



Functional Servicing & Stormwater Management Report

Proposed Mixed-Use Development,
5500 Dundas Street West,
Toronto, Ontario

Prepared for:
FCHT Holdings (Ontario) Corporation

<i>Rev. No.</i>	<i>Date</i>	<i>Description</i>
0	Dec 16, 2025	Issued for Rezoning Application

Project No.: 25-041

Executive Summary

Prospective Development Site

- The subject Site is located in the *Islington* Neighborhood of Toronto, Ontario.
- The Site's area is presently 0.97 Ha. The site comprises an existing one-storey commercial building and a large, paved parking area.
- The Owner is proposing to re-develop the Site as a two-tower mixed-use Development comprising a 16-Storey (+ mechanical penthouse) Tower and a 14-Storey (+ mechanical penthouse) Tower, containing a total of 560 residential units.
- The Site fronts-to Dundas Street West to the south, Paulart Drive to the east, Billingham Road to the west, and residential house lots to the north.

Watermains & Water Servicing

- There are existing watermains within Dundas Street West, Paulart Drive and Billingham Road.
- It is proposed to install two new connections, one for each Building, to the Dundas Street West 300mm-dia. watermain (for domestic water service as well as fire protection).

Sanitary Servicing & Sanitary Sewers

- There are existing municipal sanitary sewers within Dundas Street West, Paulart Drive and Billingham Road.
- It is proposed to install two new sanitary sewer connections, one for each building. Building A will be connected to the existing 200mm-dia. sanitary sewer within Paulart Drive, while Building B will be connected to the existing 200mm-dia. sanitary sewer within Dundas Street West.
- Downstream sanitary sewer capacity has been addressed herein as given in a downstream sanitary sewer analysis.

Storm Servicing, Storm Sewers & Stormwater Management

- There are existing municipal storm sewers within Dundas Street West, Paulart Drive and Billingham Road.
- It is proposed to install two new storm sewer connections, one for each Building, to the existing 825mm-dia. storm sewer within Dundas Street West.

Foundation Drainage & Groundwater

- The proposed buildings' foundations will be constructed in a watertight manner.

Table of Contents

1. Introduction & Background	1
a. Introduction	1
b. Subject Lands Description	1
c. Proposed Development Description	1
d. Report Scope and Terms of Reference	1
2. Watermains & Water Servicing	4
a. Water Servicing Criteria	4
b. Existing Water Mains	4
c. Proposed Water Servicing	4
d. Water Demand & Existing System Adequacy	5
3. Sanitary Sewers & Sewage Disposal	11
a. Criteria & Terms of Reference	11
b. Existing Sanitary Sewers	11
c. Basement Flooding Environmental Assessment (BFEA)	12
d. Proposed Sanitary Servicing Alternatives Analysis	14
e. Proposed Sanitary Servicing Design & Flow Calculations	16
f. Downstream Sanitary Sewer Capacity	20
4. Storm Drainage & Stormwater Management	21
a. Criteria & Terms of Reference	21
b. Existing Storm Sewers & Drainage	22
c. Basement Flooding Environmental Assessment (BFEA) – Storm Sewer Discussion	25
d. Proposed Storm Servicing Alternatives Analysis	25
e. Allowable Storm Release Rate	27
f. Proposed Storm Drainage, Servicing & Stormwater Management	28
g. Stormwater Retention & ‘Water Balance’	36
h. Stormwater Quality	37
5. Foundation Drainage & Groundwater	38
a. Criteria	38
b. Foundation Drainage Strategy	38
c. Internal Drains and Piping	38
6. Erosion & Sediment Control	42

7. Conclusions	42
----------------------	----

List of Tables

Table 1 - Water Demand Summary	5
Table 2 – Sanitary Servicing Alternatives Analysis – Building A	15
Table 3 – Sanitary Servicing Alternatives Analysis – Building B.....	16
Table 4 - Proposed Sanitary Flows Summary	17
Table 5 – Storm Servicing Alternatives Analysis Building A	26
Table 6 – Storm Servicing Alternatives Analysis Building B.....	27
Table 7 - Allowable Release Rate to Dundas Street West 825mm-Dia. Storm Sewer	28
Table 8 - Post-Development Catchment Area Parameters – East (Building A)	30
Table 9 - Post-Development Catchment Area Parameters – West (Building B)	30
Table 10 - Stormwater Quantity Control (Detention) Results Summary – East.....	31
Table 11 - Stormwater Quantity Control (Detention) Results Summary – West.....	31
Table 12 - 'Water Balance', or Stormwater Retention and Reuse, Summary – East	36
Table 13 - 'Water Balance', or Stormwater Retention and Reuse, Summary – West.....	37

List of Figures

Figure 1 – Existing Site Summary	3
Figure 2 – Pre-Development Drainage Plan.....	13
Figure 3 – Pre-Development Drainage Plan.....	24
Figure 4 – Post-Development Drainage Plan	29

Please refer to the Engineering Drawing set by civilGo Engineering Inc. concurrently with the review of this report.

Appendix A

- Architectural Site Plan & Statistics for 5500 Dundas Street West by Superkül

Appendix B

- Subsurface Utility Engineering Investigation by 4Sight

Appendix C

- Downstream Storm & Combined-Sewer-Overflow-Sewer (STM&CSO Sewer) Analysis (Calibrated BFEA-based Analysis) by civilGo Engineering Inc

1. Introduction & Background

a. Introduction

civilGo Engineering Inc. was retained by FCHT Holdings (Ontario) Corporation, to prepare a **Functional Servicing & Stormwater Management Report** for submission to the City of Toronto in support of a Rezoning Bylaw Amendment Application Submission. The proposed Development for which the Submission is being made comprises a two-tower mixed use development within the subject Site, 5500 Dundas Street West, in Toronto, Ontario. The following report has accordingly been prepared to provide discussion and engineering analysis pertaining to the site servicing for the proposed Development.

b. Subject Lands Description

The subject Development Site (the 'Site') has municipal address 5500 Dundas Street West, Toronto, Ontario and postal code M9B 1B7. The Site's area is 0.97 Ha.

Presently, the Site comprise an existing one-storey brick and stucco commercial building and a large, paved parking lot.

The Site is bounded by Dundas Street West to the south, Paulart Drive to the east, Billingham Road to the west, and residential house lots to the north.

Refer to the Existing *Site Summary Figures*, below, for the layout of the existing Site, existing infrastructure and adjacent Streets.

c. Proposed Development Description

It is proposed to construct two mixed-use purpose-built Rental Buildings of 16-Storey (+ mechanical penthouse) Tower for Building A and a 14-Storey (+ mechanical penthouse) Tower for Building B, containing a total of 560 dwelling units, a new Privately-Owned Publicly Accessible Space (P.O.P.S.) and non-residential commercial space.

Refer to the architectural Site Plan and Statistics by architects Superkül in Appendix A for the proposed Development layout and specifics as referenced herein.

d. Report Scope and Terms of Reference

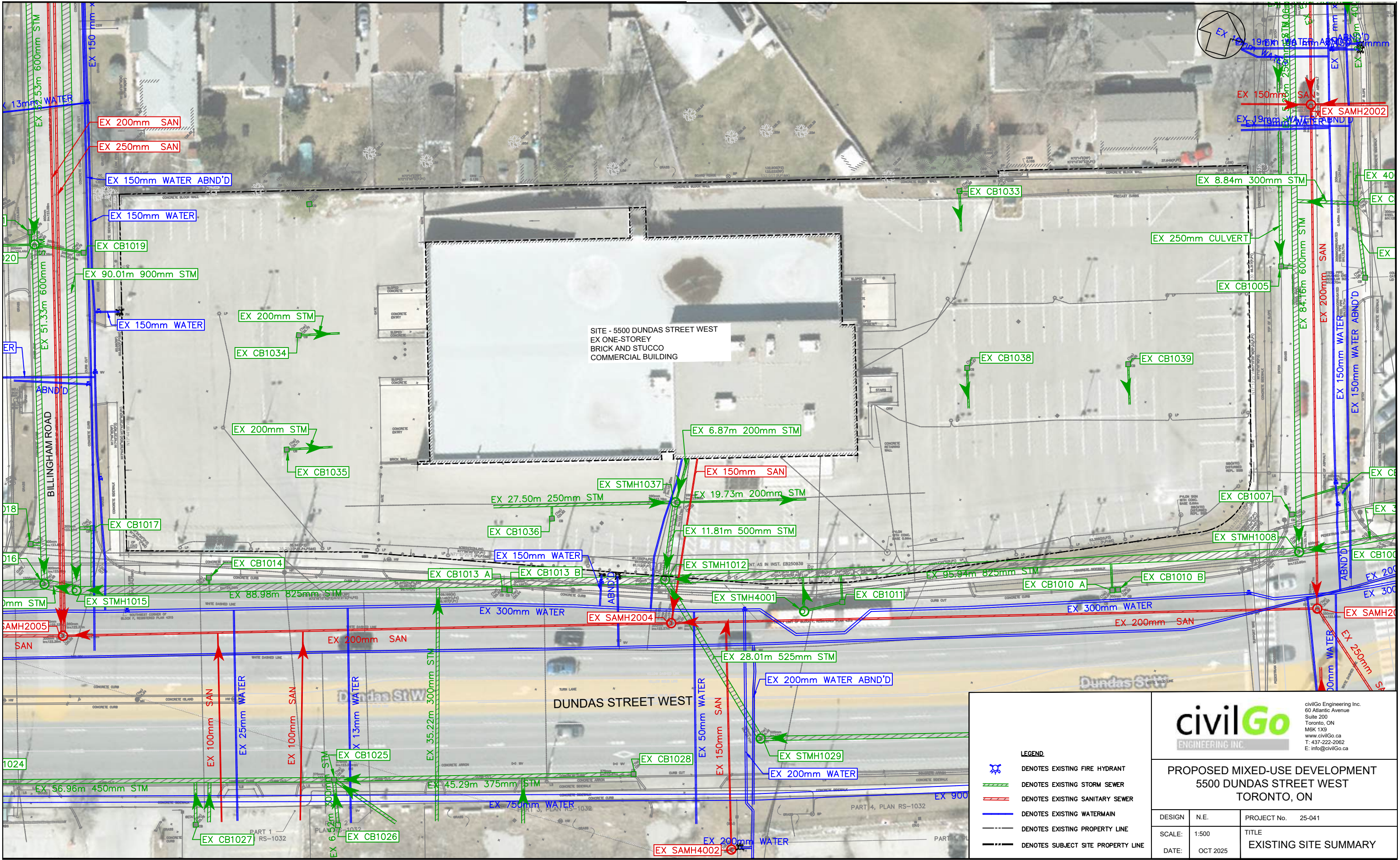
The scope of this Report is outlined below. The scope has been reviewed for compliance with the Terms of Reference for both Servicing Reports and Stormwater Management Reports as given in the City of Toronto's Website *Application Support Material: Terms of Reference*.

This report has, further, been prepared in accordance with the following documents:

- City of Toronto's *Design Criteria for Sewers and Watermains* (January 2021)
- City of Toronto's *Wet Weather Flow Management Guidelines* (November 2006)
- City of Toronto's *Water Servicing and Metering Manual* (September 2011)
- Ministry of Environment, Conservation & Parks *Stormwater Management Planning & Design Manual*

The scope of this report, in general, comprises the following.

- Obtaining the most recent engineering records (Plan & Profile Drawings) from the City of Toronto.
- Reviewing all background information pertaining to existing water infrastructure, topography and related characteristics of the subject Lands.
- Reviewing Geotechnical and Hydrogeological Reports and recommendations applying to the Site.
- Evaluating the capacity of existing sewers to support the proposed Development of the subject Site.
- Provide calculations and conclusions pertaining to site servicing and stormwater management.
- Provide stormwater management analysis and designs whereby the stormwater quality and quantity objectives given by the *Wet Weather Flow Management Guidelines* are addressed.



LEGEND

- DENOTES EXISTING FIRE HYDRANT
- DENOTES EXISTING STORM SEWER
- DENOTES EXISTING SANITARY SEWER
- DENOTES EXISTING WATERMAIN
- DENOTES EXISTING PROPERTY LINE
- DENOTES SUBJECT SITE PROPERTY LINE

civilGo
ENGINEERING INC.

civilGo Engineering Inc.
60 Atlantic Avenue
Suite 200
Toronto, ON
M6K 1X9
www.civilGo.ca
T: 437-222-2062
E: info@civilGo.ca

**PROPOSED MIXED-USE DEVELOPMENT
5500 DUNDAS STREET WEST
TORONTO, ON**

DESIGN	N.E.	PROJECT No.	25-041
SCALE:	1:500	TITLE	EXISTING SITE SUMMARY
DATE:	OCT 2025		

2. Watermains & Water Servicing

a. Water Servicing Criteria

The City of Toronto's site servicing policy typically requires all buildings/podiums/towers on a development to have separate respective water service connections to the street to which that component of the development fronts.

Design criteria pertaining to water servicing is given in Chapter 4 of the City of Toronto's *Design Criteria for Sewers and Watermains* (January 2021). The criteria that are observed herein is as follows.

- Per-capita average domestic water demand (multi-unit development): 190 L/cap/day
- Peaking Factors:
 - Peak Hour: 2.50 x average day demand
 - Maximum Day: 1.30 x average day demand
- Fire Flow Demand: is given by the calculation as per the manual *Water Supply for Public Fire Protection* by the *Fire Underwriters' Survey* (2020 revision).
- Minimum residual pressure in maximum demand scenario (Fire Flow Demand + Max. Day) is 140 kPa.

Combined domestic water and fire service connections are to be installed as per City-standard drawings, including T-1104.02-3.

b. Existing Water Mains

The existing Streets adjacent to the Site are presently understood to comprise the following watermains, adjacent to the Site's frontage.

- Within Dundas Street West, there are two existing watermains. One is an existing 300mm-dia. watermain within its northern side, which currently services the existing Building. The second is an existing 750mm-dia. watermain within its southern side. There is also an abandoned watermain along this street.
- Within Paulart Drive, there is an existing 150mm-dia. watermain. There is also an abandoned watermain along this street.
- Within Billingham Road, there is an existing 150mm-dia. watermain. There is also an abandoned watermain along this street.

There are existing Fire Hydrants located along the west side of the Site on Billingham Road, along the south side of the Site on Dundas Street West and along the eastern side of Paulart Drive across from the northeast corner of the Site.

c. Proposed Water Servicing

It is proposed to service each building with its own 200mm-dia. fire service connection with branch 150mm-dia. domestic water connection. Service to the two proposed towers will be to the 300mm-dia. watermain on Dundas Street West.

d. Water Demand & Existing System Adequacy

The domestic water demand (using average-day, peak-hour and max.-day peaking factors) as well as fire flow demand, are summarized as follows.

Fire hydrant flow-testing was completed, in accordance with NFPA 291 standards for hydrant flow-testing. The test reports are provided on the following pages.

It is evident, as per the below hydrant flow test reports, that the available flow at the minimum residual pressure of 140 kPa (20 psi) in the Dundas Street West watermain is **5734 USGM** (flow test, below). This is greater than the development's maximum water demand for either building as per Table 1, below. The existing watermain infrastructure is therefore capable of servicing the proposed development and no watermain infrastructure improvements are required.

Table 1 - Water Demand Summary

	Average Day Demand (ADD) (Pop'n x 190 L/c/d)	Max. Day Demand (MDD) (1.3x ADD)	Peak Hour Demand (PHD) (2.5xADD)	Fire Flow Demand	Total Water Demand (MDD + Fire Flow)
Building A	1.20 L/s 19 USGM	1.57 L/s 25 USGM	3.01 L/s 48 USGM	150 L/s 2378 USGM	151.57 L/s 2492 USGM
Building B	1.05 L/s 17 USGM	1.36 L/s 22 USGM	2.62 L/s 41 USGM	150 L/s 2378 USGM	151.36 L/s 2399 USGM

Domestic water demand calculations (ADD, MDD and PHD) are provided on the following page.

The fire flow demand calculation is provided on the following pages. The manual *Water Supply for Public Fire Protection* by *Fire Underwriters Survey* (2020) has been utilized to inform fire flow demand in accordance with the City of Toronto's *Design Criteria for Sewers and Watermains*. The following assumptions were made in the Fire Flow Demand calculation.

- The proposed building will be of *Fire-Resistive* (concrete) Construction.
- The proposed buildings will be sprinklered and the sprinklers will be fully monitored according to NFPA 13.
- The proposed buildings' contents (Residences, Commercial) will be limited-combustible in nature.
- Proposed building floor areas are as given in the architectural statistics in Appendix A.

Domestic Water Demand Flow Calculation Sheet

Project: Proposed Two-Tower Mixed-Use Development - 5500 Dundas Street West

Project No.: 25-041

Date: Oct 2025

By: NE

Development Component	Proposed Residential Water Flows					Prop. Non-Residential Water Flows				Total Proposed Population	Total Flows		
	1 BR + Studio Unit	2BR Unit	3BR Unit	4BR Unit	Total Residential Population	Instit'l Floor Area GFA	Commercial/Retail Floor Area GFA	Office Floor Area GFA	Non-Residential Population		Average Day Demand (ADD)	Max. Day Demand (MDD) (1.3ADD)	Peak Hour Demand (PHD) (2.5ADD)
	(Units)	(Units)	(Units)	(Units)	(Persons)	(m ²)	(m ²)	(m ²)	(Persons)		(L/s)	(L/s)	(L/s)
Building A	180	82	38	0	542	0.0	497.7	0.0	5.5	547	1.20	1.57	3.01
Building B	158	67	35	0	470	0.0	499.8	0.0	5.5	476	1.05	1.36	2.62

Reference Sanitary Flows as per *Design Criteria for Sewers and Watermains* (City of Toronto, January 2021)

Residential Unit Population:

1BR = 1.4 person/unit

2BR = 2.1 person/unit

3BR = 3.1 person/unit

4BR = 3.7 person/unit

Non-Residential Unit Population:

Office = 3.3 person/100m² GFA

Commercial/Retail = 1.1 person/100m² GFA

Institutional = GFA(m²) x 1 bed/30m² x 1 person/bed

Unit Water Demand = 190 L/cap/day

Fire Flow Demand Calculation

as per Water Supply for Public Fire Protection, 1999 (Fire Underwriters' Survey)

Project:	5500 Dundas Street West - Building A
Project No.:	25-041
Date:	Oct 2025

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

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).

Fire Flow is given by the following calculation:

Step 1:

$F = 220C\sqrt{A} = 12902 \text{ L/Min}$
 $F = 3408 \text{ USGPM}$

Where:

Type of Construction Factor, 'C' =	
Wood Frame Construction:	1.5
Ordinary Construction:	1.0
Non-Combustible Construction:	0.8
Fire Resistive Construction:	0.6

Vertical Openings & Exterior Vertical Connections Adequately Protected?: No

Building Area, 'A' =	
2	1996.3 m ²
3	2366 m ²
4	839.78 m ²
5	1363.2 m ²
6	1363.2 m ²
7	1363.2 m ²
8	1363.2 m ²
9	1363.2 m ²
10	1363.2 m ²
11	1363.2 m ²
'A' = 9553.39 m²	

Step 2:

Occupancy Hazard Reduction = -15 %

$F_{\text{reduction}} = -15\% \times 12902 \text{ L/min} = -1935 \text{ L/min}$
Therefore, F = 10967 L/min

Where % Reduction =	
Non-Combustible	-25%
Limited Combustible	-15%
Combustible	0%
Free Burning	+15%
Rapid Burning	+25%

Step 3: Complete Automatic Sprinkler Protection Deduction = 50 %, Where:

Credit for adequately designed system conforming to NFPA 13: 30% Reduction
 Credit for Standard Water Supply: 10% Reduction
 Credit for Fully Supervised System: 10% Reduction

$F_{\text{reduction}} = 50\% \times 10967 \text{ L/min} = 5483 \text{ L/min}$
Therefore, F = 5483 L/min

Step 4:

Exposure Charge:

Distance:	Exposure Charge:
Exposure to North 15.3 m =	15%
Exposure to East >45 m =	0%
Exposure to South >45 m =	0%
Exposure to West 15.0 m =	15%
Total Exposure Charge =	30%

$F_{\text{increase}} = 30\% \times 10967 \text{ L/min} = 3290 \text{ L/min}$
Therefore, F = 8773 L/min

Exposure Charge:	
0-3m	25%
3.1-10m	20%
10.1-20m	15%
20.1-30m	10%
30.1-45m	5%
>45m	0%

Therefore:

F = 8773 L/min
F = 9000 L/min (Rounded to nearest 1,000 L/min)
F = 150 L/s
F = 2378 USGPM

Fire Flow Demand Calculation

as per Water Supply for Public Fire Protection, 1999 (Fire Underwriters' Survey)

Project:	5500 Dundas Street West - Building B
Project No.:	25-041
Date:	Oct 2025

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

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).

