FUNCTIONAL SERVICING AND STORMWATER MANAGEMENT REPORT

IN SUPPORT OF REZONING

31-33 George Street North and 18-28 Elizabeth Street North

City of Brampton
Region of Peel

8395 Jane Street, Suite 100
Vaughan, Ontario L4K 5Y2
Tel: (905) 326-1404

City File Number: OZS-2021-0053
File Number: 20101

Prepared For:

Greenwin Corp.

19 Lesmill Rd. Ave.
Toronto, ON, M3B 2T3

No.	Revision	Date
2	Issued for Rezoning	May 09, 2022
1	Issued for Rezoning	October 15, 2021

EXECUTIVE SUMMARY

This Functional Servicing and Stormwater Management Report ('FSSR') has been prepared on behalf of Greenwin Corp. in support of a rezoning application for 31-33 George Street North and 18-28 Elizabeth Street North. The subject site is approximately 0.605 ha and will form the boundary of the scope of the re-zoning application. This FSSR has been developed to consider the requirements of the consent application. This FSSR presents a site servicing strategy for the subject site that addresses the requirements of the applicable regulatory agencies and provides the basis for detailed servicing design. The site servicing strategy for the proposed development is summarized as follows:

WATER SERVICING:

- The proposed development is to be serviced by a new 150 mmø fire protection and domestic connection which will connect to an existing 150 mmø watermain on Elizabeth Street North. The new connection shall meet Region of Peel standards, specifically Public Works standard drawing 1-8-3.
- The water demand requirement for the proposed development for maximum day demand plus fire flow is **130.68 L/s.**

SANITARY SERVICING:

- The development is to be serviced by a new sanitary connection to the existing 250 mmø sanitary sewer located along the Elizabeth Street North.
- Based on the Region of Peel standard drawing 2-9-2, the peak sanitary design flow (including infiltration) for the proposed development is **27.22 L/s.**

STORMWATER SERVICING:

- An existing 600 mmø storm sewer along the northeast side of Elizabeth Street North that conveys flows southeast towards a 750 mmø storm sewer on Queen Street West
- Quantity – The subject site will require that the 100-year post-development flow rate be controlled to the 2-year pre-development flow rate. Quantity control will be provided on-site by approximately **205 m^3** of underground storage in combination with an inlet control, which considers some minor uncontrolled drainage to both the adjacent roads and the remainder of the overall site.
- Water Balance – The subject site will be required to retain/reuse 5mm of stormwater. A water balance volume of **30.3 m^3** is required and will be retained through the re-use of

stormwater internally within the building. Details of internal reuse are to be provided by the building design team during the site plan approval process.

- Quality – The subject site will be required to provide **80% TSS removal**. This objective will be achieved by the installation of storm filter within the underground stormwater tank.
- It is likely that all controls will be contained within the building structure, although the exact details will be determined during the building permit process.

GENERAL NOTES:

- The subject site's buildings will remain under a single ownership. As such, 1 set of service connections will be provided.

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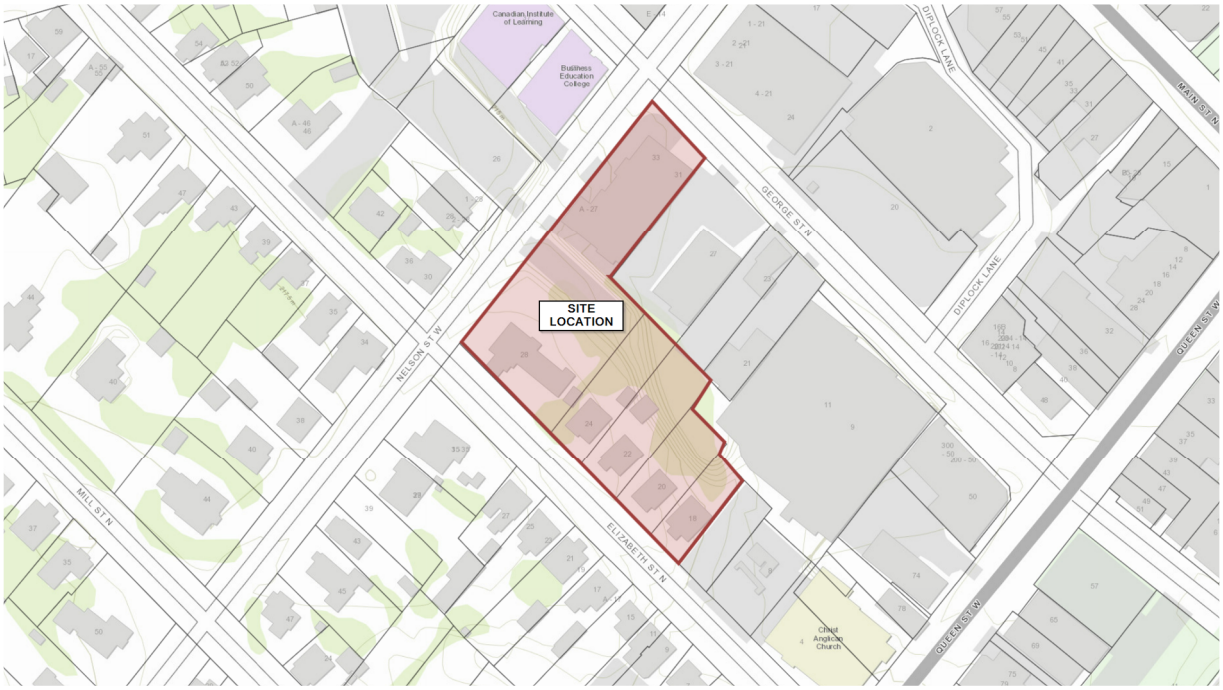
1.0 INTRODUCTION

1.1 BACKGROUND

This Functional Servicing and Stormwater Management Report ('FSSR') has been prepared on behalf of Greenwin Corp. in support of the rezoning application for 31-33 George Street North and 18-28 Elizabeth Street North.

The subject site is in the City of Brampton and the Region of Peel. The site encompasses the following properties within Brampton:

- 31 George Street
- 33 George Street
- 18 Elizabeth Street
- 20 Elizabeth Street
- 22 Elizabeth Street
- 24 Elizabeth Street
- 28 Elizabeth Street

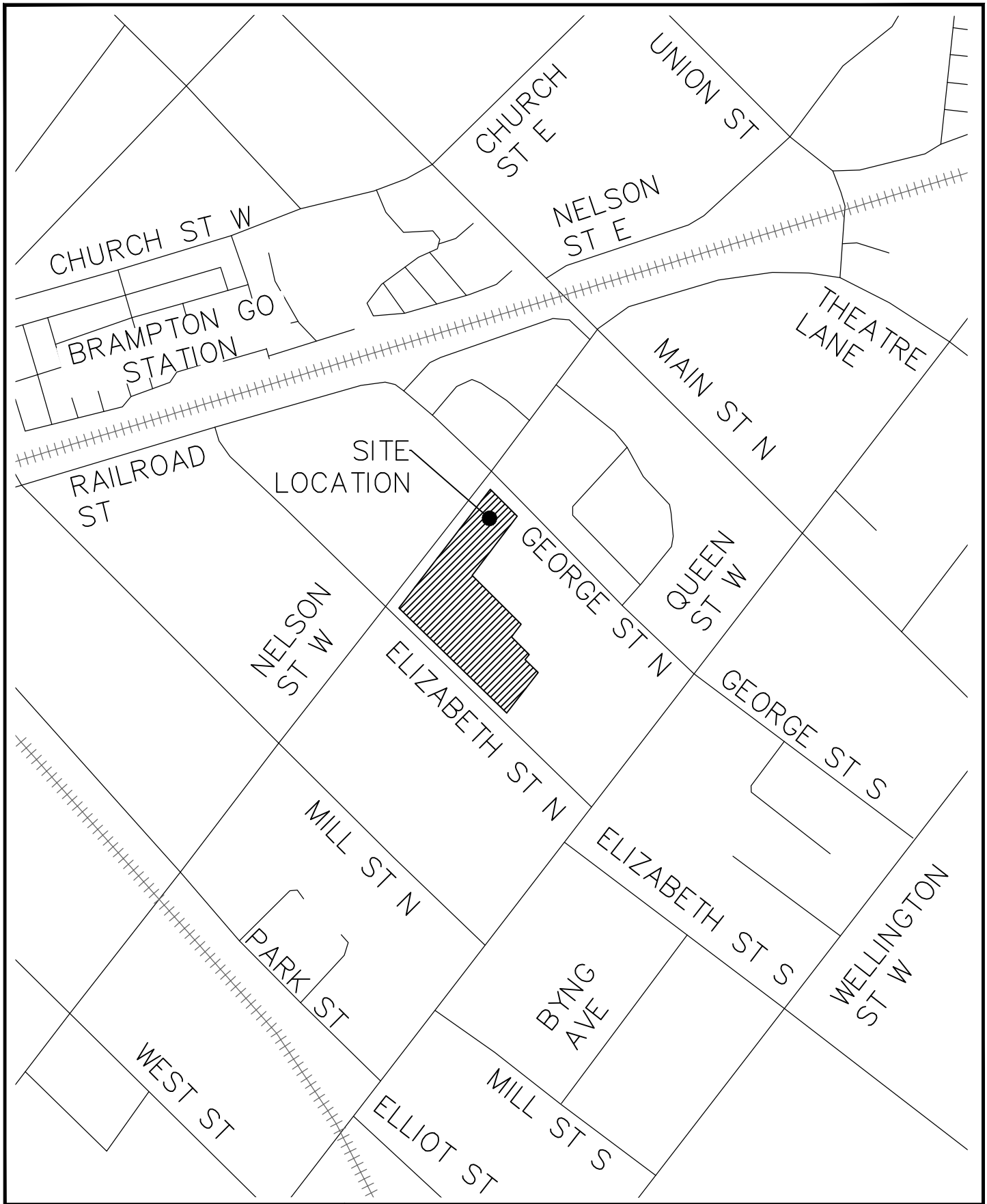


The site is bound by a variety of uses; residential lands to the northwest and southwest (across Nelson Street West and Elizabeth Street West, respectively), a proposed development to the northeast (across George Street West) and to the southeast are mixed retail and residential lands. **Figure 1** illustrates the subject site within the context of its surroundings. The **0.605 ha** site currently contains:

- 4 single family dwelling with associated driveways, yards, and sheds.
- 2 gravel parking lots along Nelson Street West.
- 2 retail buildings on the south corner of Nelson Street West and George Street West.
- 1 heritage building is located on the east corner of Nelson Street West and Elizabeth Street West which will be integrated into the proposed development.

For the existing conditions, refer to the topographical survey of the site included in **Appendix A.** For the details of the proposed development, refer to **Appendix A** for the Site and Architectural Plan and Statistics prepared by Sweeny & Co Architects Inc.

This FSSR has been prepared in order to demonstrate that the existing municipal servicing and infrastructure can accommodate the design concept presented as part of the rezoning application.



counterpoint ENGINEERING

COUNTERPOINT ENGINEERING INC.

8395 Jane St., Suite 100, Vaughan, ON L4K 5Y2 Phone 905.326.1404 Fax 905.326.1405

SITE LOCATION

MIXED USE DEVELOPMENT
31-33 GEORGE ST. N. / 18-28 ELIZABETH ST. N.
BRAMPTON, ON

SCALE: N.T.S

DATE: MAY 2022

PROJECT No. 20101

FIGURE No. 1

2.0 STUDY PARAMETERS

This FSSR is based on the review of the following documents and drawings:

- **Architectural Plans** prepared Sweeny & Co Architects Inc.
- **City of Brampton Existing Storm Drainage Areas for George Street,** April 1989
- **Fire Underwriters Survey,** 1999
- **Plan and Profile Drawings** for Nelson Street and Elizabeth Street North.
- **Region of Peel Functional Servicing and Storm Water Management Report**, prepared by the Region of Peel.
- **Region of Peel Sanitary Sewer Design Criteria**, prepared by the Region of Peel, dated March 2019 (rev. 0.9).
- **Region of Peel Site Plan Process**, prepared by the Region of Peel, dated July 2009.
- **Region of Peel Watermain Design Criteria**, prepared by the Region of Peel, dated June 2010.
- **Site Plan Review User Guide- Appendix D**, prepared by the City of Brampton.
- **Topographic Survey** prepared by Vladimir Dosen Surveying and David B. Searles Surveying Ltd.

3.0 WATER SUPPLY

3.1 EXISTING WATER SUPPLY

Along Nelson Street West, there is an existing 150 mmø watermain located along the center of the road. This 150 mmø watermain connects into an existing 150 mmø watermain located on the southwest side of Elizabeth Street North.

The single-family dwellings along Elizabeth Street North are serviced by the existing 150mmø watermain. The existing service connections to the four (4) single-family dwellings and heritage building are to be removed and capped by City forces at the owner's cost.

There is an existing hydrant located on southwest side of Elizabeth Street North approximately 10m northwest of Queen Street West.

3.2 PROPOSED WATER SUPPLY

A new fire protection and domestic connection will be required to service the subject site. The proposed services will connect into the existing 150mm diameter watermain on Elizabeth Street North in accordance with Region of Peel Public Works standard drawing 1-8-3.

The available municipal servicing should satisfy maximum day plus fire flow or the peak hour demand, whichever is greater. Fire demand is calculated as per the Fire Underwriter's Survey (FUS) guidelines (1999).

Using the 'persons per unit' breakdown within the Project Status Report provided to the applicant, the equivalent population of the subject site will be **2173 persons**. Refer to **Appendix B** for the supporting calculations of the following demands for the subject site:

- Peak Hour Demand = 21.16 L/s.
- Maximum Day Demand = 14.01 L/s.
- Fire Flow Demand (2.0 hours) = 116.67 L/s.
- **Maximum Day Demand plus Fire Flow Demand = 130.68 L/s (governs)**

4.0 SANITARY SERVICING

4.1 EXISTING SANITARY SERVICING

There is an existing 250 mmø sanitary sewer located along the Elizabeth Street North centerline which conveys flows southeast towards Queen Street West. The sewer services the single-family dwellings along Elizabeth Street North. Refer to **Appendix A** for the City plan & profile of the Elizabeth Street North Street sanitary sewer flow path to an existing trunk sewer on Queen Street West.

