165177 CANADA INC.

275 KING EDWARD AVE, BOUTIQUE HOTEL DEVELOPMENT, OTTAWA, ON

SERVICING REPORT

JANUARY 7, 2022
2ND SUBMISSION

275 KING EDWARD AVE, BOUTIQUE HOTEL DEVELOPMENT, OTTAWA, ON

SERVICING REPORT

165177 CANADA INC.

SITE PLAN APPLICATION
2ND SUBMISSION

PROJECT NO.: 211-07007-00
DATE: JANUARY 2022

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January 7, 2022

Dennis Jacobs
Momentum – Planning & Communications
1165 Greenlawn Crescent
Ottawa, ON, K2C 1Z4

Attention: Dennis Jacobs, Principal Planner, MCIP, RPP

Dear Sir:

Subject: 275 King Edward Ave – Boutique Hotel Development - Servicing Report

Please find attached our revised servicing report, including civil engineering design drawings, prepared for your review prior to second submission.

Yours sincerely,

Ding Bang (Winston) Yang, P.Eng.
Project Engineer

WSP ref.: 211-07007-00

QUALITY MANAGEMENT

ISSUE/REVISION	FIRST ISSUE	REVISION 1	REVISION 2	REVISION 3
Remarks	Issued for Site Plan Application	Issued for Site Plan Application		
Date	July 23rd, 2021	January 7th, 2022		
Prepared by	Ding Bang (Winston) Yang	Ding Bang (Winston) Yang		
Signature				
Checked by	Ishaque Jafferjee	Ishaque Jafferjee		
Signature				
Project number	211-07007-00	211-07007-00		

SIGNATURES

PREPARED BY

Ding Bang (Winston) Yang, P.Eng
Project Engineer

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Senior Project Manager

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1 GENERAL

1.1 EXECUTIVE SUMMARY

WSP was retained by 165177 Canada Inc. to provide servicing and grading design services for the proposed new boutique hotel development, including short/long term hotel suites and condominium apartments, located at 275 King Edward Ave, north of Clarence Street, south of Murray Street and west of King Edward Ave. This report outlines findings and calculations pertaining to the servicing of the proposed development for the new 8 storey building with a gross lot area of 1,590 m².

Currently the land proposed for the hotel development is consisted with natural landscaping area with mainly covered by grass and an existing residential building at 257 King Edward Ave. The gross building footprint is 946 m². The site is surrounded by commercial and residential development. It is part of lots B and 7, Geographic City of Ottawa (refer to Appendix A for the Topographical Survey Plan by Annis, O'Sullivan, Vollebekk Ltd, March 2016). Based on the topographic survey, the ground, predominantly grass and shrubs, sloping toward the north, south and west city R.O.W. from the high elevation of 58.38 m in the middle of the site adjacent to the east property line. Existing on-site detention facilities have not been constructed in the existing sites. The existing topographic conveys overland runoff to city R.O.W. Quality control will be provided as specified by the City.

The City of Ottawa required that the design of a drainage and stormwater management system in this development must be prepared in accordance with the following documents:

- Sewer Design Guidelines, City of Ottawa, October 2012;
- Stormwater Management Planning and Design Manual, Ministry of the Environment, March 2003; and
- Stormwater Management Facility Design Guidelines, City of Ottawa, April 2012

This report was prepared utilizing servicing design criteria obtained from available sources, and outlines the design for water, sanitary wastewater, and stormwater facilities.

The format of this report matches that of the servicing study checklist found in Section 4 of the City of Ottawa's Servicing Study Guidelines for Development Applications, November 2009.

The following municipal services are available within Schneider Road to the development as recorded from as-built drawings from City of Ottawa:

Murray Street:

- 450 mm and 300 mm conc sanitary sewer
- 1350 mm and 1050 mm conc storm sewer
- 203 mm DI watermain

Clarence Street:

- 450 mm and 300 mm conc sanitary sewer

- 750 mm and 375 mm conc storm sewer
- 203 mm PVC and 152 mm DI watermain

King Edward Ave:

- 1050 mm sanitary trunk sewer
- 1800 mm storm trunk sewer
- 406 mm PVC watermain

It is proposed that:

- On-site stormwater management systems, internal cistern storage will be provided to attenuate flow rates leaving the new parking lot and new building roof. Existing drainage patterns, previously established controlled flow rates will be maintained. Refer to the stormwater management report for details.

1.2 DATE AND REVISION NUMBER

This version of the report is the second revision, dated January 6th, 2022.

1.3 LOCATION MAP AND PLAN

The proposed boutique hotel development at 275 King Edward Ave, in the City of Ottawa at the location shown in Figure 1-1 below.

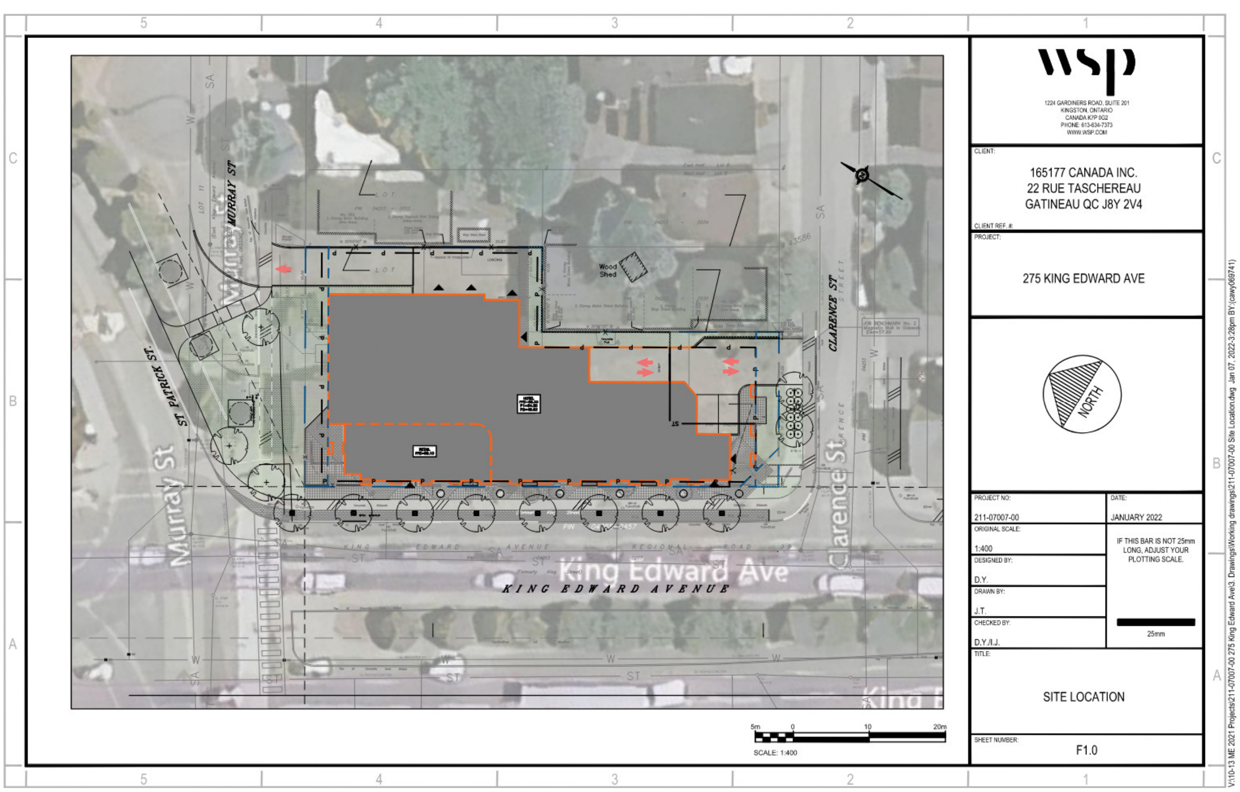


Figure 1-1 Site Location

1.4 ADHERENCE TO ZONING AND RELATED REQUIREMENTS

The proposed property use will be in conformance with zoning and related requirements prior to approval and construction and is understood to be in conformance with current zoning.

1.5 PRE-CONSULTATION MEETINGS

A pre-consultation meeting was held with the City of Ottawa on January 16, 2020. Notes from this meeting are provided in Appendix A.

1.6 HIGHER LEVEL STUDIES

The review for servicing has been undertaken in conformance with, and utilizing information from, the following documents:

- Ottawa Sewer Design Guidelines, Second Edition, Document SDG002, October 2012, City of Ottawa including:
  - Technical Bulletin ISDTB-2012-4 (20 June 2012)
  - Technical Bulletin ISDTB-2014-01 (05 February 2014)
  - Technical Bulletin PIEDTB-2016-01 (September 6, 2018)
  - Technical Bulletin ISDTB-2018-01 (21 March 2018)
  - Technical Bulletin ISDTB-2018-04 (27 June 2018)
- Ottawa Design Guidelines – Water Distribution, July 2010 (WDG001), including:
  - Technical Bulletin ISDTB-2014-02 (May 27, 2014)
  - Technical Bulletin ISTB-2018-02 (21 March 2018)
- Stormwater Management Planning and Design Manual, Ontario Ministry of the Environment and Climate Change, March 2003 (SMPDM).
- Design Guidelines for Drinking-Water Systems, Ontario Ministry of the Environment and Climate Change, 2008 (GDWS).
- Fire Underwriters Survey, Water Supply for Public Fire Protection (FUS), 1999.

1.7 STATEMENT OF OBJECTIVES AND SERVICING CRITERIA

The objective of the site servicing is to meet the requirements for the proposed modification of the site while adhering to the stipulations of the applicable higher-level studies and City of Ottawa servicing design guidelines.

1.8 AVAILABLE EXISTING AND PROPOSED INFRASTRUCTURE

Municipal storm and sanitary sewers and watermain are located within Murray Street and Clarence Street right of way. A new sanitary sewer will be connected to the existing sanitary sewers at Murray Street from the proposed development. New water service will be connected to the existing watermain at Murray Street. A redundant water service will be connected to the existing watermain at Clarence Street. New stormwater service will be connected to the existing storm sewer at Murray Street. Quantity control is required to restrict the discharge leaving the development areas, as noted in the Stormwater Management Report. The existing boundary roads at the site will remain open.

1.9 ENVIRONMENTALLY SIGNIFICANT AREAS, WATERCOURSES AND MUNICIPAL DRAINS

The proposed development site is surrounded by commercial and residential lands. Runoff from the development site is directed to Ottawa River. Oil grit separator has been proposed to provide quality control as specified by the City.

1.10 CONCEPT LEVEL MASTER GRADING PLAN

A detailed grading plan for the development site has been developed, matching the existing overland flow pattern of directing overflow drainage to the adjacent city R.O.W. The site topographic survey, included in Appendix A, provides evidence of direction of overland flow of the site from all dimensions. No changes will be made to grades at the property perimeter.

1.11 IMPACTS ON PRIVATE SERVICES

There are no existing domestic private services (septic system and well) located on the site. There are no neighbouring properties using private services.

1.12 DEVELOPMENT PHASING

No development phasing is expected for the current proposal.

1.13 GEOTECHNICAL SUTDY

A geotechnical investigation report has been prepared by Paterson Group (Report PG5721-1, April 26, 2021), and its recommendations has been taken into account in developing the engineering specifications.

1.14 DRAWING REQUIREMENT

The engineering plans submitted for site plan approval are in compliance with City requirements.

2 WATER DISTRIBUTION

2.1 CONSISTENCY WITH MASTER SERVICING STUDY AND AVAILABILITY OF PUBLIC INFRASTRUCTURE

There is an existing 203mm diameter municipal watermain along Murray Street, 203mm diameter municipal watermain along Clarence Street and a 406mm diameter municipal watermain along King Edward Ave providing water to the property. The new hotel will be protected with a supervised automatic fire protection sprinkler system and will require a 203mm diameter water service. The proposed fire department connection is with 45m of one of the municipal fire hydrants. No changes are required to the existing City water distribution system to allow servicing for this property. An addition water service of 203mm diameter will be connected to Clarence Street for redundancy.

2.2 SYSTEM CONSTRAINTS AND BOUNDARY CONDITIONS

Boundary conditions have been obtained from the City of Ottawa at the 152 mm diameter watermain on Clarence Street and the 203 mm on Murray Street for the development, and are included in Appendix B. A max fire flow demand of 250 l/s (15,000 l/min) has been calculated for the proposed development as noted in Section 2.4.

Table 2-1: Boundary Conditions

BOUNDARY CONDITIONS		
SCENARIO	203 mm on Clarence HGL (m)	203 mm on Murray HGL (m)
Maximum HGL	106.5	106.5
Minimum HGL (Peak Hour)	114.4	114.4
Max Day + Fire Flow	95.8	100.8

2.3 CONFIRMATION OF ADEQUATE DOMESTIC SUPPLY AND PRESSURE

Water demands are based on Table 4.2 of the Ottawa Design Guidelines – Water Distribution. As previously noted, the development is considered as hotel and residential development, consisting of one eight-storey hotel building. A water demand calculation sheet is included in Appendix B, and the total water demands are summarized as follows:

	Proposed
Average Day	0.64 l/s
Maximum Day	1.59 l/s
Peak Hour	3.51 l/s

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

Minimum Pressure	Minimum system pressure under peak hour demand conditions shall not be less than 276 kPa (40 psi)
Fire Flow	During the period of maximum day demand, the system pressure shall not be less than 140 kPa (20 psi) during a fire flow event.
Maximum Pressure	Maximum pressure at any point the distribution system shall not exceed 689 kPa (100 psi). In accordance with the Ontario Building/Plumbing Code, the maximum pressure should not exceed 552 kPa (80 psi). Pressure reduction controls may be required for buildings where it is not possible/feasible to maintain the system pressure below 552 kPa.