Fire Flow is given by the following calculation:

Step 1:

$F = 220C\sqrt{A} = 12969 \text{ L/Min}$
 $F = 3426 \text{ USGPM}$

Where:

Building Area, 'A' =

3	2227.3 m ²
4	2227.3 m ²
5	762.8 m ²
6	1376.3 m ²
7	1376.3 m ²
8	1376.3 m ²
9	1376.3 m ²
10	1376.3 m ²
11	1376.3 m ²
12	1376.3 m ²

'A' = 9653.05 m²

Type of Construction Factor, 'C' = 0.6

Wood Frame Construction:	1.5
Ordinary Construction:	1.0
Non-Combustible Construction:	0.8
Fire Resistive Construction:	0.6

Vertical Openings & Exterior Vertical Connections Adequately Protected?: No

Step 2:

Occupancy Hazard Reduction = -15 %

$F_{\text{reduction}} = -15\% \times 12969 \text{ L/min} = -1945 \text{ L/min}$
Therefore, F = 11024 L/min

Where % Reduction =
Non-Combustible -25%
Limited Combustible -15%
Combustible 0%
Free Burning +15%
Rapid Burning +25%

Step 3: Complete Automatic Sprinkler Protection Deduction = 50 %, Where:

Credit for adequately designed system conforming to NFPA 13: 30% Reduction
Credit for Standard Water Supply: 10% Reduction
Credit for Fully Supervised System: 10% Reduction

$F_{\text{reduction}} = 50\% \times 11024 \text{ L/min} = 5512 \text{ L/min}$
Therefore, F = 5512 L/min

Step 4:

Exposure Charge:

Distance:	Exposure Charge:
Exposure to North 24.3 m =	10%
Exposure to East 15.0 m =	15%
Exposure to South >45 m =	0%
Exposure to West 35.7 m =	5%
Total Exposure Charge =	30%

Exposure Charge:

0-3m	25%
3.1-10m	20%
10.1-20m	15%
20.1-30m	10%
30.1-45m	5%
>45m	0%

$F_{\text{increase}} = 30\% \times 11024 \text{ L/min} = 3307 \text{ L/min}$
Therefore, F = 8819 L/min

Therefore:

F = 8819 L/min
F = 9000 L/min (Rounded to nearest 1,000 L/min)
F = 150 L/s
F = 2378 USGPM

HYDRANT LOCATION

HYDRANT FLOW TEST REPORT



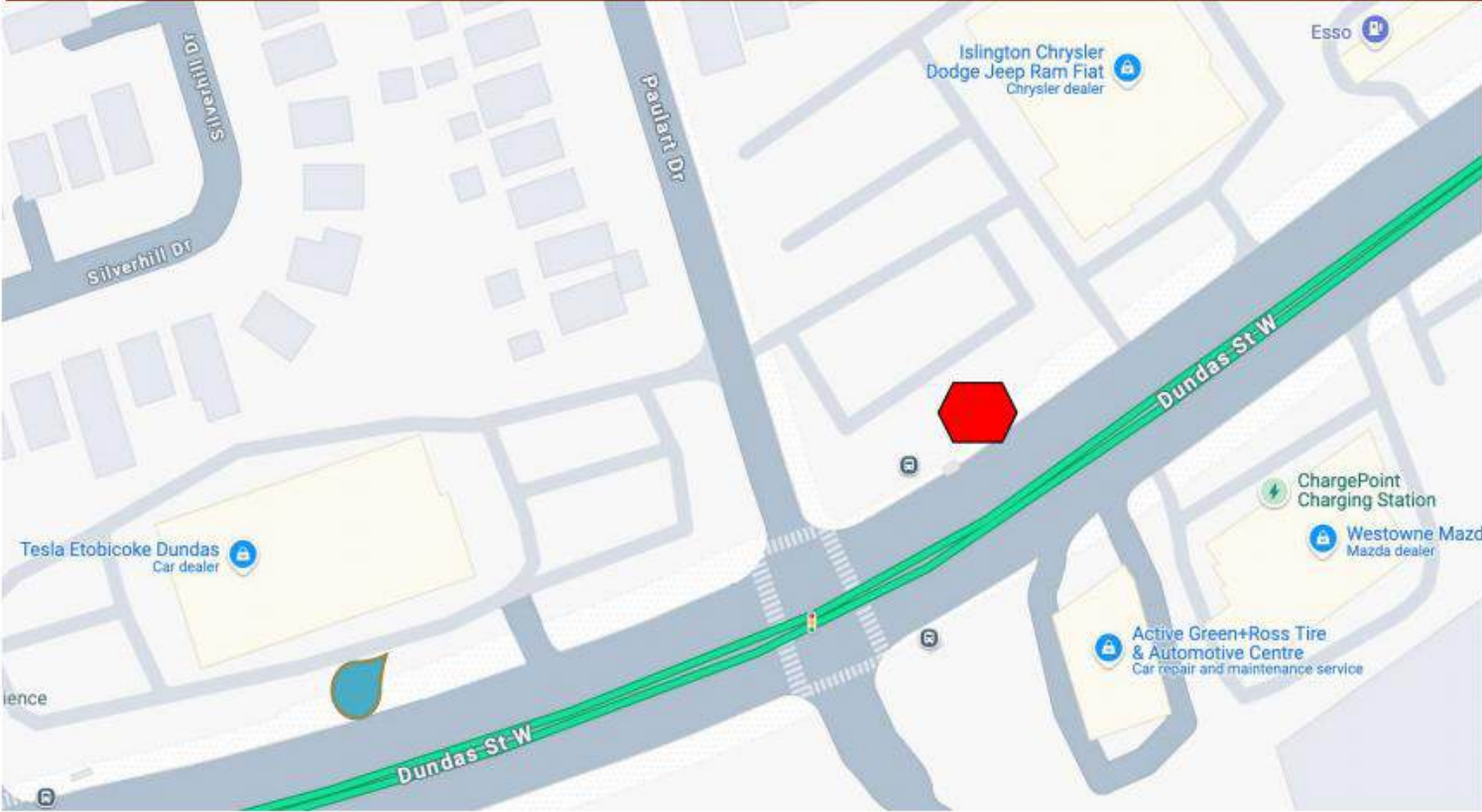
GENERAL INFORMATION:

PROJECT ID	5500DS	TESTED BY:	CG
CLIENT NAME	Bancroft, Daniel	DATE (MM-DD-YYYY)	06-16-2025
BUILDING ADDRESS	5500 Dundas St. Toronto, Ontario	TIME	9:00AM

WATER MAIN INFORMATION:

MAIN SIZE / MATERIAL	200mm
CONFIGURATION	Looped

HYDRANT LOCATION:



LEGEND:



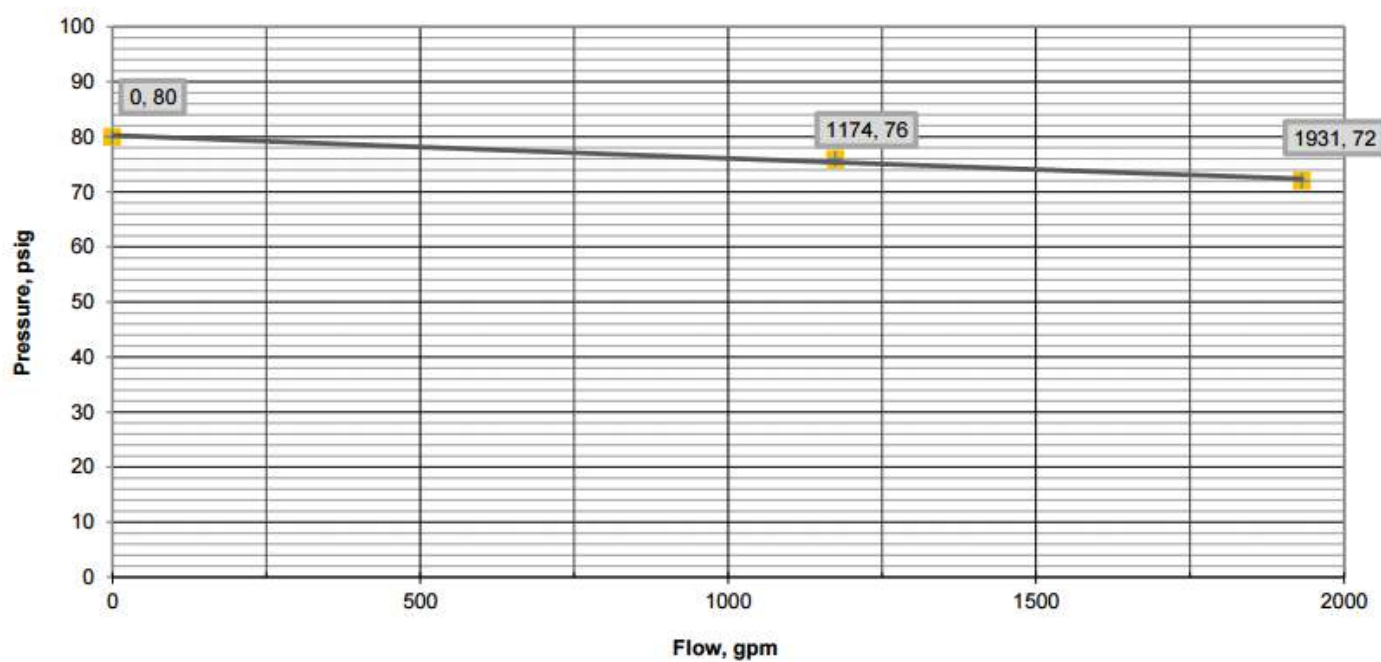
STATIC HYDRANT



RESIDUAL HYDRANT

FINAL RESULTS:

Test #	Number of Outlets	Orifice Size (in)	Pitot Reading (psig)	Equivlnt Flow (usgpm)	Total Flow (usgpm)	Projected flow at 20psi (usgpm)	Gauge Pressure (psig)	Discharge Coefnt
Static	N/A	N/A	N/A	N/A	0	N/A	80	N/A
1	1	2.47	65	1174	1174	5066	76	0.8
2	2	2.47	44	966	1931	5734	72	0.8



Note: Report is in accordance with applicable bylaw standards and NFPA 291 Recommended Practice for Water Flow Testing and Marking of Hydrants

3. Sanitary Sewers & Sewage Disposal

a. Criteria & Terms of Reference

Sanitary servicing criteria is given in Chapter 2 of the City of Toronto's *Design Criteria for Sewers and Watermains* manual (January 2021). The following sanitary sewage flow-calculation criteria are applied in this report as given in the City's manual.

- Per-capita average sanitary sewage flow: 450 L/cap/day (for the design of new sewers & sewer connections)
- Per-capita average sanitary sewage flow, for the analysis of existing sewer systems:
 - Residential population: 240 L/cap/day
 - Non-Residential population: 250 L/cap/day
- Unit population (Residential) – Bachelor & 1-B Units = 1.4 person/unit; 2-B Units = 2.1 person/unit; 3-B Units = 3.1 person/unit; 4-B Units = 3.7 person/unit; single-family = 3.5 person/unit; townhouse = 2.7 person/unit.
- Unit population (Non-residential) – Office = 3.3 person/100m² GFA; Commercial/Retail = 1.1 person/100m² GFA
- Inflow & Infiltration Flows (I&I) Originating from Subject Site = 0.26 L/s/Ha
- Peaking Factor – given by Harman Equation

b. Existing Sanitary Sewers

Refer to the Pre-Development Drainage Plan, on the following page, and the Servicing Plan, for further reference regarding existing sewer infrastructure.

Pre-development (existing) storm drainage patterns, outlets and sewer-connections were confirmed by a subsurface utility engineering investigation conducted by 4Sight on August 20, 2025 provided here in Appendix B.

The municipal Streets to which the Site fronts presently comprise the following sewers.

1. Within Dundas Street West: Within Dundas Street West, there is a 200mm-dia. sanitary sewer, which flows westerly and continues westerly until it discharges into a trunk sewer within The East Mall. This sewer continues downstream until it increases to 300mm-dia. at the intersection of Dundas Street West and Billingham. The existing building's sanitary service presently connects to this sewer.
2. Within Paulart Drive: There is a 200mm-dia. sanitary sewer, which flows southerly. This sewer continues southerly and connects to the 200mm-dia. sanitary sewer within Dundas Street West which then flows easterly within Dundas and southerly within Shorncliffe Road.
3. Within Billingham Road: There are two sanitary sewers within Billingham Road. One is an 250mm-dia. sanitary sewer on the eastern part of Billingham Road. The second sanitary sewer is a 200mm-dia. sanitary sewer on the western side of Billingham Road. Both sewers continue southerly and connect to the 300mm-dia. sanitary sewer within Dundas Street West.

c. Basement Flooding Environmental Assessment (BFEA)

The City of Toronto has undertaken a Basement Flooding Protection Program to help reduce the risk of flooding by making improvements to the sewer system and overland drainage routes. The intent and scope of the program is to undertake analysis of the City's drainage systems (municipal storm, sanitary and combined sewers) in order to identify system deficiencies and thereby recommend infrastructure improvements.

The program divides the City into 67 different Study Areas for which Basement Flooding Environmental Assessments (BFEA) have been or will be individually undertaken. Many of the study areas have been completed presently as given in the City of Toronto's Basement Flooding Protection Program Map.

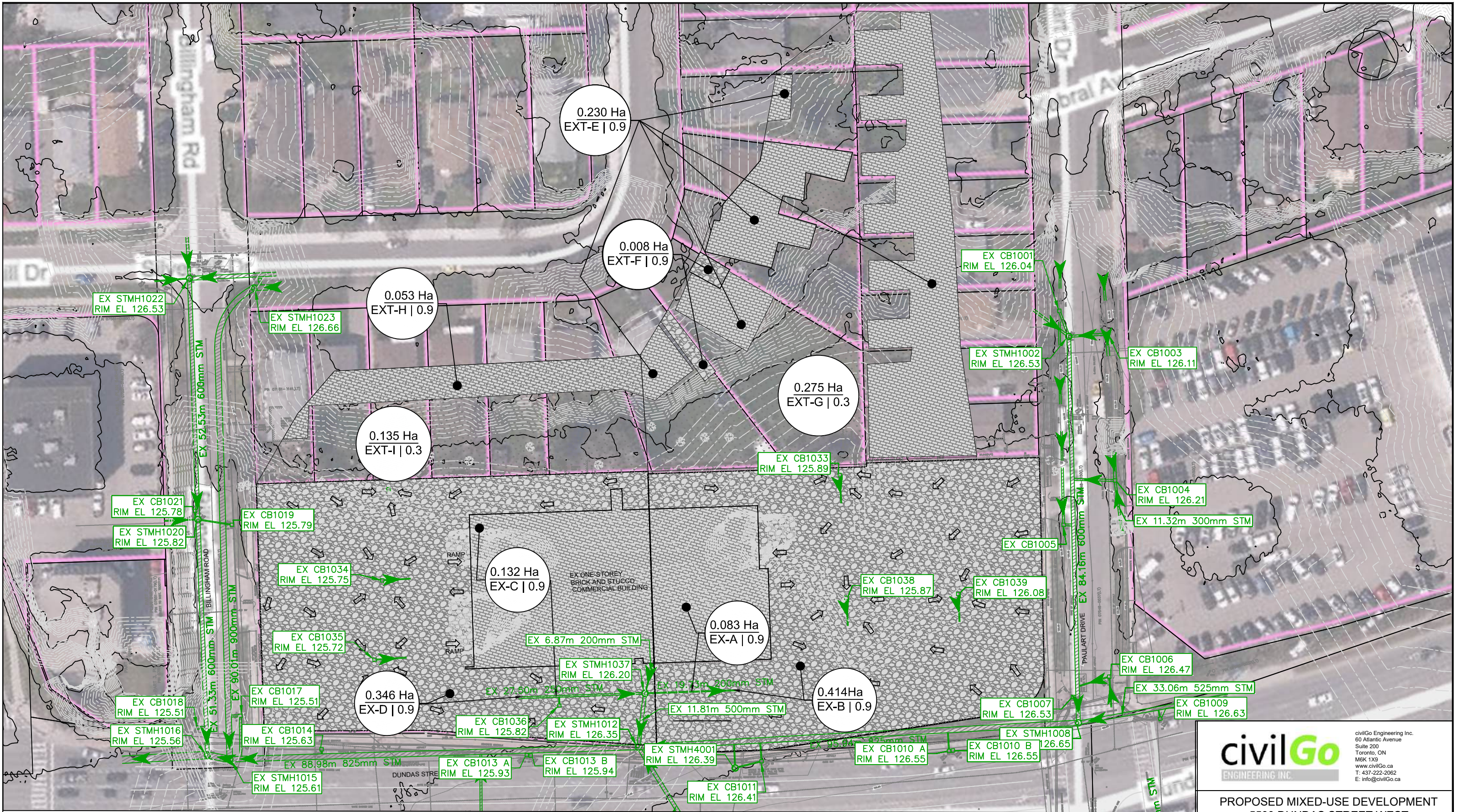
The City's criteria typically require Functional Servicing Reports prepared in support of Development applications to review and address the conclusions and recommendations of the Basement Flooding EA, where complete, with respect to the proposed Development's drainage.

The subject proposed Development of 5500 Dundas Street West falls within BFEA Study Area 54, which has been completed. The completed EA Report is titled *Basement Flooding Protection Program (BFPP) Capacity Assessment Studies – Final Study Report Area 54* by AECOM and dated October 2022.

The following comments are provided with respect to the conclusions of the EA Report, pertaining to sewage drainage. Refer to section 7, below for comments pertaining to problem identification.

- The EA Report identifies the performance of the sanitary sewer system in the 100-Year storm event. The Report shows that the sanitary sewer system presently needs improvements due to the storm sewers along Dundas St within the study area all surcharge to basement levels due to flow exceeding the sewer capacity.
- Figure A-40, *Sanitary Sewer System Results – Capacity*, in the EA Report shows that the sanitary sewer segments adjacent to the site's frontages have adequate capacity for dry-weather flow. However, Appendix C *Assessment of Flooding Mechanisms in Flood Cluster Areas* mentions that due to multiple properties having their foundation drains connected to the sanitary sewer, floodings will very highly occur during wet weather events.
- Figure A-11 in the EA Report does recommend improvements within the sanitary sewers near the subject site.

Given the above discussion, sanitary sewer infrastructure improvements are required as part of this development on account of the Basement Flooding EA's recommendations.



- LEGEND**
- DENOTES EXISTING CATCHBASIN
 - DENOTES PROPOSED CATCHBASIN
 - DENOTES EXISTING STORM MH
 - DENOTES PROPOSED STORM MH

- DENOTES EXISTING STORM SEWER
- DENOTES PROPOSED STORM SEWER
- DENOTES CATCHMENT AREA BOUNDARY
- DENOTES EXTERNAL CATCHMENT AREA BOUNDARY

- DENOTES EXISTING PROPERTY LINE
- DENOTES SUBJECT SITE PROPERTY LINE
- DENOTES MAJOR OVERLAND FLOW ROUTE
- DENOTES RAINWATER LEADER

- CATCHMENT AREA, AREA
- CATCHMENT AREA ULTIMATE OUTLET
- CATCHMENT AREA LOCATION
- RUNOFF COEFFICIENT
- CATCHMENT AREA ID

- DENOTES IMPERVIOUS GROUND SURFACE
- DENOTES IMPERVIOUS BUILDING ROOF
- DENOTES PERVIOUS SURFACE

civilGo
ENGINEERING INC.

civilGo Engineering Inc.
60 Atlantic Avenue
Suite 200
Toronto, ON
M6K 1X9
www.civilGo.ca
T: 437-222-2062
E: info@civilGo.ca

PROPOSED MIXED-USE DEVELOPMENT
5500 DUNDAS STREET WEST
TORONTO, ON

DESIGN	N.E.	PROJECT No.	25-041
SCALE:	1:750	TITLE	PRE-DEVELOPMENT DRAINAGE PLAN
DATE:	OCT 2025		

d. Proposed Sanitary Servicing Alternatives Analysis

It is proposed to service 5500 Dundas Street West's Building A to the Paulart Drive 200mm-dia. sanitary sewer for sanitary sewage flows; and to service Building B to the Dundas Street West 200mm-dia. sanitary sewer, as shown in the Site Servicing Plan.

A 200mm-dia. sanitary sewer connection is proposed to service each tower of the Development.

The Site fronts to four different sanitary sewers; a 200mm-dia. and a 250m-dia sanitary sewer within Billingham Road, the 200mm-dia. sanitary sewer within Dundas Street West and the 200mm-dia. sanitary sewer within Paulart Drive. The sewers within Billingham Road converges with the 200mm-dia. sanitary sewer within Dundas Street West and is therefore part of the same sewer-shed. The 200mm-dia. sanitary sewer within Paulart Drive is part of a separate sewer-shed.

An alternatives analysis was conducted whereby the Pro's and Con's of connection to each sewer were evaluated. The alternatives analysis and discussion/conclusion are provided as follows.

Table 2 – Sanitary Servicing Alternatives Analysis – Building A

Alternative	Receiving Combined/ Sanitary Sewer	Pro's	Con's	Discussion & Conclusion
Alternative 1	Dundas Street West 200mm-dia. Sanitary Sewer	<ul style="list-style-type: none"> There is an existing sanitary connection to this sewer from the existing Building, therefore connection of the proposed Building A to this sewer would maintain existing drainage patterns. This sewer is located at the Site's frontage to Dundas Street West, therefore if Building A needs to drain sanitary flows towards Dundas Street West, this is a suitable outlet on the basis of frontage. 	<ul style="list-style-type: none"> Due to storm sewer within Dundas Street West, to allow for proper clearance the sanitary lateral would have less than 1m cover which would then conflict with shallow buried utilities and pose constructability issues. As shown in the enclosed Downstream Sanitary Sewer Analysis, this sewer is non-compliant with Criterion 2 (WWF). 	Do not proceed with Alternative 1 due to constructability issues.
Alternative 2	Paulart Drive 200mm-dia. Sanitary Sewer	<ul style="list-style-type: none"> This sewer is located at the Site's frontage to Paulart Drive, therefore if Building A needs to drain sanitary flows towards Dundas Street West, this is a suitable outlet on the basis of frontage. There would be proper sanitary lateral cover, and no interference to other sewers. 	<ul style="list-style-type: none"> There are no existing sanitary connections to this sewer, therefore connection of the proposed Building to this sewer would change sanitary drainage patterns. As discussed in the enclosed Downstream Sanitary Sewer Analysis report, there are capacity issues in the downstream sewer within Shorncliffe Road as this sewer is non-compliant with Criterion 2 (WWF), however as is also discussed, improvements have evidently already been initiated by other developments in this sewer-shed, whereby the sewer capacity will be adequately increased. 	Proceed with Alternative 2 to allow for proper cover and clearance.

Table 3 – Sanitary Servicing Alternatives Analysis – Building B

Alternative	Receiving Combined/ Sanitary Sewer	Pro's	Con's	Discussion & Conclusion
Alternative 1	Dundas Street West 200mm-dia. Sanitary Sewer	<ul style="list-style-type: none"> There is an existing sanitary connection to this sewer from the existing Building, therefore connection of the proposed Building B to this sewer would maintain existing drainage patterns. This sewer is located at the Site's frontage to Dundas Street West, therefore if Building B needs to drain sanitary flows towards Dundas Street West, this is a suitable outlet on the basis of frontage. As shown in the enclosed Downstream Sanitary Analysis report, this sewer is compliant with Criterion 1 and has capacity on the basis of DWF. 	<ul style="list-style-type: none"> Will require lowering the existing watermain to allow for proper clearance. As shown in the enclosed Downstream Sanitary Sewer Analysis, this sewer is non-compliant with Criterion 2 (WWF). 	Proceed with Alternative 1 in order to maintain existing drainage patterns.
Alternative 2	Billingham Road 250mm-dia. Sanitary Sewer	<ul style="list-style-type: none"> This sewer is located at the Site's frontage to Billingham Road, therefore if Building B needs to drain sanitary flows towards Billingham Road, this is a suitable outlet on the basis of frontage. 	<ul style="list-style-type: none"> There are no existing sanitary connections to this sewer, therefore connection of the proposed Building to this sewer would change sanitary drainage patterns. As shown in the enclosed Downstream Sanitary Sewer Analysis, this sewer is non-compliant with Criterion 2 (WWF). 	Do not proceed with Alternative 2 as it does not comply with existing drainage patterns.

e. Proposed Sanitary Servicing Design & Flow Calculations

The proposed Building A will be serviced to the Paulart Drive 200mm-dia. Sanitary Sewer while the proposed Building B will be serviced to the Dundas Street West 200mm-dia. Sanitary Sewer. Each development will comprise a respective control maintenance hole, in accordance with City of Toronto criteria.

