Stormwater Management and Servicing Report

1480 Richmond Road

City of Ottawa

PEARSON ENGINEERING

PEARSONENG.COM

June 2026

26047

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Stormwater Management & Servicing report
1480 Richmond Road, Ottawa

1. Introduction

PEARSON Engineering Ltd. has been retained by Zail Properties (Client) to prepare an Stormwater Management (SWM) & Servicing Report in support of a proposed commercial development (Project) located at 1480 Richmond Road in the City of Ottawa (City).

The subject property consists of an existing bank facility along with its associated parking lot. The Project proposes changing the existing building use from a bank to a restaurant with an updated drive-through and parking. The site (Bank, Drive through and revised parking lot) is approximately 0.26 ha in size and situated on a 1.4 ha commercial lot which fronts onto Richmond Road to the north, a vacant lot to the west, Carling Avenue to the south and a mid-rise apartment building to the east. The location of the site can be seen on Figure 1.

The objective of this report is to assess the existing municipal infrastructure in the vicinity of the Project, the onsite Stormwater Management (SWM) facilities and internal services required to service the proposed Project. The report also includes design calculations and a brief outline of the proposed internal services, as well as comments regarding the ability of the various secondary utilities to service the site.

2. Supporting Documents

The following documents have been referenced in the preparation of this report:

- Ministry of the Environment, Design Guidelines for Sewage Works, 2008
- Ministry of the Environment, Design Guidelines for Drinking-Water Systems, 2008
- Ministry of the Environment, Stormwater Management Planning and Design Manual, March 2003
- City of Ottawa, Sewer Design Guidelines, December 2025
- City of Ottawa, Water Distribution Design Guidelines, May 2026

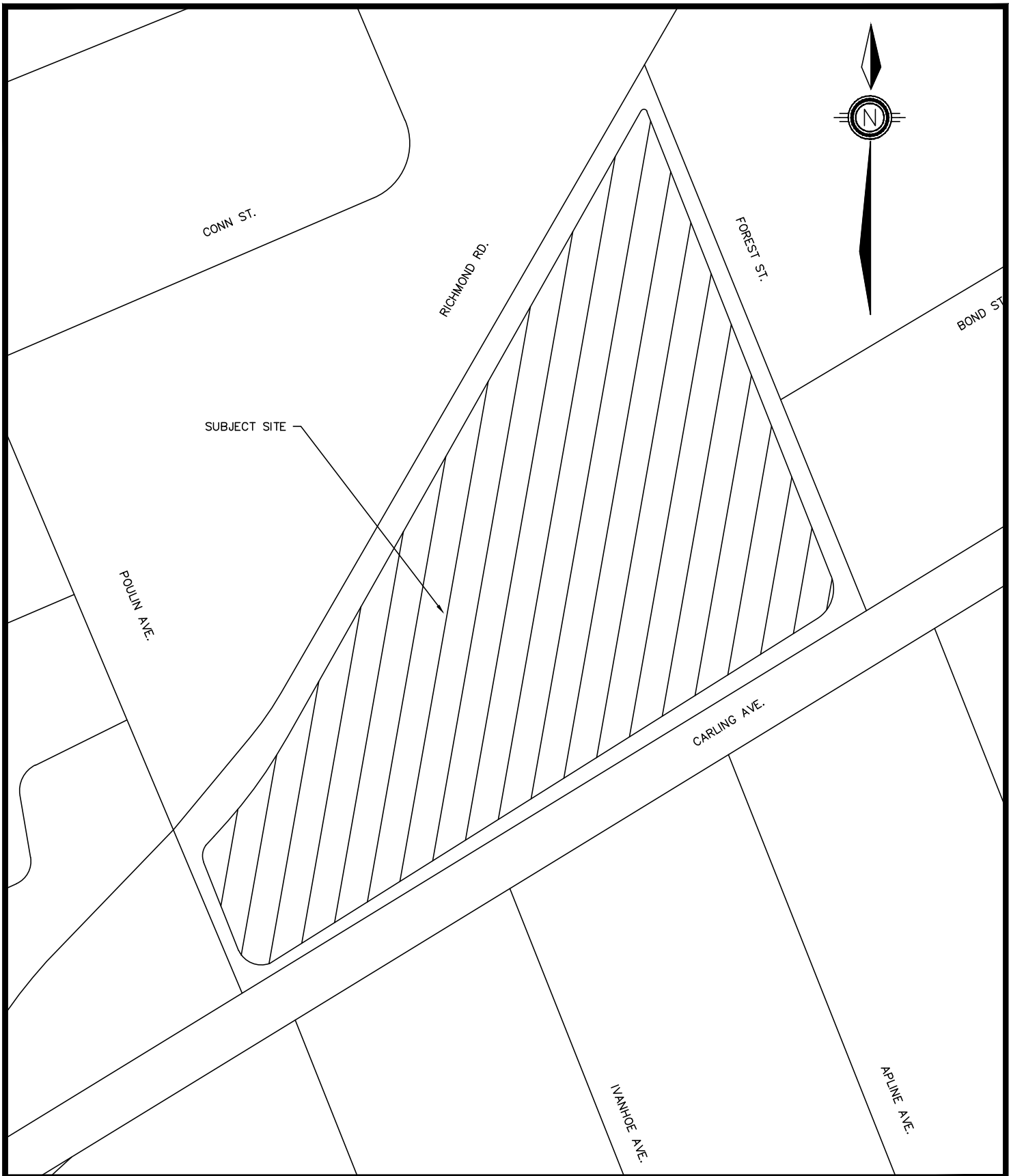
3. Water Supply and Distribution

3.1. Water Servicing Design Criteria

The site is to have a commercial land use area of approximately 0.26 ha. Utilizing the City of Ottawa Water Distribution Design Guidelines for Commercial and Institutional Use of 28,000 L/ha/day, an Average Day Demand (ADD) of 0.08 L/s was calculated. A Peak Rate factor of 1.80 was used in calculating a Peak Hour Demand (PHD) of 0.22 L/s for the development. Calculations for the domestic water requirements for the site can be found in Appendix A.

3.2. Internal Water Distribution System

The existing building is serviced by a 150 mm diameter water service connection located at the northeast corner of the building. The site is situated in 1.40 ha. commercial lots which includes 4 buildings including the subjected site, and those buildings are being serviced by 200 mm diameter watermain connected to the existing 300 mm diameter municipal watermain on Richmond Road.



ZAIL PROPERTIES
1480 RICHMOND ROAD
CITY OF OTTAWA, ONTARIO

SITE LOCATION PLAN

PEARSON ENGINEERING
PEARSONENG.COM PH. 705.719.4785

DESIGNED BY	NW	HORIZ SCALE		PROJECT #	26047
DRAWN BY	JM	VERT SCALE		DRAWING #	FIG–1
CHECKED BY	MWD	DATE	JUNE 2026	REVISION #	0

The proposed development will not result in an increase in water demand, as the existing building footprint will remain unchanged and the proposed land use will remain commercial, consistent with existing conditions. Accordingly, the post-development water demand is anticipated to be similar to the existing demand. The calculated Average Day Demand (ADD) for the entire site is approximately 7.17 m³/day, which is well below the City of Ottawa threshold of 50 m³/day for additional water servicing requirements. Therefore, the existing 150 mm diameter water service connection and associated water distribution infrastructure are considered sufficient to accommodate the proposed development, and no upgrades to the existing water servicing system are required. The existing water servicing arrangement is shown on Drawing SS-1 in Appendix G.

3.3. Fire Fighting Requirements

Fire flow calculations have been conducted as per OBC and OFM guidelines and resulted in a required fire flow of 45 L/s (2700 L/min). There is one AA Class Private hydrant placed within 15 m to the east of the site and six existing AA class hydrants within 100 m and ten existing AA class hydrant within 150 m of the site. As per Table 1 in Appendix I of Tech Bulletin ISTB 2018-02 issued by the City of Ottawa, the combined fire flow of these hydrants totals 56,781 L/min. As the required fire flow of 2700 L/min is less than the 56,781 L/min, the existing hydrant spacing is adequate for the site.

The Boundary Conditions for the site were provided by the City of Ottawa using the project's domestic and fire flow demands. Water pressures shown in Table 1 were calculated based on the Hydraulic Grade Lines (HGL) provided by the City from these boundary conditions. When comparing to the minimum and maximum allowable water pressures from City of Ottawa Water Design Guidelines, it can be seen that the site water pressures fall within City limits. Fire flow analysis, water pressure conversion and boundary conditions supplied by the City can be found in Appendix A.

Table 1: Water Demand

Design Parameter	Demand (L/s)	HGL (m)	Pressure (PSI)	Pressure (kPa)	City of Ottawa minimum (kPa)	City of Ottawa maximum (kPa)
Average Daily Demand	0.08	109.20	48.60	335.09	-	552
Peak Hour	0.22	115.90	58.10	400.58	276	552
Max Day + Fire Flow	45.22	110.60	50.60	348.88	140	552

4. Sanitary Servicing

4.1. Sanitary Design Criteria

The site is to have a ccommercial land use area of approximately 0.26 ha. Utilizing the City of Ottawa Sewer Design Guidelines for Commercial and Institutional Use of 28,000 L/ha/day, an Average Day Demand (ADD) of 0.08 L/s was calculated. Using a Peak Rate factor of 1.50 and an infiltration allowance of 0.33 L/ha/s, a peak flow of 0.21 L/s was calculated for the proposed development. Calculations for the sanitary flows for the site can be found in Appendix B. Similar to water demand, there will be no increase in sanitary flow as the building footprint will remain unchanged and the proposed land use will remain commercial, consistent with existing conditions.

4.2. Internal Sanitary Sewer System

The site is currently serviced by an existing 150 mm diameter sanitary service connection to the building. The existing service is to be maintained and reused for the proposed development. The existing sanitary service discharges to an existing 200 mm diameter private sanitary sewer located on-site. The private system ultimately outlets to the existing 200 mm diameter municipal sanitary sewer on Richmond Road.

A CCTV inspection of the existing sanitary service was completed by Clean Water Works Inc., confirming that the service is free of structural deficiencies but contains grease that should be flushed and cleaned prior to transfer of use. The associated inspection report is included in Appendix F. As the calculated peak sanitary flow remains unchanged from pre-development conditions, the existing downstream municipal sanitary sewer is considered to have sufficient capacity to accommodate the proposed development. Accordingly, no upgrades to the municipal sanitary system are required. The proposed sanitary servicing layout is shown on Drawing SS-1 in Appendix G.

5. Stormwater Management

A key component of the development is the need to address environmental and related SWM issues. These are examined in a framework aimed at meeting the City of Ottawa and MECP requirements. This report focuses on the necessary measures to satisfy the MECP's SWM requirements.

It is understood the objectives of the SWM plan are to:

- Protect life and property from flooding and erosion;
- Maintain water quality for ecological integrity, recreational opportunities, etc.;
- Protect and maintain groundwater flow regime(s);
- Protect aquatic and fishery communities and habitats; and
- Maintain and protect significant natural features.

5.1. Analysis Methodology

The design of the SWM Facilities for this site has been conducted in accordance with:

- The Ministry of the Environment Stormwater Management Planning and Design Manual, March 2003
- City of Ottawa Sewer Design Guidelines, December 2025

In order to design the facilities to meet these requirements, it is essential to select the appropriate modeling methodology for the storm system design. Given the size of the site, the Rational Method is appropriate for the design for the SWM system.

5.2. Existing Drainage Conditions

The site is currently developed as a commercial plaza with associated parking areas, drive aisles and landscaped areas. Stormwater runoff from the site is collected by an existing catchbasin network and conveyed through the storm sewer system. The 1.40 ha. commercial lot is serviced by an existing 300 mm diameter storm sewer which ultimately outlets to the existing 450 mm diameter municipal storm sewer on Richmond Road. Details of the existing drainage conditions are shown on Drawing STM-1 in Appendix G.

Given the size of the project site, the Modified Rational Method was used to determine the pre-development peak flows. The City of Ottawa IDF curve parameters were used for determining the storm intensity values. The following pre-development peak flows have been calculated based on the current condition of the site and are provided in Table 1. Detailed calculations can be found in Appendix C.

Table 2: Pre-Development Peak Flows

	2 Year Storm	5 Year Storm	10 Year Storm	25 Year Storm	50 Year Storm	100 Year Storm
Pre-Development Peak Flows (L/s)	15.7	21.3	25	32.6	39.7	45.7

5.3. Proposed Storm Drainage System

The post-development storm drainage system for the project will generally maintain pre-development drainage conditions. The majority of the site will drain to a proposed storm sewer system designed for the 5-year storm event. The first 10 mm of rainfall will be captured and drained through the proposed permeable paver system located within the parking area. The remaining stormwater will be controlled through an orifice tube and underground storage chambers to reduce post development peak flows to the target peak flow values as per the City of Ottawa standards.

In the event of a storm greater than the 100-year storm or if the orifice tube becomes blocked, the site will drain overland towards Richmond road. A small portion to the southeast part of the site will drain uncontrolled to catchbasins servicing the adjacent development on the 1.40 ha. lot. Post-development storm drainage patterns can be found on Drawing STM-2 found in Appendix G. Calculations for the proposed stormwater management system can be found in Appendix C.

5.4. Stormwater Quantity Control

The proposed development will decrease the overall imperviousness of the site with the post-development runoff coefficient decreasing from 0.86 under existing conditions to 0.78. As a result, uncontrolled post-development peak flows are lower than the existing peak flows for all design storm events. Table 3 reflects the post-development flows without any quantity controls for the site.

Table 3: Post-Development Peak Flows - Uncontrolled

	2 Year Storm	5 Year Storm	10 Year Storm	25 Year Storm	50 Year Storm	100 Year Storm
Uncontrolled Peak Flows (L/s)	14.1	19.2	22.5	29.3	35.6	41.1

The City of Ottawa Sewer Design Guidelines require the 100-year post-development peak flow be reduced to the 5-year peak flow using a maximum runoff coefficient of 0.50 instead of the pre-development runoff coefficient of 0.86. Several storage options in support of quantity control were explored to meet the target peak flow rates, including parking lot surface storage and underground tanks with the latter being chosen due to insufficient volume available on the parking lot surface.

Additionally, the City of Ottawa Sewer Design Guidelines indicates that when providing underground storage, the release rate should be reduced even further to 50% of the peak allowable rate. Table 4 demonstrates these target peak flows and the controlled post-development peak flows.

To control release rates from the site, a 75mm orifice tube downstream of CBMH2 has been incorporated in the design. The 75mm orifice is the smallest orifice allowed by the MECP in order to prevent plugging.

As shown in Table 4 below, peak flows can be reduced to the target flow rates for a maximum runoff coefficient of 0.50. Due to the small size of the site and the uncontrolled area peak flow of 9.3 l/s, the 50% target release rate required when using underground storage cannot be met.

Table 4: Post-Development Peak Flows – Controlled to Target 0.50 Runoff Coefficient

	5 Year Storm	**100 Year Storm**
Target Peak Flows (L/s) (Runoff Coefficient of 0.50)	12.34	26.44
Target Peak Flows (L/s) (50% due to underground storage)	6.17	13.22
Uncontrolled Peak Flows from the Site (L/s)	4.38	9.37
Controlled Peak Flows from the Site (L/s)	7.10	11.87
Total Post Development Peak Flow from the Site (L/s)	11.48	21.25

The site has the following constraints:

- small size of the site
- The site is reducing the impervious area for the site
- Minimum MECP orifice sizing
- uncontrolled areas that cannot be captured in the proposed storm sewer

Given the above noted constraints, the stormwater management system has been designed to provide the maximum practical attenuation of post-development peak flows with an overall improvement to the site from pre-development conditions. Calculations in Appendix C demonstrate that 15 m^3 is required to control the 100-year storm flow to 5-year pre-development storm flow. Quantity control will be provided through 19 m^3 of underground storage located within the StormTech storage tanks. The peak flows released from the site are approximately 46% of the existing peak flows and therefore the peak flows release from the site are deemed adequate for this development.

5.5. Stormwater Quality Control

The MECP in March 2003 issued a “Stormwater Management Planning and Design Manual”. This manual has been adopted by a variety of agencies including the City of Ottawa. The objective of the Stormwater Quality Control will be to ensure Enhanced Protection quality control as stated in the MECP manual. To achieve enhanced protection, permanent and temporary control of erosion and sediment transport are proposed and are discussed in the following sections.

5.5.1. Permanent Quality Control

The development’s impervious areas pose a potential risk to stormwater quality through the collection of grit, sand, and oils. The MECP standard stipulates a Total Suspended Solids (TSS) removal of at least 80% in order to treat to the MECP’s Enhanced Level of Protection standard.

A treatment train approach as been implemented on site to meet the City’s 10mm rainfall event capture, which will inherently improve stormwater quality. Stormwater from the parking lot area will drain to permeable pavers which will provide filtration through the stone reservoir. The catch basins include sumps which will settle larger sediment particles. Stormwater will then be conveyed to the StormTech underground chambers, complete with the Isolator Row Plus to provide further TSS removal before draining into the municipal storm sewer on Richmond Road. Stormtech Isolator Row Plus information can be found in Appendix E.

5.5.2. Quality Control During Construction Activities

During construction, earth grading and excavation will create the potential for soil erosion and sedimentation. It is imperative that effective environmental and sedimentation controls are in place and maintained throughout the duration of construction activities to ensure stormwater runoff's quality.

Therefore, the following recommendations shall be implemented and maintained during construction to achieve acceptable stormwater runoff quality:

- Installation of silt fence along the entire perimeter of the site to reduce sediment migration onto surrounding properties;
- Restoration of exposed surfaces with vegetative and non-vegetative material as soon as construction schedules permit. The duration in which surfaces are disturbed/exposed shall not exceed 30 days;
- Reduce stormwater drainage velocities where possible; and,
- Minimize the amount of existing vegetation removed.

6. Conclusions

The proposed development will not increase the water demand, and sanitary flows. Therefore, the existing infrastructure can adequately support the post-development conditions.

Quantity control for the site is provided in underground storage chambers which will reduce the 100-year post development flows to the 5-year target peak flows values.

Quality control is provided through permeable pavers in parking lot area and the Isolated Row Plus provided in the underground chambers.

The first 10 mm rainfall event will be captured and drained through the proposed permeable paver system located within the parking area

All of which is respectfully submitted,

Pearson Engineering Ltd.

Mike Dejean, P.Eng.
Partner, Manager of Engineering Services

Appendix A

Water Servicing Calculations

1480 Richmond Road, Ottawa
Existing Water Flow Calculations

Design Criteria:

Average Water Consumption Rate (Q):	28,000	L/ha/d
Max. Daily Factor:	1.50	
Max. Hour Factor:	1.80	

(From, Table 4.2, Ottawa Design Guidelines for Water Distribution)

Site Data:

Description	Density	Site Area		Flow Rate	Peaking Factors	
Commercial	2,559 m^2	0.26	ha	28,000 L/ha/d	Max Daily Factor*	1.50
			Bank		Max Hour Factor*	1.80

Calculate Average Day Demand:

ADD	=	28,000	x	0.26
ADD	=	7,165	L/day	
ADD	=	0.08	L/s	

Calculate Max Daily Flow

MDF	=	0.08	x	1.50
MDF	=	0.12	L/s	

Calculate Max Hour Demand

PHD	=	0.12	x	1.80
PHD	**=**	**0.22**	**L/s**	
PHD	**=**	**3.55**	**GPM**	

1480 Richmond Road, Ottawa
Proposed Water Flow Calculations

Design Criteria:

Average Water Consumption Rate (Q):	28,000	L/ha/d	(From, Table 4.2, Ottawa Design Guidelines for Water Distribution)
Max. Daily Factor:	1.50		
Max. Hour Factor:	1.80		

Site Data:

Description	Density		Site Area		Flow Rate	Peaking Factors	
Commercial	2,559	m^2	0.26	ha	28,000 L/ha/d	Max Daily Factor*	1.50
				Restaurant		Max Hour Factor*	1.80

Calculate Average Day Demand:

ADD	=	28,000	x	0.26
ADD	=	7,165	L/day	
ADD	=	0.08	L/s	

Calculate Max Daily Flow

MDF	=	0.08	x	1.50
MDF	=	0.12	L/s	

Calculate Max Hour Demand

PHD	=	0.12	x	1.80
PHD	**=**	**0.22**	**L/s**	
PHD	**=**	**3.55**	**GPM**	

PEARSON ENGINEERING

1480 Richmond Road, Ottawa
Existing Fire Flow Calculations

Required fire flow calculations as per OFM/OBC guidelines

Location:	1480 Richmond Road, Ottawa	
OBC Occupancy:	D	
Building Foot Print:	615 m^2	
Height of the Building	4.7 m	**Bank**

Date: 2026-06-26
Project: 1480 Richmond Road
Project Number: 26047

North Ex. Richmond Road	Distance to Property Line from Exterior face of the poposed building	>10	0.00
East Ex. Commercial Unit	Distance to Property Line from Exterior face of the poposed building	>10	0.00
South Ex. Commercial Unit	Distance to Property Line from Exterior face of the poposed building	>10	0.00
West Ex. Commercial Unit	Distance to Property Line from Exterior face of the poposed building	>10	0.00

Total: 0.0

S_{Total} = 1.0 + [(S_{North}) + (S_{East}) + (S_{South}) + (S_{West})]

S_{Total} 1.0 *no more than 2

Exposure Distance (m)	Spatial Coefficient
0 - 5	0.5
6	0.4
7	0.3
8	0.2
9	0.1
10	0.0

Calculations:

K = 17

Q = KVS $_{Total}$

V = 2,891 m^3

S_{total} = 1.0

Where: *Q = minimum supply of water in litres (L)*
K = water supply coefficient from Table1 of OFM guidelines
V = total building volume in cubic metres
S_{Total} = total of spatial coefficient values from property line exposures on all sides, as obtained from the formula

Q = 49,139 L

Round to Nearest 1,000 L/min Q = 49,000

Fire Flow Requirements from Table J.1 - OBC Fire Flows from Technical Bulletin IWSTB-2024-05

Since minimum supply of water <=108,000L)

Required Fire Flow

RFF =	**2700**	**L/min**
RFF =	**713**	**GPM**
RFF =	**45**	**L/s**

PEARSON ENGINEERING

1480 Richmond Road, Ottawa
Proposed Fire Flow Calculations

Required fire flow calculations as per OFM/OBC guidelines

Location:	1480 Richmond Road, Ottawa	
OBC Occupancy:	E	
Building Foot Print:	615 m^2	
Height of the Building	4.7 m	**Restaurant**

Date: 2026-06-26
Project: 1480 Richmond Road
Project Number: 26047

North Ex. Richmond Road	Distance to Property Line from Exterior face of the poposed building	>10	0.00
East Ex. Commercial Unit	Distance to Property Line from Exterior face of the poposed building	>10	0.00
South Ex. Commercial Unit	Distance to Property Line from Exterior face of the poposed building	>10	0.00
West Ex. Commercial Unit	Distance to Property Line from Exterior face of the poposed building	>10	0.00
		Total:	0.0

Exposure Distance (m)	Spatial Coefficient
0 - 5	0.5
6	0.4
7	0.3
8	0.2
9	0.1
10	0.0

S_{Total} = 1.0 + [(S_{North}) + (S_{East}) + (S_{South}) + (S_{West})]

S_{Total} 1.0 *no more than 2

Calculations:

Q = KVS $_{Total}$

K =	17		
V =	2,891	m^3	
S_{total} =	1.0		
Q =	49,139	L	
Round to Nearest 1,000 L/min Q =	49,000		

Where: *Q = minimum supply of water in litres (L)*
K = water supply coefficient from Table1 of OFM guidelines
V = total building volume in cubic metres
S_{Total} = total of spatial coefficient values from property line exposures on all sides, as obtained from the formula

Fire Flow Requirements from Table J.1 - OBC Fire Flows from Technical Bulletin IWSTB-2024-05

Since minimum supply of water <=108,000L)

Required Fire Flow	***RFF =***	**2700**	**L/min**
	RFF =	**713**	**GPM**
	RFF =	**45**	**L/s**

1480 Richmond Road, Ottawa
Total Site Water Flow Calculations

Design Criteria:

Average Water Consumption Rate (Q):	28,000	L/ha/d	(From, Table 4.2, Ottawa Design Guidelines for Water Distribution)
Max. Daily Factor:	1.50		
Max. Hour Factor:	1.80		

Site Data:

Description	Density		Site Area		Flow Rate	Peaking Factors	
Commercial	12,802	m^2	1.28	ha	28,000 L/ha/d	Max Daily Factor*	1.50
				Commercial		Max Hour Factor*	1.80

Calculate Basic Day Demand:

BDD	=	28,000	x	1.28
BDD	=	35,846	L/day	
BDD	=	0.41	L/s	
BDD	**=**	**35.85**	**m^3/day**	

1480 Richmond Road Boundary Condition Request

Requested By: Jean-Miguel Roy
Date: June 5, 2026

Prepared By: Haseebuddin Syed
Reply Date: June 12, 2026

Information Provided:

Development Type: Commercial buildings
Average Day: 0.41 L/s
Max Day: 0.62 L/s
Peak Hour: 1.11 L/s
Fire Flow Demands (FUS): 45.0 L/s

Model Information:

Model: WaterGems 2025
Model Name: BC_31Dec2025
Base Model: BaseWM_31Dec2025
Node Name:

- 1480_Richmond_Rd_1, Elev. =75.0 m

Notes:

1. Pressure Zone = 1W
2. 3-hour fire flow at time 13:00 to 15:00 hours.
3. Assumed demand patterns for proposed development Weekday_ICI_2023. OWD_ICI_2023 pattern for OWD.
4. OWD demand subtracted from MXDY - ADD. Fire flow demand applied as a point load at each connection.
5. Peak Hour results were obtained using ADD x diurnal pattern and OWD x diurnal pattern.

Model Result:

	Connection: 305 mm on Richmond Road	
	HGL (m)	P (Psi)
BSDY - Min	109.3	48.8
BSDY - Max	115.9	58.1
Peak hr- Min	109.2	48.6
Peak hr- Max	115.0	56.9
MaxDay + FireFlow (45.0 L/s)	110.6	50.6

For E-mail:

******The following information may be passed on to the consultant, but do NOT forward this e-mail directly.******

The following are boundary conditions, HGL, for hydraulic analysis at 1480 Richmond Road (zone 1W) assumed to be connected via the 305 mm watermain on Richmond Road (see attached PDF for location).

