FUNCTIONAL SERVICING REPORT

97 BOWER STREET

ACTON, ONTARIO
TOWN OF HALTON HILLS

PEARSON ENGINEERING
PEARSONENG.COM

September 2025

24029

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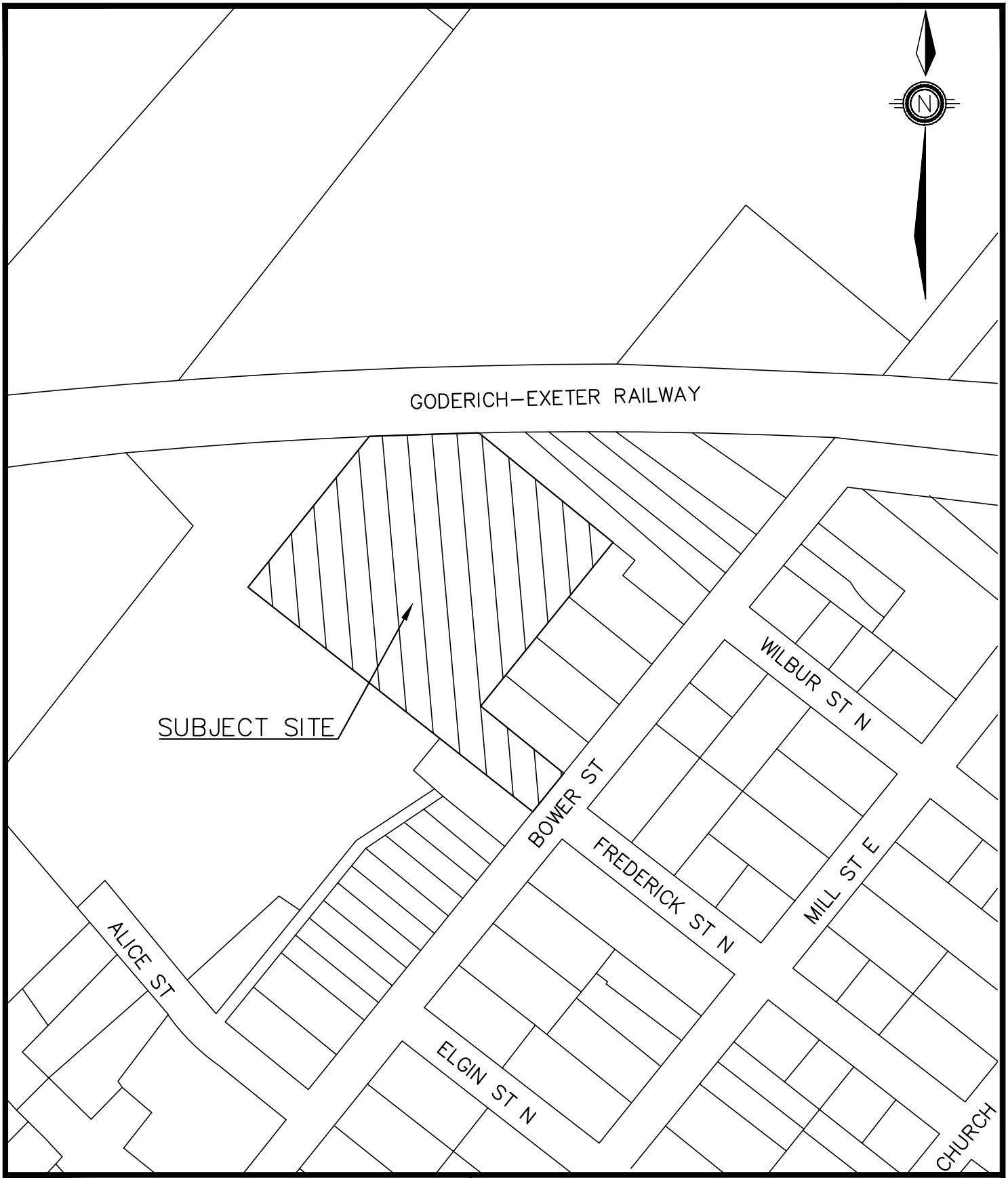
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CASTLEGROVE DEVELOPMENTS INC.
97 BOWER STREET, ACTON, ON

SITE LOCATION PLAN

PEARSON ENGINEERING
PEARSONENG.COM PH. 705.719.4785

DESIGNED BY	AA	HORIZ SCALE	N/A	PROJECT #	24029
DRAWN BY	KV	VERT SCALE	N/A	DRAWING #	FIG–1
CHECKED BY	MWD	DATE	SEPTEMBER 2025	REVISION #	0

P:\Autodesk Vault\Working Folders\24029 – KLM, 97 Bower Street, Acton\LAYOUT SHEETS\24029 – FIG–1.dwg Layout:FIG1 Plotted Sep 22, 2025 @ 2:06pm by kvasava @ PEARSON ENGINEERING LTD.

FUNCTIONAL SERVICING REPORT
97 BOWER STREET, ACTON

1. INTRODUCTION

PEARSON Engineering Ltd. has been retained by Castlegrove Developments Inc. (Client) to prepare a Functional Servicing Report (FSR) in support of the proposed mid-rise residential development located at 97 Bower Street in the Town of Halton Hills (Town) in Halton Region (Region).

The subject property is approximately 0.95 hectares in size and fronts onto Bower Street to the east, existing residential homes to the south, existing Halton Hills Hydro Inc. works yard to the west and railroad tracks to the north. The Project proposes a 5-storey building with 80 units as well as an underground parking garage, surface parking and an outdoor amenity space. The location of the site can be seen on Figure 1.

This FSR assesses the existing municipal infrastructure in the vicinity of the Project, the onsite Stormwater Management (SWM) facilities and internal services required to service the proposed Project. The report also includes preliminary design calculations and a brief outline of the proposed internal services, as well as comments regarding the ability of the various secondary utilities to service the site.

1.1. TERMS OF REFERENCE

The intent of this Functional Servicing Report is to:

- Assess the existing municipal infrastructure in the vicinity of the Project;
- Identify the existing site characteristics including any external drainage conditions;
- Illustrate the design of the stormwater conveyance system, capable of accommodating both minor and major storm flows from the site;
- Incorporate the appropriate Best Management Practices for controlling on-site erosion and sedimentation during construction while ultimately ensuring that the post-development release of stormwater is of adequate quality; and,
- Summarize this design in a technically comprehensive and concise manner.

2. SUPPORTING DOCUMENTS

The following documents have been referenced in the preparation of this report:

- Ministry of the Environment, Design Guidelines for Sewage Works, 2008
- Ministry of the Environment, Design Guidelines for Drinking-Water Systems, 2008
- The Ministry of the Environment Stormwater Management Planning and Design Manual, March 2003.
- Town of Halton Hills Design Standards, December 2021
- Halton Region Design Standards, October 2019
- Credit Valley Conservation Authority (CVCA) Technical Guidelines for Stormwater Management, July 2022

3. DESIGN POPULATION

The proposed development is to consist of 5-storey building with 80 units. Utilizing a population density of 1.65 people per unit as per Town of Halton Hills design standards for apartment, a design population of 132 people is calculated for the project.

4. WATER SUPPLY AND DISTRIBUTION

4.1. WATER SERVICING DESIGN CRITERIA

The site is to have a design population of 132 people. Utilizing the Town of Halton Design Criteria for residential water demand of 360 L/capita/day, an Average Day Demand (ADD) of 0.55 L/s was calculated. A Peak Rate factor of 8.50 was used in calculating a Peak Hour Demand (PHD) of 4.67 L/s for the proposed residential development. Calculations for the domestic water requirements for the site can be found in Appendix A.

4.2. INTERNAL WATER DISTRIBUTION SYSTEM

The project site will be serviced by connecting into the existing 200 mm diameter watermain located on the east side of Bower Street. The proposed 200 mm watermain will extend from the existing 200 mm diameter watermain located adjacent to the propertyline and extend through the project site and connect to the mechanical room of the proposed building. A fire hydrant located on site is proposed to provide adequate firefighting coverage for the proposed building as per Town Standards. Refer to SS-1 for the water servicing layout.

4.3. FIRE FLOW REQUIREMENTS

The required fire flow was calculated as per the 2020 edition of the Fire Underwriters Survey (FUS) assessment. The required fire flow for the proposed building was determined to be approximately 50 L/s (792 GPM). The building will include a sprinkler system, and the structure will be constructed using non-combustible construction materials including structural elements, walls, floors, and roofs constructed with a minimum 1-hour fire resistance rating. A hydrant flow test can be completed at detailed design to confirm available pressure if required. The required fire flows and footprint areas can be seen summarized below in Table 1 with the detailed FUS calculations attached in Appendix A.

Table 1: 2020 FUS Calculation Results Summary

Building Size	Block Footprint Area (m^2)	FUS Required Fire Flow (GPM)	FUS Required Fire Flow (L/s)
Multi Storey Building	1283	792	50

5. SANITARY SERVICING

5.1. SANITARY DESIGN CRITERIA

The site is to have a design population of 132 people. Utilizing the Town of Halton Hills Design Criteria's sanitary flow rate per capita of 360 L/capita/day, an Average Daily Flow (ADF) of 0.55 L/s was calculated. Using a Peaking Factor of 4.00 for this project and an infiltration allowance of 0.27 L/s/ha, a peak flow of 2.47 L/s was calculated for the proposed development. Sanitary design flow calculations can be found in Appendix B.