Refer to the Site Servicing Plan for the proposed service connection laterals.

The proposed Development's sanitary flows are summarized as follows. Detailed sanitary flow calculations are provided on the following pages.

The proposed building's below-grade structure will be constructed in a 'watertight' manner without any foundation drains; therefore, no groundwater flows are considered herein. Refer to further discussion in Section 5 regarding foundation drainage/lack thereof.

Table 4 - Proposed Sanitary Flows Summary

	Total Proposed Population	Residential Sanitary Flows (@ 250 L/c/d)	Non-Residential Sanitary Flows (@ 240 L/c/d)	Inflow & Infiltration (I&I) Flows	Total Proposed Sanitary Flows
Building A	542 (Res) + 6 (non-Res)	6.0 L/s	0.07 L/s	0.13 L/s	6.15 L/s
Building B	470 (Res) + 6 (non-Res)	5.2 L/s	0.07 L/s	0.12 L/s	5.41 L/s
TOTAL	1012 (Res) + 12 (non-Res)	11.2 L/s	0.14 L/s	0.25 L/s	11.56 L/s

The proposed sanitary flows as outlined above will discharge into municipal sewers by respective 200mm @ 2.0% sanitary service connections for each tower. This pipe has a capacity of 43 L/s, which is greater than the sanitary flows from the development as above, therefore the proposed sanitary sewer connections are adequately designed.

Proposed Sanitary Flows Calculation Sheet (Using 240 L/c/d & 250 L/c/d)

Project: 5500 Dundas Street West - Proposed Mixed-Use Development, Building A
Project No.: 25-041
Date: Dec 2025
By: NE



Development Component	Proposed Residential Sanitary Flows						Proposed Non-Residential Sanitary Flows					Proposed I&I Flows & Groundwater			Peak Sanitary Flows
	1 BR Unit	2BR Unit	3BR Unit	Residential Population	Peaking Factor	Peak Residential Sanitary Flow	Instit'l Floor Area GFA	Commercial/Retail Floor Area GFA	Non-Residential Population	Peaking Factor	Peak Non-Residential Sanitary Flow	Inflow & Infiltration Area	Segment I&I Flow	Groundwater Flows	
	(Units)	(Units)	(Units)	(Persons)	M	(L/s)	(m ²)	(m ²)	(Persons)	M	(L/s)	(Ha)	(L/s)	(L/s)	
Prop Apt. Bldg	180	82	38	542	4.0	6.0	0.0	497.7	5.5	4.4	0.07	0.490	0.13	0.0	6.15

Reference Sanitary Flows as per *Design Criteria for Sewers and Watermains* (City of Toronto, January 2021)

Residential Unit Population:

1BR = 1.4 person/unit
2BR = 2.1 person/unit
3BR = 3.1 person/unit
4BR = 3.7 person/unit

Non-Residential Unit Population:

Office = 3.3 person/100m² GFA
Commercial/Retail = 1.1 person/100m² GFA
Institutional = GFA(m²) x 1 bed/30m² x 1 person/bed

Unit I&I Flow = 0.26 L/s/Ha

Unit Non-Residential Sanitary Flow = 250 L/c/d (for analysis of existing sewers)

Unit Residential Sanitary Flow = 240 L/c/d (for analysis of existing sewers)

Peaking Factor, $M = 1 + 14 / (4 + P / 1000)^2$

Peak Sanitary Flow, $Q(D) \text{ (L/s)} = P * Q * M / 86,400$

Proposed Sanitary Flows Calculation Sheet (Using 240 L/c/d & 250 L/c/d)

Project: 5500 Dundas Street West - Proposed Mixed-Use Development, Building B
Project No.: 25-041
Date: Dec 2025
By: NE

Development Component	Proposed Residential Sanitary Flows						Proposed Non-Residential Sanitary Flows					Proposed I&I Flows & Groundwater			Peak Sanitary Flows
	1 BR Unit	2BR Unit	3BR Unit	Residential Population	Peaking Factor	Peak Residential Sanitary Flow	Instit'l Floor Area GFA	Commercial/Retail Floor Area GFA	Non-Residential Population	Peaking Factor	Peak Non-Residential Sanitary Flow	Inflow & Infiltration Area	Segment I&I Flow	Groundwater Flows	
	(Units)	(Units)	(Units)	(Persons)	M	(L/s)	(m ²)	(m ²)	(Persons)	M	(L/s)	(Ha)	(L/s)	(L/s)	(L/s)
Prop Apt. Bldg	158	67	35	470	4.0	5.2	0.0	499.8	5.5	4.4	0.07	0.480	0.12	0.0	5.41

Reference Sanitary Flows as per *Design Criteria for Sewers and Watermains* (City of Toronto, January 2021)

Residential Unit Population:

1BR = 1.4 person/unit
2BR = 2.1 person/unit
3BR = 3.1 person/unit
4BR = 3.7 person/unit

Non-Residential Unit Population:

Office = 3.3 person/100m² GFA
Commercial/Retail = 1.1 person/100m² GFA
Institutional = GFA(m²) x 1 bed/30m² x 1 person/bed

Unit I&I Flow = 0.26 L/s/Ha

Unit Non-Residential Sanitary Flow = 250 L/c/d (for analysis of existing sewers)

Unit Residential Sanitary Flow = 240 L/c/d (for analysis of existing sewers)

Peaking Factor, M = $1 + 14/(4 + P/1000)^2$

Peak Sanitary Flow, Q(D) (L/s) = $P * Q * M / 86,400$

f. Downstream Sanitary Sewer Capacity

civilGo Engineering undertook an analysis of the downstream sanitary sewers, from the Subject site, to the downstream Trunk sewer connection point. The analysis was conducted in accordance with City of Toronto Criteria, utilizing the BFEA calibrated 'infoworks' model. The analysis Report is provided here in Appendix C. The analysis concludes the following:

- With respect to Criterion 1, "Design Function", which requires that there will be no surcharge in the sewer system under 'design flow conditions', the results are:
 - In the Existing/Pre-Development Scenario: All downstream pipe segments are flowing well-within their respective capacities and Criteria 1 is satisfied.
 - Building B/Westerly Outlet: All downstream pipe segments are flowing well-within their respective capacities and Criteria 1 is satisfied.
 - Building A/Easterly Outlet: All downstream pipe segments are flowing well-within their respective capacities and Criteria 1 is satisfied.
 - In the Proposed/Post-Development Scenario:
 - Building B/Westerly Outlet: All downstream pipe segments are flowing well-within their respective capacities and Criteria 1 is satisfied. This applies, considering, even, the possibility that the Proposed/Future Development of 2-10 East Mall Crescent drains to this sewer.
 - Building A/Easterly Outlet:
 - There are two other proposed/future developments in this sewer-shed, which are considered herein both with, and without, the subject proposed development. These developments (5509 Dundas St. W. and 5415-5487 Dundas St. W.) cause the existing sewer to be non-compliant with Criterion 1 DWF scenarios. The FSR for 5415-5487 Dundas St. W. proposes improvements to the existing downstream sanitary sewer within Shorncliffe Road. These upgrades have been modelled herein. It was noted that, even with the upgrades proposed by 5415-5487 Dundas St. W., there remains some segments which do not comply with Criterion 1.
 - An additional scenario was completed by considering the Proposed Development, as a new, further, development in this sewer shed (in addition to 5509 and 5415-5487). This compounds the results arrived-at for the external developments, alone.
 - Consideration is therefore warranted for system improvements, on account of the external proposed developments and the proposed development, with respect to Criterion 1.
- With respect to Criterion 2, "Basement Flooding Protection", which requires that any surcharging in the sewer system will be at least 1.8m-below-grade under the 'May 12th, 2000 Storm Event', the results are:

- In the Existing/Pre-Development Scenario:
 - Building B/Westerly Outlet: Three segments downstream of the Site do not comply with Criterion 2.
 - Building A/Easterly Outlet: A number of pipe segments downstream (within Shorncliffe Road) do not comply with Criterion 2, without considering any system improvements. Considering the system improvements proposed by the development of 5415-5487 Dundas St. W., however, most downstream segments within Shorncliffe come-into compliance with Criterion 2.
- In the Proposed/Post-Development Scenario:
 - Building B/Westerly Outlet: Three segments downstream of the Site do not comply with Criterion 2.
 - Building A/Easterly Outlet: A number of pipe segments downstream (within Shorncliffe Road) do not comply with Criterion 2. As noted above, improvements are already contemplated for this sewer shed pertaining-to the development of 5415-5487 Dundas St. W., whereby Criterion 2 would generally be addressed.

4. Storm Drainage & Stormwater Management

a. Criteria & Terms of Reference

The following criteria was addressed in the stormwater management design and calculations herein.

Storm servicing criteria is given in Chapter 3 of the City of Toronto's *Design Criteria for Sewers and Watermains* manual (January 2021).

Stormwater Management criteria are given in the City of Toronto's *Wet Weather Flow Management Guidelines* (WWFMG) manual (2006). Table 7, therein, provides stormwater management criteria. WWFMG Table 7 states that the allowable release rate shall be given by the pre-development 2-year storm flow rate, utilizing the lesser of the actual pre-development runoff coefficient, or a runoff coefficient of 0.5. WWFMG Table 7 allows for the use of the Rational Method for calculation of allowable flows, where site area is less than 5.0 Ha.

The following IDF curves represent the City of Toronto's storms which will be analyzed herein, as per the above manuals.

$$I_{2-year} = 21.8 * T^{-0.78}$$

$$I_{100-year} = 59.7 * T^{-0.80}$$

Where:

I = intensity (mm/hr)

T = Time of Concentration in hours

The *Toronto Green Standard* (TGS) provides criteria for stormwater retention/water balance. TGS Version 4, Tier 1, *WQ 1.1 Water Balance, Quality and Quantity* requires the proponent to address the following criteria.

- Water Balance: Retain a minimum of 50% of average annual rainfall volume (or equivalent 5mm each rainfall event).
- Water Quality: Provide long-term average removal of 80% Total Suspended Solids (TSS).
- Water Quantity: Peak flow control in accordance with WWFMG, above.

There may be runoff from rainstorms that exceeds the capacity of the City's storm service connections. Therefore, the owner shall be responsible to provide flood protection or a safe overland flow route for the proposed development without causing damage to the proposed and adjacent public and private properties.

Existing drainage patterns on adjacent properties shall not be altered and stormwater runoff from the subject development shall not be directed to drain onto adjacent properties.

b. Existing Storm Sewers & Drainage

The municipal Streets to which the Site fronts presently comprise the following sewers.

1. Within Dundas Street West: There is an 825mm-dia. C.P. storm sewer, which flows westerly. This sewer continues westerly and increases to 1200mm-dia. at the intersection of Dundas Street West and Billingham Road. The existing Building's storm service presently connects to this storm sewer.
2. Within Paulart Drive: There is a 600mm-dia. C.P. storm sewer, which flows southerly. This sewer continues southerly and connects to the 825mm-dia. C.P. storm sewer within Dundas Street West.
3. Within Billingham Road: There are two storm sewers within Billingham Road. One is an 825mm C.P. storm sewer on the eastern part of the Road. This sewer continues southerly and connects to the 825mm-dia. C.P. storm sewer within Dundas Street West. The second storm sewer is a 600mm-dia. C.P. storm sewer on the western side of Billingham Road. This sewer continues southerly and connects to the 1200mm-dia. C.P. storm sewer within Dundas Street West.

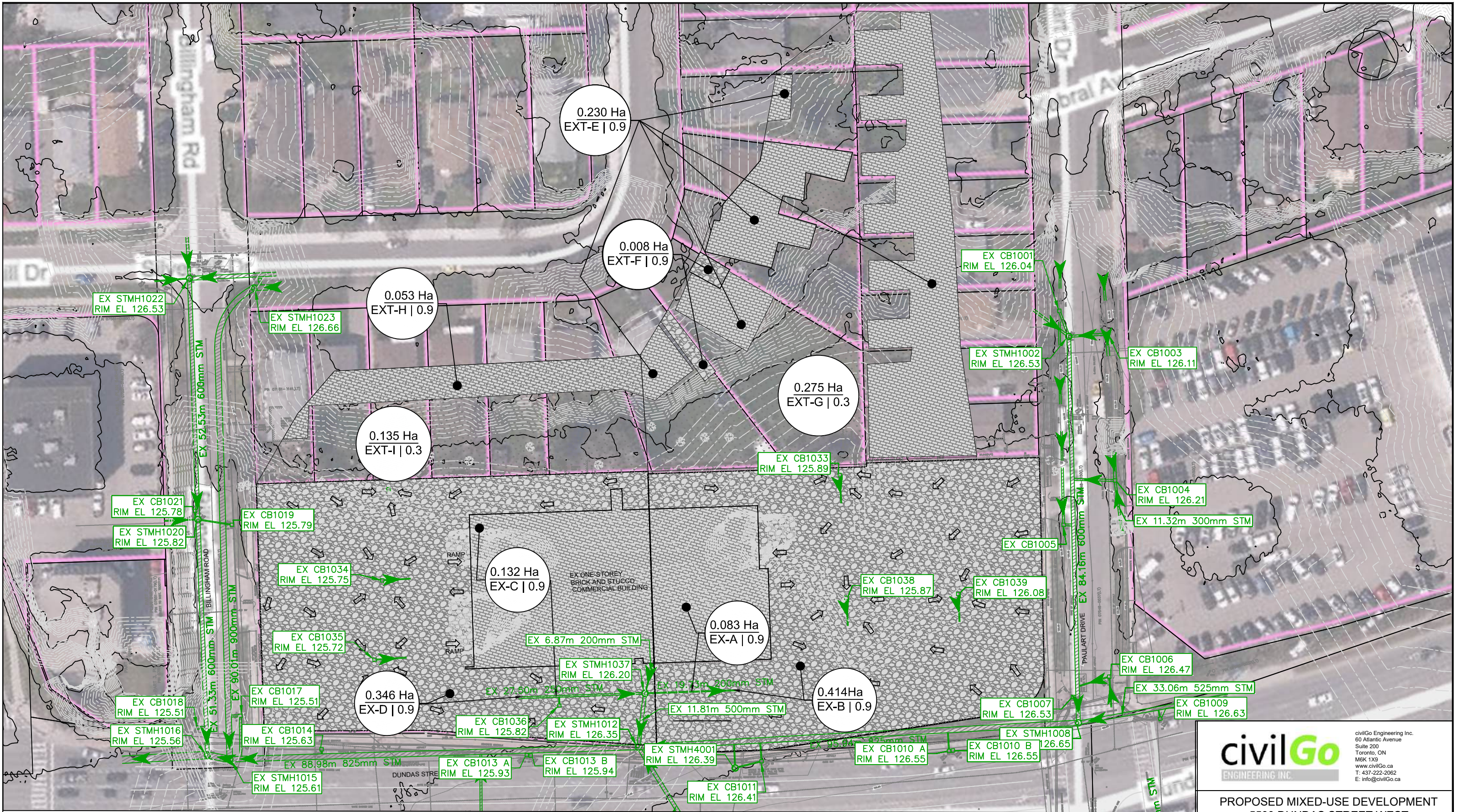
Refer to the *Pre-Development Drainage Plan* on the following page for the site's pre-development catchment areas and drainage patterns.

The Site's pre-development drainage patterns are described as follows:

- Catchment Ex-A: is a 0.083 Ha catchment area within the east side of the Site that comprises the impervious surfaces of the east half of the existing building's roof. This section of the roof drains towards the existing catch basins within the east section of the Site, discharging into the Dundas Street West storm sewer.
- Catchment Ex-B: is a 0.414 Ha catchment area within the east side of the Site that comprises the existing impervious surfaces of the parking lot within the Site, which drains by overland flow

towards catch basins within the east section of the Site, discharging into the Dundas Street West storm sewer.

- Catchment Ex-C: is a 0.138 Ha catchment area within the west side of the Site that comprises the impervious surfaces of the west half of the existing building's roof. This section of the roof drains towards the existing catch basins within the west section of the Site, discharging into the Dundas Street West storm sewer.
- Catchment Ex-D: is a 0.346 Ha catchment area within the west side of the Site that comprises the existing impervious surfaces of the parking lot within the Site, which drains by overland flow towards catch basins within the west section of the Site, discharging into the Dundas Street West storm sewer.
- Catchment Ext-E: is a 0.230 Ha external catchment area to the north that drains towards the east side of the Site. It comprises the impervious surfaces of existing roofs, which drains by overland flow and ultimately discharges on-site.
- Catchment Ext-F: is a 0.008 Ha external catchment area to the north that drains towards the east side of the Site. It comprises the impervious surfaces of existing driveways, which drains by overland flow and ultimately discharges on-site.
- Catchment Ext-G: is a 0.275 Ha external catchment area to the north that drains towards the east side of the Site. It comprises the pervious surfaces of existing grassed lawns, which drains by overland flow and ultimately discharges on-site.
- Catchment Ext-H: is a 0.053 Ha external catchment area to the north that drains towards the west side of the Site. It comprises the impervious surfaces of existing roofs, which drains by overland flow and ultimately discharges on-site.
- Catchment Ext-I: is a 0.135 Ha external catchment area to the north that drains towards the west side of the Site. It comprises the pervious surfaces of existing grassed lawns, which drains by overland flow and ultimately discharges on-site.



- LEGEND**
- DENOTES EXISTING CATCHBASIN
 - DENOTES PROPOSED CATCHBASIN
 - DENOTES EXISTING STORM MH
 - DENOTES PROPOSED STORM MH

- DENOTES EXISTING STORM SEWER
- DENOTES PROPOSED STORM SEWER
- DENOTES CATCHMENT AREA BOUNDARY
- DENOTES EXTERNAL CATCHMENT AREA BOUNDARY

- DENOTES EXISTING PROPERTY LINE
- DENOTES SUBJECT SITE PROPERTY LINE
- DENOTES MAJOR OVERLAND FLOW ROUTE
- DENOTES RAINWATER LEADER

- CATCHMENT AREA, AREA
- CATCHMENT AREA ULTIMATE OUTLET
- CATCHMENT AREA LOCATION
- RUNOFF COEFFICIENT
- CATCHMENT AREA ID

- DENOTES IMPERVIOUS GROUND SURFACE
- DENOTES IMPERVIOUS BUILDING ROOF
- DENOTES PERVIOUS SURFACE

civilGo
ENGINEERING INC.

civilGo Engineering Inc.
60 Atlantic Avenue
Suite 200
Toronto, ON
M6K 1X9
www.civilGo.ca
T: 437-222-2062
E: info@civilGo.ca

PROPOSED MIXED-USE DEVELOPMENT
5500 DUNDAS STREET WEST
TORONTO, ON

DESIGN	N.E.	PROJECT No.	25-041
SCALE:	1:750	TITLE	PRE-DEVELOPMENT DRAINAGE PLAN
DATE:	OCT 2025		

c. Basement Flooding Environmental Assessment (BFEA) – Storm Sewer Discussion

A Basement Flooding Environmental Assessment (BFEA) has been undertaken for this area, as discussed in Section 3.c., above. Refer to Section 3.c. for overall discussion pertaining to the context for the EA.

The following comments are provided with respect to the conclusions of the EA Report, pertaining to storm sewers and storm drainage.

- The EA Report identifies the performance of the storm sewer system in the 100-Year storm event. The Report shows that the storm sewer system presently surcharges to basement levels due to flow exceeding the sewer capacity.
- Figure A-41, *Storm Sewer System Results – Capacity*, in the EA Report shows that the storm sewer segments adjacent to the site's frontages have adequate capacity. Figure B-43 shows that the freeboard (or depth from grade to surcharge water elevation) is less than 1.8m below-grade along Dundas Street West adjacent to the Site's frontage.
- Figure A-27 in the EA Report does not recommend any improvements within the storm sewers near the subject site.

Given the above discussion, no storm sewer infrastructure improvements are required as part of this development on account of the Basement Flooding EA's recommendations

d. Proposed Storm Servicing Alternatives Analysis

It is proposed to service the Proposed Building A and Building B to the Dundas Street West 825mm-dia. storm sewer for storm flows. A 200mm-dia. storm sewer connection is proposed for each building. This is shown on the Functional Servicing Plan(s).

An alternatives analysis was conducted, given the available storm-sewers, wherein the Pro's and Con's of connection to each sewer were evaluated. It was decided to propose the storm sewer connection to the storm sewer main on Dundas Street West for both buildings. The alternatives analysis and discussion/conclusion are the following:

Table 5 – Storm Servicing Alternatives Analysis Building A

<u>Alternative</u>	Receiving Combined/ Sanitary Sewer	Pro's	Con's	Discussion & Conclusion
Alternative 1	Dundas Street West 825mm-dia. Storm Sewer	<ul style="list-style-type: none"> There is an existing storm connection to this sewer from the existing Building, therefore connection of the proposed Building A to this sewer would maintain existing drainage patterns. This sewer is located at the Site's frontage to Dundas Street West, therefore if Building A needs to drain storm water flows towards Dundas Street West, this is a suitable outlet on the basis of frontage. 	<ul style="list-style-type: none"> N/A 	Proceed with Alternative 1 in order to maintain existing drainage patterns.
Alternative 2	Paulart Drive 600mm-dia. Storm Sewer	<ul style="list-style-type: none"> This sewer is located at the Site's frontage to Paulart Drive, therefore this is a suitable outlet on the basis of frontage. 	<ul style="list-style-type: none"> There are no existing storm connections to this sewer, therefore connection of the proposed Building to this sewer would change storm drainage patterns. 	Do not proceed with Alternative 2 as it does not comply with existing drainage patterns.

Table 6 – Storm Servicing Alternatives Analysis Building B

Alternative	Receiving Combined/ Sanitary Sewer	Pro's	Con's	Discussion & Conclusion
Alternative 1	Dundas Street West 825mm-dia. Storm Sewer	<ul style="list-style-type: none"> There is an existing storm connection to this sewer from the existing Building, therefore connection of the proposed Building B to this sewer would maintain existing drainage patterns. This sewer is located at the Site's frontage to Dundas Street West, therefore if Building B needs to drain storm water flows towards Dundas Street West, this is a suitable outlet on the basis of frontage. 	<ul style="list-style-type: none"> N/A 	Proceed with Alternative 1 in order to maintain existing drainage patterns.
Alternative 2	Billingham Road 825mm-dia. Storm Sewer	<ul style="list-style-type: none"> This sewer is located at the Site's frontage to Billingham Road, therefore this is a suitable outlet on the basis of frontage. 	<ul style="list-style-type: none"> There are no existing storm connections to this sewer, therefore connection of the proposed Building to this storm would change sanitary drainage patterns. 	Do not proceed with Alternative 2 as it does not comply with existing drainage patterns.

e. Allowable Storm Release Rate

Stormwater quantity/detention controls are required to satisfy the criteria given in Table 7 of the WWFMG, as outlined above. The allowable release rate to municipal infrastructure is calculated as follows.

