



- **Julian Jacobs Architects**

Site Servicing and Stormwater Management Report

Type of Document

Issued for Site Plan Application

Project Name

215 McLeod Street, Ottawa, Ontario
Embassy of the Republic of Iraq

Project Number

OTT-00205359-A0

Prepared By:

exp Services Inc.
100-2650 Queensview Drive
Ottawa, ON K2B 8H6
Canada

Date Submitted

September 5, 2012

Julian Jacobs Architects

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1 Introduction

Julian Jacobs Architects retained **exp** Services Inc. (**exp**) to prepare a Servicing and Stormwater Management Report as part of a site plan application for the subject development. The subject site is located at 215 McLeod Street on the north side of McLeod Street between Metcalfe and Elgin Streets in the City of Ottawa, Ontario. *Figure 1* shows the site location.

2 Existing Conditions

The site is approximately 0.13 hectares in size and currently consists of a 2-storey building and surface parking. This existing building houses the Embassy of Iraq. The site is bound by residential homes to the north, a 13 storey residential building to the east, McLeod Avenue and the Canadian Museum of Nature to the south and business/medical buildings to the west.

3 Development Proposal

It is proposed to demolish the existing building and construct a four-storey building (plus mechanical mezzanine) with an underground parking garage. An entrance to the underground parking garage is proposed from McLeod Street. *Figure 2* shows the proposed development.

4 Water Supply

There is an existing 203mm diameter watermain along McLeod Street. This existing watermain infrastructure will provide domestic and fire protection supply to the Embassy. A 150mm diameter water service will be constructed and connected to the existing watermain along McLeod Street. Details of the proposed servicing configuration can be found on the Servicing and Grading Plan (205359-SGR) in Appendix C.

There is an existing fire hydrant within the property frontage to provide fire protection for the building. A fire demand of 6,300 L/min (105 L/sec) at 138kPa (20psi) is required as per "Required Minimum Water Supply Flow Rate" and as calculated using the Ontario Building Code – Appendix A – Article A-3.2.5.7 "Water Supply for Fire Fighting". Field measurements carried out by the City of Ottawa have recorded an actual flow at the existing hydrant of 714 igpm (3,246 L/min) at a dynamic water pressure of 48psi (330 kPa). The assessed flow at 138 kPa (20psi) has been determined to be 1,469 igpm (6,678 L/min). See Appendix B for City's water supply information and Fire Flow Calculations. It is anticipated that the water supply is sufficient to provide fire protection for the proposed building.

5 Sanitary Sewer Servicing

There are two existing 300mm diameter combined sewers along McLeod Street. It is proposed to connect a 200mm diameter sanitary service with backflow preventer to the existing combined sewer draining in a westerly direction along McLeod Street to service the Embassy.

The average daily flow for the site is calculated using 75 L/person/day as indicated in the City of Ottawa Sewer Design Guidelines. The estimated maximum staffing level is 70 people. Therefore, the daily waste flow is calculated as 5,250 L/d (75×70). This flow is generated over an 8 hour work day which is equivalent to 656.25 L/hr ($5250/8$).

Therefore, the total peak waste flow from the site is calculated at 984.38 L/hr or 0.27 L/s (656.25×1.5 peak factor / 60×60).

Refer to the Servicing and Grading Plan (205359-SGR) in Appendix C, for the sanitary service alignment and location.



The new identity of Trow / DME

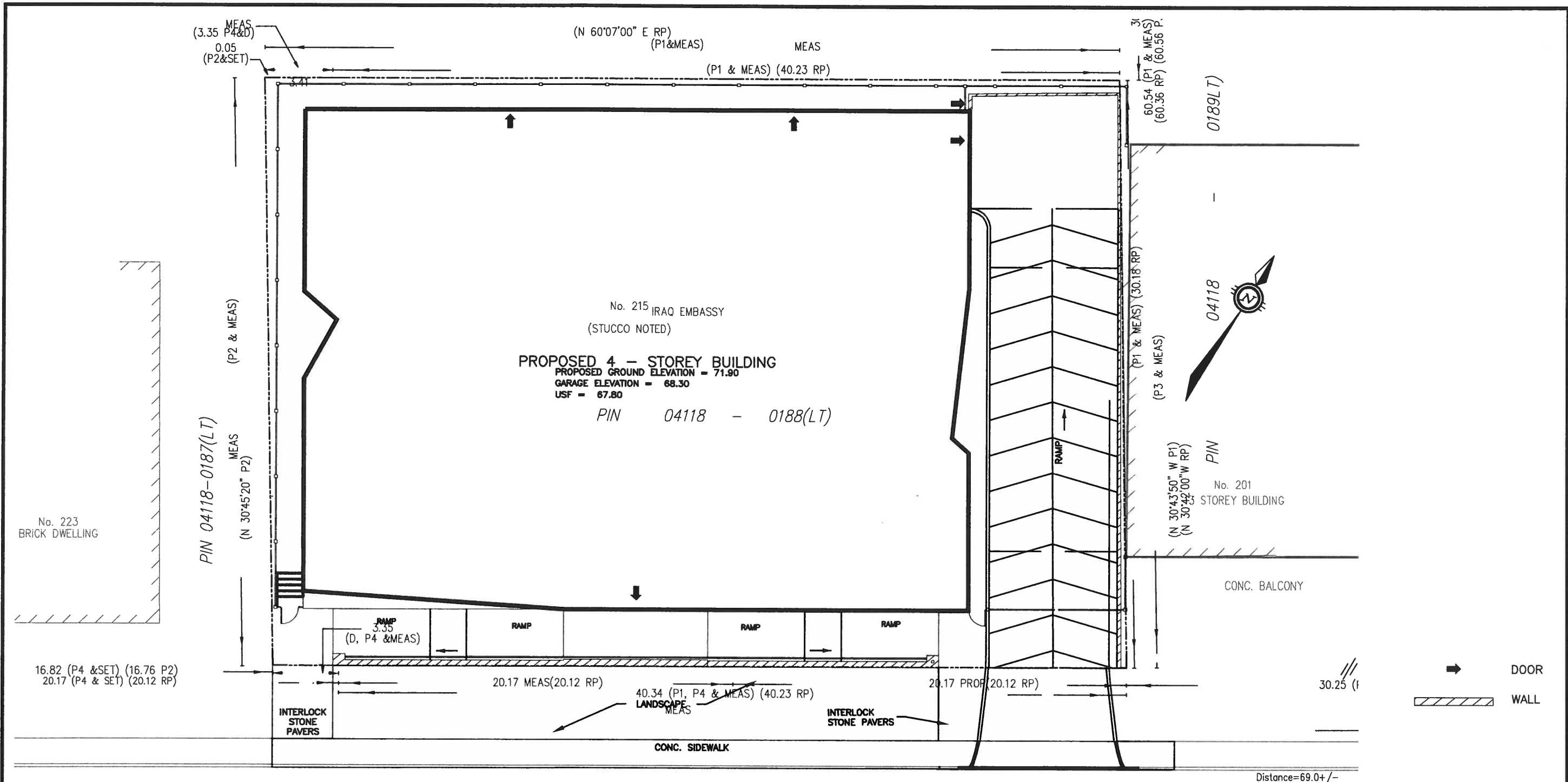
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scale N.T.S	CLIENT: JULIAN JACOBS ARCHITECTS	project no. OTT-00205359-A0
date 22/08/2012	TITLE: EMBASSY OF IRAQ – KEYPLAN	FIG 1
drawn by ASB		



