Robinson
Land Development

3750 North Bowesville Rd. Site Plan Residential Development Servicing and Stormwater Management Report

Prepared For:

Jennings Real Estate

Prepared By:

Robinson Land Development

Project No. 26052
July 2026

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LEGAL NOTIFICATION

This report was prepared by Robinson Land Development for the account of **Jennings Real Estate**

Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. **Robinson Land Development** accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this project

1.0 INTRODUCTION

Robinson Land Development has been retained by Jennings Real Estate to prepare a site servicing and stormwater management design for a proposed 14-storey residential apartment building located at 3750 North Bowesville Road in the City of Ottawa.

The client proposes to develop an approximately 17,500 m^2 GFA high rise tower, complete with a two-storey underground parking garage, at-grade pedestrian and vehicle access, and amenity space. The existing parking lot at the north side of the property will remain undeveloped at this time, though is the site of a future Phase 2 high rise apartment tower, mirroring the proposed Phase 1 tower. N. Bowesville Rd. borders the east side of the site, existing developed commercial lands border the west and north side of the site, and the forested Ottawa Hunt and Golf Club borders the south of the site. Refer to architectural site plan provided in **Appendix A** for reference.

This report will detail the proposed means of servicing the Phase 1 development with water and sanitary service and provide details on how to meet the stormwater management requirements. The Phase 2 development is not detailed in this report but it will be acknowledged for serviceability purposes to help facilitate its future development. Pre-consultation notes from the City of Ottawa have been provided in **Appendix A** for reference.

2.0 EXISTING CONDITIONS

The combined 0.68 ha subject site is zoned General Mixed-Use (GM) under the current zoning by-law and will be zoned Neighbourhood Mixed-Use (NMU) under the new 2026 zoning by-law. It is currently occupied by a conference centre / banquet hall building surrounded by an asphalt parking lot.

The following municipal infrastructure exists adjacent to the site:

- 400 mm dia. ductile iron watermain along N. Bowesville Rd.
    - A 200mm dia. water lateral currently services the site.
- 600 mm dia. concrete sanitary trunk sewer N. Bowesville Rd.
    - A sanitary lateral (size unknown) currently services the site.
- 300 mm dia. concrete storm sewer along N. Bowesville Rd. at the northeast corner of the site flowing north to a 525 mm dia. concrete storm sewer.
    - The site's storm sewers current connect to the existing 300mm dia. storm sewer.

Refer to the topographic surveys and as-built information received of the existing infrastructure provided in **Appendix A** for more details.

3.0 DEVELOPMENT PROPOSAL

The Owner is proposing to develop an approximately 17,500 m^2 GFA, 14-storey building consisting of studio, 1-bedroom, 2-bedroom, and 3-bedroom apartments, complete with a two-storey underground parking garage, and a 1-storey centralized main entrance and indoor pool. At-grade, there will be a main pedestrian access and vehicle pick-up/drop-off driveway, a driveway to the underground parking garage, and landscaped amenity spaces. A curb and sidewalk will be installed in the ROW along the frontage of the development for future urbanization. The existing parking lot at the north side of the property will remain undeveloped at this time, though is the site of a future Phase 2 high rise apartment tower, mirroring the proposed Phase 1 tower including the underground parking garage. The Owner is also considering whether to sever the property for the future Phase 2 development. Refer to the Site Plan, prepared by Hobin Architects, in **Appendix A** for more details.

The proposed development will be provided with new water service, sanitary service, and storm infrastructure per City requirements. The proposed civil design drawings are provided in **Appendix B** including:

- Existing Conditions & Removals Plan
- Servicing Plan
- Grading Plan
- Notes & Details Plan
- Erosion & Sediment Control Plan
- Pre- and Post-Development Storm Drainage Area Plans

4.0 WATER SERVICING

4.1 Design Criteria

Water demands from the site will be serviced by the 400 mm watermain on North Bowesville Road. The water service has been designed according to the following standards and guidelines:

- Ottawa Design Guidelines – Water Distribution (2026) periodically amended as part of Technical Bulletins
- Fire Underwriters Survey (FUS) Water Supply for Public Fire Protection (2020)
- MOECC Design Guidelines for Drinking-Water Systems (2008)

Accordingly, the following watermain design criteria have been utilized for the subject site:

- Average Daily Demand (Residential) 280 L/cap/d
- Peaking Factor (Max Day) 3.6 x Avg Day
- Peaking Factor (Peak Hour) 5.4 x Avg Day
- Minimum Pressure During Peak Hour 276 kPa (40 psi)
- Minimum Pressure During Maximum Day Plus Fire 140 kPa (20 psi)
- Maximum Pressure in Unoccupied Areas 689 kPa (100 psi)
- Maximum Pressure in Occupied Areas 552 kPa (80 psi)

4.2 Proposed Design & Boundary Conditions

Since the development will contain more than 50 dwelling units, redundant water servicing is required. The subject site will receive water supply via the existing 200 mm water services and a proposed 150 mm water service, connected to the existing 400 mm watermain on North Bowesville Road. A valve will be installed on the existing 400 mm watermain between the two services. The City of Ottawa provided boundary conditions for the subject site based on calculated demand estimates for the proposed Phase 1 development, as well for the future Phase 2 development. Refer to **Appendix C** for proposed domestic and fire demand calculations and received boundary conditions. The demands and received boundary conditions have been summarized in the table below, with an estimate of the pressure at the building (pressure loss across service laterals are considered negligible).

Table 1 – Water Demands & Boundary Conditions

Phase 1 Development	Demand (L/s)	Head at WM (m)	Approx. Pressure at Building FFE (100.30m) (psi)
Maximum HGL (Average Day)	1.02 L/s	131.2	44.0
Minimum HGL (Peak Hour)	5.51 L/s	125.5	35.8
Max Day + Fire (7,000 L/min)	120.35 L/s	128.3	39.8

Phase 1 + 2 Development	Demand (L/s)	Head at WM (m)	Approx. Pressure at Building FFE (100.30m) (psi)
Maximum HGL (Average Day)	2.08 L/s	131.2	44.0
Minimum HGL (Peak Hour)	11.22 L/s	125.5	35.8
Max Day + Fire (11,000 L/min)	190.81 L/s	127.5	38.7

Based on the received boundary conditions, the existing watermain has sufficient capacity to support the proposed development during domestic average day and fire demands (both Phase 1 and future Phase 2 buildout). During peak hour demands the incoming water pressure is expected to be lower than the minimum desired pressure, however since the building is a high-rise tower booster pumps will already be provided to service the upper floors' domestic demands. Fire pumps will be provided to ensure pressure to the upper floors' sprinkler system.

4.3 Fire Protection

The required fire flow for the subject site was calculated using the Fire Underwriter's Survey (FUS) long form (refer to **Appendix C**). Based on the Phase 1 building construction, occupancy, and ground floor area, the maximum required fire flow is 7,000 L/min (117 L/s). For the full Phase 2 buildout, it was conservatively assumed the two towers will be considered one building (no fire separation), leading to a maximum required fire flow of 11,000 L/min (183 L/s).

The nearest existing hydrant to the site is located on the east side of N. Bowesville Rd., northeast of the site (within 75 m of the proposed fire department connection). The proposed building will be sprinkled and as such a new hydrant is proposed opposite the main entranceway (within 45 m of the proposed fire department connection).

Based on boundary conditions received above the system will be able to support the proposed fire demand. Additionally, per Technical Bulletin ISTB-2018-02 Appendix I Table 1, a maximum of 5,700 L/min can be credited to each hydrant within 75 m. Therefore, there is sufficient coverage to meet the 7,000 L/min fire demand (Phase 1) and the conservative 11,000 L/min fire demand (Phase 2) between the existing and proposed hydrants on North Bowesville Road.

5.0 SANITARY SERVICING

5.1 Design Criteria

Sanitary flows from the site will discharge to the 600 mm sanitary trunk sewer on North Bowesville Road. The sanitary sewer service has been designed according to the following standards and guidelines:

- Ottawa Sewer Design Guidelines (2025) periodically amended as part of Technical Bulletins
- MOECC Design Guidelines for Sewage Works (2008)

Accordingly, the following design parameters have been implemented for the subject site:

- Average Daily Demand (Residential) 280 L/cap/d
- Peaking Factor Harmon Equation
- Infiltration Allowance 0.33 L/s/ha
- Velocity 0.60-3.0 m/s

5.2 Proposed Design

The Phase 1 building will be serviced via a 200 mm service lateral connecting at the northwest corner of the underground parking garage. A monitoring maintenance hole will be installed on or near the property line prior to discharge to the municipal sewer, and a maintenance hole will be added to the existing sanitary trunk sewer per City standards. A peak design flow was calculated to be 3.65 L/s. The proposed sanitary service lateral will have capacity to convey the peak design flows and meet minimum and maximum full flow velocities.

For the future Phase 2 development, the sanitary servicing will depend on whether the property will be severed or not. If the property remains as one, the Phase 2 building will tie into the proposed Phase 1 service lateral either internally or externally at the monitoring maintenance hole. If the property is severed, the Phase 2 building will be serviced by its own service lateral to the trunk sewer. A peak design flow was calculated to be 3.75 L/s (combined 7.15 L/s). The proposed sanitary service lateral(s) will have capacity to convey the peak design flows and meet minimum and maximum flow velocities, whether separate or combined. Refer to the sanitary sewer design sheet in **Appendix D** for details of the calculations.

The capacity of the receiving 600 mm sanitary sewer on N. Bowesville Rd. was confirmed by the City for the proposed peak flow demand for Phase 1 and Phase 2. Refer to correspondence in **Appendix D** for details.

6.0 STORM SERVICING

6.1 Design Criteria

Stormwater runoff collected on the subject site will be discharged to the existing 300 mm storm sewer at the northeast corner of the site along North Bowesville Road. Drainage from the portion of the parking lot that is being retained for Phase 1 will continue to be locally collected by existing on-site catch basins and connected to the existing 300 mm storm on North Bowesville Road. The storm sewer system has been designed according to the following standards and guidelines:

- Ottawa Sewer Design Guidelines (2025) periodically amended as part of Technical Bulletins
- MOECC Stormwater Management Planning and Design Manual (2003)
- Site Plan Application pre-consultation meeting minutes

Accordingly, the following design parameters have been implemented for the developed portion of the site (not including the existing parking lot):

- Quantity Control — 100-yr post- to 2-yr pre-development
Max pre-development C=0.5
- Quality Control — Enhanced (80% TSS reduction)
- Ponding — No ponding during 2-yr,
Max. depth 350 mm
Overflow min. 300 mm below building entrances
- Velocity — 0.80-3.0 m/s

The 2-yr pre-development flow rate (at max. C=0.5) for the developed portion of the property was calculated to be 38.5 L/s. Refer to **Appendix E** for details of the calculations to **Appendix B** for the Storm Drainage Area Plans for reference.

6.2 Minor System

Since the underground parking garage occupies most of the developed area, the stormwater runoff will be captured and collected through the building's drainage system (which will be detailed by Building Mechanical during detailed design phase). The Building Mechanical

drains will need to be sized to ensure no ponding during the 2-yr storm. The collected site and roof runoff will be collected to a stormwater cistern within the building footprint and equipped with a duplex pump system, check valves, and overflow (by Building Mechanical). A 20 L/s pumping rate and 40 m^3 active storage volume has been estimated with the building design team for calculation purposes and will be validated with Building Mechanical during the detailed design phase. The storm runoff will be discharged via a 250 mm storm sewer to an oil-grit separator at or near the property line to also act as a monitoring maintenance hole. A 250 mm storm sewer is proposed to be extended along N. Bowesville Rd. to connect to the existing 300 mm storm sewer to which the site currently drains.

The building will be outfitted with roof drains for all roofs, and controlled roof drains on the centralized main entrance / indoor pool roof and the upper-most mechanical penthouse roof. Roof storage will be limited up to a maximum depth of 150 mm. Prior to detailed design, a typical maximum 40 L/s/ha total roof drain discharge rate has been utilized for design purposes (1.4 L/s for the lower roof and 2.2 L/s for the upper roof).

While the overall storm runoff will be pumped from the cistern at a controlled rate for all storm events, the outlet system capacity is designed to allow free flow during the 2-yr storm. Refer to the storm sewer design sheets and storage calculations in **Appendix E** for details of the calculations and the Storm Drainage Area Plans in **Appendix B** for reference.

A summary of the calculations is presented in the tables below:

Table 2 – 2-Year Post-Development Discharge Rates (Phase 1)

Area	Max Discharge Rate (L/s)
Uncontrolled	3.7
Controlled	20.0
Total	**23.7**
2-yr Pre-Development Flow	**38.5**

Table 3 – 2-Year Post-Development Storage Volumes (Phase 1)

Area	Required Storage (m^3)	Available Storage (m^3)
Roof 1 (lower)	3.8	17.5
Roof 3 (upper)	6.1	28.0
Cistern	3.9	40.0

The existing parking lot at the north end of the site will continue to be collected and drain to the existing 300 mm storm sewer on North Bowesville Road. The 2-yr pre-development flow is estimated to be 58.9 L/s. During the interim Phase 1 condition, the existing parking lot is expected to have a slightly decreased 2-yr peak flow of 53.2 L/s. When the future Phase 2 building is developed the building will likewise capture the stormwater within its underground parking garage footprint and is anticipated to likewise control via roof storage and cistern to be pumped out to its own oil-grit separator and ultimately to the 300 mm storm sewer. The Phase 2 development will need to control to the 2-yr pre-development flow (at max C=0.5) of 33.6 L/s. Phase 2 development will need to be detailed under its own servicing and stormwater

management report. Refer to the storm sewer design sheets and storage calculations in **Appendix E** for details of the calculations and the Storm Drainage Area Plans in **Appendix B** for reference.

6.3 Major System

While no at-grade ponding is anticipated at the drainage structures within the underground parking garage footprint (by Building Mechanical during detailed design), maximum ponding depths and overflows were assessed in case of blockage or beyond the 100-yr design storm, with all overflow directed towards North Bowesville Road. The main entranceway will drain to a central catchment within the underground parking garage footprint; the local spillover towards N. Bowesville Rd. is greater than 300 mm below building entrance and less than 350 mm ponding depth. The south side and west rear amenity spaces will drain to several catchments within the underground parking garage footprint cascading to a local spillover at the rear amenity space towards the existing parking lot, which in turn spills over to North Bowesville Road. The local spillover elevation is 300 mm below the building entrance and less than 350 mm ponding depth. Under Phase 2 development the major overland flow route from Phase 1 amenity space to N. Bowesville Rd. will need to be maintained. The storage within the lower and upper roofs (controlled) and stormwater cistern was calculated for the 100-yr storm to confirm sufficient storage is available. The cistern's pump system will contain an overflow pipe to gravity drain any exceedances via the 250 mm storm discharge pipe. The 100-yr + 20% scenario was also calculated, and the roof storage and building stormwater cistern storage would all be slightly exceeded, where any overflows would be directed to the ROW as described above. Refer to the storm sewer design sheets, ICD sizing, and storage calculations in **Appendix E** for details of the calculations and the Storm Drainage Area Plans in **Appendix B** for reference.

A summary of the calculations is presented in the tables below:

Table 4 – 100-Year Post-Development Discharge Rates (Phase 1)

Area	Max Discharge Rate (L/s)
Uncontrolled	10.7
Controlled	20.0
Total	**30.7**
2-yr Pre-Development Flow	**38.5**

Table 5 – 100-Year Post-Development Storage Volumes (Phase 2)

Area	Required Storage (m^3)	Available Storage (m^3)
Roof 1 (lower)	14.5	17.5
Roof 3 (upper)	23.3	28.0
Cistern	34.1	40.0

6.4 Quality Control

Quality control will be provided by an oil-grit separator immediately prior to discharging from the property to the proposed 250 mm storm sewer extension on North Bowesville Road. Less than 10% of the controlled site area is vehicle access space (main entrance pick-up/drop-off), which is the main source of suspended solids in stormwater runoff. The oil-grit separator is sized nonetheless for the full contributing area for 80% TSS reduction based on the controlled flow rates as it is downstream of the pumped cistern. Refer to OGS sizing cutsheet in **Appendix E** for more details.

7.0 EROSION & SEDIMENT CONTROL

Prior to construction and until vegetation has been re-established in disturbed areas, erosion and sediment control measures must be implemented to mitigate the impact on receiving watercourses and existing infrastructure. Details of the measures and requirements are on the Erosion and Sediment Control Plan provided in **Appendix B**.

8.0 CONCLUSIONS

This Servicing and Stormwater Management Report has been prepared to support the Site Plan Application for the development of the property located at 3750 North Bowesville Road in the City of Ottawa. This report has detailed the proposed means of servicing the site for potable water and sanitary sewer and provided details on how to meet the stormwater management requirements in accordance with City of Ottawa standards. The proposed servicing and stormwater management designs will be achieved by implementing the following key features:

- Only Phase 1 tower is currently under consideration for development, however the Phase 2 tower (essentially mirror of Phase 1) has been considered for sizing and locating purposes.
- Domestic water supply will be provided by the existing 200 mm dia. service and a proposed 150 mm dia. service (for redundancy) connected to the existing 400 mm dia. watermain on N. Bowesville Rd., complete with a valve on the watermain between the two services. This supply will be able to service both Phase 1 and Phase 2 development.
- Fire protection will be provided by an existing hydrant and a proposed hydrant on the east side of N. Bowesville Rd. opposite the site (proposed hydrant within 45 m of building's fire department connection). This will be able to support both Phase 1 and Phase 2 development.
- Sanitary flows will be conveyed to the existing 600 mm dia. sanitary trunk sewer on Rocque Street via a 200 mm sanitary service lateral. This will be able to support both Phase 1 and Phase 2 development.
- Stormwater runoff (minor system) will be conveyed to the existing 300 mm storm sewer on N. Bowesville Rd. at the northeast corner of the site via a 250 mm storm sewer extension.
- Stormwater runoff for all storm events up to and including the 100-year design storm will be controlled on-site to the 2-yr pre-development rate within the Phase 1 development area. The Phase 2 area will remain at this time as an existing at-grade parking lot draining to the 300 mm storm sewer on N. Bowesville Rd.
- On-site storage will include controlled rooftop storage and cistern within the underground parking garage footprint. The cistern will be pumped out to the 250 mm storm sewer extension, with internal gravity overflow .

- Emergency overland flows will be conveyed to N. Bowesville Rd., maintaining minimum 300 mm below building entrances and maximum 350 mm ponding.
- Quality control will be provided by an oil-grit separator prior to discharge from site.
- Erosion and sediment control measures will be implemented prior to construction and maintained until vegetation has been re-established in disturbed areas.

Report Prepared By:

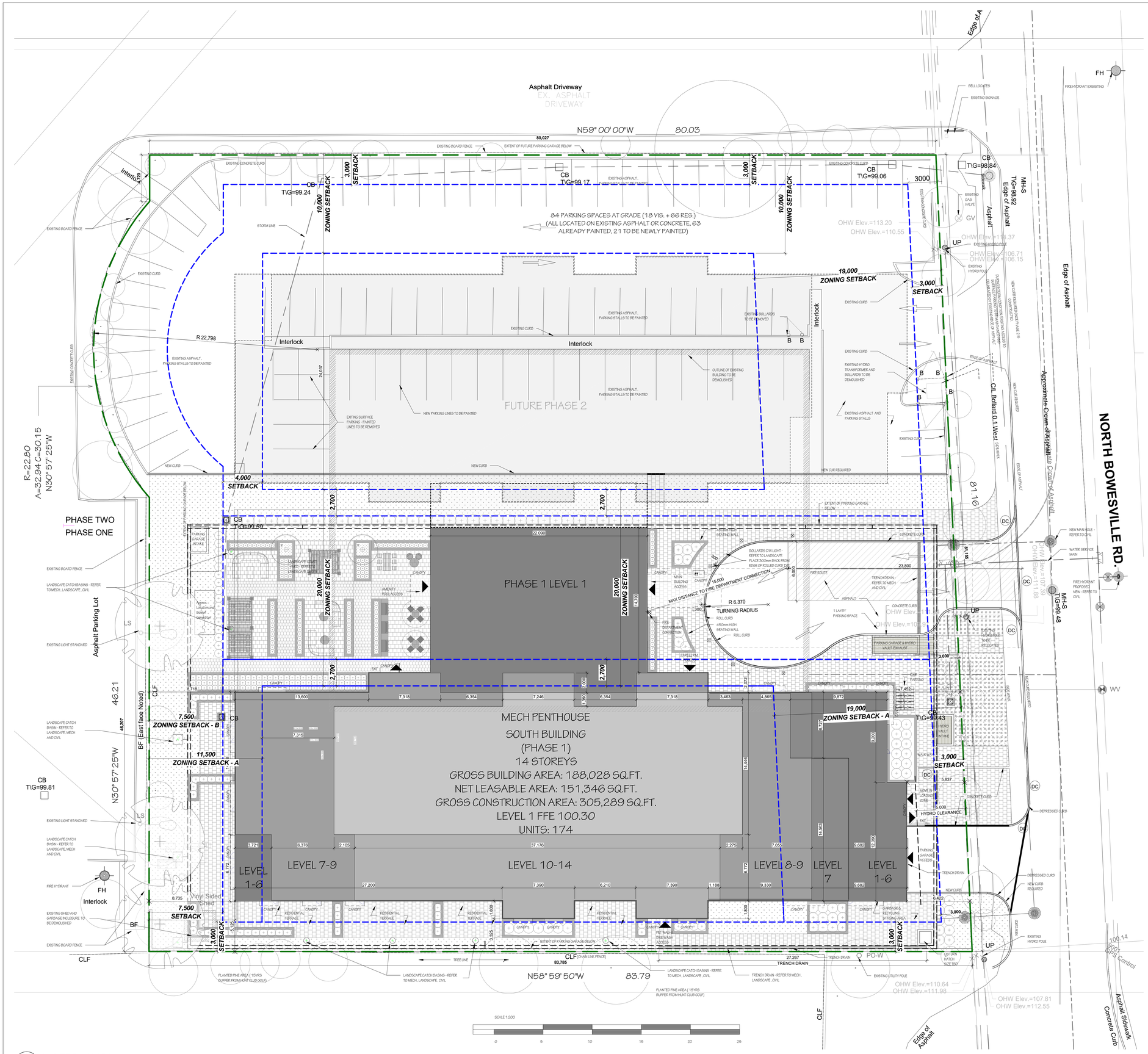
Stephen McCaughey, P.Eng.
Project Engineer

Appendix A

Architectural Site Plan

Pre-Consultation Notes

Existing Watermain, Sanitary and Storm As-Builts



1 SPA-01 00-SITE PLAN-SPA
SCALE: 1 : 150

Note: all existing site information as per site survey plan dated April 17th , 2026 Surveyed by Annis, O'Sullivan, Vollebekk Ltd. Ref No. 123084-23_JRE PLS 5 C 2 RP T F

TOPOGRAPHIC PLAN OF SURVEY OF
PART OF LOT 4
CONCESSION 2 (RIDEAU FRONT)
Geographic Township of Gloucester
CITY OF OTTAWA
Surveyed by Annis, O'Sullivan, Vollebekk Ltd.

Note: Bearings and Lengths of all property boundaries noted on the site plan are reflects the original survey, and do not account for changes to the corner site triangle.

Snow Storage Strategy: Snow to be collected and relocated off-site.

Current Zoning	GM [2852] 5492	**ZONING TABLE**	
Site Area (Phase 1 and Future Phase 2)	5455m² 58717 ft²		
Building Area (OBC)(Greatest Horiz Above Grade)	1858 m² 19999 ft²		
Gross Area (OBC) (Above Grade)	17,857m² 192,209ft²		
Gross Area (OBC) (Including below grade)	24,431m² 262,971 ft²		
Gross Floor Area GFA (City Def.)	13,561 m² 145,912ft²		
Residential Gross Leasable area (HA)	14,061m² 151,346ft²		
Amenity Area Private Balcony/Terrace (HA)	1,484m² 15,975 ft²		
Amenity Area Public / Common (HA)	960m² 10,434ft²		
Amenity Area total (HA)	2453 m² 26,409 ft²		
Gross construction area (GCA)(HA)	28,362 m² 305,289 ft²		
Gross Building Area (OBA) (HA)	17,468m² 188,028ft²		
Number of Dwelling Units	174 units		

Unit Type	Total # of Units	Percentage
1 BED	39	22%
1 BED+DEN	53	30%
2 BED	23	13%
2 BED+DEN	13	7%
3 BED	28	16%
STUDIO	18	10%
Total Count	174	

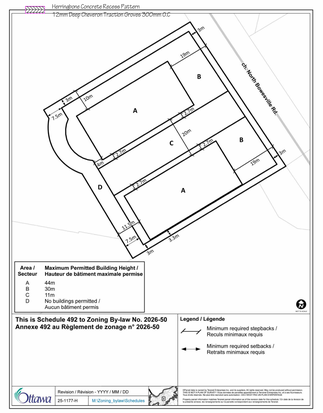
		REQUIRED	
Lot Area		N/A	6756m² 72742.51 ft²
Lot Frontage		N/A	
Lot Width			81.16 m IRREGULAR
Lot Depth			83.7 m IRREGULAR
Setbacks	Front Yard	REFER TO ZONING ENVELOPE	3.0m
	Side Yard	REFER TO ZONING ENVELOPE	3.0 m
	Interior Side Yard	REFER TO ZONING ENVELOPE	3.0 m
	Rear Yard	REFER TO ZONING ENVELOPE	7.5 m
Maximum Building Height. 14 Storeys		44m - REFER TO ZONING ENVELOPE	51.5M (including permitted mech. projection)
Amenity Area Total of 6m2 per dwelling unit, of which 50% is required to be communal		Required amenity space requirement: 174 units x 6 sq.m. = 1,044 sq.m. total amenity required Required amenity space to be common - 522 sq.m.	Provided private amenity space - 1221 sq.m. Provided common amenity space - 1195 sq.m. Provided total amenity space - - 2416 sq.m.
Parking		Minimum Required: Residential: 0.7 / Unit. =122 Visitors: 0.1 / Unit. = 18	Total Provided: 218 lvls + ext. 210 residential parking spaces below grade + at-grade provided for 174 units (1.2/unit) Once phase 2 is constructed, this reduces to 126 (0.72/unit) as at-grade visitor parking + additional res. parking moves below grade 18 visitor parking spaces provided for 174 units (0.1/unit) * located at-grade until phase 2 is constructed. in which case these 18 stalls move to p1
Bycycle Parking Requirements Building bicycle parking required: 0.5 bicycle stalls per unit		Minimum Required: 0.5/Unit = 87 stalls for 174 units	Total Provided: 105 bicycle parking spaces provided for 174 units (0.53/unit) * located in underground parking garage +15 at-grade

SITE PLAN LEGEND

TREES - REFER TO LANDSCAPE FOR TYPE
LF BUILDING WALL MOUNTED LIGHT
LS LIGHT STANDARD
UP EXISTING UTILITY POLE
TSP TRAFFIC SIGNAL POST
WV WATER VALVE
HH HANDHOLE (REFER TO SURVEY PLAN)
TB-B BELL BOX
CB-I CATCH BASIN, INLET
CB CATCH BASIN
CB EXISTING CATCH BASIN
CB NEW CATCH BASIN
MH MAINTENANCE HOLE
MH EXISTING MAN HOLE
FH EXISTING FIRE HYDRANT
TRANSFORMER
HA-SITE-FENCE
ROAD WIDENING EASEMENT
AREA IMPACTED BY ROAD WIDENING EASEMENT
TRASH CAN
FDC FIRE DEPARTMENT CONNECTION
CONCRETE CURB TO BE REBUILT
BOLLARDS
PLANTERS
DEPRESSED ROLL CURB PER CITY OF OTTAWA STANDARDS

32-Asphalt
32-Building Existing
32-Building New
DC 32-Conc Curb Depressed
32-Conc Curb To City of Ottawa Standards SC7
32-Conc Retaining Wall
32-Concrete pavers
32-Concrete Paver-02
32-Concrete-Sidewalk
32-Grass
32-Mech Grate
32-Planting-01
32-Planting-02
32-Site Utilities
Herringbone Concrete Excess Pattern
12mm Deep Clearance Tractor Grooves 500mm O.C.

HA1-EXCAVATION-1-1
HA1-EXCAVATION-1-5
HA1-EXCAVATION-3-1
HA1-PROPERTY LINE
HA1-SITE-ASPHALT
HA1-SITE-BUILDING-ABOVE
HA1-SITE-BUILDING-BELOW
HA1-SITE-BUILDING-EXISTING
HA1-SITE-BUILDING-OUTLINE
HA1-SITE-FIRE ROUTE
HA1-SITE-NEIGHBOURING-LOTS
HA1-SITE-SETBACK-LINE
HA1-SITE-SIDEWALK_JOINT



Note: all existing site information as per site survey plan dated September 16, 2015 and prepared by STANTEC GEOMATICS ltd. Ref No. 161613556-310

NO.	DATE	REVISION
A	260709	ISSUED FOR SPA

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PROJECT/LOCATION:
BOWESVILLE PHASE 1
45 OAK STREET

DRAWING TITLE:
SITE PLAN

PROJECT NO:	SCALE:	DRAWING NO.:
2222	As indicated	SPA-01
DRAWN BY:	DATE:	
Author	XX/XX/XXXX	REVISION NO.: A

SPA-01- RA- SITE PLAN

NOT FOR CONSTRUCTION

File No.: PC2026-0060

April 15, 2026

Chris Packman
Jennings Developments Inc.
Via email: cpackman@jre.ca

Subject: **Pre-Consultation: Meeting Feedback**
Proposed Site Plan Control Application – 3750 North Bowesville Road

Please find below information regarding next steps as well as consolidated comments from the above-noted pre-consultation meeting held on April 8, 2026.

Next Steps

1. A review of the proposal and materials submitted for the above-noted pre-consultation has been undertaken. For your next submission, please submit the required Application Form, together with the necessary studies and/or plans to planningcirculations@ottawa.ca, copy (cc:) to the file lead and planning support.