It is proposed to drain storm flows from the proposed Development for both Building A and Building B towards the Dundas Street West storm sewer.

The allowable release rate is calculated using the Rational Method formula, as follows. It is calculated based on the areas which drained to Dundas Street West in the existing condition. The total allowable discharge flow rate is determined as follows to be 120 L/s.

Table 7 - Allowable Release Rate to Dundas Street West 825mm-Dia. Storm Sewer

Discharge Outlet	Site Area (A) (Ha)	Runoff Coefficient* (C_{Pre-Dev}) (unitless)	2-Year Storm Rainfall Intensity (I) (mm/hr)	Allowable Discharge Flow Rate (=2.78CIA)
East	0.496 Ha	0.50	88.2 (2-year storm)	61 L/s
West	0.478 Ha	0.50	88.2 (2-year storm)	59 L/s
Allowable Release Rate =				120 L/s

* $C_{Pre-Dev} = 0.9$; greater-than 0.50, therefore $C_{Pre-Dev}$ taken-as = 0.5

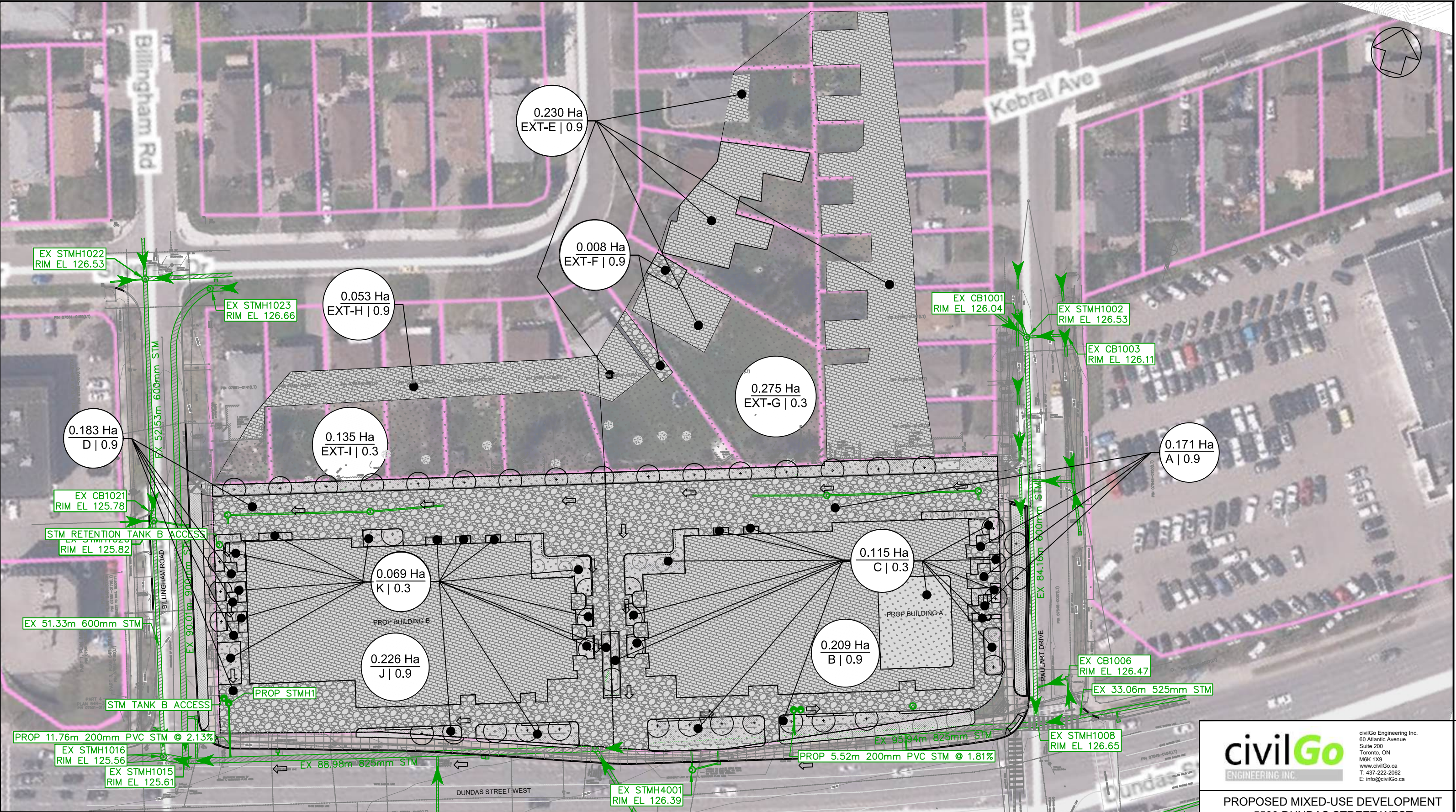
f. Proposed Storm Drainage, Servicing & Stormwater Management

It is proposed to service each tower of the proposed development with a 200mm @ 2.00% storm sewer connection to the existing 825mm-dia. storm sewer within Dundas Street West. Refer to the Site Servicing Plan(s).

The Proposed Development's storm drainage conveyances are described as follows.

- Rainwater falling on the proposed buildings' roofs and ground-level surfaces will drain uncontrolled into storm area drains & roof drains (to be designed by the mechanical engineer). The storm roof drains will drain uncontrolled by mechanical storm drainage piping, into the site's proposed below-grade 100-year storm water detention tanks. The tanks will be of cast-in-place concrete construction and constructed in the below-grade basement levels, adjacent-to the Dundas Street West frontage. Refer to the Site Servicing Plan(s) for the design of the tanks.
 - Aside: storm events up-to 5mm-depth will drain-into and fill the stormwater retention tank, which will spill into the stormwater detention tank. Refer to Section 4. f. for discussion.
- Stormwater draining into the detention tanks will be attenuated by an orifice device (to be designed at the SPA stage) prior to release into the storm sewer connection.
- Controlled flows will discharge from the orifice device which will then drain into the 200mm-dia. storm sewer connections.

The Site's post-development storm catchment areas are outlined on the *Post-Development Drainage Plan*, below, and summarized as follows.



LEGEND

- DENOTES EXISTING CATCHBASIN
- DENOTES PROPOSED CATCHBASIN
- DENOTES EXISTING STORM MH
- DENOTES PROPOSED STORM MH

- DENOTES EXISTING STORM SEWER
- DENOTES PROPOSED STORM SEWER
- DENOTES CATCHMENT AREA BOUNDARY
- DENOTES EXTERNAL CATCHMENT AREA BOUNDARY

- DENOTES EXISTING PROPERTY LINE
- DENOTES SUBJECT SITE PROPERTY LINE
- DENOTES MAJOR OVERLAND FLOW ROUTE
- DENOTES RAINWATER LEADER

- CATCHMENT AREA, AREA
- CATCHMENT AREA ULTIMATE OUTLET
- CATCHMENT AREA LOCATION
- RUNOFF COEFFICIENT
- CATCHMENT AREA ID

- DENOTES IMPERVIOUS GROUND SURFACE
- DENOTES IMPERVIOUS BUILDING ROOF
- DENOTES PERVIOUS SURFACE



civilGo
ENGINEERING INC.

civilGo Engineering Inc.
60 Atlantic Avenue
Suite 200
Toronto, ON
M6K 1X9
www.civilGo.ca
T: 437-222-2062
E: info@civilGo.ca

**PROPOSED MIXED-USE DEVELOPMENT
5500 DUNDAS STREET WEST
TORONTO, ON**

DESIGN	N.E.	PROJECT No.	25-041
SCALE:	1:500	TITLE	POST-DEVELOPMENT DRAINAGE PLAN
DATE:	OCT 2025		

Table 8 - Post-Development Catchment Area Parameters – East (Building A)

<u>Catchment Area ID</u>	Catchment Area (Ha)	Hydrology/Volume Method	Runoff Coefficient, C
Catchment A + EXT-F (Impervious Ground Surface)	0.180	Modified Rational Method	0.9
Catchment B + EXT-E (Impervious Roof)	0.439	Modified Rational Method	0.9
Catchment C + EXT-G (Pervious Ground Surface + Green Roof)	0.390	Modified Rational Method	0.3
Total	1.01		0.667

Table 9 - Post-Development Catchment Area Parameters – West (Building B)

<u>Catchment Area ID</u>	Catchment Area (Ha)	Hydrology/Volume Method	Runoff Coefficient, C
Catchment D (Impervious Ground Surface)	0.183	Modified Rational Method	0.9
Catchment C + EXT-H (Impervious Roof)	0.280	Modified Rational Method	0.9
Catchment D + EXT-I (Pervious Ground Surface)	0.204	Modified Rational Method	0.3
Total	0.667		0.717

The required volume of stormwater detention was determined utilizing the *Modified Rational Method*. The required volume of stormwater storage is summarized in Tables 10 and 11, as follows. Modified Rationale Method calculation sheets for the 1-in-2-year storm and 1-in-100-year storm are provided on the following pages, below.

Table 10 - Stormwater Quantity Control (Detention) Results Summary – East

Storm Event	Allowable Release Rate (Q_{all})	Max Controlled Flows (Q_c)	Uncontrolled Flows (Q_{uc})	Total Release Rate from Site (Q_T=Q_c+Q_{uc})	Required Detention Storage Volume	Provided Detention Storage Volume
2-Year Storm	61 L/s (Table 7)	61 L/s	N/A	61 L/s	62.50 m ³ (below*)	275 m ³
100-Year Storm	61 L/s (Table 7)	61 L/s	N/A	61 L/s	249.9 m ³ (below*)	275 m ³

*Refer to Modified Rational Method – Stormwater Storage Volume Calculation Sheets, below

It is evident in Table 10 that the proposed controlled release rate in the 100-year storm (61 L/s), is no-more-than the allowable release rate (61 L/s), therefore the City's allowable release rate criteria is addressed. Further, the required volume of stormwater storage in a 1-in-100-year storm (249.9 m³) will be accommodated in the proposed 275 m³ below-grade stormwater detention tank, therefore the stormwater detention criteria with respect to the 1-in-100-year storm is addressed.

Table 11 - Stormwater Quantity Control (Detention) Results Summary – West

Storm Event	Allowable Release Rate (Q_{all})	Max Controlled Flows (Q_c)	Uncontrolled Flows (Q_{uc})	Total Release Rate from Site (Q_T=Q_c+Q_{uc})	Required Detention Storage Volume	Provided Detention Storage Volume
2-Year Storm	59 L/s (Table 7)	59 L/s	N/A	59 L/s	34.84 m ³ (below*)	181 m ³
100-Year Storm	59 L/s (Table 7)	59 L/s	N/A	59 L/s	163.9 m ³ (below*)	181 m ³

*Refer to Modified Rational Method – Stormwater Storage Volume Calculation Sheets, below

It is evident in Table 11 that the proposed controlled release rate in the 100-year storm (59 L/s), is no-more-than the allowable release rate (59 L/s), therefore the City's allowable release rate criteria is addressed. Further, the required volume of stormwater storage in a 1-in-100-year storm (163.9 m³) will be accommodated in the proposed 181 m³ below-grade stormwater detention tank, therefore the stormwater detention criteria with respect to the 1-in-100-year storm is addressed. The design of the stormwater detention tank will be specified in Site Plan Application submission.



civilGo Engineering Inc.
60 Atlantic Avenue, Suite 200
Toronto, ON M6K 1X9
www.civilGo.ca
T: 437-222-2062
E: info@civilGo.ca

Modified Rational Method - Stormwater Storage Volume Calculation

2-Year Storm - East

Project Name:	Proposed Mixed-Use Development
Project Address:	5500 Dundas Street West
civilGo Project No.:	25-041
Date:	Dec-25
Rev. No:	0
Ref. Drawing:	Servicing Plan
By:	NE

Stormwater Quantity Control Criteria:

Control 1-in-100-Year Post-Development Storm Flow to 1-in-2-Year Pre-Development Storm Flow

Q _a = Allowable Release Rate =	61 L/s (see FSR Table 5)
Q _c = Controlled Release Rate =	61 L/s (Max outflow from Orifice)

Post-Development Catchment Area Parameters:

Catchment Areas:	A,B,C,EXT-E,EXT-F,EXT-G	See Post Development Catchment Plan
C _{post} =	0.667	Post-Development Composite Runoff Coefficient (unitless)
A _{post} =	1.01	Site Area Draining East, Post-Development (Ha)
T _c =	10	Initial Time of Concentration (minutes)

Rainfall Intensity for Storm Event:

2-Year

$$i = A / (T_d + B)^C$$

Where:	i =	rainfall intensity (mm/hr)
	A =	21.8
	B =	0
	C =	0.78
	T _d =	T _c + storm duration

City of Toronto 100-Year Storm IDF

Post-Development Runoff Flow Rate, Q_P

$$Q_P = 2.78 * C_{post} * i * A_{post}$$

Required Storage Volume, S_R

$$S_R = Q_P * T_d - Q_c * T_d$$

T _d (min)	i (mm/hr)	Q _P (L/s)	S _R (m ³)
10	88.2	165.2	62.50
11	81.9	153.3	60.94
12	76.5	143.3	59.23
13	71.9	134.6	57.40
14	67.8	127.0	55.47
15	64.3	120.4	53.44
16	61.1	114.5	51.33
17	58.3	109.2	49.15
18	55.8	104.4	46.90
19	53.5	100.1	44.59
20	51.4	96.2	42.22
21	49.4	92.6	39.81
22	47.7	89.3	37.35
23	46.1	86.2	34.84
24	44.6	83.4	32.30
25	43.2	80.8	29.73
26	41.9	78.4	27.12
27	40.6	76.1	24.48
28	39.5	74.0	21.81
29	38.4	72.0	19.11
30	37.4	70.1	16.39
31	36.5	68.3	13.64
32	35.6	66.7	10.87
33	34.8	65.1	8.08
34	34.0	63.6	5.27
35	33.2	62.2	2.44

>Max

T _d (min)	i (mm/hr)	Q _P (L/s)	S _R (m ³)
36	32.5	60.8	-0.41
37	31.8	59.5	-3.27
38	31.1	58.3	-6.15
39	30.5	57.1	-9.05
40	29.9	56.0	-11.97
41	29.3	54.9	-14.89
42	28.8	53.9	-17.83
43	28.3	52.9	-20.79
44	27.8	52.0	-23.76
45	27.3	51.1	-26.74
46	26.8	50.2	-29.73
47	26.4	49.4	-32.73
48	25.9	48.6	-35.74
49	25.5	47.8	-38.77
50	25.1	47.1	-41.80
51	24.7	46.3	-44.84
52	24.4	45.6	-47.90
53	24.0	45.0	-50.96
54	23.7	44.3	-54.03
55	23.3	43.7	-57.11
56	23.0	43.1	-60.20
57	22.7	42.5	-63.29
58	22.4	41.9	-66.39
59	22.1	41.4	-69.50
60	21.8	40.8	-72.62
61	21.5	40.3	-75.75



civilGo Engineering Inc.
60 Atlantic Avenue, Suite 200
Toronto, ON M6K 1X9
www.civilGo.ca
T: 437-222-2062
E: info@civilGo.ca

Modified Rational Method - Stormwater Storage Volume Calculation

100-Year Storm - East

Project Name:	Proposed Mixed-Use Development
Project Address:	5500 Dundas Street West
civilGo Project No.:	25-041
Date:	Dec-25
Rev. No:	0
Ref. Drawing:	Servicing Plan
By:	NE

Stormwater Quantity Control Criteria:

Control 1-in-100-Year Post-Development Storm Flow to 1-in-100-Year Pre-Development Storm Flow

Q_a = Allowable Release Rate =	61 L/s (see FSR Table 5)
Q_c = Controlled Release Rate =	61 L/s (Max outflow from Orifice)

Post-Development Catchment Area Parameters:

Catchment Areas:	A,B,C,EXT-E,EXT-F,EXT-G	See Post Development Catchment Plan
C_{post} =	0.667	Post-Development Composite Runoff Coefficient (unitless)
A_{post} =	1.01	Site Area Draining East, Post-Development (Ha)
T_c =	10	Initial Time of Concentration (minutes)

Rainfall Intensity for Storm Event: 100-Year

$$i = A / (T_d + B)^C$$

Where:	i =	rainfall intensity (mm/hr)
	A =	59.7
	B =	0
	C =	0.8
	T_d =	T_c + storm duration

Post-Development Runoff Flow Rate, Q_P

$$Q_P = 2.78 * C_{Post} * i * A_{Post}$$

Required Storage Volume, S_R

$$S_R = Q_P * T_d - Q_c * T_d$$

T_d (min)	i (mm/hr)	Q_P (L/s)	S_R (m3)
10	250.3	468.8	244.68
20	143.8	269.3	249.91
30	103.9	194.7	240.60
40	82.6	154.6	224.75
50	69.1	129.4	205.09
60	59.7	111.8	182.90
70	52.8	98.8	158.91
80	47.4	88.8	133.54
90	43.2	80.8	107.10
100	39.7	74.3	79.80
110	36.8	68.8	51.78
120	34.3	64.2	23.15
130	32.2	60.2	-5.98
140	30.3	56.8	-35.57
150	28.7	53.7	-65.54
160	27.2	51.0	-95.86
170	25.9	48.6	-126.49
180	24.8	46.4	-157.39
190	23.7	44.5	-188.54
200	22.8	42.7	-219.91
210	21.9	41.0	-251.49
220	21.1	39.5	-283.26
230	20.4	38.2	-315.20
240	19.7	36.9	-347.29
250	19.1	35.7	-379.54
260	18.5	34.6	-411.92

>Max

T_d (min)	i (mm/hr)	Q_P (L/s)	S_R (m3)
270	17.9	33.6	-444.43
280	17.4	32.6	-477.07
290	16.9	31.7	-509.81
300	16.5	30.9	-542.66
310	16.0	30.1	-575.60
320	15.6	29.3	-608.64
330	15.3	28.6	-641.77
340	14.9	27.9	-674.98
350	14.6	27.3	-708.27
360	14.2	26.7	-741.63
370	13.9	26.1	-775.07
380	13.6	25.5	-808.57
390	13.4	25.0	-842.14
400	13.1	24.5	-875.77
410	12.8	24.0	-909.45
420	12.6	23.6	-943.20
430	12.4	23.1	-977.00
440	12.1	22.7	-1010.84
450	11.9	22.3	-1044.74
460	11.7	21.9	-1078.69
470	11.5	21.5	-1112.68
480	11.3	21.2	-1146.72
490	11.1	20.8	-1180.80
500	10.9	20.5	-1214.92
510	10.8	20.2	-1249.08
520	10.6	19.9	-1283.27



civilGo Engineering Inc.
60 Atlantic Avenue, Suite 200
Toronto, ON M6K 1X9
www.civilGo.ca
T: 437-222-2062
E: info@civilGo.ca

Modified Rational Method - Stormwater Storage Volume Calculation

2-Year Storm - West

Project Name:	Proposed Mixed-Use Development
Project Address:	5500 Dundas Street West
civilGo Project No.:	25-041
Date:	Dec-25
Rev. No:	0
Ref. Drawing:	Servicing Plan
By:	NE

Stormwater Quantity Control Criteria:

Control 1-in-100-Year Post-Development Storm Flow to 1-in-2-Year Pre-Development Storm Flow

Q _a = Allowable Release Rate =	59 L/s (see FSR Table 5)
Q _c = Controlled Release Rate =	59 L/s (Max outflow from Orifice)

Post-Development Catchment Area Parameters:

Catchment Areas:	D, J, K, EXT-H, EXT-I	See Post Development Catchment Plan
C _{post} =	0.717	Post-Development Composite Runoff Coefficient (unitless)
A _{post} =	0.666	Site Area Draining West, Post-Development (Ha)
T _c =	10	Initial Time of Concentration (minutes)

Rainfall Intensity for Storm Event:

2-Year

$$i = A / (T_d + B)^C$$

Where:	i =	rainfall intensity (mm/hr)
	A =	21.8
	B =	0
	C =	0.78
	T _d =	T _c + storm duration

City of Toronto 100-Year Storm IDF

Post-Development Runoff Flow Rate, Q_P

$$Q_P = 2.78 * C_{Post} * i * A_{Post}$$

Required Storage Volume, S_R

$$S_R = Q_P * T_d - Q_c * T_d$$

T _d (min)	i (mm/hr)	Q _P (L/s)	S _R (m ³)
10	88.2	117.1	34.84
11	81.9	108.7	32.79
12	76.5	101.6	30.64
13	71.9	95.4	28.40
14	67.8	90.0	26.08
15	64.3	85.3	23.70
16	61.1	81.1	21.26
17	58.3	77.4	18.76
18	55.8	74.0	16.22
19	53.5	71.0	13.64
20	51.4	68.2	11.01
21	49.4	65.6	8.36
22	47.7	63.3	5.67
23	46.1	61.1	2.95
24	44.6	59.1	0.20
25	43.2	57.3	-2.57
26	41.9	55.6	-5.36
27	40.6	53.9	-8.18
28	39.5	52.4	-11.02
29	38.4	51.0	-13.88
30	37.4	49.7	-16.75
31	36.5	48.4	-19.64
32	35.6	47.3	-22.55
33	34.8	46.1	-25.48
34	34.0	45.1	-28.41
35	33.2	44.1	-31.37

>Max

T _d (min)	i (mm/hr)	Q _P (L/s)	S _R (m ³)
36	32.5	43.1	-34.33
37	31.8	42.2	-37.31
38	31.1	41.3	-40.30
39	30.5	40.5	-43.30
40	29.9	39.7	-46.31
41	29.3	38.9	-49.33
42	28.8	38.2	-52.36
43	28.3	37.5	-55.40
44	27.8	36.9	-58.45
45	27.3	36.2	-61.51
46	26.8	35.6	-64.57
47	26.4	35.0	-67.65
48	25.9	34.4	-70.73
49	25.5	33.9	-73.82
50	25.1	33.4	-76.91
51	24.7	32.9	-80.02
52	24.4	32.4	-83.13
53	24.0	31.9	-86.24
54	23.7	31.4	-89.36
55	23.3	31.0	-92.49
56	23.0	30.5	-95.63
57	22.7	30.1	-98.77
58	22.4	29.7	-101.91
59	22.1	29.3	-105.06
60	21.8	28.9	-108.22
61	21.5	28.6	-111.38



civilGo Engineering Inc.
60 Atlantic Avenue, Suite 200
Toronto, ON M6K 1X9
www.civilGo.ca
T: 437-222-2062
E: info@civilGo.ca