McLEOD STREET
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scale 1:200	CLIENT: JULIAN JACOBS ARCHITECTS	project no. OTT-00205359-A0
date 05/09/2012	TITLE: EMBASSY OF IRAQ - SITEPLAN	FIG 2
drawn by ASB		

6 Stormwater Management

6.1 Existing Site Drainage

As indicated previously, the site is currently occupied by an existing 2-storey building and asphalt parking. The site is presently serviced by 2 catchbasins to collect surface drainage and a storm service connected to a combined sewer in McLeod Street.

6.2 Proposed Site Drainage

The proposed development will drain to catchbasins and a storm sewer system which will outlet to the existing 300mm diameter combined sewer along McLeod Street. The storm service will be 250mm diameter in size and a backflow preventer will be installed since the service is connecting to a combined sewer system.

Refer to the Servicing and Grading Plan (205359-SGR) for details on the storm sewer system.

6.3 Stormwater Management Criteria

Stormwater management criteria has been outlined by the City of Ottawa. Post-development flow from the proposed site will be restricted to the 5-year level using a runoff coefficient of 0.40. On-site storage will be incorporated into the design of the building rooftop and in a storage/sump pit.

6.4 Stormwater Quantity Control

Given the above stormwater management criteria and a site area of 0.13 hectares, the allowable release rate is calculated to be 8.9 L/s as determined in Table 1 in Appendix A.

Quantity control of stormwater will be provided to control the release rate for storm events up to and including the 100-year event. Stormwater will be detained through roof top ponding and underground in a storage/sump pit. For the rooftop ponding only the mechanical mezzanine, third floor and fourth floor rooftops were considered as the other levels provided minimal storage. Orifice controls will be installed in the rooftop drains in order to control the release rate of stormwater prior to discharging from the site to the existing City sewer system. Stormwater from Area A1 (205359-SWM in Appendix A) will be directed to a storage/sump pit and a pump will control the release rate to the building storm service. Larger storm events have been provided with an overland flow route to McLeod Street.

Supporting calculations are shown in Appendix A. Stormwater drainage areas and ponding limits are shown on drawing 205359-SWM in Appendix A. Grading and servicing information is shown on the drawing 205359-SGR in Appendix C. The stormwater management calculations are summarized in the following Table.

Table 6.4.1 - Stormwater Summary

Drainage Area	Receiver	Total Area (ha)	2yr			100yr			Orifice Control Location
			Flow (L/s)	Storage Required (m ³)	Storage Provided (m ³)	Flow (L/s)	Storage Required (m ³)	Storage Provided (m ³)	
A1	Sump Pit	0.058	4.50	4.0	20.0	4.50	18.6	20.0	Pump
A2	Roof Drain	0.030	1.26	3.2	3.3	1.26	12.3	12.3	Roof (4th Floor)
A3	Roof Drain	0.014	0.63	1.4	1.9	0.63	5.6	5.6	Roof (Penthouse)
A4	Roof Drain	0.028	2.52	1.7	1.9	2.52	8.3	8.4	Roof (3 rd Floor)

6.5 Stormwater Quality Control

Quality control is not required as the site drains to an existing combined sewer on McLeod Street that is directed to a wastewater treatment plant.

7 Erosion and Sediment Control Measures

7.1 Temporary Measures

Temporary erosion and sediment control measures will be implemented during construction. Erosion and sediment control measures are indicated on the Servicing and Grading Plan (205359-SGR). Filter cloth catches under adjacent catchbasin grates should be inspected daily, and after every rain event to determine maintenance, repair or replacement requirements. Sediments or granular that enter site sewers shall be removed immediately by the contractor. These measures will be implemented prior to the commencement of construction and maintained in good order.

8 Conclusion

The conclusions of this report are as follows:

- Water servicing, including both domestic and fire protection, can be provided by connection to the existing watermain infrastructure along McLeod Street.
- A sanitary service connection to the existing combined service along McLeod Street will service the building.
- Quantity control of stormwater is proposed to restrict the release of stormwater to the allowable release rate.
- Quality control of stormwater is not required as the site drains to an existing combined sewer on McLeod Street that is directed to a wastewater treatment plant.
- An overland flow route has been provided out to McLeod Street.
- Erosion and sediment control measures will be implemented during construction.

Appendix A – Stormwater Management Calculations

Stormwater Management Plan 205359-SWM



Embassy of Iraq - 215 McLeod Street

Client: Julian Jacobs Architects

exp Project: OTT-00205359-A0

DATE: August 2012

TABLE 1 : Allowable Flow

Pre Dev.	C	Intensity	Area
2 Year	0.40	61.77	0.13
2.78CIA= 8.93			
8.93 L/S			

**Use a 15 minute time of concentration for 2 year
2 Year Intensity (IDF) = $732.951 / (\text{Time in min.} + 6.199)^{0.810}$

Equations:

Flow Equation

$$Q = 2.78 \times C \times I \times A$$

Where:

C is the runoff coefficient

I is the intensity of rainfall, City of Ottawa IDF

A is the total drainage area



Embassy of Iraq - 215 McLeod Street

Client: Julian Jacobs Architects

exp Project: OTT-00205359-A0

DATE: Aug. 2012

TABLE 2 : Stormwater Management Summary

(see Tables 3 to 6)

Sub Area I.D.	Sub Area (ha)	C	Outlet Location	Controlled Release (L/s)	Ponding		2 year	
					Depth (m)	Area (m ²)	Required volume (cu.m)	Available
A1	0.058	0.90	Sump Pit	4.50	N/A	--	4.0	20.0
A2	0.030	0.90	Roof	1.26	0.04	246.0	3.2	3.3
A3	0.014	0.90	Roof	0.63	0.04	140.0	1.4	1.9
A4	0.028	0.90	Roof	2.52	0.02	280.0	1.7	1.9
TOTALS	0.130			8.9			10.4	27.0

Sub Area I.D.	Sub Area (ha)	C	Outlet Location	Controlled Release (L/s)	Ponding		100 year	
					Depth (m)	Area (m ²)	Required volume (cu.m)	Available
A1	0.058	1.00	Sump Pit	4.50	N/A	--	18.6	20.0
A2	0.030	1.00	Roof	1.26	0.15	246.0	12.3	12.3
A3	0.014	1.00	Roof	0.63	0.12	140.0	5.6	5.6
A4	0.028	1.00	Roof	2.52	0.09	280.0	8.3	8.4
TOTALS	0.130			8.9			44.7	46.3



