WOODMAN ARCHITECT & ASSOCIATES LTD.

6-STOREY MIXED USE DEVELOPMENT, 357-363 PRESTON STREET, OTTAWA, ON

SITE SERVICING REPORT

MARCH 7, 2022

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SITE SERVICING REPORT

WOODMAN ARCHITECT & ASSOCIATES LTD.

FOR SITE PLAN APPROVAL

PROJECT NO.: 211-00041-00
DATE: MARCH 2022

WSP
2611 QUEENSVIEW DRIVE, SUITE 300
OTTAWA, ON, CANADA, K2B 8K2

WSP.COM

March 7, 2022

Woodman Architect & Associates Ltd.
4 Beechwood Avenue #201
Ottawa, ON K1L 8L9

Attention: Joseph Peloso

Dear Sir:

Subject: 357-363 Preston Street, Ottawa, ON – Site Servicing and Stormwater Management Report

Please find attached our site servicing report issued for site plan approval application.

Yours sincerely,

Stephen McCaughey, P.Eng.
Project Engineer

WSP ref.: 211-00041-00

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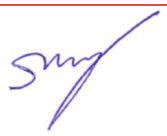
QUALITY MANAGEMENT

ISSUE/REVISION	FIRST ISSUE	REVISION 1	REVISION 2	REVISION 3
Remarks	Issued for Site Plan Approval Application			
Date	2022-03-04			
Prepared by	Erin Blanchette, EIT			
Signature				
Checked by	Stephen McCaughey, P.Eng.			
Signature				
Authorised by				
Signature				
Project number	211-00041-00			
Report number				
File reference				

SIGNATURES

PREPARED BY

Erin Blanchette, EIT
Junior Project Engineer

REVIEWED BY

Stephen McCaughey, P.Eng.
Project Engineer

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TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

1 INTRODUCTION

1.1 EXECUTIVE SUMMARY

WSP was retained by Woodman Architect & Associates Ltd. to provide servicing, grading and stormwater management design services in support of the site plan approval for the proposed mixed-use development located at 357-363 Preston Street, in the City of Ottawa. The proposed work consists of a 6-storey mixed use development tower with the ground level consisting of two commercial units and stories two through five housing a total of 40 units. This report will provide sufficient detail to demonstrate that the proposed development can be supported by the existing municipal infrastructure services (watermain, and combined sewer) and that the servicing design conforms to the applicable standards and guidelines. The report will also include measures to be taken during the construction to minimize erosion and sedimentation. A separate report (357-361-363 Preston Street Stormwater Management Report) is provided detailing the stormwater management approach and addressing the quantity control and quality measures in accordance with the applicable guidelines.

Currently, the site is partially developed and houses a small parking lot, a one storey residential building, and a two-storey commercial/residential building. The total property area is 0.084 ha in size. The site sits south-east of the Preston St. and Aberdeen St. intersection and is bounded by parking facilities to the east with developed land in the immediate surrounding area.

The subject site is a rectangular shaped property consisting of three individual lots. The site generally slopes south to north and drains onto either Preston St. or Aberdeen St. The two residential buildings on site are currently serviced for water, sanitary, and storm, however these existing on-site services will be demolished for the proposed works.

The City of Ottawa requires 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 the City of Ottawa 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 adjacent to the development as recorded from online resource GeoOttawa:

Aberdeen St.

- 203 mm watermain, and a 1200 mm concrete combined sewer.

Preston St.

- 406 mm watermain, and a 1500 mm concrete combined sewer.

It is proposed that an on-site stormwater management system will be provided to collect and attenuate flow rates and control water quality leaving the site. Refer to stormwater management report for details.

1.2 LOCATION MAP AND PLAN

The site at 357-363 Preston St. is shown in Figure 1-1 below as presented in the GeoOttawa website.

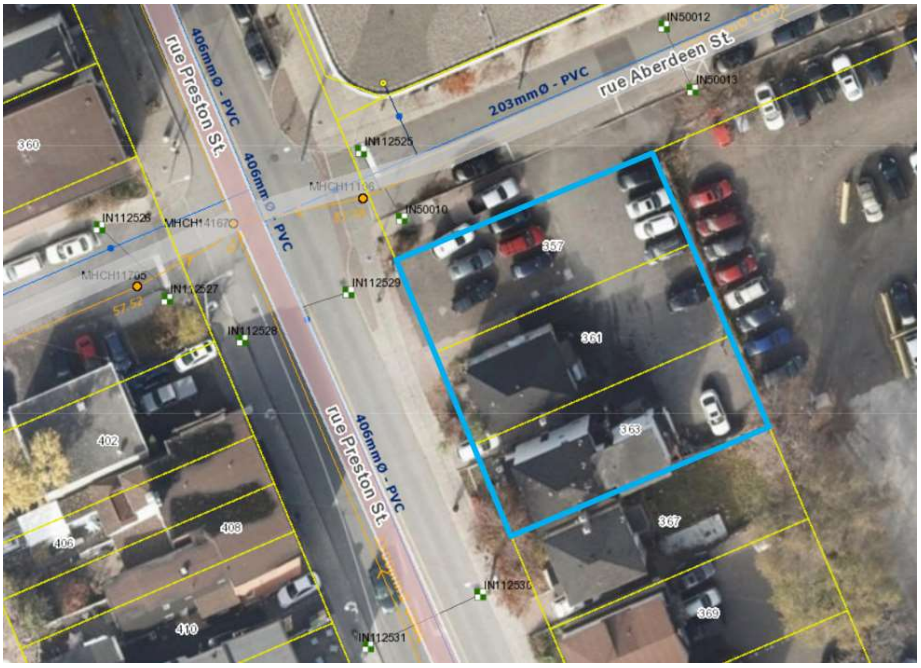


Figure 1-1 Site Location

The proposed development will consist of a 6-storey mixed use tower with 40 residential units, 2 commercial units on the ground floor, and a below grade parking garage. The building will have a gross floor area of approximately 3,471 m^2.

1.3 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 all amendments issued as part of Technical Bulletins.

- Ottawa Design Guidelines – Water Distribution, July 2010 (WDG001), including all amendments issued as part of Technical Bulletins.

- 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.

1.4 AVAILABLE EXISTING AND PROPOSED INFRASTRUCTURE

As described above, all municipal mains (combined sewers and watermains) are available and located along both Preston St. and Aberdeen St. A valved water service will be provided from Preston St. and storm and sanitary services will discharge to the combined sewer on Aberdeen St. A sanitary monitoring hole will be located at or near the property line. Quantity and quality control is required to restrict the stormwater discharge leaving the site, thus the on-site storm runoff will be captured, detention storage provided, flow release restricted, treated for quality control requirements, and finally directed towards the existing combined sewer on Aberdeen St.

1.5 GEOTECHNICAL STUDY

Coordination is underway to obtain a geotechnical investigation report of the subject property. Findings will be taken into account for this design development in subsequent submissions.

2 WATER DISTRIBUTION

2.1 SYSTEM CONSTRAINTS AND BOUNDARY CONDITIONS

Boundary conditions have been provided by the City of Ottawa at the existing connection along the Preston St. 406mm watermain (Zone 1W).

Table 2-1: Boundary Conditions (City of Ottawa)

Scenario	Preston St. Connection
Average Day (MAX HGL)	115.2m
Peak Hour (MIN HGL)	107.3m
Max Day + Fire Flow	109.2m

2.2 CONFIRMATION OF ADEQUATE DOMESTIC SUPPLY AND PRESSURE

Water demands are based on Table 4.2 of the Ottawa Design Guidelines – Water Distribution for these residential demands based on the number of apartment units. For purpose of verification of supply. A water demand calculation sheet is included in Appendix A, and the total water demands are summarized as follows:

	357-363 Preston
Average Day	0.23 L/s
Maximum Day	1.70 L/s
Peak Hour	20.74 L/s

Since the average day demand is less than 50,000 L/d (0.58 L/s), twin services will not be required. The site servicing drawing is shown in Appendix C.

The 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.

The site has been analyzed as summarized below and in Table 2-2 to ensure all the City of Ottawa minimum criteria for water pressures are met for the two conditions (maximum day + fire flow and peak hour). The analysis was carried out using EPANET, hydraulic and water quality analysis based on the boundary conditions provided by the City of Ottawa. The detailed EPANET output results are also included in the Appendix A.

With respect to an average day demand of 0.23 L/s, the model indicated that the pressure in the pipe was acceptable and within the City of Ottawa's maximum pressure requirements.

With respect to a peak hour demand of 20.74 L/s, the model indicated that the pressure drop in the pipe was acceptable and within the City of Ottawa's minimum pressure requirements.

With respect to a max day + fire flow of 135.03 L/s, the model indicated that the pressure drop in the pipe was acceptable and within the City of Ottawa's minimum pressure requirements. Section 2.3 following details the fire flow estimation.

Refer to Appendix A for the detailed water distribution analysis output.

Table 2-2: Summary of Water Pressure from EPANET results

Scenario	Pressure at Building Connection	
	(psi)	(kPa)
Max Day + Fire Flow	44.36	305.85
Peak Hour (MIN HGL)	47.63	328.40
Average Day (Max HGL)	55.70	384.04

2.3 CONFIRMATION OF ADEQUATE FIRE FLOW PROTECTION

The fire flow rate has been calculated using the Fire Underwriters Survey (FUS) method. The method considers the type of building construction, the building occupancy, the use of sprinklers and the exposures to adjacent structures. For fire resistive construction with a full sprinkler system only the 2 largest adjacent storeys plus 50% of the next 8 storeys above are considered, leading to the calculated fire flow demand of 7,980 L/min (133 L/s). A copy of the FUS calculations are included in Appendix A.

The maximum fire demand of 7,980 L/min can be delivered through the proposed 150mm service. The existing hydrant across Aberdeen St. is within 45m of the building fire department connection and will be maintained. Coordination is ongoing with mechanical regarding the fire department connection location.

The boundary condition for Maximum Day and Fire Flow results in a pressure of 305.85 kPa at the building. 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; therefore, the fire flow requirement is met.

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 estimate wastewater flows generated by the subject site and verify existing capacity;

- Average sanitary flow for residential use 280 L/c/d
- Infiltration & Foundation Allowance (Total) 0.33 L/ha/s

3.2 CALCULATIONS FOR SANITARY DEMAND

The criteria to determine anticipated peak flow based on site used as described in Ottawa Sewer Design Guidelines Appendix 4-A are as follows, refer to Appendix B for detailed calculation.

	Total
Average Day	0.23 L/s
Peak	0.77 L/s
Extraneous Day	0.03 L/s
Total	**0.83 L/s**

3.3 VERIFICATION OF AVAILABLE CAPACITY IN EXISTING SEWER

The sanitary demand will be serviced by a 150mm sewer with a minimum slope of 1% to the combined 1200mm sewer on Aberdeen St. A Sanitary Sewer Design Sheet is provided in Appendix B confirming capacity and minimum scouring velocity is achieved. Calculations show that sanitary flows from the development will be low and will be replacing similar flows generated by the existing buildings on site, so the sanitary discharge is not expected to have a significant impact on the combined sewer capacity. City to confirm the combined sewer capacity on Aberdeen St. upon receipt of this submission.

4 SITE STORM SERVICING

4.1 EXISTING CONDITION

The site sits south-east of the Preston St. and Aberdeen St. intersection and is directly bounded by parking facilities and developed residential and commercial land. The site is partially developed and houses a small parking lot, a one storey residential building, and a two-storey commercial/residential building. The existing buildings are equipped with storm services, however they will be removed as part of the development. Most runoff from the subject site is ultimately directed to the 1200m diameter combined sewer, which runs east to west along Aberdeen St.

4.2 DRAINAGE DRAWINGS

Site drawings are included in Appendix C including servicing, grading, drainage area, and erosion and sediment control.

4.3 WATER QUANTITY CONTROL OBJECTIVE

No roof storage is proposed for this site. Refer to the Stormwater Management Report for the water quantity objective for the site.

4.4 WATER QUALITY CONTROL OBJECTIVE

No water quality control is required for this site. Refer to the Stormwater Management Report for further details.

4.5 PROPOSED MINOR SYSTEM

The development will be serviced by a 150 mm storm service connection to the existing 1200 mm combined sewer on Aberdeen St. As described in the Stormwater Management Report, runoff from the new building's roof will be directed to an underground cistern located within the building footprint and will outlet to the combined sewer on Aberdeen St. A flow restrictor will reduce post-development flows to the allowable rate. An overflow pipe which discharges to a grated maintenance hole is proposed. All other flow from the developed site will be left uncontrolled and will be directed to either adjacent street. The sewer design sheet for the site storm system is provided in Appendix D.