Modified Rational Method - Stormwater Storage Volume Calculation

100-Year Storm - West

Project Name:	Proposed Mixed-Use Development
Project Address:	5500 Dundas Street West
civilGo Project No.:	25-041
Date:	Dec-25
Rev. No:	0
Ref. Drawing:	Servicing Plan
By:	NE

Stormwater Quantity Control Criteria:

Control 1-in-100-Year Post-Development Storm Flow to 1-in-100-Year Pre-Development Storm Flow

Q _a = Allowable Release Rate =	59	L/s (see FSR Table 5)
Q _c = Controlled Release Rate =	59	L/s (Max outflow from Orifice)

Post-Development Catchment Area Parameters:

Catchment Areas:	D, J, K, EXT-H, EXT-I	See Post Development Catchment Plan
C _{post} =	0.717	Post-Development Composite Runoff Coefficient (unitless)
A _{post} =	0.666	Site Area Draining West, Post-Development (Ha)
T _c =	10	Initial Time of Concentration (minutes)

Rainfall Intensity for Storm Event: 100-Year

Post-Development Runoff Flow Rate, Q_P

$$i = A / (T_d + B)^C$$

$$Q_P = 2.78 * C_{Post} * i * A_{Post}$$

Where:	i =	rainfall intensity (mm/hr)
	A =	59.7
	B =	0
	C =	0.8
	T _d =	T _c + storm duration

City of Toronto 100-Year Storm IDF

Required Storage Volume, S_R

$$S_R = Q_P * T_d - Q_c * T_d$$

T _d (min)	i (mm/hr)	Q _P (L/s)	S _R (m ³)
10	250.3	332.3	163.98
20	143.8	190.9	158.23
30	103.9	138.0	142.18
40	82.6	109.6	121.49
50	69.1	91.7	98.09
60	59.7	79.3	72.91
70	52.8	70.1	46.44
80	47.4	63.0	19.01
90	43.2	57.3	-9.19
100	39.7	52.7	-38.00
110	36.8	48.8	-67.32
120	34.3	45.5	-97.07
130	32.2	42.7	-127.18
140	30.3	40.2	-157.60
150	28.7	38.1	-188.31
160	27.2	36.2	-219.26
170	25.9	34.4	-250.42
180	24.8	32.9	-281.78
190	23.7	31.5	-313.32
200	22.8	30.2	-345.01
210	21.9	29.1	-376.85
220	21.1	28.0	-408.83
230	20.4	27.0	-440.92
240	19.7	26.1	-473.13
250	19.1	25.3	-505.45
260	18.5	24.5	-537.86

>Max

T _d (min)	i (mm/hr)	Q _P (L/s)	S _R (m ³)
270	17.9	23.8	-570.36
280	17.4	23.1	-602.95
290	16.9	22.5	-635.61
300	16.5	21.9	-668.35
310	16.0	21.3	-701.16
320	15.6	20.8	-734.04
330	15.3	20.3	-766.98
340	14.9	19.8	-799.97
350	14.6	19.3	-833.03
360	14.2	18.9	-866.13
370	13.9	18.5	-899.29
380	13.6	18.1	-932.49
390	13.4	17.7	-965.74
400	13.1	17.4	-999.04
410	12.8	17.0	-1032.37
420	12.6	16.7	-1065.75
430	12.4	16.4	-1099.16
440	12.1	16.1	-1132.61
450	11.9	15.8	-1166.10
460	11.7	15.5	-1199.62
470	11.5	15.3	-1233.17
480	11.3	15.0	-1266.75
490	11.1	14.8	-1300.37
500	10.9	14.5	-1334.01
510	10.8	14.3	-1367.68
520	10.6	14.1	-1401.37

g. Stormwater Retention & 'Water Balance'

Criteria for stormwater retention, or 'Water Balance/Reuse', is given by the City of Toronto's *Wet Weather Flow Management Guidelines (WWFMG)* and *Toronto Green Standard (TGS)*. TGS WQ 1.1 *Water Balance, Quality and Quantity* requires the proponent to address the following criteria.

- Water Balance: Retain a minimum of 50% of average annual rainfall volume (or equivalent 5mm each rainfall event).

The WWFMG and Toronto Water's criteria typically requires that retained stormwater is reused on-site within 72-hours of the 5mm storm.

It is shown, as follows, that the required retention volume to satisfy the TGS and WWFMG criteria for the east side of the Site is 27.31 m³/72-Hours and that this volume of stormwater may be retained on-site by a combination of initial abstractions and storage in a retention cistern (for subsequent on-site toilet flushing and irrigation reuse), providing a total retention volume of 26.32 m³/72-Hour.

Table 12 - 'Water Balance', or Stormwater Retention and Reuse, Summary – East

<u>Catchment Area</u>	Surface Description	Catchment Area (m ²)	Initial Abstraction (mm)	Retention Volume (m ³)
Target Volume	N/A	4956 m ²	5mm	24.78 m³
Stormwater Retention by Initial Abstraction, as Follows:				
Ground Surface (Catchment A)	Impervious Surfaces	1713 m ²	1mm	1.71 m ³
Roof (Catchment B)	Impervious Surfaces	2096 m ²	1mm	2.09 m ³
Planters (Catchment C)	Pervious Surfaces	1147 m ²	5mm	5.73 m ³
Total Stormwater Retention by Initial Abstractions:				9.54 m³
Retention in Cistern (for On-Site Toilet Flushing & Irrigation):				17.71 m³
Total On-Site Stormwater Retention Capacity:				27.26 m³

As shown above, water balance retention of 9.54 m³ is provided by surface initial abstractions. There remains a deficit of 15.23 m³/72-hour, which is addressed by retention in a below-grade stormwater retention cistern and thereafter dispersed on-site by irrigation and on-site toilet flushing. 'Clean' stormwater runoff from the building's roof will drain into a stormwater retention cistern of 27.26 m³ volume which will be designed in Site Plan Application submission.

It is shown, as follows, that the required retention volume to satisfy the TGS and WWFMG criteria for the west side of the Site is 24.83 m³/72-Hours and that this volume of stormwater may be retained on-site by a combination of initial abstractions and storage in a retention cistern (for subsequent on-site toilet flushing and irrigation reuse), providing a total retention volume of 27.31m³/72-Hour.

Table 13 - 'Water Balance', or Stormwater Retention and Reuse, Summary – West

Catchment Area	Surface Description	Catchment Area (m²)	Initial Abstraction (mm)	Retention Volume (m³)
Target Volume	N/A	4786 m ²	5mm	23.93 m³
Stormwater Retention by Initial Abstraction, as Follows:				
Ground Surface (Catchment D)	Impervious Surfaces	1830 m ²	1mm	1.83 m ³
Roof (Catchment J)	Impervious Surfaces	2265 m ²	1mm	2.26 m ³
Planters (Catchment K)	Pervious Surfaces	691 m ²	5mm	3.46 m ³
Total Stormwater Retention by Initial Abstractions:				7.55 m³
Retention in Cistern (for On-Site Toilet Flushing & Irrigation):				18.77 m³
Total On-Site Stormwater Retention Capacity:				26.32 m³

As shown above, water balance retention of 7.55 m³ is provided by surface initial abstractions. There remains a deficit of 16.38 m³/72-hour, which is addressed by retention in a below-grade stormwater retention cistern and thereafter dispersed on-site by irrigation and on-site toilet flushing. 'Clean' stormwater runoff from the building's roof will drain into a stormwater retention cistern of 27.31 m³ volume which will be designed in Site Plan Application submission.

h. Stormwater Quality

Criteria for stormwater quality is given by the City of Toronto's *Wet Weather Flow Management Guidelines (WWFMG)* and *Toronto Green Standard (TGS)*. TGS Version 4, Tier 1, *WQ 1.1 Water Balance, Quality and Quantity* requires the proponent to address the following criteria.

- **Water Quality:** Provide long-term average removal of 80% Total Suspended Solids (TSS).

A stormwater filter has been preliminarily shown in an offline configuration on the Functional Servicing Plan. A filter which provides 80% TSS Removal (as per Canadian Environmental Technology Verification, ETV) will be specified at the SPA stage.

5. Foundation Drainage & Groundwater

a. Criteria

The City of Toronto enacted a foundation drainage policy applying to new development applications made after January 1, 2022, providing criteria for consideration of foundation drainage. The policy applies to new development applications made after January 1, 2022. The policy categorizes below-grade construction into the following scenarios.

- ‘Scenario 1’: Below-grade construction extends below the stable groundwater table elevation (or within 1.0m of it) – in which case the foundations must be constructed in a watertight or ‘bathtubbed’ manner.
- ‘Scenario 2’: Below-grade construction does not extend below the stable groundwater table, and stops 1.0m higher-than the stable groundwater table elevation. The policy offers two solutions in this scenario.

The policy also allows the collection and discharge of foundation drainage on-site, into an infiltration gallery or such solution, provided the quality of the water is acceptable.

b. Foundation Drainage Strategy

Hydrogeological Investigations for the developments of 5500 Dundas Street West were prepared by EnVision Consultants Ltd, dated November 4, 2025 to qualitatively and quantitatively characterize the groundwater at each Site with respect to the City’s criteria. The conclusions of the reports are generally as follows.

In the long-term scenario, the Hydrogeological Investigation Report states (section 6.6 therein) that it is anticipated that the planned development will be constructed as a water-tight design. No permanent connection of a passive groundwater drainage system to the City’s sanitary sewer network is anticipated. Letters have been provided by appropriate parties on the following pages.

In the short term, construction stage scenario, the Hydrogeological Investigation Report states (section 5.4 therein) that the dewatering volume (inclusive of incident precipitation and with a Factor of Safety of 2.0 for groundwater contributions) is equivalent to approximately 78,300 L/day (0.906 L/s). This is within the allocated capacity of 5.41 L/s for discharge to the Dundas Street West sanitary sewer and 6.15 L/s for discharge to the Paulart Drive sanitary sewer as outlined in Section 3, therefore there is adequate capacity available for this short-term discharge.

Since the temporary construction dewatering rate is anticipated to be more than 50,000 L/day, a permitting is anticipated during construction.

A Private Water Discharge Agreement is required for discharge of construction dewatering to City sewers and will be subject to approval from Toronto Water in the form of a permit or agreement from Toronto Water’s Environmental Monitoring and Protection Unit.

c. Internal Drains and Piping

Internal drains and piping within the Site must provide adequate capacity for full capture of the 100-year storm event.



December 8, 2025

Corporate Headquarters

85 Hanna Ave, Suite 400
Toronto, ON M6K 3S3

Attention: Chief Engineer and Executive Director, Engineering and Construction Services
c/o Manager, Development Engineering

cc: General Manager, Toronto Water
c/o Manager, Environmental Monitoring and Protection Unit
30 Dee Ave, Toronto ON M9N 1S9

Dear Sir or Madam,

I, Joshua Butcher, confirm and undertake that I will construct and maintain the new buildings to be constructed on the subject lands at 5500 Dundas St W in a manner which shall be completely water-tight below grade and resistant to hydrostatic pressure without any necessity for Private Water Drainage System (subsurface drainage system) consisting of but not limited to weeping tile(s), foundation drain(s), private water collection sump(s), private water pump or any combination thereof for the disposal of private water on the surface of the ground or to a private sewer connection directly or indirectly or drainage system for disposal directly or indirectly in a municipal sewer.

 **FCHT (Ontario) Corporation**

Joshua Butcher.pfx

A handwritten signature in black ink, appearing to read 'Butcher', written over a horizontal line.

Joshua Butcher
Senior Director, Development

I, Joshua Butcher, have the authority to bind the corporation.

85 Hanna Avenue, Suite 400 Toronto, Ontario M6K 3S3

fcr.ca

ENTUITIVE

Entuitive Corporation

120 Bremner Boulevard, 4th Floor
Toronto, ON M5J 0A8 Canada

T: 416.477.5832

November 26, 2025

Attention: Executive Director, Engineering and Construction Services
c/o Manager, Development Engineering
2 Civic Centre Court, 4th Floor, Toronto, ON M9C 5A3

Cc: General Manager, Toronto Water
c/o Manager, Environmental Monitoring and Protection Unit
30 Dee Ave, Toronto, ON M9N 1S9

Re: Watertight Below-Grade Structure, 5500 Dundas Street West, Toronto, ON
Our Project No. EN025-02502

Dear Sir or Madam,

I, Robin Djuita, confirm that all buildings on the subject lands at 5500 Dundas Street West can be constructed completely water-tight below grade in a manner that will resist hydrostatic pressure without any necessity for Private Water Drainage System (subsurface drainage system) consisting of but not limited to weeping tile(s), foundation drain(s), private water collection sump(s), private water pump or any combination thereof for the disposal of private water on the surface of the ground or to a private sewer connection directly or indirectly or drainage system for disposal directly or indirectly in a municipal sewer.

Note: For structural design only to resist hydrostatic pressure. Entuitive is not responsible for waterproofing, construction and active or passive drainage systems as referenced above.

Sincerely,
Entuitive

Robin Djuita, M.Eng., P.Eng.
Associate
robin.djuita@entuitive.com
D: 416 305 2860



entuitive.com



200 KING STREET WEST, SUITE 310
TORONTO, ON CANADA M5H 3T4
P: 416-499-8000

bpa.ca

December 2, 2025

Attention: Chief Engineer and Executive Director, Engineering and Construction services
c/o Manager, Development Engineering

cc: General Manager, Toronto Water
c/o Manager, Environmental Monitoring and Protection Unit
30 Dee Ave, Toronto ON M9N 1S9

RE: 5500 DUNDAS STREET WEST

Dear Sir or Madam,

I Steve Orchard, confirm that all building(s) on the subject lands 5500 Dundas Street West will be designed and constructed in a manner without Private Water Drainage System (subsurface drainage system) consisting of but not limited to weeping tile(s), foundation drain(s), private water collections sump(s), private water pump or any combination thereof for the disposal of private water on the surface of the ground or to a private sewer connection directly or indirectly or drainage system for disposal directly or indirectly in a municipal sewer. The underground structure(s) of the proposed building(s) will be built completely watertight without any direct or indirect connection to the city sewer for the discharge of groundwater (from a PWDS or floor drain or other infrastructure).

I understand that a Private Water Drainage System as an emergency backup system is not permitted, as part of this proposal.

Yours very truly,

BPA

A handwritten signature in black ink, appearing to read "S Orchard", written over a light blue rectangular background.

Steve Orchard, P.Eng
Vice President

cc: Madeleine Bradshaw - FCR



6. Erosion & Sediment Control

Erosion and sediment control practices will be employed during the construction phase to mitigate sediment transport, in accordance with TRCA and City of Toronto requirements.

All erosion and sediment control BMPs shall be designed, constructed and maintained in all development sites in accordance with the GTA CA's Erosion & Sediment Control Guidelines for Urban Construction (2006) and/or other City of Toronto requirements on a site-by-site basis, where applicable.

7. Conclusions

This Site Servicing & Stormwater Management Report has documented how the proposed development will be serviced by the City's existing municipal infrastructure (for water, storm and sanitary), as well as providing the measures by which stormwater quantity and quality criteria are addressed.

In conclusion,

- Building A is proposed to be serviced as follows:
 - Proposed 200mm-dia. Sanitary sewer connection to the 200mm-dia. sanitary sewer within Paulart Drive.
 - Proposed 200mm-dia. Storm sewer connection to the 825mm-dia. storm sewer within Dundas Street West.
 - Proposed 200mm-dia. Fire Service Connection (with branch 150mm-dia. Domestic water Connection), to the 300mm-dia. watermain within Dundas Street West.
- Building B is proposed to be serviced as follows:
 - Proposed 300mm-dia. Sanitary sewer connection to the 200mm-dia. sanitary sewer within Dundas Street West.
 - Proposed 200mm-dia. Storm sewer connection to the 825mm-dia. storm sewer within Dundas Street West.
 - Proposed 200mm-dia. Fire Service Connection (with branch 150mm-dia. Domestic water Connection), to the 300mm-dia. watermain within Dundas Street West.
- The 100-year post-development stormwater runoff is controlled to the 2-year pre-development flow rate.
- Stormwater balance (stormwater retention) is addressed for a 5mm storm event.
- Standard erosion and sediment control measures are specified during construction.

Please contact the undersigned with any questions.

Respectfully submitted,



Daniel Bancroft, P.Eng.,
civilGo Engineering Inc.

A handwritten signature in black ink, appearing to read "Nada Eissa".

Nada Eissa, Eng. Associate,
civilGo Engineering Inc.

APPENDIX A

- Architectural Site Plan & Statistics for 5500 Dundas Street West by Superkül

NOTES AND STATISTICS

Copyright reserved. This design and drawings are the exclusive property of superk inc. (the Architect) and cannot be used for any purpose without the written consent of the Architect. This drawing is not to be used for construction until issued for that purpose by the Architect.

Prior to commencement of the Work the Contractor shall verify all drawing dimensions, details, and areas with the Contract Documents and with the conditions on site, ascertain any discrepancies between the site and the Contract Documents, and bring them here to the attention of the Architect for clarification.

101 - 35 Golden Avenue
Toronto, ON M9R 2J5
P: 416.596.0700
F: 416.533.6986
www.superk.ca

LEGEND

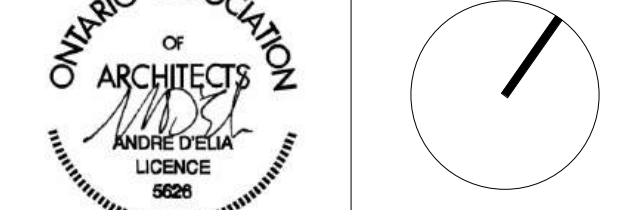
- PRINCIPAL ENTRY
- VEHICULAR ENTRY/EXIT
- FIRE DEPARTMENT CONNECTION
- FIRE HYDRANT
- MANHOLE COVER
- CATCH BASIN
- HYDRO POLE
- ELECTRICAL STAND
- EXTENT OF BELOW GRADE
- BUILDING ELEMENT ABOVE
- OPEN TO BELOW
- EXTENT OF GROUND FLOOR
- 60X180mm BICYCLE PARKING SPACE
- GEODETIC ELEVATION
- ELEVATION FROM EXISTING GRADE
- EXISTING GRADE ELEVATION
- PROPERTY LINE
- FFE FINISHED FLOOR ELEVATION
- TOP TOP OF PARAPET
- TOR TOP OF ROOF
- TOS TOP OF STRUCTURE
- TGS TORONTO GREEN STANDARDS
- TPZ TREE PROTECTION ZONE

NOTE:
SURVEY INFORMATION TAKEN FROM TOPOGRAPHIC SURVEY OF PART OF LOT 5 CONCESSION 2 AND PART OF LOT 51 REGISTERED PLAN 1973, CITY OF TORONTO BY SPEIGHT, VAN NOSTRAND & GIBSON LIMITED DATED MARCH 5, 2018.

- VEGETATION DRIP LINE
- 10M SETBACK FROM VEGETATION DRIP LINE
- LTSTOS (LONG TERM STABLE TOP OF SLOPE) T.B.C.
- 10M SETBACK FROM LTSTOS (LONG TERM STABLE TOP OF SLOPE) T.B.C.

1 2025.12.12 ISSUED FOR ZBA

No. Date Issue/Revision



5500 DUNDAS ST W

5500 Dundas St W, Etobicoke, ON M9B 1B7

Title: Site Plan

Project No. 2413 Scale As indicated

Drawing No.

A 050

Green Roof	Provided
Gross Floor Area, as defined in Green Roof Bylaw (m²)	53,208.8 m²
Total Roof Area (m²)	4,788.0 m²
Area of Residential Private Terraces (m²) (Up to Abutting Unit Area)	508.9 m²
Rooftop Outdoor Amenity Space, if in a Residential Building (m²)	1,168.0 m²
Area of Renewable Energy Devices (m²)	0.0 m²
Tower(s) Roof Area with floor plate less than 750m²	N/A
Total Available Roof Space (m²)	3,113.2 m²
Green Roof Coverage	Required: 1,867.9 m² Provided: 1,935.5 m²
Coverage of Available Roof Space (m²)	60%
Coverage of Available Roof Space (%)	62%

Gross Floor Area, as defined in Green Roof Bylaw.

The total area of each floor level of a building, above and below average grade, measured from the exterior of the main wall of each floor level, including voids at the level of each floor, such as an atrium, mezzanine, stairwell, escalator, elevator, ventilation duct or utility shaft, but excluding areas used for the purpose of parking or loading.

Definitions.

FLOOR PLATE AREA - The total area of a floor of a building, measured from the exterior of the main wall of the floor level, including voids at the level of the floor, such as an atrium, mezzanine, stairwell, escalator, elevator, ventilation duct or utility shaft.

GROSS FLOOR AREA - The total area of each floor level of a building, above and below average grade, measured from the exterior of the main wall of each floor level, including voids at the level of each floor, such as an atrium, mezzanine, stairwell, escalator, elevator, ventilation duct or utility shaft, but excluding areas used for the purpose of parking or loading.