Embassy of Iraq - 215 McLeod Street

Client: Julian Jacobs Architects
 exp Project: OTT-00205359-A0
 DATE: Aug 2012

TABLE 3 : Surface Drainage- Area A1

Post Development Runoff Coefficient "C"

Area	Surface	Ha	2 Year Event		100 Year Event	
			"C"	C _{avg}	"C"+25%	*C _{avg}
Total	Hard Surfaces	0.058	0.90	0.90	1.00	1.00
0.058						

Runoff Coefficient Equation

$$C = (A_{\text{hard}} \times 0.9 + A_{\text{soft}} \times 0.2) / A_{\text{tot}}$$

$$*C = (A_{\text{hard}} \times 1.0 + A_{\text{soft}} \times 0.25) / A_{\text{tot}}$$

*Runoff coefficients increased by 25% up to a maximum value of 1.00 for the 100-Year event

QUANTITY STORAGE REQUIREMENTS - 2 Year

0.058 = Area(ha)
 0.90 = C

Return Period	Time (min)	Intensity (mm/hr)	Flow Q (L/s)	Allowable Runoff (L/s)	Net Runoff To Be Stored (L/s)	Storage Req'd m ³
5 YEAR	5	103.57	15.0	4.5	10.5	3.2
	10	76.81	11.1	4.5	6.6	4.0
	15	61.77	9.0	4.5	4.5	4.0
	20	52.03	7.6	4.5	3.1	3.7
	25	45.17	6.6	4.5	2.1	3.1

QUANTITY STORAGE REQUIREMENTS - 100 Year

0.058 = Area(ha)
 1.00 = C

Return Period	Time (min)	Intensity (mm/hr)	Flow Q (L/s)	Allowable Runoff (L/s)	Net Runoff To Be Stored (L/s)	Storage Req'd m ³
100 YEAR	15	142.89	23.0	4.5	18.5	16.7
	20	119.95	19.3	4.5	14.8	17.8
	25	103.85	16.7	4.5	12.2	18.4
	30	91.87	14.8	4.5	10.3	18.6
	35	82.58	13.3	4.5	8.8	18.5

Equations:

Flow Equation

$$Q = 2.78 \times C \times I \times A$$

Where:

C is the runoff coefficient

I is the intensity of rainfall, City of Ottawa IDF

A is the total drainage area

* NOTE: PUMP TO BE SIZED FOR : 4.5 L/s



Embassy of Iraq - 215 McLeod Street

Client: Julian Jacobs Architects
 exp Project: OTT-00205359-A0
 DATE: Aug 2012

TABLE 4 : Roof - Area A2

Allowable Release Rate

Total Roof Flow = $\frac{\text{Flow per Drain}}{(10\text{GPM})} \times \# \text{ Drains} \times \text{Total Flow}$
 $\frac{0.63}{(10\text{GPM})} \times 2 \times 1.26 \text{ L/s}$

Post Dev run-off Coefficient "C"

Area	Surface	Ha	2 Year Event		100 Year Event	
			"C"	C _{avg}	"C"+25%	*C _{avg}
Total	Asphalt	0.000	0.90	0.90	1.00	1.00
0.030	Roof	0.030	0.90		1.00	
	Grass	0.000	0.20		0.25	

Runoff Coefficient Equation

$C = (A_{\text{hard}} \times 0.9 + A_{\text{soft}} \times 0.2) / A_{\text{tot}}$

* $C = (A_{\text{hard}} \times 1.0 + A_{\text{soft}} \times 0.25) / A_{\text{tot}}$

*Runoff coefficients increased by 25% up to a maximum value of 1.00 for the 100-Year event

QUANTITY STORAGE REQUIREMENTS - 2 Year

0.030 = Area(ha)
 0.90 = C

Return Period	Time (min)	Intensity (mm/hr)	Flow Q (L/s)	Allowable Runoff (L/s)	Net Runoff To Be Stored (L/s)	Storage Req'd m ³
5 YEAR	15	61.77	4.6	1.26	3.4	3.0
	20	52.03	3.9	1.26	2.6	3.2
	25	45.17	3.4	1.26	2.1	3.2
	35	36.06	2.7	1.26	1.4	3.0
	45	30.24	2.3	1.26	1.0	2.7

QUANTITY STORAGE REQUIREMENTS - 100 Year

0.030 = Area(ha)
 1.00 = C

Return Period	Time (min)	Intensity (mm/hr)	Flow Q (L/s)	Allowable Runoff (L/s)	Net Runoff To Be Stored (L/s)	Storage Req'd m ³
100 YEAR	40	75.15	6.3	1.26	5.0	12.0
	45	69.05	5.8	1.26	4.5	12.1
	50	63.95	5.3	1.26	4.1	12.2
	55	59.62	5.0	1.26	3.7	12.3
	60	55.89	4.7	1.26	3.4	12.2

Equations:

Flow Equation

$Q = 2.78 \times C \times I \times A$

Where:

C is the runoff coefficient

I is the intensity of rainfall, City of Ottawa IDF

A is the total drainage area



Embassy of Iraq - 215 McLeod Street

Client: Julian Jacobs Architects
 exp Project: OTT-00205359-A0
 DATE: Aug 2012

TABLE 5 : Roof - Area A3

Allowable Release Rate

$$\text{Total Roof Flow} = \frac{\text{Flow per Drain}}{(10\text{GPM})} \times \text{\# Drains} \times \text{Total Flow} = \frac{0.63}{(10\text{GPM})} \times 1 \times 0.63 \text{ L/s}$$

Post Dev run-off Coefficient "C"

Area	Surface	Ha	2 Year Event		100 Year Event	
			"C"	C _{avg}	"C"+25%	*C _{avg}
Total 0.014	Asphalt	0.000	0.90	0.90	1.00	1.00
	Roof	0.014	0.90		1.00	
	Grass	0.000	0.20		0.25	

Runoff Coefficient Equation

$$C = (A_{\text{hard}} \times 0.9 + A_{\text{soft}} \times 0.2) / A_{\text{tot}}$$

$$*C = (A_{\text{hard}} \times 1.0 + A_{\text{soft}} \times 0.25) / A_{\text{tot}}$$

*Runoff coefficients increased by 25% up to a maximum value of 1.00 for the 100-Year event

QUANTITY STORAGE REQUIREMENTS - 2 Year

0.014 = Area(ha)
 0.90 = C

Return Period	Time (min)	Intensity (mm/hr)	Flow Q (L/s)	Allowable Runoff (L/s)	Net Runoff To Be Stored (L/s)	Storage Req'd m ³
5 YEAR	10	76.81	2.7	0.63	2.1	1.2
	15	61.77	2.2	0.63	1.5	1.4
	20	52.03	1.8	0.63	1.2	1.4
	30	40.04	1.4	0.63	0.8	1.4
	40	32.86	1.2	0.63	0.5	1.3