Water pressure at municipal connections check:
Min. HGL @ Clarence – Pavement elevation = 114.4m – 58.01m = 56.39m = 552.86 kPa
Min. HGL @ Murray – Pavement elevation = 114.4m – 57.56m = 56.84m = 557.27 kPa

Water pressure at building connection (at average day) check:
Max. HGL @ Clarence – Finished floor elevation = 106.5m – 58.32 = 48.18m = 472.36 kPa
Max. HGL @ Murray – Finished floor elevation = 106.5m – 58.32 = 48.18m = 472.36 kPa

Water pressure at building connection (at max. hour demand) check:
Min. HGL @ Clarence – Finished floor elevation = 114.4m-58.32m = 56.08m = 549.82 kPa
Min. HGL @ Murray – Finished floor elevation = 114.4m-58.32m = 56.08m = 549.82 kPa

Water pressure at building connection (at max. day + fire demand):
(Max Day + Fire) HGL @ Clarence - Finished floor elevation = 95.8m-58.32m = 37.48m = 367.46 kPa
(Max Day + Fire) HGL @ Murray - Finished floor elevation = 100.8m-58.32m = 42.48m = 416.48 kPa

The minimum water pressure inside the building at the connection is determined with the minimum HGL condition, resulting in a pressure of 549.82 kPa which exceed the minimum requirement of 276 kPa per the guidelines.

2.4 CONFIRMATION OF ADEQUATE FIRE FLOW PROTECTION

The fire flow rate has been calculated using the Fire Underwriters Survey (FUS) method. The method takes into account the type of building construction, the building occupancy, the use of sprinklers and the exposures to adjacent structures. Assuming non-combustible construction and with sprinkler system, a fire flow demand of 250 l/s (15,00 l/min) for the 8-Storey building has been calculated. A copy of the calculation is included in Appendix B.

The demand of 15,000 l/min can be delivered through three municipal fire hydrants. Two existing public hydrants are located on King Edward Ave and Clarence Street, both are rated at 5700 l/min. The third public hydrant is located on Murray Street, east of the site, is within 150 m of the building, and is rated at 3800 l/min. The three hydrants have a combined total of 15,200 l/min. The proposed hotel/apartment building will be serviced by a 203 mm service off the 203 mm watermain at Murray Street and a 203 mm redundancy service off the 203 mm watermain along Clarence Street. The services will run into the water entry room. The proposed building will be sprinklered and fire protection will be provided with the fire department Siamese connection within 45 m of the public fire hydrants. The boundary condition for Maximum Day and Fire Flow results in a pressure of 367.46 kPa and 416.48 kPa at the ground floor level for both connections. In the guidelines, a minimum residual pressure of 140 kPa must be maintained in the distribution system for a fire flow and maximum day event. As a pressure of 367.46 kPa and 416.48 kPa are achieved, the fire flow requirement is exceeded.

2.5 CHECK OF HIGH PRESSURE

High pressure is not concern. The maximum water pressure inside the building at the connection is determined with the maximum HGL condition, resulting in the range of 472.36 kPa which is less than the 552 kPa threshold in the guideline in which pressure control is not required.

2.6 PHASING CONSTRAINTS

No phasing constraints exist.

2.7 RELIABILITY REQUIREMENTS

Shut off valve will be provided at the study boundary at both Murray and Clarence Street. Water flow can be isolated from either direction along Murray Street and Clarence Street. A redundant 203mm service is connected off the 203mm watermain along Clarence Street, and shut off valve will be provided.

2.8 NEED FOR PRESSURE ZONE BOUNDAY MODIFICATION

There is no need for a pressure zone boundary modification.

2.9 CAPABILITY OF MAJOR INFRASTRUCTURE TO SUPPLY SUFFICIENT WATER

The current infrastructure is capable of meeting the domestic demand based on City requirements and fire demand as determined by FUS requirements for the proposed hotel/apartment buildings.

2.10 DESCRIPTION OF PROPOSED WATER DISTRIBUTION NETWORK

A 203mm watermain looping is proposed to be provided into the proposed development. The 203mm private water service will be connected to the 203mm municipal watermain along Murray Street and Clarence Street. The existing municipal hydrant is located within 45 metres of the fire department connection as per OBC requirements.

2.11 OFF-SITE REQUIREMENTS

No off-site improvements to watermains, feedermains, pumping stations, or other water infrastructure are required to maintain existing conditions and service the adjacent buildings, other than the connection of the new private watermain to the City watermain in the north and south frontage of the site.

2.12 CALCULATION OF WATER DEMANDS

Water demands were calculated by as described in Sections 2.3 and 2.4 above.

2.13 MODEL SCHEMATIC

The water works consist only two building services, a model schematic is not required for this development.

3 WASTEWATER DISPOSAL

3.1 DESIGN CRITERIA

In accordance with the City of Ottawa's Sewer Design Guidelines, the following design criteria have been utilized in order to predict wastewater flows generated by the subject site and complete the sewer design;

- Minimum Velocity 0.6 m/s
- Maximum Velocity 3.0 m/s
- Manning Roughness Coefficient 0.013
- Average sanitary flow for Residential 280 L/cap/day
- Average sanitary flow for Commercial 28,000 L/Ha/day
- Residential Peaking Factor 1+(14/(4+P^0.5))*K
  Where P is population, K is residential correction factor = 0.80
- Commercial/Institutional Peaking Factor 1.5
- Infiltration Allowance (Total) 0.33 L/s/Ha
- Minimum Sewer Slopes – 200 mm diameter 0.32%

3.2 CONSISTENCY WITH MASTER SERVICING STUDY

The outlet for the sanitary service from the proposed building is the existing 300 mm diameter municipal sewer on Clarence Street. The Ottawa Sewer Design Guidelines provide estimates of sewage flows based on residential development. The anticipated peak flow based on an estimated development area of 0.159 Ha with total population of 176 people and applying the peaking factor of 3.53 is 2.02 L/s, and adding the extraneous flow, the estimated ultimate peak flow is 2.06 L/s.

The Ottawa Sewer Design Guidelines provide estimates of sewage flows based on residential development. A sanitary design sheet has been attached to Appendix C for reference.

3.3 REVIEW OF SOIL CONDITIONS

There are no specific local subsurface conditions that suggest the need for a higher extraneous flow allowance.

3.4 DESCRIPTION OF EXISTING SANITARY SEWER

The outlet sanitary sewer for is the existing 300 mm diameter sewer on Clarence Street. This local sewer will outlet to a municipal wastewater treatment facility via the existing 1200 mm diameter sanitary trunk sewer along King Edward Ave, then discharge to Ottawa River ultimately.

3.5 VERIFICATION OF AVAILABLE CAPACITY IN DOWNSTREAM SEWER

The capacity of the downstream 300 mm diameter sewer on Clarence Street at 0.40% slope is 60.39 L/s, which is adequate for the flow assumptions from the proposed development as noted above. As noted above, the expected flow based on the proposed development will be lower than the flow allowance assumed for the site based on the Sewer Design Guidelines.

3.6 CALCULATIONS FOR NEW SANITARY SEWER

The 200 mm diameter sanitary service from the sanitary monitoring manhole at the property line to the street will have a slope of 1.00%, and a capacity of 32.80 L/s, with a velocity of 1.04 m/s. The 200 mm sanitary sewer between the building and the private monitoring manhole will have a slope of 1.00%, and a capacity of 32.80 L/s, with a velocity of 1.04 m/s. the capacity of each pipe exceeds the estimated peak sanitary flow rate of 2.06 L/s for the entire proposed site.

3.7 DESCRIPTION OF PROPOSED SEWER NETWORK

The proposed sanitary sewer network on site will consist of a 200 mm diameter building service, a 1200 mm diameter monitoring manhole SAMH01 at the property boundary, and a 200 mm diameter outlet sewer discharging to the existing 300mm diameter municipal concrete sanitary sewer on Clarence Street with a 1200 mm diameter manhole SANMH02.

3.8 ENVIRONMENTAL CONSTRAINTS

There are no previously identified environmental constraints that impact the sanitary servicing design in order to preserve the physical condition of watercourses, vegetation, or soil cover, or to manage water quantity or quality.

3.9 PUMPING REQUIREMENTS

The proposed development will have no impact on existing pumping stations and will not require new pumping facilities, other than an internal lift pumping package for the underground parking level floor drains. The internal pumps are being designed by the mechanical engineer as part of the plumbing system design.

3.10 FORCE-MAINS

No force-mains are required specifically for this development.

3.11 EMERGENCY OVERFLOWS FROM SANITARY PUMPING STATIONS

No pumping stations are required for this site, except as required internally for the plumbing design to service the lower area of the building.

3.12 SPECIAL CONSIDERATIONS

There is no known need for special considerations for sanitary sewer design related to existing site conditions.

4 SITE STORM SERVICING

4.1 EXISTING CONDITION

Drainage from the site currently flows overland to city R.O.W on the north, west and south of the property. Further downstream, drainage is conveyed via pipe storm sewer network along King Edward Ave.

As noted in the pre-consultation meeting and associated notes from City of Ottawa, the stormwater design for the site modification is required to result in peak flow rates under 5-year and 100-year conditions that do not exceed the 5 year rate generated under existing conditions.

City of Ottawa has asked that 80% TSS removal be provided for stormwater discharges.

4.2 ANALYSIS OF AVAILABLE CAPACITY IN PUBLIC INFRASTRUCTURE

The allowable release rate for the 0.159 Ha site has been calculated in SWM memo. The total release rate is 23 L/s. Detailed calculations are provided in SWM memo. The receiving municipal 750 mm diameter storm sewer on Clarence Street already accept uncontrolled flow from the site equal to or greater than the allowable release rate of 23 L/s that will be generated from the proposed development under the 100-year return period storm event. Existing on-site detention facilities have not been constructed in the existing sites including 257, 261, 269 and 277 King Edward Ave. The existing topography conveys overland runoff to Murray Street, King Edward Ave and Clarence Street.

4.3 DRAINAGE DRAWING

Drawing C3.0 shows the receiving storm sewer and site storm sewer network. Drawing C2.0 provides proposed grading and drainage and includes existing grading information. Drawing C4.0 and C4.1 provide a pre and post-construction drainage sub-areas plans, including both site and roof information.

4.4 WATER QUANTITY CONTROL OBJECTIVE

The water quantity objective for the site is to limit the flow release to 18 L/s. Excess flows above this limit up to those generated by the 100 year storm event are temporarily stored on site.
No provision is required on the site to accommodate any flow from the adjacent lands. All flows exceeding the defined minor system capacity and on-site storage capability will enter the major system, with overflow to the City right of way on the south, west and north of the site. Refer to the Stormwater Management Memo for the water quantity objective for the site.

4.5 WATER QUALITY CONTROL OBJECTIVE

As noted previously, the designated water quality control objective is the achieve 80% TSS removal. This objective will be achieved through the use of oil and grit separator for the runoff generated from the developed site, achieving the approximate TSS removal required as well as oil capture.

4.6 DESIGN CRITERIA

The stormwater system was designed following the principles of dual drainage, making accommodation for both major and minor flow.

Some of the key criteria include the following:

• Design Storm (minor system)	1:2-year return (Ottawa)
• Rational Method Sewer Sizing	
• Initial Time of Concentration	10 minutes
• Runoff Coefficients	
Landscaped Areas	C = 0.25
Asphalt/Concrete	C = 0.90
Traditional Roof	C = 0.90
• Pipe Velocities	0.80 m/s to 6.0 m/s
• Minimum Pipe Size	250 mm diameter (200 mm CB Leads and service pipes)

4.7 PROPOSED MINOR SYSTEM

The detailed design for this site provides a storm sewer outlet from the north of the building to Murray Street, a building foundation drain to Clarence Street to the south and small areas of uncontrolled surface drainage entering the municipal roads ROW to the south, west and north. Using the above noted criteria, the proposed on-site storm sewers were sized accordingly.

A detailed storm sewer design sheet and the associated storm sewer drainage area plan is included in Appendix D.

4.8 STORMWATER MANAGEMENT

Refer to Stormwater Management Memo for details.

4.9 INLET CONTROLS

Refer to Stormwater Management Memo for details.

4.10 ON-SITE DETENTION

Refer to Stormwater Management Memo for details.

4.11 WATERCOURSES

There are no watercourses on or adjacent to the site.

4.12 PRE AND POST DEVELOPMENT PEAK FLOW RATES

Pre and post development peak flow rates for the impacted areas of the site have been noted in the Stormwater Management Memo and storm sewer design sheet.

4.13 DIVERSION OF DRAINAGE CATCHMENT AREAS

There will be no diversion of existing drainage catchment areas arising from the proposed work described in this report.

4.14 DOWNSTREAM CAPACITY WHERE QUANTITY CONTROL IS NOT PROPOSED

This checklist item is not applicable to this development as quantity control is provided.

4.15 IMPACTS TO RECEIVING WATERCOURSES

No significant negative impact is anticipated to downstream receiving watercourses due to proposed quantity and quality control measures.

4.16 MUNICIPAL DRAINS AND RELATED APPROVALS

There are no municipal drains on the site or associated with the drainage from the site.

4.17 MEANS OF CONVEYANCE AND STORAGE CAPACITY

The means of flow conveyance and storage capacity are described in the Stormwater Management Memo.

4.18 HYDRAULIC ANALYSIS

Hydraulic calculations for the site storm sewers are provided in the storm sewer design sheet and the Stormwater Management Memo.

4.19 IDENTIFICATION OF FLOODPLAINS

There are no designated floodplains on the site of this development.

4.20 FILL CONSTRAINTS

There are no known fill constraints applicable to this site related to any floodplain. The site is generally being raised higher relative to existing conditions. No fill constraints related to soil conditions are anticipated, as confirmed in the geotechnical report.

5 SEDIMENT AND EROSION CONTROL

5.1 GENERAL

During construction, existing storm sewer system can be exposed to sediment loadings. A number of construction techniques designed to reduce unnecessary construction sediment loadings will be used including;

- The installation of straw bales within existing drainage features surrounding the site;
- Bulkhead barriers will be installed in the outlet pipes;
- Filter cloths will remain on open surface structures such as manholes and catchbasins until these structures are commissioned and put into use;
- Installation of silt fence, where applicable, around the perimeter of the proposed work area.

During construction of the services, any trench dewatering using pumps will be fitted with a “filter sock.” Thus, any pumped groundwater will be filtered prior to release to the existing surface runoff. The contractor will inspect and maintain the filter sock as needed including sediment removal and disposal.

