

**SUBJECT**  
City Gates Phase 2 - Interim Parking Design  
Arcadis Engineering Review

**TO**  
Andrew Kent  
Senior Director, Developments  
Killam REIT  
Halifax, NS

**DATE**  
22/08/2025

**DEPARTMENT**  
Land Engineering

**PROJECT NUMBER**  
38729-5.2.2.1

**COPIES TO**  
Matt Anderson Petitpas  
Devdatsinh Vaghela

**NAME**  
Terry Brule  
Principal – Practice Lead  
Land Engineering  
Arcadis

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## Introduction

This technical memorandum has been prepared for Killam REIT and provides a review of the civil engineering aspects supporting the proposed interim surface parking area design as part of Phase 2 of the City Gates mixed-use site plan. The memorandum is based on the City Park Redevelopment Phase 2 Design Brief, prepared by IBI Group and dated December 2018. This document can be made available if needed. However, for reference, a copy of the Phase 2 drawing (38729-C-101 Site Servicing) is included in **Appendix A** to illustrate the proposed adjustments for this phase.

**Figure 1** shows the location site plan for the interim parking within Phase 2, for which the proponent is seeking approvals. This interim parking is bordered by the future Phase 3 Block 2 to the north, the previously completed Phase 2 Block 5 to the east, and Vantage Point Private to the west and south. The plan consists of constructing 64 additional parking spaces within the existing landscaped areas until the proposed future residential building in Block 3 is constructed.

**Figure 1: Site Location**



This memorandum will outline the impacts on stormwater management and site grading for the proposed parking addition. It should be noted due to the limited extents of construction required to support the proposed works, there will be no impacts on Sanitary collection and disposal or water supply.

## Stormwater Management

The proposed storm outlet for the subject site is shown on the City Park Development Phase 2 drawing C-103 Site Servicing and is included in **Appendix B**. In the proposed interim parking design, it is proposed to connect to the existing catchbasin leads and extend to the center of proposed parking lots to maximize ponding capacities while maintaining the same release rate that was previously designed (2.0 L/s). As shown in the Stormwater Management Modified Rational Method calculations, the 2 revised ponding areas provide sufficient surface storage for the 100yr storm event. Due to the release rate of the existing inlet control devices located at the catchbasins to be utilized, there will be minor surface ponding during the 5yr storm event. A copy of these SWM calculations have been provided in **Appendix B**.

A storm sewer design sheet reflecting the revised drainage areas, runoff coefficients, and associated storm pipes, which have been highlighted for reference, is included in **Appendix B**. It should be noted that the storm pipe running from MH202 to EXMH124 remains slightly over capacity, primarily due to its dimensions and slope, as well as the increased runoff coefficients from the additional parking spaces. However, any resulting minor surcharging will not be problematic, as this storm sewer segment exclusively handles parking lot surface drainage and is not connected to any buildings. At most, this could result in temporary detention upstream within the storm pipes, associated structures, and surface areas. Importantly, all other pipes, both upstream and downstream, have sufficient capacity to convey the flows without any surcharging. A copy of the Phase 2 Interim Parking updated Storm Drainage Area plan (38729-C-502 Storm Drainage Area Plan) has been included in **Appendix B**, as well as a copy of the Phase 2 Storm Drainage Area plan (38729-C-501 Storm Drainage Area Plan) to show the extents of the drainage design changes.

## Site Grading

The proposed grading for the interim parking, as shown in drawing 38729-202 Grading Plan, can be found in **Appendix C**. A review of the Phase 2 site grading plan (drawing C-201 Grading Plan) confirms that the proposed grading aligns with the existing conditions as shown on the Phase 2 plan and follows standard design concepts to ensure proper drainage and integration with surrounding areas. A copy of the Phase 2 site grading plan (C-201) is also included in **Appendix C**.

## Conclusion

In summary, apart from some minor surcharging, the proposed stormwater management and servicing maintain the existing level of service prescribed in the Design Brief prepared by IBI Group, dated December 2018, for the City Parks Development Phase 2. Additionally, the proposed site grading integrates with the surrounding existing grades while ensuring sufficient stormwater surface detention and compliance with the City's design guidelines. We therefore confident that the servicing design shown on the City Parks Interim Parking engineering plans should be satisfactory to the City of Ottawa.

We trust our conclusions are satisfactory for your purposes. We are, of course, available to review and discuss the information contained within this document.

Yours truly,

Arcadis Professional Services (Canada) Inc.



Terry Brule, P.Eng.



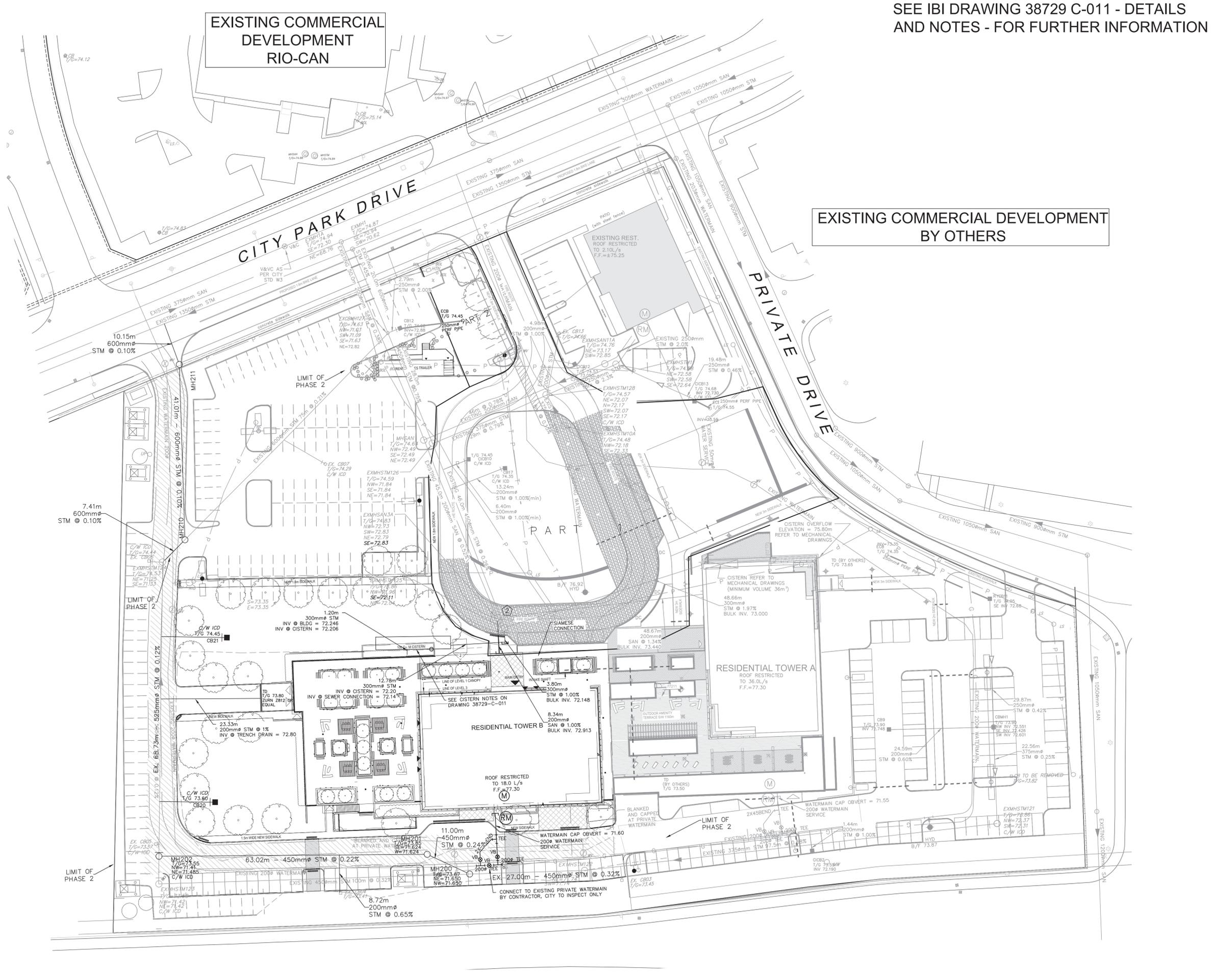
Noted. Arcadis to coordinate.

For supportability:

The storm infrastructure for this site serves multiple properties. Was an ECA obtained for this site? If not, one is required. This application may qualify for the MECP's under their EASR program, but this needs to be confirmed with them.

