

A-2024-0234 SEVERED

August 16th 2024

Name of

Clara Vani Secretary Treasurer, Committee of Adjustment City of Brampton, Clerks Office 2 Wellington Street West, 1st Floor Brampton, ON L6Y 4R2

3455 Queen Street East

Files: Consent B-2024-0012, and Variance Files A-2024-0233 & A-2024-0034

Please find attached to this Parking Rationale & Cover Letter the following documents:

- Draft R-Plan 66-5-19
- Parts Summary, PIN Abstract 2024-08-16
- Proposed Severance Sketch 2024-08-15
- C101-SEV Proposed Servicing Plan for Severed Lot

The purpose of this application is to Sever and Create a Vacant Lot that will have a deficient frontage onto Auction Lane. The resultant Retained Lot will have a slightly deficient number of parking provided on-site for the Hyatt Hotel, but the Severed Lot will create easements for parking, and rights-of-way to ensure compliance with the Zoning Bylaw in practice.

The attached Draft R Plan and Parts Summary described the existing reciprocal easements for access, servicing, and rights of way for the shared drive aisle amongst both 3455 Queen St. E. (Subject Site) as well as 2 and 4 Auction Lane.

This Parts Summary and Draft R Plan further seek to ensure harmonious and orderly development by way of reciprocal agreements between the Transfering Parties of the Severed and Retained Lots, this includes partial private easements for Parking, Rights-of-Way, and Services for Sanitary and Stormwater.

The Severed Lot enjoys its own access from both Auction Lane, as well as from Queen St. E. via a right-of-way easement partially measured over the Retained Lands. The inverse is also true of the Retained Lot.

The Severed Lot Line also bisects the Retained Lot perfectly along the centre line of an existing as-built Parking Stall for ease of harmony. The Lot Line parking stall location creates a unique aisle width variance as a result, because the proposed Severed Lot line bisects the drive aisle in its own way.

Parking Rationale

Minor Variance File A18-055 was previously approved by the Committee of Adjustment to lower the overall Parking Requirements for the construction of a 6 Storey Hyatt Hotel and 2 Storey Office / Retail Building under SP17-123.000.

Today, the 2 Storey Building is now entirely Office, resulting in an even lower parking rate than previously understood for the Retail portion of this building under A18-055. Compliance is achieved via off-site parking easements in favour thereof.

1370 Hurontario St. Miss ON. L5G 3H4
Phone: 647-963-7375 • Website: www.harperdell.ca • Email: nick@harperdell.ca



August 16th 2024

B-2024-0012, A-2024-0233 & A-2024-0034 Amendments

The Subject Variance & Consent Applications are therefore to be amended as follows:

RETAINED LANDS (HOTEL/RETAIL/OFFICE):

- 1. To permit 89 parking spaces, whereas the By-law requires 136 parking spaces (reduced to 119 under previous variance A18-055).
- 2. To permit 29 required parking spaces on the severed lands to be used in conjunction with the hotel/office uses on the retained parcel, whereas the by-law requires that all parking be provided on the same lot as the building or use for which it is required.
- 3. To permit a parking aisle width of 1.6 metres, whereas the By-law requires a minimum parking aisle width of 6.6 metres.

SEVERED LANDS:

- 1. To permit a lot width of 9.08 metres, whereas the By-law requires a minimum lot width of 50 metres.
- 2. To permit a parking aisle width of 5.18 metres, whereas the By-law requires a minimum parking aisle width of 6.6 metres.
- 3. To permit a parking lot associated with the hotel/office uses on the retained lands, whereas the by-law does not permit a parking lot for uses located on an adjacent lot.

We trust the ensuing conditions of provisional consent will allow the relevant approval agencies the time and care to measure the appropriateness of this proposal for posterity and Orderly Development.

Yours very truly,

Nicholas H. Dell Principal

1370 Hurontario St. Miss ON. L5G 3H4
Phone: 647-963-7375 • Website: www.harperdell.ca • Email: nick@harperdell.ca

PART SUMMARY

Location:

Property referred to as 3455 Queen Street East

Part of Lot 5, Concession 7

Northern Division (Geographic Township of Toronto Gore, County of Peel)

City of Brampton

Regional Municipality of Peel

File:

66-5-19

Client:

2514682 Ontario Inc

Date:

November 27, 2023

Revision Date:

August 16, 2024

David B. Searles Surveying Ltd.

ONTARIO LAND SURVEYORS

Land Information Services

4255 Sherwoodtowne Blvd., Suite 206, Mississauga, Ontario, L5Z 1Y5 Tel: (905) 273-6840 Fax: (905) 896-4410 Email: info@dbsearles.ca

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Note:

PART NUMBER	DESCRIPTION	AREA (sq. m)
1	Part of the retained lands - Subject to easement in gross as in PR3548763	5574
2	Part of the retained lands - Proposed access easement in favour of severed land and subject to easement in gross as in PR3548763	287
3	Part of the retained lands - Proposed access easement in favour of severed land, subject to easement in gross as in PR3548763, subject to easement as in PR2195765 & LT1714750	298
4	Part of the retained lands - Proposed access easement in favour of severed land, Subject to easement in gross as in PR3548763, subject to easement as in PR2195765 & LT1714750	34
5	Part of the retained lands - Proposed access easement in favour of severed land, Subject to easement in gross as in PR3548763, subject to easement as in PR2195765 & LT1714750	28
6	Part of the retained lands - Proposed access easement, proposed easement and subject to easement in gross as in PR3548763.	100
7	Part of the retained lands - Proposed easement and subject to easement in gross as in PR3548763.	76
8	Part of the retained lands - Proposed access easement and subject to easement in gross as in PR3548763.	10
9	Part of the retained lands - Proposed easement and Subject to easement in gross as in PR3548763.	10
10	Part of the retained lands - Proposed easement, proposed access easement and Subject to easement in gross as in PR3548763.	2
11	Part of the severed lands - Proposed easement and Subject to easement in gross as in PR3548763.	3
12	Part of the severed lands - Subject to easement in gross as in PR3548763.	5113
13	Part of the severed lands - Subject to easement in gross as in PR3548763 & PR2897231, subject to easement as in PR2195765.	3
14	Part of the severed lands - Proposed access easement in favour of retained land, Subject to easement in gross as in PR3548763 & PR2897231, subject to easement as in PR2195765.	0.1
15	Part of the severed lands - Proposed access easement in favour of retained land, Subject to easement in gross as in PR3548763 & PR2897232, subject to easement as in PR2195765.	9
16	Part of the severed lands - Proposed access easement in favour of retained land, Subject to easement in gross as in PR3548763 & PR2897231, subject to easement as in PR2195765.	18
17	Part of the severed lands - Proposed access easement in favour of retained land, Subject to easement in gross as in PR3548763, subject to easement as in RO597132	34
18	Part of the severed lands - Proposed access easement in favour of retained land, Subject to easement in gross as in PR3548763, subject to easement as in PR627395 & RO597132	29
19	Part of the severed lands - Proposed access easement in favour of retained land, Subject to easement in gross as in PR3548763	3
20	Part of the severed lands - Proposed access easement in favour of retained land, Subject to easement in gross as in PR3548763 & PR2897232, subject to easement as in PR2195765 and LT1714750	9
21	Part of the severed lands - Proposed access easement in favour of retained land, Subject to easement in gross as in PR3548763, subject to easement as in LT1714750, PR627395 & RO597132	14
22	Part of the severed lands - Proposed access easement in favour of retained land, Subject to easement in gross as in PR3548763 & PR2897231, subject to easement as in PR2195765 and LT1714750	12
23	Part of the severed lands - Proposed access easement in favour of retained land, Subject to easement in gross as in PR3548763, subject to easement as in PR2195765 and LT1714750	336
24	Part of the severed lands - Proposed access easement in favour of retained land, Subject to easement in gross as in PR3548763, subject to easement as in PR2195765.	268
25	Part of the severed lands - Proposed access easement in favour of retained land, Subject to easement in gross as in PR3548763 & PR2897232, subject to easement as in PR2195765 and LT1714750	4
26	Part of the severed lands - Proposed access easement in favour of retained land, Proposed easement, Subject to easement in gross as in PR3548763, subject to easement as in PR2195765.	2
27	Part of the severed lands - Proposed access easement in favour of retained land, Subject to easement in gross as in PR3548763 & PR2897232, subject to easement as in PR2195765.	10

Part of the severed lands - Proposed parking easement and subject to easement in gross as in PR3548763.

Part of the severed lands - Proposed access easement and subject to easement in gross as in PR3548763.

Part of the severed lands - Proposed easement, proposed access easement and subject to easement in gross as in

Part of the severed lands - Proposed access easement, subject to right of way as in PR2195765 and PR627395 and

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42

PR3548763.

subject to easement in gross as in PR3548763.

369

402

0.05

Note:

Retained lands are comprised of Part of Lot 5, Concession 7 Northern Division (Geographic Township of Toronto Gore, County of Peel) described as Parts 1, 2, 3, 4, 5, 6, 7, 8, 9 and 10 on Plan 43R-XXXXXXX in the City of Brampton, Regional Municipality of Peel

Area of Retained Lands:

Frontage of Retained Lands: 90.31

6419 sq.m.

Severed lands are comprised of Part of Lot 5, Concession 7 Northern Division (Geographic Township of Toronto Gore, County of Peel) described as Parts 11 to 41 (both inclusive) on Plan 43R-XXXXXX in the City of Brampton, Regional Municipality of Peel

Area of Severed Lands: 7716 5

7722.95 sq.m.