The four (4) single family dwellings are serviced by the 250 mmø sanitary sewer. The existing connections will be removed and capped by the city forces at the owner's expense.

4.2 PROPOSED SANITARY SERVICING

A proposed connection to service the new development will connect into the existing 250 mmø sanitary sewer located along Elizabeth Street North.

Using the Region of Peel Sanitary Design criteria, the equivalent population for the proposed residential/commercial development is approximately **2173 persons.** The peak sanitary flow for the proposed development without infiltration has been calculated to be **27.22 L/s.**

In accordance with the Region of Peel requirements, an infiltration allowance of 0.0002 m^3/sec/ha is to be provided. This equates to 0.12 L/s, which results in a final peak flow of **27.22 L/s.** Refer to **Appendix C** for supporting calculations.

5.0 STORMWATER SERVICING

5.1 EXISTING CONDITIONS

There is an existing 600 mmø storm sewer along the northeast side of Elizabeth Street North that conveys flows southeast towards a 750 mmø storm sewer on Queen Street West. Refer to **Appendix A** for the City plan & profile of Elizabeth Street North and for the storm sewer flow path to the existing on 750 mmø storm sewer on Queen Street West.

The site drainage along Nelson Street drains towards the northeast direction towards George Street, along Elizabeth Street the front yards drain towards roadway and the rear yards drain towards the single dwelling backyards which are surrounded by trees and vegetation. The site is comprised of 2 retail buildings, 2 gravel parking lots, 1 heritage building to be incorporated into the proposed development and 4 single dwelling homes with associated driveways, garage sheds and yards. Refer to **Figure 2 – Existing Storm Drainage.**

5.2 ALLOWABLE RELEASE RATE

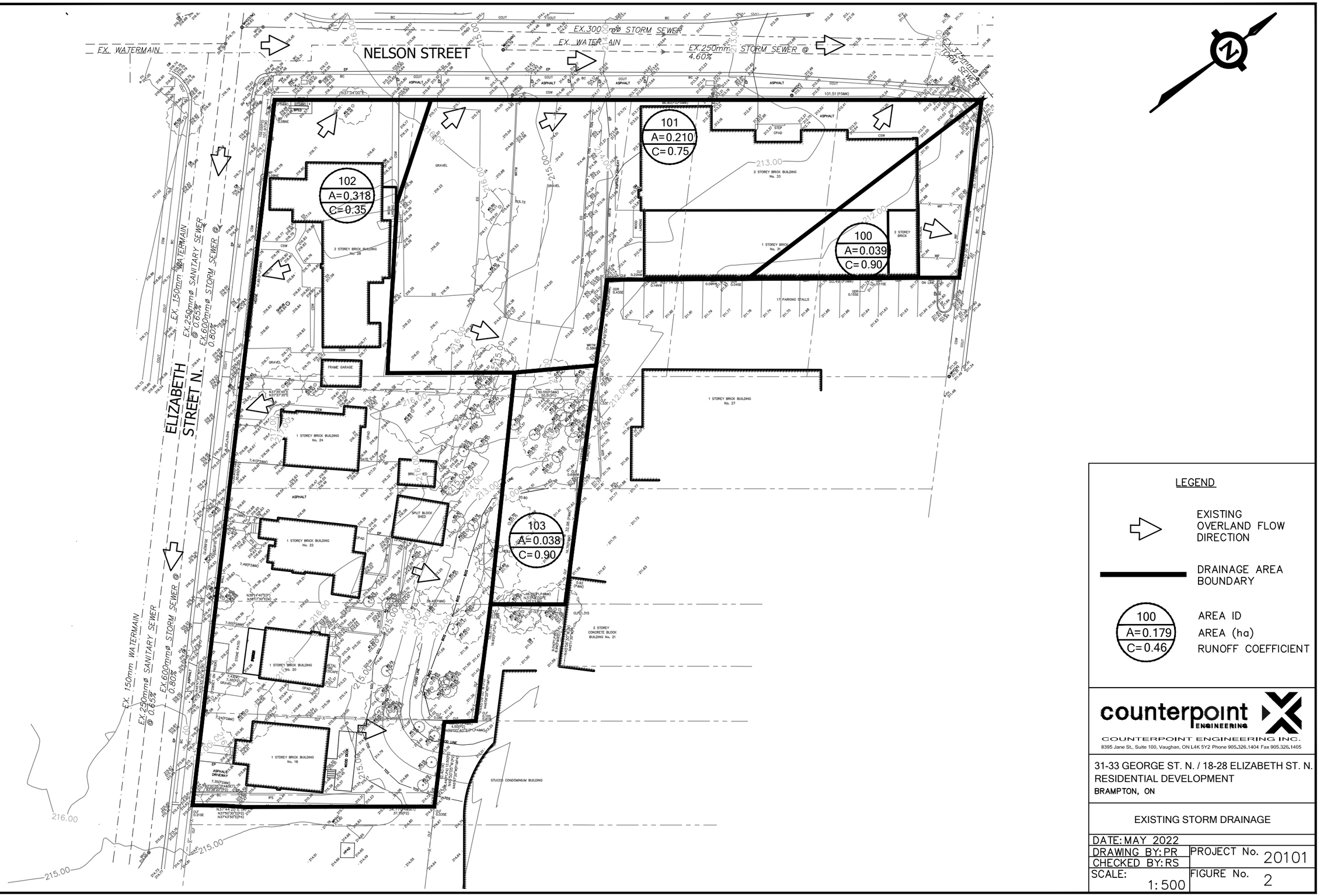
In accordance with the City's requirements, the subject site will be required to control the 100-year post-development peak flows to the 2-year pre-development flow rate. In addition to this, the maximum run-off co-efficient that's has been used to calculate the pre-development flow rate (allowable) is 0.56.

As a result, the allowable discharge from the subject site is calculated as follows:

$$Q_A = C \times A \times i \times N \text{ (L/s)}$$

Table 1 - Allowable Release Rate

Variables	Site
A - Site Area (ha)	0.605
Tc (min)	10
C - Runoff Coefficient	0.56
i - Intensity	79.43
N – Constant	2.778
Q - Release Rate (L/s)	**74.6**


NELSON STREET
ELIZABETH STREET N.
EX. WATERMAIN
EX. 300mmø STORM SEWER
EX. WATER MAIN
EX. 250mmø STORM SEWER @ 4.60%
EX. 375mmø STORM SEWER
EX. 150mm WATERMAIN
EX. 250mmø SANITARY SEWER @ 0.65%
EX. 600mmø STORM SEWER @ 0.80%
101
A=0.210
C=0.75
100
A=0.039
C=0.90
102
A=0.318
C=0.35
103
A=0.038
C=0.90
LEGEND
EXISTING OVERLAND FLOW DIRECTION
DRAINAGE AREA BOUNDARY
100
A=0.179
C=0.46
AREA ID
AREA (ha)
RUNOFF COEFFICIENT
counterpoint ENGINEERING
COUNTERPOINT ENGINEERING INC.
8395 Jane St., Suite 100, Vaughan, ON L4K 5Y2 Phone 905.326.1404 Fax 905.326.1405
31-33 GEORGE ST. N. / 18-28 ELIZABETH ST. N.
RESIDENTIAL DEVELOPMENT
BRAMPTON, ON
EXISTING STORM DRAINAGE
DATE: MAY 2022
DRAWING BY: PR
CHECKED BY: RS
SCALE: 1:500
PROJECT No. 20101
FIGURE No. 2

Quantity control will be provided on-site to ensure that the 100-year post development peak flows to the existing 600mm diameter storm sewer will be attenuated to the allowable release rate of **74.6 L/s** or less. Refer to **Appendix D** for allowable release rate calculations.

5.3 PROPOSED STORMWATER SERVICING

Due to the extents of the building structure and underground parking, quantity, water balance and quality controls will need to be located within the parking structure. For the purpose of re-zoning, we have estimated the quantities and sizes of the controls. Refinement and re-calculation of these items will be required at the site plan approval stage of the project, as it is expected that architectural and landscaping design elements will be further refined at that time.

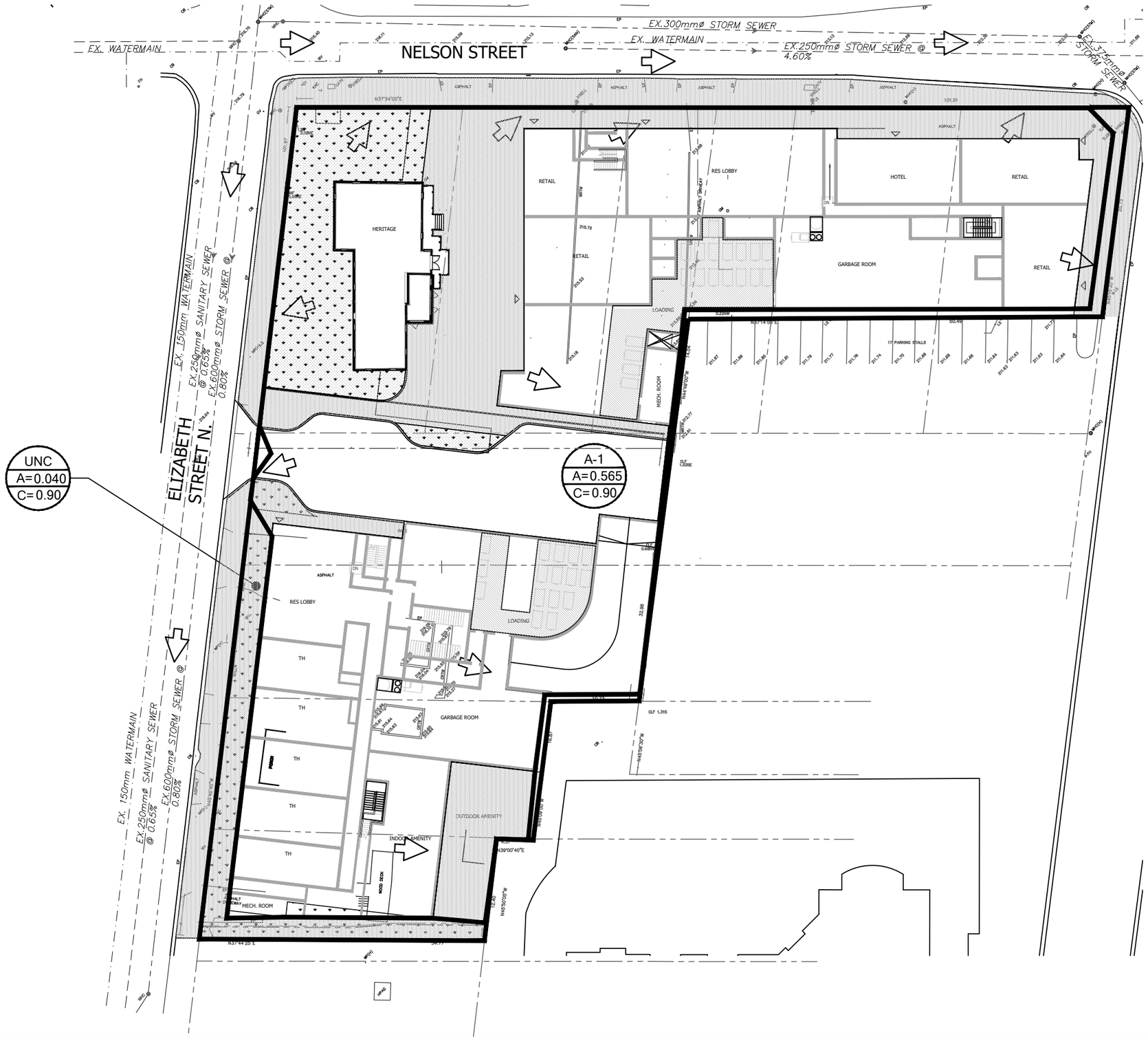
Under proposed conditions, the building roof-tops and areas that have underlying parking structures will be serviced by area drains that fall under the mechanical plumbing scope of work. As such, for that area, the 'site servicing' scope of work terminates outside of the structure.

A total area of approximately **0.040 ha** of the proposed development will release uncontrolled, while the balance will be captured and controlled to ensure the overall allowable release rate is maintained. Refer to **Figure 3** for the proposed storm drainage area plan.

5.4 QUANTITY CONTROL

The uncontrolled areas (UNC), with a composite run-off co-efficient of 0.90, will produce a combined peak runoff of **17.8 L/s** during the 100-year storm event. This uncontrolled release rate will be deducted from the allowable release rate of **74.6 L/s**, resulting in an allowable release rate from the captured area of **56.8 L/s**.

Quantity control will be provided by gravity by an underground storage tank within the underground parking level(s) of the building in combination with an inlet control device (preliminarily a 75 mm orifice tube, Ipex Cycletough PVC SDR 26 with actual inside diameter of 81.65 mm) that will have a maximum release rate of **16.8 L/s** (Refer to **Table 2** below), which is less than the 56.8 L/s allowable. A storage volume in the tank of approximately **205 m^3** will be required (205 m^3 to be provided) to meet the control target. Note that an additional **28.3 m^3** of storage volume will be available for the water reuse cistern portion of the tank (refer to section 5.5), to be located below the invert of the orifice control. Refer to **Table 2** below and **Appendix D** for detailed calculations.



LEGEND

EXISTING OVERLAND FLOW DIRECTION

DRAINAGE AREA BOUNDARY

PERVIOUS AREAS

A-1 / A=0.557 / C=0.85 — AREA ID, AREA (ha), RUNOFF COEFFICIENT

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COUNTERPOINT ENGINEERING INC.
8395 Jane St., Suite 100, Vaughan, ON L4K 5Y2 Phone 905.326.1404 Fax 905.326.1405

31-33 GEORGE ST. N. / 18-28 ELIZABETH ST. N.
RESIDENTIAL DEVELOPMENT
BRAMPTON, ON

PROPOSED STORM DRAINAGE

DATE: MAY 2022	
DRAWING BY: PR	PROJECT No. 20101
CHECKED BY: RS	
SCALE: 1:500	FIGURE No. 3

Surface ponding storage volume will not be required, and all the stormwater storage volume required for quantity control will be provided within the underground storage tank mentioned above. Details regarding the underground storage tank will be available at the site plan approval stage. Sufficient inlet capacity to the site storm drainage system will be provided in area A-1 through area drains, catch basins and roof drains to ensure the capture of the 100-year storm flows.