# Appendix A

SEE IBI DRAWING 38729 C-011 - DETAILS AND NOTES - FOR FURTHER INFORMATION



**RIO CAN**  
REAL ESTATE INVESTMENT TRUST

**Killam**  
PROPERTIES INC

14		
13		
12		
11		
10		
9	ISSUED FOR CONSTRUCTION	TRB 19:12:10
8	RE-ISSUED FOR TENDER	TRB 19:07:22
7	RE-ISSUED FOR CONSTRUCTION	TRB 19:03:29
6	ISSUED FOR CONSTRUCTION	TRB 19:02:21
5	REVISED PER CITY COMMENTS	TRB 18:12:12
4	ISSUED FOR TENDER	TRB 18:11:22
3	REVISED PER CITY COMMENTS	TRB 18:11:09
2	ISSUED FOR 66% REVIEW	TRB 18:10:31
1	ISSUED TO CITY	TRB 18:08:08
No.	REVISIONS	By Date



**IBI GROUP**  
400 - 333 Preston Street  
Ottawa ON K1S 5N4 Canada  
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ibigroup.com

Project Title  
**2280 CITY PARK DEVELOPMENT**  
PHASE 2



Drawing Title  
**SITE SERVICING**

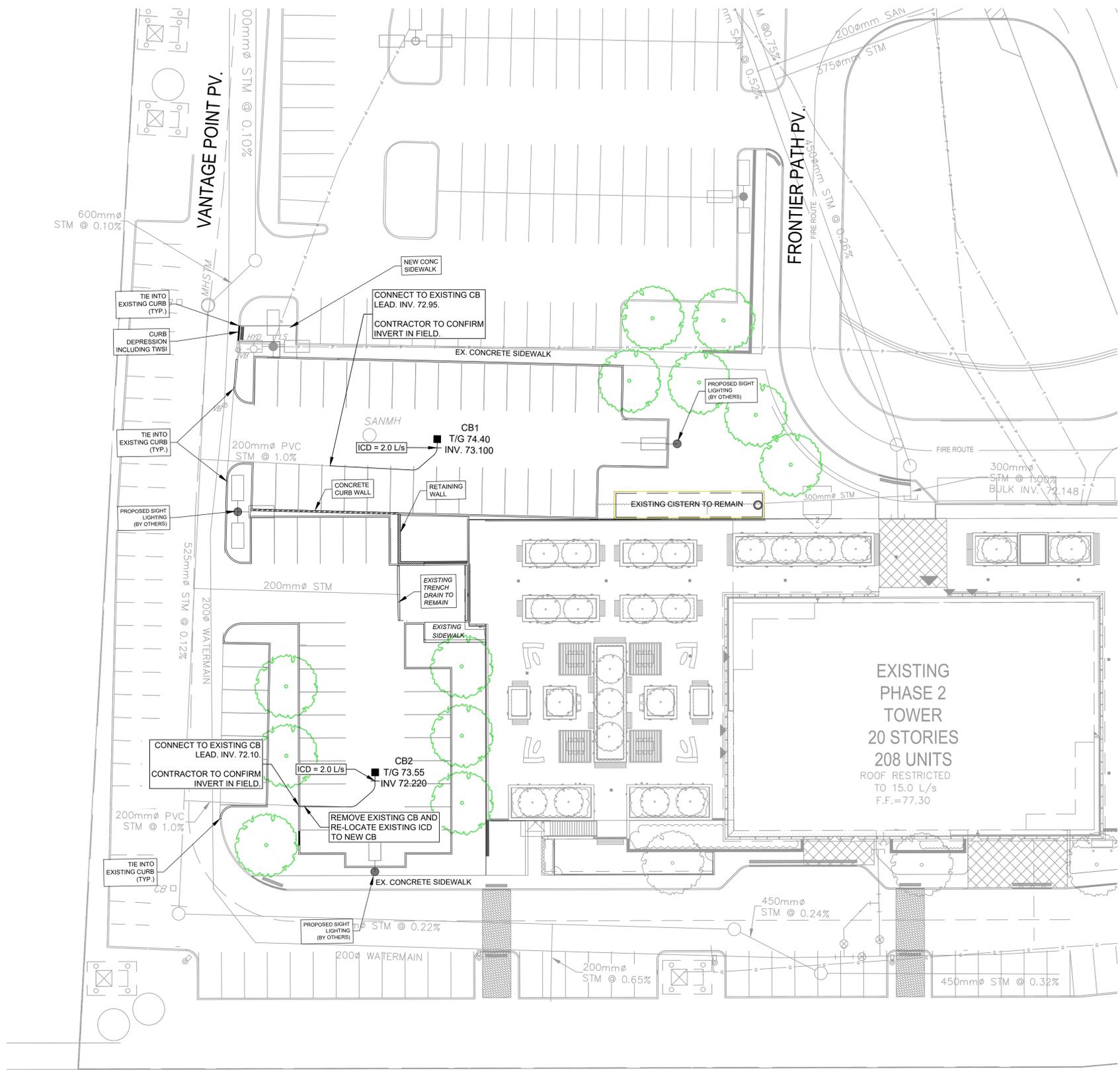
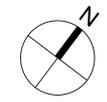
Scale  
1 : 400

Design	J.E.B.	Date	AUG. 2018
Drawn	E.H.	Checked	T.R.B.
Project No.	38729	Drawing No.	C-101

A:\38729-2280CityPark\Phase 2\C-101-SITE SERVICING PHASE2.dwg Layout Name: C-101 Site Servicing - 2280 City Park Phase 2 - 12/10/2018 1:23 PM Last Saved By: E.H. Date: 12/10/2018 1:23 PM

D07-12-18-0122

# Appendix B



CLIENT



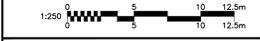
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Arcadis Professional Services (Canada) Inc.  
formerly (B) Group Professional Services (Canada) Inc.

No.	DESCRIPTION	DATE
1	ISSUED FOR SPRA	2025-08-21



CONSULTANTS



**PRIME CONSULTANT**  
**ARCADIS**  
 333 Preston Street - Suite 500  
 Ottawa ON K1S 5N4 Canada  
 tel 613 225 1311  
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**PROJECT**  
 KILLAM - CITY PARK PHASE 2  
 INTERIM PARKING  
 200 FRONTIER PATH PVT.

**PROJECT NO:**  
38729

<b>DRAWN BY:</b> D.D. / E.H.	<b>CHECKED BY:</b> M.P.
<b>PROJECT MGR:</b> T.R.B.	<b>APPROVED BY:</b> T.R.B.

**SHEET TITLE**  
GENERAL SERVICING PLAN

<b>SHEET NUMBER</b> C-103	<b>ISSUE</b> 1
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File Location: J:\38729-SilverCity\CA\5 Drawings\Submittal\Parking\Sheet\C-103 SERVICING PLAN.dwg Last Saved: August 22, 2025, by b06ed5754 Printed: August 22, 2025 6:48:53 AM by Dene, Denis  
 D07-XX-XX-XXXX  
 XXXXX



**IBI GROUP**  
333 PRESTON STREET  
OTTAWA, ON  
K1S 5N4

**PHASE 2 - INTERIM PARKING**

**PROJECT:** Killam REIT City Gates  
**DATE:** 2025-08-20  
**FILE:** 38729 - 5.7  
**REV #:** 6 - 2025-08-20  
**DESIGNED BY:** MAP  
**CHECKED BY:** TB

**STORMWATER MANAGEMENT**

**Formulas and Descriptions**

$i_{2yr} = 1.2 \text{ year Intensity} = 732.951 / (T_c + 6.199)^{0.810}$   
 $i_{5yr} = 1.5 \text{ year Intensity} = 998.071 / (T_c + 6.053)^{0.814}$   
 $i_{100yr} = 1:100 \text{ year Intensity} = 1735.688 / (T_c + 6.014)^{0.820}$   
 $T_c = \text{Time of Concentration (min)}$   
 $C = \text{Average Runoff Coefficient}$   
 $A = \text{Area (Ha)}$   
 $Q = \text{Flow} = 2.78CiA \text{ (L/s)}$

**Maximum Allowable Release Rate**

**Restricted Flowrate (based TOD 5y @ C=0.5)**

$C = 0.5$   
 $T_c = 17.27 \text{ min}$  \*as per proposed Storm Sewer Design sheet  
 $i_{100yr} = 76.87 \text{ mm/hr}$   
 $A_{TOTAL} = 2.86 \text{ Ha}$