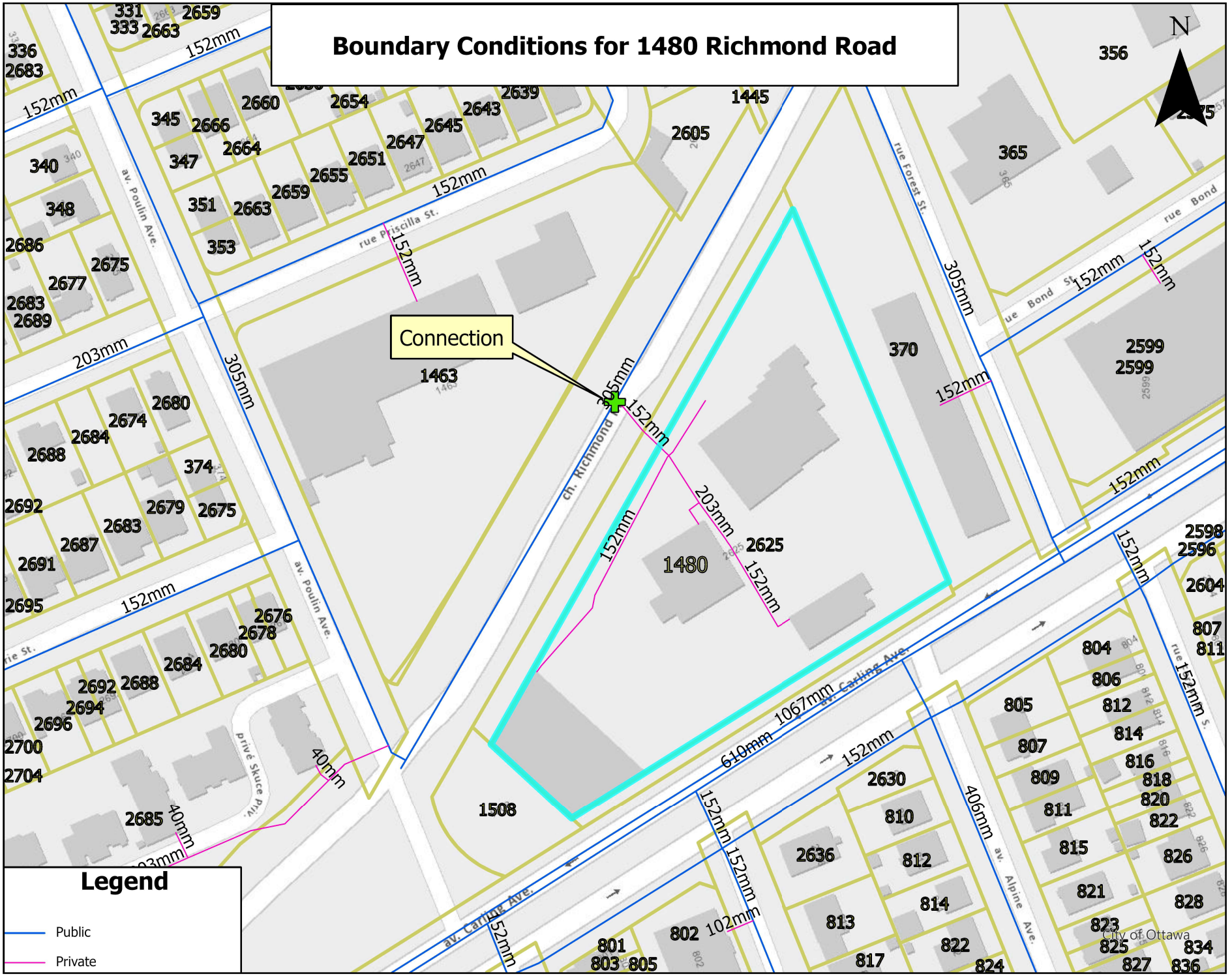
Minimum HGL = 109.2 m

Maximum HGL = 115.9 m

Max Day + Fire Flow (45.0 L/s) = 110.6 m

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

Disclaimer: The boundary condition information is based on current operation of the city water distribution system. The computer model simulation is based on the best information available at the time. The operation of the water distribution system can change on a regular basis, resulting in a variation in boundary conditions. The physical properties of watermains deteriorate over time, as such must be assumed in the absence of actual field test data. The variation in physical watermain properties can therefore alter the results of the computer model simulation.


Boundary Conditions for 1480 Richmond Road
N
Connection
1480
1463
1508
2625
2605
1445
370
365
356
2599
2599
2598
2596
2604
807
811
804
806
812
814
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818
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2678
2680
2684
2692
2688
2694
2696
2700
2704
2685
privé Skuce Pvt.
rue Priscilla St.
av. Poulin Ave.
ch. Richmond
rue Forest St.
rue Bond
av. Carling Ave.
av. Alpine Ave.
152mm
203mm
305mm
40mm
610mm
1067mm
406mm
102mm
Legend
Public
Private
City of Ottawa

Nicole Wells

From: Roy, Jean-Miguel <Jean-Miguel.Roy@ottawa.ca>
Sent: Thursday, June 18, 2026 9:30 AM
To: Nicole Wells
Subject: RE: PC2026-0029 - 1480 Richmond Rd, Boundary Condition Request
Attachments: 1480 Richmond Road June 2026.pdf; 1480 Richmond Road June 2026.docx

Good morning Nicole,

The following are boundary conditions, HGL, for hydraulic analysis at 1480 Richmond Road (zone 1W) assumed to be connected via the 305 mm watermain on Richmond Road (see attached PDF for location).

Minimum HGL = 109.2 m
Maximum HGL = 115.9 m
Max Day + Fire Flow (45.0 L/s) = 110.6 m

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

Disclaimer: The boundary condition information is based on current operation of the city water distribution system. The computer model simulation is based on the best information available at the time. The operation of the water distribution system can change on a regular basis, resulting in a variation in boundary conditions. The physical properties of watermains deteriorate over time, as such must be assumed in the absence of actual field test data. The variation in physical watermain properties can therefore alter the results of the computer model simulation.

Let me know if you have any questions.

Best,
Jean-Miguel

From: Roy, Jean-Miguel
Sent: June 04, 2026 3:01 PM
To: 'Nicole Wells' <nwells@pearsoneng.com>
Subject: RE: PC2026-0029 - 1480 Richmond Rd, Boundary Condition Request

Hi Nicole,

Thank you for the quick turnaround; your request for WBC has been forwarded to our Infrastructure and Water Services team. They will process it and provide WBC within the next two weeks.

Best,
J-M

From: Nicole Wells <nwells@pearsoneng.com>
Sent: June 04, 2026 9:47 AM

To: Roy, Jean-Miguel <Jean-Miguel.Roy@ottawa.ca>
Subject: RE: PC2026-0029 - 1480 Richmond Rd, Boundary Condition Request

Hi Jean-Miguel,

Thank you for the clarification. Please find enclosed an updated Location of Service plan and revised calculations with the existing and the proposed water demand, required fire flow, as well as the total site basic day demand. As the development will continue to be commercial, there is no change in water demand. Let me know if you need anything further to complete the request.

Thank you,

Nicole Wells, C.E.T.
Senior Project Manager

20 YEARS PEARSON ENGINEERING

OTTAWA OFFICE
900 Morrison Drive, Unit 100
Ottawa, ON K2H 8K7
P: 613-416-1232 ext. 249
nwells@pearsoneng.com
pearsoneng.com

BARRIE	GTA	OWEN SOUND
705-719-4785	905-597-5572	226-256-2957

From: Roy, Jean-Miguel <Jean-Miguel.Roy@ottawa.ca>
Sent: Thursday, June 4, 2026 9:21 AM
To: Nicole Wells <nwells@pearsoneng.com>
Subject: RE: PC2026-0029 - 1480 Richmond Rd, Boundary Condition Request

Hi Nicole,

Correct, they're the same.

J-M

From: Nicole Wells <nwells@pearsoneng.com>
Sent: June 04, 2026 9:19 AM
To: Roy, Jean-Miguel <Jean-Miguel.Roy@ottawa.ca>
Subject: RE: PC2026-0029 - 1480 Richmond Rd, Boundary Condition Request

Hi Jean-Miguel,

Is the basic day demand the same as the average day demand?

Thank you,

Nicole Wells, C.E.T.
Senior Project Manager

20 YEARS PEARSON ENGINEERING

OTTAWA OFFICE
900 Morrison Drive, Unit 100
Ottawa, ON K2H 8K7
P: 613-416-1232 ext. 249
nwells@pearsoneng.com
pearsoneng.com

BARRIE	GTA	OWEN SOUND
705-719-4785	905-597-5572	226-256-2957

From: Roy, Jean-Miguel <Jean-Miguel.Roy@ottawa.ca>
Sent: Wednesday, June 3, 2026 5:08 PM
To: Nicole Wells <nwells@pearsoneng.com>
Subject: RE: PC2026-0029 - 1480 Richmond Rd, Boundary Condition Request

Hi Nicole,

Before I can forward your request for Water Boundary Conditions to our Infrastructure & Water Services team for processing, I will need you to respond to the following questions/comments:

- It is my understanding, per the information available to me, that the existing buildings within this property are fed by a single watermain connection on Richmond Rd. Have you evaluated the total basic day demands from all these existing building uses and determine if redundancy (i.e. a

second watermain connection to Richmond Rd) is required? Requirement for redundancy applies to sites having basic day demands larger than 50 m3/day.

- Please make sure that your Location of Service screenshot shows the existing connection on Richmond as this is where the HGLs are being provided, as well as any additional connection that may be required per the above comment made.
- Does your proposed 0.08 l/s average daily demand represent an increase from the existing water demands to your building, or is it generally consistent with the existing demand? The reason I ask this question is because the City's hydraulic model already accounts for the existing basic day demands from your building; therefore, it would be important to know the existing water demands for your building to determine if there is an increase in demands – this increase is what we would be accounting for in our WBC.

Thank you Nicole.
Jean-Miguel

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

From: Nicole Wells <nwells@pearsoneng.com>
Sent: June 01, 2026 3:41 PM
To: Roy, Jean-Miguel <Jean-Miguel.Roy@ottawa.ca>
Subject: PC2026-0029 - 1480 Richmond Rd, Boundary Condition Request

Hi Jean-Miguel,

We would like to make a boundary condition request for our site at 1480 Richmond Rd. The project proposes the reuse of the existing water service. Please see our boundary condition information below:

a. Location of service (show on a plan or map) – See attached.
b. Type of development – Commercial; Fast food restaurant
c. Average daily demand: 0.08 l/s.
d. Maximum daily demand: 0.12 l/s.
e. Maximum hourly daily demand: 0.22 l/s.
f. Required fire flow: 45 l/s
g. Supporting Calculations for all demands listed above and required fire flow as per Fire Underwriter Surveys - See attached.

Let me know if you require any further information to complete the boundary condition request.

Thank you,

Nicole Wells, C.E.T.
Project Manager

OTTAWA OFFICE
900 Morrison Drive, Unit 100
Ottawa, ON K2H 8K7
P: 613-416-1232 ext. 249
nwells@pearsoneng.com
pearsoneng.com

BARRIE	GTA	OWEN SOUND
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Appendix B

Sanitary Servicing Calculations

1480 Richmond Road, Ottawa
Sanitary Flow Calculations

Design Criteria

Average Water Consumption Rate (Q):	28,000 L/ha/day	(Commercial)
Peak Flow	Qp = P * Q * M / 86400	Where: 1.5 ≤ M ≤ 4.0
Peaking Factor (M) - Commercial	1.50	(From Ottawa Design Guidelines based on
Extraneous Flow	0.33 L/ha/s	Institutional Land Use)

Site Data

Description	Total Area (ha)	Units	Flow Rate
Commercial	0.26 ha	1 Unit	28,000 L/ha/day

Calculate Average Daily Flows (ADF):

ADF	=	Flow Rate	x	Area (ha)
ADF	=	28000	x	0.26
ADF	=	7,165	L/day	
ADF	=	0.08	L/s	

Calculate Peaking Factor (M)

M	=	1.50

Calculate Peak Flow

Q_p	=	ADF	x	Peaking Factor
Q_p	=	0.08	x	1.50
Q_p	=	0.12	L/s	

Infiltration Allowance	=	Extraneous Flow	x	Total Site Area
	=	0.33	x	0.26
	=	0.08	L/s	

Q_p (Inc. Infiltration Allowance)	=	Q_P	+	Infiltration Allowance
	=	0.12	+	0.08
	=	0.21	L/s	

Appendix C

Stormwater Management Calculations

1480 Richmond Road, Ottawa
Calculation of Runoff Coefficients

Runoff Coefficient	=	0.20	0.90	0.90	0.80	0.90		Weighted
Surface Cover	=	Grass	Asphalt	Building	Gravel	Conc.		Runoff Coefficient
Pre-Development	Total Area (m^2)	Area (m^2)	Area (m^2)	Area (m^2)	Area (m^2)	Area (m^2)		
1	853	44	750	0	0	59		0.86
Pre Total	853	44	750	0	0	59		0.50
Post-Development	Total Area (m^2)	Area (m^2)	Area (m^2)	Area (m^2)	Area (m^2)	Area (m^2)		
1	685	151	419	0	0	115		0.75
2	168	0	168	0	0	0		0.90
Post Total	853	151	587	0	0	115		0.78

Note: Note: In accordance with the City of Ottawa guidelines, a pre-development runoff coefficient of 0.50, or the existing runoff coefficient (0.86) whichever is lower, has been adopted for the pre-development design. Accordingly, a runoff coefficient of 0.50 has been used for the SWM calculations.

1480 Richmond Road, Ottawa
Pre-Development Peak Flows

City of Ottawa

Storm Event (yrs)	Coeff A	Coeff B	Coeff C
2	**732.95**	**6.20**	**0.81**
5	**998.07**	**6.05**	**0.81**
10	**1174.18**	**6.01**	**0.82**
25	**1402.88**	**6.02**	**0.82**
50	**1569.58**	**6.01**	**0.82**
100	**1735.69**	**6.01**	**0.82**

Modified Rational Method
Q = CiCIA / 360

Where:
- Q - Flow Rate (m^3/s)
- C - Rational Method Runoff Coefficient
- I - Storm Intensity (mm/hr)
- A - Area (ha.)
- Ci - Peaking Coefficient

Area Number	1	
Area	0.09	ha
Runoff Coefficient	0.86	
Time of Concentration	10	min
Return Rate	2	year
Peaking Coefficient (Ci)	1.00	
Rainfall Intensity	76.81	mm/hr
Allowable Peak Flow	15.7	L/s
Return Rate	5	year
Peaking Coefficient (Ci)	1.00	
Rainfall Intensity	104.19	mm/hr
Allowable Peak Flow	21.3	L/s
Return Rate	10	year
Peaking Coefficient (Ci)	1.00	
Rainfall Intensity	122.14	mm/hr
Allowable Peak Flow	25.0	L/s
Return Rate	25	year
Peaking Coefficient (Ci)	1.10	
Rainfall Intensity	144.69	mm/hr
Allowable Peak Flow	32.6	L/s
Return Rate	50	year
Peaking Coefficient (Ci)	1.20	
Rainfall Intensity	161.47	mm/hr
Allowable Peak Flow	39.7	L/s
Return Rate	100	year
Peaking Coefficient (Ci)	1.25	
Rainfall Intensity	178.56	mm/hr
Allowable Peak Flow	45.7	L/s

1480 Richmond Road, Ottawa
Pre-Development Peak Flows at 0.5 Runoff

City of Ottawa

Storm Event (yrs)	Coeff A	Coeff B	Coeff C
2	732.95	6.20	0.81
5	998.07	6.05	0.81
10	1174.18	6.01	0.82
25	1402.88	6.02	0.82
50	1569.58	6.01	0.82
100	1735.69	6.01	0.82

Modified Rational Method
Q = CiCIA / 360

Where:
- Q - Flow Rate (m^3/s)
- C - Rational Method Runoff Coefficient
- I - Storm Intensity (mm/hr)
- A - Area (ha.)
- Ci - Peaking Coefficient

Area Number	1	
Area	0.09	ha
Runoff Coefficient	0.50	
Time of Concentration	10	min
Return Rate	2	year
Peaking Coefficient (Ci)	1.00	
Rainfall Intensity	76.81	mm/hr
Allowable Peak Flow	9.1	L/s
Return Rate	5	year
Peaking Coefficient (Ci)	1.00	
Rainfall Intensity	104.19	mm/hr
Allowable Peak Flow	12.3	L/s
Return Rate	10	year
Peaking Coefficient (Ci)	1.00	
Rainfall Intensity	122.14	mm/hr
Allowable Peak Flow	14.5	L/s
Return Rate	25	year
Peaking Coefficient (Ci)	1.10	
Rainfall Intensity	144.69	mm/hr
Allowable Peak Flow	18.9	L/s
Return Rate	50	year
Peaking Coefficient (Ci)	1.20	
Rainfall Intensity	161.47	mm/hr
Allowable Peak Flow	23.0	L/s
Return Rate	100	year
Peaking Coefficient (Ci)	1.25	
Rainfall Intensity	178.56	mm/hr
Allowable Peak Flow	26.4	L/s

1480 Richmond Road, Ottawa
Post-Development Peak Flows

City of Ottawa

Storm Event (yrs)	Coeff A	Coeff B	Coeff C
2	**732.95**	**6.20**	**0.81**
5	**998.07**	**6.05**	**0.81**
10	**1174.18**	**6.01**	**0.82**
25	**1402.88**	**6.02**	**0.82**
50	**1569.58**	**6.01**	**0.82**
100	**1735.69**	**6.01**	**0.82**

Modified Rational Method
Q = CiCIA / 360

Where:

- Q - Flow Rate (m^3/s)
- C - Rational Method Runoff Coefficient
- I - Storm Intensity (mm/hr)
- A - Area (ha.)
- Ci - Peaking Coefficient

	Controlled Area	Uncontrolled Area
Area Number	1	2
Area	0.07 ha	0.02 ha
Runoff Coefficient	0.75	0.90
Time of Concentration	10 min	10 min
Return Rate	2 year	2 year
Peaking Coefficient (Ci)	1.00	1.00
Rainfall Intensity	76.81 mm/hr	76.81 mm/hr
Post-Development Peak Flow	10.9 L/s	3.2 L/s
Return Rate	5 year	5 year
Peaking Coefficient (Ci)	1.00	1.00
Rainfall Intensity	104.19 mm/hr	104.19 mm/hr
Post-Development Peak Flow	14.8 L/s	4.4 L/s
Return Rate	10 year	10 year
Peaking Coefficient (Ci)	1.00	1.00
Rainfall Intensity	122.14 mm/hr	122.14 mm/hr
Post-Development Peak Flow	17.3 L/s	5.1 L/s
Return Rate	25 year	25 year
Peaking Coefficient (Ci)	1.10	1.10
Rainfall Intensity	144.69 mm/hr	144.69 mm/hr
Post-Development Peak Flow	22.6 L/s	6.7 L/s
Return Rate	50 year	50 year
Peaking Coefficient (Ci)	1.20	1.20
Rainfall Intensity	161.47 mm/hr	161.47 mm/hr
Post-Development Peak Flow	27.5 L/s	8.1 L/s
Return Rate	100 year	100 year
Peaking Coefficient (Ci)	1.25	1.25
Rainfall Intensity	178.56 mm/hr	178.56 mm/hr
Post-Development Peak Flow	31.7 L/s	9.4 L/s

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1480 Richmond Road, Ottawa
Quantity Control Volume Calculations

DATE:	26-Jun-26
FILE:	25050
CONTRACT/PROJECT:	1480 Richmond Road, Ottawa
COMPLETED BY:	ST

Modified Rational Method Parameters

Pre Development Area (ha)	Post Development Area (ha)	Time of Concentration (min)	Time Increments (min)	Pre Development Runoff Coefficient	Post Development Runoff Coefficient
0.09	0.07	10	1	0.50	0.75

Note: Refer to page Calculation of Runoff Coefficients for detailed calculations of Modified Rational Method parameters.

Pre-Development Runoff Rate

	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year
C	0.50	0.50	0.50	0.55	0.60	0.63
I	76.81	104.19	122.14	144.69	161.47	178.56
A	0.09	0.09	0.09	0.09	0.09	0.09
Q	9.1	12.3	14.5	18.9	23.0	26.4

Note: Q = 0.00278CIA

Rainfall Station	City of Ottawa

Underground Storage Design Inputs

Storm Event (yrs)	Rational Method Coefficient A	Rational Method Coefficient B	Rational Method Coefficient C	Controlled Peak Flows (L/s)	Post Development Runoff Coefficient
2	732.95	6.20	0.81	5.69	0.75
5	998.07	6.05	0.81	7.10	0.75
10	1174.18	6.01	0.82	7.93	0.75
25	1402.88	6.02	0.82	9.48	0.82
50	1569.58	6.01	0.82	10.81	0.89
100	1735.69	6.01	0.82	11.87	0.93

Storm Event (yrs)	Storage (m^3)	Time (min)
2	4	20
5	6	21
10	7	22
25	10	24
50	13	25
100	15	26

Note: Storage volume calculated as per Hydrology Handbook, Second Edition, American Society of Civil Engineers, 1996

Time (min)	2 Year Intensity mm/hr	2 Year Inflow L/s	2 Year Outflow L/s	2 Year Storage m^3	Difference	5 Year Intensity mm/hr	5 Year Inflow L/s	5 Year Outflow L/s	5 Year Storage m^3	Difference	10 Year Intensity mm/hr	10 Year Inflow L/s	10 Year Outflow L/s	10 Year Storage m^3	Difference	25 Year Intensity mm/hr	25 Year Inflow L/s	25 Year Outflow L/s	25 Year Storage m^3	Difference	50 Year Intensity mm/hr	50 Year Inflow L/s	50 Year Outflow L/s	50 Year Storage m^3	Difference	100 Year Intensity mm/hr	100 Year Inflow L/s	100 Year Outflow L/s	100 Year Storage m^3	Difference
1	148.14	21.0	5.7	-1	1	203.51	28.9	7.1	-1	1	239.57	34.0	7.9	-1	1	284.43	44.4	9.5	0	2	317.75	54.1	10.8	0	2	351.38	62.3	11.9	0	3
2	133.33	18.9	5.7	0	1	182.69	25.9	7.1	1	1	214.88	30.5	7.9	1	1	255.03	39.8	9.5	1	1	284.86	48.5	10.8	2	2	315.00	55.9	11.9	2	2
3	121.46	17.3	5.7	1	1	166.09	23.6	7.1	1	1	195.22	27.7	7.9	2	1	231.63	36.2	9.5	3	1	258.67	44.0	10.8	4	1	286.05	50.7	11.9	5	2
4	111.72	15.9	5.7	1	0	152.51	21.6	7.1	2	1	179.16	25.4	7.9	3	1	212.51	33.2	9.5	4	1	237.29	40.4	10.8	5	1	262.41	46.5	11.9	6	1
5	103.57	14.7	5.7	2	0	141.18	20.0	7.1	3	0	165.77	23.5	7.9	3	1	196.58	30.7	9.5	5	1	219.48	37.4	10.8	6	1	242.70	43.1	11.9	8	1
6	96.64	13.7	5.7	2	0	131.57	18.7	7.1	3	0	154.42	21.9	7.9	4	0	183.08	28.6	9.5	6	1	204.38	34.8	10.8	7	1	226.01	40.1	11.9	9	1
7	90.66	12.9	5.7	3	0	123.30	17.5	7.1	4	0	144.67	20.5	7.9	5	0	171.48	26.8	9.5	6	1	191.41	32.6	10.8	8	1	211.67	37.5	11.9	10	1
8	85.46	12.1	5.7	3	0	116.11	16.5	7.1	4	0	136.19	19.3	7.9	5	0	161.39	25.2	9.5	7	0	180.14	30.7	10.8	9	1	199.20	35.3	11.9	11	1
9	80.87	11.5	5.7	3	0	109.79	15.6	7.1	4	0	128.74	18.3	7.9	5	0	152.54	23.8	9.5	7	0	170.24	29.0	10.8	9	1	188.25	33.4	11.9	11	1
10	76.81	10.9	5.7	3	0	104.19	14.8	7.1	5	0	122.14	17.3	7.9	6	0	144.69	22.6	9.5	8	0	161.47	27.5	10.8	10	0	178.56	31.7	11.9	12	1
11	73.17	10.4	5.7	3	0	99.19	14.1	7.1	5	0	116.25	16.5	7.9	6	0	137.69	21.5	9.5	8	0	153.65	26.2	10.8	10	0	169.91	30.1	11.9	12	0
12	69.89	9.9	5.7	3	0	94.70	13.4	7.1	5	0	110.96	15.7	7.9	6	0	131.40	20.5	9.5	9	0	146.62	25.0	10.8	11	0	162.13	28.8	11.9	13	0
13	66.93	9.5	5.7	3	0	90.63	12.9	7.1	5	0	106.17	15.1	7.9	6	0	125.71	19.6	9.5	9	0	140.26	23.9	10.8	11	0	155.11	27.5	11.9	13	0
14	64.23	9.1	5.7	4	0	86.93	12.3	7.1	5	0	101.82	14.4	7.9	6	0	120.55	18.8	9.5	9	0	134.49	22.9	10.8	11	0	148.72	26.4	11.9	14	0
15	61.77	8.8	5.7	4	0	83.56	11.9	7.1	5	0	97.85	13.9	7.9	7	0	115.83	18.1	9.5	9	0	129.22	22.0	10.8	12	0	142.89	25.3	11.9	14	0
16	59.50	8.5	5.7	4	0	80.46	11.4	7.1	5	0	94.21	13.4	7.9	7	0	111.50	17.4	9.5	9	0	124.39	21.2	10.8	12	0	137.55	24.4	11.9	14	0
17	57.42	8.2	5.7	4	0	77.61	11.0	7.1	5	0	90.86	12.9	7.9	7	0	107.52	16.8	9.5	9	0	119.94	20.4	10.8	12	0	132.63	23.5	11.9	14	0
18	55.49	7.9	5.7	4	0	74.97	10.6	7.1	6	0	87.76	12.5	7.9	7	0	103.84	16.2	9.5	10	0	115.83	19.7	10.8	12	0	128.08	22.7	11.9	15	0
19	53.70	7.6	5.7	4	0	72.53	10.3	7.1	6	0	84.88	12.0	7.9	7	0	100.43	15.7	9.5	10	0	112.01	19.1	10.8	12	0	123.87	22.0	11.9	15	0
20	52.03	7.4	5.7	4	0	70.25	10.0	7.1	6	0	82.21	11.7	7.9	7	0	97.26	15.2	9.5	10	0	108.47	18.5	10.8	12	0	119.95	21.3	11.9	15	0
21	50.48	7.2	5.7	4	0	68.13	9.7	7.1	6	0	79.72	11.3	7.9	7	0	94.30	14.7	9.5	10	0	105.17	17.9	10.8	13	0	116.30	20.6	11.9	15	0
22	49.02	7.0	5.7	4	0	66.15	9.4	7.1	6	0	77.39	11.0	7.9	7	0	91.53	14.3	9.5	10	0	102.08	17.4	10.8	13	0	112.88	20.0	11.9	15	0
23	47.66	6.8	5.7	4	0	64.29	9.1	7.1	6	0	75.21	10.7	7.9	7	0	88.94	13.9	9.5	10	0	99.18	16.9	10.8	13	0	109.68	19.5	11.9	15	0
24	46.37	6.6	5.7	4	0	62.54	8.9	7.1	6	0	73.15	10.4	7.9	7	0	86.51	13.5	9.5	10	0	96.47	16.4	10.8	13	0	106.68	18.9	11.9	15	0
25	45.17	6.4	5.7	4	0	60.90	8.6	7.1	6	0	71.22	10.1	7.9	7	0	84.22	13.1	9.5	10	0	93.91	16.0	10.8	13	0	103.85	18.4	11.9	15	0
26	44.03	6.3	5.7	4	0	59.35	8.4	7.1	5	0	69.40	9.8	7.9	7	0	82.05	12.8	9.5	10	0	91.50	15.6	10.8	13	0	101.18	17.9	11.9	15	0
27	42.95	6.1	5.7	4	0	57.88	8.2	7.1	5	0	67.68	9.6	7.9	7	0	80.01	12.5	9.5	10	0	89.22	15.2	10.8	13	0	98.66	17.5	11.9	15	0
28	41.93	6.0	5.7	4	0	56.49	8.0	7.1	5	0	66.05	9.4	7.9	7	0	78.08	12.2	9.5	10	0	87.06	14.8	10.8	13	0	96.27	17.1	11.9	15	0
29	40.96	5.8	5.7	3	-3	55.18	7.8	7.1	5	0	64.51	9.2	7.9	7	0	76.25	11.9	9.5	10	0	85.02	14.5	10.8	13	0	94.01	16.7	11.9	15	0
30	40.04	5.7	0.0	0	0	53.93	7.7	7.1	5	0	63.05	8.9	7.9	7	0	74.51	11.6	9.5	10	0	83.08	14.1	10.8	12	0	91.87	16.3	11.9	15	0
31	39.17	5.6	0.0	0	0	52.74	7.5	7.1	5	0	61.65	8.7	7.9	7	0	72.86	11.4	9.5	9	0	81.23	13.8	10.8	12	0	89.83	15.9	11.9	15	0