5.2. INTERNAL SANITARY SEWER SYSTEM

It is proposed that the sanitary sewers be constructed in accordance with the Town of Halton Hills and the Ministry of the Environment, Conservation, and Parks (MECP) guidelines to service the Project. The Project's sanitary sewer system will convey flow via a 150 mm diameter gravity sanitary sewer from the Proposed Building and connect to the existing 200 mm sanitary sewer located on Bower Street. The existing 200 mm diameter sanitary sewer on Bower Street runs from north to south and assumed that it has a capacity of 20.75 L/s at a slope of 0.40%. The proposed peak flow is approximately 11.83% of the existing sanitary sewer's capacity, therefore no adverse effects on the existing sanitary sewers are expected. Refer to SS- 1 for the sanitary servicing layout.

6. STORMWATER MANAGEMENT

A key component of the development is the need to address environmental and related SWM issues. These are examined in a framework aimed at meeting the Town of Halton Hills, Credit Valley Conservation (CVC), and MECP requirements. This Report focuses on the necessary measures to satisfy the MECP's SWM requirements.

It is understood the objectives of the SWM plan are to:

- Protect life and property from flooding and erosion.
- Maintain water quality for ecological integrity, recreational opportunities etc.
- Protect and maintain groundwater flow regime(s).
- Protect aquatic and fishery communities and habitats.
- Maintain and protect significant natural features.
- Incorporate Low Impact Development (LID) practices to promote infiltration and reduce phosphorus levels to downstream watercourses.

6.1. ANALYSIS METHODOLOGY

The design of the SWM Facilities for this site has been conducted in accordance with:

- The Ministry of the Environment Stormwater Management Planning and Design Manual, March 2003
- Town of Halton Hills development design standards, April 2022
- Credit Valley Conservation Authority Technical Guidelines for Stormwater Management, July 2022

In order to design the facilities to meet these requirements, it is essential to select the appropriate modeling methodology for the storm system design. Given the size of the site, the Modified Rational Method is appropriate for the design for the SWM system.

6.2. EXISTING DRAINAGE CONDITIONS

The existing Project site currently consists of a residential lot and driveway access to Bower Street. The majority of the site, along with external areas, from the north and east, drains toward the eastern property line, near the backyard of the neighboring property. Stormwater accumulates in this area before overtopping a high point to the west and continuing to drain overland towards Black Creek. Details of existing storm drainage conditions are shown on STM- 1.

According to the Geotechnical Investigation completed by Palmer Environmental Consulting Group Inc, dated September 2024, the project site is comprised of a layer of surficial grass overlying sand, sandy silt fill underlain by a stratum of sandy silt till. Upon completion of drilling, six groundwater monitoring wells were installed in which it determined that the groundwater level is approximately 0.93 to 3.26m below existing ground surface. Groundwater monitoring to continue as three of the boreholes remained dry while levels were recorded on May 14, 2024.

Given the size of the site, the Modified Rational Method will be used to determine the pre-development peak flows. IDF curve parameters were taken from the Town of Halton Hills Stormwater Management Guidelines to determine the storm intensity values. The pre-development peak flows for the site can be seen in Table 2 below. Detailed calculations can be found in Appendix C.

Table 2: Pre-Development Peak Flows

	2 Year Storm	5 Year Storm	10 Year Storm	25 Year Storm	50 Year Storm	100 Year Storm
Project Site (m^3/s)	0.03	0.04	0.05	0.06	0.07	0.08
EXT -1 (m^3/s)	0.02	0.03	0.03	0.04	0.05	0.06
EXT- 2 (m^3/s)	0.01	0.02	0.02	0.03	0.04	0.04
Total Peak Flow to Black Creek (m^3/s)	0.06	0.09	0.10	0.13	0.16	0.18

6.3. PROPOSED DRAINAGE CONDITIONS

The post-development storm drainage for the project will generally follow pre-development conditions. Drainage from the parking lot will be conveyed to a proposed catchbasin and storm sewer sized for the 5-year storm event. Runoff from the building rooftop will be captured internally and coordinated with mechanical consultants. A portion to the east side of the proposed building will drain uncontrolled and will be conveyed via a proposed swale and storm pipe sized for 100-year storm which ultimately connects to the proposed storm sewer network. Stormwater will be conveyed through an Oil-Grit Separator (OGS) before outletting to Black Creek. External flow (EXT-1 area) from the northeast will continue to flow southwesterly and captured by the proposed cutoff swale located parallel to the northeastern property line which will outlet the flows into Black Creek. Neighboring properties to the south will continue to drain northerly and captured by the proposed swale and storm sewer system which have been sized to convey the 100-year storm event. This external flow captured by the proposed swale and storm sewer will bypass the orifice tube and outlet to Black Creek. A small portion of the driveway drains uncontrolled towards Bower Street.

Quantity control will be achieved through the use of underground storage chambers, including an orifice tube located downstream of MH 2 to restrict flows and reduce post-development peak flows to pre-development values.

In the event of the storm greater than the 100-year storm and/or the orifice tube gets blocked, the storm sewer will surcharge, and an emergency overland flow route is provided towards Black Creek. The proposed post-development storm drainage patterns can be found on STM- 2 in Appendix E.

6.4. STORMWATER QUANTITY CONTROL

The proposed development will increase the imperviousness of the site and as such the post-development peak flows will increase. It is important to quantify the increase in stormwater runoff rates and attenuate these increases. The calculated post-development runoff coefficient of 0.50 is greater than the pre-development runoff coefficient of 0.15.

Quantity control on site will be provided through underground storage chambers located in the parking lot and will be designed as an off-line system. An orifice tube will be implemented downstream of CBMH2 to reduce the post-development peak flows leaving the site, causing stormwater to back up into the StormTech underground storage chambers. Calculations in Appendix C demonstrate that 223 m^3 is required to control the 100-year storm event to pre-development values. Quantity control will be provided through 224.4 m^3 of underground storage located within the Storm Tech storage tanks.

Table 3 below summarizes the post-development peak flows. By comparing the pre-development and post-development flows, it can be seen that the post-development flows for all storm events are smaller than or equal to the pre-development peak flows.

Table 3: Post-development Peak Flows

	2 Year Storm	5 Year Storm	10 Year Storm	25 Year Storm	50 Year Storm	100 Year Storm
Controlled Flow (m^3/s)	0.01	0.01	0.01	0.02	0.02	0.02
Uncontrolled Flow (m^3/s)	0.02	0.03	0.03	0.05	0.05	0.06
Total Project Site Peak Flow (m3/s)	**0.03**	**0.04**	**0.04**	**0.07**	**0.07**	**0.08**
EXT-1 (m^3/s)	0.02	0.03	0.03	0.04	0.05	0.06
EXT- 2 (m^3/s)	0.01	0.02	0.02	0.03	0.04	0.04
Total Peak Flow to Black Creek (m^3/s)	**0.06**	**0.09**	**0.10**	**0.13**	**0.16**	**0.18**

6.5. STORMWATER QUALITY CONTROL

The Ministry of the Environment, Conservation, and Parks (MECP) in March 2003 issued a "Stormwater Management Planning and Design Manual". This manual has been adopted by a variety of agencies including the Town of Halton Hills. The development's Stormwater Quality Control objective is to provide Enhanced Protection quality control as stated in the MECP manual. To achieve enhanced protection, permanent and temporary control of erosion and sediment transport are proposed using a treatment train approach and are discussed in the following sections.

6.5.1. PERMANENT QUALITY CONTROL

The development's active parking facilities affect quality of stormwater through the collection of grit, salt, sand, and oils on the paved surfaces. An Oil/Grit Separator (OGS) is proposed to treat stormwater from the parking lot to MECP Enhanced Protection standards. The MECP standard stipulates a Total Suspended Solids (TSS) removal of a minimum of 80%.

Stormwater will be conveyed by the storm sewer system and will flow through an OGS unit prior to draining to Black Creek. The proposed OGS will treat the post-development flows with a minimum TSS removal rate of 80% as per MECP standards. The OGS will be sized to treat the controlled area of 0.41 ha with a runoff coefficient of 0.90.

Regular inspections and proper maintenance of the proposed OGS unit will ensure the TSS removal rate will be achieved as well as protect the downstream watercourse from oil, grease, and heavy metals. Detailed information regarding the OGS unit will be provided at detailed design stage.

6.5.2. QUALITY CONTROL DURING CONSTRUCTION

During construction, earth grading, and excavation will create the potential for soil erosion and sedimentation. It is imperative that effective environmental and sedimentation controls are in place and maintained throughout the duration of construction activities to ensure the stormwater runoff's quality.