$Q_{TOTAL} =$	305.61 L/s
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$Q_{TOTAL} =$	305.61 L/s
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**Uncontrolled Release ( $Q_{uncontrolled} = 2.78 \cdot C \cdot i_{100yr} \cdot A_{uncontrolled}$ )**

$C = 0.3$   
 $T_c = 10 \text{ min}$   
 $i_{100yr} = 178.56 \text{ mm/hr}$   
 $A_{uncontrolled} = 0.26 \text{ Ha}$

$Q_{uncontrolled} =$	38.72 L/s
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**Maximum Allowable Release Rate ( $Q_{max \text{ allowable}} = Q_{restricted} - Q_{uncontrolled}$ )**

$Q_{max \text{ allowable}} =$	266.89 L/s
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**MODIFIED RATIONAL METHOD (100-Year & 5-Year)**

<b>Drainage Area 1</b> (1 & 8 with weighted average C)					
Area (Ha)	0.380	Restricted Flow $Q_r$ (L/s) = 4.00			
C =	0.79				
100-Year Ponding					
$T_c$ Variable (min)	$i_{100yr}$ (mm/hour)	Peak Flow $Q_p = 2.78 \cdot C \cdot i_{100yr} \cdot A$ (L/s)	$Q_r$ (L/s)	$Q_p - Q_r$ (L/s)	Volume 100yr (m <sup>3</sup> )
183	23.59	19.74	4.00	15.74	172.80
185	23.39	19.57	4.00	15.57	172.81
186	23.29	19.48	4.00	15.48	172.81
187	23.19	19.40	4.00	15.40	172.81
189	22.99	19.24	4.00	15.24	172.80

<b>Drainage Area 1</b>					
Area (Ha)	0.380	Restricted Flow $Q_r$ (L/s) = 4.00			
C =	0.70				
5-Year Ponding					
$T_c$ Variable (min)	$i_{5yr}$ (mm/hour)	Peak Flow $Q_p = 2.78 \cdot C \cdot i_{5yr} \cdot A$ (L/s)	$Q_r$ (L/s)	$Q_p - Q_r$ (L/s)	Volume 5yr (m <sup>3</sup> )
95	23.31	17.23	4.00	13.23	75.43
97	22.94	16.96	4.00	12.96	75.43
98	22.76	16.83	4.00	12.83	75.43
99	22.58	16.70	4.00	12.70	75.43
101	22.24	16.44	4.00	12.44	75.41

Storage (m <sup>3</sup> )				
Overflow	Required	Surface	Sub-surface	Balance
0.00	172.81	175.10	3.90	0.00

Storage (m <sup>3</sup> )				
Overflow	Required	Surface	Sub-surface	Balance
0.00	75.43	175.10	3.90	0.00

**IN-LINE STORAGE (Structure)**

Structure	Height (m)	Storage (m <sup>3</sup> )
RYCB11	1.12	0.40
RYCB12	1.02	0.37
CB9	0.85	0.31
<b>Total:</b>		<b>1.08</b>

**IN-LINE STORAGE (Structure)**

Structure	Height (m)	Storage (m <sup>3</sup> )
CBMH1	1.17	1.33
<b>Total:</b>		<b>1.33</b>

**IN-LINE STORAGE (Pipe)**

Structure to Structure	Length (m)	Dia (m)	Storage (m <sup>3</sup> )
RYCB12 - RYCB11	23.29	0.20	0.73
RYCB11 - CBMH1	28.43	0.25	1.40
CB9 - CBMH1	24.59	0.20	0.77
CBMH1 - EXMHSTM121	22.56	0.38	2.49
<b>Total:</b>			<b>5.39</b>

overflows to: 2,3,4

overflows to: 2,3,4

There will be no overflow as all 5yr and 100yr volumes will be captured within the designed systems. Wording on the updated calculation sheet has been adjusted to reflect this.

Clarify where offsite this drainage area overflows to. Is it to private property or the ROW?

Drainage Area 2,3,4					
Area (Ha)		0.310			
C =		1.00 Restricted Flow Q <sub>r</sub> (L/s) = 25.00			
100-Year Ponding					
T <sub>c</sub> Variable (min)	i <sub>100yr</sub> (mm/hour)	Peak Flow Q <sub>p</sub> = 2.78xCi <sub>100yr</sub> A (L/s)	Q <sub>r</sub> (L/s)	Q <sub>p</sub> -Q <sub>r</sub> (L/s)	Volume 100yr (m <sup>3</sup> )
27	98.66	85.02	25.00	60.02	97.24
29	94.01	81.02	25.00	56.02	97.48
30	91.87	79.17	25.00	54.17	97.51
31	89.83	77.41	25.00	52.41	97.49
33	86.03	74.14	25.00	49.14	97.31

Storage (m <sup>3</sup> )				
Overflow	Required	Surface	Sub-surface	Balance
0.00	97.51	81.48	15.75	0.28

IN-LINE STORAGE (Structure)			IN-LINE STORAGE (Structure)		
0.6m X 0.6m CB			1.2mDia CBMH's		
0.36 m3/m	Height (m)	Storage (m3)	1.13 m3/m	Height (m)	Storage (m3)
CICB2	1.35	0.49	EXMHSTM121	1.37	1.55
EXCB03	1.10	0.40	EXMHSTM122	1.85	2.09
EXCB04	0.85	0.31			
Total:		1.19	Total:		3.64

overflows to: offsite

Drainage Area 2,3,4					
Area (Ha)		0.310			
C =		0.90 Restricted Flow Q <sub>r</sub> (L/s) = 25.00			
5-Year Ponding					
T <sub>c</sub> Variable (min)	i <sub>5yr</sub> (mm/hour)	Peak Flow Q <sub>p</sub> = 2.78xCi <sub>5yr</sub> A (L/s)	Q <sub>r</sub> (L/s)	Q <sub>p</sub> -Q <sub>r</sub> (L/s)	Volume 5yr (m <sup>3</sup> )
13	90.63	70.29	25.00	45.29	35.33
15	83.56	64.81	25.00	39.81	35.83
16	80.46	62.41	25.00	37.41	35.91
17	77.51	60.19	25.00	35.19	35.90
19	72.53	56.25	25.00	31.25	35.63

Storage (m <sup>3</sup> )				
Overflow	Required	Surface	Sub-surface	Balance
0.00	35.91	81.48	15.75	0.00

IN-LINE STORAGE (Pipe)			
Pipe storage			
Structure to Structure	Length (m)	Dia (m)	Storage (m3)
MHSTM121 - MHSTM122	97.50	0.38	10.77
MHSTM122 - MHSTM123	100.00	0.45	15.90
Total:			26.67

overflows to: offsite

Drainage Area 5					
Area (Ha)		0.130			
C =		1.00 Restricted Flow Q <sub>r</sub> (L/s) = 27.00			
100-Year Ponding					
T <sub>c</sub> Variable (min)	i <sub>100yr</sub> (mm/hour)	Peak Flow Q <sub>p</sub> = 2.78xCi <sub>100yr</sub> A (L/s)	Q <sub>r</sub> (L/s)	Q <sub>p</sub> -Q <sub>r</sub> (L/s)	Volume 100yr (m <sup>3</sup> )
9	188.25	68.04	27.00	41.04	22.16
11	169.91	61.40	27.00	34.40	22.71
12	162.13	58.59	27.00	31.59	22.73
13	155.11	56.06	27.00	29.06	22.68
15	142.89	51.64	27.00	24.64	22.18

Storage (m <sup>3</sup> )				
Overflow	Required	Surface	Sub-surface	Balance
2.74	25.49	26.06	0	0.00

overflows to: offsite

Drainage Area 5					
Area (Ha)		0.130			
C =		0.86 Restricted Flow Q <sub>r</sub> (L/s) = 27.00			
5-Year Ponding					
T <sub>c</sub> Variable (min)	i <sub>5yr</sub> (mm/hour)	Peak Flow Q <sub>p</sub> = 2.78xCi <sub>5yr</sub> A (L/s)	Q <sub>r</sub> (L/s)	Q <sub>p</sub> -Q <sub>r</sub> (L/s)	Volume 5yr (m <sup>3</sup> )
2	182.69	56.78	27.00	29.78	3.57
4	152.51	47.40	27.00	20.40	4.90
5	141.18	43.88	27.00	16.88	5.06
6	131.57	40.89	27.00	13.89	5.00
8	116.11	36.09	27.00	9.09	4.36