4.6 PROPOSED MAJOR SYSTEM

For the overall small ground-level drainage areas, the major overland flow routes lead out to the adjacent streets, with the overflow elevations at minimum 300mm below the building entrances. Additionally, the spillover points are less than 300mm from the surface inlet elevation so there will be no ponding greater than 300mm even in cases of blockage. The storm sewers are sized such that no ponding will occur during the 2-year. Due to the small drainage areas at-grade no ponding is expected during the 100-year nor 100-year + 20% stress test. The storm sewer design sheets are provided in Appendix D.

5 SEDIMENT AND EROSION CONTROL

5.1 GENERAL

Prior to topsoil stripping, earthworks or underground construction, erosion and sediment controls will be implemented and will be maintained throughout construction. Silt fences will be installed around the perimeter of the site and will be cleaned and maintained throughout construction. Silt fences will remain in place until the working areas have been stabilized or re-vegetated. Catch basins and manholes will have filter fabric installed under the grate during construction to protect from silt entering the storm sewer system. A mud mat will be installed at the construction access to reduce risk of mud tracking onto adjacent roads.

Erosion and sediment controls must be in place during construction. Recommendations to the contractor will be included in the erosion and sediment control plan in Appendix C and are summarized below:

During all construction activities, erosion and sedimentation shall be controlled by the following techniques:

Prior to start of construction:

- Install silt fence along the perimeter of the property line.
- Install mud mat (gravel mat on geotextile) at construction site entrance to reduce mud tracking from site onto road.
- Install silt sack filters in all the catchbasins and manholes that capture runoff from the construction area.

During construction:

- Minimize the extent of disturbed areas and the duration of exposure and impacts to existing grading.
- Perimeter vegetation to remain in place until permanent storm water management is in place otherwise, immediately install silt fence when the existing site is disturbed at the perimeter.
- Protect disturbed areas from overland flow by providing temporary swales to the satisfaction of the field engineer. Tie-in temporary swale to existing catchbasins as required.
- During demolition of existing on-site storm infrastructure, protect downstream sewers from unfiltered flow.
- Provide temporary cover such as seeding or mulching if disturbed area will not be rehabilitated within 30 days.
- Inspect silt fences, filter fabric filters and catch basin sumps weekly and within 24 hours after a storm event. Clean and repair when necessary.
- Drawing to be reviewed and revised as required during construction.
- Erosion control fencing to be also installed around the base of all stockpiles.
- Do not locate topsoil piles and excavation material closer than 2.5m from any paved surface, or one which is to be paved before the pile is removed. All topsoil piles are to be seeded if they are to remain on site long enough for seeds to grow (longer than 30 days).
- Control dust blown off-site by seeding topsoil piles and other areas temporarily (provide watering as required and to the satisfaction of the engineer).
- No alternate methods of erosion protection shall be permitted unless approved by the field engineer.
- City roadway and sidewalk to be cleaned of all sediment from vehicular tracking as required.

- During wet conditions, tires of all vehicles/equipment leaving the site are to be scrapped.
- Any mud/material tracked onto the road shall be removed immediately by hand or rubber tire loader.
- Take all necessary steps to prevent building material, construction debris or waste being spilled or tracked onto abutting properties or public streets during construction and proceed immediately to clean up any areas so affected.
- All erosion control structure to remain in place until all disturbed ground surfaces have been stabilized either by paving or restoration of vegetative ground cover.
- During the course of construction, if the engineer believes that additional prevention methods are required to control erosion and sedimentation, the contractor will install additional silt fences or other methods as required to the satisfaction of the engineer.
- The contractor shall implement best management practices, to provide for protection of the area drainage system and the receiving watercourse, during construction activities. The contractor acknowledges that failure to implement appropriate erosion and sediment control measures may be subject to penalties imposed by any applicable regulatory agency.

6 APPROVAL AND PERMIT REQUIREMENTS

6.1 GENERAL

The proposed development is subject to City of Ottawa site plan approval and criteria from the Rideau Valley Conservation Authority.

No other 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 except those noted above.

Given the site is discharging to a combined sewer an ECA with the Ontario Ministry of the Environment, Conservation and Parks (MECP) will be required. This site should be reviewed and considered for the City of Ottawa's Transfer of Review to expedite the application process.

7 CONCLUSION CHECKLIST

7.1 CONCLUSIONS AND RECOMMENDATIONS

It is concluded that the proposed development can meet all provided servicing constraints and associated requirements, with the City to confirm the combined sewer capacity on Aberdeen St. upon receipt of this submission. 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

Minutes from a pre-consultation meeting held with the City of Ottawa are provided in Appendix E.

A WATER DEMAND

WATER DISTRIBUTION - PROPOSED DOMESTIC DEMANDS

Demand Type		Amount	Units
Average Day Demand			
Residential	=	280	L/c/d
Light Industrial	=	35000	L/gross ha/d
Heavy Industrial	=	55000	L/gross ha/d
Shopping Centres	=	2500	L/(1000m2/d)
Hospitals	=	900	L/(bed/d)
Schools	=	70	L/(Students/d)
Trailer Parks no Hook-Ups	=	340	L/(space/d)
Trailer Parks with Hook-Ups	=	800	L/(space/d)
Campgrounds	=	225	L/(campsite/d)
Mobile Home Parks	=	1000	L/(Space/d)
Motels	=	150	L/(bed-space/d)
Hotels	=	225	L/(bed-space/d)
Tourist Commercial	=	28000	L/gross ha/d
Other Commercial	=	28000	L/gross ha/d

Unit Type	Person / Unit
Single Family	3.4
Semi-detached	2.7
Duplex	2.3
Townhouse (row)	2.7
Apartments:	
Bachelor	1.4
1 Bedroom	1.4
2 Bedroom	2.1
3 Bedroom	3.1
Average Apt.	1.8
357/361/363 Preston Units:	
Studio	1.4
1 Bedroom	1.4
2 Bedroom	2.1
3 Bedroom	3.1

Maximum Daily Demand:					
Residential	=	2.5	x	average day	L/c/d
Industrial	=	1.5	x	average day	L/gross ha/d
Commercial	=	1.5	x	average day	L/gross ha/d
Institutional	=	1.5	x	average day	L/gross ha/d

Population Calculator	357-363 Preston Count
Studio	8
1 Bedroom	25
2 Bedroom	6
3 Bedroom	1
Total Population	**61.9**

Maximum Hour Demand:					
Residential	=	2.2	x	maximum day	L/c/d
Industrial	=	1.8	x	maximum day	L/gross ha/d
Commercial	=	1.8	x	maximum day	L/gross ha/d
Institutional	=	1.8	x	maximum day	L/gross ha/d

Residential Maximum day factor for an equivalent population of 62* = **8.27**

Residential Peak hour factor for an equivalent population of 62* = **12.46**

* based on interpolation of table 3-3 in the Ontario Drinking Water Design Guidelines

		357/362/363 Preston - Residential			**357/362/363 Preston - Commercial**			**Totals**
Demand Type	=	Residential			Other Commercial			
Average Day Demand	=	280		L/c/d	28,000		L/gross ha/d	
Population	=	62						
Area	=				0.08		ha	
	=	280	x	62	28,000	x	0.08	
	=	17,332		L/day	2,355		L/day	
Average Daily Flow	=	**0.20**		**L/s**	**0.03**		**L/s**	**Average Daily Flow (L/s) = 0.23**
Daily Demand Type	=	Residential			Commercial			
Max. Daily Factor	=	8.3		L/c/d	1.5		L/gross ha/d	
	=	8.3	x	Average Daily Flow	1.5	x	Average Daily Flow	
	=	8.3	x	17,332	1.5	x	2,355	
	=	143,336		L/day	3,532		L/day	
Maximum Daily Demand	=	**1.66**		**L/s**	**0.04**		**L/s**	**Maximum Daily Demand (L/s) = 1.70**
Hour Demand Type	=	Residential			Commercial			
Max. Hour Factor	=	12.5		L/c/d	1.8		L/gross ha/d	
	=	12.5	x	Maximum Daily Demand	12.5	x	Maximum Daily Demand	
	=	12.5	x	143,336	1.8	x	3,532	
	=	1,785,962		L/day	6,358		L/day	
Maximum Hour Demand	=	**20.67**		**L/s**	**0.07**		**L/s**	**Maximum Hour Demand (L/s) = 20.74**

WATER DISTRIBUTION - PROPOSED FIRE FLOW DEMANDS

F = 220 C √A

Type of Construction Coefficient:		Comments
Wood Frame	1.5	(all structurally combustible)
Ordinary	1.0	(brick, masonry wall, combustible floor and interior)
Non-Combustible	0.8	(unprotected metal structural component, masonry or metal walls)
Fire Resistive	0.6	(fully protected frame, floors and roof)

Combustibility:		
Non-Combustible	-25%	
Limited Combustible	-15%	
Combustible	0%	
Free Burning	15%	
Rapid Burning	25%	

Sprinkler Protection:		
Complete Sprinkler System	-50%	(max.)
NFPA 13 Conformed	-30%	(max.)
If Water Supply Standard for Both System and Fire Lines	-10%	additional (max.)
Fully Supervised System	-10%	additional (max.)
None	0%	

		357-363 Preston		
Type of Construction Coefficient		Fire Resistive		
		0.6		
Gross Floor Area (m^2)		4,302	m2	
Fire Flow, F		8,658	L/min	
F(round)		9,000	L/min	
Modification 1: Occupancy Combustibility		Limited Combustible		
		-15%		
Occupancy Credit		-1,350	L/min	
F(mod1) = F(round) + Occupancy Credit		7,650	L/min	
Modification 2: Sprinkler Protection		Complete Sprinkler System		
		-50%		
Additional Credit		If Water Supply Standard for Both System and Fire Lines		
		0		
Sprinkler Credit		-3,825	L/min	
F(mod2) = F(mod1) + Sprinkler Credit		3,825	L/min	
Modification 3: Exposure Distances				
North		18	m	15%
South		1	m	25%
East		22	m	10%
West		160	m	0%
		Total %	=	50%
		7,650	x	0.50
Exposure Credit		3,825	L/min	
F(mod3) = F(mod2) + Exposure Credit		7,650	L/min	
F(final) = F(mod3) rounded to nearest 1,000L/min		**8,000**	**L/min**	
F(final)		**133**	**L/s**	

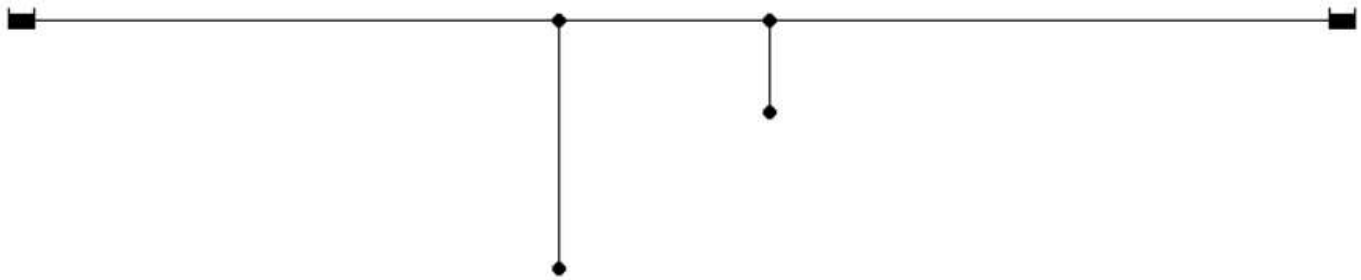
	357-363 Preston St	
Average Daily Demand	0.23	L/s
Maximum Daily Demand	1.70	L/s
Peak Hour Demand	20.74	L/s
Fire Flow	133	L/s

Max Day + Fire Flow	135.03	L/s

EPANET 2.2 - 357-363 Preston - Model.net

File Edit View Project Report Window Help

Network Map



Browser

Data Map

Junctions

Building
SiteConnection1
SiteHydrantConn
SiteHydrant

Auto-Length Off LPS 200% X,Y: -3197.100, 6083.188

```
**************************************************************************
*                            E P A N E T                                 *
*                     Hydraulic and Water Quality                        *
*                     Analysis for Pipe Networks                         *
*                           Version 2.2                                  *
**************************************************************************

Input File: 357-363 Preston - Model.net
```

Link - Node Table:

Link ID	Start Node	End Node	Length m	Diameter mm
11	SiteConnection1	Building	10	150
14	SiteHydrantConnection	EastSupply	10	406
15	WestSupply	SiteConnection1	10	406
16	SiteHydrantConnection	SiteHydrant	6	150
1	SiteHydrantConnection	SiteConnection1	10	406

Node Results:

Node ID	Demand LPS	Head m	Pressure m	Quality	
Building	0.23	115.20	55.70	0.00	
SiteConnection1	0.00	115.20	55.70	0.00	
SiteHydrantConnection	0.00	115.20	56.40	0.00	
SiteHydrant	0.00	115.20	56.40	0.00	
WestSupply	-0.14	115.20	0.00	0.00	Reservoir
EastSupply	-0.09	115.20	0.00	0.00	Reservoir

Link Results:

Link ID	Flow LPS	Velocity m/s	Unit Headloss m/km	Status
11	0.23	0.01	0.00	Open
14	-0.09	0.00	0.00	Open
15	0.14	0.00	0.00	Open
16	0.00	0.00	0.00	Open
1	0.09	0.00	0.00	Open

```
*********************************************************************
*                            E P A N E T                            *
*                     Hydraulic and Water Quality                   *
*                     Analysis for Pipe Networks                    *
*                           Version 2.2                             *
*********************************************************************

Input File: 357-363 Preston - Model.net
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Link - Node Table:

Link ID	Start Node	End Node	Length m	Diameter mm
11	SiteConnection1	Building	10	150
14	SiteHydrantConnection	EastSupply	10	406
15	WestSupply	SiteConnection1	10	406
16	SiteHydrantConnection	SiteHydrant	6	150
1	SiteHydrantConnection	SiteConnection1	10	406

Node Results:

Node ID	Demand LPS	Head m	Pressure m	Quality	
Building	20.74	107.13	47.63	0.00	
SiteConnection1	0.00	107.30	47.80	0.00	
SiteHydrantConnection	0.00	107.30	48.50	0.00	
SiteHydrant	0.00	107.30	48.50	0.00	
WestSupply	-12.29	107.30	0.00	0.00	Reservoir
EastSupply	-8.45	107.30	0.00	0.00	Reservoir

Link Results:

Link ID	Flow LPS	Velocity m/s	Unit Headloss m/km	Status
11	20.74	1.17	16.60	Open
14	-8.45	0.07	0.02	Open
15	12.29	0.09	0.04	Open
16	0.00	0.00	0.00	Open
1	8.45	0.07	0.02	Open

```
*********************************************************************
*                            E P A N E T                            *
*                     Hydraulic and Water Quality                   *
*                     Analysis for Pipe Networks                    *
*                           Version 2.2                             *
*********************************************************************