QUANTITY STORAGE REQUIREMENTS - 100 Year

0.014 = Area(ha)
 1.00 = *C

Return Period	Time (min)	Intensity (mm/hr)	Flow Q (L/s)	Allowable Runoff (L/s)	Net Runoff To Be Stored (L/s)	Storage Req'd m ³
100 YEAR	35	82.58	3.2	0.63	2.6	5.4
	40	75.15	2.9	0.63	2.3	5.5
	45	69.05	2.7	0.63	2.1	5.6
	50	63.95	2.5	0.63	1.9	5.6
	55	59.62	2.3	0.63	1.7	5.6

Equations:

Flow Equation

$$Q = 2.78 \times C \times I \times A$$

Where:

C is the runoff coefficient

I is the intensity of rainfall, City of Ottawa IDF

A is the total drainage area



Embassy of Iraq - 215 McLeod Street

Client: Julian Jacobs Architects
 exp Project: OTT-00205359-A0
 DATE: Aug 2012

TABLE 6 : Roof - Area A4

Allowable Release Rate

$$\text{Total Roof Flow} = \frac{\text{Flow per Drain}}{(10\text{GPM})} \times \text{\# Drains} = \frac{0.63}{(10\text{GPM})} \times 4 = 2.52 \text{ L/s}$$

Post Dev run-off Coefficient "C"

Area	Surface	Ha	2 Year Event		100 Year Event	
			"C"	C _{avg}	"C"+25%	*C _{avg}
Total 0.028	Asphalt	0.000	0.90	0.90	1.00	1.00
	Roof	0.028	0.90		1.00	
	Grass	0.000	0.20		0.25	

Runoff Coefficient Equation

$$C = (A_{\text{hard}} \times 0.9 + A_{\text{soft}} \times 0.2) / A_{\text{tot}}$$

$$*C = (A_{\text{hard}} \times 1.0 + A_{\text{soft}} \times 0.25) / A_{\text{tot}}$$

*Runoff coefficients increased by 25% up to a maximum value of 1.00 for the 100-Year event

QUANTITY STORAGE REQUIREMENTS - 2 Year

0.028 = Area(ha)
 0.90 = C

Return Period	Time (min)	Intensity (mm/hr)	Flow Q (L/s)	Allowable Runoff (L/s)	Net Runoff To Be Stored (L/s)	Storage Req'd m ³
5 YEAR	5	103.57	7.3	2.52	4.7	1.4
	10	76.81	5.4	2.52	2.9	1.7
	15	61.77	4.3	2.52	1.8	1.6
	25	45.17	3.2	2.52	0.6	1.0
	35	36.06	2.5	2.52	0.0	0.0

QUANTITY STORAGE REQUIREMENTS - 100 Year

0.028 = Area(ha)
 1.00 = C

Return Period	Time (min)	Intensity (mm/hr)	Flow Q (L/s)	Allowable Runoff (L/s)	Net Runoff To Be Stored (L/s)	Storage Req'd m ³
100 YEAR	20	119.95	9.3	2.52	6.8	8.2
	25	103.85	8.1	2.52	5.6	8.3
	30	91.87	7.2	2.52	4.6	8.3
	35	82.58	6.4	2.52	3.9	8.2
	40	75.15	5.8	2.52	3.3	8.0

Equations:

Flow Equation

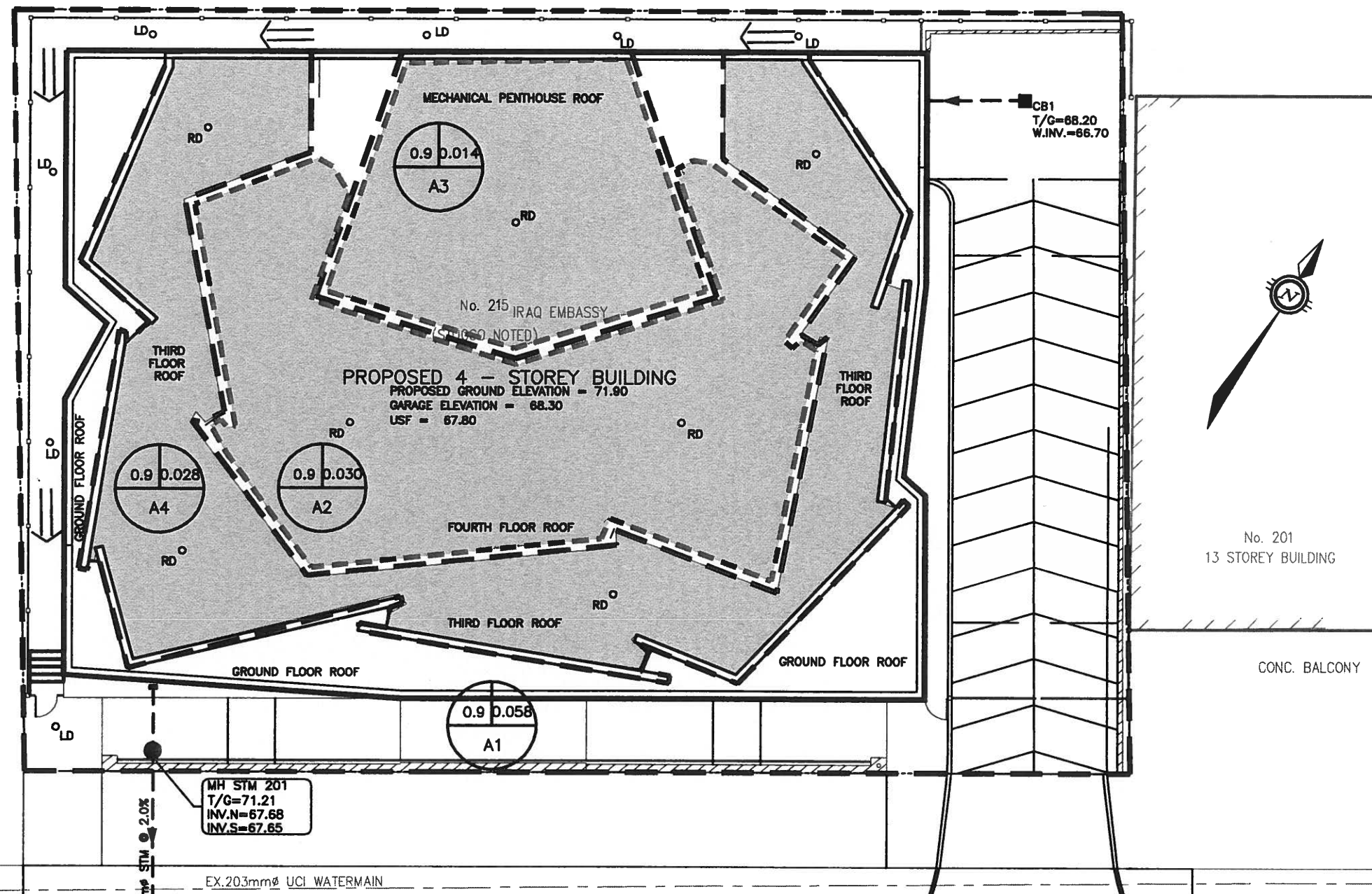
$$Q = 2.78 \times C \times I \times A$$

Where:

C is the runoff coefficient

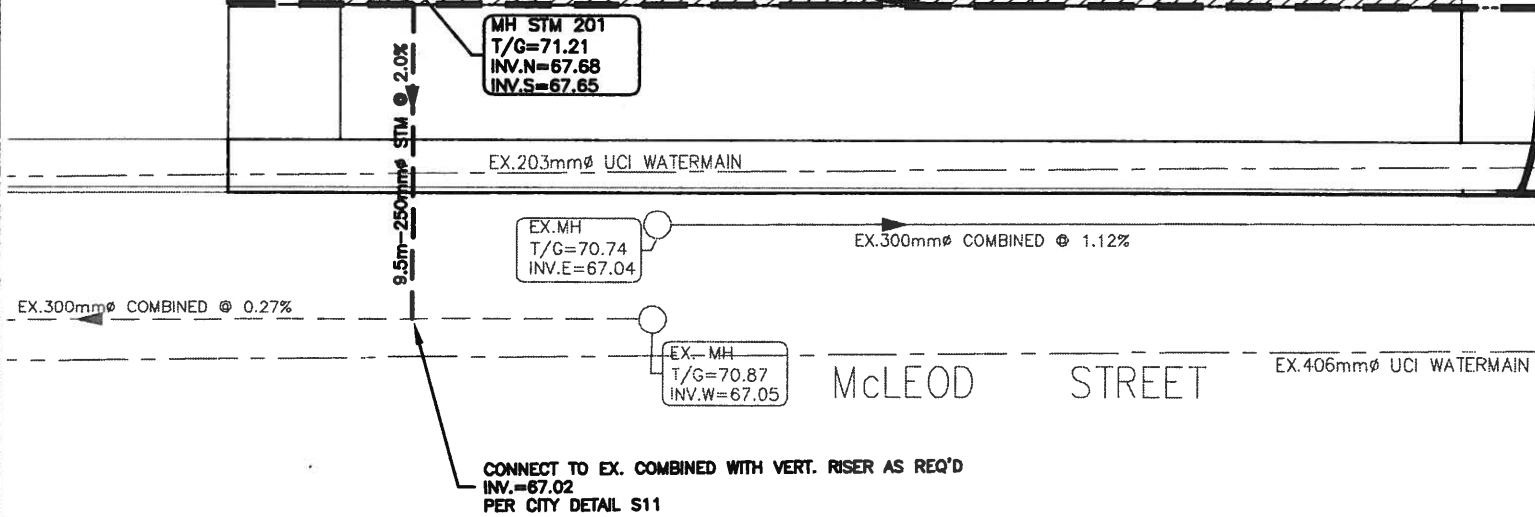
I is the intensity of rainfall, City of Ottawa IDF

A is the total drainage area



LEGEND

- POST-DEVELOPMENT DRAINAGE AREA
- MAJOR OVERLAND FLOW ROUTE
- RUNOFF COEFFICIENT
- AREA (ha)
- DRAINAGE AREA ID
- ROOF TOP PONDING LIMIT
- LANDSCAPE & ROOF DRAIN



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		<p>scale 1:200</p> <p>date 05/09/2012</p> <p>drawn by ASB</p>	<p>CLIENT: JULIAN JACOBS ARCHITECTS</p> <p>TITLE: EMBASSY OF IRAQ - SWM</p>

Appendix B –

Fire Flow Calculation and City Correspondence City of Ottawa Servicing Report Checklist

Water Supply For Fire Fighting
Proposed Iraq Embassy (215 McLeod Street)
City of Ottawa
exp Project #205359

Fire Flow required for a given building may be estimated by: $Q=K \times V \times S_{Tot}$

Q = minimum supply of water in litres

K = water supply coefficient from Table 1 of OBC A-3.2.5.7

V = total building volume in cubic metres

S_{Tot} = total of spatial coefficient values from property line exposures on all sides as obtained from the formula
 (from Figure 1 OBC A-3.2.5.7)

$$S_{Tot} = 1.0 + (S_{side1} + S_{side2} + S_{side3} + S_{side4})$$

K = 10 (for Building Classification "D" per OBC 3.2.2.49, non-combustible with fire separations)

V = Parking + 1st + 2nd + 3rd + 4th + mech. penthouse = 3,922+2,711+3,011+3,083+1,879+288 = 15,895 m³

$$S_{Tot} = 1.0 + (S_{side1} + S_{side2} + S_{side3} + S_{side4})$$

Side 1 8.1m

Side 2 13.4m

Side 3 7.4m

Side 4 53.0m

from Figure 1: $S_{Tot} = 1.0 + (0.2 + 0 + 0.25 + 0) = 1.45$

$$Q = 10 \times 15,895 \times 1.45 = 230,478 \text{ L}$$

From Table 2 (OBC A-3.2.5.7) the required Minimum Water Supply Flow Rate (L/min) is 6,300 (if Q > 190,000 L and < 270,000 L)

Therefore Flow Rate = 6,300 L/min

The fire flow requirement is 6,300 L/min
 or 105 L/sec
 or 1,386 igpm (uk)

FAX TRANSMISSION FORM - Supply Pressure/Flow Capacity

City of Ottawa
 Transportation Utilities and Public Works
 Customer Service & Operational Support
 951 Clyde Avenue
 Ottawa, On, K1Z 5A6

Joseph Hannewyk email: joseph.hannewyk@ottawa.ca
 Business Consultant/Water Resources Analyst phone 560-6065 x22617

Date/Time: 12/03/19-11:52:00
 Our File: 49-01-2006
 1 of 2 Page(s)

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To: Alain Basakay
Company: Exp
Tel: 613-688-1899 x3259
Fax:

Location: Mcleod @ Elgin
Request_dt: 12/03/19-11:41:29
Email: Alain.Basakay@exp.com

