Urbandale Corporation

Design Brief

801 Eagleson

August 2025

Design Brief

801 Eagleson

August 2025

Prepared By:
Arcadis Canada Inc.
333 Preston Street, Suite 500
Ottawa, Ontario K1S5N4
Canada
Phone: 613 721 0555

Prepared For:
Vincent Denomme
Planning and Development Manager
Urbandale Corporation
2193 Arch St
Ottawa, Ontario K1G 2H5, CA

Our Ref:
148792-6.0-6.04-03

Sam Labadie, P.Eng.,
Land Development Engineer, Arcadis Canada Inc.

LICENSED PROFESSIONAL ENGINEER
S. E. LABADIE
100214983
2025-08-29
PROVINCE OF ONTARIO

This document is intended only for the use of the individual or entity for which it was prepared and may contain information that is privileged, confidential and exempt from disclosure under applicable law. Any dissemination, distribution or copying of this document is strictly prohibited.

Table of Contents

1 INTRODUCTION 1
1.1 Pre-Consultation Meeting 1
1.2 Geotechnical Concerns 1
2 WATER DISTRIBUTION 3
2.1 Existing Conditions 3
2.2 Design Criteria 3
2.2.1 Water Demands 3
2.2.2 System Pressures 3
2.2.3 Fire Flow Rate 4
2.2.4 Boundary Conditions 4
2.3 Proposed Water Plan 5
3 WASTEWATER 7
3.1 Existing Conditions 7
3.2 Design Criteria 7
3.3 Recommended Wastewater Plan 7
4 SITE STORMWATER MANAGEMENT 8
4.1 Existing Conditions 8
4.2 Design Criteria 8
4.3 Stormwater Management 8
4.2.1 Stormwater Quality Control 8
4.2.2 Stormwater Quantity Control 8
5 SEDIMENT AND EROSION CONTROL PLAN 12
5.1 General 12
5.2 Trench Dewatering 12
5.3 Bulkhead Barriers 12
5.4 Seepage Barriers 12
6 CONCLUSIONS & RECOMMENDATIONS 14
6.1 Conclusions 14
6.2 Recommendations 14

.

List of Appendices

APPENDIX A

Site Plan for 801 Eagleson
City of Ottawa Pre-Consultation Meeting Notes
City of Ottawa Study and Plan Identification List
148792-001 General Plan of Services
Easement Memo

APPENDIX B

Boundary Conditions
Water Demand Calculations
FUS Calculations
Hydraulic Analysis Results

APPENDIX C

Sanitary Sewer Design Sheet
Sanitary Capacity Correspondence

APPENDIX D

JFSA Figure 2
DSEL Quality Treatment Excerpt
JFSA Table 1
2011 Bridlewood Servicing Report Excerpt
Release Rate Correspondence
Storm Sewer Design Sheet
148792-500 Storm Drainage Area Plan
148792-600 Ponding Plan
Modified Rational Method SWM Calculations
Runoff Coefficient Calculations
Sewer Storage Calculations
EZ Storm System Storage and Specifications
Watt's Adjustable Flow Control Roof Drain Spec
Custom ICD Sizing Calculations
IPEX Spec Sheet

APPENDIX E

148792-900 Erosion and Sediment Control Plan
148792-010 Notes and Legends
148792-200 Grading Plan

1 INTRODUCTION

801 Eagleson is located at the north intersection of Eagleson Road and Bridgestone Drive in Ottawa, Ontario. This proposed site is abutted by an elementary school to the East, residential properties to the North, Bridgestone Drive to the South and Eagleson Drive to the West. Arcadis Professional Services (Canada) Inc. (formerly IBI Group) has been retained by Urbandale Corporation to provide professional engineering services for 801 Eagleson. The subject site is approximately 1.72 ha and consists of 5 commercial buildings to be completed in one phase. Refer to key plan on **Figure 1.1** for Site location.

Figure 1.1 Site Location

1.1 Pre-Consultation Meeting

The City of Ottawa hosted a pre-consultation meeting on May 29th, 2024. Notes of the meeting and City of Ottawa Study and Plan Identification List are provided in **Appendix A**. There were no major engineering concerns flagged in this meeting.

1.2 Geotechnical Concerns

A geotechnical report entitled “Geotechnical Report – Proposed Commercial Development – 801 Eagleson Road – Ottawa, Ontario – PG2574-1” dated June 2025 by Paterson Group Inc. has been prepared for the subject site.

The objective of the investigation report include:

- Determination of the subsoil and groundwater conditions;
- Provision of geotechnical recommendations pertaining to the design and development of the subject site including construction considerations.

Among other items, the report comments on the following:

- Site grading;
- Foundation design;
- Pavement structure;
- Infrastructure construction;
- Groundwater control;
- Status of existing building pads placed for previous site plan design

The report concludes that the subject site is considered suitable for the proposed development.

1.3 Easements

There is an existing storm and sanitary sewer running through the site. These sewers are in an existing easement that the city has asked to be widened for easier servicing of the sewer. After discussions with the city, the north-south easement with the 1800mm storm and 600mm sanitary is to be widened 1.5m to a total width of 11.8m. A memo discussing the revised width is included in **Appendix A** for reference.

The easement over the sanitary sewer running east-west is to be widened to 9.0m. Revised easement lines are shown on drawing C-001 General Plan of Services in **Appendix A**.

2 WATER DISTRIBUTION

2.1 Existing Conditions

801 Eagleson will be serviced with potable water from the City of Ottawa's existing watermains. There is an existing 400 mm diameter watermain along Bridgestone Drive with a pre-installed 200 watermain service capped at the property line to the proposed site. This watermain falls within the City of Ottawa's pressure district Pressure Zone 3W which will provide the water supply to the site.

2.2 Design Criteria

2.2.1 Water Demands

The proposed development consists of 5 commercial buildings. In order to calculate water demand rates, the per unit population density and consumption rates are taken from Tables 4.1 and 4.2 of the Ottawa Design Guidelines – Water Distribution were used and are summarized as follows:

- Average Day Demand 2,500 L/(1000m2)/day
- Peak Daily Demand 1.5 x avg. day
- Peak Hour Demand 1.8 x max. day

A water demand calculation sheet is included in **Appendix B** and the total water demands are summarized as follows:

- Average Day 0.12 l/s
- Maximum Day 0.18 l/s
- Peak Hour 0.33 l/s

2.2.2 System Pressures

The 2010 City of Ottawa Water Distribution Guidelines states that the preferred practice for the design of a new distribution system is to have normal operating pressures range between 345 kPa (50 psi) and 552 kPa (80 psi) under maximum daily flow conditions. Other pressure criteria identified in the guidelines are as follows:

Minimum Pressure	Minimum system pressure under peak hour demand conditions shall not be less than 276 kPa (40 psi).
Fire Flow	During the period of maximum day demand, the system pressure shall not be less than 150 kPa (21 psi) during a fire flow event.

Maximum Pressure	Maximum pressure at any point in the distribution system in unoccupied areas shall not exceed 689 kPa (100 psi). In accordance with the Ontario Building/Plumbing Code the maximum pressure should not exceed 552 kPa (80 psi) in occupied areas. Pressure reduction controls may be required for buildings when it is not possible/feasible to maintain the system pressure below 552 kPa.

2.2.3 Fire Flow Rate

The Fire Underwriters Survey was used to determine the fireflow for the site. The calculations result in a fire flow of 4,000 L/min (66.7 l/s) based on noncombustible building construction. A copy of the FUS calculation is included in **Appendix B**.

2.2.4 Boundary Conditions

The City of Ottawa has provided hydraulic boundary conditions for the two connections to Bridgestone Drive. The boundary conditions are based on the water demand and fire flow rates provided. A copy of the boundary conditions received November 22, 2024 is included in **Appendix B** and is summarized as follows:

Connection 1 – Bridgestone Drive West

BOUNDARY CONDITIONS		
SCENARIO	Hydraulic Head	Pressure (PSI)
Maximum HGL	161.0	92.9
Peak Hour	156.5	86.4
Max Day + Fire Flow (66.7 l/s)	157.0	87.1

Connection 2 – Bridgestone Drive East

BOUNDARY CONDITIONS		
SCENARIO	Hydraulic Head	Pressure (PSI)
Maximum HGL	161.0	91.4
Peak Hour	156.5	84.9
Max Day + Fire Flow (66.7 l/s)	157.0	85.6

2.3 Proposed Water Plan

The site will be serviced by two 150mm diameter watermains from Bridgestone Drive. There is an existing 200mm diameter watermain cap located at the property line from Bridgestone Drive, and an additional watermain connection to the existing 400mm diameter watermain along Bridgestone Drive will be provided in order to accommodate a looped system. There are two new hydrants proposed on site, in front of Building A-2 and A-3.

Per Section 2.2.4, each building will need a fire flow of up to 4,000 L/min. With at least one AA hydrant with 75m of each building, the capacity needed to deliver the required fire flow to the structures are being provided in accordance with Technical Bulletin ISTB-2018-02 dated March 21, 2018. Furthermore, the fire dept. connection for each building is also located within 45m of a hydrant.

HYDRANT AVAILABILITY		
BUILDING ID	NEW AA FIRE HYDRANTS WITHIN 75M (5,700 L/MIN)	AVAILABLE FLOW (L/MIN)
A-1	1	5,700
A-2	2	11,400
A-3	2	11,400
C	1	5,700
D	2	11,400
E	1	5,700

A computer model has been created for the subject site using the InfoWater Pro 2024 program. The model includes the hydraulic boundary condition at the existing main on Bridgestone Drive. The hydraulic model was run under basic day, maximum day with fire flows and under peak hour conditions. Watermains are sized to provide sufficient pressure and to deliver the required fire flow. All watermains on site are 150 mm diameter in order to provide the required fire flow. Results of the hydraulic analysis for the site is included in **Appendix B** and is summarized as follows:

SCENARIO	Pressure (kPa)
Basic Day (Max HGL) Pressure (kPa)	630.09 – 644.79
Residual Pressure for Maximum Day plus Fire Flow for Design Fire Flow of 4,000 l/min @ 150 kPa (kPa)	492.98-604.47
Peak Hour Pressure (kPa)	585.99-600.69

A comparison of the results and design criteria is summarized as follows:

Maximum Pressure	Under Basic Day all nodes have pressure that exceeds 552 kPa (80 psi), therefore pressure reducing control is required for the buildings. There is no area where the pressure exceeds the maximum level of 689 kPa (100 psi) in unoccupied areas.
Minimum Pressure	The lowest minimum pressure during peak hour conditions is 585.99 kPa which exceeds the minimum 276 kPa (40 psi) requirement.
Fire Flow	The minimum residual pressure during a design fireflow under maximum day conditions with minimum system pressure of 150 kPa (21psi) is 492.98 kPa which exceeds the minimum of 150 kPa.

The above results indicate the municipal infrastructure can support the proposed development.

3 WASTEWATER

3.1 Existing Conditions

There is an existing 600mm concrete sanitary sewer in an easement bisecting the subject site. There is currently no flow from the subject site to any sanitary sewer. The capacity of the 600mm concrete sewer is discussed in Section 3.3.

3.2 Design Criteria

The sanitary sewers for the subject site will be based on the City of Ottawa design criteria. It should be noted that the sanitary sewer design for this study incorporates the latest City of Ottawa design parameters identified in Technical Bulletin ISTB-2018-01. Some of the key criteria will include the following:

- Commercial 28,000 l/ha/d
- ICI Peaking factor 1.5
- Infiltration allowance 0.33 l/s/ha
- Velocities 0.60 m/s min. to 3.0 m/s max.

3.3 Recommended Wastewater Plan

Wastewater flows have been calculated for the subject site, see detailed Sanitary Sewer Design Sheet in **Appendix C**.

As discussed in Section 3.1, there is an existing 600mm sanitary sewer located through an easement on the subject site. The City of Ottawa has provided confirmation that a total wastewater flow of up to 1.9 L/s would be negligible (see correspondence in **Appendix C**). Given that the wastewater design flow rate is less than this amount, it is concluded that the existing 600mm has sufficient capacity for the proposed development.

4 SITE STORMWATER MANAGEMENT

4.1 Existing Conditions

The subject site is currently undeveloped with no known stormwater management control measures. Stormwater currently flows overland to Eagleson Road and Bridgestone Drive.

An existing 1800mm storm sewer is located in an easement that bisects the site. This sewer is shallow at under 2m of soil cover.

Additionally, a 600mm storm sewer is in Eagleson Road.

4.2 Design Criteria

The stormwater management infrastructure was designed per the City of Ottawa 2012 Sewer Design Guidelines. Previous consultation with the City has also confirmed water quantity and quality requirements for this site, as summarized below,

- Design Storm — 1:5-year return (Ottawa)
- Rational Method Sewer Sizing
- Initial Time of Concentration — 10 minutes
- Runoff Coefficients
  - Softscape Areas — C = 0.20
  - Hardscape Areas — C = 0.90
- Pipe Velocities — 0.80 m/s to 3.0 m/s
- Minimum Pipe Size — 250 mm diameter (200 mm CB Leads)

4.3 Stormwater Management

The subject site forms part of the lands included in the “Monahan Drain Constructed Wetlands: Updated Hydrologic and Hydraulic Analysis” Report by JFSA, dated March 2019. The site is part of the drainage area that discharges to the Bridgewood SWM Pond, also referred to as “Forebay 3” as part of the Monahan Drain Wetland Reconstruction project.

4.2.1 Stormwater Quality Control

Stormwater for this site is tributary to the Bridgewood Stormwater Management Facility, across Bridgestone Drive. This stormwater management pond is located in Cell 3 as shown in Figure 3, “Detailed Drainage Areas to Cell 1 + Water Levels along the MDCW”, prepared by JFSA (located in **Appendix D**). Per the Design Brief for the Monahan Drain Wetland Reconstruction report by DSEL, revised November 2013, the stormwater management facility has been designed with a permanent pool volume sized to provide an “enhanced level” of treatment for Cell 3 (see excerpt in **Appendix D**).

4.2.2 Stormwater Quantity Control

The subject site forms part of the lands included in the “Monahan Drain Constructed Wetlands: Updated Hydrologic and Hydraulic Analysis” Report by JFSA, dated March 2019. Table 1 in that report, “Assumed Future Impervious Cover by Zoning Code”, it is assumed that Commercial/Mixed-Use zones would have a total imperviousness of 90%. An excerpt from that

report containing Table 1 can be found in **Appendix D**.

The calculations for converting imperviousness to a runoff coefficient are as follows,

$C = 0.7(Imp) + 0.2$

$C = 0.7\ (0.90) + 0.2$

$C = 0.83$

It can therefore be considered that the downstream stormwater management pond has been designed to accommodate the subject property with a runoff coefficient (C) of 0.83.

Additionally, the City of Ottawa has instructed that the release rate be held to the "Bridlewood Commercial Plaza Servicing Report" prepared by J.L. Richards dated May 2011, except with a Tc of 10min instead of 20min to match the latest City of Ottawa sewer design guidelines (see email correspondence and excerpt from the 2012 report in **Appendix D**).

The release rate can be therefore calculated as follows,

$\mathbf{Q_{restricted}}$ = **2.78** x **C** x $\mathbf{i_{5yr}}$ x **A** where:
C = Runoff coefficient = 0.40
$\mathbf{i_{5yr}}$ = Intensity of 5-year storm event (mm/hr)
= $998.071 \times (T_c + 6.053)^{0.814}$ =104.19 mm/hr; where T_c = 10 minutes
A = 1.75 Ha

$\mathbf{Q_{restricted}}$ = **2.78** x **C** x $\mathbf{i_{5yr}}$ x **A**
= 2.78 x 0.40 x 104.19 x 1.75
= 202.75 L/s

It is therefore proposed to restrict the 100-year stormwater outflow from the subject site to 202.75 L/s. This will be achieved through a combination of inlet control devices (ICD's), underground storage, surface storage where possible, and roof storage.

Surface flows in excess of the site's allowable release rate will be stored on site and gradually released into the minor system to respect the site's allowable release rate. The average rooftop retention depth located within the building area will be limited to 75mm during a 1:100-year event as shown on the ponding plan located in **Appendix D** and grading plans located in **Appendix E**.

Along the perimeter of the site, the opportunity to capture and store runoff is limited due to grading constraints and building geometry. These areas will discharge uncontrolled to Eagleson Road and Bridgestone Drive. These areas are located at the perimeter of the site where it is necessary to tie into public boulevards and adjacent properties or in areas where ponding stormwater is undesirable.

Based on the proposed site plan, the total uncontrolled area has been calculated to be (0.02 + 0.005) 0.025 Ha. For the detailed storm drainage area plan for the site, refer to Drawing 500 in **Appendix D**.

Based on a 1:100-year event, the flow from the 0.02 Ha uncontrolled area to the west can be determined as:

$\mathbf{Q_{uncontrolled}}$ = **2.78** x **C** x $\mathbf{i_{100yr}}$ x **A** where:
C = Average runoff coefficient = 0.52 x 1.25 = 0.65 (100 year C-value)
$\mathbf{i_{100yr}}$ = Intensity of 100-year storm event (mm/hr)
= $1735.688 \times (T_c + 6.014)^{0.820}$ =178.56 mm/hr; where T_c = 10 minutes
A = Uncontrolled Area = 0.02 Ha

Therefore, the uncontrolled release rate can be determined as:

$\mathbf{Q_{uncontrolled1}}$ = **2.78** x **C** x $\mathbf{i_{100yr}}$ x **A**
= 2.78 x 0.65 x 178.56 x 0.02

= 6.45 L/s

Similarly, the 0.005 Ha uncontrolled release rate from the south can be determined as:

$\mathbf{Q_{uncontrolled2}}$ = **2.78** x **C** x $\mathbf{i_{100yr}}$ x **A**
= 2.78 x 0.25 x 178.56 x 0.005
= 0.62 L/s

The Maximum allowable release rate from the site can be determined by subtracting the Uncontrolled release rate from the minor system restricted flow rate.

$Q_{max} = Q_{restricted} - Q_{uncontrolled1} - Q_{uncontrolled2}$

Q_{max} = 202.75 L/s – 6.45 L/s – 0.62 L/s

Q_{max} = 195.68 L/s

Therefore, the total restricted flow rate through the minor system will be the design flow rate of **195.68 L/s**. This will be achieved using Inlet Control Devices and surface ponding. A summary of the ICD's, their corresponding storage requirements, storage availability, and associated drainage areas has been provided below.

DRAINAGE AREA	ICD RESTRICTED FLOW (L/s)	100 YEAR STORAGE REQUIRED (m^3)	2 YEAR STORAGE REQUIRED (m^3)	STORAGE PROVIDED (m^3)
Bldg A-1 Roof	1.50	41.90	12.34	45.00
Bldg A-2 Roof	1.50	55.63	16.74	56.25
Bldg A-3 Roof	1.50	41.90	12.34	45.00
Bldg C Roof	1.50	28.94	8.24	33.75
Bldg D Roof	1.50	16.98	4.53	22.50
Bldg E Roof	1.50	28.94	8.24	33.75
MH105	95.00	256.76	49.95	257.56
CBMH6	91.00	164.46	27.62	165.73
TOTAL	**195.00**	**635.50**	**140.01**	**659.54**

Detailed stormwater management calculations for the 2-year event, 100-year event, and stress test (100-year plus 20%) event can be found in **Appendix D**.

There will be no 2-year surface ponding per the modified rational method calculations.

A 0.3m freeboard from downstream high points/maximum ponding elevations to first floor building opening is maintained in all scenarios including emergency overflow conditions.

Refer to the geotechnical report for information regarding foundation drainage. Foundation drainage systems are to be independent and connected to the storm service downstream of any stormwater management control device.

Detailed roof design to be completed by others at a later date. Roof design is to adhere to the requirements of this report (notably, the stormwater capacity and release rate) as well as any requirements in the Ontario Building Code (scupper details, emergency overflow, etc). Roof drain flow controls to be Watts Adjustable Accutrol Weir or equivalent (specification sheet found in **Appendix D**).

ICDs in MH105 and CBMH6 to be custom-sized orifices (see sizing calculations in **Appendix D**) by IPEX or equivalent.

5 SEDIMENT AND EROSION CONTROL PLAN

5.1 General

During construction, existing stream and conveyance systems can be exposed to significant sediment loadings. Although construction is only a temporary situation, it is proposed to introduce a number of mitigative construction techniques to reduce unnecessary construction sediment loadings. These will include:

- groundwater in trench will be pumped into a filter mechanism prior to release to the environment;
- bulkhead barriers will be installed at the nearest downstream manhole in each sewer which connects to an existing downstream sewer;
- seepage barriers will be constructed in any temporary drainage ditches; and
- silt sacks will remain on open surface structure such as manholes and catchbasins until these structures are commissioned and put into use.
- Prior to roads having a granular base, construction traffic exiting the site to be directed to a mud mat to reduce sediment tracked offsite

5.2 Trench Dewatering

During construction of municipal services, any trench dewatering using pumps will be discharged into a filter trap made up of geotextile filters and straw bales similar in design to the OPSD 219.240 Dewatering Trap. These will be constructed in a bowl shape with the fabric forming the bottom and the straw bales forming the sides. Any pumped groundwater will be filtered prior to release to the existing surface runoff. The contractor will inspect and maintain the filters as needed including sediment removal and disposal and material replacement as needed.

5.3 Bulkhead Barriers

At the first manhole constructed immediately upstream of an existing sewer, a ½ diameter bulkhead will be constructed over the lower half of the outletting sewer. This bulkhead will trap any sediment carrying flows, thus preventing any construction –related contamination of existing sewers. The bulkheads will be inspected and maintained including periodic sediment removal as needed.

5.4 Seepage Barriers

These barriers will consist of both the Light Duty Straw Bale Barrier as per OPSD 219.100 or the Light Duty Silt Fence Barrier as per OPSD 219.110 and will be installed in accordance with the sediment and erosion control drawing. The barriers are typically made of layers of straw bales or geotextile fabric staked in place. All seepage barriers will be inspected and maintained as needed.

5.5 Surface Structure Filters

All catchbasins, and to a lesser degree manholes, convey surface water to sewers. However, until the surrounding surface has been completed these structures will be covered to prevent sediment from entering the minor storm sewer system. Until rear yards are sodded or until streets are asphalted and curbed, all catchbasins and manholes will be equipped with geotextile filter socks. These will stay in place and be maintained during construction and build until it is appropriate to remove them.

5.6 Mud Mats

To reduce the amount of sediment tracked offsite onto municipal roads, construction traffic is to be directed to exit the site on a 150mm pad made of 50mm clear stone and placed on non-woven geotextile, known as a “mud mat”. The pad is to be maintained until onsite roads have a granular base.

6 CONCLUSIONS & RECOMMENDATIONS

6.1 Conclusions

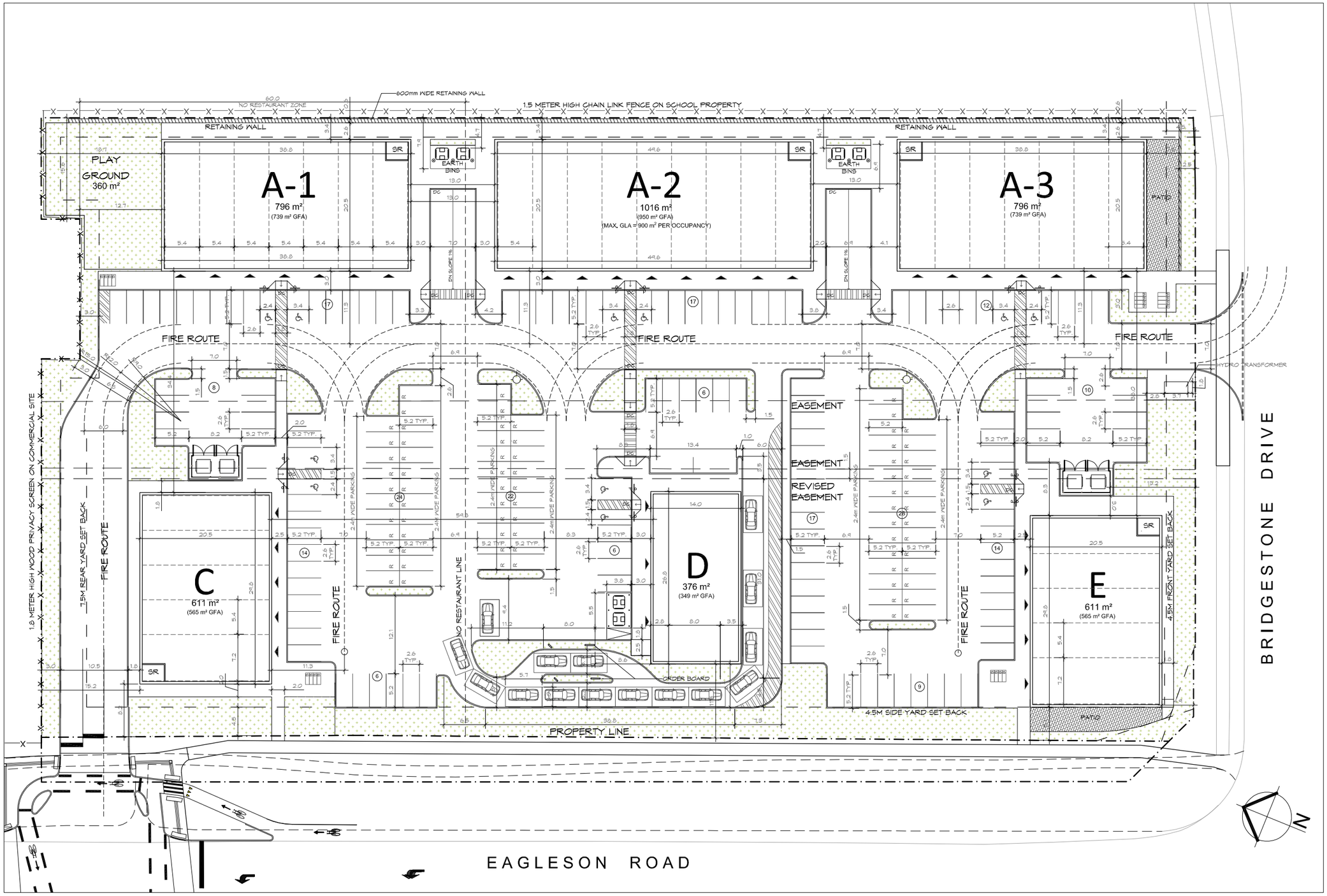
This report and the accompanying working drawings clearly indicate that the proposed development meets the requirements of the stakeholder regulators, including the City of Ottawa. The proposed development is also in general conformance with the recommendations made by the 2024 Preconsultation Meeting Notes.

There is a reliable water supply available adjacent to the proposed development; a wastewater outlet is available adjacent to the site; local storm sewers have been installed adjacent to the site.

6.2 Recommendations

It is recommended that the regulators review this submission with an aim of providing the requisite approvals to permit the owners to proceed to the construction stage of the subject site.

Appendix A



SITE PLAN LEGEND

SYMBOL	DESCRIPTION
	BUILDING
	LANDSCAPED AREA
	CONCRETE SIDEWALK
	FIRE ROUTE
	RESTAURANT AREA
	PROPERTY LINE
	SETBACK LINE
	NEW CURB
DC	NEW DEPRESSED CURB
	BURIED HYDRO LINES
	ENTRANCE
LS	LAMP STANDARD
B	BOLLARD
S	SIGN
SP	EXISTING WATER STAND POST
96.0	ELEVATION MARKER
CB	CATCH BASIN
P	BARRIER FREE SIGN
F.F. 96.0	FINISH FLOOR ELEVATION
	ACCESSIBLE PARKING SPACE
	STANDARD PARKING SPACE (2.6 X 5.2 M.)
R	REDUCED WIDTH PARKING SPACE (2.4 X 5.2)
B B	NEW BIKE RACK
	PAINTED LINES

PARKING SPACES	
TOTAL:	210

FLOOR AREA	
GROSS FLOOR AREA:	3,936 m²
BUILDING AREA:	4,240 m²

SITE AREA	
TOTAL:	17,172 m²

801 EAGLESON - REVISED SITE PLAN

SCALE 1:600 2025-08-22

DREDGE LEAHY ARCHITECTS

Urbandale CORPORATION

File No.: PC2024-0186

June 6, 2024

Jordan Quintyne
Urbandale Corporation
Via email: jquintyne@urbandale.com

Subject: Pre-Consultation: Meeting Feedback
Proposed Site Plan Control Application – 801 Eagleson Road

Please find below information regarding next steps as well as consolidated comments from the above-noted pre-consultation meeting held on May 29, 2024.

Pre-Consultation Preliminary Assessment

1 ☐	**2** ☐	**3** ☐	**4** ☒	**5** ☐

One (1) indicates that considerable major revisions are required while five (5) suggests that the proposal appears to meet the City's key land use policies and guidelines. This assessment is purely advisory and does not consider technical aspects of the proposal or in any way guarantee application approval.

Next Steps

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

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

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

Supporting Information and Material Requirements

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

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

Consultation with Technical Agencies

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

Planning

Comments:

Policy

1. The following policies apply to the site:

    a. The site is designated Mainstreet Corridor on Schedule B5 – Suburban (West) Transect.

    b. Site abuts a major pathway running along Monahan Drain, identified on Schedule C3 – Active Transportation Network. The lands are also designated Open Space on Schedule C12 – Urban Greenspace.

    c. Per Schedule C4 – Urban Road Network, Eagleson Road is classified as an Arterial Road and Bridgestone Drive is classified as a Major Collector Road.

    d. Eagleson Road is subject to right-of-way protection, per Schedule C16 – Road Classification and Right-of-Way protection – 34 metres.

    e. No area-specific polies or secondary plans.

Zoning

2. Provide more information on the proposed uses. Refer to Section 190(7) and Urban Exception 226 for permitted uses.

3. Gross Leasable Area

    a. Please confirm the proposed gross leaseable area for each of the proposed occupancies/buildings.

    b. Zoning Interpretation staff have confirmed that the maximum gross leasable area provisions identified in the LC parent zone apply to the permitted non-residential uses identified in the LC7 subzone. Therefore,

the following provisions related to maximum gross leaseable area apply to the proposed non-residential uses:

i. Each separate occupancy may not exceed 900 square metres in gross leasable area, per Section 189(1)(b).

ii. The total area occupied by all the separate occupancies combined may not exceed a gross leasable area of 3,000 square metres, per Section 189(1)(c).

4. Landscaping requirements

a. Please note a minimum of 3m landscaped buffer is required along the perimeter of the subject property, per Table 189(h). There appears to be deficiencies in the following locaitons:

i. Along the shared property line with 17 Bridgestone Drive (Maurice-Lapointe Elementary School), which is zoned institutional (I1A – Minor Institutional Zone).

ii. Some pinch points along the northern property line abutting the residential properties along Huntsmain Crescent, which are zoned residential (R1M – Residential First Density, Subzone M).

b. Refer to Section 110(1) of the Zoning By-law for landscaping provisions for parking lots. Further information is required to confirm that the minimum landscape buffer and interior landscaping requirements are being achieved.

c. Consider opportunities for additional landscaping throughout the proposed surface parking lot through landscaped islands, landscaped medians, etc.

5. Parking Requirements

a. Please provide parking calculations as part of the next submission.

b. Refer to Section 101 of the Zoning By-law for applicable parking rates.

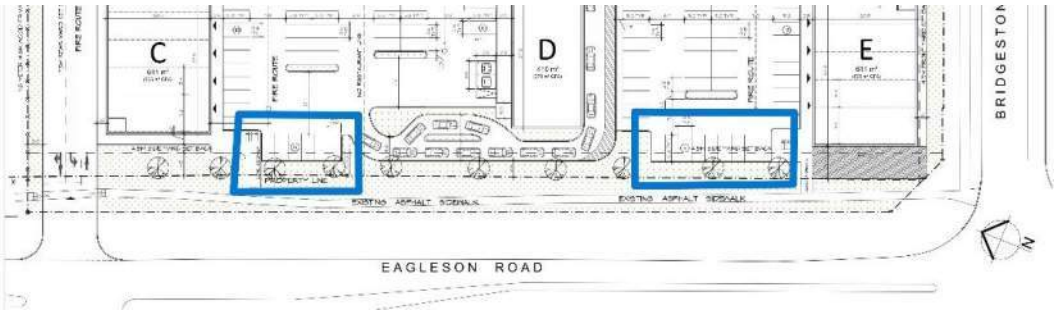
c. Please note that the following zoning provisions may impact the minimum parking requirements for the proposed development:

i. Section 101(6)(a) – additional parking provisions related to shopping centres.

ii. Section 101(6)(b) – additional parking provisions related to drive through facilties.

iii. Section 104 – shared parking provisions.

d. Please note that motor vehicle parking is not permitted in a required corner side yard, per Section 109(2) in Zoning By-law. Please shift all parking out of the required 4.5m corner side yard setback along Eagleson.