Storage (m <sup>3</sup> )				
Overflow	Required	Surface	Sub-surface	Balance
0.00	5.06	26.06	0	0.00

overflows to: offsite

Drainage Area 5A					
Area (Ha)		0.090			
C =		0.88 Restricted Flow Q <sub>r</sub> (L/s) = 2.00			
100-Year Ponding					
T <sub>c</sub> Variable (min)	i <sub>100yr</sub> (mm/hour)	Peak Flow Q <sub>p</sub> = 2.78xCi <sub>100yr</sub> A (L/s)	Q <sub>r</sub> (L/s)	Q <sub>p</sub> -Q <sub>r</sub> (L/s)	Volume 100yr (m <sup>3</sup> )
88	41.83	9.16	2.00	7.16	37.79
90	41.11	9.00	2.00	7.00	37.80
91	40.76	8.92	2.00	6.92	37.81
92	40.42	8.85	2.00	6.85	37.81
94	39.76	8.70	2.00	6.70	37.81

Storage (m <sup>3</sup> )				
Overflow	Required	Surface	Sub-surface	Balance
	37.81	40.66	0	0.00

Drainage Area 5A					
Area (Ha)		0.090			
C =		0.70 Restricted Flow Q <sub>r</sub> (L/s) = 2.00			
5-Year Ponding					
T <sub>c</sub> Variable (min)	i <sub>5yr</sub> (mm/hour)	Peak Flow Q <sub>p</sub> = 2.78xCi <sub>5yr</sub> A (L/s)	Q <sub>r</sub> (L/s)	Q <sub>p</sub> -Q <sub>r</sub> (L/s)	Volume 5yr (m <sup>3</sup> )
40	44.18	7.74	2.00	5.74	13.77
42	42.68	7.48	2.00	5.48	13.80
43	41.97	7.35	2.00	5.35	13.81
44	41.29	7.23	2.00	5.23	13.81
46	39.99	7.00	2.00	5.00	13.81

Storage (m <sup>3</sup> )				
Overflow	Required	Surface	Sub-surface	Balance
0.00	13.81	40.66	0	0.00

overflows to: offsite

Drainage Area 5B					
Area (Ha)		0.110			
C =		0.84 Restricted Flow Q <sub>r</sub> (L/s) = 2.00			
100-Year Ponding					
T <sub>c</sub> Variable (min)	i <sub>100yr</sub> (mm/hour)	Peak Flow Q <sub>p</sub> = 2.78xCi <sub>100yr</sub> A (L/s)	Q <sub>r</sub> (L/s)	Q <sub>p</sub> -Q <sub>r</sub> (L/s)	Volume 100yr (m <sup>3</sup> )
104	36.77	9.42	2.00	7.42	46.28
106	36.23	9.28	2.00	7.28	46.29
107	35.97	9.21	2.00	7.21	46.30
108	35.71	9.15	2.00	7.15	46.30
110	35.20	9.02	2.00	7.02	46.30

Storage (m <sup>3</sup> )				
Overflow	Required	Surface	Sub-surface	Balance
	46.30	52.44	0	0.00

Drainage Area 5B					
Area (Ha)		0.110			
C =		0.67 Restricted Flow Q <sub>r</sub> (L/s) = 2.00			
5-Year Ponding					
T <sub>c</sub> Variable (min)	i <sub>5yr</sub> (mm/hour)	Peak Flow Q <sub>p</sub> = 2.78xCi <sub>5yr</sub> A (L/s)	Q <sub>r</sub> (L/s)	Q <sub>p</sub> -Q <sub>r</sub> (L/s)	Volume 5yr (m <sup>3</sup> )
48	38.78	7.95	2.00	5.95	17.12
50	37.65	7.71	2.00	5.71	17.14
51	37.12	7.60	2.00	5.60	17.15
52	36.59	7.50	2.00	5.50	17.15
54	35.60	7.29	2.00	5.29	17.15

Storage (m <sup>3</sup> )				
Overflow	Required	Surface	Sub-surface	Balance
0.00	17.15	52.44	0	0.00

overflows to: offsite

<b>Drainage Area 6</b>					
Area (Ha)	0.070	Restricted Flow Q <sub>r</sub> (L/s)= 22.00			
C =	1.00				
<b>100-Year Ponding</b>					
T <sub>c</sub> Variable (min)	i <sub>100yr</sub> (mm/hour)	Peak Flow Q <sub>p</sub> =2.78xCi <sub>100yr</sub> A (L/s)	Q <sub>r</sub> (L/s)	Q <sub>p</sub> -Q <sub>r</sub> (L/s)	Volume 100yr (m <sup>3</sup> )
4	262.41	51.06	22.00	29.06	6.98
6	226.01	43.98	22.00	21.98	7.91
7	211.67	41.19	22.00	19.19	<b>8.06</b>
8	199.20	38.76	22.00	16.76	8.05
10	178.56	34.75	22.00	12.75	7.65

<b>Storage (m<sup>3</sup>)</b>									
Overflow	0.00	Required	8.06	Surface	5.32	Sub-surface	0	Balance	2.74
overflow from:		20, 19		overflows to:		5			

<b>Drainage Area 6</b>					
Area (Ha)	0.070	Restricted Flow Q <sub>r</sub> (L/s)= 22.00			
C =	0.84				
<b>5-Year Ponding</b>					
T <sub>c</sub> Variable (min)	i <sub>5yr</sub> (mm/hour)	Peak Flow Q <sub>p</sub> =2.78xCi <sub>5yr</sub> A (L/s)	Q <sub>r</sub> (L/s)	Q <sub>p</sub> -Q <sub>r</sub> (L/s)	Volume 5yr (m <sup>3</sup> )
1	203.51	33.27	22.00	11.27	0.68
2	182.69	29.86	22.00	7.86	<b>0.94</b>
3	166.09	27.15	22.00	5.15	0.93
5	141.18	23.08	22.00	1.08	0.32

<b>Storage (m<sup>3</sup>)</b>									
Overflow	0.00	Required	0.94	Surface	5.32	Sub-surface	0	Balance	0.00
overflow from:		5		overflows to:		5			

<b>Drainage Area 17, 19 &amp; 7</b>					
Area (Ha)	0.580	Restricted Flow Q <sub>r</sub> (L/s)= 30.00			
C =	0.83				
<b>100-Year Ponding</b>					
T <sub>c</sub> Variable (min)	i <sub>100yr</sub> (mm/hour)	Peak Flow Q <sub>p</sub> =2.78xCi <sub>100yr</sub> A (L/s)	Q <sub>r</sub> (L/s)	Q <sub>p</sub> -Q <sub>r</sub> (L/s)	Volume 100yr (m <sup>3</sup> )
36	80.96	108.24	30.00	78.24	169.01
37	79.42	106.18	30.00	76.18	169.11
38	77.93	104.19	30.00	74.19	<b>169.16</b>
39	76.51	102.29	30.00	72.29	169.16
41	73.83	98.71	30.00	68.71	169.03

<b>Storage (m<sup>3</sup>)</b>									
Overflow	8.80	Required	177.96	Surface	212.44	Sub-surface	0.00	Balance	0.00
overflow from:		20, 19		overflows to:		6			

<b>Drainage Area 17, 19 &amp; 7</b>					
Area (Ha)	0.580	Restricted Flow Q <sub>r</sub> (L/s)= 30.00			
C =	0.66				
<b>5-Year Ponding</b>					
T <sub>c</sub> Variable (min)	i <sub>5yr</sub> (mm/hour)	Peak Flow Q <sub>p</sub> =2.78xCi <sub>5yr</sub> A (L/s)	Q <sub>r</sub> (L/s)	Q <sub>p</sub> -Q <sub>r</sub> (L/s)	Volume 5yr (m <sup>3</sup> )
16	80.46	86.06	30.00	56.06	53.81
18	74.97	80.19	30.00	50.19	54.20
19	72.53	77.57	30.00	47.57	<b>54.23</b>
20	70.25	75.14	30.00	45.14	54.17
22	66.15	70.75	30.00	40.75	53.79

<b>Storage (m<sup>3</sup>)</b>									
Overflow	0.00	Required	54.23	Surface	212.44	Sub-surface	0	Balance	0.00
overflow from:		6		overflows to:		6			