All catchbasins, and to a lesser degree, manholes, convey surface water to sewers. Consequently, until the surrounding surface has been completed, these structures will be covered to prevent sediment from entering the minor storm sewer system. These measures will stay in place and be maintained during construction and build-out until it is appropriate to remove them.

During construction of any development both imported and native soils are placed in stockpiles. Mitigative measures and proper management to prevent these materials entering the sewer system are needed.

During construction of the deeper watermains and sewers, imported granular bedding materials are temporarily stockpiled on site. These materials are however quickly used up and generally placed before any catchbasins are installed.

Refer to the Erosion and Sedimentation Control Plan C5.0 provided in Appendix E.

6 APPROVAL AND PERMIT REQUIREMENTS

6.1 GENERAL

The proposed development is subject to site plan approval and building permit approval.

No approvals related to municipal drains are required.

No permits or approvals are anticipated to be required from the Ontario Ministry of Transportation, National Capital Commission, Parks Canada, Public Works and Government Services Canada, or any other provincial or federal regulatory agency.

7 CONCLUSION CHECKLIST

7.1 CONCLUSIONS AND RECOMMENDATIONS

It is concluded that the proposed development can meet all provided servicing constraints and associated requirements. It is recommended that this report be submitted to the City of Ottawa in support of the application for site plan approval.

7.2 COMMENTS RECEIVED FROM REVIEW AGENCIES

This is the second submission, responses to city comments have been attached.

APPENDIX

A

- PRE-CONSULTATION MEETING NOTES
- TOPOGRAPHIC SURVEY PLAN

MINUTES

Pre-Application Consultation Meeting: 260 Murray, 261, 269, 277 King Edward
Date: January 16, 2020
Time: 1:00 pm
Location: Laurier 110-4118E

Attendees

City of Ottawa
John Lunney, File Lead
Christopher Moise, Urban Designer
John Wu, Engineer, Infrastructure
Wally Dubyk, Transportation

Applicant Team
Dennis Jacobs
Bob Woodman
Tino Tolot
Jay Patel

Community Representation
Peter Ferguson,
Lowertown Community Association

Introductions

Explanation of the pre-application consultation project and confirmation of the Non-Disclosure Agreement

Overview of Proposal

Overview

- ~119 unit singular-use hotel
- Proposed vehicular entrance from King Edward Avenue with exit on the Murray Street frontage
- Principal nine storey mass occupying bulk of site, abutting interior lot lines against 257 Clarence
- Three storey mass in northeast corner, along rear lot line abutting 262 Murray Street

Preliminary Comments from City

Urban Design – Christopher Moise

- Attention should be made to support the prominent nature of King Edward in scale, activity (entrances, etc.), materiality, pedestrian supportive treatment;
- Materiality can be employed as a way to relate to the burgeoning context of King Edward and heritage nature of the neighbourhood. The use of brick or other 'noble' material is a good way to do this;
- Challenge will be in how to sensitively transition to the surrounding low-rise context to the east;
- Having the primary vehicular entrance off King Edward may compromise the pedestrian environment intended along that street;
- Further analysis of the massing of the project in relation to the neighbouring residential context and block pattern will help moving forward. We recommend an Informal visit to the UDRP where alternative approaches are presented and analyzed to gain the best feed back to develop a supportable approach moving forward.
- Create a public realm that:
    - Provides direct pedestrian connections between the building and the sidewalk;
    - Offers comfortable micro climate conditions for sitting, standing, and walking around the building at grade;
    - Is animated by active ground floor uses, streetscape amenities, and architectural features.
- Develop a design that:
    - Provides height and massing transition between the proposed development and existing low-rise residential area;
    - Responds to the characteristics of the three abutting streets
        - King Edward – a wide urban thoroughfare that carries heavy traffic. Potential considerations may include wider building setbacks to accommodate significant landscaping and improved pedestrian realm.
        - Murray – a quiet residential street. Considerations may include building setbacks that respect the setback pattern on the street and the retaining of existing trees and hedges (where applicable).
        - Clarence – a quiet residential street. Considerations may include building setbacks that respect the setback pattern on the street and the retaining of existing trees and hedges (where applicable).
    - Follows the principles of and incorporate features of sustainable design.

John Lunney – Planning

- Proposal would require applications for Site Plan Control, Complex with minor Zoning By-law Amendment Application
- Unable to bridge prior planning applications submitted (and not completed) at the site
- Proposal could benefit from consolidation of lot at northwest corner of King Edward Avenue and St. Patrick Street
- Vehicular access features along King Edward Avenue potentially conflict with *Traditional Mainstreet Official Plan* policies promoting pedestrian-focused environment
- Robust rationale necessitated for Zoning Amendment permitting 9 storeys (~6 storeys) required, with specific reference to compatibility to low-rise context to the east (bound between Murray, Nelson, and Clarence Streets)

John Wu- Infrastructure

- Service connections available at King Edward Avenue and Clarence Street
- Noise Study for Stationary Noise (rooftop) required with submission
- Noise study for traffic noise not required but recommended
- Geotechnical report and ESA phase 1 required with submission

Wally Dubyk – Transportation

- King Edward Avenue is designated as an Arterial road within the City's Official Plan with a ROW protection of 40.0.0 metres. The ROW limits are to be shown on all the drawings and the offset distance (20.0 metres) to be dimensioned from the existing centerline of pavement.
- ROW interpretation – Land for a road widening will be taken equally from both sides of a road, measured from the centreline in existence at the time of the widening if required by the City. The centreline is a line running down the middle of a road surface, equidistant from both edges of the pavement. In determining the centreline, paved shoulders, bus lay-bys, auxiliary lanes, turning lanes and other special circumstances are not included in the road surface.
- The proposed tree planting maybe above the Street Lighting duct. Please contact Paolo Augello (paolo.augello@ottawa.ca) at 613-580-2424 extension 32579.
- The concrete sidewalks should be 2.0 metres in width and be continuous and depressed through the proposed accesses (please refer to the City's sidewalk and curb standard drawing).
- All underground and above ground building footprints and permanent walls need to be shown on the plan to confirm that any permanent structure does not extend either above or below into the existing property lines, and/or future road widening protection limits.
- The City of Ottawa Zoning By-Law Corner Sight Triangles (Sec. 57) states that no obstruction to the vision of motor vehicle operators higher than 0.75 metres above grade. The consultant should review the sight distance to ensure that no obstructions hinder the view of the driver.
- Please note that the proposed access off King Edward Avenue will not be able to service tenants travelling in the southbound direction.
- Note Section 24(1) & (2) of the By-Law No. 2003-447, which prohibits the construction of a private approach that will create hazardous conditions due to queuing of vehicles on the roadway.
- The closure of an existing private approach shall reinstate the sidewalk, shoulder, curb and boulevard to City standards.
- Where an owner whose property abuts two or more highways, the City recommends that a private approach shall be permitted on the highway carrying the lesser volume of vehicular traffic and the private approach shall be located as far from the nearest intersections as possible.
- The TIA (Transportation Impact Assessment) Guidelines (2017) were approved by Transportation Committee and City Council on June 14, 2017. The new version of the TIA Guidelines (2017) that are posted on the web are now to be used for the TIA Submission for development applications.

  The following list highlights the significant changes to the 2006 TIA Guidelines

1. A Screening Test (Step 1) quickly determines if a transportation study is required. Consultants should fill in the form in Appendix B.
2. Should the development generate 60 peak hour person trips, the TIA guidelines Step 2 – Scoping report would be required.
3. Study Scope (Step 2) is site specifically tailored; there are no longer three defined types of TIA reports. Scoping report is required and needs to be signed off by TPM before the consultant moves on to Forecasting volumes.

4. Sign off from City Transportation Project Manager is required at key points in the review process prior to TIA Submission (Step 5). See Figure 1 on page 9 for a good flow chart of the process.
5. Multi Modal Level of Service (MMLOS) and Complete Street analysis is required to assess the impact of all modes of travel rather than just vehicle traffic.
6. There is no longer a requirement for consultant pre-approval. Consultants must now sign and submit the Credentials Form included in the Appendix A with each TIA report.
7. The TIA Submission (report, drawings and/or monitoring plan) is required with the development application.

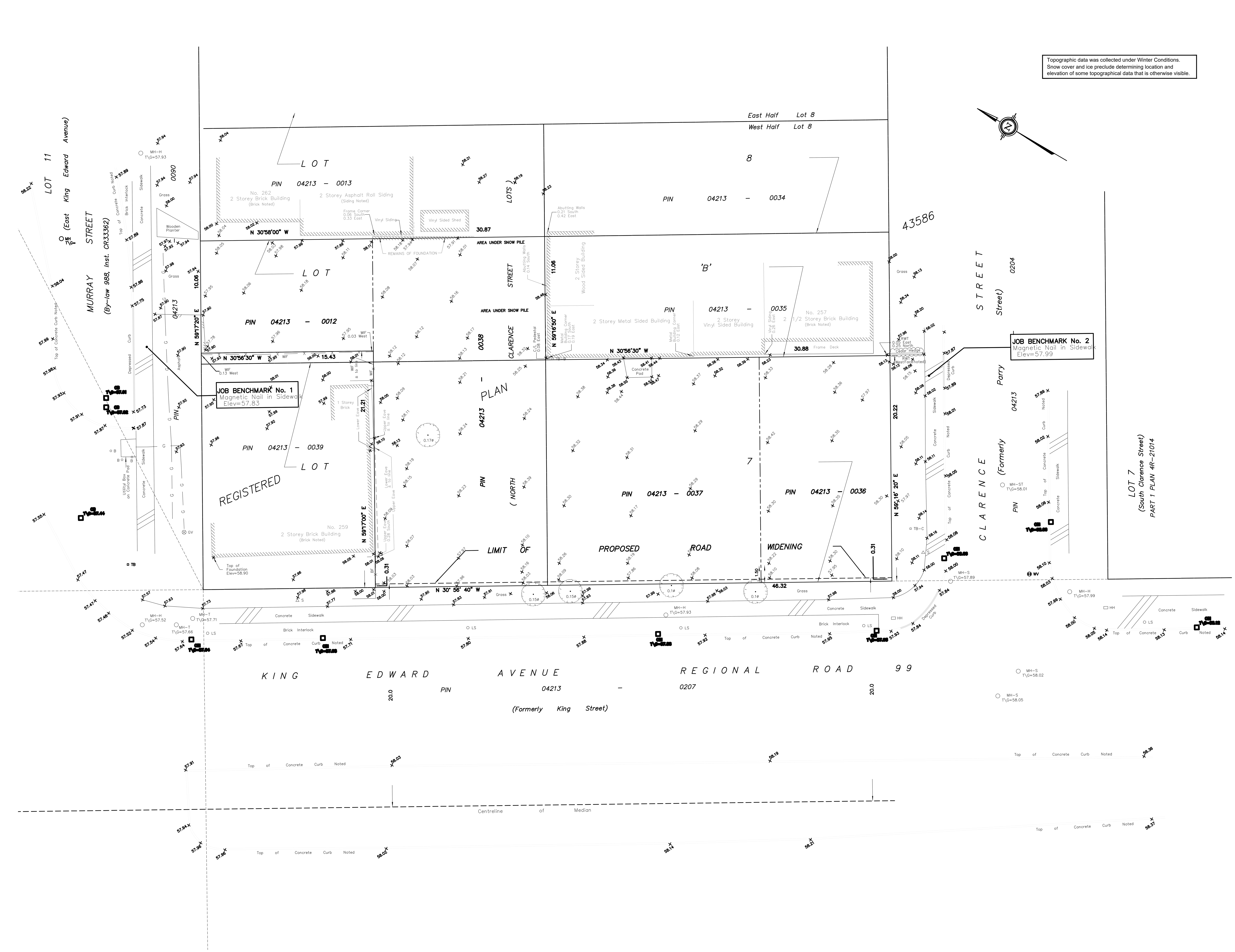
Click on the website: https://ottawa.ca/en/transportation-impact-assessment-guidelines

- A construction Traffic Management Plan is to be provided for approval by the Senior Engineer, Traffic Management, Transportation Services Dept.
- For the interlock pavers, landscaped areas and public art on City's road right-of-way the developer has to sign a "Maintenance Agreement" with the City to cover any claims.

Preliminary Comments from Community Association Representative

Lowertown Community Association – Peter Ferguson

- Attention to rear transition of building to the east is important
- Consider materials complementary to the setting
- Vehicular access will be a challenge from King Edward Avenue



TOPOGRAPHICAL PLAN OF

PART OF LOTS B And 7

North Clarence Street
(Formerly Parry Street)

REGISTERED PLAN 43586

CITY OF OTTAWA

Prepared by Annis, O'Sullivan, Vollebekk Ltd.

Scale 1 : 150

6 4.5 3.0 1.5 0 3 6 Metres

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

Date E.H. Herweyer, O.L.S.

PLAN REVISED SEPTEMBER 9, 2014 TO ILLUSTRATE ADDITIONAL ELEVATIONS AND PROPOSED ROAD WIDENING.

PLAN REVISED MARCH 24, 2016 TO ILLUSTRATE ELEVATIONS ON SITE AFTER DEMOLITION OF BUILDINGS

Notes & Legend

	Denotes	
	Denotes	Deciduous Tree
	-	Coniferous Tree
MH-ST	-	Maintenance Hole (Storm Sewer)
MH-S	-	Maintenance Hole (Sanitary)
MH-T	-	Maintenance Hole (Traffic)
MH-H	-	Maintenance Hole (Hydro)
MH	-	Maintenance Hole (Unidentified)
CB	-	Catch Basin
CBI	-	Catch Basin Inlet
GM	-	Gas Meter
HM	-	Hydro Meter
HH	-	Handhole
TB-B	-	Bell Terminal Box
TB-C	-	Cable Terminal Box
TB-T	-	Traffic Terminal Box
TB	-	Unidentified Terminal Box
B	-	Bollard
S	-	Sign
LS	-	Light Standard
Ø	-	Diameter
x85.00	-	Location of Elevations
T/G	-	Top of Grate / Lid
SF	-	Steel Fence
WIF	-	Wrought Iron Fence
BF	-	Board Fence
C/L	-	Centreline
WV	-	Water Valve
GV	-	Gas Valve
RWT	-	Retaining Wall - Wooden
TSP	-	Traffic Signal Post
G	-	Underground Gas
	-	Property Line

SITE AREA = 1,262.3 m²

BOUNDARY INFORMATION COMPILED FROM PLAN BY ANNIS, O'SULLIVAN, VOLLEBEKK LTD., DATED NOVEMBER 15, 2006.