6. Aisle and Driveway requirements

   a. Show width of the proposed access on Eagleson on the plan. Please note that a double traffic lane driveway providing access to a parking lot must have a minimum width of 6m, per Section 107(1)(a) in the Zoning By-law.

   b. Please ensure that the width of the aisle providing access to the proposed loading zones between the A-buildings are sufficiently wide. A minimum aisle width of 9m is required for a loading space angled between 60° to 90°, per Table 113B(b).

7. Waste Management Requirements

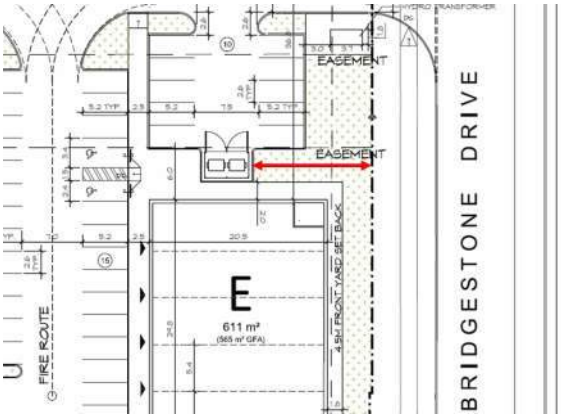
   a. Refer to Section 110(3) of the Zoning By-law for provisions related to outdoor refuse collection areas located within or accessed via a parking lot.

   b. Please note that all outdoor refuse collection and refuse loading areas contained within or accessed via a parking lot must be screened from view by an opaque screen with a minimum height of 2.0 metres, per Section 110(3)(c); however, where an in-ground refuse container is provied, the screening requirement of Section (3)(c) above may be achieved with soft landscaping, per Section 110(3)(d).

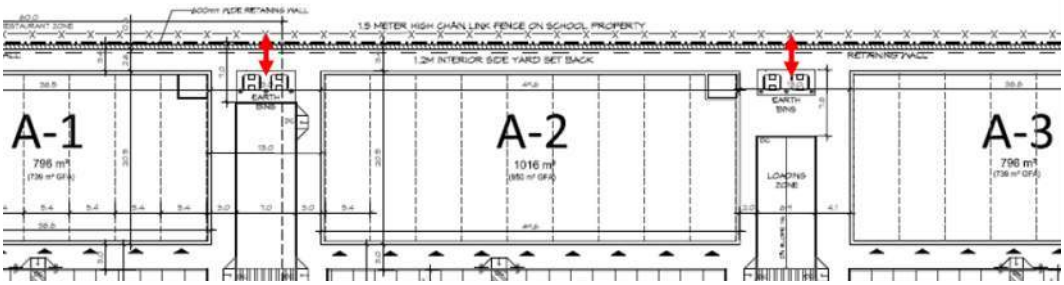
      i. Provide design details of the proposed waste enclosures.

      ii. For in-ground containers, show proposed screening landscaping on the landscape plan.

   c. Show the distance between the proposed waste enclosure next to building E and Bridgestone Drive. Please note that the bins must be located at least 9m from a public street, per Section 110(3)(a).



d. Confirm the distance between the proposed earth bins between the A buildings and the shared property line with the school. Please note that the bins must be located at least 3m from the lot line, per Section 110(3)(b).



8. Bicycle Parking Requirements

   a. Provide bicycle parking calculation in the next submission.

   b. Provide design details of the propsoed bicycle parking in the next submission.

   c. Refer to Section 111 in the Zoning By-law for minimum bicycle parking rates and bicycle parking provisions.

9. Drive-through Facility

   a. Additional information required on the proposed drive-through facility to confirm zoning compliance:

      i. Confirm the associated use (e.g., restaurant, car wash, etc.)

      ii. If it is a restaurant use, please show the location of the order board on the site plan.

iii. Show the dimensions of at least one queuing space on the site plan. Please note that all queuing spaces must be at least 3m wide and 5.7m long, per Section 112(2).

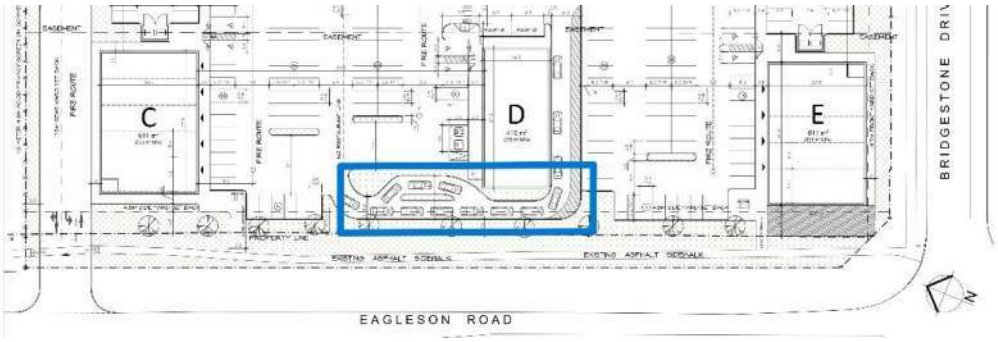
iv. Refer to Section 112 of the Zoning By-law for additional provisions related to drive-through facilities.

b. Please note that the following zoning requirements for drive-through facilities are included in Urban Exception 226:

i. it must not be located in the front or corner exterior side yard;

ii. it must be located a minimum of 30 m from any R1 subzone

The proposed drive-through facility is therefore not permitted within the required 4.5m corner side yard along Eagleson. The queuing lane is currently encroaching 1.3m into the required yard (see below). Please shift the queuing lane out of the required corner side yard setback.



10. Outdoor Commercial Patios – refer to Section 85 of the Zoning By-law for applicable provisions.

Concept Plan

11. Consider swapping the locations of Building D and the associated drive-through facility, so that Building D is along the Eagleson frontage, and the queuing lanes are interior to the site. Refer to guidelines 17-23 in the Urban Design Guidelines for Drive-Through Facilities for further direction on preferred configurations for drive-through facilities along a public street.

12. Explore opportunities for additional tree planting along Eagleson and Bridgestone.

13. Explore opportunities for additional landscaping throughout the surface parking area (e.g., landscaped islands, etc.).

14. Consider opportunities to screen the loading areas from the school through landscaping/hedges along the proposed fence.

Required Applications

15. The following development applications are required to permit the proposed development:

    a. Site Plan Control (Complex) – more information on the process can be found here.

    b. If required, zoning relief can be sought through either a Minor Variance application to the Committee of Adjustment or a Minor Zoning By-law Amendment application.

        i. Minor Variance – more information on the process can be found here.

        ii. Zoning By-law Amendment (Minor) – more information on the process can be found here.

Feel free to contact Colette Gorni, DR Planner, for follow-up questions.

Urban Design

Comments:

Submission Requirements

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

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

    b. The development is not subject to the Urban Design Review Panel.

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

    a. Design Brief

    b. Site Plan

    c. Landscape Plan

    d. Elevations

    e. Conceptual Floor Plans

Preliminary Design Comments

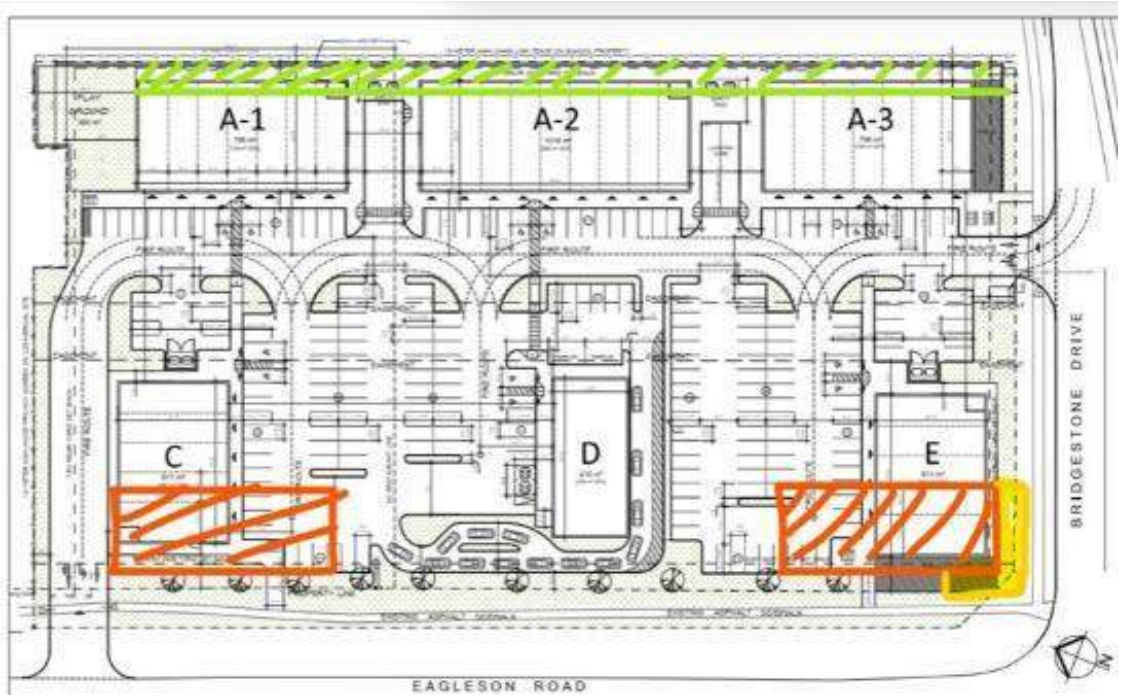
18. In addition to the Official Plan, please ensure that the Design Brief addresses:

    a. Urban Design Guidelines for Large Format Retail

    b. Urban Design Guidelines for Drive Throughs

19. Transition to surrounding properties should be considered: reducing retaining proposed to the extent possible, increasing setback and additional soft surface and landscaping should be considered to improve transition. CPTED principles should be considered for the program between the school and the “A” buildings.

20. Please consider how the proposed buildings address the public realm. Please consider rotating buildings C and E 90-degrees, similar to the concept below.



21. Please ensure that the architectural treatment activates the public realm. Please ensure that glazing is provided along the public roads.

22. Please provide additional landscaping along public roadway frontages including tree plantings and decorative landscaping. Please ensure that the drive through queuing lane is well screened.

23. Look for options to increase the amount of landscaping on the site including providing tree plantings within the parking boulevards and foundation plantings along the buildings.

24. Evaluate appropriate treatment for commercial patios including landscape buffering to ensure that they feel comfortable for patrons.

Feel free to contact Lisa Stern, Planner III (Urban Design), for follow-up questions.

Engineering

Watermain Design

25. Boundary Conditions - civil consultant to request boundary conditions from the City's assigned Project Manager, Development Review. Water boundary conditions request must include the location of the service and the expected loads required by the proposed development. Please provide all the following information:

    a. Location of service (show on a plan or map)

    b. Type of development

    c. Average daily demand: ___ l/s.

    d. Maximum daily demand: ___l/s.

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

    f. Required fire flow.

    g. Supporting Calculations for all demands listed above and required fire flow as per Fire Underwriter Surveys.

26. Provide a watermain system analysis demonstrating adequate pressure as per section 4.2.2 of the Water Distribution Guidelines.

27. Two watermains separated by an isolation valve will be required to avoid the creation of a vulnerable service area for proposed demand greater than $50m^3$/day.

28. Demonstrate adequate hydrant coverage for fire protection. Please review Technical Bulletin ISTB-2018-02, Appendix I table 1 – maximum flow to be considered from a given hydrant.

Sanitary Design

29. Demonstrate there is adequate residual capacity in the receiving downstream sanitary sewer to accommodate the proposed development.

30. Please apply the wastewater design flow parameters in Technical Bulletin PIEDTB-2018-01.

Stormwater Management

31. The following Stormwater Management Criteria for the subject site are based on the 2012 approved Servicing report and the 2019 Monahan Drain Constructed Wetland (MDCW) study prepared by JFSA:

    a. Minor system to be designed for the 5-year storm event.

    b. Post-Development peak flows to be no greater than the 5-year pre-development release rate using a calculated time of concentration of no less than 10 minutes. Events beyond the 5-year and up to the 100-year to be contained on site.

    c. Storm drainage directed to the ditch along Eagleson to be controlled post to pre.

    d. The post-development total imperviousness and percent of pervious area directly connected percentages for this site should be no greater than 90% and 100% respectively per the MDCW study.

32. Enhanced level water quality control (80% TSS) removal is required for this site as the receiving downstream stormwater management facility is currently at capacity and is unable to achieve the quality control target.

33. Storm sewer outlets should not be submerged.

Additional Comments

34. The City requests that the sewer easement be reconfigured to ensure a 4.5m clearance from the centre of nearest easement sewer to the nearest easement boundary. This will provide sufficient clearance for future maintenance of the sewer without impacting possible adjacent foundations.

    Although the proposed Site Plan is not proposing any foundations within 4.5m of either easement sewer, the City needs to ensure that future developments cannot build foundations any closer than 4.5m from either of sewer.

    Typically, the City does not allow servicing connections to easement infrastructure, nor does it allow private infrastructure within the easement. However, with the above request, the City is willing to permit servicing connections to the easement sewers as well as allow the private watermain to be within the easement where necessary. While this was permitted in the previously approved site plan, the City is not required to grant these permissions within the City easement for subsequent applications. If agreeable to the applicant, the City will include a condition to adjust the easement configuration in the site plan agreement.

35. Pre- and post-construction CCTV would also be required for the sanitary and storm collectors located within the City-owned sewer easement should the developer explore the approach to connect their development to the said sewers. The developer would be responsible to repair any damages done to the sewers during the construction of their development. If agreeable to the applicant, the City will also include a condition for the provision of CCTV in the site plan agreement.

36. Provide existing servicing information and the recommended location for the proposed connections. Services should ideally be grouped in a common trench to minimize the number of road cuts.

37. Sewer connections to be made above the springline of the sewermain as per:

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

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

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

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

38. Future road widening should be noted on all engineering plans.

39. Please include the location of the Hydro Ottawa easement on the engineering drawings.

40. A site lighting certification letter stating the following is required:

    a. The exterior site lighting has been designed using only fixtures that meet the criteria for full cut-off (sharp cut-off) classification, as recognized by the IESNA or EIS and;

    b. The exterior site lighting has been designed to meet minimal light spillage onto adjacent properties. 0.5 fc is normally the maximum allowable spillage.

41. It is Development Review's understanding following the external meeting with the developer that the retaining wall along the back of building A-1, A-2 and A-3 has been constructed back in 2022. Since this site is lower than the adjacent land, please ensure that all external drainage areas are considered in the

proposed stormwater management design. Note that an MECP Environmental Compliance Approval may be required as per Ontario Regulations 525/98 if the site is designed to service more than one lot or parcel of land.

Feel free to contact Jean-Miguel Roy, Infrastructure Project Manager, for follow-up questions.

Noise

Comments:

42. Stationery and road noise studies are required for the commercial and daycare, respectively.

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

Transportation

Comments:

43. If the proposed Eagleson access ties into the existing signal, an RMA submission (functional design, delegated authority report, internal detailed design, and external utility circulation) is required.

44. Right-of-way protection.

    a. See Schedule C16 of the Official Plan.

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

45. Corner Sight Triangle policy (2024):

    a. Arterial/Arterial: overlapping 5m x 15m triangles

    b. Arterial/Collector: overlapping 5m x 15m triangles

    c. Collector/Collector: overlapping 5m x 15m triangles

    d. Arterial/Local: 3m x 9m with the longer dimension along the arterial road

46. TIA submission required. Proceed to scoping.

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

Environment

Comments:

47. Bird-Safe Design Guidelines

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

48. Urban Heat Island

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

49. Landscaping

    a. Please consider providing shade trees for the outdoor play area(s).

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

Forestry

Comments:

50. Existing Trees

    a. There are off-site trees adjacent to the site and one (possibly City-owned tree) on Eagleson so a Tree Conservation Report is required.

    b. If appropriate, you may combine the TCR with the LP.

    c. Contact Mark Richardson if you need additional information on the TCR requirements.

51. Proposed Trees

    a. Please find space for trees interior on the site.

    b. Soil Volume - Please demonstrate as per the **Landscape Plan Terms of Reference** that the available soil volumes for new plantings will meet or exceed the following:

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

c. Planted trees should meet minimum setback requirements

   i. Maintain 1.5m from sidewalk or MUP/cycle track or water service laterals.

   ii. Maintain 2.5m from curb.

   iii. Coniferous species require a minimum 4.5m setback from curb, sidewalk, or MUP/cycle track/pathway.

d. Efforts shall be made to provide as much future canopy cover as possible at a site level, through tree planting and tree retention. The Landscape Plan shall show/document that the proposed tree planting and retention will contribute to the City's overall canopy cover over time. Please provide a projection of the future canopy cover for the site to 40 years.

Feel free to contact Mark Richardson, Planning Forester, for follow-up questions.

Parkland

Comments:

52. Parkland Dedication:

   a. Parkland dedication was not provided as part of the previous Site Plan approval (D07-12-11-0106). Therefore, parkland is required through the current resubmission, unless it can be demonstrated that parkland was provided previously through another mechanism.

   b. The amount of parkland dedication that will be required will be calculated as per the City of Ottawa Parkland Dedication By-law No. 2022-280, as amended.

   c. Parkland requirement for commercial / industrial uses is currently calculated as 2% of the gross land area of the site being developed.

d. Parks & Facilities Planning estimates the gross land area of the redevelopment to be 17,178 square meters.

e. Therefore, for information purposes, the preliminary parkland dedication requirement is calculated to be 344 square meters, as shown below:

   i. 17,178 m2 x 2% = 344 m2 parkland dedication required

f. Please provide the City with a surveyor's plan/area certificate/memo which specifies the exact gross land area of the property parcel(s) being developed.

53. Form of Parkland Dedication:

    a. Parks & Facilities Planning anticipates requesting Cash-in-Lieu of Parkland for this proposal.

54. Design Brief

    a. PFP requests that parkland dedication be addressed in the Design Brief so that the requirement is formally acknowledged in the submitted documentation. Please include an explanation of how the proposed development will address the policies related to parkland as per Section 4.4 of the Official Plan and the requirements of the Parkland Dedication By-law.

Please note that the park comments regarding parkland dedication are preliminary and will be finalized (and subject to change) upon receipt of the development application and the requested supporting documentation. Additionally, if the proposed development and/or land use changes, then the parkland dedication requirement be re-evaluated accordingly.

Feel free to contact Jeannette Krabicka, Parks Planner, for follow-up questions.

Other

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

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

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

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

Yours Truly,
Colette Gorni, Planner (DR West)

c.c. Nishant Dave, Planner (DR West)
Lisa Stern, Urban Design Planner
Jean-Miguel Roy, Infrastructure Project Manager
Rubina Rasool, Infrastructure Project Manager
Mike Giampa, Transportation Project Manager
Matthew Hayley, Environmental Planner
Mark Richardson, Planning Forester
Jeannette Krabicka, Parks Planner

APPLICANT'S STUDY AND PLAN IDENTIFICATION LIST

Proposed Site Plan Control Application – 801 Eagleson Road – PC2024-0186

Legend: **R** = Required, the study or plan is required with application submission
A = Advised, the study or plan is advised to evaluate the application or satisfy a condition of approval/draft approval
1 - OPA, **2** - ZBA, **3** - Plan of Subdivision, **4** - Plan of Condominium, **5** - SPC

Core studies required for certain applications all the time (Remaining studies are site specific)

For information and guidance on preparing required studies and plans refer here:

ENGINEERING									
R	**A**	**Study/ Plan Name**	**Description**	**When Required**					**Applicable Study Components & Other Comments**
				1	**2**	**3**	**4**	**5**	
☒	☐	1. Environmental Site Assessment (Phase 1 & Phase 2)	Ensures development only takes place on sites where the environmental conditions are suitable for the proposed use	☒	☒	☒	☒	☒	Record of Site Condition Yes ☐ No ☐
				Study Trigger Details: All cases					
☒	☐	2. Geotechnical Study	Geotechnical design requirements for the subsurface conditions	☒	☒	☒	☒	☒	
				Study Trigger Details: All cases					
☒	☐	3. Grading and Drainage Plan	Grading relationships between connecting (or abutting) properties and surface runoff control	☐	☐	☒	☐	☒	
				Study Trigger Details: All cases					
☐	☐	4. Hydrogeological and Terrain Analysis	A scientific study or evaluation that includes a description of the ground and surface hydrology, geology, terrain, affected landform and its susceptibility	☐	☐	☒	☒	☒	Reasonable Use Study Yes ☐ No ☐ Groundwater Impact Study Yes ☐ No ☐
				Study Trigger Details: When developing on private services or when urban development is in close proximity to existing private serviced development					
☒	☐	5. Noise Control Study	Potential impacts of noise on a development	☒	☒	☒	☒	☒	Vibration Study Yes ☐ No ☐
				Study Trigger Details: See Terms of Reference for full details.					

☐	☐	6. Rail Proximity Study	Development on land adjacent to all Protected Transportation Corridors and facilities shown on Schedule C2 of the Official Plan, to follow rail safety and risk mitigation best practices	☐	☒	☒	☒	☒	Rail Safety Report Yes ☐ No ☐ O-Train Network Proximity Study Yes ☐ No ☐
				Study Trigger Details: Within the Development Zone of Influence for existing and future rapid transit stations and corridors, as shown on Annex 2 of the OP OR on land adjacent to all Protected Transportation Corridors and facilities shown on Schedule C2 of the Official Plan					
☒	☐	7. Site Servicing Study	Provides servicing details based on proposed scale of development with an engineering overview taking into consideration surrounding developments and connections.	☐	☒	☒	☒	☒	Fluvial Geomorphological Report Yes ☐ No ☐ Assessment of Adequacy of Public Services Yes ☒ No ☐ Servicing Options Report Yes ☐ No ☐ Erosion and Sediment Control Plan / Brief Yes ☒ No ☐ Hydraulic Water Main Analysis Yes ☒ No ☐ Stormwater Management Report and Detailed Design Brief Yes ☒ No ☐
				Study Trigger Details: All cases					
☐	☐	8. Slope Stability Study	Assessment of slope stability and measures to provide safe set-back.	☐	☒	☒	☒	☒	Retrogressive Landslide Analysis Yes ☐ No ☐
				Study Trigger Details: Where the potential for Hazard Lands exists on a site.					
☒	☐	9. Transportation Impact Assessment	Identify on and off-site measures to align a development with City transportation objectives.	☐	☒	☒	☒	☒	Roadway Modification Functional Design Yes ☐ No ☐
				Study Trigger Details: If the development generates 60 person-trips or more; or if the development is located in a Location Trigger; or if the development has a Safety Trigger.					

☐	☐	10. Water Budget Assessment	Identify impact of land use changes on the hydrologic cycle and post-development mitigation targets.	☐	☒	☒	☒	☒	
				Study Trigger Details: May be required for site plan control applications for sites with private servicing and / or proximity to hydrogeologically-sensitive areas. Draft plans of subdivision are required to integrate water budget assessments into supporting stormwater management plans and analysis for the study area.					
☐	☐	11. Wellhead Protection Study	Delineate a Wellhead Protection Area (WHPA) and characterize vulnerability for new communal residential drinking water well systems, in accordance with Technical Rules under *Clean Water Act.*	☐	☒	☒	☒	☒	
				Study Trigger Details: Required for all new communal residential drinking water well systems; including new municipal wells, new private communal wells (small water works) that require a Municipal Responsibility Agreement (MRA), expansions or increased water takings from an existing municipal well or existing private communal well and new private communal wells.					

PLANNING									
R	**A**	**Study/Plan Name**	**Description**	**When Required**					**Applicable Study Components & Other Comments**
				1	**2**	**3**	**4**	**5**	
☐	☐	12. Agrology and Soil Capability Study	Confirm or recommend alterations to mapping of agricultural lands in the City.	☒	☐	☐	☐	☐	
				Study Trigger Details: For the expansion of a settlement area or identification of a new settlement area through a comprehensive review; or where it is demonstrated that the land does not meet the requirements for an Agricultural Resource Area.					
☐	☐	13. Archaeological Assessment	Discover any archaeological resources on site, evaluate cultural heritage value and conservation strategies	☒	☒	☒	☒	☒	
				Study Trigger Details: When the land has either: a known archaeological site; or the potential to have archaeological sites; or where the City's Archaeological Resource Potential Mapping Study indicates archaeological potential, outside of the historic core; or upon discovery of any archaeological resource during construction in the City's historic core area.					
☒	☐	14. Building Elevations	Visual of proposed development to understand facing of building including direction of sunlight, height, doors, and windows.	☒	☒	☐	☐	☒	
				Study Trigger Details: Site Plan: for residential buildings with 25 or more residential units; or for residential buildings with less than 25 residential units, if the units are within the Urban area or the High-performance Development Standard threshold in the rural area. Official Plan or Zoning By-law: if staff deem it necessary to determine compliance with OP policies, the Zoning By-law or City of Ottawa Urban Design Guidelines.					

☐	☐	15. Heritage Impact Assessment	Determine impacts of proposed development on cultural heritage resources.	☒	☒	☒	☒	☒	Conservation Plan Yes ☐ No ☐
				Study Trigger Details: Where development or an application under the Ontario Heritage Act is proposed on, adjacent to, across the street from or within 30 metres of a protected heritage property; or for any development adjacent to the Rideau Canal UNESCO World Heritage Site and its landscaped buffer.					
☐	☐	16. Heritage Act Acknowledgement Report	A submission requirement to demonstrate that the *Ontario Heritage Act* requirements have been satisfied, to ensure that multiple applications are considered currently.	☐	☒	☒	☒	☒	Heritage Permit Application Yes ☐ No ☐ Notice of Intent to Demolish Yes ☐ No ☐
				Study Trigger Details: Where the subject property is listed on the Heritage Register and the applicant must submit a Heritage Permit Application (designated heritage property listed on the Heritage Register) or provide notice of intent to demolish or remove a building (non-designated property listed on the Heritage Register).					
☐	☐	17. Impact Assessment Study – Mineral Aggregate	Mineral aggregate extraction activities; and to protect known high quality mineral aggregate resources from development and activities that would preclude or hinder their existence (ability to be extracted) or expansion.	☒	☒	☒	☒	☒	
				Study Trigger Details: New Development within 500 metres of lands within the Bedrock Overlay , or within 300 metres of lands within the Sand and Gravel Resource Area Overlay.					
☐	☐	18. Impact Assessment Study – Mining Hazards	To identify or confirm known mineral deposits or petroleum resources and significant areas of mineral potential. To protect mineral and petroleum resources from development and activities which would preclude or hinder the establishment of new operations or access to the resources.	☒	☒	☒	☒	☒	
				Study Trigger Details: For all applications in proximity to mining operations.					

☐	☐	19. Impact Assessment Study – Waste Disposal Sites / Former Landfill Sites	To identify or confirm known proximity of existing or former waste disposal sites. To ensure issues of public health, public safety and environmental impact are addressed.	☒	☒	☒	☒	☒	
				Study Trigger Details: For the establishment of any new Solid Waste Disposal Site or for a footprint expansion of an operating Solid Waste Disposal Site; or development within three kilometers of an operating or non-operating Waste Disposal Site.					
☒	☐	20. Landscape Plan	A plan to demonstrate how the canopy cover, urban design, health, and climate change objectives of Official Plan will be met through tree planting and other site design elements.	☒	☒	☒	☒	☒	
				Study Trigger Details: Site Plan, Plan of Subdivision, and Plan of Condominium: always required, except where it is demonstrated that the landscape component of a project is not relevant to the review of the application. A high-level conceptual Landscape Plan may be required to support Zoning By-law and Official Plan Amendment applications.					
☐	☐	21. Mature Neighbourhood Streetscape Character Analysis	In the Mature Neighbourhoods a Streetscape Character Analysis is required to determine the applicable zoning requirements.	☐	☒	☐	☐	☐	
				Study Trigger Details: Zoning By-law amendment application in areas covered by the Mature Neighbourhoods zoning overlay for applications of residential development of four storeys or less located in a R1, R2, R3, or R4 zone.					
☐	☐	22. Minimum Distance Separation	Provincial land use planning tool that determines setback distances between livestock barns, manure storages or anaerobic digesters and surrounding land uses, with the objective of minimizing land use conflicts and nuisance complaints related to odour.	☒	☒	☒	☒	☒	
				Study Trigger Details: Applications in the Rural Area, outside of a village.					

☐	☐	23. Parking Plan	A tool to assess the sufficiency of on-street parking in plans of subdivision.	☐	☐	☒	☒	☐	
				Study Trigger Details: For new or revised plans of subdivision with public streets.					
☒	☐	24. Plan of Survey	A Plan of Survey depicts legal boundaries and is a specialized map of a parcel of land and it delineates boundary locations, building locations, physical features and other items of spatial importance.	☒	☒	☒	☒	☒	
				Study Trigger Details: Required for all *Planning Act* applications.					
☐	☐	25. Plan of Subdivision	Proposed subdivision layout to be used for application approval	☐	☒	☒	☐	☐	
				Study Trigger Details: Always required with the submission of plan of subdivision application. Only required with a Zoning By-law Amendment application, where such ZBLA is in response to enable a subdivision.					
☐	☐	26. Plan of Condominium	Proposed condominium layout to be used for application approval	☐	☐	☐	☒	☐	
				Study Trigger Details: With the submission of plan of condominium application.					
☐	☐	27. Planning Rationale	Provides the planning justification in support of the *Planning Act* application and to assist staff and the public in the review of the proposal.	☒	☒	☒	☐	☐	Integrated Environmental Review Summary Yes ☐ No ☐
				Study Trigger Details: For all Official Plan amendment, Zoning By-law amendment, or plan of subdivision applications.					
☒	☐	28. Preliminary Construction Management Plan	A checklist that shows a development proposal's anticipated impacts to all modes of transportation and all elements in the right of way during construction.	☐	☐	☒	☐	☒	
				Study Trigger Details: For all Site Plan and plan of subdivision applications.					