LOADING NOTES

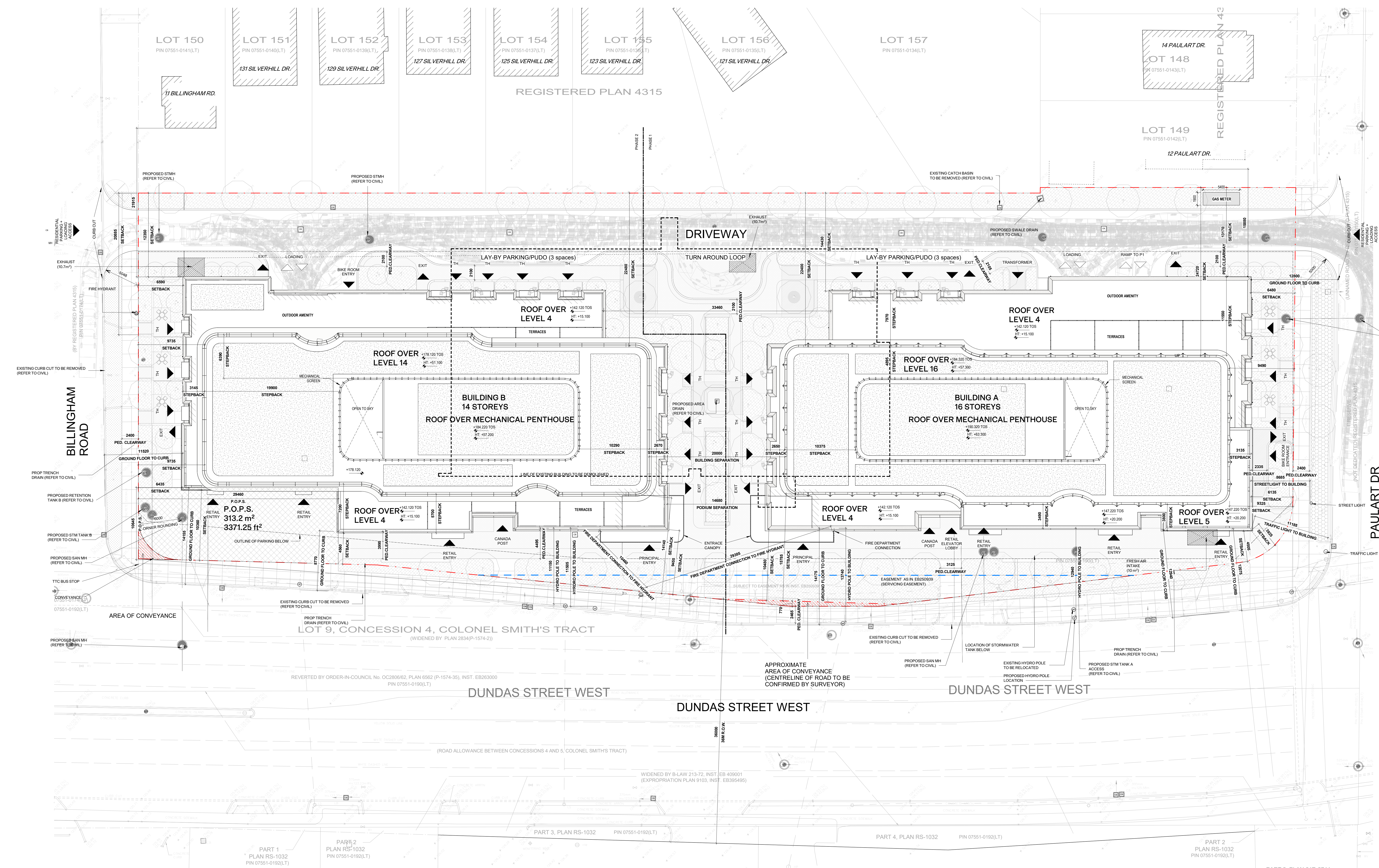
- TYPE G LOADING SPACE AND ADJACENT STAGING PAD HAVE VERTICAL CLEARANCE OF MIN 6.1 METERS.
- OVERHEAD DOOR TO LOADING SPACE WILL HAVE MIN 4.4 METER HEIGHT; 2.1M DEEP STAGING AREA DIRECTLY IN FRONT OF THE LOADING AREA TO HAVE MIN. VERTICAL CLEARANCE OF 6.1M; 30 (BUILDING A) + 28 (BUILDING B) M STAGING AREA FOR THE DEVELOPMENT.
- TYPE G LOADING SPACE WILL BE SHARED BETWEEN RESIDENTIAL AND NON-RESIDENTIAL USES. NON-RESIDENTIAL COMPONENT WILL ONLY SCHEDULE USE OF THE TYPE G LOADING SPACE ON DIFFERENT DAYS FROM THE COLLECTION DAYS OF THE RESIDENTIAL COMPONENT TO ENSURE THAT THE TYPE G LOADING SPACE WILL BE VACANT FOR CITY WASTE COLLECTION.
- NON-RESIDENTIAL WASTE WILL BE LABELED AND STORED SEPARATELY FROM THE BINS FOR RESIDENTIAL WASTE.
- TYPE G LOADING SPACE WILL BE LEVEL, +/-2% AND CONSTRUCTED WITH MIN 200mm THICK SACRIFICIAL CONCRETE SLAB.
- A WARNING SYSTEM WILL BE PROVIDED, ALERTING DRIVERS WHEN EXITING THE UNDERGROUND PARKING GARAGE THAT LARGE TRUCKS ARE MANOEUVRING WITHIN THE PUBLIC LANE.
- ALL ACCESS DRIVEWAYS TO BE USED BY THE GARAGE COLLECTION VEHICLE WILL HAVE:
 - MINIMUM VERTICAL CLEARANCE OF 4.4 METRES THROUGHOUT;
 - MINIMUM WIDTH OF 4.5 METRES THROUGHOUT; AND
 - MINIMUM WIRE AT POINT OF INGRESS AND EGRESS.
- NO PARKING SIGNS TO BE PROVIDED AND MAINTAINED ADJACENT TO THE LOADING SPACE.
- CONSTRUCT ANY TYPE G LOADING SPACE AND ALL DRIVEWAYS AND PASSAGEWAYS PROVIDING ACCESS THERETO, TO THE REQUIREMENTS OF THE ONTARIO BUILDING CODE, INCLUDING ALLOWANCE FOR CITY OF TORONTO BULK LIFT AND REAR BIN LOADING WITH IMPACT FACTORS WHERE THEY ARE TO BE BUILT AS SUPPORTED STRUCTURES.
- THE RESIDENTIAL SOLID WASTE ROOM WILL ACCOMMODATE GARAGE, RECYCLING AND ORGANICS FOR THE RESIDENTIAL COMPONENT OF THE BUILDING VIA USE OF A BISOPTER IN THE DEVELOPMENT.
- BULK WASTE HAS 10m² DESIGNATED FLOOR AREA FOR THE DEVELOPMENT.
- "COLLECTION OF WASTE MATERIALS FOR THIS DEVELOPMENT WILL TAKE PLACE IN AN ENCLOSED LOADING BAY. AN ON-SITE STAFF PERSON IS RESPONSIBLE FOR MOVING THE BINS FROM THE GARAGE STORAGE SPACE TO THE COLLECTION POINT AND PROVIDE VEHICULAR DIRECTIONS TO THE COLLECTION VEHICLE OPERATOR AS REQUIRED."
- THIS BUILDING IS DESIGNED WITH A TYPE G LOADING SPACE, A FLASHING WARNING LIGHT SYSTEM AND/OR APPROPRIATE SIGNAGE ADJACENT TO THE SPACE, AT NO COST TO THE CITY, WILL BE IN PLACE AND ACTIVATED DURING COLLECTION AND REMAIN ACTIVE UNTIL THE VEHICLE EXITS THE SITE. REFER TO TRAFFIC CONSULTANT REPORT FOR SWEEP PATH.
- SOLID WASTE MANAGEMENT TO BE NOTIFIED UPON COMPLETION OF THE DEVELOPMENT AND SHOULD PUBLIC WASTE COLLECTION BE USED, ALL NECESSARY APPLICATION AND APPROVALS TO BE COMPLETED PRIOR TO COMMENCEMENT OF CITY REFUSE COLLECTION.
- NON-RESIDENTIAL GARAGES WILL BE COLLECTED BY LICENSED PRIVATE WASTE MANAGEMENT COMPANY.
- REUSE OR REPAIR BY THE NON-RESIDENTIAL USER MUST BE STORED ON SITE, IN IDENTIFIED CONTAINERS IN ACCORDANCE WITH CHAPTER 841 OF THE MUNICIPAL CODE, "WASTE COLLECTION AND DISPOSAL".
- ON-SITE STAFF MEMBER WILL BE AVAILABLE TO MANOEUVRE BINS FOR THE COLLECTION DRIVER AND ALSO ACT AS A FLAGMAN WHEN THE TRUCK IS REVERSING. IN THE EVENT THE ON-SITE STAFF IS UNAVAILABLE AT THE TIME THE CITY COLLECTION VEHICLE ARRIVES AT THE SITE, THE COLLECTION VEHICLE WILL LEAVE THE SITE AND NOT RETURN UNTIL THE NEXT SCHEDULED COLLECTION DATE.
- FOR SPECIFIC TRUCK DIMENSIONS AND TURNING RADIUS, REFER TO TRAFFIC CONSULTANT'S REPORT.

SITE PLAN NOTES

- THE BUILDING IS TO BE SPRINKLERED.
- RESIDENTIAL VISITOR PARKING SPACES WILL BE INDIVIDUALLY SIGNED AT THE FRONT OF EACH SPACE FOR THE USE OF RESIDENTIAL VISITORS. BUILDING MANAGEMENT SHALL PROVIDE ENFORCEMENT OF THIS ARRANGEMENT.
- SIDEWALKS AND BOULEVARDS WITHIN THE RIGHT OF WAY TO HAVE A MINIMUM 1% AND MAXIMUM 4% SLOPE TOWARDS THE ROADWAY.
- REFER TO SITE SERVISING DOCUMENTS FOR SEWER AND WATER SERVICE INFORMATION.
- ANY RETAINING WALLS ARE TO BE PROFESSIONALLY ENGINEERED.
- ALL EXISTING ACCESSORIES, CURB CUTS, TRAFFIC CONTROL SIGNS, ETC. ALONG THE DEVELOPMENT SITE FRONTS THAT ARE NO LONGER REQUIRED ARE TO BE REMOVED. THE BOULEVARD WITHIN THE PUBLIC RIGHT OF WAY, IN ACCORDANCE WITH CITY STANDARDS AND TO THE SATISFACTION OF THE EXECUTIVE DIRECTOR OF TECHNICAL SERVICES ARE TO BE REINSTATED.
- PROPOSED ACCESS TO THE RIGHT-OF-WAY/LANEWAY FOR THIS PROJECT TO BE DESIGNED IN ACCORDANCE WITH CITY STANDARD NO. 10.01.01 FOR COMMERCIAL CURB CUTS AND SIDEWALK VEHICULAR ENTRIES.
- NO SPEED BUMPS SHALL BE INSTALLED ON ANY DESIGNATED FIRE ROUTE.
- MAX. POROSITY OF ALL GROUND LEVEL VENTILATION GRATES MUST BE 20mm X 20mm PER TORONTO GREEN STANDARDS.
- ALL EXTERIOR LIGHT FIXTURES TO BE "DARK SKY" COMPLIANT.

UTILITY/SERVICES NOTES

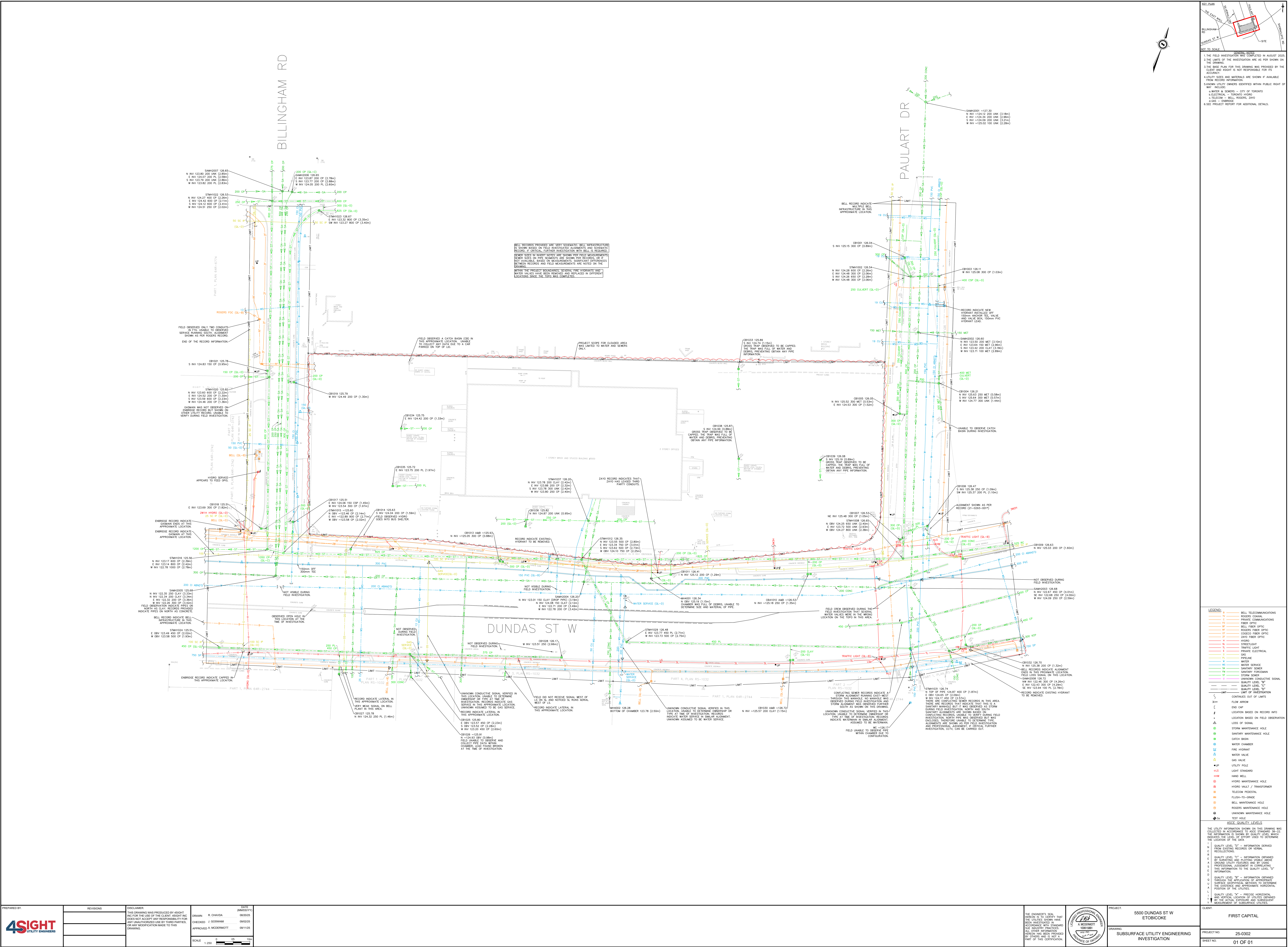
- THE METHOD OF INSTALLATION FOR THE PROPOSED SERVICE CONNECTIONS WILL BE AT THE DISCRETION OF TORONTO WATER.
- EXISTING CONNECTIONS NO LONGER IN USE SHALL BE DISCONNECTED BY TORONTO WATER AT THE OWNER'S COST.
- THE LOCATION OF THE WATER METER SHALL BE TO TORONTO WATER'S SATISFACTION.
- THE OWNER IS REQUIRED TO INSTALL AND MAINTAIN A PREMISE ISOLATION DEVICE FOR ALL APPLICABLE WATER SERVICES IN ACCORDANCE WITH THE TORONTO MUNICIPAL CODE, CHAPTER 851 WATER SUPPLY, THE BUILDING CODE AND CSA 864 SERIES STANDARDS.
- THE BUILDING'S STORM AND SANITARY SYSTEM MUST BE DESIGNED TO BE ABLE TO OPERATE UNDER MUNICIPAL SURCHARGE CONDITIONS.
- THE OWNER SHALL OBTAIN ANY PARTY, INCLUDING THE APPLICANT OR ANY SUBSEQUENT OWNER, APPLS FOR MORE THAN ONE CONDOMINIUM CORPORATION ENCOMPASSING ANY OR ALL OF THIS DEVELOPMENT OR MAKE AN APPLICATION THAT RESULTS IN A LAND DIVISION. STAFF MAY REQUIRE LEGAL ASSURANCES, INCLUDING BUT NOT LIMITED TO EASEMENTS, WITH RESPECT TO THE APPROVED SERVICES. SUCH ASSURANCES WILL BE DETERMINED AT THE TIME OF APPLICATION FOR CONDOMINIUM APPROVAL.



Site Plan
1 - 00

APPENDIX B

- Subsurface Utility Engineering Investigation by 4Sight



KEY PLAN

1. THE FIELD INVESTIGATION WAS COMPLETED IN AUGUST 2025.

2. THE LIMITS OF THE INVESTIGATION ARE AS PER SHOWN ON THE DRAWING.

3. THE BORE PLAN FOR THIS DRAWING WAS PROVIDED BY THE CLIENT AND ASHST IS NOT RESPONSIBLE FOR ITS ACCURACY.

4. UTILITY SIZES AND MATERIALS ARE SHOWN IF AVAILABLE FROM RECORD INFORMATION.

5. KNOWN UTILITY OWNERS IDENTIFIED WITHIN PUBLIC RIGHT OF WAY INCLUDE:

- WATER & SEWERS - CITY OF TORONTO
- ELECTRICAL - TORONTO HYDRO
- TELECOM - BELL, ROGERS, ZAYO
- ROADS - TORONTO

6. SEE PROJECT REPORT FOR ADDITIONAL DETAILS.

LEGEND

- 1. BELL TELECOMMUNICATIONS
- 2. ROGERS CABLE
- 3. PRIVATE COMMUNICATIONS
- 4. FIBER OPTIC
- 5. BELL FIBER OPTIC
- 6. ROGERS FIBER OPTIC
- 7. COXCOM FIBER OPTIC
- 8. ZAYO FIBER OPTIC
- 9. HYDRO
- 10. STREETLIGHT
- 11. PRIVATE LIGHT
- 12. GAS
- 13. ELECTRICAL
- 14. PYROLINE
- 15. WATER
- 16. WATER SERVICE
- 17. SANITARY SEWER
- 18. SANITARY FORCEMAIN
- 19. STORM SEWER
- 20. UNKNOWN CONDUCTIVE SIGNAL
- 21. QUALITY LEVEL "T"
- 22. QUALITY LEVEL "C"
- 23. QUALITY LEVEL "X"
- 24. LIMIT OF INVESTIGATION
- 25. CONTINUES OUT OF LIMITS
- 26. FLOW ARROW
- 27. END CAP
- 28. LOCATION BASED ON RECORD INFO
- 29. LOCATION BASED ON FIELD OBSERVATION
- 30. LOSS OF SIGNAL
- 31. STORM MAINTENANCE HOLE
- 32. SANITARY MAINTENANCE HOLE
- 33. CATCH BASIN
- 34. WATER CHAMBER
- 35. FIRE HYDRANT
- 36. WATER VALVE
- 37. GAS VALVE
- 38. UTILITY POLE
- 39. HAND WELL
- 40. HYDRO MAINTENANCE HOLE
- 41. HYDRO VAULT / TRANSFORMER
- 42. TELECOM PEDestal
- 43. PLUMB-TO-SHAPE
- 44. BELL MAINTENANCE HOLE
- 45. ROGERS MAINTENANCE HOLE
- 46. UNKNOWN MAINTENANCE HOLE
- 47. TEST HOLE

ASCE QUALITY LEVELS

1. THE UTILITY INFORMATION SHOWN ON THIS DRAWING WAS COLLECTED IN ACCORDANCE TO ASCE STANDARD 38-22.

2. THE INFORMATION IS SHOWN BY QUALITY LEVEL, WHICH INDICATES THE LEVEL OF EFFORT USED TO DETERMINE THE LOCATION OF THE DATA.

3. QUALITY LEVEL "T" - INFORMATION DERIVED FROM EXISTING RECORDS OR VERBAL RECollections.

4. QUALITY LEVEL "C" - INFORMATION OBTAINED BY SURVEYING AND PLUMBING, VISUAL ABOVE GROUND, OR BY OTHER MEANS.

5. PROFESSIONAL JUDGMENT IN CORRELATING THIS INFORMATION TO THE QUALITY LEVEL "C" INFORMATION.

6. QUALITY LEVEL "X" - INFORMATION OBTAINED THROUGH THE APPLICATION OF APPROPRIATE SURVEYING TECHNIQUES TO DETERMINE THE EXISTENCE AND APPROXIMATE HORIZONTAL POSITION OF THE UTILITIES.

7. QUALITY LEVEL "T" - PRELIMINARY INFORMATION AND THE ACTUAL LOCATION OF UTILITIES OBSERVED BY MEASUREMENT OF SURFACE UTILITIES.

APPENDIX C

- Downstream Storm & Combined-Sewer-Overflow-Sewer (STM&CSO Sewer) Analysis (Calibrated BFEA-based Analysis) by civilGo Engineering Inc.



Downstream Sanitary Sewer Analysis (Calibrated BFEA-based Analysis)

Proposed Mixed-Use Development,
5500 Dundas Street West,
Toronto, Ontario

Prepared for:
FCHT Holdings (Ontario) Corporation

<i>Rev. No.</i>	<i>Date</i>	<i>Description</i>
0	December 12 th , 2025	Issued for Rezoning Application

Project No.: 25-041

Executive Summary

1. This Report has been prepared to summarize and provide the findings of a downstream sanitary sewer analysis, prepared in support of a Rezoning Bylaw Amendment (ZBA) Application Submission for the Proposed Development of 5500 Dundas Street West, Toronto, comprising two proposed Towers for Mixed-Use Development.
2. The subject Site, 5500 Dundas Street West, falls within *Basement Flooding Environmental Assessment (BFEA) Study Area 54*. At the time this report was prepared, the City of Toronto's *Basement Flood Protection Map* website stated that BFEA Study Area 54 was completed in 2022.
3. The Proposed Development comprises two Buildings (A and B), in two respective Phases, which which discharge into two separate downstream outlets (given discussion in the FSR):
 - 3.1. Building A (Phase 1) is proposed to be connected to an existing 200mm-dia. separated sanitary sewer within Paulart Drive, adjacent to the Site, which flows southerly and connects to the 200mm-dia. sanitary sewer within Dundas Street West which flows easterly within Dundas and southerly within Shorncliffe Road. This is referred-to herein as the Easterly Outlet.
 - 3.2. Building B (Phase 2) is proposed to be connected to an existing 200mm-dia. separated sanitary sewer within Dundas Street West, adjacent to the Site, and continues westerly, ultimately discharging into a trunk sanitary sewer within Dundas Street West at The East Mall. This is referred-to herein as the Westerly Outlet.
4. This analysis has been conducted in accordance with the Criteria given in *Table 1* of the City of Toronto's manual titled *Sewer Capacity Assessment Guidelines* (July 2021). The results of the analysis are summarized as follows.
 - 4.1. With respect to Criterion 1, "Design Function", which requires that there will be no surcharge in the sewer system under 'design flow conditions', the results are:
 - 4.1.1. In the Existing/Pre-Development Scenario: All downstream pipe segments are flowing well-within their respective capacities and Criteria 1 is satisfied.
 - 4.1.1.1. Building B/Westerly Outlet: All downstream pipe segments are flowing well-within their respective capacities and Criteria 1 is satisfied.
 - 4.1.1.2. Building A/Easterly Outlet: All downstream pipe segments are flowing well-within their respective capacities and Criteria 1 is satisfied.
 - 4.1.2. In the Proposed/Post-Development Scenario:
 - 4.1.2.1. Building B/Westerly Outlet: All downstream pipe segments are flowing well-within their respective capacities and Criteria 1 is satisfied. This applies, considering, even, the possibility that the Proposed/Future Development of 2-10 East Mall Cresc. Drains to this sewer.
 - 4.1.2.2. Building A/Easterly Outlet:
 - 4.1.2.2.1. There are two other proposed/future developments in this sewer-shed, which are considered herein both with, and without, the subject proposed development. These developments (5509 Dundas St. W. and 5415-5487

Dundas St. W.) cause the existing sewer to be non-compliant with Criterion 1 DWF scenarios. The FSR for 5415-5487 Dundas St. W. proposes improvements to the existing downstream sanitary sewer within Shorncliffe Road. These upgrades have been modelled herein. It was noted that, even with the upgrades proposed by 5415-5487 Dundas St. W., there remains some segments which do not comply with Criterion 1.