ELEVATION NOTES

1. Elevations shown are geodetic and are referred to the CGVD28 geodetic datum.
2. It is the responsibility of the user of this information to verify that the job benchmark has not been altered or disturbed and that it's relative elevation and description agrees with the information shown on this drawing.

UTILITY NOTES

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

Ontario Land Surveyors
ANNIS, O'SULLIVAN, VOLLEBEKK LTD.
14 Concourse Gate, Suite 500
Nepean, Ont. K2E 7S6
Phone: (613) 727-0850 / Fax: (613) 727-1079
Email: Nepean@aovltd.com

Job No.15106–14 Lauzon Pt Lts B And 7 RP43586 T D3(grid) S/N

Yang, Winston

From: Wu, John <John.Wu@ottawa.ca>
Sent: June 11, 2021 12:32 PM
To: Yang, Winston
Subject: RE: 260 Murray, 261, 269, 277 King Edward

Yes, 80% TSS removal.
The service need 300mm? impossible.
No DMA, only on if 300 mm service on 400mm main , yes needed.

From: Yang, Winston <Winston.Yang@wsp.com>
Sent: June 11, 2021 12:27 PM
To: Wu, John <John.Wu@ottawa.ca>
Subject: RE: 260 Murray, 261, 269, 277 King Edward

Thanks John.

What is the level of quality control required, 80% TSS removal?
DMA chamber is the one from City Standard Detail W3.

Yours truly,

Ding Bang (Winston) Yang, P.Eng.
Project Engineer
Infrastructure

T+ 1 613-690-0538

2611 Queensview Drive, Suite 300
Ottawa, Ontario,
K2B 8K2, Canada

www.wsp.com

From: Wu, John <John.Wu@ottawa.ca>
Sent: June 11, 2021 8:37 AM
To: Yang, Winston <Winston.Yang@wsp.com>
Subject: RE: 260 Murray, 261, 269, 277 King Edward

C0.5 5 year's storm event is the release rate, quality control is needed, because it is close to river.
Connections to local sewers.
Connection for water , no 400mm water main, other watermains, no preference.
DMA chamber means what?

john

From: Yang, Winston <Winston.Yang@wsp.com>
Sent: June 10, 2021 4:37 PM
To: Wu, John <John.Wu@ottawa.ca>
Subject: Re: 260 Murray, 261, 269, 277 King Edward

Hi John,

Just want to touch base with you regarding the proposed hotel at 275 King Edward.
I could not find too much details from the pre-consultation meeting minute for civil infrastructure.

John Wu- Infrastructure
- Service connections available at King Edward Avenue and Clarence Street
- Noise Study for Stationary Noise (rooftop) required with submission
- Noise study for traffic noise not required but recommended
- Geotechnical report and ESA phase 1 required with submission

I am just wondering do you have any expectation for the SWM criteria?
I would like to make sure we are on the same page as we are putting up the design package for SPA.
I will be appreciated if you can provide your comments/responses to the following questionnaires.
- The site was used for commercial with mostly paved. What is the C value we can use to calculate the pre-development peak flows?
- Is there quality control required?
- There are trunk sewers of 1800mm dia. storm and 1050mm dia. sanitary in King Edward, and local sewers of 375mm dia. storm and 300mm dia. sanitary in Clarence St. What's your preference for the connection as you have mentioned service connections available at King Edward Ave and Clarence Street.
- There are 406mm dia watermain in King Edward and 203mm dia. and 152mm dia. watermain in Clarence St. which mains a water boundary condition request should be made?
- Is a DMA chamber needed for this private development?

Feel free to reach me out if you want to discuss this project further.

Thanks,

Ding Bang (Winston) Yang, P.Eng.
Project Engineer
Infrastructure

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Ottawa, Ontario,
K2B 8K2, Canada

www.wsp.com

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APPENDIX

APPENDIX

B

- WATERMAIN BOUNDARY CONDITIONS FROM CITY OF OTTAWA
- EMAILS FROM CITY OF OTTAWA
- FIRE UNDERWRITERS SURVEY – FIRE FLOW CALCULATION
- WATER DEMAND CALCULATION

Yang, Winston

From: Wu, John <John.Wu@ottawa.ca>
Sent: June 23, 2021 7:35 AM
To: Yang, Winston
Subject: RE: Boundary Condition request for 260 Murray, 261, 269, 277 King Edward
Attachments: 275 King Edward Avenue June 2021.pdf

Here it is :

******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 275 King Edward Avenue (zone 1W) assumed to be connected to the 152 mm on Clarence Street and the 203 mm on Murray (see attached PDF for location).

	152 mm on Clarence	203 mm on Murray
Minimum HGL (m)	106.5	106.5
Maximum HGL (m)	114.4	114.4
Max Day + Fire Flow (250 L/s) (m)	95.8	100.8

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.

John

From: Yang, Winston <Winston.Yang@wsp.com>
Sent: June 15, 2021 4:33 PM
To: Wu, John <John.Wu@ottawa.ca>
Subject: Boundary Condition request for 260 Murray, 261, 269, 277 King Edward

Hi John,

The building is proposed to be serviced from the 203mm watermain at Murray Street. The redundancy watermain will be connected to the 203mm/152mm watermain at Clarence Street.
The total gross building area is confirmed to be 11,640 m² by the Architect. The architect has also confirmed that the type of construction of the proposed building is non-combustible construction with fully supervised automatic fire protection.

The domestic water demands were calculated using the City of Ottawa's Water Design Guidelines. The fire flow required was determined by the Fire Underwriter Survey (FUS) method.
The resulting FUS fire flow is 15,00 L/min or 250 L/s. Please see attached pdf for the detail FUS calculation for your review.

In summary:
Average Daily Demand = 0.64 L/s
Maximum Daily Demand = 1.59 L/s
Maximum Hour Demand = 3.51 L/s
Required Fire Flow = 250 L/s

Please provide fire flow information for the two connection points at Murray Street and Clarence Street.

Should you have any questions please do not hesitate to contact me.

Thank you,

Ding Bang (Winston) Yang, P.Eng.
Project Engineer
Infrastructure

T+ 1 613-690-0538

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Ottawa, Ontario,
K2B 8K2, Canada

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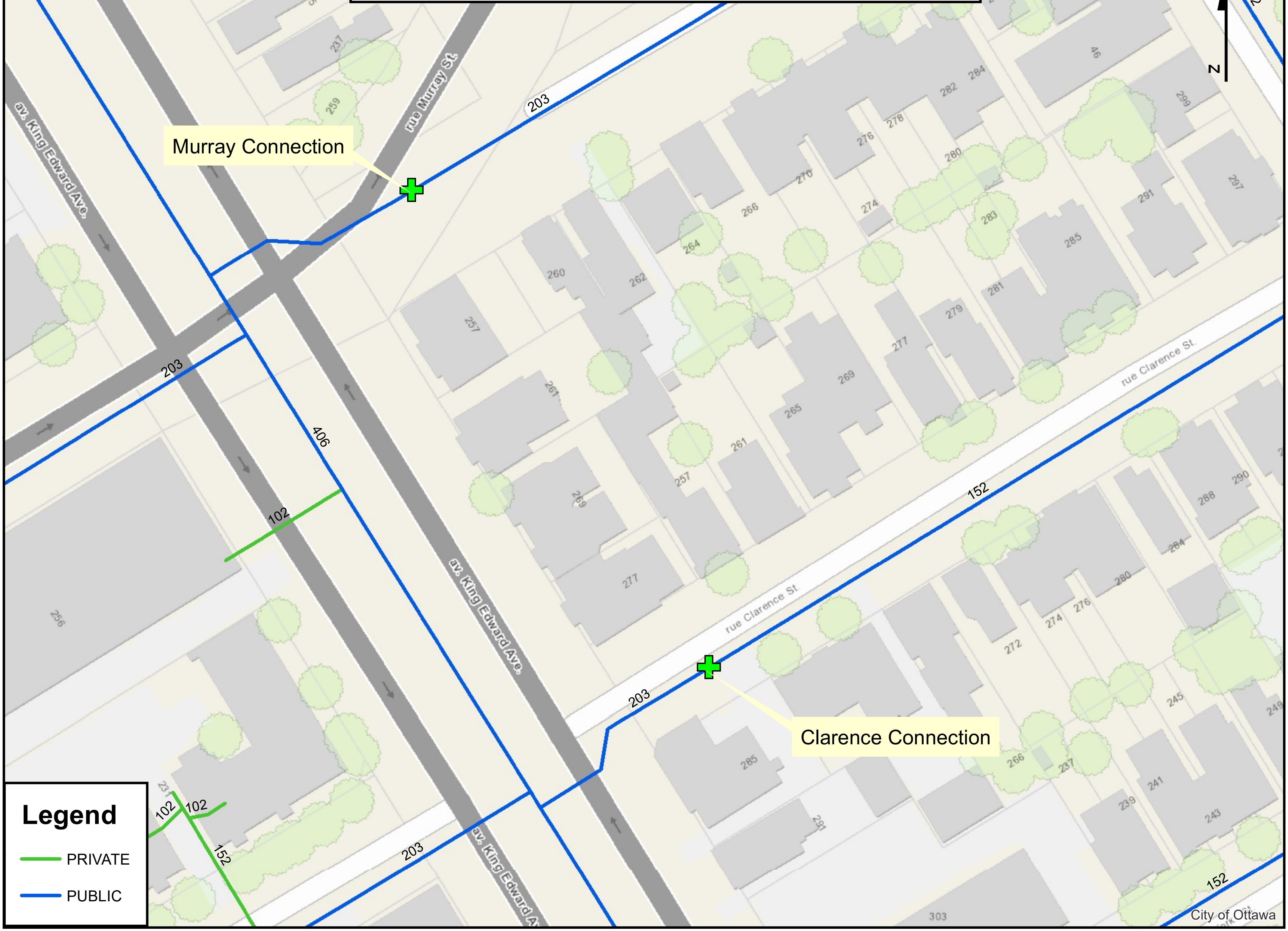
Boundary Conditions for 275 King Edward Avenue



Fire Flow Design Sheet (FUS)
275 King Edward Avenue
City of Ottawa
WSP Project No. 211-07007-00
Date: 14-Jun-21

Proposed 8-Storey Building
Fire Flow Requirements Based on Fire Underwriters Survey (FUS) 1999

1. An estimate of the Fire Flow required for a given fire area may be estimated by: $F = 220\,C\sqrt{A}$

F = required fire flow in litres per minute
C = coefficient related to the type of construction
1.5 for wood construction (structure essentially combustible)
1.0 for ordinary construction (brick or other masonry walls, combustible floor and interior)
0.8 for noncombustible construction (unprotected metal structural components, masonry or metal walls)
0.6 for fire-resistive construction (fully protected frame, floors, roof)
A = total floor area in square metres (including all storeys, but excluding basements at least 50% below grade)

A = 11640 m^2
C = 0.8
F = 18988.4 L/min

rounded off to 19,000 L/min (min value of 2000 L/min)

2. The value obtained in 1. may be reduced by as much as 25% for occupancies having a low contents fire hazard.

Non-combustible	-25%
Limited Combustible	-15%
Combustible	0%
Free Burning	15%
Rapid Burning	25%

Reduction due to low occupancy hazard -15% x 19,000 = 16,150 L/min

3. The value obtained in 2. may be reduced by as much as 50% for buildings equipped with automatic sprinkler protection.

Adequate Sprinkler confirms to NFPA13	-30%
Water supply common for sprinklers & fire hoses	-10%
Fully supervised system	-10%
No Automatic Sprinkler System	0%

Reduction due to Sprinkler System -50% x 16,150 = -8,075 L/min

4. The value obtained in 2. is increased for structures exposed within 45 metres by the fire area under consideration.

Separation	Charge
0 to 3 m	25%
3.1 to 10 m	20%
10.1 to 20 m	15%
20.1 to 30 m	10%
30.1 to 45 m	5%

Side 1	45	5%	north side
Side 2	0	25%	east side
Side 3	24	10%	south side
Side 4	45	5%	west side
		45%	(Total shall not exceed 75%)

Increase due to separation 45% x 16,150 = 7,268 L/min

5. The flow requirement is the value obtained in 2., minus the reduction in 3., plus the addition in 4.

The fire flow requirement is	15,000	L/min	(Rounded to nearest 1000 L/min)
or	**250**	**L/sec**	
or	3,963	gpm (us)	
or	3,300	gpm (uk)	

Based on method described in:
"Water Supply for Public Fire Protection - A Guide to Recommended Practice", 1991
by Fire Underwriters Survey

Water Demand Calculation Sheet

Project:	**275 King Edward Avenue**	**Date:**	**2021-07-06**
Location:	**City of Ottawa**	**Design:**	**WY**
WSP Project No.	**211-07007-00**	**Page:**	**1 of 1**

Proposed Buildings	Residential				Non-Residentail			Average Daily Demand (l/s)			Maximum Daily Demand (l/s)			Maximum Hourly Demand (l/s)			Fire Demand
	Units			Pop.	Industrial	Institutional	Commercial										
	SF	APT	ST		(ha)	(ha)	(ha)	Res.	Non-Res.	Total	Res.	Non-Res.	Total	Res.	Non-Res.	Total	(l/s)
Proposed 8-Storey Hotel																	
Bachelor		75		105				0.34		0.34	0.85		0.85	1.87		1.87	250
Bachelor B.F.		4		6				0.02		0.02	0.05		0.05	0.10		0.10	250
1 Bedroom		33		46				0.15		0.15	0.37		0.37	0.82		0.82	250
2 Bedroom		9		19				0.06		0.06	0.15		0.15	0.34		0.34	250
Total				**176**						**0.57**			**1.42**			**3.13**	