Table 2 – Peak Flow and Storage Summary - 100-Year Storm Event

Rainfall Data

Location:	**Brampton, Ontario**	a	**51.3**
Event	**100-year**	b	**0**
		c	**0.695**

Area ID	Area (ha)	Runoff Coefficient	TC (min)	Storage Available (m^3)	Storage Required (m^3)	Designed Release Rate (L/s)	Description	Orifice Size (mm)	Orifice Release Rate (L/s)	Allowable Release Rate (L/s)
A-1	0.565	0.90	10	205	205	16.8	Areas to Tank	81.65	16.8	56.8
UNC	0.040	0.90	10	N/A	N/A	17.8	Uncontrolled			
Total	**0.605**			205	**205**	**34.6**				

As shown in **Table 2** above, the proposed site release rate during the 100-year storm event will be less than the allowable release rate**.** Refer to **Appendix D** for storage volume calculations.

The design of all internal piping within the building must provide adequate capacity for full capture and conveyance of all flows generated by storms up to and including the 100-year rainfall event. All design and associated calculations for the internal storm system, including the design of the internal inlet structures, piping and mechanical appurtenances is to be completed by the Mechanical Engineer.

5.5 WATER BALANCE

In accordance with City of Brampton requirements, 5 mm of run-off shall be retained on-site and managed by the way of infiltration, evapotranspiration or re-use. Initial abstraction values were not considered in the calculation of the storm water volume to be retained for water balance.

The site area (0.605 ha) multiplied by a 5mm, 24-hour storm is equivalent to approximately **30.3 m^3** of total required retention.

For the proposed development the feasibility of bio-retention galleries, infiltration galleries, permeable pavers, etc. have not been explored now but will be at the site plan approval phase

of the project. During the building design phase of the project, methods of re-using the water balance volume will be determined.

A sump will be provided as a part of the quantity control structure. The volume of the sump is to match at a minimum the water balance volume requirement and is to be located below the invert of the storm outlet, should it be discharged via gravity flow. The details and configuration of the structure will be determined at the site plan approval stage of the project.

5.6 QUALITY CONTROL

The City of Brampton requires that 80% removal of TSS on an average annual loading basis from all runoff leaving the proposed development.

A storm filter unit is proposed to treat stormwater drainage for quality control and as pre-treatment of stormwater for water re-use. The specific storm filter unit, sizing and details will be determined at Site Plan Approval.

6.0 CONCLUSIONS

This FSSR presents a site servicing strategy for the proposed development that addresses the requirements of the applicable design guidelines and provides the basis for detailed servicing design.

We trust this report sufficiently addresses the site servicing requirements and allows for approval of the proposed rezoning application of the subject site. Should there be any questions or comments, please feel free to contact the undersigned.

Sincerely,

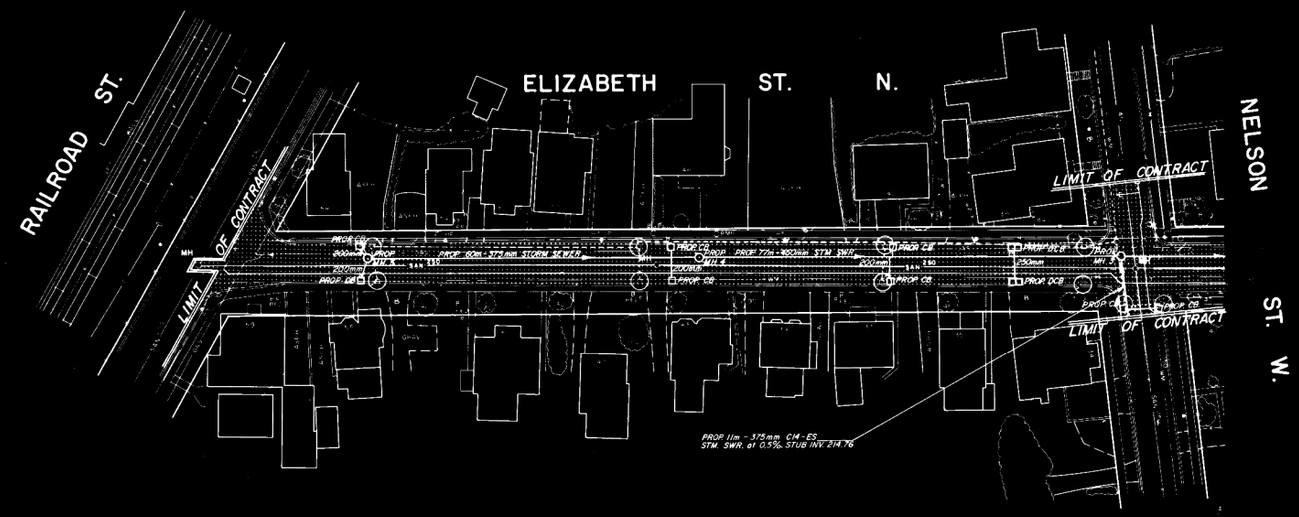
Counterpoint Engineering Inc.

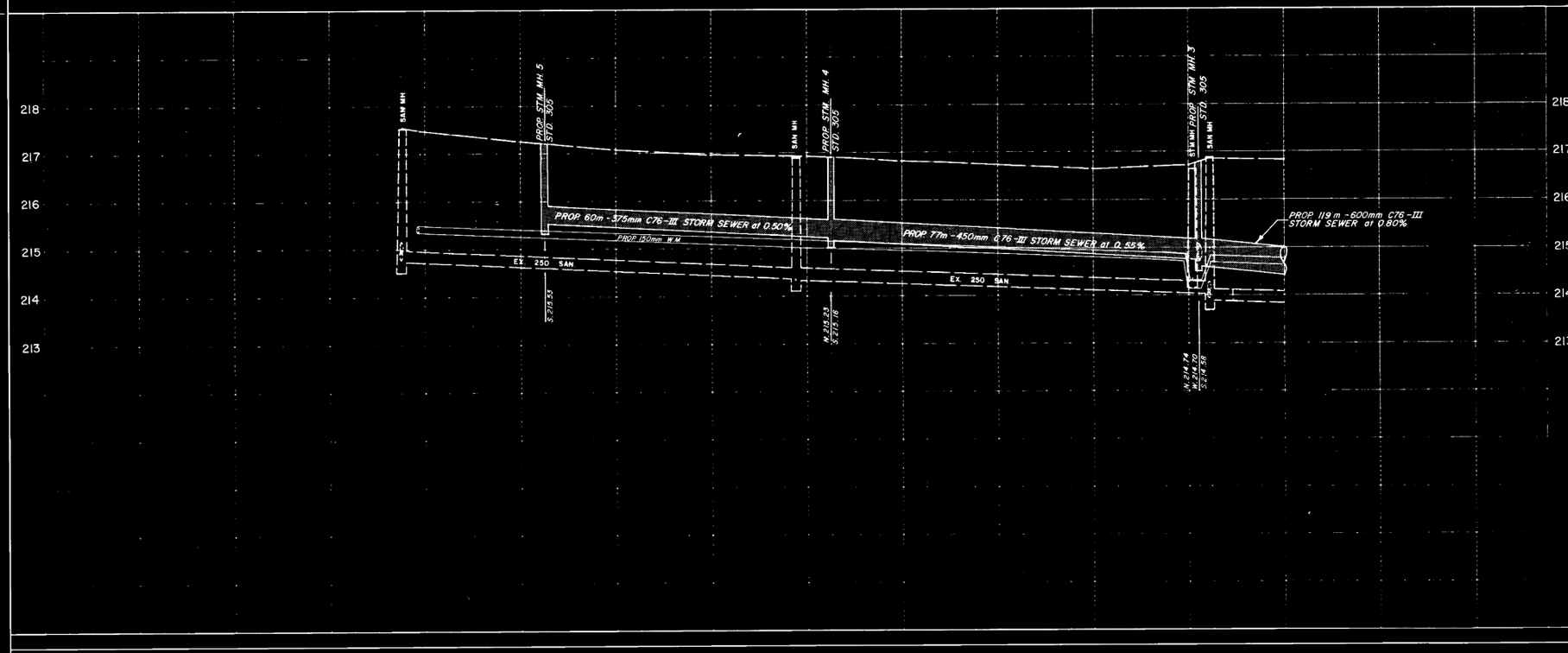
Rasheed Serrao, P.Eng.
Partner, Practice Area Lead – Urban
Direct/Mobile: (416) 628-7805
Email: rserrao@counterpointeng.com

Praveen Ravisuthan, P.Eng.
Project Manager
Direct: (647) 888-2043
Email: pravisuthan@counterpointeng.com

APPENDIX A

F3-37-5





THIS DWG. TO BE USED FOR ROAD AND STORM SEWER WORK ONLY

LEGEND:

○ TO BE REMOVED

NOTES:

- EXACT LOCATIONS OF ALL PROP. CATCHBASINS TO BE DETERMINED IN THE FIELD BY ENGINEER.

REFERENCE: BENCH MARK F4-56 ELEV. 218.441
BRICK BUILDING, 147 QUEEN ST. W. (SALVATION ARMY THRIFT STORE). BRASS PLAQUE IN N. FACE 5.8m W. OF N.E. CORNER 0.3m ABOVE GROUND.

No.	By	Date	Revision	Checked
2	P.S.	88-05	MH 1 & MH 2 LOCATION REVISED	M.J.H.
1	Wm V.R.	88-03	MISC. STM. SWR.	M.V.L.

CITY OF BRAMPTON

ENGINEERING DEPARTMENT

COMMISSIONER OF PUBLIC WORKS: L.T. KOEHLE P.Eng.

REGISTERED PROFESSIONAL ENGINEER
M. V. LOSTRACCO
PROVINCE OF ONTARIO

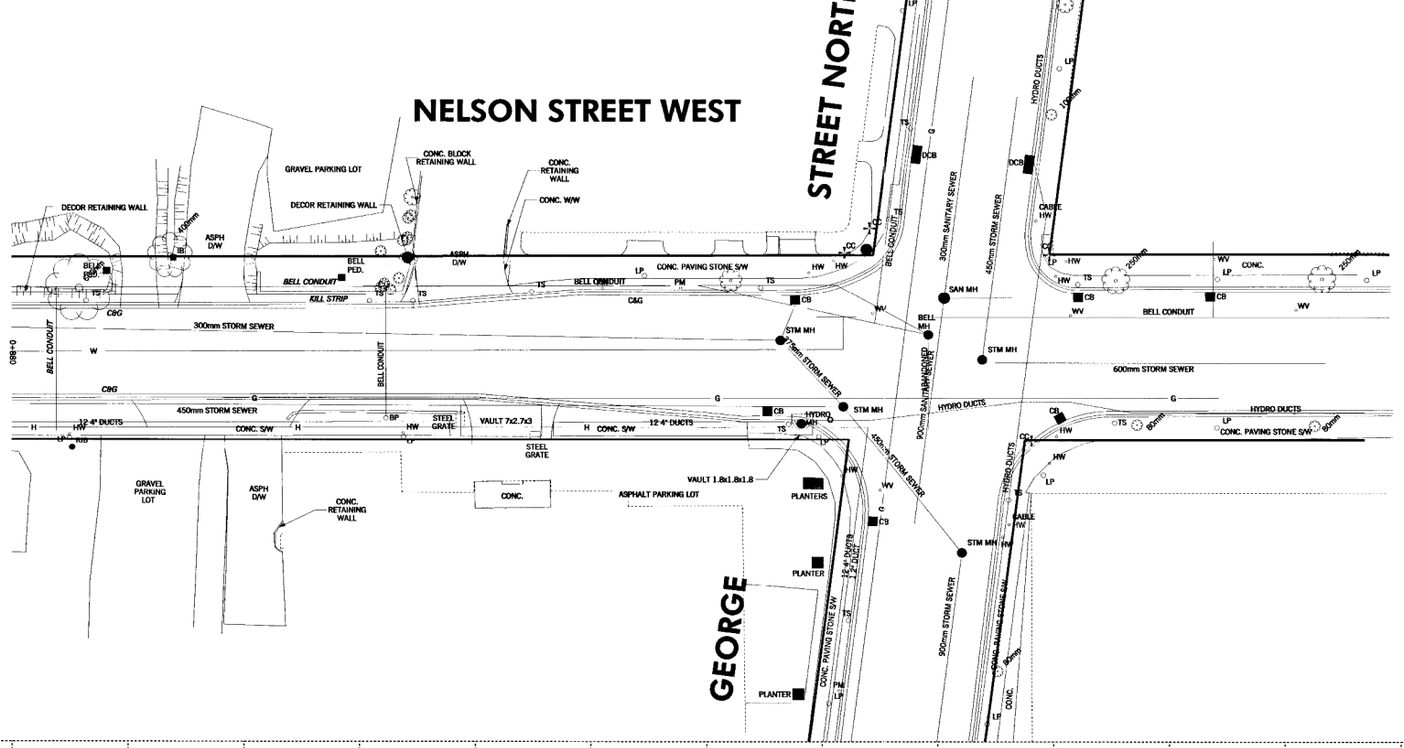
ELIZABETH STREET N.

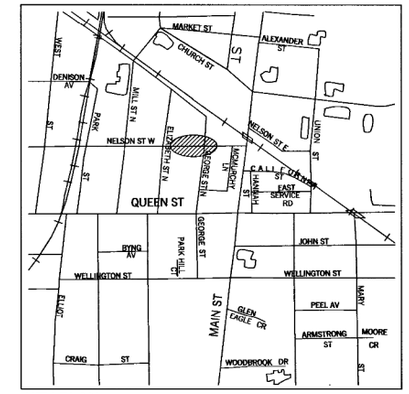
STATION 0+180 TO 0+360

10m S. OF NELSON ST. TO RAILROAD ST.