<b>Drainage Area 20</b>					
Area (Ha)	0.090	Restricted Flow Q <sub>r</sub> (L/s)= 19.80 Existing			
C =	1.00				
<b>100-Year Ponding</b>					
T <sub>c</sub> Variable (min)	i <sub>100yr</sub> (mm/hour)	Peak Flow Q <sub>p</sub> =2.78xCi <sub>100yr</sub> A (L/s)	Q <sub>r</sub> (L/s)	Q <sub>p</sub> -Q <sub>r</sub> (L/s)	Volume 100yr (m <sup>3</sup> )
8	199.20	49.84	19.80	30.04	14.42
10	178.56	44.68	19.80	24.88	14.93
11	169.91	42.51	19.80	22.71	<b>14.99</b>
12	162.13	40.57	19.80	20.77	14.95
14	148.72	37.21	19.80	17.41	14.62

<b>Storage (m<sup>3</sup>)</b>									
Overflow	0.00	Required	14.99	Surface	7.20	Sub-surface	0.00	Balance	7.79
overflow from:		7		overflows to:		7			

<b>Drainage Area 20</b>					
Area (Ha)	0.090	Restricted Flow Q <sub>r</sub> (L/s)= 19.80			
C =	0.90				
<b>5-Year Ponding</b>					
T <sub>c</sub> Variable (min)	i <sub>5yr</sub> (mm/hour)	Peak Flow Q <sub>p</sub> =2.78xCi <sub>5yr</sub> A (L/s)	Q <sub>r</sub> (L/s)	Q <sub>p</sub> -Q <sub>r</sub> (L/s)	Volume 5yr (m <sup>3</sup> )
2	182.69	41.14	19.80	21.34	2.56
4	152.51	34.34	19.80	14.54	3.49
5	141.18	31.79	19.80	11.99	<b>3.60</b>
6	131.57	29.63	19.80	9.83	3.54
8	116.11	26.15	19.80	6.35	3.05

<b>Storage (m<sup>3</sup>)</b>									
Overflow	0.00	Required	3.60	Surface	7.20	Sub-surface	0	Balance	0.00
overflow from:		7		overflows to:		7			

<b>Drainage Area 12, 13</b>					
Area (Ha)	0.200	Restricted Flow Q <sub>r</sub> (L/s)= 33.00			
C =	1.00				
<b>100-Year Ponding</b>					
T <sub>c</sub> Variable (min)	i <sub>100yr</sub> (mm/hour)	Peak Flow Q <sub>p</sub> =2.78xCi <sub>100yr</sub> A (L/s)	Q <sub>r</sub> (L/s)	Q <sub>p</sub> -Q <sub>r</sub> (L/s)	Volume 100yr (m <sup>3</sup> )
12	162.13	90.15	33.00	57.15	41.15
14	148.72	82.69	33.00	49.69	41.74
15	142.89	79.45	33.00	46.45	<b>41.80</b>
16	137.55	76.48	33.00	43.48	41.74
18	128.08	71.21	33.00	38.21	41.27

<b>Storage (m<sup>3</sup>)</b>									
Overflow	3.08	Required	44.89	Surface	43.88	Sub-surface	0.00	Balance	1.01
overflow from:		10.00		overflows to:		19			

<b>Drainage Area 12, 13</b>					
Area (Ha)	0.200	Restricted Flow Q <sub>r</sub> (L/s)= 33.00			
C =	0.90				
<b>5-Year Ponding</b>					
T <sub>c</sub> Variable (min)	i <sub>5yr</sub> (mm/hour)	Peak Flow Q <sub>p</sub> =2.78xCi <sub>5yr</sub> A (L/s)	Q <sub>r</sub> (L/s)	Q <sub>p</sub> -Q <sub>r</sub> (L/s)	Volume 5yr (m <sup>3</sup> )
4	152.51	76.32	33.00	43.32	10.40
6	131.57	65.84	33.00	32.84	11.82
7	123.30	61.70	33.00	28.70	<b>12.05</b>
8	116.11	58.10	33.00	25.10	12.05
10	104.19	52.14	33.00	19.14	11.48

<b>Storage (m<sup>3</sup>)</b>									
Overflow	0.00	Required	12.05	Surface	43.88	Sub-surface	0	Balance	0.00
overflow from:		19		overflows to:		19			

<b>Drainage Area 10</b>					
Area (Ha)	0.040	Restricted Flow Q <sub>r</sub> (L/s)= 18.00			
C =	1.00				
<b>100-Year Ponding</b>					
T <sub>c</sub> Variable (min)	i <sub>100yr</sub> (mm/hour)	Peak Flow Q <sub>p</sub> =2.78xCi <sub>100yr</sub> A (L/s)	Q <sub>r</sub> (L/s)	Q <sub>p</sub> -Q <sub>r</sub> (L/s)	Volume 100yr (m <sup>3</sup> )
2	315.00	35.03	18.00	17.03	2.04
4	262.41	29.18	18.00	11.18	2.68
5	242.70	26.99	18.00	8.99	<b>2.70</b>
6	226.01	25.13	18.00	7.13	2.57
8	199.20	22.15	18.00	4.15	1.99

<b>Storage (m<sup>3</sup>)</b>									
Overflow	5.02	Required	7.71	Surface	3.63	Sub-surface	1.00	Balance	3.08
overflow from:		9.00		overflows to:		12			

<b>Drainage Area 10</b>					
Area (Ha)	0.040	Restricted Flow Q <sub>r</sub> (L/s)= 18.00			
C =	0.30				
<b>5-Year Ponding</b>					
T <sub>c</sub> Variable (min)	i <sub>5yr</sub> (mm/hour)	Peak Flow Q <sub>p</sub> =2.78xCi <sub>5yr</sub> A (L/s)	Q <sub>r</sub> (L/s)	Q <sub>p</sub> -Q <sub>r</sub> (L/s)	Volume 5yr (m <sup>3</sup> )
-5	956.98	31.92	18.00	13.92	-4.18
-3	402.34	13.42	18.00	-4.58	0.82
-2	319.47	10.66	18.00	-7.34	<b>0.88</b>
-1	266.98	8.91	18.00	-9.09	0.55
1	203.51	6.79	18.00	-11.21	-0.67

<b>Storage (m<sup>3</sup>)</b>									
Overflow	0.00	Required	0.88	Surface	3.63	Sub-surface	1	Balance	0.00
overflow from:		12		overflows to:		12			

<b>Drainage Area 9</b>					
Area (Ha)	0.080	Restricted Flow Q <sub>r</sub> (L/s)= 28.00			
C =	1.00				
<b>100-Year Ponding</b>					
T <sub>c</sub> Variable (min)	i <sub>100yr</sub> (mm/hour)	Peak Flow Q <sub>p</sub> =2.78xCl <sub>100yr</sub> A (L/s)	Q <sub>r</sub> (L/s)	Q <sub>p</sub> -Q <sub>r</sub> (L/s)	Volume 100yr (m <sup>3</sup> )
3	286.05	63.62	28.00	35.62	6.41
5	242.70	53.98	28.00	25.98	7.79
6	226.01	50.26	28.00	22.26	<b>8.02</b>
7	211.67	47.07	28.00	19.07	8.01
9	188.25	41.87	28.00	13.87	7.49

<b>Storage (m<sup>3</sup>)</b>									
Overflow	0.00	Required	8.02	Surface	3.00	Sub-surface	0.00	Balance	5.02

overflows to: 10

<b>Drainage Area 9</b>					
Area (Ha)	0.080	Restricted Flow Q <sub>r</sub> (L/s)= 28.00			
C =	0.30				
<b>5-Year Ponding</b>					
T <sub>c</sub> Variable (min)	i <sub>5yr</sub> (mm/hour)	Peak Flow Q <sub>p</sub> =2.78xCl <sub>5yr</sub> A (L/s)	Q <sub>r</sub> (L/s)	Q <sub>p</sub> -Q <sub>r</sub> (L/s)	Volume 5yr (m <sup>3</sup> )
-5	956.98	63.85	28.00	35.85	-10.75
-3	402.34	26.84	28.00	-1.16	0.21
-2	319.47	21.32	28.00	-6.68	<b>0.80</b>
-1	266.98	17.81	28.00	-10.19	0.61
1	203.51	13.58	28.00	-14.42	-0.87