Population Densities

Single Family	3.4 person/unit
Semi-Detached	2.7 person/unit
Duplex	2.3 person/unit
Townhome (Row)	2.7 person/unit
Bachelor Apartment	1.4 person/unit
1 Bedroom Apartment	1.4 person/unit
2 Bedroom Apartment	2.1 person/unit
3 Bedroom Apartment	3.1 person/unit
4 Bedroom Apartment	4.1 person/unit
Avg. Apartment	1.8 person/unit

Average Daily Demand

Residentail	280 l/cap/day
Industrial	35000 l/ha/day
Institutional	28000 l/ha/day
Commercial	28000 l/ha/day

Maximum Daily Demand

Residential	2.5 x avg. day
Industrial	1.5 x avg. day
Institutional	1.5 x avg. day
Commercial	1.5 x avg. day

Maximum Hourly Demand

Residential	2.2 x max. day
Industrial	1.8 x max. day
Institutional	1.8 x max. day
Commercial	1.8 x max. day

APPENDIX

APPENDIX

C

- SANITARY SEWER DESIGN SHEET

SANITARY SEWAGE - PROPOSED SANITARY FLOWS

Average Wastewater Flows:		
Residential	280	L/c/d
Commercial	28,000	L/gross ha/d
Institutional	28,000	L/gross ha/d
Light Industrial	35,000	L/gross ha/d
Heavy Industrial	55,000	L/gross ha/d

Peaking Factors:	
Residential	Harmon Equation
Commercial (>20% Area)	1.5
Commercial (<20% Area)	1.0
Institutional (>20% Area)	1.5
Institutional (<20% Area)	1.0
Industrial	Per Figure in Appendix 4-B

$$P.F. = 1 + \left(\frac{14}{4 + \left(\frac{P}{1000}\right)^{\frac{1}{2}}}\right) * \mathrm{K}$$

where P = population
K = correction factor = 0.8

Peak Extraneous Flows:	
Infiltration Allowance	0.33
Less than 10 ha:	
Foundation Drain Allowance	5.0
10 ha - 100 ha:	
Foundation Drain Allowance	3.0
Greater than 100 ha:	
Foundation Drain Allowance	2.0

Unit Type	**Person Per Unit**	**Hotel/Condo**
Single Family	3.4	
Semi-detached	2.7	
Duplex	2.3	
Townhouse (row)	2.7	
Apartments:		
Bachelor	1.4	79
1 Bedroom	1.4	33
2 Bedroom	2.1	9
3 Bedroom	3.1	
Average Apt.	1.8	
Total Population		**176**

0

	Boutique Hotel/Condo King Edward		
Demand Type=	**Residential**		
Average Day Demand=	280		L/c/d
Population	**176**		
Site Area (ha)	**0.159**		
	280	x	176
	49,196		L/day
Average Daily Flow=	**0.57**		**L/s**
Peaking Factor Type	Residential		
Peaking Factor	3.53		*Max=4
	3.53	x	average day
	3.53	x	49,196
	173,879		L/day
Peak Daily Flow=	**2.01**		**L/s**
Infiltration Allowance	0.33		
	0.33	x	lot area
	0.33	x	0.159
Peak Extraneous Flow=	**0.05**		**L/s**
	peak daily flow	+	extraneous flow
	2.01	+	0.05
Total Peak Design Flow=	**2.06**		**L/s**

*Total site area was divided by 4 (for 4 towers) to calculate infiltration allowance for each building

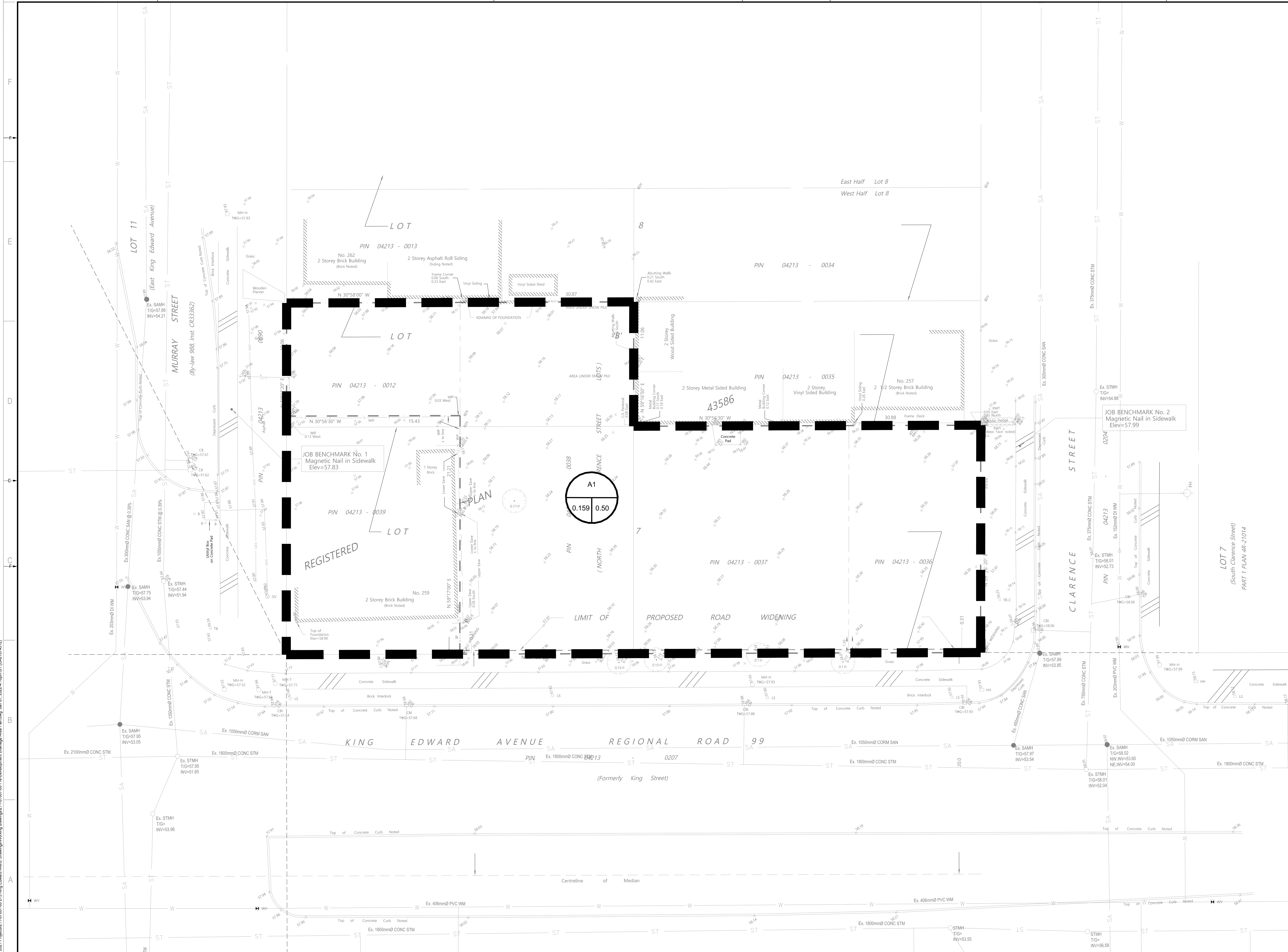
Total Peak Sanitary Flow	**2.06**	**L/s**

APPENDIX

APPENDIX

D

- STORM SEWER DESIGN SHEET
- PRE AND POST STORM DRAINAGE PLANS C4.0 AND C4.1
- GRADING PLAN C2.0
- SERVICING PLAN C3.0
- STORMCEPTOR EFO4 DETAILS, SIZING REPORT



wsp

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F: 613-829-8299
WWW.WSP.COM

ARCHITECT:

WOODMAN ARCHITECT & ASSOCIATES LTD.

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TEL: 613 228 9850 • FAX: 613 228 9848 • mailbox@woodmanarchitect.com

SEAL:

LICENSED PROFESSIONAL ENGINEER
D. B. YANG
100230568
2022-01-07
PROVINCE OF ONTARIO

NORTH

CLIENT:

165177 CANADA INC.
c/o JAY PATEL
22 RUE TASCHEREAU,
GATINEAU QC J8Y 2V4

CLIENT REF. #: –

PROJECT:

BOUTIQUE HOTEL
275 KING EDWARD AVE

KEY PLAN:

SITE

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ISSUED FOR - REVISION:

IS	RE	DATE	DESCRIPTION
2		2022-01-06	REVISED AS PER CITY COMMENTS
1		2021-07-23	ISSUED FOR SPA

PROJECT NO: 211-07007-00
DATE: JANUARY 2022
ORIGINAL SCALE: 1:150
IF THIS BAR IS NOT 25mm LONG, ADJUST YOUR PLOTTING SCALE.
25mm
DESIGNED BY: J.T./D.Y.
DRAWN BY: J.T.
CHECKED BY: D.Y.

DISCIPLINE:

TITLE:

PRE-DEVELOPMENT DRAINAGE AREA PLAN

SHEET NUMBER:

C4.0

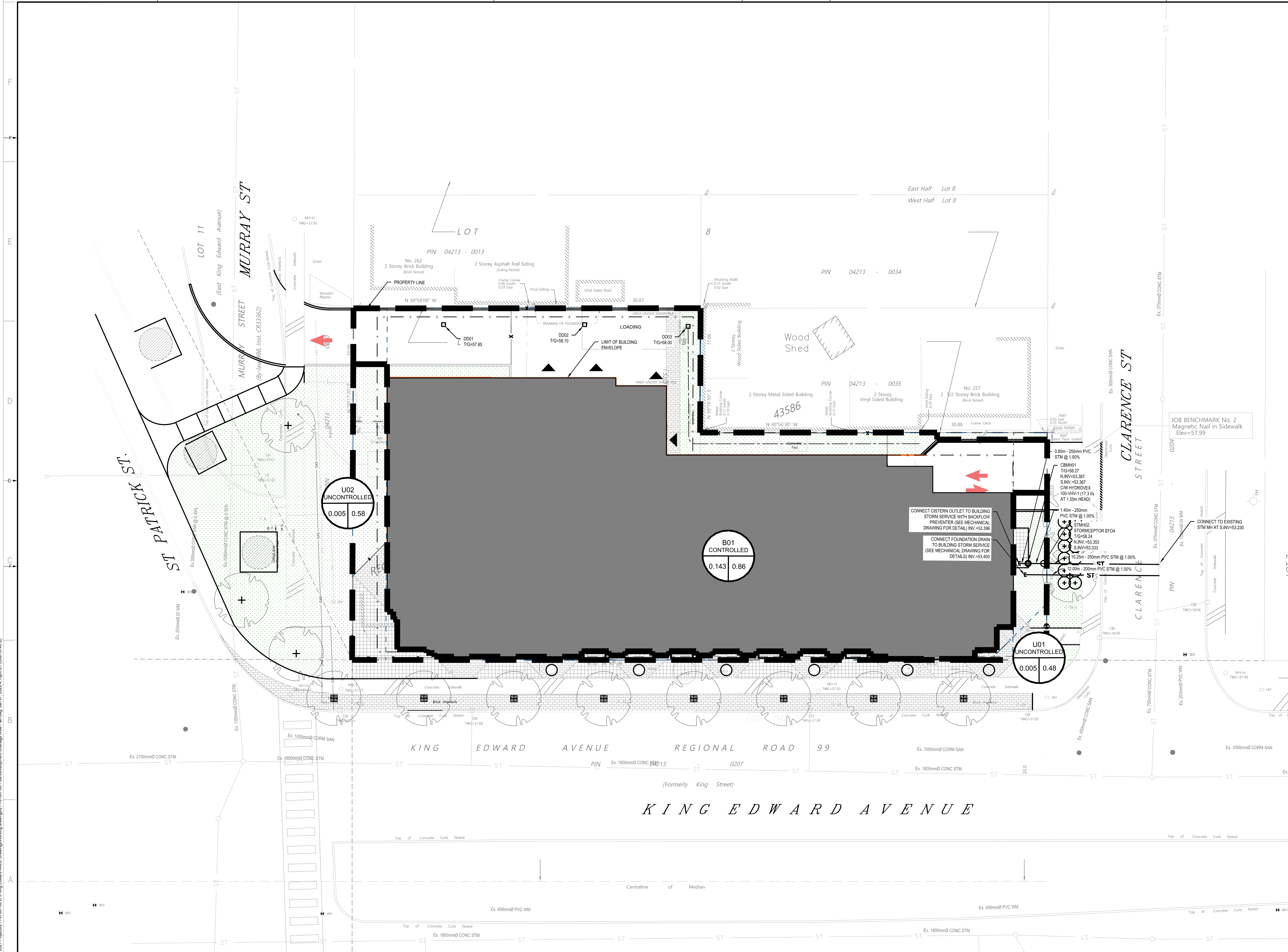
SHEET #: 4 OF 7

ISSUE: REV #
0

DATE OF: 2022-01-06

D07-12-21-0128, D02-02-21-0085

V:\10-13 ME 2021 Projects\211-07007-00 275 King Edward Ave\3. Drawings\Working drawings\211-07007-00 Pre-Development Drainage Area Plan.dwg Jan 07, 2022-4:16pm BY (CAJT074512)