☐	☐	29. Public Consultation Strategy	Proposal to reach and collect public input as part of development application.	☒	☒	☒	☒	☒	
				Study Trigger Details: Official Plan Amendment, Zoning By-law Amendment and Subdivision: Always required. Condominium: Vacant Land only Site Plan: At the discretion of the City's file lead in consultation with the Business and Technical Support Services Manager.					
☐	☐	30. Shadow Analysis	A visual model of how the proposed development will cast its shadow.	☐	☒	☐	☐	☐	
				Study Trigger Details: When there is an increase in height or massing proposed for a residential, commercial or office use. Two triggers: 1. Inside the Greenbelt: proposed development is over 5 storeys in height (≤15 meters). If a development proposal is 5 storeys or less, but is proposing an increase in height and/or massing and is in close proximity to a shadow sensitive area, a shadow analysis may be requested. 2. Outside the Greenbelt: proposed development is over 3 storeys in height (≤9 meters) and is in close proximity to a shadow sensitive area. Where a proposed development is not in close proximity to a shadow sensitive area (e.g. industrial development) the trigger for a shadow analysis is over 5 storeys in height (≤15 meters).					
☒	☐	31. Site Plan	A Site Plan is a visual drawing that illustrates the proposed development of a site in two dimensions.	☒	☒	☒	☒	☒	Site Plan Yes ☐ No ☐ Concept Plan Yes ☐ No ☐
				Study Trigger Details: Site Plan: All Other applications: where a layout of the					

				public realm, building massing, heights, densities or massing of the proposal provides changes to the planned context; sites proposing multiple land uses; sites with multiple landowners; sites with two or more buildings, on-site park dedication, and/or a new public or private street(s); sites with proposed changes to connectivity (such as active transportation networks, vehicular circulation or access to transit); sites where the development potential on adjacent properties may be impacted by or could be integrated into the proposed site.					Facility Fit Plan Yes ☐ No ☐
☒	☐	32. Urban Design Brief	Illustrate how a development proposal represents high-quality and context sensitive design that implements policies of the Official Plan, relevant secondary plans, and Council approved plans and guidelines.	☒	☒	☒	☐	☒	
				<u>Study Trigger Details</u>: For all Official Plan amendment, Zoning By-law amendment, and plan of subdivision applications. For SPC applications: proposals for residential buildings with 25 or more residential units, or for proposals for residential buildings with less than 25 residential units, if the units are within the Urban area or the High-performance Development Standard threshold in the rural area where OP Policy 11.3 (3) is relevant; for non-residential and mixed-use proposals.					
☐	☐	33. Urban Design Review Panel Report	Demonstrates that a development proposal has attended an Urban Design Review Panel formal review meeting, received, and responded to the associated recommendations, if applicable	☒	☒	☒	☒	☒	
				<u>Study Trigger Details</u>: Required for all planning act applications subject to UDRP review, in accordance with the UDRP Panel Terms of Reference.					
☐	☐	34. Wind Analysis	A visual model and a written evaluation of how a proposed development will impact pedestrian-level wind conditions.	☐	☒	☐	☐	☒	
				<u>Study Trigger Details</u>: Applications seeking an increase in height and/or massing which is either: a tall building(s), 10 storeys or more or a proposed building that is more than twice the height of					

				adjacent existing buildings and is greater than five storeys in height and is adjacent to existing or planned low rise development, open spaces, water bodies and large public amenity areas.					
☒	☐	35. Zoning Confirmation Report	The purpose of the Zoning Confirmation Report (ZCR) is to identify all zoning compliance issues, if any, at the outset of a planning application.	☐	☒	☐	☐	☒	
				Study Trigger Details: Required for all SPC and ZBLA applications.					

ENVIRONMENTAL

R	A	Study / Plan Name	Description	When Required					Applicable Study Components & Other Comments
				1	2	3	4	5	
☐	☐	36. Community Energy Plan	Includes a community energy analysis, alongside mitigation measures, and other associated information. The community energy analysis refers to the overall assessment process to identify on and off-site measures to align the design of the development with City climate objectives.	☐	☐	☐	☐	☐	
				NOT IMPLEMENTED & NOT REQUIRED					
☐	☐	37. Energy Modelling Report	The Energy Modeling Report is a Site Plan Control application submission requirement to show how climate change mitigation, and energy objectives will be met through exterior building design elements.	☐	☐	☐	☐	☐	
				NOT IMPLEMENTED & NOT REQUIRED					
☐	☐	38. Environmental Impact Study	Assessment of environmental impacts of a project and documents the existing natural features, identifies the potential environmental impacts,	☒	☒	☒	☐	☒	Assessment of Landform Features Yes ☐ No ☐ Integrated Environmental Review Yes ☐ No ☐
				Study Trigger Details: Is required when development or site alteration is proposed in or within a					

			recommends ways to avoid and reduce the negative impacts, and proposes ways to enhance natural features and functions.	specified distance of environmentally designated lands, natural heritage features, the City's Natural Heritage System, or hazardous forest types for wildland fire. The EIS Decision Tool (Appendix 2 of the Environmental Impact Study Guidelines) provides a checklist of the natural heritage features and adjacent areas within which an EIS is required to support development applications under the *Planning Act.*	Protocol for Wildlife Protection during Construction Yes ☐ No ☐ Significant Woodlands Guidelines for Identification, Evaluation, and Impact Assessment Yes ☐ No ☐
☐	☐	39. Environmental Management Plan	A comprehensive environmental planning document that identifies, evaluates, and mitigates the potential impacts of proposed development on the natural environment and its ecological functions at local planning stage.	☒ ☐ ☐ ☐ ☐ <u>Study Trigger Details</u>: Official Plan amendments for local plans (area-specific policy or secondary plan, where: there is significant change in the conditions upon which the original study was based; there are proposed changes to planned infrastructure needed to service a subdivision that would have a significant impact on the infrastructure needs of another subdivision within the EMP study area, or the applicable Class Environmental Assessment approval has expired.	
☐	☐	40. High-performance Development Standard	A collection of voluntary and required standards that raise performance of new building projects to achieve sustainable and resilient design	☐ ☐ ☐ ☐ ☐ NOT IMPLEMENTED & NOT REQUIRED	
☒	☐	41. Tree Conservation Report	Demonstrates how tree cover will be retained and protected on the site, including mature trees, stands of trees, and hedgerows.	☐ ☐ ☒ ☒ ☒ <u>Study Trigger Details</u>: Where there is a tree of 10 centimeters in diameter or greater on the site and/or if there is a tree on an adjacent site that has a Critical Root Zone (CRZ) extending onto the development site.	

INSULATION LEGEND:

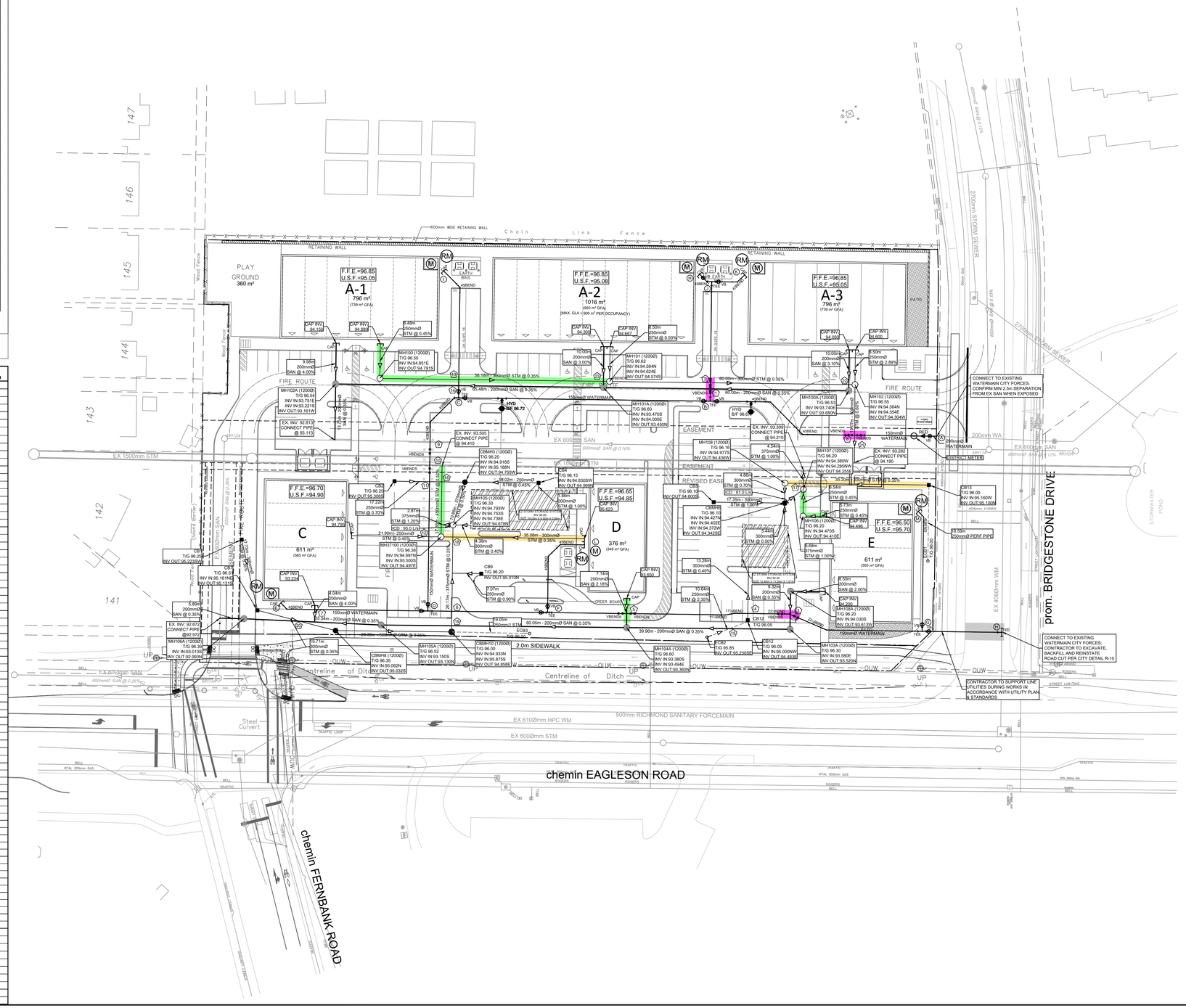
- 50mm INSULATION
- 100mm INSULATION
- INSULATE PER GEOTECHNICAL RECOMMENDATIONS

Pipe Interference Table

Crossing No.	PIPE 1	PIPE 2	Clearance
1	WTR Bottom 94.021	SAN Top 93.768	0.253
2	STM Bottom 94.479	WTR Top 93.979	0.500
3	WTR Bottom 94.050	SAN Top 93.799	0.250
4	STM Bottom 94.386	WTR Top 93.828	0.557
5	WTR Bottom 94.025	SAN Top 93.775	0.250
6	STM Bottom 94.769	WTR Top 93.979	0.790
7	WTR Bottom 93.958	SAN Top 93.401	0.558
8	STM Bottom 94.160	WTR Top 93.621	0.539
9	WTR Bottom 93.828	SAN Top 93.546	0.282
10	ex-stm Bottom 93.314	WTR Top 92.814	0.500
11	STM Bottom 95.240	WTR Top 93.959	1.282
12	STM Bottom 94.703	WTR Top 93.956	0.746
13	STM Bottom 94.714	WTR Top 94.029	0.685
14	WTR Bottom 93.851	SAN Top 93.533	0.319
15	STM Bottom 95.137	SAN Top 93.654	1.483
16	STM Bottom 95.219	STM Top 94.963	0.257
17	STM Bottom 94.984	STM Top 94.692	0.292
18	STM Bottom 95.501	STM Top 95.251	0.250
19	STM Bottom 94.778	SAN Top 93.397	1.382
20	STM Bottom 95.024	SAN Top 93.267	1.757
21	STM Bottom 94.142	SAN Top 93.712	0.430
22	STM Bottom 94.361	SAN Top 93.993	0.368
23	STM Bottom 94.591	SAN Top 94.251	0.339

WATERMAIN SCHEDULE

	Station	Description	Finished Grade	Top of Watermain	As Built Watermain
A	0+000.00	CONNECTION	96.788	94.210	
	0+001.65	VB	96.557	94.157	
	0+003.88	200x150 REDUCER	96.536	94.136	
	0+005.55	DISTRICT METER	96.525	94.125	
	0+018.04	V BEND	96.354	93.954	
	0+019.04	V BEND	96.360	93.621	
	0+021.04	V BEND	96.371	93.621	
	0+022.04	V BEND	96.368	93.980	
	0+032.75	45 BEND	96.450	94.050	
	0+043.96	45 BEND	96.448	94.048	
	0+048.70	HYD TEE	96.455	94.055	
	0+057.03	VB	96.371	93.971	
B	0+058.69	BLDG A-2, A-3 TEE	96.381	93.981	
	0+060.34	VB	96.400	94.000	
	0+109.59	HYD TEE	96.495	94.095	
	0+118.58	VB	96.730	94.330	
C	0+120.23	BLDG A-1 TEE	96.405	94.005	
	0+121.23	45 BEND	96.426	94.026	
	0+129.53	45 BEND	96.436	94.036	
	0+136.28	V BEND	96.383	93.983	
	0+137.28	V BEND	96.379	95.814	
	0+140.98	V BEND	96.363	95.814	
	0+141.98	V BEND	96.359	93.959	
	0+174.18	VB	96.353	93.953	
D	0+175.83	TEE	96.379	93.979	
E	0+000.00	BUILDING C CAP	96.581	94.181	
	0+002.09	45 BEND	96.563	94.163	
	0+034.92	VB	96.395	93.995	
D	0+036.57	TEE	96.379	93.979	
	0+064.20	VB	96.379	93.979	
F	0+065.85	BLDG D TEE	96.389	93.989	
	0+083.20	V BEND	96.496	94.096	
	0+084.20	V BEND	96.488	94.088	
	0+086.20	V BEND	96.472	94.072	
	0+087.20	V BEND	96.464	94.064	
	0+109.55	11.25 BEND	96.118	93.718	
	0+111.67	11.25 BEND	96.095	93.695	
	0+122.22	V BEND	96.144	93.744	
	0+123.22	V BEND	96.157	94.215	
	0+125.01	22.5 BEND	96.180	94.215	
	0+126.26	V BEND	96.195	94.215	
	0+127.26	V BEND	96.356	93.956	
	0+134.94	22.5 BEND	96.356	93.956	
G	0+158.28	BLDG E TEE	96.162	93.762	
	0+159.93	VB	95.894	93.494	
H	0+178.61	TEE		92.610	
I	0+000.00	BUILDING A-1 CAP	96.674	94.274	
	0+005.65		96.601	94.201	
	0+006.01	45 BEND	96.55	94.150	
	0+031.03	VB	94.014	91.614	
C	0+032.68	BLDG A-1 TEE	96.405	94.005	
B	0+000.00	BLDG A-2, A-3 TEE	96.381	93.981	
	0+002.00	V BEND	96.397	93.997	
	0+002.50	V BEND	96.402	94.180	
	0+003.50	V BEND	96.410	94.180	
	0+004.00	V BEND	96.414	93.970	
	0+005.00	V BEND	96.422	93.970	
	0+005.50	V BEND	96.426	94.026	
	0+026.68		96.550	94.150	
J	0+029.23	TEE	96.631	94.231	
H	0+000.00	BUILDING A-2 CAP	96.654	94.254	
	0+001.21	VB	96.643	94.243	
	0+002.51	45 BEND	96.631	94.231	
J	0+003.67	TEE	96.631	94.231	
	0+005.33	VB	96.615	94.215	
	0+009.92	45 BEND	96.700	94.300	
K	0+012.43	BUILDING A-3 CAP	96.710	94.310	
F	0+000	BUILDING D TEE	96.389	93.989	
	0+001.56	VB	96.380	93.980	
	0+013.77	45 BEND	96.396	93.996	
	0+017.88		96.419	94.019	
L	0+023.77	BUILDING D CAP	96.633	94.233	
G	0+000.00	BLDG E TEE	96.162	93.762	
	0+001.65	VB	96.220	93.820	
	0+028.03	45 BEND	96.261	93.861	
M	0+029.85	BUILDING E CAP	96.327	93.927	



CLIENT

URBANDALE CORPORATION

COPYRIGHT

This drawing has been prepared solely for the intended use, thus any reproduction or distribution for any purpose other than authorized by Arcadis is forbidden. Written dimensions shall have precedence over scaled dimensions. Contractors shall verify and be responsible for all dimensions and conditions on the job, and Arcadis shall be informed of any variations from the dimensions and conditions shown on the drawing. Shop drawings shall be submitted to Arcadis for general conformance before proceeding with fabrication.

Arcadis Professional Services (Canada) Inc.
formerly IBI Group Professional Services (Canada) Inc

ISSUES

No.	DESCRIPTION	DATE
1	ISSUED FOR REVIEW	2024-12-19
2	CITY SUBMISSION No. 1	2025-01-22
3	CITY SUBMISSION No. 2	2025-07-09
4	CITY SUBMISSION No. 3	2025-08-29

KEY PLAN

CONSULTANTS

1:500 0 5 15 25m

SEAL

LICENSED PROFESSIONAL ENGINEER
S. E. LABADIE
100214983
2025-08-29
PROVINCE OF ONTARIO

PRIME CONSULTANT

ARCADIS

333 Preston Street - Suite 500
Ottawa ON K1S 5N4 Canada
tel 613 225 1311
www.arcadis.com

PROJECT

COMMERCIAL SITE

801 EAGLESON ROAD

PROJECT NO: 148792

DRAWN BY:	CHECKED BY:
D.D.	M.P.
PROJECT MGR:	APPROVED BY:
T.R.B.	S.E.L.

SHEET TITLE

GENERAL PLAN OF SERVICES

SHEET NUMBER C-001

ISSUE 4

CITY FILE No. D07-12-25-0014

CITY PLAN No.19247

File Location: C:\DARoot\Jobs\a7e21b5fc3e4ee949581f0e4ae1e0e\facs4files\b.cab1b187-9819-430f-840e-591549310772\Project Files\7.03_Design\04-Civil\Sheets\C-001 GENERAL PLAN OF SERVICES.dwg Last Saved: August 28, 2025, by dzeks5754 Plotted: Thursday, August 28, 2025 5:32:36 PM by acesuser

Jean-Miguel Roy
City of Ottawa
110 Laurier Avenue West. Ottawa, ON
Ottawa, ON
K1P 1J1

Arcadis Professional Services
(Canada) Inc.
333 Preston Street
Suite 500
Ottawa, Ontario K1S 5N4
Canada
Phone: 613 241 3300
www.arcadis.com

Date: 2025-08-29
Our Ref: 148792
Project Name: 801 Eagleson Road
Subject: Memo Re: 1800mm Storm Sewer Easement

Per City of Ottawa correspondences, the easement encompassing an existing 1800mm dia. storm sewer bisecting 801 Eagleson Road needs to expand to allow the City to service the pipe in the future as needed. The City has asked for this easement to be 4.5m (and more recently 5.0m) from the centerline of the existing storm sewer to allow for adequate access. The other side of the easement is to be 4.5m from the centerline of the existing 600mm dia. sanitary sewer, which is its current location and no extension is required.

No private infrastructure is permitted inside this easement (except to connect to city sewers), which has prompted a detailed look into the actual spacing requirements for the storm sewer.

The limits of the sewer as shown on drawings were design lines, not the asbuilt location. The centerline of the existing storm was surveyed and found the asbuilt sewer location to be slightly east of the design location. The existing easement line is 1.6m from the centerline of the asbuilt storm sewer location.

A cross-section was prepared to determine the minimum required easement, see attached. After discussion with Development Review at the City of Ottawa, it is our opinion that an easement of 3.1m from the centerline of the storm sewer (an increase of 1.5m from existing) would be satisfactory to all parties. This would result in a total easement width of 11.8m across both storm and sanitary, which is sufficient spacing for heavy equipment to operate.

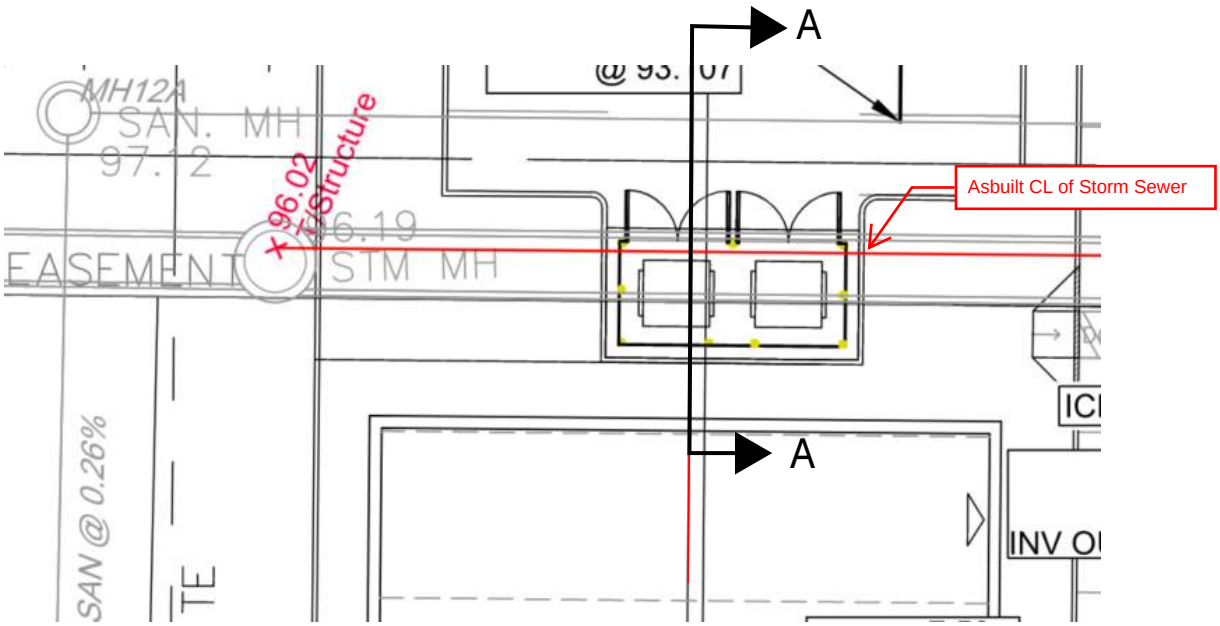
Sincerely,
Arcadis Professional Services (Canada) Inc.

S. Labadie, P.Eng.

CC. Vincent Denomme – Urbandale Corporation
Roger Tuttle – Urbandale Corporation

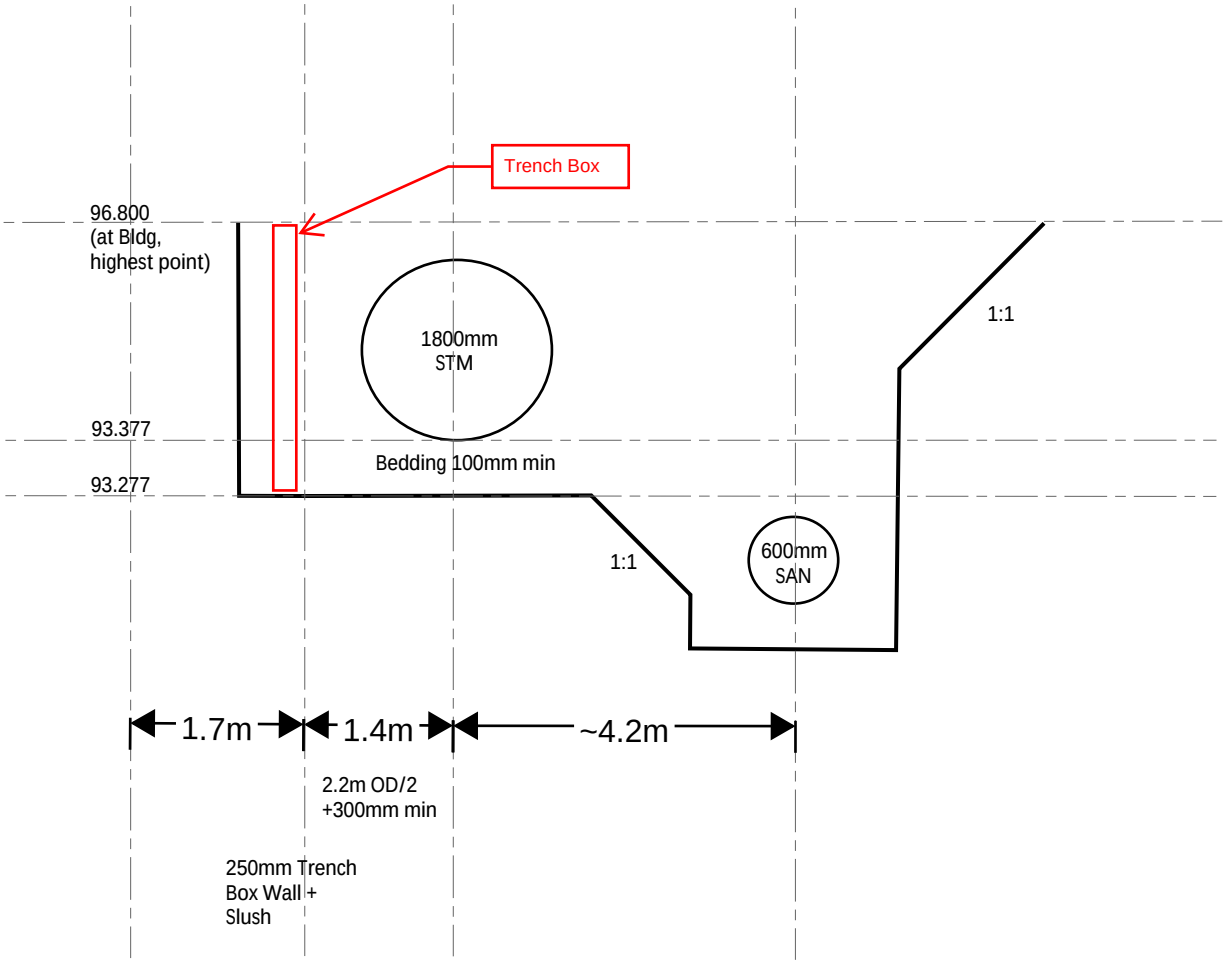
Cross Section of Sewers in Existing Easement

Station 0+119.5 (Center of Proposed Building C)



*Center of pipe (not MH) as shot by Arcadis

Trench Cross-Section A-A per OPSD S-802.031 with Trench Box (not to scale)



Storm invert = Invert at MH - 13.4m at 0.22%
= 93.606 - 13.4*0.0022
= 93.577
Bottom of Pipe = Invert - Wall Thickness
= 93.577 - 0.20
= 93.377

Existing Easement line on sanitary side is 4.5m away from Sanitary CL, no change proposed

2025-06-11 SL

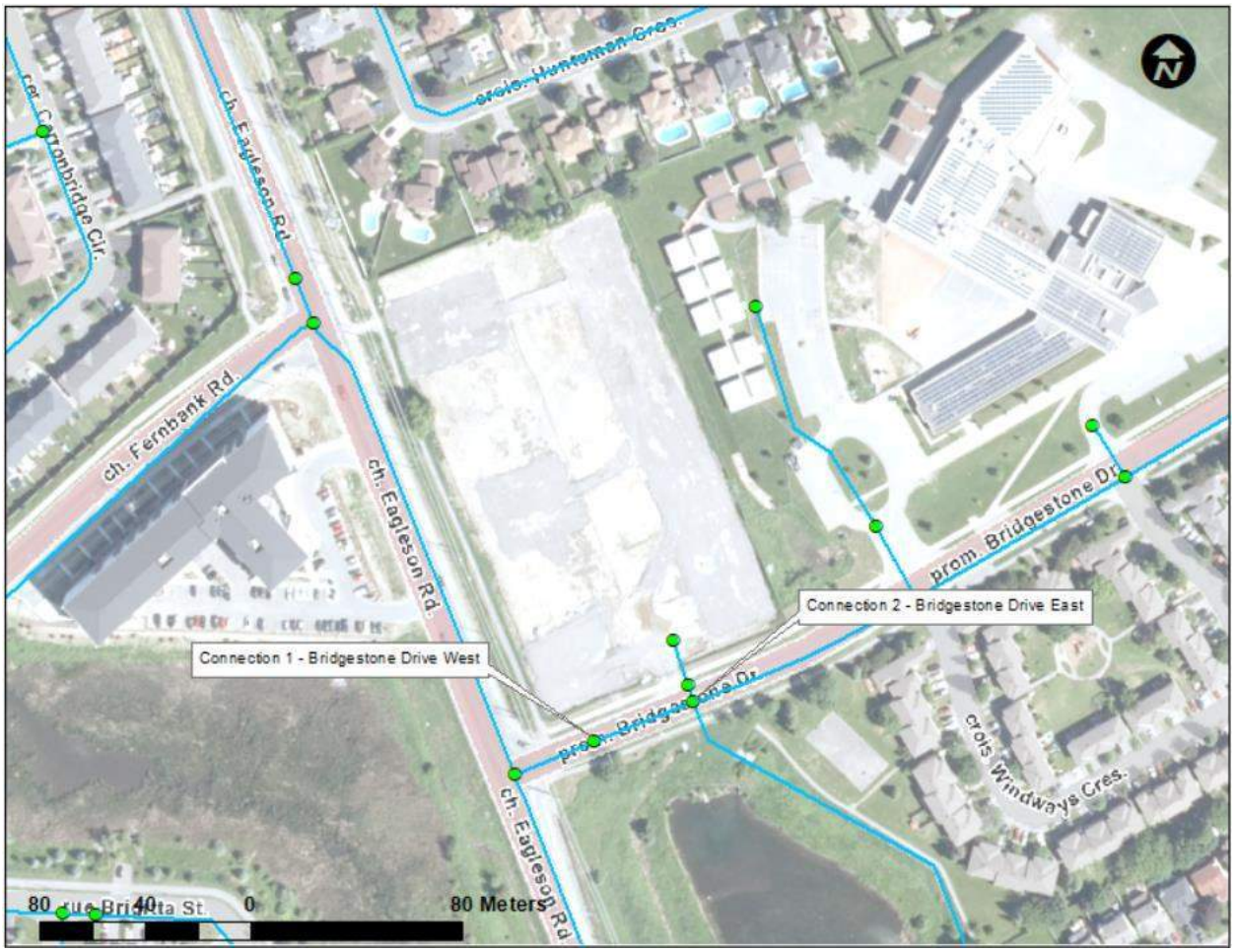
Appendix B

Boundary Conditions
801 Eagleson Road

Provided Information

Scenario	Demand	
	L/min	L/s
Average Daily Demand	7	0.12
Maximum Daily Demand	11	0.18
Peak Hour	20	0.33
Fire Flow Demand #1	4,000	66.67

Location



Results

Connection 1 - Bridgestone Drive West

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	161.0	92.9
Peak Hour	156.5	86.4
Max Day plus Fire Flow #1	157.0	87.1

[1] Ground Elevation = 95.7 m

Connection 2 - Bridgestone Drive East

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	161.0	91.4
Peak Hour	156.5	84.9
Max Day plus Fire Flow #1	157.0	85.6

[1] Ground Elevation = 96.7 m

Notes

1. As per the Ontario Building Code in areas that may be occupied, the static pressure at any fixture shall not exceed 552 kPa (80 psi.) Pressure control measures to be considered are as follows, in order of preference:
    a. If possible, systems to be designed to residual pressures of 345 to 552 kPa (50 to 80 psi) in all occupied areas outside of the public right-of-way without special pressure control equipment.
    b. Pressure reducing valves to be installed immediately downstream of the isolation valve in the home/ building, located downstream of the meter so it is owner maintained.
2. Demands for proposed Connection 2 at existing stub off Bridgestone Drive were assigned to upstream junction at the stub and the 406 mm water main on Bridgestone Drive off the public looped watermains. The engineer must calculate headloss off the dead-end main.
3. Any connection to a watermain 400 mm or larger should be approved by DWS as per the Water Design Guidelines Section 2.4 Review by Drinking Water Services.

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.