MISC. STORM SEWERS

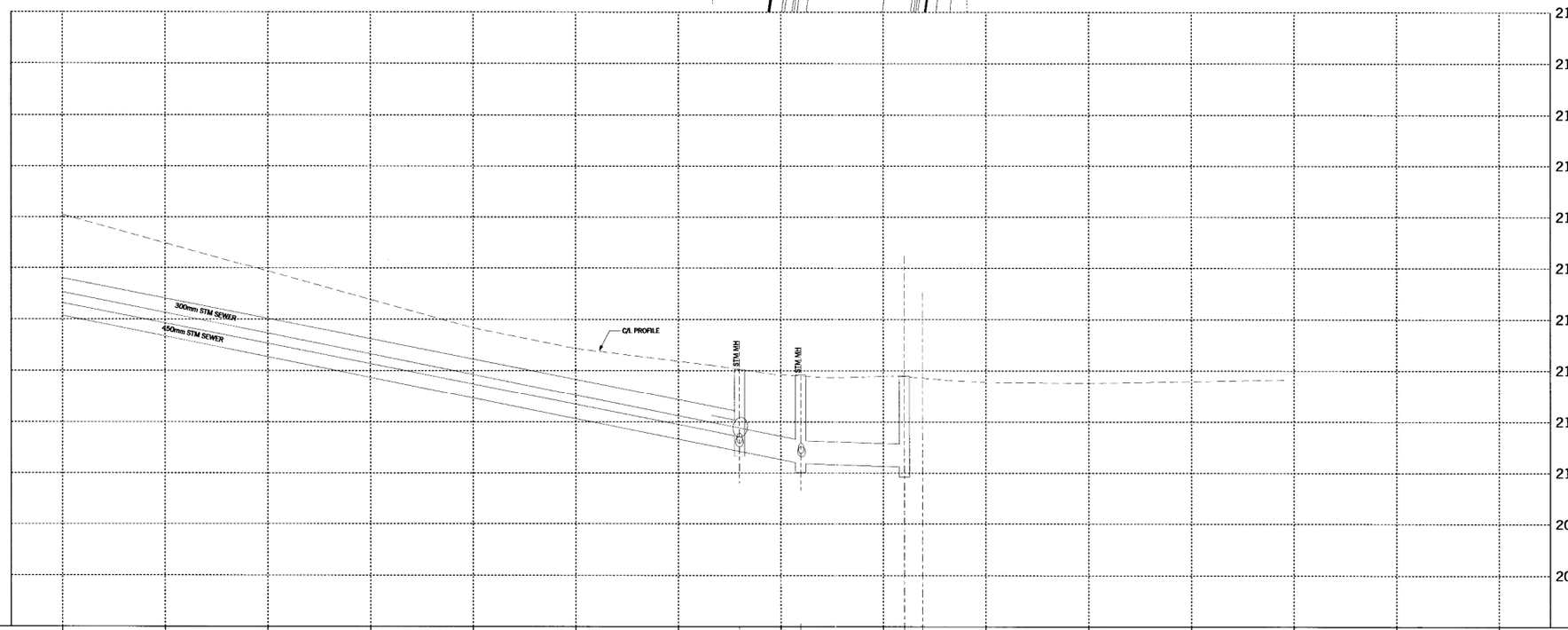
Surveyed By REGION | Date | Contract No. 88-106





KEY PLAN

N.T.S.



NO.	BY	DATE	REVISIONS	CHECKED
1		17 MAR 05	AS CONSTRUCTED (93-100)	

REFERENCE: BENCH MARK F3-55 212.705m

Royal Bank building, north west corner of Queen Street West and Main Street.
Brass plaque 20.9 feet west of south seat corner, 0.7 feet above sidewalk.

CITY OF BRAMPTON
PUBLIC WORKS DEPARTMENT

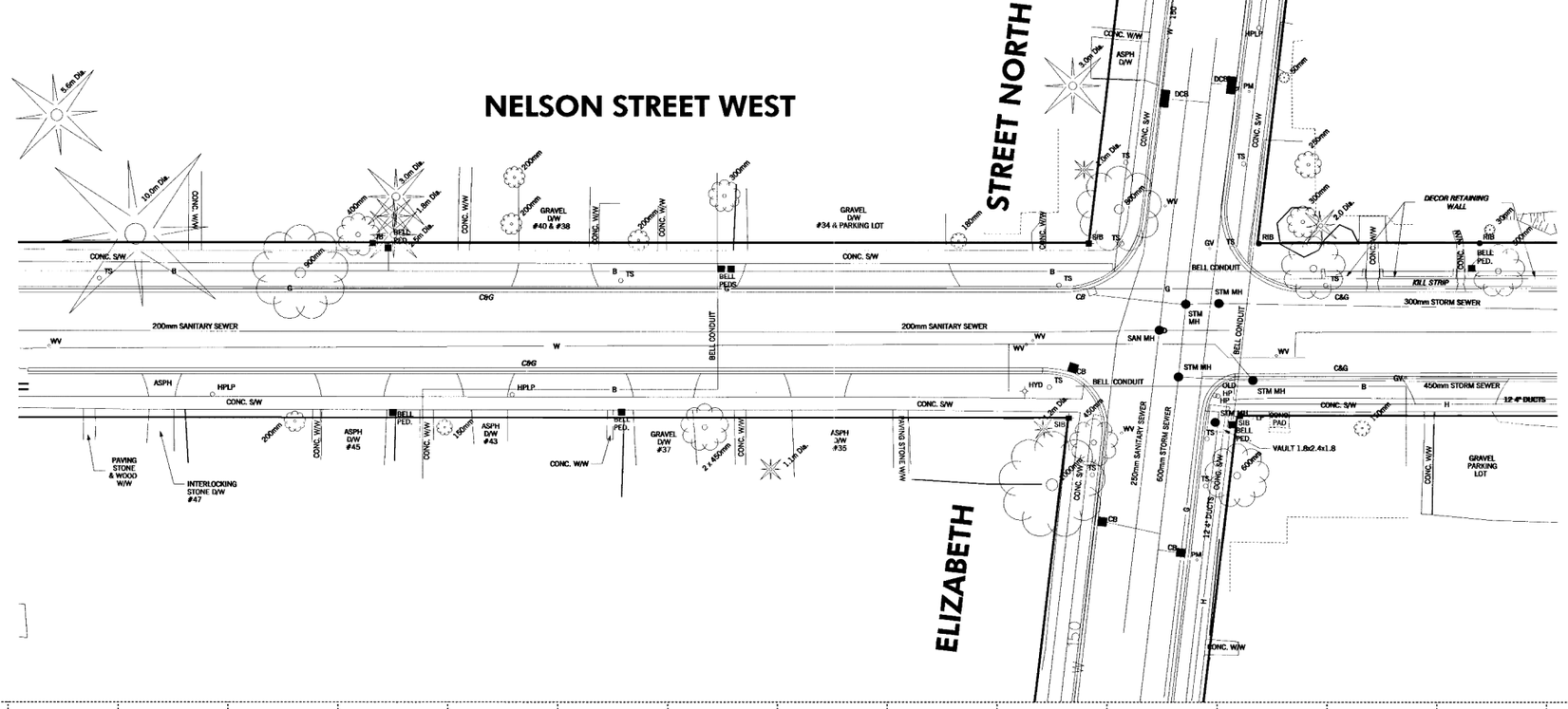
COMMISSIONER OF PUBLIC WORKS L. T. KOEHLE, P. ENG.

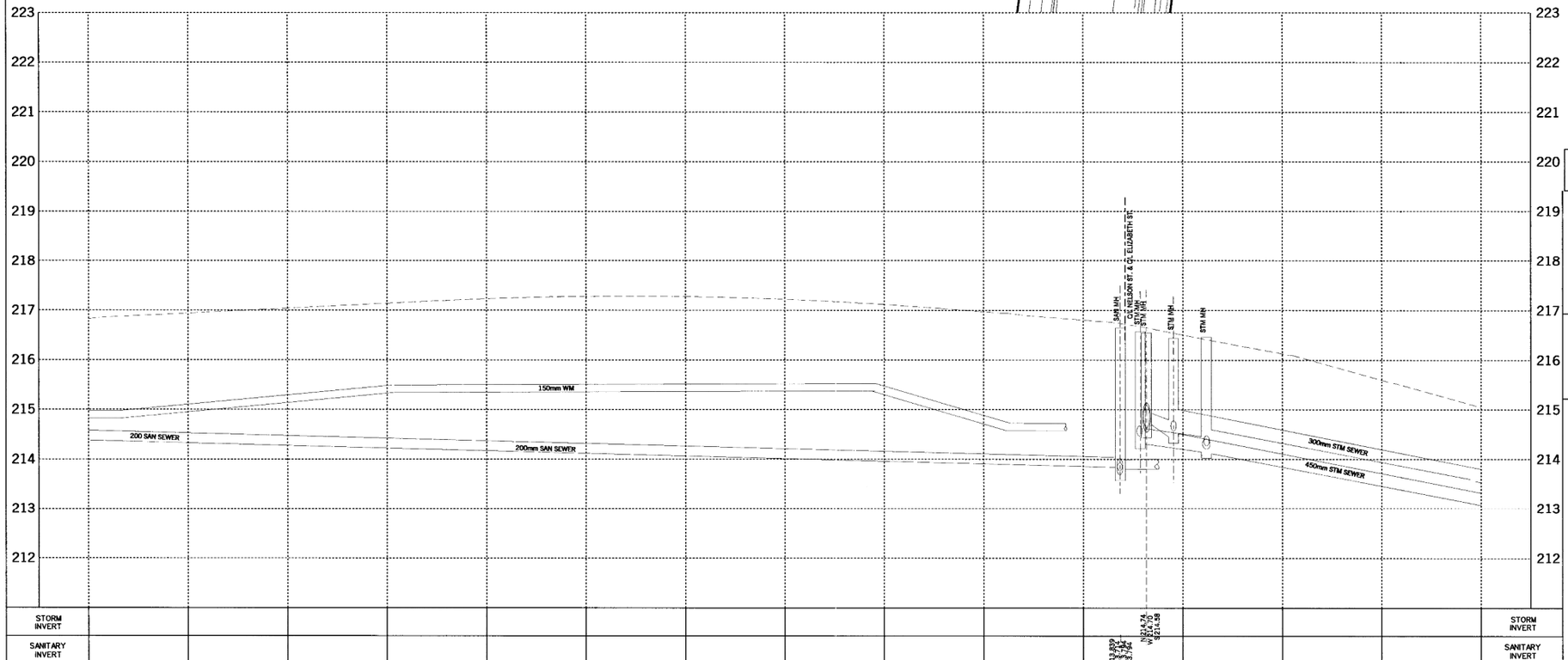
PROJECT DWG. NO.

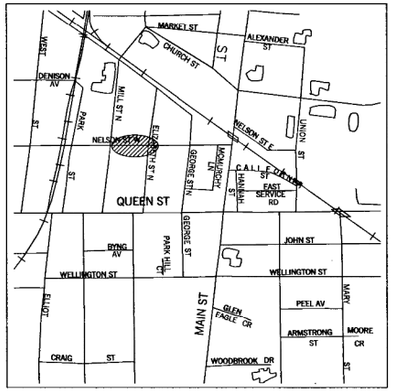
NELSON STREET WEST

STA. 0+880 TO STA. 1+000

35m E. OF ELIZABETH STREET NORTH TO GEORGE STREET NORTH







KEY PLAN

N.T.S.

REFERENCE: BENCH MARK F3-55 212.705m

Royal Bank building, north west corner of Queen Street West and Main Street.
Brass plaque 20.8 feet west of south east corner, 0.7 feet above sidewalk.

NO.	BY	DATE	REVISIONS	CHECKED
1		17 MAR 06	AS CONSTRUCTED (93-100)	

CITY OF BRAMPTON
PUBLIC WORKS DEPARTMENT

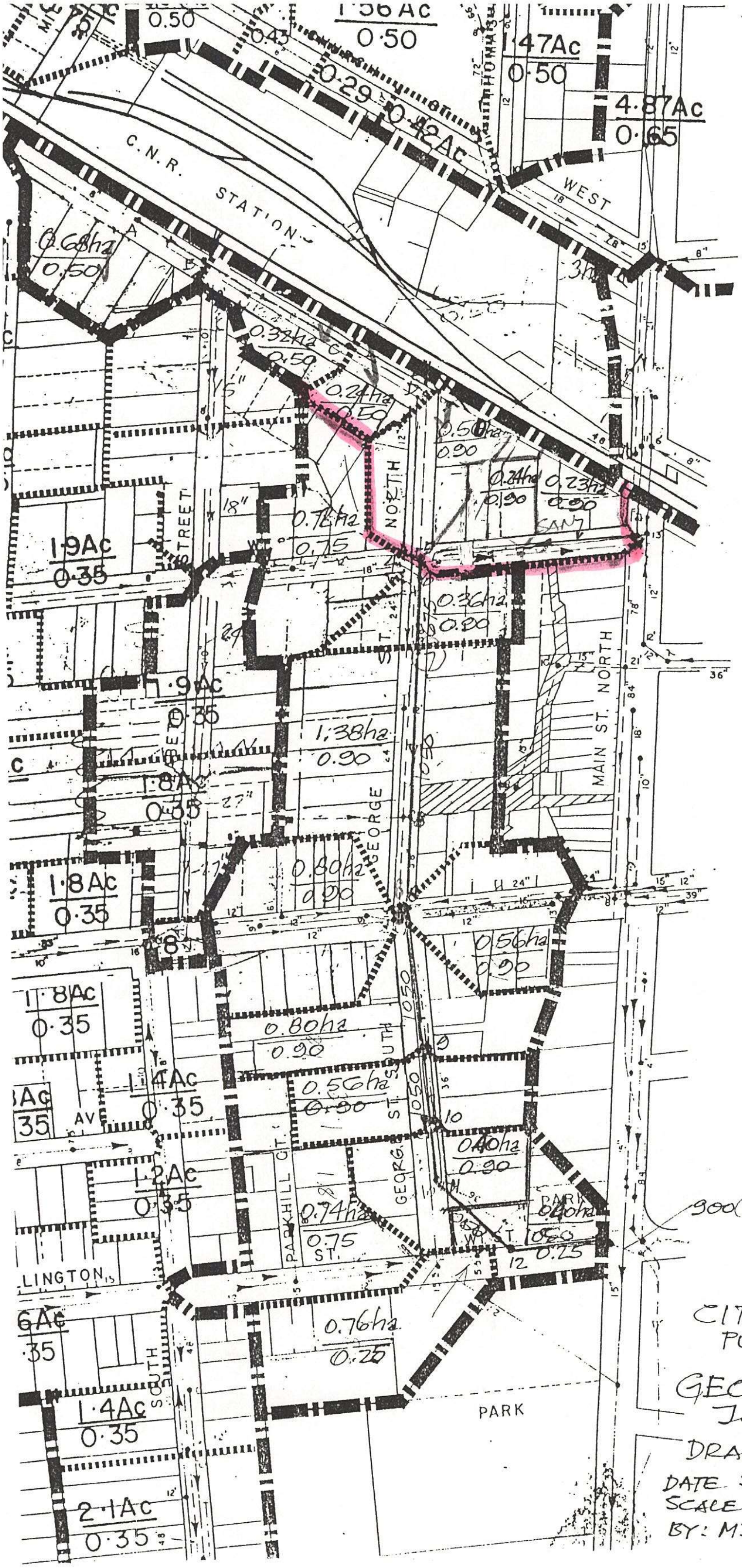
COMMISSIONER OF PUBLIC WORKS L. T. KOEHLE, P. ENG.