Therefore, the following recommendations shall be implemented and maintained during construction to achieve acceptable stormwater runoff quality:

- Installation of filter strips, silt fences and rock check dams or other similar facilities throughout the site, and specifically during all construction activities, in order to reduce stormwater drainage velocities and trap sediment on-site.
- Restoration of exposed surfaces with vegetative and non-vegetative material as soon as construction schedules permit; the duration in which surfaces are disturbed/exposed shall not exceed 30 days.
- Provision of a mud-mat where applicable at the construction entrances in order to control the tracking of sediment and debris onto municipal streets.
- Reduce stormwater drainage velocities where possible.
- Minimize the amount of existing vegetation removed.

7. FLOODLINE ANALYSIS

A Flood risk map for Black, Silver and Snow's Creeks was completed by Amec in June 2012 which allowed future development on Bower Street. Using this map, a floodline elevation of 350.07 was determined on the west side of the site. It was determined that the floodline lies outside of development area. Floodline extents can be seen on drawing SG-1.

8. SECONDARY UTILITIES

Given the location of the subject site is within the municipal area of Halton Hills, it is anticipated that secondary utilities (hydro, cable, and telecommunication) will be readily available to service the site. Letters have been sent to all secondary utilities to notify them of the proposed development, gain information on the availability of their services for the site and ensure they are able to adequately support the proposed development.

9. CONCLUSIONS

The proposed development will require the connection of sanitary and watermain services to the existing municipal services on Bower Street.

Quantity control for the development will be provided through the underground storage tank located to northeast corner of the project site.

Quality control will be provided via and OGS unit and underground storage chambers to obtain enhanced level quality control for the site.

All of which is respectfully submitted,

PEARSON ENGINEERING LTD.





Taylor Arkell, P.Eng.
Senior Project Manager/Engineer

Mike Dejean, P.Eng.
Partner, Manager of Engineering Services



APPENDIX A

WATER SERVICING AND FIRE FLOW CALCULATIONS

97 Bower Street, Acton
Water Flow Calculations

Design Criteria

Demand per capita (Q):	360	L/cap/d	(As per 2022 Development Charges Background Study for Water, Wastewater, Roads and General Services Development Charges)
Peak Rate Factor (Max. Hour)	8.5		(As per Table 3-3: Peaking Factors for Drinking-Water Systems Serving Fewer than 500 People, MECP Design Guidelines for Drinking-Water
Max. Day Factor	3.8		

Site Data

Description	Density		Units		Flow Rate		Peaking Factors	
Apartments	1.65	people/unit	80	units	360	L/cap/d	MAX DAY FACTOR*	3.8
	2						PEAK RATE FACTOR*	8.5
Calculate Population							* From MECP Design Guidelines based on	
Pop. Apartments	=	1.65	x	80			population fewer than 500 People	
Pop. Total	=	132	people					
Calculate Average Day Demand (ADD)								
ADD	=	Flow Rate	x	Population				
ADD	=	360	x	132				
ADD	=	47,520	L/day					
ADD	=	0.55	L/s					
Calculate Max Day Flow								
MDF	=	ADD	x	Max Day Factor				
MDF	=	0.55	x	3.8				
MDF	=	2.09	L/s					
Calculate Peak Hour Demand								
PHD	=	ADD	x	Peak Hour Factor				
PHD	=	0.55	x	8.5				
PHD	=	4.67	L/s					

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97 Bower Street, Acton
Fire Flow Calculations

Required fire flow calculations as per the Fire Underwritors Survey's Water Supply for Public Fire Protection - 2020:

Location:	97 Bower Street, Acton
OBC Occupancy:	Residential Occupancy - Class C
Building Foot Print:	1,283 m²
# of Stories:	5

Date: 9/22/2025
Project: 97 Bower Street, Acton
Project Number: 24029

Type	Construction Class	Charge
5	Wood Frame	1.50
4	Heavy Timber (A-D)	0.80 - 1.50
3	Ordinary	1.00
2	Non-Combustible	0.80
1	Fire Resistive	0.60

Construction Class: Type 2 — Non-Combustible

Automated Sprinkler Protection:

		Credit	Total
NFPA 13 sprinkler standard	Yes	30%	50%
Standard Water Supply	Yes	10%	
Fully Supervised System	Yes	10%	

Contents	Charge
Non-Combustible	-25%
Limited Combustible	-15%
Combustible	0%
Free Burning	15%
Rapid Burning	25%

Contents Factor: Limited Combustible — **Charge:** -15%

Exposure Side & Building	Length - Height Ratio	Distance to Exposure Building (m)	Charge
North Railway tracks	>100	>30.1	0%
East Ex. Residential	>100	>30.1	0%
South Ex. Residential	> 100	>30.1	0%
West Ex. Creek	>100	>30.1	0%
		Total:	**0%**

Separation Distance	Charge
0.0 - 3.0 m	0%
3.1 - 10.0 m	0%
10.1 - 20.0 m	0%
20.1 - 30.0 m	0%
> 30.1 m	0%

Note: As per FUS 2020 Table 6, Charges for Type I-II[3] were used for Non-Combustible Construction Class

Are Buildings Contigious? No

Fire Resistant Building: Are vertical openings and exterior vertical communications protected with a minimum one (1) hr rating? Yes

Calculations: *C* = 0.80 — Non-Combustible

Required Fire Flow: ***RFF = 220 x C x √A***

Where: *RFF* = required fire flow in liters per minute
C = Coefficient related to the type of construction
A = the total effective area in square meters for Construction Coefficient below 1.0 (excluding basements in building considered).
Note: Single largest floor area plus 25% of each of the two immediately adjoining floors are considered in determining the Total Effective Area.

Total Effective Area:

A =	Single Largest Floor area	+	25% of the two immediately adjoining floors
A =	1,283	+	642
	A = 1,925		m²

RFF = 7,721 L/min
Round to Nearest 1,000 L/min — RFF = 8,000 L/min

* Must be > 2,000 L/min or < 45,000 L/min

Correction Factors:

Contents Charge		-1,200	L/min
RFF Adjusted for Contents	**D =**	6,800	L/min
Reduction For Sprinkler	**E =**	3,400	L/min
RFF w/ Sprinkler Reduction		3,400	L/min
Exposure Charge	**F =**	0	L/min
RFF w/ Exposure Charge		3,400	L/min

As per "Water Supply for Public Fire Protection" pg.19 note G:
RFF = **D - E + F**

RFF = 6800 L/min - 3400 L/min + 0 L/min
RFF = 3400 L/min

Required Fire Flow: **RFF =** 3,400 L/min

Round to Nearest 1,000 L/min

RFF =	**3,000**	**L/min**
RFF=	**792**	**GPM**
RFF =	**50**	**L/s**

APPENDIX B

SANITARY SERVICING CALCULATIONS

97 Bower Street, Acton
Sanitary Flow Calculations

Design Criteria:

Flow per Capita (Q):	360	L/cap/d	(As per 2022 Development Charges Background Study for Water, Wastewater, Roads and General Services Development Charges,Table B-3)
Peak Flow:	Qp = P * Q * M / 86400 + I * A		
Peaking Factor (Harmon Formula):	M = 1 + (14 / (4 + (P / 1000) ^ 0.5))		Where: 1.5 ≤ M ≤ 4.0
Extraneous flow (I):	0.29	L/s/ha	

Site Data:

Description	Density		Units		Flow Rate		Area	
Apartments	1.65	people/unit	80	units	360	L/cap/d	0.95	ha

Calculate Population

Pop. Apartments	=	1.65	x	80
Pop.	=	132	people	

Calculate Average Daily Flows

ADF	=	Flow Rate	x	Population
ADF	=	360	x	132
ADF	=	47,520	L/day	
ADF	=	0.55	L/s	

Calculate Peaking Factor

M = $1 + \dfrac{14}{4 + \left(\dfrac{132}{1{,}000}\right)^{0.5}}$

M	=	4.21		
	Use Max Peaking Factor 4.00			

Calculate Peak Flow

Qp	=	ADF	x	M
	=	0.55	x	4.00
	=	2.20	L/s	

Infiltration Allowance	=	Extraneous Flow	x	Area (ha)
I_A	=	0.29	x	0.95
	=	0.27	L/s	

Qp (Inc. Infiltration Allowance)	=	Qp	+	I_A
	=	2.20	+	0.27
	=	2.47	L/s	

APPENDIX C

STORMWATER MANAGEMENT CALCULATIONS

97 Bower Street, Acton
Calculation of Runoff Coefficients

Runoff Coefficient	=	0.15	0.10	0.95	0.95	0.95		Weighted Runoff Coefficient
Surface Cover	=	Grass	Forest	Asphalt	Building	Concrete		
Pre-Development	Total Area (m^2)	Area (m^2)	Area (m^2)	Area (m^2)	Area (m^2)	Area (m^2)		
1	9301	9301	0	0	0	0		0.15
2	171	171	0	0	0	0		0.15
Pre Total	9472	9472	0	0	0	0		0.15
Post-Development	Total Area (m^2)	Area (m^2)	Area (m^2)	Area (m^2)	Area (m^2)	Area (m^2)		
1	4107	231	0	2085	1279	512		0.90
2	5194	5194	0	0	0	177		0.18
3	171	62	0	87	0	22		0.66
Post Total	9472	5487	0	2172	1279	711		0.50
External Area	Total Area (m^2)	Area (m^2)	Area (m^2)	Area (m^2)	Area (m^2)	Area (m^2)		
EXT - 1	4884	4603	0	0	281	0		0.20
EXT - 2	2472	2055	0	0	418	0		0.29