ARCADIS IBI GROUP
500-333 Preston Street
Ottawa, Ontario K1S 5N4 Canada
arcadis.com

WATERMAIN DEMAND CALCULATION SHEET
Eagleson Road Commercial | Urbandale
148792 -6.0 | Rev #1 | 2024-11-25
Prepared By: SL | Checked By: TB

NODE	RESIDENTIAL				NON-RESIDENTIAL (ICI)			AVERAGE DAILY DEMAND (l/s)			MAXIMUM DAILY DEMAND (l/s)			MAXIMUM HOURLY DEMAND (l/s)			FIRE DEMAND (l/min)
				POPULATION	INDUST. (ha)	COMM. (ha)	INSTIT. (ha)	RESIDENTIAL	ICI	TOTAL	RESIDENTIAL	ICI	TOTAL	RESIDENTIAL	ICI	TOTAL	
Site						**0.4206**			**0.12**	**0.12**		**0.18**	**0.18**		**0.33**	**0.33**	**4,000**
J20																	**4,000**
J22																	**4,000**
J24																	**4,000**
J26																	**4,000**
J28			A-3, A-2			0.1812			**0.05**	**0.05**		**0.08**	**0.08**		**0.14**	**0.14**	**4,000**
J30																	**4,000**
J32																	**4,000**
J34			A-1			0.0796			**0.02**	**0.02**		**0.03**	**0.03**		**0.06**	**0.06**	**4,000**
J36																	**4,000**
J38			C			0.0611			**0.02**	**0.02**		**0.03**	**0.03**		**0.05**	**0.05**	**4,000**
J40			D			0.0376			**0.01**	**0.01**		**0.02**	**0.02**		**0.03**	**0.03**	**4,000**
J42																	**4,000**
J44																	**4,000**
J46			E			0.0611			**0.02**	**0.02**		**0.03**	**0.03**		**0.05**	**0.05**	**4,000**
J48																	**4,000**
TOTAL						**0.4206**			**0.12**	**0.12**		**0.18**	**0.18**		**0.33**	**0.33**	**4,000**

ASSUMPTIONS

POPULATION DENSITY

Townhouse	2.7	persons/unit
Medium Density (Stacks)	1.8	persons/unit

WATER DEMAND RATES

Residential	280	l/cap/day
Commercial Shopping Center	2,500	L/(1000m2)/day

PEAKING FACTORS

Maximum Daily		
Residential	2.5	x avg. day
Commercial	1.5	x avg. day
Maximum Hourly		
Residential	2.2	x max. day
Commercial	1.8	x max. day

FIRE DEMANDS

Commercial	4,000	L/min
	66.7	L/s

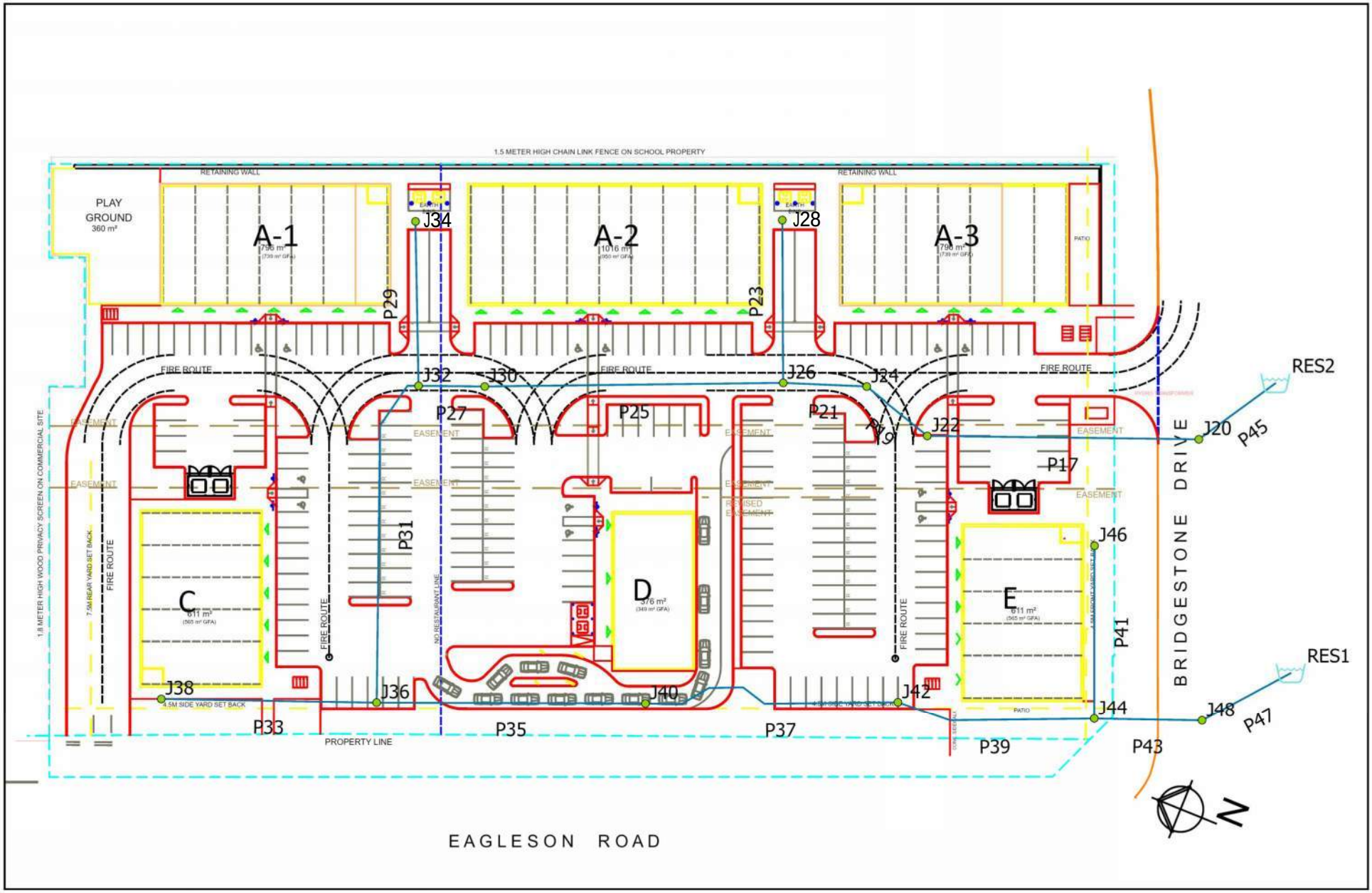
ARCADIS IBI GROUP
500-333 Preston Street
Ottawa, Ontario K1S 5N4 Canada
arcadis.com

FIRE UNDERWRITERS SURVEY
Eagleson Road Commercial | Urbandale
148792 -6.0 | Rev #1 | 2024-10-25
Prepared By: SL | Checked By: TB

STEP	Contents	Description		Adjustment Factor		Result	
1	Floor Area	Building A-2				950	m2
	Total Storey					1	storey
	Total Effective Floor Area					**950**	m2
2	**Type of Construction**	**Type V** Wood Frame	1.5	Type II Noncombustible Construction	0.8		
		Type III Ordinary Construction	1.0				
		Type II Noncombustible Construction	0.8				
		Type I Fire Resistive Construction	0.6				
3	**Required Fire Flow**	RFF = 220C√A				**5000**	L/min
4	**Occupancy and Contents**	Noncombustible Contents	-25%	Combustible Contents	0%	0	L/min
		Limited Combustible Contents	-15%				
		Combustible Contents	0%				
		Free Burning Contents	15%				
		Rapid Burning Contents	25%				
	Fire Flow					**5000**	L/min
5	**Automatic Sprinkler Protection**	Automatic Sprinkler Conforming to NFPA 13	-30%	Yes	-30%	-1500	L/min
		Standard Water Supply for both the system and Fire Department Hose Lines	-10%	No		0	L/min
		Fully Supervised System	-10%	No			
	Fire Flow					**-1500**	L/min
6	**Exposure Adjustment**	Based on **Table 6** Exposure Adjustement Charges for Subject Building					
	North	Separation (m)	13	With unprotected opening	4%	200	L/min
		Length X Height Factor (m.storeys)	21				
		Construction Type	Type II				
	South	Separation (m)	13	With unprotected opening	4%	200	L/min
		Length X Height Factor (m.storeys)	21				
		Construction Type	Type II				
	East	Separation (m)	15	With unprotected opening	3%	150	L/min
		Length X Height Factor (m.storeys)	11				
		Construction Type	Type II				
	West	Separation (m)	32	With unprotected opening	0%	4	L/min
		Length X Height Factor (m.storeys)	14				
		Construction Type	Type II				
	Fire Flow					**554**	L/min
7	**Total Required Fire Flow**					**4054**	
		Rounded to Nearest 1000 L/min				**4000**	L/min

Notes 1. Fire flow calculation are based on Fire Underwriters Survey version 2020.

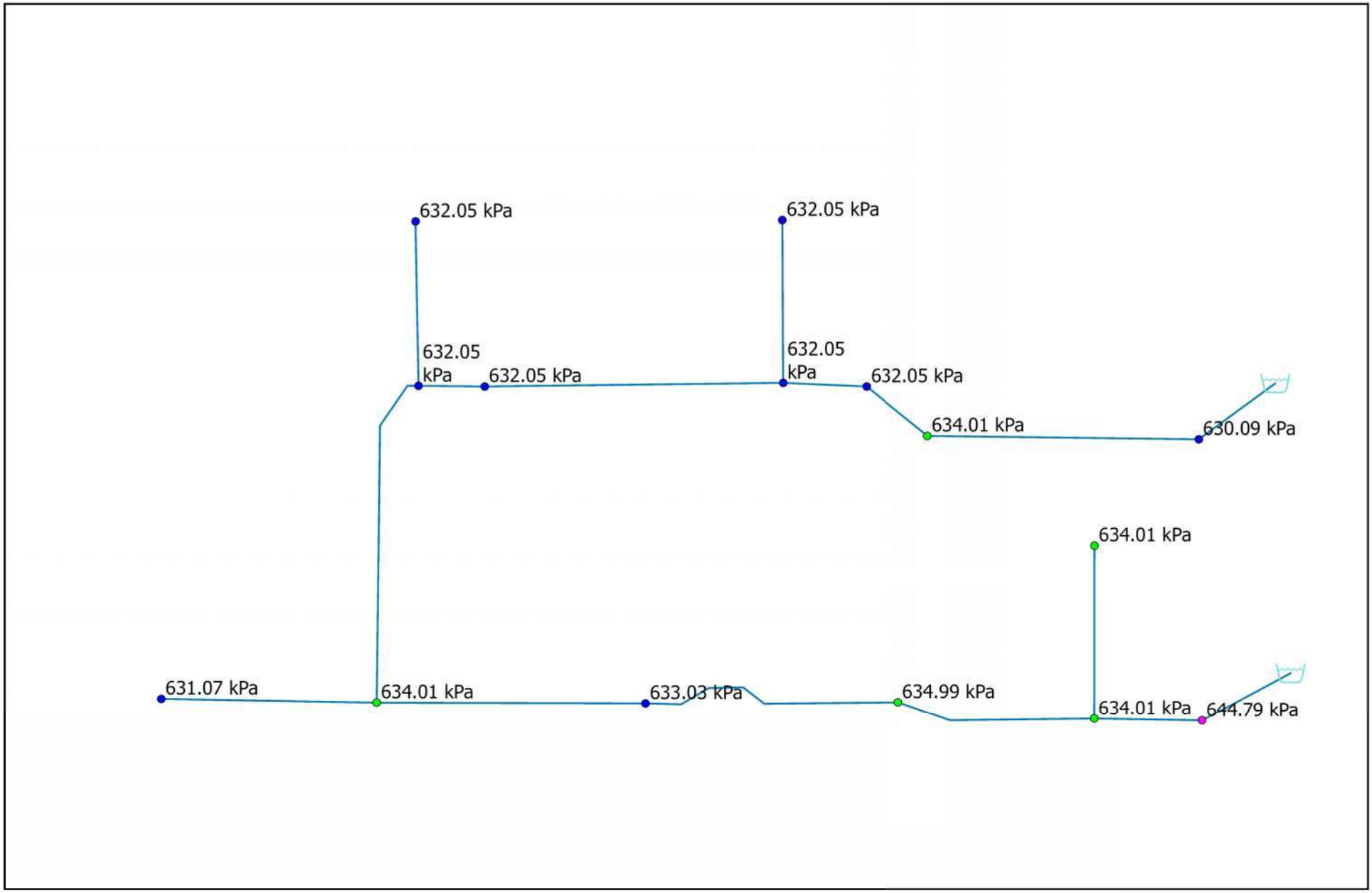
Node and Pipe IDs



Average Day

		ID	Demand (L/s)	Elevation (m)	Head (m)	Pressure (kPa)
1		J20	0.00	96.70	161.00	630.09
2		J22	0.00	96.30	161.00	634.01
3		J24	0.00	96.50	161.00	632.05
4		J26	0.00	96.50	161.00	632.05
5		J28	0.05	96.50	161.00	632.05
6		J30	0.00	96.50	161.00	632.05
7		J32	0.00	96.50	161.00	632.05
8		J34	0.02	96.50	161.00	632.05
9		J36	0.00	96.30	161.00	634.01
10		J38	0.02	96.60	161.00	631.07
11		J40	0.01	96.40	161.00	633.03
12		J42	0.00	96.20	161.00	634.99
13		J44	0.00	96.30	161.00	634.01
14		J46	0.02	96.30	161.00	634.01
15		J48	0.00	95.20	161.00	644.79

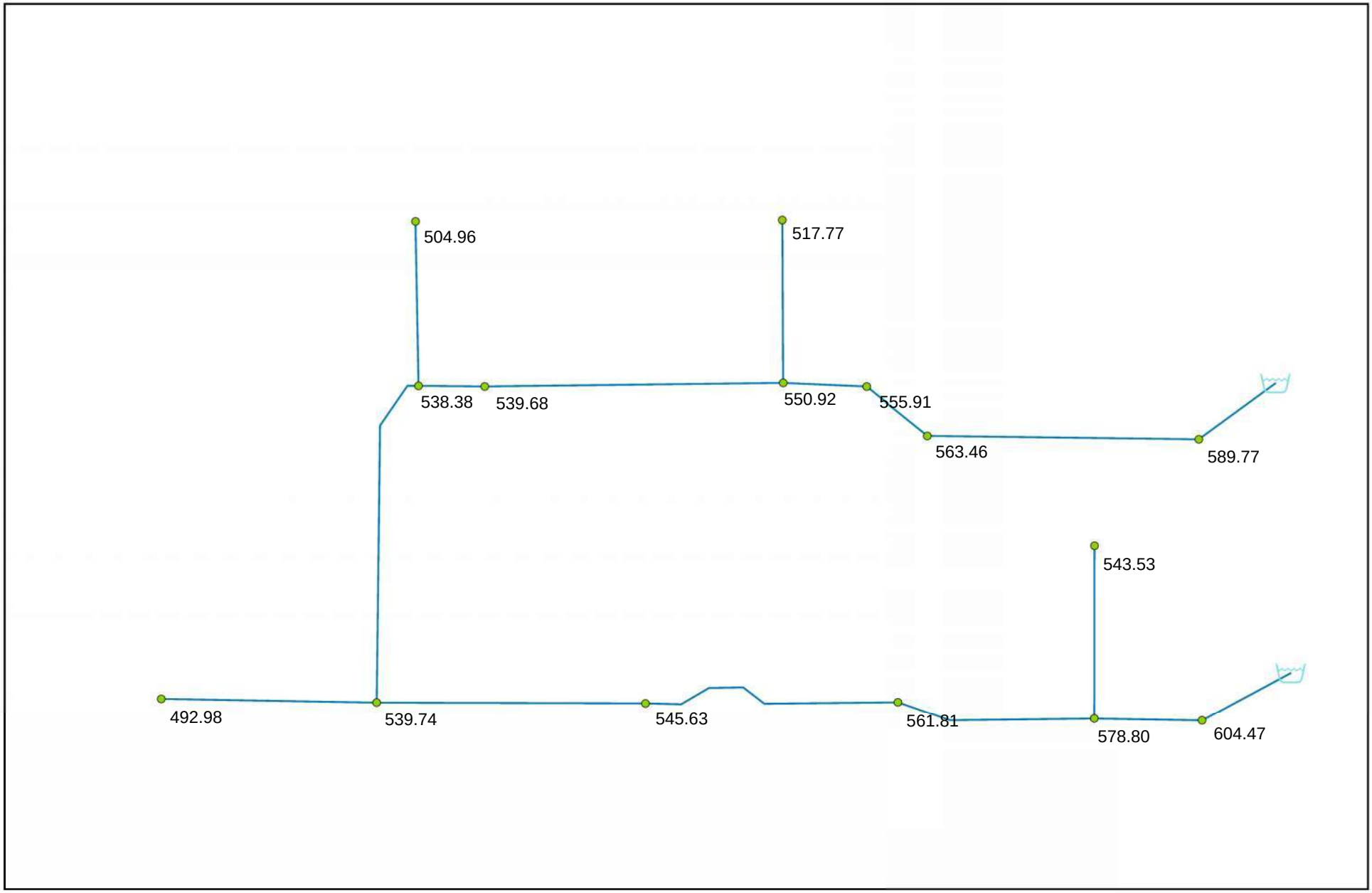
Average Day


632.05 kPa
632.05 kPa
632.05 kPa
632.05 kPa
632.05 kPa
632.05 kPa
634.01 kPa
630.09 kPa
634.01 kPa
631.07 kPa
634.01 kPa
633.03 kPa
634.99 kPa
634.01 kPa
644.79 kPa

Max Day plus Fire 4000 L/min

		ID	Static Demand (L/s)	Static Pressure (kPa)	Static Head (m)	Fire-Flow Demand (L/s)	Residual Pressure (kPa)	Hydrant Available Flow (L/s)	Hydrant Pressure at Available Flow (kPa)
1	☐	J20	0.00	590.89	157.00	66.70	589.77	1,684.40	149.97
2	☐	J22	0.00	594.81	157.00	66.70	563.46	279.73	149.96
3	☐	J24	0.00	592.85	157.00	66.70	555.91	255.39	149.96
4	☐	J26	0.00	592.85	157.00	66.70	550.92	238.50	149.96
5	☐	J28	0.08	592.85	157.00	66.70	517.77	174.16	149.96
6	☐	J30	0.00	592.85	157.00	66.70	539.68	209.75	149.96
7	☐	J32	0.00	592.85	157.00	66.70	538.38	207.02	149.96
8	☐	J34	0.03	592.85	157.00	66.70	504.96	159.86	149.96
9	☐	J36	0.00	594.81	157.00	66.70	539.74	206.28	149.96
10	☐	J38	0.03	591.87	157.00	66.70	492.98	149.80	149.96
11	☐	J40	0.02	593.83	157.00	66.70	545.63	221.42	149.96
12	☐	J42	0.00	595.79	157.00	66.70	561.81	268.01	149.96
13	☐	J44	0.00	594.81	157.00	66.70	578.80	401.93	149.96
14	☐	J46	0.03	594.81	157.00	66.70	543.53	214.31	149.96
15	☐	J48	0.00	605.59	157.00	66.70	604.47	1,714.50	149.97

Max Day plus Fire Flow - Residual Pressure



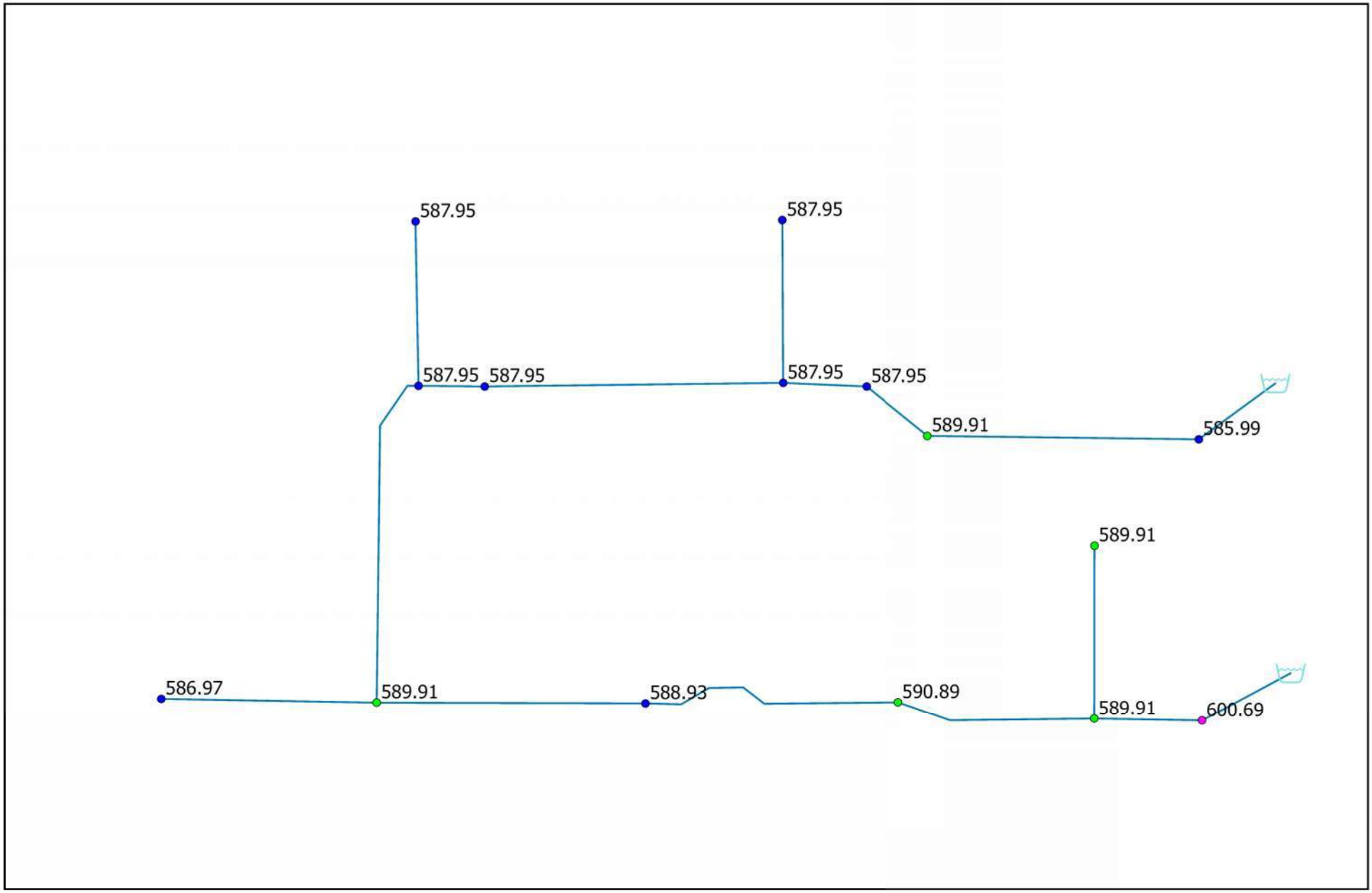
Peak Hour

		ID	Demand (L/s)	Elevation (m)	Head (m)	Pressure (kPa)
1		J20	0.00	96.70	156.50	585.99
2		J22	0.00	96.30	156.50	589.91
3		J24	0.00	96.50	156.50	587.95
4		J26	0.00	96.50	156.50	587.95
5		J28	0.14	96.50	156.50	587.95
6		J30	0.00	96.50	156.50	587.95
7		J32	0.00	96.50	156.50	587.95
8		J34	0.06	96.50	156.50	587.95
9		J36	0.00	96.30	156.50	589.91
10		J38	0.05	96.60	156.50	586.97
11		J40	0.03	96.40	156.50	588.93
12		J42	0.00	96.20	156.50	590.89
13		J44	0.00	96.30	156.50	589.91
14		J46	0.05	96.30	156.50	589.91
15		J48	0.00	95.20	156.50	600.69

Peak Hour - Pipes

		ID	From Node	To Node	Length (m)	Diameter (mm)	Roughness	Flow (L/s)	Velocity (m/s)	Headloss (m)	HL/1000 (m/k-m)	Status	Flow Reversal Count
1		P17	J20	J22	45.70	155.00	100.00	0.16	0.01	0.00	0.00	Open	0
2		P19	J22	J24	13.25	155.00	100.00	0.16	0.01	0.00	0.00	Open	0
3		P21	J24	J26	14.11	155.00	100.00	0.16	0.01	0.00	0.00	Open	0
4		P23	J26	J28	27.42	155.00	100.00	0.14	0.01	0.00	0.00	Open	0
5		P25	J26	J30	50.27	155.00	100.00	0.02	0.00	0.00	0.00	Open	0
6		P27	J30	J32	11.14	155.00	100.00	0.02	0.00	0.00	0.00	Open	0
7		P29	J32	J34	27.68	155.00	100.00	0.06	0.00	0.00	0.00	Open	0
8		P31	J36	J32	56.66	155.00	100.00	0.04	0.00	0.00	0.00	Open	0
9		P33	J36	J38	36.31	155.00	100.00	0.05	0.00	0.00	0.00	Open	0
10		P35	J36	J40	45.28	155.00	100.00	-0.09	0.00	0.00	0.00	Open	0
11		P37	J40	J42	44.32	155.00	100.00	-0.12	0.01	0.00	0.00	Open	0
12		P39	J42	J44	33.59	155.00	100.00	-0.12	0.01	0.00	0.00	Open	0
13		P41	J44	J46	29.21	155.00	100.00	0.05	0.00	0.00	0.00	Open	0
14		P43	J44	J48	18.15	155.00	100.00	-0.17	0.01	0.00	0.00	Open	0
15		P45	J20	RES2	1.00	155.00	100.00	-0.16	0.01	0.00	0.00	Open	0
16		P47	J48	RES1	1.00	155.00	100.00	-0.17	0.01	0.00	0.00	Open	0

Peak Hour


587.95
587.95
587.95
587.95
587.95
587.95
589.91
585.99
589.91
586.97
589.91
588.93
590.89
589.91
600.69

Appendix C

ARCADIS IBI GROUP
500-333 Preston Street
Ottawa, Ontario K1S 5N4 Canada
ibigroup.com

SANITARY SEWER DESIGN SHEET

801 Eagleson
Urbandale Corporation
CITY OF OTTAWA

LOCATION				RESIDENTIAL										ICI AREAS								INFILTRATION ALLOWANCE			FIXED FLOW (L/s)		TOTAL FLOW	PROPOSED SEWER DESIGN						
				AREA w/ Units	UNIT TYPES				AREA w/o Units	POPULATION		RES PEAK FACTOR	PEAK FLOW	AREA (Ha)						ICI PEAK FACTOR	PEAK FLOW	AREA (Ha)		FLOW				CAPACITY	LENGTH	DIA	SLOPE	VELOCITY (full)	AVAILABLE CAPACITY	
														INSTITUTIONAL		COMMERCIAL		INDUSTRIAL																
STREET	AREA ID	FROM MH	TO MH	(Ha)	1 Bed APT	2 Bed APT	3 Bed APT	Other APT	(Ha)	IND	CUM		(L/s)	IND	CUM	IND	CUM	IND	CUM		(L/s)	IND	CUM	(L/s)	IND	CUM	(L/s)	(L/s)	(m)	(mm)	(%)	(m/s)	L/s	(%)
	EAST OF EASEMENT																																	
	BLK A-3	BLDG A-3	MH100A							0.0	0.0	3.80	0.00		0.0	0.16	0.16		0.0	1.50	0.08	0.16	0.16	0.05	0.00	0.00	0.13	60.24	10.00	200	3.10	1.858	60.11	99.78%
	MH100A	MH100A	MH101A							0.0	0.0	3.80	0.00		0.0	0.20	0.36		0.0	1.50	0.18	0.20	0.36	0.12	0.00	0.00	0.29	20.24	60.00	200	0.35	0.624	19.95	98.55%
	BLK A-2	BLDG A-2	MH101A							0.0	0.0	3.80	0.00		0.0	0.19	0.19		0.0	1.50	0.09	0.19	0.19	0.06	0.00	0.00	0.16	59.26	10.00	200	3.00	1.828	59.11	99.74%
	MH101A	MH101A	MH102A							0.0	0.0	3.80	0.00		0.0	0.16	0.71		0.0	1.50	0.35	0.16	0.71	0.23	0.00	0.00	0.58	20.24	65.48	200	0.35	0.624	19.66	97.14%
	BLK A-1	BLDG A-1	MH102A							0.0	0.0	3.80	0.00		0.0	0.18	0.18		0.0	1.50	0.09	0.18	0.18	0.06	0.00	0.00	0.15	68.43	9.98	200	4.00	2.110	68.29	99.79%
	MH102A	MH102A	EX.SAN							0.0	0.0	3.80	0.00		0.0	0.08	0.97		0.0	1.50	0.47	0.08	0.97	0.32	0.00	0.00	0.79	20.24	13.75	200	0.35	0.624	19.45	96.09%
																														200				
	WEST OF EASEMENT																																	
	BLK E	BLDG E	MH108A							0.0	0.0	3.80	0.00		0.0	0.13	0.13		0.0	1.50	0.06	0.13	0.13	0.04	0.00	0.00	0.11	48.39	8.50	200	2.00	1.492	48.28	99.78%
	MH108A	MH108A	MH103A							0.0	0.0	3.80	0.00		0.0	0.12	0.25		0.0	1.50	0.12	0.12	0.25	0.08	0.00	0.00	0.20	20.24	9.32	200	0.35	0.624	20.04	98.99%
	MH103A	MH103A	MH104A							0.0	0.0	3.80	0.00		0.0	0.08	0.33		0.0	1.50	0.16	0.08	0.33	0.11	0.00	0.00	0.27	20.24	39.96	200	0.35	0.624	19.97	98.67%
	BLK D	BLDG D	MH104A							0.0	0.0	3.80	0.00		0.0	0.18	0.18		0.0	1.50	0.09	0.18	0.18	0.06	0.00	0.00	0.15	48.39	7.80	200	2.00	1.492	48.24	99.70%
	MH104A	MH104A	MH105A							0.0	0.0	3.80	0.00		0.0	0.08	0.59		0.0	1.50	0.29	0.08	0.6	0.19	0.00	0.0	0.48	20.24	60.05	200	0.35	0.624	19.76	97.62%
	BLK C	BLDG C	SAN							0.0	0.0	3.80	0.00		0.0	0.09	0.09		0.0	1.50	0.04	0.09	0.09	0.03	0.00	0.00	0.07	68.43	4.04	200	4.00	2.110	68.36	99.89%
	MH105A	MH105A	MH106A							0.0	0.0	3.80	0.00		0.0	0.09	0.18		0.0	1.50	0.09	0.09	0.18	0.06	0.00	0.00	0.15	20.24	33.54	200	0.35	0.624	20.10	99.27%
	MH106A	MH106A	EX.SAN							0.0	0.0	3.80	0.00		0.0	0.1	0.88		0.0	1.50	0.43	0.11	0.3	0.10	0.00	0.0	0.52	20.24	5.89	200	0.35	0.624	19.72	97.41%
																														200				

Design Parameters:

Residential			ICI Areas			
1-BD	1.4	p/p/u				
2-BD	2.1	p/p/u	INST	28,000	L/Ha/day	
3-BD	3.1	p/p/u	COM	28,000	L/Ha/day	
Other	1.8	p/p/u	IND	35,000	L/Ha/day	MOE Chart
				17000	L/Ha/day	

Notes:
1. Mannings coefficient (n) = 0.013
2. Demand (per capita): 280 L/day 200 L/day
3. Infiltration allowance: 0.33 L/s/Ha
4. Residential Peaking Factor:
   Harmon Formula = 1+(14/(4+(P/1000)^0.5))0.8
   where K = 0.8 Correction Factor
5. Commercial and Institutional Peak Factors based on total area,
1.5 if greater than 20%, otherwise 1.0

Designed: MP

Checked: SL

Dwg. Reference: 148792-400

No.	Revision	Date
1.	Site Servicing Report Submission 1	2024-12-18
2.	Site Servicing Report Submission 2	2025-07-03
3.	Site Servicing Report Submission 3	2025-08-29

File Reference:	Date:	Sheet No:
148792-6.04.04	2025-08-29	1 of 1

Labadie, Sam

From: Labadie, Sam
Sent: November 1, 2024 2:09 PM
To: Roy, Jean-Miguel
Cc: Brule, Terry; Fawzi, Mohammed
Subject: RE: 801 Eagleson - Reports Request

Hi Jean-Miguel,

Thank you, we will make the request to GI.

We expect a total sanitary flow rate of approximately 1.8 L/s, so we will proceed in designing the private system without capacity concerns for the public system.

Sam Labadie P.Eng
Civil Engineer
Arcadis Professional Services (Canada) Inc.
Suite 500, 333 Preston Street | Ottawa | ON | K1S 5N4 | Canada
C: +1 613 899 5717
www.arcadis.com

From: Roy, Jean-Miguel <Jean-Miguel.Roy@ottawa.ca>
Sent: November 1, 2024 1:54 PM
To: Labadie, Sam <samantha.labadie@arcadis.com>
Cc: Brule, Terry <terry.brule@arcadis.com>; Fawzi, Mohammed <mohammed.fawzi@ottawa.ca>
Subject: RE: 801 Eagleson - Reports Request

Arcadis Warning: Exercise caution with email messages from external sources such as this message. Always verify the sender and avoid clicking on links or scanning QR codes unless certain of their authenticity.

Hi Sam,

The reports that you've mentioned can be purchased from geoinformation@ottawa.ca.

For the sanitary capacity, may I ask what is the expected release rate for this site? We've recently received confirmation from internally that a 1.9l/s, which is the calculated release rate from 2012, would be negligeable. If your expected sanitary release rate is within that range, we would ask you to assess the capacity of your private system only. Please confirm.