: Maximum Storage Volume

PEARSON ENGINEERING

1480 Richmond Road, Ottawa
Stage-Storage-Discharge Table

Elevation (m)	Volume (m^3)	Cum. Vol. (m^3)	Orifice Head (m)	Orifice Flow (L/s)	Weir Head (m)	Weir Flow (L/s)	Total Flow (L/s)
73.76	0	0	0	0.8	0	0	0.8
73.80	1.3	1	0.0	3.2	0	0	3.2
73.85	1.3	3	0.1	4.8	0	0	4.8
73.90	1.3	4	0.1	5.9	0	0	5.9
73.95	1.3	5	0.2	6.9	0	0	6.9
74.00	1.3	7	0.2	7.7	0	0	7.7
74.05	1.3	8	0.3	8.5	0	0	8.5
74.10	1.3	9	0.3	9.2	0	0	9.2
74.15	1.3	10	0.4	9.8	0	0	9.8
74.20	1.3	12	0.4	10.4	0	0	10.4
74.25	1.3	13	0.5	11.0	0	0	11.0
74.30	1.3	14	0.5	11.5	0	0	11.5
74.35	1.3	16	0.6	12.1	0	0	12.1
74.40	1.3	17	0.6	12.5	0	0	12.5
74.45	1.3	18	0.7	13.0	0	0	13.0
74.50	0.6	19	0.7	13.5	0	0	13.5
74.55	0	19	0.8	13.9	0.05	10	23.4
74.60	0	19	0.8	14.4	0.10	27	41.2
74.65	0	19	0.9	14.8	0.15	49	64.2
74.70	0	19	0.9	15.2	0.20	76	91.2
74.75	0	19	1.0	15.6	0.25	106	121.8
74.80	0	19	1.0	16.0	0.30	140	155.7
74.85	0	19	1.1	16.4	0.35	176	192.4
74.90	0	19	1.1	16.7	0.40	215	231.8
74.95	0	19	1.2	17.1	0.45	257	273.7
75.00	0	19	1.2	17.5	0.50	301	318.0
75.05	0	19	1.3	17.8	0.55	347	364.5
75.10	0	19	1.3	18.1	0.60	395	413.2
75.15	0	19	1.4	18.5	0.65	445	463.9
75.20	0	19	1.4	18.8	0.70	498	516.6
75.25	0	19	1.5	19.1	0.75	552	571.2
75.30	0	19	1.5	19.4	0.80	608	627.7
75.35	0	19	1.6	19.8	0.85	666	685.9
75.40	0	19	1.6	20.1	0.90	726	745.8
75.45	0	19	1.7	20.4	0.95	787	807.4
75.50	0	19	1.7	20.7	1.00	850	870.7

Orifice Tube	
Diameter	75 mm
Invert Elevation	73.72
Orifice Constant	0.80
Orifice Centroid	73.76
Orifice Flow Formula	0.80π(D/2,000)2 x (2x9.81xH)0.5

Emergency Overflow Weir	
Width	1.00 m
Invert of Weir	74.50 m
Weir Flow Formula	$1.7WH^{1.5}$

1480 Richmond Road, Ottawa
Calculation of Runoff Coefficients - Pipe Sheet

Runoff Coefficient	=	0.20	0.90	0.90	0.80	0.90		Weighted
Surface Cover	=	Grass	Asphalt	Building	Gravel	Conc.		Runoff Coefficient
Post-Development	Total Area (m^2)	Area (m^2)	Area (m^2)	Area (m^2)	Area (m^2)	Area (m^2)		
1	347	0	347	0	0	0		0.90
2	1863	0	1863	0	0	0		0.90
3	292	0	248	0	0	44		0.90
4	389	0	191	0	0	198		0.90
5	781	0	781	0	0	0		0.90
Post Total	3672	0	3430	0	0	242		0.90

Q = 0.0028*C*I*A (m^3/s)

C = Runoff Coefficient

I = Rainfall Intensity = $A/(Time+B)^C$

A = Area (ha)

1480 Richmond Road, Ottawa
Storm Sewer Design Sheet
5-Year Storm Event

DATE: 26-Jun-26

FILE: 26047

CONTRACT/PROJECT: 1480 Richmond Road

Areas	Manhole		Length	Increment			Total	Flow Time (min)		I	Total Q	S	D	Q Full	V Full	% Full
	From	To	(m)	C	A	CA	CA	TO	IN	(mm/h)	(L/s)	(%)	(mm)	(L/s)	(m/s)	
1	Ex. CB	Ex. CB3	19.5	0.90	0.03	0.03	0.03	10.00	0.31	104.19	9.0	1.00	200	32.8	1.04	27.6%
-	Ex. CB3	Ex. CB2	2.5	-	-	-	0.03	10.31	0.04	102.58	8.9	1.00	200	32.8	1.04	27.1%
2	Ex. CB2	MH1	42.6	0.90	0.19	0.17	0.20	10.35	0.68	102.38	56.6	1.00	200	32.8	1.04	172.4%
3	-	CBMH1	2.6	0.75	0.03	0.02	0.02	10.00	0.03	104.19	6.3	1.00	300	96.7	1.37	6.6%
-	CBMH1	CBMH2	8.2	-	-	-	0.02	10.03	0.14	104.03	6.3	0.50	300	68.4	0.97	9.3%
4	CBMH2	MH1	8.2	0.75	0.04	0.03	0.05	10.17	0.14	103.29	7.1 *	0.50	300	68.4	0.97	10.4%
5	Ex. CB1	MH1	10.1	0.90	0.08	0.07	0.07	10.00	0.17	104.19	20.3	0.50	300	68.4	0.97	29.7%
-	MH1	Ex. MH3	9.4	-	-	-	0.27	11.03	0.16	99.05	81.16*	0.50	300	68.4	0.97	118.7%

Note: * indicates orifice plate flow

1. Flows from CBMH2 to MH1 are shown with "*" as those flows are controlled with the help of an orifice tube.
2. Flows from MH1 to Ex. MH3 includes Area 2 and Area 5 and the controlled flows from Area 4 is directly added into the total flow in order to reflect the orifice effect on total flow.
3. The overall storm flow leaving from site is decreased compared to pre-development condition though, it exceeds the existing storm structure capapcity.

1480 Richmond Road, Ottawa
Water Balance Calculations

As per the City of Ottawa guideline, the first 10 mm design storm would need to be retained onsite.

The required volume can be calculated as below:

Required Volume	=	Total Site Area (m^2)		x	Design Storm	
	=	853		x	10.0	
	=	8.53	m^3			

Pavement Area					
Impervious Area	=	853		x	0.010
Storage Volume Required	=	8.53	m^3		
Proposed Pavers Area	=	50	m^2		
Proposed Pavers Volume	=	10	m^3		

Appendix D

Pre-Consultation Summary

File No.: PC2026-0029

March 4, 2026

Tamara Nahal
Fotenn Planning + Design
420 O'Connor Street
Ottawa ON
K2P 1W4

Via email: nahal@fotenn.com

Subject: Pre-Consultation: Meeting Feedback
Proposed Site Plan Control Application
2625 Carling Avenue and 1480 Richmond Road

Please find below information regarding next steps as well as consolidated comments from the above-noted pre-consultation meeting held on February 25, 2026.

Pre-Consultation Preliminary Assessment

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.

2. In your subsequent pre-consultation or 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.

Supporting Information and Material Requirements

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

    a. The required plans and studies must meet the City's Terms of Reference (ToR) and/or Guidelines, as available on Ottawa.ca. These ToR and Guidelines outline

the specific requirements that must be met for each plan or study to be deemed adequate.

Consultation with Technical Agencies

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

Planning

Comments:

1. **Official Plan**: Inner Urban Transect, Hub Designation, Corridor – Mainstreet, Evolving Overlay

   Lincoln Fields Secondary Plan: Hub Designation

2. **Zoning By-law**:

   Current: Arterial Mainstreet Zone (AM10)

   New: Hub Zone 2 (H2 H(100))

3. Design guidelines:

   Urban Design Guidelines for Drive-Through Facilities

   Urban Design Guidelines for Arterial Mainstreets

4. Landscape requirements:

   a. A Landscape Plan is required as part of a complete application for Site Plan Control.

5. Parking requirements:

   a. The subject site is located within Area Z of Schedule 1A to Zoning By-law 2008-250.Pursuant to Section 101(2), no off-street motor vehicle parking is required to be provided within Area Z.

6. Drive-through facility use:

   a. Official Plan – Hub Designation:

      Policy 4 of Section 6.1.1: Hubs will generally permit residential uses, and will permit such non-residential uses as are consistent with Subsection 6.1.1, Policy 3 h) and:

a) Hubs will generally prohibit automobile-oriented, motor-vehicle-dependent and motor-vehicleprioritizing uses including but not limited to: i) Drive-through facilities.

b. Secondary Plan – Hub Designation:

Policy 4 of Section 2.1 notes:

Where there is a lot containing only a non-residential use that exists prior to the adoption of this Plan that no is longer compliant, the City may consider applications that seek minor changes and alterations without requiring complete compliance with the policies of this Plan, such as maintaining the existing minimum building height, the location of surface parking, or the number of private approaches. In these instances, the City shall ensure:

a) There is a no net increase in surface parking area and spaces;

b) There is a no net loss in soft landscaping and tree planting;

i) A net increase in soft landscaping and tree planting is encouraged;

c) The construction and conveyance of required active transportation facilities, as described in section 3.1, policy (1)(b) and identified on Schedule C – Mobility and Connectivity, as applicable; and

d) Compliance with minimum bicycle parking requirements.

c. Zoning By-law 2008-250:

Arterial Mainstreet Zone: Drive-through facility is a permitted non-residential use.

d. Zoning By-law 2026-50:

Hub Zone 2: does not permit a Drive-through facility.

7. Required Applications:

a. Site Plan Control:

i. Site Plan Control approval is required as the proposal involves the expansion of a drive-through facility (By-law No. 2014-256).

ii. If a Site Plan Control application is submitted prior to the adoption of new Zoning By-law 2026-50, the current Arterial Mainstreet (AM) Zone permits a drive-through use.

b. Permission Application:

i. If a Site Plan Control application is submitted following the adoption of new Zoning By-law 2026-50, the proposed use becomes legal non-conforming and a Permission application to the Committee of Adjustment will be required in order for the Site Plan application to proceed.

ii. The Permission application should include a detailed description outlining how both drive-throughs will operate without conflict, including site circulation and parking impacts across the property.

8. Application Timing:

    a. Submission of a Site Plan Control application prior to March 11, 2026, with application to be reviewed under current Zoning By-law 2008-250 due to transition policy in By-law 2026-50.

    b. Submission of Site Plan Control and Permission applications after March 11, 2026, with applications to be reviewed under both Zoning By-law 2008-250 and new Zoning By-law 2026-50, in order to permit the expansion of the legal non-conforming drive-through use.

Feel free to contact Jillian Simpson, Planner, for follow-up questions.

Urban Design

Comments:

9. An Urban Design Brief is not required.

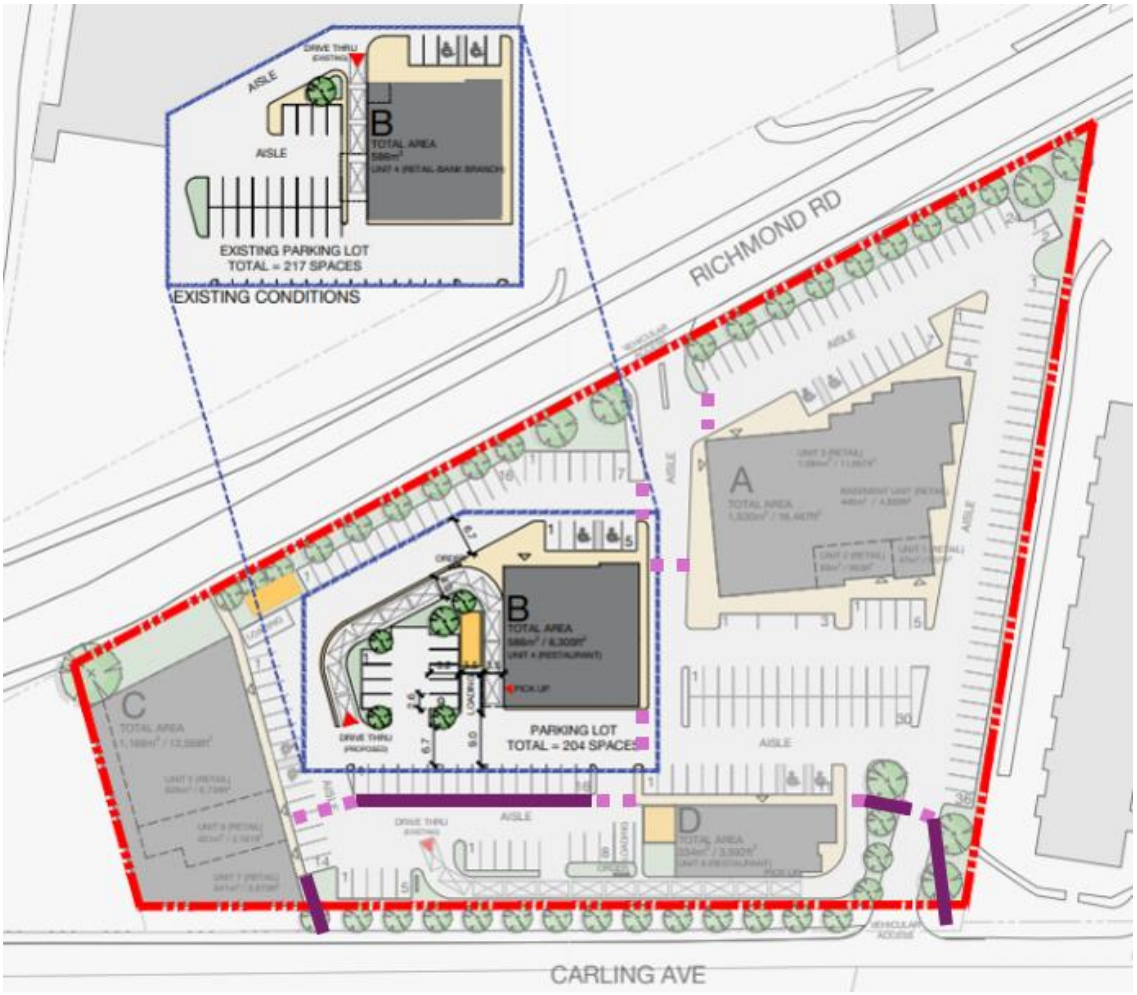
10. Additional drawings and studies are required as shown on the SPIL. Please follow the terms of references (Planning application submission information and materials | City of Ottawa) to prepare these drawings and studies. These include:

    a. Site Plan

    b. Landscape Plan

    c. Building Elevations

11. Please explore the potential to improve pedestrian circulation through the plaza and to public streets. Please see below:



Feel free to contact Nader Kadri, Planner, for follow-up questions.

Engineering

Stormwater Management Design

12. The Stormwater Management Criteria, for the subject site, is to be based on Table 1 Row 2 of the May 2020 Pinecrest Creek Study and the City of Ottawa Sewer Design Guidelines:

    a. A minimum on-site retention of the 10 mm design storm. Refer to the Pinecrest Creek Study for additional details on the SWM design criteria for this site.

    b. The pre-development runoff shall be the lower of the existing coefficient or a maximum equivalent 'C' of 0.5, whichever is less (§ 8.3.7.3).

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

d. Flows to the storm sewer in excess of the 5-year storm release rate, up to and including the 100-year storm event, must be detained on site.

e. Enhanced level water quality control (80% TSS) removal is required, some of which may be achieved by on-site retention of the first 10 mm rainfall.

f. Stormwater management applies to the area of the site being redeveloped.

13. Confirm if the site is currently controlled by an ICD downstream.

14. When underground storage is used for stormwater, 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 when using the modified rational method 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. The consultant may also choose to model the stormwater flows using a dynamic stormwater model.

Sewer (Sanitary & Storm) Design

15. A capacity review of the private sanitary and storm sewers will be required to demonstrate that there is adequate residual capacity to accommodate the new proposal.

16. The existing sanitary and storm sewers on private property may be reused if:

    a. They are confirmed to be in an adequate condition and

    b. They are adequately sized for the proposed release rates.

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

18. Provide existing service 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.

19. Connections to trunk sewers and easement sewers are typically not permitted.

20. Provide information on the monitoring manhole requirements – should be located in an accessible location on private property near the property line (ie. Not in a parking area).

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

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

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

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

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

Watermain Design

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

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

    b. Type of development

    c. Average daily demand: ___ l/s.

    d. Maximum daily demand: ___l/s.

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

    f. Required fire flow.

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

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

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

25. The existing water service to your building may be reused if:

    a. It is confirmed to be in an adequate condition and

    b. It is adequately sized for the proposed demands.

26. Two watermains separated by an isolation valve is required to avoid the creation of a vulnerable service area for proposed developments with a basic day water demand greater than 50m3/day. Please confirm the demand for your proposal and

approximate demand for the existing buildings on this property. If the combined demands exceed 50m3/day, a second service connection will be required off of Richmond Road.

27. Please note that no new connection to the existing backbone watermains on Carling Avenue will be accepted. If a new watermain connection is required, it shall be made off Richmond Road.

28. Please note that a perimeter meter may be required for this site if the total private watermain length exceeds 150 m.

Additional Comments

29. The applicant is notified that Capital Works Projects (resurfacing) are scheduled on Richmond in 4-7 years and Carling Avenue in 1-2 years. Coordination with the City will be required to ensure that, if road cuts are proposed in the right of way, that they are completed before the typical three-year moratorium. If road cuts can't be advanced before the scheduled moratorium, the applicant will need to apply for a road cut restriction waiver from the City's Road Cut Permit Office. The City has the right to conditionally approve or deny Moratorium applications, and require additional level of resurfacing depending on the geometry and location of the road cut.

30. Given the limited scope of work proposed in the preliminary Conceptual Plan (the drive-through reconfiguration and potential service upsizing or renewal) a Geotechnical Investigation is not considered necessary for this Site Plan application at this time. However, should the project scope increase during the design stage, these reports may be requested at our discretion.

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

Transportation

Comments:

31. Follow Transportation Impact Assessment Guidelines:

    a. Note that the TIA Guidelines have been updated, the changes are available on the City's website.

    b. Update Screening Form to provide the net number if trips generated by the site (i.e. proposed new trips minus existing trips by the bank use) and send to josiane.gervais@ottawa.ca for review. Also note the driveway to the site is existing and not proposed, therefore the third safety trigger response should be "no".

c. A Transportation Impact Assessment may be required. Please submit the Scoping/Forecasting report to josiane.gervais@ottawa.ca at your earliest convenience. The applicant is responsible to submit the Scoping Report prior to application and must allow for a 14 day circulation period. If required, the Strategy Report (including Synchro files) must be submitted with the formal submission to deem complete. The applicant is strongly encouraged to submit the Strategy Report to the TPM prior to formal submission and allow for a 14 day circulation period.

32. Ensure that the development proposal complies with the Right-of-Way protection requirements of the Official Plan's Schedule C16.

    a. 44.5m ROW protection along Carling, from Richmond to Bronson (measured as 22.25m from the centerline).

    b. 37.5m ROW protection along Richmond, from Hwy 417 to Kichi Zibi Mikan Pky (measured as 18.75 from centerline). [Note: The revised Schedule C16 currently going through OPA, D01-01-25-0022, shows a ROW protection of 30m along Richmond, between Carling and Kichi Zibi Mikan.]

       Any requests for exceptions to ROW protection requirements must be discussed with Transportation Planning and concurrence provided by Transportation Planning management. If an exception is sought, send justification via email to josiane.gervais@ottawa.ca.

33. ROW must be unincumbered and conveyed at no cost to the City. Note that conveyance of the ROW will be required prior to registration of the SP agreement. Additional information on the conveyance process can be provided upon request.

34. Transportation Master Plan (2025) includes:

    a. Carling Avenue along property frontage identified as a Transit Priority Corridor (Priority Network)

    b. Carling Avenue along property frontage identified Road Urbanization and Mainstreet Improvements (Priority Network)

35. Nearby planned construction and infrastructure projects include:

    a. Road resurfacing along Carling, planned in 1-2 years, PM not yet assigned.

    b. Road resurfacing along Richmond, planned in 4-7 years, PM not yet assigned.

    c. Sidewalk renewal along Richmond, planned this year, PM: Kyle Delaney.

d. Note the City imposes a moratorium on pavement that is 3 years old or less. Consultation with Infrastructure & Water Services Dept. is strongly encouraged for coordination of construction.

36. There are two bus stops along the property frontages to Richmond and Carling. Upgrades to existing transit stop #6451 to include paved shelter pad to the specifications of the City may be required.

37. As the proposed site is commercial and for general public use, AODA legislation applies.

    a. Ensure all crosswalks located internally on the site provide a TWSI at the depressed curb, per requirements of the Integrated Accessibility Standards Regulation under the AODA.

    b. Clearly define accessible parking stalls and ensure they meet AODA standards (include an access aisle next to the parking stall and a pedestrian curb ramp at the end of the access aisle, as required).

38. On site plan:

    a. Ensure site accesses meet the City's Private Approach Bylaw.

    b. Show all details of the roads abutting the site; include such items as pavement markings, signage, accesses, on-street parking, and/or sidewalks.

    c. Turning movement diagrams required for all accesses showing the largest vehicle to access/egress the site.

    d. Turning movement diagrams required for internal movements (loading areas, garbage).

    e. Show all curb radii measurements; ensure that all curb radii are reduced as much as possible and fall within TAC guidelines (Figure 8.5.1).

    f. Show dimensions for site elements (i.e. lane/aisle widths, access width and throat length, parking stalls, sidewalks, pedestrian pathways, etc.)

Feel free to contact Josiane Gervais, Transportation Project Manager, for follow-up questions.

Environment

Comments:

39. There are no triggers for an Environmental Impact Study.

40. Bird-Safe Design Guidelines - Please review and incorporate bird safe design elements, where feasible. Some of the risk factors include glass and related design

traps such as corner glass and fly-through conditions, ventilation grates and open pipes, landscaping, light pollution. More guidance and solutions are available in the guidelines which can be found here: https://documents.ottawa.ca/sites/documents/files/birdsafedesign_guidelines_en.pdf

41. Please consider if there are features that can be added reduce the urban heat island effect (see OP 10.3). For example, this impact can be reduced by adding large canopy trees, green rooves or vegetation walls, or incorporating building with low heat absorbing materials.

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

Forestry

Comments:

42. Please submit a Tree Conservation Report (TCR) for review. TCR guidelines are provided below. An approved TCR is required as part of the Site Plan application and must identify the proposed protection measures for the existing trees along Carling Avenue. Please see below for the approximate area that needs to be protected.

43. A Landscape plan is required for the Site Plan application and should illustrate how the site will be enhanced and improved with new landscaping. The applicant is asked to create new tree planting spaces and plant trees that will mitigate the heat island effect.

44. The following Tree Conservation Report (TCR) guidelines have been adapted from the Schedule E of the Tree Protection By-law – for more information on these requirements please contact julian.alvarez-barkham@ottawa.ca.

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

        i. An approved TCR is a requirement of Site Plan approval.

    b. Any removal of privately-owned trees 10cm or larger in diameter within the urban area, or city-owned trees of any diameter requires a tree permit issued under the Tree Protection Bylaw (Bylaw 2020 – 340); the permit will be based on an approved TCR and made available at or near plan approval.

    c. The TCR must contain 2 separate plans:

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

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

    d. 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.

        i. For ease of review, the Planning Forester suggests that all trees be numbered and referenced in an inventory table.