97 Bower Street, Acton
Pre-Development Peak Flows

Town of Halton Hills

Storm Event (yrs)	Coeff A	Coeff B	Coeff C
2	**586.100**	**6.000**	**0.760**
5	**946.460**	**7.000**	**0.788**
10	**1173.480**	**8.000**	**0.794**
25	**1368.910**	**8.000**	**0.789**
50	**1622.450**	**9.000**	**0.797**
100	**1777.200**	**9.000**	**0.795**

Modified Rational Method

Q = CiCIA / 360

Where:

- Q - Flow Rate (m^3/s)
- C - Rational Method Runoff Coefficient
- I - Storm Intensity (mm/hr)
- A - Area (ha.)
- Ci - Peaking Coefficient

	Project Site Area	External Area	External Area
Area Number	Area 1 & 2	EXT - 1	EXT - 2
Area	0.95 ha	0.49 ha	0.25 ha
Runoff Coefficient	0.15	0.20	0.29
Time of Concentration	10 min	10 min	10 min
Return Rate	2 year	2 year	2 year
Peaking Coefficient (Ci)	1.00	1.00	1.00
Rainfall Intensity	71.3 mm/hr	71.3 mm/hr	71.3 mm/hr
Pre-Development Peak Flow	0.03 m^3/s	0.02 m^3/s	0.01 m^3/s
Return Rate	5 year	5 year	5 year
Peaking Coefficient (Ci)	1.00	1.00	1.00
Rainfall Intensity	101.5 mm/hr	101.5 mm/hr	101.5 mm/hr
Pre-Development Peak Flow	0.04 m^3/s	0.03 m^3/s	0.02 m^3/s
Return Rate	10 year	10 year	10 year
Peaking Coefficient (Ci)	1.00	1.00	1.00
Rainfall Intensity	118.2 mm/hr	118.2 mm/hr	118.2 mm/hr
Pre-Development Peak Flow	0.05 m^3/s	0.03 m^3/s	0.02 m^3/s
Return Rate	25 year	25 year	25 year
Peaking Coefficient (Ci)	1.10	1.10	1.10
Rainfall Intensity	139.9 mm/hr	139.9 mm/hr	139.9 mm/hr
Pre-Development Peak Flow	0.06 m^3/s	0.04 m^3/s	0.03 m^3/s
Return Rate	50 year	50 year	50 year
Peaking Coefficient (Ci)	1.20	1.20	1.20
Rainfall Intensity	155.2 mm/hr	155.2 mm/hr	155.2 mm/hr
Pre-Development Peak Flow	0.07 m^3/s	0.05 m^3/s	0.04 m^3/s
Return Rate	100 year	100 year	100 year
Peaking Coefficient (Ci)	1.25	1.25	1.25
Rainfall Intensity	171.1 mm/hr	171.1 mm/hr	171.1 mm/hr
Pre-Development Peak Flow	0.08 m^3/s	0.06 m^3/s	0.04 m^3/s

97 Bower Street, Acton
Post-Development Peak Flows

Town of Halton Hills

Storm Event (yrs)	Coeff A	Coeff B	Coeff C
2	**586.100**	**6.000**	**0.760**
5	**946.460**	**7.000**	**0.788**
10	**1173.480**	**8.000**	**0.794**
25	**1368.910**	**8.000**	**0.789**
50	**1622.450**	**9.000**	**0.797**
100	**1777.200**	**9.000**	**0.795**

Modified Rational Method

$Q = CiCIA / 360$

Where:

- Q - Flow Rate (m^3/s)
- C - Rational Method Runoff Coefficient
- I - Storm Intensity (mm/hr)
- A - Area (ha.)
- Ci - Peaking Coefficient

	Controlled	Uncontrolled	External	External
Area Number	Area 1	Area 2 & 3	EXT-1	EXT-2
Area	0.41 ha	0.54 ha	0.49 ha	0.25 ha
Runoff Coefficient	0.90	0.20	0.20	0.29
Time of Concentration	10 min	10 min	10 min	10 min
Return Rate	2 year	2 year	2 year	2 year
Peaking Coefficient (Ci)	1.00	1.00	1.00	1.00
Rainfall Intensity	71.3 mm/hr	71.3 mm/hr	71.3 mm/hr	71.3 mm/hr
Post-Development Peak Flow	0.07 m^3/s	0.02 m^3/s	0.02 m^3/s	0.01 m^3/s
Return Rate	5 year	5 year	5 year	5 year
Peaking Coefficient (Ci)	1.00	1.00	1.00	1.00
Rainfall Intensity	101.5 mm/hr	101.5 mm/hr	101.5 mm/hr	101.5 mm/hr
Post-Development Peak Flow	0.10 m^3/s	0.03 m^3/s	0.03 m^3/s	0.02 m^3/s
Return Rate	10 year	10 year	10 year	10 year
Peaking Coefficient (Ci)	1.00	1.00	1.00	1.00
Rainfall Intensity	118.2 mm/hr	118.2 mm/hr	118.2 mm/hr	118.2 mm/hr
Post-Development Peak Flow	0.12 m^3/s	0.03 m^3/s	0.03 m^3/s	0.02 m^3/s
Return Rate	25 year	25 year	25 year	25 year
Peaking Coefficient (Ci)	1.10	1.10	1.10	1.10
Rainfall Intensity	139.9 mm/hr	139.9 mm/hr	139.9 mm/hr	139.9 mm/hr
Post-Development Peak Flow	0.16 m^3/s	0.05 m^3/s	0.04 m^3/s	0.03 m^3/s
Return Rate	50 year	50 year	50 year	50 year
Peaking Coefficient (Ci)	1.20	1.20	1.20	1.20
Rainfall Intensity	155.2 mm/hr	155.2 mm/hr	155.2 mm/hr	155.2 mm/hr
Post-Development Peak Flow	0.19 m^3/s	0.05 m^3/s	0.05 m^3/s	0.04 m^3/s
Return Rate	100 year	100 year	100 year	100 year
Peaking Coefficient (Ci)	1.25	1.25	1.25	1.25
Rainfall Intensity	171.1 mm/hr	171.1 mm/hr	171.1 mm/hr	171.1 mm/hr
Post-Development Peak Flow	0.22 m^3/s	0.06 m^3/s	0.06 m^3/s	0.04 m^3/s

97 Bower Street, Acton
Quantity Control Volume Calculations

DATE: 12-Sep-25
FILE: 24029
CONTRACT/PROJECT: 97 Bower Street, Acton
COMPLETED BY: KV / NP

Modified Rational Method Parameters

Pre Development Area (ha)	Post Development Area (ha)	Time of Concentration (min)	Time Increments (min)	Pre Development Runoff Coefficient	Post Development Runoff Coefficient
0.95	0.41	10	5	0.15	0.90

Note: Refer to page Calculation of Runoff Coefficients for detailed calculations of Modified Rational Method parameters.

Pre-Development Runoff Rate

	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year
C	0.15	0.15	0.15	0.17	0.18	0.19
I	71.26	101.51	118.25	139.95	155.24	171.05
A	0.95	0.95	0.95	0.95	0.95	0.95
Q	0.028	0.040	0.047	0.061	0.074	0.084

Note: Q= 0.00278CIA

Rainfall Station	Halton Hills

SWM Pond Design Input

Storm Event (yrs)	Chicago Storm Coefficient A	Chicago Storm Coefficient B	Chicago Storm Coefficient C	Allowable Outflow (m3/s)	Post Development Runoff Coefficient
2	586.10	6.00	0.76	0.01	0.90
5	946.46	7.00	0.79	0.01	0.90
10	1173.48	8.00	0.79	0.01	0.90
25	1368.91	8.00	0.79	0.02	1.00
50	1622.45	9.00	0.80	0.02	1
100	1777.20	9.00	0.80	0.02	1.00

Results

Storm Event (yrs)	Storage m^3	Time min
2	83.1	145
5	115.2	130
10	139.2	135
25	183.8	140
50	204.4	130
100	222.9	125