<b>Storage (m<sup>3</sup>)</b>									
Overflow	0.00	Required	0.80	Surface	3.00	Sub-surface	0	Balance	0.00

overflows to: 10

<b>Drainage Area PHASE 2</b>					
Area (Ha)	0.250	Restricted Flow Q <sub>r</sub> (L/s)= 18.00			
C =	1.00				
<b>100-Year Ponding</b>					
T <sub>c</sub> Variable (min)	i <sub>100yr</sub> (mm/hour)	Peak Flow Q <sub>p</sub> =2.78xCl <sub>100yr</sub> A (L/s)	Q <sub>r</sub> (L/s)	Q <sub>p</sub> -Q <sub>r</sub> (L/s)	Volume 100yr (m <sup>3</sup> )
30	91.87	63.85	18.00	45.85	82.53
32	87.89	61.08	18.00	43.08	82.71
33	86.03	59.79	18.00	41.79	<b>82.75</b>
34	84.27	58.57	18.00	40.57	82.75
36	80.96	56.27	18.00	38.27	82.66

<b>Storage (m<sup>3</sup>)</b>									
Overflow	0.00	Required	82.75	Cistern	120.00	Sub-surface	0.00	Balance	0.00

<b>Drainage Area PHASE 2</b>					
Area (Ha)	0.250	Restricted Flow Q <sub>r</sub> (L/s)= 18.00			
C =	0.90				
<b>5-Year Ponding</b>					
T <sub>c</sub> Variable (min)	i <sub>5yr</sub> (mm/hour)	Peak Flow Q <sub>p</sub> =2.78xCl <sub>5yr</sub> A (L/s)	Q <sub>r</sub> (L/s)	Q <sub>p</sub> -Q <sub>r</sub> (L/s)	Volume 5yr (m <sup>3</sup> )
15	83.56	52.27	18.00	34.27	30.84
17	77.61	48.54	18.00	30.54	31.15
18	74.97	46.89	18.00	28.89	<b>31.21</b>
19	72.53	45.36	18.00	27.36	31.20
21	68.13	42.62	18.00	24.62	31.02

<b>Storage (m<sup>3</sup>)</b>									
Overflow	0.00	Required	31.21	Surface	120.00	Sub-surface	0	Balance	0.00

<b>Drainage Area PHASE 2 Cistern sizing only</b>					
Area (Ha)	0.250	Restricted Flow Q <sub>r</sub> (L/s)= 9.00			
C =	1.00				
<b>100-Year Ponding</b>					
T <sub>c</sub> Variable (min)	i <sub>100yr</sub> (mm/hour)	Peak Flow Q <sub>p</sub> =2.78xCl <sub>100yr</sub> A (L/s)	Q <sub>r</sub> (L/s)	Q <sub>p</sub> -Q <sub>r</sub> (L/s)	Volume 100yr (m <sup>3</sup> )
62	54.54	37.91	9.00	28.91	107.54
64	53.26	37.02	9.00	28.02	107.59
65	52.65	36.89	9.00	27.89	<b>107.60</b>
66	52.05	36.17	9.00	27.17	107.60
68	50.89	35.37	9.00	26.37	107.58

<b>Storage (m<sup>3</sup>)</b>									
Overflow	0.00	Required	107.60	Cistern	120.00	Sub-surface	0.00	Balance	0.00

<b>Drainage Area PHASE 2</b>					
Area (Ha)	0.250	Restricted Flow Q <sub>r</sub> (L/s)= 9.00			
C =	0.90				
<b>5-Year Ponding</b>					
T <sub>c</sub> Variable (min)	i <sub>5yr</sub> (mm/hour)	Peak Flow Q <sub>p</sub> =2.78xCl <sub>5yr</sub> A (L/s)	Q <sub>r</sub> (L/s)	Q <sub>p</sub> -Q <sub>r</sub> (L/s)	Volume 5yr (m <sup>3</sup> )
33	50.53	31.61	9.00	22.61	44.76
35	48.52	30.35	9.00	21.35	44.83
36	47.58	29.76	9.00	20.76	<b>44.84</b>
37	46.67	29.20	9.00	20.20	44.83
39	44.98	28.14	9.00	19.14	44.78

<b>Storage (m<sup>3</sup>)</b>									
Overflow	0.00	Required	44.84	Surface	120.00	Sub-surface	0	Balance	0.00

<b>Drainage Area 11</b>					
Area (Ha)	0.050	Restricted Flow Q <sub>r</sub> (L/s)= 2.10			
C =	1.00				
<b>100-Year Ponding</b>					
T <sub>c</sub> Variable (min)	i <sub>100yr</sub> (mm/hour)	Peak Flow Q <sub>p</sub> =2.78xCl <sub>100yr</sub> A (L/s)	Q <sub>r</sub> (L/s)	Q <sub>p</sub> -Q <sub>r</sub> (L/s)	Volume 100yr (m <sup>3</sup> )
53	61.28	8.52	2.10	6.42	20.41
54	60.44	8.40	2.10	6.30	20.41
55	59.62	8.29	2.10	6.19	<b>20.42</b>
56	58.83	8.18	2.10	6.08	20.42
57	58.07	8.07	2.10	5.97	20.42

<b>Storage (m<sup>3</sup>)</b>									
Overflow	0.00	Required	20.42	Roof	22.00	Sub-surface	0.00	Balance	0.00

<b>Drainage Area 11</b>					
Area (Ha)	0.050	Restricted Flow Q <sub>r</sub> (L/s)= 2.10			
C =	0.90				
<b>5-Year Ponding</b>					
T <sub>c</sub> Variable (min)	i <sub>5yr</sub> (mm/hour)	Peak Flow Q <sub>p</sub> =2.78xCl <sub>5yr</sub> A (L/s)	Q <sub>r</sub> (L/s)	Q <sub>p</sub> -Q <sub>r</sub> (L/s)	Volume 5yr (m <sup>3</sup> )
28	56.49	7.07	2.10	4.97	8.34
30	53.93	6.75	2.10	4.65	8.36
31	52.74	6.60	2.10	4.50	<b>8.37</b>
32	51.61	6.46	2.10	4.36	8.36
34	49.50	6.19	2.10	4.09	8.35

<b>Storage (m<sup>3</sup>)</b>									
Overflow	0.00	Required	8.37	Surface	22.00	Sub-surface	0	Balance	0.00

<b>Drainage Area 14 (TWR A)</b>					
Area (Ha)	0.210	Restricted Flow Q <sub>r</sub> (L/s)= 36.00			
C =	1.00				
<b>100-Year Ponding</b>					
T <sub>c</sub> Variable (min)	i <sub>100yr</sub> (mm/hour)	Peak Flow Q <sub>p</sub> =2.78xCl <sub>100yr</sub> A (L/s)	Q <sub>r</sub> (L/s)	Q <sub>p</sub> -Q <sub>r</sub> (L/s)	Volume 100yr (m <sup>3</sup> )
12	162.13	94.65	36.00	58.65	42.23
13	155.11	90.55	36.00	54.55	42.55
14	148.72	86.82	36.00	50.82	<b>42.69</b>
15	142.89	83.42	36.00	47.42	42.68
16	137.55	80.30	36.00	44.30	42.53

<b>Storage (m<sup>3</sup>)</b>									
Overflow	0.00	Required	42.69	Cistern	48.00	Sub-surface	0.00	Balance	0.00

<b>Drainage Area 14 (TWR A)</b>					
Area (Ha)	0.210	Restricted Flow Q <sub>r</sub> (L/s)= 36.00			
C =	0.90				
<b>5-Year Ponding</b>					
T <sub>c</sub> Variable (min)	i <sub>5yr</sub> (mm/hour)	Peak Flow Q <sub>p</sub> =2.78xCl <sub>5yr</sub> A (L/s)	Q <sub>r</sub> (L/s)	Q <sub>p</sub> -Q <sub>r</sub> (L/s)	Volume 5yr (m <sup>3</sup> )
4	152.51	80.13	36.00	44.13	10.59
6	131.57	69.13	36.00	33.13	11.93
7	123.30	64.79	36.00	28.79	<b>12.09</b>
8	116.11	61.01	36.00	25.01	12.00
10	104.19	54.75	36.00	18.75	11.25

<b>Storage (m<sup>3</sup>)</b>									
Overflow	0.00	Required	12.09	Surface	48.00	Sub-surface	0	Balance	0.00



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**STORM SEWER DESIGN SHEET**

City Park Drive Rio-Can Redevelopment  
 City of Ottawa  
 RioCan Management Inc.