Input File: 357-363 Preston - Model.net
```

Link - Node Table:

Link ID	Start Node	End Node	Length m	Diameter mm
11	SiteConnection1	Building	10	150
14	SiteHydrantConnection	EastSupply	10	406
15	WestSupply	SiteConnection1	10	406
16	SiteHydrantConnection	SiteHydrant	6	150
1	SiteHydrantConnection	SiteConnection1	10	406

Node Results:

Node ID	Demand LPS	Head m	Pressure m	Quality	
Building	135.03	103.86	44.36	0.00	
SiteConnection1	0.00	109.19	49.69	0.00	
SiteHydrantConnection	0.00	109.19	50.39	0.00	
SiteHydrant	0.00	109.19	50.39	0.00	
WestSupply	-80.00	109.20	0.00	0.00	Reservoir
EastSupply	-55.03	109.20	0.00	0.00	Reservoir

Link Results:

Link ID	Flow LPS	Velocity m/s	Unit Headloss m/km	Status
11	135.03	7.64	533.15	Open
14	-55.03	0.43	0.57	Open
15	80.00	0.62	1.13	Open
16	0.00	0.00	0.00	Open
1	55.03	0.43	0.56	Open

B SANITARY DEMAND

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

$$P.F. = 1 + \left(\frac{14}{4 + \left(\frac{P}{1000} \right) \text{^} 0.5} \right) * \text{K}$$

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**	Unit Count
Single Family	3.4	
Semi-detached	2.7	
Duplex	2.3	
Townhouse (row)	2.7	
Apartments:		
Bachelor	1.4	
1 Bedroom	1.4	
2 Bedroom	2.1	
3 Bedroom	3.1	
Average Apt.	1.8	
357/361/363 Preston Units:		
Studio	1.4	8
1 Bedroom	1.4	25
2 Bedroom	2.1	6
3 Bedroom	3.1	1
	Total Population:	**62**
	Total Area (ha):	**0.084**

57/361/363 Preston Commercial:	
Lot area (m^2)	841
Total Lot Area (ha)	**0.084**

	357/361/363 Preston -Residential			**357/361/363 Preston - Commercial**		
Demand Type=	**Residential**			**Commercial**		
Average Day Demand=	280		L/c/d	28,000		L/gross ha/d
Population	**62**			**62**		
Site Area (ha)	**0.084**			**0.084**		
	280	x	62	28,000	x	0.084
	17,332		L/day	2,355		L/day
Average Daily Flow=	**0.20**		**L/s**	**0.03**		**L/s**
Peaking Factor Type	Residential			Commercial		
Peaking Factor	3.64		*Max=4	1.50		*Max=4
	3.64	x	average day	1.50	x	average day
	3.64	x	17,332	1.50	x	2,355
	63,020		L/day	3,532		L/day
Peak Daily Flow=	**0.73**		**L/s**	**0.04**		**L/s**
Infiltration Allowance	0.33			0.33		
	0.33	x	lot area	0.33	x	lot area
	0.33	x	0.084	0.33	x	0.084
Peak Extraneous Flow=	**0.03**		**L/s**	**0.03**		**L/s**
	peak daily flow	+	extraneous flow	peak daily flow	+	extraneous flow
	0.73	+	0.03	0.04	+	0.03
Total Peak Design Flow=	**0.76**		**L/s**	**0.07**		**L/s**

257-363 Preston St.		
Peak Design Flow =	**0.83**	**L/s**
Total Peak Design Flow =	**0.83**	**L/s**

WSP Canada

Sanitary Sewer Design Sheet

LOCATION			RESIDENTIAL AREA AND POPULATION						INSTITUTIONAL		C+I+I	INFILTRATION			TOTAL FLOW (l/s)	PIPE						MANHOLE	
CONNECTIONS	FROM MH	TO MH	AREA (Ha)	POP.	CUMMULATIVE AREA (Ha)	CUMMULATIVE POP.	PEAK FACT.	PEAK FLOW (l/s)	AREA (Ha)	ACCU. AREA (Ha)	PEAK FLOW (l/s)	TOTAL AREA (Ha)	ACCU. AREA (Ha)	INFILT. FLOW (l/s)		LENGTH (m)	DIA. (mm)	SLOPE (%)	CAP. (FULL) (l/s)	PIPE CAPACITY USED (%)	VEL. (FULL) (m/s)	UP INVERT (m)	DOWN INVERT (m)
	BUILDING	SAMH1*	0.08	62	0.08	62	3.4	0.68	0.000	0.000	0.00	0.08	0.08	0.03	**0.71**	3.0	150	2.0%	**21.54**	**3.3%**	1.22	58.18	58.12
	SAMH1*	EX SEWER	0.0	0	0.08	62	0.0	0.68	0.000	0.000	0.00	0.0	0.08	0.03	**0.71**	6.5	150	3.8%	**29.77**	**2.4%**	1.68	58.10	57.85

DESIGN PARAMETERS	Designed:	PROJECT:				
	Erin Blanchette, EIT	357-363 Preston Residential Development				
Residential: 280 L/cap/d	Checked:	LOCATION:				
Peak Factor = 3.4	Stephen McCaughey, P.Eng.	357, 363 Preston St., Ottawa, ON				
Extraneous Flow = 0.33 l/s/ha						
Minimum Velocity = 0.60 m/s	Dwg. Reference:	File Ref.:	Date:		Sheet No.	
Manning's n = 0.013			March 2022		1 of 1	

*SAMH1 is a monitoring maintenance hole

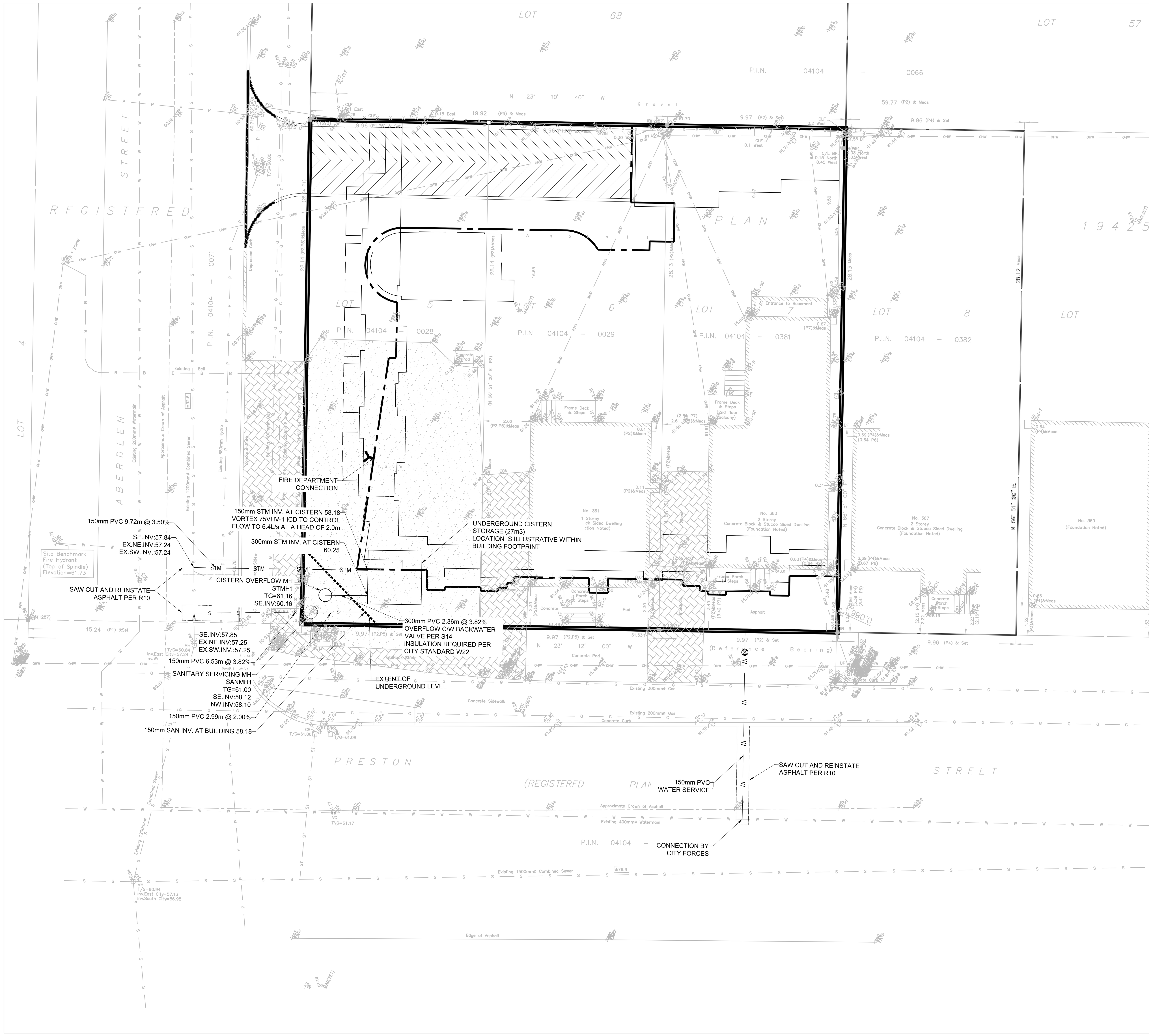
C SITE DRAWINGS

SAN STRUCTURE TABLE

STRUCTURE ID	TOP OF GRATE ELEVATION	INVERT IN			INVERT OUT	INSULATION REQUIRED ON OUTLET PIPE?	DESCRIPTION SIZE	OPSD	COVER
SAMH1	61.00	58.12			58.10	N	1200mm DIA.	OPSD 701.010	S24

STORM STRUCTURE TABLE

STRUCTURE ID	TOP OF GRATE ELEVATION	INVERT IN			INVERT OUT	INSULATION REQUIRED ON OUTLET PIPE?	DESCRIPTION SIZE	OPSD	COVER
STMH1	61.16	60.16			N/A	Y	1200mm DIA.	OPSD 701.010	S24.1



LEGEND

× 58.54	EXISTING GRADE ELEVATION
— S — S —	EXISTING COMBINED SEWER
— W — W —	EXISTING WATERMAIN
CB	EXISTING CATCH BASIN
MH–S	EXISTING STORM MANHOLE
MH–S	EXISTING SANITARY MANHOLE
FH	EXISTING FIRE HYDRANT
WV	EXISTING VALVE & BOX
59.79TC / 59.64BC	PROPOSED TOP & BOTTOM OF CURB
59.87	PROPOSED GARDE ELEVATION
3.8%	PROPOSED SLOPE
— ST — ST —	PROPOSED STORM SEWER
— S — S —	PROPOSED SANITARY SEWER
— W — W —	PROPOSED WATER SERVICE
	PROPOSED CATCHBASIN
	PROPOSED STORM MANHOLE
S S	PROPOSED SANITARY MANHOLE
	PROPOSED FIRE HYDRANT
	PROPOSED VALVE & BOX
— SF —	PROPOSED LIGHT DUTY SILT FENCE

NOTES: STORM SEWERS AND STRUCTURES

1. ALL STORM SEWER MATERIALS AND CONSTRUCTION METHODS SHALL CONFORM TO THE CURRENT CITY OF OTTAWA STANDARDS AND SPECIFICATIONS. PROVIDE CCTV INSPECTION REPORTS FOR ALL NEW STORM SEWERS, SERVICES AND CB LEADS.
2. STORM SEWERS 450mm DIAMETER AND SMALLER SHALL BE PVC SDR-35, WITH RUBBER GASKET PER CSA A-257.3.
3. STORM SEWER LARGER THAN 450mm SHALL BE REINFORCED CONCRETE CLASS 100.
4. SEWER BEDDING AS PER CITY OF OTTAWA DETAIL S6.
5. ALL STORM MANHOLES TO BE AS PER STORM STRUCTURE TABLE.
6. ANY NEW OR EXISTING STORM SEWER WITH LESS THAN 2.0m COVER REQUIRES THERMAL INSULATION AS PER CITY OF OTTAWA STANDARD W22, OR APPROVED BY THE ENGINEER.
7. ALL CATCHBASIN LEADS TO BE MINIMUM 200mm DIAMETER AT MINIMUM 1.0% SLOPE UNLESS OTHERWISE SPECIFIED.
8. STORM CATCHBASINS AS PER OPSD 705.010 AND FRAME/COVER AS PER CITY STANDARD DRAWINGS S19. STORM CBMH'S AS INDICATED IN TABLE WITH SUMP, ADJUSTMENT SECTIONS SHALL BE AS PER OPSD 704.010.
9. INSTALLATION OF FLOW CONTROL ICD'S TO BE VERIFIED BY QUALITY VERIFICATION ENGINEER RETAINED BY CONTRACTOR.
10. PROVIDE BACKWATER VALVE ON FOUNDATION DRAIN, STORM DISCHARGE, AND OVERFLOW DISCHARGE PER S14

NOTES: SANITARY SEWER AND MANHOLES

1. ALL SANITARY SEWER, SANITARY SEWER APPURTENANCES AND CONSTRUCTION METHODS SHALL CONFORM TO THE CURRENT CITY OF OTTAWA STANDARDS AND SPECIFICATIONS. PROVIDE CCTV INSPECTION REPORTS FOR ALL NEW SANITARY PIPING.
2. SANITARY SEWER PIPE SIZE 150mm DIAMETER AND GREATER TO BE PVC SDR-35 (UNLESS SPECIFIED OTHERWISE) WITH RUBBER GASKET TYPE JOINTS IN CONFORMANCE WITH CSA B-182.2,3,4.
3. SEWER BEDDING AS PER CITY OF OTTAWA DETAIL S6.
4. ALL SANITARY MANHOLES 1200mm IN DIAMETER TO BE AS PER OPSD 701.01. FRAME AND COVER TO BE AS PER CITY OF OTTAWA STANDARD S25 AND S24.
5. MAINTENANCE HOLE BENCHING AND PIPE OPENING ALTERNATIVES AS PER THE OPSD 701.021
6. ANY SANITARY SEWER WITH LESS THAN 2.0m COVER REQUIRES THERMAL INSULATION AS PER CITY OF OTTAWA STANDARD W22, OR APPROVED BY THE ENGINEER.
7. PROVIDE BACKWATER VALVE PER S14.1

NOTES: WATERMAIN

1. ALL WATERMAIN AND WATERMAIN APPURTANANCES, MATERIALS, CONSTRUCTION AND TESTING METHODS SHALL CONFORM TO THE CURRENT CITY OF OTTAWA AND MINISTRY OF ENVIRONMENT STANDARDS AND SPECIFICATIONS.
2. ALL WATERMAIN 300mm DIAMETER AND SMALLER TO BE POLY VINYL CHLORIDE (PVC) CLASS 150 DR 18 MEETING AWWA SPECIFICATION C900.
3. ALL WATERMAIN TO BE INSTALLED AT MINIMUM COVER OF 2.4m BELOW FINISHED GRADE. WHERE WATERMAINS CROSS OVER OTHER UTILITIES, A MINIMUM 0.30m CLEARANCE SHALL BE MAINTAINED; WHERE WATERMAINS CROSS UNDER OTHER UTILITIES, A MINIMUM 0.50m CLEARANCE SHALL BE MAINTAINED. WHERE THE MINIMUM SEPARATION CANNOT BE ACHIEVED, THE WATERMAIN SHALL BE INSTALLED AS PER CITY OF OTTAWA STANDARDS W25 AND W25.2. WHERE 2.4m MINIMUM DEPTH CANNOT BE ACHIEVED, THERMAL INSULATION SHALL BE PROVIDED AS PER CITY OF OTTAWA STANDARD W22. WHERE A WATERMAIN IS IN CLOSE PROXIMITY TO AN OPEN STRUCTURE, THERMAL INSULATION SHALL BE PROVIDED AS PER CITY OF OTTAWA STANDARD W23.
4. CONCRETE THRUST BLOCKS AND MECHANICAL RESTRAINTS ARE TO BE INSTALLED AT ALL TEES, BENDS, HYDRANTS, REDUCERS, ENDS OF MAINS AND CONNECTIONS 100mm AND LARGER, IN ACCORDANCE WITH CITY OF OTTAWA STANDARDS W25.3 & W25.4.
5. CATHODIC PROTECTION REQUIRED FOR ALL IRON FITTINGS AS PER CITY OF OTTAWA STANDARD W40 & W42.
6. ALL VALVES AND VALVE BOXES AND CHAMBERS, HYDRANTS, AND HYDRANT VALVES AND ASSEMBLES SHALL BE INSTALLED AS PER CITY OF OTTAWA STANDARD
7. FIRE HYDRANT LOCATION AND INSTALLATION AS PER CITY OF OTTAWA STANDARD W18 & W19. CONTRACTOR TO PROVIDE FLOW TEST AND PAINTING OF NEW HYDRANT IN ACCORDANCE WITH CITY STANDARDS.
8. IF WATER MAIN MUST BE DEFLECTED TO MEET ALIGNMENT, ENSURE THAT THE AMOUNT OF DEFLECTION USED IS LESS THAN HALF THAT RECOMMENDED BY THE MANUFACTURER.

0 5m 10m

SCALE: 1:100

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ALL CONTRACTORS MUST COMPLY WITH ALL CODES AND BYLAWS AND OTHER AUTHORITIES HAVING JURISDICTION OVER THE WORK.

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OTTAWA ONTARIO CANADA K2B 8K2
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CONSULTANTS:
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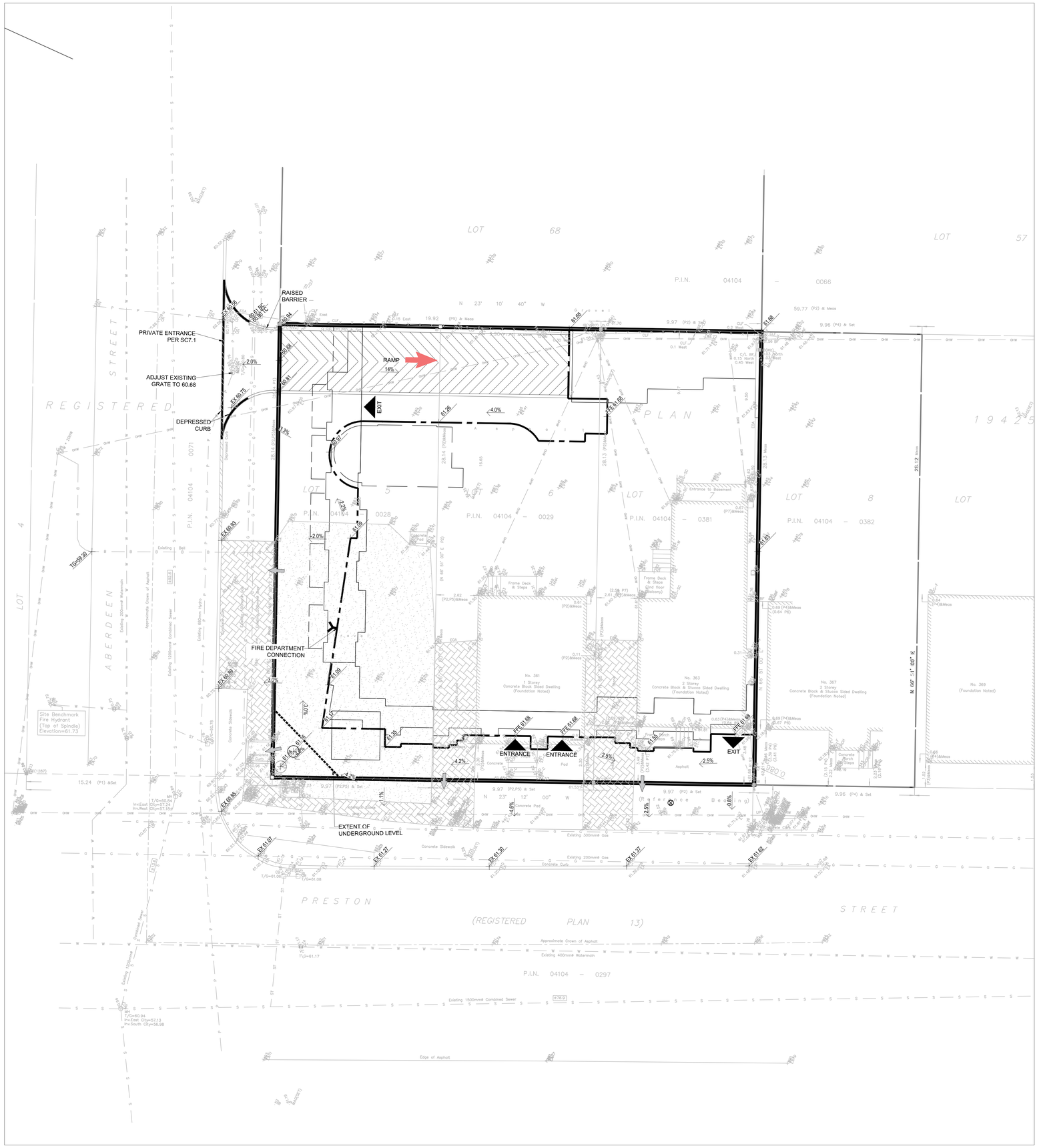
MECHANICAL –
ELECTRICAL –
LANDSCAPING –

357 361 363 PRESTON ST

SEVICING PLAN

C001



LEGEND

× 58.54	EXISTING GRADE ELEVATION
S S	EXISTING COMBINED SEWER
W W	EXISTING WATERMAIN
CB	EXISTING CATCH BASIN
MH–S	EXISTING STORM MANHOLE
MH–S	EXISTING SANITARY MANHOLE
FH	EXISTING FIRE HYDRANT
WV	EXISTING VALVE & BOX
59.79TC 59.64BC	PROPOSED TOP & BOTTOM OF CURB
59.87	PROPOSED GARDE ELEVATION
3.8%	PROPOSED SLOPE
ST ST	PROPOSED STORM SEWER
S S	PROPOSED SANITARY SEWER
W W	PROPOSED WATER SERVICE
	PROPOSED CATCHBASIN
	PROPOSED STORM MANHOLE
S S	PROPOSED SANITARY MANHOLE
	PROPOSED FIRE HYDRANT
	PROPOSED VALVE & BOX
SF	PROPOSED LIGHT DUTY SILT FENCE

NOTES: PARKING LOT AND WORK IN PUBLIC RIGHTS OF WAY

1. CONTRACTOR TO REINSTATE ROAD CUTS AS PER CITY OF OTTAWA DETAIL R10.
2. REFER TO GEOTECHNICAL INVESTIGATION REPORT PREPARED BY PATERSON GROUP DATED MARCH 2021 FOR GEOTECHNICAL RECOMMENDATIONS.
3. CONTRACTOR TO PREPARE SUBGRADE, INCLUDING PROOFROLLING, TO THE SATISFACTION OF THE GEOTECHNICAL CONSULTANT PRIOR TO THE COMMENCEMENT OF PLACEMENT OF GRANULAR B MATERIAL.