Frontage of Severed Lands: 9.08m (Minimum is 50 m)

TOTAL AREA: 1.413 Ha

 ${\bf CAUTION: Areas \ subject \ to \ change \ upon \ completion \ of \ final \ Survey. }$

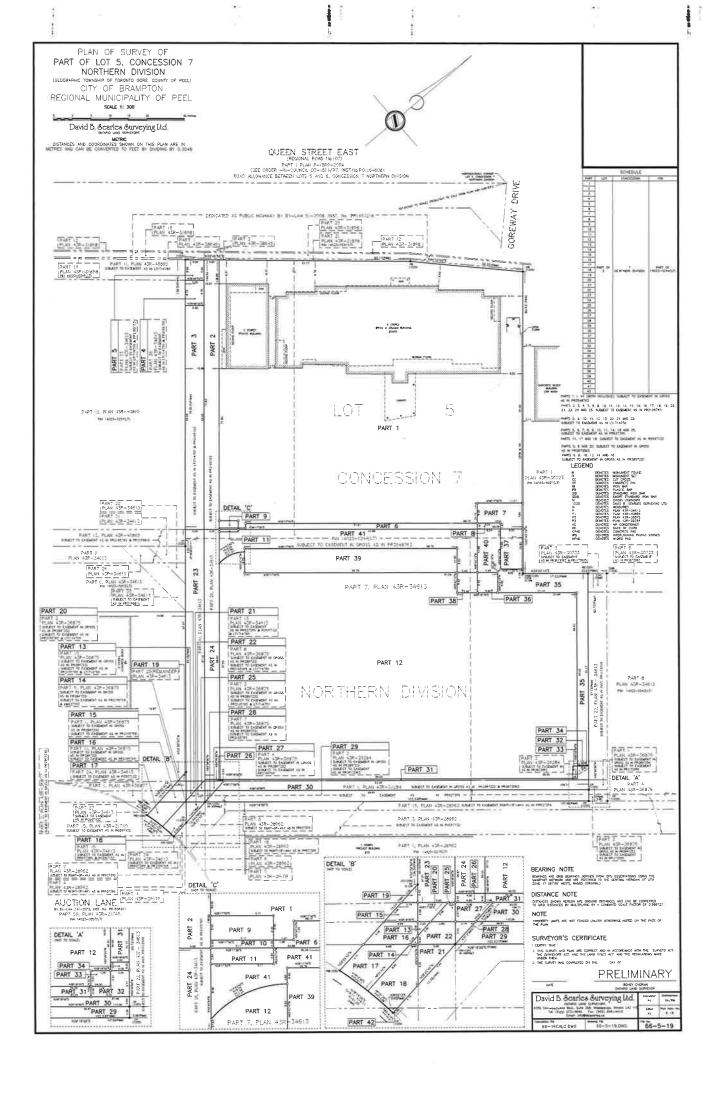
ZONING: Category Commercial, Type SC, Special Section 1923

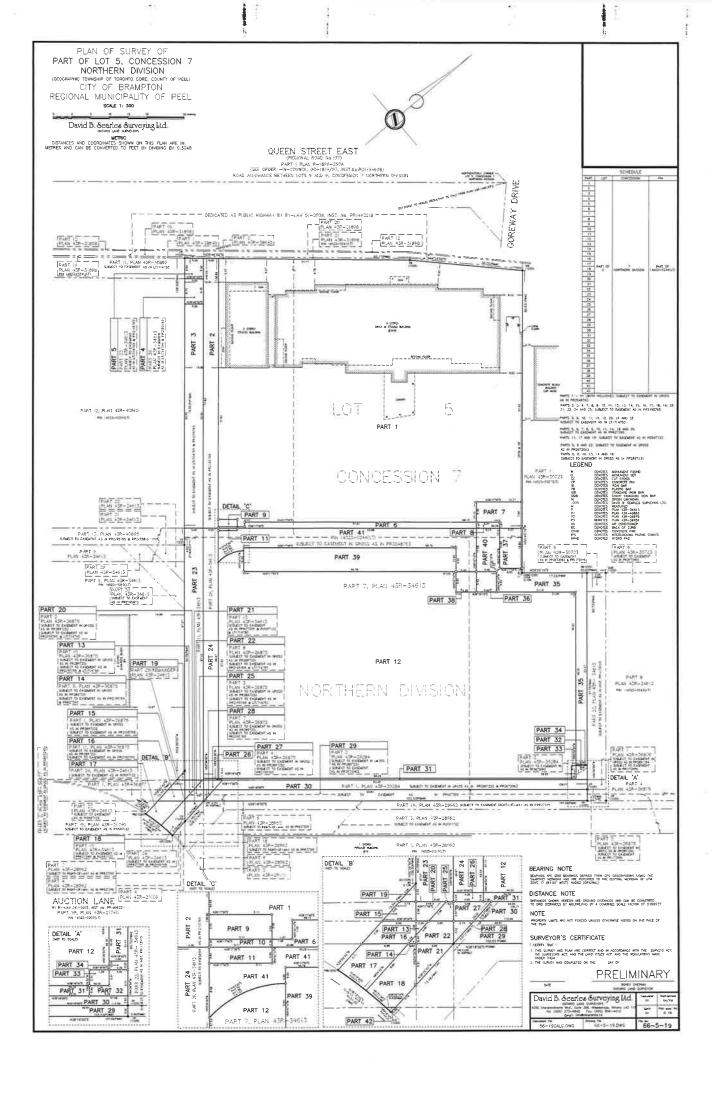
David B. Searles Surveying Ltd.

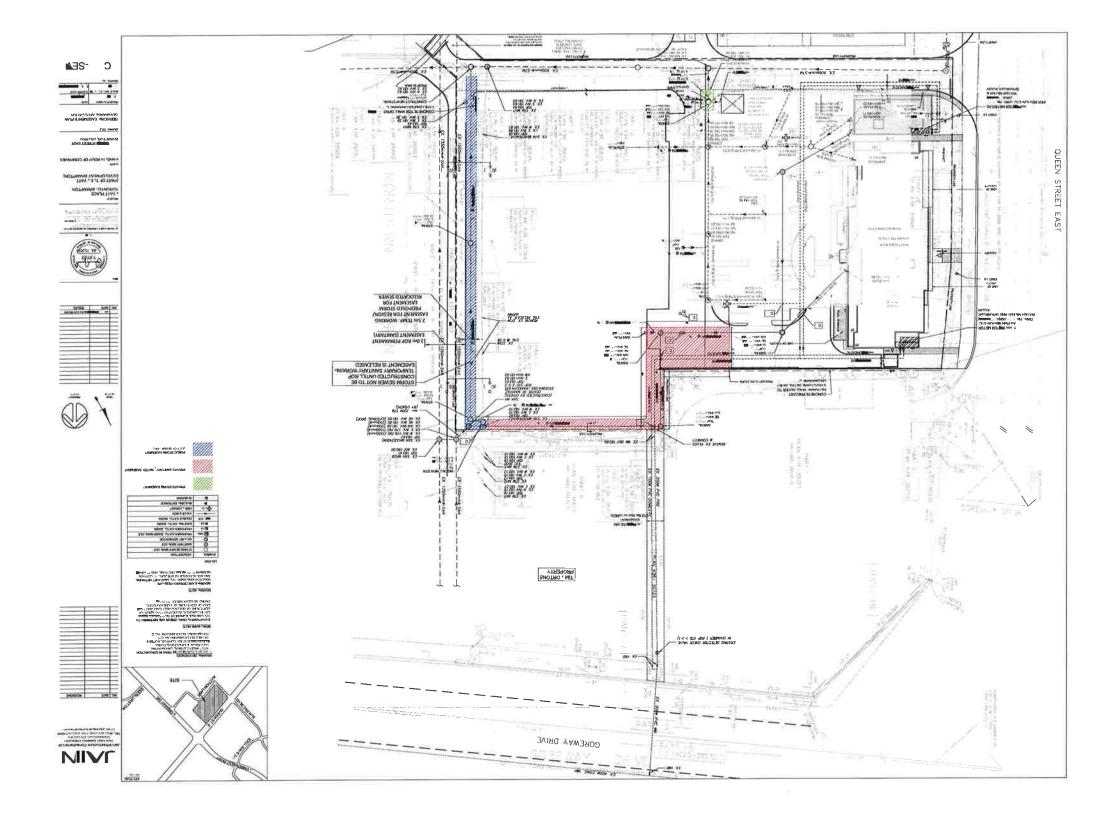
Boney Cherian, O.L.S.

REVISIONS:

1 Adjust severance limit per clients request, update plan and summary accordingly









Flower City



For Office Use Only
(to be inserted by the Secretary-Treasurer after application is deemed complete)

FILE NUMBER: A 2004

The Personal Information collected on this form is collected pursuant to section 45 of the Planning Act and will be used in the processing of this application. Applicants are advised that the Committee of Adjustment is a public process and the information contained in the Committee of Adjustment files is considered public information and is available to anyone upon request and will be published on the City's website. Questions about the collection of personal information should be directed to the Secretary-Treasurer, Committee of Adjustment, City of Brampton.

	Minor Variance o	<u>ICATION</u> r Special Permis	ssion			
		10 ⁻ - 0 - 0	331011			
TE: It is required that this application be filed with the Secretary-Treasurer of the Committee of Adjustr accompanied by the applicable fee.						
The under the <u>Planni</u>	rsigned hereby applies to the Commiting Act, 1990, for relief as described	ttee of Adjustment for the 0 in this application from By-	City of Brampton under section 45 o -Law 270-2004.			
Phone # Email	416-565-0205 sgandhi905@hotmail.com	Fax #	NA .			
Phone # Email	647-963-7375 nick@harperdell.ca	Fax #	NA			
		nces requested):				
-	- harden	Consent to Sever ap	plication.			
		· ·	•			
	The under the Plann Name of Address Phone # Email Name of Address Phone # Email Nature ar Racking Deficient	(Please real this required that this application be filed with the accompanied by the applicable fee. The undersigned hereby applies to the Committhe Planning Act, 1990, for relief as described as described to the Planning Act, 1990, for relief as described as des	(Please read Instructions) It is required that this application be filed with the Secretary-Treasurer of accompanied by the applicable fee. The undersigned hereby applies to the Committee of Adjustment for the the Planning Act, 1990, for relief as described in this application from By. Name of Owner(s) 2514682 Ontario Inc. c/o Surinder Sharma Address 14 Leone Lane Brampton Ontario L6P 0K9 Phone # 416-565-0205 Fax # Email Sgandhi905@hotmail.com Fax # Phone # 47-963-7375 Fax # Email Nature and extent of relief applied for (variances requested):			

	To allo	W 9.00	3 IOT WIGTN W	nere 50	metres is required.	
4.	Recipro	al easen	ple to comply with nents for access	s, servicing,	and parking will be combine	to maintain the
	intent of	the Zonii	ng Bylaw; lack c	f adverse in	mpact is conducive to a suppo	ortive variance.
5.	Lot Numb Plan Num	ber/Conc	of the subject land	to the payer had	as al Timoria (des Causas diffrant amenina na Pierra J. 3 to Nationa esclusivo). 22. 23	and 24 on Plan ASHANAAAA in mis City of Beardon
6.	Dimensio Frontage Depth Area	9.08m	ect land (in metric	units)		
7.	Provincia Municipa	l Highway	intained All Year		Seasonal Road Other Public Road Water	

8,	land: (specify <u>i</u>	<u>n metric units g</u>	d structures on or proposed for the subject pround floor area, gross floor area, number of tc., where possible)
		S/STRUCTURES on t	he subject land: List all structures (dwelling, shed, gazebo, etc.)
	vacani, paniai pan	King lot	
	PROPOSED BUILDIN	IGS/STRUCTURES o	n the subject land:
9.	Location of all t	ouildings and st e from side, rea	ructures on or proposed for the subject lands: r and front lot lines in <u>metric units</u>)
	EXISTING Front yard setback Rear yard setback Side yard setback	NA	
	PROPOSED Front yard setback Rear yard setback Side yard setback Side yard setback	NA	
10.	Date of Acquisition o	f subject land:	August 4th 2017
11.	Existing uses of subj	ect property:	Vacant and Hyatt Hotel
12.	Proposed uses of su	bject property:	Vacant (Severed) Hyatt Hotel (Retained)
13.	Existing uses of abu	tting properties:	Gas Station, Event Centre, Youth Shelter
14.	Date of construction	of all buildings & str	uctures on subject land: August 16th 2022
15.	Length of time the ex	cisting uses of the su	bject property have been continued: <u>Unknown</u>
16. (a)	What water supply is Municipal / Well	existing/proposed?	Other (specify)
(b)	What sewage dispos Municipal ✓ Septic	al is/will be provided 	Other (specify)
(c)	What storm drainage Sewers Ditches Swales	system is existing/p	oroposed? Other (specify)