**PHASE 2  
 INTERIM PARKING**

LOCATION				AREA (Ha)										RATIONAL DESIGN FLOW										SEWER DATA													
STREET	AREA ID	FROM	TO	C= 0.20	C= 0.30	C= 0.40	C= 0.50	C= 0.67	C= 0.70	C= 0.75	C= 0.80	C= 0.85	C= 0.90	IND 2.78AC	CUM 2.78AC	INLET (min)	TIME IN PIPE	TOTAL (min)	i (5) (mm/hr)	i (10) (mm/hr)	i (100) (mm/hr)	5yr PEAK FLOW (L/s)	10yr PEAK FLOW (L/s)	100yr PEAK FLOW (L/s)	FIXED FLOW (L/s)	DESIGN FLOW (L/s)	CAPACITY (L/s)	LENGTH (m)	PIPE SIZE (mm)			SLOPE (%)	VELOCITY (m/s)	AVAIL CAP (5yr)			
																												DIA	W	H			(L/s)	(%)			
	8	RYCB11	CBMH1		0.10									0.08	0.08	10.00	0.63	10.63	104.19	122.14	178.56	8.69				8.69	42.08	31.21	250				0.46	0.830	33.39	79.35%	
	1	CBMH1	EXMH121											0.28	0.70	10.63	0.23	10.86	101.00	118.38	173.03	79.18				79.18	164.62	19.95	375				0.81	1.444	85.44	51.90%	
	2, 3	EXMH121	EXMH122											0.42	1.20	10.86	1.33	12.19	99.88	117.06	171.09	120.22				120.22	139.30	97.50	375				0.58	1.222	19.08	13.69%	
		EXMH122	MH200											0.00	1.20	12.19	0.44	12.63	93.91	110.03	160.77	113.04				110.04	168.25	27.00	450				0.32	1.025	55.22	32.82%	
		MH200	MH201											0.00	1.20	12.63	0.21	12.83	92.11	107.91	157.66	110.87				110.87	145.71	11.00	450				0.24	0.888	34.84	23.91%	
	4	MH201	MH202										0.13	0.27	1.47	12.83	1.24	14.07	91.28	106.94	156.24	134.63				134.63	139.51	63.02	450				0.22	0.850	4.88	3.50%	
	5, 5A, 5B	MH202	EXMH124					0.11	0.09					0.69	2.16	14.07	1.80	15.87	86.69	101.54	148.31	187.43				187.43	155.42	75.00	525				0.12	0.696	-32.01	-20.60%	
	6, 7	EXMH124	EXCBMH127											0.85	3.01	15.87	1.24	17.11	80.86	94.68	138.24	243.61				243.61	293.54	75.00	600				0.21	1.006	49.93	17.01%	
	9, 10	CICB13	EXMHSTM11											0.12	0.30	10.00	0.40	10.40	104.19	122.14	178.56	31.28				31.28	42.08	19.69	250				0.46	0.830	10.79	25.65%	
	11	EX "REST"	EXMH11											0.05	0.00	10.00	0.10	10.10	104.19	122.14	178.56	0.00				2.10	2.10	87.74	10.00	250				2.00	1.731	85.64	97.61%
		EXMH11	EXMH128											0.00	0.00	10.40	0.16	10.56	102.15	119.74	175.03	30.67				2.10	32.77	94.09	18.00	250				2.30	1.857	61.32	65.17%
	12, 13	EXMH128	EXMH126											0.20	0.50	10.40	0.34	10.73	102.15	119.74	175.03	81.79				2.10	83.89	162.57	29.00	375				0.79	1.426	78.69	48.40%
	14	BLDG A	EXMH125											0.21	0.53	10.00	0.37	10.37	104.19	122.14	178.56	0.00				36.00	36.00	139.79	42.80	300				1.92	1.916	103.79	74.25%
	PHASE 2	PHASE 2	EXMH125											0.27	0.68	10.00	0.05	10.05	104.19	122.14	178.56	0.00				15.00	15.00	101.89	3.78	300				1.02	1.396	86.89	85.28%
	17, 19	EXMH125	EXMH126		0.14									0.47	0.47	10.37	0.83	11.20	102.27	119.87	175.23	48.19				51.00	99.19	151.66	46.00	450				0.26	0.924	52.47	34.60%
		EXMH126	EXCBMH127											0.00	1.27	10.73	0.30	11.03	100.47	117.76	172.12	127.78				53.10	180.88	257.58	28.00	450				0.75	1.569	76.70	29.78%
	20	EXCBMH127	EXMH1											0.09	0.23	17.11	0.23	17.33	77.31	90.51	132.12	348.65				53.10	401.75	429.70	20.00	600				0.45	1.472	27.95	6.50%

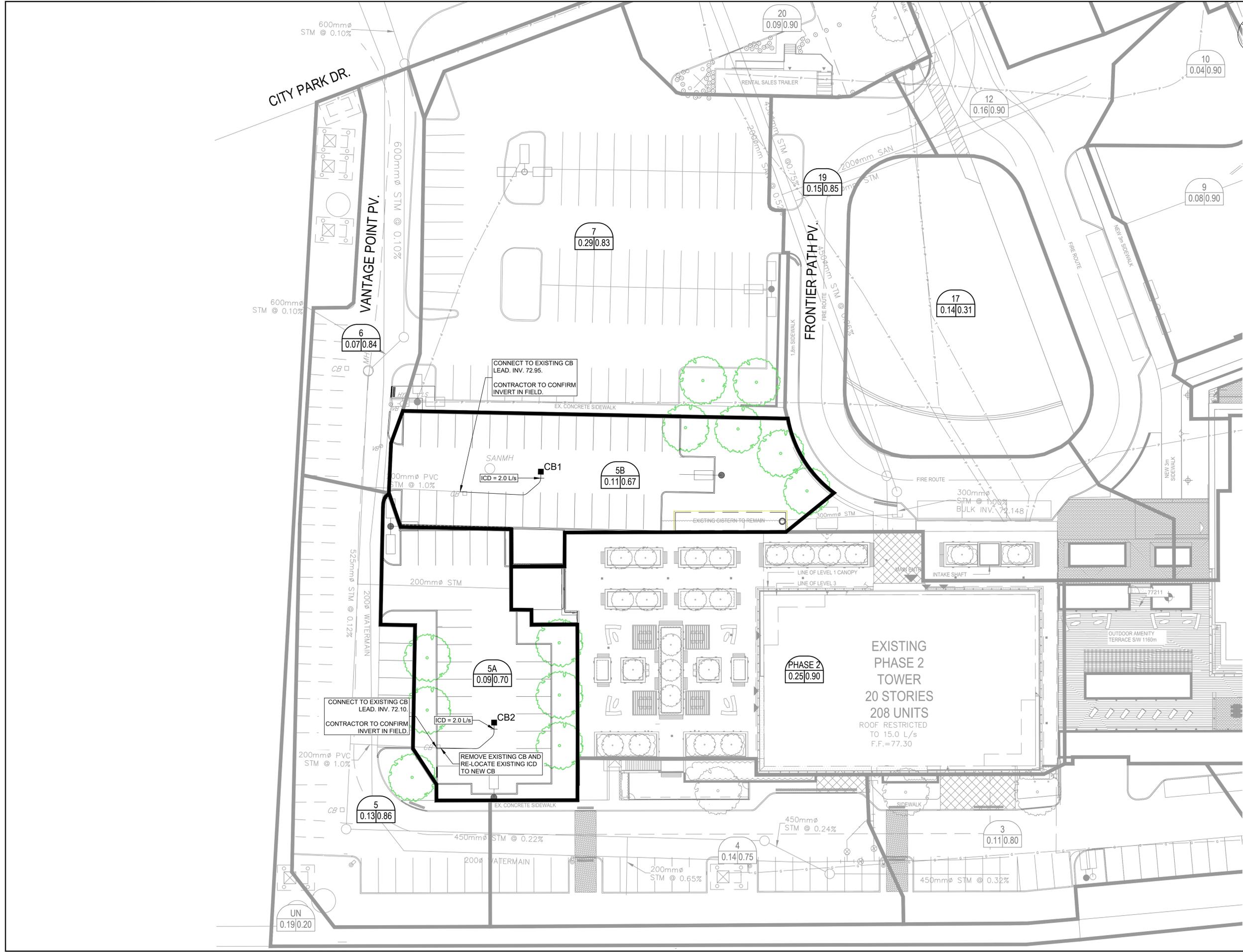
**Definitions:**  
 Q = 2.78CA, where:  
 Q = Peak Flow in Litres per Second (L/s)  
 A = Area in Hectares (Ha)  
 i = Rainfall intensity in millimeters per hour (mm/hr)  
 [i = 998.071 / (TC+6.053)^0.814] 5 YEAR  
 [i = 1174.184 / (TC+6.014)^0.816] 10 YEAR  
 [i = 1735.688 / (TC+6.014)^0.820] 100 YEAR

**Notes:**  
 1. Mannings coefficient (n) = 0.013  
 2. Existing pipe diameters taken from OMM design brief dated February 1999  
 3. Existing pipe lengths and slopes taken from field survey data by Stantec and IBI Group

**Designed:** Designed: MAP  
**Checked:** Checked: TRB  
**Dwg. Reference:** 38729-500

No.	Revision	Date
1.	City submission No. 1	August 10, 2018
2.	City submission No. 3	December 12, 2018
3.	As-Built	December 3, 2021
4.	Interim Parking SPRA No. 1	August 21, 2025

**File Reference:** 38729.5.7.1  
**Date:** 2025-08-21  
**Sheet No:** 1 of 1



**CLIENT**  
 Killam PROPERTIES INC

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**Arcadis Professional Services (Canada) Inc.**  
 formerly (B) Group Professional Services (Canada) Inc.