4. FILL TO BE PLACED AND COMPACTED PER THE GEOTECHNICAL REPORT REQUIREMENTS.
5. CONTRACTOR TO SUPPLY, PLACE AND COMPACT GRANULAR B MATERIAL IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL CONSULTANT. CONTRACTOR TO PROVIDE CONSULTANT WITH SAMPLES OF GRANULAR B MATERIAL FOR TESTING AND CERTIFICATION FROM THE GEOTECHNICAL CONSULTANT THAT THE MATERIAL MEETS THE GRADATION REQUIREMENTS SPECIFIED IN THE GEOTECHNICAL REPORT.
6. GRANULAR A MATERIAL TO BE PLACED ONLY UPON APPROVAL BY THE GEOTECHNICAL CONSULTANT OF GRANULAR B PLACEMENT.
7. CONTRACTOR TO SUPPLY, PLACE AND COMPACT GRANULAR A MATERIAL IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL CONSULTANT. CONTRACTOR TO PROVIDE CONSULTANT WITH SAMPLES OF GRANULAR A MATERIAL FOR TESTING AND CERTIFICATION FROM THE GEOTECHNICAL CONSULTANT THAT THE MATERIAL MEETS THE GRADATION REQUIREMENTS SPECIFIED IN THE GEOTECHNICAL REPORT.
8. ASPHALT MATERIAL TO BE PLACED ONLY UPON APPROVAL BY THE GEOTECHNICAL CONSULTANT OF GRANULAR A PLACEMENT.
9. CONTRACTOR TO SUPPLY, PLACE AND COMPACT ASPHALT MATERIAL IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL CONSULTANT. CONTRACTOR TO PROVIDE CONSULTANT WITH SAMPLES OF ASPHALT MATERIAL FOR TESTING AND CERTIFICATION FROM THE GEOTECHNICAL CONSULTANT THAT THE MATERIAL MEETS THE REQUIREMENTS SPECIFIED IN THE GEOTECHNICAL REPORT.
10. CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING LINE AND GRADE IN ACCORDANCE WITH THE PLANS, AND FOR PROVIDING THE CONSULTANT WITH VERIFICATION PRIOR TO PLACEMENT.
11. ALL EXCESS MATERIAL TO BE HAULED OFFSITE AND DISPOSED OF AT AN APPROVED DUMP SITE. SHOULD THE CONTRACTOR DISCOVER ANY HAZARDOUS MATERIAL, CONTRACTOR IS TO NOTIFY CONSULTANT. CONSULTANT TO DETERMINE APPROPRIATE DISPOSAL METHOD/LOCATION.
12. PAVEMENT STRUCTURE (MATERIAL TYPES AND THICKNESS) TO BE AS SPECIFIED IN THE GEOTECHNICAL REPORT.

0 5m 10m

SCALE: 1:100

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GRADING PLAN

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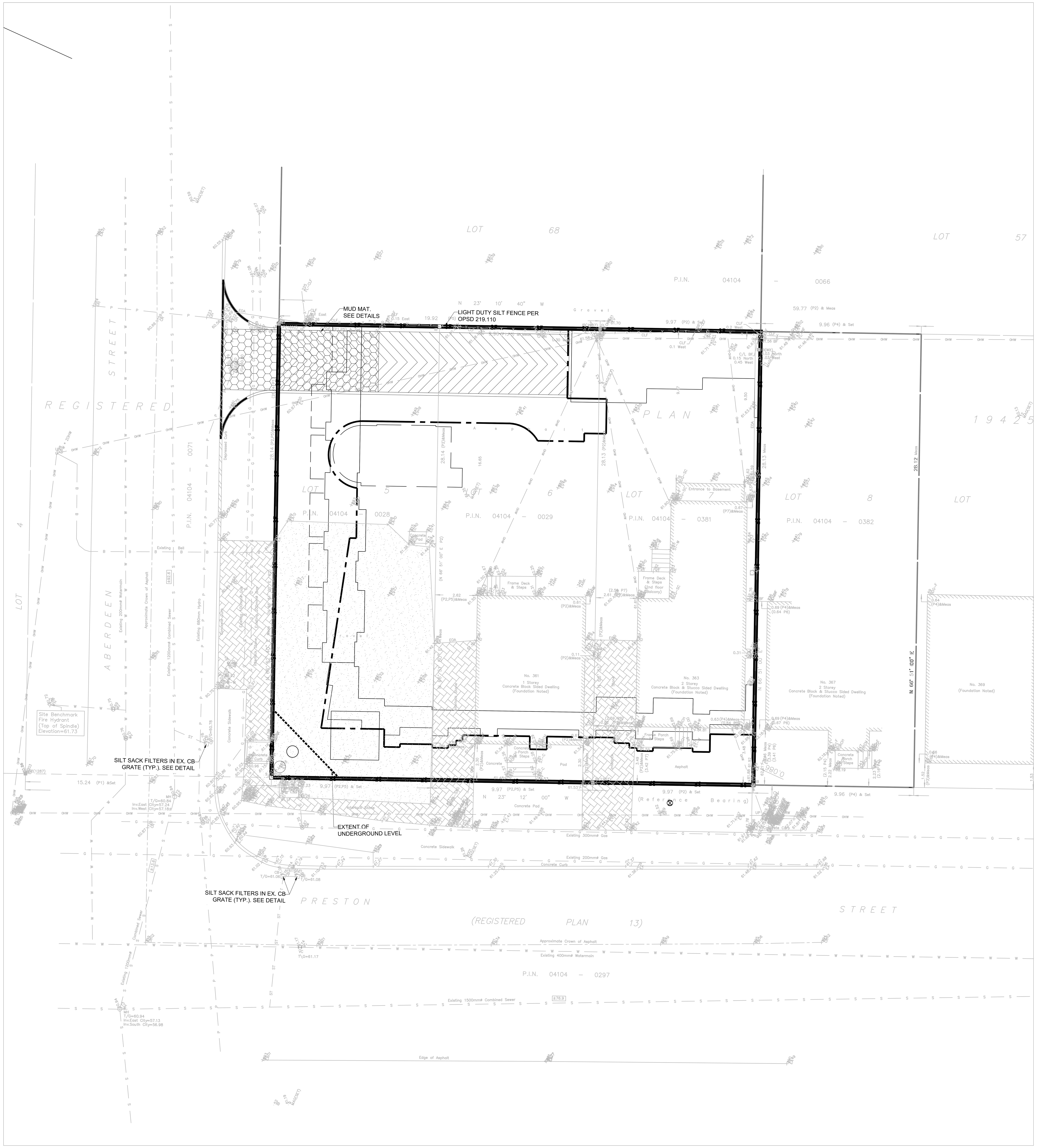

LEGEND

× 58.54	EXISTING GRADE ELEVATION
— S — S —	EXISTING COMBINED SEWER
— W — W —	EXISTING WATERMAIN
☐ CB	EXISTING CATCH BASIN
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○ MH-S	EXISTING SANITARY MANHOLE
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— S — S —	PROPOSED SANITARY SEWER
— W — W —	PROPOSED WATER SERVICE
☐	PROPOSED CATCHBASIN
○	PROPOSED STORM MANHOLE
○	PROPOSED SANITARY MANHOLE
○	PROPOSED FIRE HYDRANT
⊗	PROPOSED VALVE & BOX
— SF —	PROPOSED LIGHT DUTY SILT FENCE

NOTES: EROSION AND SEDIMENT CONTROL

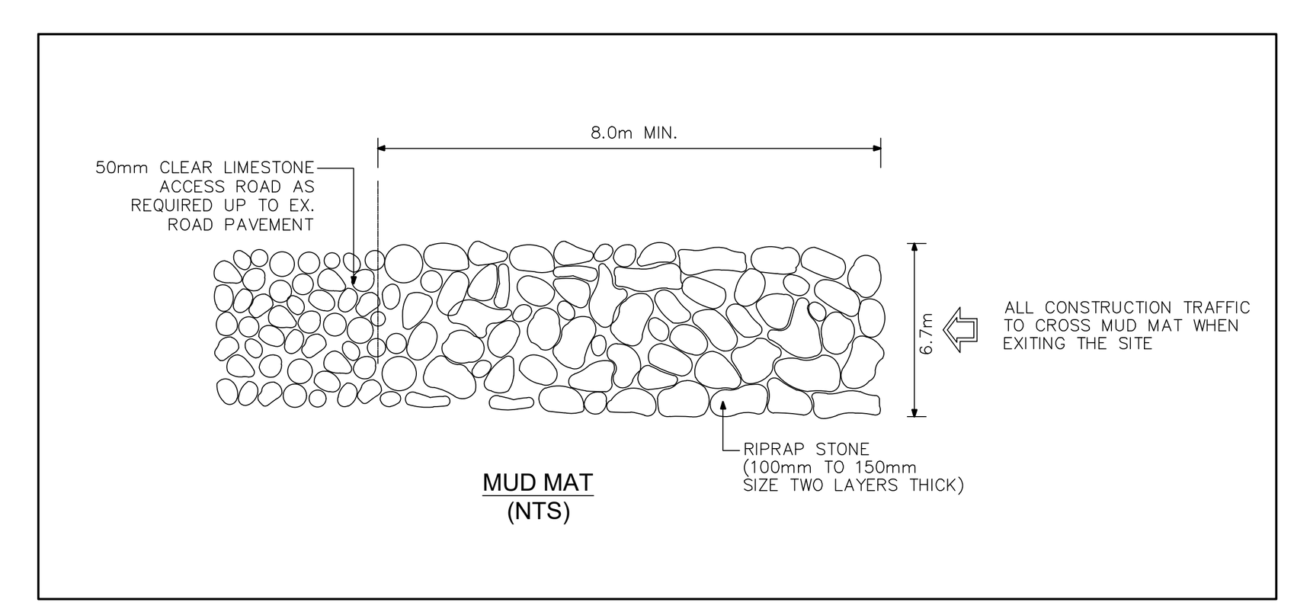
** CONTRACTOR IS RESPONSIBLE FOR ALL INSTALLATION, MONITORING, REPAIR AND REMOVAL OF ALL EROSION AND SEDIMENT CONTROL FEATURES. **

1. PRIOR TO START OF CONSTRUCTION:

1.1. INSTALL SILT FENCE IN LOCATION SHOWN.
1.2. INSTALL FILTER FABRIC OR SILT SACK FILTERS IN ALL THE CATCHBASINS AND MANHOLES TO REMAIN DURING CONSTRUCTION WITHIN THE SITE.
1.3. INSPECT MEASURES IMMEDIATELY AFTER INSTALLATION.
1.4. INSTALL MUD MAT AT CONSTRUCTION ENTRANCES.

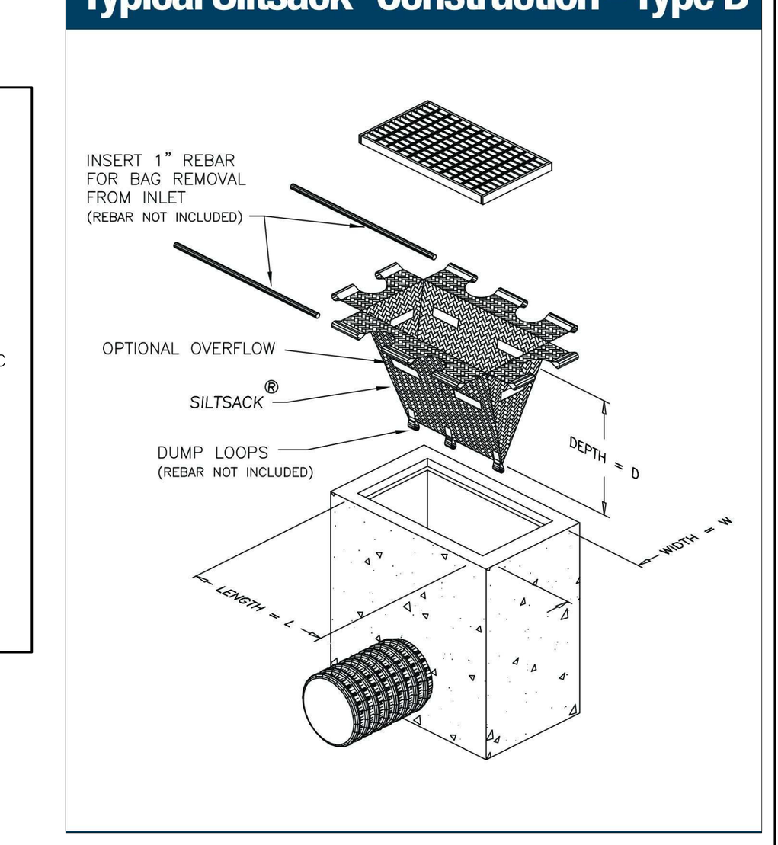
2. DURING CONSTRUCTION:

2.1. MINIMIZE THE EXTENT OF DISTURBED AREAS AND THE DURATION OF EXPOSURE AND IMPACTS TO EXISTING GRADING.
2.2. PERIMETER VEGETATION TO REMAIN IN PLACE UNTIL PERMANENT STORM WATER MANAGEMENT IS IN PLACE. OTHERWISE, IMMEDIATELY INSTALL SILT FENCE WHEN THE EXISTING SITE IS DISTURBED AT THE PERIMETER.
2.3. PROTECT DISTURBED AREAS FROM OVERLAND FLOW BY PROVIDING TEMPORARY SWALES TO THE SATISFACTION OF THE FIELD ENGINEER. TIE-IN TEMPORARY SWALE TO EXISTING CB'S AS REQUIRED.
2.4. PROVIDE TEMPORARY COVER SUCH AS SEEDING OR MULCHING IF DISTURBED AREA WILL NOT BE REHABILITATED WITHIN 30 DAYS.
2.5. INSPECT SILT FENCES, FILTER FABRIC FILTERS AND CATCH BASIN SUMPS WEEKLY AND WITHIN 24 HOURS AFTER A STORM EVENT. CLEAN AND REPAIR WHEN NECESSARY.
2.6. DOWNSTREAM STORM INFRASTRUCTURE SHALL BE PROTECTED FROM UNFILTERED RUNOFF DURING ON-SITE STORM INFRASTRUCTURE DEMOLITION.
2.7. DRAWING TO BE REVIEWED AND REVISED AS REQUIRED DURING CONSTRUCTION.
2.8. EROSION CONTROL FENCING TO BE ALSO INSTALLED AROUND THE BASE OF ALL STOCKPILES.
2.9. DO NOT LOCATE TOPSOIL PILES AND EXCAVATION MATERIAL CLOSER THAN 2.5m FROM ANY PAVED SURFACE, OR ONE WHICH IS TO BE PAVED BEFORE THE PILE IS REMOVED. ALL TOPSOIL PILES ARE TO BE SEEDED IF THEY ARE TO REMAIN ON SITE LONG ENOUGH FOR SEEDS TO GROW (LONGER THAN 30 DAYS).
2.10. CONTROL WIND-BLOWN DUST OFF SITE BY SEEDING TOPSOIL PILES AND OTHER AREAS TEMPORARILY (PROVIDE WATERING AS REQUIRED AND TO THE SATISFACTION OF THE ENGINEER).
2.11. NO ALTERNATE METHODS OF EROSION PROTECTION SHALL BE PERMITTED UNLESS APPROVED BY THE FIELD ENGINEER.
2.12. CITY ROADWAY AND SIDEWALK TO BE CLEANED OF ALL SEDIMENT FROM VEHICULAR TRACKING AS REQUIRED.
2.13. DURING WET CONDITIONS, TIRES OF ALL VEHICLES/EQUIPMENT LEAVING THE SITE ARE TO BE SCRAPED.
2.14. ANY MUD/MATERIAL TRACKED ONTO THE ROAD SHALL BE REMOVED IMMEDIATELY BY HAND OR RUBBER TIRE LOADER.
2.15. TAKE ALL NECESSARY STEPS TO PREVENT BUILDING MATERIAL, CONSTRUCTION DEBRIS OR WASTE BEING SPILLED OR TRACKED ONTO ABUTTING PROPERTIES OR PUBLIC STREETS DURING CONSTRUCTION AND PROCEED IMMEDIATELY TO CLEAN UP ANY AREAS SO AFFECTED.
2.16. ALL EROSION CONTROL STRUCTURE TO REMAIN IN PLACE UNTIL ALL DISTURBED GROUND SURFACES HAVE BEEN STABILIZED EITHER BY PAVING OR RESTORATION OF VEGETATIVE GROUND COVER.
2.17. THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES, TO PROVIDE FOR PROTECTION OF THE AREA DRAINAGE SYSTEM AND THE RECEIVING WATERCOURSE, DURING CONSTRUCTION ACTIVITIES. THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY.



MUD MAT
(NTS)

Typical Siltsack® Construction - Type B



SCALE: 1:100

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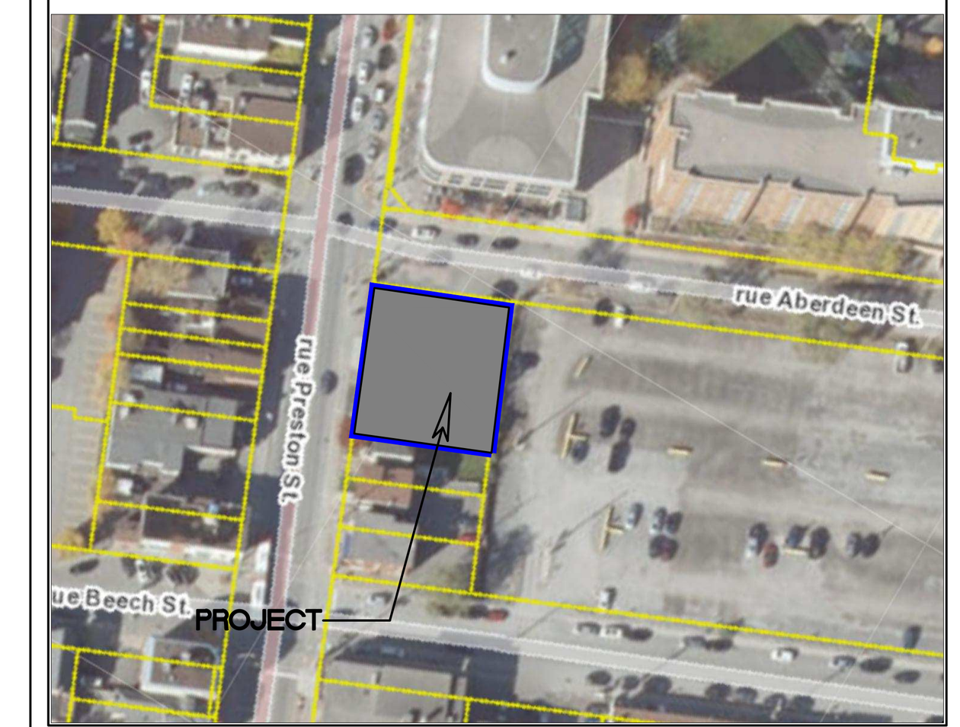
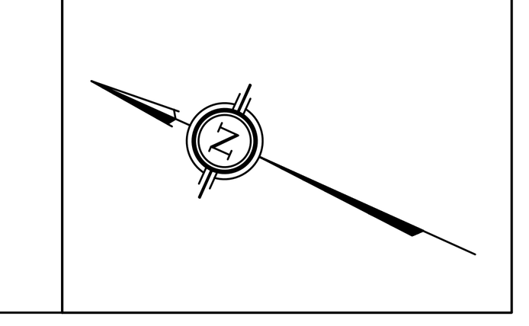
201-4 BEECHWOOD AVE. OTTAWA, ON K1L 8L9

KEY PLAN



STAMP

TRUE NORTH



ALL CONTRACTORS TO VERIFY ALL DIMENSIONS ON SITE AND TO REPORT ALL ERRORS AND/OR OMISSIONS TO THE ARCHITECT.

ALL CONTRACTORS MUST COMPLY WITH ALL CODES AND BYLAWS AND OTHER AUTHORITIES HAVING JURISDICTION OVER THE WORK.

DO NOT SCALE DRAWINGS.

THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION UNTIL SIGNED BY THE ARCHITECT.

NOT FOR CONSTRUCTION

NO.	REVISION	DD/MM/YY DATE
1	ISSUED FOR SPA	07/03/22

wsp
300-2611 QUEENSVIEW DRIVE
OTTAWA ONTARIO CANADA K2B 8K2
TEL: 1-613-829-2800 | FAX: 1-613-829-8299 | WWW.WSPGROUP.COM

CONSULTANTS:
STRUCTURAL –
MECHANICAL –
ELECTRICAL –
LANDSCAPING –

357 361 363 PRESTON ST

EROSION AND SEDIMENT CONTROL PLAN

C003

D STORM SEWER DESIGN SHEET

WSP Canada

Storm Sewer Design Sheet

LOCATION					FLOW							PIPE							MANHOLE	
Catchment Area	FROM MH	TO MH	Coefficient	Area (m2)	Indiv. 2.78*AC	Cum. 2.78*AC	Time of Conc. (min.)	Rainfall Intensity (mm.hr)	Indiv. Area Flow (L/s)	Cum. Flow (L/s)	Controlled Cum. Flow (L/s)	Length (m)	Dia. (mm)	Slope (%)	Cap. (Full) (L/s)	Velocity (Full) (m/s)	Time of flow (min.)	Ratio (Q/Qfull)	UP INVERT (m)	DOWN INVERT (m)
	TANK*	STMH1	0.90	700.0	0.175	0.175	10.000	76.81	13.45	13.45	6.40	9.7	150	3.50%	28.49	1.6	0.10	22%	58.18	57.84

DESIGN PARAMETERS	
Q = 2.78CIA where,	Ottawa IDF Curve
Q = Peak flow in L/s	IDF Curve Equation (2yr storm)
A = Drainage area in ha	I = 732.951/(T+6.199)^0.81
I = Rainfall intensity (mm/hr)	Min. velocity = 0.8 m/s
C = Runoff coefficient	Manning 'n' = 0.013

Designed: Erin Blanchette, EIT	PROJECT: 357-363 Preston Residential Development		
Checked: Stephen McCaughey, P.Eng.	LOCATION: 357-363 Preston St., Ottawa, ON		
Dwg. Reference:	File Ref.: 211-00041-00	Date: Macrh 2022	Sheet No. 1 of 3

Note:
Underground storage in building footprint includes roof drainage
* ICD on TANK outlet controlled to 6.40 L/s

WSP Canada

Storm Sewer Design Sheet

LOCATION					FLOW							PIPE							MANHOLE	
Catchment Area	FROM MH	TO MH	Coefficient	Area (m2)	Indiv. 2.78*AC	Cum. 2.78*AC	Time of Conc. (min.)	Rainfall Intensity (mm.hr)	Indiv. Area Flow (L/s)	Cum. Flow (L/s)	Controlled Cum. Flow (L/s)	Length (m)	Dia. (mm)	Slope (%)	Cap. (Full) (L/s)	Velocity (Full) (m/s)	Time of flow (min.)	Ratio (Q/Qfull)	UP INVERT (m)	DOWN INVERT (m)
	TANK*	STMH1	0.90	700.0	0.175	0.175	10.00	178.56	31.27	31.27	6.40	9.7	150	3.50%	28.49	1.6	0.10	22%	58.18	57.84

DESIGN PARAMETERS		Designed:	PROJECT:			
Q = 2.78CIA where,	Ottawa IDF Curve	Erin Blanchette, EIT	357-363 Preston Residential Development			
Q = Peak flow in L/s	IDF Curve Equation (100yr storm)					
A = Drainage area in ha	I = 1735.688/(T+6.014)^0.82	Checked:	LOCATION:			
I = Rainfall intensity (mm/hr)	Min. velocity = 0.8 m/s	Stephen McCaughey, P.Eng.	357-363 Preston St., Ottawa, ON			
C = Runoff coefficient	Manning 'n' = 0.013	Dwg. Reference:	File Ref.:	Date:	Sheet No.	
			211-00041-00	March 202	2 of 3	

Note:
Underground storage in building footprint includes roof drainage
* ICD on TANK outlet controlled to 6.40 L/s

WSP Canada

Storm Sewer Design Sheet

LOCATION					FLOW							PIPE							MANHOLE	
Catchment Area	FROM MH	TO MH	Coefficient	Area (m2)	Indiv. 2.78*AC	Cum. 2.78*AC	Time of Conc. (min.)	Rainfall Intensity + 20% (mm.hr)	Indiv. Area Flow (L/s)	Cum. Flow (L/s)	Controlled Cum. Flow (L/s)	Length (m)	Dia. (mm)	Slope (%)	Cap. (Full) (L/s)	Velocity (Full) (m/s)	Time of flow (min.)	Ratio (Q/Qfull)	UP INVERT (m)	DOWN INVERT (m)
	TANK*	STMH1	0.90	700.0	0.175	0.175	10.00	214.27	37.53	37.53	6.40	9.7	150	3.50%	28.49	1.6	0.10	22%	58.18	57.84

DESIGN PARAMETERS		Designed:	PROJECT:			
Q = 2.78CIA where,	Ottawa IDF Curve	Erin Blanchette, EIT	357-363 Preston Residential Development			
Q = Peak flow in L/s	IDF Curve Equation (100yr storm)					
A = Drainage area in ha	I = 1735.688/(T+6.014)^0.82	Checked:	LOCATION:			
I = Rainfall intensity (mm/hr)	Min. velocity = 0.8 m/s	Stephen McCaughey, P.Eng.	357-363 Preston St., Ottawa, ON			
C = Runoff coefficient	Manning 'n' = 0.013	Dwg. Reference:	File Ref.:	Date:	Sheet No.	
			211-00041-00	March 2022	3 of 3	

Note:
Underground storage in building footprint includes roof drainage
* ICD on TANK outlet controlled to 6.40 L/s

E CORRESPONDENCES

Blanchette, Erin

From: Bakhit, Reza <reza.bakhit@ottawa.ca>
Sent: January 31, 2022 9:16 AM
To: Blanchette, Erin
Subject: RE: Boundary Conditions Request - 357,361,363 Preston
Attachments: 357, 361, 363 Preston Street January 2022.pdf

Hi Erin,

The following are boundary conditions, HGL, for hydraulic analysis at 357, 361, 363 Preston Street (zone 1W) assumed to be connected to the 406 mm watermain on Preston Street (see attached PDF for location).

Minimum HGL: 107.3 m

Maximum HGL: 115.2 m

Max Day + Fire Flow: 109.2 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.

Regards,

Reza Bakhit, P.Eng, C.E.T
Project Manager
Planning, Real Estate and Economic Development Department / Direction générale de la planification, des biens immobiliers et du développement économique
Development Review - Centeral Branch
City of Ottawa | Ville d'Ottawa
110 Laurier Avenue West Ottawa, ON | 110, avenue. Laurier Ouest. Ottawa (Ontario) K1P 1J1
613.580.2400 ext./poste 19346, reza.bakhit@ottawa.ca
Please note: Given the current pandemic, I will be working from home until further notice; reaching me by email is the easiest. I will be checking my voicemail, just not as frequently as I normally would be.

From: Blanchette, Erin <Erin.Blanchette@wsp.com>
Sent: Wednesday, January 26, 2022 3:47 PM
To: Bakhit, Reza <reza.bakhit@ottawa.ca>
Cc: McCaughey, Stephen <Stephen.Mccaughey@wsp.com>
Subject: RE: Boundary Conditions Request - 357,361,363 Preston

Pre-Application Consultation Meeting Notes

Property Address: 357, 361 and 363 Preston Street
PC2021-0208
Monday, June 21, 2021
2pm – 3pm via Microsoft Teams

Attendees:

City of Ottawa
Jean-Charles Renaud, File Lead
Holly Newitt, Student Planner
Wally Dubyk, Transportation
Reza Bakhit, Engineer
Randolph Wang, Urban Design
Forestry – regrets

Applicant Team
Jefferey Kelly, Novatech
Murray Chown, Novatech
Woodman Team
Joshua Audia
Jennifer Luong
Miro Savic

Community Association
Ed McKenna
David Seaborn

Subject: 357, 361 and 363 Preston Street

Meeting Notes:

Opening & attendee introduction

- Introduction of attendees and opening remarks

Overview of proposal

Woodman Team

- Situated on the corner of Aberdeen and Preston
- 6 storey mixed use, commercial at grade with residential – 40 units including penthouse
    - Mix of 2-bedroom, 1-bedroom and studio units
    - 2 commercial units
    - Rooftop amenity space and private balcony/terraces
- Aberdeen Street setback infringement- MV or ZBA
    - Caused by a balcony
- 29 bike spots on ground floor
- Ramp to access underground parking garage
- 11 parking spaces underground
- Mixed palette materiality - glazing, metal, stone, and cladding

Technical Comments:

Jean-Charles Renaud, Planner

- Bike parking at grade is great, would encourage 1:1 or better
- Consider the 450 Rochester proposal in terms of proximity, adjacency and interactions
- Consult the Secondary Plan in providing landscaping along the street edge.

Randolph, Urban Design

- A Design Brief is required as part of the submission. The Terms of Reference of the Design Brief is attached for convenience. As part of the Design Brief, it is important to show the proposed development in both the existing and planned context. The future context can be represented by the proposed development at 450 Rochester, which can be found on the City's Dev Apps.
- The Preston-Carling District Secondary Plan requires the completion of a public realm network study for any development in the area within the context of the Council-approved Preston-Carling District Public Realm Study.
    - Please forward the Preston-Carling District Public Realm Study to the applicant (I have shared with you).
    - An example of such a study can be found as part of the 450 Rochester.
- The property is within a Design Priority Area. The proposed development is subject to the former review by the City's Urban Design Review Panel (UDRP). Please visit the UDRP website for detailed information about submission and scheduling.
- The height and massing of the proposed building is generally appropriate. Please consider the following for further advancement:
    - Please ensure ROW protections are taken as part of development.
    - Please study the public realm plan of Preston Street and the development 450 Rochester to ensure seamless integration.
    - Please note the proposed garage entrance abuts the proposed loading area of 450 Rochester. Coordination between the two projects is required.
    - The proposed "angles" at the corner of Preston and Aberdeen are interesting yet arbitrary. It may create some volumetric effects on the building facades but it may be not be most conducive to public realm and may compromise interior efficiencies. With respect to public realm, for example, it looks like the building wants to draw pedestrian attention to its garbage room and the garage entrance (see Diagram 1). Generally speaking, provision of more generous public realm at the street corner is more appropriate and desirable.
    - The many "intersecting" brick and stone "frames" on the Preston facade may be too complicated (see Diagram 2);
    - The hanging brick "frame" on Aberdeen also requires some more thinking (see Diagram 3). Generally, a "grounded" building is more appropriate for public realm and blend into the urban fabric more harmoniously.
    - Please continue to study the relationship between the east facing units and the proposed development at 450 Rochester.

Wally Dubyk, Transportation

- A Screening Form is to be submitted to determine if a transportation study is required. Consultants should fill in the form in Appendix 'B'. Click on the website: www.ottawa.ca/TIA
- Update to the TIA Guideline Forecasting Report
    - We would like to inform all consultants making TIA Forecasting Report submissions to the City of Ottawa as part of a development application, that all new applications (pre-consultation meetings dated after March 3, 2021) must use the NEW TRANS Trip

Generation Manual when forecasting site generated trips using this manual (see attached).
    - The TRANS committee (a joint transportation planning committee serving the National Capital region) finalized a new manual early in March 2021. The document will be available in French and English on the TRANS website http://www.ncr-trans-rcn.ca/surveys/2009-trip-generation.
    - The new manual has simplified the conversion from vehicle trips to person trips and then trips by modal share. The City has also developed a spreadsheet that will apply the factors of location and building type to quickly provide the existing trip numbers by mode share.
- Preston Street is designated as an Arterial road within the City's Official Plan with a ROW protection of 23.0 metres. The ROW protection limit offset distance (11.5 metres) is to be dimensioned from the existing centerline of pavement and shown on the drawings. The Certified Ontario Land Surveyor is to confirm the ROW protected limits and any portion that may fall within the private property to be conveyed to the City.
- 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.
- A 5.0 metres x 5.0 metres sight triangle would be required at the intersection of Preston Street and Aberdeen Street. The sight triangle dimensions are to be measured from the ROW protected limits and is to be shown on all drawings. The sight triangle area is to be conveyed to the City.
- Please keep in mind that on street parking is not a viable option for tenants. Ensure that potential tenants are aware that there is no provision for parking.
- 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, sight triangles and/or future road widening protection limits.
- Permanent structures such as curbing, stairs, retaining walls, and underground parking foundation also bicycle parking racks are not to extend into the City's right-of-way limits.
- The consultant should review the sight distance at the intersection and any obstructions that may hinder the view of the driver.
- No private approach shall be constructed within 0.3 metres of any adjacent property measured at the highway line, and at the curb line or roadway edge.
- The closure of an existing private approach shall reinstate the sidewalk, shoulder, curb and boulevard to City standards.
- The concrete sidewalk should be 2.0 metres in width and be continuous and depressed through the proposed access.
- The proponent shall comply with the Private Approach By-Law 2003-447
- Ensure that the driveway grade does not exceed 2% within the private property for a distance of 6.0 metres from the ROW limit; see Section 25 (s) of the Private Approach By-Law #2003-447. Any grade exceeding 6% will require a subsurface melting device. For private property, the mechanism to vary the slope is a minor variance. The consultant would need to provide technical rationale.
- The Owner shall be required to enter into maintenance and liability agreement for all pavers, plant and landscaping material placed in the City right-of-way and the Owner shall assume all maintenance and replacement responsibilities in perpetuity.

- Bicycle parking spaces are required as per Section 111 of the Ottawa Comprehensive Zoning By-law. Bicycle parking spaces should be located in safe, secure places near main entrances and preferably protected from the weather.
- A construction Traffic Management Plan is to be provided for approval by the Senior Engineer, Traffic Management, Transportation Services Dept.

Reza Bakhit, Engineer

General:

- It is the sole responsibility of the consultant to investigate the location of existing underground utilities in the proposed servicing area and submit a request for locates to avoid conflict(s). The location of existing utilities and services shall be documented on an **Existing Conditions Plan**.
