

1400 Coldrey Avenue
City of Ottawa, ON

Water Servicing Memorandum

Prepared For:

Kehillat Beth Israel

Prepared By:

Robinson Land Development

Project No. 24060
Version 1.0
December 2025

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LEGAL NOTIFICATION

This report was prepared by Robinson Land Development for the account of **Kehillat Beth Israel**.

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

1.0 INTRODUCTION

Robinson Land Development were retained by Kehillat Beth Israel to prepare detailed civil designs in support of the proposed redevelopment of the site located at 1400 Coldrey Avenue in the City of Ottawa (refer to **Figure 1: Key Plan** following page 1). The site designs are detailed in the Stormwater Management Brief (available under a separate cover).

At the request of the City of Ottawa, this supplementary memorandum has been prepared to support the installation of a new water service for the subject site. This memorandum will detail the proposed watermain design required to service the site in accordance with current City of Ottawa guidelines.

2.0 GUIDELINES, STUDIES AND REPORTS

The designs provided herein have been prepared in keeping with the following documents:

- **Ottawa Design Guidelines, Water Distribution**, City of Ottawa, First Edition, July 2010 (herein referred to as the OWDG).
 - **Including subsequent technical bulletins.**
- **Water Supply for Public Fire Protection**, Fire Underwriters Survey, 2020 (herein referred to as FUS Guidelines).

Design requirements were also established through consultation with City staff. Refer to correspondence under **Appendix A**.

3.0 WATER SERVICING

3.1 Existing System

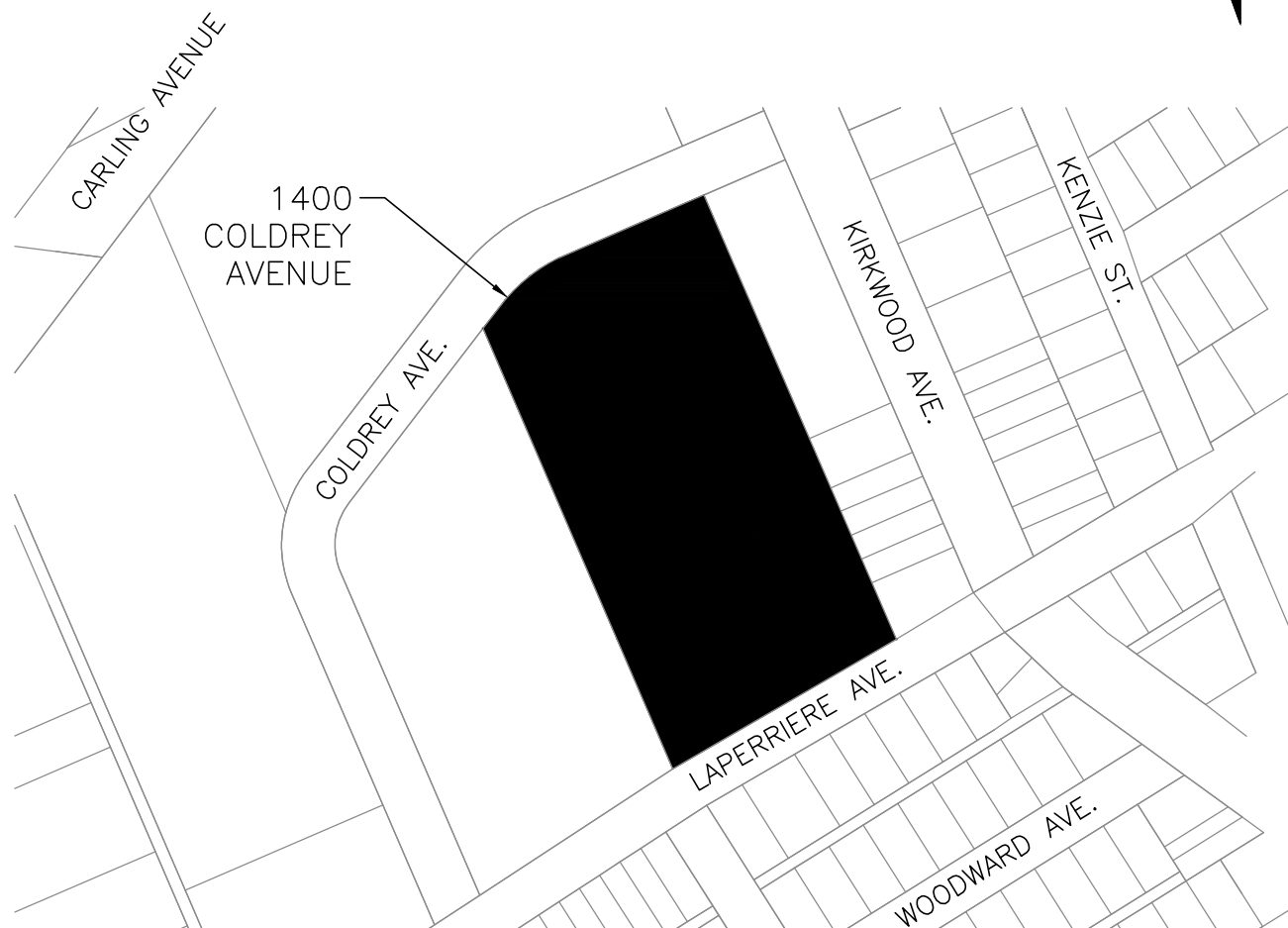
The subject site is located within the 2W2C pressure zone. Existing municipal water infrastructure is available in proximity to the subject site as follows:

- An existing 203mm diameter UCI watermain within the Coldrey Avenue right-of-way.
- An existing 203mm diameter UCI watermain within the Laperriere Avenue right-of-way.

The 1.8-hectare subject site is zoned minor institutional (I1A) and contains an existing building which currently operates as a synagogue. The building receives water supply via a +/- 152mm diameter water service fed from the existing 203mm diameter watermain on Laperriere Avenue. The water entry is located at the rear of the building as shown on the Servicing Plan (DWG. 24060-S1) provided under **Appendix B**.

3.2 Proposed System

Due to the poor condition of the existing site services, consideration is being given for a replacement of the existing water service while the site is under redevelopment. To allow flexibility to accommodate future development plans on the southern portion of the site, the proposed water service will require a new 152mm diameter watermain connection to the existing 203mm diameter watermain on Coldrey Avenue. The water entry into the building will remain at the same location and the existing water service will be blanked at the municipal main on Laperriere Avenue. The proposed watermain network is shown on the Servicing Plan (DWG. 24060-S1) provided under **Appendix B**.