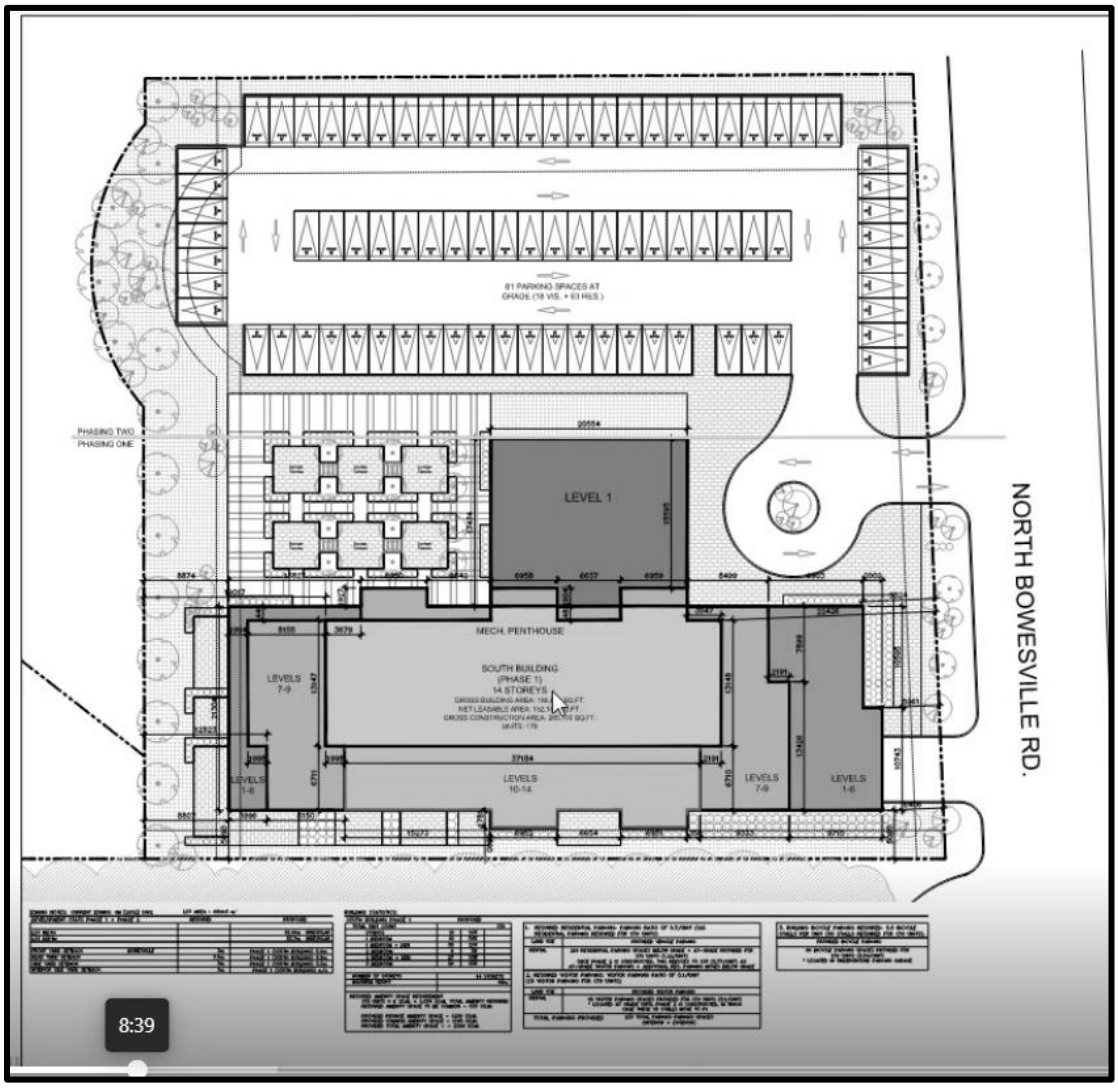
2. In your subsequent pre-consultation or formal application submission, please ensure that all comments or issues detailed herein are addressed. A detailed cover letter stating how each issue has been addressed is requested with the submission materials. Please coordinate the numbering of your responses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

3. Please note, if your development proposal changes significantly in scope, design, or density it is recommended that a subsequent pre-consultation application be submitted.

Proposal Overview

- Construction of two 14-storey high-rise residential buildings, in 2 phases,
- Phase 1 is anticipated to start summer 2027 for the southern building, 1-storey linking amenity space (contemplated pool) and partially existing (and slightly expanded) temporary surface parking lot at the north side.
- The building still has the 6-storey podiums and complies with the previous zoning provisions.
- Massing has been simplified from the rezoning for the step-backs on floors 7-9.
- The rooftops will have interior and exterior amenity space.
- Anticipate submission for Site Plan Control application in June 2026.

The following image was presented at the pre-consultation meeting on April 8, 2026:



Planning

Comments:

1. The Official Plan designates the subject property Neighbourhood in Outer Urban Transect. Neighbourhoods are intended to permit a mix of building form and densities and planned for ongoing gradual well planned transformation through sustainable and context-sensitive development.

2. The subject property is located inside the Airport Vicinity Development Zone, as shown on Schedule C14. Please review Official Plan Section 10.2.2.

3. A Noise study consistent with the Council-approved Environmental Noise Control Guidelines is required as part of a complete application for any development proposal within the 25 Line (Composite of 25 NEF/NEP), as shown on Schedule C14.

Zoning:

4. The site is zoned GM [2932] S492 in Zoning By-Law 2008-250.

5. The subject property is zoned NMU[2932] S492 (Neighbourhood Mixed-Zone, Exception 2932, Schedule 492) under the new Zoning By-law 2026-50.

   As of March 11, 2026, the date of Council enactment of Zoning By-law 2026-50, the most restrictive provisions from both By-laws apply until appeals are resolved (likely in spring 2027).

Preliminary Comments:

6. Consider appropriate interfaces between residential buildings, such as appropriate soft landscaping and screening.

7. Ensure ample green space is provided and takes precedence over hard surfacing when feasible.

8. Use native, pollinator-friendly species when possible and avoid invasives.

9. Discuss the proposal and timing with the local Councillor (Brockington). There were some concerns from the nearby residents during the rezoning process.

10. Community Benefits Charges will be required for all buildings, that are 5 or more storeys and 10 or more units and will be required at the time of building permit. The amount will be reflective of the direction provided in the 2025 Housing Initiatives and valued at 2% of the land.

Additional comments will be provided once staff receive the updated drawings. The drawings that staff reviewed prior to the pre-consultation meeting were the original rezoning plans.

For follow-up questions, please contact tracey.scaramozzino@ottawa.ca or jaime.mallory@ottawa.ca.

Urban Design

Comments:

1. Urban Design staff have concerns regarding the extent of surface parking proposed as part of the development. Staff encourage the applicant to explore alternative interim uses until they are prepared to proceed with Phase 2 of the development.

2. If surface parking is to be provided, its extent should be reduced, and it should be significantly setback from North Bowesville Road.

3. The public realm along North Bowesville Road should be enhanced as part of this application, including the provision of a pedestrian sidewalk and street trees, where feasible.

4. The pick-up and drop-off area should be designed to prioritize pedestrians. Consider using a paver treatment in place of asphalt to reinforce this intent.

5. Staff look forward to reviewing the building elevations.

6. An Urban Design Brief is not required.

Submission Requirements:

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

    a. Site Plan;

    b. Landscape Plan; and

    c. Building Elevations.

For follow-up questions, please contact Nader Kadri, Planner III – Urban Design, at nader.kadri@ottawa.ca.

Engineering

Comments:

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

    a. Water Quality Control: provide enhanced levels of protection of 80% for total suspended solids removal.

    b. Water Quantity Control: In the absence of area specific Stormwater Management criteria please control post-development runoff from the subject site, up to and including the 100-year storm event, to a 2-year pre-development level.

        i. The pre-development runoff coefficient will need to be determined as per existing conditions but in no case more than 0.5. [If 0.5 applies it needs to be clearly demonstrated in the report that the pre-development runoff coefficient is greater than 0.5].

        ii. The time of concentration (Tc) used to determine the pre-development condition should be calculated. Tc should not be less than 10 min. since IDF curves become unrealistic at less than 10 min; Tc of 10 minutes shall be used for all post-development calculations.

        iii. Any storm events greater than the established 2-year allowable release rate, up to and including the 100-year storm event, shall be detained on-site. For events greater than 100 years, spillage must be directed to a public right-of-way and not to neighboring private property.

    c. Please provide a Pre-Development Drainage Area Plan to define the pre-development drainage areas/patterns. Existing drainage patterns shall be maintained and discussed as part of the proposed Stormwater Management solution.

    d. Ponding Notes:

        i. 100-year spill elevation must be 300mm lower than any building opening or ramp.

        ii. Demonstrate that the stress test spill elevation (100-year +20% event) does not spill onto any permanent structures.

        iii. The maximum permissible ponding depth for the 100-year storm event is 350mm. No spilling to adjacent sites.

iv. Please note that as per Sewer Design Guidelines (SDG 004, Fourth Edition, 2025, section 8.3.11.1), there shall be no surface ponding on private parking areas during the 2-year storm rainfall event. 100-year spill elevation must be 300mm lower than any building opening or ramp.

e. Document how any foundation drainage system will be integrated into the servicing design and show the positive outlet on the plan. Foundation drainage is to be independently connected to the sewer main unless being pumped with appropriate back up power, sufficient sized pump and back flow prevention. It is recommended that the foundation drainage system be drained by a sump pump connection to the storm sewer to minimize risk of basement flooding, as it will provide the best protection from the uncontrolled sewer system compared to relying on the backwater valve.

f. Please note that the minimum orifice dia. for a plug style ICD is 83mm and the minimum flow rate from a vortex ICD is 6 L/s in order to reduce the likelihood of plugging.

g. If rooftop control and storage is proposed as part of the Stormwater Management solutions, sufficient details (Cl. 8.3.8.4) shall be discussed and documented in the report and on the plans. Roof drains are to be connected downstream of any incorporated ICDs within the Stormwater Management system and not to the foundation drain system. Provide a Roof Drain Plan as part of the submission.

h. Underground Storage: Please note that the Modified Rational Method for storage computation in the Sewer Design Guidelines was originally intended to be used for above ground storage (i.e. parking lot) where the change in head over the orifice varied from 1.5 m to 1.2 m (assuming a 1.2 m deep CB and a max ponding depth of 0.3 m). This change in head was small and hence the release rate fluctuated little, therefore there was no need to use an average release rate.

    i. When underground storage is used, the release rate fluctuates from a maximum peak flow based on maximum head down to a release rate of zero. This difference is large and has a significant impact on storage requirements. We therefore require that an average release rate equal to 50% of the peak allowable rate shall be applied to estimate the required volume. Alternatively, the consultant may choose to use a submersible pump in the design to ensure a constant release rate. In the event that there is a disagreement from the designer regarding the required storage, the City will require that the designer demonstrate their rationale utilizing dynamic modelling, that will then be reviewed by City modelers in the Water Resources Group. Regarding all proposed UG storage, ground water levels (and in particular HGW levels) will need to be

reviewed to ensure that the proposed system does not become surcharged and thereby ineffective.

ii. Provide information on type of underground storage system including product name and model, number of chambers, chamber configuration, confirm invert of chamber system, top of chamber system, required cover over system and details, interior bottom slope (for self-cleaning), chart of storage values, length, width and height, capacity, entry ports (maintenance) etc. UG storage to provide actual 5- and 100-year event storage requirements.

9. General Servicing

a. 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.

b. Given that multiple buildings are proposed within one parcel of land, only one set of services (Storm, Sanitary and Water) will be allowed to connect to city infrastructure. Each building will have to be serviced from this one set of services. The one exception to this rule is for sites requiring water supply redundancy, where we will allow a second water connection to the city watermain to meet this requirement.

c. Where servicing involves three or more service trenches, either a full road width or full lane width 40 mm asphalt overlay will be required, as per amended Road Activity By-Law 2003-445 and City Standard Detail Drawing R10. The extent of the overlay must be shown on the grading plan or a road reinstatement plan.

d. CCTV sewer inspection of city infrastructure is required to record pre and post construction conditions and ensure there is no damage to City Assets.

e. Existing buildings sewer laterals require a CCTV inspection and report to ensure existing services to be re-used are in good working order and meet current minimum size requirements.

f. Connections to trunk sewers, easement sewers and backbone watermains are typically not permitted.

g. If a severance is planned, this needs to be addressed in servicing to satisfy severance requirements. Where a large parcel with multiple buildings are planned, the City will require an ultimate servicing plan to appropriately understand how severance requirements are being met.

h. Sewer connections to be made above the springline of the sewer main as per:

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

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

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

iv. No submerged outlet connections.

10. Storm Sewer

a. A 300mm dia. concrete storm sewer is available within North Bowesville Road.

b. A storm sewer monitoring maintenance hole is required to be installed at the property line (on the private side of the property) as per City of Ottawa Sewer-Use By-law 2003-514 (14) Monitoring Devices.

11. Sanitary Sewer

a. A 600 mm dia. concrete sanitary sewer (1994) is available within North Bowesville Road.

b. Include correspondence from the Architect within the Appendix of the report confirming the number of residential units per building and a unit type breakdown for each of the buildings to support the calculated building populations.

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

d. Sanitary sewer monitoring maintenance hole is required to be installed at the property line (on the private side of the property) as per City of Ottawa Sewer-Use By-law 2003-514 (14) Monitoring Devices.

e. A backwater valve is required on the sanitary service for protection.

12. Water:

a. A 400 mm dia. DI watermain (1982) is available within North Bowesville Road.

b. Existing residential services are to be blanked at the main.

c. Water Boundary condition requests must include the location of the service (map or plan with connection location(s) indicated) and the

expected loads required by the proposed development, including calculations. Please provide the following information:

i. Plan showing the proposed location of service(s).

ii. Type of development and the amount of fire flow required (L/min). Note: The OBC method can be used if the fire demand for the private property is less than 9,000 L/min. If the OBC fire demand reaches 9000 L/min, then the FUS method is to be used.

iii. Average daily demand: __L/s.

iv. Maximum daily demand: __L/s.

v. Maximum hourly daily demand: __L/s.

vi. Note: Use Table 3-3 of the MOE Design Guidelines for Drinking-Water System to determine Maximum Day and Maximum Hour peaking factors for 0 to 500 persons and use Table 4.2 of the Ottawa Design Guidelines, Water Distribution for 501 to 3,000 persons.

d. Please review Water Distribution Design Guidelines (WDG002 – Second Edition, December 2025), maximum fire flow hydrant capacity is provided in Section 3/4 Table 1 of Appendix I. A hydrant coverage figure shall be provided and demonstrate there is adequate fire protection for the proposal.

e. A Water Data Card will have to be submitted to size the water meter.

f. Any proposed emergency route is to be to the satisfaction of Fire Services.

13. Grading and Erosion

a. Post-development site grading shall match existing property line grades in order to minimize disruption to the adjacent residential properties. A Topographical Plan of Survey shall be provided as part of the submission and a note provided on the plans.

b. Erosion and sediment control plan must be provided.

c. Any portion of the subject property which is intended to be used for permanent or temporary snow storage shall be as shown on the approved site plan and grading plan. Snow storage shall not interfere with approved grading and drainage patters or servicing. Snow storage areas shall be setback from the property lines, foundations, fencing or landscaping a minimum of 1.5 m. Snow storage areas shall not occupy driveways, aisles,

required parking spaces or any portion of a road allowance. If snow is to be removed from the site, please indicate this on the plan(s).

d. Street catch basins are not to be located at any proposed entrances.

e. Depressed driveways are discouraged and are not allowed in sag locations. For other locations, the builder must ensure that the maximum depth of flow on the street during the 100-year and stress test events will not spill onto the depressed driveway.

f. If window wells are proposed, they are to be indirectly connected to the footing drains. A detail of window well with indirect connection is required, as is a note at window well location speaking to indirect connection.

14. Environmental

a. A Phase I Environmental Site Assessment (ESA) is required to be completed in accordance with Ontario Regulation 153/04 in support of this development proposal to determine the potential for site contamination. Depending on the Phase I recommendations a Phase II ESA may be required.

b. The Phase I ESA shall provide all the required Environmental Source Information as required by O. Reg. 153/04. ERIS records are available to public at a reasonable cost and need to be included in the ESA report to comply with O.Reg. 153/04 and the Official Plan. The City will not be in a position to approve the Phase I ESA without the inclusion of the ERIS reports.

c. Official Plan: Section 10. Protection of Health and Safety (ottawa.ca)

15. Environmental Compliance Approval

a. Due to the recent changes by the Ministry of Environment, effective September 1, 2025, all on-site private stormwater management facilities, storm sewers, sanitary sewers which were subject to ECA are now subject to Environmental Activity Sector Registry (EASR). The consultant must demonstrate that the requirements have been met.

16. Geotechnical

a. A Geotechnical Study/Investigation shall be prepared in support of this development proposal.

b. Reducing the groundwater level in this area can lead to potential damage to surrounding structures due to excessive differential settlements of the ground. The impact of groundwater lowering on adjacent properties needs

to be discussed and investigated to ensure there will be no short term and long-term damages associated with lowering the groundwater in this area.

c. The Geotechnical Study shall be consistent with the Geotechnical Investigation and Reporting Guidelines for Development Applications. Geotechnical Investigation and Reporting (ottawa.ca)

d. If Sensitive marine clay soils are present in this area that are susceptible to soil shrinkage that can lead to foundation and building damages. All six (6) conditions listed in the Tree Planting in Sensitive Marine Clay Soils- 2017 Guidelines are required to be satisfied. Note that if the plasticity index of the soil is determined to be less than 40% a minimum separation between a street tree and the proposed building foundations of 4.5 m will need to be achieved. A memorandum addressing the Tree in Clay Soil Guidelines prepared by a geotechnical engineer is required to be provided to the City. Tree Planting in Sensitive Marine Clay Soils - 2017 Guidelines (ottawa.ca).

17. Pre-construction Survey

a. Pre-construction (Piling/Hoe Ramming or close proximity to City Assets) and/or Pre-Blasting (if applicable) Survey required for any buildings/dwellings in proximity of 75 m of site and circulation of notice of vibration/noise to residents within 150 m of site. Conditions for Pre-construction/ Pre-blast Survey & Use of Explosives will be applied to agreements. Refer to City's Standard S.P. No. F-1201 entitled Use of Explosives, as amended.

18. Regarding Quantity Estimates

a. Please note that external Garbage and/or bicycle storage structures are to be added to QE under Landscaping as it is subject to securities. In addition, sump pumps for Sanitary and Storm laterals and/or cisterns are to be added to QE under "Hard" items as it is subject to securities, even though it is internal and is spoken to under Stormwater Managment and Site Servicing Report and Plan.

19. Capital Works Projects Scheduled

a. Construction approach – Please contact the Right-of-Ways Permit Office TMconstruction@ottawa.ca early in the planning process to determine the ability to construct site.

20. As-builts can be requested through the Geoinformation Centre at geoinformation@ottawa.ca or by phone, 613-580-2424 extension 44455.

Please refer to the City of Ottawa Guide to Preparing Studies and Plans [Engineering]: Planning application submission information and materials. The guide

outlines the requirement for a statement to be provided on the plan about where the property boundaries have been derived from.

For follow-up questions, please contact Anton Chetrar, Project Manager, at anton.chetrar@ottawa.ca.

Transportation

Comments:

21. Show all details of the roads abutting the site up to and including the opposite curb; include such items as pavement markings, accesses and/or sidewalks.

22. Turning templates will be required for all accesses showing the largest vehicle to access the site; required for internal movements and at all access (entering and exiting and going in both directions).

23. Show all curb radii measurements; ensure that all curb radii are reduced as much as possible

24. Show lane/aisle widths.

25. A Transportation Impact Assessment study is required. Synchro files are required to deem the submission complete.

26. A concrete sidewalk is required along the site frontage. A Road Modification Approval submission is required.

32. A Road Noise study is required.

For follow-up questions, please contact Mike Giampa, Transportation Project Manager at mike.giampa@ottawa.ca.

Environment

Comments:

27. The woods on the adjacent property to the south are identified as Natural Heritage Features and potentially significant on City mapping. Normally, this would trigger the need for the submission of an Environmental Impact Statement (EIS) to ensure that the proposed development would not incur negative impacts on the protected features.

    However, the City's Environmental Impact Statement Guidelines allow for an EIS to be waived if the Environmental Planner feels that it would be justified. Specifically in cases where "the risk of negative impacts occurring as a result of

the proposed project is extremely low to non-existent, such that the completion of the [EIS] would not afford any useful benefit to the environment, the applicant or the City".

In this particular case, the only real concern for environmental impacts that the EIS would have to address would be further harm to the adjacent woodlands. However, this matter is already required to be handled through the submission of a Tree Conservation Report and the requirements of the Tree Protected By-law (see Forestry, below). As such, an EIS would provide no additional value.

For this application, the submission of a Tree Conservation Report can be accepted in-lieu of a full EIS.

For follow-up questions, please contact Mark Elliott, Environmental Planner at mark.elliott@ottawa.ca.

28. The site is in very close proximity to protected woodlands, the golf course, and the river which provide attractive wildlife habitat. It is likely that there are a lot of birds in the area and therefore Bird Safe mitigations should be given high priority. The applicant is encouraged to consider implementing mitigation measures from the City's Bird Safe Design Guidelines wherever possible. Of particular note would be visual markers or bird-safe glazing on all glass below 16 metres, as described in Guideline 2.

    Amy MacPherson can be contacted to discuss Bird Safe design guidelines at amy.macpherson@ottawa.ca.

Forestry

Comments:

29. A Tree Conservation Report and Landscape Plan are submission requirements for this Site Plan Control Application. These reports can be combined if all required information can be provided.

30. The City of Ottawa is working towards a 40% canopy cover target across the City. Reaching this target relies heavily on the urban canopy contribution protected and provided through development opportunities. Provide as much large canopy cover across the site and in the right of way as feasible.

    a. Reduce hardscaped areas and increase soft landscaped areas that can support trees.

    b. The Official Plan directs surface parking lots to incorporate regular spacing for trees (Section 4.1.3), please do so.

    c. Retain as many of the trees north of the proposed parking area.

d. Ensure the underground parking garage does not extend lot line to lot line as this eliminates space for trees.

e. Plant trees around the perimeter of the parking lot in the landscape buffer.

31. Thank you for incorporating a strip of trees on the west side of the site. This is exactly what we are looking for.

32. Boundary and adjacently owned trees are protected through the Tree Protection By-law. The applicant acknowledged this requirement through the Zoning By-law application. The building, excavation, and the location of the shoring cannot impact the neighbouring trees. The Engineer and forestry professional must work together to discuss and develop a plan that satisfies all requirements. Provide a detailed retention plan for these trees in the Tree Conservation Report.

    a. Please provide a conceptual cross section for the excavation to demonstrate there will be no impact to trees of this description as a result of building construction.

    b. Address in the Tree Conservation Report whether there will be conflicts between the building and/or building construction with existing tree canopies. Detail how this will be addressed if relevant and confirm any pruning will not lead to major decline or death of the tree (s).

Tree Conservation Report requirements:

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

33. A Tree Conservation Report (TCR) must be supplied for review along with the suite of other plans/reports required by the City.

34. Any tree 10 cm in diameter or greater and City-owned trees of any diameter requires a tree permit issued under the Tree Protection By-law (By-law 2020 – 340); the permit will be based on an approved TCR and made available at or near plan approval.

35. The TCR must contain 2 separate plans/maps:

    a. Plan/Map 1 - show existing conditions with tree cover information.

    b. Plan/Map 2 - show proposed development with tree cover information.

36. The TCR must list all trees on-site, as well as off-site trees if the CRZ (critical root zone) extends into the developed area, by species, diameter, and health condition. Please note that averages can be used if there are forested areas.

37. Please identify trees by ownership – private on-site, private on adjoining site, city owned, co-owned (trees on a property line).

38. If trees are to be removed, the TCR must clearly show where they are, and document the reason they cannot be retained.

39. The removal of trees on a property line will require the permission of both property owners.

40. All retained trees must be shown, and all retained trees within the area impacted by the development process must be protected as per City guidelines available at Tree Protection Specification or by searching Ottawa.ca.

41. The City encourages the retention of healthy trees; if possible, please seek opportunities for retention of trees that will contribute to the design/function of the site.

42. Removal of a City tree is not permitted unless justified. If justified, monetary compensation for the value of the tree must be paid before a tree removal permit is issued.

Landscape Plan Requirements:

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

Additional Elements for Tree Planting in the Right of Way:

44. Please ensure any retained trees are shown on the Landscape Plan.

45. Sensitive Marine Clay - Please follow the City's 2017 Tree Planting in Sensitive Marine Clay guidelines.

46. Soil Volume - Please demonstrate as per the Landscape Plan Terms of Reference that the available soil volumes for new plantings will meet or exceed the minimum soil volumes requested.

47. The City requests that consideration be given to planting native species wherever there is a high probability of survival to maturity.

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

Minimum Setbacks:

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

50. Maintain 2.5 m from curb.

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

52. Maintain 7.5 m between large growing trees, and 4 m between small growing trees. Park or open space planting should consider 10 m spacing, except where otherwise approved in naturalization/afforestation areas.

53. Adhere to Ottawa Hydro's planting guidelines (species and setbacks) when planting around overhead primary conductors.

Tree Specifications:

54. Minimum stock size: 50 mm tree caliper for deciduous, 200 cm height for coniferous.

55. Maximize the use of large deciduous species wherever possible to maximize future canopy coverage.

56. Tree planting on city property shall be in accordance with the City of Ottawa's Tree Planting Specification; and if possible, include watering and warranty as described in the specification.

57. No root barriers, dead-man anchor systems, or planters are permitted.

58. No tree stakes unless necessary (and only 1 on the prevailing winds side of the tree).

Hard Surface Planting:

59. If there are hard surface plantings, a detailed planting must be provided.

60. Curb style planters are highly recommended.

61. No grates are to be used and if guards are required, City of Ottawa standard (which can be provided) shall be used.

62. Trees are to be planted at grade.

For follow-up questions, please contact Hayley Murray, Forester at hayley.murray@ottawa.ca.

Parkland

Parkland Dedication:

63. The amount of required parkland conveyance is to be calculated as per the City of Ottawa Parkland Dedication By-law No. 2022-280 (or as amended):

    i. For cash-in-lieu of conveyance of parkland (residential > 18 units/net ha): one hectare per 1,000 net residential units but shall not exceed a maximum of 10% of the gross land area where less than or equal to five hectares.

    ii. For conveyance of parkland, cash-in-lieu of conveyance parkland, or combination thereof:

        - 5% of the gross land area (residential ≤ 18 units/net ha).
        - 5% of the gross land area (other purposes, including residential care facility as defined by the Zoning By-law, excluding residential).
        - 2% of the gross land area (commercial & industrial uses).

    iii. Where land is developed for a mix of uses within a building, the conveyance requirement shall be the cumulative sum for each use, as calculated using the applicable rate prorated proportionally to the gross floor area allocated to each use.

Form of Parkland Dedication:

64. Parks Planning will be requesting cash-in-lieu of conveyance of parkland for parkland dedication in accordance with the Parkland Dedication By-law.

Preliminary Parkland Dedication Calculation

65. Parks Planning Request the following information to confirm and calculate the parkland conveyance:

    a. Gross land area in square metres.

    b. Number of residential units proposed/existing.

    c. Gross floor area of proposed of proposed residential development.

    d. The proportion of commercial/residentail development proposed on site.

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

67. Prior to building permit issuance, the Owner shall also pay the parkland appraisal fee of $850.00 plus H.S.T. of $110.50.

68. Full suite of Parks conditions will be included when a formal Site Plan application is submitted.

Reference Documents

69. Please review the following City of Ottawa reference documents which outline the requirements for parkland conveyance and/or cash-in-lieu of parkland.

    a. Parks and Recreation Facilities Master Plan (2021).

    b. Park Development Manual, 2nd edition.

    c. Parkland Dedication By-Law (2022-280) and Planning Act amendments.

    d. City of Ottawa Standard Parks Conditions.

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

For follow-up questions, please contact Louise Cerveny, Parks Planner at Louise.Cerveny@ottawa.ca.

Other

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

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

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

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

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

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

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

Submission Requirements and Fees

1. A Site Plan Control – Complex application is required to proceed with the proposed development.
    a. Additional information regarding fees related to planning applications can be found by visiting: Fees related to planning applications - Development application fees | City of Ottawa.
2. The attached **Study and Plan Identification List** outlines the information and material that has been identified as either required (R) or advised (A) as part of a future complete application submission.
    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.
3. All of the above comments or issues should be addressed to ensure the effectiveness of the application submission review.
4. 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.

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

Yours Truly,
Tracey Scaramozzino, MCIP RPP

Encl. Study and Plan Identification List
List of Technical Agencies
Supplementary Development Information
Accessible Design Standards Site Plan Checklist

c.c. Jaime Mallory, Planner
Nader Kadri, Planner III – Urban Design
Anton Chetrar, Infrastructure Project Manager
Mike Giampa, Transportation Project Manager

Mark Elliott, Environmental Planner
Amy MacPherson, Bird Safe Design
Hayley Murray, Forester
Louise Cerveny, Parks

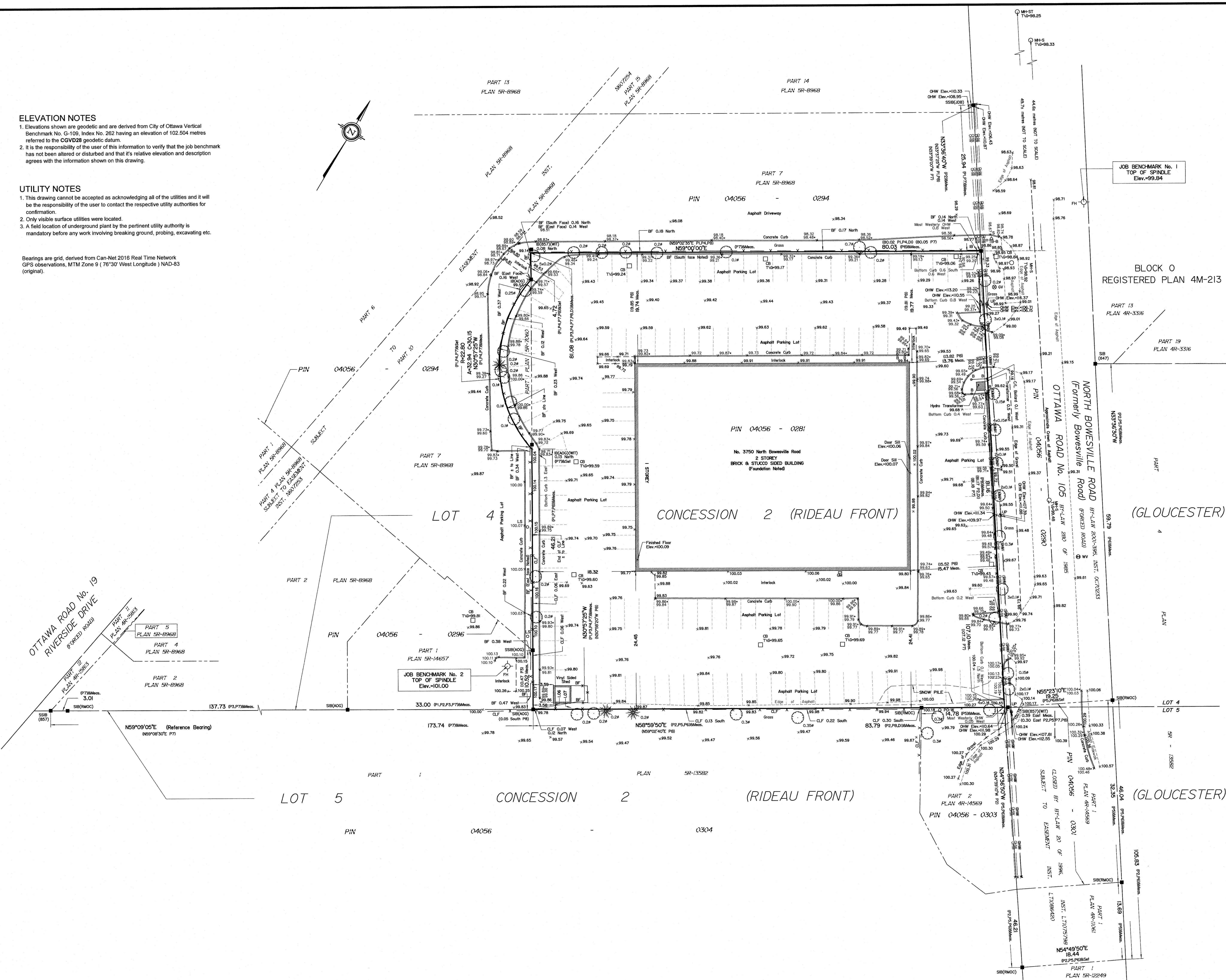
ELEVATION NOTES

1. Elevations shown are geodetic and are derived from City of Ottawa Vertical Benchmark No. G-109, Index No. 262 having an elevation of 102.504 metres referred to the **CGVD28** geodetic datum.
2. It is the responsibility of the user of this information to verify that the job benchmark has not been altered or disturbed and that it's relative elevation and description agrees with the information shown on this drawing.