- Any easements on the subject site shall be identified and respected by any development proposal and shall adhere to the conditions identified in the easement agreement. A **legal survey plan** shall be provided, and all easements shall be shown on the engineering plans.
- An application to consolidate the parcels (357, 361 and 363 Preston Street) of land will be required otherwise the proposed stormwater works will be servicing more than one parcel of land and thus does not meet the exemption set out in O.Reg. 525/98. This would mean an **ECA would be required** regardless of who owns the parcels.
- The subject site is located within a combined sewershed therefore the approval exemption under O.Reg. 525/98 **would not apply,** and an Environmental Compliance Approval **(ECA) application** will be required. (One ECA can cover both SWM and the connection to the combined sewer). Please note that the ECA for connection to the combined sewer system will be warranted regardless of consolidating the subject lots.
- Reference documents for information purposes :
    - Ottawa Sewer Design Guidelines (October 2012)
    - Technical Bulletin PIEDTB-2016-01
    - Technical Bulletins ISTB-2018-01, ISTB-2018-02 and ISTB-2018-03.
    - Ottawa Design Guidelines - Water Distribution (2010)
    - Geotechnical Investigation and Reporting Guidelines for Development Applications in the City of Ottawa (2007)
    - City of Ottawa Slope Stability Guidelines for Development Applications (revised 2012)
    - City of Ottawa Environmental Noise Control Guidelines (January 2016)
    - City of Ottawa Accessibility Design Standards (2012) (City recommends development be in accordance with these standards on private property)
    - Ottawa Standard Tender Documents (latest version)
    - Ontario Provincial Standards for Roads & Public Works (2013)
    - Record drawings and utility plans are also available for purchase from the City (Contact the City's Information Centre by email at InformationCentre@ottawa.ca or by phone at (613) 580-424 x.44455).
- Please note that this is the applicant responsibility to refer to the latest applicable guidelines while preparing reports and studies.

Disclaimer:
The City of Ottawa does not guarantee the accuracy or completeness of the data and information contained on the above image(s) and does not assume any responsibility or liability with respect to any damage or loss arising from the use or interpretation of the image(s) provided. This image is for schematic purposes only

Stormwater Management Criteria and Information:

- **Water Quantity Control:** Please control post-development runoff from the subject site, up to and including the **100-year storm event**, to **a 2-year pre-development level.** The pre-development runoff coefficient will need to be determined **as per existing conditions** but in no case more than 0.5. [**If 0.5 applies it needs to be clearly demonstrated in the report that the pre-development runoff coefficient is greater than 0.5**]. The time of concentration (T_c) used to determine the pre-development condition should be calculated. *Tc should not be less than 10 min. since IDF curves become unrealistic at less than 10 min; T_c of 10 minutes shall be used for all post-development calculations*].
- Any storm events greater than the established **2-year allowable** release rate, up to and including the **100-year storm event**, shall be detained on-site. The SWM measures required to avoid impact on downstream sewer system will be subject to review.
- Please note that foundation drainage is to be independently connected to sewer main unless being pumped with appropriate back up power, sufficient sized pump and back flow prevention. **It is recommended that the foundation drainage system be drained by a sump pump connection to the storm sewer to minimize risk of basement flooding as it will provide the best protection from the uncontrolled sewer system compared to relying on the backwater valve.**
- **Water Quality Control:** Please consult with the local conservation authority (RVCA) regarding water quality criteria prior to submission of a Site Plan Control Proposal application to establish any water quality control restrictions, criteria and measures for the site. Correspondence and clearance shall be provided in the Appendix of the report.
- Please note that as per *Technical Bulletin PIEDTB-2016-01 section 8.3.11.1 (p.12 of 14)* **there shall be no surface ponding on private parking areas during the 5-year storm rainfall event**.
- **If Underground Storage proposed:** Please note that the Modified Rational Method for storage computation in the Sewer Design Guidelines was originally intended to be used for above ground storage (i.e. parking lot) where the change in head over the orifice varied from 1.5 m to 1.2 m (assuming a 1.2 m deep CB and a max ponding depth of 0.3 m). This change in head

was small and hence the release rate fluctuated little, therefore there was no need to use an average release rate.

  - When underground storage is used, the release rate fluctuates from a maximum peak flow based on maximum head down to a release rate of zero. This difference is large and has a significant impact on storage requirements. **We therefore require that an average release rate equal to 50% of the peak allowable rate shall be applied to estimate the required volume. Alternatively, the consultant may choose to use a submersible pump in the design to ensure a constant release rate.**
  - In the event that there is a disagreement from the designer regarding the required storage, The City will require that the designer demonstrate their rationale utilizing dynamic modelling, that will then be reviewed by City modellers in the Water Resources Group.
  - Please provide information on UG storage pipe. Provide required cover over pipe and details, chart of storage values, capacity etc. How will this pipe be cleaned of sediment and debris?
  - Provide information on type of underground storage system including product name and model, number of chambers, chamber configuration, confirm invert of chamber system, top of chamber system, required cover over system and details, interior bottom slope (for self-cleansing), chart of storage values, length, width and height, capacity, entry ports (maintenance) etc.
  - Provide a cross section of underground chamber system showing invert and obvert/top, major and minor HWLs, top of ground, system volume provided during major and minor events. UG storage to provide actual 2- and 100-year event storage requirements.
  - In regard to all proposed UG storage, ground water levels (and in particular HGW levels) will need to be reviewed to ensure that the proposed system does not become surcharged and thereby ineffective.
  - Modeling can be provided to ensure capacity for both storm and sanitary sewers for the proposed development by City's Water Distribution Dept. – Modeling Group, through PM and upon request.

- Please note that the minimum orifice dia. for a plug style **ICD is 83mm and the minimum flow rate from a vortex ICD is 6 L/s** in order to reduce the likelihood of plugging.
- Post-development site grading shall match existing property line grades in order to minimize disruption to the adjacent residential properties. A **topographical plan of survey** shall be provided as part of the submission and a note provided on the plans.
- Please provide a **Pre-Development Drainage Area Plan** to define the pre-development drainage areas/patterns. **Existing drainage patterns shall be maintained and discussed as part of the proposed SWM solution**.
- **If rooftop control and storage is proposed** as part of the SWM solutions sufficient details (Cl. 8.3.8.4) shall be discussed and document in the report and on the plans. Roof drains are to be connected downstream of any incorporated ICDs within the SWM system and not to the foundation drain system. Provide a **Roof Drain Plan** as part of the submission.
- Considering the size of the site, it would be acceptable to control the roof portion only and leave the remainder of the site uncontrol as long as the uncontrolled portion is directed towards the right of way. The grading plan should clearly demonstrate that the uncontrolled portion of the site would send the water towards the ROW.
- If **Window wells** are proposed, they are to be indirectly connected to the footing drains. A detail of window well with indirect connection is required, as is a note at window well location speaking to indirect connection.
- There must be at least **15cm of vertical clearance** between the spill elevation and the ground elevation at the building envelope that is in proximity of the flow route or ponding area. The exception in this case would be at reverse sloped loading dock locations. At these locations, a

minimum of 15cm of vertical clearance must be provided below loading dock openings. Ensure to provide discussion in report and ensure grading plan matches if applicable.

Combined Sewers:

- A 1500mm dia. CONC combined sewer (2008) is available within Preston Street**.**
- A 1200mm dia. CONC combined sewer (1997) is available within Aberdeen Street.
  Note: The connection to either would be acceptable. However, the Aberdeen is preferred.

Water:

- A 406 mm dia. PVC watermain (2008) is available within Preston Street**.**
- A 203mm dia. PVC watermain (1997) is available within Aberdeen Street.
- Existing residential service to be blanked at the main. (This has to be shown and noted on the servicing plans)
- **Water Supply Redundancy:** Residential buildings with a basic day demand greater than 50m^3/day (0.57 L/s) are required to be connected to a minimum of two water services separated by an isolation valve to avoid a vulnerable service area as per the *Ottawa Design Guidelines - Water Distribution, WDG001, July 2010 Clause 4.3.1 Configuration.* The basic day demand for this site not expected to exceed 50m^3/day.