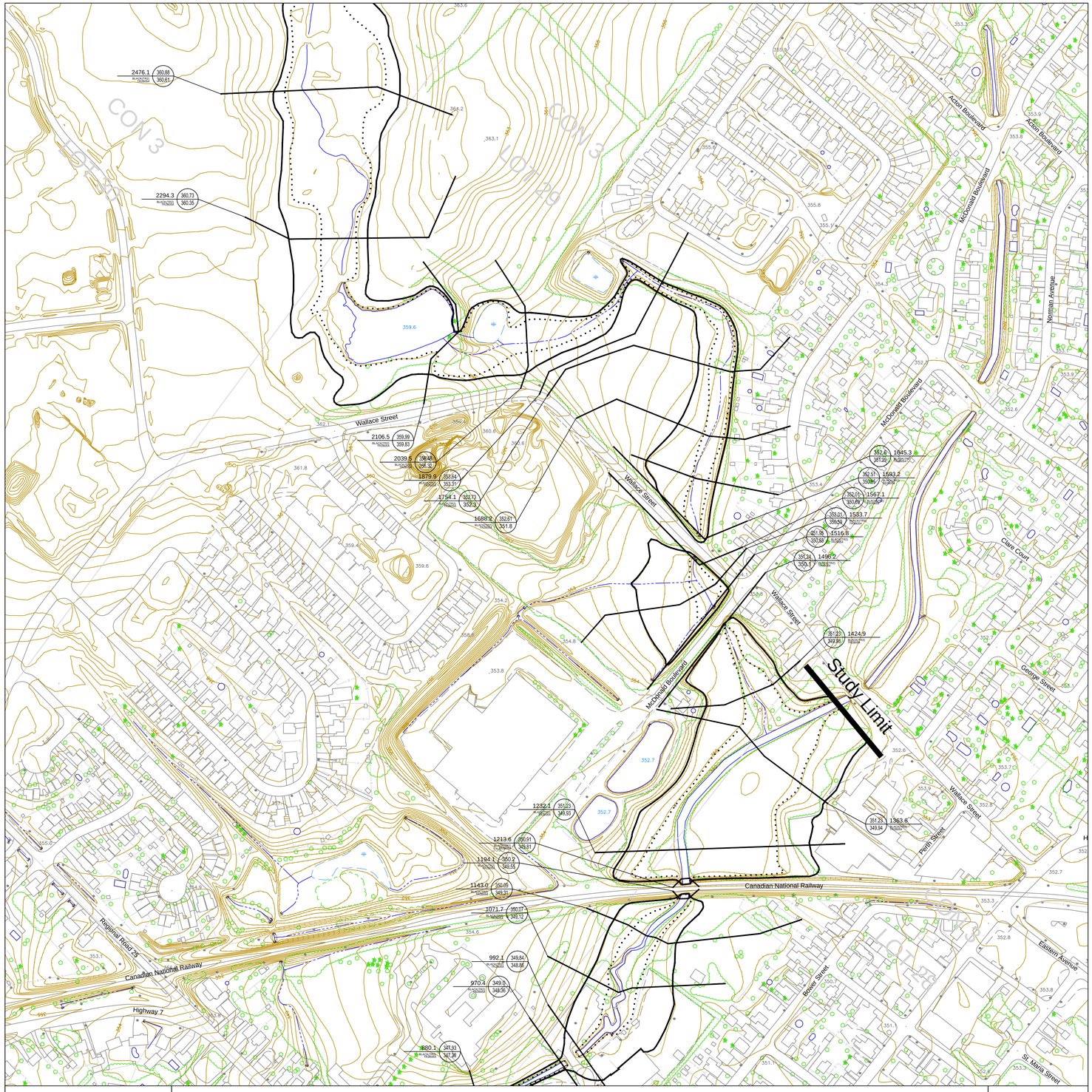
Note: Storage volume calculated as per Hydrology Handbook, Second Edition, American Society of Civil Engineers, 1996

Time (min)	2 Year Intensity mm/hr	2 Year Inflow m^3/s	2 Year Outflow m^3/s	2 Year Storage m^3	Difference	5 Year Intensity mm/hr	5 Year Inflow m^3/s	5 Year Outflow m^3/s	5 Year Storage m^3	Difference	10 Year Intensity mm/hr	10 Year Inflow m^3/s	10 Year Outflow m^3/s	10 Year Storage m^3	Difference	25 Year Intensity mm/hr	25 Year Inflow m^3/s	25 Year Outflow m^3/s	25 Year Storage m^3	Difference	50 Year Intensity mm/hr	50 Year Inflow m^3/s	50 Year Outflow m^3/s	50 Year Storage m^3	Difference	100 Year Intensity mm/hr	100 Year Inflow m^3/s	100 Year Outflow m^3/s	100 Year Storage m^3	Difference
5	94.74	0.098	0.007	26	14	133.57	0.138	0.010	37	20	153.11	0.158	0.012	42	24	180.91	0.205	0.015	55	31	198.02	0.226	0.019	59	36	218.05	0.249	0.021	65	39
10	71.26	0.074	0.007	40	9	101.51	0.105	0.010	57	13	118.25	0.122	0.012	66	15	139.95	0.159	0.015	86	20	155.24	0.177	0.019	95	23	171.05	0.195	0.021	104	26
15	57.95	0.060	0.007	49	6	82.85	0.086	0.010	69	9	97.33	0.100	0.012	82	11	115.34	0.131	0.015	106	14	128.87	0.147	0.019	118	17	142.06	0.162	0.021	130	18
20	49.27	0.051	0.007	55	5	70.50	0.073	0.010	78	7	83.26	0.086	0.012	92	8	98.76	0.112	0.015	121	11	110.83	0.126	0.019	135	13	122.22	0.139	0.021	148	14
25	43.11	0.045	0.007	59	4	61.67	0.064	0.010	85	5	73.08	0.075	0.012	101	6	86.75	0.099	0.015	132	9	97.63	0.111	0.019	147	10	107.70	0.123	0.021	162	11
30	38.48	0.040	0.007	63	3	55.00	0.057	0.010	90	4	65.33	0.067	0.012	107	5	77.61	0.088	0.015	140	7	87.52	0.100	0.019	157	8	96.57	0.110	0.021	173	9
35	34.85	0.036	0.007	66	2	49.77	0.051	0.010	94	3	59.22	0.061	0.012	112	4	70.40	0.080	0.015	147	6	79.49	0.091	0.019	165	7	87.74	0.100	0.021	181	7
40	31.94	0.033	0.007	68	2	45.55	0.047	0.010	98	3	54.27	0.056	0.012	117	4	64.55	0.073	0.015	153	5	72.96	0.083	0.019	172	5	80.54	0.092	0.021	188	6
45	29.53	0.031	0.007	71	2	42.06	0.043	0.010	100	2	50.16	0.052	0.012	120	3	59.69	0.068	0.015	158	4	67.52	0.077	0.019	177	5	74.56	0.085	0.021	194	5
50	27.50	0.028	0.007	72	2	39.13	0.040	0.010	103	2	46.70	0.048	0.012	123	3	55.59	0.063	0.015	162	3	62.92	0.072	0.019	182	4	69.49	0.079	0.021	199	4
55	25.77	0.027	0.007	74	1	36.62	0.038	0.010	105	2	43.73	0.045	0.012	126	2	52.08	0.059	0.015	165	3	58.97	0.067	0.019	186	3	65.14	0.074	0.021	203	4
60	24.27	0.025	0.007	75	1	34.45	0.036	0.010	107	1	41.16	0.042	0.012	128	2	49.04	0.056	0.015	168	3	55.54	0.063	0.019	189	3	61.36	0.070	0.021	207	3
65	22.96	0.024	0.007	76	1	32.55	0.034	0.010	108	1	38.90	0.040	0.012	130	2	46.37	0.053	0.015	171	2	52.53	0.060	0.019	192	2	58.04	0.066	0.021	210	3
70	21.80	0.023	0.007	77	1	30.87	0.032	0.010	109	1	36.91	0.038	0.012	132	1	44.01	0.050	0.015	173	2	49.86	0.057	0.019	194	2	55.10	0.063	0.021	213	2
75	20.77	0.021	0.007	78	1	29.38	0.030	0.010	111	1	35.13	0.036	0.012	133	1	41.90	0.048	0.015	175	2	47.48	0.054	0.019	196	2	52.47	0.060	0.021	215	2
80	19.85	0.021	0.007	79	1	28.04	0.029	0.010	111	1	33.54	0.035	0.012	134	1	40.01	0.045	0.015	176	1	45.34	0.052	0.019	198	1	50.12	0.057	0.021	217	2
85	19.02	0.020	0.007	80	1	26.83	0.028	0.010	112	1	32.10	0.033	0.012	135	1	38.30	0.044	0.015	178	1	43.41	0.050	0.019	199	1	47.98	0.055	0.021	218	1
90	18.26	0.019	0.007	80	1	25.74	0.027	0.010	113	1	30.79	0.032	0.012	136	1	36.75	0.042	0.015	179	1	41.65	0.048	0.019	201	1	46.05	0.053	0.021	219	1
95	17.57	0.018	0.007	81	0	24.74	0.026	0.010	114	0	29.60	0.031	0.012	137	1	35.34	0.040	0.015	180	1	40.05	0.046	0.019	202	1	44.28	0.051	0.021	220	1
100	16.93	0.017	0.007	81	0	23.82	0.025	0.010	114	0	28.51	0.029	0.012	137	1	34.04	0.039	0.015	181	1	38.58	0.044	0.019	202	1	42.66	0.049	0.021	221	1
105	16.35	0.017	0.007	82	0	22.98	0.024	0.010	114	0	27.50	0.028	0.012	138	0	32.85	0.037	0.015	182	1	37.22	0.042	0.019	203	1	41.16	0.047	0.021	222	0
110	15.81	0.016	0.007	82	0	22.20	0.023	0.010	115	0	26.57	0.027	0.012	138	0	31.74	0.036	0.015	182	0	35.97	0.041	0.019	204	0	39.78	0.045	0.021	222	0
115	15.31	0.016	0.007	82	0	21.48	0.022	0.010	115	0	25.71	0.027	0.012	139	0	30.72	0.035	0.015	183	0	34.81	0.040	0.019	204	0	38.50	0.044	0.021	223	0
120	14.85	0.015	0.007	83	0	20.81	0.021	0.010	115	0	24.91	0.026	0.012	139	0	29.77	0.034	0.015	183	0	33.73	0.038	0.019	204	0	37.31	0.043	0.021	223	0
125	14.42	0.015	0.007	83	0	20.19	0.021	0.010	115	0	24.16	0.025	0.012	139	0	28.88	0.033	0.015	184	0	32.72	0.037	0.019	204	0	36.20	0.041	0.021	223	0
130	14.01	0.014	0.007	83	0	19.60	0.020	0.010	115	0	23.46	0.024	0.012	139	0	28.06	0.032	0.015	184	0	31.78	0.036	0.019	204	0	35.16	0.040	0.021	223	0
135	13.63	0.014	0.007	83	0	19.06	0.020	0.010	115	0	22.81	0.024	0.012	139	0	27.28	0.031	0.015	184	0	30.90	0.035	0.019	204	0	34.19	0.039	0.021	223	0
140	13.28	0.014	0.007	83	0	18.55	0.019	0.010	115	0	22.20	0.023	0.012	139	0	26.55	0.030	0.015	184	0	30.07	0.034	0.019	204	0	33.27	0.038	0.021	222	0
145	12.94	0.013	0.007	83	0	18.06	0.019	0.010	115	0	21.62	0.022	0.012	139	0	25.86	0.029	0.015	184	0	29.29	0.033	0.019	204	0	32.41	0.037	0.021	222	0
150	12.62	0.013	0.007	83	0	17.61	0.018	0.010	115	0	21.07	0.022	0.012	139	0	25.21	0.029	0.015	184	0	28.55	0.033	0.019	204	0	31.60	0.036	0.021	222	-1
155	12.32	0.013	0.007	83	0	17.18	0.018	0.010	115	0	20.56	0.021	0.012	139	0	24.60	0.028	0.015	183	0	27.86	0.032	0.019	203	0	30.83	0.035	0.021	221	-1
160	12.04	0.012	0.007	83	0	16.77	0.017	0.010	114	0	20.07	0.021	0.012	138	0	24.02	0.027	0.015	183	0	27.20	0.031	0.019	203	-1	30.10	0.034	0.021	220	-1
165	11.77	0.012	0.007	83	0	16.39	0.017	0.010	114	0	19.61	0.020	0.012	138	0	23.47	0.027	0.015	183	0	26.57	0.030	0.019	202	-1	29.41	0.034	0.021	220	-1
170	11.52	0.012	0.007	83	0	16.02	0.017	0.010	114	0	19.17	0.020	0.012	138	0	22.95	0.026	0.015	183	0	25.98	0.030	0.019	202	-1	28.76	0.033	0.021	219	-1
175	11.28	0.012	0.007	83	0	15.67	0.016	0.010	113	0	18.75	0.019	0.012	138	0	22.45	0.026	0.015	182	0	25.42	0.029	0.019	201	-1	28.13	0.032	0.021	218	-1
180	11.04	0.011	0.007	83	0	15.34	0.016	0.010	113	0	18.36	0.019	0.012	137	0	21.98	0.025	0.015	182	-1	24.88	0.028	0.019	200	-1	27.54	0.031	0.021	217	-1
185	10.82	0.011	0.007	82	0	15.03	0.016	0.010	113	0	17.98	0.019	0.012	137	0	21.53	0.024	0.015	181	-1	24.37	0.028	0.019	199	-1	26.97	0.031	0.021	216	-1
190	10.61	0.011	0.007	82	0	14.73	0.015	0.010	112	0	17.62	0.018	0.012	136	0	21.10	0.024	0.015	181	-1	23.88	0.027	0.019	199	-1	26.43	0.030	0.021	215	-1
195	10.41	0.011	0.007	82	0	14.44	0.015	0.010	112	0	17.27	0.018	0.012	136	-1	20.69	0.023	0.015	180	-1	23.41	0.027	0.019	198	-1	25.92	0.030	0.021	214	-1
200	10.22	0.011	0.007	82	0	14.16	0.015	0.010	111	0	16.94	0.017	0.012	135	-1	20.30	0.023	0.015	179	-1	22.96	0.026	0.019	197	-1	25.42	0.029	0.021	213	-1
205	10.03	0.010	0.007	81	0	13.90	0.014	0.010	111	-1	16.62	0.017	0.012	135	-1	19.92	0.023	0.015	179	-1	22.53	0.026	0.019	196	-1	24.95	0.028	0.021	212	-1
210	9.86	0.010	0.007	81	0	13.64	0.014	0.010	110	-1	16.32	0.017	0.012	134	-1	19.56	0.022	0.015	178	-1	22.12	0.025	0.019	195	-1	24.50	0.028	0.021	211	-1
215	9.69	0.010	0.007	81	0	13.40	0.014	0.010	110	-1	16.03	0.017	0.012	133	-1	19.21	0.022	0.015	177	-1	21.73	0.025	0.019	194	-1	24.06	0.027	0.021	209	-1
220	9.52	0.010	0.007	81	0	13.17	0.014	0.010	109	-1	15.75	0.016	0.012	133	-1	18.88	0.021	0.015	177	-1	21.35	0.024	0.019	193	-1	23.64	0.027	0.021	208	-1
225	9.37	0.010	0.007	80	0	12.94	0.013	0.010	109	-1	15.48	0.016	0.012	132	-1	18.56	0.021	0.015	176	-1	20.98	0.024	0.019	192	-1	23.24	0.027	0.021	207	-1