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PROJECT NO.: 211-07007-00
DATE: JANUARY 2022
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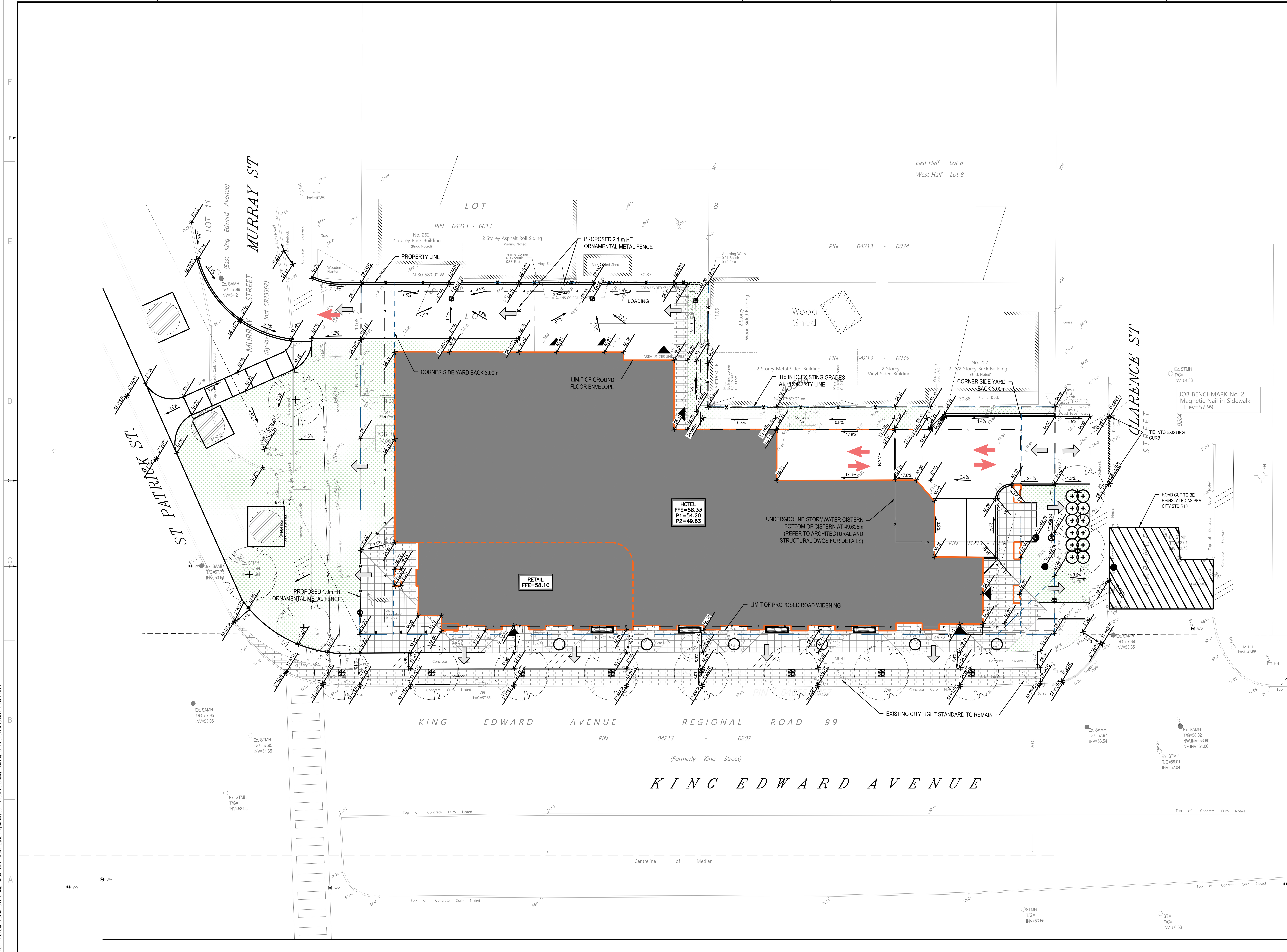
POST-DEVELOPMENT DRAINAGE AREA PLAN

SHEET NUMBER: C4.1
SHEET #: 5 OF 7
ISSUE: REV #: 0
DATE OF: 2022-01-06

D07-12-21-0128, D02-02-21-0085



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CLIENT REF. #: –

PROJECT:

BOUTIQUE HOTEL
275 KING EDWARD AVE

KEY PLAN:

SITE

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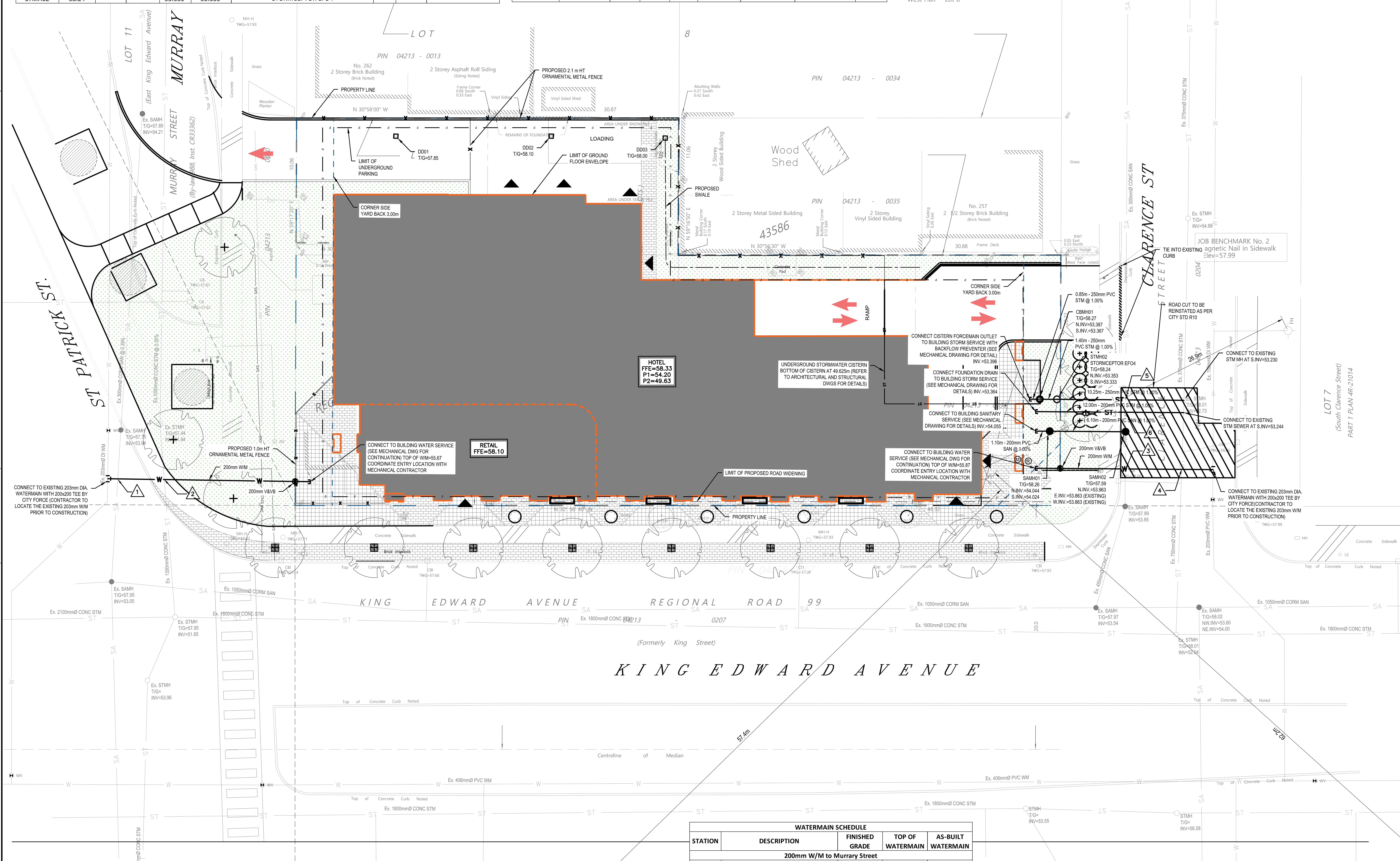
STORM STRUCTURE TABLE

STRUCTURE ID	TOP OF GRATE	INVERT				DESCRIPTION			HEAD (m)	FLOW (l/s)	ICD TYPE
		INLET	INLET	INLET	OUTLET	SIZE	OPSD	COVER			
CBMH01	58.27			53.387	53.367	1200mm DIA.	OPSD 701.010	S28.1			
STMH02	58.24			53.353	53.333	STORMCEPTOR EFO4					

SAN STRUCTURE TABLE

STRUCTURE ID	TOP OF GRATE ELEVATION	INVERT				DESCRIPTION		
		INLET	INLET	INLET	OUTLET	SIZE	OPSD	COVER
SAMH01	58.26			54.044	54.024	1200mm DIA.	OPSD-701.010	S24
SANMH02	57.59		53.963	53.863	53.863	1200mm DIA.	OPSD-701.010	S24



PIPE CROSSING TABLE

		Invert	Obvert			Invert	Obvert	
1	200mmØ PVC W/M	55.230	55.430	1.005	Clearance Above	53.925	54.225	*EXISTING 300mmØ CONC SAN*
2	200mmØ PVC W/M	55.339	55.539	2.367	Clearance Above	51.922	52.972	*EXISTING 1050mmØ CONC STM*
3	200mmØ PVC W/M	55.470	55.670	0.563	Clearance Above	53.857	54.907	*EXISTING 300mmØ CONC SAN*
4	200mmØ PVC W/M	55.399	55.599	2.123	Clearance Above	52.526	53.276	*EXISTING 750mmØ CONC STM*
5	250mmØ PVC STM	53.278	53.528	0.341	Clearance Below	53.869	54.169	*EXISTING 300mmØ CONC SAN*
6	200mmØ PVC STM	53.291	53.491	0.376	Clearance Above	53.867	54.167	*EXISTING 300mmØ CONC SAN*

WATERMAIN SCHEDULE

STATION	DESCRIPTION	FINISHED GRADE	TOP OF WATERMAIN	AS-BUILT WATERMAIN
200mm W/M to Murrary Street				
0+000	Connect to Ex. 203mm W/M with 200x200 Tee	57.700		55.300
0+000.8	Crossing existing sanitary	57.830	55.430	
0+004.6	Crossing existing storm	57.940	55.540	
0+015.1	200mm V&VB	57.930	55.530	
0+016.4	200mm W/M STUB (BLDG C)	58.070	55.670	
200mm W/M to Clarence Street				
0+000	Connect to Ex. 203mm W/M with 200x200 Tee	58.020		55.620
0+002.5	Crossing existing storm	57.999	55.599	
0+007.1	Crossing existing sanitary	58.070	55.670	
0+012.4	200mm V&VB	58.240	55.840	
0+014.4	200mm W/M STUB (BLDG C)	58.270	55.870	

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TITLE: SERVICING PLAN
SHEET NUMBER: C3.0
SHEET #: 3 OF 7
ISSUE:
REV # 0
DATE OF: 2022-01-06

D07-12-21-0128, D02-02-21-0085

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Stormceptor® EF Sizing Report

STORMCEPTOR®
ESTIMATED NET ANNUAL SEDIMENT (TSS) LOAD REDUCTION

07/22/2021

Province:	Ontario
City:	Ottawa
Nearest Rainfall Station:	OTTAWA MACDONALD-CARTIER INT'L AP
NCDC Rainfall Station Id:	6000
Years of Rainfall Data:	37
Site Name:	
Drainage Area (ha):	0.14
% Imperviousness:	100.00

Runoff Coefficient 'c': 0.90

Project Name:	275 King Edward Ave
Project Number:	211-07007-00
Designer Name:	Kathryn Kerker
Designer Company:	WSP
Designer Email:	kathryn.kerker@wsp.com
Designer Phone:	613-690-1206
EOR Name:	
EOR Company:	
EOR Email:	
EOR Phone:	

Particle Size Distribution:	Fine
Target TSS Removal (%):	80.0
Required Water Quality Runoff Volume Capture (%):	90.00
Estimated Water Quality Flow Rate (L/s):	4.55
Oil / Fuel Spill Risk Site?	Yes
Upstream Flow Control?	Yes
Upstream Orifice Control Flow Rate to Stormceptor (L/s):	17.30
Peak Conveyance (maximum) Flow Rate (L/s):	
Site Sediment Transport Rate (kg/ha/yr):	

Net Annual Sediment (TSS) Load Reduction Sizing Summary

Stormceptor Model	TSS Removal Provided (%)
EFO4	88
EFO6	91
EFO8	92
EFO10	93
EFO12	93

Recommended Stormceptor EFO Model: EFO4

Estimated Net Annual Sediment (TSS) Load Reduction (%): 88

Water Quality Runoff Volume Capture (%): > 90

THIRD-PARTY TESTING AND VERIFICATION

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

PERFORMANCE

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

PARTICLE SIZE DISTRIBUTION (PSD)

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

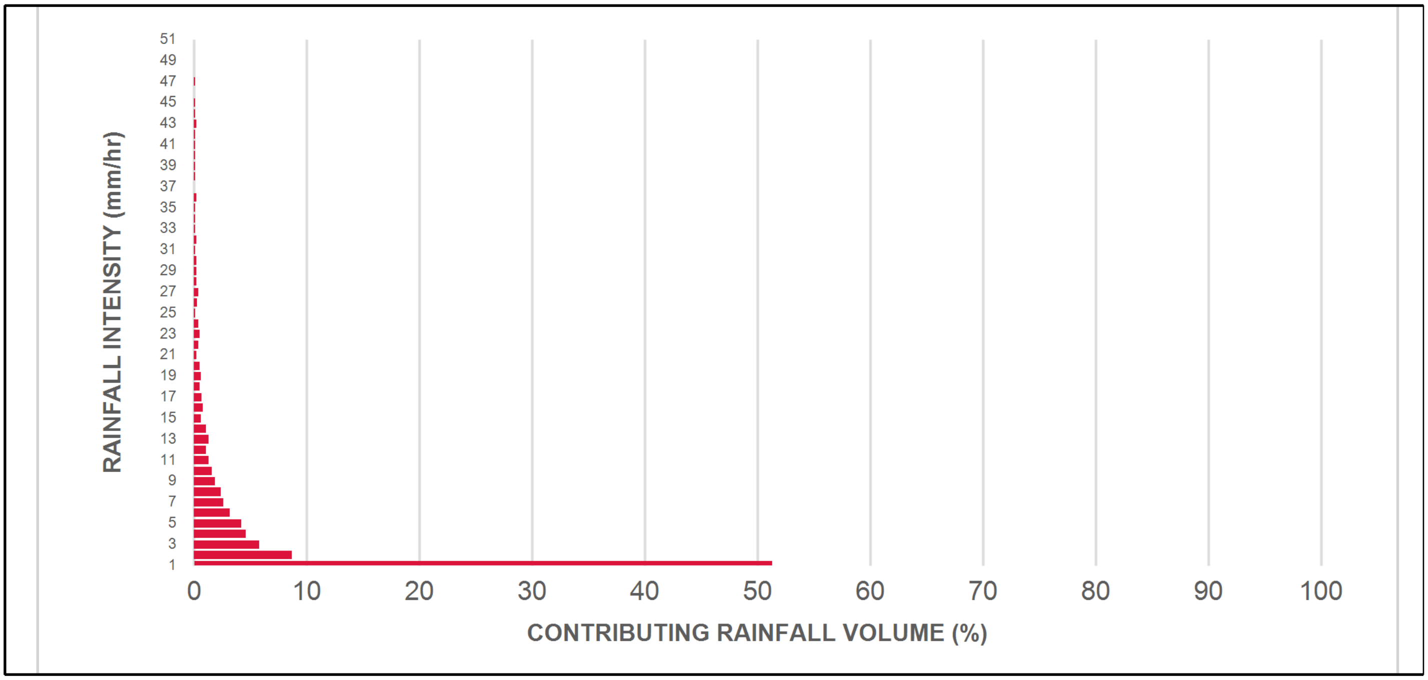
Particle Size (μm)	Percent Less Than	Particle Size Fraction (μm)	Percent
1000	100	500-1000	5
500	95	250-500	5
250	90	150-250	15
150	75	100-150	15
100	60	75-100	10
75	50	50-75	5
50	45	20-50	10
20	35	8-20	15
8	20	5-8	10
5	10	2-5	5
2	5	<2	5