Thanks,
JM

From: Labadie, Sam <samantha.labadie@arcadis.com>
Sent: October 25, 2024 2:53 PM

To: Roy, Jean-Miguel <Jean-Miguel.Roy@ottawa.ca>
Cc: Brule, Terry <terry.brule@arcadis.com>
Subject: 801 Eagleson - Reports Request

CAUTION: This email originated from an External Sender. Please do not click links or open attachments unless you recognize the source.

ATTENTION : Ce courriel provient d'un expéditeur externe. Ne cliquez sur aucun lien et n'ouvrez pas de pièce jointe, excepté si vous connaissez l'expéditeur.

Hi Jean-Miguel,

We are reviewing the Pre-Consultation Meeting Minutes for 801 Eagleson Road. Would you mind sending the 2012 approved Servicing Report and the 2019 MDCW study?

Also, can you direct us to the report or MSS document that we should be referencing for the Sanitary capacity?

Thank you,

Sam Labadie P.Eng
Civil Engineer
Arcadis Professional Services (Canada) Inc.
Suite 500, 333 Preston Street | Ottawa | ON | K1S 5N4 | Canada
C: +1 613 899 5717
www.arcadis.com

This email and any files transmitted with it are the property of Arcadis and its affiliates. All rights, including without limitation copyright, are reserved. This email contains information that may be confidential and may also be privileged. It is for the exclusive use of the intended recipient(s). If you are not an intended recipient, please note that any form of distribution, copying or use of this communication or the information in it is strictly prohibited and may be unlawful. If you have received this communication in error, please return it to the sender and then delete the email and destroy any copies of it. While reasonable precautions have been taken to ensure that no software or viruses are present in our emails, we cannot guarantee that this email or any attachment is virus free or has not been intercepted or changed. Any opinions or other information in this email that do not relate to the official business of Arcadis are neither given nor endorsed by it.

'

This e-mail originates from the City of Ottawa e-mail system. Any distribution, use or copying of this e-mail or the information it contains by other than the intended recipient(s) is unauthorized. Thank you.

Le présent courriel a été expédié par le système de courriels de la Ville d'Ottawa. Toute distribution, utilisation ou reproduction du courriel ou des renseignements qui s'y trouvent par une personne autre que son destinataire prévu est interdite. Je vous remercie de votre collaboration.

'

Appendix D

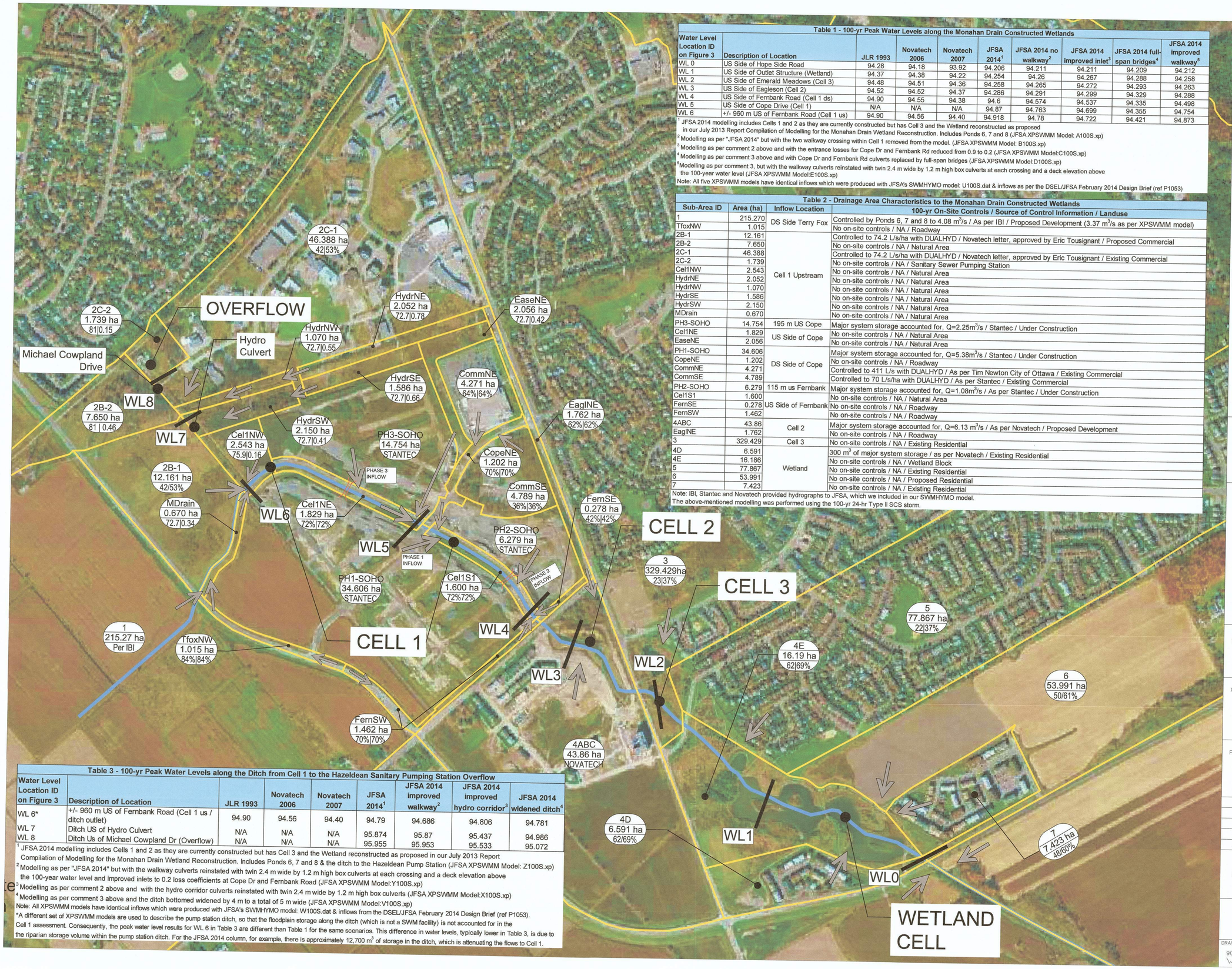


Table 1 - 100-yr Peak Water Levels along the Monahan Drain Constructed Wetlands

Water Level Location ID on Figure 3	Description of Location	JLR 1993	Novatech 2006	Novatech 2007	JFSA 2014[1]	JFSA 2014 no walkway[2]	JFSA 2014 improved inlet[3]	JFSA 2014 full-span bridges[4]	JFSA 2014 improved walkway[5]
WL 0	US Side of Hope Side Road	94.28	94.18	93.92	94.206	94.211	94.211	94.209	94.212
WL 1	US Side of Outlet Structure (Wetland)	94.37	94.38	94.22	94.254	94.26	94.267	94.288	94.258
WL 2	US Side of Emerald Meadows (Cell 3)	94.48	94.51	94.36	94.258	94.265	94.272	94.293	94.263
WL 3	US Side of Eagleson (Cell 2)	94.52	94.52	94.37	94.286	94.291	94.299	94.329	94.288
WL 4	US Side of Fernbank Road (Cell 1 ds)	94.90	94.55	94.38	94.6	94.574	94.537	94.335	94.498
WL 5	US Side of Cope Drive (Cell 1)	N/A	N/A	N/A	94.87	94.763	94.699	94.355	94.754
WL 6	+/- 960 m US of Fernbank Road (Cell 1 us)	94.90	94.56	94.40	94.918	94.78	94.722	94.421	94.873

[1] JFSA 2014 modelling includes Cells 1 and 2 as they are currently constructed but has Cell 3 and the Wetland reconstructed as proposed in our July 2013 Report Compilation of Modelling for the Monahan Drain Wetland Reconstruction. Includes Ponds 6, 7 and 8 (JFSA XPSWMM Model: A100S.xp)
[2] Modelling as per "JFSA 2014" but with the two walkway crossing within Cell 1 removed from the model. (JFSA XPSWMM Model: B100S.xp)
[3] Modelling as per comment 2 above and with the entrance losses for Cope Dr and Fernbank Rd reduced from 0.9 to 0.2 (JFSA XPSWMM Model:C100S.xp)
[4] Modelling as per comment 3 above and with Cope Dr and Fernbank Rd culverts replaced by full-span bridges (JFSA XPSWMM Model:D100S.xp)
[5] Modelling as per comment 3, but with the walkway culverts reinstated with twin 2.4 m wide by 1.2 m high box culverts at each crossing and a deck elevation above the 100-year water level (JFSA XPSWMM Model:E100S.xp)
Note: All five XPSWMM models have identical inflows which were produced with JFSA's SWMHYMO model: U100S.dat & inflows as per the DSEL/JFSA February 2014 Design Brief (ref P1053)

Table 2 - Drainage Area Characteristics to the Monahan Drain Constructed Wetlands

Sub-Area ID	Area (ha)	Inflow Location	100-yr On-Site Controls / Source of Control Information / Landuse
1	215.270	DS Side Terry Fox	Controlled by Ponds 6, 7 and 8 to 4.08 m^3/s / As per IBI / Proposed Development (3.37 m^3/s as per XPSWMM model)
TfoxNW	1.015		No on-site controls / NA / Roadway
2B-1	12.161	Cell 1 Upstream	Controlled to 74.2 L/s/ha with DUALHYD / Novatech letter, approved by Eric Tousignant / Proposed Commercial
2B-2	7.650		No on-site controls / NA / Natural Area
2C-1	46.388		Controlled to 74.2 L/s/ha with DUALHYD / Novatech letter, approved by Eric Tousignant / Existing Commercial
2C-2	1.739		No on-site controls / NA / Sanitary Sewer Pumping Station
Cel1NW	2.543		No on-site controls / NA / Natural Area
HydrNE	2.052		No on-site controls / NA / Natural Area
HydrNW	1.070		No on-site controls / NA / Natural Area
HydrSE	1.586		No on-site controls / NA / Natural Area
HydrSW	2.150		No on-site controls / NA / Natural Area
MDrain	0.670		No on-site controls / NA / Natural Area
PH3-SOHO	14.754	195 m US Cope	Major system storage accounted for, Q=2.25m^3/s / Stantec / Under Construction
Cel1NE	1.829	US Side of Cope	No on-site controls / NA / Natural Area
EaseNE	2.056		No on-site controls / NA / Natural Area
PH1-SOHO	34.606	DS Side of Cope	Major system storage accounted for, Q=5.38m^3/s / Stantec / Under Construction
CopeNE	1.202		No on-site controls / NA / Roadway
CommNE	4.271		Controlled to 411 L/s with DUALHYD / As per Tim Newton City of Ottawa / Existing Commercial
CommSE	4.789		Controlled to 70 L/s/ha with DUALHYD / As per Stantec / Existing Commercial
PH2-SOHO	6.279	115 m us Fernbank	Major system storage accounted for, Q=1.08m^3/s / As per Stantec / Under Construction
Cel1S1	1.600		No on-site controls / NA / Natural Area
FernSE	0.278	US Side of Fernbank	No on-site controls / NA / Roadway
FernSW	1.462		No on-site controls / NA / Roadway
4ABC	43.86	Cell 2	Major system storage accounted for, Q=6.13 m^3/s / As per Novatech / Proposed Development
EaglNE	1.762		No on-site controls / NA / Roadway
3	329.429	Cell 3	No on-site controls / NA / Existing Residential
4D	6.591	Wetland	300 m^3 of major system storage / as per Novatech / Existing Residential
4E	16.186		No on-site controls / NA / Wetland Block
5	77.867		No on-site controls / NA / Existing Residential
6	53.991		No on-site controls / NA / Proposed Residential
7	7.423		No on-site controls / NA / Existing Residential

Note: IBI, Stantec and Novatech provided hydrographs to JFSA, which we included in our SWMHYMO model.
The above-mentioned modelling was performed using the 100-yr 24-hr Type II SCS storm.

Table 3 - 100-yr Peak Water Levels along the Ditch from Cell 1 to the Hazeldean Sanitary Pumping Station Overflow

Water Level Location ID on Figure 3	Description of Location	JLR 1993	Novatech 2006	Novatech 2007	JFSA 2014[1]	JFSA 2014 improved walkway[2]	JFSA 2014 improved hydro corridor[3]	JFSA 2014 widened ditch[4]
WL 6*	+/- 960 m US of Fernbank Road (Cell 1 us / ditch outlet)	94.90	94.56	94.40	94.79	94.686	94.806	94.781
WL 7	Ditch US of Hydro Culvert	N/A	N/A	N/A	95.874	95.87	95.437	94.986
WL 8	Ditch Us of Michael Cowpland Dr (Overflow)	N/A	N/A	N/A	95.955	95.953	95.533	95.072

[1] JFSA 2014 modelling includes Cells 1 and 2 as they are currently constructed but has Cell 3 and the Wetland reconstructed as proposed in our July 2013 Report Compilation of Modelling for the Monahan Drain Wetland Reconstruction. Includes Ponds 6, 7 and 8 & the ditch to the Hazeldean Pump Station (JFSA XPSWMM Model: Z100S.xp)
[2] Modelling as per "JFSA 2014" but with the walkway culverts reinstated with twin 2.4 m wide by 1.2 m high box culverts at each crossing and a deck elevation above the 100-year water level and improved inlets to 0.2 loss coefficients at Cope Dr and Fernbank Road (JFSA XPSWMM Model:Y100S.xp)
[3] Modelling as per comment 2 above and with the hydro corridor culverts reinstated with twin 2.4 m wide by 1.2 m high box culverts (JFSA XPSWMM Model:X100S.xp)
[4] Modelling as per comment 3 above and the ditch bottomed widened by 4 m to a total of 5 m wide (JFSA XPSWMM Model:V100S.xp)
Note: All XPSWMM models have identical inflows which were produced with JFSA's SWMHYMO model: W100S.dat & inflows from the DSEL/JFSA February 2014 Design Brief (ref P1053).
*A different set of XPSWMM models are used to describe the pump station ditch, so that the floodplain storage along the ditch (which is not a SWM facility) is not accounted for in the Cell 1 assessment. Consequently, the peak water level results for WL 6 in Table 3 are different than Table 1 for the same scenarios. This difference in water levels, typically lower in Table 3, is due to the riparian storage volume within the pump station ditch. For the JFSA 2014 column, for example, there is approximately 12,700 m^3 of storage in the ditch, which is attenuating the flows to Cell 1.

LEGEND :

- SUBCATCHMENT BOUNDARY
- MONAHAN DRAIN
- DRAINAGE DIRECTION / INFLOW LOCATION TO XPSWMM
- 5 / 77.87 ha / 22/37% — SUB-CATCHMENT ID (STANDHYD) / SUB-CATCHMENT AREA (HA) / DIRECT / TOTAL IMPERVIOUSNESS (%)
- 13 / 121.65 ha / 75.7|1.3 — SUB-CATCHMENT ID (NASHYD) / SUB-CATCHMENT AREA (HA) / CURVE NUMBER | TIME TO PEAK (H)
- WL1 WATER LEVEL LOCATION refer to Table 1
- APPROXIMATE LOCATION of WALKWAYS

SCALE :

0 125 250 375 500 m

N

J.F. Sabourin & Associates Inc.
WATER RESOURCES AND ENVIRONMENTAL CONSULTANTS
OTTAWA (613) 836-3884
GATINEAU (819) 243-6858

CLIENT : Ottawa

PROJECT :

CELL 1 MODELLING
MONAHAN DRAIN CONSTRUCTED WETLANDS

BY	DATE	DESCRIPTION	REV
CB	Sept/14	FINAL	3
CB	Feb/13	For Review / Comments	2
CB	Dec/13	For Discussion	1
CB	Sept/13	For Discussion	0

DETAILED DRAINAGE AREAS TO CELL 1 + WATER LEVELS ALONG the MDCW

FIGURE 3

DESIGNED:
DRAWN: CB
VERIFIED:
APPROVED:

DRAWING REF. 902(03)-13\Design\CAD \JFSA Figures 20140905.dwg

DATE Sept/14

PROJECT No. 902(03)-13

DESIGN BRIEF
FOR THE
MONAHAN DRAIN WETLAND RECONSTRUCTION

CITY OF OTTAWA

JUNE 2012
REVISED NOVEMBER 2013
OUR FILE: 12-591

1.0 INTRODUCTION

The existing Monahan Drain Constructed Wetlands are located within the City of Ottawa, and consist of three quantity control cells (Cells 1, 2 and 3) and one quality and quantity control cell (Wetland Cell) in the Monahan Drain. Refer to ***Appendix C*** for a plan view of the cells by AECOM.

It is proposed that the existing Cell 3 and Wetland Cell be reconstructed to meet quality and quantity control stormwater management (SWM) requirements. As shown by ***Figure 1***, the existing Cell 3 and Wetland Cell are located north of Hope Side Road, east of Eagleson Road, south of Bridgestone Drive and west of existing and future residential development. For the purposes of this report, Cell 3 and the Wetland Cell are henceforth referred to collectively as the SWM facility.

The Monahan Drain has a total drainage area of 4044.58 ha (refer to ***Figure 2***, and to Table C-1 of ***Appendix C***), 3142.95 ha of which discharge to the Monahan Drain downstream of the Constructed Wetlands. The SWM facility has a total drainage area of 901.63 ha, and provides treatment for 686.36 ha. The 901.63 ha can be described in the following way:

- 215.27 ha are treated for quality and quantity control separately (west of Terry Fox Drive).
- 194.87 ha are treated for quality control by separate SWM facilities and oil-and-grit separators, and for quantity control by Cells 1 and 2 before discharging to the downstream SWM facility (Cell 3 and the Wetland Cell).
- The remaining 491.49 ha are to be treated for quality and quantity control by the reconstructed SWM facility.

The SWM facility needs to provide sufficient quantity control such that, on the downstream side of Hope Side Road (total drainage area of 1393.29 ha) the peak upper limit of flow will not exceed 27.45 m^3/s during a 100-year event.

The reconstructed SWM facility is a hybrid wet pond / wetland intended to satisfy various stormwater management requirements, including the following:

Water quality control: The permanent pool volume should be sized for an enhanced level of protection (82.00 m^3/ha, 41% imperviousness). The active volume portion for water quality control (80 m^3/ha) is greater than the typical 40 m^3/ha to account for the upstream drainage areas treated separately. The active storage volume should have a detention time between 24 to 48 hours.

Table 1: Assumed Future Impervious Cover by Zoning Code

Land Use Type	Zone Codes	Total Imperviousness	Percent of Impervious Area Directly Connected
Residential	R1	70%	75%
	R2	70%	75%
	R3	75%	75%
	R4	85%	100%
	R5	85%	100%
	RM	70%	75%
Institutional zones	I1	90%	100%
	I2	90%	100%
Open space and leisure zones	O1	15%	0%
	L1	15%	0%
	L2	15%	0%
	L3	15%	0%
Environmental zone	EP	10%	0%
Commercial/Mixed use zones	LC	90%	100%
	GM	90%	100%
	TM	90%	100%
	AM	90%	100%
	MC	90%	100%
	MD	90%	100%
Industrial zones	IP	90%	100%
	IL	90%	100%
	IG	90%	100%
	IH	90%	100%
Transportation zones	T1	90%	100%
	T2	90%	100%
Rural zones	AG	15%	0%
Other zones	DR	77.5%	87.5%

5.0 STORM SERVICING AND STORMWATER MANAGEMENT

5.1 General

This Report addresses the dual drainage system (i.e., minor and major) design for the Bridlewood Commercial Plaza. The minor storm system is comprised of inlet catch basins, maintenance holes, and storm sewers. This system is designed to quickly capture and convey runoff from frequent storm events with a 1:5 year recurrence. The major system is concerned with overland drainage, and consists of ground surface features like swales, ditches, roadways, parking areas, and stormwater management facilities. The major system is designed to accommodate runoff during storm events ranging from a 1:5 year up to a 1:100 year recurrence. For the Plaza site, both systems drain to the existing Bridlewood forebay located on the south side of Bridgestone Drive. This sedimentation forebay provides pre-treatment prior to discharging to the Monahan Drain system, where stormwater quantity and quality treatment is provided.

Note that a hydraulic grade line (HGL) analysis has not been performed for the Plaza. Although it is standard practice to perform an HGL analysis to ensure a minimum freeboard of 0.30 m below the building underside of footing to prevent basement flooding, all of the buildings on this site will be built with slab on grade construction (i.e., no basements), so basement flooding is not a concern.

5.2 Design Criteria

5.2.1 General

Storm servicing for the Plaza was designed in accordance with the City of Ottawa Sewer Design Guidelines (November 2004). The general stormwater servicing design parameters used to complete the detailed design for the Plaza are listed in Table 5.1.

Table 5.1: Stormwater Servicing Design Criteria

General Design Criteria
Allowable post-development stormwater release rate restricted to pre-development rate of 136.7 L/s
Quality control measures not required as storm sewers outlet to pond on south side of Bridgestone Drive that provides quality control
Minimum swale grades at 1.5% (with lower grades sub-drain must be provided)
Minimum roadway profile grades at 0.5%
Minimum roadway slope of 0.1% from crest to crest for overland flow route

Minimum freeboard of 0.30 m between the finished floor elevation and the maximum street ponding elevation
Maximum ponding depth of approximately 0.25 m for the 1:100 year storm event
Minimum of 0.30 m clearance between the underside of footing and the 1:100 year HGL elevation (not applicable)
Minimum circular orifice diameter of 75 mm unless alternate self-scouring inlet control devices (ICDs) are used
Ensure ponding water does not directly enter the sanitary sewer system through sanitary maintenance holes
Storm sewers sized for the 1:5 year storm event using the Rational Method and City of Ottawa Intensity-Duration-Frequency (IDF) curves
Provide measures to ensure that site preparation and construction is in accordance with the current Best Management Practices for Erosion and Sediment Control
Temporary ICD to be installed at outlet to ensure flow attenuation is restricted to allowable release rate until all elements of system are operable (not applicable)

5.2.2 Minor System

Storm flows generated by the Plaza are proposed to be captured by catch basins and local storm sewers, and conveyed to the existing 1800 mm diameter storm trunk sewer that runs from north to south through the site within a 10.57 m wide easement. The trunk sewer crosses to the south side of Bridgestone Drive, and outlets to the existing Bridlewood sedimentation forebay.

The existing 1800 mm diameter storm trunk sewer has been approved by the City as an outlet for stormwater from the site. It is noted that the original design for the sewer infrastructure in this area was based on a residential type development where a school and proposed commercial block now exist (refer to Appendix 'E' for previous storm drainage design). The drainage area characteristics of the previous design were used to calculate a maximum allowable release rate of 136.7 L/s for the Plaza site, as follows:

Drainage Area (Plaza site),	$A = 1.75$ ha;
Runoff Coefficient (previous design),	$C = 0.4$;
Time of Concentration (pre-development),	$T_C = 20$ min;
5-Year Rainfall Intensity (Ottawa),	$I_5 = 70.25$ mm/hr;

Using Rational Method,

$$Q = 2.78*CIA$$
$$= 2.78*0.4*1.75*70.25$$
$$= 136.7 \text{ L/s}$$

Therefore, the total of rooftop drainage, uncontrolled off-site and minor system flows, and ICD restricted flows must not exceed the calculated allowable release rate.

5.2.3 Major System

Surface runoff from the Plaza site in excess of the allowable minor system release rate (refer to Section 5.2.2) is to be contained on-site. The City Design Guidelines stipulate that on-site storage must be provided to contain runoff generated by the 1:100 year storm event. Additionally, the impact of the July 1, 1979 historical storm has been investigated, for information purposes. On-site storage will be achieved by the implementation of ponding in parking lot sags and on rooftops.

5.3 Proposed Minor System

5.3.1 Stormwater Quality and Quantity

Storm runoff generated by the Plaza is to be conveyed to the existing Bridlewood sedimentation forebay on the south side of Bridgestone Drive. This sedimentation forebay provides pre-treatment for stormwater runoff from the tributary lands in the Bridlewood Community, before outletting to the Monahan Drain, which itself is a tributary to the Jock River. The Monahan Drain system is approved by the RVCA and operated by the City to provide the necessary quantity and quality control for fish habitat protection in the Jock River and Rideau River watersheds.

Locally, the Plaza site has been designed to meet the maximum allowable release rate (refer to Section 5.2.2) by utilizing inlet control devices (ICDs) at the minor system outlets and on-site storage in parking lot sags and on rooftops. No additional water quality measures have been included in the servicing of the subject site, other than sumps in catch basins.

5.3.2 Storm Sewer Servicing

Storm sewers servicing the Plaza development were sized based on the 1:5 year peak flows calculated using the Rational Method. An inlet time of 10 minutes was used, as recommended in the City Design Guidelines for commercial sites. Refer to Appendix 'E' for the Storm Sewer Design Sheet and Drainage Plan.

As presented in Section 5.2.2, the post-development flows generated by the Plaza must be controlled to an allowable release rate of 136.7 L/s. This maximum release rate represents the total of rooftop drainage, uncontrolled off-site flows, uncontrolled minor

Labadie, Sam

From: Roy, Jean-Miguel <Jean-Miguel.Roy@ottawa.ca>
Sent: April 9, 2025 2:20 PM
To: Labadie, Sam
Cc: Brule, Terry; Fawzi, Mohammed
Subject: RE: 801 Eagleson - Comment Review

Arcadis Warning: Exercise caution with email messages from external sources such as this message. Always verify the sender and avoid clicking on links or scanning QR codes unless certain of their authenticity.

Hi Sam and Terry,

Thank you for your patience on this matter.

Following internal discussions on the allowable release rate for this site, we can confirm that the criteria set out in the 2012 Approved Servicing Report that was based on the City's Sewer Design Guidelines should be adhered to. As indicated in the report, the 2019 MDCW study was completed to update the existing hydrologic and hydraulic models of the MDCW, to reflect current conditions and to investigate the impacts if future development progresses within the watershed. The study assesses three primary scenarios: the current conditions, a future condition where all vacant developable lands are built-out, and a future ultimate condition which assumes that all lands are built-out to their maximum zoning density allowances. The study is NOT intended to provide a criteria for future undeveloped lands.

However, we've reviewed the 2012 Servicing Report quantity control calculations and noticed that a minimum Tc of 20 mins was used instead of 10 mins, as it was based on the 2004 Sewer Design Guidelines. The City accepts that you use a Tc of 10 mins for your calculations to be in line with the latest Sewer Design Guidelines. This will increase the allowable release rate for this site.

With regards to the proposed locations for the monitoring maintenance holes, the City does not have any concern if the maintenance holes aren't directly at the easement limits. They can be a few meters away from the connections, as long as they aren't within the easement. That said, your proposed location for MH102A, MH102 & MH107 is fine and doesn't need to be revised, unless MH107 falls within the new easement limits.

Regards,

Jean-Miguel Roy
Project Manager, Infrastructure Approvals
Planning, Real Estate and Economic Development Department
Services de la planification, Direction générale de la planification, de l'immobilier et du développement économique
110 Laurier Avenue West | 110 avenue Laurier Ouest
City of Ottawa | Ville d'Ottawa
613.580.2424 x 27566

Classified as City of Ottawa - Internal / Ville d'Ottawa - classé interne

ARCADIS
IBI GROUP

ARCADIS IBI GROUP
500-333 Preston Street
Ottawa, Ontario K1S 5N4 Canada
ibigroup.com

STORM SEWER DESIGN SHEET
801 Eagleson
Urbandale Corporation
City of Ottawa

LOCATION				AREA (Ha)											RATIONAL DESIGN FLOW																	SEWER DATA								
STREET	AREA ID	FROM	TO	C= 0.20	C= 0.38	C= 0.52	C= 0.74	C= 0.77	C= 0.83	C= 0.86	C= 0.87	C= 0.88	C= 0.89	C= 0.90	IND 2.78AC	CUM 2.78AC	INLET (min)	TIME IN PIPE	TOTAL (min)	i (2) (mm/hr)	i (5) (mm/hr)	i (10) (mm/hr)	i (100) (mm/hr)	2yr PEAK FLOW (L/s)	5yr PEAK FLOW (L/s)	10yr PEAK FLOW (L/s)	100yr PEAK FLOW (L/s)	FIXED FLOW IND	FIXED FLOW CUM	DESIGN FLOW (L/s)	CAPACITY (L/s)	LENGTH (m)	PIPE SIZE (mm) DIA	PIPE SIZE (mm) W	PIPE SIZE (mm) H	SLOPE (%)	VELOCITY (m/s)	AVAIL CAP (5yr) (L/s)	AVAIL CAP (5yr) (%)
EAST OF EASEMENT																																								
	ROOF A-1	BLDG A-1	MH100											0.08	0.20	0.20	10.00	0.17	10.17	76.81	104.19	122.14	178.56	15.37	20.86	24.45	35.74		0.00	20.86	41.62	8.48	250			0.45	0.821	20.76	49.89%
		MH100	MH101												0.00	0.20	10.17	1.14	11.32	76.15	103.29	121.08	177.00	15.24	20.68	24.24	35.43		0.00	20.68	59.68	56.18	300			0.35	0.818	39.01	65.36%
	ROOF A-2	BLDG A-2	MH101											0.10	0.25	0.25	10.00	0.16	10.16	76.81	104.19	122.14	178.56	19.22	26.07	30.56	44.68		0.00	26.07	43.89	8.50	250			0.50	0.866	17.83	40.61%
		MH101	MH102												0.00	0.45	11.32	1.22	12.54	72.09	97.72	114.51	167.36	32.47	44.01	51.57	75.37		0.00	44.01	59.68	60.00	300			0.35	0.818	15.67	26.26%
	ROOF A-3	BLDG A-3	MH102											0.08	0.20	0.20	10.00	0.07	10.07	76.81	104.19	122.14	178.56	15.37	20.86	24.45	35.74		0.00	20.86	105.44	8.50	250			2.89	2.081	84.59	80.22%
		MH102	EX. STM												0.00	0.65	12.54	0.30	12.84	68.26	92.45	108.32	158.26	44.40	60.14	70.46	102.95		0.00	60.14	78.14	19.07	300			0.60	1.071	18.00	23.03%
																																	1800							
WEST OF EASEMENT																																								
	CB1	CB1	CB7					0.15							0.32	0.32	10.00	0.36	10.36	76.81	104.19	122.14	178.56	24.66	33.46	39.22	57.33		0.00	33.46	59.82	17.71	300			0.35	0.820	26.36	44.07%
		CB7	CBMH8												0.00	0.32	10.36	0.41	10.77	75.45	102.33	119.95	175.33	24.23	32.86	38.51	56.30		0.00	32.86	59.51	19.83	300			0.35	0.816	26.65	44.79%
	CBMH8	CBMH8	CBMH10		0.02										0.02	0.34	10.77	0.58	11.34	73.99	100.32	117.58	171.85	25.32	34.33	40.24	58.81		0.00	34.33	59.60	28.39	300			0.35	0.817	25.27	42.39%
	CB9	CB9	STM						0.12						0.28	0.28	10.00	0.10	10.10	76.81	104.19	122.14	178.56	21.27	28.85	33.82	49.44		0.00	28.85	58.75	7.07	250			0.90	1.159	29.90	50.89%
	ECB3, CBMH10	CBMH10	MH105	0.03											0.02	0.64	11.34	0.54	11.89	72.00	97.59	114.36	167.14	45.78	62.05	72.71	106.26		0.00	62.05	91.46	26.17	375			0.25	0.802	29.41	32.16%
	CB4	CB4	CBMH3							0.13					0.31	0.31	10.00	0.37	10.37	76.81	104.19	122.14	178.56	23.87	32.38	37.96	55.50		0.00	32.38	41.62	18.02	250			0.45	0.821	9.23	22.19%
	*ADD'L STORAGE ONLY	CB4	STORAGE												0.00	0.00	10.00	0.02	10.02	76.81	104.19	122.14	178.56	0.00	0.00	0.00	0.00		0.00	0.00	100.88	1.86	300			1.00	1.383	100.88	100.00%
		STORAGE	MH105												0.00	0.00	10.02	0.08	10.11	76.72	104.07	122.00	178.35	0.00	0.00	0.00	0.00		0.00	0.00	63.80	4.38	300			0.40	0.874	63.80	100.00%
	CB2	CB2	CBMH3										0.16		0.40	0.40	10.00	0.28	10.28	76.81	104.19	122.14	178.56	30.40	41.25	48.35	70.69		0.00	41.25	51.91	17.22	250			0.70	1.024	10.66	20.53%
	CBMH3	CBMH3	MH105										0.13		0.32	1.03	10.37	0.16	10.53	75.43	102.30	119.91	175.28	77.56	105.20	123.31	180.25		0.00	105.20	129.34	10.86	375			0.50	1.134	24.14	18.66%
		MH105	STM												0.00	1.66	11.89	0.03	11.92	70.24	95.18	111.52	162.96	116.89	158.38	185.59	271.19		0.00	158.38	200.37	2.87	375			1.20	1.757	41.99	20.95%
	ROOF C	BLDG C	MH37100											0.06	0.15	0.15	10.00	0.44	10.44	76.81	104.19	122.14	178.56	11.53	15.64	18.34	26.81		0.00	15.64	41.62	21.90	250			0.45	0.821	25.98	62.42%
	ROOF D	BLDG D	MH37100											0.04	0.10	0.10	10.00	0.71	10.71	76.81	104.19	122.14	178.56	7.69	10.43	12.22	17.87		0.00	10.43	59.68	35.08	300			0.35	0.818	49.25	82.53%
		MH3700	EX. STM												0.00	1.91	11.92	0.23	12.14	70.16	95.06	111.38	162.76	134.30	181.97	213.22	311.57		0.00	181.97	210.32	17.36	450			0.50	1.281	28.35	13.48%
																																	1800							
	ECB1, CB13	CB13	MH108			0.01	0.11								0.24	0.24	10.00	0.72	10.72	76.81	104.19	122.14	178.56	18.49	25.08	29.41	42.99		0.00	25.08	59.68	35.20	300			0.35	0.818	34.60	57.97%
		MH108	CBMH6												0.00	0.24	10.72	0.07	10.79	74.16	100.55	117.85	172.26	17.85	24.21	28.37	41.47		0.00	24.21	84.40	4.86	300			0.70	1.157	60.20	71.32%
	CB5	CB5	CBMH6									0.21			0.51	0.51	10.00	0.21	10.21	76.81	104.19	122.14	178.56	39.46	53.53	62.75	91.73		0.00	53.53	100.88	17.35	300			1.00	1.383	47.35	46.94%
	ECB2, CB12	CB12	STORAGE	0.03									0.06		0.17	0.17	10.00	0.25	10.25	76.81	104.19	122.14	178.56	12.68	17.21	20.17	29.49		0.00	17.21	63.80	13.28	300			0.40	0.874	46.60	73.03%
		STORAGE	CBMH6												0.00	0.17	10.25	0.09	10.35	75.85	102.87	120.59	176.28	12.52	16.99	19.91	29.11		0.00	16.99	71.33	5.44	300			0.50	0.978	54.35	76.19%
	CB6	CBMH6	MH107								0.11				0.27	1.19	10.79	0.06	10.85	73.91	100.21	117.45	171.67	87.63	118.82	139.26	203.54		0.00	118.82	182.91	5.68	375			1.00	1.604	64.09	35.04%
	ROOF E	BLDG E	MH106											0.06	0.15	0.15	10.00	0.12	10.12	76.81	104.19	122.14	178.56	11.53	15.64	18.34	26.81		0.00	15.64	41.62	5.73	250			0.45	0.821	25.98	62.42%
		MH106	MH107												0.00	0.15	10.12	0.13	10.25	76.36	103.58	121.42	177.50	11.46	15.55	18.23	26.65		0.00	15.55	41.62	6.54	250			0.45	0.821	26.07	62.64%
		MH107	EX. STM												0.00	1.34	10.85	0.05	10.89	73.70	99.93	117.12	171.18	98.45	133.48	156.44	228.66		0.00	133.48	182.91	4.54	375			1.00	1.604	49.43	27.02%
																																	1800							
														1.69																										