- Please **review Technical Bulletin ISTB-2018-0**, maximum fire flow hydrant capacity is provided in Section 3 Table 1 of Appendix I. A **hydrant coverage figure** shall be provided and **demonstrate there is adequate fire protection for the proposal**. Two or more public hydrants are anticipated to be required to handle fire flow.
- Boundary conditions are required to confirm that the require fire flows can be achieved as well as availability of the domestic water pressure on the City street in front of the development. Use Table 3-3 of the MOE Design Guidelines for Drinking-Water System to determine Maximum Day and Maximum Hour peaking factors for 0 to 500 persons and use Table 4.2 of the Ottawa Design Guidelines, Water Distribution for 501 to 3,000 persons. Please provide the following information to the City of Ottawa via email to request water distribution network boundary conditions for the subject site. Please note that once this information has been provided to the City of Ottawa it takes approximately 5-10 business days to receive boundary conditions.
    - Type of Development and Units
    - Site Address
    - A plan showing the proposed water service connection location.
    - **Average Daily Demand** (L/s)
    - **Maximum Daily Demand** (L/s)
    - **Peak Hour Demand** (L/s)
    - **Fire Flow** (L/min)
        - [*Fire flow demand requirements shall be based on **Fire Underwriters Survey (FUS)** Water Supply for Public Fire Protection 1999*]
        - *Exposure separation distances shall be defined on a figure to support the FUS calculation and required fore flow (RFF).*
    - **Hydrant capacity shall be assessed to demonstrate the RFF can be achieved**. Please identify which hydrants are being considered to meet the RFF on a fire hydrant coverage plan as part of the boundary conditions request.

Road Reinstatement

- Where servicing involves three or more service trenches, either a full road width or full lane width 40 mm asphalt overlay will be required, as per amended Road Activity By-Law 2003-445 and City Standard Detail Drawing R10. The amount of overlay will depend on condition of roadway and width of roadway(s).

Permits and Approvals:

- Please note that this project will be subject to an Environmental Compliance Approval (ECA).

Required Engineering Plans and Studies:

- **Plans**
  - Existing Conditions and Removals Plan
  - Site Servicing Plan
  - Grade Control and Drainage Plan
  - Erosion and Sediment Control Plan
  - Roof Drainage Plan
  - Topographical survey
- **Reports**
  - Site Servicing and Stormwater Management Report
  - Geotechnical Study/Investigation
  - Slope Stability Assessment Reports (if required, please see requirements below)
  - Noise Control Study
  - Phase I ESA
  - Phase II ESA (Depending on recommendations of the Phase I ESA)
  - Site lighting certificate
- Please refer to the **City of Ottawa Guide to Preparing Studies and Plans [Engineering]:**
  - Specific information has been incorporated into both the Guide to Preparing Studies and Plans for a site plan. The guide outlines the requirement for a statement to be provided on the plan about where the property boundaries have been derived from.
  - Added to the general information for servicing and grading plans is a note that an **O.L.S**. should be engaged when reporting on or relating information to property boundaries or existing conditions. The importance of engaging an **O.L.S.** for development projects is emphasized.

Phase One Environmental Site Assessment:

- A Phase I ESA is required to be completed in accordance with Ontario Regulation 153/04 in support of this development proposal to determine the potential for site contamination. Depending on the Phase I recommendations a Phase II ESA may be required.
- The Phase I ESA shall provide all the required Environmental Source Information as required by O. Reg. 153/04. ERIS records are available to public at a reasonable cost and need to be included in the ESA report to comply with O.Reg. 153/04 and the Official Plan. The City will not be in a position to approve the Phase I ESA without the inclusion of the ERIS reports.
- Official Plan Section 4.8.4: https://ottawa.ca/en/city-hall/planning-and-development/official-plan-and-master-plans/official-plan/volume-1-official-plan/section-4-review-development-applications#4-8-protection-health-and-safety

Geotechnical Investigation:

- A Geotechnical Study/Investigation shall be prepared in support of this development proposal.
- Reducing the groundwater level in this area can lead to potential damages to surrounding structures due to excessive differential settlements of the ground. The impact of groundwater lowering on adjacent properties needs to be discussed and investigated to ensure there will be no short term and long term damages associated with lowering the groundwater in this area.

- Geotechnical Study shall be consistent with the **Geotechnical Investigation and Reporting Guidelines for Development Applications**.
  https://documents.ottawa.ca/sites/default/files/documents/cap137602.pdf

Slope Stability Assessment Reports

- A report addressing the stability of slopes, prepared by a qualified geotechnical engineer licensed in the Province of Ontario, should be provided wherever a site has slopes (existing or proposed) steeper than 5 horizontal to 1 vertical (i.e., 11 degree inclination from horizontal) and/or more than 2 metres in height.
- A report is also required for sites having retaining walls greater than 1 metre high, that addresses the global stability of the proposed retaining walls.
  https://documents.ottawa.ca/en/document/slope-stability-guidelines-development-applications

Noise Study:

- A **Transportation Noise Assessment** is required as the subject development is located within 100m proximity of an Arterial Road .
- A **Stationary Noise Assessment** is required in order to assess the noise impact of the proposed sources of stationary noise (mechanical HVAC system/equipment) of the development onto the surrounding residential area to ensure the noise levels do not exceed allowable limits specified in the City Environmental Noise Control Guidelines.
  https://documents.ottawa.ca/sites/default/files/documents/enviro_noise_guide_en.pdf

Exterior Site Lighting:

- Any proposed light fixtures (both pole-mounted and wall mounted) must be part of the approved Site Plan. All external light fixtures must meet the criteria for Full Cut-off Classification as recognized by the Illuminating Engineering Society of North America (IESNA or IES), and must result in minimal light spillage onto adjacent properties (as a guideline, 0.5 fc is normally the maximum allowable spillage). In order to satisfy these criteria, the please provide the City with a **Certification (Statement) Letter** from an acceptable professional engineer stating that the design is compliant.

Construction approach:

- Please contact the Right-of-Ways Permit Office TMconstruction@ottawa.ca early in the Site Plan process to determine the ability to construct site and copy File Lead Jean-Charles.Renaud@ottawa.ca on this request.

Mark Richardson, Forestry

LP tree planting requirements:

For additional information on the following please contact adam.palmer@Ottawa.ca

- Minimum Setbacks
  - Maintain 1.5m from sidewalk or MUP/cycle track.
  - Maintain 2.5m from curb
  - Coniferous species require a minimum 4.5m setback from curb, sidewalk or MUP/cycle track/pathway.
  - Maintain 7.5m between large growing trees, and 4m between small growing trees. Park or open space planting should consider 10m spacing.
  - Adhere to Ottawa Hydro's planting guidelines (species and setbacks) when planting around overhead primary conductors.

- Tree specifications
    - Minimum stock size: 50mm tree caliper for deciduous, 200cm height for coniferous.
    - Maximize the use of large deciduous species wherever possible to maximize future canopy coverage
    - Tree planting on city property shall be in accordance with the City of Ottawa's Tree Planting Specification; and include watering and warranty as described in the specification (can be provided by Forestry Services).
    - Plant native trees whenever possible
    - No root barriers, dead-man anchor systems, or planters are permitted.
    - No tree stakes unless necessary (and only 1 on the prevailing winds side of the tree)
- Hard surface planting
    - Curb style planter is highly recommended
    - No grates are to be used and if guards are required, City of Ottawa standard (which can be provided) shall be used.
    - Trees are to be planted at grade
- Soil Volume
    - Please ensure adequate soil volumes are met:

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

Please note that these soil volumes are not applicable in cases with Sensitive Marine Clay.

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

Community Association

Ed McKenna

- Favorable response to the architecture and relationship of the building to the street
- Appreciates the balconies on both Aberdeen and Preston and emphasizing the pedestrian space
- The garbage room projection is a good screen for the ramp
- Wondering if the lobby entrance could have added emphasis
- Would encourage additional bike parking to get to a 1:1 ratio
    - Happy to see the ground floor access for the bikes
- Concerned that the mail room is too small for parcel quantity and storage prior to collection
- Would like to highlight the importance of street trees
- Would like to see materiality reflect the existing Preston Square building and how it will relate to proposed development to the south/wrapping the site

David Seaborn

- Would also like to highlight the importance of 1:1 bike ratio
- Found the massing of the building interesting and appreciates the unique architecture

Next steps:

- We encourage the applicant to discuss the proposal with the local Councillor and the community association
- We will follow up with meeting minutes and a list of required documents for the submission