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

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

        i. Compensation may be required for the removal of city owned trees.

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

    h. 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 on the Tree Protection Specification or by searching Ottawa.ca.

        i. The location of tree protection fencing must be shown on the plan.

        ii. Show the critical root zone of the retained trees.

i. As per the Official Plan §4.8.2, the retention of healthy trees must be prioritized wherever possible. Please seek opportunities for retention of trees that will contribute to the design and function of the site.

45. The following Landscape Plan (LP) guidelines have been adapted from Schedule E of the Tree Protection By-law – for more information on these requirements please contact julian.alvarez-barkham@ottawa.ca.

a. Please ensure any retained trees are shown on the LP.

b. Minimum Setbacks

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

ii. Maintain 2.5m from curb.

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

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

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

b. Tree specifications

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

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

c. 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.

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

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

f. Hard surface planting

i. If there are hard surface plantings, a planting detail must be provided.

ii. Curb style planter design is highly recommended.

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

c. Trees are to be planted at grade.

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

Tree Type/Size	Single Tree Soil Volume (m^3)	Multiple Tree Soil Volume (m^3/tree)
Ornamental	15	9
Columnar	15	9
Small	20	12
Medium	25	15
Large	30	18
Conifer	25	15

   i. It is strongly suggested that the proposed species list include a column listing the available soil volume.

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

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

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

Feel free to contact Julian Alvarez-Barkham, Forester, for follow-up questions.

Parkland

Comments:

46. In accordance with Parkland Dedication By-law No. 2022-280, parkland dedication is not required for a change of use from one commercial use to another where there is no net increase in gross floor area.

47. Please note, if the land use changes or gross floor area changes, then the parkland dedication requirement, and form will be re-evaluated accordingly.

Feel free to contact Samantha Gatchene, Parks Planner, for follow-up questions.

Other

48. The High Performance Development Standard (HPDS) is a collection of voluntary and required standards that raise the performance of new building projects to achieve sustainable and resilient design and will be applicable to Site Plan Control and Plan of Subdivision applications.

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

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

Submission Requirements and Fees

1. Site Plan Control, Complex Application
    a. Additional information regarding fees related to planning applications can be found here.
2. The attached **Study and Plan Identification List** outlines the information and material that has been identified as either required (R) or advised (A) as part of a future complete application submission.
    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.

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

Yours Truly,
Jillian Simpson, MCIP RPP

Encl. Feedback Form – Phase 1
Study Plan and Identification List
List of Technical Agencies to Consult
HPDS Example Checklist
HPDS Overview for Applicants

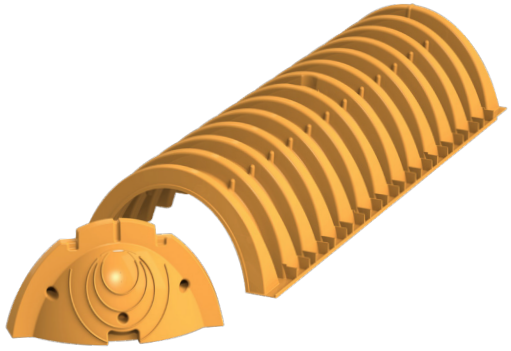
c.c. Jean-Miguel Roy, Infrastructure Project Manager
Alex Polyak, Senior Infrastructure Project Manager
Josiane Gervais, Transportation Project Manager
Stream Shen, Planner III
Nader Kadri, Planner III, Urban Design
Matthew Hayley, Planner III, Environment
Samantha Gatchene, Planner II, Parks
Julian Alvarez-Barkham, Planning Forester

Appendix E

StormTech Chambers Information

StormTech® SC-310 Chamber

Designed to meet the most stringent industry performance standards for superior structural integrity while providing designers with a cost-effective method to save valuable land and protect water resources. The StormTech system is designed primarily to be used under parking lots, thus maximizing land usage for private (commercial) and public applications. StormTech chambers can also be used in conjunction with Green Infrastructure, thus enhancing the performance and extending the service life of these practices.



Nominal Chamber Specifications
(not to scale)

Size (L x W x H)
85.4" x 34" x 16"
2170 mm x 864 mm x 406 mm

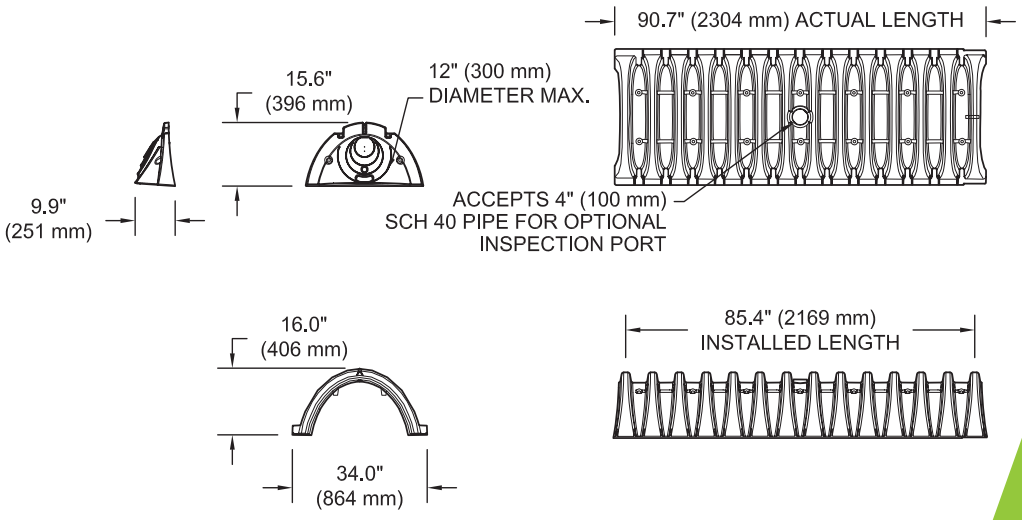
Chamber Storage
14.7 ft³ (0.42 m³)

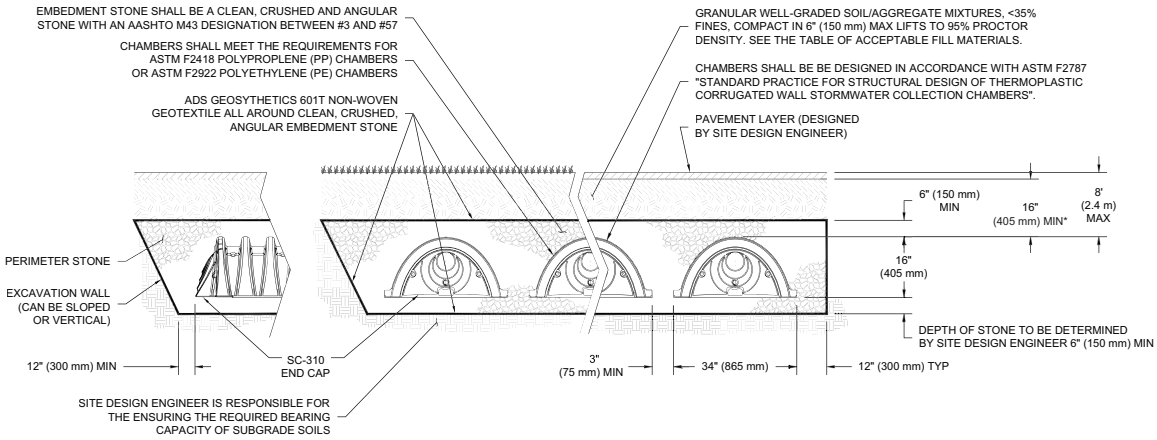
Min. Installed Storage*
29.3 ft³ (0.83 m³)

Weight
37.0 lbs (16.8 kg)

Shipping
55 chambers/pallet
108 end caps/pallet
18 pallets/truck

*Assumes 6" (150 mm) stone above and below chambers and 40% stone porosity.





ADS StormTech™

StormTech SC-310 Specifications

Cumulative Storage Volumes Per Chamber

Assumes 40% Stone Porosity. Calculations are Based Upon a 6” (150 mm) Stone Base Under Chambers.

Depth of Water in System Inches (mm)	Cumulative Chamber Storage ft³ (m³)	Total System Cumulative Storage ft³ (m³)
28 (711)	14.70 (0.416)	29.34 (0.831)
27 (686)	14.70 (0.416)	28.60 (0.810)
26 (660)	Stone Cover 14.70 (0.416)	27.87 (0.789)
25 (635)	14.70 (0.416)	27.14 (0.769)
24 (610)	14.70 (0.416)	26.41 (0.748)
23 (584)	14.70 (0.416)	25.68 (0.727)
22 (559)	14.70 (0.416)	24.95 (0.707)
21 (533)	14.64 (0.415)	24.18 (0.685)
20 (508)	14.49 (0.410)	23.36 (0.661)
19 (483)	14.22 (0.403)	22.47 (0.636)
18 (457)	13.68 (0.387)	21.41 (0.606)
17 (432)	12.99 (0.368)	20.25 (0.573)
16 (406)	12.17 (0.345)	19.03 (0.539)
15 (381)	11.25 (0.319)	17.74 (0.502)
14 (356)	10.23 (0.290)	16.40 (0.464)
13 (330)	9.15 (0.260)	15.01 (0.425)
12 (305)	7.99 (0.227)	13.59 (0.385)
11 (279)	6.78 (0.192)	12.13 (0.343)
10 (254)	5.51 (0.156)	10.63 (0.301)
9 (229)	4.19 (0.119)	9.11 (0.258)
8 (203)	2.83 (0.081)	7.56 (0.214)
7 (178)	1.43 (0.041)	5.98 (0.169)
6 (152)	0	4.39 (0.124)
5 (127)	0	3.66 (0.104)
4 (102)	Stone Foundation 0	2.93 (0.083)
3 (76)	0	2.19 (0.062)
2 (51)	0	1.46 (0.041)
1 (25)	0	0.73 (0.021)

Note: Add 0.73 ft³ (0.021 m³) of storage for each additional inch (25 mm) of stone foundation.

Storage Volume Per Chamber ft³ (m³)

	Bare Chamber Storage ft³ (m³)	Chamber and Stone Foundation Depth in. (mm)		
		6 (150)	12 (300)	18 (450)
SC-310 Chamber	14.7 (0.42)	29.30 (0.83)	33.7 (0.95)	38.1 (1.08)

Note: Assumes 6” (150 mm) stone above chambers, 3” (76 mm) row spacing and 40% stone porosity.

Amount of Stone Per Chamber

English Tons (yds³)	Stone Foundation Depth		
	6”	12”	18”
SC-310	1.9 (1.4)	2.5 (1.8)	3.1 (2.2)
Metric Kilograms (m³)	**150 mm**	**300 mm**	**450 mm**
SC-310	1724 (1.0)	2268 (1.3)	2812 (1.7)

Note: Assumes 6” (150 mm) of stone above and 3” (76 mm) between chambers.

Volume Excavation Per Chamber yd³ (m³)

	Stone Foundation Depth		
	6 (150)	12 (300)	18 (450)
SC-310	2.6 (2.0)	3.0 (2.3)	3.4 (2.6)

Note: Assumes 3” (76 mm) of row separation and 6” (150 mm) of stone above the chambers and 16” (400 mm) of cover. The volume of excavation will vary as depth of cover increases.

ADS StormTech products, manufactured in accordance with ASTM F2418 or ASTMF2922, comply with all requirements in the Build America, Buy America (BABA) Act.

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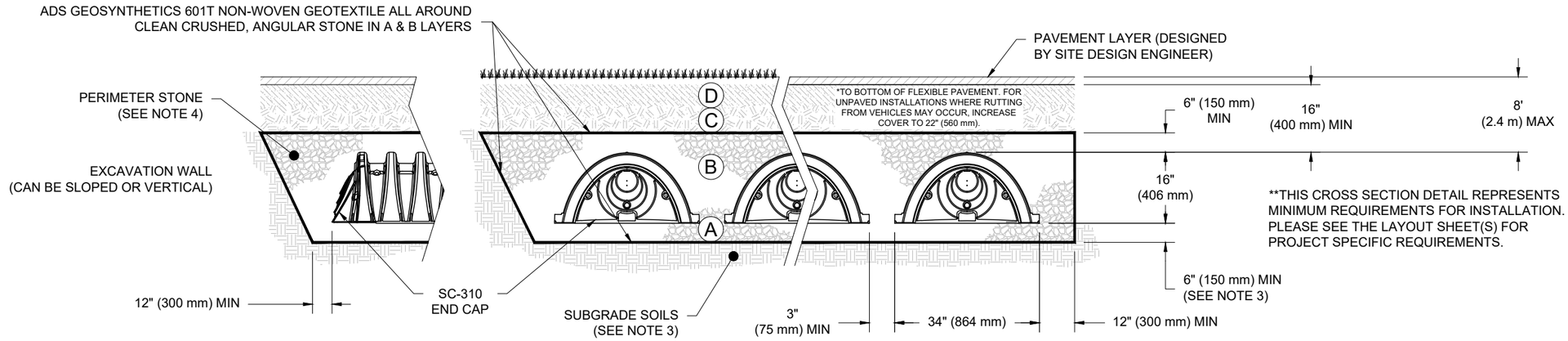
ADS StormTech™

adspipe.com
800-821-6710

ACCEPTABLE FILL MATERIALS: STORMTECH SC-310 CHAMBER SYSTEMS

MATERIAL LOCATION		DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	3.25	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 16" (400 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.
5. WHERE RECYCLED CONCRETE AGGREGATE IS USED IN LAYERS 'A' OR 'B' THE MATERIAL SHOULD ALSO MEET THE ACCEPTABILITY CRITERIA OUTLINED IN TECHNICAL NOTE 6.20 "RECYCLED CONCRETE STRUCTURAL BACKFILL".



NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2922 (POLYETHYLENE) OR ASTM F2418 (POLYPROPYLENE), "STANDARD SPECIFICATION FOR CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-310 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS. REFERENCE STORMTECH DESIGN MANUAL FOR BEARING CAPACITY GUIDANCE.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2922 SHALL BE GREATER THAN OR EQUAL TO 325 LBS/FT/%. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

STANDARD CROSS SECTION
SC-310 CHAMBER
STORMTECH

DATE: 02/17/2025 | DRAWN: SMW | CHECKED: JLM
DRAWING #: 721-320

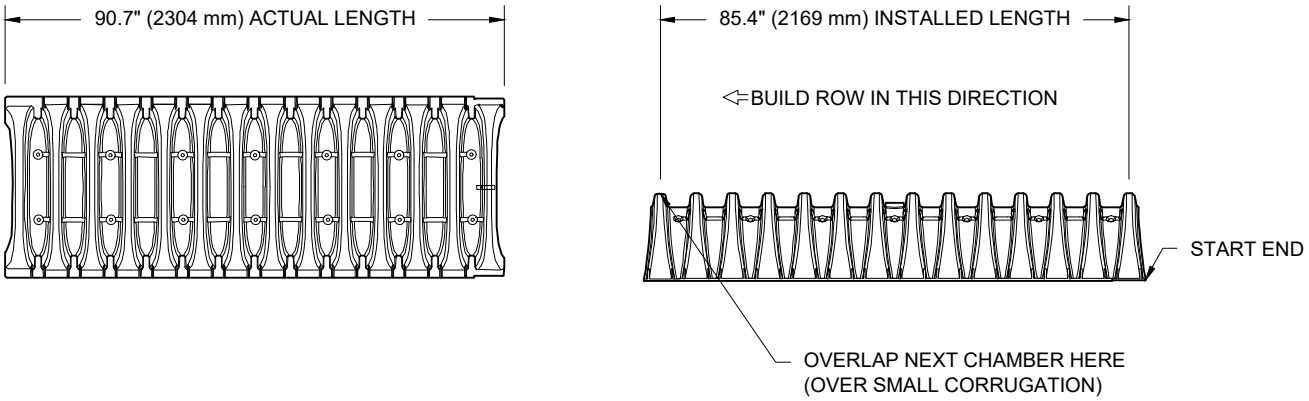
DATE	DRWN	CHKD	DESCRIPTION

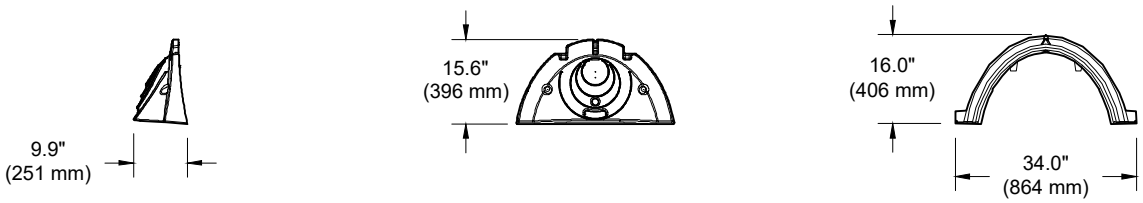
StormTech®
Chamber System
1-800-821-6710 | WWW.STORMTECH.COM

4640 TRUEMAN BLVD
HILLIARD, OH 43026

SC-310 TECHNICAL SPECIFICATION

NTS



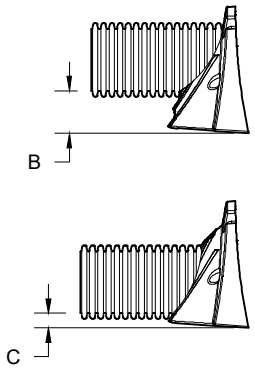


NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	34.0" X 16.0" X 85.4"	(864 mm X 406 mm X 2169 mm)
CHAMBER STORAGE	14.7 CUBIC FEET	(0.42 m³)
MINIMUM INSTALLED STORAGE*	29.34 CUBIC FEET	(0.83 m³)
WEIGHT	35.0 lbs.	(16.8 kg)

*ASSUMES 6" (150 mm) ABOVE AND BELOW CHAMBER; 3" (75 mm) BETWEEN CHAMBERS

PART #	STUB	B	C
SC310EPE06TPC	6" (150 mm)	5.8" (147 mm)	---
SC310EPE06BPC		---	0.5" (13 mm)
SC310EPE08TPC	8" (200 mm)	3.5" (89 mm)	---
SC310EPE08BPC		---	0.6" (15 mm)
SC310EPE10TPC	10" (250 mm)	1.4" (36 mm)	---
SC310EPE10BPC		---	0.7" (18 mm)
SC310ECEZ*	12" (300 mm)	---	0.9" (23 mm)



ALL STUBS, EXCEPT FOR THE SC310ECEZ ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

* FOR THE SC310ECEZ THE 12" (300 mm) STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 0.25" (6 mm). BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.

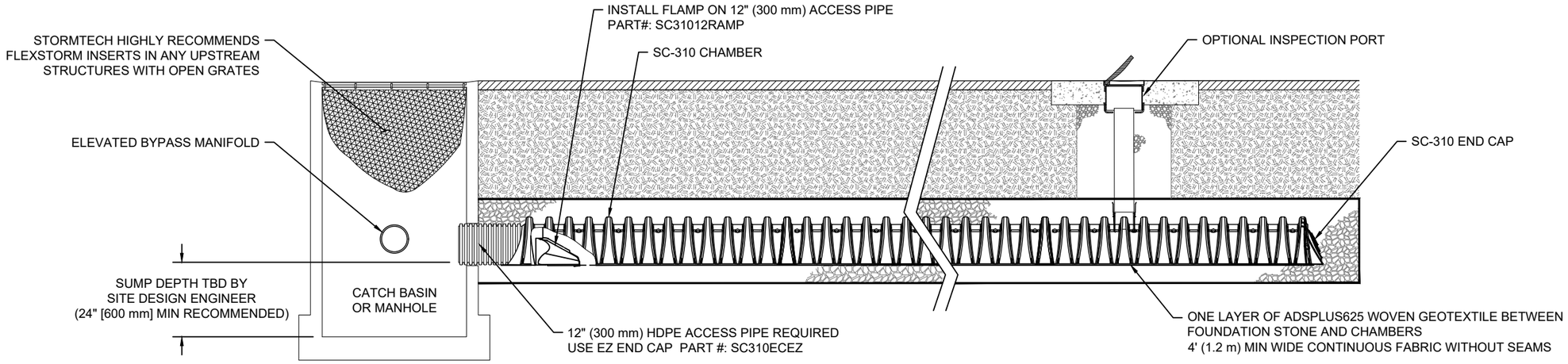
NOTE: ALL DIMENSIONS ARE NOMINAL; PRE-CORED END CAPS END WITH "PC"

TECHNICAL SPECIFICATIONS
SC-310 CHAMBER

DRAWN: SMW
CHECKED: JLM
DATE: 01/15/25
DRAWING #: 721-310

StormTech® Chamber System
1-800-821-6710
WWW.STORMTECH.COM

ADS
4640 TRUEMAN BLVD
HILLIARD, OH 43026



SC-310 ISOLATOR ROW PLUS DETAIL
NTS

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

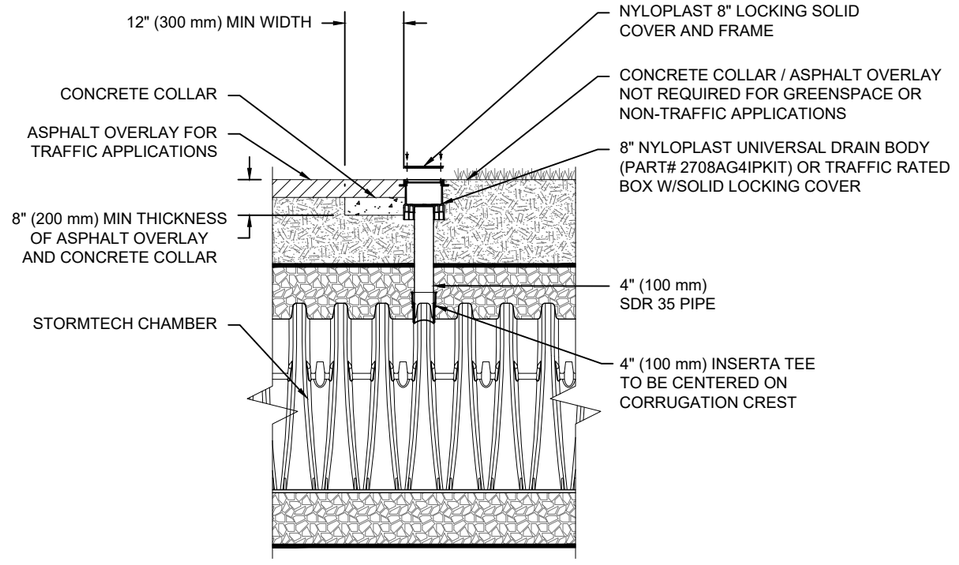
STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.

2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.



NOTE:
INSPECTION PORTS MAY BE CONNECTED THROUGH ANY CHAMBER CORRUGATION CREST.

4" PVC INSPECTION PORT DETAIL
(SC SERIES CHAMBER)
NTS

SC-310
ISOLATOR ROW PLUS DETAILS
DATE: 10/29/20 DRAWN: ALI
PROJECT #: CHECKED: ALI

DATE	DRWN	CHKD	DESCRIPTION
12/15/23	AYT		

THIS DRAWING HAS BEEN PREPARED BASED ON INFORMATION PROVIDED TO ADS UNDER THE DIRECTION OF THE SITE DESIGN ENGINEER OR OTHER PROJECT REPRESENTATIVE. THE SITE DESIGN ENGINEER SHALL REVIEW THIS DRAWING PRIOR TO CONSTRUCTION. IT IS THE ULTIMATE RESPONSIBILITY OF THE SITE DESIGN ENGINEER TO ENSURE THAT THE PRODUCT(S) DEPICTED AND ALL ASSOCIATED DETAILS MEET ALL APPLICABLE LAWS, REGULATIONS, AND PROJECT REQUIREMENTS.

StormTech® Chamber System
888-892-2694 | WWW.STORMTECH.COM

4640 TRUEMAN BLVD
HILLIARD, OH 43026
1-800-733-7473

SHEET 1 OF 1

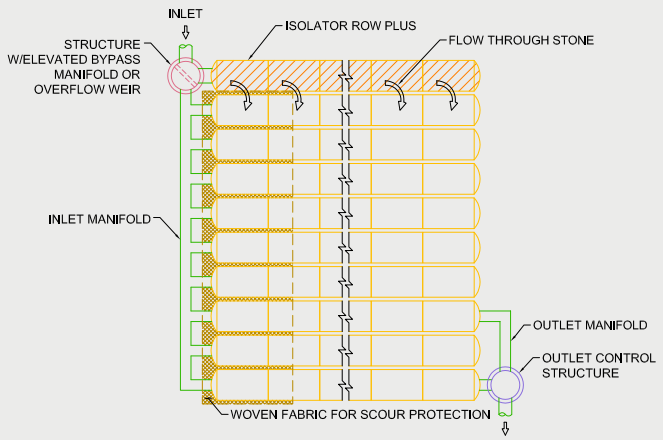
Isolator® Row Plus

The StormTech Isolator Row Plus is an enhancement to our proven water quality treatment system. This updated system is an NJCAT verified water quality treatment device that can be incorporated into any system layout.

Features

- Isolator Row Plus is now NJCAT verified. As a Manufactured Treatment Device it achieves over 80% TSS removal by filtration NJDEP Laboratory Protocol Assessment NJCAT Technology Verification.
- A patented Flamp™ (Flared End Ramp) provides a smooth transition from pipe invert to fabric bottom. The Flamp is attached to the inlet pipe inside the chamber end cap and improves chamber function over time by distributing sediment and debris that would otherwise collect at the inlet. It also serves to improve the fluid and solid flow back into the inlet pipe during maintenance and cleaning.
- Proprietary ADS Plus fabric maintains durability and sediment removal while allowing for higher water quality flow rates. A single layer of ADS Plus fabric is placed between the angular base stone and the Isolator Row Plus chambers.

Schematic of the StormTech Isolator Row Plus System



Technology Descriptions

The Isolator Row Plus is designed to capture the “first flush” runoff and offers the versatility to be sized on a volume or a flow basis. An upstream manhole not only provides access to the Isolator Row Plus but includes a high/low concept such that stormwater flow rates or volumes that exceed the capacity of the Isolator Row Plus bypass through a manifold to the other chambers. This is achieved with either an elevated bypass manifold or a high-flow weir. This creates a differential between the Isolator Row Plus row of chambers and the manifold to the rest of the system, thus allowing for settlement time in the Isolator Row Plus. After Stormwater flows through the Isolator Row Plus and into the rest of the StormTech chamber system it is either infiltrated into the soils below or passed at a controlled rate through an outlet manifold and outlet control structure.