Robinson

Land Development

scale	N.T.S.	1400 COLDREY AVENUE, OTTAWA	project no.
date	09/06/25		24060
drawn by	BLM	KEY PLAN	FIG 1.0

3.3 Design Criteria

The proposed watermain system for the subject site has been designed in accordance with the current OWDG using the following design criteria:

Institutional

- Basic Day (BSDY) Demand 28,000 L/ha/day (OWDG Table 4.2)
- Maximum Day (MXDY) Demand 1.5 x BSDY (OWDG Table 4.2)
- Peak Hour (PKHR) Demand 1.8 x MXDY (ISD-2010-2)
- Minimum System Pressure 40 psi (OWDG S4.2.2)
- Maximum System Pressure 80 psi (OWDG S4.2.2)

3.4 Water Demands

Domestic water demands have been calculated using the design criteria above and have been summarized in the table below.

Table 3.1: Domestic Water Demands

Institutional Area (ha)	Basic Day Demand (L/s)	Maximum Day Demand (L/s)	Peak Hour Demand (L/s)
1.80	0.58	0.88	1.58

Refer to the supporting water demand calculations provided under **Appendix C** for more details.

3.5 Boundary Conditions

The City of Ottawa water resources department provided boundary conditions for the proposed connection location on Coldrey Avenue. The provided boundary conditions are as follows:

- Minimum HGL 125.2 m
- Maximum HGL 132.1 m
- Available Fire Flow at 20 psi 10,500 L/min

Refer to the boundary conditions provided under **Appendix C** for more details.

3.6 System Pressures

Using the provided boundary conditions, the minimum and maximum system pressures at the building have been calculated as follows:

Building Finished Floor Elevation (FF) 77.70 m

Hydrostatic Pressure (P) ρgh
 Density of Water (ρ) 1000 kg/m³
 Acceleration Due to Gravity (g) 9.81 m/s²
 Head (h) HGL – FF

$$P_{\min} = (1000 \text{ kg/m}^3) \times (9.81 \text{ m/s}^2) \times (125.2 \text{ m} - 77.70 \text{ m}) \times (0.000145038 \text{ psi/pa})$$

$$P_{\min} = 67.6 \text{ psi}$$

$$P_{\max} = (1000 \text{ kg/m}^3) \times (9.81 \text{ m/s}^2) \times (132.1 \text{ m} - 77.70 \text{ m}) \times (0.000145038 \text{ psi/pa})$$

$P_{\max} = 77.4$ psi

As calculated above, the water pressure at the ground floor level of the building is anticipated to range between 67.6 psi to 77.4 psi which is in accordance with the desired operating pressures from the current OWDG.

3.7 Fire Flow

The total required fire flow for the subject site has been calculated in accordance with the FUS guidelines. The following input parameters have been used in the fire flow calculations:

- | | |
|------------------------|---|
| • Type of Construction | Ordinary Construction |
| • Effective Floor Area | 2816 m ² (excludes basement 50% below grade) |
| • Occupancy Class | Limited Combustible |
| • Sprinkler Protection | None |
| • Exposure Distances | Separations as per Site Plan |

Using the parameters above, the total required fire flow for the existing building has been calculated to be 11,000 L/min which exceeds the available fire flow of 10,500 L/min noted in the City's boundary conditions by approximately 5%. The largest exposure charge occurs on the east side of the building due to an existing garage structure located on the adjacent property. Consideration could be made to reducing the exposure charge given the structure being exposed is unoccupied and risks would be considered minimal. Since the redevelopment of the site does not include any modifications to the existing building, the required fire flow under current site conditions has been maintained.

3.8 Hydrant Coverage

Under current site conditions, fire protection is provided by the existing municipal hydrant located on the north side of Coldrey Avenue (denoted as EX-HYD-1). The existing hydrant is located approximately 51 metres from the exterior building face and approximately 75 metres from the building's main entrance. Secondary hydrants are available at the intersection of Kirkwood Avenue (to the east) and at the southwest corner of 1500 Coldrey Avenue (to the west). Both secondary hydrants are located within 150 m of the existing building.

In accordance with City of Ottawa Technical Bulletin ISTB-2018-02, the aggregate fire flow capacity of all contributing fire hydrants within 150 m of a building shall not be less than the required fire flow. The contribution to the required fire flow is dependent on the distance from the hydrant to building being considered. A flow of 5,700 L/min should be assigned to all hydrants with a distance of less than or equal to 75 m from the building being considered and 3,800 L/min to all hydrants with a distance between 75 m and 150 m from the building being considered (as per *Table 1* from ISTB-2018-02 for AA rated hydrants).

Hydrant coverage for the existing building will continue to be provided by the existing municipal hydrants located along Coldrey Avenue which remains consistent with the current site conditions. The proposed entrance connection to Coldrey Avenue on the west side of the site will facilitate fire department access between the secondary hydrant to the west and the existing building which is an improvement on the existing site condition. The contributing fire flows from the existing hydrants have been summarized in the table below.

Table 3.2: Hydrant Coverage

Hydrant ID	Distance to Building* ³ (m)	Hydrant Contribution (L/min)
EX-HYD-1	65	5,700
EX-HYD-2	144	3,800
EX-HYD-3	146	1,000* ¹
Total		10,500*²

Notes:

1. Total contributing fire flow cannot exceed the available fire flow from the municipal distribution system.
2. Maximum available fire flow (at 20 psi residual pressure) as per boundary conditions.
3. Distance to building measured along path of travel.

As shown in the table above, the contributing fire flows from the existing hydrants can provide the maximum fire flow available from the municipal distribution system and therefore adequate fire protection coverage has been demonstrated. The existing hydrant (denoted as EX-HYD-3) located at the intersection of Kirkwood Crescent is within 150 metres of the building, however, the contributing fire flow has been reduced to 1,000 L/min since the total contributing fire flow (from all hydrants simultaneously) cannot exceed the fire flow available from the municipal distribution system. Refer to **Figure 2: Hydrant Coverage Plan** provided under **Appendix C**.

4.0 CONCLUSIONS

It has been demonstrated that a new water service for the existing building located at 1400 Coldrey Avenue can be provided in keeping with current City of Ottawa guidelines. Specifically, the watermain design will include the following key design features:

- Domestic water supply via a new 152mm diameter watermain connection to the existing 203mm diameter watermain on Coldrey Avenue.
- Fire protection and hydrant coverage will continue to be provided by the existing hydrants along Coldrey Avenue.
- The existing water service will be blanked at the existing municipal main on Laperriere Avenue.

Report Prepared By:



Brandon MacKechnie, P.Eng.
Project Engineer

Appendix A

Correspondence with City Staff

Brandon Mackechnie

From: Cassidy, Tyler <tyler.cassidy@ottawa.ca>
Sent: November 13, 2025 3:03 PM
To: Brandon Mackechnie
Cc: Bullen, Chloe
Subject: RE: 1400 Coldrey Avenue Water Service

"CAUTION: External Sender"

Hi Brandon,

Thank you for reaching out. I agree with your final sentence below, I'm not expecting a model/HNA for this work. If you could request boundary conditions with your proposed demands, then review the available flow from the BC results and confirm there is sufficient hydrant coverage. Essentially we want to confirm if a private hydrant is/isn't required.