UTILITY NOTES

1. This drawing cannot be accepted as acknowledging all of the utilities and it will be the responsibility of the user to contact the respective utility authorities for confirmation.
2. Only visible surface utilities were located.
3. A field location of underground plant by the pertinent utility authority is mandatory before any work involving breaking ground, probing, excavating etc.

Bearings are grid, derived from Can-Net 2016 Real Time Network GPS observations, MTM Zone 9 (76°30' West Longitude) NAD-83 (original).



TOPOGRAPHIC PLAN OF SURVEY OF

PART OF LOT 4
CONCESSION 2 (RIDEAU FRONT)
Geographic Township of Gloucester
CITY OF OTTAWA

Surveyed by Annis, O'Sullivan, Vollebekk Ltd.

Scale 1 : 300

12 9 6 3 0 6 12 Metres

Metric

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

Surveyor's Certificate

I CERTIFY THAT :

1. This survey and plan are correct and in accordance with the Surveys Act, the Surveyors Act and the regulations made under them.
2. The survey was completed on the 17th day of April, 2026.

April 30, 2026
Date

E. H. Herweyer
Ontario Land Surveyor

Notes & Legend

	Denotes	
—□—	"	Survey Monument Planted
—■—	"	Survey Monument Found
SIB	"	Standard Iron Bar
SSIB	"	Short Standard Iron Bar
IB	"	Iron Bar
(WIT)	"	Witness
Meas.	"	Measured
(AOG)	"	Annis, O'Sullivan, Vollebekk Ltd.
(P1)	"	Plan 5R-8968
(P2)	"	Plan 5R-13582
(P3)	"	Plan 5R-14657
(P4)	"	Plan 5R-7060
(P5)	"	Plan 4R-14569
(P6)	"	Plan 4R-11061
(P7)	"	(JDB) Plan May 28, 2021
(P8)	"	(1287) Plan December 27, 1989 (Revised January 27, 1994)
(D1)	"	Inst. CT232246
MH-ST	"	Maintenance Hole (Storm Sewer)
MH-S	"	Maintenance Hole (Sanitary)
— OHW —	"	Overhead Wires
UP	"	Utility Pole
PO-W	"	Wooden Pole
LS	"	Light Standard
CB	"	Catch Basin
FH	"	Fire Hydrant
WV	"	Water Valve
T/G	"	Top of Grate
GV	"	Gas Valve
GM	"	Gas Meter
B	"	Bollard
S	"	Sign
CLF	"	Chain Link Fence
BF	"	Board Fence
TB-B	"	Bell Terminal Box
Ø	"	Diameter
+ 65.00	"	Location of Elevations
+ 65.00*	"	Top of Concrete Curb Elevation
C/L	"	Centreline
- - - -	"	Parking Space Paint Line
(tree symbol)	"	Deciduous Tree
(tree symbol)	"	Coniferous Tree

ASSOCIATION OF ONTARIO LAND SURVEYORS
PLAN SUBMISSION FORM
V-130572

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

ANNIS, O'SULLIVAN, VOLLEBEKK LTD.
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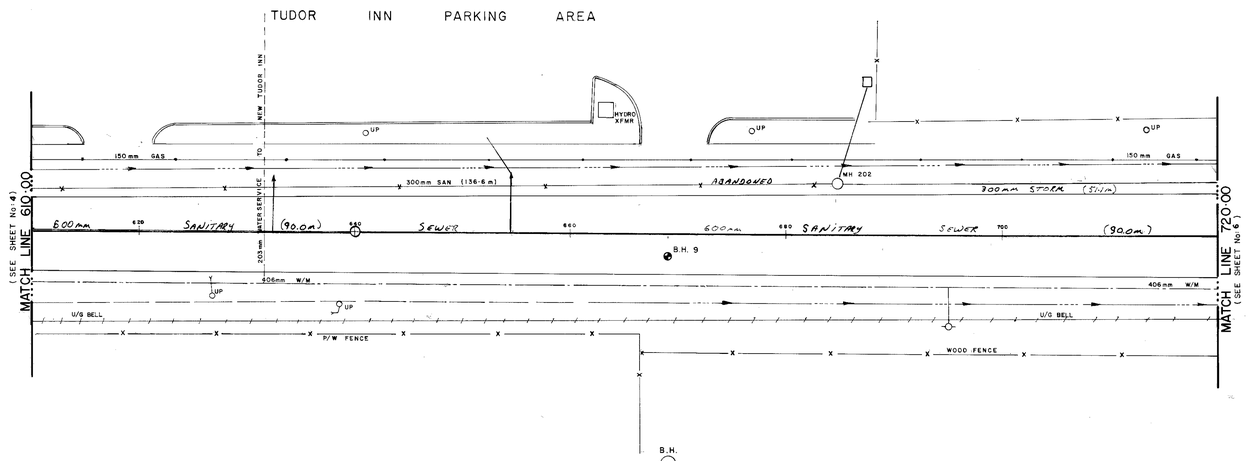
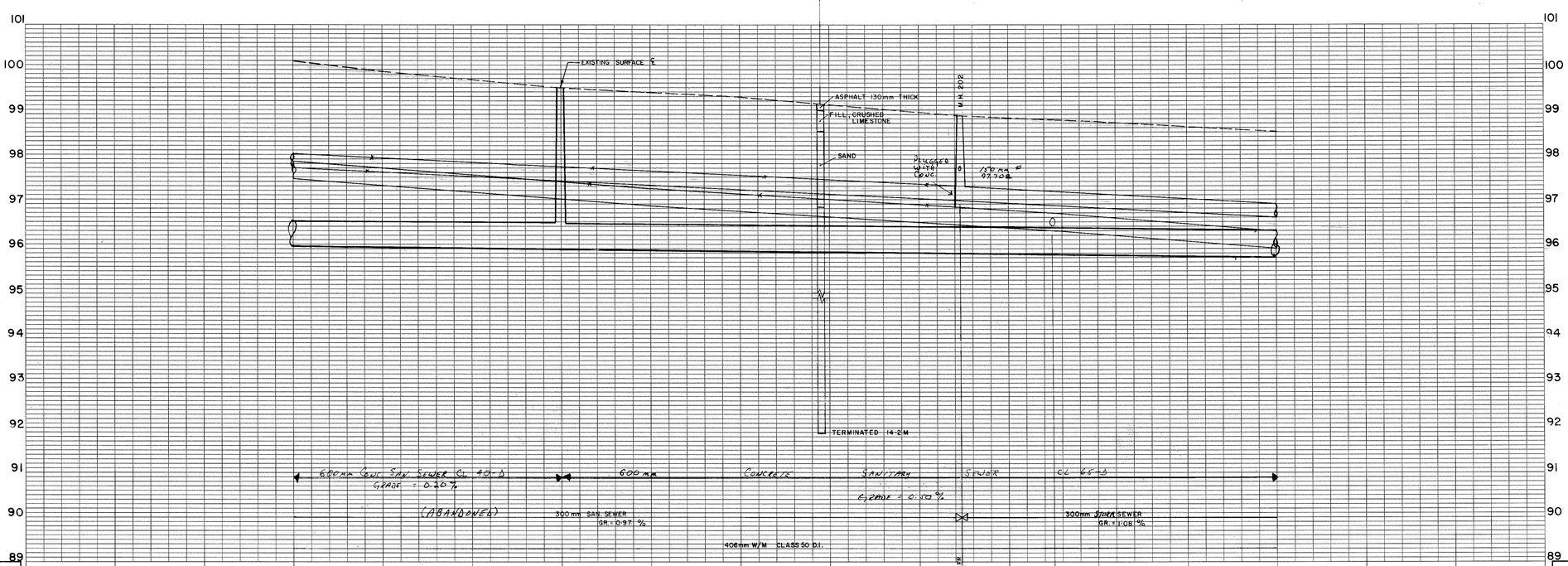
Phone: (613) 727-0850 / Fax: (613) 727-1079
Email: Nepean@aovltd.com
Ontario Land Surveyors

Job No. 23954-23 JRE PtLt 5 C 2 RF T F | ig

2664 (5 of 7)

BOWESVILLE ROAD





Elevations	610.00	620.00	630.00	640.00	650.00	660.00	670.00	680.00	684.80	690.00	695.00	700.00	710.00	720.00
Existing Surface ℄	99.951		99.590		99.391		99.166	98.964 MH				98.858		98.604
West Edge Pavt	97.95	99.871		99.488		99.276		99.069				98.801		98.509
East Edge Pavt		99.919		99.523		99.326		99.062				98.753		98.502
Top of W.M.				SAN. MH 5	97.33			SAN. MH 8			96.79			
Type & Diameter (sewer)				600mm				300mm			MH 8 AVENUE			
Inverts Exist & Prop. (sewer)	97.818			96.783				97.090						96.711
Stations	610.00	620.00	630.00	640.00	650.00	660.00	670.00	680.00	684.80	690.00	695.00	700.00	710.00	720.00

Revisions:

No.	Date	Description	Drawn By	Appr'd By
1	FEB/96	FINAL MEASUREMENTS		

Final Measurements:

Construction Type: SANITARY SEWER & ROAD	Inspector: T. CONNORS, D. BROWN, L. VIAU
Work Commenced: SEPT. 93	Instrumentman: T. CONNORS
Work Completed: JULY 94	Field Book #: 5470 & 5471
Contractor: COLNETT CONST.	Date: 27-SEPT-94
Drafting Revisions: T. CONNORS	Checked By:

Designed By	Date	Checked By	Date
Survey Detail By:	Date	Checked By	Date
Drafting By:	Date	Checked By	Date

Chief Design & Const. Eng.

LICENSED PROFESSIONAL ENGINEER
PROVINCE OF ONTARIO
94·08·12

Notes:

- Utilities shown are taken from best available records. Contractor is requested to check with all utility companies before digging.
- Soil information shown is not guaranteed and contractors are advised to collect additional soils information as deemed necessary.
- Reference bench mark:
- Proposed storm and sanitary sewers may be constructed in a common trench provided that a minimum horizontal distance of 460mm is maintained between outside barrels of pipe.
- All pipes shall conform to the Canadian Standards Association (C.S.A.) A257.2 reinforced concrete sewer pipe with approved rubber gaskets.
- A minimum of 460 mm vertical clearance to be maintained between sewers and watermains where practical.
- Borehole soil descriptions are not based on sieve analysis but on visual inspection only, except where otherwise noted.
- Soil information taken from:
- Date of television inspection:
- This plan supercedes (in whole or in part) plan no:
- Actual rock line recorded during construction of existing sewer.
- Registered plan no.:
- Caution, while illustrations and utilities shown are taken from best available information, they cannot be guaranteed.
- When reduced, the scale of this drawing is approximately 1:400 horizontally and 1:81 vertically. Do not scale this plan.
- See additional notes on sheet No. 1.

City of Ville d' **Ottawa**

Department Of Engineering And Works
Engineering Branch
Design And Construction Division
1600 SCOTT STREET · OTTAWA ONTARIO · K1Y 4N7

Commissioner	Branch Director
D. G. Curry P. Eng.	W. R. Cole P. Eng.

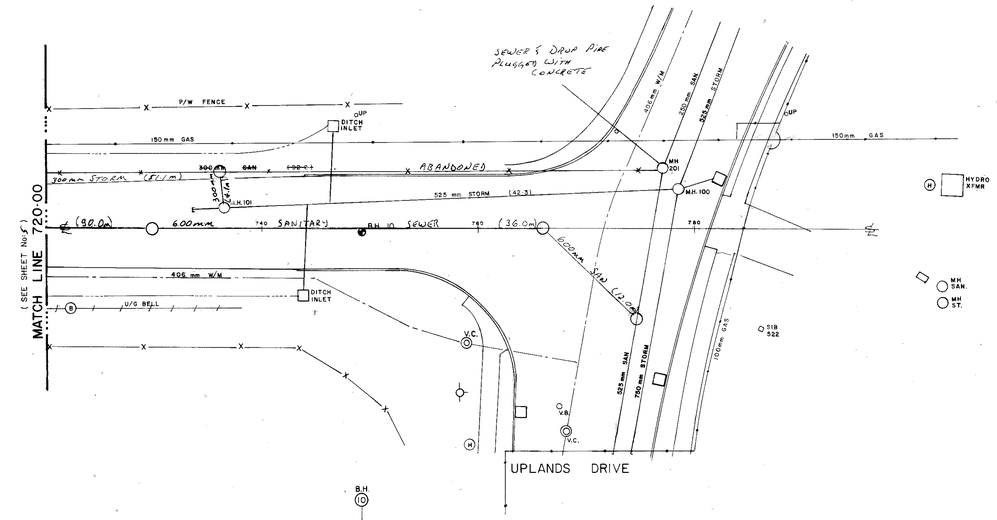
BOWESVILLE ROAD

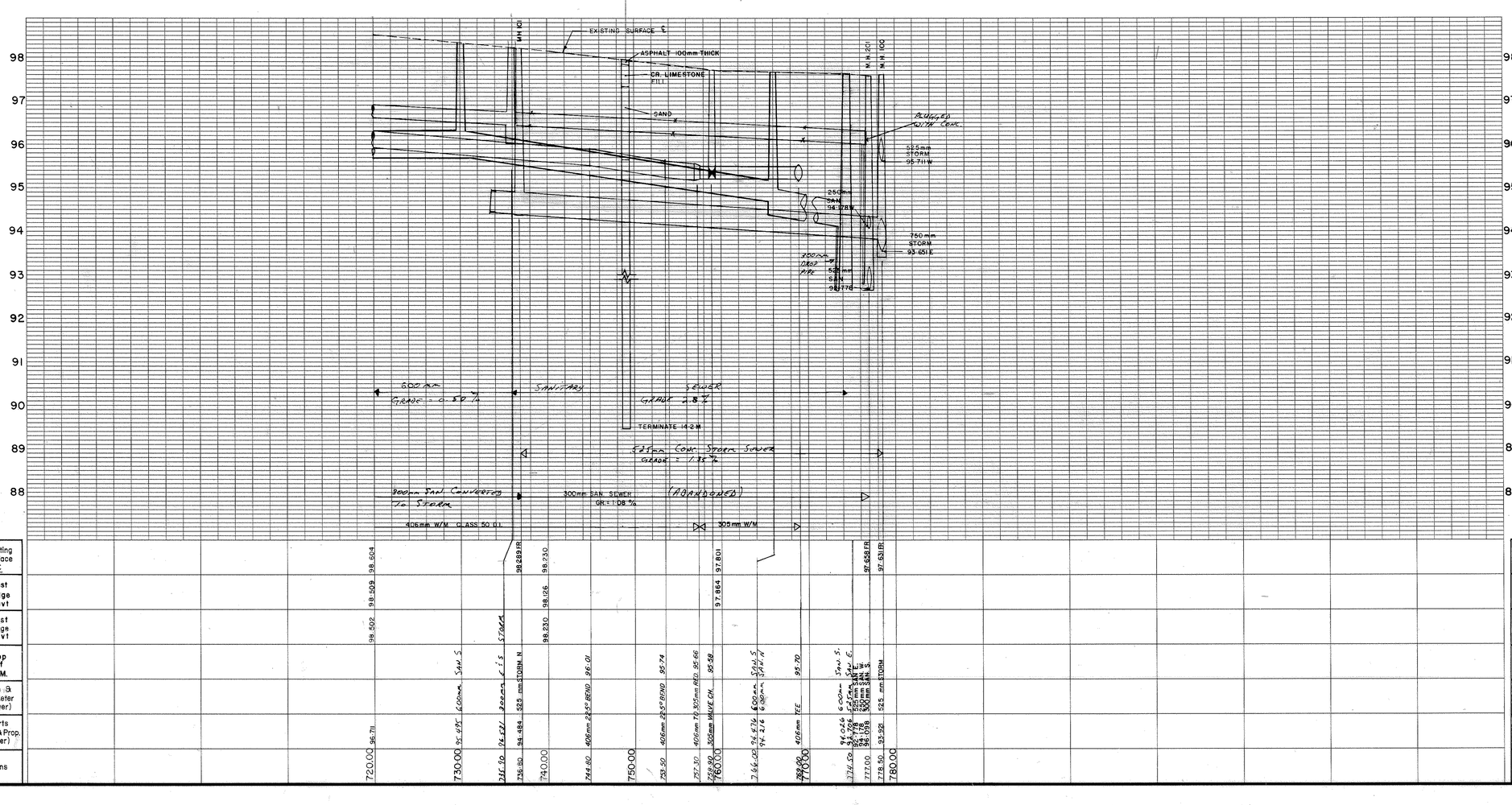
FROM CH. 610·00 TO 710·00

Contract No.:	Survey Books:	Scales: (SEE NOTE)	Plan No:
93C 2664	5470 · 5471	HOR. 1:250 VERT. 1:50	2664 Sheet 5 of 7

2664 (6 OF 7)

BOWESVILLE ROAD





Elevations	720.00	730.00	740.00	750.00	760.00	770.00	780.00
Existing Surface ℄	98.604	98.289 JR	98.730		97.801	97.658 JR	97.631 JR
West Edge Pavt	98.509		98.26		97.864		
East Edge Pavt	99.502		98.230				
Top of W.M.			96.01	95.74	95.66	95.58	95.70
Type & Diameter (sewer)		600mm SAN S. 525 mm STORM N.		406mm 22½° BEND	406mm TO 305mm RED.	300mm VALVE CH.	406mm TEE
Inverts Exist. & Prop. (sewer)	96.711	97.435 E 94.484				94.476 94.276	94.026 93.776
Stations	720.00	730.00	740.00	750.00	760.00	770.00	780.00

Revisions:

No.	Date	Description	Drawn By	Appr'd By
1.	FEB/96	FINAL MEASUREMENTS		

Final Measurements:

Construction Type: SANITARY SEWER & ROAD	Inspector: T. CONNORS, D. BROWN, L. VAN
Work Commenced: SEPT. 93	Instrumentman: T. CONNORS
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Drafting Revisions: T. CONNORS	Checked By:

Designed By	Date	Checked By	Date
Survey Detail By	Date	Checked By	Date
Drafting By	Date	Checked By	Date

Chief Design & Const. Eng.

LICENSED PROFESSIONAL ENGINEER PROVINCE OF ONTARIO 96 08 16

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Engineering Branch
Design And Construction Division
1600 SCOTT STREET · OTTAWA ONTARIO · K1Y 4N7

D.G. Curry P. Eng.	W.R. Cole P. Eng.
Commissioner	Branch Director

BOWESVILLE ROAD

FROM CH. 720-00 TO UPLANDS DRIVE

Contract No.:	Survey Books:	Scales: (SEE NOTE)	Plan No.:
93C 2664	5470 · 5471	HOR. 1:250 VERT. 1:50	2664
			Sheet 6 of 7

Appendix B

Existing Conditions and Removals Plan
(DWG. 26052-XR1)

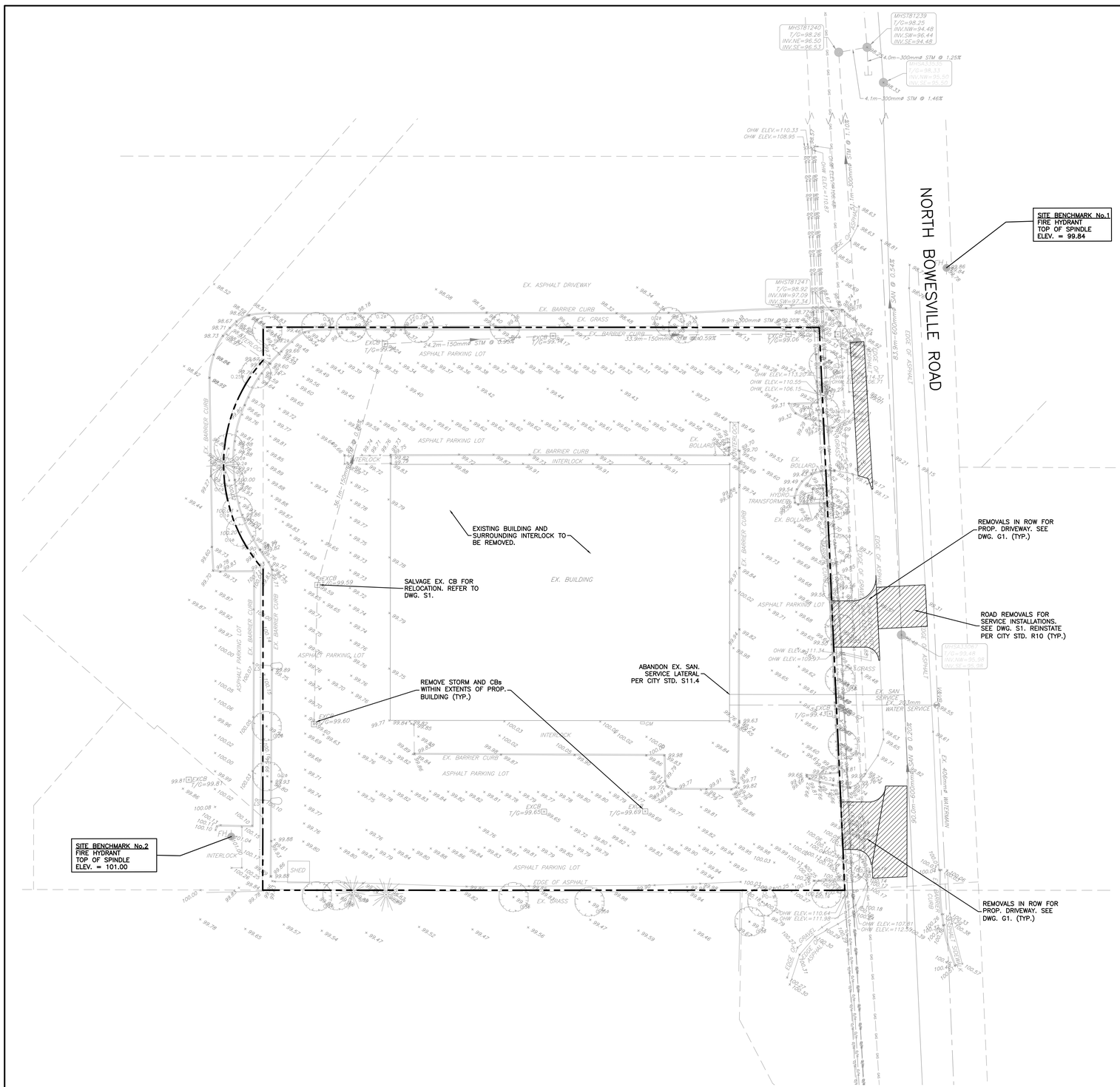
Servicing Plan
(DWG. 26052-S1)

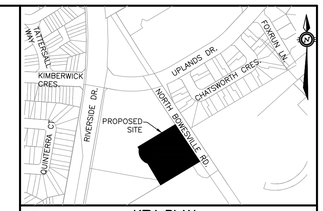
Grading Plan
(DWG. 26052-GR1)

Notes & Details Plan
(DWG. 26052-N1)

Erosion and Sediment Control Plan
(DWG. 26052-ESC1)

Storm Drainage Area Plans
(DWG. 246052-STM1 & STM2)





KEY PLAN

LEGEND

- PROPERTY BOUNDARY
- ×104.00 EXISTING ELEVATION
- EXISTING WATERMAIN
- EXISTING VALVE & VALVE BOX
- EXISTING HYDRANT
- EXISTING SANITARY SEWER & MAINTENANCE HOLE
- EXISTING STORM SEWER & MAINTENANCE HOLE
- EXISTING CATCH BASIN
- EXISTING UTILITY POLE
- EXISTING OVERHEAD UTILITIES
- EXISTING HYDRO TRANSFORMER
- EXISTING NATURAL GAS
- REMOVALS

NOT FOR CONSTRUCTION

NOTES

THE POSITION OF ALL POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

PROPERTY BOUNDARIES HAVE BEEN DERIVED FROM THE TOPOGRAPHIC PLAN OF SURVEY OF PART OF LOT 4 CONCESSION 2 (RIDEAU FRONT) GEOGRAPHIC TOWNSHIP OF GLOUCESTER CITY OF OTTAWA, PREPARED BY ANNIS, O'SULLIVAN, VOLLEBEKK LTD., DATED APRIL 17, 2026. BEARINGS ARE DERIVED FROM CAN-NET 2016 REAL TIME NETWORK GPS OBSERVATIONS, MTM ZONE 9, NAD-83 (ORIGINAL). ELEVATIONS ARE GEODETIC (CGVD28) AND ARE DERIVED FROM FROM VERTICAL BENCHMARK No.G-109: ELEVATION 102.504

NO.	REVISION DESCRIPTION	DATE	BY
1	ISSUED FOR SPA	08/07/26	SM

SCALE
0 3m 6m 12m
HORIZONTAL 1:300

LICENSED PROFESSIONAL ENGINEER
JUL 08/26
S.A.G.MCCAUGHEY
100217133
PROVINCE OF ONTARIO

Robinson Land Development
2936 Baseline Road, Suite 200, Ottawa, ON K2H 1B3
(613) 592-6060 rcii.com

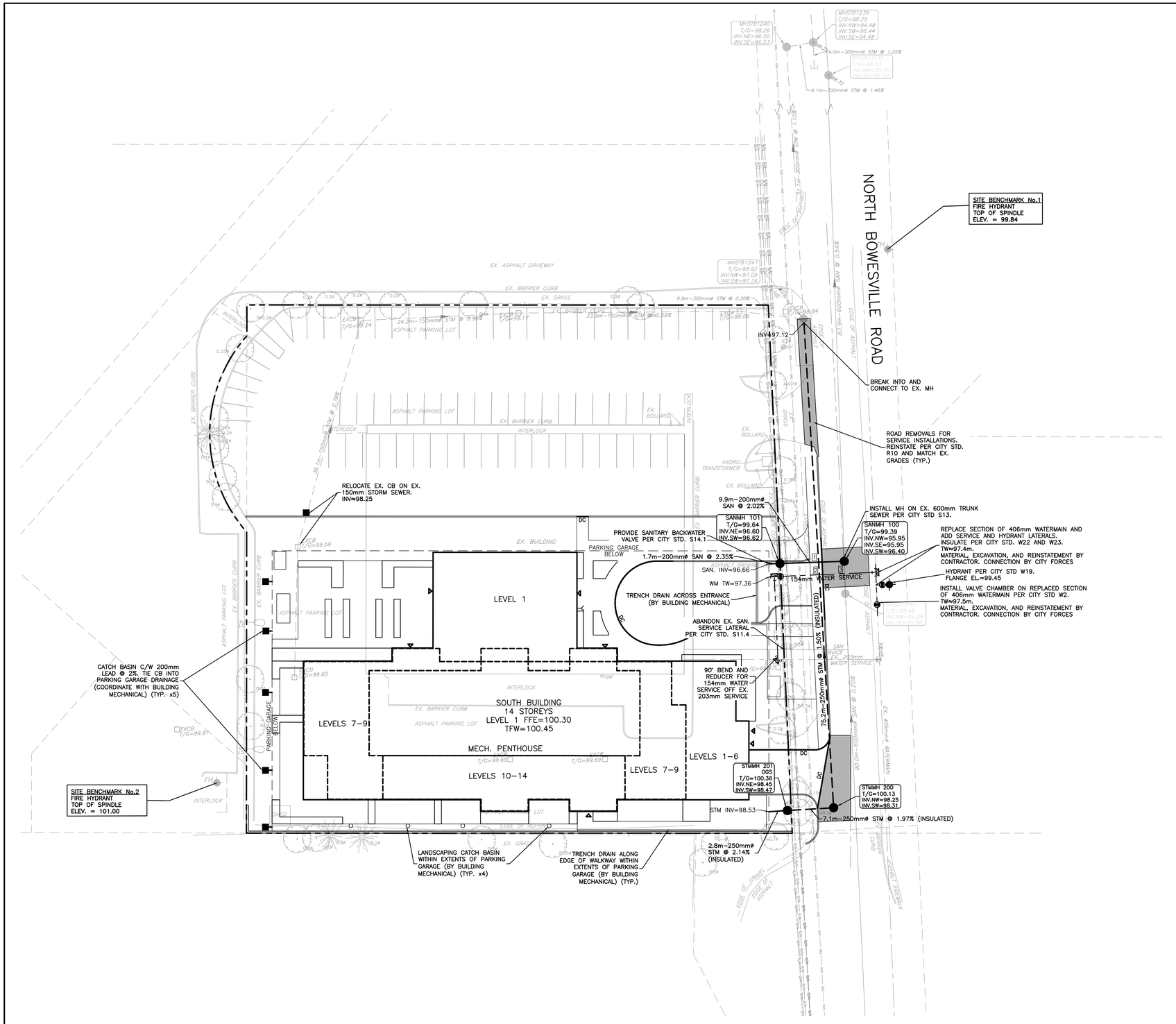
DESIGN	SM
CHECKED	BM
DRAWN	NI
CHECKED	SM
APPROVED	CC

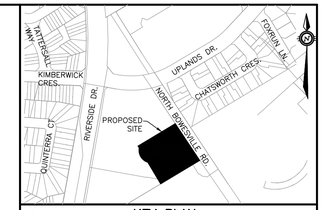
JENNINGS REAL ESTATE

3750 NORTH BOWESVILLE ROAD

EXISTING CONDITIONS AND REMOVALS PLAN

PROJECT No.	26052
SURVEY	AOV
DATED	JULY 2026
DWG. No:	26052-XR1





LEGEND

- PROPERTY BOUNDARY
- ×104.00 EXISTING ELEVATION
- EXISTING WATERMAIN
- EXISTING VALVE & VALVE BOX
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- EXISTING STORM SEWER & MAINTENANCE HOLE
- EXISTING CATCH BASIN
- EXISTING UTILITY POLE
- EXISTING OVERHEAD UTILITIES
- EXISTING HYDRO TRANSFORMER
- EXISTING NATURAL GAS
- WATERMAIN
- VALVE & VALVE BOX
- PROPOSED HYDRANT
- SIAMESE CONNECTION
- SANITARY SEWER & MAINTENANCE HOLE
- STORM SEWER & MAINTENANCE HOLE
- CATCH BASIN
- LANDSCAPE CATCH BASIN (PARKING GARAGE ROOF DRAIN – BY MECHANICAL)
- BUILDING ENTRANCE
- 1 CROSSING NUMBER

UTILITY CROSSING TABLE

CROSSING No.	SERVICE	INVERT/OBVERT	SEPARATION (m)
1	STM	97.67	0.94
	SAN	96.73	
2	STM	97.70	0.50
	WATER	97.20	
3	WATER	97.07	0.50
	EX. SAN	96.57	

NOT FOR CONSTRUCTION

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LICENSED PROFESSIONAL ENGINEER
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PROVINCE OF ONTARIO