17,	Is the subject property the subject of a subdivision or consent?	an application under the Planning Act, for approval of a plan of
	Yes No 🗸	
	If answer is yes, provide details:	ile#Status
18.	Has a pre-consultation application bee	n filed?
	Yes No 🔽	
19.	Has the subject property ever been the	subject of an application for minor variance?
	Yes No No	Unknown
	If answer is yes, provide details:	
	File # Decision File # Decision	ReliefRelief
	File # Decision	Relief
		Signature of Applicant(s) or Authorized Agent
DAT	ED AT THE CITY OF	Braneton
THIS	14th DAY OF JUNE	. 20 24 .
IF THIS A	PPLICATION IS SIGNED BY AN AGENT,	, SOLICITOR OR ANY PERSON OTHER THAN THE OWNER OF
THE APP	LICANT IS A CORPORATION, THE AP	N OF THE OWNER MUST ACCOMPANY THE APPLICATION. IF PPLICATION SHALL BE SIGNED BY AN OFFICER OF THE
	ATION AND THE CORPORATION'S SEAL	
1	Nicholas Dell	OF THE City OF Mississauga
IN THE	Pegion OF Peel	SOLEMNLY DECLARE THAT:
ALL OF T BELIEVIN	HE ABOVE STATEMENTS ARE TRUE AN	SOLEMNLY DECLARE THAT: OBJECT OF THE SAME FORCE AND EFFECT AS IF MACHINESIONER, etc.,
OATH.	Î	Province of Ontario,
DECLARE	D BEFORE ME AT THE	101 70-
LITY	of Brampton	City of Brampton Expires S
IN THE	Region of	Expires September 20, 202
Heel	THIS DAY OF	Sill
- 14	re kody /	Signature of Applicant or Authorized Agent
V		
	A Commissioner etc.	
	FOR O	OFFICE USE ONLY
	Present Official Plan Designation:	
	Present Zoning By-law Classification:	·
	This application has been reviewed with r	respect to the variances required and the results of the
		tlined on the attached checklist.
	Zoning Officer	Date
	DATE RECEIVED	une 14/24
	Date Application Deemed Complete by the Municipality	Revised 2022/02/17

PERMISSION TO ENTER

To: The Secretary-Treasurer
Committee of Adjustment
City of Brampton
2 Wellington Street West
Brampton, Ontario
L6Y 4R2
coa@brampton.ca

I/We, 2514682 Ontario Inc., c/o Surinder Sharma / SANJAY GAND H)

please print/type the full name of the owner(s)

the undersigned, being the registered owner(s) of the subject land, hereby authorize the Members of the City of Brampton Committee of Adjustment and City of Brampton staff members, to enter upon the above noted property for the purpose of conducting a site inspection with respect to the attached application for Minor Variance and/or consent.

Dated this 5th day of	June	, 20 <u>24</u> .
Sang C	Ca (s	ANJAY CANDHI)
(signature of the owner[s], or	where the owner is a firm or corporation,	the signature of an officer of the owner.)
1/161	and	
(where the owner is a f	frm or corporation, please print or type th	e full name of the person signing.)

NOTE: If the owner is a firm or corporation, the corporate seal shall be affixed hereto.

NO DISCUSSION SHALL TAKE PLACE BETWEEN THE COMMITTEE MEMBERS AND THE APPLICANT DURING THE SITE INSPECTION

APPOINTMENT AND AUTHORIZATION OF AGENT

To: The Secretary-Treasurer Committee of Adjustment City of Brampton 2 Wellington Street West Brampton, Ontario L6Y 4R2 coa@brampton.ca

LOCATION OF THE SUBJECT LAND: 3455 Queen Street East
I/We, 2514682 Ontario Inc. c/o Surinder Sharma /SANTAY GANDHI
please print/type the full name of the owner(s)
the undersigned, being the registered owner(s) of the subject lands, hereby authorize
Harper Dell & Associates Inc., c/o Nicholas H. Dell
please print/type the full name of the agent(s)
to make application to the City of Brampton Committee of Adjustment in the matter of an application for minor variance with respect to the subject land.
Dated this 5th day of June 2024.
(signature of the owner(s) or where the owner is a firm or corporation, the signature of an officer of the owner.)
Man and
(where the owner is a firm or corporation, please print or type the full name of the person signing.)
NOTE: If the owner is a firm or corporation, the corporate seal shall be affixed hereto.

NOTE: Unit owners within a Peel Standard Condominium Corporation are to secure authorization from the Directors of the Condominium Corporation in a form satisfactory to the City of Brampton, prior to submission of an application. Signatures from all Members of the Board of Directors are required.

Zoning Non-compliance Checklist

File No.

A-2024- 0234

Applicant:

2514682 Ontario Inc.

Address:

3455 Queen Street East

Zoning:

Service Commercial section 1923

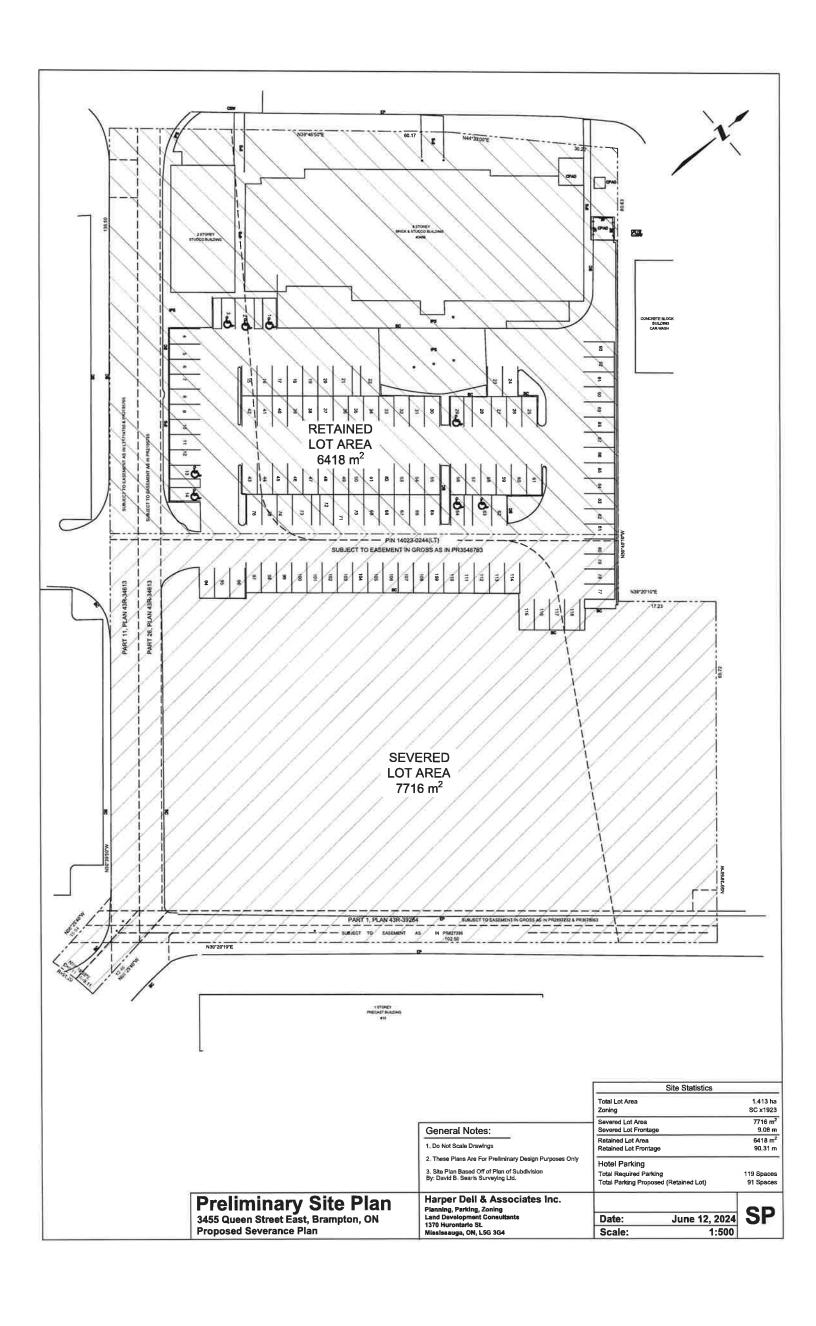
By-law 270-2004, as amended

SEVERED LOT

Category	Proposal	By-law Requirement	Section #
USE			
LOT DIMENSIONS AREA / DEPTH / WIDTH	To permit a lot width of 9.08 metres.	Whereas the by-law requires a minimum lot width of 50 metres.	1923.2(2)
BUILDING SETBACKS FRONT/ SIDE / REAR			
BUILDING SIZE			
SIDE DOOR			
COVERAGE			
PARKING			
DRIVEWAY			
ACCESSORY STRUCTURE			
ACCESSORY STRUCTURE SIZE / HEIGHT			
MULTIPLE ACCESSORY STRUCTURES			
DRIVEWAY WIDTH			
LANDSCAPE OPEN SPACE			
SCHEDULE 'C'			
FENCE HEIGHT	*		

Rose Bruno
Reviewed by Zoning

June 13, 2024 Date





2.0 STORMWATER MANAGEMENT CRITERIA AND METHODOLOGY

The existing storm infrastructure was developed based on the following SWM criteria.

- Water Quantity Control 100-year post-development peak flows to 2-year predevelopment levels for all storms
- Water Quality Control Long-term average removal of 80% of total suspended solids (TSS) on an annual loading basis from a minimum 90% of the runoff volume runoff leaving the site;
- Water Balance Control Retain first 5mm from each rainfall through on-site infiltration, filtration, evapo-transpiration and rainwater reuse;

2.1 Storm Water Quantity Control:

(a) Allowable discharge rate = 80.6 l/sec (b) Controlled Flow Rate = 46.0 l/sec

The runoff from the site has been overcontrolled with the help of an orifice pipe installed at Storm Manhole No. 1 (STMMH1). Orifice pipe will restrict the flow to 46.0 l/sec.