Feel free to reach out if you have any additional questions.

Thank you,

Tyler Cassidy, P.Eng

Infrastructure Project Manager,

Planning, Development and Building Services department (PDBS)/ Direction générale des services de la planification, de l'aménagement et du bâtiment (DGSPAB) - South Branch

City of Ottawa | Ville d'Ottawa

110 Laurier Avenue West Ottawa, ON | 110, avenue. Laurier Ouest. Ottawa (Ontario) K1P 1J1

613.580.2424 ext./poste 12977, Tyler.Cassidy@ottawa.ca

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

From: Brandon Mackechnie <bmackechnie@rcii.com>
Sent: November 12, 2025 10:57 AM
To: Cassidy, Tyler <tyler.cassidy@ottawa.ca>
Cc: Bullen, Chloe <chloe.bullen@ottawa.ca>
Subject: RE: 1400 Coldrey Avenue Water Service

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Hi Tyler,

We can certainly provide a memo discussing the items you listed below. Regarding the boundary condition request, please consider the following:

- The building is existing and won't be altered.
- The demands and fire flows won't be altered from the current condition.

- Fire flow will be provided by the existing hydrant on Coldrey Avenue (across from the site).

Given the above, would it be more appropriate for the City to tell us what the available fire flow is on Coldrey and then we can compare that value to the required fire flow calculated using FUS guidelines? Even if we were to model the proposed building service based on boundary conditions, it won't tell us what the available fire flow is on Coldrey Avenue.

Regards,



Brandon MacKechnie, P.Eng. | Project Engineer

210-350 Palladium Drive, Ottawa ON, K2V 1A8

O: 613-592-6060 x130 | bmackechnie@rcii.com | www.rcii.com

WE'RE MOVING! 

Please note that Robinson Consultants Inc. will be relocating to 2936 Baseline Road, 2nd Floor, Ottawa, Ontario K2H 1B3 on November 24, 2025.

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From: Cassidy, Tyler <tyler.cassidy@ottawa.ca>

Sent: November 10, 2025 3:46 PM

To: Brandon MacKechnie <bmackechnie@rcii.com>

Cc: Tim Eisner <teisner@jfsa.com>; David Meikle <dave@dbmconsultinginc.com>; Bullen, Chloe <chloe.bullen@ottawa.ca>

Subject: RE: 1400 Coldrey Avenue Water Service

"CAUTION: External Sender"

Hi Brandon,

We can amend the agreement with some additional conditions for private watermain and get this revision included.

Before we proceed, we do need some additional information on the proposed watermain. Typically, the watermain should be designed and analyzed in the Site Servicing Report. In this case, a memo which contains the design details and analysis will need to be prepared and submitted for review and inclusion in the agreement. The memo should include the following information:

- Boundary conditions
- Verification of watermain size
- Calculation of the required fire flow per FUS2020 methodology, and confirmation that the required fire flow is available
- Any discussion on if Pressure Reducing Valves (PRVs) or any other appurtenance is required.

We'll also have to complete a water data card to determine/confirm the appropriate meter size before obtaining a water permit.

Please let me know if you have any further questions.

Thank you,

Tyler Cassidy, P.Eng

Infrastructure Project Manager,

Planning, Development and Building Services department (PDBS)/ Direction générale des services de la planification, de l'aménagement et du bâtiment (DGSPAB) - South Branch

City of Ottawa | Ville d'Ottawa

110 Laurier Avenue West Ottawa, ON | 110, avenue. Laurier Ouest. Ottawa (Ontario) K1P 1J1

613.580.2424 ext./poste 12977, Tyler.Cassidy@ottawa.ca

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

From: Brandon MacKechnie <bmackechnie@rcii.com>

Sent: November 07, 2025 12:01 PM

To: Cassidy, Tyler <tyler.cassidy@ottawa.ca>

Cc: Tim Eisner <teisner@jfsa.com>; David Meikle <dave@dbmconsultinginc.com>

Subject: 1400 Coldrey Avenue Water Service

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Hi Tyler,

The Owner for 1400 Coldrey Avenue is considering a replacement of their existing water service while the site is currently under construction. I've attached a redline servicing plan showing what we would be proposing for a new water service to the building. Since our approved design did not include any modifications to the existing water service, can you please advise what the requirements would be if the Owner wants to move forward with a new water service as per the attached.

Thanks,



Brandon MacKechnie, P.Eng. | Project Engineer

210-350 Palladium Drive, Ottawa ON, K2V 1A8

O: 613-592-6060 x130 | bmackechnie@rcii.com | www.rcii.com

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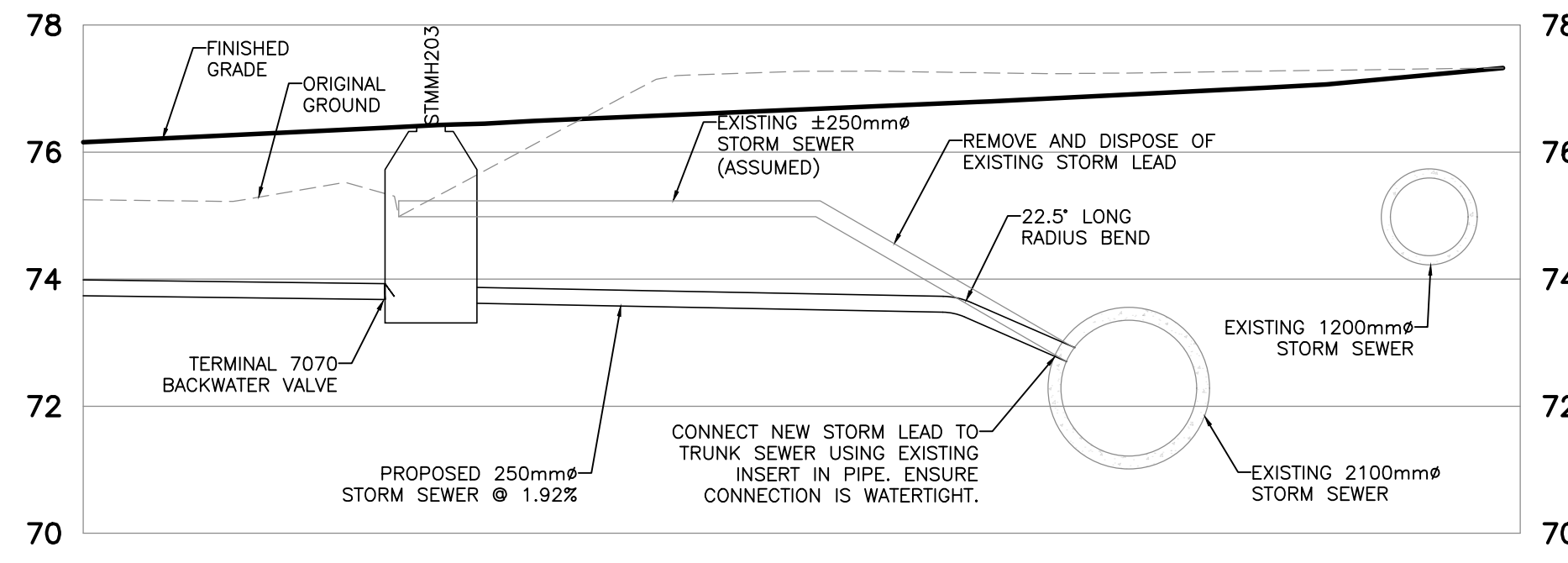
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Appendix B