PROJECT DWG. NO.

NELSON STREET WEST

STA. 0+740 TO STA. 0+880

MILL STREET NORTH TO 35m E. OF ELIZABETH STREET NORTH


C.N.R.
STATION
WEST
NORTH
STREET
GEORGE
MAIN ST. NORTH
SOUTH
PARKHILL CT.
PARK
900(EXIST.)
CITY OF BRAMPTON
PUBLIC WORKS
GEORGE STREET
JOB# 89-112
DRAINAGE AREAS
DATE : APRIL 1989
SCALE : 1:2400 (1"=200
BY: MJH

METRIC

DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

SURVEYOR'S REAL PROPERTY REPORT

PART 1) PLAN AND TOPOGRAPHIC DETAIL OF
LOT 13 AND PART OF LOTS 12, 14 AND 15
BLOCK 2, REGISTERED PLAN BR-4
CITY OF BRAMPTON
REGIONAL MUNICIPALITY OF PEEL

SCALE 1:200

2.0m 0 2.0 10.0metres

VLADIMIR DOSEN SURVEYING, O.L.S.

NOTES AND LEGEND

☐	DENOTES SURVEY MONUMENT PLANTED
■	DENOTES SURVEY MONUMENT FOUND
SIB	DENOTES STANDARD IRON BAR
WIT	DENOTES WITNESS
M	DENOTES MEASURED
S	DENOTES SET
P1	DENOTES PLAN 43R-11278
P2	DENOTES REGISTERED PLAN BR-4
(865)	DENOTES DONALD P. McLEAN, O.L.S.
(OU)	DENOTES ORIGIN UNKNOWN
ø	DENOTES DIAMETER
BF	DENOTES BOARD FENCE
CB	DENOTES CATCH BASIN
CLF	DENOTES CHAIN LINK FENCE
FFE	DENOTES FINISHED FLOOR ELEVATION
UP	DENOTES UTILITY POLE
WV	DENOTES WATER VALVE
✿	DENOTES DECIDUOUS TREE

ASSOCIATION OF ONTARIO LAND SURVEYORS
PLAN SUBMISSION FORM
1988558
THIS PLAN IS NOT VALID UNLESS IT IS AN EMBOSSED ORIGINAL COPY ISSUED BY THE SURVEYOR
In accordance with Regulation 1026, Section 29(3).

THIS REPORT WAS PREPARED FOR
GIL SHCOLYAR
AND THE UNDERSIGNED ACCEPTS NO RESPONSIBILITY FOR USE BY OTHER PARTIES.

PART 2) SURVEY REPORT

REGISTERED EASEMENTS AND/OR RIGHT OF WAYS:
NO EASEMENTS OR RIGHT OF WAYS ARE REGISTERED

COMPLIANCE WITH MUNICIPAL ZONING BY-LAWS:
THIS PLAN DOES NOT CERTIFY COMPLIANCE WITH ZONING BY-LAWS.

BENCHMARK:

ELEVATIONS ARE GEODETIC AND ARE DERIVED FROM CITY OF BRAMPTON BENCHMARK No.55 HAVING AN ELEVATION OF 212.705 METRES.

COORDINATE REFERENCE:

COORDINATES AND BEARINGS SHOWN HEREON ARE DERIVED FROM DIRECT GPS REAL TIME KENEMATIC (RTK) OBSERVATIONS AND ARE REFERRED TO THE CENTRAL MERIDIAN 81°00' WEST LONGITUDE, ZONE 17, UTM PROJECTION, NAD83 (CSRS, 1997.0) DATUM.

COORDINATES SHOWN ON THIS PLAN HAVE BEEN DETERMINED TO URBAN ACCURACY OF ±0.05m AT 95% CONFIDENCE LEVEL ACCORDING TO O.REG. 216/10.

BEARINGS ARE GRID BEARINGS.

DISTANCES ARE GROUND AND CAN BE CONVERTED TO GRID BY MULTIPLYING BY THE COMBINED SCALE FACTOR OF 0.999448

ORP	NORTHING	EASTING
A	4837643.354	599691.484
B	4837615.517	599719.771

POINTS ID	NORTHING	EASTING
1	4837612.002	599743.111
2	4837653.953	599699.976
3	4837693.996	599730.754
4	4837639.433	588764.421

COORINATES CANNOT, IN THEMSELVES, BE USED TO RE-ESTABLISH THE CORNERS OR BOUNDARIES SHOWN ON THIS PLAN

REVISION NOTE:

REVISED TO INCLUDE HOUSE Nos.18 AND 20 (PART OF LOTS 14 AND 15) ON APRIL 5, 2018

DATE: APRIL 24, 2018

VLADIMIR DOSEN, B.Sc.
ONTARIO LAND SURVEYOR

SURVEYOR'S CERTIFICATE

I CERTIFY THAT:

1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT AND THE REGULATIONS MADE UNDER THEM.
2. THE SURVEY WAS COMPLETED ON THE 1st DAY OF AUGUST, 2016.

DATE: SEPTEMBER 8, 2016

VLADIMIR DOSEN, B.Sc.
ONTARIO LAND SURVEYOR

REVISION NOTE:

REVISED TO GEODETIC ON DECEMBER 11, 2018

VLADIMIR DOSEN, B.Sc.
ONTARIO LAND SURVEYOR

VLADIMIR DOSEN SURVEYING
ONTARIO LAND SURVEYORS
555 DAVISVILLE AVENUE
TORONTO, ONTARIO M4S 1J2
PHONE (416) 466-0440 EMAIL: vladdosen@rogers.com

JOB No: 16311	FIELD BY: KUMAR/RUBAN
FILE: 16-135	DRAWN BY: CL/NATHAN
CAD FILE: 18-24 ELIZABETH STREET-1(GEOSPATIAL)-FOR CITY	CHECKED BY: VD

RATIO REQUIREMENTS

PARKING	UNITS	RATIO	REQUIRED	PROVIDED
P5				141
P4				139
P3				139
P2				139
P1				99
TOTAL (REZONING):				**657**
RESIDENTIAL	928	0.47	436	436
VISITORS	928	0.20	186	221
BARRIER FREE	-		16 (8A+8B)	16*
CARPOOL/ HYBRID - EFFICIENT VEHICLE		3%	28	28*

*INCLUDED WITHIN TOTAL PARKING COUNT.

BICYCLE RACKS	UNITS	RATIO	REQUIRED	PROVIDED
LONG TERM	928	0.6/UNIT	557	557
SHORT TERM	928	0.1/UNIT	93	93
TOTAL:	**928**	**0.7/UNIT**	**650**	**650**

LOADING & STAGING**	REQUIRED	PROVIDED
GARBAGE	1	1
GARBAGE	1	1
OTHER	0	1
MOVING	0	1
MOVING	0	1

*FROM THE REGION OF PEEL WASTE MANAGEMENT GUIDELINES

GARBAGE BINS.*	UNITS	RATIO	REQUIRED	PROVIDED
GARBAGE:	928	54UNITS/3yrd³	17 BINS	17 BINS
RECYCLING:	928	45UNITS/3yrd³	20 BINS	20 BINS
TOTAL:	**928**		**37 BINS**	**37 BINS**
BULKY:		10sm	10x2 = 20sm	20sm

*FROM THE REGION OF PEEL WASTE MANAGEMENT GUIDELINES
*BASED ON COMPACTED GARBAGE RATIOS

UNITS IN FLOOD PLAIN	MAXIMUM*	PROVIDED
L8/9	300	12
L10 - L27		144
L28 - L42		135
TOTAL	**300**	**291**

*TRCA

GREEN ROOF	PROVIDED	%
TOTAL GREEN ROOF AREA	1,126.15 sm	25
TOTAL ROOF AREA	4,505.6 sm	100

COMMON RESIDENTIAL AMENITY*	PROVIDED
LEVEL 1	147.9sm
LEVEL 2	1299.3sm
TOTAL OUTDOOR	***1,447.2sm***
LEVEL 1	160.8 sm
LEVEL 2	1193.1 sm
TOTAL INDOOR	***1,353.9 sm***
TOTAL AMENITY	**2,801.1sm**

*EXCLUDES PRIVATE TERRACES AND BALCONIES

GENERAL SITE AMENITY	PROVIDED
OUTDOOR GARDENS	***394sm (4,241sf)***
PLAZA	***385 sm (4,144sf)***
TOTAL AMENITY	**779sm (8,385sf)**

NOTES

GENERAL:

SPECIFIC:

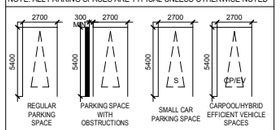
ZONING STANDARDS AS PER BY-LAW 270-2004

TYPICAL PARKING SPACE:

DRIVE AISLE: MIN. 6.0m
DRIVE AISLE WITH PARKING ACCESS: MIN. 6.6m

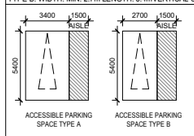
TYPICAL PARKING SPACE DIMENSIONS:

WIDTH: MIN. 2.7m LENGTH: 5.4m VERTICAL CLEARANCE: 2.1m
NOTE: ALL PARKING SPACES ARE TYPICAL UNLESS OTHERWISE NOTED



TYPICAL ACCESSIBLE PARKING SPACE DIMENSIONS:

TYPE A: WIDTH: MIN. 3.4m LENGTH: 5.4mVERTICAL CLEARANCE: 2.1m
TYPE B: WIDTH: MIN. 2.7m LENGTH: 5.4mVERTICAL CLEARANCE: 2.1m



TYPICAL LOADING SPACE:

TYPICAL LOADING SPACE DIMENSIONS:

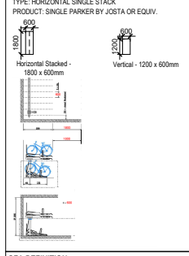
CITY: WIDTH: MIN. 3.5m LENGTH: 9m VERTICAL CLEARANCE: 4.25m
NOTE: ALL PARKING SPACES ARE TYPICAL UNLESS OTHERWISE NOTED

TYPICAL BICYCLE PARKING SPACE:

BICYCLE PARKING SPACE MIN. REQUIREMENT DIMENSIONS:

HORIZONTAL	*VERTICAL*
WIDTH: MIN. 0.6m	WIDTH: 0.5m
LENGTH: MIN. 1.8m	LENGTH (HEIGHT): 1.6
VERTICAL CLEARANCE: 1.9m	HORIZONTAL CLEARANCE: 1.2m

TYPE: HORIZONTAL SINGLE STACK
PRODUCT: SINGLE PARKER BY JOSTA OR EQUIV.



GFA DEFINITION

FLOOR AREA, GROSS RESIDENTIAL shall mean the aggregate of the area of all floors in a building, whether at, above, or below established grade, measured from the exterior of the outside walls, but excluding any porch, verandah, unfinished attic, basement or any floor area used for building maintenance or service equipment, stairwells or elevators, loading areas, common laundry facilities, common washrooms, common children's pay area, recreation area, parking of motor vehicles, or storage.

SITE SYMBOL LEGEND:

- ATRIUM ENTRANCE
- RESIDENTIAL ENTRANCE (TOWER)
- RESIDENTIAL ENTRANCE (TOWNHOUSES)
- RETAIL ENTRANCE
- HOTEL ENTRANCE
- OUTDOOR AMENITY
- GREEN ROOF
- x123.45 EX — EXISTING GRADES
- x123.45 — PROPOSED GRADES
- HYD — PROPOSED FIRE HYDRANT
- FDC — FIRE DEPARTMENT CONNECTION
- INTAKE/EXHAUST GRATE
- BINS — 3 CUBIC YARD GARBAGE/RECYCLING
- MH — PROPOSED MANHOLE
- PROPOSED CONVEX TRAFFIC MIRROR
- TRAFFIC SIGNS
- RADII SEPARATION DISTANCES AS INDICATED
- EASEMENT LINE
- PROPERTY LINE
- EXTENT OF FLOOD PLAIN LINE

1 / AZ101 ZBL_Site Plan
1 : 350

DRAWING NOT TO BE SCALED

Contractor must check and verify all dimensions on the job and report any discrepancies to the architect before proceeding with the work.

This drawing shall not be used for construction purposes until signed by the consultant responsible. This drawing, as an instrument of service, is provided by and is the property of Sweeny & Co. Architects.

ISSUED

21-10-08	ISSUED FOR REZONING
22-04-29	ISSUED FOR COORDINATION

Sweeny&Co Architects

134 PETER STREET | SUITE 1601
TORONTO, ONTARIO | M5V 2H2 | CANADA
P: 416-971-6252 | F: 416-971-5420
E: info@andco.com | www.sweenyandco.com

PROJ. NAME
BRAMPTON MIXED USE RESIDENTIAL
24 Elizabeth St. N. / 33 George St. N.