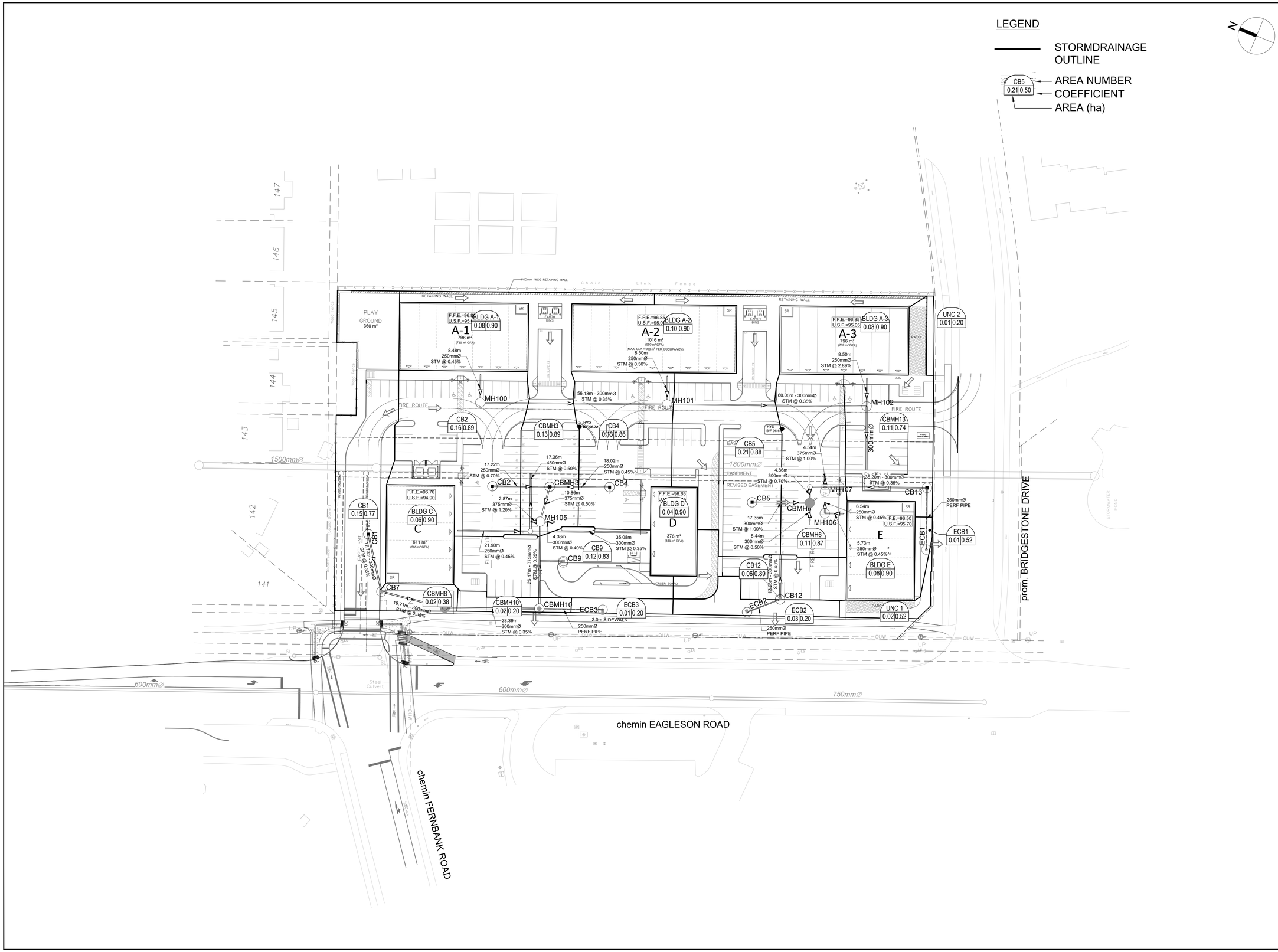
Definitions:
Q = 2.78CiA, where:
Q = Peak Flow in Litres per Second (L/s)
A = Area in Hectares (Ha)
i = Rainfall intensity in millimeters per hour (mm/hr)
[i = 732.951 / (TC+6.199)^0.810] 2 YEAR
[i = 998.071 / (TC+6.053)^0.814] 5 YEAR
[i = 1174.184 / (TC+6.014)^0.816] 10 YEAR
[i = 1735.688 / (TC+6.014)^0.820] 100 YEAR

Notes:
1. Mannings coefficient (n) = 0.013

Designed: MP
Checked: SL
Dwg. Reference: 148792-500

No.	Revision	Date
1.	Site Servicing Report Submission 1	2024-12-18
2.	Site Servicing Report Submission 2	2025-07-03
3.	Site Servicing Report Submission 2	2025-08-29

File Reference:	Date:	Sheet No:
148792-6.04.04	2025-08-29	1 of 1



CLIENT

URBANDALE CORPORATION

COPYRIGHT

This drawing has been prepared solely for the intended use, thus any reproduction or distribution for any purpose other than authorized by Arcadis is forbidden. Written dimensions shall have precedence over scaled dimensions. Contractors shall verify and be responsible for all dimensions and conditions shown on the job, and Arcadis shall be informed of any variations from the dimensions and conditions shown on the drawing. Shop drawings shall be submitted to Arcadis for general conformance before proceeding with fabrication.

Arcadis Professional Services (Canada) Inc.
formerly IBI Group Professional Services (Canada) Inc.

ISSUES

No.	DESCRIPTION	DATE
1	ISSUED FOR REVIEW	2024-12-19
2	CITY SUBMISSION No. 1	2025-01-22
3	CITY SUBMISSION No. 2	2025-07-09
4	CITY SUBMISSION No. 3	2025-08-29

KEY PLAN

CONSULTANTS

1:500

SEAL

LICENSED PROFESSIONAL ENGINEER
S. E. LABADIE
100214983
2025-08-29
PROVINCE OF ONTARIO

PRIME CONSULTANT

ARCADIS

333 Preston Street - Suite 500
Ottawa ON K1S 5N4 Canada
tel 613 225 1311
www.arcadis.com

PROJECT

COMMERCIAL SITE

801 EAGLESON ROAD

PROJECT NO: 148792

DRAWN BY:	CHECKED BY:
D.D.	**M.P.**
PROJECT MGR:	APPROVED BY:
T.R.B.	**S.E.L.**

SHEET TITLE

STORM DRAINAGE AREA PLAN

SHEET NUMBER: C-500

ISSUE: 4

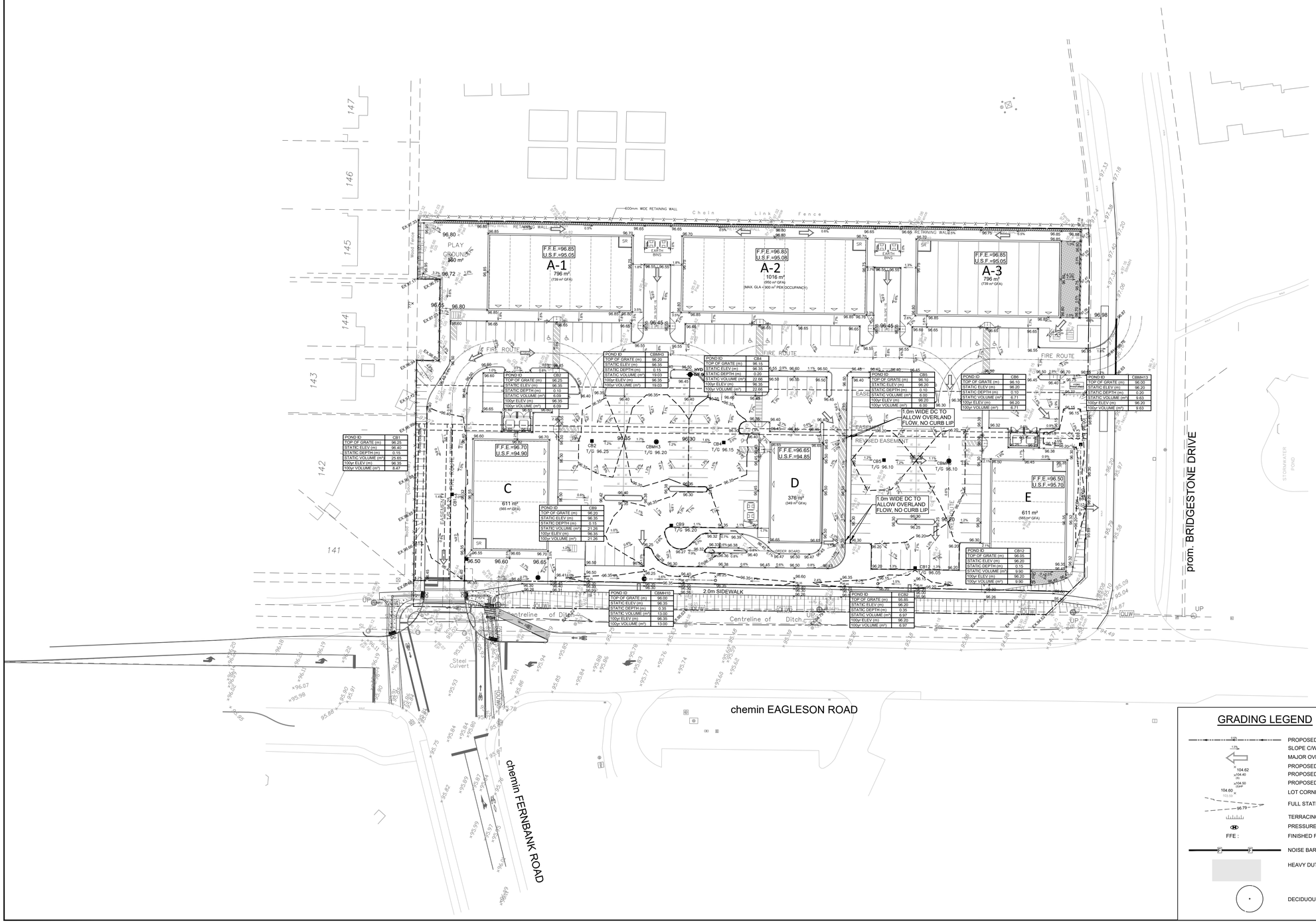
CITY FILE No. D07-12-25-0014

CITY PLAN No.19247

SCALE CHECK 1 in

Dwn

File Location: C:\DARoot\Jobs\8ed3e8a7\04fd41fc\b76cb01152ec9417\ada4f\files\b ceb1b197-9819-43f0-840e-591543910772\Project Files\17.03_Design\04-Civil\Sheets\C-500 STORM DRAINAGE AREA PLAN.dwg Last Saved: August 28, 2025, by domc5754 Plotted: Thursday, August 28, 2025 4:08:31 PM by acesuser



GRADING LEGEND

- PROPOSED DITCH C/W FLOW DIRECTION AND SLOPE
- SLOPE C/W FLOW DIRECTION
- MAJOR OVERLAND FLOW ROUTE
- PROPOSED SPOT GRADE
- PROPOSED SWALE GRADE
- PROPOSED SWALE HIGH POINT GRADE
- LOT CORNER GRADE C/W EXISTING GRADE
- FULL STATIC PONDING GRADE
- TERRACING 3:1 MAXIMUM UNLESS NOTED OTHERWISE
- PRESSURE REDUCING VALVE
- FFE : FINISHED FLOOR ELEVATION
- NOISE BARRIER LOCATION
- HEAVY DUTY ROADWAY (16458m²)
- DECIDUOUS TREE
- CONIFEROUS TREE

CLIENT

URBANDALE CORPORATION

COPYRIGHT

This drawing has been prepared solely for the intended use, thus any reproduction or distribution for any purpose other than authorized by Arcadis is forbidden. Written dimensions shall have precedence over scaled dimensions. Contractors shall verify and be responsible for all dimensions and conditions on the job, and Arcadis shall be informed of any variations from the dimensions and conditions shown on the drawing. Shop drawings shall be submitted to Arcadis for general conformance before proceeding with fabrication.

Arcadis Professional Services (Canada) Inc.
formerly IBI Group Professional Services (Canada) Inc

ISSUES

No.	DESCRIPTION	DATE
1	ISSUED FOR REVIEW	2024-12-19
2	CITY SUBMISSION No. 1	2025-01-22
3	CITY SUBMISSION No. 2	2025-07-09
4	CITY SUBMISSION No. 3	2025-08-29

KEY PLAN

CONSULTANTS

1:500 0 5 15 25m

SEAL

LICENSED PROFESSIONAL ENGINEER
S. E. LABADIE
100214983
2025-08-29
PROVINCE OF ONTARIO

PRIME CONSULTANT

ARCADIS

333 Preston Street - Suite 500
Ottawa ON K1S 5N4 Canada
tel 613 225 1311
www.arcadis.com

PROJECT

COMMERCIAL SITE

801 EAGLESON ROAD

PROJECT NO: 148792	
DRAWN BY: **D.D.**	CHECKED BY: **M.P.**
PROJECT MGR: **T.R.B.**	APPROVED BY: **S.E.L.**

SHEET TITLE

PONDING PLAN

SHEET NUMBER	ISSUE
C-600	4

File Location: C:\Users\dore57540\DC\ACCDocs\Arcadis ACC US\ACA-00148792-801 Eagleson Rd Commercial\Project Files\7.03_Design\04-Civil\Sheets\C-600 PONDING PLAN.dwg Last Saved: July 9, 2025, by dore57540 Plotted: August 28, 2025 1:20:50 PM by Dore, Denis

CITY FILE No. D07-12-25-0014

CITY PLAN No.19247

Formulas and Descriptions

i_{2yr} = 1:2 year Intensity = 732.951 / $(T_c+6.199)^{0.810}$
i_{5yr} = 1:5 year Intensity = 998.071 / $(T_c+6.053)^{0.814}$
i_{100yr} = 1:100 year Intensity = 1735.688 / $(T_c+6.014)^{0.820}$
T_c = Time of Concentration (min)
C = Average Runoff Coefficient
A = Area (Ha)
Q = Flow = 2.78CiA (L/s)

Maximum Allowable Release Rate

Restricted Flowrate ($Q_{restricted}$ = 2.78*C*i_{5yr} *A, 5-year flowrate captured , based on Imp of 0.40, Tc=10min)

Per J.L. Richards Servicing Report 18845 Dated May 2011
Commercial/Mixed-use zones, runoff C = 0.40, Time of concentration of 10 mins

A =	1.75	ha
C =	0.4	
Tc =	10	mins
i_{5yr} =	104.19	mm/hr

$Q_{restricted}$ = 2.78*0.4*1.75*104.19

$Q_{restricted}$ =	202.75	L/s

Uncontrolled Release ($Q_{uncontrolled}$ = 2.78*C*i_{100yr} *$A_{uncontrolled}$)

UNC 1 - South

C_{100yr} =	0.65	*(C increased 25% for 100-yr)*
T_c =	10	min
i_{100yr} =	178.56	mm/hr
$A_{uncontrolled}$ =	0.02	Ha
$Q_{uncontrolled}$ =	6.45	L/s

UNC 2 - Retaining Wall

C_{100yr} =	0.25	*(C increased 25% for 100-yr)*
T_c =	10	min
i_{100yr} =	178.56	mm/hr
$A_{uncontrolled}$ =	0.005	Ha
$Q_{uncontrolled}$ =	0.62	L/s

Maximum Allowable Release Rate ($Q_{max\ allowable}$ = $Q_{restricted}$ - $Q_{uncontrolled}$)

$Q_{max\ allowable}$ =	195.68	L/s

MODIFIED RATIONAL METHOD (100-Year, 5-Year & 2-Year Ponding)

Drainage Area	Bldg A-1 Roof		
Area (Ha)	0.08	Restricted Flow ICD_{Actual} (L/s)=	1.50
C =	1.00	Restricted Flow $Q_{r\ for\ swm\ calc}$ (L/s)=	1.50

50% reduction if sub-surface storage considered

100-Year Ponding						100-Year +20% Ponding		
T_c Variable (min)	i_{100yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{100yr}A$ (L/s)	Q_r (L/s)	Q_p-Q_r (L/s)	Volume 100yr (m^3)	$100YRQ_p$ 20% (L/s)	Qp - Qr (L/s)	Volume 100+20 (m^3)
120	32.89	7.32	1.50	5.82	41.87			
125	31.86	7.09	1.50	5.59	41.90			
130	30.90	6.87	1.50	5.37	**41.90**	8.25	6.75	**52.62**
135	30.00	6.67	1.50	5.17	41.89			
140	29.15	6.48	1.50	4.98	41.86			

Storage (m^3)					100+20		
Overflow	Required	Surface	Sub-surface	Balance	Overflow	Required	Balance
0.00	41.90	45.00		0.00	0.00	52.62	7.62
					convert to flow with peak Tc (L/s)		0.98

overflows to: Out

Drainage Area	Bldg A-1 Roof		
Area (Ha)	0.08		
C =	0.90	Restricted Flow Q_r (L/s)=	1.50

2-Year Ponding					
T_c Variable (min)	i_{2yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{2yr}A$ (L/s)	Q_r (L/s)	Q_p-Q_r (L/s)	Volume 2yr (m^3)
50	28.04	5.61	1.50	4.11	12.34
51	27.64	5.53	1.50	4.03	12.34
52	27.26	5.46	1.50	3.96	**12.34**
53	26.88	5.38	1.50	3.88	12.34
54	26.52	5.31	1.50	3.81	12.34

Storage (m^3)				
Overflow	Required	Surface	Sub-surface	Balance
0.00	12.34	45.00	0	0.00

overflows to: Out

Drainage Area	Bldg A-2 Roof		
Area (Ha)	0.10	Restricted Flow ICD_{Actual} (L/s)=	1.50
C =	1.00	Restricted Flow $Q_{r\ for\ swm\ calc}$ (L/s)=	1.50

50% reduction if sub-surface storage considered

100-Year Ponding						100-Year +20% Ponding		
T_c Variable (min)	i_{100yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{100yr}A$ (L/s)	Q_r (L/s)	Q_p-Q_r (L/s)	Volume 100yr (m^3)	$100YRQ_p$ 20% (L/s)	Qp - Qr (L/s)	Volume 100+20 (m^3)
155	26.91	7.48	1.50	5.98	55.61			
160	26.24	7.29	1.50	5.79	55.63			
165	25.61	7.12	1.50	5.62	**55.63**	8.54	7.04	**69.73**
170	25.01	6.95	1.50	5.45	55.62			
175	24.44	6.80	1.50	5.30	55.60			

Storage (m^3)					100+20		
Overflow	Required	Surface	Sub-surface	Balance	Overflow	Required	Balance
0.00	55.63	56.25		0.00	0.00	69.73	13.48
					convert to flow with peak Tc (L/s)		1.36

overflows to: Out

Drainage Area	Bldg A-2 Roof		
Area (Ha)	0.10		
C =	0.90	Restricted Flow Q_r (L/s)=	1.50

2-Year Ponding					
T_c Variable (min)	i_{2yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{2yr}A$ (L/s)	Q_r (L/s)	Q_p-Q_r (L/s)	Volume 2yr (m^3)
65	23.15	5.79	1.50	4.29	16.74
66	22.89	5.73	1.50	4.23	16.74
67	22.64	5.66	1.50	4.16	**16.74**
68	22.39	5.60	1.50	4.10	16.74
69	22.15	5.54	1.50	4.04	16.73

Storage (m^3)				
Overflow	Required	Surface	Sub-surface	Balance
0.00	16.74	56.25	0	0.00

overflows to: Out

Drainage Area	Bldg A-3 Roof		
Area (Ha)	0.08	Restricted Flow ICD_{Actual} (L/s)=	1.50
C =	1.00	Restricted Flow $Q_{r\ for\ swm\ calc}$ (L/s)=	1.50

50% reduction if sub-surface storage considered

100-Year Ponding						100-Year +20% Ponding		
T_c Variable (min)	i_{100yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{100yr}A$ (L/s)	Q_r (L/s)	Q_p-Q_r (L/s)	Volume 100yr (m^3)	$100YRQ_p$ 20% (L/s)	Qp - Qr (L/s)	Volume 100+20 (m^3)
115	34.01	7.56	1.50	6.06	41.83			
120	32.89	7.32	1.50	5.82	41.87			
125	31.86	7.09	1.50	5.59	**41.90**	8.50	7.00	**52.52**
130	30.90	6.87	1.50	5.37	41.90			
135	30.00	6.67	1.50	5.17	41.89			

Storage (m^3)					100+20		
Overflow	Required	Surface	Sub-surface	Balance	Overflow	Required	Balance
0.00	41.90	45.00		0.00	0.00	52.52	7.52
					convert to flow with peak Tc (L/s)		1.00

overflows to: Out

Drainage Area	Bldg A-3 Roof		
Area (Ha)	0.08		
C =	0.90	Restricted Flow Q_r (L/s)=	1.50

2-Year Ponding					
T_c Variable (min)	i_{2yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{2yr}A$ (L/s)	Q_r (L/s)	Q_p-Q_r (L/s)	Volume 2yr (m^3)
50	28.04	5.61	1.50	4.11	12.34
51	27.64	5.53	1.50	4.03	12.34
52	27.26	5.46	1.50	3.96	**12.34**
53	26.88	5.38	1.50	3.88	12.34
54	26.52	5.31	1.50	3.81	12.34

Storage (m^3)				
Overflow	Required	Surface	Sub-surface	Balance
0.00	12.34	45.00	0	0.00

overflows to: Out

Drainage Area	Bldg C Roof		
Area (Ha)	0.06	Restricted Flow ICD_{Actual} (L/s)=	1.50
C =	1.00	Restricted Flow $Q_{r\ for\ swm\ calc}$ (L/s)=	1.50

50% reduction if sub-surface storage considered

100-Year Ponding						100-Year +20% Ponding		
T_c Variable (min)	i_{100yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{100yr}A$ (L/s)	Q_r (L/s)	Q_p-Q_r (L/s)	Volume 100yr (m^3)	$100YRQ_p$ 20% (L/s)	Qp - Qr (L/s)	Volume 100+20 (m^3)
85	42.95	7.16	1.50	5.66	28.89			
90	41.11	6.86	1.50	5.36	28.93			
95	39.43	6.58	1.50	5.08	**28.94**	7.89	6.39	**36.44**
100	37.90	6.32	1.50	4.82	28.93			
105	36.50	6.09	1.50	4.59	28.90			

Storage (m^3)					100+20		
Overflow	Required	Surface	Sub-surface	Balance	Overflow	Required	Balance
0.00	28.94	33.75		0.00	0.00	36.44	2.69
					convert to flow with peak Tc (L/s)		0.47

overflows to: Out

Drainage Area	Bldg C Roof		
Area (Ha)	0.06		
C =	0.90	Restricted Flow Q_r (L/s)=	1.50

2-Year Ponding					
T_c Variable (min)	i_{2yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{2yr}A$ (L/s)	Q_r (L/s)	Q_p-Q_r (L/s)	Volume 2yr (m^3)
38	34.06	5.11	1.50	3.61	8.24
39	33.45	5.02	1.50	3.52	8.24
40	32.86	4.93	1.50	3.43	**8.24**
41	32.30	4.85	1.50	3.35	8.24
42	31.76	4.77	1.50	3.27	8.23

Storage (m^3)				
Overflow	Required	Surface	Sub-surface	Balance
0.00	8.24	33.75	0	0.00

overflows to: Out

Drainage Area	Bldg D Roof			
Area (Ha)	0.04	Restricted Flow ICD_{Actual} (L/s)=	1.50	
C =	1.00	Restricted Flow $Q_{r\ for\ swm\ calc}$ (L/s)=	1.50	50% reduction if sub-surface storage considered

100-Year Ponding						100-Year +20% Ponding		
T_c Variable (min)	i_{100yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{100yr}A$ (L/s)	Q_r (L/s)	Q_p-Q_r (L/s)	Volume 100yr (m^3)	100YRQ_p 20% (L/s)	Qp - Qr (L/s)	Volume 100+20 (m^3)
50	63.95	7.11	1.50	5.61	16.84			
55	59.62	6.63	1.50	5.13	16.93			
60	55.89	6.22	1.50	4.72	**16.98**	7.46	5.96	**21.45**
65	52.65	5.85	1.50	4.35	16.98			
70	49.79	5.54	1.50	4.04	16.95			

Storage (m^3)					100+20		
Overflow	Required	Surface	Sub-surface	Balance	Overflow	Required	Balance
0.00	16.98	22.50		0.00	0.00	21.45	0.00
					convert to flow with peak Tc (L/s)		0.00

overflows to: Out

Drainage Area	Bldg D Roof			
Area (Ha)	0.04			
C =	0.90	Restricted Flow Q_r (L/s)=	1.50	

2-Year Ponding					
T_c Variable (min)	i_{2yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{2yr}A$ (L/s)	Q_r (L/s)	Q_p-Q_r (L/s)	Volume 2yr (m^3)
25	45.17	4.52	1.50	3.02	4.53
26	44.03	4.41	1.50	2.91	4.53
27	42.95	4.30	1.50	2.80	**4.53**
28	41.93	4.20	1.50	2.70	4.53
29	40.96	4.10	1.50	2.60	4.52

Storage (m^3)				
Overflow	Required	Surface	Sub-surface	Balance
0.00	4.53	22.50	0	0.00

overflows to: Out

Drainage Area	Bldg E Roof			
Area (Ha)	0.06	Restricted Flow ICD_{Actual} (L/s)=	1.50	
C =	1.00	Restricted Flow $Q_{r\ for\ swm\ calc}$ (L/s)=	1.50	50% reduction if sub-surface storage considered

100-Year Ponding						100-Year +20% Ponding		
T_c Variable (min)	i_{100yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{100yr}A$ (L/s)	Q_r (L/s)	Q_p-Q_r (L/s)	Volume 100yr (m^3)	100YRQ_p 20% (L/s)	Qp - Qr (L/s)	Volume 100+20 (m^3)
85	42.95	7.16	1.50	5.66	28.89			
90	41.11	6.86	1.50	5.36	28.93			
95	39.43	6.58	1.50	5.08	**28.94**	7.89	6.39	**36.44**
100	37.90	6.32	1.50	4.82	28.93			
105	36.50	6.09	1.50	4.59	28.90			

Storage (m^3)					100+20		
Overflow	Required	Surface	Sub-surface	Balance	Overflow	Required	Balance
0.00	28.94	33.75		0.00	0.00	36.44	2.69
					convert to flow with peak Tc (L/s)		0.47

overflows to: Out

Drainage Area	Bldg E Roof			
Area (Ha)	0.06			
C =	0.90	Restricted Flow Q_r (L/s)=	1.50	

2-Year Ponding					
T_c Variable (min)	i_{2yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{2yr}A$ (L/s)	Q_r (L/s)	Q_p-Q_r (L/s)	Volume 2yr (m^3)
38	34.06	5.11	1.50	3.61	8.24
39	33.45	5.02	1.50	3.52	8.24
40	32.86	4.93	1.50	3.43	**8.24**
41	32.30	4.85	1.50	3.35	8.24
42	31.76	4.77	1.50	3.27	8.23

Storage (m^3)				
Overflow	Required	Surface	Sub-surface	Balance
0.00	8.24	33.75	0	0.00

overflows to: Out

Drainage Area	MH105			
Area (Ha)	0.74	Restricted Flow ICD_{Actual} (L/s)=	95.00	
C =	1.00	Restricted Flow $Q_{r\ for\ swm\ calc}$ (L/s)=	47.50	50% reduction if sub-surface storage considered

100-Year Ponding						100-Year +20% Ponding		
T_c Variable (min)	i_{100yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{100yr}A$ (L/s)	Q_r (L/s)	Q_p-Q_r (L/s)	Volume 100yr (m^3)	100YRQ_p 20% (L/s)	Qp - Qr (L/s)	Volume 100+20 (m^3)
25	103.85	213.49	47.50	165.99	248.98			
30	91.87	188.86	47.50	141.36	254.45			
35	82.58	169.77	47.50	122.27	**256.76**	203.72	156.22	**328.06**
40	75.15	154.48	47.50	106.98	256.76			
45	69.05	141.95	47.50	94.45	255.03			