: Maximum Storage Volume

APPENDIX D

CREDIT VALLEY CONSERVATION
FLOOD RISK MAP



UTM NAD83

Scale 1:2000

150 0 150 Metres

300 0 300 600 900 Feet

CONTOUR INTERVAL: 0.5 METRES

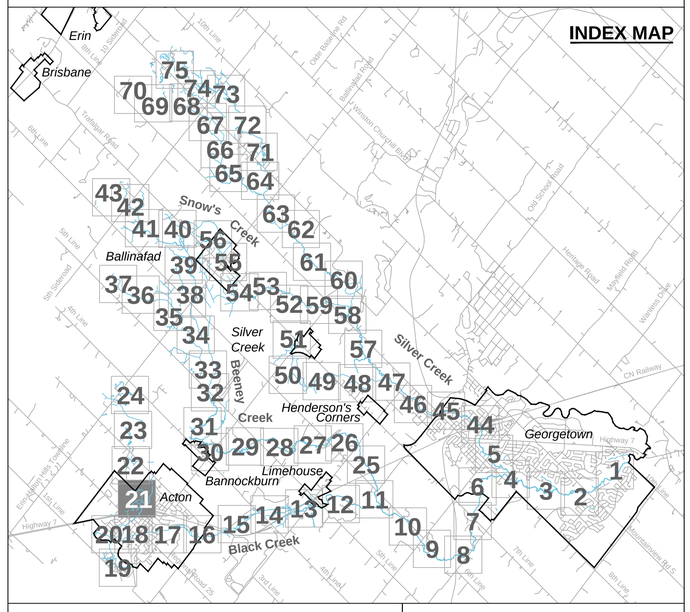
CVC
CREDIT VALLEY CONSERVATION
Ontario, Canada

Flood Risk Map
Black, Silver and Snow's Creeks

LEGEND

- Contour Index
- Contour Intermediate
- Contour Text 100.0
- Spot Height . 100.20
- Road Paved
- Road Curbed
- Access Way
- Driveway
- Parking Lot
- Wall
- Retaining Wall
- Hydraulic capacity is to be verified
- Tower
- Bridge
- Wooded Area
- Pile
- Building
- Fence
- Misc.line / Feature Outline
- Water Feature
- Water Feature Approx
- Culvert Symbol
- Tank, Silo, Smokestack
- Regional Storm Floodline
- 100-Year Floodline

INDEX MAP



amec

Please note that the Professional Engineer's stamp verifies the flood line and associated data, not the map unless otherwise noted.