Servicing Plan (DWG. 24060-S1)

Grading Plan (DWG. 24060-GR1)

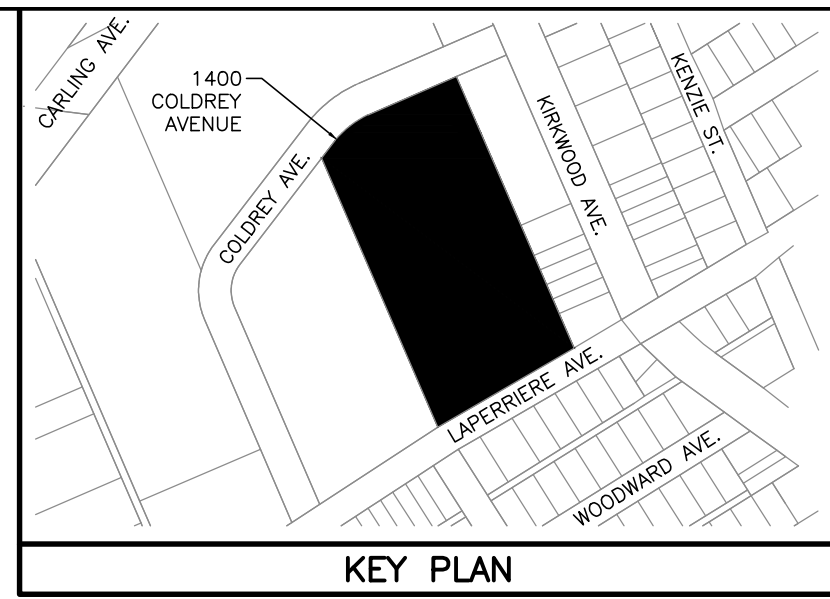


STORM SEWER CONNECTION DETAIL
N.T.S.

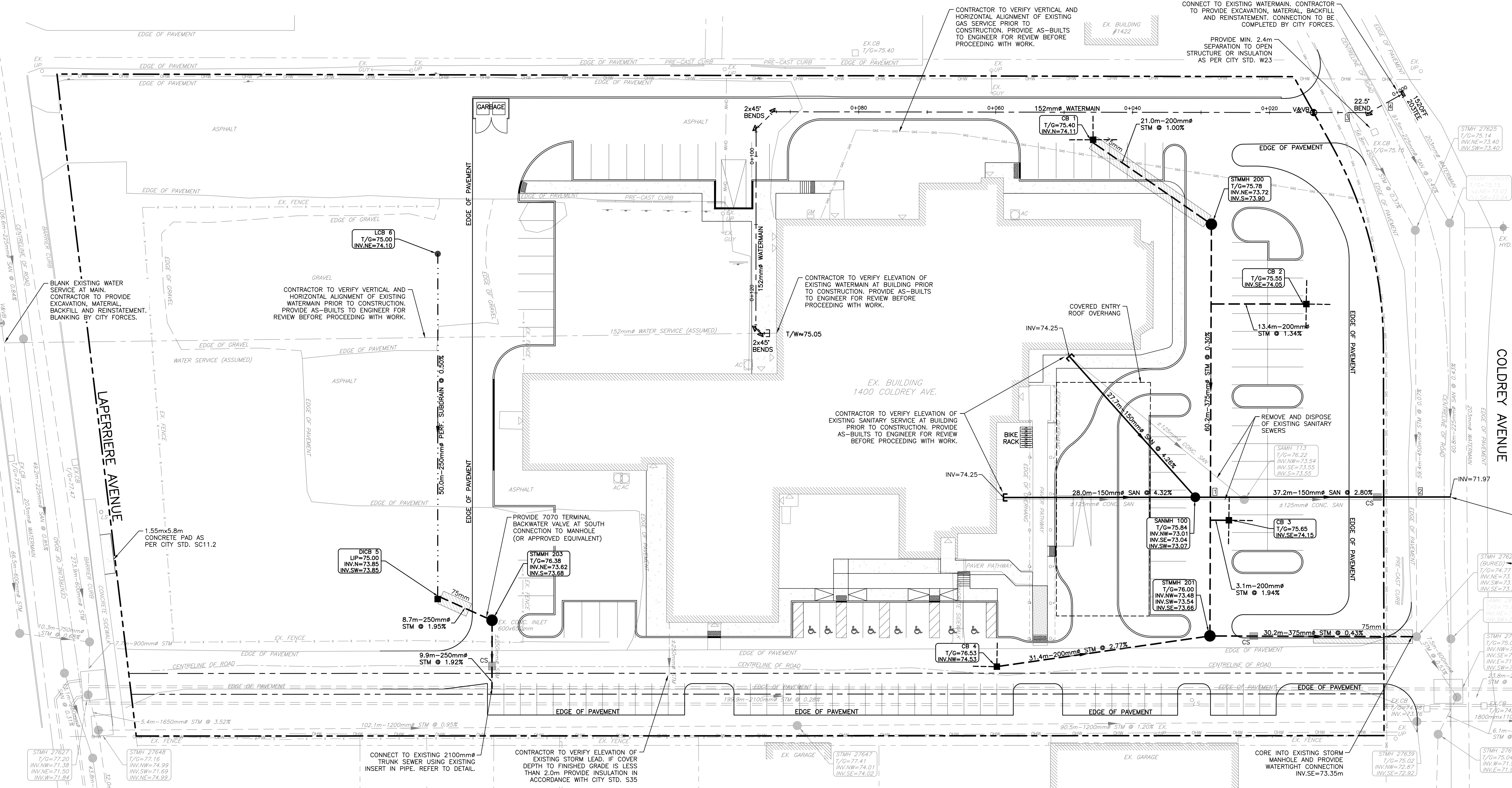
INLET CONTROL DEVICE (ICD) TABLE				
STRUCTURE	2-YR HEAD (m)	2-YR OUTFLOW (L/s)	ORIFICE DIAMETER (mm)	ORIFICE TYPE
CB 1	1.19	21.0	95	CUSTOM TEMPEST HF, CIRCULAR, SLIDE
CB 2	1.40	23.0	96	CUSTOM TEMPEST HF, CIRCULAR, SLIDE
CB 3	1.40	35.0	117	CUSTOM TEMPEST HF, CIRCULAR, SLIDE
CB 4	1.90	20.0	83	CUSTOM TEMPEST HF, CIRCULAR, SLIDE
DICB 5	1.02	69.6	180	CUSTOM TEMPEST HF, CIRCULAR, SLIDE