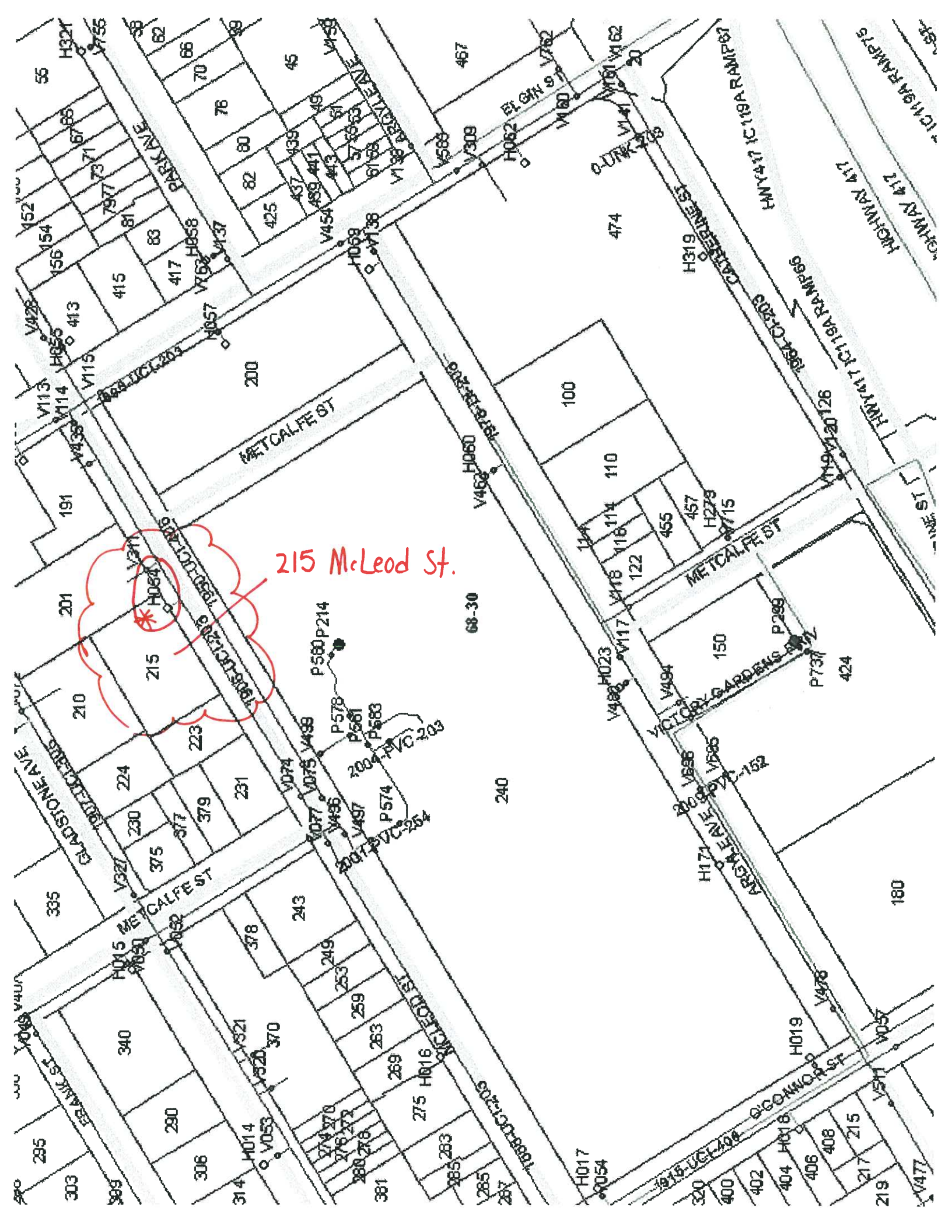
Pressure Only ? (Y):

6225

Inspection Date	Flow Hydrant	Residual Hydrant	Pressure (psi)			Preferred Response Method:		
			Static	Dynamic	Pitot	Actual	Flow (igpm) @ 20 psi	
2011/08/17	6830054 ✱	6830016	58	>48	26	714 ✱	1469 ✱	
2011/08/31	6830053	6830057	60	>50	44	929	1964	
2011/08/31	6830057	6830062	62	>52	40	886	1923	

Note: the computed flows are approximate and performed for hydrant colour coding purposes, thus these values are not intended for design purposes.

Ref# 6225



215 McLeod St.

* H062

Map labels include street names: METCALFE ST, GLADSTONE AVE, VICTORY GARDENS, ARCHER AVE, G'CONCORD ST, PARK AVE, and HIGHWAY 417. Lot numbers range from 100 to 475. Utility labels include H062, H015, H017, H018, H019, H023, H031, H032, H039, H054, H057, H058, H059, H060, H061, H062, H063, H064, H065, H066, H067, H068, H069, H070, H071, H072, H073, H074, H075, H076, H077, H078, H079, H080, H081, H082, H083, H084, H085, H086, H087, H088, H089, H090, H091, H092, H093, H094, H095, H096, H097, H098, H099, H100, H101, H102, H103, H104, H105, H106, H107, H108, H109, H110, H111, H112, H113, H114, H115, H116, H117, H118, H119, H120, H121, H122, H123, H124, H125, H126, H127, H128, H129, H130, H131, H132, H133, H134, H135, H136, H137, H138, H139, H140, H141, H142, H143, H144, H145, H146, H147, H148, H149, H150, H151, H152, H153, H154, H155, H156, H157, H158, H159, H160, H161, H162, H163, H164, H165, H166, H167, H168, H169, H170, H171, H172, H173, H174, H175, H176, H177, H178, H179, H180, H181, H182, H183, H184, H185, H186, H187, H188, H189, H190, H191, H192, H193, H194, H195, H196, H197, H198, H199, H200, H201, H202, H203, H204, H205, H206, H207, H208, H209, 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4.1 General Content

- Executive Summary (for larger reports only).

Comments: Not applicable

- Date and revision number of the report.

Comments: April 13, 2012 revision 1

- Location map and plan showing municipal address, boundary, and layout of proposed development.

Comments: 215 McLeod Avenue, Ottawa, ON Figure 1 and Figure 2

- Plan showing the site and location of all existing services.

Comments: Refer to drawing 205359-SGR

- Development statistics, land use, density, adherence to zoning and official plan, and reference to applicable subwatershed and watershed plans that provide context to which individual developments must adhere.

Comments: Refer to planning rational

- Summary of Pre-consultation Meetings with City and other approval agencies.

Comments: Refer to planning rational

- Reference and confirm conformance to higher level studies and reports (Master Servicing Studies, Environmental Assessments, Community Design Plans), or in the case where it is not in conformance, the proponent must provide justification and develop a defensible design criteria.

Comments: References made where applicable

- Statement of objectives and servicing criteria.

Comments: Refer to Site Servicing and SWM Report

- Identification of existing and proposed infrastructure available in the immediate area.

Comments: Refer to drawing 205359-SGR in the report

- Identification of Environmentally Significant Areas, watercourses and Municipal Drains potentially impacted by the proposed development (Reference can be made to the Natural Heritage Studies, if available).

Comments: None identified

- Concept level master grading plan to confirm existing and proposed grades in the development. This is required to confirm the feasibility of proposed stormwater management and drainage, soil removal and fill constraints, and potential impacts to neighbouring properties. This is also required to confirm that the proposed grading will not impede existing major system flow paths.

Comments: Refer to drawing 205359-SGR in the report

- Identification of potential impacts of proposed piped services on private services (such as wells and septic fields on adjacent lands) and mitigation required to address potential impacts.