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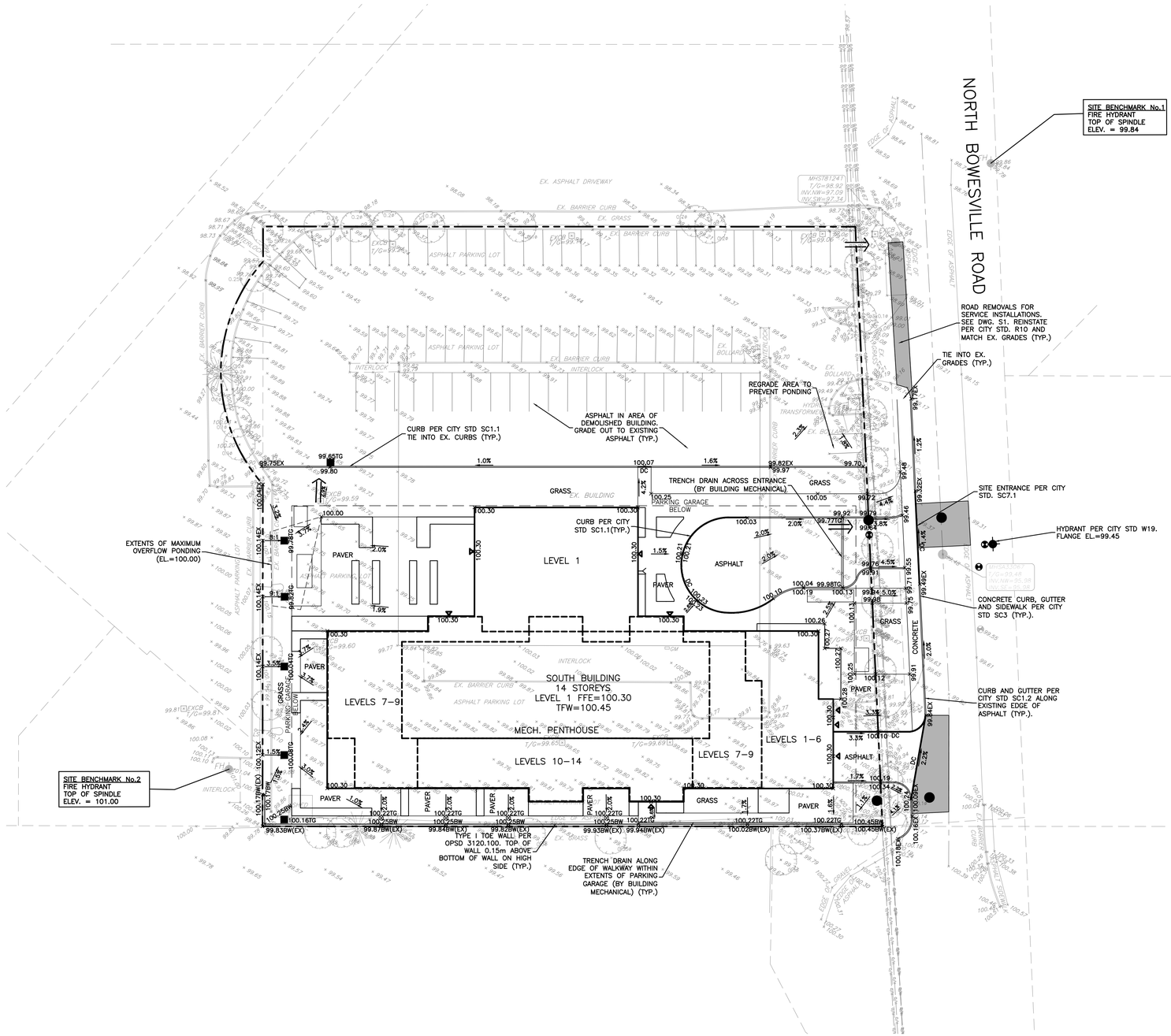
DESIGN	SM
CHECKED	BM
DRAWN	NI
CHECKED	SM
APPROVED	CC

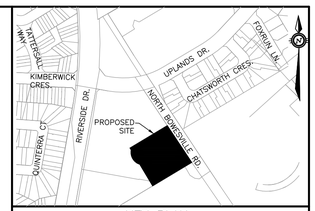
JENNINGS REAL ESTATE

3750 NORTH BOWESVILLE ROAD

SERVICING PLAN

PROJECT No.	26052
SURVEY	AOV
DATED	JULY 2026
DWG. No:	26052-S1





KEY PLAN

LEGEND

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- EXISTING CATCH BASIN
- EXISTING UTILITY POLE
- EXISTING OVERHEAD UTILITIES
- EXISTING HYDRO TRANSFORMER
- × 99.00 PROPOSED GRADE
- 2.0% DRAINAGE SLOPE & DIRECTION
- VALVE & VALVE BOX
- PROPOSED HYDRANT
- Y SIAMESE CONNECTION
- MAINTENANCE HOLE
- CATCH BASIN
- LANDSCAPE CATCH BASIN (PARKING GARAGE ROOF DRAIN – BY MECHANICAL)
- MAXIMUM OVERFLOW PONDING
- MAJOR OVERLAND FLOW ROUTE
- BUILDING ENTRANCE

NOT FOR CONSTRUCTION

NOTES

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NO.	REVISION DESCRIPTION	DATE	BY
1	ISSUED FOR SPA	08/07/26	SM

SCALE
0 3m 6m 12m
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LICENCED PROFESSIONAL ENGINEER
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PROVINCE OF ONTARIO

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DESIGN	SM
CHECKED	BM
DRAWN	NI
CHECKED	SM
APPROVED	CC

JENNINGS REAL ESTATE

3750 NORTH BOWESVILLE ROAD

GRADING PLAN

PROJECT No.	26052
SURVEY	AOV
DATED	JULY 2026
DWG. No:	26052-GR1

GENERAL NOTES:

1. ALL WORKS AND MATERIALS SHALL CONFORM TO THE LATEST REVISIONS OF THE STANDARDS AND SPECIFICATIONS OF THE CITY OF OTTAWA AND ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD) AND SPECIFICATIONS (OPSS), AS AMENDED BY THE CITY OF OTTAWA.
2. THE CONTRACTOR SHALL CONFIRM THE LOCATION OF ALL EXISTING UTILITIES WITHIN THE SITE AND ADJACENT WORK AREAS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES TO THE SATISFACTION OF THE AUTHORITY HAVING JURISDICTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR OR REPLACEMENT OF ANY SERVICES OR UTILITIES DISTURBED DURING CONSTRUCTION, TO THE SATISFACTION OF THE AUTHORITY HAVING JURISDICTION.
3. ALL DIMENSIONS AND ELEVATIONS SHALL BE CHECKED AND VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCIES SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER.
4. DESIGN ELEVATIONS GIVEN ARE TO BE ADHERED TO WITH NO CHANGES WITHOUT PRIOR WRITTEN APPROVAL BY ROBINSON LAND DEVELOPMENT. CONTRACTOR TO PROVIDE AS CONSTRUCTED SURVEY TO VERIFY WORKS ARE COMPLETED IN ACCORDANCE WITH THE DESIGN.
5. ALL GROUND SURFACES SHALL BE EVENLY GRADED WITHOUT PONDING AREAS TO PROPOSED GRADES WHERE NOTED, AND EXISTING GRADES OTHERWISE.
6. CONTRACTOR SHALL ADJUST FINAL GRADE OF EXISTING MAINTENANCE HOLES, VALVE BOXES, ETC. AS REQUIRED TO MATCH PROPOSED GRADES.
7. ANY AREAS BEYOND THE LIMIT OF THE SITE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER TO THE SATISFACTION OF THE AUTHORITY HAVING JURISDICTION AT THE CONTRACTOR'S EXPENSE.
8. RELOCATION OF EXISTING SERVICES AND/OR UTILITIES SHALL BE AS SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER AT THE EXPENSE OF THE CONTRACTOR.
9. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE "OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS". THE GENERAL CONTRACTOR SHALL BE DEEMED TO BE THE CONSTRUCTOR AS DEFINED IN THE ACT.
10. ALL CONSTRUCTION SIGNAGE MUST CONFORM TO THE M.T.O. MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (LATEST AMENDMENT).
11. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
12. THE SUPPORT OF ALL UTILITIES SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.
13. THE CONTRACTOR WILL BE RESPONSIBLE FOR ADDITIONAL BEDDING OR ADDITIONAL STRENGTH PIPE IF THE MAXIMUM TRENCH WIDTH, AS SPECIFIED BY OPSD, IS EXCEEDED.
14. ALL NECESSARY CLEARING AND GRUBBING SHALL BE COMPLETED BY THE CONTRACTOR. REFER TO LANDSCAPE PLANS FOR ANY TREE CUTTING.
15. REFER TO GEOTECHNICAL INVESTIGATION REPORT BY XXX, DATED XXX.
16. THE CONTRACTOR IS RESPONSIBLE FOR AND SHALL PROVIDE FOR DEWATERING, SUPPORT AND PROTECTION OF EXCAVATIONS AND TRENCHING AS WELL AS RELEASE OF ANY PUMPED GROUNDWATER IN A CONTROLLED AND APPROVED MANNER.
17. DO NOT CONSTRUCT USING DRAWINGS THAT ARE NOT MARKED "ISSUED FOR CONSTRUCTION".
18. CONTRACTOR IS RESPONSIBLE FOR ALL LAYOUT FOR CONSTRUCTION PURPOSES.
19. THE CONTRACTOR SHALL BE RESPONSIBLE TO MANAGE EXCESS SOIL IN ACCORDANCE WITH ONTARIO REGULATION 406/19.

STORM SEWERS:

1. ALL REINFORCED CONCRETE STORM SEWER PIPE SHALL BE IN ACCORDANCE WITH CSA A257.2 (LATEST AMENDMENT). ALL NON-REINFORCED CONCRETE STORM SEWER PIPE SHALL BE IN ACCORDANCE WITH CSA A257.1 (LATEST AMENDMENT). PIPE SHALL BE JOINTED WITH STD. RUBBER GASKETS AS PER CSA A257.3 (LATEST AMENDMENT).
2. ALL PVC STORM SEWERS ARE TO BE SDR 35 APPROVED PER C.S.A. B182.2 OR LATEST AMENDMENT, UNLESS OTHERWISE SPECIFIED.
3. ALL STORM SEWER TRENCH AND BEDDING SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA STD. S6 AND S7 CLASS 'B' UNLESS OTHERWISE SPECIFIED. BEDDING AND COVER MATERIAL SHALL BE SPECIFIED BY GEOTECHNICAL REPORT.
4. THE STORM SEWER CLASSES HAVE BEEN DESIGNED BASED ON BEDDING CONDITIONS SPECIFIED ABOVE. WHERE THE SPECIFIED TRENCH WIDTH IS EXCEEDED, THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE ADDITIONAL BEDDING, A DIFFERENT TYPE OF BEDDING OR A HIGHER PIPE STRENGTH AT HIS OWN EXPENSE AND SHALL ALSO BE RESPONSIBLE FOR EXTRA TEMPORARY AND/OR PERMANENT REPAIRS MADE NECESSARY BY THE WIDENED TRENCH.
5. ALL STORM MANHOLES SHALL BE 1200mm DIAMETER AS PER OPSD 701.010 UNLESS OTHERWISE NOTED.
6. ALL CATCH BASINS SHALL BE 600mm X 600mm AS PER OPSD 705.010 UNLESS OTHERWISE NOTED.
7. STORM MANHOLE FRAME AND COVERS SHALL BE AS PER CITY OF OTTAWA STD. S24.1 AND S25. CBMH COVER AS PER CITY OF OTTAWA STD. S28.1.
8. CB FRAME PER OPSD 400.020 AND COVER PER CITY OF OTTAWA STD. 19.1.
9. STORM SEWER MANHOLES SERVING SEWERS LESS THAN 900mm SHALL BE CONSTRUCTED WITH A 300mm SUMP. FOR STORM SEWERS 900mm AND OVER USE BENCHING IN ACCORDANCE WITH OPSD 701.021.
10. STORM SERVICE CONNECTION REQUIRES APPROVED CONTROLLED SETTLEMENT JOINT IN ACCORDANCE WITH CITY OF OTTAWA STANDARD S11 AND S11.1.
11. FOUNDATION DRAINS TO BE INSTALLED WITH BACKWATER VALVES PER CITY OF OTTAWA STD. S14.
12. SEWERS WITH LESS THAN 2m COVER SHALL BE INSULATED PER CITY OF OTTAWA STD. S35.

SANITARY SEWERS:

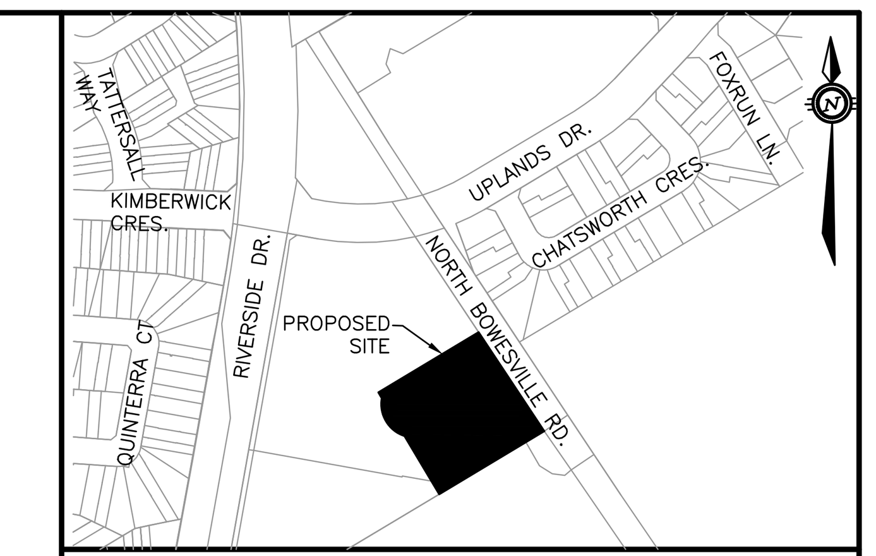
1. ALL SANITARY SEWERS SHALL BE PVC SDR 35 AND SERVICE LATERALS SHALL BE PVC SDR 28, IN ACCORDANCE WITH CITY OF OTTAWA STANDARDS.
2. SANITARY SEWER TRENCH AND BEDDING SHALL BE AS PER CITY OF OTTAWA STD. S6 AND S7, CLASS 'B' BEDDING UNLESS OTHERWISE NOTED. BEDDING AND COVER MATERIAL SHALL BE SPECIFIED BY GEOTECHNICAL REPORT.
3. ALL SANITARY SERVICES ARE TO BE EQUIPPED WITH APPROVED BACKWATER VALVES PER CITY OF OTTAWA STD. S11.1.
4. SANITARY MANHOLE FRAME AND COVERS SHALL BE WATERTIGHT AS PER CITY OF OTTAWA STD. S24 AND S25.
5. SANITARY SEWER MANHOLES SHALL BE 1200mm DIAMETER AS PER OPSD 701.010 AND BENCHED AS PER OPSD 701.021.
6. SANITARY PRE-CAST MANHOLE SHALL BE CONSTRUCTED WITH A HIGHER PERCENTAGE OF SILICA FUME IN THE CONCRETE TO MAKE IT MORE DENSE AND LESS SUSCEPTIBLE TO CORROSION OR PINHOLE LEAKS.
7. FOR SANITARY MANHOLES, DEPENDING ON THE ELEVATION OF THE GROUNDWATER TABLE, AND BASED ON THE RECOMMENDATION OF THE PROJECT GEOTECHNICAL CONSULTANT, CRETEX SEALS, OR A SIMILAR PRODUCT, SHALL BE INSTALLED IN THE PRE-CAST MANHOLE SECTION TO JUST BELOW THE MANHOLE FRAME TO PREVENT INFILTRATION.
8. CONTRACTOR SHALL PERFORM LEAKAGE TESTING, IN THE PRESENCE OF THE CONSULTANT, FOR SANITARY SEWERS IN ACCORDANCE WITH OPSS 410 AND OPSS 407. CONTRACTOR SHALL PERFORM VIDEO INSPECTION OF ALL STORM AND SANITARY SEWERS. A COPY OF THE VIDEO AND INSPECTION REPORT SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.
9. IN ACCORDANCE WITH CITY OF OTTAWA STANDARD S11, SANITARY SERVICE CONNECTION REQUIRES APPROVED CONTROLLED SETTLEMENT JOINT.
10. SEWERS AND LATERALS WITH LESS THAN 2m COVER SHALL BE INSULATED PER CITY OF OTTAWA STD. S35.

WATER SUPPLY:

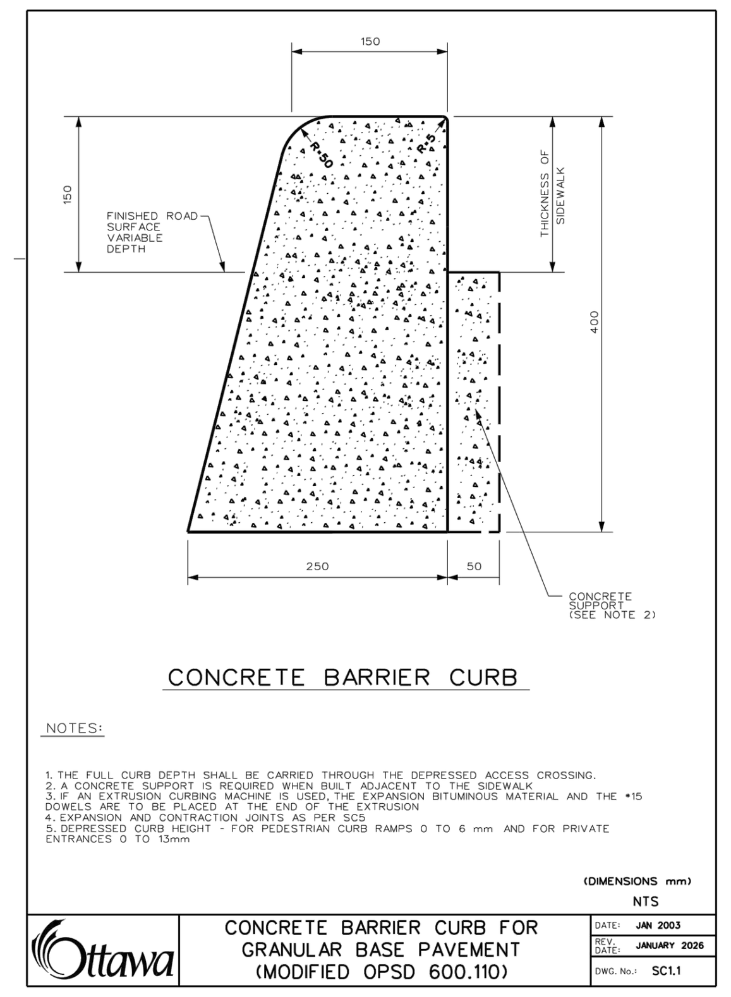
1. ALL PVC WATERMAINS SHALL BE EQUAL TO AWWA C-900 CLASS 150, SDR 18, OR APPROVED EQUAL.
2. WATERMAIN TRENCH AND BEDDING SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA STANDARD W17, UNLESS OTHERWISE SPECIFIED. BEDDING AND COVER MATERIAL SHALL BE SPECIFIED BY GEOTECHNICAL REPORT.
3. ALL PVC WATERMAINS SHALL BE INSTALLED WITH A 10 GAUGE STRANDED COPPER TWU OR RWU TRACER WIRE IN ACCORDANCE WITH CITY OF OTTAWA STD. W36.
4. CATHODIC PROTECTION IS REQUIRED ON ALL METALLIC FITTINGS AS PER CITY OF OTTAWA STD. W40 AND W42.
5. CONTRACTOR TO SUPPLY HYDRANT EXTENSION TO ADJUST THE LENGTH OF HYDRANT BARREL IF REQUIRED.
6. FIRE HYDRANTS SHALL BE INSTALLED AS PER CITY OF OTTAWA STD. W19, AND LOCATED AS PER CITY STD. W18.
7. VALVE IN BOXES SHALL BE INSTALLED AS PER CITY OF OTTAWA STD. W24.
8. WATERMAIN IN FILL AREAS TO BE INSTALLED WITH RESTRAINED JOINTS AS PER CITY OF OTTAWA STD. W25.5 AND W25.6.
9. THRUST BLOCKING OF WATERMAIN TO BE INSTALLED AS PER CITY OF OTTAWA STD. W25.3 AND W25.4.
10. INSULATION FOR WATERMAIN CROSSING OVER AND BELOW SEWER SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA STD. W25.2 AND W25, RESPECTIVELY, WHERE WATERMAIN COVER IS LESS THAN 2.4m.
11. INSULATION BETWEEN WATERMAIN AND OPEN STRUCTURES IN ACCORDANCE WITH CITY OF OTTAWA STD. W23 WHERE CLEARANCE IS LESS THAN 2.4m.
12. THE MINIMUM VERTICAL CLEARANCE BETWEEN WATERMAIN AND SEWER IS 0.5m , AS PER CITY STD. W25.2. FOR CROSSING UNDER SEWER, ADEQUATE STRUCTURAL SUPPORT FOR THE SEWERS IS REQUIRED TO PREVENT EXCESSIVE DEFLECTION OF JOINTS AND SETTLING. THE LENGTH OF WATER PIPE SHALL BE CENTERED AT THE POINT OF CROSSING SO THAT THE JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE SEWER AS PER CITY STD. W25.
13. CONNECTION TO EXISTING WATERMAIN TO BE PERFORMED BY CITY FORCES. CONTRACTOR TO PROVIDE LABOUR, EQUIPMENT AND MATERIAL REQUIRED FOR EXCAVATION, BEDDING AND REINSTATEMENT.
10. THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY CAPS, PLUGS AND BLOW-OFFS AND NOZZLES REQUIRED FOR TESTING AND DISINFECTION OF THE WATERMAIN.
11. SWABBING, DISINFECTION, AND HYDROSTATIC TESTING TO BE CONDUCTED AS PER CITY OF OTTAWA STANDARDS IN THE PRESENCE OF A CITY INSPECTOR AND/OR CONSULTANT.

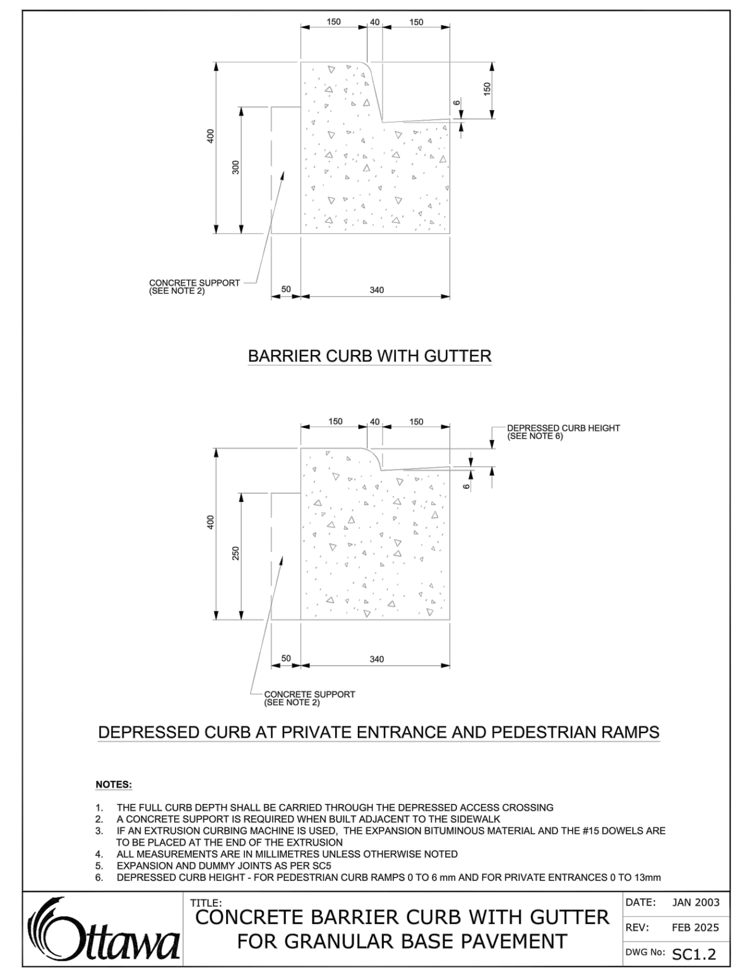
ROADWORK SPECIFICATIONS:

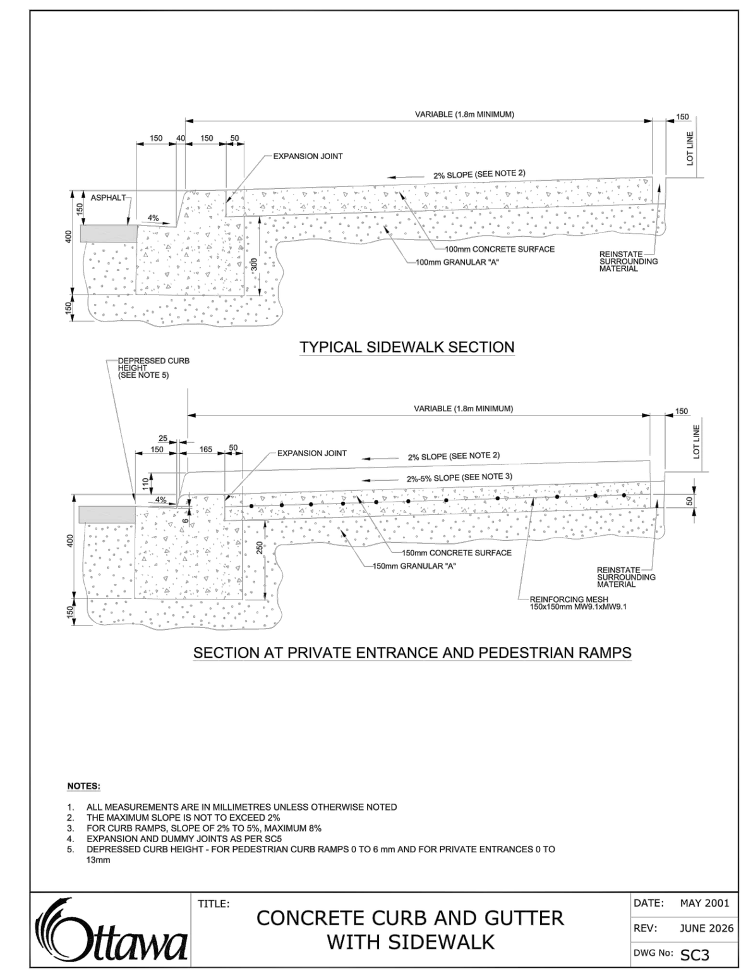
1. CONCRETE CURB SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA STD. SC1.1 (BARRIER CURB) OR SC1.2 (CURB & GUTTER) AS NOTED. PROVISION SHALL BE MADE FOR CURB DEPRESSIONS AT SIDEWALKS AND DRIVEWAYS.
2. ALL BARRIER CURB TO BE 150mm ABOVE FINISHED ASPHALT GRADE UNLESS OTHERWISE NOTED.
3. CONCRETE SIDEWALK SHALL BE IN ACCORANCE WITH CITY OF OTTAWA STD. SC3 WITH CONSTRUCTION JOINTS PER SC5.
4. PAVEMENT REINSTATEMENT FOR SERVICE AND UTILITY CUTS SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA STD. R10 AND OPSD 509.010, OPSS 310.
5. GRANULAR "A" SHALL BE PLACED TO A MINIMUM THICKNESS OF 300mm AROUND ALL STRUCTURES WITHIN PAVEMENT AREA.
6. ASPHALT WEAR COURSE SHALL NOT BE PLACED UNTIL THE VIDEO INSPECTION OF SEWERS & NECESSARY REPAIRS HAVE BEEN CARRIED OUT TO THE SATISFACTION OF THE ENGINEER.
7. SUB-EXCAVATE SOFT AREAS AND FILL WITH GRANULAR 'B' COMPACTED TO 95% SPMDD IN MAXIMUM 300mm LIFTS.
8. ALL EDGES OF DISTURBED PAVEMENT SHALL BE SAW-CUT TO FORM A NEAT AND STRAIGHT LINE PRIOR TO PLACING NEW ASPHALT.
9. PAVEMENT DESIGN AS PER GEOTECHNICAL RECOMMENDATIONS. SEE GEOTECHNICAL INVESTIGATION REPORT BY XXX, DATED XXX.