Summary of Verified Claims[1]

Treatment Rate (gpm/ft²)	4.1
Underlying Geotextile Layers	1
NJDEP Test Sediment	D50=75um
Mean Particle Concentration (mg/L)	200
TSS Removal Efficiency	>80%

[1] Verification testing of the StormTech SC-740 Isolator Row PLUS in accordance with NJDEP Laboratory protocol to access total suspended solids removal by filtration manufactured treatment device, 2013

ADS StormTech™

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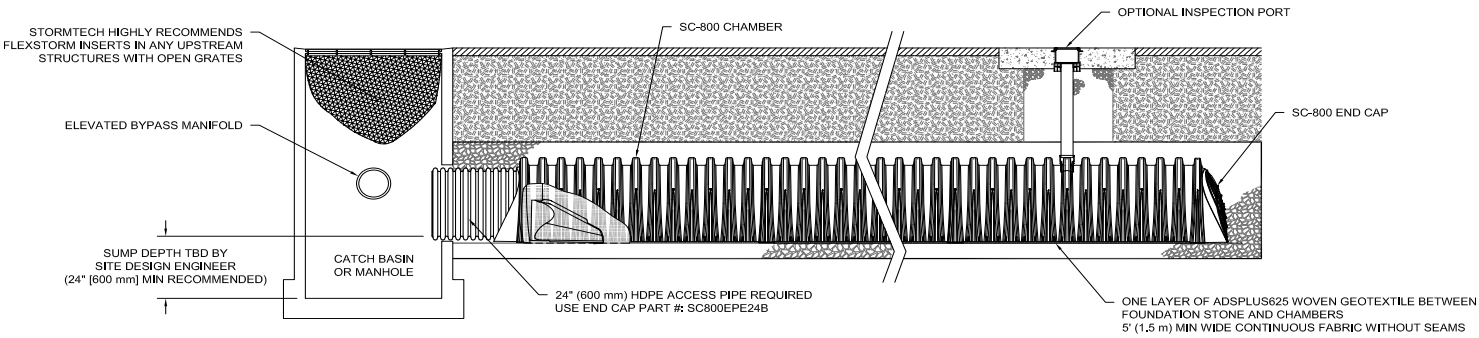
800-821-6710

StormTech Isolator Row Plus (not to scale)



Maintenance

The Isolator Row Plus was designed to reduce the cost of periodic maintenance. By "isolating" sediment to just one row of the StormTech system, costs are dramatically reduced by eliminating the need to clean out each row of the entire storage bed. If inspection indicates the potential need for maintenance, access is provided via a manhole(s) located on the end(s) of the row for cleanout.

Maintenance is accomplished with the JetVac® process. The JetVac process utilizes a high-pressure water nozzle to propel itself down the Isolator Row Plus while scouring and suspending sediment. As the nozzle is retrieved, the captured pollutants are flushed back into the manhole for vacuuming. Most sewer and pipe maintenance companies have vacuum/JetVac combination vehicles. Selection of an appropriate JetVac nozzle will improve maintenance efficiency.

StormTech Isolator Row Plus

Chamber Model	Chamber Storage	Chamber Footprint	Treatment Rate
SC-160LP	15.0 cf (0.42 m^3)	11.45 sf (1.06 m^2)	0.11 cfs (3.11 L/s)
SC-310	31.0 cf (0.88 m^3)	17.7 sf (1.64 m^2)	0.16 cfs (4.53 L/s)
DC-780	78.4 cf (2.22 m^3)	27.8 sf (2.58 m^2)	0.26 cfs (7.36 L/s)
SC-800	81.0 cf (2.29 m^3)	27.3 sf (2.54 m^2)	0.25 cfs (7.1 L/s)
MC-3500	175.0 cf (4.96 m^3)	42.9 sf (3.99 m^2)	0.40 cfs (11.32 L/s)
MC-4500	162.6 cf (4.60 m^3)	30.1 sf (2.80 m^2)	0.28 cfs (7.93 L/s)
MC-7200	267.3 cf (7.57 m^3)	50.0 sf (4.65 m^2)	0.45 cfs (12.74 L/s)

Installation

Installation of the stormwater treatment unit(s) shall be preformed per manufacture's installation instructions. Such instructions can be obtained by calling Advanced Drainage Systems Inc. at (800) 821-6710 or by logging on to adspipe.com.

ADS StormTech™

adspipe.com
800-821-6710

Appendix F

Clean Water Works Inc. Pre-Construction CCTV Inspection Report

Ottawa (Head Office)
1800 Bantree Street
Ottawa, Ontario K1B 5L6
☎ 613.745.2444
613.745.9994

Montreal
7562, Côte-de-Liesse
St-Laurent, Quebec H4T 1E7
☎ 514.738.2666
514.738.9762

www.cwwcanada.com
1.866.695.0155

CLEAN WATER WORKS INC.

INTEGRATED SEWER SOLUTIONS

1480 RICHMOND RD

Ottawa, Ontario

SEWER CCTV INSPECTION REPORT

Report ID
153600SA1

Sewer Use
Sanitary

Completion Date
June 22, 2026

Inspected Length
86.10 meters

Table of contents

1. Index of pipes

4 items

Pipe	Upstream	Downstream	Street	Date	Direction	Height	Inspected	Total	Page
BUILDING SANITARY	C.O.	MAIN	Richmond Road	22/06/2026, 9:41 AM	D - Downstream	150	15.9	16.2	5
SAN MH 1 MAIN	SAN MH 1	MAIN	Richmond Road	22/06/2026, 10:34 AM	D - Downstream	200	17.8	18	7
SAN MH 3 SAN MH 1	SAN MH 3	SAN MH 1	Richmond Road	22/06/2026, 10:18 AM	U - Upstream	200	31.5	65	11
SAN MH 3 SAN MH 1	SAN MH 3	SAN MH 1	Richmond Road	22/06/2026, 9:52 AM	D - Downstream	200	20.9	65	9
							Total: 86.1	Total: 164.2	

2. Structural rating

4 items

0 - No Defects (4 of 4 items)

Score	Quick	Index	Pipe	Start/End	Direction	Street	Page
0	0000	0	BUILDING SANITARY	C.O. --> MAIN	Direction of flow	Richmond Road	5
0	0000	0	SAN MH 1 MAIN	SAN MH 1 --> MAIN	Direction of flow	Richmond Road	7
0	0000	0	SAN MH 3 SAN MH 1	SAN MH 3 --> SAN MH 1	Direction of flow	Richmond Road	9
0	0000	0	SAN MH 3 SAN MH 1	SAN MH 1 --> SAN MH 3	Against flow	Richmond Road	11

3. O&M rating

4 items

5 - Most significant defect grade (1 of 4 items)

Score	Quick	Index	Structural	Pipe	Start/End	Direction	Street	Page
13	5142	4.3	0	BUILDING SANITARY	C.O. --> MAIN	Direction of flow	Richmond Road	5

4 - Significant (1 of 4 items)

Score	Quick	Index	Structural	Pipe	Start/End	Direction	Street	Page
16	4126	2.3	0	SAN MH 1 MAIN	SAN MH 1 --> MAIN	Direction of flow	Richmond Road	7

3 - Moderate defect grade (1 of 4 items)

Score	Quick	Index	Structural	Pipe	Start/End	Direction	Street	Page
33	3A00	3	0	SAN MH 3 SAN MH 1	SAN MH 3 --> SAN MH 1	Direction of flow	Richmond Road	9

2 - Minor to Moderate (1 of 4 items)

Score	Quick	Index	Structural	Pipe	Start/End	Direction	Street	Page
6	2300	2	0	SAN MH 3 SAN MH 1	SAN MH 1 --> SAN MH 3	Against flow	Richmond Road	11

4. Pipe summary and condition details

Pipe identification

Pipe:	BUILDING SANITARY	**Direction of inspection:**	C.O. --> MAIN
Direction of flow:	C.O. --> MAIN	**Direction:**	Direction of flow

Pipe location

			UPSTREAM	DOWNSTREAM
Road:	Richmond Road	**Easting (X):**		
Crossroad:		**Northing (Y):**		
Drainage Area:		**Elevation (Z):**		
City:	Ottawa			
Location:	Building	**GPS Accuracy:**		
Owner:	COD	**Coordinate System:**		
Road segment:		**Vertical Datum:**		

Pipe characteristics

Sewer Use:	Sanitary	**Inspected length:**	15.9
Height:	150	**Total length:**	16.2
Width:		**Rim/Inv.:**	
Shape:	Circular	**Grade/Inv.:**	
Material:	Polyvinyl Chloride	**Rim/Grade:**	
Lining:		**Rim/Inv.:**	
Joint length:	4	**Grade/Inv.:**	
Year laid:		**Rim/Grade:**	
Year renewed:		**Sewer category:**	

Additional details

Inspection standard:	PACP 6.0	**Location details:**	
Date:	22/06/2026, 9:41 AM	**Surveyed by:**	Jonathan Larocque
Project Number:	1480 Richmond Road	**Certificate #:**	U06180703002189
Customer:	COD-153600	**Pre-Cleaning:**	No Pre-Cleaning
PO number:		**Date cleaned:**	
Work order:	153600	**Unit of measurement:**	Metric
Purpose:	Pre-Acceptance	**Media label:**	
Weather:	Dry	**Sheet #:**	
Flow control:	Not Controlled		

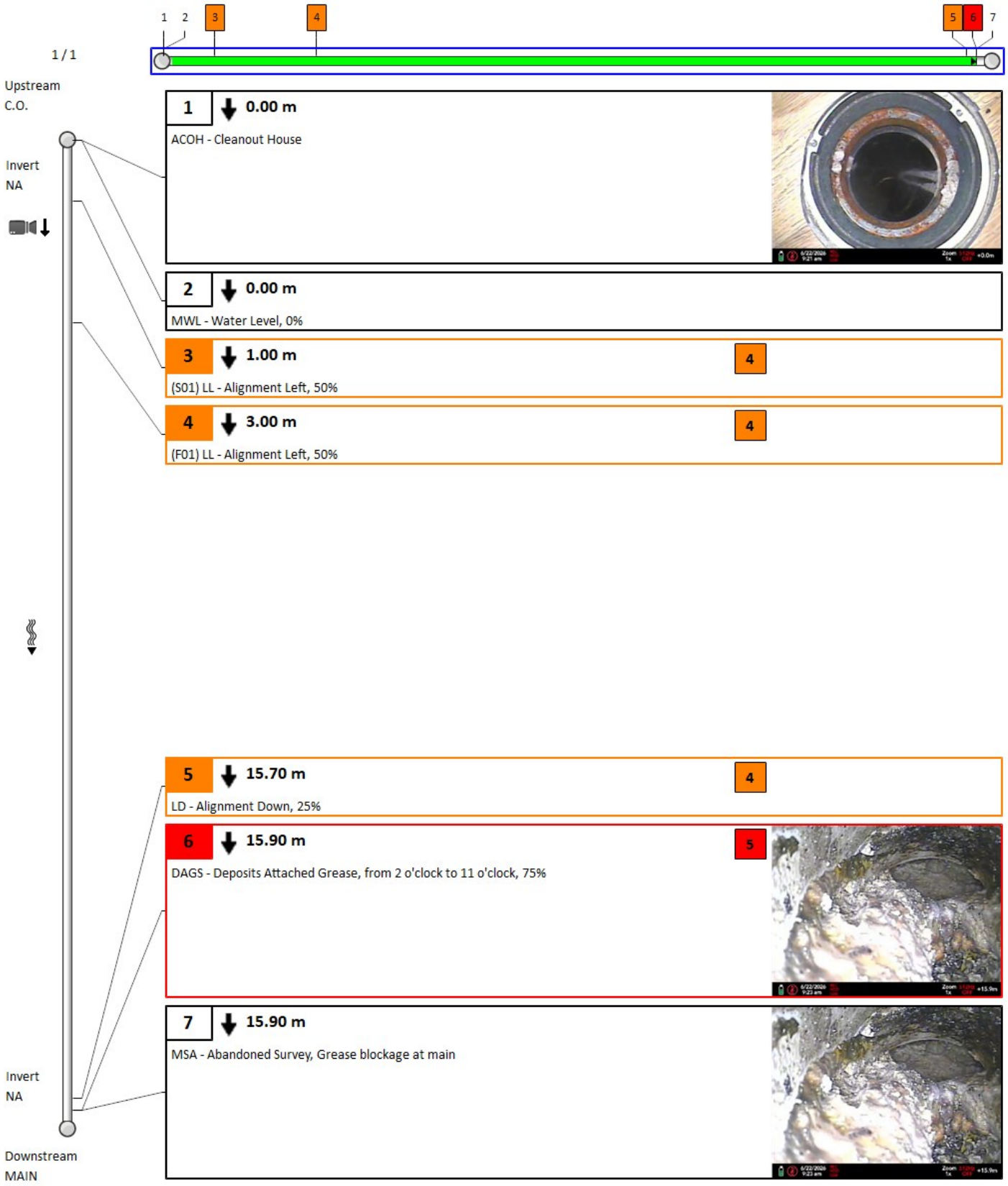
Structural rating		O&M rating		Overall rating	
Peak:	0	**Peak:**	5	**Peak:**	5
Quick rating:	0000	**Quick rating:**	5142	**Quick rating:**	5142
Score:	0	**Score:**	13	**Score:**	13
Index:	0	**Index:**	4.3	**Index:**	4.3

Additional information

Other information

Report ID:	153600SA1	**Information 6:**	
Information 2:		**Information 7:**	
Information 3:		**Information 8:**	
Information 4:		**Information 9:**	
Information 5:		**Information 10:**	

4. Pipe summary and condition details



4. Pipe summary and condition details

Pipe identification

Pipe:	SAN MH 1 MAIN	**Direction of inspection:**	SAN MH 1 --> MAIN
Direction of flow:	SAN MH 1 --> MAIN	**Direction:**	Direction of flow

Pipe location

			UPSTREAM	DOWNSTREAM
Road:	Richmond Road	**Easting (X):**		
Crossroad:		**Northing (Y):**		
Drainage Area:		**Elevation (Z):**		
City:	Ottawa			
Location:	Parking Lot	**GPS Accuracy:**		
Owner:	COD	**Coordinate System:**		
Road segment:		**Vertical Datum:**		

Pipe characteristics

Sewer Use:	Sanitary	**Inspected length:**	17.8
Height:	200	**Total length:**	18
Width:		**Rim/Inv.:**	
Shape:	Circular	**Grade/Inv.:**	
Material:	Asbestos Cement	**Rim/Grade:**	
Lining:		**Rim/Inv.:**	
Joint length:	4	**Grade/Inv.:**	
Year laid:		**Rim/Grade:**	
Year renewed:		**Sewer category:**	

Additional details

Inspection standard:	PACP 6.0	**Location details:**	
Date:	22/06/2026, 10:34 AM	**Surveyed by:**	Jonathan Larocque
Project Number:	1480 Richmond Road	**Certificate #:**	U06180703002189
Customer:	COD-153600	**Pre-Cleaning:**	Jetting
PO number:		**Date cleaned:**	
Work order:	153600	**Unit of measurement:**	Metric
Purpose:	Pre-Acceptance	**Media label:**	
Weather:	Dry	**Sheet #:**	
Flow control:	Not Controlled		

Structural rating		O&M rating		Overall rating	
Peak:	0	**Peak:**	4	**Peak:**	4
Quick rating:	0000	**Quick rating:**	4126	**Quick rating:**	4126
Score:	0	**Score:**	16	**Score:**	16
Index:	0	**Index:**	2.3	**Index:**	2.3

Additional information

Other information

Report ID:	153600SA1	**Information 6:**	
Information 2:		**Information 7:**	
Information 3:		**Information 8:**	
Information 4:		**Information 9:**	
Information 5:		**Information 10:**	

4. Pipe summary and condition details

1 / 1

Upstream
SAN MH 1

Invert
NA

1 **0.00 m**

AMH - Manhole, SAN MH 1

2 **0.00 m**

MWL - Water Level, 5%

3 **5.10 m** **4**

LL - Alignment Left, 25%

4 **7.90 m** **2**

(S01) DAGS - Deposits Attached Grease, from 10 o'clock to 3 o'clock, 5%

5 **15.90 m** **2**

(F01) DAGS - Deposits Attached Grease, from 10 o'clock to 3 o'clock, 5%

6 **16.10 m** **2**

DAGS - Deposits Attached Grease, from 4 o'clock to 8 o'clock, 10%

7 **17.80 m**

AEP - End of Pipe, MAIN

Invert
NA

Downstream
MAIN

4. Pipe summary and condition details

Pipe identification

Pipe:	SAN MH 3 SAN MH 1	**Direction of inspection:**	SAN MH 3 --> SAN MH 1
Direction of flow:	SAN MH 3 --> SAN MH 1	**Direction:**	Direction of flow

Pipe location

			UPSTREAM	DOWNSTREAM
Road:	Richmond Road	**Easting (X):**		
Crossroad:		**Northing (Y):**		
Drainage Area:		**Elevation (Z):**		
City:	Ottawa			
Location:	Parking Lot	**GPS Accuracy:**		
Owner:	COD	**Coordinate System:**		
Road segment:		**Vertical Datum:**		

Pipe characteristics

Sewer Use:	Sanitary	**Inspected length:**	20.9
Height:	200	**Total length:**	65
Width:		**Rim/Inv.:**	
Shape:	Circular	**Grade/Inv.:**	
Material:	Asbestos Cement	**Rim/Grade:**	
Lining:		**Rim/Inv.:**	
Joint length:	4	**Grade/Inv.:**	
Year laid:		**Rim/Grade:**	
Year renewed:		**Sewer category:**	

Additional details

Inspection standard:	PACP 6.0	**Location details:**	
Date:	22/06/2026, 9:52 AM	**Surveyed by:**	Jonathan Larocque
Project Number:	1480 Richmond Road	**Certificate #:**	U06180703002189
Customer:	COD-153600	**Pre-Cleaning:**	Jetting
PO number:		**Date cleaned:**	
Work order:	153600	**Unit of measurement:**	Metric
Purpose:	Pre-Acceptance	**Media label:**	
Weather:	Dry	**Sheet #:**	
Flow control:	Not Controlled		

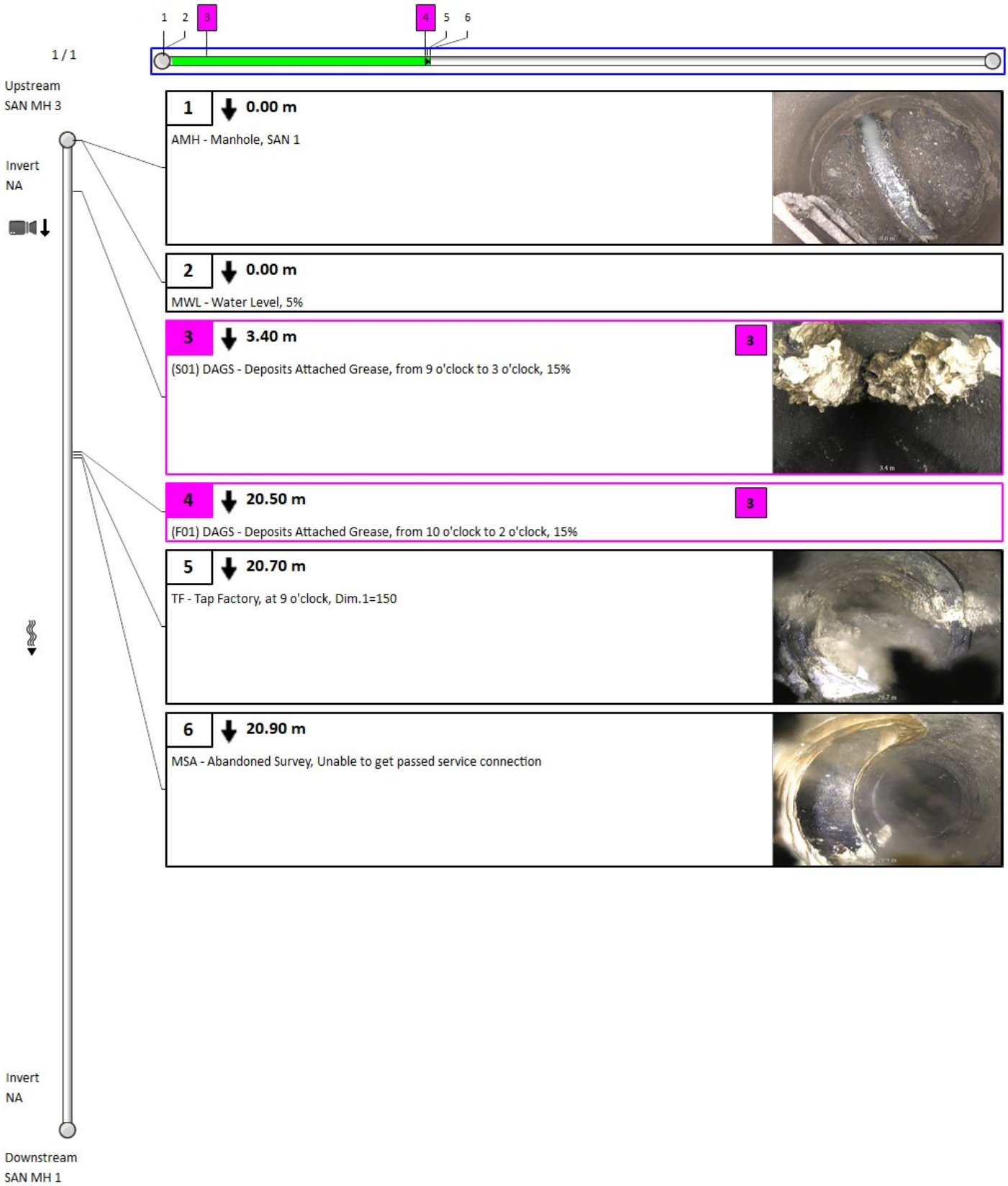
Structural rating		O&M rating		Overall rating	
Peak:	0	**Peak:**	3	**Peak:**	3
Quick rating:	0000	**Quick rating:**	3A00	**Quick rating:**	3A00
Score:	0	**Score:**	33	**Score:**	33
Index:	0	**Index:**	3	**Index:**	3

Additional information

Other information

Report ID:	153600SA1	**Information 6:**	
Information 2:		**Information 7:**	
Information 3:		**Information 8:**	
Information 4:		**Information 9:**	
Information 5:		**Information 10:**	

4. Pipe summary and condition details



4. Pipe summary and condition details

Pipe identification

Pipe:	SAN MH 3 SAN MH 1	**Direction of inspection:**	SAN MH 1 --> SAN MH 3
Direction of flow:	SAN MH 3 --> SAN MH 1	**Direction:**	Against flow

Pipe location

			UPSTREAM	DOWNSTREAM
Road:	Richmond Road	**Easting (X):**		
Crossroad:		**Northing (Y):**		
Drainage Area:		**Elevation (Z):**		
City:	Ottawa			
Location:	Parking Lot	**GPS Accuracy:**		
Owner:	COD	**Coordinate System:**		
Road segment:		**Vertical Datum:**		

Pipe characteristics

Sewer Use:	Sanitary	**Inspected length:**	31.5
Height:	200	**Total length:**	65
Width:		**Rim/Inv.:**	
Shape:	Circular	**Grade/Inv.:**	
Material:	Asbestos Cement	**Rim/Grade:**	
Lining:		**Rim/Inv.:**	
Joint length:	4	**Grade/Inv.:**	
Year laid:		**Rim/Grade:**	
Year renewed:		**Sewer category:**	

Additional details

Inspection standard:	PACP 6.0	**Location details:**	
Date:	22/06/2026, 10:18 AM	**Surveyed by:**	Jonathan Larocque
Project Number:	1480 Richmond Road	**Certificate #:**	U06180703002189
Customer:	COD-153600	**Pre-Cleaning:**	Jetting
PO number:		**Date cleaned:**	
Work order:	153600	**Unit of measurement:**	Metric
Purpose:	Pre-Acceptance	**Media label:**	
Weather:	Dry	**Sheet #:**	
Flow control:	Not Controlled		

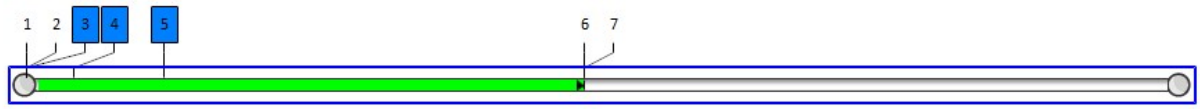
Structural rating		O&M rating		Overall rating	
Peak:	0	**Peak:**	2	**Peak:**	2
Quick rating:	0000	**Quick rating:**	2300	**Quick rating:**	2300
Score:	0	**Score:**	6	**Score:**	6
Index:	0	**Index:**	2	**Index:**	2

Additional information

Other information

Report ID:	153600SA1	**Information 6:**	
Information 2:		**Information 7:**	
Information 3:		**Information 8:**	
Information 4:		**Information 9:**	
Information 5:		**Information 10:**	

4. Pipe summary and condition details



1 / 1

Downstream
SAN MH 1

Invert
NA

1 **0.00 m**

AMH - Manhole, SAN 2

2 **0.00 m**

MWL - Water Level, 5%

3 **0.00 m** 2

DAGS - Deposits Attached Grease, at 6 o'clock, 5%

4 **2.70 m** 2

DAGS - Deposits Attached Grease, at 6 o'clock, 5%

5 **7.80 m** 2

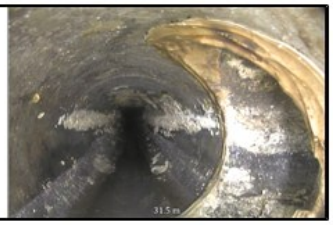
DAGS - Deposits Attached Grease, from 7 o'clock to 5 o'clock, 5%