OWNER

DWG TITLE
Site Plan & Zoning Info

DATE :	APRIL 22, 2022
SCALE :	As indicated
DRAWN :	JAF/PG
CHECKED :	DC
PROJ. No. :	1918

DWG No. **AZ101**

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2022-04-29 12:29:09 PM

CONTEXT PLAN

PROJECT STATISTICS

GENERAL		
Project:	24 Elizabeth St. N. / 33 George St. N.	
Address :	Brampton, Ontario	
District:	--	
Site Area :	6,049 m²	65,116 SF
Parking spaces:	657	
Res. Parking Ratio:	0.47	
ZONING		
By-law :	CITY OF BRAMPTON	
Height limit :	135.0 m	
Gross Floor Area :	67,220 m²	
Density :	11.11	
Building height :	146.10 m	

	HEIGHT		TFA		GFA - CITY OF BRAMPTON													
					RESIDENTIAL		HOTEL		HERITAGE		RETAIL		GFA TOTAL		INDOOR AMENITY		OUTDOOR AMENITY	
UNDERGROUND	Storeys	Metres	Area m²	Area SF	Area m²	Area SF	Area m²	Area SF	Area m²	Area SF	Area m²	Area SF	Area m²	Area SF	Area m²	Area SF	Area m²	Area SF
PARKING																		
Level P5	1	4.00 m	5,648.60 m²	60,801 SF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Level P4	1	4.00 m	5,648.60 m²	60,801 SF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Level P3	1	4.00 m	5,648.60 m²	60,801 SF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Level P2	1	4.00 m	5,648.60 m²	60,801 SF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Level P1	1	4.00 m	4,681.87 m²	50,395 SF	72.56 m²	781 SF	--	--	--	--	--	--	72.56 m²	781 SF	--	--	--	--
PARKING TOTAL	*5*	*20.00 m*	*27,276.28 m²*	*293,599 SF*	*72.56 m²*	*781 SF*	--	--	--	--	--	--	*72.56 m²*	*781 SF*	--	--	--	--
UNDERGROUND TOTAL	***5***	***20.00 m***	***27,276.28 m²***	***293,599 SF***	***72.56 m²***	***781 SF***	--	--	--	--	--	--	***72.56 m²***	***781 SF***	--	--	--	--

	HEIGHT		TFA		GFA - CITY OF BRAMPTON													
					RESIDENTIAL		HOTEL		HERITAGE		RETAIL		GFA TOTAL		INDOOR AMENITY		OUTDOOR AMENITY	
ABOVE GRADE	Storeys	Metres	Area m²	Area SF	Area m²	Area SF	Area m²	Area SF	Area m²	Area SF	Area m²	Area SF	Area m²	Area SF	Area m²	Area SF	Area m²	Area SF
HOTEL																		
Level N-01 Retail	1	3.00 m	461.22 m²	4,965 SF	--	--	461.22 m²	4,965 SF	--	--	--	--	461.22 m²	4,965 SF	--	--	--	--
Level N-01 Res	1	3.00 m	121.56 m²	1,308 SF	--	--	121.56 m²	1,308 SF	--	--	--	--	121.56 m²	1,308 SF	--	--	--	--
Level N-01 Mezz	1	3.00 m	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Level N-02	1	3.00 m	1,111.99 m²	11,969 SF	9.53 m²	103 SF	1,034.55 m²	11,136 SF	--	--	--	--	1,044.08 m²	11,238 SF	--	--	--	--
Level N-03	1	3.00 m	1,286.35 m²	13,846 SF	9.61 m²	103 SF	1,163.18 m²	12,520 SF	--	--	--	--	1,172.79 m²	12,624 SF	--	--	--	--
Level N-04	1	3.00 m	1,373.95 m²	14,789 SF	9.61 m²	103 SF	1,250.82 m²	13,464 SF	--	--	--	--	1,260.43 m²	13,567 SF	--	--	--	--
Level N-05	1	3.00 m	1,376.10 m²	14,812 SF	9.61 m²	103 SF	1,259.83 m²	13,561 SF	--	--	--	--	1,269.44 m²	13,664 SF	--	--	--	--
Level N-06 and N-07	*2*	*6.00 m*	*2,752.21 m²*	*29,625 SF*	*19.22 m²*	*207 SF*	*2,519.65 m²*	*27,121 SF*	--	--	--	--	*2,538.88 m²*	*27,328 SF*	--	--	--	--
SUBTOTAL	*0*	*0.00 m*	*8,483.39 m²*	*91,314 SF*	*57.58 m²*	*620 SF*	*7,810.80 m²*	*84,075 SF*	--	--	--	--	*7,868.39 m²*	*84,695 SF*	--	--	--	--
PODIUM (North)																		
Level N-01 Retail	1	2.46 m	338.05 m²	3,639 SF	--	--	--	--	--	--	266.65 m²	2,870 SF	266.65 m²	2,870 SF	--	--	--	--
Level N-01 Res	1	7.19 m	1,760.11 m²	18,946 SF	601.08 m²	6,470 SF	--	--	216.65 m²	2,332 SF	523.26 m²	5,632 SF	1,340.99 m²	14,434 SF	--	--	162.33 m²	1,747 SF
Level N-01 Mezz	1	3.00 m	1,608.26 m²	17,311 SF	741.97 m²	7,986 SF	--	--	--	--	--	--	741.97 m²	7,986 SF	--	--	--	--
Level N-02	1	3.00 m	262.67 m²	2,827 SF	--	--	--	--	--	--	--	--	--	--	227.43 m²	2,448 SF	--	--
Level N-03	1	2.80 m	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Level N-04	1	2.80 m	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Level N-05	1	2.80 m	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Level N-06	1	2.80 m	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Level N-07	1	3.90 m	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Level N-08	1	3.00 m	935.00 m²	10,064 SF	859.40 m²	9,251 SF	--	--	--	--	--	--	859.40 m²	9,251 SF	--	--	--	--
Level N-09	1	4.00 m	935.00 m²	10,064 SF	813.18 m²	8,753 SF	--	--	--	--	--	--	813.18 m²	8,753 SF	--	--	--	--
SUBTOTAL	*11*	*37.75 m*	*5,839.08 m²*	*62,851 SF*	*3,015.63 m²*	*32,460 SF*	--	--	*216.65 m²*	*2,332 SF*	*789.91 m²*	*8,503 SF*	*4,022.19 m²*	*43,295 SF*	*227.43 m²*	*2,448 SF*	*162.33 m²*	*1,747 SF*
TOWER (North)																		
Level N-10	1	3.00 m	820.00 m²	8,826 SF	757.89 m²	8,158 SF	--	--	--	--	--	--	757.89 m²	8,158 SF	--	--	--	--
Level N-11 to N-27	*17*	*51.80 m*	*13,940.00 m²*	*150,049 SF*	*12,884.09 m²*	*138,683 SF*	--	--	--	--	--	--	*12,884.09 m²*	*138,683 SF*	--	--	--	--
Level N-28	1	3.00 m	820.00 m²	8,826 SF	760.78 m²	8,189 SF	--	--	--	--	--	--	760.78 m²	8,189 SF	--	--	--	--
Level N-29 to N-42	*14*	*42.80 m*	*11,480.00 m²*	*123,570 SF*	*10,650.85 m²*	*114,645 SF*	--	--	--	--	--	--	*10,650.85 m²*	*114,645 SF*	--	--	--	--
Mech. Penthouse	1	8.00 m	408.20 m²	4,394 SF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SUBTOTAL	*33*	*108.35 m*	*27,468.20 m²*	*295,665 SF*	*25,053.60 m²*	*269,675 SF*	--	--	--	--	--	--	*25,053.60 m²*	*269,675 SF*	--	--	--	--
PODIUM (South)																		
Level N-01 Res	1	3.00 m	1,763.72 m²	18,984 SF	915.26 m²	9,852 SF	--	--	--	--	--	--	915.26 m²	9,852 SF	172.23 m²	1,854 SF	--	--
Level N-01 Mezz	1	3.00 m	1,111.43 m²	11,963 SF	387.13 m²	4,167 SF	--	--	--	--	--	--	387.13 m²	4,167 SF	--	--	--	--
Level N-02	1	3.00 m	1,042.40 m²	11,220 SF	4.68 m²	50 SF	--	--	--	--	--	--	4.68 m²	50 SF	977.83 m²	10,525 SF	1,257.85 m²	13,539 SF
Level S-03	1	3.00 m	1,194.98 m²	12,863 SF	1,125.43 m²	12,114 SF	--	--	--	--	--	--	1,125.43 m²	12,114 SF	--	--	--	--
Level S-04 and S-05	*2*	*6.00 m*	*2,389.95 m²*	*25,725 SF*	*2,250.87 m²*	*24,228 SF*	--	--	--	--	--	--	*2,250.87 m²*	*24,228 SF*	--	--	--	--
Level S-06	1	3.00 m	852.18 m²	9,173 SF	779.87 m²	8,394 SF	--	--	--	--	--	--	779.87 m²	8,394 SF	--	--	--	--
Level S-07	1	3.00 m	852.18 m²	9,173 SF	779.92 m²	8,395 SF	--	--	--	--	--	--	779.92 m²	8,395 SF	--	--	--	--
Level S-08	1	3.00 m	852.15 m²	9,173 SF	768.95 m²	8,277 SF	--	--	--	--	--	--	768.95 m²	8,277 SF	--	--	--	--
SUBTOTAL	*9*	*27.00 m*	*10,058.99 m²*	*108,274 SF*	*7,012.12 m²*	*75,478 SF*	--	--	--	--	--	--	*7,012.12 m²*	*75,478 SF*	*1,150.06 m²*	*12,379 SF*	*1,257.85 m²*	*13,539 SF*
TOWER (South)																		
Level S-09	1	3.00 m	877.01 m²	9,440 SF	802.19 m²	8,635 SF	--	--	--	--	--	--	802.19 m²	8,635 SF	--	--	--	--
Level S-10 and S-37	*28*	*84.00 m*	*24,556.37 m²*	*264,323 SF*	*22,461.40 m²*	*241,773 SF*	--	--	--	--	--	--	*22,461.40 m²*	*241,773 SF*	--	--	--	--
Mech. Penthouse	1	8.00 m	409.50 m²	4,408 SF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SUBTOTAL	*29*	*87.00 m*	*25,842.89 m²*	*278,171 SF*	*23,263.59 m²*	*250,407 SF*	--	--	--	--	--	--	*23,263.59 m²*	*250,407 SF*	--	--	--	--
ABOVEGRADE TOTAL	***44***	***146.1 m***	***77,692.54 m²***	***836,276 SF***	***58,402.53 m²***	***628,640 SF***	***7,810.80 m²***	***84,075 SF***	***216.65 m²***	***2,332 SF***	***789.91 m²***	***8,503 SF***	***67,219.89 m²***	***723,549 SF***	***1,377.49 m²***	***14,827 SF***	***1,420.19 m²***	***15,287 SF***
GRAND TOTAL			**104,968.82 m²**	**1,129,875 SF**	**58,475.09 m²**	**629,421 SF**	**7,810.80 m²**	**84,075 SF**	**216.65 m²**	**2,332 SF**	**789.91 m²**	**8,503 SF**	**67,292.45 m²**	**724,330 SF**	**1,377.49 m²**	**14,827 SF**	**1,420.19 m²**	**15,287 SF**
	HEIGHT		**TFA**		**RESIDENTIAL**		**HOTEL**		**HERITAGE**		**RETAIL**		**GFA TOTAL**		**INDOOR AMENITY**		**OUTDOOR AMENITY**	

*** Areas in square feet are for reference only.

TOTAL RESIDENTIAL UNIT COUNT

	BACH	1BD	1BD+D	2BD	2BD+D	3BD	TH	TOTAL
Level N-01 Retail	-	-	-	-	-	-	-	-
Level N-01 Res	-	-	-	-	-	-	-	-
Level N-01 Mezz	-	-	-	-	-	-	-	-
Level N-02	-	-	-	-	-	-	-	-
Level N-03	-	-	-	-	-	-	-	-
Level N-04	-	-	-	-	-	-	-	-
Level N-05	-	-	-	-	-	-	-	-
Level N-06	-	-	-	-	-	-	-	-
Level N-07	-	-	-	-	-	-	-	-
Level N-08	-	2	6	-	8	-	16	
Level N-09	-	-	-	-	-	-	-	-
SUBTOTAL	-	2	6	-	8	-	16	
	-	12.5%	37.5%	-	50.0%	-	-	
Level N-10	-	9	-	3	1	-	-	13
Level N-11 to N-27	-	153	-	51	17	-	-	221
Level N-28	1	10	-	3	-	-	-	14
Level N-29 to N-42	*14*	*140*	-	*42*	-	-	-	*196*
Mech. Penthouse	-	-	-	-	-	-	-	-
SUBTOTAL	*15*	*312*	-	*99*	*18*	-	-	*444*
	3.4%	70.3%	-	22.3%	4.1%	-	-	
Level N-01 Res	-	-	-	-	-	-	5	5
Level N-01 Mezz	-	-	-	-	-	-	-	-
Level N-02	-	-	-	-	-	-	-	-
Level S-03	-	3	3	6	-	4	-	16
Level S-04 and S-05	-	*6*	*6*	*12*	-	*8*	-	*32*
Level S-06	-	7	1	3	2	-	-	13
Level S-07	-	4	3	3	2	-	-	13
Level S-08	-	5	1	3	3	-	-	12
SUBTOTAL	*1*	*25*	*14*	*27*	*7*	*12*	*5*	*91*
	-	-	-	-	-	-	-	-
Level S-09	-	7	2	4	-	-	-	13
Level S-10 and S-37	-	*196*	*56*	*112*	-	-	-	*364*
Mech. Penthouse	-	-	-	-	-	-	-	-
SUBTOTAL	-	*203*	*58*	*116*	-	-	-	*377*
	-	53.8%	15.4%	30.8%	-	-	-	
ABOVEGRADE TOTAL	***16***	***540***	***74***	***248***	***25***	***20***	***5***	***928***
GRAND TOTAL	**16**	**614**		**273**		**25**		
	1.7%	58.2%	8.0%	26.7%	2.7%	2.7%	0.5%	
AVG. UNIT SIZE PER TYPE	32.80 m² 353 SF	47.34 m² 510 SF	58.87 m² 634 SF	69.62 m² 749 SF	74.88 m² 806 SF	97.00 m² 1,044 SF	151.41 m² 1,630 SF	

TOTAL HOTEL UNIT COUNT

	EL-K	EL-QQ	EL-K EXT	EL-1BD EXT	EL-C EXT	EL-QQC	TOTAL
Level N-01 Retail	-	-	-	-	-	-	-
Level N-01 Res	-	-	-	-	-	-	-
Level N-01 Mezz	-	-	-	-	-	-	-
Level N-02	6	2	8	-	-	4	20
Level N-03	7	2	9	1	-	4	23
Level N-04	7	3	10	1	-	4	25
Level N-05	7	5	12	1	1	-	26
Level N-06 and N-07	*14*	*10*	*24*	*2*	*2*	-	*52*
SUBTOTAL	*41*	*22*	*63*	*5*	*3*	*12*	*146*
	28.1%	15.1%	43.2%	3.4%	2.1%	8.2%	
Level N-08	-	-	-	-	-	-	-
Level N-09	-	-	-	-	-	-	-
SUBTOTAL	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
Level N-10	-	-	-	-	-	-	-
Level N-11 to N-27	-	-	-	-	-	-	-
Level N-28	-	-	-	-	-	-	-
Level N-29 to N-42	-	-	-	-	-	-	-
Mech. Penthouse	-	-	-	-	-	-	-
SUBTOTAL	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
Level S-06	-	-	-	-	-	-	-
Level S-07	-	-	-	-	-	-	-
Level S-08	-	-	-	-	-	-	-
SUBTOTAL	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
Level S-09	-	-	-	-	-	-	-
Level S-10 and S-37	-	-	-	-	-	-	-
Mech. Penthouse	-	-	-	-	-	-	-
SUBTOTAL	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
ABOVEGRADE TOTAL	*41*	*22*	*63*	*5*	*3*	*12*	*146*
GRAND TOTAL	**63**		**83**				**146**
	43.2%		56.8%				

DRAWING NOT TO BE SCALED

Contractor must check and verify all dimensions on the job and report any discrepancies to the architect before proceeding with the work.