Required site storage was calculated at 428m³. The following storage capacities are available on site

No.	Туре	Storage Capacity (m ³)	Status		
1	Manholes/Pipes	31.3	Constructed		
2	Parking lot Ponding	148.5	Constructed		
3	Hotel Roof	58.0	Constructed		
4	Banquet Hall Roof	157.6	Not Constructed		
5	Parking Structure Roof	69.9	Not Constructed		
	Total	465.3			

Table 1- Onsite Detention Storage Capacity

Items 4 & 5 are within the severed parcel and will be redesigned to provide the required storage while ensuring that the total controlled flow of 46.0 l/sec is not exceeded. Using the area ratio of retained and severed parcel, a pro rata flow of 25.12 l/sec will be allowed from the severed parcel.

2.2 Storm water Quality Controls

A stormceptor model STC-750 with a calculated 85% removal efficiency was provided for a total site area of 1.46 ha. The severed parcel will be contain the proposed building roof which will generate clean water and not compromise the overall efficiency of the installed OGS unit.



2.3 Water Balance:

Site volume requirements for water balance were calculated at 5mm rainfall depth for the total catchment areas.

Water balance volume required = 1.46 ha. x (5mm/1000) x 0.79 = 57.6m³ Water balance volume provided:

- 1) Green Area: $1572 \text{ m}^2 \text{ x} (5\text{mm}/1000) = 7.8 \text{ m}^3$ 2) Paved Area: $6478 \text{ m}^2 \text{ x} (1\text{mm}/1000) = 6.5\text{m}^3$
- 3) Roof Area: $6546 \text{ m}^2 \text{ x} (1\text{mm}/1000) = 6.5\text{m}^3$
- 4) Infiltration Chamber: = 39m³
- 6) Total water balance provided for the site = 59.8 m^3

The severed parcel will contain a similarly sized building roof. A revised water balance calculation will be provided in detailed design to confirm conformance to original design.

2.4 Minor System Drainage

Site storm network has been designed to convey 2-yr post development peak flows from the site including the severed parcel. The site storm network will be reanalyzed for site flows which are not expected to change as the severed parcel is expected to contain roughly the same impervious area percentage as assumed for previous design.

3.0 SITE SERVICE CONNECTIONS

The following existing and new connections will be provided for the site services.

STORM: The severed parcel is proposed to be connected to the existing STM MH1as shown in Figure 2 and Drawing C101-SEV (Appendix A).

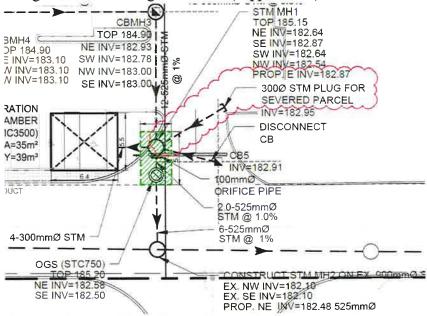
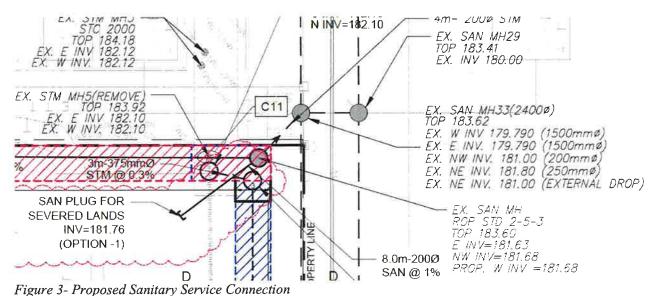


Figure 2- Proposed Storm Service Connection



SANITARY: The severed parcel is proposed to be connected to the existing sanitary control manhole as shown in Figure 3 and Drawing C101-SEV (Appendix A). Initial consultation with the Region has been carried out which shows that it would be preferred to use the existing control manhole as connection point (OPTION-1). The other option (OPTION-2) would require a new connection to the 1350mm / 1500 mm dia trunk sewer pipes which is not allowed by the Region.



WATER: A new water service is proposed to be installed form the existing 400mm dia. watermain on Auction Lane as shown in Figure 4 and Drawing C101-SEV (Appendix A)

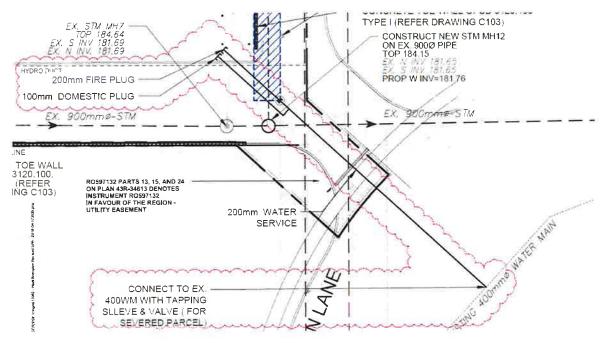


Figure 4- Proposed Water Service Connection



4.0 EROSION AND SEDIMENT CONTROL DURING CONSTRUCTION

An erosion and sediment control strategy will be implemented during the construction to mitigate the transportation of silt from the site. The following measures should be implemented with regular inspection and maintenance,

- Temporary silt fencing around the perimeter of the grading activities;
- Designated construction vehicle access should be laid with 50mm size rip rap as a vibration pad for mud tracking control;
- Erosion control measures to be removed only after the site is substantially stabilized with sod, and at the direction of the consultant or city staff.

5.0 CONCLUSIONS AND RECOMMANDATIONS

- The severed parcel post development flows will be controlled to conform to the overall controlled through roof control as per previous design.
- Existing Quality control provision through OGS unit will be reanalyzed for removal efficiency and conformance with original design.
- Minor storm sewer network will be reanalyzed for carrying capacity and conformance with original design.
- Overland flow route through the site will be maintained to ensure that major overland flows are safely carried through the site.
- Erosion control such as installation of temporary silt fence, mud matt & rock check dams are recommended to minimize off-site sediment transport.

We trust you will find this submission complete and in order. Should you have any questions, please contact the undersigned.

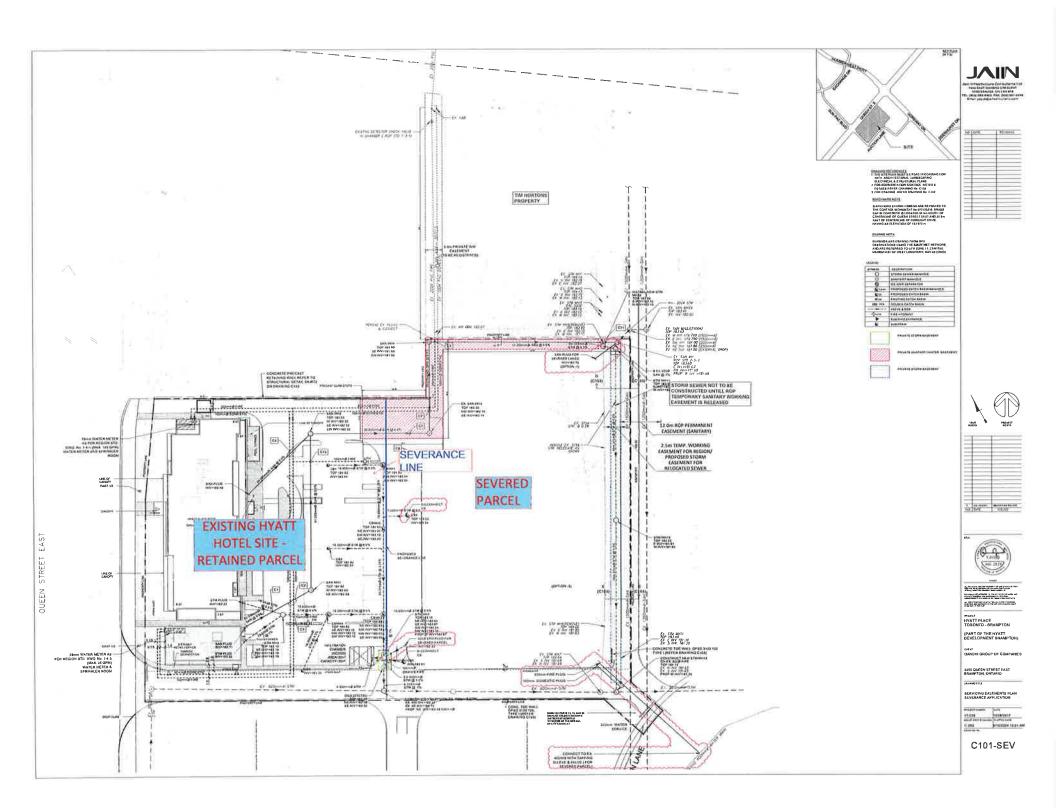
Respectfully Submitted,

Jain Infrastructure Consultants Ltd.

Y.AYUB Y.AYUB

Yasar Ayub , P.Eng Project Manager Sep 09,2024

Appendix A Figures



Appendix B Original SWM Report Sep 12,2018

STORMWATER MANAGEMENT REPORT FOR

HYATT PLACE TORONTO-BRAMPTON BRAMPTON, ONTARIO

SEPTEMBER 12, 2018

Prepared by:



Jain Infrastructure Consultants Ltd. 7405 East Danbro Crescent, 2nd FLoor Mississauga, ON L5N 6P8 Tel: (905) 285-9900 X 225 Fax: (905) 567-5246



1.0 INTRODUCTION:

The purpose of this report is to present the connections for sanitary sewage disposal, water distribution, storm drainage and appropriate measures to mitigate the impact of runoff with the proposed redevelopment. Adequacy of the pipe sizes to convey 2-year storm flows from the development is analysed for existing system and proposed network.

The subject site is located south of Queen Street East and north of Auction lane, Brampton as shown in Fig. 1.



Figure 1 - Site Location Plan

2.0 BACKGROUND OF THE PROJECT:

A legal and topographic survey has been prepared by David B. Searless Surveying Company dated August 26, 2016 which identifies the site as the part of Lot 5, Concession 7, Northern Division, City of Brampton.

The site has approximately 1.46 ha area, a vacant land covered with grass and trees. It is proposed to redevelop the site for construction of a hotel, a banquet hall, a parking structure and parking lot.

New buildings ground floor levels are proposed at 185.50m. The existing grades around the site are proposed to be matched at the boundary limits. Proposed site servicing, grading and storm drainage plans are submitted separately as full-size drawings with this report.

Potential stormwater management (SWM) strategies to mitigate any potential impacts per City of Brampton design guidelines are presented in the report. New site servicing requirements for sanitary and water supply will also be discussed in following sections.



2.1 EXISTING SERVICES:

The following municipal services will provide connections for the site:

- An existing 1350mm dia. sanitary sewer is located on the east site of property.
- An existing 400mm dia. watermain is located on Auction lane.
- An existing 900mm dia. storm sewer is located on south easement.