6 **31.50 m**

TF - Tap Factory, at 3 o'clock, Dim.1=150

7 **31.50 m**

AEP - End of Pipe, Reversal complete



Invert
NA

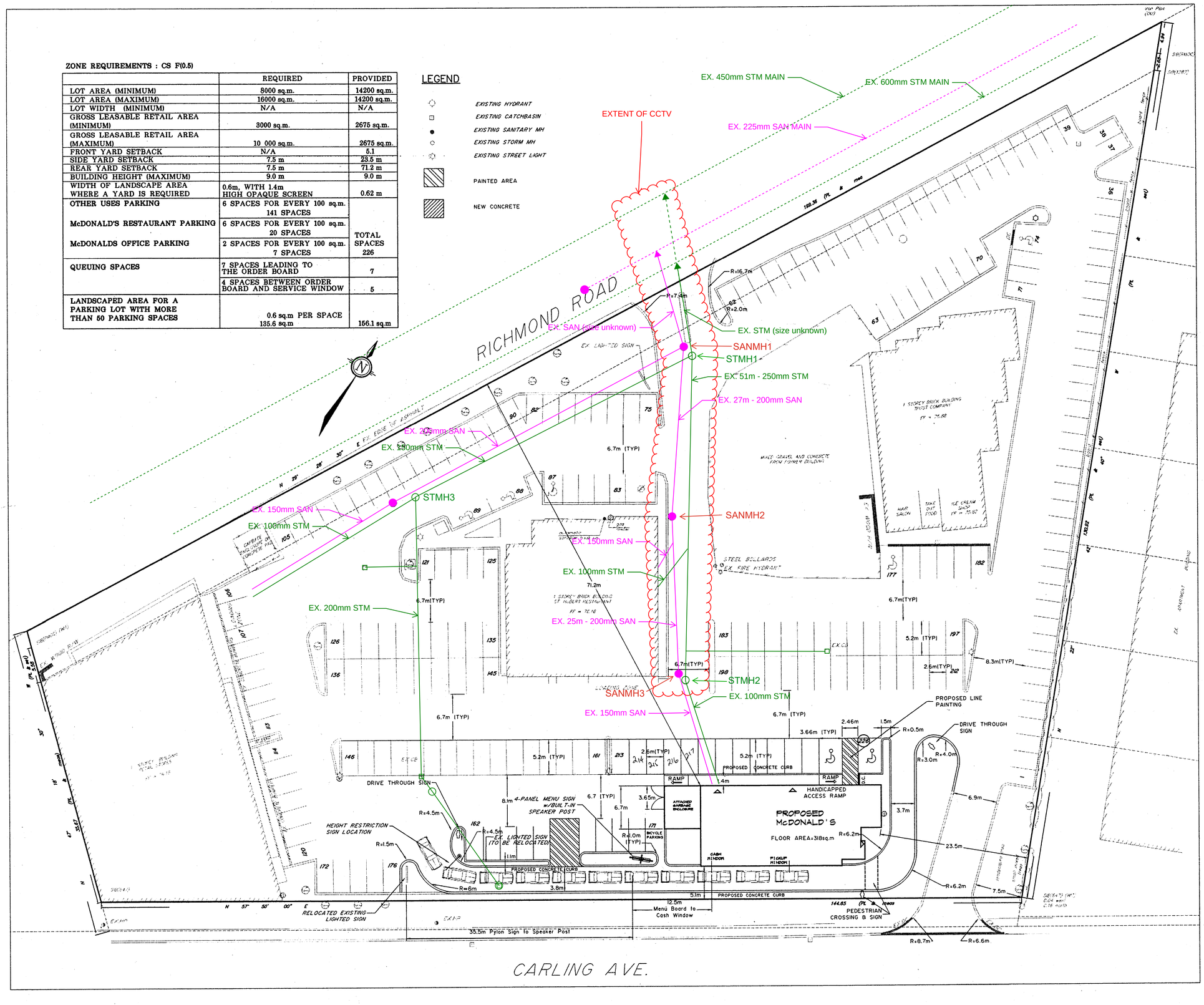
Upstream
SAN MH 3

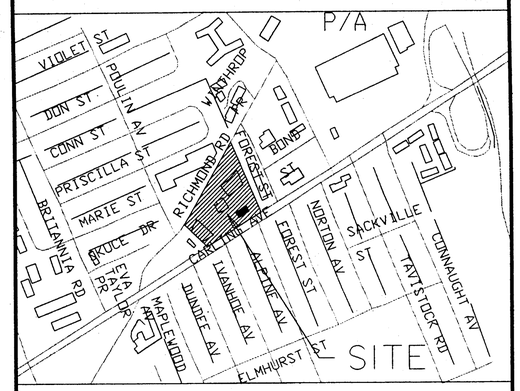
ZONE REQUIREMENTS : CS F(0.5)

	REQUIRED	PROVIDED
LOT AREA (MINIMUM)	8000 sq.m.	14200 sq.m.
LOT AREA (MAXIMUM)	16000 sq.m.	14200 sq.m.
LOT WIDTH (MINIMUM)	N/A	N/A
GROSS LEASABLE RETAIL AREA (MINIMUM)	3000 sq.m.	2675 sq.m.
GROSS LEASABLE RETAIL AREA (MAXIMUM)	10 000 sq.m.	2675 sq.m.
FRONT YARD SETBACK	N/A	5.1
SIDE YARD SETBACK	7.5 m	23.5 m
REAR YARD SETBACK	7.5 m	71.2 m
BUILDING HEIGHT (MAXIMUM)	9.0 m	9.0 m
WIDTH OF LANDSCAPE AREA WHERE A YARD IS REQUIRED	0.6m, WITH 1.4m HIGH OPAQUE SCREEN	0.62 m
OTHER USES PARKING	6 SPACES FOR EVERY 100 sq.m. 141 SPACES	
McDONALD'S RESTAURANT PARKING	6 SPACES FOR EVERY 100 sq.m. 20 SPACES	TOTAL SPACES 226
McDONALDS OFFICE PARKING	2 SPACES FOR EVERY 100 sq.m. 7 SPACES	
QUEUING SPACES	7 SPACES LEADING TO THE ORDER BOARD	7
	4 SPACES BETWEEN ORDER BOARD AND SERVICE WINDOW	5
LANDSCAPED AREA FOR A PARKING LOT WITH MORE THAN 50 PARKING SPACES	0.6 sq.m PER SPACE 135.6 sq.m	166.1 sq.m

LEGEND

- EXISTING HYDRANT
- EXISTING CATCHBASIN
- EXISTING SANITARY MH
- EXISTING STORM MH
- EXISTING STREET LIGHT
- PAINTED AREA
- NEW CONCRETE





KEY PLAN
N.T.S.

SITE PLAN

2625 Carling Ave.
City of Ottawa

Client:

Site Plan Revision For McDonald's Restaurants of Canada

Property Owner:

Toth Equity Limited

256 Rideau Street
Ottawa, Ontario
K1N 5Y3
Tel: (613) 241-6380 Fax: (613) 241-7812

0 5 10 15 20 25 50 metres
1 : 300

1:300

No.	REVISION	DATE	BY
6	REVISED AS PER CITY COMMENTS	JUNE 01/00	MC
5	REVISED AS PER CLIENT COMMENTS	MAY 10/00	GW
4	REVISED AS PER CITY COMMENTS	MAY 2/00	GW
3	ISSUED FOR CITY REVIEW	APR 11/00	GW
2	ISSUED FOR SITE PLAN APPLICATION: McDONALD'S RESTAURANT	FEB 21/00	MC
1	ISSUED FOR CLIENT REVIEW	FEB 15/00	MC

NOVATECH
CONSULTING ENGINEERS & PLANNERS
Suite 17, 77 Auriga Drive
Nepean, Ontario, Canada
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Facsimile (613)727-6972
Email: novainfo@novatech-eng.com

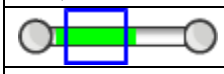
ISSUED
APRIL 2000

PROJECT No.
99183

DRAWING No.
99183-SP

Jun 22, 2000 - 15:59:33 DWG Name: J:\Nova\1999\99183\Sp\99183SP3.dwg Updated By: WLW

Vision Report© Legend

	The numbers sequentially identify each observation. They allow you to find complete descriptions and related photos throughout the pages. Note that when the pipe contains too many observations, the Vision© report hides the least important observations to optimize the display*.
60	A number with neither a square nor circle indicates a general observation.
	A circled number indicates a structural anomaly. The color of the circle indicates the severity of the anomaly on a scale of 1 to 5, 5 being the most severe: green=1, blue=2, magenta=3, orange=4 and red=5.
	A number in a square indicates an operation and maintenance anomaly. The color of the square indicates the severity of the anomaly on a scale of 1 to 5, 5 being the most severe: green=1, blue=2, magenta=3, orange=4 and red=5.
◀ 3 / 31 ▶	Indicates the current page number of the inspection report.
	The blue square indicates a section of the pipe; this section is covered in detail on the current page of the report.
	The green line indicates the inspected part of the pipe. The remaining white line indicates the uninspected part of the pipe.
	Indicates the hold points on the camera during an inspection.
	Indicates the hold points on the camera during the reverse inspection.
	Indicates that a reverse inspection was carried out, however the camera did not reach the initial inspection hold point. (the hold point of the initial inspection)
	Indicates that a reverse inspection was carried out and that it has joined (has arrived at) the initial inspection hold point.
401-059B	Identifies the start manhole number. Note that this manhole is not necessarily the upstream manhole of the pipe.
401-631	Identifies the end manhole number. Note that this manhole is not necessarily the downstream manhole of the pipe.
ou	A downward arrow indicates that the inspection was carried out in the direction of the current, whereas an upward arrow indicates an inspection against the current. Note that the manhole located on the upper left of the page is always the start manhole, but not necessarily the upstream manhole of the pipe.
	This camera followed by a downward arrow is located on the upper left of the vertical pipe; it indicates that an inspection was done from this manhole.
	When the second camera appears on the bottom left page it means that a reverse inspection was carried out. Information about the reverse inspection is included in the report, thereby combining both inspections.
Invert 3.40	The measurement shown under the word <Invert> indicates the measurements between the frame and the pipe captured during the inspection. This measurement is available at the top left for the start manhole and the bottom left for the end manhole. If the invert was not measured during the inspection, an <NA> mark will be displayed.
	The downward bold arrow to the right of the observation number indicates that this observation was captured during the initial inspection.
	The blank arrow pointing upwards and located to the right of the observation number indicates that this observation was taken during the reverse inspection period, thereby confirming that this report combined both inspections.
18.40 m	Located to the right of the observation number is a number identifying the observation distance in relation to the start of the pipe.
SRV - Armature visible	A full description of the observation code according to the protocol used.

*Any hidden observations are readily accessible from the database as well as in other CTSpec report templates.

** CTSpec inc. reserves the right to modify, eliminate or add to the product features described in this pamphlet without notice.

Vision Report© Legend

	The numbers sequentially identify each observation. They allow you to find complete descriptions and related photos throughout the pages. Note that when the pipe contains too many observations, the Vision© report hides the least important observations to optimize the display*.
60	A number with neither a square nor circle indicates a general observation.
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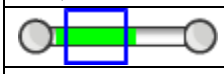
	A number in a square indicates an operation and maintenance anomaly. The color of the square indicates the severity of the anomaly on a scale of 1 to 5, 5 being the most severe: green=1, blue=2, magenta=3, orange=4 and red=5.
◀ 3 / 31 ▶	Indicates the current page number of the inspection report.
	The blue square indicates a section of the pipe; this section is covered in detail on the current page of the report.
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401-059B	Identifies the start manhole number. Note that this manhole is not necessarily the upstream manhole of the pipe.
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ou	A downward arrow indicates that the inspection was carried out in the direction of the current, whereas an upward arrow indicates an inspection against the current. Note that the manhole located on the upper left of the page is always the start manhole, but not necessarily the upstream manhole of the pipe.
	This camera followed by a downward arrow is located on the upper left of the vertical pipe; it indicates that an inspection was done from this manhole.
	When the second camera appears on the bottom left page it means that a reverse inspection was carried out. Information about the reverse inspection is included in the report, thereby combining both inspections.
Invert 3.40	The measurement shown under the word <Invert> indicates the measurements between the frame and the pipe captured during the inspection. This measurement is available at the top left for the start manhole and the bottom left for the end manhole. If the invert was not measured during the inspection, an <NA> mark will be displayed.
	The downward bold arrow to the right of the observation number indicates that this observation was captured during the initial inspection.
	The blank arrow pointing upwards and located to the right of the observation number indicates that this observation was taken during the reverse inspection period, thereby confirming that this report combined both inspections.
18.40 m	Located to the right of the observation number is a number identifying the observation distance in relation to the start of the pipe.
SRV - Armature visible	A full description of the observation code according to the protocol used.

*Any hidden observations are readily accessible from the database as well as in other CTSpec report templates.

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1.866.695.0155

CLEAN WATER WORKS INC.

INTEGRATED SEWER SOLUTIONS

1480 RICHMOND RD

Ottawa, Ontario

SEWER CCTV INSPECTION REPORT

Report ID
153600ST1

Sewer Use
Storm

Completion Date
June 22, 2026

Inspected Length
132.60 meters

Table of contents

1. Index of pipes

4 items

Pipe	Upstream	Downstream	Street	Date	Direction	Height	Inspected	Total	Page
BUILDING STORM	C.O.	MAIN	Richmond Road	22/06/2026, 12:12 PM	D - Downstream	100	10.3	10.3	5
STM MH 1 MAIN	STM MH 1	MAIN	Richmond Road	22/06/2026, 11:16 AM	D - Downstream	250	32.5	32.5	7
STM MH 2 STM MH 1	STM MH 2	STM MH 1	Richmond Road	22/06/2026, 11:24 AM	U - Upstream	250	52	52	9
STM MH 3 STM MH 1	STM MH 3	STM MH 1	Richmond Road	22/06/2026, 11:12 AM	D - Downstream	300	37.8	47.6	11
							Total: 132.6	Total: 142.4	

2. Structural rating

4 items

1 - Minor defect grade (1 of 4 items)

Score	Quick	Index	Pipe	Start/End	Direction	Street	Page
1	1100	1	STM MH 1 MAIN	STM MH 1 --> MAIN	Direction of flow	Richmond Road	7

0 - No Defects (3 of 4 items)

Score	Quick	Index	Pipe	Start/End	Direction	Street	Page
0	0000	0	BUILDING STORM	C.O. --> MAIN	Direction of flow	Richmond Road	5
0	0000	0	STM MH 2 STM MH 1	STM MH 1 --> STM MH 2	Against flow	Richmond Road	9
0	0000	0	STM MH 3 STM MH 1	STM MH 3 --> STM MH 1	Direction of flow	Richmond Road	11

3. O&M rating

4 items

4 - Significant (2 of 4 items)

Score	Quick	Index	Structural	Pipe	Start/End	Direction	Street	Page
8	4200	4	0	BUILDING STORM	C.O. --> MAIN	Direction of flow	Richmond Road	5
4	4100	4	1	STM MH 1 MAIN	STM MH 1 --> MAIN	Direction of flow	Richmond Road	7

2 - Minor to Moderate (1 of 4 items)

Score	Quick	Index	Structural	Pipe	Start/End	Direction	Street	Page
2	2100	2	0	STM MH 3 STM MH 1	STM MH 3 --> STM MH 1	Direction of flow	Richmond Road	11

0 - No Defects (1 of 4 items)

Score	Quick	Index	Structural	Pipe	Start/End	Direction	Street	Page
0	0000	0	0	STM MH 2 STM MH 1	STM MH 1 --> STM MH 2	Against flow	Richmond Road	9

4. Pipe summary and condition details

Pipe identification

Pipe:	BUILDING STORM	**Direction of inspection:**	C.O. --> MAIN
Direction of flow:	C.O. --> MAIN	**Direction:**	Direction of flow

Pipe location

			UPSTREAM	DOWNSTREAM
Road:	Richmond Road	**Easting (X):**		
Crossroad:		**Northing (Y):**		
Drainage Area:		**Elevation (Z):**		
City:	Ottawa			
Location:	Building	**GPS Accuracy:**		
Owner:	COD	**Coordinate System:**		
Road segment:		**Vertical Datum:**		

Pipe characteristics

Sewer Use:	Stormwater	**Inspected length:**	10.3
Height:	100	**Total length:**	10.3
Width:		**Rim/Inv.:**	
Shape:	Circular	**Grade/Inv.:**	
Material:	Cast Iron	**Rim/Grade:**	
Lining:		**Rim/Inv.:**	
Joint length:		**Grade/Inv.:**	
Year laid:		**Rim/Grade:**	
Year renewed:		**Sewer category:**	

Additional details

Inspection standard:	PACP 6.0	**Location details:**	
Date:	22/06/2026, 12:12 PM	**Surveyed by:**	Jonathan Larocque
Project Number:	1480 Richmond Road	**Certificate #:**	U06180703002189
Customer:	COD-153600	**Pre-Cleaning:**	No Pre-Cleaning
PO number:		**Date cleaned:**	
Work order:	153600	**Unit of measurement:**	Metric
Purpose:	Pre-Acceptance	**Media label:**	
Weather:	Dry	**Sheet #:**	
Flow control:	Not Controlled		

Structural rating		O&M rating		Overall rating	
Peak:	0	**Peak:**	4	**Peak:**	4
Quick rating:	0000	**Quick rating:**	4200	**Quick rating:**	4200
Score:	0	**Score:**	8	**Score:**	8
Index:	0	**Index:**	4	**Index:**	4

Additional information

Other information

Report ID:	153600ST1	**Information 6:**	
Information 2:		**Information 7:**	
Information 3:		**Information 8:**	
Information 4:		**Information 9:**	
Information 5:		**Information 10:**	

4. Pipe summary and condition details

1 / 1

Upstream
C.O.

Invert
NA

1 **0.00 m**

ACOH - Cleanout House

2 **0.00 m**

MWL - Water Level, 0%

3 **1.50 m**

TF - Tap Factory, at 3 o'clock, Dim.1=150

4 **2.00 m** 4

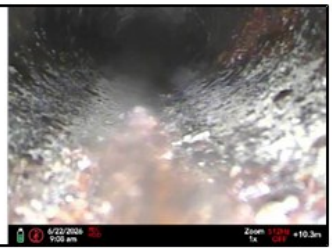
LR - Alignment Right, 50%

5 **9.00 m** 4

LD - Alignment Down, 50%

6 **10.30 m**

MSA - Abandoned Survey, Unable to push mini cam further



Invert
NA

Downstream
MAIN

4. Pipe summary and condition details

Pipe identification

Pipe:	STM MH 1 MAIN	**Direction of inspection:**	STM MH 1 --> MAIN
Direction of flow:	STM MH 1 --> MAIN	**Direction:**	Direction of flow

Pipe location

			UPSTREAM	DOWNSTREAM
Road:	Richmond Road	**Easting (X):**		
Crossroad:		**Northing (Y):**		
Drainage Area:		**Elevation (Z):**		
City:	Ottawa			
Location:	Parking Lot	**GPS Accuracy:**		
Owner:	COD	**Coordinate System:**		
Road segment:		**Vertical Datum:**		

Pipe characteristics

Sewer Use:	Stormwater	**Inspected length:**	32.5
Height:	250	**Total length:**	32.5
Width:		**Rim/Inv.:**	
Shape:	Circular	**Grade/Inv.:**	
Material:	Polyvinyl Chloride	**Rim/Grade:**	
Lining:		**Rim/Inv.:**	
Joint length:	4	**Grade/Inv.:**	
Year laid:		**Rim/Grade:**	
Year renewed:		**Sewer category:**	

Additional details

Inspection standard:	PACP 6.0	**Location details:**	
Date:	22/06/2026, 11:16 AM	**Surveyed by:**	Jonathan Larocque
Project Number:	1480 Richmond Road	**Certificate #:**	U06180703002189
Customer:	COD-153600	**Pre-Cleaning:**	Jetting
PO number:		**Date cleaned:**	
Work order:	153600	**Unit of measurement:**	Metric
Purpose:	Pre-Acceptance	**Media label:**	
Weather:	Dry	**Sheet #:**	
Flow control:	Not Controlled		

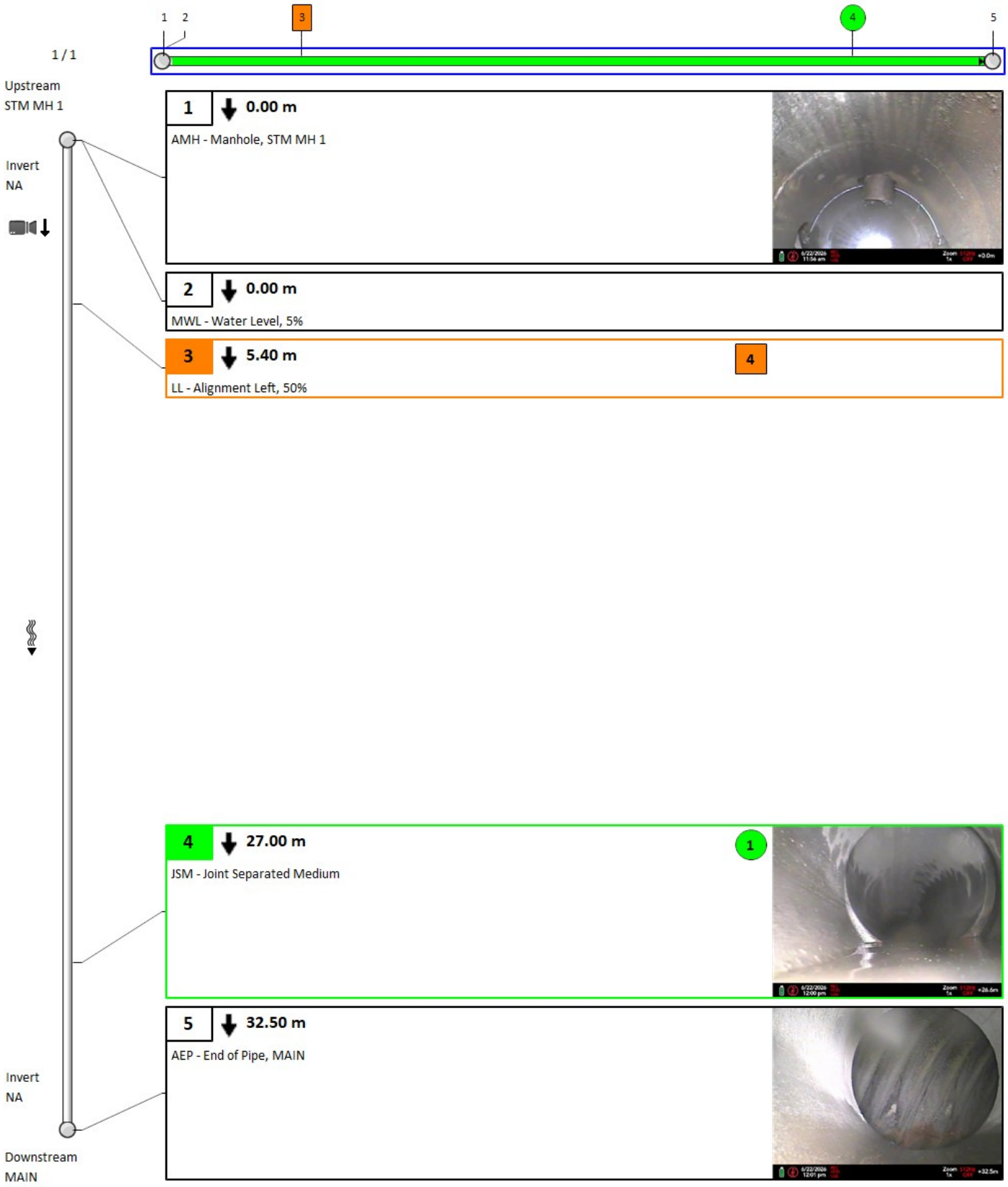
Structural rating		O&M rating		Overall rating	
Peak:	1	**Peak:**	4	**Peak:**	4
Quick rating:	1100	**Quick rating:**	4100	**Quick rating:**	4111
Score:	1	**Score:**	4	**Score:**	5
Index:	1	**Index:**	4	**Index:**	2.5

Additional information

Other information

Report ID:	153600ST1	**Information 6:**	
Information 2:		**Information 7:**	
Information 3:		**Information 8:**	
Information 4:		**Information 9:**	
Information 5:		**Information 10:**	

4. Pipe summary and condition details



4. Pipe summary and condition details

Pipe identification

Pipe:	STM MH 2 STM MH 1	**Direction of inspection:**	STM MH 1 --> STM MH 2
Direction of flow:	STM MH 2 --> STM MH 1	**Direction:**	Against flow

Pipe location

			UPSTREAM	DOWNSTREAM
Road:	Richmond Road	**Easting (X):**		
Crossroad:		**Northing (Y):**		
Drainage Area:		**Elevation (Z):**		
City:	Ottawa			
Location:	Parking Lot	**GPS Accuracy:**		
Owner:	COD	**Coordinate System:**		
Road segment:		**Vertical Datum:**		

Pipe characteristics

Sewer Use:	Stormwater	**Inspected length:**	52
Height:	250	**Total length:**	52
Width:		**Rim/Inv.:**	
Shape:	Circular	**Grade/Inv.:**	
Material:	Asbestos Cement	**Rim/Grade:**	
Lining:		**Rim/Inv.:**	
Joint length:	4	**Grade/Inv.:**	
Year laid:		**Rim/Grade:**	
Year renewed:		**Sewer category:**	

Additional details

Inspection standard:	PACP 6.0	**Location details:**	
Date:	22/06/2026, 11:24 AM	**Surveyed by:**	Jonathan Larocque
Project Number:	1480 Richmond Road	**Certificate #:**	U06180703002189
Customer:	COD-153600	**Pre-Cleaning:**	Jetting
PO number:		**Date cleaned:**	
Work order:	153600	**Unit of measurement:**	Metric
Purpose:	Pre-Acceptance	**Media label:**	
Weather:	Dry	**Sheet #:**	
Flow control:	Not Controlled		