Upstream Flow Controlled Results

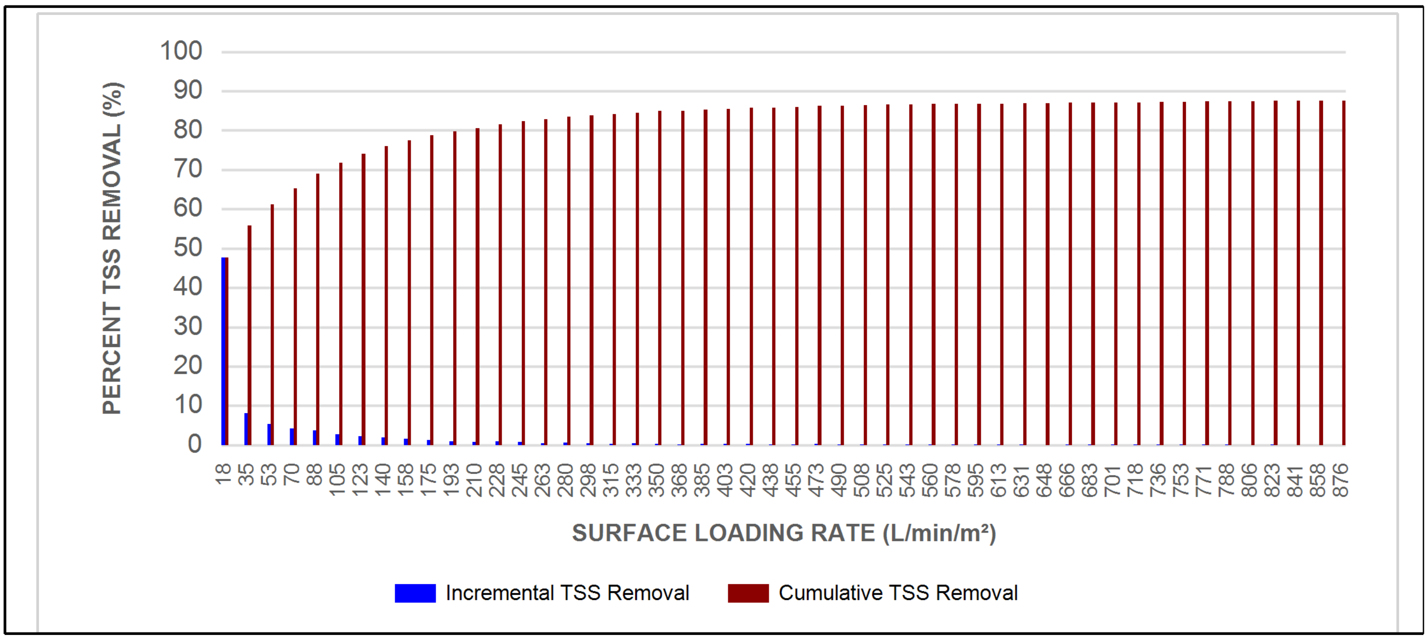
Rainfall Intensity (mm / hr)	Percent Rainfall Volume (%)	Cumulative Rainfall Volume (%)	Flow Rate (L/s)	Flow Rate (L/min)	Surface Loading Rate (L/min/m²)	Removal Efficiency (%)	Incremental Removal (%)	Cumulative Removal (%)
1	51.3	51.3	0.35	21.0	18.0	93	47.7	47.7
2	8.7	60.0	0.70	42.0	35.0	93	8.1	55.8
3	5.8	65.8	1.05	63.0	53.0	92	5.3	61.1
4	4.6	70.4	1.40	84.0	70.0	90	4.1	65.3
5	4.2	74.6	1.75	105.0	88.0	89	3.7	69.0
6	3.2	77.8	2.10	126.0	105.0	87	2.8	71.8
7	2.6	80.4	2.45	147.0	123.0	85	2.2	74.0
8	2.4	82.8	2.80	168.0	140.0	83	2.0	76.0
9	1.9	84.7	3.15	189.0	158.0	81	1.5	77.5
10	1.6	86.3	3.50	210.0	175.0	79	1.3	78.8
11	1.3	87.6	3.85	231.0	193.0	77	1.0	79.8
12	1.1	88.7	4.20	252.0	210.0	75	0.8	80.6
13	1.3	90.0	4.55	273.0	228.0	74	1.0	81.6
14	1.1	91.1	4.90	294.0	245.0	72	0.8	82.4
15	0.6	91.7	5.25	315.0	263.0	71	0.4	82.8
16	0.8	92.5	5.60	336.0	280.0	69	0.6	83.4
17	0.7	93.2	5.95	357.0	298.0	68	0.5	83.8
18	0.5	93.7	6.31	378.0	315.0	66	0.3	84.2
19	0.6	94.3	6.66	399.0	333.0	64	0.4	84.5
20	0.5	94.8	7.01	420.0	350.0	63	0.3	84.9
21	0.2	95.0	7.36	441.0	368.0	62	0.1	85.0
22	0.4	95.4	7.71	462.0	385.0	60	0.2	85.2
23	0.5	95.9	8.06	483.0	403.0	58	0.3	85.5
24	0.4	96.3	8.41	504.0	420.0	57	0.2	85.7
25	0.1	96.4	8.76	525.0	438.0	57	0.1	85.8

Rainfall Intensity (mm / hr)	Percent Rainfall Volume (%)	Cumulative Rainfall Volume (%)	Flow Rate (L/s)	Flow Rate (L/min)	Surface Loading Rate (L/min/m²)	Removal Efficiency (%)	Incremental Removal (%)	Cumulative Removal (%)
26	0.3	96.7	9.11	546.0	455.0	57	0.2	86.0
27	0.4	97.1	9.46	567.0	473.0	56	0.2	86.2
28	0.2	97.3	9.81	588.0	490.0	55	0.1	86.3
29	0.2	97.5	10.16	609.0	508.0	55	0.1	86.4
30	0.2	97.7	10.51	631.0	525.0	54	0.1	86.5
31	0.1	97.8	10.86	652.0	543.0	54	0.1	86.6
32	0.2	98.0	11.21	673.0	560.0	53	0.1	86.7
33	0.1	98.1	11.56	694.0	578.0	53	0.1	86.7
34	0.1	98.2	11.91	715.0	595.0	52	0.1	86.8
35	0.1	98.3	12.26	736.0	613.0	52	0.1	86.8
36	0.2	98.5	12.61	757.0	631.0	52	0.1	86.9
37	1.5	100.0	12.96	778.0	648.0	52	0.8	87.7
38	0.1	100.1	13.31	799.0	666.0	52	0.1	87.8
39	0.1	100.2	13.66	820.0	683.0	52	0.1	87.8
40	0.1	100.3	14.01	841.0	701.0	52	0.1	87.9
41	0.1	100.4	14.36	862.0	718.0	51	0.1	87.9
42	0.1	100.5	14.71	883.0	736.0	51	0.1	88.0
43	0.2	100.7	15.06	904.0	753.0	51	0.1	88.1
44	0.1	100.8	15.41	925.0	771.0	51	0.1	88.1
45	0.1	100.9	15.76	946.0	788.0	51	0.1	88.2
46	-0.9	100.0	16.11	967.0	806.0	51	N/A	87.7
47	0.1	100.1	16.46	988.0	823.0	51	0.1	87.8
48	-0.1	100.0	16.81	1009.0	841.0	51	N/A	87.7
49	0.0	100.0	17.00	1020.0	850.0	51	0.0	87.7
50	0.0	100.0	17.00	1020.0	850.0	51	0.0	87.7
Estimated Net Annual Sediment (TSS) Load Reduction =								**88 %**

RAINFALL DATA FROM OTTAWA MACDONALD-CARTIER INT'L AP RAINFALL STATION



INCREMENTAL AND CUMULATIVE TSS REMOVAL FOR THE RECOMMENDED STORMCEPTOR® MODEL



Maximum Pipe Diameter / Peak Conveyance

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

SCOUR PREVENTION AND ONLINE CONFIGURATION

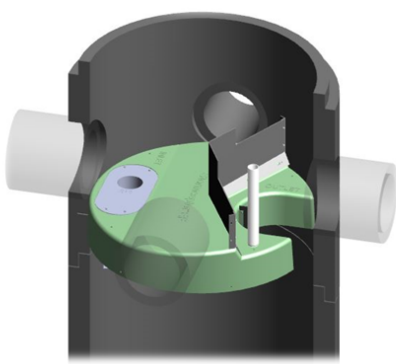
►**Stormceptor® EF and EFO** feature an internal bypass and superior scour prevention technology that have been demonstrated in third-party testing according to the scour testing provisions of the Canadian ETV **Procedure for Laboratory Testing of Oil-Grit Separators**, and the exceptional scour test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

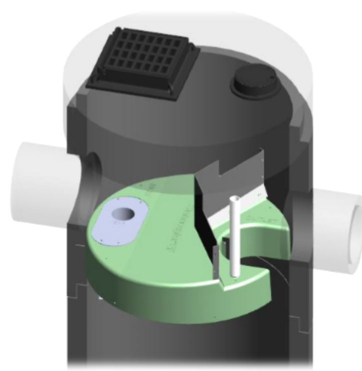
DESIGN FLEXIBILITY

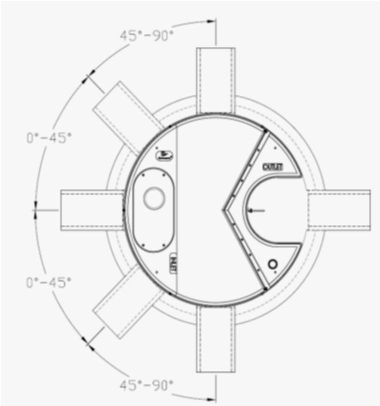
►**Stormceptor® EF** and **EFO** offers design flexibility in one simplified platform, accepting stormwater flow from a single inlet pipe or multiple inlet pipes, and/or surface runoff through an inlet grate. The device can also serve as a junction structure, accommodate a 90-degree inlet-to-outlet bend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

OIL CAPTURE AND RETENTION

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







INLET-TO-OUTLET DROP

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

HEAD LOSS

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

Pollutant Capacity

Stormceptor EF / EFO	Model Diameter		Depth (Outlet Pipe Invert to Sump Floor)		Oil Volume		Recommended Sediment Maintenance Depth *		Maximum Sediment Volume *		Maximum Sediment Mass **	
	(m)	(ft)	(m)	(ft)	(L)	(Gal)	(mm)	(in)	(L)	(ft³)	(kg)	(lb)
EF4 / EFO4	1.2	4	1.52	5.0	265	70	203	8	1190	42	1904	5250
EF6 / EFO6	1.8	6	1.93	6.3	610	160	305	12	3470	123	5552	15375
EF8 / EFO8	2.4	8	2.59	8.5	1070	280	610	24	8780	310	14048	38750
EF10 / EFO10	3.0	10	3.25	10.7	1670	440	610	24	17790	628	28464	78500
EF12 / EFO12	3.6	12	3.89	12.8	2475	655	610	24	31220	1103	49952	137875

*Increased sump depth may be added to increase sediment storage capacity
** Average density of wet packed sediment in sump = 1.6 kg/L (100 lb/ft³)

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

STANDARD STORMCEPTOR EF/EFO DRAWINGS

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

STANDARD STORMCEPTOR EF/EFO SPECIFICATION

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

STANDARD PERFORMANCE SPECIFICATION FOR “OIL GRIT SEPARATOR” (OGS) STORMWATER QUALITY TREATMENT DEVICE

PART 1 – GENERAL

1.1 WORK INCLUDED

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

1.2 REFERENCE STANDARDS & PROCEDURES

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

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

1.3 SUBMITTALS

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

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

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

PART 2 – PRODUCTS

2.1 OGS POLLUTANT STORAGE

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

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

PART 3 – PERFORMANCE & DESIGN

3.1 GENERAL

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

3.2 SIZING METHODOLOGY

The OGS device shall be engineered, designed and sized to provide stormwater quality treatment based on treating a minimum of 90 percent of the average annual runoff volume and a minimum removal of an annual average 60% of the sediment (TSS) load based on the Particle Size Distribution (PSD) specified in the sizing report for the specified device. Sizing shall be determined using historical rainfall data and a sediment removal performance curve derived from the actual third-party verified laboratory testing data. The OGS device shall also have sufficient annual sediment storage capacity as specified and calculated in Section 2.1.