3.0 STORMWATER MANAGEMENT CRITERIA AND METHODOLOGY

The proposed development shall follow the respective criteria/guidelines of the City of Brampton. The criteria for small new developments (residential & non-residential) - total site area less than 5.0 ha are summarized below:

- Water Quantity Control The required level of Control 100-year post-development peak flows to 2-year pre-development levels for all storms;
- Water Quality Control long-term average removal of 80% of total suspended solids (TSS) on an annual loading basis from a minimum 90% of the runoff volume runoff leaving the site;
- Water Balance Control Retain first 5mm from each rainfall through on-site infiltration, filtration, evapo-transpiration and rainwater reuse;

3.1 Storm Water Runoff Coefficients

Pre-development runoff coefficients are calculated based on existing site conditions shown in Figure DR101, Appendix A. Post development runoff coefficients are calculated as per proposed landuse as shown in Figure DR102, Appendix A. Calculations for pre-and post-development imperviousness are given in Appendix B and are summarized below:

Table 1 - Runoff Coefficients

Drainage Area (Hectare)	Runoff coefficient 'C' (Pre-development)	Runoff coefficient 'C' (Post-development)		
4.16	0.25	0.79		



3.2 Pre and Post Development Flow

Peak flow rates under the pre and post development conditions are computed using IDF curves and Rational Method. Detail calculations are attached in Appendix B and are summarized below:

Table 2 - Pre and Post Development Site Flows

Peak Flow	Return Period (yr.)	Flow (l/sec)
Pre-development	2	80.6
Post-Development	100	561.6

3.2.1 Pre and Post Development Flows to Queen Street R.O.W

As shown in Drawing DR101 & DR102, the area EX1 flowing towards Queen street has decreased in the proposed development. The pre and post development have been calculated in response to Region's comments for 2-100 yr return periods and shown in Table 2.1 below.

Table 2.1 - Pre and Post Development Flows towards Queen Street

				Flows (I/sec)					
Stage	Catchmen t	Area (m²)	Runoff Coefficien t	2 - Years	5- Years	10 - Years	25 - Years	50 - Year s	100- Years
Pre Development	EX1	1847	0.25	9.2	12.1	14.1	16.6	18.4	20.3
Post Development	EX1	527	0.25	2.9	3.8	4.5	5.3	5.8	6.4

4.3 Water Quantity Control

Allowable discharge rate is calculated as follows:

- (a) 2-yr Pre-development peak = 80.6 l/sec (Appendix B, Calculation Sheet B-1)
- (b) Allowable discharge rate = 80.6 l/sec
- (c) 100-yr Post development flow = 561.6 l/sec (Appendix B, Calculation Sheet 2)

4.3.1 Orifice Control:

The runoff from the site is controlled with the help of an orifice pipe installed at Storm Manhole No. 1 (STMMH1). Orifice Sizing Calculations attached in Table C5, Appendix C shows that a 100-mm dia. Orifice pipe will restrict the flow to 46.0 l/sec.



4.3.2 Roof Control

Flow will be detained on the roof by installing parabolic weirs, (Zurn Z105 Control Flo Roof Drain). Drain specs are attached in Appendix E. Proposed numbers of roof drains and limiting flow rates are calculated and summarized in Table 3.

Table 3- Roof Drains summary

Roof ID	Surface Area (m²)	Number of Drains	Flow (l/sec)		
Hotel Roof	1313	3	3.75		
Banquet Hall Roof	3300	6	5.00		
Parking Structure Roof	1482	2	2.50		

4.3.3 Storage for Quantity Control:

Storm events from 2-yr unto 100-yr indicates that maximum required amount of storage is 428m³. (Refer: Table C1, Appendix C)

Onsite detention storage is provided as roof retention, parking lot ponding and storage in manholes and pipes as shown in Drawing C102. Detention storage calculations are attached in Appendix C and summarized in Table 4 below:

Table 4- Onsite Detention Storage Capacity

Tag	Storage Capacity (m ³)	Depth of Ponding (mm)		
Manholes/Pipes	31.3	N/A		
Parking lot Ponding	148.5	300		
Hotel Roof	58.0	177		
Banquet Hall Roof	157.6	145		
Parking Structure Roof	69.9	141		
Total	465.3			

The available onsite detention storage capacity (465.3m^3) will exceed the required storage capacity (428 m^3) as calculated in Table C1 Appendix C.

4.4 Storm water Quality Controls

Long term average removal of 80% of Total Suspended Solids (TSS) on an annual basis from 90% all runoff leaving the site is required. Quality control will be achieved by using soft landscape areas and oil/grit separator. Oil/grit separator's overall TSS removal from runoff leaving the site is will be 85%. Details are presented in Appendix F. Removal of TSS in Green areas and roof is 100%. The overall TSS removal is 93.3%. The summary of total TSS is shown in Table 4 below:



Table 4- TSS removal

Surface	Treatment Method	Area (m3)	Effective TSS Removal	% Area of Site	Overall TSS Removal (%)
Green Area	Inherent	1575	100	10.8	10.8
Rooftop	Inherent	6546.9	100	44.8	44.8
Asphalt/Concret e	ogs	6478.7	85	44.4	37.7
Tota	I	14600.6		100.0	93.5

4.5 Water Balance:

Site volume requirements for water balance is calculated at 5mm rainfall depth for catchment areas.

Water balance volume required = 1.46 ha. x (5mm/1000) x 0.79 = 57.6m³

Water balance volume provided:

1) Green Area: $1572 \text{ m}^2 \text{ x } (5 \text{mm}/1000) = 7.8 \text{ m}^3$

2) Paved Area: $6478 \text{ m}^2 \text{ x} (1 \text{mm}/1000) = 6.5 \text{m}^3$

3) Roof Area: $6546 \text{ m}^2 \text{ x} (1 \text{mm}/1000) = 6.5 \text{m}^3$

4) Infiltration Chamber: $= 39 \text{m}^3$

6) Total water balance provided for the site = 59.8 m^3

Storm Chamber specs are attached in Appendix G.

4.6 Minor System Drainage

Site storm network has been designed to convey 2-yr post development peak flows. Design calculations are provided in Appendix D and show on Drawing C101.

4.7 Major System Drainage

The overland flow will not impact the buildings since the grading of the site ensures storm flows greater than 100 years will be able to flow overland through the site without any impact to proposed buildings and adjacent site.



5.0 EROSION AND SEDIMENT CONTROL DURING CONSTRUCTION

An erosion and sediment control strategy will be implemented during the construction to mitigate the transportation of silt from the site. Drawing C103 shows the silt fence and sediment control measures. The following measures should be implemented with regular inspection and maintenance,

The following measures should be implemented with regular inspection and maintenance,

- Temporary silt fencing around the perimeter of the grading activities;
- Designated construction vehicle access should be laid with 50mm size rip rap as a vibration pad for mud tracking control;
- Erosion control measures to be removed only after the site is substantially stabilized with sod, and at the direction of the consultant or city staff.

5.0 CONCLUSIONS AND RECOMMANDATIONS

- The site post development flows will be controlled to less than pre development levels by orifice pipe and upstream temporary detention storage on roof and parking.
- Quality control will be achieved through soft landscaped areas and oil/grit separator.
- Minor storm sewer network has been designed to connect to existing sewers in accordance with city storm sewer design standards.
- Overland flow route through the site ensures that major overland flows are safely carried through the site.
- Erosion control such as installation of temporary silt fence, mud matt & rock check dams are recommended to minimize off-site sediment transport.

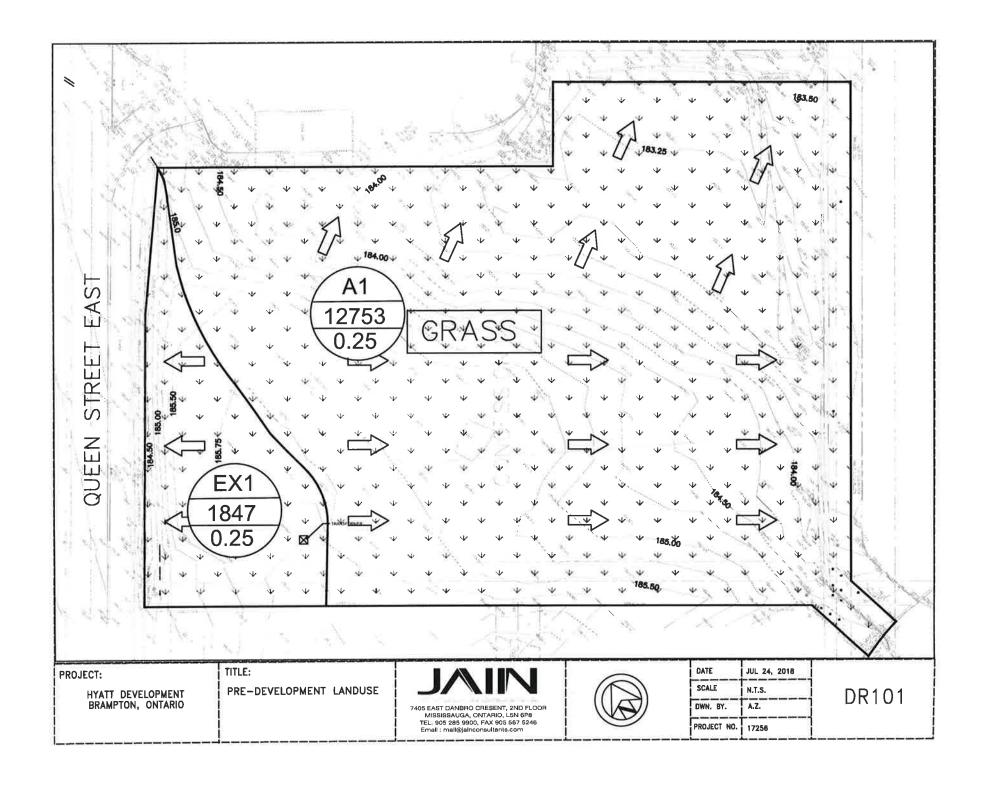
We trust you will find this submission complete and in order. Should you have any questions, please contact the undersigned.