Comments: Not applicable

- Proposed phasing of the development, if applicable.

Comments: Development will not be phased

- Reference to geotechnical studies and recommendations concerning servicing.

Comments: Refer to geotechnical report

- All preliminary and formal site plan submissions should have the following information:

- Metric scale
- North arrow (including construction North)
- Key plan
- Name and contact information of applicant and property owner
- Property limits including bearings and dimensions
- Existing and proposed structures and parking areas
- Easements, road widening and rights-of-way
- Adjacent street names

Comments: Pertinent information provided

4.2 Development Servicing Report: Water

- Confirm consistency with Master Servicing Study, if available

Comments: Not applicable
- Availability of public infrastructure to service proposed development

Comments: Refer to Section 4 of the Site servicing and SWM Report
- Identification of system constraints

Comments: Refer to Section 4 of the Site Servicing and SWM Report
- Identify boundary conditions

Comments: Refer to Section 4 of the Site Servicing and SWM Report
- Confirmation of adequate domestic supply and pressure

Comments: Refer to Section 4 of the Site Servicing and SWM Report
- Confirmation of adequate fire flow protection and confirmation that fire flow is calculated as per the Fire Underwriter's Survey. Output should show available fire flow at locations throughout the development.

Comments: Refer to Section 4 of the Site Servicing and SWM Report
- Provide a check of high pressures. If pressure is found to be high, an assessment is required to confirm the application of pressure reducing valves.

Comments: Not applicable
- Definition of phasing constraints. Hydraulic modeling is required to confirm servicing for all defined phases of the project including the ultimate design

Comments: Not applicable
- Address reliability requirements such as appropriate location of shut-off valves

Comments: Not applicable
- Check on the necessity of a pressure zone boundary modification.

Comments: Not applicable

- Reference to water supply analysis to show that major infrastructure is capable of delivering sufficient water for the proposed land use. This includes data that shows that the expected demands under average day, peak hour and fire flow conditions provide water within the required pressure range

Comments: Not applicable, no change in land use

- Description of the proposed water distribution network, including locations of proposed connections to the existing system, provisions for necessary looping, and appurtenances (valves, pressure reducing valves, valve chambers, and fire hydrants) including special metering provisions.

Comments: Not applicable, building service only

- Description of off-site required feeder mains, booster pumping stations, and other water infrastructure that will be ultimately required to service proposed development, including financing, interim facilities, and timing of implementation.

Comments: Not applicable, building service only

- Confirmation that water demands are calculated based on the City of Ottawa Design Guidelines.

Comments: Not applicable, building service only

- Provision of a model schematic showing the boundary conditions locations, streets, parcels, and building locations for reference.

Comments: Not applicable, building service only

4.3 Development Servicing Report: Wastewater

- Summary of proposed design criteria (Note: Wet-weather flow criteria should not deviate from the City of Ottawa Sewer Design Guidelines. Monitored flow data from relatively new infrastructure cannot be used to justify capacity requirements for proposed infrastructure).

Comments: Refer to Section 5 of the Site Servicing and SWM Report

- Confirm consistency with Master Servicing Study and/or justifications for deviations.

Comments: Not applicable

- Consideration of local conditions that may contribute to extraneous flows that are higher than the recommended flows in the guidelines. This includes groundwater and soil conditions, and age and condition of sewers.

Comments: Not applicable

- Description of existing sanitary sewer available for discharge of wastewater from proposed development.

Comments: Refer to Section 5 of the Site Servicing and SWM Report

- Verify available capacity in downstream sanitary sewer and/or identification of upgrades necessary to service the proposed development. (Reference can be made to previously completed Master Servicing Study if applicable)

Comments: Not applicable, building service only

- Identification and implementation of the emergency overflow from sanitary pumping stations in relation to the hydraulic grade line to protect against basement flooding.

Comments: Not applicable

- Special considerations such as contamination, corrosive environment etc.

Comments: Not applicable

4.4 Development Servicing Report: Stormwater

- Description of drainage outlets and downstream constraints including legality of outlets (i.e. municipal drain, right-of-way, watercourse, or private property)

Comments: Refer to Section 6 of the Site Servicing and SWM Report

- Analysis of available capacity in existing public infrastructure.

Comments: Refer to Section 6 of the Site Report and SWM Report

- A drawing showing the subject lands, its surroundings, the receiving watercourse, existing drainage patterns, and proposed drainage pattern.

Comments: Refer to drawing 205359-SGR & SWM

- Water quantity control objective (e.g. controlling post-development peak flows to pre-development level for storm events ranging from the 2 or 5 year event (dependent on the receiving sewer design) to 100 year return period); if other objectives are being applied, a rationale must be included with reference to hydrologic analyses of the potentially affected subwatersheds, taking into account long-term cumulative effects.

Comments: Refer to Section 6 of the Site Servicing and SWM Report

- Water Quality control objective (basic, normal or enhanced level of protection based on the sensitivities of the receiving watercourse) and storage requirements.

Comments: Refer to Section 6 of the Site Servicing and SWM Report

- Description of the stormwater management concept with facility locations and descriptions with references and supporting information.

Comments: Refer to Section 6 of the Site Servicing and SWM Report

- Set-back from private sewage disposal systems.

Comments: Not applicable

- Watercourse and hazard lands setbacks.

Comments: Not applicable

- Record of pre-consultation with the Ontario Ministry of Environment and the Conservation Authority that has jurisdiction on the affected watershed.

Comments: Not applicable

- Confirm consistency with sub-watershed and Master Servicing Study, if applicable study exists.

Comments: Not applicable

- Storage requirements (complete with calculations) and conveyance capacity for minor events (1:5 year return period) and major events (1:100 year return period).

Comments: Refer to Appendix A of the Report

- Identification of watercourses within the proposed development and how watercourses will be protected, or, if necessary, altered by the proposed development with applicable approvals.

Comments: Not applicable

- Calculate pre and post development peak flow rates including a description of existing site conditions and proposed impervious areas and drainage catchments in comparison to existing conditions.

Comments: Refer to Appendix A of the report

- Any proposed diversion of drainage catchment areas from one outlet to another.

Comments: Not applicable

- Proposed minor and major systems including locations and sizes of stormwater trunk sewers, and stormwater management facilities.

Comments: Refer to Appendix A of the Report

- If quantity control is not proposed, demonstration that downstream system has adequate capacity for the post-development flows up to and including the 100-year return period storm event.

Comments: Not applicable

- Identification of potential impacts to receiving watercourses

Comments: Not applicable

- Identification of municipal drains and related approval requirements.

Comments: Not applicable

- Descriptions of how the conveyance and storage capacity will be achieved for the development.

Comments: Refer to Section 6 of the Site Servicing and SWM Report

- 100 year flood levels and major flow routing to protect proposed development from flooding for establishing minimum building elevations (MBE) and overall grading.