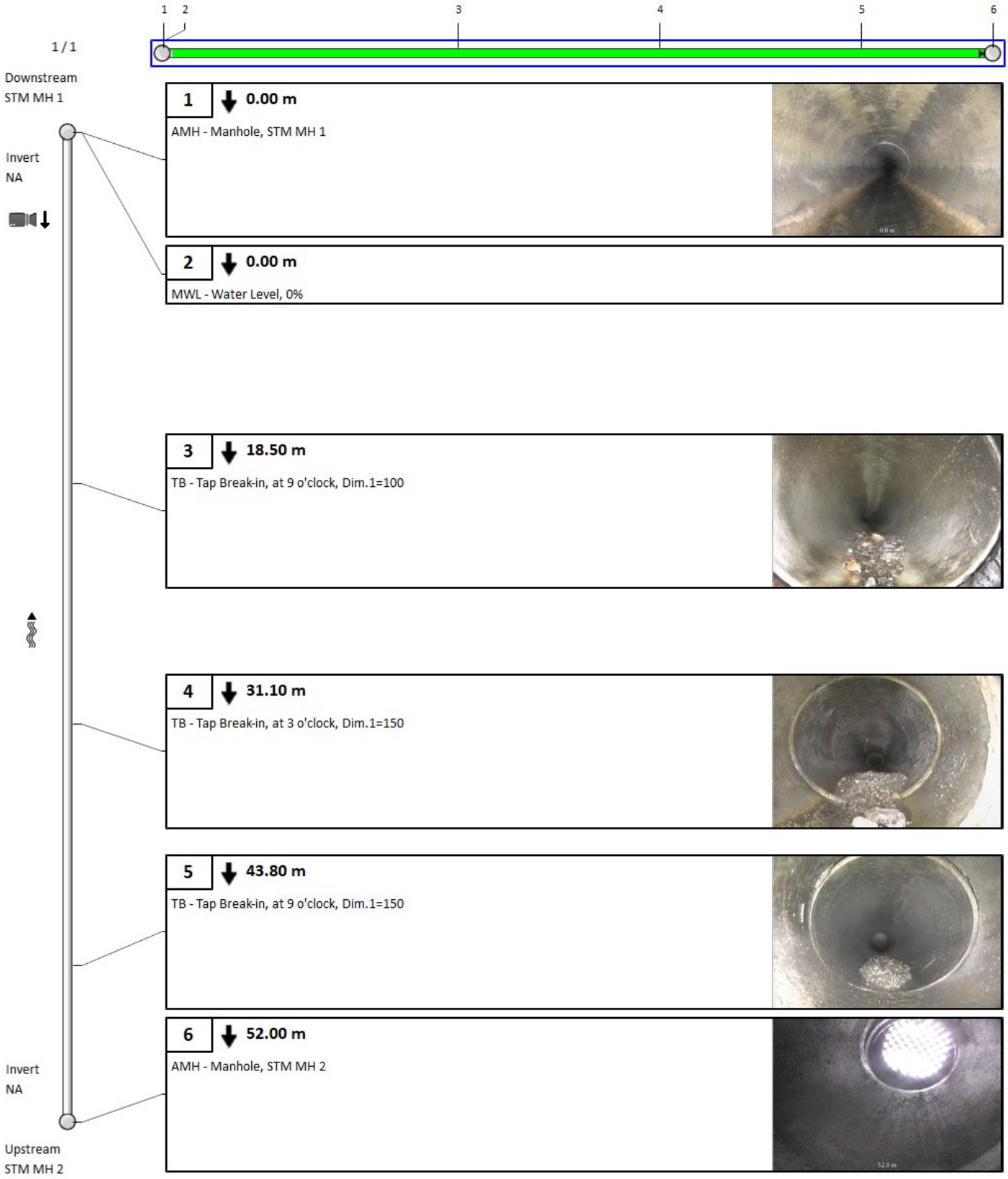
Structural rating		O&M rating		Overall rating	
Peak:	0	**Peak:**	0	**Peak:**	0
Quick rating:	0000	**Quick rating:**	0000	**Quick rating:**	0000
Score:	0	**Score:**	0	**Score:**	0
Index:	0	**Index:**	0	**Index:**	0

Additional information

Other information

Report ID:	153600ST1	**Information 6:**	
Information 2:		**Information 7:**	
Information 3:		**Information 8:**	
Information 4:		**Information 9:**	
Information 5:		**Information 10:**	

4. Pipe summary and condition details



4. Pipe summary and condition details

Pipe identification

Pipe:	STM MH 3 STM MH 1	**Direction of inspection:**	STM MH 3 --> STM MH 1
Direction of flow:	STM MH 3 --> STM MH 1	**Direction:**	Direction of flow

Pipe location

Road:	Richmond Road		
Crossroad:		UPSTREAM	DOWNSTREAM
Drainage Area:		**Easting (X):**	**Easting (X):**
City:	Ottawa	**Northing (Y):**	**Northing (Y):**
Location:	Parking Lot	**Elevation (Z):**	**Elevation (Z):**
Owner:	COD	**GPS Accuracy:**	
Road segment:		**Coordinate System:**	
		Vertical Datum:	

Pipe characteristics

Sewer Use:	Stormwater	**Inspected length:**	37.8
Height:	300	**Total length:**	47.6
Width:		**Rim/Inv.:**	
Shape:	Circular	**Grade/Inv.:**	
Material:	Asbestos Cement	**Rim/Grade:**	
Lining:		**Rim/Inv.:**	
Joint length:	4	**Grade/Inv.:**	
Year laid:		**Rim/Grade:**	
Year renewed:		**Sewer category:**	

Additional details

Inspection standard:	PACP 6.0	**Location details:**	
Date:	22/06/2026, 11:12 AM	**Surveyed by:**	Jonathan Larocque
Project Number:	1480 Richmond Road	**Certificate #:**	U06180703002189
Customer:	COD-153600	**Pre-Cleaning:**	No Pre-Cleaning
PO number:		**Date cleaned:**	
Work order:	153600	**Unit of measurement:**	Metric
Purpose:	Pre-Acceptance	**Media label:**	
Weather:	Dry	**Sheet #:**	
Flow control:	Not Controlled		

Structural rating		O&M rating		Overall rating	
Peak:	0	**Peak:**	2	**Peak:**	2
Quick rating:	0000	**Quick rating:**	2100	**Quick rating:**	2100
Score:	0	**Score:**	2	**Score:**	2
Index:	0	**Index:**	2	**Index:**	2

Additional information

Other information

Report ID:	153600ST1	**Information 6:**	
Information 2:		**Information 7:**	
Information 3:		**Information 8:**	
Information 4:		**Information 9:**	
Information 5:		**Information 10:**	

4. Pipe summary and condition details

1 / 1

Upstream
STM MH 3

Invert
NA

1 **0.00 m**

AMH - Manhole, STM MH 3

2 **0.00 m**

MWL - Water Level, 0%

3 **36.70 m** **2**

DSC - Deposits Settled Compacted, from 4 o'clock to 8 o'clock, 10%

4 **37.80 m**

MSA - Abandoned Survey, Debris cannot go further

Invert
NA

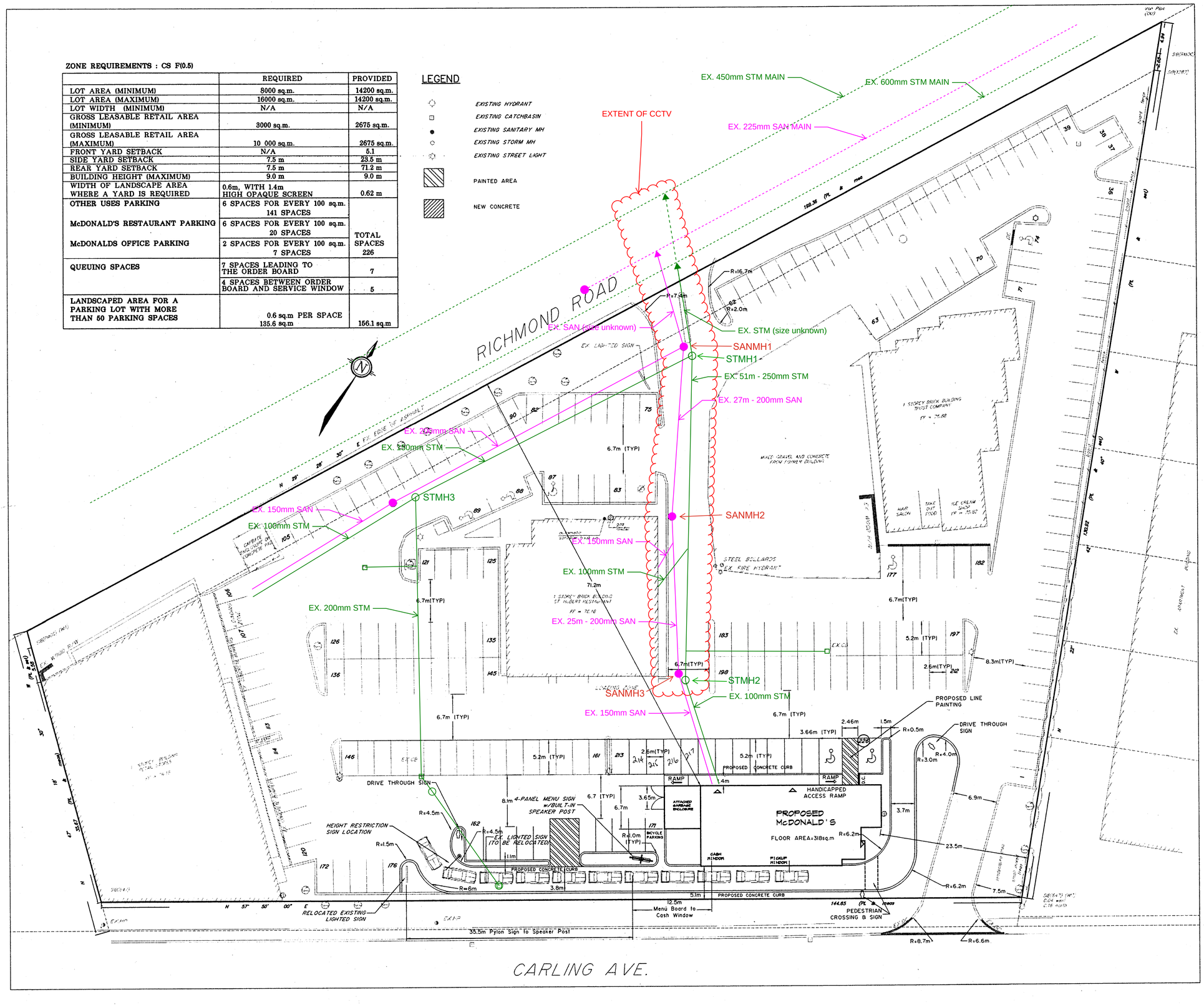
Downstream
STM MH 1

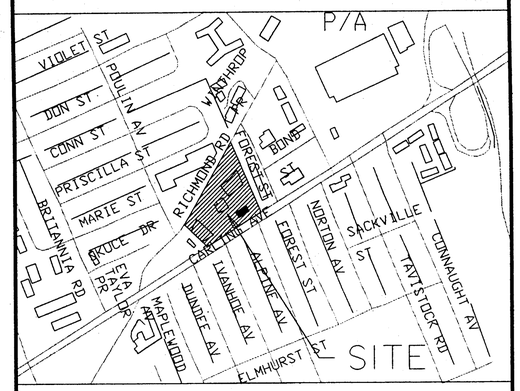
ZONE REQUIREMENTS : CS F(0.5)

	REQUIRED	PROVIDED
LOT AREA (MINIMUM)	8000 sq.m.	14200 sq.m.
LOT AREA (MAXIMUM)	16000 sq.m.	14200 sq.m.
LOT WIDTH (MINIMUM)	N/A	N/A
GROSS LEASABLE RETAIL AREA (MINIMUM)	3000 sq.m.	2675 sq.m.
GROSS LEASABLE RETAIL AREA (MAXIMUM)	10 000 sq.m.	2675 sq.m.
FRONT YARD SETBACK	N/A	5.1
SIDE YARD SETBACK	7.5 m	23.5 m
REAR YARD SETBACK	7.5 m	71.2 m
BUILDING HEIGHT (MAXIMUM)	9.0 m	9.0 m
WIDTH OF LANDSCAPE AREA WHERE A YARD IS REQUIRED	0.6m, WITH 1.4m HIGH OPAQUE SCREEN	0.62 m
OTHER USES PARKING	6 SPACES FOR EVERY 100 sq.m. 141 SPACES	
McDONALD'S RESTAURANT PARKING	6 SPACES FOR EVERY 100 sq.m. 20 SPACES	TOTAL SPACES 226
McDONALDS OFFICE PARKING	2 SPACES FOR EVERY 100 sq.m. 7 SPACES	
QUEUING SPACES	7 SPACES LEADING TO THE ORDER BOARD	7
	4 SPACES BETWEEN ORDER BOARD AND SERVICE WINDOW	5
LANDSCAPED AREA FOR A PARKING LOT WITH MORE THAN 50 PARKING SPACES	0.6 sq.m PER SPACE 135.6 sq.m	166.1 sq.m

LEGEND

- EXISTING HYDRANT
- EXISTING CATCHBASIN
- EXISTING SANITARY MH
- EXISTING STORM MH
- EXISTING STREET LIGHT
- PAINTED AREA
- NEW CONCRETE





KEY PLAN
N.T.S.

SITE PLAN

2625 Carling Ave.
City of Ottawa

Client:

Site Plan Revision For McDonald's Restaurants of Canada

Property Owner:

Toth Equity Limited

256 Rideau Street
Ottawa, Ontario
K1N 5Y3
Tel: (613) 241-6380 Fax: (613) 241-7812

0 5 10 15 20 25 50 metres
1 : 300

1:300

No.	REVISION	DATE	BY
6	REVISED AS PER CITY COMMENTS	JUNE 01/00	MC
5	REVISED AS PER CLIENT COMMENTS	MAY 10/00	GW
4	REVISED AS PER CITY COMMENTS	MAY 2/00	GW
3	ISSUED FOR CITY REVIEW	APR 11/00	GW
2	ISSUED FOR SITE PLAN APPLICATION: McDONALD'S RESTAURANT	FEB 21/00	MC
1	ISSUED FOR CLIENT REVIEW	FEB 15/00	MC

NOVATECH
CONSULTING ENGINEERS & PLANNERS
Suite 17, 77 Auriga Drive
Nepean, Ontario, Canada
K2E 7Z7
Telephone (613)727-1658
Facsimile (613)727-6972
Email: novainfo@novatech-eng.com

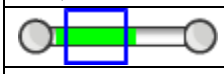
ISSUED
APRIL 2000

PROJECT No.
99183

DRAWING No.
99183-SP

Jun 22, 2000 - 15:59:33 DWG Name: J:\Nova\1999\99183\Sp\99183SP3.dwg Updated By: WLW

Vision Report© Legend

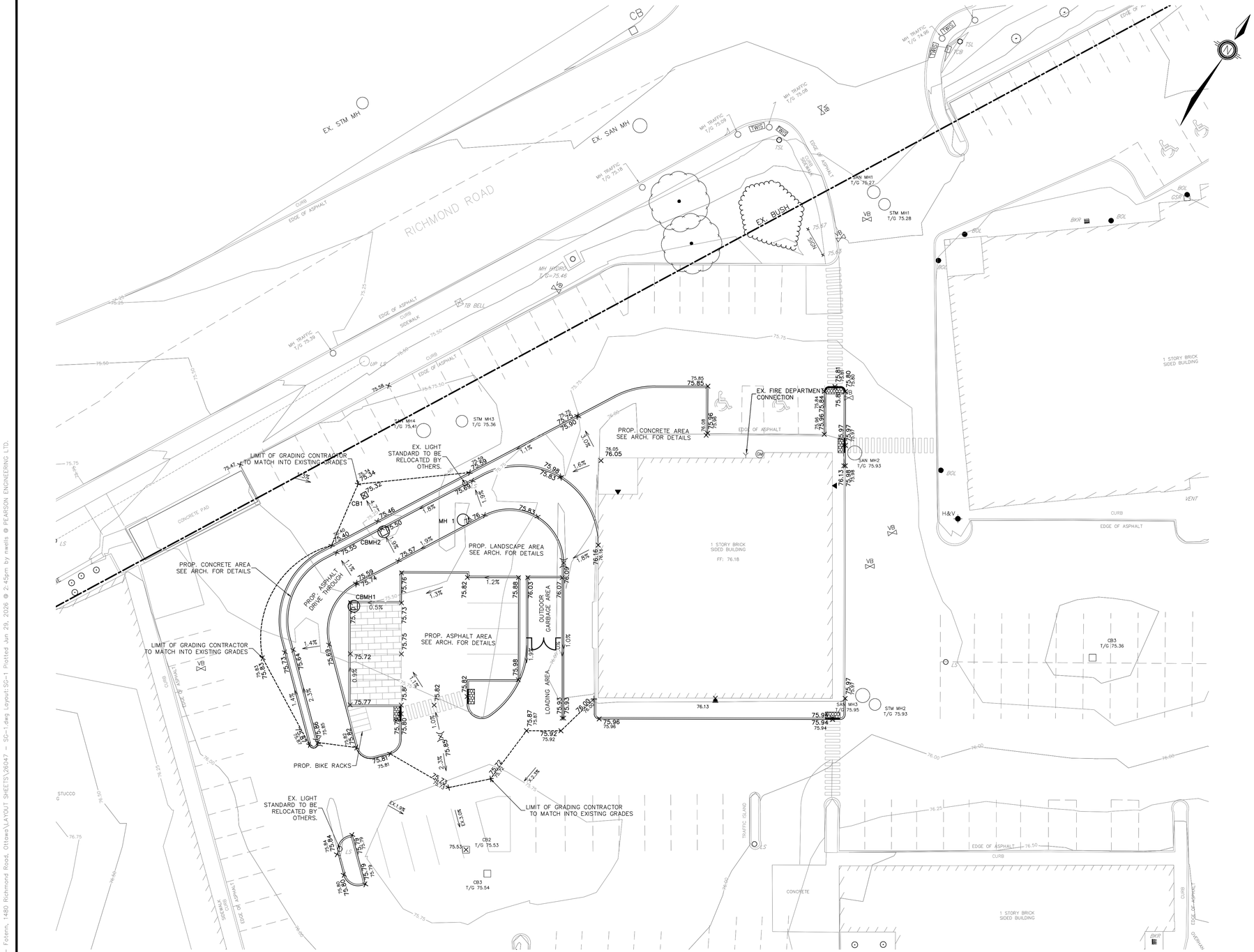
	The numbers sequentially identify each observation. They allow you to find complete descriptions and related photos throughout the pages. Note that when the pipe contains too many observations, the Vision© report hides the least important observations to optimize the display*.
60	A number with neither a square nor circle indicates a general observation.
	A circled number indicates a structural anomaly. The color of the circle indicates the severity of the anomaly on a scale of 1 to 5, 5 being the most severe: green=1, blue=2, magenta=3, orange=4 and red=5.
	A number in a square indicates an operation and maintenance anomaly. The color of the square indicates the severity of the anomaly on a scale of 1 to 5, 5 being the most severe: green=1, blue=2, magenta=3, orange=4 and red=5.
◀ 3 / 31 ▶	Indicates the current page number of the inspection report.
	The blue square indicates a section of the pipe; this section is covered in detail on the current page of the report.
	The green line indicates the inspected part of the pipe. The remaining white line indicates the uninspected part of the pipe.
	Indicates the hold points on the camera during an inspection.
	Indicates the hold points on the camera during the reverse inspection.
	Indicates that a reverse inspection was carried out, however the camera did not reach the initial inspection hold point. (the hold point of the initial inspection)
	Indicates that a reverse inspection was carried out and that it has joined (has arrived at) the initial inspection hold point.
401-059B	Identifies the start manhole number. Note that this manhole is not necessarily the upstream manhole of the pipe.
401-631	Identifies the end manhole number. Note that this manhole is not necessarily the downstream manhole of the pipe.
ou	A downward arrow indicates that the inspection was carried out in the direction of the current, whereas an upward arrow indicates an inspection against the current. Note that the manhole located on the upper left of the page is always the start manhole, but not necessarily the upstream manhole of the pipe.
	This camera followed by a downward arrow is located on the upper left of the vertical pipe; it indicates that an inspection was done from this manhole.
	When the second camera appears on the bottom left page it means that a reverse inspection was carried out. Information about the reverse inspection is included in the report, thereby combining both inspections.
Invert 3.40	The measurement shown under the word <Invert> indicates the measurements between the frame and the pipe captured during the inspection. This measurement is available at the top left for the start manhole and the bottom left for the end manhole. If the invert was not measured during the inspection, an <NA> mark will be displayed.
	The downward bold arrow to the right of the observation number indicates that this observation was captured during the initial inspection.
	The blank arrow pointing upwards and located to the right of the observation number indicates that this observation was taken during the reverse inspection period, thereby confirming that this report combined both inspections.
18.40 m	Located to the right of the observation number is a number identifying the observation distance in relation to the start of the pipe.
SRV - Armature visible	A full description of the observation code according to the protocol used.

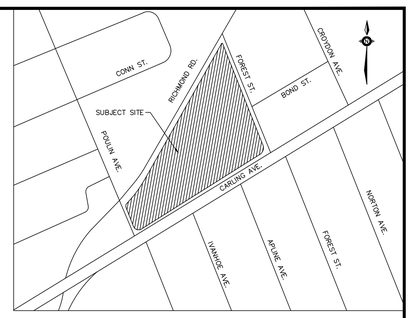
*Any hidden observations are readily accessible from the database as well as in other CTSpec report templates.

** CTSpec inc. reserves the right to modify, eliminate or add to the product features described in this pamphlet without notice.

Appendix G

Pearson Engineering Drawings





KEY MAP
NTS

LEGEND

- CB — PROPOSED CATCH BASIN
- CB — EXISTING CATCH BASIN
- STM DCB — PROPOSED DOUBLE CATCH BASIN
- MH — PROPOSED STORM MANHOLE
- STM MH — EXISTING STORM MANHOLE
- SAN MH — PROPOSED SANITARY MANHOLE
- SAN MH — EXISTING SANITARY MANHOLE
- HYD. — PROPOSED FIRE HYDRANT
- EX. H&V — EXISTING FIRE HYDRANT
- VB — PROP. WATER VALVE
- VB — EX. WATER VALVE
- 254.63 — PROPOSED ELEVATION
- 254.09 — EXISTING ELEVATION
- 1.5% — PROPOSED DIRECTION AND GRADE
- PROP. BACK OF CURB
- PROP. EDGE OF PAVEMENT
- PROP. CURB CUT LOCATION
- EX. CURB CUT LOCATION
- HIGH POINT
- PROPERTY LINE
- LIMIT OF WORK
- PERSON DOOR
- PERMEABLE PAVERS WITH IMPERMEABLE LINER
- TACTILE WALKING SURFACE INDICTOR SEE ARCHITECTURE FOR DETAILS

NO.	REVISION NOTE	DATE	BY

BENCHMARK

BEARING NOTE
BEARINGS ARE GRID, DERIVED FROM THE CAN-NET VRS NETWORK OBSERVATIONS ON NCC HORIZONTAL CONTROL MONUMENTS 19773035 AND 19680191, CENTRAL MERIDIAN 76° 30' WEST LONGITUDE MTM ZONE 9. NAD83 (ORIGINAL)

19773035 N:5006060.42 E:324888.04
19680191 N:5033564.26 E:388064.94

VERTICAL DATUM NOTE
ELEVATIONS ARE REFERRED TO THE CANADIAN GEODETIC VERTICAL DATUM (CGVD-1928:1978) AND ARE DERIVED FROM THE CAN-NET VRS NETWORK - OTWA BASE STATION

LICENCED PROFESSIONAL ENGINEER
M.W. DEJEAN
90470626
Jun 29, 2026
PROVINCE OF ONTARIO

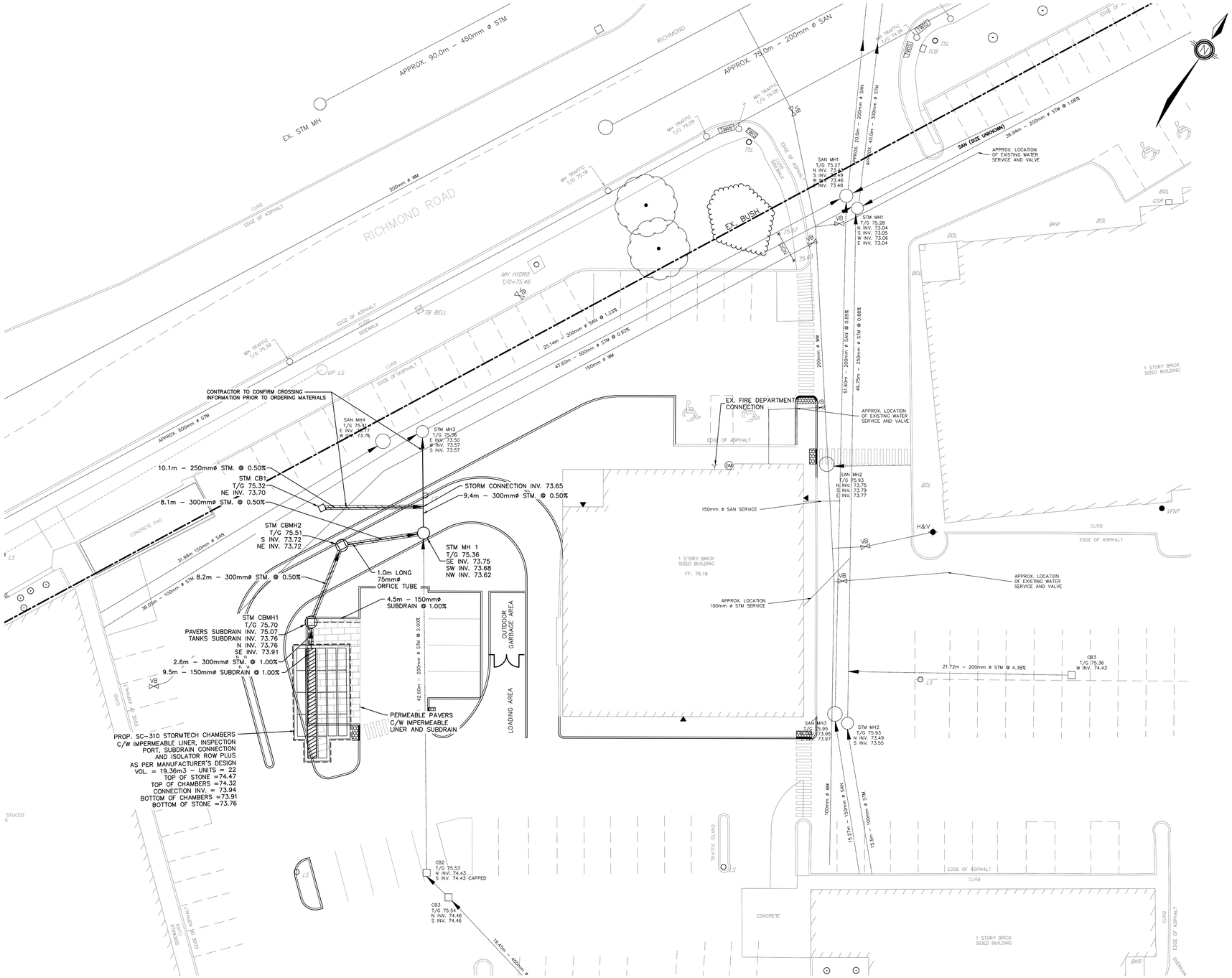
ZAIL PROPERTIES
1480 RICHMOND ROAD
CITY OF OTTAWA, ONTARIO

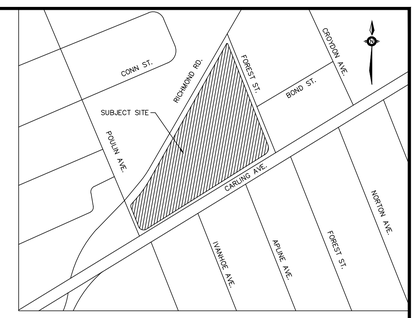
SITE GRADING PLAN

PEARSON ENGINEERING
PEARSONENG.COM PH. 705.719.4785

DESIGNED BY	NW	HORIZ SCALE	1:200
DRAWN BY	JM	VERT SCALE	N/A
CHECKED BY	MWD	DATE	MAY 2026
PROJECT #	26047		
DRAWING #	SG-1		
REVISION #	0		

P:\Autodesk Vault\Working Folders\26047 - Fotenn, 1480 Richmond Road, Ottawa\LAYOUT SHEETS\26047 - SG-1.dwg, Layout: SG-1 Plotted: Jun 29, 2026 @ 2:45pm by nwells @ PEARSON ENGINEERING LTD.