CROSSING TABLE			
CROSSING No.	SERVICE	INVERT/OBVERT	SEPARATION (m)
1	STORM	73.60	0.50
	SANITARY	73.10	
2	EX STORM	73.29	1.03
	SANITARY	72.26	
3	EX STORM	73.39	0.63
	WATER	72.76	
4	WATER	72.63	0.25
	EX SANITARY	72.38	

152mm WATERMAIN GRADE TABLE - PROPOSED BUILDING SERVICE				
STATION	FINISHED GRADE (m)	TOP OF WATER (m)	COVER DEPTH (m)	COMMENTS
0+000	75.13	72.83 (ASSUMED)	2.30	152mm OFF 203mm TEE
0+003	75.20	72.78	2.42	SANITARY SEWER CROSSING
0+005.5	75.18	72.78	2.40	22.5' HORIZONTAL BEND
0+008.2	75.16	72.76	2.40	STORM SEWER CROSSING
0+020	75.50	73.10	2.40	TOP OF WATERMAIN
0+030	75.67	73.27	2.40	TOP OF WATERMAIN
0+040	75.49	73.09	2.40	TOP OF WATERMAIN
0+050	75.51	73.11	2.40	TOP OF WATERMAIN
0+060	75.66	73.26	2.40	TOP OF WATERMAIN
0+070	76.09	73.69	2.40	TOP OF WATERMAIN
0+080	76.32	73.92	2.40	TOP OF WATERMAIN
0+090	76.39	73.99	2.40	TOP OF WATERMAIN
0+092.5	76.37	73.97	2.40	45° HORIZONTAL BEND
0+096	76.32	73.92	2.40	45° HORIZONTAL BEND
0+110	76.41	74.01	2.40	TOP OF WATERMAIN
0+120	76.96	74.56	2.40	TOP OF WATERMAIN
0+125.1	77.39	74.99	2.40	45° HORIZONTAL BEND
0+126.2	77.45	75.05	2.40	45° HORIZONTAL BEND
0+127.4	77.45	75.05	2.40	CONNECT TO EXISTING SERVICE



- LEGEND**
- PROPERTY BOUNDARY
 - EXISTING HYDRANT
 - EXISTING CATCH BASIN
 - EXISTING WATERMAIN
 - EXISTING VALVE & VALVE BOX
 - EXISTING SANITARY SEWER & MANHOLE
 - EXISTING STORM SEWER & MANHOLE
 - EXISTING LIGHT STANDARD
 - EXISTING UTILITY POLE
 - EXISTING OVERHEAD WIRES
 - EXISTING GAS
 - CATCH BASIN WITH 3.0m-150mm SUBDRAIN STUBS
 - ELBOW LANDSCAPE CATCH BASIN (CITY STD. S31)
 - STORM SEWER & MANHOLE
 - SANITARY SEWER & MANHOLE
 - WATERMAIN
 - VALVE & VALVE BOX
 - SWALE WITH 250mm PERFORATED SUBDRAIN
 - CLAY SEAL (CITY STD. S8)
 - EXISTING BUILDING ENTRANCE
 - CROSSING NUMBER
 - INSULATION & THICKNESS (AS PER CITY STD. S35)



CONNECT TO EXISTING 225mm CONC. SANITARY SEWER WITH 250mmx150mm PVC TEE MAIN SPRINGLINE EL=71.96m SERVICE CONNECTION=71.97m

CONTRACTOR TO EXPOSE STMH 27626 PRIOR TO CONSTRUCTION AND VERIFY EXISTING INVERTS. PROVIDE AS-BUILTS TO ENGINEER FOR REVIEW BEFORE PROCEEDING WITH WORK.

NOTES

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

PROPERTY BOUNDARIES ARE DERIVED FROM PLAN OF SURVEY OF PART OF LOT 1 CONCESSION A RIDEAU FRONT, GEOGRAPHIC TOWNSHIP OF NEPEAN, CITY OF OTTAWA, SURVEYED BY ANNIS, O'SULLIVAN, VOLLEBEKK LTD. BEARINGS ARE GRID, ARE REFERRED TO THE CENTRAL MERIDIAN OF MTM ZONE 9, NAD-83 (ORIGINAL).

NO.	REVISION DESCRIPTION	DATE	BY
3	NEW WATER SERVICE	11/12/25	BLM
2	REVISED PER COMMENTS	21/08/25	BLM
1	ISSUED FOR REVIEW	09/06/25	BLM