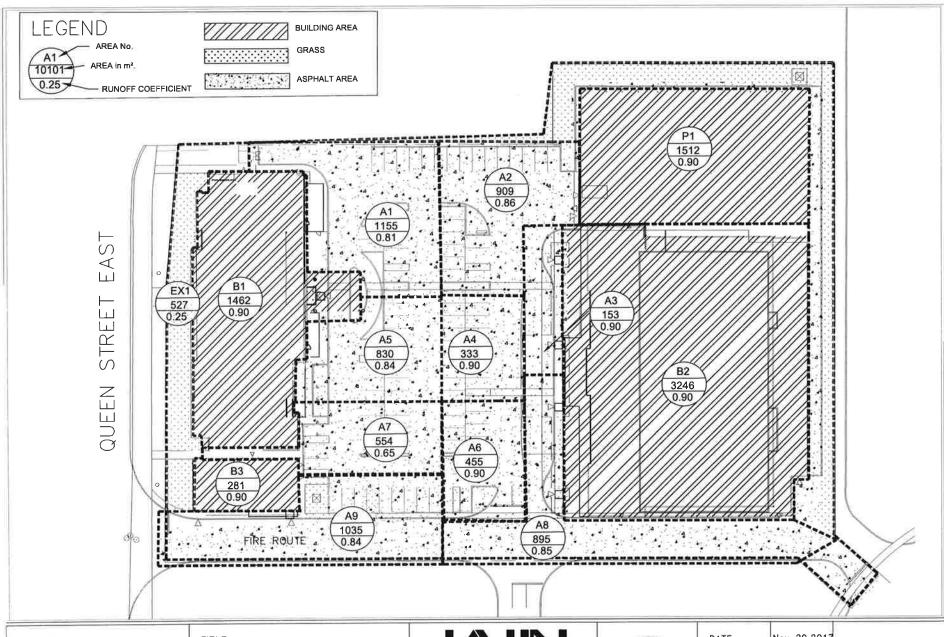
Respectfully Submitted,

Jain Infrastructure Consultants Ltd.

Yasar Ayub , P.Eng Project Manager Sep12, 2018

Appendix A Figures





PROJECT:

HYATT DEVELOPMENT BRAMPTON, ON

TITLE:

POST-DEVELOPMENT LANDUSE



7405 EAST DANBRO CRESENT, 2ND FLOOR MISSISSAUGA, ONTARIO, L5N 8P8 TEL. 905 285 9900, FAX 905 567 5246 Emall: :mall@jainconsultants.com



DATE	Nov 29,2017
SACLE	N.T.S.
DWN BY:	A.Z.
PROJECT No.	17256

DR102

Appendix B Peak Flow Calculation

Calculation Sheet B-1

(Pre-development)

Project:	Hyatt Development, Brampton,ON
Project No.	17-256
Prepared by	Jain Infrastructure Consultants Ltd.
Date:	5/9/2018

PRE DEVELOPMENT RUNOFF COFFICENT

AREA TYPE	AREA (M ²)	RUNOFF COEFFICIENT	AREA x C	
GREEN AREA	14600.00	0.25	3650.00	

ΣAREA X R

3650.00

WEIGHTED AVERAGE "R"

0.25

AREA "A" (Hectares)

1.46

Rainfall intensity : $I = A * t_c^B (mm/hr)$

Where:

tc =Time of concentration(hr)

Q = 2.78ACI/1000

Where:

Q= Volume of runoff (cubic meters per second)

A = Contributing Draingae Area (hectares)

I = rainfall intensity (mm/hr)

Return Period (Years)	2 -Years	5-Years	10 -Years	25 -Years	50 -Years	100-Years
A	22.1	29.9	35.1	41.6	46.5	51.3
В	-0.714	-0.701	-0.695	-0.691	-0.688	-0.686
t _c (mins)	10.00	10.00	10.00	10.00	10.00	10.00
l (mm/hr)*	79.43	104.99	121.93	143.48	159.52	175.36
Q (m ³ /sec)	0.08	0.11	0.12	0.15	0.16	0.18
Q (liters/sec)	80.6	106.5	123.7	145.6	161.9	177.9

Calculation Sheet B-2

(Post-development)

Project:	Hyatt Development, Brampton,ON
Project No.	17-051
Company:	Jain Infrastucture Consultnats Ltd.
Date:	5/9/2018

POST DEVELOPMENT RUNOFF COFFICENT

AREA TYPE	REA TYPE AREA (M ²) RUNOFF COEFFICIENT		AREA x C	
GREEN AREA	1749.00	0.25	437.25	
ASPHALT	6368.00	0.90	5731.20	
BUILDING	6483.00	0.90	5834.70	

ΣAREA X R

12003.15

WEIGHTED AVERAGE "R"

0.79

AREA "A" (Hectares)

1.46

Rainfall intensity : $I = A * t_c^B (mm/hr)$

Where:

tc =Time of concentration(hr)

Q = 2.78ACI/1000

Where:

Q= Volume of runoff (cubic meters per second)

A = Contributing Draingae Area (hectares)

I = rainfall intensity (mm/hr)

Return Period (Years)	2 -Years	5-Years	10 -Years	25 -Years	50 -Years	100-Years
Α	22.1	29.9	35.1	41.6	46.5	51.3
В	-0.714	-0.701	-0.695	-0.691	-0.688	-0.686
t _c (mins)	10.00	10.00	10.00	10.00	10.00	10.00
l (mm/hr)*	79.43	104.99	121.93	143.48	159.52	175.36
Q (m ³ /sec)	0.25	0.34	0.39	0.46	0.51	0.56
Q (liters/sec)	254.4	336.2	390.5	459.5	510.9	561.6

Appendix C

Detention Storage & Orifice Sizing Calculations

On-Site Storage Calculator

Project: Hyatt Place Toronto-Brampton **Brampton** By: AZ Table C1(Site) Date: 9-May-18 R =100 yr rainfall: 0.79 $i_{100} = 51.3t_c^{-0.686}$ mm/hr A =1.46 ha $Q_{release} =$ $0.046 \text{ m}^3/\text{s}$ 46.00 L/s Q₁₀₀ Q_{stored} T.C Peak Volume (m^3/s) (m^3/s) (m³)(min) (mm/hr) 5 282.121 0.904 0.858 257.365 10 175.359 0.516 309.499 0.562 341.469 15 132.779 0.425 0.379 20 363.865 108.999 0.349 0.303 25 0.300 0.254 380.481 93.528 30 82.532 0.264 0.218 393.164 35 74.250 0.238 0.192 402.969 40 67.751 0.217 0.171 410.560 45 0.154 62.492 0.200 416.388 50 58.135 0.186 0.140 420.772 55 54.455 0.174 0.128 423.947 60 51.300 0.164 0.118 426.094 65 427.354 48.559 0.156 0.110 70 46.152 0.148 0.102 427.839 *** 75 0.095 427.639 44.019 0.141 80 42.112 0.135 0.089 426.832 425.478 85 40.397 0.129 0.083 90 38.844 0.124 0.078 423.632 95 37.429 0.120 0.074 421.339 0.070 418.637 100 36.135 0.116 105 0.112 0.066 415.561 34.946 0.108 0.062 412.140 110 33.848 115 32.831 0.105 0.059 408.400 120 0.056 404.364 31.887 0.102 445 12.976 0.042 450.000 STORAGE VS 400.000 350.000 300.000 300.000 250.000 200.000 150.000 100,000 50.000

TIME (MINUTE)

5 15 25 35 45 55 65 75 85 95 105 115 445 455 465

On-Site Storage

 Calculator
 Project: Hyatt Place Toronto-Brampton

Brampton	By: AZ
Table C2(Hotel Roof)	Date: 9-May-18

 Table C2(Hotel Roof)
 Date: 9

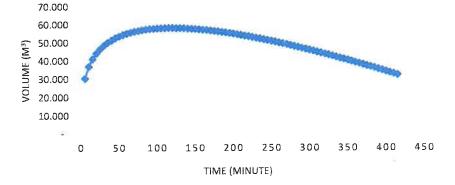
 R = 0.90
 100 yr rainfall:

 A = 0.15 ha
 ; -51.2 + -0.686

A = 0.15 ha $i_{100} = 51.3t_c^{-0.686} mm / hr$ $Q_{\text{release}} = 0.004 \text{ m}^3/\text{s}$

3.75 L/s Q_{100} Peak Volume T.C i₁₀₀ Q_{stored} (m³/s)(m³/s)(m³)(min) (mm/hr) 30.233 5 0.105 0.101 282.121 36.732 10 0.065 0.061 175.359 15 132.779 0.049 0.045 40.900 20 108.999 0.040 0.037 43.961 25 0.035 0.031 46.353 93.528 48.291 30 82.532 0.031 0.027 0.024 49.895 35 74.250 0.028 0.021 51.244 40 67.751 0.025 52.389 45 62.492 0.023 0.019 50 0.022 0.018 53.367 58.135 55 54.455 0.020 0.016 54.205 54.924 0.015 60 51.300 0.019 0.014 55.540 65 48.559 0.018 70 0.013 56.067 46.152 0.017 75 44.019 0.016 0.013 56.515 0.016 0.012 56.893 80 42.112 0.015 85 40.397 0.011 57.207 0.011 57.464 0.014 90 38.844 95 37.429 0.014 0.010 57.670 57.828 100 36.135 0.013 0.010 57.943 105 34.946 0.013 0.009 0.009 58.019 110 33.848 0.013 58.057 115 32.831 0.012 0.008 58.061 0.012 0.008 120 31.887 58.034 125 31.006 0.011 800.0

(STORAGE VS. TIME)



On-Site Storage Calculator

Brampton

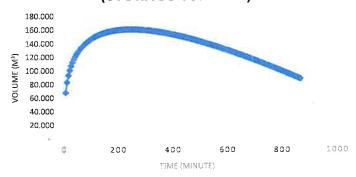
Project: Hyatt Place Toronto-Brampton

By: AZ ate: 9-Mav-18

	Table C3(Event Centre Roof)	Date: 9-May-18
R =	0.90	100 yr rainfall:
A =	0.33 ha	$i_{100} = 51.3t_c^{-0.686} mm/hr$
$Q_{\text{release}} =$	$0.005 \text{ m}^3/\text{s}$	100

		5.00 L/s				
T.C		i ₁₀₀	Q ₁₀₀	Q _{stored}	Peak Volume	
(min)		(mm/hr)	(m ³ /s)	(m ³ /s)	(m ³)	
	5	282.121	0.230	0.225	67.457	
	10	175.359	0.143	0.138	82.724	
	15	132.779	0.108	0.103	92.864	
	20	108.999	0.089	0.084	100.568	
	25	93.528	0.076	0.071	106.803	
	30	82.532	0.067	0.062	112.038	
	35	74.250	0.060	0.055	116.540	
	40	67.751	0.055	0.050	120.480	
	45	62.492	0.051	0.046	123.972	
	50	58.135	0.047	0.042	127.096	
	55	54.455	0.044	0.039	129.913	
	60	51.300	0.042	0.037	132.468	
	65	48.559	0.040	0.035	134.798	
	70	46.152	0.038	0.033	136.930	
	75	44.019	0.036	0.031	138.889	
	80	42.112	0.034	0.029	140.693	
	85	40.397	0.033	0.028	142.358	
	90	38.844	0.032	0.027	143.898	
	95	37.429	0.030	0.025	145.324	
•	100	36.135	0.029	0.024	146.646	
	105	34.946	0.028	0.023	147.873	
	110	33.848	0.028	0.023	149.013	
	115	32.831	0.027	0.022	150.071	
·	120	31.887	0.026	0.021	151.054	
	125	31.006	0.025	0.020	151.967	
	130	30.183	0.025	0.020	152.815	
	135	29.412	0.024	0.019	153.602	
	140	28.687	0.023	0.018	154.331	
	145	28.005	0.023	0.018	155.006	
	150	27.361	0.022	0.017	155.631	
	155	26.752	0.022	0.017	156.207	
	160	26.176	0.021	0.016	156.738	
•	165	25.629	0.021	0.016	157.226	
	170	25.110	0.020	0.015	157.673	***
	175	24.615	0.020	0.015	158.081	
	180	24.144	0.020	0.015	158.452	