KEY MAP
NTS

LEGEND

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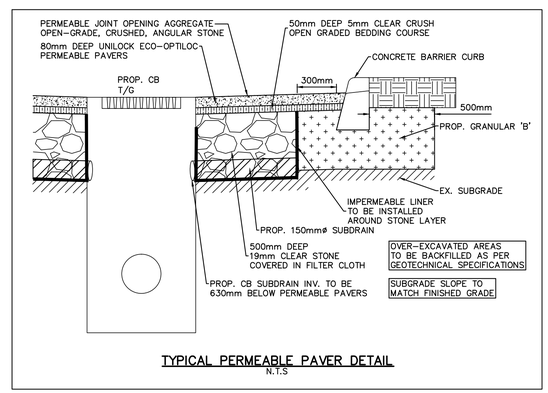
- 1.5% — PROPOSED DIRECTION AND GRADE
- PROP. BACK OF CURB
- PROP. EDGE OF PAVEMENT
- PROP. CURB CUT LOCATION
- EX. CURB CUT LOCATION
-) (— HIGH POINT
- PROPERTY LINE
- LIMIT OF WORK
- PERSON DOOR
- PERMEABLE PAVERS WITH IMPERMEABLE LINER
- PROPOSED PIPE INSULATION AS PER ND-1 DETAIL



TYPICAL PERMEABLE PAVER DETAIL
N.T.S

NO.	REVISION NOTE	DATE	BY

BENCHMARK

BEARING NOTE
BEARINGS ARE GRID, DERIVED FROM THE CAN-NET VRS NETWORK OBSERVATIONS ON NCC HORIZONTAL CONTROL MONUMENTS 19773035 AND 19680191, CENTRAL MERIDIAN 76° 30' WEST LONGITUDE MTM ZONE 9. NAD83 (ORIGINAL)

19773035 N:5006060.42 E:324888.04
19680191 N:5033564.26 E:388064.94

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LICENCED PROFESSIONAL ENGINEER
M.W. DEJEAN
90470626
Jun 29, 2026
PROVINCE OF ONTARIO

ZAIL PROPERTIES
1480 RICHMOND ROAD
CITY OF OTTAWA, ONTARIO

SITE SERVICING PLAN

PEARSON ENGINEERING
PEARSONENG.COM PH. 705.719.4785

DESIGNED BY	NW	HORIZ SCALE	1: 200
DRAWN BY	JM	VERT SCALE	N/A
CHECKED BY	MWD	DATE	MAY 2026
PROJECT #	26047		
DRAWING #	SS-1		
REVISION #	0		

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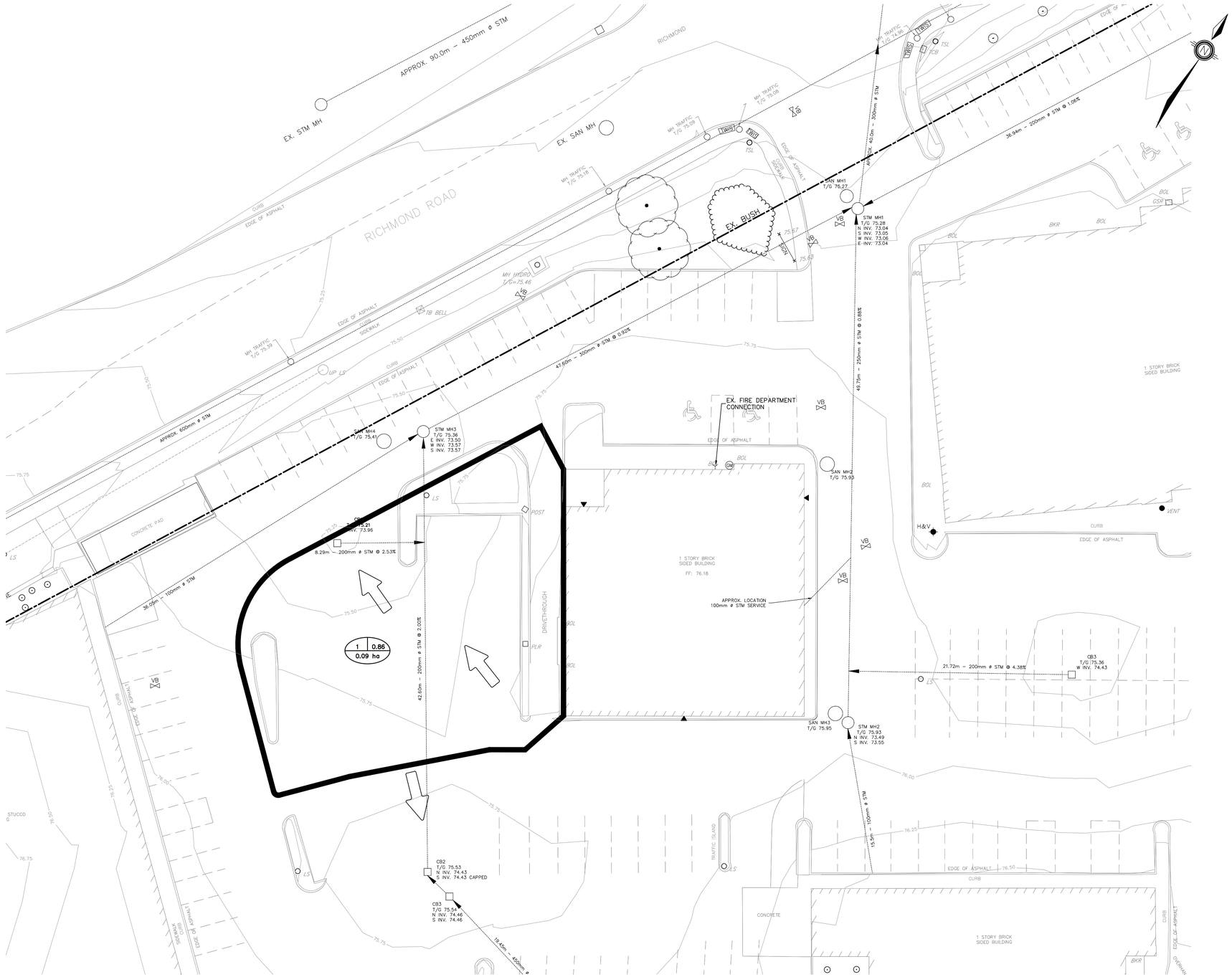
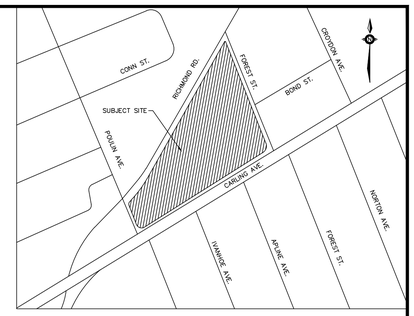




KEY MAP
NTS

LEGEND

- RETAINING WALL (BY OTHERS)
- OVERLAND FLOW DIRECTION
- CATCHMENT AREA: 1 | 0.75 — 1.00 ha — RUNOFF COEFFICIENT; AREA IN HECTARES
- PERMEABLE PAVERS WITH IMPERMEABLE LINER
- PROPOSED PIPE INSULATION AS PER ND-1 DETAIL

NO.	REVISION NOTE	DATE	BY

BENCHMARK

BEARING NOTE
BEARINGS ARE GRID, DERIVED FROM THE CAN-NET VRS NETWORK OBSERVATIONS ON NCC HORIZONTAL CONTROL MONUMENTS 19773035 AND 19680191, CENTRAL MERIDIAN 76° 30' WEST LONGITUDE MTM ZONE 9. NAD83 (ORIGINAL)

19773035 N: 5006060.42 E: 324888.04
19680191 N: 5033564.26 E: 388064.94

VERTICAL DATUM NOTE
ELEVATIONS ARE REFERRED TO THE CANADIAN GEODETIC VERTICAL DATUM (CGVD-1928:1978) AND ARE DERIVED FROM THE CAN-NET VRS NETWORK – OTWA BASE STATION

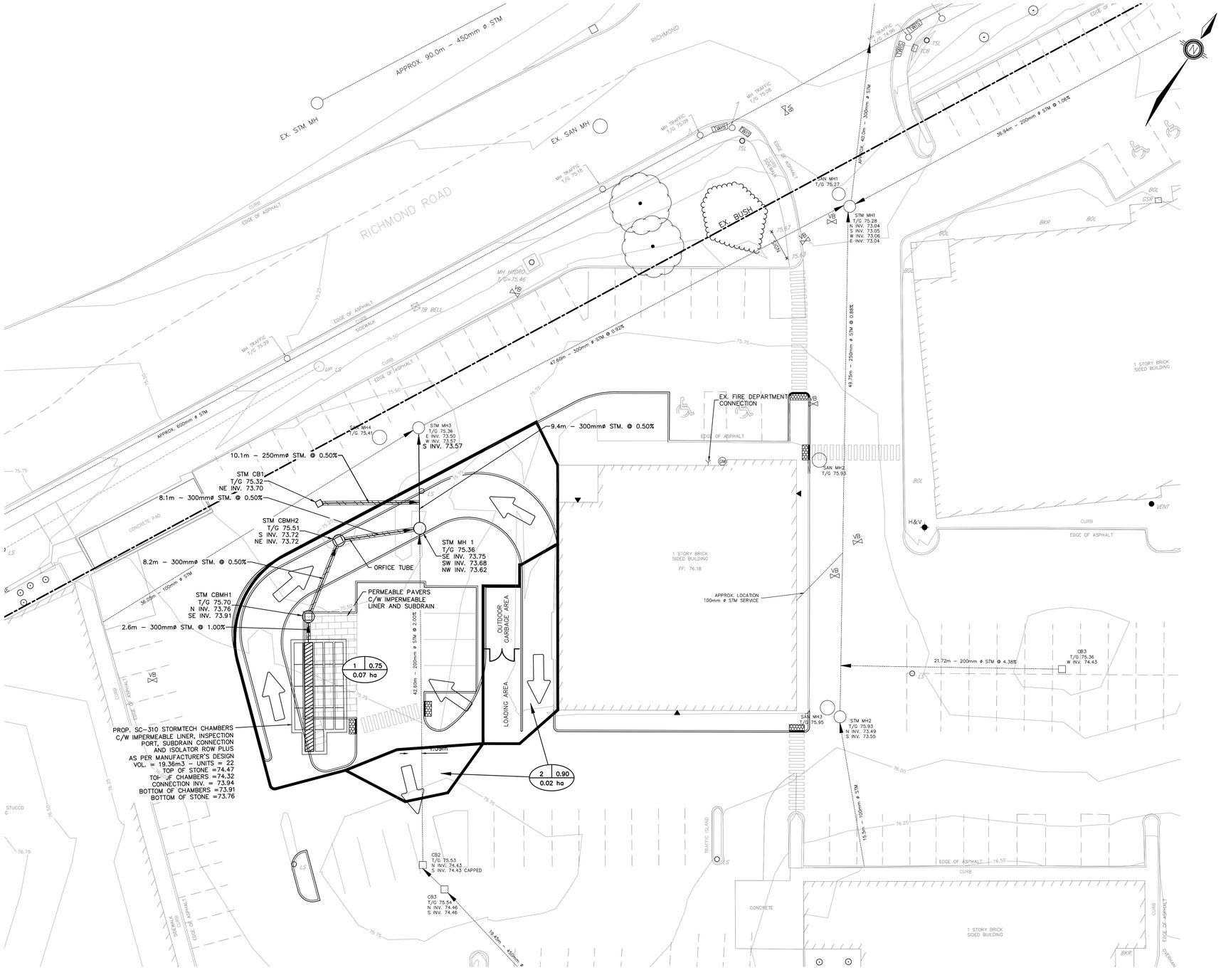
LICENCED PROFESSIONAL ENGINEER
M.W. DEJEAN
90470626
Jun 29, 2026
PROVINCE OF ONTARIO

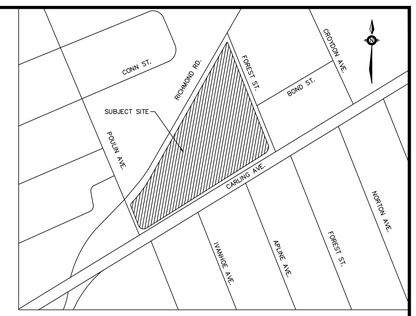
ZAIL PROPERTIES
1480 RICHMOND ROAD
CITY OF OTTAWA, ONTARIO

PRE-DEVELOPMENT
STORM CATCHMENT PLAN

PEARSON ENGINEERING
PEARSONENG.COM PH. 705.719.4785

DESIGNED BY	NW	HORIZ SCALE	1:200
DRAWN BY	JM	VERT SCALE	N/A
CHECKED BY	MWD	DATE	MAY 2026
PROJECT #	26047		
DRAWING #	STM-1		
REVISION #	0		





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DRAWN BY	JM	VERT SCALE	N/A
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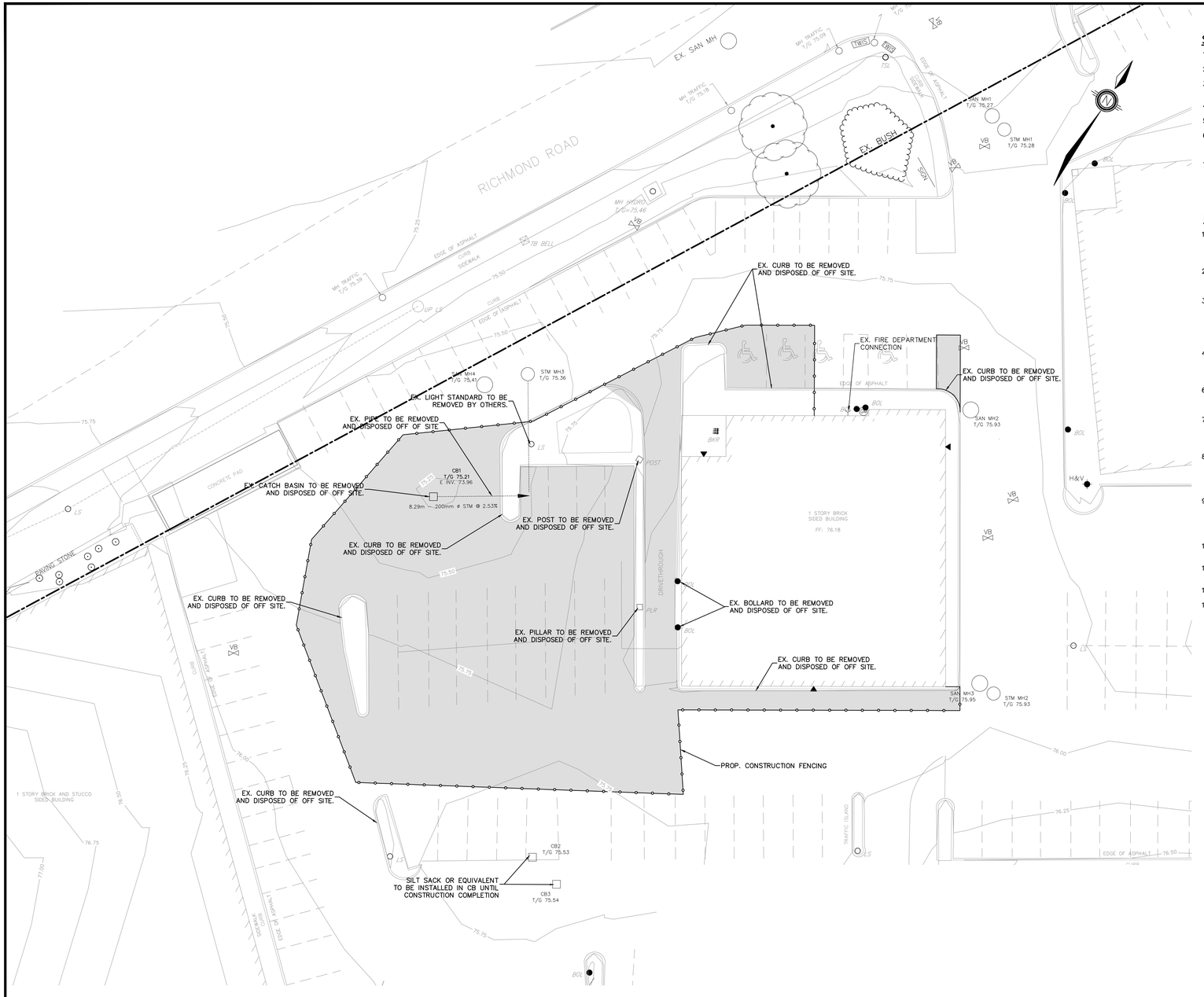
PROJECT #	26047		
DRAWING #	STM-2		
REVISION #	0		

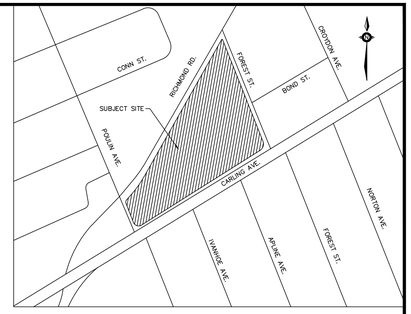


SEQUENCE OF CONSTRUCTION

1. ENGINEER TO BE NOTIFIED PRIOR TO INITIATION OF ANY ON SITE WORKS.
2. SILT FENCE AS PER OPSD 219.110
3. VEGETATION REMOVAL MAY COMMENCE AFTER ALL SILT FENCE IS INSTALLED AND APPROVED BY THE ENGINEER.
4. COMMENCE WITH EARTH WORKS AND SITE SERVICING.
5. INSTALLATION OF PROPOSED INFILTRATION FACILITIES TO THE TIME OF LANDSCAPING WORKS.
6. EROSION CONTROL MEASURES TO BE MAINTAINED AS DIRECTED BY THE ENGINEER DURING THE CONSTRUCTION PERIOD. ADDITIONAL CONTROL MEASURES MAY BE REQUIRED AT THE DISCRETION OF THE ENGINEER.
7. ALL DISTURBED GROUND LEFT INACTIVE FOR MORE THAN 30 DAYS SHALL BE STABILIZED WITH SEED, SOD, MULCH OR OTHER ADEQUATE COVERING, AS INSTRUCTED BY THE ENGINEER.

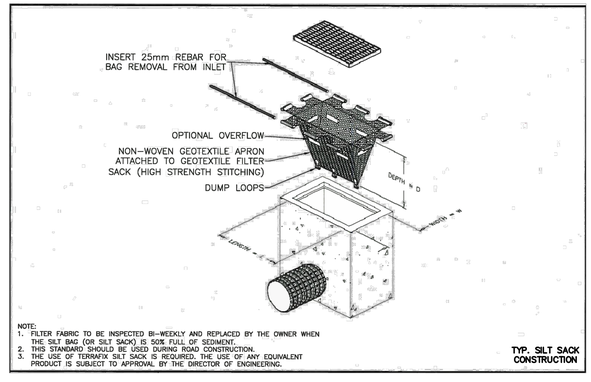
NOTES FOR SEDIMENT & EROSION CONTROL

1. DISTURBED AREAS THAT HAVE FAILED TO HAVE STABLE GROUND COVER ESTABLISHED BY OCTOBER 30TH SHALL BE PROTECTED WITH A SILTATION CONTROL FENCE OR STRAW MULCH ETC. AND MAINTAINED BY THE CONTRACTOR UNTIL VEGETATION BECOMES ESTABLISHED IN THE SUBSEQUENT GROWING SEASON.
2. ANY DEWATERING WASTE SHALL BE DISCHARGED TO A VEGETATED AREA AT LEAST 30m FROM ANY WATERCOURSE AND FILTERED. FILTERING METHODS MUST BE APPROVED BY THE SITE ADMINISTRATOR.
3. SILT FENCE SHALL BE PUT IN PLACE PRIOR TO AND MAINTAINED DURING ALL GRADING. SILT FENCE TO BE INSPECTED PRIOR TO COMMENCEMENT OF EARTH GRADING ACTIVITIES. SILT FENCE TO BE INSPECTED AND REPAIRED OR REPLACED IF DAMAGED AS DIRECTED BY THE SITE ADMINISTRATOR.SILT CONTROLS TO BE INSPECTED ON A REGULAR BASIS AND AFTER EVERY RAIN EVENT. INSTALLATION SHALL BE TO THE MANUFACTURER'S RECOMMENDED SPECIFICATIONS.
4. THE CONTRACTOR SHALL BE PREPARED FOR UNEXPECTED CONDITIONS AND ACCORDINGLY HAVE STOCKPILED MATERIALS ON SITE FOR NECESSARY REPAIRS AS A RESULT OF FAILED OR INADEQUATE CONTROL MEASURES. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSPECTED AT LEAST ONCE A WEEK, AND AFTER EVERY RAINFALL EVENT.
5. CONTRACTOR SHALL OBTAIN A CURRENT COPY AND BECOME FAMILIAR WITH OPSS 577, CONSTRUCTION SPECIFICATION FOR TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES AS WELL AS ALL APPLICABLE MUNICIPAL STANDARDS.
6. THE CONTRACTOR MAY CONSIDER ALTERNATIVE SEDIMENT AND EROSION CONTROL MEASURES. SUCH MEASURES SHOULD BE PRESENTED IN WRITING FOR APPROVAL OF THE SITE ADMINISTRATOR AND MUST BE APPROVED IN WRITING BY THE MUNICIPALITY AND CONSERVATION AUTHORITY.
7. THE TOPS OF ALL FILTER FABRIC MUST BE A MINIMUM OF 1.0 METRES ABOVE THE GROUND LEVEL AND ATTACHED TO THE FENCE WITH A CONTINUOUS STEEL WIRE. ALTERNATIVELY, THE FILTER FABRIC MUST BE FOLDED OVER THE TOP OF THE FENCE AND ATTACHED TO THE FENCE WITH WIRE LOOPED THROUGH THE FABRIC ON BOTH SIDES OF THE FENCE. FILTER FABRIC IS TO BE TERRAFIX 270R OR EQUIVALENT.
8. ALL DISTURBED GROUND LEFT FOR MORE THAN 30 DAYS SHALL BE STABILIZED BY SEEDING, SODDING, MULCHING, OR COVERING OR OTHER EQUIVALENT CONTROL MEASURES. THIS PERIOD OF INACTIVITY SHALL BE AT THE DISCRETION OF THE CITY OF OTTAWA BUT SHALL NOT EXCEED THIRTY DAYS OR SUCH LONGER PERIOD DEEMED ADVISABLE BY THE CITY OF OTTAWA'S PLANNING, INFRASTRUCTURE AND ECONOMIC DEVELOPMENT DEPARTMENT.
9. CONTRACTOR RESPONSIBLE FOR MUD TRACKING, PREVENTION, AND MAINTENANCE ON RICHMOND RD.
10. ROADS AND PARKING LOT AROUND SITE TO BE LEFT IN A BROOM SWEPT CONDITION AT THE END OF EACH WORK DAY.
11. SILT SACKS TO BE CLEANED OUT AD REQUIRED.
12. THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES, TO PROVIDE FOR PROTECTION OF THE AREA DRAINAGE SYSTEM AND THE RECEIVING WATERCOURSE, DURING CONSTRUCTION ACTIVITIES. THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALITIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY.



LEGEND

- PROPOSED CATCH BASIN
- EXISTING CATCH BASIN
- PROPOSED DOUBLE CATCH BASIN
- PROPOSED STORM MANHOLE
- EXISTING STORM MANHOLE
- PROPOSED SANITARY MANHOLE
- EXISTING SANITARY MANHOLE
- PROPOSED FIRE HYDRANT
- EXISTING FIRE HYDRANT
- PROP. WATER VALVE
- PROPERTY LINE
- OVERLAND FLOW DIRECTION
- LIMITS OF ASPHALT REMOVAL
- CONSTRUCTION FENCING



NOTE:
1. FILTER FABRIC TO BE INSPECTED BI-WEEKLY AND REPLACED BY THE OWNER WHEN THE SILT BAG (OR SILT SACK) IS 50% FULL OF SEDIMENT.
2. THIS STANDARD SHOULD BE USED DURING ROAD CONSTRUCTION.
3. THE USE OF TERRAFIX SILT SACK IS REQUIRED. THE USE OF ANY EQUIVALENT PRODUCT IS SUBJECT TO APPROVAL BY THE DIRECTOR OF ENGINEERING.

TYP. SILT SACK CONSTRUCTION

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