Licensed Professional Engineer
P. Nimmrichter
Province of Ontario

Cross Section Label

Cross Section Number: 12-155-99999
River Name: SILVER(TR1) TR1B003
Reach Name
100 Year Flood Water Level (elevation in metres): 171.24
Regulatory Flood Water Level (elevation in metres): 172.33
Cross Section Location

REVISIONS			
No.	Description	By	Date
1	Section labelling updated / maps added to set	PN/RB	06/12

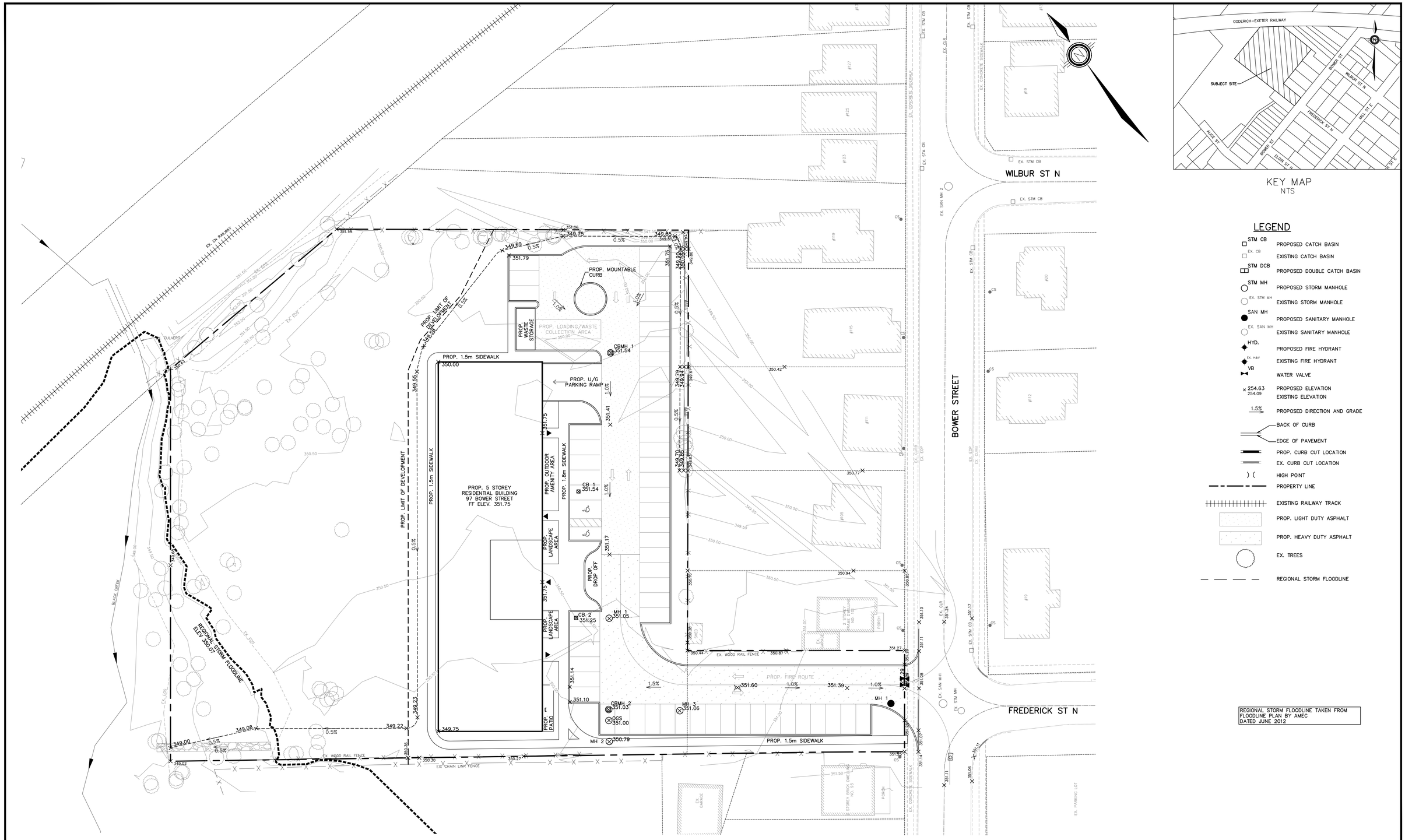
Credit Valley Conservation

Flood Risk Map
Black, Silver and Snow's Creeks

Sheet 21 of 75

APPENDIX E

PEARSON ENGINEERING DRAWING



KEY MAP
NTS

LEGEND

- STM CB — PROPOSED CATCH BASIN
- EX. CB — EXISTING CATCH BASIN
- STM DCB — PROPOSED DOUBLE CATCH BASIN
- STM MH — PROPOSED STORM MANHOLE
- EX. STM MH — EXISTING STORM MANHOLE
- SAN MH — PROPOSED SANITARY MANHOLE
- EX. SAN MH — EXISTING SANITARY MANHOLE
- HYD. — PROPOSED FIRE HYDRANT
- EX. H&V — EXISTING FIRE HYDRANT
- VB — WATER VALVE
- 254.63 — PROPOSED ELEVATION
- 254.09 — EXISTING ELEVATION
- 1.5% — PROPOSED DIRECTION AND GRADE
- BACK OF CURB
- EDGE OF PAVEMENT
- PROP. CURB CUT LOCATION
- EX. CURB CUT LOCATION
-) (— HIGH POINT
- PROPERTY LINE
- EXISTING RAILWAY TRACK
- PROP. LIGHT DUTY ASPHALT
- PROP. HEAVY DUTY ASPHALT
- EX. TREES
- REGIONAL STORM FLOODLINE

REGIONAL STORM FLOODLINE TAKEN FROM FLOODLINE PLAN BY AMEC DATED JUNE 2012

NO.	REVISION NOTE	DATE	BY

BENCHMARK

TOP OF IRON BAR LOCATED AT SOUTH WEST LOT CORNER ELEVATION: 351.26

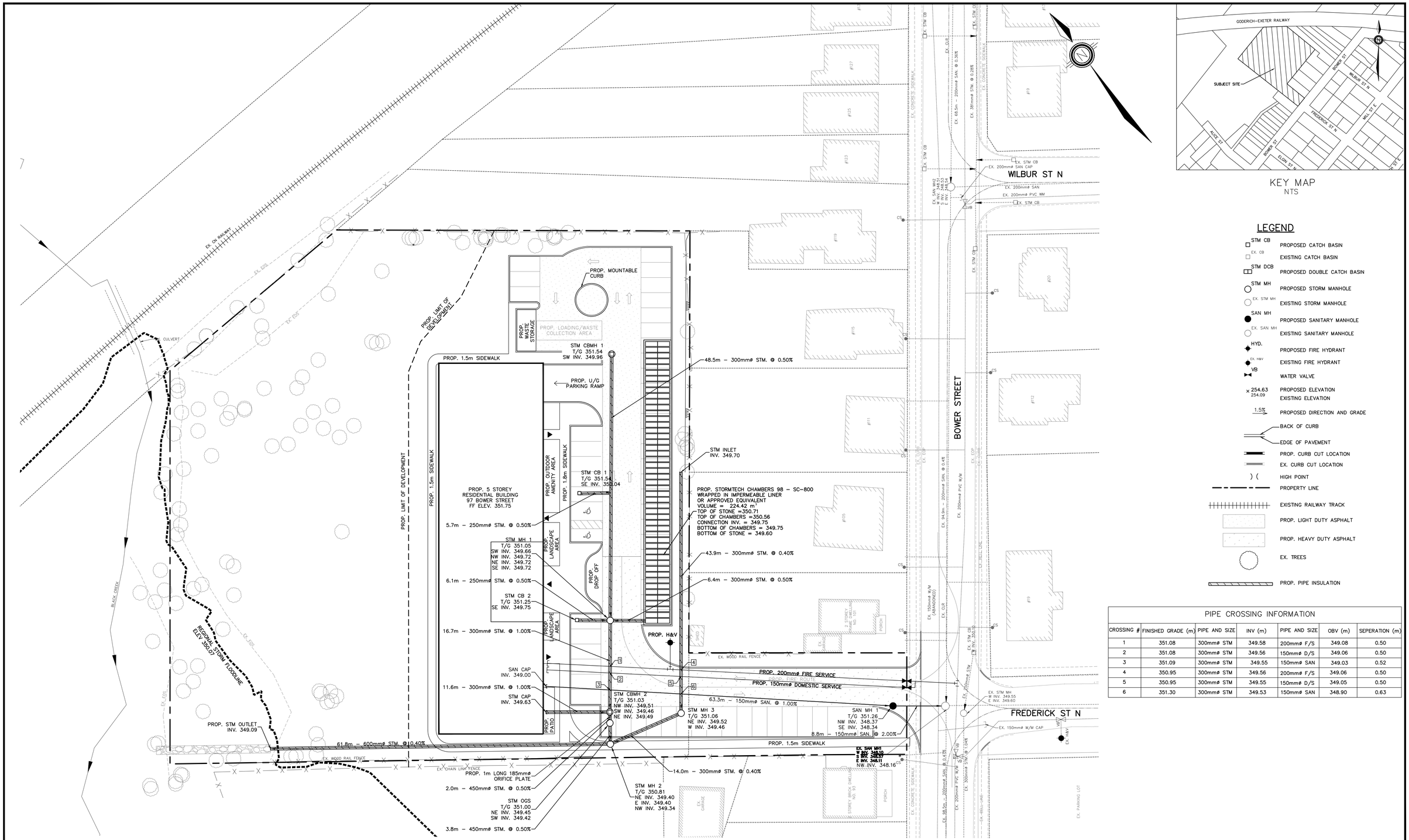
CASTLEGROVE DEVELOPMENTS INC.
97 BOWER STREET,
ACTON, ONTARIO

SITE GRADING PLAN

PEARSON ENGINEERING
PEARSONENG.COM PH. 705.719.4785

DESIGNED BY	AA	HORIZ SCALE 1:300	PROJECT # 24029
DRAWN BY	KV	VERT SCALE N/A	DRAWING # SG-1
CHECKED BY	MWD	DATE SEPTEMBER 2025	REVISION # 0

P:\Autodesk Vault\Working Folders\24029 - KLM, 97 Bower Street, Acton\LAYOUT SHEETS\24029 - FSR LAYOUTS.dwg, Layout:SG Plotted: Sep 22, 2025 @ 11:02pm by kvatova @ PEARSON ENGINEERING LTD.