Storage (m^3)					100+20		
Overflow	Required	Surface	Sub-surface	Balance	Overflow	Required	Balance
0.00	256.76	90.50	167.06	0.00	0.00	328.06	70.50
					convert to flow with peak Tc (L/s)		33.57

overflows to: Out/CBMH6

Drainage Area	MH105			
Area (Ha)	0.74			
C =	0.81	Restricted Flow Q_r (L/s)=	47.50	

2-Year Ponding					
T_c Variable (min)	i_{2yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{2yr}A$ (L/s)	Q_r (L/s)	Q_p-Q_r (L/s)	Volume 2yr (m^3)
12	69.89	116.39	47.50	68.89	49.60
13	66.93	111.45	47.50	63.95	49.88
14	64.23	106.96	47.50	59.46	**49.95**
15	61.77	102.86	47.50	55.36	49.82
16	59.50	99.09	47.50	51.59	49.52

Storage (m^3)				
Overflow	Required	Surface	Sub-surface	Balance
0.00	49.95	90.50	167.06	0.00

overflows to: Out/CBMH6

Drainage Area	CBMH6			
Area (Ha)	0.54	Restricted Flow ICD_{Actual} (L/s)=	91.00	
C =	1.00	Restricted Flow $Q_{r\ for\ swm\ calc}$ (L/s)=	45.50	50% reduction if sub-surface storage considered

100-Year Ponding						100-Year +20% Ponding		
T_c Variable (min)	i_{100yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{100yr}A$ (L/s)	Q_r (L/s)	Q_p-Q_r (L/s)	Volume 100yr (m^3)	100YRQ_p 20% (L/s)	Qp - Qr (L/s)	Volume 100+20 (m^3)
20	119.95	178.70	45.50	133.20	159.84			
25	103.85	154.71	45.50	109.21	163.82			
30	91.87	136.87	45.50	91.37	**164.46**	164.24	118.74	**213.73**
35	82.58	123.03	45.50	77.53	162.80			
40	75.15	111.95	45.50	66.45	159.48			

Storage (m^3)					100+20		
Overflow	Required	Surface	Sub-surface	Balance	Overflow	Required	Balance
0.00	164.46	39.21	126.52	0.00	0.00	213.73	48.00
					convert to flow with peak Tc (L/s)		26.67

overflows to: Out

Drainage Area	CBMH6			
Area (Ha)	0.54			
C =	0.80	Restricted Flow Q_r (L/s)=	45.50	

2-Year Ponding					
T_c Variable (min)	i_{2yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{2yr}A$ (L/s)	Q_r (L/s)	Q_p-Q_r (L/s)	Volume 2yr (m^3)
8	85.46	101.85	45.50	56.35	27.05
9	80.87	96.39	45.50	50.89	27.48
10	76.81	91.54	45.50	46.04	**27.62**
11	73.17	87.20	45.50	41.70	27.52
12	69.89	83.30	45.50	37.80	27.22

Storage (m^3)				
Overflow	Required	Surface	Sub-surface	Balance
0.00	27.62	39.21	126.52	0.00

overflows to: Out

Stormwater Management Summary Table

Drainage Area	ICD Restricted Flow (L/s)	100 Year Storage Required (m3)	2 Yr Storage Required (m3)	Storage Provided	
Bldg A-1 Roof	1.50	41.90	12.34	45.00	OK
Bldg A-2 Roof	1.50	55.63	16.74	56.25	OK
Bldg A-3 Roof	1.50	41.90	12.34	45.00	OK
Bldg C Roof	1.50	28.94	8.24	33.75	OK
Bldg D Roof	1.50	16.98	4.53	22.50	OK
Bldg E Roof	1.50	28.94	8.24	33.75	OK
MH105	95.00	256.76	49.95	257.56	OK
CBMH6	91.00	164.46	27.62	165.73	OK
TOTAL	**195.00**	**635.50**	**140.01**	**659.54**	

801 EAGLESON
RUNOFF COEFFICIENT CALCULATION SHEET

RESTRICTED

CB1	Area (m^2)	C
Softscape	284	0.20
Hardscape	1220	0.90
Total	1504	**0.77**

CB2	Area (m^2)	C
Softscape	34	0.20
Hardscape	1595	0.90
Total	1629	**0.89**

CBMH3	Area (m^2)	C
Softscape	21	0.20
Hardscape	1290	0.90
Total	1311	**0.89**

CB4	Area (m^2)	C
Softscape	66	0.20
Hardscape	1204	0.90
Total	1270	**0.86**

CB5	Area (m^2)	C
Softscape	66	0.20
Hardscape	2035	0.90
Total	2101	**0.88**

CB6	Area (m^2)	C
Softscape	53	0.20
Hardscape	1036	0.90
Total	1089	**0.87**

CBMH8	Area (m^2)	C
Softscape	139	0.20
Hardscape	48	0.90
Total	187	**0.38**

CB9	Area (m^2)	C
Softscape	124	0.20
Hardscape	1066	0.90
Total	1190	**0.83**

CBMH10	Area (m^2)	C
Softscape	167	0.20
Hardscape	0	0.90
Total	167	**0.20**

CB12	Area (m^2)	C
Softscape	12	0.20
Hardscape	621	0.90
Total	633	**0.89**

CBMH13	Area (m^2)	C
Softscape	257	0.20
Hardscape	891	0.90
Total	1148	**0.74**

ECB1	Area (m^2)	C
Softscape	51	0.20
Hardscape	43	0.90
Total	94	**0.52**

ECB2	Area (m^2)	C
Softscape	294	0.20
Hardscape	0	0.90
Total	294	**0.20**

ECB3	Area (m^2)	C
Softscape	137	0.20
Hardscape	0	0.90
Total	137	**0.20**

UNRESTRICTED

UNC 1 (BLDG E PATIO)	Area (m^2)	C
Softscape	94	0.20
Hardscape	77	0.90
Total	171	**0.52**

UNC 2 (EAST RET. WALL)	Area (m^2)	C
Softscape	51	0.20
Hardscape	0	0.90
Total	51	**0.20**

GROUPED AREAS

MH105	Area (m^2)	C
CB1	1504	0.77
CBMH8	187	0.38
ECB3	137	0.20
CBMH10	167	0.20
CB9	1190	0.83
CB4	1270	0.86
CB2	1629	0.89
CBMH3	1311	0.89
Total	7395	**0.81**

MH108	Area (m^2)	C
ECB2	294	0.20
CB12	633	0.89
ECB1	94	0.52
CBMH13	1148	0.74
CB5	2101	0.88
CB6	1089	0.87
Total	5359	**0.80**

ARCADIS IBI GROUP
500-333 Preston Street
Ottawa, Ontario K1S 5N4 Canada
ibigroup.com

PROJECT: 801 Eagleson RFP
DATE: 2025-08-29
FILE: 148792.6.04.04
REV #: 3
DESIGNED BY: SEL

UNDERGROUND STORAGE CALCULATIONS

Pipe Storage	*MH105*				
From	**To**	**Length**	**Diameter**	**X-sec Area**	**Volume**
CB1	CB7	17.73	300	0.071	1.25
CB7	CBMH8	19.71	300	0.071	1.39
CBMH8	CBMH10	35.92	300	0.071	2.54
ECB3	CBMH10	18.90	250	0.049	0.93
CBMH10	MH105	26.17	375	0.110	2.89
CB9	STM	7.07	250	0.049	0.35
CB4	CBMH3	18.02	250	0.049	0.88
CB2	CBMH3	17.22	250	0.049	0.85
CBMH3	MH105	10.86	375	0.110	1.20
CB4	STORAGE	2.90	300	0.071	0.20
STORAGE	MH105	4.38	300	0.071	0.31
				Total	12.79

Structure Storage		*MH105*				
	Base	**Top**	**Height**	**diameter**	**X-sec Area**	**Volume**
CB01	95.223	96.25	1.03	600	0.360	0.37
CB7	95.131	96.35	1.22	600	0.360	0.44
CBMH8	95.032	96.35	1.32	1200	1.131	1.49
ECB3	95.000	96.00	1.00	250	0.049	0.05
CBMH10	94.858	96.00	1.14	1200	1.131	1.29
CB9	95.010	96.20	1.19	600	0.360	0.43
CB4	94.999	96.15	1.15	600	0.360	0.41
CB2	95.308	96.25	0.94	600	0.360	0.34
CBMH3	94.793	96.20	1.41	1200	1.131	1.59
MH105	94.678	96.33	1.65	1200	1.131	1.87
EZ STORM STORAGE SYSTEM		(SEE SEPARATE DETAIL SHEET)				145.98
					Total	154.26

TOTAL	**MH105**	**167.06**

Pipe Storage	*CBMH6*				
From	**To**	**Length**	**Diameter**	**X-sec Area**	**Volume**
ECB1	CB13	18.59	250	0.049	0.91
CB13	MH108	35.20	300	0.090	3.17
MH108	CBMH6	4.86	300	0.090	0.44
CB5	CBMH6	17.35	300	0.090	1.56
ECB2	CB12	10.64	250	0.063	0.67
CB12	STORAGE	9.19	300	0.090	0.83
STORAGE	CBMH6	5.44	300	0.090	0.49
				Total	8.06

Structure Storage		*CBMH6*				
	Base	**Top**	**Height**	**diameter**	**X-sec Area**	**Volume**
ECB1	95.400	96.00	0.60	250	0.049	0.03
CB13	95.100	96.00	0.90	600	0.360	0.32
MH108	94.436	96.16	1.72	1200	1.131	1.95
CB5	94.600	96.10	1.50	600	0.360	0.54
ECB2	95.250	95.85	0.60	250	0.049	0.03
CB12	94.461	96.05	1.59	600	0.360	0.57
CBMH6	94.267	96.10	1.83	1200	1.131	2.07
EZ STORM STORAGE SYSTEM		(SEE SEPARATE DETAIL SHEET)				112.94
					Total	118.46

TOTAL	**CBMH6**	**126.52**

EZstorm system overview

Project details :

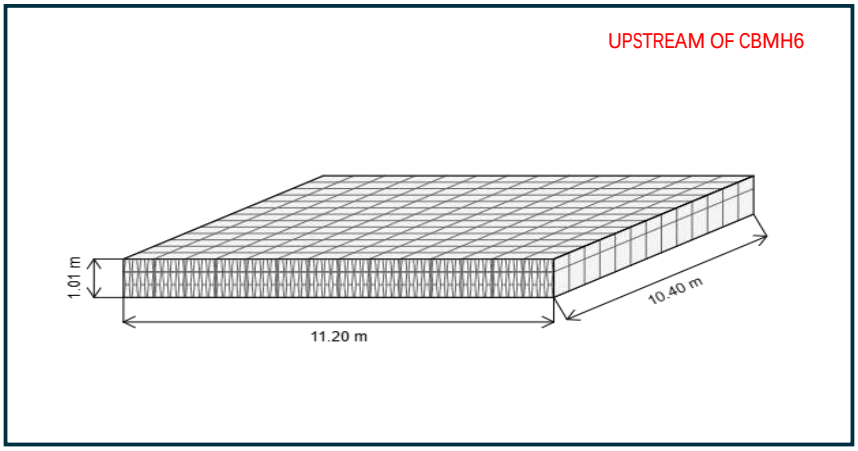
Project description :	Eagleson
Date :	7/8/2025
Location :	Ottawa, ON

Client details :

Contact:	
E-mail :	

EZstorm configuration	
EZstorm application	Retention / Detention
Load type	Light traffic
Height	1.01 m
Length	11.20 m
Width	10.40 m
EZstorm storage volume	112.94 m³
Total storage volume	112.94 m³

Fill materiel	
Fill materiel	3/4" granular fill / Sand
Storage in stone	No
Stone porosity	-
Stone above system	-
Perimeter stone	-
Stone below system	-
Storage in stone	-

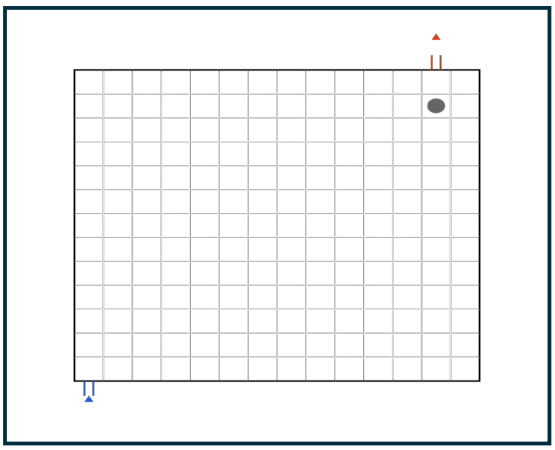


Summary

Total storage volume provided :	112.94 m³
EZstorm storage volume	112.94 m³
Storage in stone	-
Stone quantity (fill) required for this project :	55.86 m³

EZstorm system accessories

- Inlet
- Inlet with HDS
- Outlet
- Inspection port
- Pretreatment row
- EZaccess manhole



10.40 m

11.20 m

Material list

EZstorm material list	Qty
EZstorm half blocs	182
EZstorm lateral side grid	54
EZstorm lateral side grid (half blocs)	54
EZstorm cover plates	182
EZstorm access chimney (frame and cover included)	1
EZaccess (frame and cover included)	0
Geotextile surface area required	663.82
Geomembrane surface area required	304.25

EZstorm system overview

Project details :

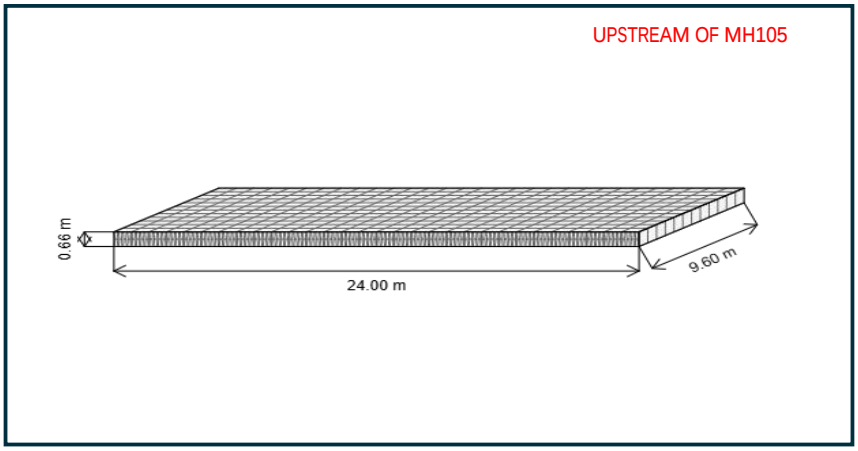
Project description :	Eagleson
Date :	7/8/2025
Location :	Ottawa, ON

Client details :

Contact:	
E-mail :	

EZstorm configuration	
EZstorm application	Retention / Detention
Load type	Light traffic
Height	0.66 m
Length	24.00 m
Width	9.60 m
EZstorm storage volume	145.98 m³
Total storage volume	145.98 m³

Fill materiel	
Fill materiel	3/4" granular fill / Sand
Storage in stone	No
Stone porosity	-
Stone above system	-
Perimeter stone	-
Stone below system	-
Storage in stone	-

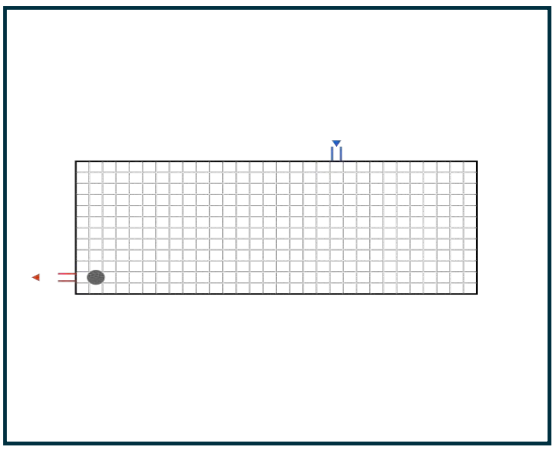


Summary

Total storage volume provided :	145.98 m³
EZstorm storage volume	145.98 m³
Storage in stone	-
Stone quantity (fill) required for this project :	102.94 m³

EZstorm system accessories

- Inlet
- Inlet with HDS
- Outlet
- Inspection port
- Pretreatment row
- EZaccess manhole



9.60 m

24.00 m

Material list

EZstorm material list	Qty
EZstorm half blocs	0
EZstorm lateral side grid	84
EZstorm access chimney (frame and cover included)	1
EZaccess (frame and cover included)	0
Geotextile surface area required	1212.36
Geomembrane surface area required	555.67

450 373-8262
info@nextinfras.com

WATTS®	Adjustable Accutrol Weir Tag: _____	Adjustable Flow Control for Roof Drains

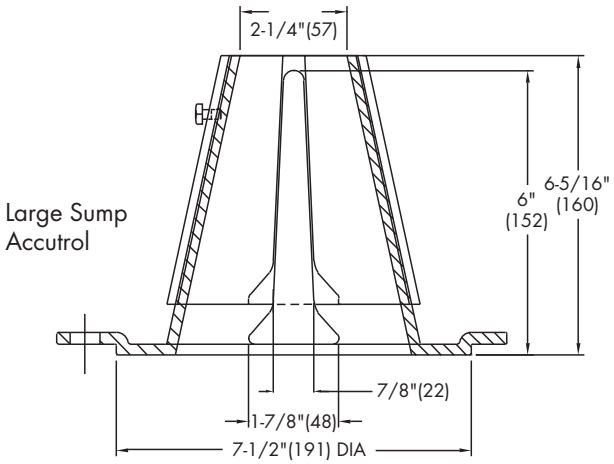
ADJUSTABLE ACCUTROL (for Large Sump Roof Drains only)

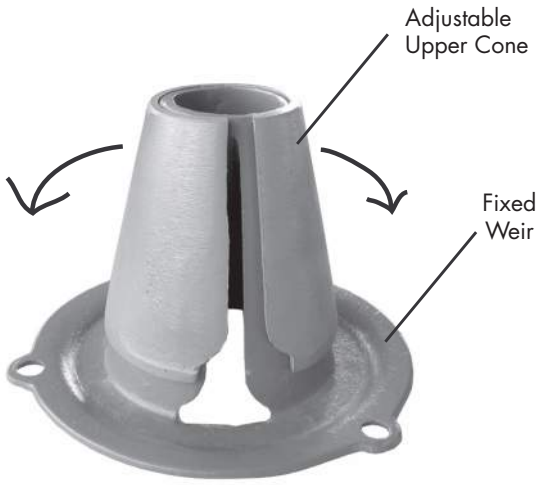
For more flexibility in controlling flow with heads deeper than 2", Watts Drainage offers the Adjustable Accutrol. The Adjustable Accutrol Weir is designed with a single parabolic opening that can be covered to restrict flow above 2" of head to less than 5 gpm per inch, up to 6" of head. To adjust the flow rate for depths over 2" of head, set the slot in the adjustable upper cone according to the flow rate required. Refer to Table 1 below.
Note: Flow rates are directly proportional to the amount of weir opening that is exposed.

EXAMPLE:

For example, if the adjustable upper cone is set to cover 1/2 of the weir opening, flow rates above 2"of head will be restricted to 2-1/2 gpm per inch of head.

Therefore, at 3"of head, the flow rate through the Accutrol Weir that has 1/2 the slot exposed will be:
[5 gpm (per inch of head) x 2 inches of head] + 2-1/2 gpm (for the third inch of head) = 12-1/2 gpm.





1/2 Weir Opening Exposed Shown Above

TABLE 1. Adjustable Accutrol Flow Rate Settings

Weir Opening Exposed	1"	2"	3"	4"	5"	6"
	Flow Rate (gallons per minute)					
Fully Exposed	5	10	15	20	25	30
3/4	5	10	13.75	17.5	21.25	25
1/2	5	10	12.5	15	17.5	20
1/4	5	10	11.25	12.5	13.75	15
Closed	5	5	5	5	5	5

Job Name _____ Contractor _____

Job Location _____ Contractor's P.O. No. _____

Engineer _____ Representative _____

Watts product specifications in U.S. customary units and metric are approximate and are provided for reference only. For precise measurements, please contact Watts Technical Service. Watts reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without incurring any obligation to make such changes and modifications on Watts products previously or subsequently sold.

WATTS®
A Watts Water Technologies Company

USA: Tel: (800) 338-2581 • Fax: (828) 248-3929 • Watts.com
Canada: Tel: (905) 332-4090 • Fax: (905) 332-7068 • Watts.ca
Latin America: Tel: (52) 81-1001-8600 • Fax: (52) 81-8000-7091 • Watts.com

© 2016 Watts

ARCADIS PROFESSIONAL SERVICES (CANADA) INC.
500-333 Preston Street
Ottawa, Ontario K1S 5N4 Canada
arcadis.com

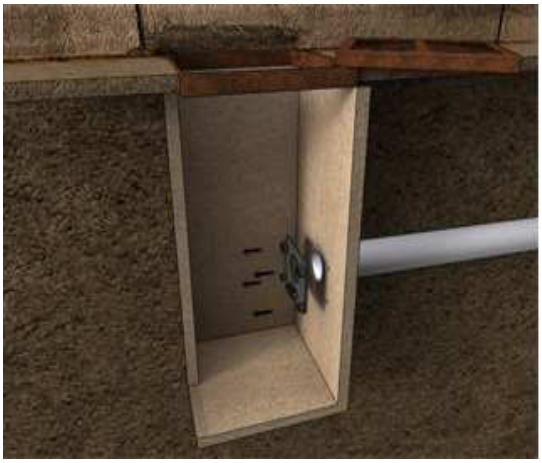
ORIFICE SIZING
801 Eagleson | Urbandale Corporation
123456-6.0 | Rev #2 | 2025-07-09
Prepared By: MP | Checked By: SL

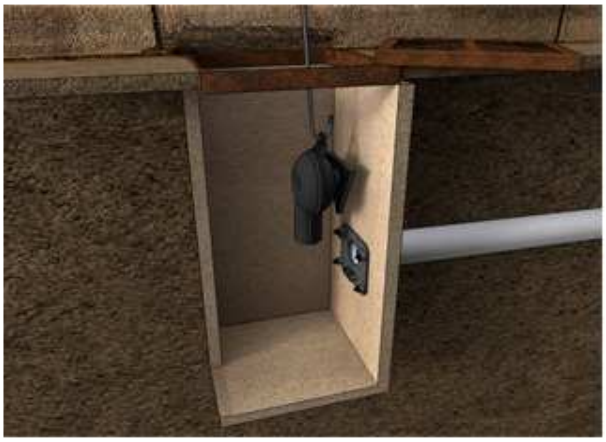
Orifice coefficients	
Cv =	0.60

	Invert	Diameter	Centre ICD	Max. Pond Elevation	Hydraulic Slope	Target Flow	Theoretical Orifice	Theoretical Actual Flow	Recommended Orifice	Recommended Actual Flow
	(m)	(mm)	(m)	(m)	(m)	(l/s)	(m)	(l/s)	(m)	(l/s)
MH105	94.678	375	94.866	96.350	1.485	95.00	0.1933	95.00	0.193	95.00
CBMH6	94.342	375	94.530	96.200	1.671	91.00	0.1837	91.00	0.184	91.00
						186.0				**186.0**

Square CB Installation Notes:

1. Materials and tooling verification:
   - Tooling: impact drill, 3/8'' concrete bit, torque wrench for 9/16''nut, hand hammer, level, and marker.
   - Material: (4) concrete anchor 3/8x3-1/2, (4) washers, (4) nuts
2. Use the mounting wall plate to locate and mark the hole (4) pattern on the catch basin wall. You should use a level to ensure that the plate is at the horizontal.
3. Use an impact drill with a 3/8'' concrete bit to make the four holes at a minimum of 1-1/2'' depth up to 2-1/2''. Clean the concrete dust from the holes.
4. Install the anchors (4) in the holes by using a hammer. Put the nuts on the top of the anchors to protect the threads when you will hit the anchors with the hammer. Remove the nuts on the ends of the anchors
5. Install the wall mounting plate on the anchors and screw the nut in place with a maximum torque of 40 N.m (30 lbf-ft). There should be no gap between the wall mounting plate and the catch basin wall.
6. From ground above using a reach bar, lower the device by hooking the end of the reach bar to the handle of the LMF device. Align the triangular plate portion into the mounting wall plate. Push down the device to be sure it has centered in to the wall mounting plate and has created a seal.

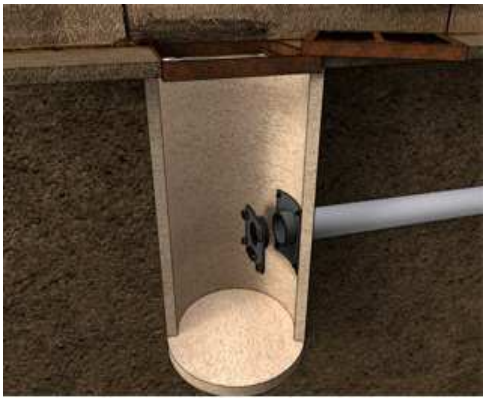




IPEX

Round CB Installation Notes: (Refer to square install notes above for steps 1 , 3, & 4)

2. Use spigot catch basin wall plate to locate and mark the hole (4) pattern on the catch basin wall. You should use a level to ensure that the plate is at the horizontal.
5. Install the CB spigot wall plate on the anchors and screw the 4 nuts in place with a maximum torque of 40 N.m (30 lb-ft). There should be no gap between the CB spigot wall plate and the catch basin wall.
6. Apply solvent cement on the hub of the universal mounting plate and the spigot of the spigot CB wall plate. Slide the hub over the spigot. Make sure the universal mounting plate is at the horizontal and its hub is completely inserted onto the spigot. Normally, the corners of the universal mounting plate hub adapter should touch the catch basin wall.
7. From ground above using a reach bar, lower the ICD device by hooking the end of the reach bar to the handle of the ICD device. Align the triangular plate portion into the mounting wall plate. Push down the device to be sure it has centered into the mounting plate and has created a seal.



CAUTION/WARNING/DISCLAIM:

- Verify that the inlet(s) pipe(s) is not protruding into the catch basin. If it is, cut it back so that the inlet pipe is flush with the catch basin wall.
- Any required cement in the installation must be approved for PVC.
- The solvent cement should not be used below 0°C (32°F) or in a high humidity environment. Please refer to the IPEX solvent cement guide to confirm required curing times or attend the IPEX **Online Solvent Cement Training Course**.
- Call your IPEX representative for more information or if you have any questions about our products.

IPEX

IPEX TEMPEST Inlet Control Devices Technical Specification

General

Inlet control devices (ICD's) are designed to provide flow control at a specified rate for a given water head level and also provide odour and floatable control where specified. All ICD's will be IPEX Tempest or approved equal.

All devices shall be removable from a universal mounting plate. An operator from street level using only a T-bar with a hook will be able to retrieve the device while leaving the universal mounting plate secured to the catch basin wall face. The removal of the TEMPEST devices listed above must not require any unbolting or special manipulation or any special tools.

High Flow (HF) Sump devices will consist of a removable threaded cap which can be accessible from street level with out entry into the catchbasin (CB). The removal of the threaded cap shall not require any special tools other than the operator's hand.

ICD's must have no moving parts.

Materials

ICD's are to be manufactured from Polyvinyl Chloride (PVC) or Polyurethane material, designed to be durable enough to withstand multiple freeze-thaw cycles and exposure to harsh elements.

The inner ring seal will be manufactured using a Buna or Nitrile material with hardness between Duro 50 and Duro 70.

The wall seal is to be comprised of a 3/8" thick Neoprene Closed Cell Sponge gasket which is attached to the back of the wall plate.

All hardware will be made from 304 stainless steel.

Dimensioning

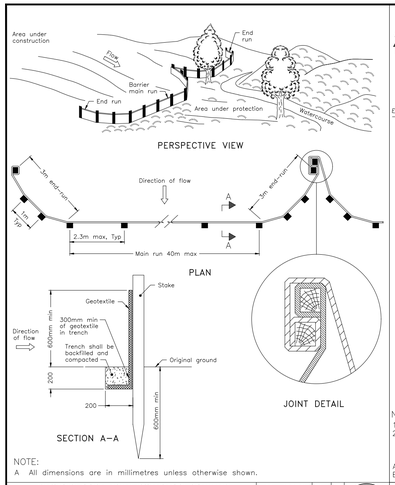
The Low Medium Flow (LMF), High Flow (HF) and the High Flow (HF) Sump shall allow for a minimum outlet pipe diameter of 200mm with a 600mm deep Catch Basin sump.

Installation

Contractor shall be responsible for securing, supporting and connecting the ICD's to the existing influent pipe and catchbasin/manhole structure as specified and designed by the Engineer.

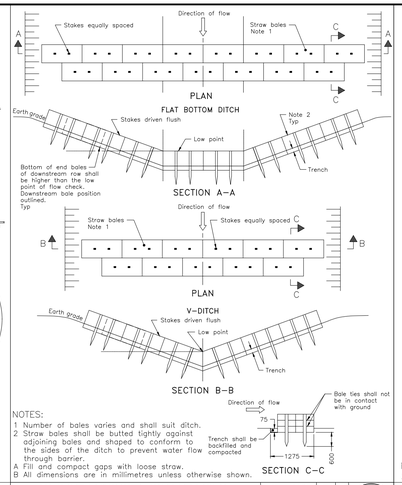
IPEX

Appendix E



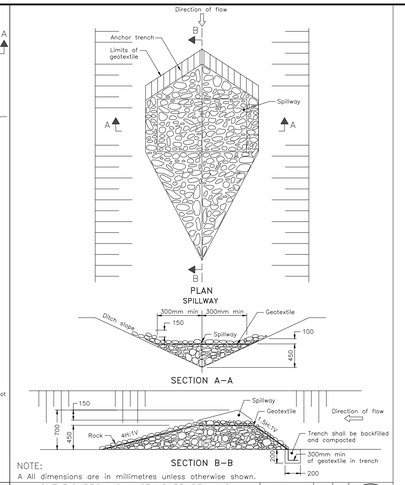
NOTE:
A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2021	Rev 3
LIGHT–DUTY SILT FENCE BARRIER	OPSD 219.110	



NOTES:
1 Number of bales varies and shall suit ditch.
2 Straw bales shall be butted tightly against adjoining bales and shaped to conform to the sides of the ditch to prevent water flow through barrier.
A Fill and compact gaps with loose straw.
B All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2021	Rev 3
STRAW BALE FLOW CHECK DAM	OPSD 219.180	



NOTE:
A All dimensions are in millimetres unless otherwise shown.