(STORAGE VS. TIME)



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On-Site Storage

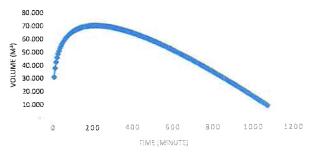
Calculator Brampton Project: Hyatt Place Toronto-Brampton

By: AZ Date: 9-May-18

	Table C4(Parking Stracture Ro	of) Date: 9-May-18
R =	0.90	100 yr rainfall:
A =	0.15 ha	$i_{100} = 51.3t_c^{-0.686} mm/hr$
$Q_{\text{release}} =$	$0.003 \text{ m}^3/\text{s}$	700 STISS _C
	2.50 L/s	

-	2.30 🖸				
T.C	i ₁₀₀	Q ₁₀₀	Q _{stored}	Peak Volume	
(min)	(mm/hr)	(m ³ /s)	(m ³ /s)	(m ³)	
5	282.121	0.105	0.102	30.608	
10	175.359	0.065	0.062	37.482	
15	132.779	0.049	0.047	42.025	
20	108.999	0.040	0.038	45.461	
25	93.528	0.035	0.032	48.228	
30	82.532	0.031	0.028	50.541	
35	74.250	0.028	0.025	52.520	
40	67.751	0.025	0.023	54.244	
45	62.492	0.023	0.021	55.764	
50	58.135	0.022	0.019	57.117	
55	54.455	0.020	0.018	58.330	
60	51.300	0.019	0.017	59.424	
65	48.559	0.018	0.015	60.415	
70	46.152	0.017	0.015	61.317	
75	44.019	0.016	0.014	62.140	
80	42.112	0.016	0.013	62.893	
85	40.397	0.015	0.012	63.582	
90	38.844	0.014	0.012	64.214	
95	37.429	0.014	0.011	64.795	
100	36.135	0.013	0.011	65.328	
105	34.946	0.013	0.010	65.818	
110	33.848	0.013	0.010	66.269	
115	32.831	0.012	0.010	66.682	
120	31.887	0.012	0.009	67.061	
125	31.006	0.011	0.009	67.409	
130	30.183	0.011	0.009	67.726	
135	29.412	0.011	0.008	68.016	
140	28.687	0.011	0.008	68.280	
145	28.005	0.010	0.008	68.519	
150	27.361	0.010	0.008	68.735	
155	26.752	0.010	0.007	68.929	
160	26.176	0.010	0.007	69.103	
165	25.629	0.009	0.007	69.257	
170	25.110	0.009	0.007	69.392	
175	24.615	0.009	0.007	69.510	
180	24.144	0.009	0.006	69.610	
185	23.695	0.009	0.006	69.695	
190	23.265	0.009	0.006	69.765	
195	22.854	0.008	0.006	69.819	
200	22.461	0.008	0.006	69.860	
205	22.083	800.0	0.006	69.887	
210	21.721	0.008	0.006	69.902	
215	21.374	0.008	0.005	69.904	•••
220	21.039	0.008	0.005	69.894	
225	20.717	0.008	0.005	69.872	

(STORAGE VS. TIME)



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ORIFICE SIZING CALCULATION

Table C5

Jain Infrastructure Consultants Ltd.

Project: Hyatt Place Toronto-Brampton

Date: May 9, 2018

Location	HWL	Orifice Inv.	c	a	g	Orifice dia.	h	Q
	(m)	(m)		(m²)		(m)	(m)	(m³/sec)
STM MH1	185.2	182.64	0.82	0.0079	9.81	0.1	2.56	0.046

Orifice Flow Equation:

 $Q=ca\sqrt{2gh}$

Where:

 $Q = Flow (m^3/sec)$

a = Orifice area (m²)

g = Gravitational Constant

h = Center line head (m)

Proposed Storage Calculator

Table C6

Project: Haytt Developent,
Project No.: 17-256

By: AZ **Date:** 30-Nov-17

CATCH BASIN/MH

Description	Length (m)	Width (m)	Height (m)	Volume (m³)
CB1	0.6	0.6	1.5	0.54
CB2	0.6	0.6	1.5	0.54
CB3	0.6	0.6	1.5	0.54
CB4	0.6	0.6	1.5	0.54
CB5	0.6	0.6	1.5	0.54
CBMH1	1.2	1.2	1.28	1.84
CBMH2	1.2	1.2	1.42	2.04
СВМН3	1.2	1.2	1.62	2.33
STM MH1	1.2	1.2	2.56	3.69
СВМН4	1.2	1.2	1.48	2.13
TOTAL				14.74

PIPES

FROM MH	то мн	Length (m)	DIA (m)	Volume (m3)
CB1	CBMH1	19	0.3	1.34
CBMH1	CBMH2	19	0.3	1.34
CB4	CBMH2	8	0.3	0.57
CB2	Pipe	19	0.3	1.34
CBMH2	СВМНЗ	25	0.375	2.76
CB3	CBMH4	16	0.3	1.13
BLDG PLUG	CB	21	0.3	1.48
СВМН4	СВМНЗ	19	0.3	1.34
CB5	STM MH1	8	0.3	0.57
Parking Stracture	CBMH1	21	0.3	1.48
Event Center	СВМНЗ	15	0.3	1.06
СВМН3	STM MH1	14	0.45	2.23
TOTAL				16.64

TOTAL VOLUME:

31.38 m3

Appendix D Storm Drainage Design Sheet

CITY OF BRAMPTON

ENGINEERING DEPARTMENT

STORM SEWER DESIGN SHEET

DESIGN STORM: 2 YEAR RETURN

10.00 minutes

R (2-YEAR):

Tc (start):

R=22.1(T)^-0.714, R in mm/hr, T in Hours

HYATT DEVELOPMENT, BRAMPTON, ONTARIO

Jain Infrastructure Consultants Ltd.						
PREPARED BY:	H.A					
FILE No.:	17-051					
DATE PREPARED	09-May-18					

	MANH	DLES	Α	R	AxR	ACC.	Tc	- 1	q	STC	ORM SEW	ER DESIG	N INFOR	MATION	TIME	
LOCATION	FROM	ТО	area	runoff		AxR			(2-YR)	size	slope	length	Q full	V full	SECT	REMARKS
	MH#	MH#	(ha)	coeff.			(min)	(mm/hr)	(l/s)	(mm)	(%)	(m)	(l/s)	(m/s)	(min)	
Parking	CB1	CBMH1	0.116	0.81	0.09	0.09	10.00	79.43	20.66	300	0.50	16.00	68.37	0.96	0.28	
Roof	Parking Structure	CBMH1	0.148	0.90	0.13	0.13	10.00	79.43	29.45	300	0.50	21.00	68.37	0.96	0.36	
Parking	CBMH1	CBMH2	0.091	0.86	0.08	0.31	10.28	77.90	66.07	300	0.75	19.00	83.74	1.18	0.27	
Parking	CB4	300mm φ Pipe	0.015	0.90	0.01	0.01	10.00	79.43	3.04	300	0.50	7.00	68.37	0.96	0.12	
Parking	CB2	375mm φ Pipe	0.083	0.84	0.07	0.07	10.00	79.43	15.40	300	0.50	16.00	68.37	0.96	0,28	
Parking	СВМН2	СВМНЗ	0.033	0.90	0.03	0.42	10.54	76.48	88.99	375	0.75	25.00	152	1.37	0.30	
Roof	Hotel	СВМН4	0.131	0.90	0.12	0.12	10.00	79.43	26.09	300	0.50	26.00	68	0.96	0.45	
Parking	СВЗ	CBMH4	0.104	0.84	0.09	0.09	10.00	79.43	19.20	300	0.50	19.00	68	0.96	0.33	
Parking	CBMH4	СВМНЗ	0.046	0.90	0.04	0.25	10.45	76.98	52.66	300	0.50	16.00	68	0.96	0.28	
Roof	Event Centre	СВМНЗ	0.326	0.90	0,29	0.29	10.00	79.43	64.77	300	0.50	15.00	68	0.96	0.26	
Parking	СВМНЗ	STM MH1	0.047	0.85	0.89	1.85	10.85	74.94	385.00	525	1.00	14.00	430	1,98	0.12	
Parking	CB5	STM MH1	0.090	0.85	0.08	0.08	10.00	79.43	16.80	300	0.50	6.00	68	0.96	0.10	
Parking	STM MH1	ogs	0.000	0.00	0.00	1.92	10.97	74.37	397.77	525	1.00	5.00	430	1.98	0.04	100mm φ Orifice Pipe
Parking	ogs	STM MH2	0.000	0.00	0.00	1.92	11.01	74.16	396.68	525	1.00	3.00	430	1.98	0.03	

Appendix E Flow Control Roof Drain



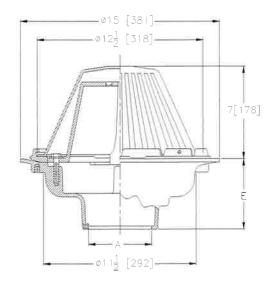
Z-105 CONTROL-FLO ROOF DRAIN w/ Parabolic Weir

SPECIFICATION SHEET

TAG_____



Dimensional Data (inches and [mm]) are Subject to Manufacturing Tolerances and Change Without Notice



A .	Approx.	Dome
Pipe Size Inches / [mm]	Wt. Lbs. / [kg]	Open Area Sq. In. / [sq cm
2 - 3 - 4	34	148
[51 - 76 - 102]	[15]	[955]

*REGULARLY FURNISHED UNLESS OTHERWISE SPECIFIED

ENGINEERING SPECIFICATION: ZURN Z-105 "Control-Flo" roof drain for dead -level roof construction, Dura-Coated cast iron body. "Control-Flo" weir shall be linear functioning with integral membrane flashing clamp/gravel guard and Poly-Dome. All data shall be verified proportional to flow rates.