KEY MAP
NTS

LEGEND

- STM CB / EX. CB — PROPOSED / EXISTING CATCH BASIN
- STM DCB — PROPOSED DOUBLE CATCH BASIN
- STM MH / EX. STM MH — PROPOSED / EXISTING STORM MANHOLE
- SAN MH / EX. SAN MH — PROPOSED / EXISTING SANITARY MANHOLE
- HYD. / EX. H&V — PROPOSED / EXISTING FIRE HYDRANT
- VB — WATER VALVE
- 254.63 / 254.09 — PROPOSED / EXISTING ELEVATION
- 1.5% — PROPOSED DIRECTION AND GRADE
- BACK OF CURB
- EDGE OF PAVEMENT
- PROP. CURB CUT LOCATION
- EX. CURB CUT LOCATION
-) (— HIGH POINT
- PROPERTY LINE
- EXISTING RAILWAY TRACK
- PROP. LIGHT DUTY ASPHALT
- PROP. HEAVY DUTY ASPHALT
- EX. TREES
- PROP. PIPE INSULATION

PIPE CROSSING INFORMATION

CROSSING #	FINISHED GRADE (m)	PIPE AND SIZE	INV (m)	PIPE AND SIZE	OBV (m)	SEPERATION (m)
1	351.08	300mmø STM	349.58	200mmø F/S	349.08	0.50
2	351.08	300mmø STM	349.56	150mmø D/S	349.06	0.50
3	351.09	300mmø STM	349.55	150mmø SAN	349.03	0.52
4	350.95	300mmø STM	349.56	200mmø F/S	349.06	0.50
5	350.95	300mmø STM	349.55	150mmø D/S	349.05	0.50
6	351.30	300mmø STM	349.53	150mmø SAN	348.90	0.63

NO.	REVISION NOTE	DATE	BY

BENCHMARK

TOP OF IRON BAR LOCATED AT SOUTH WEST LOT CORNER ELEVATION: 351.26

CASTLEGROVE DEVELOPMENTS INC.
97 BOWER STREET,
ACTON, ONTARIO

SITE SERVICING PLAN

PEARSON ENGINEERING
PEARSONENG.COM PH. 705.719.4785

DESIGNED BY	AA	HORIZ SCALE	1:300
DRAWN BY	KV	VERT SCALE	N/A
CHECKED BY	MWD	DATE	SEPTEMBER 2025
PROJECT #	24029		
DRAWING #	SS-1		
REVISION #	0		

P:\Autodesk Vault\Working Folders\24029 - KLM, 97 Bower Street, Acton\LAYOUT SHEETS\24029 - FSR LAYOUTS.dwg Layout:SS Plotted: Sep 22, 2025 @ 11:02am by kvoave @ PEARSON ENGINEERING LTD.



LEGEND

- OVERLAND FLOW DIRECTION
- CATCHMENT AREA: 1 | 0.75 | 1.00 ha — RUNOFF COEFFICIENT; AREA IN HECTARES
- CATCHMENT BOUNDARY

REGIONAL STORM FLOODLINE TAKEN FROM FLOODLINE PLAN BY AMEC DATED JUNE 2012

BENCHMARK

TOP OF IRON BAR LOCATED AT SOUTH WEST LOT CORNER ELEVATION: 351.26

NO.	REVISION NOTE	DATE	BY

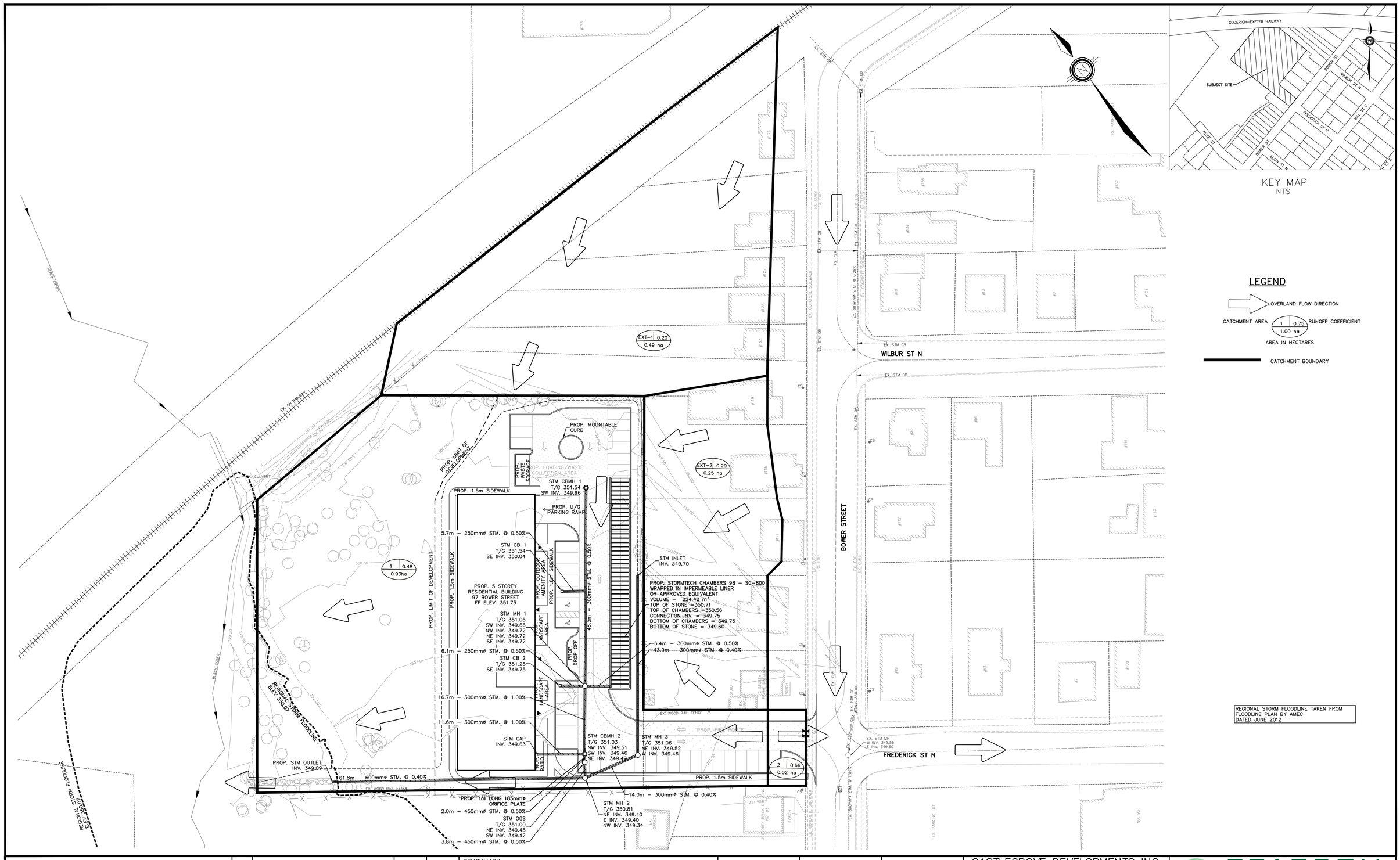
CASTLEGROVE DEVELOPMENTS INC.
97 BOWER STREET,
ACTON, ONTARIO

PRE- DEVELOPMENT
STORM CATCHMENT PLAN

PEARSON ENGINEERING
PEARSONENG.COM PH. 705.719.4785

DESIGNED BY	AA	HORIZ SCALE 1:400	PROJECT # 24029
DRAWN BY	KV	VERT SCALE N/A	DRAWING # STM-1
CHECKED BY	MWD	DATE SEPTEMBER 2025	REVISION # 0

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BENCHMARK

TOP OF IRON BAR LOCATED AT SOUTH WEST LOT CORNER ELEVATION: 351.26

NO.	REVISION NOTE	DATE	BY

CASTLEGROVE DEVELOPMENTS INC.
97 BOWER STREET,
ACTON, ONTARIO

POST– DEVELOPMENT
STORM CATCHMENT PLAN

PEARSON ENGINEERING
PEARSONENG.COM PH. 705.719.4785

DESIGNED BY	AA	HORIZ SCALE	1:400
DRAWN BY	KV	VERT SCALE	N/A
CHECKED BY	MWD	DATE	SEPTEMBER 2025

PROJECT # 24029
DRAWING # STM–2
REVISION # 0

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