ISSUES		
No.	DESCRIPTION	DATE
1	ISSUED FOR SPRA	2025-08-21

**CONSULTANTS**

**SEAL**

**PRIME CONSULTANT**  
**ARCADIS**  
 333 Preston Street - Suite 500  
 Ottawa ON K1S 5N4 Canada  
 tel 613 225 1311  
 www.arcadis.com

**PROJECT**  
 KILLAM - CITY PARK PHASE 2  
 INTERIM PARKING  
 200 FRONTIER PATH PVT.

**PROJECT NO:** 38729

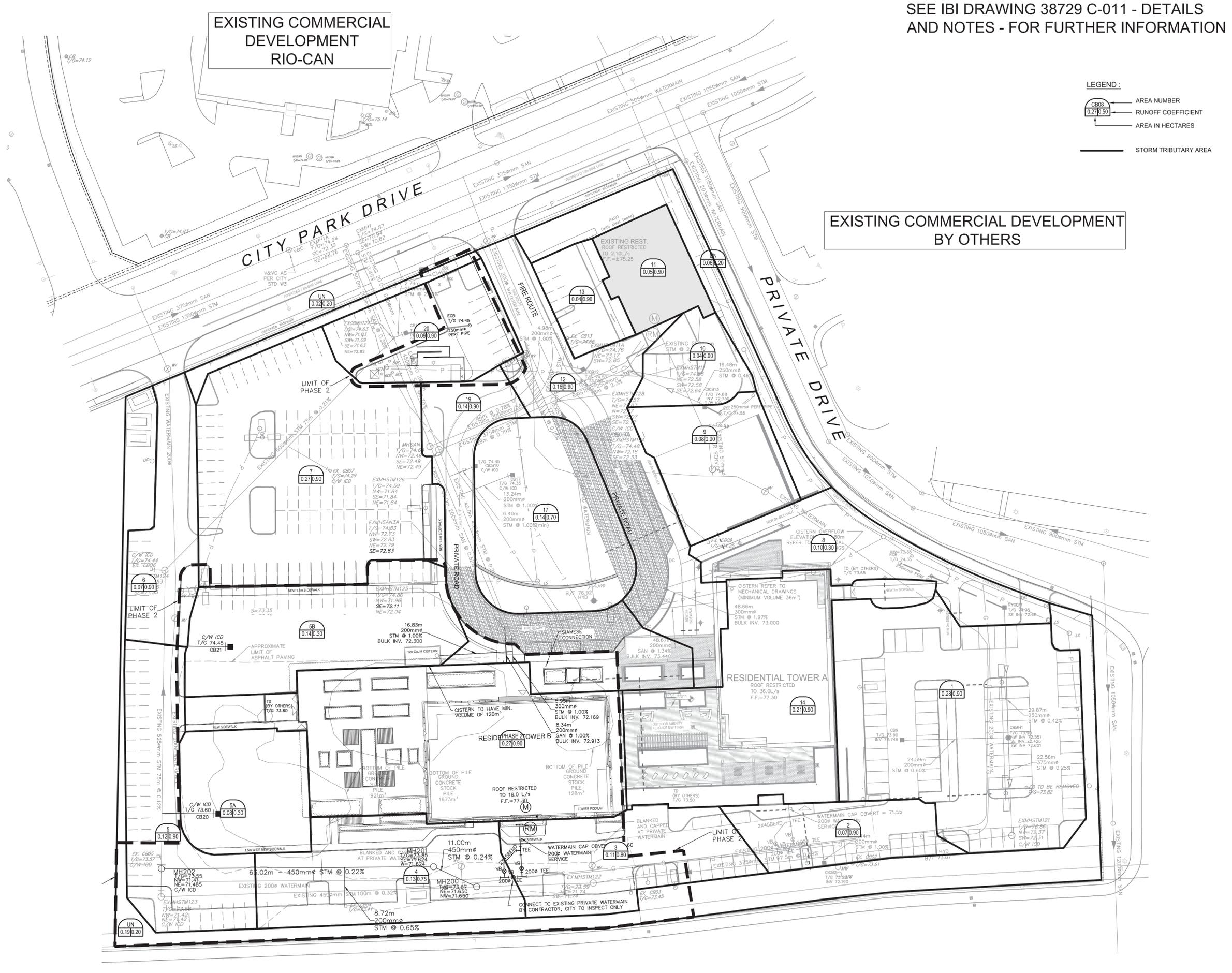
<b>DRAWN BY:</b> D.D. / E.H.	<b>CHECKED BY:</b> M.P.
<b>PROJECT MGR:</b> T.R.B.	<b>APPROVED BY:</b> T.R.B.

**SHEET TITLE**  
 STORM DRAINAGE AREA PLAN

<b>SHEET NUMBER</b> C-502	<b>ISSUE</b> 1
------------------------------	-------------------

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 Scale: 1:1000  
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 XXXX

SEE IBI DRAWING 38729 C-011 - DETAILS AND NOTES - FOR FURTHER INFORMATION

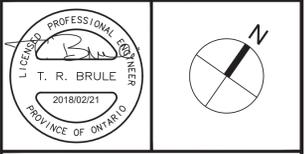


No.	REVISIONS	By	Date
14			
13			
12			
11			
10			
9			
8			
7			
6			
5			
4	ISSUED FOR CONSTRUCTION	TRB	19:02:21
3	REVISED PER CITY COMMENTS	TRB	18:12:12
2	REVISED PER CITY COMMENTS	TRB	18:11:09
1	ISSUED TO CITY	TRB	18:08:08



**IBI GROUP**  
 400 - 333 Preston Street  
 Ottawa ON K1S 5N4 Canada  
 tel 613 225 1311 fax 613 225 9868  
 ibigroup.com

Project Title  
**2280 CITY PARK DEVELOPMENT PHASE 2**



Drawing Title  
**STORM DRAINAGE AREA PLAN**

Scale  
 1 : 400

Design  
 J.E.B. Date  
 AUG. 2018

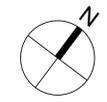
Drawn  
 E.H. Checked  
 T.R.B.

Project No.  
 38729 Drawing No.  
 C-501

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D07-12-18-0122

# Appendix C



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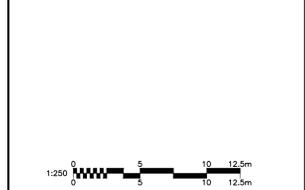
**Arcadis Professional Services (Canada) Inc.**  
formerly (B) Group Professional Services (Canada) Inc.

**ISSUES**

No.	DESCRIPTION	DATE
1	ISSUED FOR SPRA	2025-08-21



**CONSULTANTS**



**SEAL**



**PRIME CONSULTANT**



333 Preston Street - Suite 500  
Ottawa ON K1S 5N4 Canada  
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**PROJECT**

**KILLAM - CITY PARK PHASE 2  
INTERIM PARKING**

200 FRONTIER PATH PVT.

**PROJECT NO:**

38729

**DRAWN BY:**

D.D. / E.H.

**CHECKED BY:**

M.P.

**PROJECT MGR:**

T.R.B.

**APPROVED BY:**

T.R.B.

**SHEET TITLE**

**GRADING PLAN**

**SHEET NUMBER**

**C-202**

**ISSUE**

**1**