- 4.1.2.2.2. An additional scenario was completed by considering the Proposed Development, as a new, further, development in this sewer shed (in addition to 5509 and 5415-5487). This compounds the results arrived-at for the external developments, alone.
- 4.1.2.2.3. Consideration is therefore warranted for system improvements, on account of the external proposed developments and the proposed development, with respect to Criterion 1.

- 4.2. With respect to Criterion 2, “Basement Flooding Protection”, which requires that any surcharging in the sewer system will be at least 1.8m-below-grade under the ‘May 12th, 2000 Storm Event’, the results are:

4.2.1. In the Existing/Pre-Development Scenario:

- 4.2.1.1. Building B/Westerly Outlet: Three segments downstream of the Site do not comply with Criterion 2.
- 4.2.1.2. Building A/Easterly Outlet: A number of pipe segments downstream (within Shorncliffe Road) do not comply with Criterion 2, without considering any system improvements. Considering the system improvements proposed by the development of 5415-5487 Dundas St. W., however, most downstream segments within Shorncliffe come-into compliance with Criterion 2.

4.2.2. In the Proposed/Post-Development Scenario:

- 4.2.2.1. Building B/Westerly Outlet: Three segments downstream of the Site do not comply with Criterion 2.
- 4.2.2.2. Building A/Easterly Outlet: A number of pipe segments downstream (within Shorncliffe Road) do not comply with Criterion 2. As noted above, improvements are already contemplated for this sewer shed pertaining-to the development of 5415-5487 Dundas St. W., whereby Criterion 2 would generally be addressed.

- 5. Given the foregoing results, it is requested that further discussion is arranged with City staff, regarding the approvals which are required, offsite improvements, and status of the downstream sewer-system improvements proposed by the development of 5415-5487 Dundas St. W.

Table of Contents

1. Introduction & Background	1
a. Introduction	1
b. Report Scope and Terms of Reference	1
2. Downstream Sanitary Sewer Analysis.....	2
a. Existing Downstream Local Sanitary Sewers Description	2
b. Infoworks ICM Calibrated Model Description	5
c. Subject Proposed Development Sanitary Flow.....	5
d. New & Recent External Developments' Sanitary Flows	6
e. Infoworks ICM Analysis Results & Output	6
f. Discussion	21
3. Conclusion.....	23

List of Figures

Figure 1 – Sanitary Sewer Tributary Catchment Plan	4
Figure 2 – Westerly Outlet: Pre-Development DWF (Criterion 1) HGL.....	8
Figure 3 – Westerly Outlet: Post-Development DWF (Criterion 1) HGL (without 2-10 East Mall Cresc.)	9
Figure 4 – Westerly Outlet: Post-Development DWF (Criterion 1) HGL (with 2-10 East Mall Cresc.)	10
Figure 5 – Westerly Outlet: Pre-Development WWF (May 12 th , 2000 Storm Event) (Criterion 2) HGL	11
Figure 6 – Westerly Outlet: Post-Development WWF (May 12 th , 2000 Storm Event) (Criterion 2) HGL (without 2-10 East Mall Cresc.)	12
Figure 7 – Westerly Outlet: Post-Development WWF (May 12 th , 2000 Storm Event) (Criterion 2) HGL (with 2-10 East Mall Cresc.)	13
Figure 8 - Westerly Outlet: Post-Development WWF (May 12 th , 2000 Storm Event) (Criterion 2) HGL - Upstream Tributary Branch on Billingham Road and Silverhill Drive	14
Figure 9 - Easterly Outlet: Existing DWF Downstream HGL on Paulart, Dundas, Shorncliffe	15
Figure 10 - Easterly Outlet: Existing DWF Downstream HGL on Paulart, Dundas, Shorncliffe (considering Flows from External Proposed Developments and without System Improvements)	16
Figure 11 - Easterly Outlet: Existing DWF Downstream HGL on Paulart, Dundas, Shorncliffe (considering Flows from External Proposed Developments and with System Improvements Proposed by 5415 Dundas St. W. Development).....	17
Figure 12 - Easterly Outlet: Existing DWF Downstream HGL on Paulart, Dundas, Shorncliffe (considering Flows from External Proposed Developments and with System Improvements Proposed by 5415 Dundas St. W. Development, and with subject Proposed Development)	18
Figure 13 - Easterly Outlet: Existing WWF (May 12 th , 2000 Storm) Downstream HGL on Paulart, Dundas, Shorncliffe	19

Figure 14 - Easterly Outlet: Post-Development WWF (May 12th, 2000 Storm) Downstream HGL on Paulart, Dundas, Shorncliffe (considering Flows from External Proposed Developments and with System Improvements Proposed by 5415 Dundas St. W. Development, and with subject Proposed Development) 20

Appendix A

- Sanitary Sewer Inspection Report by Aquaflow Technology – verification of Existing 600mm-dia. Sanitary Sewer Segment within Dundas St. W.

1. Introduction & Background

a. Introduction

civilGo Engineering Inc. was retained by First Capital to prepare a **Downstream Sanitary Sewer Analysis** for submission to the City of Toronto in support of a Rezoning Bylaw Amendment (ZBA) Application Submission. The proposed Development for which the Submission is being made comprises two Proposed Mixed-Use Towers within the subject lands, 5500 Dundas Street West, in Toronto, Ontario.

The existing site comprises one one-storey retail building and large paved parking areas. It is proposed to construct two towers with a common underground parking space. Building A is proposed to be 16-stories tall with a mechanical penthouse, while Building B is proposed to be 14-stories tall with a mechanical penthouse.

Refer to the *Functional Servicing & Stormwater Management Report* by civilGo Engineering Inc. for discussion regarding the proposed development and site servicing. It is proposed that the Proposed Building A should be serviced to the 200mm-dia. separated sanitary sewer within Paulart Drive ('easterly outlet') while Building B should be serviced to the 200mm-dia. separated sanitary sewer within Dundas Street West ('westerly outlet'). This Report has therefore been prepared to provide analysis and discussion regarding the capacity of the sanitary sewers which commences within Dundas Street West and Paulart Drive, to accommodate the proposed sanitary flows from the proposed Buildings. It is noted that these are two separate downstream sanitary sewer-sheds, both of which are analyzed herein.

The analysis procedure was additionally discussed in consultation with City of Toronto staff from the *Engineering & Construction Services (ECS)* division. The terms-of-reference for this analysis were reviewed therein. City staff requested verification of a segment of 600mm-dia. sanitary sewer within Dundas Street West (the segment being irregular in that it increases pipe-diameter from 300mm-dia. to 600mm-dia. for only one segment). This was accordingly verified in the enclosed investigation by Aquaflow Technology (Appendix A herein). It was confirmed that the noted segment of 600mm-dia. sanitary sewer is correctly recorded as a 600mm-dia. pipe segment.

b. Report Scope and Terms of Reference

The scope of this Report is outlined below. The Terms of Reference given by the *Sewer Capacity Assessment Guidelines* (City of Toronto, Toronto Water, 1st Edition – July 2021) and the City of Toronto's *Design Criteria for Sewers and Watermains* (January 2021) were observed in the preparation of this report.

The methodology/procedure of preparation of the following downstream sanitary sewer analysis, in general, comprised the following.

- The most-recent *Basement Flooding Environmental Assessment (BFEA) Study Area 54* Report Document and Infoworks '.ICMT' Transportable Database (Calibrated BFEA Model) was obtained from the City of Toronto.
- The '.ICMT' transportable infoworks database, received from the City of Toronto, was loaded in the latest version of the Computer Software *Infoworks ICM 2025 – Ultimate* by Autodesk. Note:

It was necessary to utilize the ‘-Ultimate’ version of the *Infoworks ICM 2025* software, rather than the ‘-Standard’ version, due to the number of 2D nodes in the BFEA 54 Infoworks model.

- The sanitary sewer network to-which the proposed Development will drain was reviewed in the Infoworks Model, in order to confirm upstream tributary reaches, downstream trunk-sewer outlet, etc.
- Recent developments (appearing on the City of Toronto’s *Application Information Centre* website) were reviewed and cross-referenced against the data embedded in the Infoworks model, to determine whether such new/recent developments had been considered in the ‘base line’/‘existing conditions’ Infoworks model received from the City. Where such new developments did not appear in the Infoworks database/model, these were identified in this report, and the Infoworks database/model was updated to reflect these new/recent developments in the ‘existing’ scenario.
- Additional scenarios and a Catchment Area were created to represent the ‘Post-Development’/‘Proposed’ condition, where the proposed sanitary flows arising from the subject proposed Development of 5500 Dundas Street West were newly added to the downstream system.
- The Infoworks Model was Run, in both existing and proposed scenarios, as well as dry-weather and wet-weather scenarios, in-order to provide conclusions with respect to the different Criterion listed in the City of Toronto’s criteria manual, *Sewer Capacity Assessment Guidelines*. Conclusions were thus provided with respect to the ‘Criterion 1’ and ‘Criterion 2’ given in the City’s manual.
- In order to address the requirement for consideration of the ‘May 12th, 2000’ Storm Event to address Criterion 2 (for WWF), the Scenarios in the Infoworks Model were run in that WWF Scenario.
- A sanitary sewer network catchment plan were prepared, utilizing the Infoworks ICM Model, to illustrate the extents of the model analysis as well as existing and proposed developments which were considered.
- Hydraulic-Grade-Line (HGL) Plots were extracted from the *Infoworks ICM* software to provide the results of the analysis.
- Recommendations with respect to system adequacy to accommodate the Subject Site development were made in reference to the BFEA Model.

2. Downstream Sanitary Sewer Analysis

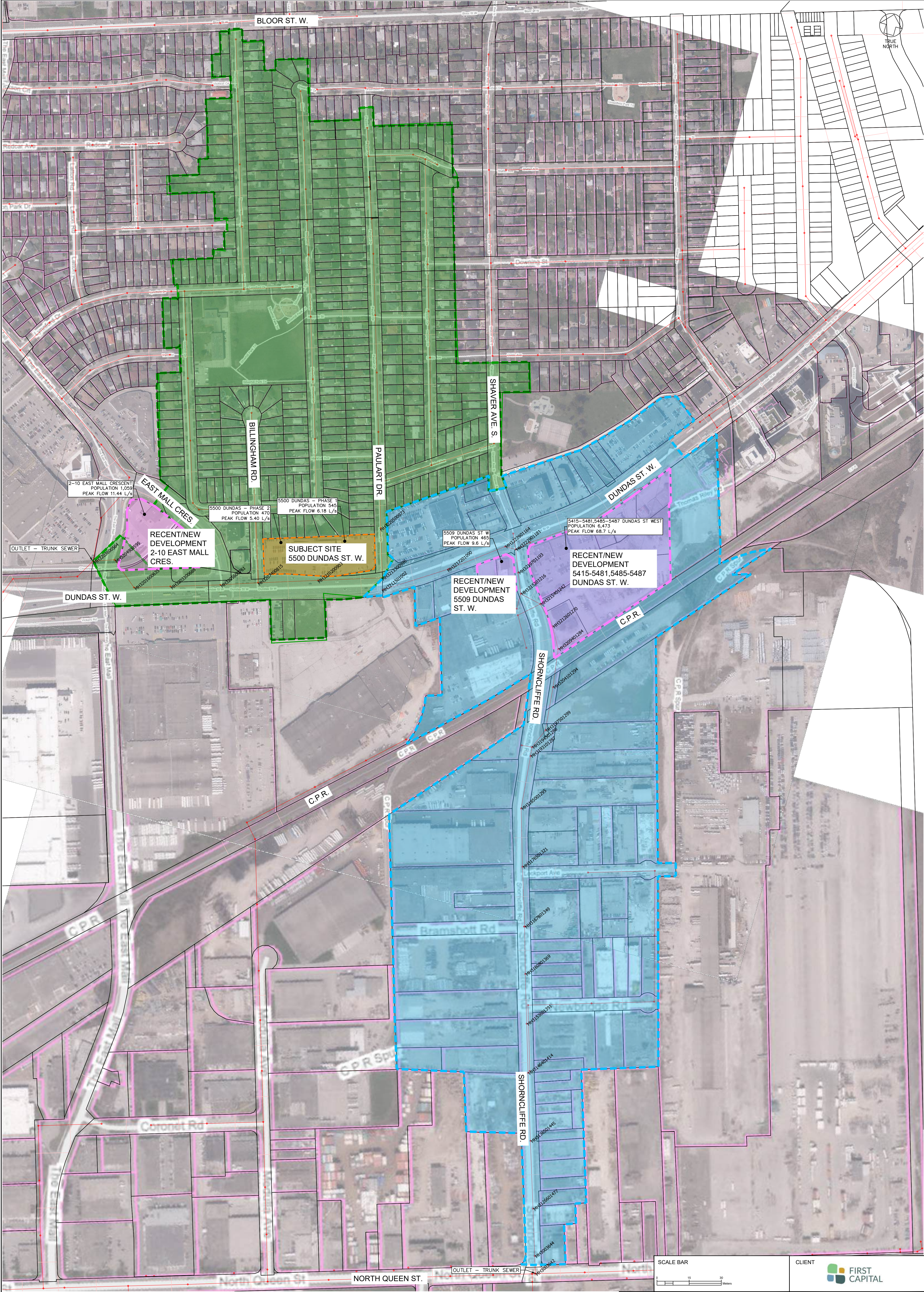
a. Existing Downstream Local Sanitary Sewers Description

The first downstream separated sanitary sewer for consideration commences within Dundas Street West, adjacent to the Subject Site’s south Property Line. The sewer commences as a 200mm-dia. concrete pipe and continues downstream, westerly, within Dundas Street West. The sewer continues south-west towards The East Mall Crescent where it becomes a 600mm-dia. concrete sewer until it reaches the intersection where Dundas Street West bridges over The East Mall. It then returns to being a 300mm-dia. concrete sewer and continues west along Cloverdale Mall. Ultimately, the sewer discharges into a 600mm-dia. reinforced concrete trunk sanitary sewer near the intersection where Cloverdale Mall bridges over The East Mall.

The second downstream separated sanitary sewer for consideration commences within Paulart Drive, adjacent to the Subject Site's east Property Line. The sewer commences as a 200mm-dia. concrete pipe and continues downstream, southerly, within Paulart Drive. The sewer continues south towards the 200mm-dia. concrete sewer within Dundas Street West where it splits off again and becomes a 250mm-dia. sewer that continues southerly within Dundas Street West. It then continues easterly within Dundas Street West as a 300mm-dia. sewer. It then reaches the intersection of Dundas Street West and Shorncliffe Road and continues southerly within Shorncliffe Road. The sewer continues southerly on Shorncliffe Road, increasing in diameter to 375mm (but then decreasing to 300mm), before terminating at a trunk-outlet within North Queen Street.

Refer to the *Sanitary Sewer Tributary Catchment Plan* (Fig. 1), on the following page, for the extents of the subject downstream sanitary sewer.

The *Sanitary Sewer Tributary Catchment Plan* (Fig. 1) additionally identifies the location of the subject Proposed Development Site, as well as other new and recent developments, which were not previously implemented in the received Infoworks ICM Model ('.ICMT' File received from the City).



LEGEND

DENOTES OVERALL TRIBUTARY AREA - DUNDAS STREET WEST

DENOTES OVERALL TRIBUTARY AREA - SHORNCLIFFE ROAD

DENOTES SUBJECT SITE TRIBUTARY AREA

DENOTES NEW & RECENT DEVELOPMENTS' TRIBUTARY AREA

DENOTES SEPARATED SANITARY SEWER

civilGo

ENGINEERING INC.

civilGo Engineering Inc.
60 Atlantic Avenue
Suite 200
Toronto, ON
M6K 1X9
www.civilGo.ca
T: 437-222-2062
E: info@civilGo.ca

PROPOSED MIXED-USE DEVELOPMENT,
5500 DUNDAS STREET WEST,
TORONTO, ON

DESIGN	N.E.	CHECKED	D.B.	PROJECT No.	25-041
SCALE:	1:750	DRAWING TITLE			FIG.
DATE:	OCT 2025	SANITARY TRIBUTARY DRAINAGE AREA			1

b. Infoworks ICM Calibrated Model Description

civilGo Engineering received the following materials from the City of Toronto (via the ECS division), to inform this analysis and report.

It is noted that, whereas the subject Site falls within BFEA Study Area 54, City staff informed civilGo Engineering that the Study Area 54 project files had been combined with the adjacent Study Area 49, 50 and 53 project files. This was evident on review of the received project files, listed as follows.

- City of Toronto Basement Flooding Environmental Assessment Project Files:
 - Basement Flooding Study Bundle B: *Existing Conditions InfoWorks Model Development - BFPP Capacity Assessment, Basement Flooding Study Areas 49, 50, 53, and 54*, by AECOM.
 - BFEA '.ICMT' Infoworks ICM Transportable Database File (Infoworks Model)

It was noted that the received Infoworks Model comprises a comprehensive, calibrated model of the sewers in the study area – comprising various classifications of sewers, including separated sanitary sewers, separated storm sewers, combined sewers, combined-sewer-overflow sewers, etc.

The model comprises flow data for both Dry-Weather-Flow (DWF) Conditions, as well as Rainfall Derived Inflow and Infiltration (RDII) Flows (Wet-Weather-Flow; WWF), as generated by the R-T-K method.

Calibrated WWF results are embedded in the analysis for the critical 'May 12th, 2000' Storm Event – analysis of which is required to address 'Criterion 2' in Table 1 of the City of Toronto's manual *Sewer Capacity Assessment Guidelines* (City of Toronto, Toronto Water, 1st Edition – July 2021).

c. Subject Proposed Development Sanitary Flow

The subject Site currently contributes to the Dundas Street West separated sanitary sewer, which is the subject of this analysis. The proposed Development of the Site, comprising the proposed sanitary sewer connection to the same separated sanitary sewer within Dundas Street West, therefore poses the following increase in Dry-Weather-Flow (DWF) on the downstream sanitary sewer network.

The following table, Table 1, summarizes the proposed sanitary flows draining to the subject separated sanitary sewers, by the Proposed Development. This was calculated in reference to the below criteria. Refer to the *Functional Servicing & Stormwater Management Report* for detailed sanitary flow-rate calculations.

The proposed sanitary flows from the Subject Site were inputted into the model as flow-rates, as per Table 1. The Proposed Building will comprise no Foundation Drainage.

Table 1 - Subject Proposed Development Proposed Sanitary Flow Rate

	Total Proposed Population	Residential Sanitary Flows (@ 250 L/c/d)	Non-Residential Sanitary Flows (@ 240 L/c/d)	Inflow & Infiltration (I&I) Flows	Total Proposed Sanitary Flows
Building A	542 (Res) + 6 (non-Res)	6.0 L/s	0.07 L/s	0.13 L/s	6.15 L/s
Building B	470 (Res) + 6 (non-Res)	5.2 L/s	0.07 L/s	0.12 L/s	5.41 L/s
TOTAL	1012 (Res) + 12 (non-Res)	11.2 L/s	0.14 L/s	0.25 L/s	11.56 L/s

- Per-capita average sanitary sewage flow: 450 L/cap/day (for the design of new sewers & sewer connections)
- Unit population (Residential) – Bachelor & 1-B Units = 1.4 person/unit; 2-B Units = 2.1 person/unit; 3-B Units = 3.1 person/unit; 4-B Units = 3.7 person/unit; single-family = 3.5 person/unit; townhouse = 2.7 person/unit.
- Inflow & Infiltration Flows (I&I) Originating from Subject Site = 0.26 L/s/Ha
- Peaking Factor – given by Harman Equation

d. New & Recent External Developments' Sanitary Flows

In accordance with the criteria given in the City of Toronto's manual, new and recent developments were identified and cross-referenced against the Infoworks 'ICMT' database received from the City, in order to determine whether they had previously been added to the model to represent the 'Existing' Scenario, or if they needed to be added to represent the 'Existing' Scenarios. Four new development was accordingly added-to the analysis in the Existing/Pre-Development Scenarios, as shown in Figure 1.

e. Infoworks ICM Analysis Results & Output

The Infoworks ICM Model Results are provided in the following Figures, on the following pages, in the following scenarios, for both the westerly and easterly sewer-sheds.