This drawing shall not be used for construction purposes until signed by the consultant responsible. This drawing, as an instrument of service, is provided by and is the property of Sweeny & Co. Architects.

ISSUED

21-10-08	ISSUED FOR REZONING
22-04-29	ISSUED FOR COORDINATION

Sweeny&Co Architects

134 PETER STREET | SUITE 1601
TORONTO, ONTARIO | M5V 2H2 | CANADA
P: 416-971-6252 | F: 416-971-5420
E: info@andco.com | www.sweenyandco.com

PROJ. NAME

BRAMPTON MIXED USE RESIDENTIAL

24 Elizabeth St. N. / 33 George St. N.

OWNER

DWG TITLE

Context Plan & Project Statistics

DATE : APRIL 22, 2022
SCALE :
DRAWN : JAF/PG
CHECKED : DC
PROJ. No. : 1918

DWG No.

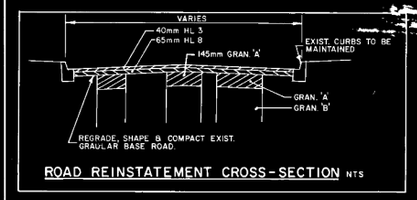
AZ001

C:\Users\james\Documents\1918_ 28 Elizabeth Brampton_R21_Central_James93A5E.rvt

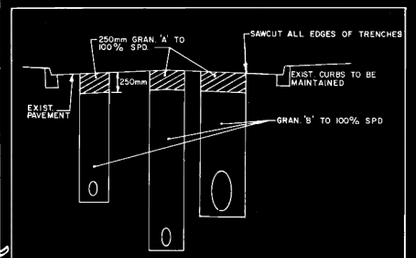
2022-04-29 12:28:58 PM

F3-37-4

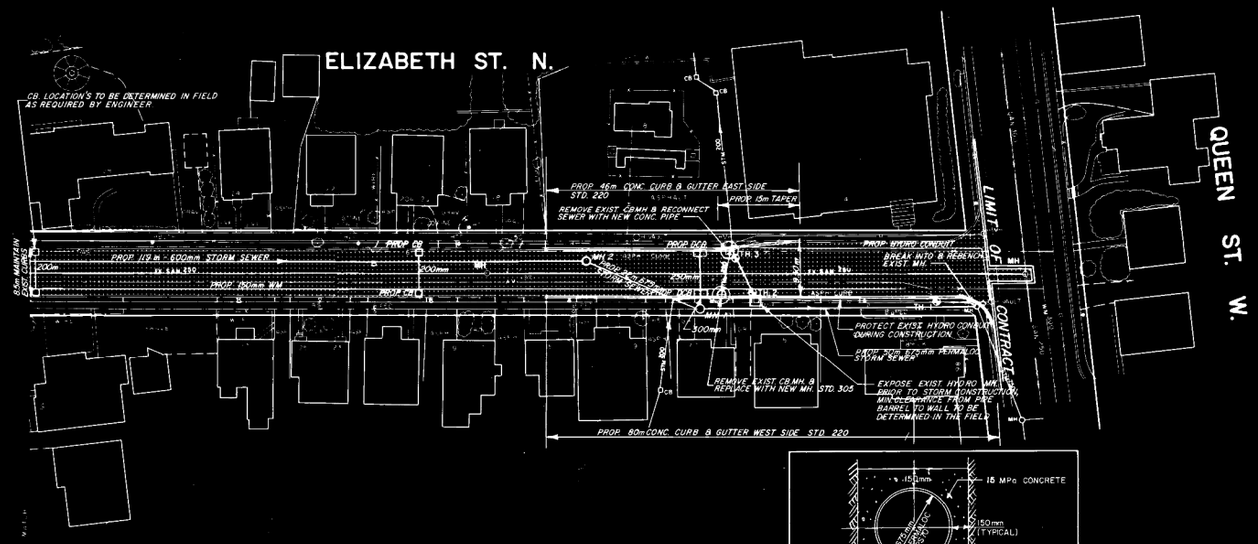
88-106

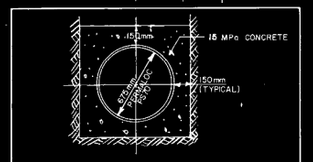


ROAD REINSTATEMENT CROSS-SECTION NTS



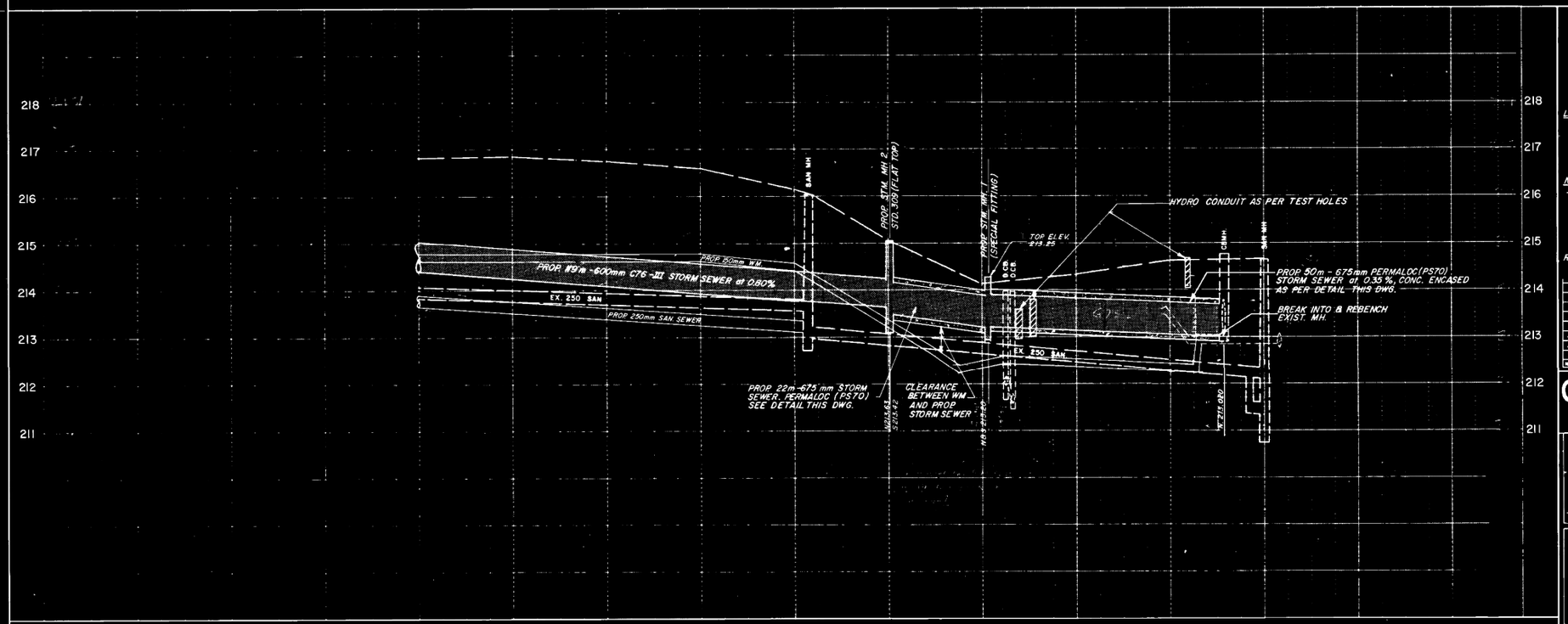
TEMPORARY TRENCH REINSTATEMENT DETAIL NTS





DETAIL OF CONCRETE ENCASEMENT NTS

NOTE: ALL STORM SEWER, CATCHBASIN, WATERMAIN & SANITARY LEADS, SERVICES & APPURTENACES TO BE BACKFILLED WITH GRAN. 'B' TO 100% S.P.D.



THIS DWG. TO BE USED FOR ROAD AND STORM SEWER WORK ONLY

LEGEND:

TO BE REMOVED

NOTES:

- EXACT LOCATIONS OF ALL PROP. CATCHBASINS TO BE DETERMINED IN THE FIELD BY ENGINEER.

REFERENCE: BENCH MARK F4-56 ELEV. 218.441

BRICK BUILDING, M7 QUEEN ST. W. (SALVATION ARMY THRIFT STORE) BRASS PLAQUE IN N. FACE 3.8m W. OF N.E. CORNER 0.3m ABOVE GROUND.

No.	By	Date	Revision	Checked
3	P.S.	88-06	675mm CONC. PIPE TO PERMALOC PS70	M.J.H.
2	P.S.	88-05	MH 1 & MH 2 LOCATION REVISED	M.J.H.
1	Kim V.R.	88-03	MISC. STM. SWR.	M.V.L.

CITY OF BRAMPTON

ENGINEERING DEPARTMENT

COMMISSIONER OF PUBLIC WORKS, L.T. KOEHLE P.Eng.

REGISTERED PROFESSIONAL ENGINEER D. J. VAN BEILEN PROVINCE OF ONTARIO

REGISTERED PROFESSIONAL ENGINEER M. V. LOSTRACCO PROVINCE OF ONTARIO

ELIZABETH STREET N.

STATION 0+000 TO 0+180

QUEEN ST. TO 10m S. OF NELSON ST.

MISC. STORM SEWERS

Supervised By REGION Date Contract No. 88-106

APPENDIX B

Counterpoint Engineering Inc.

WATER DEMAND CALCULATIONS

Project: Greenwin 31 George North
Project No: 20101
Location: Brampton
Site Area: 0.605 ha

Table #1: Per Capita Demand

Residential	280	litres/cap/day
ICI	300	litres/employ./day

Population Rates and Domestic Sewage Rate

1 Bedroom Apartment	1.68	ppu
2+ Bedroom Apartment	2.54	ppu
Rowhouse	3.5	ppu
Commercial/Retail	50	persons per ha

Unit and Floor Area Breakdown

	Unit Count/Area	Population
1 Bdrm. & 1 Bdrm./Den:	614	1032
2 Bdrm. & 2 Bdrm./Den:	273	693
3 Bedroom:	25	88
Hotel (1 Bdrm) Units	63	106
Hotel (2 Bdrm) Units	83	211
Hotel	0.78108	39
Heritage (Existing building)	0.02167	1
Commerical/Retail	0.07899	4
Total Equivalent Population:		**2173**

Peaking Factors

Land Use	Peak Hour	Maximum Day
Residential	3.00	2.00
ICI	3.00	1.40

Summary of Demands

Site	Building	Daily Water Demand (L/sec)	Max Day Water Demand (L/sec)	Peak Hour Water Demand (L/sec)	Fire Demand Required (L/sec)	Max Day plus Fire Demand (L/sec)
31 George	Proposed	7.05	14.01	21.16	116.67	130.68

Counterpoint Engineering Inc.

REQUIRED FIRE FLOW WORKSHEET - PROPOSED DEVELOPMENT

Project: Greenwin 31 George North
Project No: 20101
Building: Proposed

Guide for Determination of Required Flow Copyright I.S.O

$$F = 220C\sqrt{A}$$

where
F = the required fire flow in litres per minute.
C = coefficient related to the type of construction.
= 1.5 for wood frame construction (structure essentially all combustible).
= 1.0 for ordinary construction (brick or other masonry walls, combustible floor and interior).
= 0.8 for non-combustible construction (unprotected metal structural components, masonry or metal walls).
= 0.6 for fire-resistive construction (fully protected frame, floors, roof).
A = The total floor area in square metres (including all storeys, but excluding basements at least 50 percent below grade) in the building being considered.

Type of Construction		Class Factor
WF	Wood Frame	1.5
OC	Ordinary Construction	1.0
NC	Non-Combustible	0.8
FC	Fire-Resistive	0.6

Contents		% Reduction
NC	Non-Combustible	25
LC	Limited Combustible	15
C	Combustible	0
FB	Free Burning	15
RB	Rapid Burning	25

Area Notes for Fire Resistive Buildings (from FUS manual, 1999):

If Vertical Openings are inadequately protected (less than 1-hour fire rating): Area is the total of the two largest adjoining floors (above ground level) plus 50% of the area of each of the next 8 adjoining floors above that.