3.3 CANADIAN ETV or ISO 14034 ETV VERIFICATION OF SCOUR TESTING

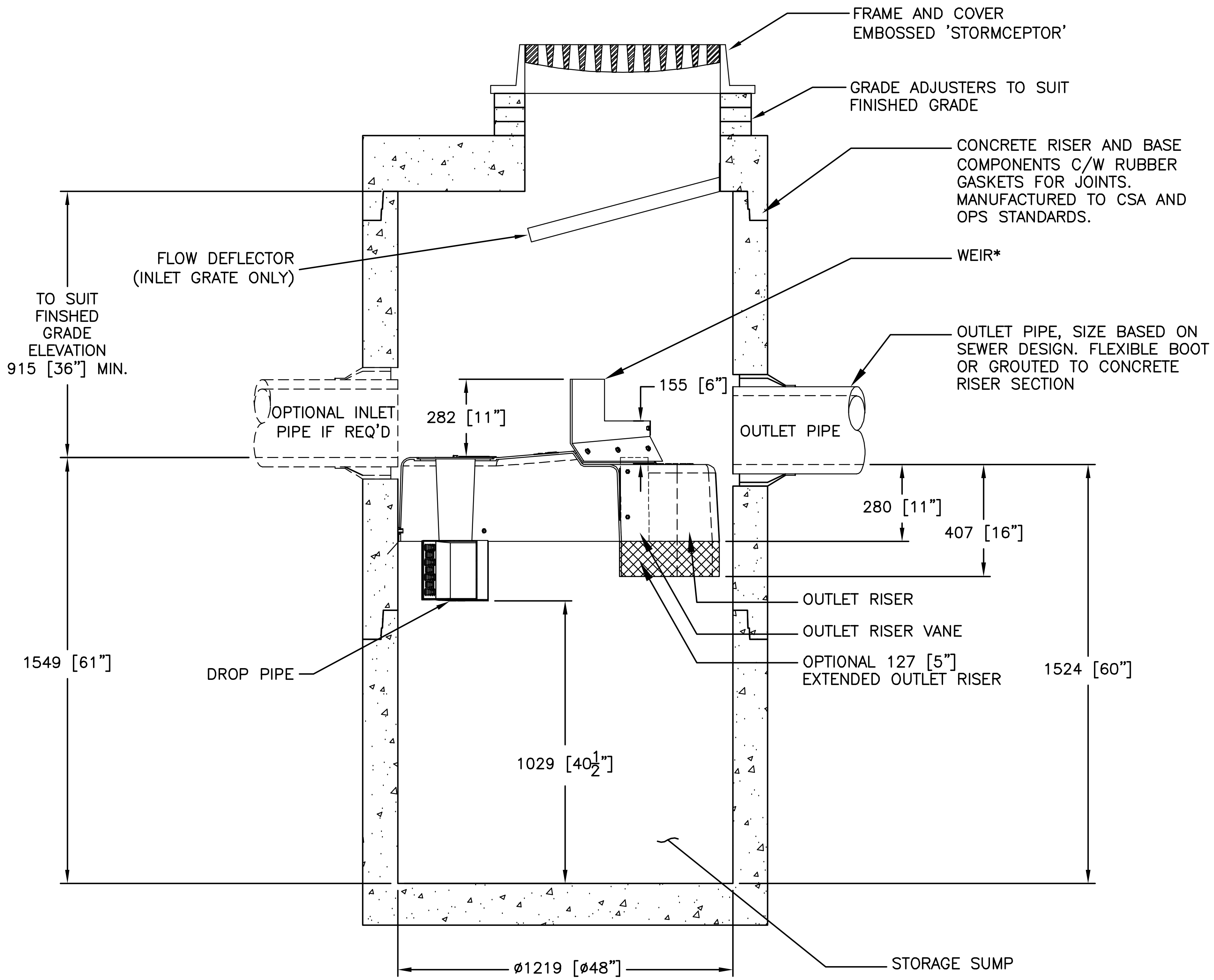
The OGS device shall have Canadian ETV or ISO 14034 ETV Verification of third-party scour testing conducted in accordance with the Canadian ETV Program's **Procedure for Laboratory Testing of Oil-Grit Separators.**

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

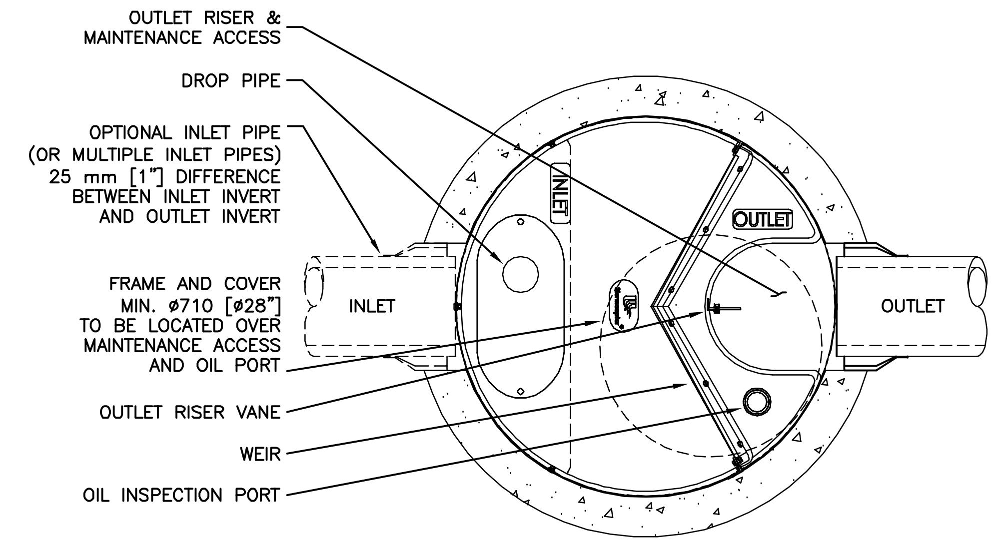
3.4 LIGHT LIQUID RE-ENTRAINMENT SIMULATION TESTING

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

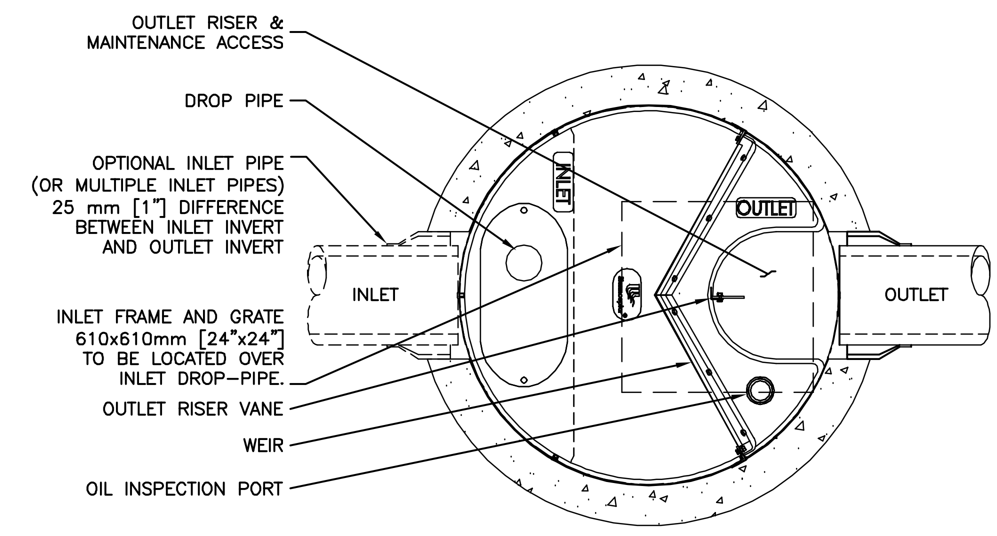
3.4.1 For an OGS device to be an acceptable stormwater treatment device on a site where vehicular traffic occurs and the potential for an oil or fuel spill exists, the OGS device must have reported verified performance results of greater than 99% cumulative retention of LDPE plastic beads for the five specified surface loading rates (ranging 200 L/min/m2 to 2600 L/min/m2) in accordance with the Light Liquid Re-entrainment Simulation Testing within the Canadian ETV Program's **Procedure for Laboratory Testing of Oil-Grit Separators.**However, an OGS device shall not be allowed if the Light Liquid Re-entrainment Simulation Testing was performed with screening components within the OGS device that are effective at retaining the LDPE plastic beads, but would not be expected to retain light liquids such as oil and fuel.



SECTION VIEW



PLAN VIEW (STANDARD)



PLAN VIEW (INLET TOP)

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

GENERAL NOTES:

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

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

INSTALLATION NOTES

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

STANDARD DETAIL
NOT FOR CONSTRUCTION

SITE SPECIFIC DATA REQUIREMENTS

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

* PER ENGINEER OF RECORD

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

Stormceptor® EF

SCALE = NTS

imbrium

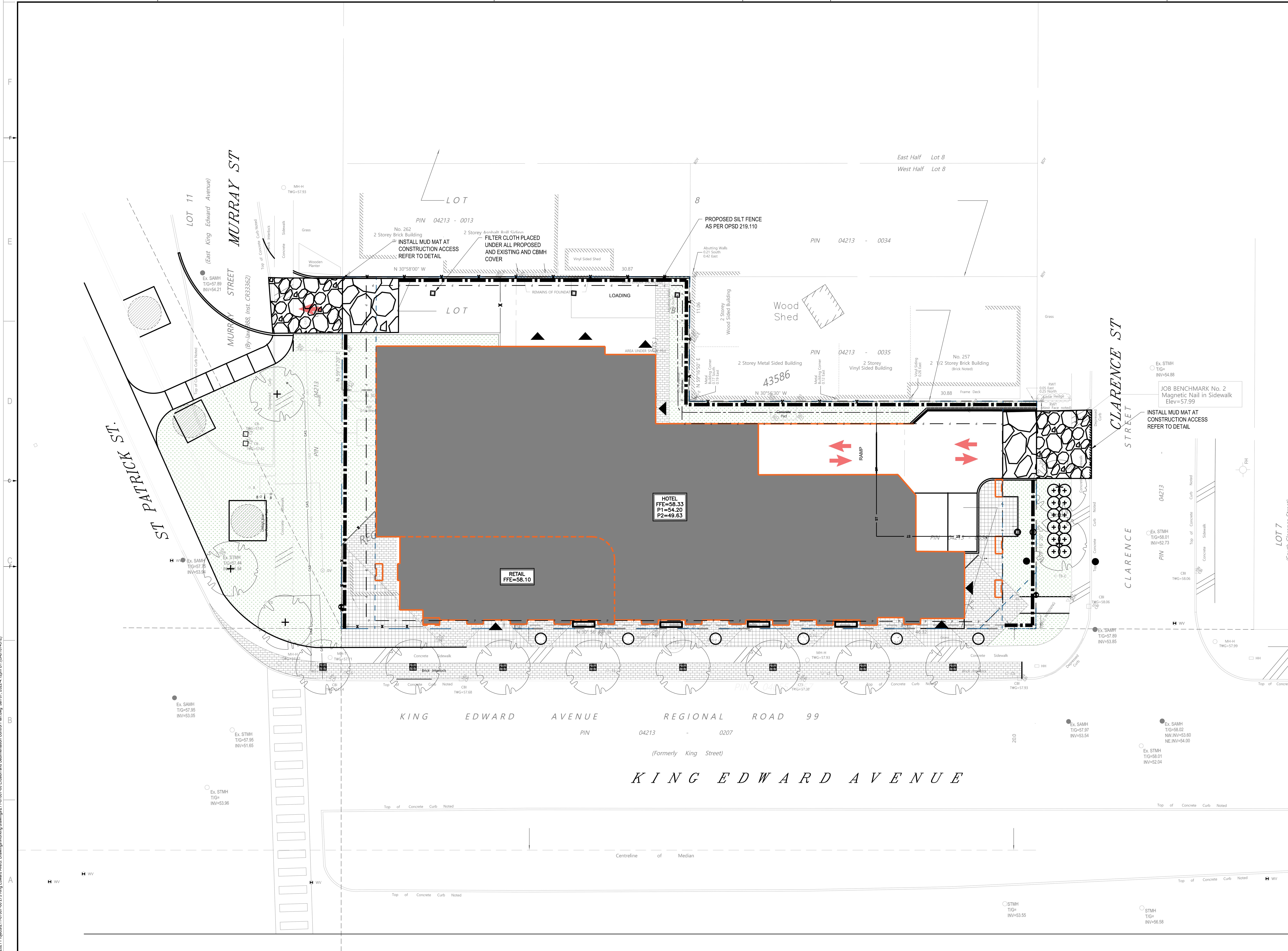
DATE: 10/13/2017	
DESIGNED: JSK	DRAWN: JSK
CHECKED: BSF	APPROVED: SP
PROJECT No.: EFO4	SEQUENCE No.: *
SHEET: 1 OF 1	

APPENDIX

APPENDIX

E

- EROSION AND SEDIMENTATION CONTROL PLAN C5.0



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SEAL:

LICENSED PROFESSIONAL ENGINEER
D. B. YANG
100230568
2022-01-07
PROVINCE OF ONTARIO

NORTH

CLIENT:

165177 CANADA INC.
c/o JAY PATEL
22 RUE TASCHEREAU,
GATINEAU QC J8Y 2V4

CLIENT REF. #: --

PROJECT:

BOUTIQUE HOTEL
275 KING EDWARD AVE

KEY PLAN:

SITE

DISCLAIMER: COPYRIGHT:

ISSUED FOR - REVISION:

IS	RE	DATE	DESCRIPTION
2		2022-01-06	REVISED AS PER CITY COMMENTS
1		2021-07-23	ISSUED FOR SPA

PROJECT NO: 211-07007-00
DATE: JANUARY 2022
ORIGINAL SCALE: 1:150
IF THIS BAR IS NOT 25mm LONG, ADJUST YOUR PLOTTING SCALE.
25mm
DESIGNED BY: J.T./D.Y.
DRAWN BY: J.T.
CHECKED BY: D.Y.
DISCIPLINE: --

TITLE:

ENROSION AND SEDIMENTATION CONTROL PLAN

SHEET NUMBER: C5.0
SHEET #: 6 OF 6
ISSUE: REV #: 0
DATE OF: 2022-01-06

D07-12-21-0128, D02-02-21-0085

APPENDIX

APPENDIX

F

- SUBMISSION CHECK LIST