Comments: Refer to Appendix A of the report

- Inclusion of hydraulic analysis including hydraulic grade line elevations.

Comments: Not applicable

- Description of approach to erosion and sediment control during construction for the protection of receiving watercourse or drainage corridors.

Comments: Refer to Section 7 of the Site Servicing and SWM Report

- Identification of floodplains - proponent to obtain relevant floodplain information from the appropriate Conservation Authority. The proponent may be required to delineate floodplain elevations to the satisfaction of the Conservation Authority if such information is not available or if information does not match current conditions.

Comments: Not applicable

- Identification of fill constraints related to floodplain and geotechnical investigation.

Comments: Not applicable

4.5 Approval and Permit Requirements: Checklist

The Servicing Study shall provide a list of applicable permits and regulatory approvals necessary for the proposed development as well as the relevant issues affecting each approval. The approval and permitting shall include but not be limited to the following:

- Conservation Authority as the designated approval agency for modification of floodplain, potential impact on fish habitat, proposed works in or adjacent to a watercourse, cut/fill permits and Approval under Lakes and Rivers Improvement Act. The Conservation Authority is not the approval authority for the Lakes and Rivers Improvement Act. Where there are Conservation Authority regulations in place, approval under the Lakes and Rivers Improvement Act is not required, except in cases of dams as defined in the Act.

Comments: Not applicable

- Application for Certificate of Approval (CofA) under the Ontario Water Resources Act.

Comments: Application for ECA for connection to a combined Sewer system will be made

- Changes to Municipal Drains.

Comments: Not applicable

- Other permits (National Capital Commission, Parks Canada, Public Works and Government Services Canada, Ministry of Transportation etc.)

Comments:

4.6 Conclusion Checklist

- Clearly stated conclusions and recommendations

Comments: Refer to Section 8 of the Site Servicing and SWM Report

- Comments received from review agencies including the City of Ottawa and information on how the comments were addressed. Final sign-off from the responsible reviewing agency.

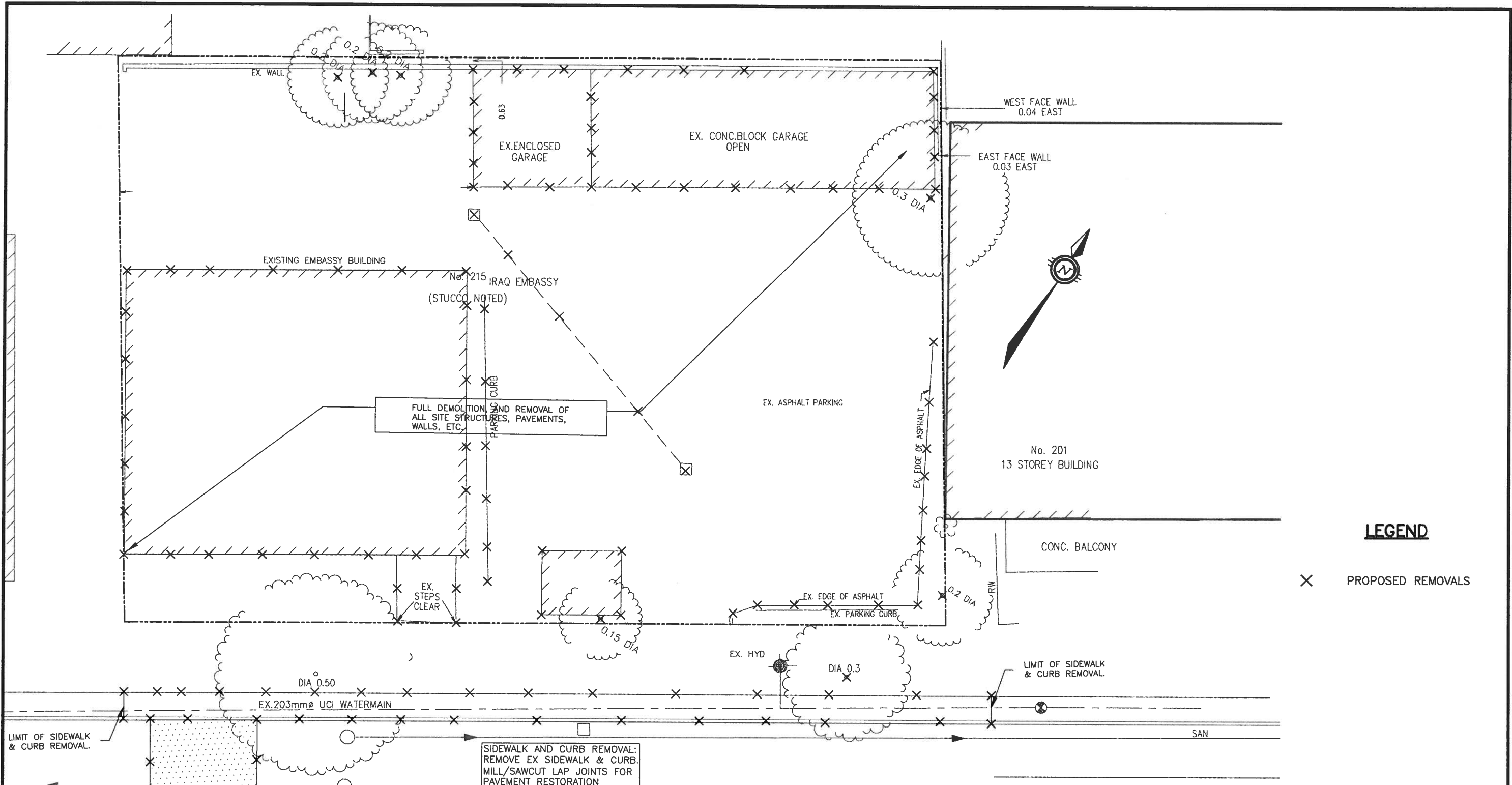
Comments: Not applicable

- All draft and final reports shall be signed and stamped by a professional Engineer registered in Ontario

Comments: The report and all the drawings are signed and stamped

Appendix C – Servicing and Grading Plan 205359-SGR

Demolition Plan 205359-DEM



FULL DEMOLITION AND REMOVAL OF ALL SITE STRUCTURES, PAVEMENTS, WALLS, ETC.

SIDEWALK AND CURB REMOVAL: REMOVE EX SIDEWALK & CURB. MILL/SAWCUT LAP JOINTS FOR PAVEMENT RESTORATION

EX. SERVICES REMOVAL: WATER AND SAN SERVICES TO BE BLANKED AT MAIN BY U/G SUBCONTRACTOR & CITY FORCES REMOVE EX WATER SERVICE STANDPOSTS.

LEGEND

× PROPOSED REMOVALS



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scale 1:200	CLIENT: JULIAN JACOBS ARCHITECTS	project no. OTT-00205359-A0
date 22/08/2012	TITLE: EMBASSY OF IRAQ – DEMOLITION	DEM
drawn by ASB		