If Vertical Openings are adequately protected (at least 1-hour fire rating): Area is the total of the largest floor (above ground level) plus 25% of the area of each of the next 2 immediately adjoining floors above that.

1) Fire Flow

Type of Construction:	FC	
C=	0.6	
A=	3,078	m^2
F=	**7,323**	**L/min**

Note: vertical openings are assumed to be adequately protected. Area is Podium level 1 plus 0.25 x Podium level 2 + 3.

2) Occupancy Reduction/Surcharge

Contents Factor:		LC			
Reduction/Surcharge of		-15%	=	-1,098	L/min
F=	7323L/min +	-1098	L/min =	6,224	**L/min**

3) System Type Reduction

NFPA 13 Sprinkler:		YES	30%		
Standard Water Supply:		YES	10%		
Fully Supervised:		YES	10%		
Total			50%		
Reduction of		50%	L/min =	3,112	L/min
F=	6224L/min -	3,112	L/min =	3,112	**L/min**

4) Separation Charge

Building Face	Dist(m)	Charge
North	13.48	15%
East	11.4	15%
South	15.33	15%
West	21	10%
Total		55%

of 6224.34 **L/min** = 3,423 **L/min**
(max exposure charge can be 75%)

Separation	Charge	Separation	Charge
0 to 3m	25%	20.1 to 30 m	10%
3.1 to 10m	20%	30.1 to 45m	5%
10.1 to 20m	15%		

F = 3112L/min + 3423L/min = 6,536 **L/min** (2,000L/min<F<45,000L/min)

F =	7,000	**L/min**	(round to the nearest 1,000L/min)
F =	117	**L/s**	
F =	1,849	**gpm**	

APPENDIX C

Counterpoint Engineering Inc.

SANITARY FLOW CALCULATIONS

Project: Greenwin 31 George North
Project No: 20101
Location: Brampton
Gross Site Area: 0.605 ha

Population Rates and Domestic Sewage Rate

1 Bedroom Apartment	1.68	ppu
2+ Bedroom Apartment	2.54	ppu
Rowhouse	3.5	ppu
Commercial/Retail	50	persons per ha
Domestic Sewage Rate	302.8	Lcpd

Unit and Floor Area Breakdown 1058.0

	Unit Count/Area	Population
1 Bdrm. & 1 Bdrm./Den :	614	1032
2 Bdrm. & 2 Bdrm./Den :	273	693
3 Bedroom:	25	88
Hotel (1 Bdrm) Units	63	106
Hotel (2 Bdrm) Units	83	211
Hotel	0.78108	39
Heritage (Existing building)	0.02167	1
Commerical/Retail	0.07899	4

Total Equivalent Population: **2173**

Peaking Factor

$$M_d = 1 + \frac{14}{4 + P^{0.5}}$$ = **3.56**

Peak Flow w/o Infiltration per Std. Dwg. 2-9-2: **0.02709** m^3/sec
27.09 L/sec

Infiltration: 0.0002 m^3/sec/ha
Infiltration Rate: **0.000121** m^3/sec
0.12 L/sec

Total Peak Flow: **0.02722** m^3/sec
27.22 L/sec

Population	Peak Flow (m^3/sec)	Population	Peak Flow (m^3/sec)	Population	Peak Flow (m^3/sec)
1000	0.0130	4750	0.0542	13000	0.1292
1050	0.0139	5000	0.0569	14000	0.1376
1100	0.0145	5250	0.0594	15000	0.1459
1150	0.0151	5500	0.0618	16000	0.1540
1200	0.0157	5750	0.0640	17000	0.1620
1300	0.0169	6000	0.0666	18000	0.1700
1400	0.0181	6250	0.0691	19000	0.1779
1500	0.0193	6500	0.0710	20000	0.1857
1600	0.0204	6750	0.0737	25000	0.2236
1700	0.0217	7000	0.0762	30000	0.2601
1800	0.0228	7250	0.0784	35000	0.2955
1900	0.0239	7500	0.0809	40000	0.3298
2000	0.0251	7750	0.0830	45000	0.3634
2200	0.0273	8000	0.0854	50000	0.3963
2400	0.0296	8250	0.0878	55000	0.4286
2600	0.0318	8500	0.0898	60000	0.4603
2800	0.0340	8750	0.0922	65000	0.4915
3000	0.0361	9000	0.0945	70000	0.5224
3250	0.0387	9250	0.0968	75000	0.5528
3500	0.0415	9500	0.0981	80000	0.5828
3750	0.0441	9750	0.1010	85000	0.6126
4000	0.0467	10000	0.1033	90000	0.6420
4250	0.0492	11000	0.1120	95000	0.6711
4500	0.0518	12000	0.1210	100000	0.7000

Notes:
1. Domestic sewage flows are based upon a unit sewage flow of 302.8 Lpcd.
2. The flows in the above table include the Harmon Peaking Factor.
3. Domestic sewage flow for less than 1000 persons shall be 0.013m^3/sec.
4. Domestic sewage flow for greater than 100,000 persons shall be 7.0 x 10^{-6} m^3/sec per capita.
5. Lpcd = Litres per capita per day 1 Litre = 0.001 $metre^3$

Region of Peel
Working for you

Date: June 2005 Rev: 1
Approved:

SEWAGE FLOWS
(EXCLUDING INFILTRATION)

STD. DWG. ~~2-5-2~~ 2-9-2

APPENDIX D

counterpoint engineering

Predevelopment Flows

Project Name: 31-33 George Street

Project Number: 20101

Composite RC Value	Area [ha]	RC	RC * Area
100	0.039	0.90	0.0351
101	0.210	0.75	0.1575
102	0.318	0.35	0.1113
103	0.038	0.90	0.0342
Total:	**0.605**		**0.3381**
		Divided by Total Area =	**0.56**

Rational Method - 2 Year Predevelopment

Event:		2	years
ABC's:	A	22.1	
	C	0.714	
Time of Concentration:	t	10	min
Runoff Coefficient:	C	0.56	
Site Area	A	0.605	ha
Intensity $i=A/(T)^c$	i	79.43	mm/hr
Flow Q=CiA/360	Q	0.07	m^3/s
		74.6	**L/s**

Rational Method - 5 Year Predevelopment

Event:		5	years
ABC's:	A	29.9	
	C	0.701	
Time of Concentration:	t	10	min
Runoff Coefficient:	C	0.56	
Site Area	A	0.605	ha
Intensity $i=A/(T)^c$	i	104.99	mm/hr
Flow Q=CiA/360	Q	0.10	m^3/s
		98.6	**L/s**

Rational Method - 10 Year Predevelopment

Event:		10	years
ABC's:	A	35.1	
	C	0.695	
Time of Concentration:	t	10	min
Runoff Coefficient:	C	0.56	
Site Area	A	0.605	ha
Intensity $i=A/(T)^c$	i	121.93	mm/hr
Flow Q=CiA/360	Q	0.11	m^3/s
		114.5	**L/s**

Rational Method - 25 Year Predevelopment

Event:		25	years
ABC's:	A	41.6	
	C	0.691	
Time of Concentration:	t	10	min
Runoff Coefficient:	C	0.56	
Site Area	A	0.605	ha
Intensity $i=A/(T)^c$	i	143.48	mm/hr
Flow Q=CiA/360	Q	0.13	m^3/s
		134.8	**L/s**

Rational Method - 50 Year Predevelopment

Event:		50	years
ABC's:	A	46.5	
	C	0.688	
Time of Concentration:	t	10	min
Runoff Coefficient:	C	0.56	
Site Area	A	0.605	ha
Intensity $i=A/(T)^c$	i	159.52	mm/hr
Flow Q=CiA/360	Q	0.15	m^3/s
		149.8	**L/s**

Rational Method - 100 Year Predevelopment

Event:		100	years
ABC's:	A	51.3	
	C	0.686	
Time of Concentration:	t	10	min
Runoff Coefficient:	C	0.56	
Site Area	A	0.605	ha
Intensity $i=A/(T)^c$	i	175.36	mm/hr
Flow Q=CiA/360	Q	0.16	m^3/s
		164.7	**L/s**

counterpoint engineering

Allowable Release Rate

Project Name: 31-33 George Street

Project Number: 20101

Existing Site

Composite RC Value	Area [ha]	RC	RC * Area
100	0.039	0.90	0.0351
101	0.210	0.75	0.1575
102	0.318	0.35	0.1113
103	0.038	0.90	0.0342
Total:	**0.605**		**0.3381**
		Divided by Total Area =	**0.56**

Rational Method - 2 Year Predevelopment

Event:		2	years
ABC's:	A	22.1	
	C	0.714	
Time of Concentration:	t	10	min
Runoff Coefficient:	C	0.56	
Site Area*	A	0.605	ha
Intensity	i	79.43	mm/hr
$i=A/(T)^c$			
Flow	Q	0.075	m^3/s
Q=CiA/360		**74.6**	**L/s**

counterpoint engineering

SWM DESIGN CALCULATIONS
Required Storage Calculations (Rooftop and areas to Tank on UG1)

Project Name: 31-33 George Street **Prepared by:** P.R.
Municipality: City of Brampton
Project No.: 20101 **Last Revised:** 6-May-22

Rainfall Data

Location:	**Brampton, Ontario**	a	**51.3**
Event	**100-year**	b	**0**
		c	**0.695**

Site Data

Area (ha)	**0.565**
Runoff Coefficient	**0.90**
AC	0.51
Tc (min)	**10**
Time Increment (min)	**5**
Release Rate (L/s)	**16.8**
Storage Required (m^3)	**205**

The Rational Equation:

$$Q = \frac{(C)(i)(A)}{360}$$

where,

Q = the design flow (m^3/s)
C = the site specific runoff coefficient
A = the drainage area (ha)
i = rainfall intensity (mm/hr)

Time	Rainfall Intensity	Storm Runoff	Runoff Volume	Released Volume	Storage Volume	
(min)	(mm/hr)	(m^3/s)	(m^3)	(m^3)	(m^3)	
10	178	0.25	151	10	141	
15	134	0.19	171	15	156	
20	110	0.16	187	20	167	
25	94	0.13	200	25	175	
30	83	0.12	211	30	181	
35	75	0.11	221	35	186	
40	68	0.10	231	40	190	
45	63	0.09	239	45	194	
50	58	0.08	247	50	197	
55	54	0.08	254	55	199	
60	51	0.07	261	61	201	
65	49	0.07	268	66	202	
70	46	0.07	274	71	203	
75	44	0.06	279	76	204	
80	42	0.06	285	81	204	
85	40	0.06	290	86	205	
90	39	0.05	295	91	205	********
95	37	0.05	300	96	205	
100	36	0.05	305	101	204	
105	35	0.05	310	106	204	
110	34	0.05	314	111	203	
115	33	0.05	318	116	202	
120	32	0.04	323	121	202	

counterpoint engineering

SWM DESIGN CALCULATIONS
100-Year Flow Rate Calculations (Uncontrolled)

Project Name: 31-33 George Street **Prepared by:** P.R.
Municipality: City of Brampton
Project No.: 20101 **Last Revised:** 6-May-22

Rainfall Data

Location:	**Brampton, Ontario**	a	**51.3**
Event	**100-year**	b	**0**
		c	**0.695**

Site Data

Area (ha)	**0.040**
Runoff Coefficient	**0.90**
AC	0.04
Tc (min)	**10**
Rainfall Intensity (mm/hr)	178
Rational Flow Rate (L/s)	**17.8**

The Rational Equation:

$$Q = \frac{(C)(i)(A)}{360}$$

where,

Q = the design flow (m^3/s)
C = the site specific runoff coefficient
A = the drainage area (ha)
i = rainfall intensity (mm/hr)

counterpoint engineering

SWM DESIGN CALCULATIONS
Storage Provided Calculations

Project Name: 31-33 George Street **Prepared by:** P.R.
Municipality: City of Brampton
Project No.: 20101 **Last Revised:** 6-May-22

Rainfall Data

Location:	**Brampton, Ontario**	a	**51.3**
Event	**100-year**	b	**0**
		c	**0.695**

Area ID	Area (ha)	Runoff Coefficient	TC (min)	Storage Available (m^3)	Storage Required (m^3)	Designed Release Rate (L/s)	Description	Orifice Size (mm)	Orifice Release Rate (L/s)	Allowable Release Rate (L/s)
A-1	0.565	0.90	10	205	205	16.8	Areas to Tank	81.65	16.8	56.8
UNC	0.040	0.90	10	N/A	N/A	17.8	Uncontrolled			
Total	**0.605**			205	**205**	**34.6**				

Allowable release rate is 74.6 L/s

AREA ID A-1

Composite RC Value	Area [ha]	RC	RC * Area
Green Roof	0.113	0.90	0.1013
Landscape/Pervious	0.060	0.90	0.0540
Building/Impervious Area	0.392	0.90	0.3532
	0.565	Total	0.5085
	Divided by Total Area =		0.90

AREA ID UNC

Composite RC Value	Area [ha]	RC	RC * Area
Building/Impervious Area	0.040	0.90	0.0360
	0.040	Total	0.0360
	Divided by Total Area =		0.90

SWM DESIGN CALCULATIONS
Summary - Water Balance Calculations

Project Name: 31-33 George Street
Municipality: City of Brampton
Project No.: 20101
Date: 6-May-22

Prepared by: P.R.
Last Revised: 6-May-22

Site Area: 0.605 ha

Water Balance Calculation Sheet

Total Required Volume to be Retained (5mm across area)	**30.3**	**m^3**
Abstraction: Conventional Roof		
Initial Abstraction	1.0	mm
Total Area	0.34	ha
Volume for evapotranspiration	**3.4**	**m^3**
Abstraction: Asphalt Pavement and walkways		
Initial Abstraction	1.0	mm
Total Area	0.11	ha
Volume for evapotranspiration	**1.1**	**m^3**
Abstraction: Grassed and Landscaped Areas		
Initial Abstraction	5.0	mm
Total Area	0.15	ha
Volume for evapotranspiration and infiltration	**7.7**	**m^3**
Total Volume Retained (Initial Abstractions):	**12.2**	**m^3**
Percent of Required Volume Being Retained (Initial Abstractions):	**40.3**	**%**
Shortfall for Total Water Reuse Cistern Volume (to be used in first 72 hrs)	**18.1**	**m^3**