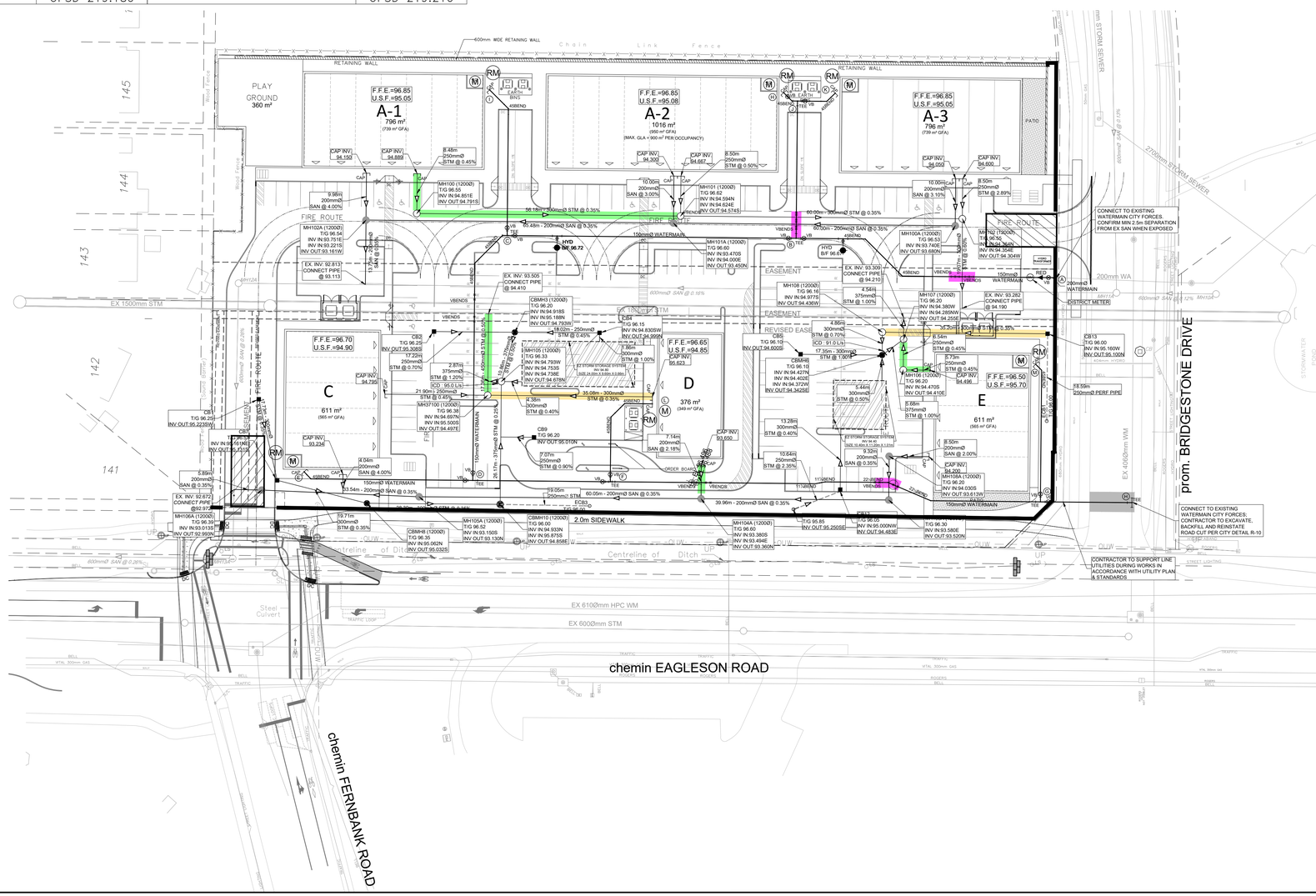
ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2022	Rev 3
TEMPORARY ROCK FLOW CHECK DAM V–DITCH	OPSD 219.210	

NOTES:

1. THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES, TO PROVIDE FOR PROTECTION OF THE AREA DRAINAGE SYSTEM AND THE RECEIVING WATERCOURSE, DURING CONSTRUCTION ACTIVITIES. THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY.
2. SILT FENCE TO BE ERECTED PRIOR TO EARTH WORKS BEING COMMENCED. SILT FENCE TO BE MAINTAINED UNTIL VEGETATION IS ESTABLISHED OR UNTIL START OF SUBSEQUENT PHASE.
3. STRAW BALE SEDIMENT TRAPS TO BE CONSTRUCTED IN EXISTING ROAD SIDE DITCHES. TRAPS TO REMAIN AND BE MAINTAINED UNTIL VEGETATION IS ESTABLISHED.
4. SILT SACK TO BE PLACED AND MAINTAINED UNDER COVER OF ALL CATCHBASINS. GEOTEXTILE SILT SACK IN STREET CBs TO REMAIN UNTIL ALL CURBS ARE CONSTRUCTED. GEOTEXTILE FABRIC IN RYCBs TO REMAIN UNTIL VEGETATION IS ESTABLISHED. ALL CATCHBASINS TO BE REGULARLY INSPECTED AND CLEANED, AS NECESSARY, UNTIL SOD AND CURBS ARE CONSTRUCTED.
5. CONTRACTOR TO PROVIDE DETAILS ON LOCATION(S) AND DESIGN OF DEWATERING TRAP(S) PRIOR TO COMMENCING WORK. CONTRACTOR ALSO RESPONSIBLE FOR MAINTAINING TRAP(S) AND ADJUSTING SIZE(S) IF DEEMED REQUIRED BY THE ENGINEER DURING CONSTRUCTION.
6. CONTRACTOR TO PROTECT EXISTING CATCHBASINS WITH FILTER CLOTH UNDER THE COVERS TO TRAP SEDIMENTATION. REFER TO IDENTIFIED STRUCTURES.
7. WORKS NOTED ABOVE ARE TO BE INSTALLED, INSPECTED, MAINTAINED AND ULTIMATELY REMOVED BY SERVICING CONTRACTOR.
8. THIS IS A "LIVING DOCUMENT" AND MAY BE MODIFIED IN THE EVENT THE PROPOSED CONTROL MEASURES ARE INSUFFICIENT.

LEGEND:

- LIGHT DUTY SILT FENCE AS PER OPSD-219.110
- SNOW FENCE
- STRAW BALE CHECK DAM AS PER OPSD-219.180
- ROCK CHECK DAM AS PER OPSD-219.210
- SILT SACK PLACED UNDER EXISTING CB COVER
- TEMPORARY MUD MAT 0.15m THICK 50mm CLEAR STONE ON NON WOVEN FILTER CLOTH (15.0 × 7.0)



CLIENT

URBANDALE CORPORATION

COPYRIGHT
This drawing has been prepared solely for the intended use, thus any reproduction or distribution for any purpose other than authorized by Arcadis is forbidden. Written dimensions shall have precedence over scaled dimensions. Contractors shall verify and be responsible for all dimensions and conditions on the job, and Arcadis shall be informed of any variations from the dimensions and conditions shown on the drawing. Shop drawings shall be submitted to Arcadis for general conformance before proceeding with fabrication.

Arcadis Professional Services (Canada) Inc.
formerly IBI Group Professional Services (Canada) Inc.

ISSUES

No.	DESCRIPTION	DATE
1	ISSUED FOR REVIEW	2024-12-19
2	CITY SUBMISSION No. 1	2025-01-22
3	CITY SUBMISSION No. 2	2025-07-09
4	CITY SUBMISSION No. 3	2025-08-29

KEY PLAN

CONSULTANTS

1:500 0 5 15 25m

SEAL

LICENSED PROFESSIONAL ENGINEER
S. E. LABADIE
100214983
2025-08-29
PROVINCE OF ONTARIO

PRIME CONSULTANT

ARCADIS

333 Preston Street - Suite 500
Ottawa ON K1S 5N4 Canada
tel 613 225 1311
www.arcadis.com

PROJECT

COMMERCIAL SITE

801 EAGLESON ROAD

PROJECT NO: 148792	
DRAWN BY: **D.D.**	CHECKED BY: **M.P.**
PROJECT MGR: **T.R.B.**	APPROVED BY: **S.E.L.**

SHEET TITLE

SEDIMENTATION AND EROSION CONTROL PLAN

SHEET NUMBER	ISSUE
C-900	4

SCALE CHECK 1in 10mm

CITY FILE No. D07-12-25-0014

CITY PLAN No.19247

File Location: C:\DARoot\Jobs\8a93e8a7049d41e5b7ebd152ce9417dedak\files\b.cab1b187-9819-4390-840e-5915439107\2\Project Files\7.03_Design\04-Civil\Sheets\C-900_SEDIMENTATION EROSION CONTROL PLAN.dwg Last Saved: August 28, 2025, by dorecd5754 Plotted: Thursday, August 28, 2025 4:08:39 PM by acessuser

GENERAL LEGEND

Symbol	Description
	LIMIT OF CONSTRUCTION
	PHASING LINE
	BARRIER CURB
	MOUNTABLE CURB
	DEPRESSED BARRIER CURB
CONCRETE SIDEWALK	CONCRETE SIDEWALK
	TACTILE WALKING SURFACE INDICATOR
ASPHALT SIDEWALK	ASPHALT SIDEWALK / PATHWAY
BUS	BUS STOP CONCRETE / ASPHALT

SERVICING LEGEND

Symbol	Description
MH118A	SANITARY MANHOLE
200mmØ SAN	SANITARY SEWER
MH109 MH118	STORM MANHOLE
825mmØ STM	STORM SEWER - LESS THAN 900Ø
900mmØ STM	STORM SEWER - 900Ø AND GREATER
200Ø WATERMAIN	WATERMAIN
CB100 T/G 104.10	STREET CATCHBASIN C/W TOP OF GRATE
CICB101 G/G 104.25	CURB INLET CATCHBASIN C/W GUTTER GRADE
DCB100 T/G 104.10	DOUBLE CATCHBASIN C/W TOP OF GRATE
DCICB101 G/G 104.25	DOUBLE CURB INLET CATCHBASIN C/W GUTTER GRADE
DI101 T/G 103.59	DITCH INLET MANHOLE C/W TOP OF GRATE
CBMH101 T/G 103.59	CATCHBASIN MANHOLE C/W TOP OF GRATE
RYCB T/G 104.35	REAR YARD CATCHBASIN IN ROAD CONNECTING STRUCTURE C/W SOLID GRATE
T/G 104.35 INV 103.35	REAR YARD "TEE" CATCHBASIN (300Ø) C/W TOP OF GRATE AND INVERT OUT
T/G 104.50 INV 103.50	REAR YARD "END" CATCHBASIN (300Ø) C/W TOP OF GRATE AND INVERT OUT
T/G 104.35 INV 103.35	REAR YARD "CUSTOM ANGLED " CATCHBASIN (450Ø) C/W TOP OF GRATE AND INVERT OUT
T/G 104.35 INV 103.35	REAR YARD "THREE WAY" CATCHBASIN (450Ø) C/W TOP OF GRATE AND INVERT OUT
	PERFORATED REAR YARD SUBDRAIN
300mmØ CSP	CSP CULVERT C/W DIAMETER
VB	VALVE AND VALVE BOX
V&VC	VALVE AND VALVE CHAMBER
DM	DISTRICT METER
	PARK VALVE CHAMBER C/W SERVICE POST
HYD 104.35	FIRE HYDRANT C/W BOTTOM OF FLANGE ELEVATION
200Ø WM RED 150Ø WM	WATERMAIN REDUCER
2 VBENDS	VERTICAL BEND LOCATION
	SIAMESE CONNECTION (IF REQUIRED)
M	METER (IF REQUIRED)
RM	REMOTE METER (IF REQUIRED)
A	WATERMAIN IDENTIFICATION (IF REQUIRED)
1	PIPE CROSSING IDENTIFICATION (IF REQUIRED)
	SINGLE SERVICE LOCATION
	DOUBLE SERVICE LOCATION
BH 12 102.00	INFERRED REFUSAL (SEE GEOTECHNICAL REPORT)
HGL 101.79	100 YEAR STORM HYDRAULIC GRADE LINE AT MANHOLE
USF 101.79	UNDERSIDE OF FOOTING ELEVATION
	CLAY SEAL IN SEWER / WATERMAIN TRENCH

TOPO - SURVEY LEGEND

Symbol	Description
MH	- MANHOLE
	- WATER VALVE, VALVE CHAMBER, FIRE HYDRANT
LS	- LAMP STANDARD
UP	- UTILITY POLE
	- ANCHOR
TL	- TRAFFIC LIGHT
	- SIGN
R	- ROGERS PEDESTAL
B	- BELL PEDESTAL
	- TRAFFIC HANDHOLE
----OUW----	- OVERHEAD UTILITY WIRES
HYDRO	- UNDERGROUND HYDRO
BELL	- UNDERGROUND BELL
ROGERS	- UNDERGROUND ROGERS
TRAFFIC	- UNDERGROUND TRAFFIC
STREET LIGHTING	- UNDERGROUND STREET LIGHT
50mm GAS	- GAS MAIN
	- CURB
×95.62 ×95.18 ×95.73 Pad	- EXISTING GROUND SPOT ELEVATION

NOTES :

1. ALL MATERIALS AND CONSTRUCTION IS TO BE IN ACCORDANCE WITH THE CURRENT CITY OF OTTAWA STANDARD DRAWINGS & SPECIFICATIONS OR OPSD/OPSS IF CITY DRAWINGS AND SPECIFICATIONS DO NOT APPLY.
2. THE POSITION OF UNDERGROUND AND ABOVE GROUND SERVICE, UTILITIES AND STRUCTURES ARE NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH SERVICE, UTILITIES AND STRUCTURES IS NOT GUARANTEED. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE EXACT LOCATION, SIZE, MATERIAL AND ELEVATION OF ALL EXISTING SERVICES AND UTILITIES PRIOR TO CONSTRUCTION.
3. THE CONTRACTOR SHALL REPORT ALL CONFLICTS, DISCOVERIES OF ERROR AND DISCREPANCIES TO THE ENGINEER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT AND ASSUME RESPONSIBILITY FOR ALL UTILITIES WHETHER OR NOT SHOW ON THESE DRAWINGS.
5. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT ALL LANDS BEYOND THE SITE LIMITS. ANY AREAS BEYOND THE SITE LIMITS, WHICH ARE DISTURBED DURING CONSTRUCTION, SHALL BE REPAIRED AND RESTORED TO ORIGINAL CONDITION OR BETTER, TO THE SATISFACTION OF THE ADJACENT LAND OWNER, THE OWNER, THE OWNERS REPRESENTATIVES AND/OR THE AUTHORITY HAVING JURISDICTION AT THE EXPENSE OF THE CONTRACTOR.
6. WHERE NECESSARY, THE CONTRACTOR SHALL IMPLEMENT A TRAFFIC MANAGEMENT PLAN TO THE SATISFACTION OF THE CITY OF OTTAWA. ALL CONSTRUCTION SIGNAGE MUST CONFORM TO THE LATEST VERSION OF THE M.T.O. MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. ALL TEMPORARY TRAFFIC CONTROL MEASURES MUST BE REMOVED UPON THE COMPLETION OF THE WORKS.
7. SHOULD ANY BURIED ARCHAEOLOGICAL REMAINS BE FOUND ON THE PROPERTY DURING CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL NOTIFY THE OWNER TO CONTACT THE HERITAGE OPERATIONS UNIT OF THE ONTARIO MINISTRY OF CULTURE MUST BE NOTIFIED IMMEDIATE, AND WORK WITHIN THE AREA SHALL BE CEASED UNTIL FURTHER NOTICE.
8. FOR GEOTECHNICAL INFORMATION REFER TO GEOTECHNICAL REPORT **PG2574-1 DATED JUNE, 2025** PREPARED BY **PREPARED BY PATERSON.**

Table 3 - Recommended Pavement Structure - Car Only Parking Areas	
Thickness (mm)	Material Description
50	**Wear Course** – HL-3 or Superpave 12.5 Asphaltic Concrete
150	**BASE** - OPSS Granular A Crushed Stone
300	**SUBBASE** - OPSS Granular B Type II
SUBGRADE - Either fill, in situ soil or OPSS Granular B Type I or II material placed over in situ soil or fill.	

Table 4 - Recommended Pavement Structure - Access Lanes and Heavy Truck Parking/Loading Areas	
Thickness (mm)	Material Description
40	**Wear Course** – HL-3 or Superpave 12.5 Asphaltic Concrete
50	**Binder Course** – HL-8 or Superpave 19.0 Asphaltic Concrete
150	**BASE** - OPSS Granular A Crushed Stone
450	**SUBBASE** - OPSS Granular B Type II
SUBGRADE - Either fill, in situ soil or OPSS Granular B Type I or II material placed over in situ soil or fill.	

ADDITIONALLY, PER PATERSON MEMO 02 REV 1 DATED MARCH 24, 2022 FOR AREA OVER EXISTING SHALLOW TRUNK SEWER

Table 1 – Recommended Flexible Pavement Structure – Access Roadways and Truck Traffic Areas	
Thickness (mm)	Material Description
40	**Wear Course** – HL-3 or Superpave 12.5 Asphaltic Concrete
50	**Wear Course** – HL-8 or Superpave 19 Asphaltic Concrete
150	**BASE** – OPSS Granular A Crushed Stone
460	**SUBBASE** – OPSS Granular B Type II
100	**SM Rigid Insulation** (or equivalent)
SUBGRADE – Either fill, in-situ soil, or OPSS Granular B Type I or II material placed over in-situ soil or raft slab.	

9. FOR GEODETIC **BENCHMARK** AND GEOMETRIC LAYOUT OF STREET AND LOTS, REFER TO TOPOGRAPHICAL SURVEY AND PLAN OF SUBDIVISION PREPARED BY **AOV** BENCHMARK BASED ON CAN--NET VIRTUAL REFERENCE SYSTEM NETWORK.
10. FOR SITE PLAN INFORMATION, REFER TO SITE PLAN PREPARED BY **DL Architects Inc**.
11. THESE DRAWINGS ARE NOT TO BE SCALED OR USED FOR LAYOUT PURPOSES
12. ROADWAY SECTIONS REQUIRING GRADE RAISE TO PROPOSED SUB GRADE LEVEL TO BE FILLED WITH ACCEPTABLE NATIVE EARTH BORROW OR IMPORTED OPSS SELECTED SUBGRADE MATERIAL IF NATIVE MATERIAL IS DEFICIENT AS PER RECOMMENDATION OF GEOTECHNICAL ENGINEER.
13. IN AREAS WHERE EXISTING GROUND IS BELOW THE PROPOSED ELEVATION OF SEWER AND WATERMAINS, GRADE RAISING AND FILLING IS TO BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT. AS PER CITY GUIDELINES ALL WATERMAINS IN FILL AREAS ARE TO BE TIED WITH RESTRAINING JOINTS AND THRUST BLOCKS.
14. THE CONTRACTOR SHALL IMPLEMENT THE EROSION AND SEDIMENT CONTROL PLAN PRIOR TO THE COMMENCEMENT OF ANY SITE CONSTRUCTION. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED TO THE SATISFACTION OF THE ENGINEER, OR ANY REGULATORY AGENCY. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED UNTIL VEGETATION IS ESTABLISHED OR UNTIL THE START OF A SUBSEQUENT PHASE.
15. CONTRACTORS SHALL BE RESPONSIBLE FOR KEEPING CLEAN ALL ROADS WHICH BECOME COVERED IN DUST, DEBRIS AND/OR MUD AS A RESULT OF ITS CONSTRUCTION OPERATIONS.
16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ADDITIONAL BEDDING OR ADDITIONAL STRENGTH PIPE SHOULD THE MAXIMUM OPSD TRENCH WIDTH BE EXCEEDED.
17. ALL PIPE, CULVERTS, STRUCTURES REFER TO NOMINAL INSIDE DIMENSIONS.
18. SHOULD CLAY SEALS BE REQUIRED, THEY SHALL BE INSTALLED AS PER THE RECOMMENDATIONS WITHIN THE GEOTECHNICAL REPORT.
19. UNLESS SPECIFICALLY NOTED OTHERWISE, PIPE MATERIALS SHALL BE AS FOLLOWS;
    -WATERMAINS TO BE PVC DR18
    -SANITARY SEWER TO BE PVC DR35
    -PERFORATED STORM SEWERS IN REAR YARDS AND LANDSCAPE AREAS TO BE HDPE
    -STORM SEWERS 375mm DIAMETER AND LESS TO BE PVC DR35
    -STORM SEWERS 450mm DIAMETER AND GREATER TO BE CONCRETE, CLASS AS PER OPSD 807.010 OR 807.030, OR HIGHER
    FOR SHALLOW SEWERS, REFER TO CITY STANDARD S35.
20. ALL CONNECTIONS TO EXISTING WATERMAINS ARE TO BE COMPLETED BY CITY FORCES. CONTRACTOR IS TO EXCAVATE, BACKFILL, COMPACT AND REINSTATE.
21. ANY WATERMAIN WITH LESS THAN 2.4m AND ANY SEWER WITH LESS THAN 2.0m DEPTH OF COVER REQUIRES THERMAL INSULATION AS PER CITY OF OTTAWA STANDARD W22 OR AS APPROVED BY THE ENGINEER. **SEE PATERSON MEMO 01 DATED SEPT 2, 2018.**
22. ALL FIRE HYDRANTS AS PER CITY STANDARD W19, c/w 150mmØ LEAD UNLESS OTHERWISE SPECIFIED.
23. ALL STUBBED SEWERS SHALL HAVE PRE-MANUFACTURED CAPS INSTALLED.
24. ALL CATCHBASINS SHALL HAVE A 600mm SUMP. ALL CATCHBASIN MANHOLES, AND ALL STORM MANHOLES WITH OUTLETTING PIPE SIZES LESS THAN 900mm, SHALL HAVE A 300mm SUMP.
25. ALL SANITARY MANHOLES IN PONDING AREAS SHALL BE EQUIPPED WITH A WATERTIGHT COVER.
26. ALL LEADS FOR STREET CATCHBASIN'S AND CURB INLET CATCHBASIN'S CONNECTED TO MAIN SHALL BE 200mmØ PVC DR35 @ MIN 2% SLOPE UNLESS NOTED OTHERWISE. ALL LEADS FOR RYCB'S CONNECTED TO MAIN SHALL BE 200mmØ PVC DR35 @ MIN 1% SLOPE UNLESS NOTED OTHERWISE.
27. UNLESS SPECIFICALLY NOTED OTHERWISE, ALL STREET CATCHBASINS SHALL BE INSTALLED WITH TWO - 3.0m MINIMUM SUBDRAINS INSTALLED LONGITUDINALLY, PARALLEL WITH THE CURB. ALL CATCHBASINS IN ASPHALT AREAS, NOT ADJACENT TO A CURB, SHALL BE INSTALLED WITH FOUR - 3.0m MINIMUM SUBDRAINS INSTALLED ORTHOGONALLY.
28. INLET CONTROL DEVICES SHALL BE INSTALLED PRIOR TO COMPLETING THE ROAD BASE (GRANULAR A).
29. ALL SEWER SERVICE LATERALS WITH MAINLINE CONNECTIONS DEEPER THAN 5.0m REQUIRE A CONTROLLED SETTLEMENT JOINT.
30. EACH BUILDING SHALL BE EQUIPPED WITH A SANITARY AND STORM SEWER BACKWATER VALVE AND CLEAN-OUT ON ITS PRIMARY SERVICE, IF REQUIRED BY ONTARIO BUILDING CODE REQUIREMENTS (BY OTHERS).
31. THE SUBGRADE OF ALL STRUCTURES, PIPE, ROADS, SIDEWALKS, WALKWAYS, AND BUILDINGS SHALL BE INSPECTED BY THE GEOTECHNICAL ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION.
32. TOP COURSE ASPHALT SHALL NOT BE PLACED UNTIL THE FINAL CCTV INSPECTION AND NECESSARY REPAIRS HAVE BEEN COMPLETED TO THE SATISFACTION OF THE ENGINEER AND THE CITY OF OTTAWA.
33. ALL RETAINING WALLS GREATER THAN 1.0m IN HEIGHT SHALL BE DESIGNED BY A QUALIFIED STRUCTURAL ENGINEER.
34. ALL RETAINING WALLS GREATER THAN 0.6m IN HEIGHT REQUIRE A GUARD. ANY GUARD ON A RETAINING WALL GREATER THAN 1.0m IN HEIGHT SHALL BE DESIGNED BY THE QUALIFIED STRUCTURAL ENGINEER RESPONSIBLE FOR THE WALL DESIGN.
35. UPON COMPLETION OF THE RETAINING WALL, THE CONTRACTOR SHALL REQUEST A CONFORMANCE CERTIFICATE FROM THE QUALIFIED ENGINEER RESPONSIBLE FOR THE WALL DESIGN.
36. PRESSURE REDUCING VALVES WILL BE REQUIRED FOR ALL BUILDINGS (BY OTHERS)
37. OFFSET BETWEEN THE EXISTING WATERMAIN STUB (A) AND EXISTING SANITARY SEWER WILL BE CONFIRMED AT THE TIME OF CONSTRUCTION. IF THE DISTANCE MEASURED FROM BARREL TO BARREL IS LESS THAN 2.5M, THE EXISTING WATERMAIN STUB IS TO BE MOVED TO RESPECT THIS CLEARANCE

CLIENT

URBANDALE CORPORATION

COPYRIGHT

This drawing has been prepared solely for the intended use, thus any reproduction or distribution for any purpose other than authorized by Arcadis is forbidden. Written dimensions shall have precedence over scaled dimensions. Contractors shall verify and be responsible for all dimensions and conditions on the job, and Arcadis shall be informed of any variations from the dimensions and conditions shown on the drawing. Shop drawings shall be submitted to Arcadis for general conformance before proceeding with fabrication.

Arcadis Professional Services (Canada) Inc.
formerly IBI Group Professional Services (Canada) Inc.

ISSUES

No.	DESCRIPTION	DATE
1	ISSUED FOR REVIEW	2024-12-19
2	CITY SUBMISSION No. 1	2025-01-22
3	CITY SUBMISSION No. 2	2025-07-09
4	CITY SUBMISSION No. 3	2025-08-29

KEY PLAN

CONSULTANTS

SEAL

LICENSED PROFESSIONAL ENGINEER
S. E. LABADIE
100214983
2025-08-29
PROVINCE OF ONTARIO

ARCADIS
333 Preston Street - Suite 500
Ottawa ON K1S 5N4 Canada
tel 613 225 1311
www.arcadis.com

PROJECT
COMMERCIAL SITE
801 EAGLESON ROAD

PROJECT NO: 148792

DRAWN BY: **D.D.** CHECKED BY: **M.P.**

PROJECT MGR: **T.R.B.** APPROVED BY: **S.E.L.**

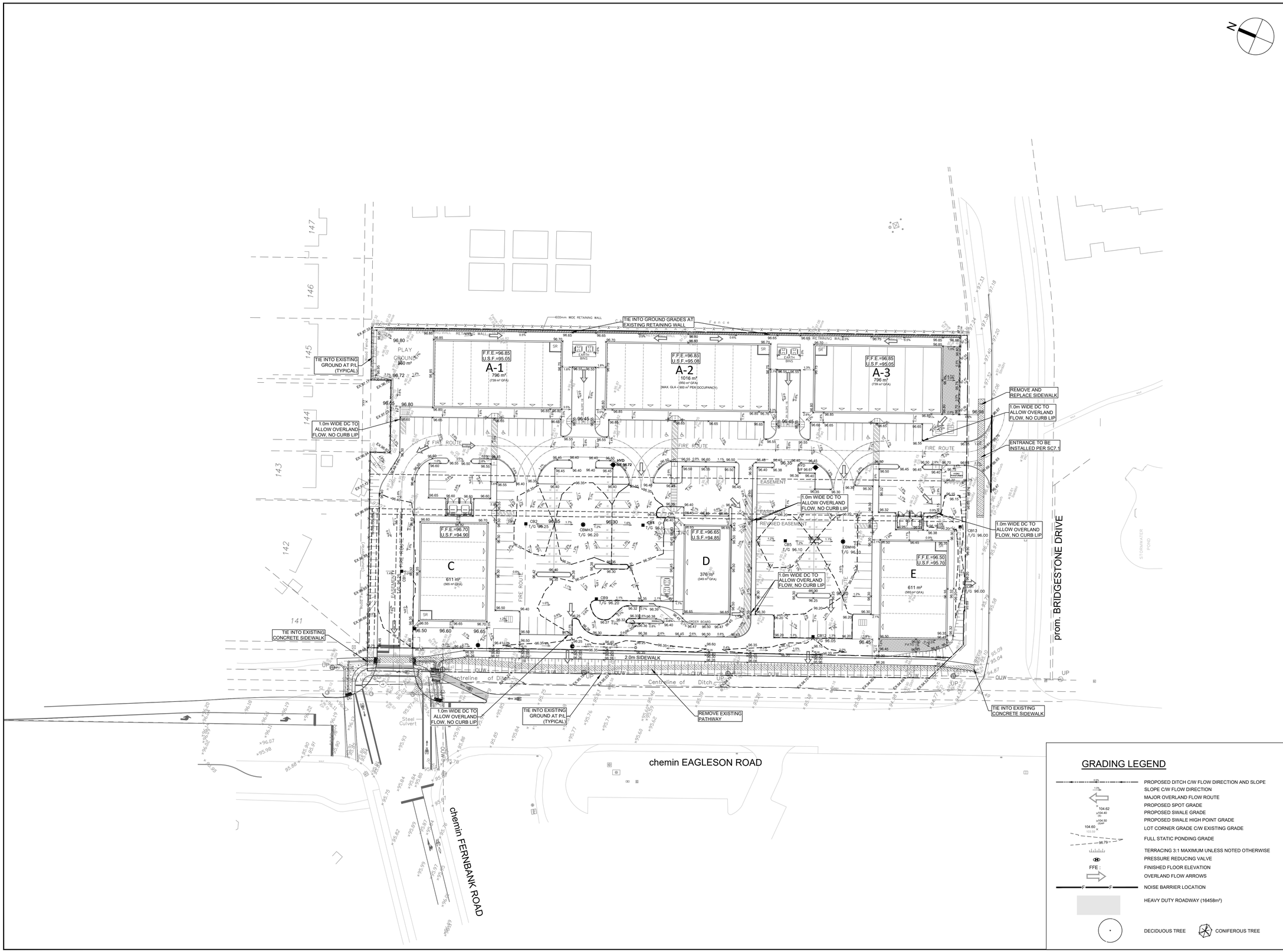
SHEET TITLE
NOTES & LEGEND

SHEET NUMBER C-010 ISSUE 4

SCALE CHECK 1 in 10mm

File Location: C:\DARoot\Jobs\640ffc6865b1400791 9f14b40f50e803\adskfiles\b.ceb1b187-9819-43f0-840e-591543910772\Project Files\7.03_Design\04-Civil\Sheets\C-010 NOTES-LEGEND.dwg Last Saved: August 28, 2025, by dored5754 Plotted: Thursday, August 28, 2025 5:11:46 PM by acesuser

CITY FILE No. D07-12-25-0014 CITY PLAN No.19247



GRADING LEGEND

- PROPOSED DITCH C/W FLOW DIRECTION AND SLOPE
- SLOPE C/W FLOW DIRECTION
- MAJOR OVERLAND FLOW ROUTE
- PROPOSED SPOT GRADE
- PROPOSED SWALE GRADE
- PROPOSED SWALE HIGH POINT GRADE
- LOT CORNER GRADE C/W EXISTING GRADE
- FULL STATIC PONDING GRADE
- TERRACING 3:1 MAXIMUM UNLESS NOTED OTHERWISE
- PRESSURE REDUCING VALVE
- FFE : FINISHED FLOOR ELEVATION
- OVERLAND FLOW ARROWS
- NOISE BARRIER LOCATION
- HEAVY DUTY ROADWAY (16458m²)
- DECIDUOUS TREE
- CONIFEROUS TREE

CLIENT

URBANDALE CORPORATION

COPYRIGHT

This drawing has been prepared solely for the intended use, thus any reproduction or distribution for any purpose other than authorized by Arcadis is forbidden. Written dimensions shall have precedence over scaled dimensions. Contractors shall verify and be responsible for all dimensions and conditions on the job, and Arcadis shall be informed of any variations from the dimensions and conditions shown on the drawing. Shop drawings shall be submitted to Arcadis for general conformance before proceeding with fabrication.

Arcadis Professional Services (Canada) Inc.
formerly IBI Group Professional Services (Canada) Inc

ISSUES

No.	DESCRIPTION	DATE
1	ISSUED FOR REVIEW	2024-12-19
2	CITY SUBMISSION No. 1	2025-01-22
3	CITY SUBMISSION No. 2	2025-07-09
4	CITY SUBMISSION No. 3	2025-08-29

KEY PLAN

CONSULTANTS

1:500 0 5 15 25m

SEAL

LICENSED PROFESSIONAL ENGINEER
S. E. LABADIE
100214983
2025-08-29
PROVINCE OF ONTARIO

PRIME CONSULTANT

ARCADIS

333 Preston Street - Suite 500
Ottawa ON K1S 5N4 Canada
tel 613 225 1311
www.arcadis.com

PROJECT

COMMERCIAL SITE

801 EAGLESON ROAD

PROJECT NO: 148792

DRAWN BY:	CHECKED BY:
D.D.	**M.P.**
PROJECT MGR:	APPROVED BY:
T.R.B.	**S.E.L.**

SHEET TITLE

GRADING PLAN

SHEET NUMBER C-200

ISSUE 4

CITY FILE No. D07-12-25-0014

CITY PLAN No.19247

File Location: C:\Users\dores57540\CACCDocs\Arcadis ACC US\ACA-00148792-801 Eagleson Rd\Commercial\Project Files\7.03_Design\04-Civil\Sheets\C-200 GRADING PLAN.dwg Last Saved: August 28, 2025, by dores57540 Plotted: August 28, 2025 12:57:25 PM by Dore, Denis