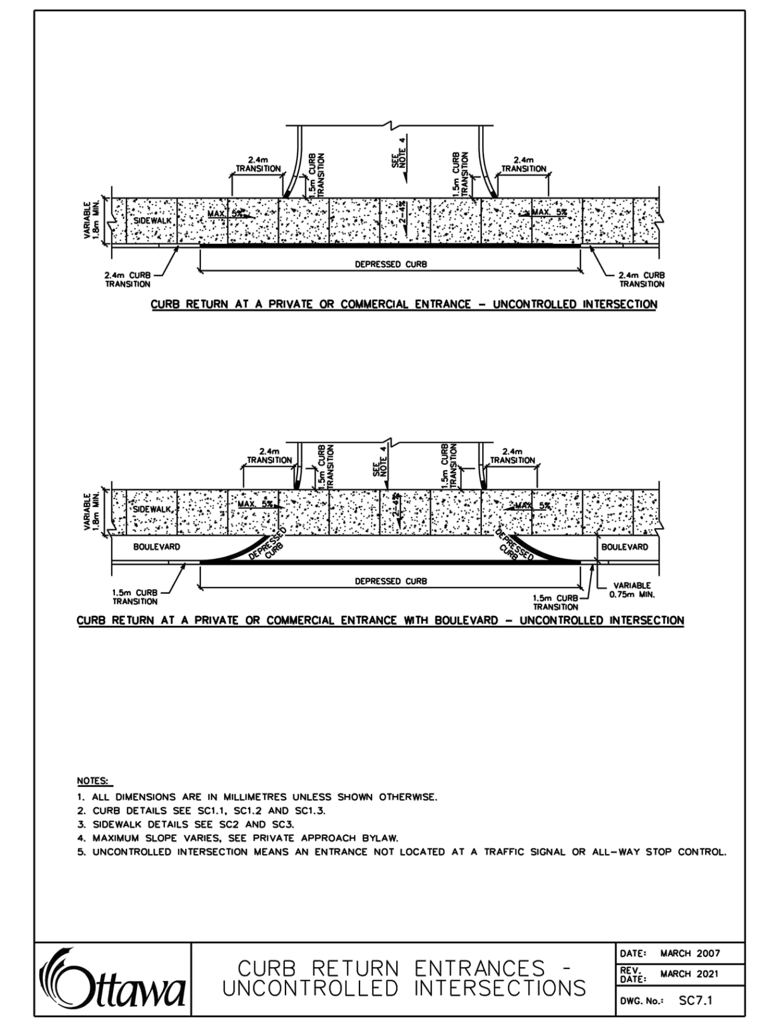


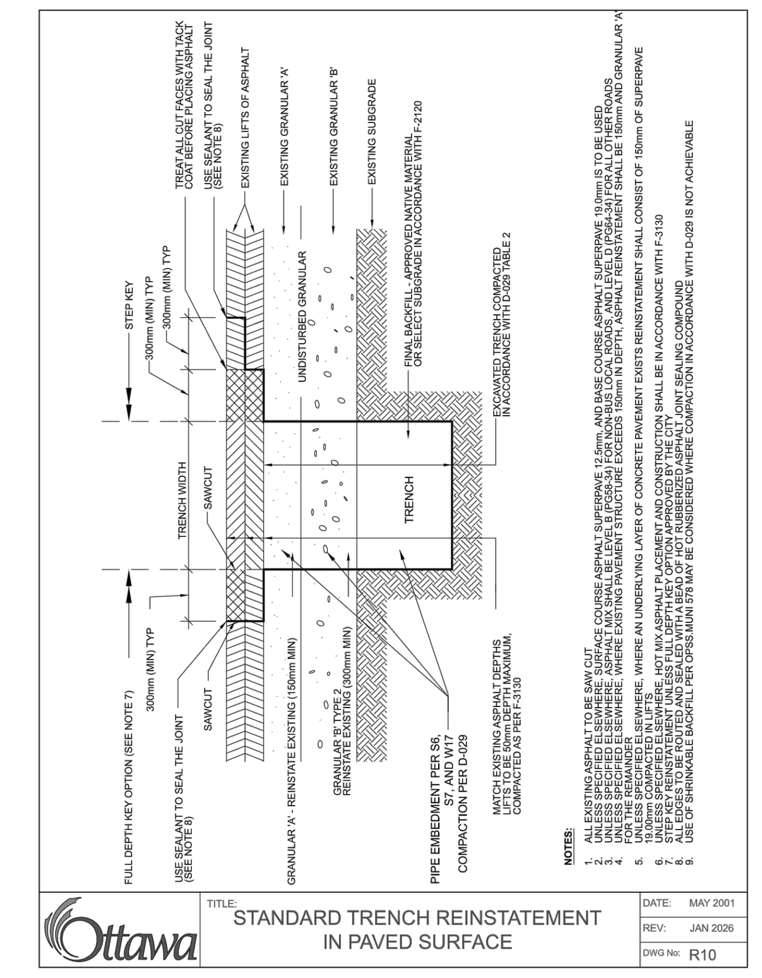
KEY PLAN

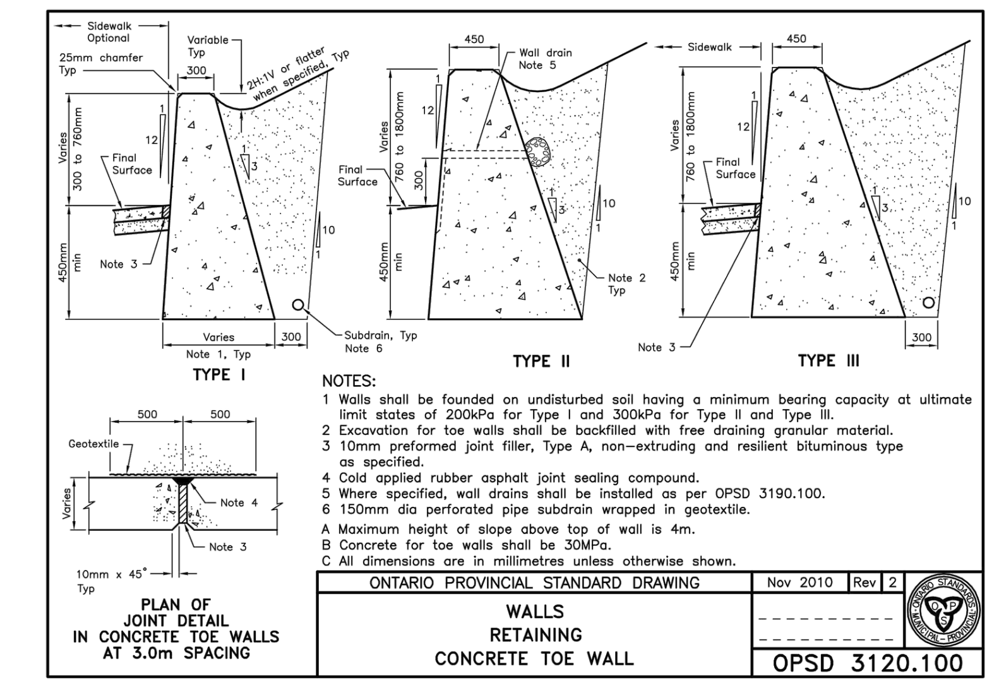


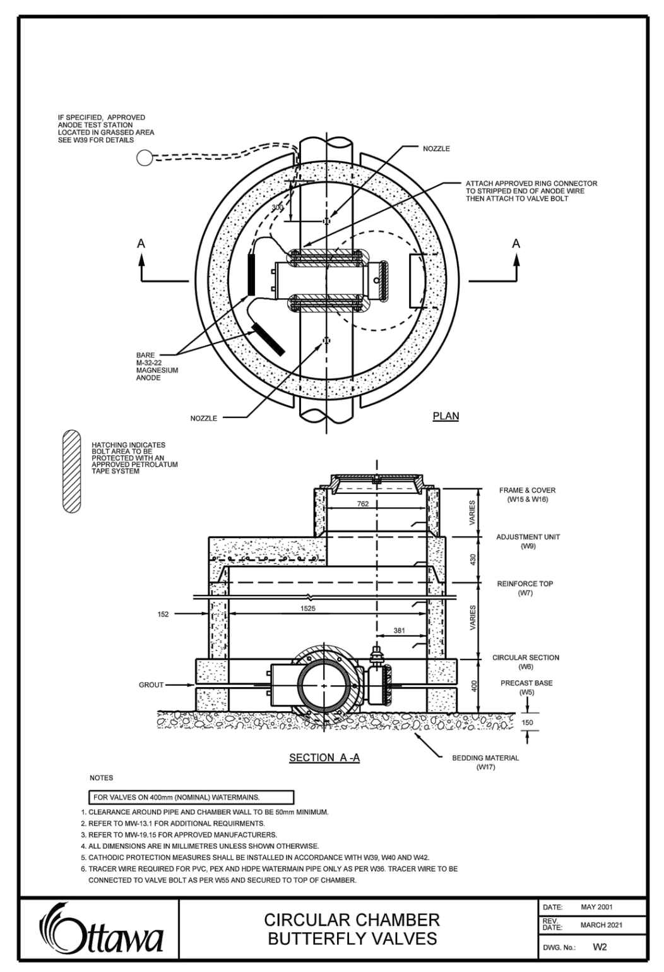


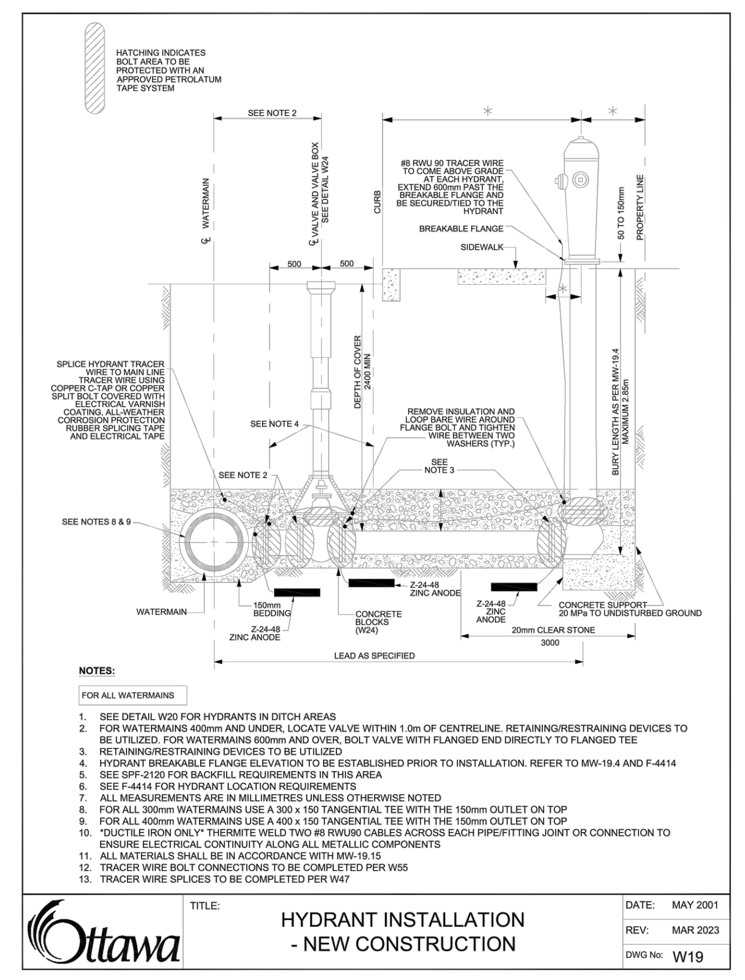


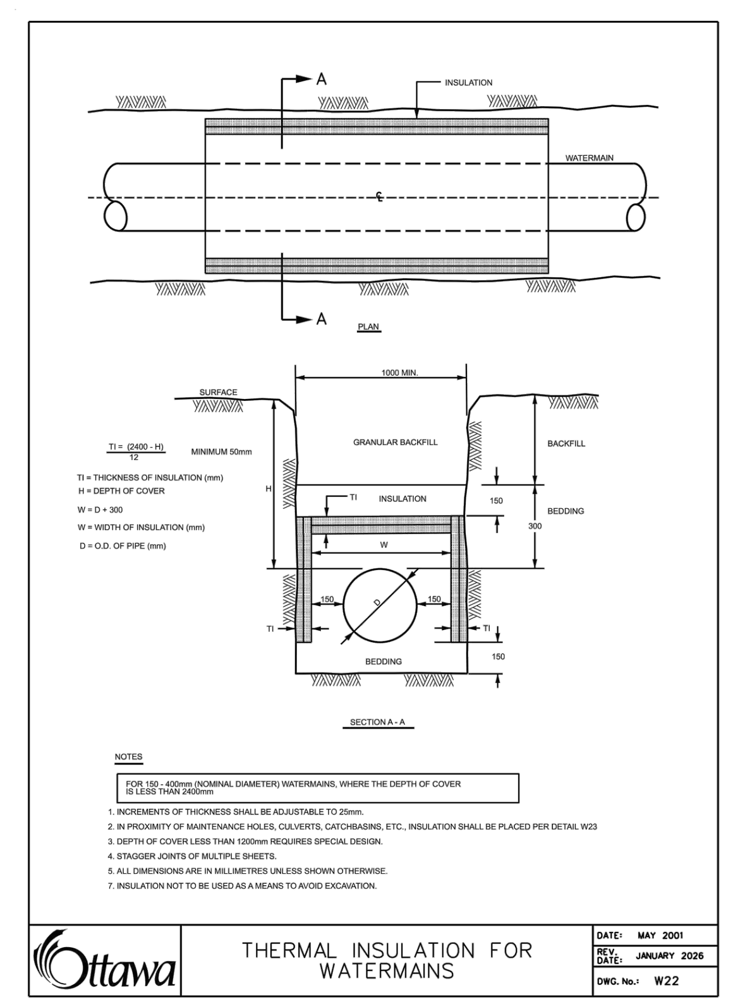


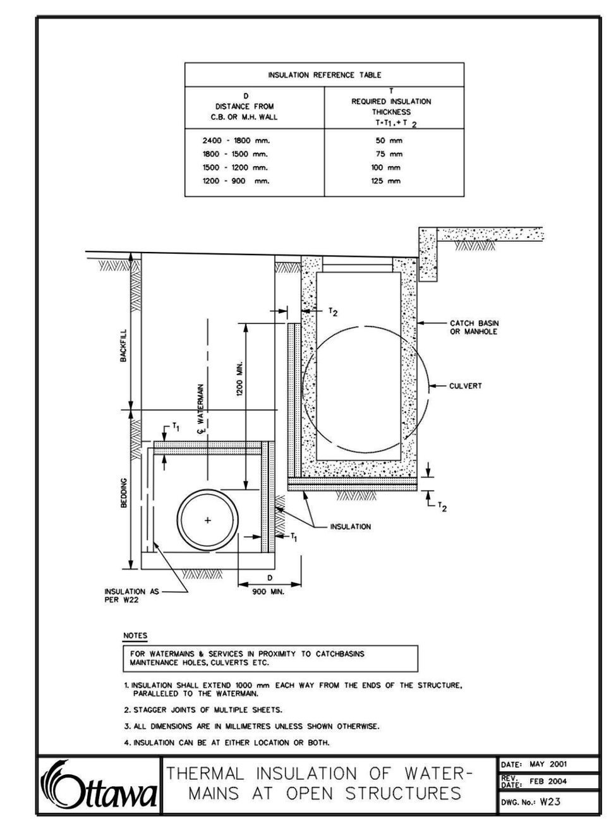


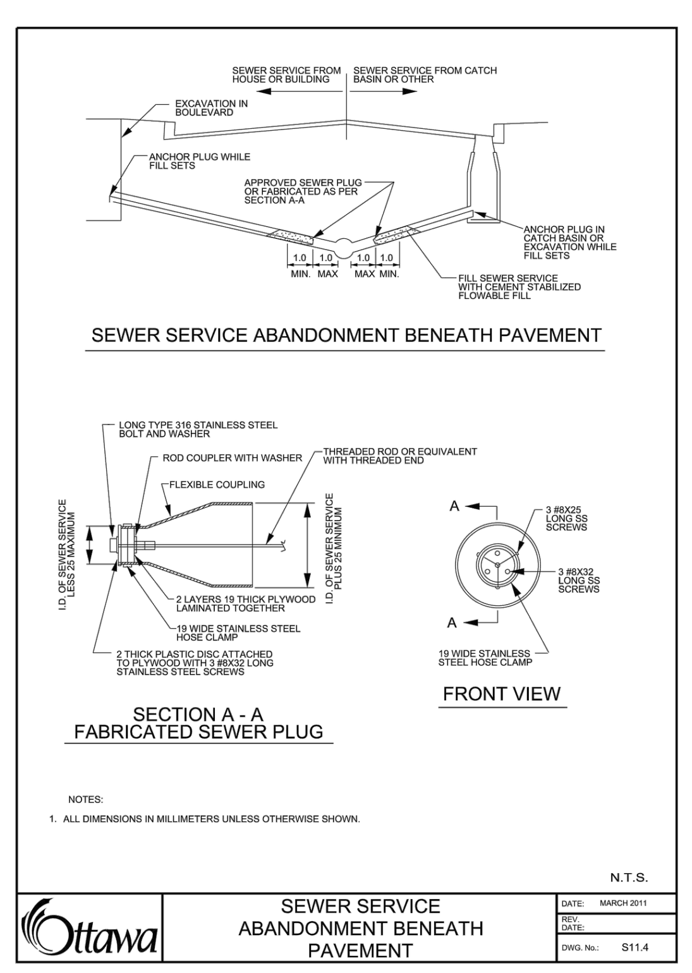


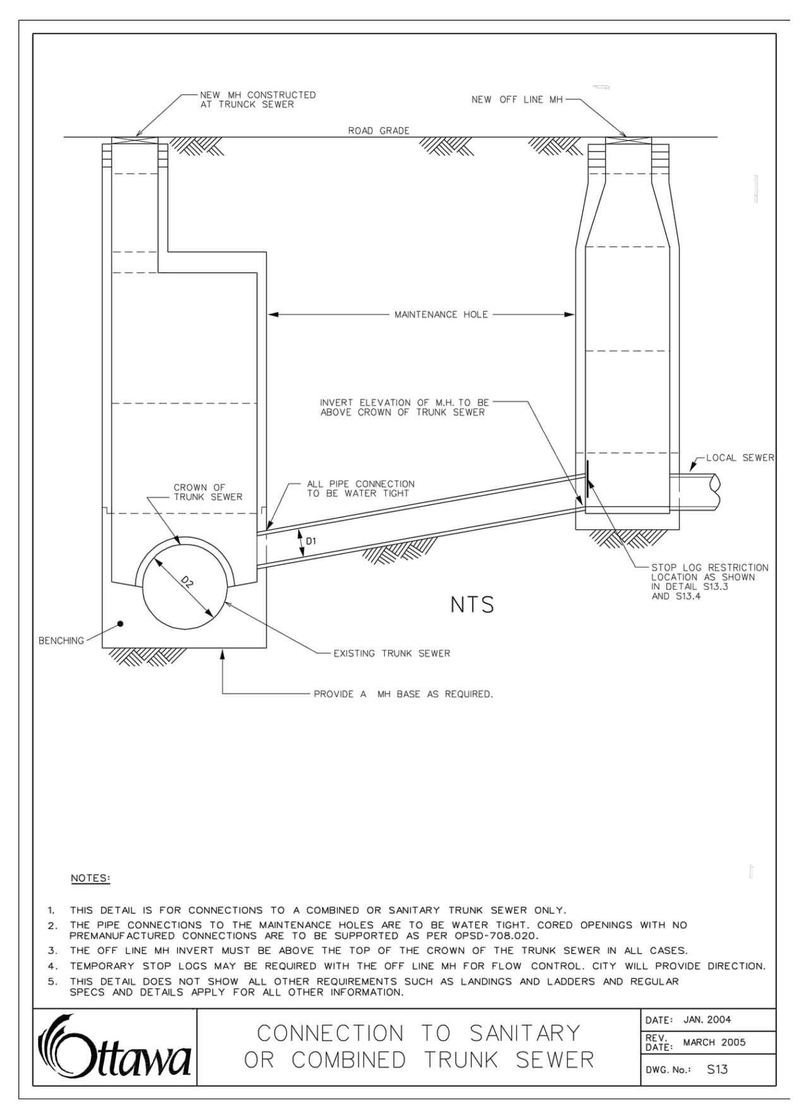


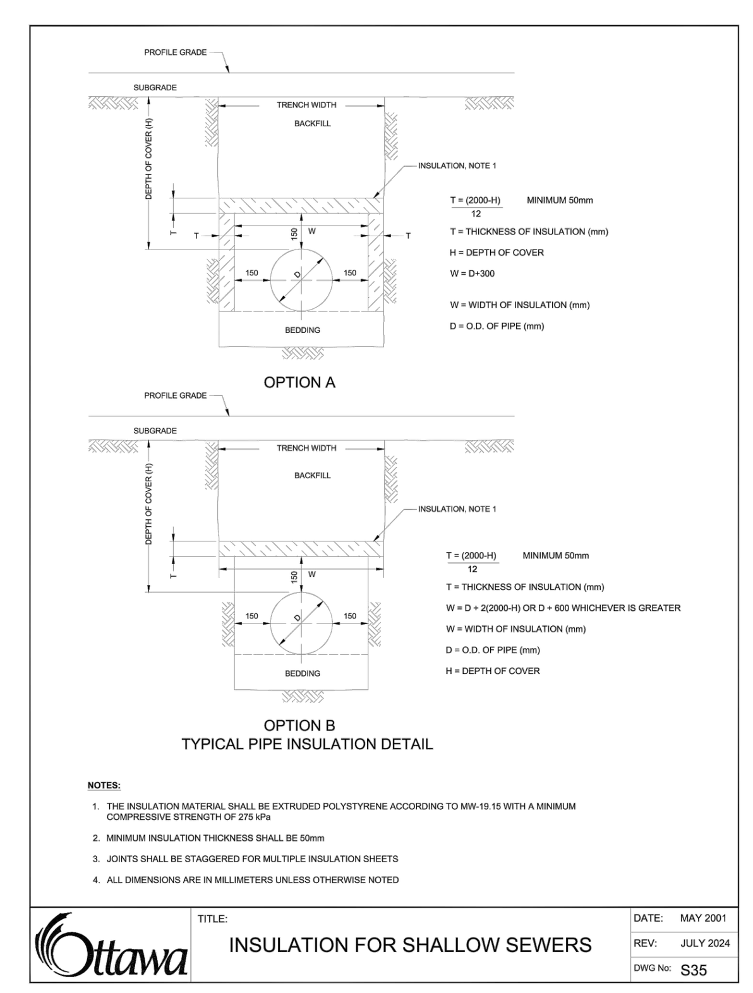












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NOTES

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NO.	REVISION DESCRIPTION	DATE	BY
1	ISSUED FOR SPA	08/07/26	SM

SCALE

LICENSED PROFESSIONAL ENGINEER
JUL 08/26
S.A.G.MCCAUGHEY
100217133
PROVINCE OF ONTARIO

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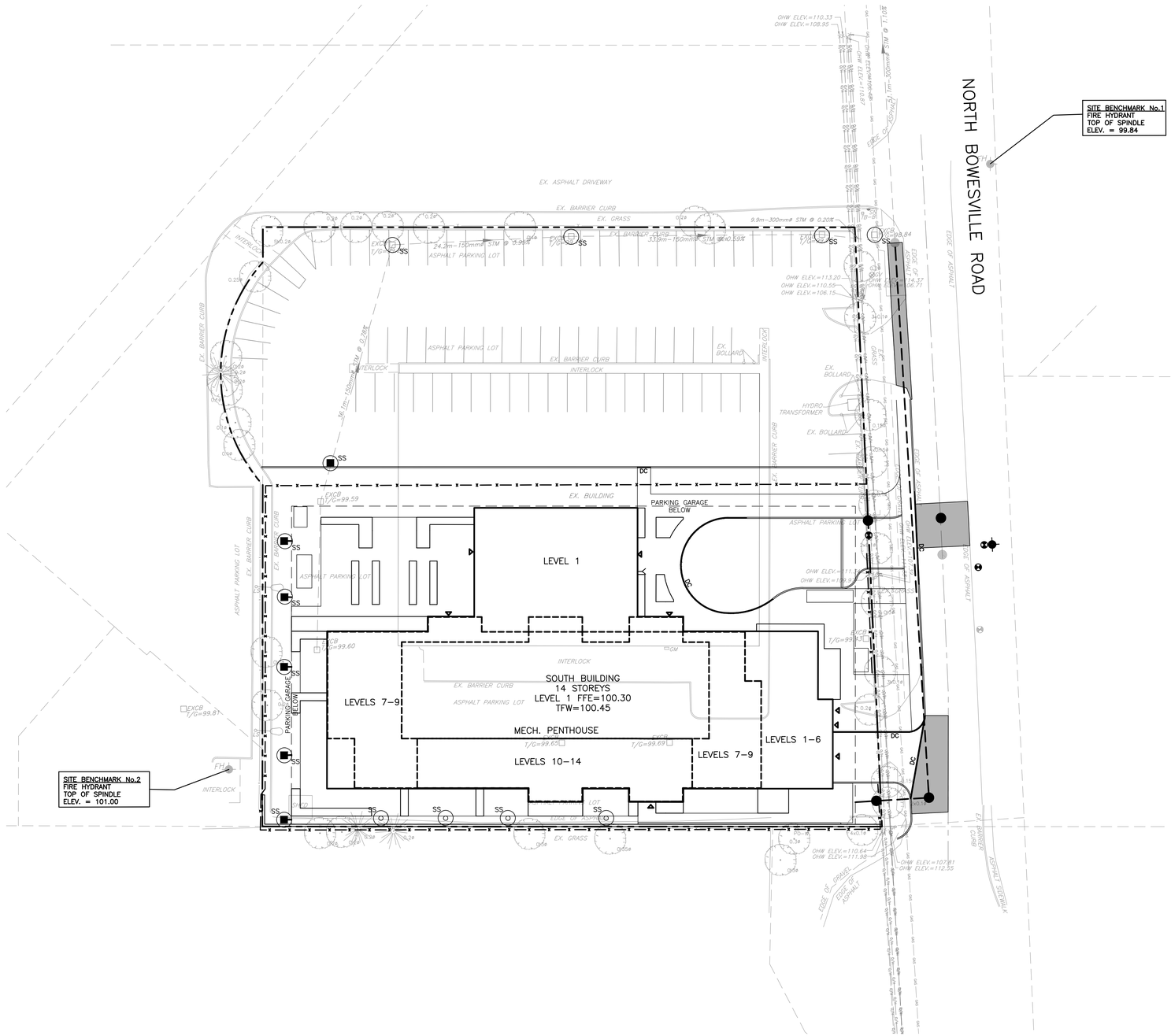
DESIGN	SM
CHECKED	BM
DRAWN	NI
CHECKED	SM
APPROVED	CC

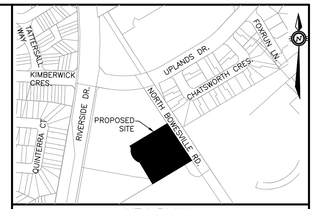
JENNINGS REAL ESTATE

3750 NORTH BOWESVILLE ROAD

NOTES AND DETAILS PLAN

PROJECT No.	26052
SURVEY	AOV
DATED	JULY 2026
DWG. No:	26052-N1





KEY PLAN

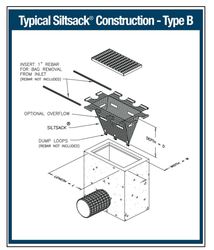
LEGEND

- PROPERTY BOUNDARY
- EXISTING WATERMAIN
- EXISTING VALVE & VALVE BOX
- EXISTING HYDRANT
- EXISTING SANITARY SEWER & MAINTENANCE HOLE
- EXISTING STORM SEWER & MAINTENANCE HOLE
- EXISTING CATCH BASIN
- EXISTING UTILITY POLE
- EXISTING OVERHEAD UTILITIES
- EXISTING HYDRO TRANSFORMER
- EXISTING NATURAL GAS
- VALVE & VALVE BOX
- PROPOSED HYDRANT
- MAINTENANCE HOLE
- CATCH BASIN
- LANDSCAPE CATCH BASIN (PARKING GARAGE ROOF DRAIN – BY MECHANICAL)
- SILT FENCE
- SILT SACK

NOTES:

1. THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES TO PROVIDE FOR PROTECTION OF THE AREA DRAINAGE SYSTEM AND THE ULTIMATE 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. LIMIT THE EXTENT OF EXPOSED SOILS AT ANY GIVEN TIME.
3. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED UNTIL VEGETATION HAS BEEN RE-ESTABLISHED IN ALL DISTURBED AREAS. RE-VEGETATE DISTURBED AREAS AS SOON AS POSSIBLE.
4. STOCKPILE SOIL AWAY (15 METRES OR GREATER) FROM WATERCOURSES, DRAINAGE FEATURES AND TOP OF STEEP SLOPES.
5. SILT SACKS ARE TO BE PLACED UNDERNEATH THE FRAME AND COVER OF ALL PROPOSED AND EXISTING CATCH BASIN AND OPEN COVER STORM MANHOLES UNTIL CONSTRUCTION IS COMPLETED.
6. A SILT FENCE BARRIER SHALL BE INSTALLED AS PER OPSD 219.110 WHERE INDICATED AND MAINTAINED AS REQUIRED.
7. DURING ACTIVE CONSTRUCTION PERIODS, VISUAL INSPECTIONS SHALL BE UNDERTAKEN ON A WEEKLY BASIS AND AFTER MAJOR STORM EVENTS (>25mm RAIN IN 24 HOUR PERIOD) ON SEDIMENT CONTROL BARRIERS AND ANY DAMAGE REPAIRED IMMEDIATELY.
8. EROSION AND SEDIMENT CONTROL BARRIERS SHALL ALSO BE ASSESSED (AND REPAIRED AS REQUIRED) FOLLOWING SIGNIFICANT SNOWMELT EVENTS.
9. VISUAL INSPECTIONS SHALL ALSO BE UNDERTAKEN IN ANTICIPATION OF LARGE STORM EVENTS (OR A SERIES OF RAINFALL AND/OR SNOWMELT DAYS) THAT COULD POTENTIALLY YIELD SIGNIFICANT RUNOFF VOLUMES.
10. CARE SHALL BE TAKEN TO PREVENT DAMAGE TO EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION OPERATIONS.
11. IN SOME CASES, BARRIERS MAY BE REMOVED TEMPORARILY TO ACCOMMODATE THE CONSTRUCTION OPERATIONS. THE AFFECTED BARRIERS SHALL BE REINSTATED IMMEDIATELY AFTER CONSTRUCTION OPERATIONS ARE COMPLETED.
12. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE ADJUSTED AS REQUIRED AS THE SITE BECOMES DEVELOPED.
13. SEDIMENT CONTROL DEVICES SHALL BE CLEANED OF ACCUMULATED SEDIMENTATION AS REQUIRED AND REPLACED AS NECESSARY.
14. DURING THE COURSE OF CONSTRUCTION, IF THE ENGINEER BELIEVES THAT ADDITIONAL PREVENTION METHODS ARE REQUIRED TO CONTROL EROSION AND SEDIMENTATION, THE CONTRACTOR SHALL IMPLEMENT ADDITIONAL MEASURES, AS REQUIRED, TO THE SATISFACTION OF THE ENGINEER AT NO ADDITIONAL COST.
15. CONSTRUCTION AND MAINTENANCE REQUIREMENTS FOR EROSION AND SEDIMENT CONTROLS ARE TO COMPLY WITH OPSS 805.