SCALE

0 3m 6m 12m

HORIZONTAL 1:300

PROFESSIONAL ENGINEER

B.L. MACKECHNIE

100199554

11 Dec 25

PROVINCE OF ONTARIO

Robinson

Land Development

350 Palladium Drive

Ottawa, ON K2V 1A8

(613) 592-6060 roil.com

DESIGN	BLM
CHECKED	CC
DRAWN	BLM
CHECKED	CC
APPROVED	BLM

KEHILLAT BETH ISRAEL

1400 COLDREY AVENUE

CITY OF OTTAWA

SERVICING PLAN

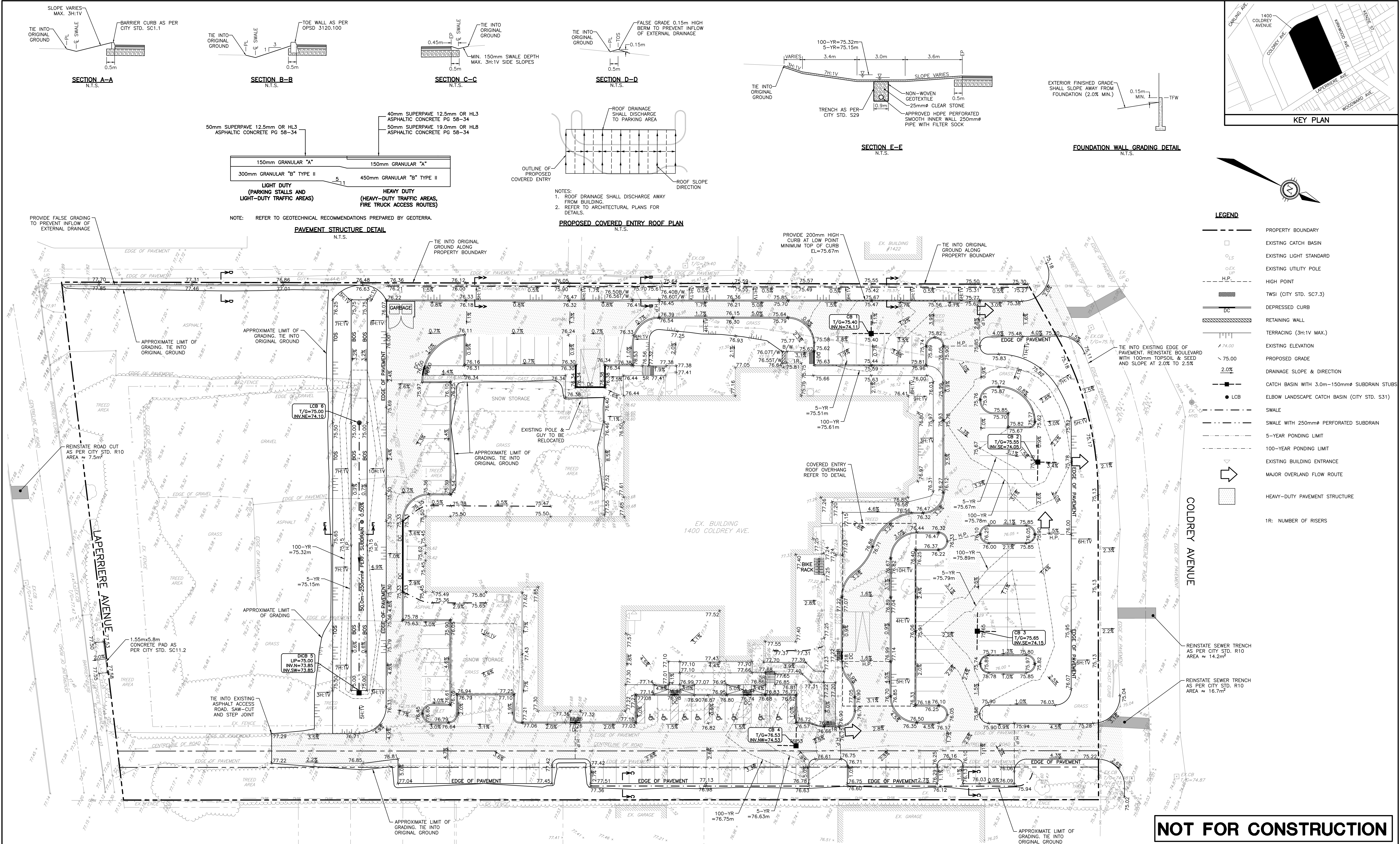
PROJECT No. 24060

SURVEY RCI

DATED DECEMBER 2025

DWG. No. 24060-S1

NOT FOR CONSTRUCTION



NOTES						<div>SCALE</div> 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Appendix C

Water Demands

Boundary Conditions

Fire Flow Calculations

Figure 2: Hydrant Coverage Plan

WATER DEMAND CALCULATIONS

1400 Coldrey Avenue, Ottawa
Project No. 24060



JUNCTION NODE	RESIDENTIAL POPULATION				COMMERCIAL AREA (ha)	INSTITUTIONAL AREA (ha)	BASIC DAY DEMAND (L/s)				MAX. DAY DEMAND (L/s)				PEAK HOUR DEMAND (L/s)			
	UNIT COUNT			TOTAL POPULATION			RES.	COMM.	INST.	TOTAL	RES.	COMM.	INST.	TOTAL	RES.	COMM.	INST.	TOTAL
	SINGLE FAMILY	TOWNHOUSE	APARTMENTS															
CONNECTION 1						1.80			0.58	0.58			0.88	0.88			1.58	1.58
Total						1.80			0.58	0.58			0.88	0.88			1.58	1.58

Notes:

1. Per unit populations as per OWDG Table 4.1.

Per Unit Populations		
Single Family =	3.4	persons/unit
Townhouses =	2.7	persons/unit
Apartments (2 bedroom) =	2.1	persons/unit

Basic Day Demand:		
Residential	280	L/person/day
Commercial	28000	L/ha/day
Institutional	28000	L/ha/day

Max. Day Demand:		
Residential	2.5	x Avg. Day
Commercial	1.5	x Avg. Day
Institutional	1.5	x Avg. Day

Peak Hour Demand:		
Residential	2.2	x Max. Day
Commercial	1.8	x Max. Day
Institutional	1.8	x Max. Day

Brandon Mackechnie

From: Cassidy, Tyler <tyler.cassidy@ottawa.ca>
Sent: December 5, 2025 1:56 PM
To: Brandon Mackechnie
Cc: Bullen, Chloe
Subject: RE: 1400 Coldrey Avenue Water Service
Attachments: 1400 Coldrey Avenue November 2025.pdf

"CAUTION: External Sender"

Hi Brandon,

Please find the results to the boundary condition request for 1400 Coldrey Avenue below:

The following are boundary conditions, HGL, for hydraulic analysis at 1400 Coldrey Avenue (zone 2W2C) assumed to be connected to the 203 mm watermain on Coldrey Avenue (see attached PDF for location).

Minimum HGL = 125.2 m

Maximum HGL = 132.1 m

Available fire flow @ 20 residual psi = 175 L/s, assuming a ground elevation of 75.2 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. Fire Flow analysis is a reflection of available flow in the watermain; there may be additional restrictions that occur between the watermain and the hydrant that the model cannot take into account.

Thank you,

Tyler Cassidy, P.Eng

Infrastructure Project Manager,

Planning, Development and Building Services department (PDBS)/ Direction générale des services de la planification, de l'aménagement et du bâtiment (DGSPAB) - South Branch

City of Ottawa | Ville d'Ottawa

110 Laurier Avenue West Ottawa, ON | 110, avenue. Laurier Ouest. Ottawa (Ontario) K1P 1J1

613.580.2424 ext./poste 12977, Tyler.Cassidy@ottawa.ca

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

From: Cassidy, Tyler
Sent: November 25, 2025 3:39 PM
To: Brandon Mackechnie <bmackechnie@rcii.com>
Cc: Bullen, Chloe <chloe.bullen@ottawa.ca>
Subject: RE: 1400 Coldrey Avenue Water Service

Hi Brandon,

I've submitted the request for boundary conditions to our water resources department. Please allow for up to 7 business days for the results to be provided.

Thank you,

Tyler Cassidy, P.Eng

Infrastructure Project Manager,

Planning, Development and Building Services department (PDBS)/ Direction générale des services de la planification, de l'aménagement et du bâtiment (DGSPAB) - South Branch

City of Ottawa | Ville d'Ottawa

110 Laurier Avenue West Ottawa, ON | 110, avenue. Laurier Ouest. Ottawa (Ontario) K1P 1J1

613.580.2424 ext./poste 12977, Tyler.Cassidy@ottawa.ca

From: Brandon Mackechnie <bmackechnie@rcii.com>

Sent: November 21, 2025 12:41 PM

To: Cassidy, Tyler <tyler.cassidy@ottawa.ca>

Cc: Bullen, Chloe <chloe.bullen@ottawa.ca>

Subject: RE: 1400 Coldrey Avenue Water Service

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

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

Hi Tyler,

Please find attached, water demand and FUS calculations for 1400 Coldrey. The proposed connection location is shown on the attached drawing.

Let me know if you require anything further.