OPTIONS (Check/specify appropriate options)

PIPE SIZE		(Specify size	e/type)	OUTLET	E BODY HT. DIM.
2,3,4 [50,75,100 2,3,4 [50,75,100 2,3,4 [50,75,100 2,3,4 [50,75,100	o] o]		IP NH	Inside Caulk Threaded No-Hub Neo-Loc	5 1/4 [133] 3 3/4 [95] 5 1/4 [133] 4 5/8 [117]
	D.C.C.I. Body with Poly-Dome* D.C.C.I. Body with Aluminum Don	ne			
-AR / C C C C C C C C C C	Naterproof Flange Acid Resistant Epoxy Coated Fini Underdeck Clamp Top Set® Roof Deck Plate (Repla C and -R) Adjustable Drain Riser Extension 3-5/8" [92] to 7-1/4" [184] Static Extension 1 [25] thru 4 [102] (\$ Adjustable Extension Assembly 1 3/4 [44] thru 3 1/2 [89]	ces both the	9	-EB -G -R -VP -90	Elevating Body Plate Galvanized Cast Iron Roof Sump Receiver Vandal Proof Secured Top 90° Threaded Side Outlet Body
			ſ	REV. A DA	TE: 09/14/05 C.N. NO. 89837

DWG. NO. 63601

PRODUCT NO. Z-105

Appendix F Stormceptor Sizing Summary





Brief Stormceptor Sizing Report - Hyatt - Parking

Project Name	Hyatt Place	Project Number	17-256	
City	Brampton	State/ Province	Ontario	
Country	Canada	Date	5/8/2018	
esigner Information		EOR Information (optional)		
Name	Yasar Ayub	Name		
Company	RRL	Company		
Phone #	416-668-6367	Phone #		
Email	yasara@reinders.ca	Email		

Stormwater Treatment Recommendation

The recommended Stormceptor Model(s) which achieve or exceed the user defined water quality objective for each site within the project are listed in the below Sizing Summary table.

Site Name	Hyatt - Parking	
Target TSS Removal (%)	80	
TSS Removal (%) Provided	85	
Recommended Stormceptor Model	STC 750	

The recommended Stormceptor Model achieves the water quality objectives based on the selected inputs, historical rainfall records and selected particle size distribution.

Stormceptor Sizing Summary				
Stormceptor Model	% TSS Removal Provided	% Runoff Volume Captured Provided		
STC 300	77	95		
STC 750	85	99		
STC 1000	85	99		
STC 1500	85	99		
STC 2000	87	100		
STC 3000	87	100		
STC 4000	89	100		
STC 5000	90	100		
STC 6000	91	100		
STC 9000	94	100		
STC 10000	93	100		
STC 14000	95	100		
StormceptorMAX	Custom	Custom		





Drainag	je Area	Water Qua	ality Objective	
Total Area (ha)	1.46	TSS Removal (%)	80.0
Imperviousness %	79.0	Runoff Volume Capture (%)		90.00
Rain	fall	Oil Spill Capture Vol	ume (L)	
Station Name	TORONTO CENTRAL	Peak Conveyed Flow Rate (L/s)		41.00
State/Province	Ontario	Water Quality Flow Rate (L/s)		
Station ID #	0100	Up Stream Storage		
Years of Records	18	Storage (ha-m) Discharge (rge (cms)
Latitude	45°30'N	0.000	0.000	
Longitude	90°30'W	0.045 0		0.040
		0.050	0.	041
		0.055	0.	041
		Up Stream	Flow Diversion	on
		Max. Flow to Stormce	otor (cms)	

Particle Size Distribution (PSD) The selected PSD defines TSS removal				
	Fine Distribution			
Particle Diameter Distribution Specific Gravit (microns) %				
20.0	20.0	1.30		
60.0	20.0	1.80		
150.0	20.0	2.20		
400.0	20.0	2.65		
2000.0	20.0	2.65		

Notes

- Stormceptor performance estimates are based on simulations using PCSWMM for Stormceptor, which uses the EPA Rainfall and Runoff modules.
- Design estimates listed are only representative of specific project requirements based on total suspended solids (TSS) removal defined by the selected PSD, and based on stable site conditions only, after construction is completed.
- For submerged applications or sites specific to spill control, please contact your local Stormceptor representative for further design assistance.

For Stormceptor Specifications and Drawings Please Visit: http://www.imbriumsystems.com/technical-specifications

Appendix G Storm Chamber



User Inputs

Chamber Model MC-3500 **Outlet Control Structure** Yes (Outlet) **Project Name** Brampton **Project Location** Toronto **Project Date** 07/12/2017

Abu Ziauddin **Engineer**

Measurement Type Metric

Required Storage Volume 35 cubic meters

Stone Porosity 40% Stone Above Chambers 305 mm. **Stone Foundation Depth** 229 mm. **Average Cover Over Chambers** 610 mm. **Design Constraint** Width **Design Constraint Dimension** 15 meters

Results

System Volume and Bed Size

Installed Storage Volume 39 cubic meters Storage Volume Per Chamber 5.0 cubic meters Storage Volume Per End Cap 1.3 cubic meters

Number Of Chambers Required 4 each **Number Of End Caps Required** 6 each

Rows/Chambers 1 row(s) of 2 chamber(s) Leftover Rows/Chambers 2 row(s) of 1 chamber(s)

7.20 meters **Maximum Length Maximum Width** 7.12 meters Approx. Bed Size Required 45 square meters

System Components

Amount Of Stone Required 60 cubic meters **Volume Of Excavation (Not Including** 75 cubic meters

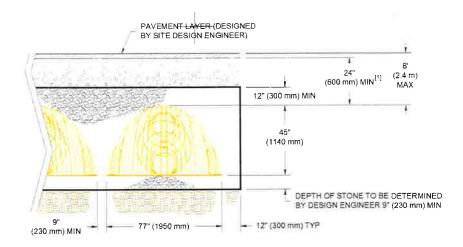
Non-woven Filter Fabric Required

Length Of Isolator Row 5.50 meters

Woven Isolator Row Fabric

139 square meters

18 square meters



[1] TO BOTTOM OF FLEXIBLE PAVEMENT FOR UNPAVED INSTALLATIONS WHERE RUTTING FROM VEHICLES MAY OCCUR, INCREASE COVER TO 30° (750 mm)

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STORMTECH MC-3500 CHAMBER

Designed to meet the most stringent industry performance standards for superior structural integrity while providing designers with a cost-effective method to save valuable land and protect water resources. The StormTech system is designed primarily to be used under parking lots, thus maximizing land usage for private (commercial) and public applications. StormTech chambers can also be used in conjunction with Green Infrastructure, thus enhancing the performance and extending the service life of these practices.

STORMTECH MC-3500 CHAMBER (not to scale)

Nominal Chamber Specifications

Size (LxWxH) 90" x 77" x 45" 2,286 mm x 1,956 mm x 1,143 mm

Chamber Storage 109.9 ft³ (3.11 m³)

Min. Installed Storage* 178.9 ft³ (5.06 m³)

Weight

134 lbs (60.8 kg)

Shipping

15 chambers/pallet 7 end caps/pallet 7 pallets/truck

*Assumes a minimum of 12" (300 mm) of stone above, 9" (230 mm) of stone below chambers, 9" (230 mm) of stone between chambers/end caps and 40% stone porosity.

STORMTECH MC-3500 END CAP (not to scale)

Nominal End Cap Specifications

Size (L x W x H)

26.5" x 71" x 45.1" 673 mm x 1,803 mm x 1,145 mm

End Cap Storage 14.9 ft³ (1.30 m³)

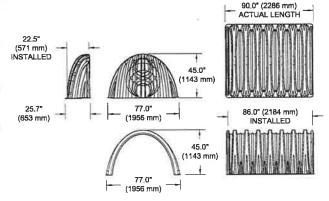
Min. Installed Storage*
46.0 ft³ (1.30 m³)

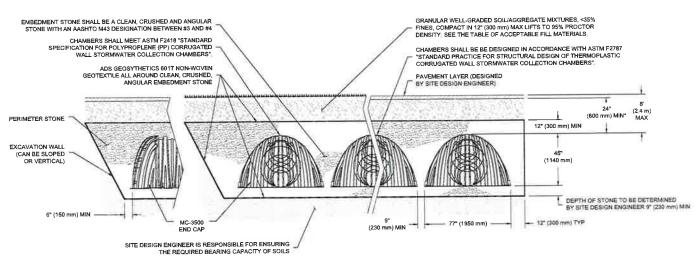
Weight

49 lbs (22.2 kg)

*Assumes a minimum of 12" (300 mm) of stone above, 9" (230 mm) of stone below, 6" (150 mm) of stone perimeter, 9" (230 mm) of stone between chambers/end caps and 40% stone porosity.











MC-3500 CHAMBER SPECIFICATION

STORAGE VOLUME PER CHAMBER FT3 (M3)

	Bare Chamber	Chamber and Stone Foundation Depth in. (mm)			
	Storage ft³ (m³)		12" (300 mm)	15" (375 mm)	18" (450 mm)
MC-3500 Chamber	109.9 (3.11)	178.9 (5.06)	184.0 (5.21)	189.2 (5.36)	194.3 (5.5)
MC-3500 End Cap	14.9 (.42)	46.0 (1.33)	47,7 (1.35)	49.4 (1.40)	51.1 (1.45)

Note: Assumes 9" (230 mm) row spacing, 40% stone porosity, 12" (300 mm) stone above and includes the bare chamber/end cap volume.

AMOUNT OF STONE PER CHAMBER

	Stone Foundation Depth			
ENGLISH TONS (yds ³)	9"	12"	15"	18"
MC-3500 Chamber	9.1 (6.4)	9.7 (6.9)	10.4 (7.3)	11.1 (7.8)
MC-3500 End Cap	4.1 (2.9)	4.3 (3.0)	4.5 (3.2)	4.5 (3.2)
METRIC KILOGRAMS (m³)	230 mm	300 mm	375 mm	450 mm
MC-3500 Chamber	8,220 (4.9)	8,831 (5.3)	9,443 (5.6)	10,054 (6.0)
MC-3500 End Cap	3,699 (2.2)	3,900 (2.3)	4,100 (2.5)	4,301 (2.6)

Note: Assumes 12" (300 mm) of stone above and 9" (230 mm) row spacing and 6" (150 mm) of perimeter stone in front of end caps.

VOLUME EXCAVATION PER CHAMBER YD3 (M3)

W. 188 (577)		Stone Foundation Depth			
	9" (230 mm)	12" (300 mm)	15" (375mm)	18" (450 mm)	
MC-3500 Chamber	12.4 (9.5)	12.8 (9.8)	13.3 (10.2)	13.8 (10.5)	
MC-3500 End Cap	4.1 (3.1)	4.2 (3,2)	4.4. (3.3)	4.5 (3.5)	

Note: Assumes 9" (230 mm) of separation between chamber rows and 24" (600 mm) of cover. The volume of excavation will vary as depth of cover increases.



Working on a project?
Visit us at www.stormtech.com
and utilize the StormTech Design Tool

For more information on the StormTech MC-3500 Chamber and other ADS products, please contact our Customer Service Representatives at 1-800-821-6710

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