Typical Siltsack® Construction - Type B



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SCALE
0 3m 6m 12m
HORIZONTAL 1:300

LICENSED PROFESSIONAL ENGINEER
S.A.G. MCCAUGHEY
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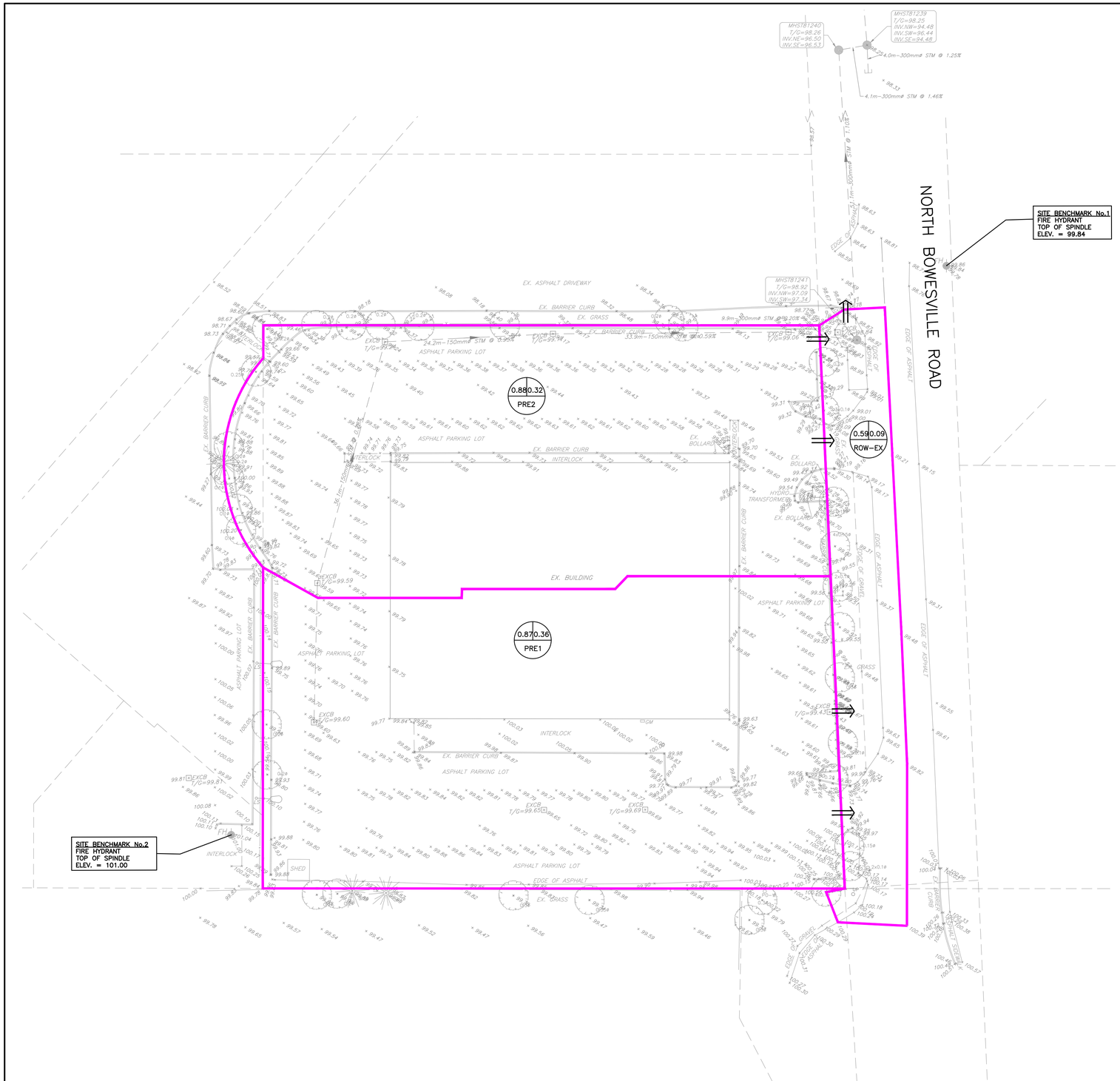
DESIGN	SM
CHECKED	BM
DRAWN	NI
CHECKED	SM
APPROVED	CC

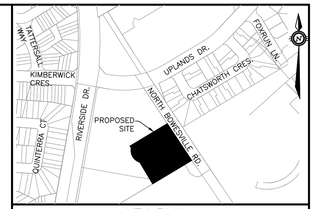
JENNINGS REAL ESTATE

3750 NORTH BOWESVILLE ROAD

EROSION AND SEDIMENT CONTROL PLAN

PROJECT No.	26052
SURVEY	AOV
DATED	JULY 2026
DWG. No:	26052-ESC1





LEGEND

- PROPERTY BOUNDARY
- EXISTING ELEVATION (× 104.00)
- EXISTING WATERMAIN
- EXISTING VALVE & VALVE BOX
- EXISTING HYDRANT
- EXISTING SANITARY SEWER & MAINTENANCE HOLE
- EXISTING STORM SEWER & MAINTENANCE HOLE
- EXISTING CATCH BASIN
- EXISTING UTILITY POLE
- EXISTING OVERHEAD UTILITIES
- EXISTING HYDRO TRANSFORMER
- EXISTING NATURAL GAS
- MAJOR OVERLAND FLOW ROUTE
- STORM DRAINAGE AREA BOUNDARY

RUNOFF COEFFICIENT — 0.50 0.28 — AREA (ha) — 1 — DRAINAGE AREA ID

NOT FOR CONSTRUCTION

NOTES

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SCALE — 0 3m 6m 12m — HORIZONTAL 1:300

LICENCED PROFESSIONAL ENGINEER — JUL 08/26 — S.A.G.MCCAUGHEY 100217133 — PROVINCE OF ONTARIO

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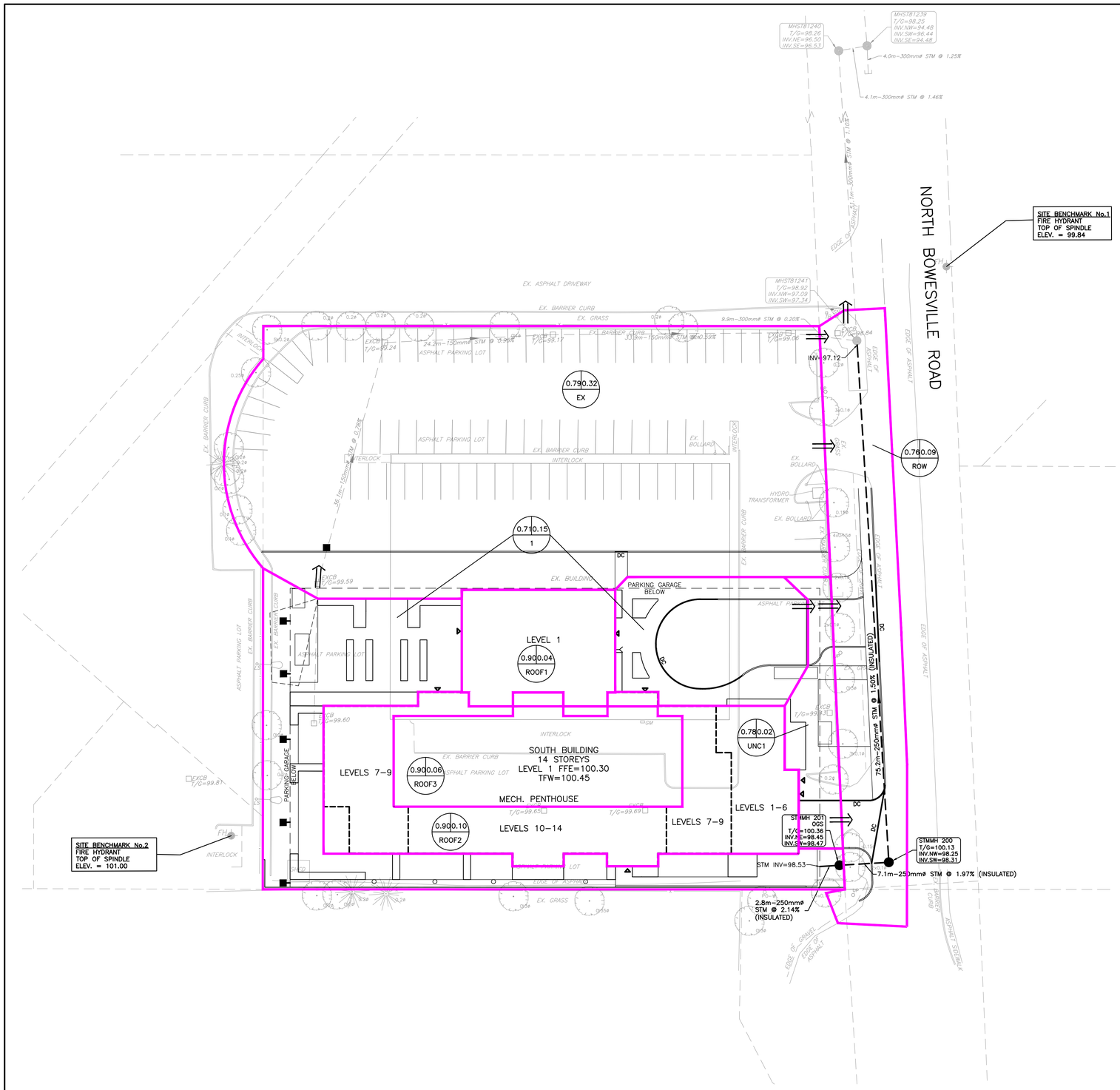
DESIGN	SM
CHECKED	BM
DRAWN	NI
CHECKED	SM
APPROVED	CC

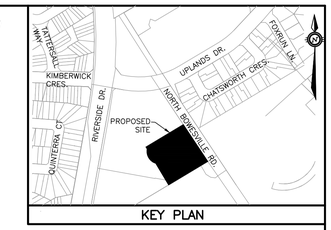
JENNINGS REAL ESTATE

3750 NORTH BOWESVILLE ROAD

PRE-DEVELOPMENT STORM DRAINAGE AREA PLAN

PROJECT No.	26052
SURVEY	AOV
DATED	JULY 2026
DWG. No:	26052-STM1





LEGEND

- PROPERTY BOUNDARY
- ×104.00 EXISTING ELEVATION
- EXISTING WATERMAIN
- EXISTING VALVE & VALVE BOX
- EXISTING HYDRANT
- EXISTING SANITARY SEWER & MAINTENANCE HOLE
- EXISTING STORM SEWER & MAINTENANCE HOLE
- EXISTING CATCH BASIN
- EXISTING UTILITY POLE
- EXISTING OVERHEAD UTILITIES
- EXISTING HYDRO TRANSFORMER
- EXISTING NATURAL GAS
- STORM SEWER & MAINTENANCE HOLE
- CATCH BASIN
- LANDSCAPE CATCH BASIN (PARKING GARAGE ROOF DRAIN – BY MECHANICAL)
- BUILDING ENTRANCE
- MAJOR OVERLAND FLOW ROUTE
- STORM DRAINAGE AREA BOUNDARY

RUNOFF COEFFICIENT
0.50 0.28 AREA (ha)
1
DRAINAGE AREA ID

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DESIGN	SM
CHECKED	BM
DRAWN	NI
CHECKED	SM
APPROVED	CC

JENNINGS REAL ESTATE

3750 NORTH BOWESVILLE ROAD

POST-DEVELOPMENT STORM DRAINAGE AREA PLAN

PROJECT No.	26052
SURVEY	AOV
DATED	JULY 2026
DWG. No:	26052-STM2

Appendix C

Water Demand Calculations

Fire Demand Calculations

Boundary Conditions

WATERMAIN DESIGN SHEET

Robinson Consultants

Junction Node Number	RESIDENTIAL POPULATION				NON-RES			AVG. DAILY					MAX. DAILY					PEAK HOURLY				
	ACTUAL COUNT				IND. (ha)	COMM. (ha)	INST. (ha)	DEMAND (L/s)					DEMAND (L/s)					DEMAND (L/s)				
	Studio / 1 Bedroom	2 Bedroom	3 Bedroom	Total Population				RES.	IND.	COMM.	INST.	TOTAL	RES.	IND.	COMM.	INST.	TOTAL	RES.	IND.	COMM.	INST.	TOTAL
Phase 1	113	33	28	315				1.02				**1.02**	3.68				**3.68**	5.51				**5.51**
Phase 2	117	34	29	326				1.06				**1.06**	3.80				**3.80**	5.71				**5.71**
Total				**641**								**2.08**					**7.48**					**11.22**

Residential Densities

Low Density (SFH's) =	3.4	cap/unit
Medium Density (Townhouses) =	2.7	cap/unit
High Density (Apartments) =	1.8	cap/unit

Apartments

Studio =	**1.4**	**cap/unit**
1 Bedroom =	**1.4**	**cap/unit**
2 Bedroom =	**2.1**	**cap/unit**
3 Bedroom =	**3.1**	**cap/unit**
Avg. Apartment =	1.8	cap/unit

Avg. Daily Demand:			Max. Daily Demand:		Max. Hourly Demand:	
Residential =	**280**	**L/cap/day**	**3.6**	**x Avg. Day**	**5.4**	**x Avg. Day**
Industrial (Light) =	35000	L/ha/day	1.5	x Avg. Day	1.8	x Max. Day
Commercial =	28000	L/ha/day	1.5	x Avg. Day	1.8	x Max. Day
Institutional =	28000	L/ha/day	1.5	x Avg. Day	1.8	x Max. Day

*per MECP 2008 Table 3-3 for fewer than 500 people

Project Name:	3750 N. Bowesville Rd
Project Location:	Ottawa ON
Project No:	26052
Date:	17-Jun-26
Building Type:	Residential
Building Being Considered:	PHASE 1 + PHASE 2 Combined Building

Robinson Land Development

Calculations for Total Required Fire Flow

Step	Parameter				Value	
A	Type of Construction	**Options**	**C**	Non-Combustible Construction (Type II)	0.8	
		Wood Frame (Type V)	1.5			
		Ordinary Construction (Type III)	1.0			
		Non-Combustible Construction (Type II)	0.8			
		Fire Resistive Construction (Type I)	0.6			
B	1st Floor				3,370	m^2
	2nd Floor				3,020	m^2
	3rd Floor (50% Area)				1,510	m^2
	4th Floor (50% Area)				1,510	m^2
	5th Floor (50% Area)				1,510	m^2
	6th Floor (50% Area)				1,510	m^2
	7th Floor (50% Area)				1,270	m^2
	8th Floor (50% Area)				1,270	m^2
	9th Floor (50% Area)				1,270	m^2
	10th Floor (50% Area)				840	m^2
	Total Effective Floor Area				**17,080**	**m^2**
C	**Fire Flow**				**23,000**	**L/min**
D	Occupancy Class	**Options**	**Charge**	Limited Combustible	-0.15	
		Non-combustible	-0.25			
		Limited Combustible	-0.15			
		Combustible	0.00			
		Free burning	0.15			
		Rapid Burning	0.25			
	Occupancy Adjustment				**-3450**	**L/min**
	Fire Flow				**19,550**	**L/min**
E	Sprinkler Protection	**Options**	**Charge**	Automatic Sprinkler Protection	-0.30	
		Automatic Sprinkler Protection	-0.30			
		None	0.00			
		Water Supply is Standard for System and Hose Lines	-0.10	Yes	-0.10	
		Full Supervision of the Sprinker System	-0.10	Yes	-0.10	
	Sprinkler Reduction				**-9,775**	**L/min**
	Exposures					
	West Side					
	Subject Building and Exposed Building Fully Protected with Automatic Sprinker Systems				Yes	
	Exposed Building Fully Protected with Automatic Sprinker Systems				Yes	
	Exposed Wall Length				47	m
	Exposed Wall No. of Storeys				9	
	Length-Height Factor of Exposed Wall				423	m.storeys
	Construction Type of Exposed Wall	**Options**		Noncombustible or Fire Resistive with Unprotected Openings		
		Wood Frame				
		Ordinary with Unprotected Openings				
		Ordinary without Unprotected Openings				
		Noncombustible or Fire Resistive with Unprotected Openings				
		Noncombustible or Fire Resistive without Unprotected Openings				
	Separation Distance				27	m
	West Side Exposure Charge				**0.00**	

	North Side				
	Subject Building and Exposed Building Fully Protected with Automatic Sprinker Systems			No	
	Exposed Building Fully Protected with Automatic Sprinker Systems			No	
	Exposed Wall Length			68	m
	Exposed Wall No. of Storeys			3	
	Length-Height Factor of Exposed Wall			204	m.storeys
	Construction Type of Exposed Wall	**Options**	Noncombustible or Fire Resistive with Unprotected Openings		
		Wood Frame			
		Ordinary with Unprotected Openings			
		Ordinary without Unprotected Openings			
		Noncombustible or Fire Resistive with Unprotected Openings			
		Noncombustible or Fire Resistive without Unprotected Openings			
	Separation Distance			22	m
	North Side Exposure Charge			**0.04**	
F	**East Side**				
	Subject Building and Exposed Building Fully Protected with Automatic Sprinker Systems			No	
	Exposed Building Fully Protected with Automatic Sprinker Systems			No	
	Exposed Wall Length			27	m
	Exposed Wall No. of Storeys			2	
	Length-Height Factor of Exposed Wall			54	m.storeys
	Construction Type of Exposed Wall	**Options**	Wood Frame		
		Wood Frame			
		Ordinary with Unprotected Openings			
		Ordinary without Unprotected Openings			
		Noncombustible or Fire Resistive with Unprotected Openings			
		Noncombustible or Fire Resistive without Unprotected Openings			
	Separation Distance		**>30m; No Exposure**	35	m
	East Side Exposure Charge			**0.00**	
	South Side				
	Subject Building and Exposed Building Fully Protected with Automatic Sprinker Systems			No	
	Exposed Building Fully Protected with Automatic Sprinker Systems			No	
	Exposed Wall Length			1	m
	Exposed Wall No. of Storeys			1	
	Length-Height Factor of Exposed Wall			1	m.storeys
	Construction Type of Exposed Wall	**Options**	Wood Frame		
		Wood Frame			
		Ordinary with Unprotected Openings			
		Ordinary without Unprotected Openings			
		Noncombustible or Fire Resistive with Unprotected Openings			
		Noncombustible or Fire Resistive without Unprotected Openings			
	Separation Distance		**>30m; No Exposure**	100	m
	South Side Exposure Charge			**0.00**	
	Total Exposure Charge			**0.04**	**< 0.75**
	Increase for Exposures			**782**	**L/min**
G	**Total Required Fire Flow**			**11,000**	**L/min**

Notes:

1. Fire flow calculations have been prepared in accordance with Fire Underwriters Survey (v. 2020)

2. Floor areas used in Step B based on ground floor, second floor, and 50% of next eight floors due to non-combustible construction

3. Where buildings are at a diagonal to each other, the shortest separtion distance is increased by 3 metres and used as the exposure distance (Ref. FUS v.2020 pg.30).

Project Name:	3750 N. Bowesville Rd
Project Location:	Ottawa ON
Project No:	26052
Date:	17-Jun-26
Building Type:	Residential
Building Being Considered:	PHASE 1 Separate Building

Robinson Land Development

Calculations for Total Required Fire Flow

Step	Parameter				Value	
A	Type of Construction	**Options**	**C**	Non-Combustible Construction (Type II)	0.8	
		Wood Frame (Type V)	1.5			
		Ordinary Construction (Type III)	1.0			
		Non-Combustible Construction (Type II)	0.8			
		Fire Resistive Construction (Type I)	0.6			
B	1st Floor				1860	m^2
	2nd Floor				1510	m^2
	3rd Floor (50% Area)				755	m^2
	4th Floor (50% Area)				755	m^2
	5th Floor (50% Area)				755	m^2
	6th Floor (50% Area)				755	m^2
	7th Floor (50% Area)				635	m^2
	8th Floor (50% Area)				635	m^2
	9th Floor (50% Area)				635	m^2
	10th Floor (50% Area)				420	m^2
	Total Effective Floor Area				**8715**	**m^2**
C	**Fire Flow**				**16,000**	**L/min**
D	**Occupancy Class**	**Options**	**Charge**	Limited Combustible	-0.15	
		Non-combustible	-0.25			
		Limited Combustible	-0.15			
		Combustible	0.00			
		Free burning	0.15			
		Rapid Burning	0.25			
	Occupancy Adjustment				**-2400**	**L/min**
	Fire Flow				**13,600**	**L/min**
E	**Sprinkler Protection**	**Options**	**Charge**	Automatic Sprinkler Protection	-0.30	
		Automatic Sprinkler Protection	-0.30			
		None	0.00			
		Water Supply is Standard for System and Hose Lines	-0.10	Yes	-0.10	
		Full Supervision of the Sprinker System	-0.10	Yes	-0.10	
	Sprinkler Reduction				**-6,800**	**L/min**
	Exposures					
	West Side					
	Subject Building and Exposed Building Fully Protected with Automatic Sprinker Systems				Yes	
	Exposed Building Fully Protected with Automatic Sprinker Systems				Yes	
	Exposed Wall Length				47	m
	Exposed Wall No. of Storeys				9	
	Length-Height Factor of Exposed Wall				423	m.storeys
	Construction Type of Exposed Wall	**Options**		Noncombustible or Fire Resistive with Unprotected Openings		
		Wood Frame				
		Ordinary with Unprotected Openings				
		Ordinary without Unprotected Openings				
		Noncombustible or Fire Resistive with Unprotected Openings				
		Noncombustible or Fire Resistive without Unprotected Openings				
	Separation Distance				27	m
	West Side Exposure Charge				**0.00**	

	North Side				
	Subject Building and Exposed Building Fully Protected with Automatic Sprinker Systems			Yes	
	Exposed Building Fully Protected with Automatic Sprinker Systems			Yes	
	Exposed Wall Length			65	m
	Exposed Wall No. of Storeys			14	
	Length-Height Factor of Exposed Wall			910	m.storeys
	Construction Type of Exposed Wall	**Options**	Noncombustible or Fire Resistive with Unprotected Openings		
		Wood Frame			
		Ordinary with Unprotected Openings			
		Ordinary without Unprotected Openings			
		Noncombustible or Fire Resistive with Unprotected Openings			
		Noncombustible or Fire Resistive without Unprotected Openings			
	Separation Distance			19	m
	North Side Exposure Charge			**0.00**	
F	**East Side**				
	Subject Building and Exposed Building Fully Protected with Automatic Sprinker Systems			No	
	Exposed Building Fully Protected with Automatic Sprinker Systems			No	
	Exposed Wall Length			1	m
	Exposed Wall No. of Storeys			1	
	Length-Height Factor of Exposed Wall			1	m.storeys
	Construction Type of Exposed Wall	**Options**	Wood Frame		
		Wood Frame			
		Ordinary with Unprotected Openings			
		Ordinary without Unprotected Openings			
		Noncombustible or Fire Resistive with Unprotected Openings			
		Noncombustible or Fire Resistive without Unprotected Openings			
	Separation Distance		**>30m; No Exposure**	100	m
	East Side Exposure Charge			**0.00**	
	South Side				
	Subject Building and Exposed Building Fully Protected with Automatic Sprinker Systems			No	
	Exposed Building Fully Protected with Automatic Sprinker Systems			No	
	Exposed Wall Length			1	m
	Exposed Wall No. of Storeys			1	
	Length-Height Factor of Exposed Wall			1	m.storeys
	Construction Type of Exposed Wall	**Options**	Wood Frame		
		Wood Frame			
		Ordinary with Unprotected Openings			
		Ordinary without Unprotected Openings			
		Noncombustible or Fire Resistive with Unprotected Openings			
		Noncombustible or Fire Resistive without Unprotected Openings			
	Separation Distance		**>30m; No Exposure**	100	m
	South Side Exposure Charge			**0.00**	
	Total Exposure Charge			**0**	**< 0.75**
	Increase for Exposures			**0**	**L/min**
G	**Total Required Fire Flow**			**7,000**	**L/min**

Notes:

1. Fire flow calculations have been prepared in accordance with Fire Underwriters Survey (v. 2020)

2. Floor areas used in Step B based on ground floor, second floor, and 50% of next eight floors due to non-combustible construction

3. Where buildings are at a diagonal to each other, the shortest separtion distance is increased by 3 metres and used as the exposure distance (Ref. FUS v.2020 pg.30).

Project Name:	3750 N. Bowesville Rd
Project Location:	Ottawa ON
Project No:	26052
Date:	17-Jun-26
Building Type:	Residential
Building Being Considered:	PHASE 2 Separate Building

Robinson Land Development

Calculations for Total Required Fire Flow

Step	Parameter				Value	
A	Type of Construction	**Options**	**C**	Non-Combustible Construction (Type II)	0.8	
		Wood Frame (Type V)	1.5			
		Ordinary Construction (Type III)	1.0			
		Non-Combustible Construction (Type II)	0.8			
		Fire Resistive Construction (Type I)	0.6			
B	1st Floor				1510	m^2
	2nd Floor				1510	m^2
	3rd Floor (50% Area)				755	m^2
	4th Floor (50% Area)				755	m^2
	5th Floor (50% Area)				755	m^2
	6th Floor (50% Area)				755	m^2
	7th Floor (50% Area)				635	m^2
	8th Floor (50% Area)				635	m^2
	9th Floor (50% Area)				635	m^2
	10th Floor (50% Area)				420	m^2
	Total Effective Floor Area				**8,365**	**m^2**
C	**Fire Flow**				**16,000**	**L/min**
D	Occupancy Class	**Options**	**Charge**	Limited Combustible	-0.15	
		Non-combustible	-0.25			
		Limited Combustible	-0.15			
		Combustible	0.00			
		Free burning	0.15			
		Rapid Burning	0.25			
	Occupancy Adjustment				**-2400**	**L/min**
	Fire Flow				**13,600**	**L/min**
E	Sprinkler Protection	**Options**	**Charge**	Automatic Sprinkler Protection	-0.30	
		Automatic Sprinkler Protection	-0.30			
		None	0.00			
		Water Supply is Standard for System and Hose Lines	-0.10	Yes	-0.10	
		Full Supervision of the Sprinker System	-0.10	Yes	-0.10	
	Sprinkler Reduction				**-6,800**	**L/min**
	Exposures					
	West Side					
	Subject Building and Exposed Building Fully Protected with Automatic Sprinker Systems				Yes	
	Exposed Building Fully Protected with Automatic Sprinker Systems				Yes	
	Exposed Wall Length				47	m
	Exposed Wall No. of Storeys				9	
	Length-Height Factor of Exposed Wall				423	m.storeys
	Construction Type of Exposed Wall	**Options**		Noncombustible or Fire Resistive with Unprotected Openings		
		Wood Frame				
		Ordinary with Unprotected Openings				
		Ordinary without Unprotected Openings				
		Noncombustible or Fire Resistive with Unprotected Openings				
		Noncombustible or Fire Resistive without Unprotected Openings				
	Separation Distance				28	m
	West Side Exposure Charge				**0.00**	

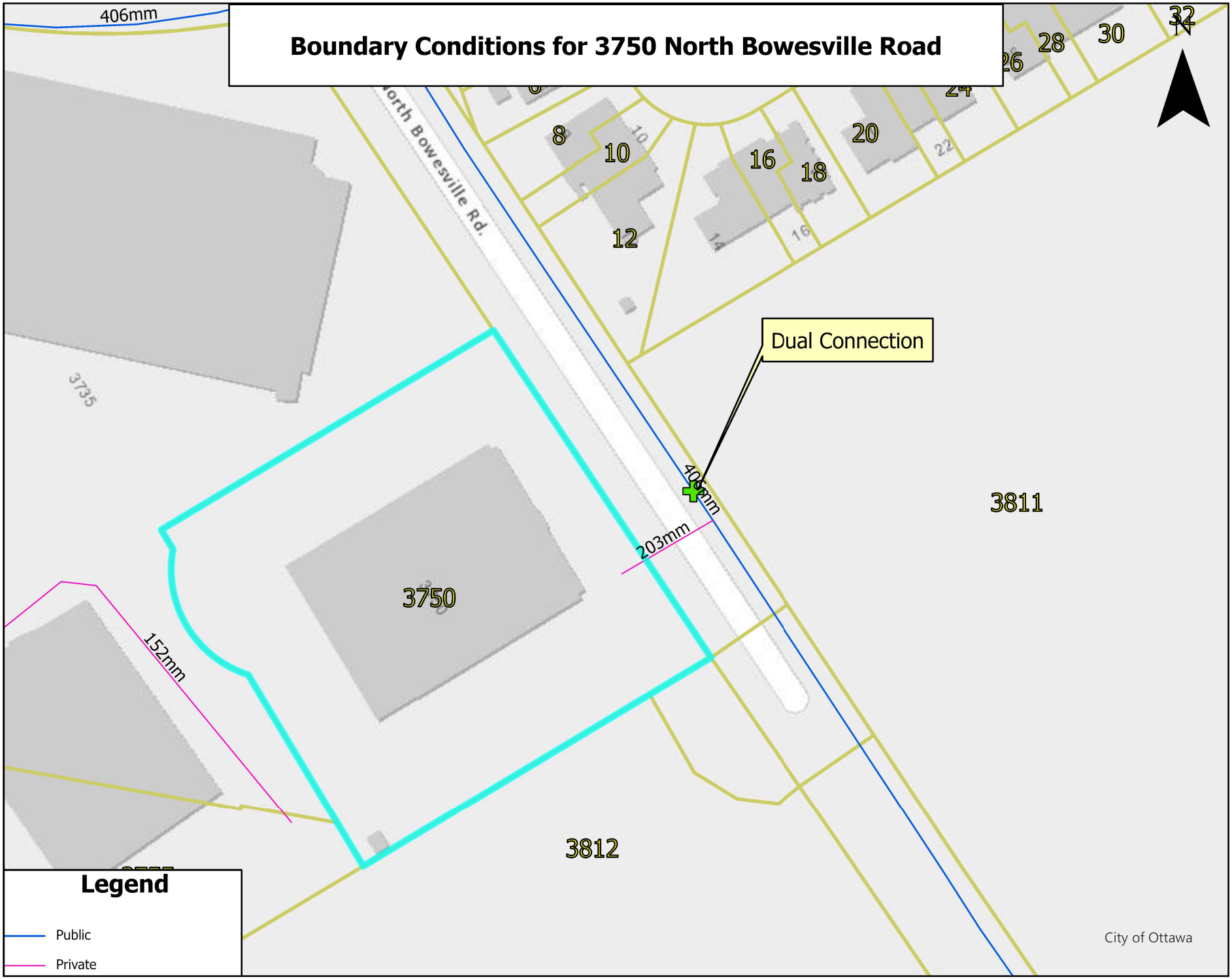
	North Side				
	Subject Building and Exposed Building Fully Protected with Automatic Sprinker Systems			No	
	Exposed Building Fully Protected with Automatic Sprinker Systems			No	
	Exposed Wall Length			68	m
	Exposed Wall No. of Storeys			3	
	Length-Height Factor of Exposed Wall			204	m.storeys
	Construction Type of Exposed Wall	**Options**	Noncombustible or Fire Resistive with Unprotected Openings		
		Wood Frame			
		Ordinary with Unprotected Openings			
		Ordinary without Unprotected Openings			
		Noncombustible or Fire Resistive with Unprotected Openings			
		Noncombustible or Fire Resistive without Unprotected Openings			
	Separation Distance			22	m
	North Side Exposure Charge			**0.04**	
F	**East Side**				
	Subject Building and Exposed Building Fully Protected with Automatic Sprinker Systems			No	
	Exposed Building Fully Protected with Automatic Sprinker Systems			No	
	Exposed Wall Length			27	m
	Exposed Wall No. of Storeys			2	
	Length-Height Factor of Exposed Wall			54	m.storeys
	Construction Type of Exposed Wall	**Options**	Wood Frame		
		Wood Frame			
		Ordinary with Unprotected Openings			
		Ordinary without Unprotected Openings			
		Noncombustible or Fire Resistive with Unprotected Openings			
		Noncombustible or Fire Resistive without Unprotected Openings			
	Separation Distance		**>30m; No Exposure**	35	m
	East Side Exposure Charge			**0.00**	
	South Side				
	Subject Building and Exposed Building Fully Protected with Automatic Sprinker Systems			Yes	
	Exposed Building Fully Protected with Automatic Sprinker Systems			Yes	
	Exposed Wall Length			65	m
	Exposed Wall No. of Storeys			14	
	Length-Height Factor of Exposed Wall			910	m.storeys
	Construction Type of Exposed Wall	**Options**	Noncombustible or Fire Resistive with Unprotected Openings		
		Wood Frame			
		Ordinary with Unprotected Openings			
		Ordinary without Unprotected Openings			
		Noncombustible or Fire Resistive with Unprotected Openings			
		Noncombustible or Fire Resistive without Unprotected Openings			
	Separation Distance			19	m
	South Side Exposure Charge			**0.00**	
	Total Exposure Charge			**0.04**	**< 0.75**
	Increase for Exposures			**544**	**L/min**
G	**Total Required Fire Flow**			**7,000**	**L/min**

Notes:

1. Fire flow calculations have been prepared in accordance with Fire Underwriters Survey (v. 2020)

2. Floor areas used in Step B based on ground floor, second floor, and 50% of next eight floors due to non-combustible construction

3. Where buildings are at a diagonal to each other, the shortest separtion distance is increased by 3 metres and used as the exposure distance (Ref. FUS v.2020 pg.30).


Boundary Conditions for 3750 North Bowesville Road
406mm
North Bowesville Rd.
Dual Connection
406mm
203mm
152mm
3735
3750
3811
3812
8
10
12
16
18
20
24
26
28
30
32
Legend
Public
Private
City of Ottawa

Stephen McCaughey

From: Chetrar, Anton <anton.chetrar@ottawa.ca>
Sent: May 20, 2026 9:04 AM
To: Stephen McCaughey
Subject: RE: 3750 N Bowesville Rd - Watermain Boundary Conditions & Sanitary Capacity Confirmation
Attachments: 3750 North Bowesville Road May 2026.pdf

"CAUTION: External Sender"
Hi Stephen,

Please find water boundary conditions for 3750 North Bowesville Road.

The following are boundary conditions, HGL, for hydraulic analysis at 3750 North Bowesville Road (zone 2W2C) assumed to be dually connected via the 406 mm watermain of North Bowesville Road (see attached PDF for location).

Phase 1:
Minimum HGL = 125.5 m
Maximum HGL = 131.2 m
Max Day + Fire Flow (116.66 L/s) = 128.3 m

Full Buildout:
Minimum HGL = 125.5 m
Maximum HGL = 131.2 m
Max Day + Fire Flow (183.33 L/s) = 127.5 m

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

Note:
Any connection to a watermain 406 mm or larger must be approved by DWS as per the Water Design Guidelines Section 2.4.

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.

Thanks,
Anton Chetrar | P. Eng
Project Manager, Infrastructure - Gestionnaire de projet, Projets d'infrastructure
Development Review – South Services | Direction de l'examen des projets d'aménagement – Service Sud
Planning, Development and Building Services Department (PDBS) and Direction générale des services de la planification, de l'aménagement et du bâtiment (DGSPAB)
City of Ottawa | Ville d'Ottawa
110 Laurier Avenue West |110 avenue Laurier Ouest

Ottawa, ON K1P 1J1
Tel.|Tél. 613.580.2424 ext.60865
anton.chetrar@ottawa.ca

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

From: Stephen McCaughey <smccaughey@rcii.com>
Sent: May 13, 2026 8:27 AM
To: Chetrar, Anton <anton.chetrar@ottawa.ca>
Subject: RE: 3750 N Bowesville Rd - Watermain Boundary Conditions & Sanitary Capacity Confirmation

Thanks Anton!