Regards,



Brandon MacKechnie, P.Eng. | Project Engineer

210-350 Palladium Drive, Ottawa ON, K2V 1A8

O: 613-592-6060 x130 | bmackechnie@rcii.com | www.rcii.com

WE'RE MOVING! 📦

Please note that Robinson Consultants Inc. will be relocating to 2936 Baseline Road, 2nd Floor, Ottawa, Ontario K2H 1B3 on November 24, 2025.

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From: Cassidy, Tyler <tyler.cassidy@ottawa.ca>

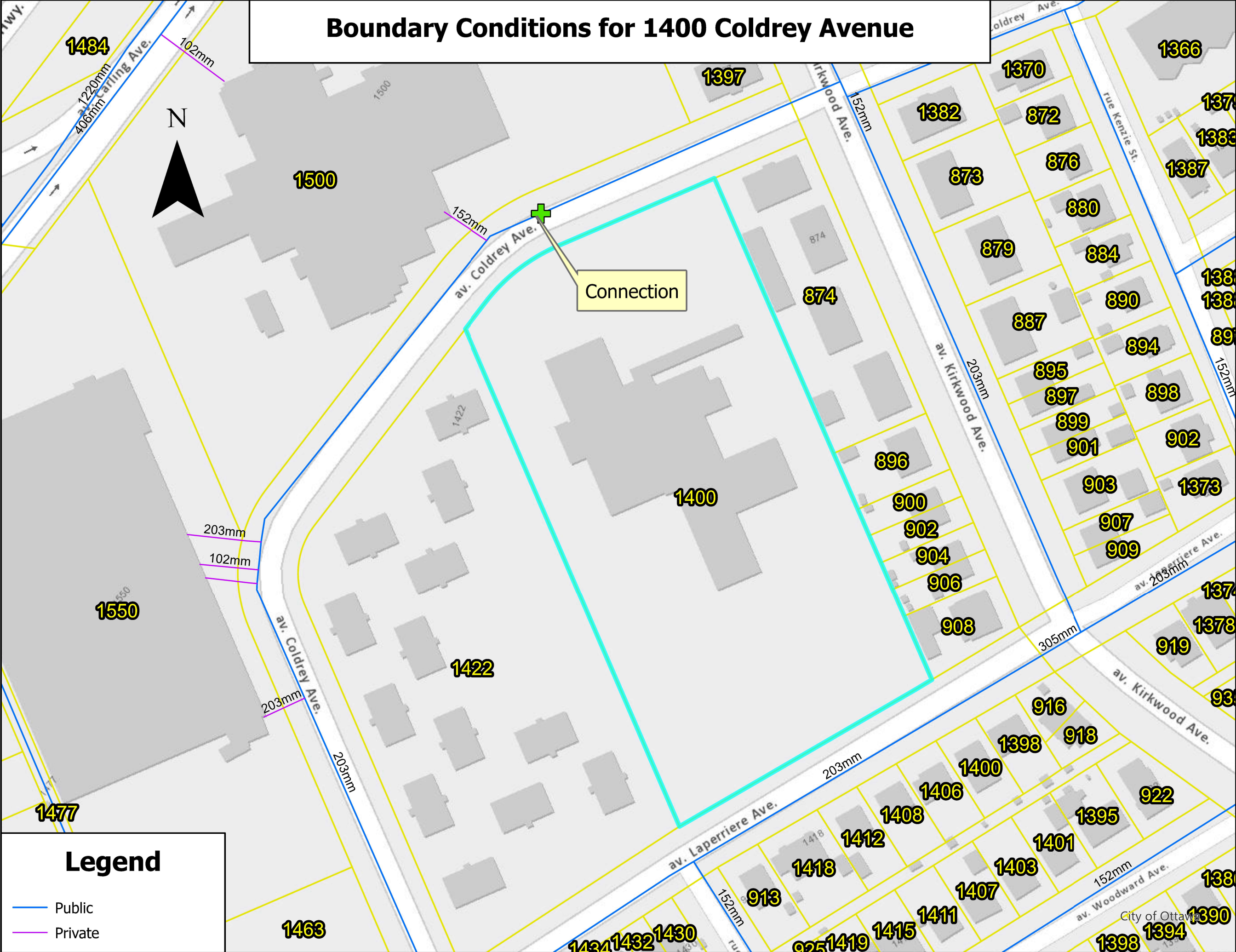
Sent: November 13, 2025 3:03 PM

To: Brandon Mackechnie <bmackechnie@rcii.com>

Cc: Bullen, Chloe <chloe.bullen@ottawa.ca>

Subject: RE: 1400 Coldrey Avenue Water Service

Boundary Conditions for 1400 Coldrey Avenue



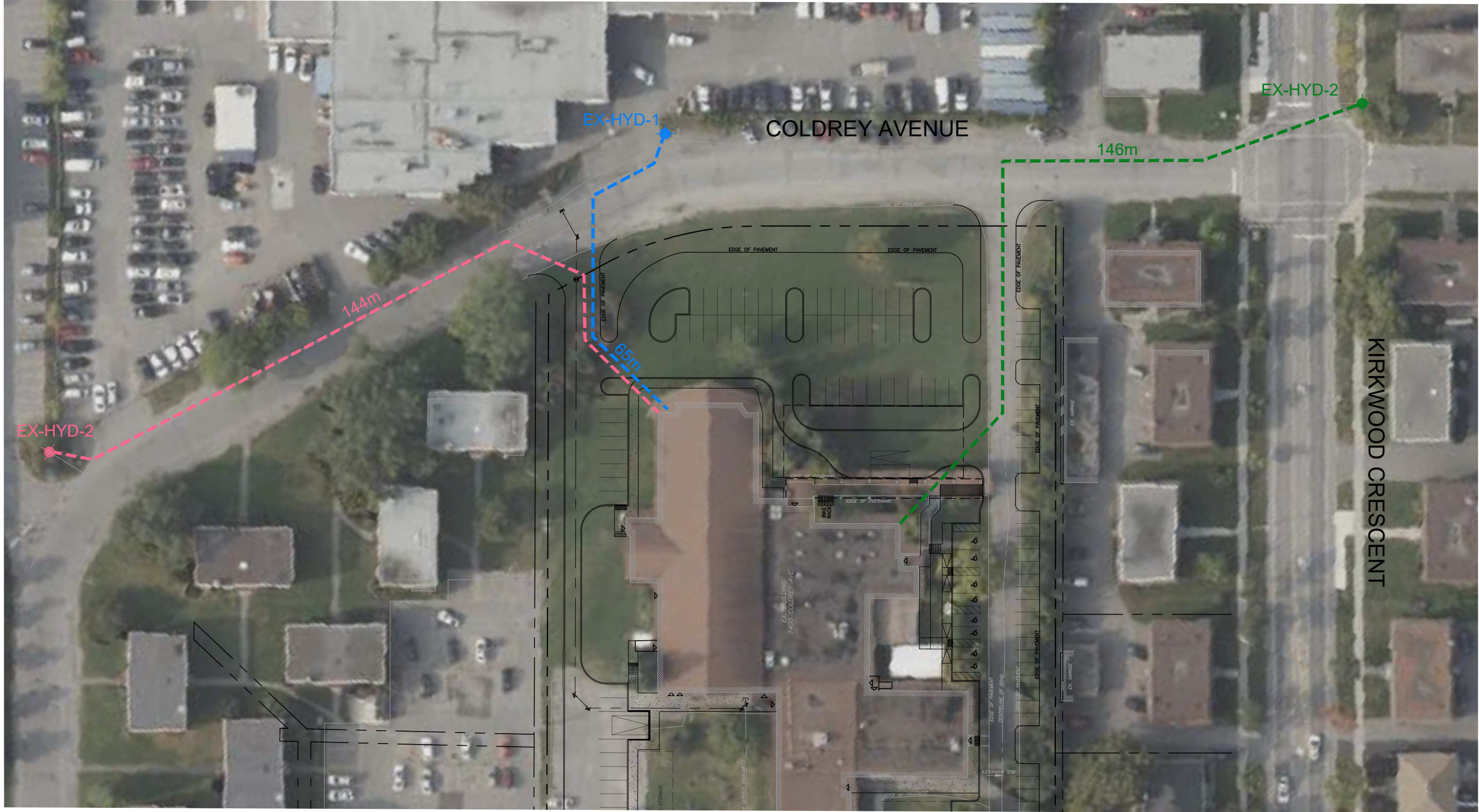
<div><div>Project Name: 1400 Coldrey Avenue Redevelopment</div><div>Project Location: 1401 Coldrey Avenue, Ottawa</div><div>Project No: 24060</div><div>Date: Dec. 11, 2025</div></div> <div><div>Building Type: Synagogue</div><div>Building Being Considered: Existing Building</div></div>		<div>Robinson</div> <div>Land Development</div>						
Calculations for Total Required Fire Flow								
Step	Parameter					Value		
A	Type of Construction	Options	C	Ordinary Construction (Type III)	1.0			
		Wood Frame (Type V)	1.5					
		Ordinary Construction (Type III)	1.0					
		Non-Combustible Construction (Type II)	0.8					
		Fire Resistive Construction (Type I)	0.6					
	Ground Floor Area				2816.0	m ²		
	Total Effective Floor Area				2,816.0	m ²		
C	Fire Flow					12,000	L/min	
D	Occupancy Class	Options	Charge	Limited Combustible	-0.15			
		Non-combustible	-0.25					
		Limited Combustible	-0.15					
		Combustible	0.00					
		Free burning	0.15					
		Rapid Burning	0.25					
	Occupancy Adjustment					-1800	L/min	
	Fire Flow					10,200	L/min	
E	Sprinkler Protection	Options	Charge	None	0.00			
		Automatic Sprinkler Protection	-0.30					
		None	0.00					
		Water Supply is Standard for System and Hose Lines	-0.10	No	0.00			
		Full Supervision of the Sprinkler System	-0.10	No	0.00			
	Sprinkler Reduction					0	L/min	
F	Exposures							
	West Side							
	Subject Building and Exposed Building Fully Protected with Automatic Sprinkler Systems					No		
	Exposed Building Fully Protected with Automatic Sprinkler Systems					No		
	Exposed Wall Length					10.7	m	
	Exposed Wall No. of Storeys					2		
	Length-Height Factor of Exposed Wall					21.4	m.storeys	
	Construction Type of Exposed Wall	Options	Ordinary with Unprotected Openings					
		Wood Frame						
		Ordinary with Unprotected Openings						
		Ordinary without Unprotected Openings						
		Noncombustible or Fire Resistive with Unprotected Openings						
		Noncombustible or Fire Resistive without Unprotected Openings						
	Separation Distance					25.5	m	