Stephen McCaughey, P.Eng. | Project Engineer
2936 Baseline Road, Suite 200, Ottawa ON, K2H 1B3
O: 613-592-6060 x1600 | smccaughey@rcii.com | www.rcii.com

From: Chetrar, Anton <anton.chetrar@ottawa.ca>
Sent: May 13, 2026 7:45 AM
To: Stephen McCaughey <smccaughey@rcii.com>
Subject: RE: 3750 N Bowesville Rd - Watermain Boundary Conditions & Sanitary Capacity Confirmation

Hi Stephen,

I have sent the water boundary conditions request for both scenarios and will get back to you once I have results.

For the sanitary, since the 600mm dia sanitary sewer within North Bowesville Road is a trunk sewer, the connection will need to follow City Standard S13. For each property to connect with their own sanitary service, a local sewer will be required within North Bowesville Road.
No sanitary capacity concerns on the proposed flows.

Please let me know if you have any questions on the above.

Thanks,
Anton Chetrar | P. Eng

Project Manager, Infrastructure - Gestionnaire de projet, Projets d'infrastructure
Development Review – South Services | Direction de l'examen des projets d'aménagement – Service Sud
Planning, Development and Building Services Department (PDBS) and Direction générale des services de la planification, de l'aménagement et du bâtiment (DGSPAB)
City of Ottawa | Ville d'Ottawa
110 Laurier Avenue West |110 avenue Laurier Ouest
Ottawa, ON K1P 1J1
Tel.|Tél. 613.580.2424 ext.60865
anton.chetrar@ottawa.ca

From: Stephen McCaughey <smccaughey@rcii.com>
Sent: May 07, 2026 1:42 PM
To: Chetrar, Anton <anton.chetrar@ottawa.ca>
Subject: 3750 N Bowesville Rd - Watermain Boundary Conditions & Sanitary Capacity Confirmation

Hi Anton,

I'm the civil engineer working on the proposed 3750 N Bowesville residential site plan and I understand you're the engineering reviewer per the preconsultation meeting. Per the Preconsultation meeting, the proposal is for twin residential high rise towers, and currently only one tower is proposed for construction (Phase 1).

I'm reaching out to request watermain boundary conditions and confirmation of sanitary capacity. The site will connect to the 400mm watermain and 600mm sanitary sewer fronting the property.

Estimates water demand are below. There is uncertainty at this stage if the two towers will be considered a single building or be severed, so I've prepared a fire demand calculation for both scenarios if we can request boundary conditions for both cases
Phase 1:

Avg day: 1.02 L/s
Peak hour: 5.51 L/s
Max Day + Fire (7,000 L/min): 120.35 L/s

Full Buildout:

Avg day: 2.08 L/s
Peak hour: 11.22 L/s
Max Day + Fire (7,000 L/min): 124.15 L/s
Max Day + Fire (11,000 L/min): 190.81 L/s

The sanitary demands are below. The previous serviceability report noted there were no sanitary capacity concern but I just want to validate for the site plan submission. Also, there is uncertainty by the developer at this stage if the Phase 2 high rise (and property) will be severed to be its own civil address or not, but there is desire from the developer for the two buildings to work independently. Regardless of property severance, could each building connect with its own sanitary service?

Phase 1:

Peak sanitary demand: 3.65 L/s

Full Buildout:

Peak sanitary demand: 7.40 L/s

Thank you,

Stephen McCaughey, P.Eng. | Project Engineer
2936 Baseline Road, Suite 200, Ottawa ON, K2H 1B3
O: 613-592-6060 x1600 | smccaughey@rcii.com | www.rcii.com

Appendix D

Sanitary Sewer Design Sheet

Sanitary Capacity Correspondence

SANITARY SEWER DESIGN SHEET

Robinson
Land Development

LOCATION				UNIT COUNT			RESIDENTIAL AREA AND POPULATION				RESIDENTIAL FLOW			CUM. PEAK DESIGN FLOW (L/s)	PIPE						
							INDIVIDUAL		CUMULATIVE												
DRAINAGE AREA	FROM MH	TO MH	DRAINAGE AREA (ha)	STUDIO / 1 BEDROOM	2 BEDROOM	3 BEDROOM	POP.	AREA (ha)	POP.	AREA (ha)	PEAK FACTOR	PEAK POP. FLOW (L/s)	EXTRAN. FLOW (L/s)		LENGTH (m)	DIAMETER (mm)	SLOPE (%)	CAPACITY (L/s)	FULL FLOW VELOCITY (m/s)	ACTUAL VELOCITY (m/s)	EXCESS CAPACITY (L/s)	PERCENT FULL
PHASE 1	BLDG	SANMH101	0.675	113	33	28	315	0.68	315	0.68	3.46	3.53	0.22	**3.75**	1.7	200	2.35%	50.33	1.60	0.93	46.58	7%
	SANMH101	SANMH100	0.0						315	0.68	3.46	3.53	0.22	**3.75**	9.9	200	2.02%	46.66	1.49	0.88	42.91	8%
PHASE 1 + PHASE 2	BLDG	SANMH101	0.675	117	34	29	326	0.68	641	0.68	3.33	6.92	0.22	**7.15**	1.7	200	2.35%	50.33	1.60	1.13	43.18	14%
	SANMH101	SANMH100	0.0						641	0.68	3.33	6.92	0.22	**7.15**	9.9	200	2.02%	46.66	1.49	1.07	39.52	15%
							641															

DESIGN PARAMETERS

			Per Unit Populations:		
Average Daily Flow =	**280**	**L/cap/day**	Single Family	3.4	persons/unit
Comm./Inst. Flow =	28000	L/ha/day	Semi-detached	2.7	persons/unit
Industrial Flow =	35000	L/ha/day	Duplex	2.3	persons/unit
Maximum Residential Peak Factor =	4.0		Townhouse	2.7	persons/unit
Harmon - Correction Factor (K) =	0.8		Apartments:		
Institutional/Commercial Peak Factor =	1.5		Studio	1.4	persons/unit
Extraneous Flow =	**0.33**	**L/s/ha**	1 Bedroom	1.4	persons/unit
Minimum Full-Flow Velocity =	0.6	m/s	2 Bedroom	2.1	persons/unit
Maximum Full-Flow Velocity =	3.0	m/s	3 Bedroom	3.1	persons/unit
			Average Apt.	1.8	persons/unit

Ottawa, ON K1P 1J1
Tel.|Tél. 613.580.2424 ext.60865
anton.chetrar@ottawa.ca

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

From: Stephen McCaughey <smccaughey@rcii.com>
Sent: May 13, 2026 8:27 AM
To: Chetrar, Anton <anton.chetrar@ottawa.ca>
Subject: RE: 3750 N Bowesville Rd - Watermain Boundary Conditions & Sanitary Capacity Confirmation

Thanks Anton!

Stephen McCaughey, P.Eng. | Project Engineer
2936 Baseline Road, Suite 200, Ottawa ON, K2H 1B3
O: 613-592-6060 x1600 | smccaughey@rcii.com | www.rcii.com

From: Chetrar, Anton <anton.chetrar@ottawa.ca>
Sent: May 13, 2026 7:45 AM
To: Stephen McCaughey <smccaughey@rcii.com>
Subject: RE: 3750 N Bowesville Rd - Watermain Boundary Conditions & Sanitary Capacity Confirmation

"CAUTION: External Sender"
Hi Stephen,

I have sent the water boundary conditions request for both scenarios and will get back to you once I have results.

For the sanitary, since the 600mm dia sanitary sewer within North Bowesville Road is a trunk sewer, the connection will need to follow City Standard S13. For each property to connect with their own sanitary service, a local sewer will be required within North Bowesville Road.
No sanitary capacity concerns on the proposed flows.

Please let me know if you have any questions on the above.

Thanks,
Anton Chetrar | P. Eng

Project Manager, Infrastructure - Gestionnaire de projet, Projets d'infrastructure
Development Review – South Services | Direction de l'examen des projets d'aménagement – Service Sud
Planning, Development and Building Services Department (PDBS) and Direction générale des services de la planification, de l'aménagement et du bâtiment (DGSPAB)
City of Ottawa | Ville d'Ottawa
110 Laurier Avenue West |110 avenue Laurier Ouest
Ottawa, ON K1P 1J1
Tel.|Tél. 613.580.2424 ext.60865
anton.chetrar@ottawa.ca

From: Stephen McCaughey <smccaughey@rcii.com>
Sent: May 07, 2026 1:42 PM
To: Chetrar, Anton <anton.chetrar@ottawa.ca>
Subject: 3750 N Bowesville Rd - Watermain Boundary Conditions & Sanitary Capacity Confirmation

Hi Anton,

I'm the civil engineer working on the proposed 3750 N Bowesville residential site plan and I understand you're the engineering reviewer per the preconsultation meeting. Per the Preconsultation meeting, the proposal is for twin residential high rise towers, and currently only one tower is proposed for construction (Phase 1).

I'm reaching out to request watermain boundary conditions and confirmation of sanitary capacity. The site will connect to the 400mm watermain and 600mm sanitary sewer fronting the property.

Estimates water demand are below. There is uncertainty at this stage if the two towers will be considered a single building or be severed, so I've prepared a fire demand calculation for both scenarios if we can request boundary conditions for both cases
Phase 1:

Avg day: 1.02 L/s
Peak hour: 5.51 L/s
Max Day + Fire (7,000 L/min): 120.35 L/s

Full Buildout:

Avg day: 2.08 L/s
Peak hour: 11.22 L/s
Max Day + Fire (7,000 L/min): 124.15 L/s
Max Day + Fire (11,000 L/min): 190.81 L/s

The sanitary demands are below. The previous serviceability report noted there were no sanitary capacity concern but I just want to validate for the site plan submission. Also, there is uncertainty by the developer at this stage if the Phase 2 high rise (and property) will be severed to be its own civil address or not, but there is desire from the developer for the two buildings to work independently. Regardless of property severance, could each building connect with its own sanitary service?

Phase 1:

Peak sanitary demand: 3.65 L/s

Full Buildout:

Peak sanitary demand: 7.40 L/s

Thank you,

Stephen McCaughey, P.Eng. | Project Engineer
2936 Baseline Road, Suite 200, Ottawa ON, K2H 1B3
O: 613-592-6060 x1600 | smccaughey@rcii.com | www.rcii.com

Appendix E

Pre- and Post-Development Flows

Storm Sewer Design Sheets

Storage Volume Calculations

OGS Sizing & Cutsheet

Robinson Consultants

	Impervious	Pervious	Semi-Pervious
C	0.9	0.2	0.5

Runoff Coefficient Calculations - Pre-Development Runoff

Drainage Area ID	Impervious Area (ha)	Pervious Area (ha)	Semi-Pervious Area (ha)	Total Area (ha)	C	C (100 YR)	Percent Impervious (%)
PRE1	0.348	0.013	0.000	0.361	0.87	1.00	96.4
PRE2	0.304	0.011	0.000	0.315	0.88	1.00	96.5
	0.652	**0.024**	**0.000**	**0.676**	**0.88**	**1.00**	**96.4**

Runoff Coefficient Calculations - Site-Controlled Runoff

Drainage Area ID	Impervious Area (ha)	Pervious Area (ha)	Semi-Pervious Area (ha)	Total Area (ha)	C	C (100 YR)	Percent Impervious (%)
ROOF1	0.035	0.000	0.000	0.035	0.90	1.00	100.0
ROOF2	0.095	0.000	0.000	0.095	0.90	1.00	100.0
ROOF3	0.056	0.000	0.000	0.056	0.90	1.00	100.0
1	0.095	0.022	0.035	0.152	0.71	0.88	85.5
	0.281	**0.022**	**0.035**	**0.338**	**0.81**	**0.95**	**93.5**

Runoff Coefficient Calculations - Site-Uncontrolled Runoff

Drainage Area ID	Impervious Area (ha)	Pervious Area (ha)	Semi-Pervious Area (ha)	Total Area (ha)	C	C (100 YR)	Percent Impervious (%)
UNC1	0.017	0.002	0.003	0.022	0.78	0.98	90.9
	0.017	**0.002**	**0.003**	**0.022**	**0.78**	**0.98**	**90.9**

Runoff Coefficient Calculations - Interim Phase 2 Area (Remain as Existing)

Drainage Area ID	Impervious Area (ha)	Pervious Area (ha)	Semi-Pervious Area (ha)	Total Area (ha)	C	C (100 YR)	Percent Impervious (%)
EX	0.264	0.047	0.004	0.315	0.79	0.99	85.1
	0.264	**0.047**	**0.004**	**0.315**	**0.79**	**0.99**	**85.1**

Runoff Coefficient Calculations - Pre-Development ROW

Drainage Area ID	Impervious Area (ha)	Pervious Area (ha)	Semi-Pervious Area (ha)	Total Area (ha)	C	C (100 YR)	Percent Impervious (%)
ROW-EX	0.047	0.038	0.000	0.085	0.59	0.73	55.3
	0.047	**0.038**	**0.000**	**0.085**	**0.59**	**0.73**	**55.3**

Runoff Coefficient Calculations - Post-Development ROW

Drainage Area ID	Impervious Area (ha)	Pervious Area (ha)	Semi-Pervious Area (ha)	Total Area (ha)	C	C (100 YR)	Percent Impervious (%)
ROW	0.068	0.017	0.000	0.085	0.76	0.95	80.0
	0.068	**0.017**	**0.000**	**0.085**	**0.76**	**0.95**	**80.0**

Note: C_{100} = C * 1.25 (max. 1.0)

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Pre-Development Flow Calculations

Drainage Area	PRE1
Area (ha) =	0.36
C =	0.50
C (100 YR) =	0.50

Design Event	Time (min)	Rainfall Intensity (mm/hr)	Flow (L/s)
2 Year	10	76.8	38.5
100 Year	10	178.6	89.6

Notes:

1. Rainfall intensity calculated using City of Ottawa IDF curve equations.
2. Flow calculated using the Rational Method.
3. Max pre-development C = 0.50 for Post-Development Criteria

Drainage Area	PRE2
Area (ha) =	0.32
C =	0.88
C (100 YR) =	1.00

Design Event	Time (min)	Rainfall Intensity (mm/hr)	Flow (L/s)
2 Year	10	76.8	58.9
100 Year	10	178.6	156.4

Notes:

1. Rainfall intensity calculated using City of Ottawa IDF curve equations.
2. Flow calculated using the Rational Method.
3. C (100 YR) = C + 25% (Max. 1.0)

Drainage Area	PRE2
Area (ha) =	0.32
C =	0.50
C (100 YR) =	0.50

Design Event	Time (min)	Rainfall Intensity (mm/hr)	Flow (L/s)
2 Year	10	76.8	33.6
100 Year	10	178.6	78.2

Notes:

1. Rainfall intensity calculated using City of Ottawa IDF curve equations.
2. Flow calculated using the Rational Method.
3. Max pre-development C = 0.50 for Post-Development Criteria

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Post-Development Flow Calculations - Uncontrolled & Existing

Drainage Area	UNC1
Area (ha) =	0.02
C =	0.78
C (100 YR) =	0.98

Return Period	Time of Concentration (min)	Intensity (mm/hr)	Controlled Area Flow (L/s)
2 Year	10	76.8	3.7
100 Year	10	178.6	10.7

Notes:

1. Rainfall intensity calculated using City of Ottawa IDF curve equations.
2. Flow calculated using the Rational Method.
3. C (100 YR) = C + 25% (Max. 1.0)

Drainage Area	EX
Area (ha) =	0.32
C =	0.79
C (100 YR) =	0.99

Return Period	Time of Concentration (min)	Intensity (mm/hr)	Controlled Area Flow (L/s)
2 Year	10	76.8	53.2
100 Year	10	178.6	154.5

Notes:

1. Rainfall intensity calculated using City of Ottawa IDF curve equations.
2. Flow calculated using the Rational Method.
3. C (100 YR) = C + 25% (Max. 1.0)

STORM SEWER DESIGN SHEET

Robinson Consultants

LOCATION			AREA (ha)		INDIV. 2.78AR	ACCUM. 2.78AR	TIME OF CONC. (min)	2 YR RAINFALL INTENSITY (mm/hr)	2 YR PEAK FLOW (L/s)	CUMULATIVE CONTROLLED PEAK FLOW (L/s)	PROPOSED SEWER									
DRAINAGE AREA	FROM MH	TO MH	TOTAL AREA	C							PIPE DIA. (mm)	UPSTREAM INV.	DNSTREAM INV.	GRADE (%)	LENGTH (m)	CAPACITY (L/s)	FULL FLOW VELOCITY (m/s)	TIME OF FLOW (min)	PERCENT FULL (PEAK)	PERCENT FULL (CONTROLLED)
EX	EX CB	81241	0.315	0.79	0.692	0.692	10.00	76.81	53.2	53.2	299	97.36	97.34	0.20	9.9	43.1	0.61	0.27	123%	123%
ROOF1			0.035	0.90	0.088	0.088	10.00	76.81	6.7											
ROOF2			0.095	0.90	0.238	0.238	10.00	76.81	18.3											
ROOF3			0.056	0.90	0.140	0.140	10.00	76.81	10.8											
1	BLDG	201	0.152	0.71	0.299	0.764	10.00	76.81	58.7	*20.0*	251	98.53	98.47	2.14	2.8	88.1	1.78	0.03	67%	23%
	201	200	0.000	0.00	0.000	0.764	10.03	76.70	58.6	*20.0*	251	98.45	98.31	1.97	7.1	84.5	1.71	0.07	69%	24%
	200	81241	0.000	0.00	0.000	0.764	10.10	76.44	58.4	*20.0*	251	98.25	97.12	1.50	75.2	73.8	1.49	0.84	79%	27%
Downstream capacity during Phase 1																				
UNC1	SITE	81241	0.022	0.78	0.048	0.048	10.00	76.81	3.7	3.7										
ROW	81241	81240	0.085	0.76	0.180	1.684	10.94	73.39	123.6	*87.5*	299	97.09	96.53	1.10	51.1	100.4	1.43	0.60	123%	87%
Downstream capacity with future Phase 2																				
UNC1	SITE	81241	0.022	0.78	0.048	0.048	10.00	76.81	3.7	3.7										
ROW	81241	81240	0.085	0.76	0.180	1.684	10.94	73.39	123.6	*69.5*	299	97.09	96.53	1.10	51.1	100.4	1.43	0.60	123%	69%

Design Parameters

Notes:
1. Rainfall intensity calculated using Town of Perth IDF curve equations.
2. Peak flows calculated using the Rational Method.
3. Manning's roughness coefficient = 0.013
4. Full flow velocity: MIN 0.8 m/s; MAX 6.0 m/s
5. Roof drains and site drainage collected to pumped cistern within underground parking garage
6. Italicized "Cumulative Controlled Peak Flow" indicates the peak flow controlled by cistern pump
7. Future Phase 2 assumed to be controlled to 2-yr pre-development rate of 32.8 L/s

STORM SEWER DESIGN SHEET

Robinson Consultants

LOCATION			AREA (ha)		INDIV. 2.78AR	ACCUM. 2.78AR	TIME OF CONC. (min)	100 YR RAINFALL INTENSITY (mm/hr)	100 YR PEAK FLOW (L/s)	CUMULATIVE CONTROLLED PEAK FLOW (L/s)	PROPOSED SEWER									
DRAINAGE AREA	FROM MH	TO MH	TOTAL AREA	C							PIPE DIA. (mm)	UPSTREAM INV.	DNSTREAM INV.	GRADE (%)	LENGTH (m)	CAPACITY (L/s)	FULL FLOW VELOCITY (m/s)	TIME OF FLOW (min)	PERCENT FULL (PEAK)	PERCENT FULL (CONTROLLED)
EX	EX CB	81241	0.315	0.99	0.865	0.865	10.00	178.56	154.5	154.5	299	97.36	97.34	0.20	9.9	43.1	0.61	0.27	358%	358%
ROOF1			0.035	1.00	0.097	0.097	10.00	178.56	17.4											
ROOF2			0.095	1.00	0.264	0.264	10.00	178.56	47.2											
ROOF3			0.056	1.00	0.156	0.156	10.00	178.56	27.8											
1	BLDG	201	0.152	0.88	0.373	0.890	10.00	178.56	159.0	*20.0*	251	98.53	98.47	2.14	2.8	88.1	1.78	0.03	181%	23%
	201	200	0.000	0.00	0.000	0.890	10.03	178.32	158.8	*20.0*	251	98.45	98.31	1.97	7.1	84.5	1.71	0.07	188%	24%
	200	81241	0.000	0.00	0.000	0.890	10.10	177.69	158.2	*20.0*	251	98.25	97.12	1.50	75.2	73.8	1.49	0.84	214%	27%
Downstream capacity during Phase 1																				
UNC1	SITE	81241	0.022	0.98	0.060	0.060	10.00	178.56	10.7	10.7										
ROW	81241	81240	0.085	0.95	0.224	2.040	10.94	170.43	347.6	*215.9*	299	97.09	96.53	1.10	51.1	100.4	1.43	0.60	346%	215%
Downstream capacity with future Phase 2																				
UNC1	81241	81240	0.022	0.98	0.060	0.060	10.10	177.69	10.6	*-94.8*										
ROW	81241	81240	0.085	0.95	0.224	2.040	10.94	170.43	347.6	*101.2*	299	97.09	96.53	1.10	51.1	100.4	1.43	0.60	346%	101%

Design Parameters

Notes:
1. Rainfall intensity calculated using Town of Perth IDF curve equations.
2. Peak flows calculated using the Rational Method.
3. Manning's roughness coefficient = 0.013
4. Full flow velocity: MIN 0.8 m/s; MAX 6.0 m/s
5. Roof drains and site drainage collected to pumped cistern within underground parking garage
6. Italicized "Cumulative Controlled Peak Flow" indicates the peak flow controlled by cistern pump
7. Future Phase 2 assumed to be controlled to 2-yr pre-development rate of 32.8 L/s

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Flow & Storage Volume Calculations

Drainage Area **ROOF1**

Area (ha) = 0.035
C = 0.90
C (100 YR) = 1.00

Release Rate (L/s) = **1.4**
Max Depth (m) = 0.15
Max. Available Storage (m3) = **17.5**

Design Event	Time (min)	Rainfall Intensity (mm/hr)	Flow (L/s)	Release Rate (L/s)	Net Runoff to be Stored (L/s)	Storage Required (m^3)
2 Year	10	76.8	6.7	1.4	5.3	3.2
	15	61.8	5.4	1.4	4.0	3.6
	20	52.0	4.6	1.4	3.2	3.8
	25	**45.2**	**4.0**	**1.4**	**2.6**	**3.8**
	30	40.0	3.5	1.4	2.1	3.8
	35	36.1	3.2	1.4	1.8	3.7
100 Year	30	91.9	8.9	1.4	7.5	13.6
	40	75.1	7.3	1.4	5.9	14.2
	50	64.0	6.2	1.4	4.8	14.5
	60	**55.9**	**5.4**	**1.4**	**4.0**	**14.5**
	70	49.8	4.8	1.4	3.4	14.5
	80	45.0	4.4	1.4	3.0	14.3
100 Year + 20%	40	90.2	8.8	1.4	7.4	17.7
	50	76.7	7.5	1.4	6.1	18.2
	60	67.1	6.5	1.4	5.1	18.5
	70	**59.7**	**5.8**	**1.4**	**4.4**	**18.5**
	80	54.0	5.3	1.4	3.9	18.5
	90	49.3	4.8	1.4	3.4	18.4

Notes:

1. Rainfall intensity calculated using City of Ottawa IDF curve equations.
2. Flow calculated using the Rational Method.
3. C (100 YR) = C + 25% (Max. 1.0)
4. Controlled release rate assumed based on 40 L/s/ha; at 0.035ha = 1.4 L/s

Drainage Area **ROOF3**

Area (ha) = 0.056
C = 0.90
C (100 YR) = 1.00

Release Rate (L/s) = **2.2**
Max Depth (m) = 0.15
Max. Available Storage (m3) = **28**

Design Event	Time (min)	Rainfall Intensity (mm/hr)	Flow (L/s)	Release Rate (L/s)	Net Runoff to be Stored (L/s)	Storage Required (m^3)
2 Year	10	76.8	10.8	2.2	8.5	5.1
	15	61.8	8.7	2.2	6.4	5.8
	20	52.0	7.3	2.2	5.1	6.1
	25	**45.2**	**6.3**	**2.2**	**4.1**	**6.1**
	30	40.0	5.6	2.2	3.4	6.1
	35	36.1	5.1	2.2	2.8	5.9
100 Year	30	91.9	14.3	2.2	12.1	21.7
	40	75.1	11.7	2.2	9.5	22.7
	50	64.0	10.0	2.2	7.7	23.1
	60	**55.9**	**8.7**	**2.2**	**6.5**	**23.3**
	70	49.8	7.8	2.2	5.5	23.1
	80	45.0	7.0	2.2	4.8	22.9
100 Year + 20%	40	90.2	14.0	2.2	11.8	28.3
	50	76.7	11.9	2.2	9.7	29.1
	60	67.1	10.4	2.2	8.2	29.5
	70	**59.7**	**9.3**	**2.2**	**7.1**	**29.7**
	80	54.0	8.4	2.2	6.2	29.6
	90	49.3	7.7	2.2	5.4	29.4

Notes:

1. Rainfall intensity calculated using City of Ottawa IDF curve equations.
2. Flow calculated using the Rational Method.
3. C (100 YR) = C + 25% (Max. 1.0)
4. Controlled release rate assumed based on 40 L/s/ha; at 0.056ha = 2.2 L/s

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Drainage Area	**1**	(Building Storm Cistern)	
Area (ha) =	0.152		
C =	0.71	Release Rate (L/s) =	**20.0**
C (100 YR) =	0.88	Max. Available Storage (m3) =	**40**

Design Event	Time (min)	Rainfall Intensity (mm/hr)	Flow (L/s)	Release Rate (L/s)	Net Runoff to be Stored (L/s)	Storage Required (m^3)
2 Year	**10**	**76.8**	**26.6**	**20.0**	**6.6**	**3.9**
	15	61.8	22.1	20.0	2.1	1.9
	20	52.0	19.2	20.0	-0.8	-1.0
	25	45.2	17.1	20.0	-2.9	-4.3
	30	40.0	15.6	20.0	-4.4	-7.9
	35	36.1	14.4	20.0	-5.6	-11.7
100 Year	10	178.6	70.3	20.0	50.3	30.2
	15	142.9	57.0	20.0	37.0	33.3
	20	**120.0**	**48.4**	**20.0**	**28.4**	**34.1**
	25	103.8	42.4	20.0	22.4	33.6
	30	91.9	37.9	20.0	17.9	32.3
	35	82.6	34.5	20.0	14.5	30.4
100 Year + 20%	10	214.3	83.6	20.0	63.6	38.2
	15	171.5	67.6	20.0	47.6	42.9
	20	143.9	57.4	20.0	37.4	44.8
	25	**124.6**	**50.1**	**20.0**	**30.1**	**45.2**
	30	110.2	44.8	20.0	24.8	44.6
	35	99.1	40.6	20.0	20.6	43.3

Notes:

1. Rainfall intensity calculated using City of Ottawa IDF curve equations.
2. Flow calculated using the Rational Method, plus the controlled roof drains from Roof 1 and Roof 3
3. C (100 YR) = C + 25% (Max. 1.0)
4. Controlled release rate is assumed pumping rate from building stormwater cistern

Stormceptor® Stormceptor® EF Sizing Report Rinker Materials

Imbrium® Systems
ESTIMATED NET ANNUAL SEDIMENT (TSS) LOAD REDUCTION

06/12/2026

Province:	Ontario
City:	Ottawa
Nearest Rainfall Station:	OTTAWA CDA RCS
Climate Station Id:	6105978
Years of Rainfall Data:	20
Site Name:	
Drainage Area (ha):	0.38
Runoff Coefficient 'c':	0.79
Particle Size Distribution:	Fine
Target TSS Removal (%):	80.0

Project Name:	3750 N Bowesville
Project Number:	70991
Designer Name:	Stephen McCaughey
Designer Company:	Robinson Consultants
Designer Email:	smccaughey@rcii.com
Designer Phone:	613-592-6060
EOR Name:	
EOR Company:	
EOR Email:	
EOR Phone:	

Required Water Quality Runoff Volume Capture (%):	80.00
Estimated Water Quality Flow Rate (L/s):	6.07
Oil / Fuel Spill Risk Site?	Yes
Upstream Flow Control?	Yes
Upstream Orifice Control Flow Rate to Stormceptor (L/s):	20.00
Peak Conveyance (maximum) Flow Rate (L/s):	20.00
Influent TSS Concentration (mg/L):	100
Estimated Average Annual Sediment Load (kg/yr):	188
Estimated Average Annual Sediment Volume (L/yr):	153

Net Annual Sediment (TSS) Load Reduction Sizing Summary

Stormceptor Model	TSS Removal Provided (%)
EFO4	89
EFO5	93
EFO6	96
EFO8	98
EFO10	99
EFO12	100

Recommended Stormceptor EFO Model: EFO4

Estimated Net Annual Sediment (TSS) Load Reduction (%): 89

Water Quality Runoff Volume Capture (%): > 90

imbrium

THIRD-PARTY TESTING AND VERIFICATION

►**Stormceptor® EF and Stormceptor® EFO** are the latest evolutions in the Stormceptor® oil-grit separator (OGS) technology series, and are designed to remove a wide variety of pollutants from stormwater and snowmelt runoff. These technologies have been third-party tested in accordance with the Canadian ETV **Procedure for Laboratory Testing of Oil-Grit Separators** and performance has been third-party verified in accordance with the **ISO 14034 Environmental Technology Verification (ETV)** protocol.

PERFORMANCE

►**Stormceptor® EF and EFO** remove stormwater pollutants through gravity separation and floatation, and feature a patent-pending design that generates positive removal of total suspended solids (TSS) throughout each storm event, including high-intensity storms. Captured pollutants include sediment, free oils, and sediment-bound pollutants such as nutrients, heavy metals, and petroleum hydrocarbons. Stormceptor is sized to remove a high level of TSS from the frequent rainfall events that contribute the vast majority of annual runoff volume and pollutant load. The technology incorporates an internal bypass to convey excessive stormwater flows from high-intensity storms through the device without resuspension and washout (scour) of previously captured pollutants. Proper routine maintenance ensures high pollutant removal performance and protection of downstream waterwavs.

PARTICLE SIZE DISTRIBUTION (PSD)

►The **Canadian ETV PSD** shown in the table below was used, or in part, for this sizing. This is the identical PSD that is referenced in the Canadian ETV ***Procedure for Laboratory Testing of Oil-Grit Separators*** for both sediment removal testing and scour testing. The Canadian ETV PSD contains a wide range of particle sizes in the sand and silt fractions, and is considered reasonably representative of the particle size fractions found in typical urban stormwater runoff.