	West Side Exposure Charge						0.01	
	North Side							
	Subject Building and Exposed Building Fully Protected with Automatic Sprinkler Systems					No		
	Exposed Building Fully Protected with Automatic Sprinkler Systems					No		
	Exposed Wall Length					35	m	
	Exposed Wall No. of Storeys					2		
	Length-Height Factor of Exposed Wall					70	m.storeys	
	Construction Type of Exposed Wall	Options	Ordinary with Unprotected Openings					
		Wood Frame						
		Ordinary with Unprotected Openings						
		Ordinary without Unprotected Openings						
		Noncombustible or Fire Resistive with Unprotected Openings						
		Noncombustible or Fire Resistive without Unprotected Openings						
	Separation Distance					>30m; no exposure	52.0	m
	North Side Exposure Charge						0.00	
	East Side							
	Subject Building and Exposed Building Fully Protected with Automatic Sprinkler Systems					No		
	Exposed Building Fully Protected with Automatic Sprinkler Systems					No		
	Exposed Wall Length					9.5	m	
	Exposed Wall No. of Storeys					1		
	Length-Height Factor of Exposed Wall					9.5	m.storeys	
	Construction Type of Exposed Wall	Options	Noncombustible or Fire Resistive with Unprotected Openings					
		Wood Frame						
		Ordinary with Unprotected Openings						
		Ordinary without Unprotected Openings						
		Noncombustible or Fire Resistive with Unprotected Openings						
		Noncombustible or Fire Resistive without Unprotected Openings						
	Separation Distance					17.6	m	

	East Side Exposure Charge		0.03		
	South Side				
	Subject Building and Exposed Building Fully Protected with Automatic Sprinkler Systems		Yes		
	Exposed Building Fully Protected with Automatic Sprinkler Systems		Yes		
	Exposed Wall Length		10.5	m	
	Exposed Wall No. of Storeys		1		
	Length-Height Factor of Exposed Wall		10.5	m.storeys	
	Construction Type of Exposed Wall	Options	Wood Frame	2	
		Wood Frame			
		Ordinary with Unprotected Openings			
		Ordinary without Unprotected Openings			
		Noncombustible or Fire Resistive with Unprotected Openings			
		Noncombustible or Fire Resistive without Unprotected Openings			
	Separation Distance		>30m; no exposure	85.0	m
	South Side Exposure Charge		0.00		
Total Exposure Charage		0.04	< 0.75		
Increase for Exposures		408	L/min		
G	Total Required Fire Flow		11,000	L/min	


Notes:

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

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



LEGEND

- — — — — PROPERTY BOUNDARY
-  EXISTING HYDRANT
- — — — — PATH OF TRAVEL FROM EX-HYD-1
- — — — — PATH OF TRAVEL FROM EX-HYD-2
- — — — — PATH OF TRAVEL FROM EX-HYD-3

Robinson
Land Development

scale	1:750	1400 COLDREY AVENUE, OTTAWA	project no.
date	11/12/25		24060
drawn by	BLM	HYDRANT COVERAGE PLAN	FIG 2