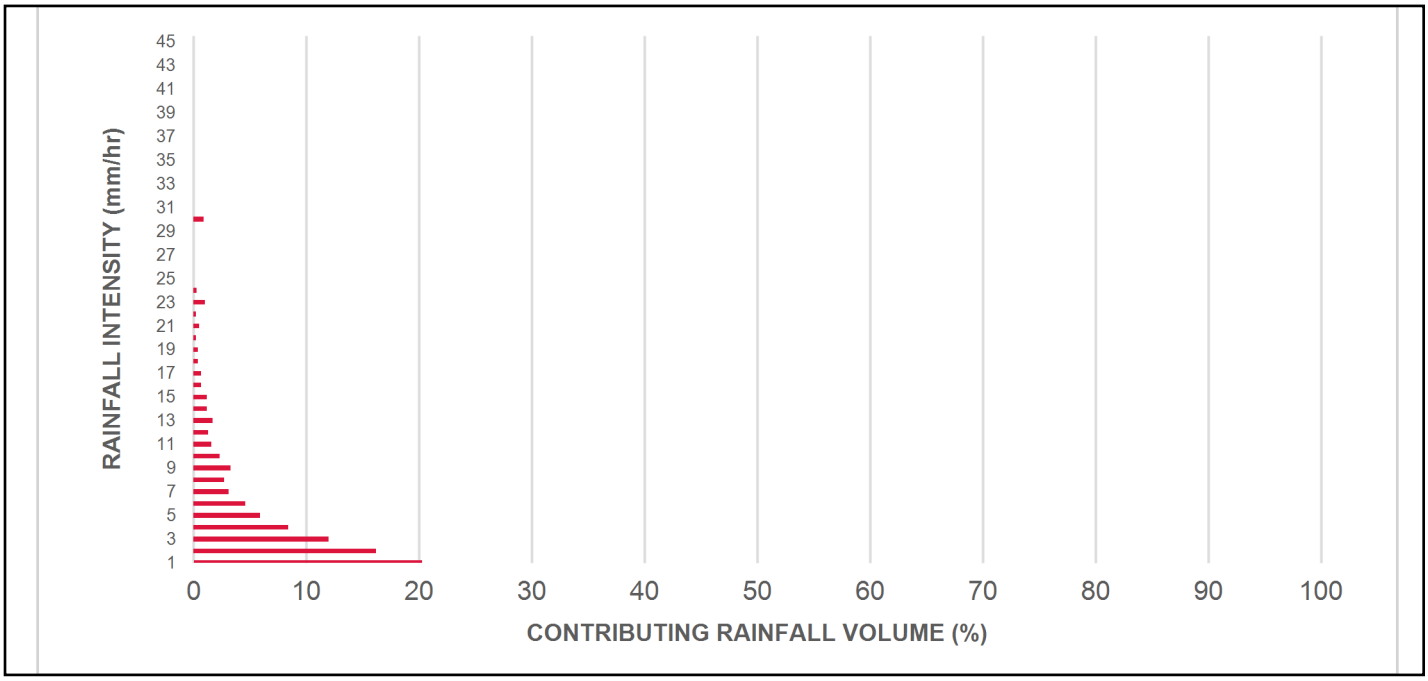
Particle Size (µm)	Percent Less Than	Particle Size Fraction (µm)	Percent
1000	100	500-1000	5
500	95	250-500	5
250	90	150-250	15
150	75	100-150	15
100	60	75-100	10
75	50	50-75	5
50	45	20-50	10
20	35	8-20	15
8	20	5-8	10
5	10	2-5	5
2	5	<2	5

Upstream Flow Controlled Results

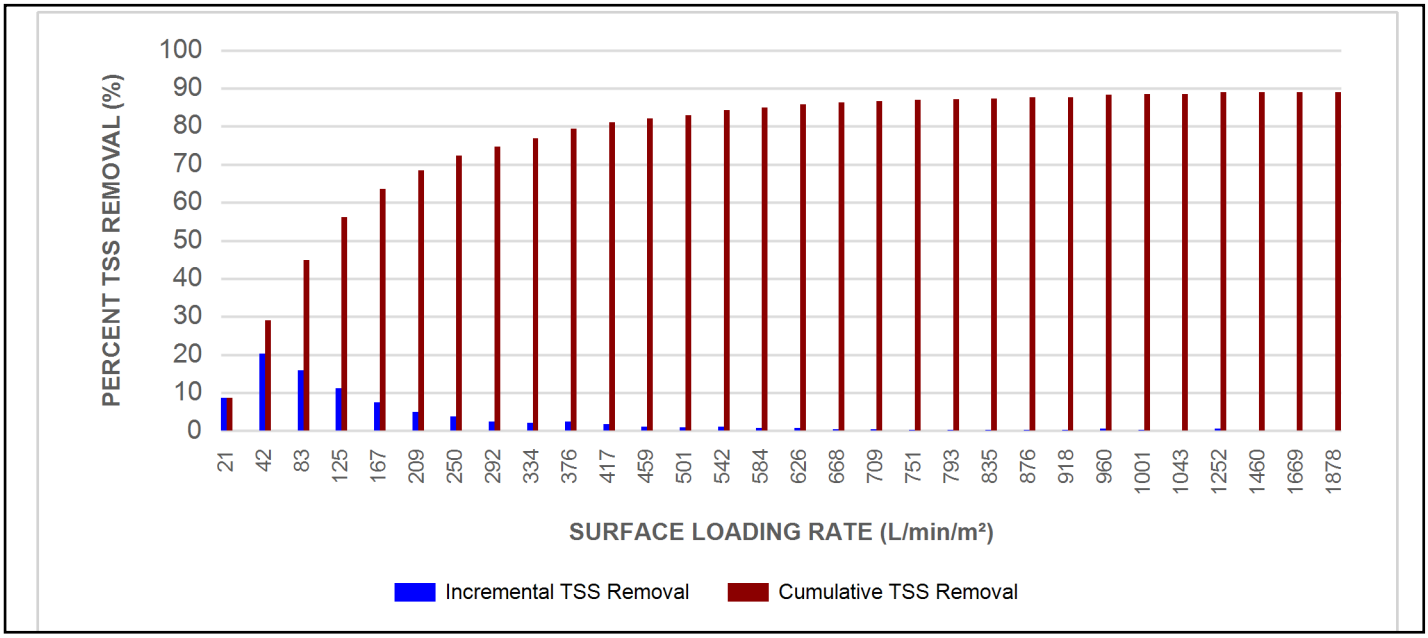
Rainfall Intensity (mm / hr)	Percent Rainfall Volume (%)	Cumulative Rainfall Volume (%)	Flow Rate (L/s)	Flow Rate (L/min)	Surface Loading Rate (L/min/m²)	Removal Efficiency (%)	Incremental Removal (%)	Cumulative Removal (%)
0.50	8.6	8.6	0.42	25.0	21.0	100	8.6	8.6
1.00	20.3	29.0	0.83	50.0	42.0	100	20.3	29.0
2.00	16.2	45.2	1.67	100.0	83.0	98	16.0	44.9
3.00	12.0	57.2	2.50	150.0	125.0	93	11.2	56.1
4.00	8.4	65.6	3.34	200.0	167.0	88	7.4	63.6
5.00	5.9	71.6	4.17	250.0	209.0	83	4.9	68.5
6.00	4.6	76.2	5.01	300.0	250.0	81	3.7	72.3
7.00	3.1	79.3	5.84	351.0	292.0	79	2.4	74.7
8.00	2.7	82.0	6.68	401.0	334.0	77	2.1	76.8
9.00	3.3	85.3	7.51	451.0	376.0	75	2.5	79.3
10.00	2.3	87.6	8.35	501.0	417.0	73	1.7	81.0
11.00	1.6	89.2	9.18	551.0	459.0	71	1.1	82.1
12.00	1.3	90.5	10.01	601.0	501.0	69	0.9	83.0
13.00	1.7	92.2	10.85	651.0	542.0	67	1.2	84.2
14.00	1.2	93.5	11.68	701.0	584.0	66	0.8	85.0
15.00	1.2	94.6	12.52	751.0	626.0	64	0.7	85.7
16.00	0.7	95.3	13.35	801.0	668.0	64	0.4	86.2
17.00	0.7	96.1	14.19	851.0	709.0	64	0.5	86.6
18.00	0.4	96.5	15.02	901.0	751.0	63	0.3	86.9
19.00	0.4	96.9	15.86	951.0	793.0	63	0.3	87.1
20.00	0.2	97.1	16.69	1001.0	835.0	63	0.1	87.3
21.00	0.5	97.5	17.53	1052.0	876.0	63	0.3	87.6
22.00	0.2	97.8	18.36	1102.0	918.0	62	0.2	87.7
23.00	2.2	100.0	19.19	1152.0	960.0	62	1.4	89.1
24.00	0.0	100.0	20.00	1200.0	1000.0	62	0.0	89.1
25.00	0.0	100.0	20.00	1200.0	1000.0	62	0.0	89.1
30.00	0.0	100.0	20.00	1200.0	1000.0	62	0.0	89.1
35.00	0.0	100.0	20.00	1200.0	1000.0	62	0.0	89.1
40.00	0.0	100.0	20.00	1200.0	1000.0	62	0.0	89.1
45.00	0.0	100.0	20.00	1200.0	1000.0	62	0.0	89.1
Estimated Net Annual Sediment (TSS) Load Reduction =								**89 %**

Climate Station ID: 6105978 *Years of Rainfall Data*: 20

RAINFALL DATA FROM OTTAWA CDA RCS RAINFALL STATION



INCREMENTAL AND CUMULATIVE TSS REMOVAL FOR THE RECOMMENDED STORMCEPTOR® MODEL



Maximum Pipe Diameter / Peak Conveyance

Stormceptor EF / EFO	Model Diameter		Min Angle Inlet / Outlet Pipes	Max Inlet Pipe Diameter		Max Outlet Pipe Diameter		Peak Conveyance Flow Rate	
	(m)	(ft)		(mm)	(in)	(mm)	(in)	(L/s)	(cfs)
EF4 / EFO4	1.2	4	90	609	24	609	24	425	15
EF5 / EFO5	1.5	5	90	762	30	762	30	710	25
EF6 / EFO6	1.8	6	90	914	36	914	36	990	35
EF8 / EFO8	2.4	8	90	1219	48	1219	48	1700	60
EF10 / EFO10	3.0	10	90	1828	72	1828	72	2830	100
EF12 / EFO12	3.6	12	90	1828	72	1828	72	2830	100

SCOUR PREVENTION AND ONLINE CONFIGURATION

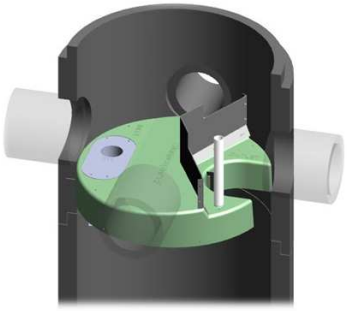
►**Stormceptor® EF and EFO** feature an internal bypass and superior scour prevention technology that have been demonstrated in third-party testing according to the scour testing provisions of the Canadian ETV **Procedure for Laboratory Testing of Oil-Grit Separators**, and the exceptional scour test performance has been third-party verified in accordance with the ISO 14034 ETV protocol. As a result, Stormceptor EF and EFO are approved for online installation, eliminating the need for costly additional bypass structures, piping, and installation expense.

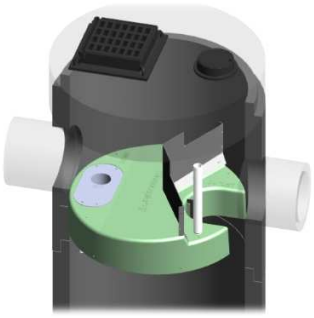
DESIGN FLEXIBILITY

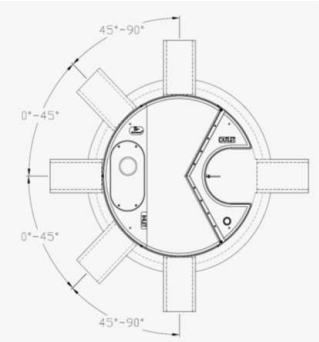
►**Stormceptor® EF** and **EFO** offers design flexibility in one simplified platform, accepting stormwater flow from a single inlet pipe or multiple inlet pipes, and/or surface runoff through an inlet grate. The device can also serve as a junction structure, accommodate a 90-degree inlet-to-outlet bend angle, and can be modified to ensure performance in submerged conditions.

OIL CAPTURE AND RETENTION

►While Stormceptor® EF will capture and retain oil from dry weather spills and low intensity runoff, **Stormceptor® EFO** has demonstrated superior oil capture and greater than 99% oil retention in third-party testing according to the light liquid re-entrainment testing provisions of the Canadian ETV **Procedure for Laboratory Testing of Oil-Grit Separators**. Stormceptor EFO is recommended for sites where oil capture and retention is a requirement.







INLET-TO-OUTLET DROP

Elevation differential between inlet and outlet pipe inverts is dictated by the angle at which the inlet pipe(s) enters the unit.
0° - 45° : The inlet pipe is 1-inch (25mm) higher than the outlet pipe.
45° - 90° : The inlet pipe is 2-inches (50mm) higher than the outlet pipe.

HEAD LOSS

The head loss through Stormceptor EF is similar to that of a 60-degree bend structure. The applicable K value for calculating minor losses through the unit is 1.1. For submerged conditions the applicable K value is 3.0.

Pollutant Capacity

Stormceptor EF / EFO	Model Diameter		Depth (Outlet Pipe Invert to Sump Floor)		Oil Volume		Recommended Sediment Maintenance Depth *		Maximum Sediment Volume *		Maximum Sediment Mass **	
	(m)	(ft)	(m)	(ft)	(L)	(Gal)	(mm)	(in)	(L)	(ft^3)	(kg)	(lb)
EF4 / EFO4	1.2	4	1.52	5.0	265	70	203	8	1190	42	1904	5250
EF5 / EFO5	1.5	5	1.62	5.3	420	111	305	10	2124	75	2612	5758
EF6 / EFO6	1.8	6	1.93	6.3	610	160	305	12	3470	123	5552	15375
EF8 / EFO8	2.4	8	2.59	8.5	1070	280	610	24	8780	310	14048	38750
EF10 / EFO10	3.0	10	3.25	10.7	1670	440	610	24	17790	628	28464	78500
EF12 / EFO12	3.6	12	3.89	12.8	2475	655	610	24	31220	1103	49952	137875

*Increased sump depth may be added to increase sediment storage capacity
** Average density of wet packed sediment in sump = 1.6 kg/L (100 lb/ft^3)

Feature	Benefit	Feature Appeals To
Patent-pending enhanced flow treatment and scour prevention technology	Superior, verified third-party performance	Regulator, Specifying & Design Engineer
Third-party verified light liquid capture and retention for EFO version	Proven performance for fuel/oil hotspot locations	Regulator, Specifying & Design Engineer, Site Owner
Functions as bend, junction or inlet structure	Design flexibility	Specifying & Design Engineer
Minimal drop between inlet and outlet	Site installation ease	Contractor
Large diameter outlet riser for inspection and maintenance	Easy maintenance access from grade	Maintenance Contractor & Site Owner

STANDARD STORMCEPTOR EF/EFO DRAWINGS

For standard details, please visit http://www.imbriumsystems.com/stormwater-treatment-solutions/stormceptor-ef

STANDARD STORMCEPTOR EF/EFO SPECIFICATION

For specifications, please visit http://www.imbriumsystems.com/stormwater-treatment-solutions/stormceptor-ef

STANDARD PERFORMANCE SPECIFICATION FOR "OIL GRIT SEPARATOR" (OGS) STORMWATER QUALITY TREAMENT DEVICE

PART 1 – GENERAL

1.1 WORK INCLUDED

This section specifies requirements for selecting, sizing, and designing an underground Oil Grit Separator (OGS) device for stormwater quality treatment, with third-party testing results and a Statement of Verification in accordance with ISO 14034 Environmental Management – Environmental Technology Verification (ETV).

1.2 REFERENCE STANDARDS & PROCEDURES

ISO 14034:2016 Environmental management – Environmental technology verification (ETV)

Canadian Environmental Technology Verification (ETV) Program's **Procedure for Laboratory Testing of Oil-Grit Separators**

1.3 SUBMITTALS

1.3.1 All submittals, including sizing reports & shop drawings, shall be submitted upon request with each order to the contractor then forwarded to the Engineer of Record for review and acceptance. Shop drawings shall detail all OGS components, elevations, and sequence of construction.

1.3.2 Alternative devices shall have features identical to or greater than the specified device, including: treatment chamber diameter, treatment chamber wet volume, sediment storage volume, and oil storage volume.

1.3.3 Unless directed otherwise by the Engineer of Record, OGS stormwater quality treatment product substitutions or alternatives submitted within ten days prior to project bid shall not be accepted. All alternatives or substitutions submitted shall be signed and sealed by a local registered Professional Engineer, based on the exact same criteria detailed in Section 3, in entirety, subject to review and approval by the Engineer of Record.

PART 2 – PRODUCTS

2.1 OGS POLLUTANT STORAGE

The OGS device shall include a sump for sediment storage, and a protected volume for the capture and storage of petroleum hydrocarbons and buoyant gross pollutants. The minimum sediment & petroleum hydrocarbon storage capacity shall be as follows:

2.1.1	4 ft (1219 mm) Diameter OGS Units:	1.19 m^3 sediment / 265 L oil
	5 ft (1524 mm) Diameter OGS Units:	1.95 m^3 sediment / 420 L oil
	6 ft (1829 mm) Diameter OGS Units:	3.48 m^3 sediment / 609 L oil
	8 ft (2438 mm) Diameter OGS Units:	8.78 m^3 sediment / 1,071 L oil
	10 ft (3048 mm) Diameter OGS Units:	17.78 m^3 sediment / 1,673 L oil
	12 ft (3657 mm) Diameter OGS Units:	31.23 m^3 sediment / 2,476 L oil

PART 3 – PERFORMANCE & DESIGN

3.1 GENERAL

The OGS stormwater quality treatment device shall be verified in accordance with ISO 14034:2016 Environmental management – Environmental technology verification (ETV). The OGS stormwater quality treatment device shall remove oil, sediment and gross pollutants from stormwater runoff during frequent wet weather events, and retain these pollutants during less frequent high flow wet weather events below the insert within the OGS for later removal during maintenance. The Manufacturer shall have at least ten (10) years of local experience, history and success in engineering design, manufacturing and production and supply of OGS stormwater quality treatment device systems, acceptable to the Engineer of Record.

3.2 SIZING METHODOLOGY

The OGS device shall be engineered, designed and sized to provide stormwater quality treatment based on treating a minimum of 90 percent of the average annual runoff volume and a minimum removal of an annual average 60% of the sediment (TSS) load based on the Particle Size Distribution (PSD) specified in the sizing report for the specified device. Sizing of the OGS shall be determined by use of a minimum ten (10) years of local historical rainfall data provided by Environment Canada. Sizing shall also be determined by use of the sediment removal performance data derived from the ISO 14034 ETV third-party verified laboratory testing data from testing conducted in accordance with the Canadian ETV protocol Procedure for Laboratory Testing of Oil-Grit Separators, as follows:

3.2.1 Sediment removal efficiency for a given surface loading rate and its associated flow rate shall be based on sediment removal efficiency demonstrated at the seven (7) tested surface loading rates specified in the protocol, ranging 40 L/min/m^2 to 1400 L/min/m^2, and as stated in the ISO 14034 ETV Verification Statement for the OGS device.

3.2.2 Sediment removal efficiency for surface loading rates between 40 L/min/m^2 and 1400 L/min/m^2 shall be based on linear interpolation of data between consecutive tested surface loading rates.

3.2.3 Sediment removal efficiency for surface loading rates less than the lowest tested surface loading rate of 40 L/min/m^2 shall be assumed to be identical to the sediment removal efficiency at 40 L/min/m^2. No extrapolation shall be allowed that results in a sediment removal efficiency that is greater than that demonstrated at 40 L/min/m^2.

3.2.4 Sediment removal efficiency for surface loading rates greater than the highest tested surface loading rate of 1400 L/min/m^2 shall assume zero sediment removal for the portion of flow that exceeds 1400 L/min/m^2, and shall be calculated using a simple proportioning formula, with 1400 L/min/m^2 in the numerator and the higher surface loading rate in the denominator, and multiplying the resulting fraction times the sediment removal efficiency at 1400 L/min/m^2.

The OGS device shall also have sufficient annual sediment storage capacity as specified and calculated in Section 2.1.

3.3 CANADIAN ETV or ISO 14034 ETV VERIFICATION OF SCOUR TESTING

The OGS device shall have Canadian ETV or ISO 14034 ETV Verification of third-party scour testing conducted in accordance with the Canadian ETV Program's **Procedure for Laboratory Testing of Oil-Grit Separators.**

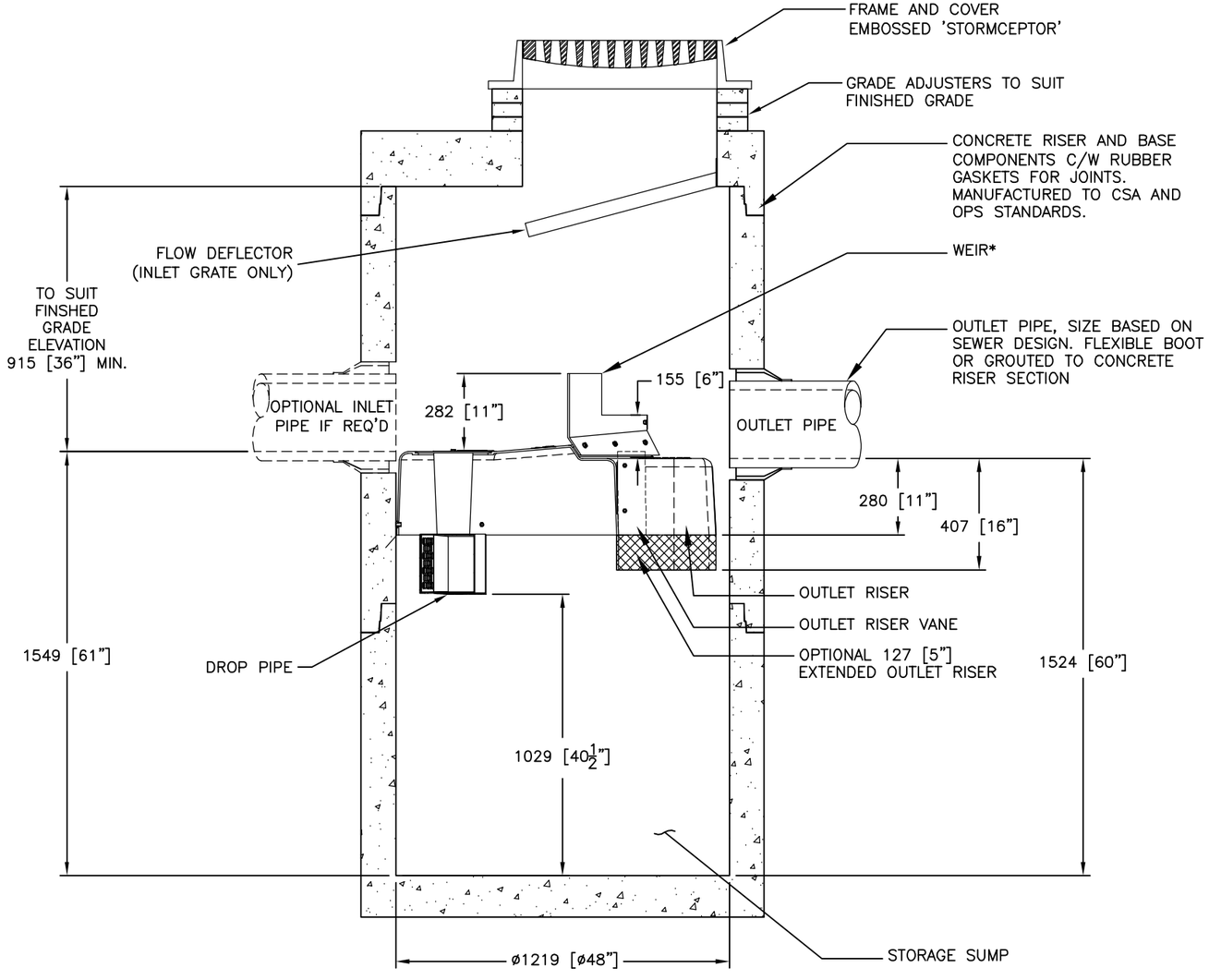
3.3.1 To be acceptable for on-line installation, the OGS device must demonstrate an average scour test effluent concentration less than 10 mg/L at each surface loading rate tested, up to and including 2600 L/min/m^2.

3.4 LIGHT LIQUID RE-ENTRAINMENT SIMULATION TESTING

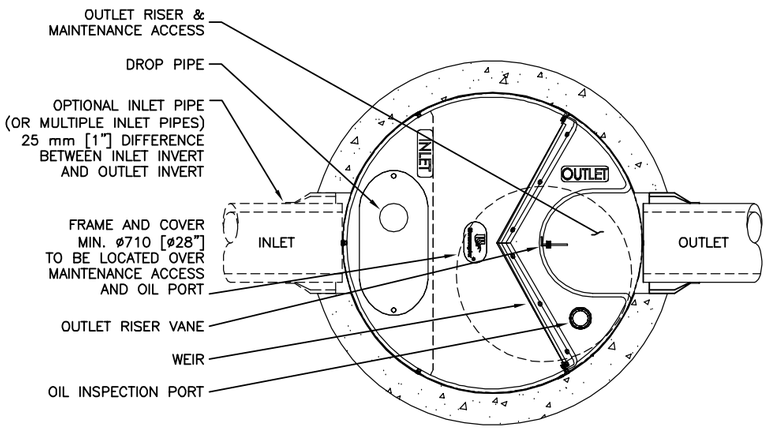
The OGS device shall have Canadian ETV or ISO 14034 ETV Verification of completed third-party Light Liquid

Re-entrainment Simulation Testing in accordance with the Canadian ETV **Program's Procedure for Laboratory Testing of Oil-Grit Separators,** with results reported within the Canadian ETV or ISO 14034 ETV verification. This re-entrainment testing is conducted with the device pre-loaded with low density polyethylene (LDPE) plastic beads as a surrogate for light liquids such as oil and fuel. Testing is conducted on the same OGS unit tested for sediment removal to assess whether light liquids captured after a spill are effectively retained at high flow rates.

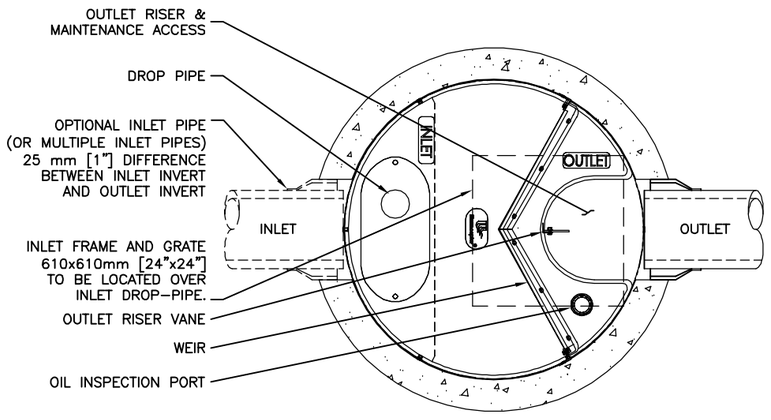
3.4.1 For an OGS device to be an acceptable stormwater treatment device on a site where vehicular traffic occurs and the potential for an oil or fuel spill exists, the OGS device must have reported verified performance results of greater than 99% cumulative retention of LDPE plastic beads for the five specified surface loading rates (ranging 200 L/min/m^2 to 2600 L/min/m^2) in accordance with the Light Liquid Re-entrainment Simulation Testing within the Canadian ETV Program's **Procedure for Laboratory Testing of Oil-Grit Separators.** However, an OGS device shall not be allowed if the Light Liquid Re-entrainment Simulation Testing was performed with screening components within the OGS device that are effective at retaining the LDPE plastic beads, but would not be expected to retain light liquids such as oil and fuel.



SECTION VIEW



PLAN VIEW (STANDARD)



PLAN VIEW (INLET TOP)

FOR SITE SPECIFIC DRAWINGS PLEASE CONTACT YOUR LOCAL STORMCEPTOR REPRESENTATIVE. SITE SPECIFIC DRAWINGS ARE BASED ON THE BEST AVAILABLE INFORMATION AT THE TIME. SOME FIELD REVISIONS TO THE SYSTEM LOCATION OR CONNECTION PIPING MAY BE NECESSARY BASED ON AVAILABLE SPACE OR SITE CONFIGURATION REVISIONS. ELEVATIONS SHOULD BE MAINTAINED EXCEPT WHERE NOTED ON BYPASS STRUCTURE (IF REQUIRED).

GENERAL NOTES:

* MAXIMUM SURFACE LOADING RATE (SLR) INTO LOWER CHAMBER THROUGH DROP PIPE IS 1135 L/min/m^2 (27.9 gpm/ft^2) FOR STORMCEPTOR EF4 AND 535 L/min/m^2 (13.1 gpm/ft^2) FOR STORMCEPTOR EFO4 (OIL CAPTURE CONFIGURATION). WEIR HEIGHT IS 150 mm (6 INCH) FOR EF04.

1. ALL DIMENSIONS INDICATED ARE IN MILLIMETERS (INCHES) UNLESS OTHERWISE SPECIFIED.
2. STORMCEPTOR STRUCTURE INLET AND OUTLET PIPE SIZE AND ORIENTATION SHOWN FOR INFORMATIONAL PURPOSES ONLY.
3. UNLESS OTHERWISE NOTED, BYPASS INFRASTRUCTURE, SUCH AS ALL UPSTREAM DIVERSION STRUCTURES, CONNECTING STRUCTURES, OR PIPE CONDUITS CONNECTING TO COMPLETE THE STORMCEPTOR SYSTEM SHALL BE PROVIDED AND ADDRESSED SEPARATELY.
4. DRAWING FOR INFORMATION PURPOSES ONLY. REFER TO ENGINEER'S SITE/UTILITY PLAN FOR STRUCTURE ORIENTATION.
5. NO PRODUCT SUBSTITUTIONS SHALL BE ACCEPTED UNLESS SUBMITTED 10 DAYS PRIOR TO PROJECT BID DATE, OR AS DIRECTED BY THE ENGINEER OF RECORD.

INSTALLATION NOTES

A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE (LIFTING CLUTCHES PROVIDED)
C. CONTRACTOR WILL INSTALL AND LEVEL THE STRUCTURE, SEALING THE JOINTS, LINE ENTRY AND EXIT POINTS (NON-SHRINK GROUT WITH APPROVED WATERSTOP OR FLEXIBLE BOOT)
D. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT THE DEVICE FROM CONSTRUCTION-RELATED EROSION RUNOFF.
E. DEVICE ACTIVATION, BY CONTRACTOR, SHALL OCCUR ONLY AFTER SITE HAS BEEN STABILIZED AND THE STORMCEPTOR UNIT IS CLEAN AND FREE OF DEBRIS.

STANDARD DETAIL
NOT FOR CONSTRUCTION

SITE SPECIFIC DATA REQUIREMENTS

STORMCEPTOR MODEL	EFO4				
STRUCTURE ID					*
HYDROCARBON STORAGE REQ'D (L)					*
WATER QUALITY FLOW RATE (L/s)					*
PEAK FLOW RATE (L/s)					*
RETURN PERIOD OF PEAK FLOW (yrs)					*
DRAINAGE AREA (HA)					*
DRAINAGE AREA IMPERVIOUSNESS (%)					*
PIPE DATA:	I.E.	MAT'L	DIA	SLOPE %	HGL
INLET #1	*	*	*	*	*
INLET #2	*	*	*	*	*
OUTLET	*	*	*	*	*

* PER ENGINEER OF RECORD

MARK	DATE	REVISION DESCRIPTION	BY
####	####	####	####
####	####	####	####
1	6/8/18	UPDATES	JSK
0	5/26/17	INITIAL RELEASE	JSK

Stormceptor® EF

SCALE = NTS

imbrium®
407 FAIRVIEW DRIVE, WHITBY, ON, L1N 9A9
TF 800-565-4501 CA 416-800-9000 INTL +1-416-800-9000

DATE: 10/13/2017

DESIGNED:	DRAWN:
JSK	JSK
CHECKED:	APPROVED:
BSF	SP
PROJECT No.:	SEQUENCE No.:
EFO4	*

SHEET: 1 OF 1