- Pre-Development DWF (Criterion 1) (with- and without- external proposed/future developments)
- Post-Development DWF (Criterion 1)
- Pre-Development WWF (May 12th, 2000 storm event)
- Post-Development WWF (May 12th, 2000 storm event) (with external proposed/future developments and with subject Site)

The HGL Plots on the following pages (Fig. 2-14) should be read in the reference to the following:

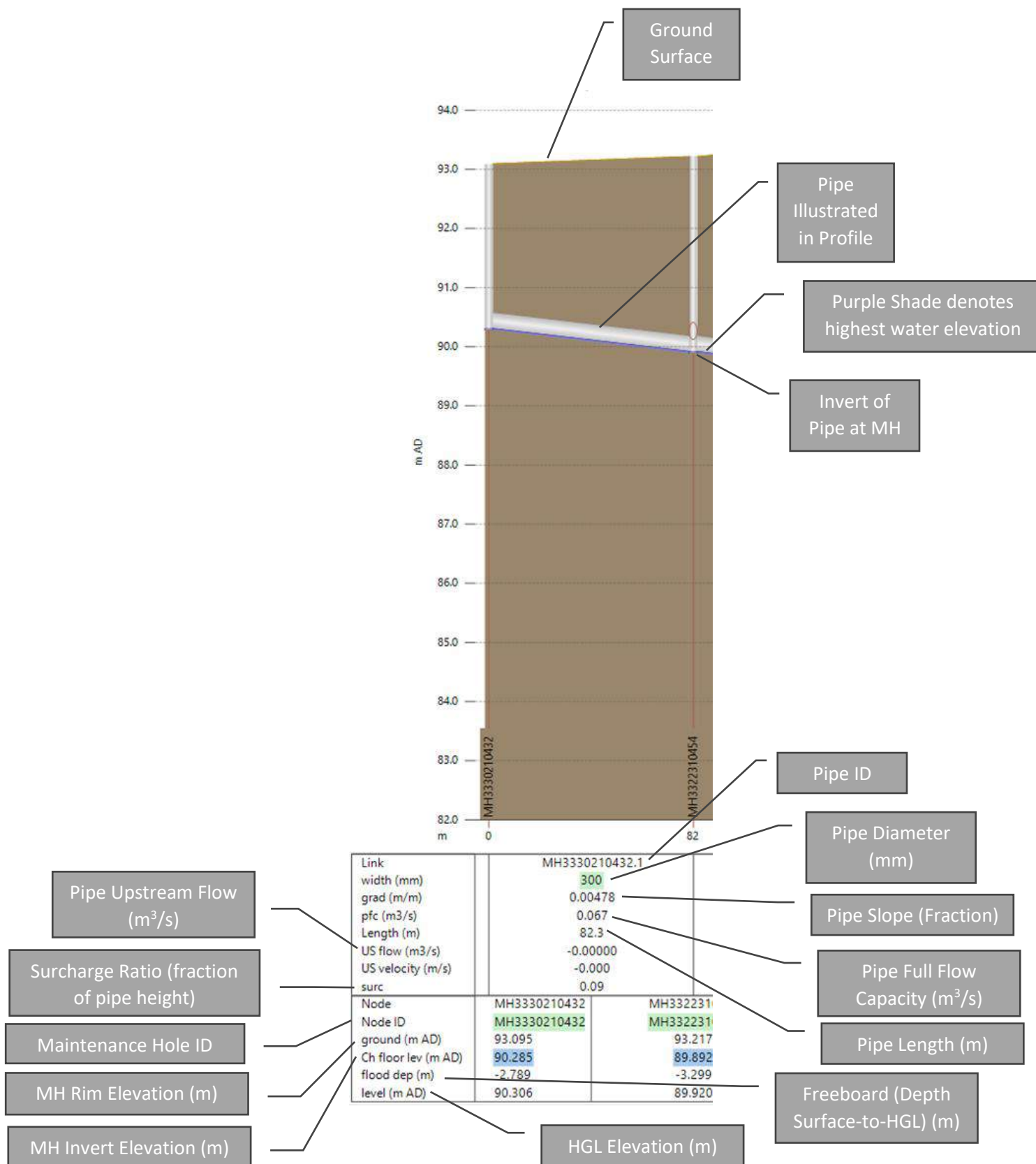


Figure 2 – Westerly Outlet: Pre-Development DWF (Criterion 1) HGL

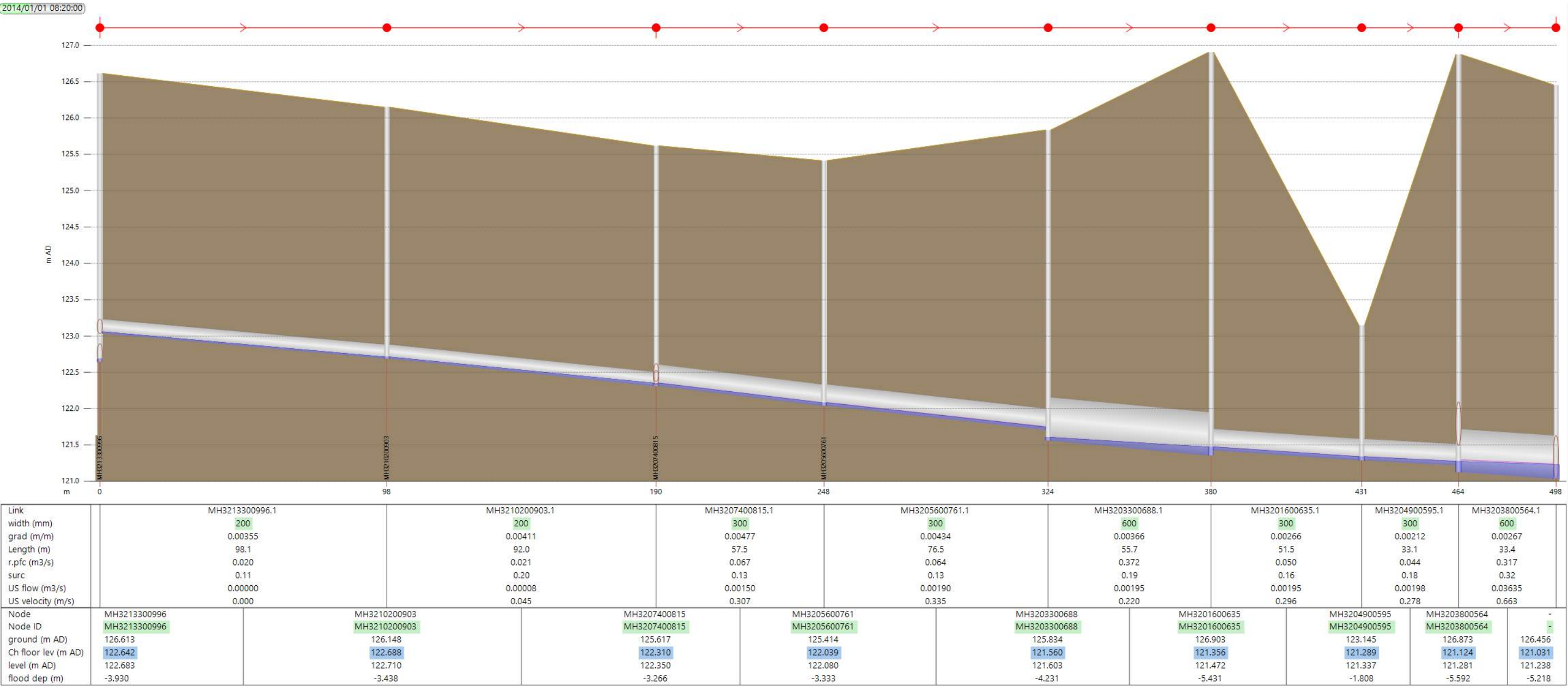


Figure 3 – Westerly Outlet: Post-Development DWF (Criterion 1) HGL (without 2-10 East Mall Cresc.)

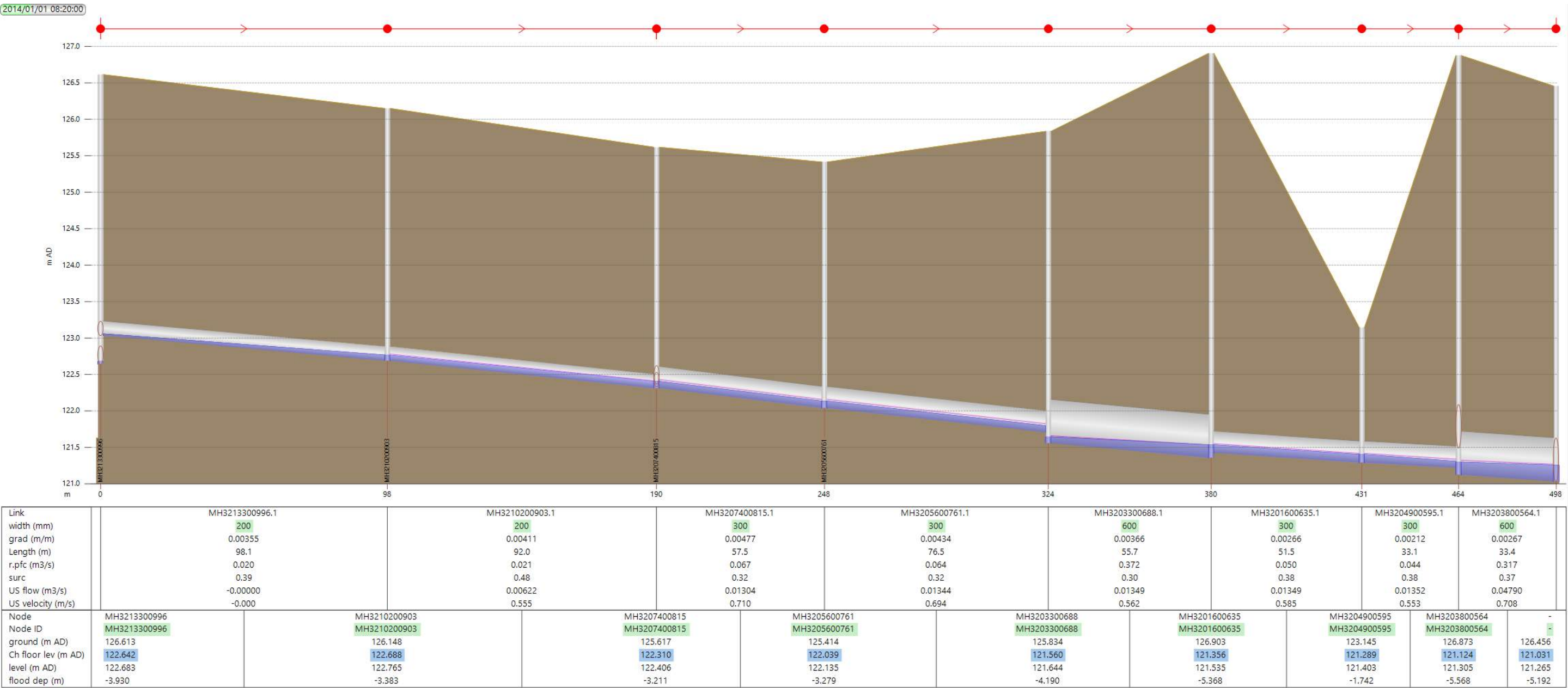


Figure 4 – Westerly Outlet: Post-Development DWF (Criterion 1) HGL (with 2-10 East Mall Cresc.)

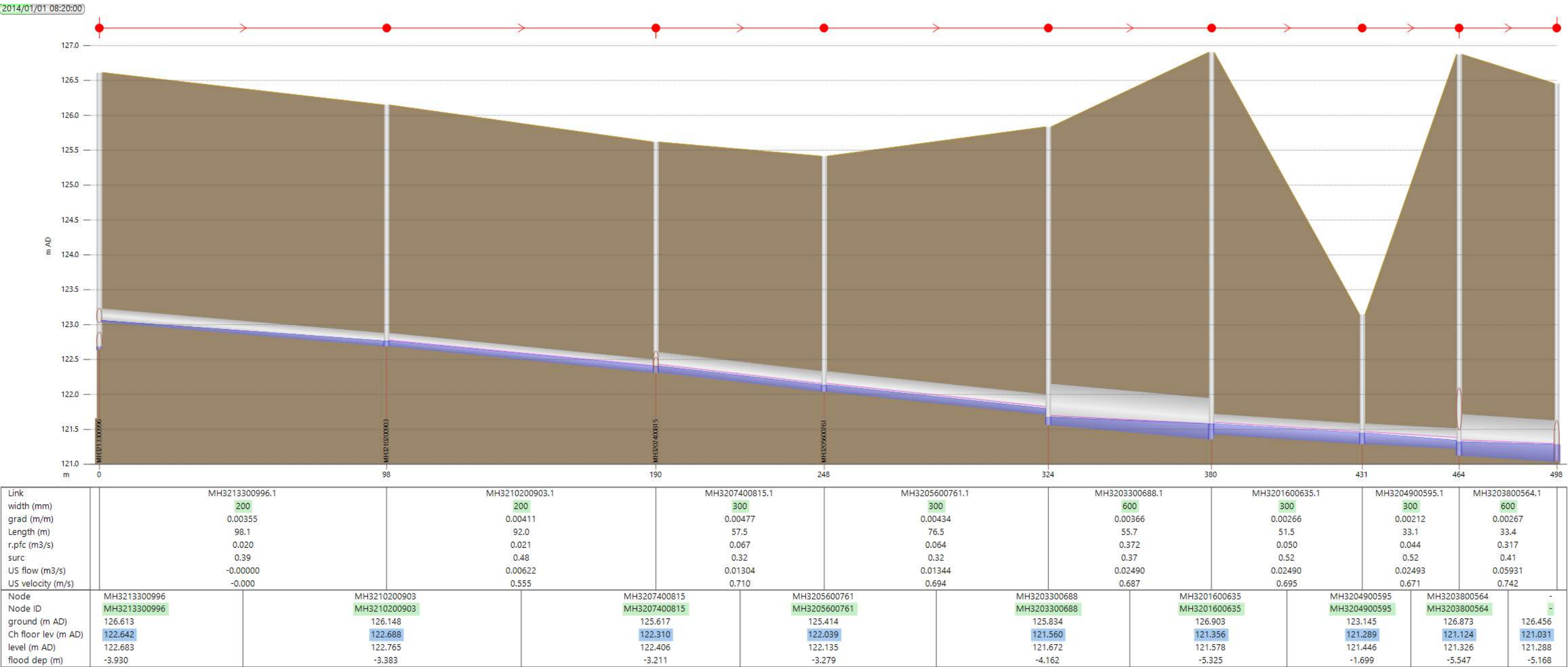


Figure 5 – Westerly Outlet: Pre-Development WWF (May 12th, 2000 Storm Event) (Criterion 2) HGL

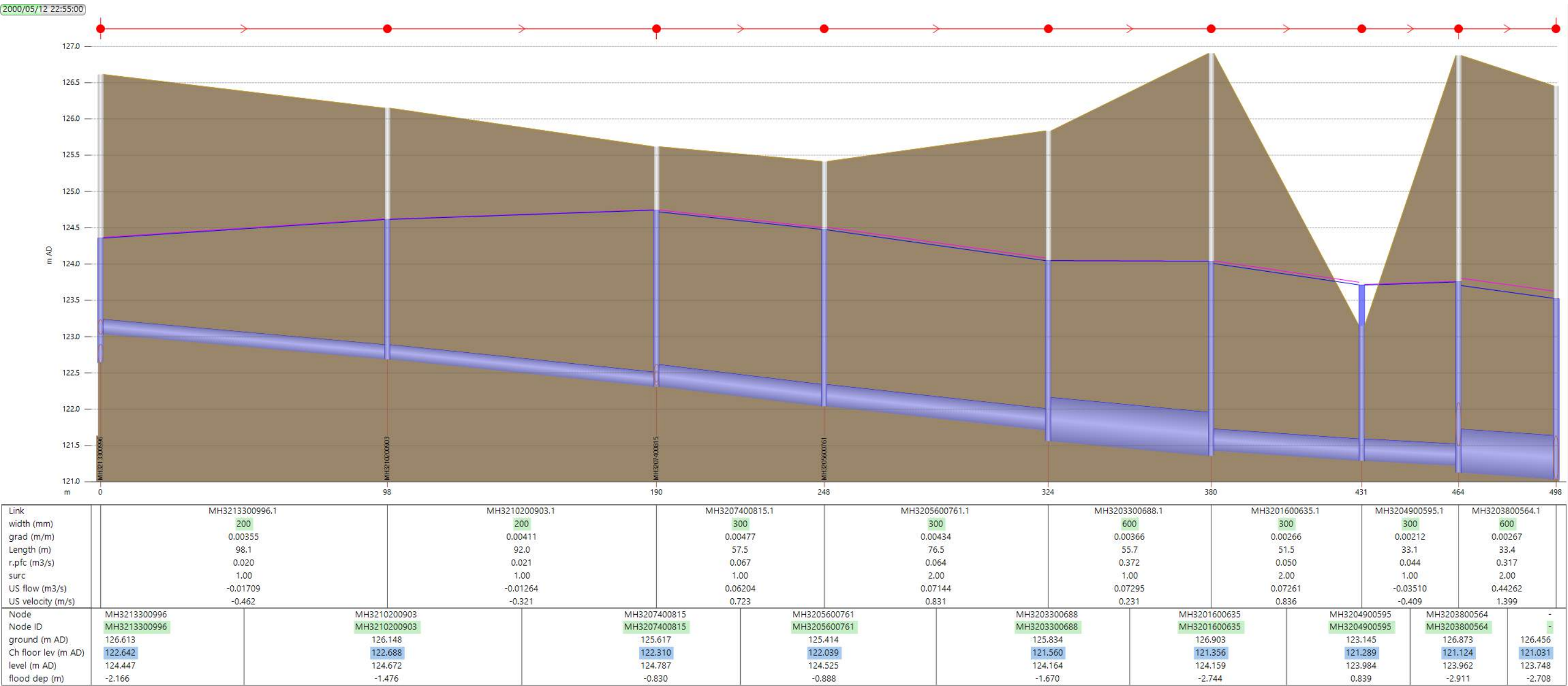


Figure 6 – Westerly Outlet: Post-Development WWF (May 12th, 2000 Storm Event) (Criterion 2) HGL (without 2-10 East Mall Cresc.)

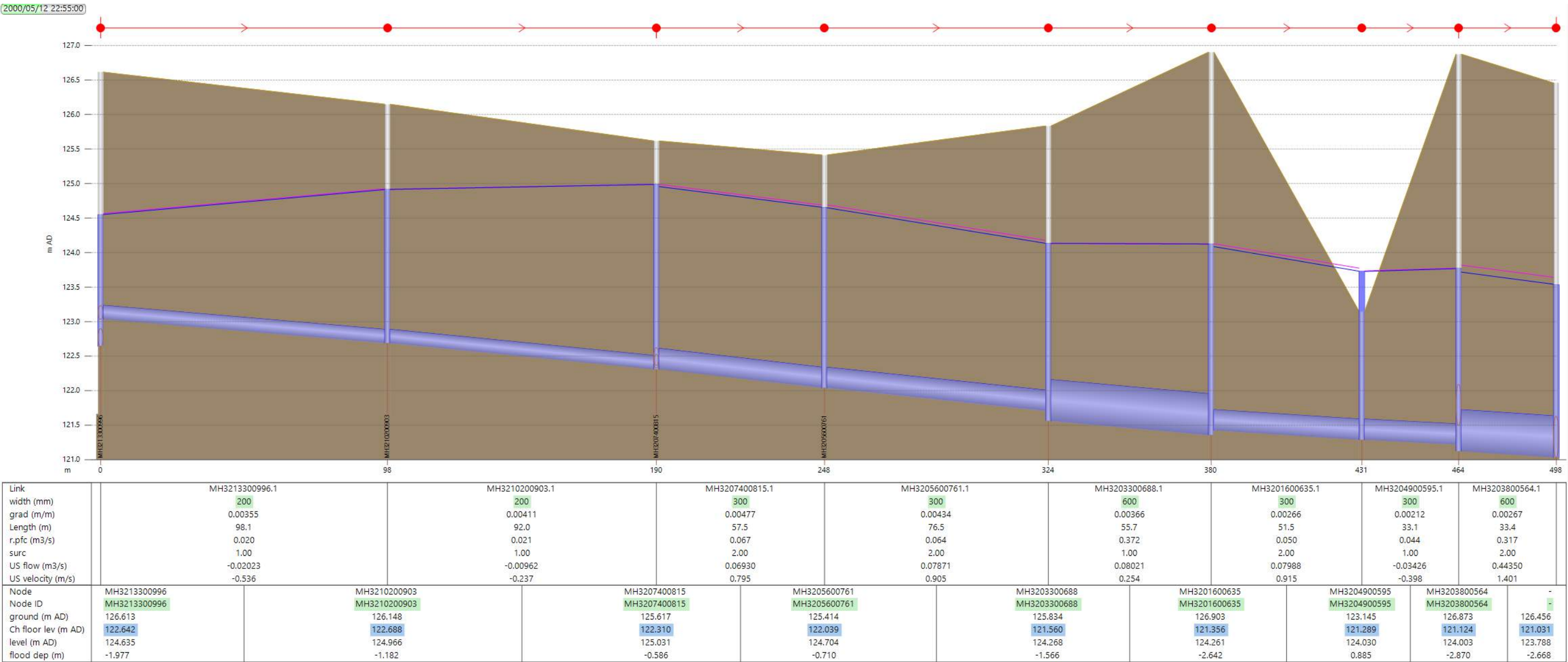


Figure 7 – Westerly Outlet: Post-Development WWF (May 12th, 2000 Storm Event) (Criterion 2) HGL (with 2-10 East Mall Cresc.)

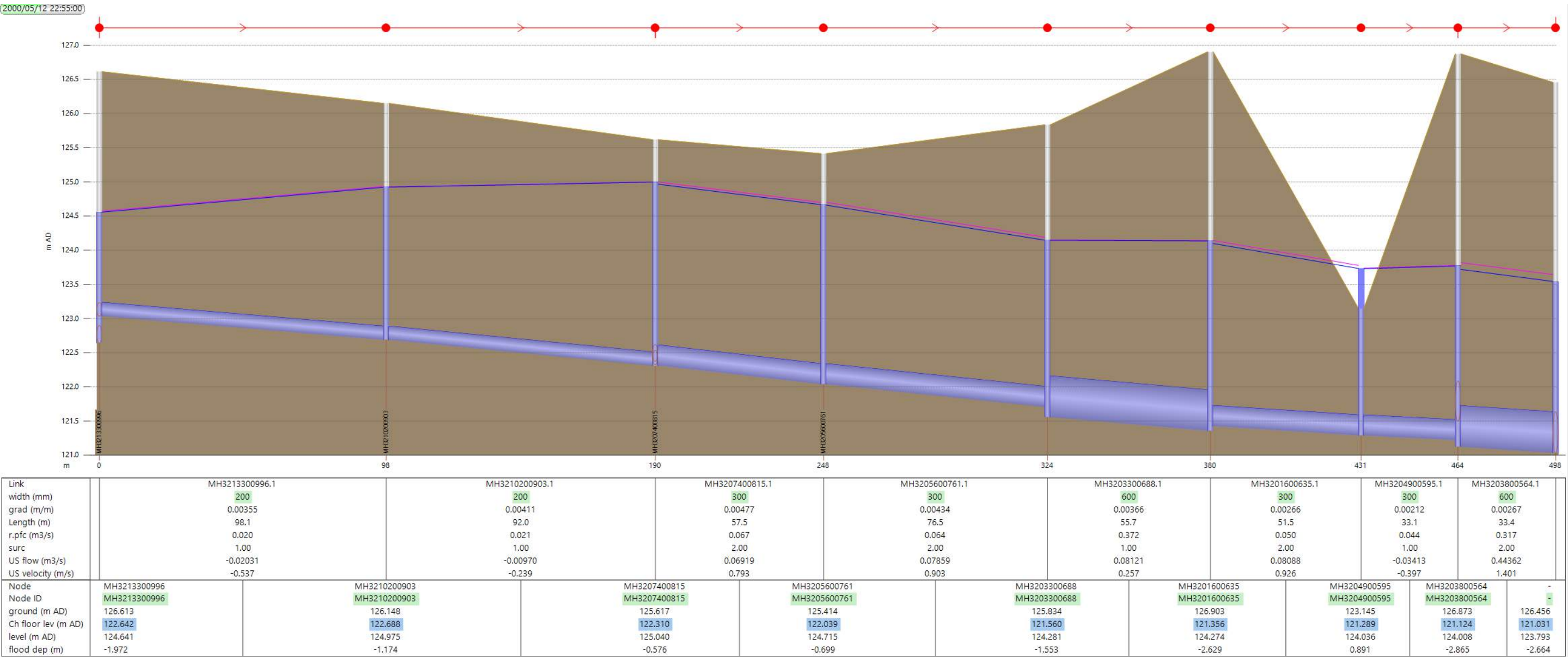


Figure 8 - Westerly Outlet: Post-Development WWF (May 12th, 2000 Storm Event) (Criterion 2) HGL - Upstream Tributary Branch on Billingham Road and Silverhill Drive

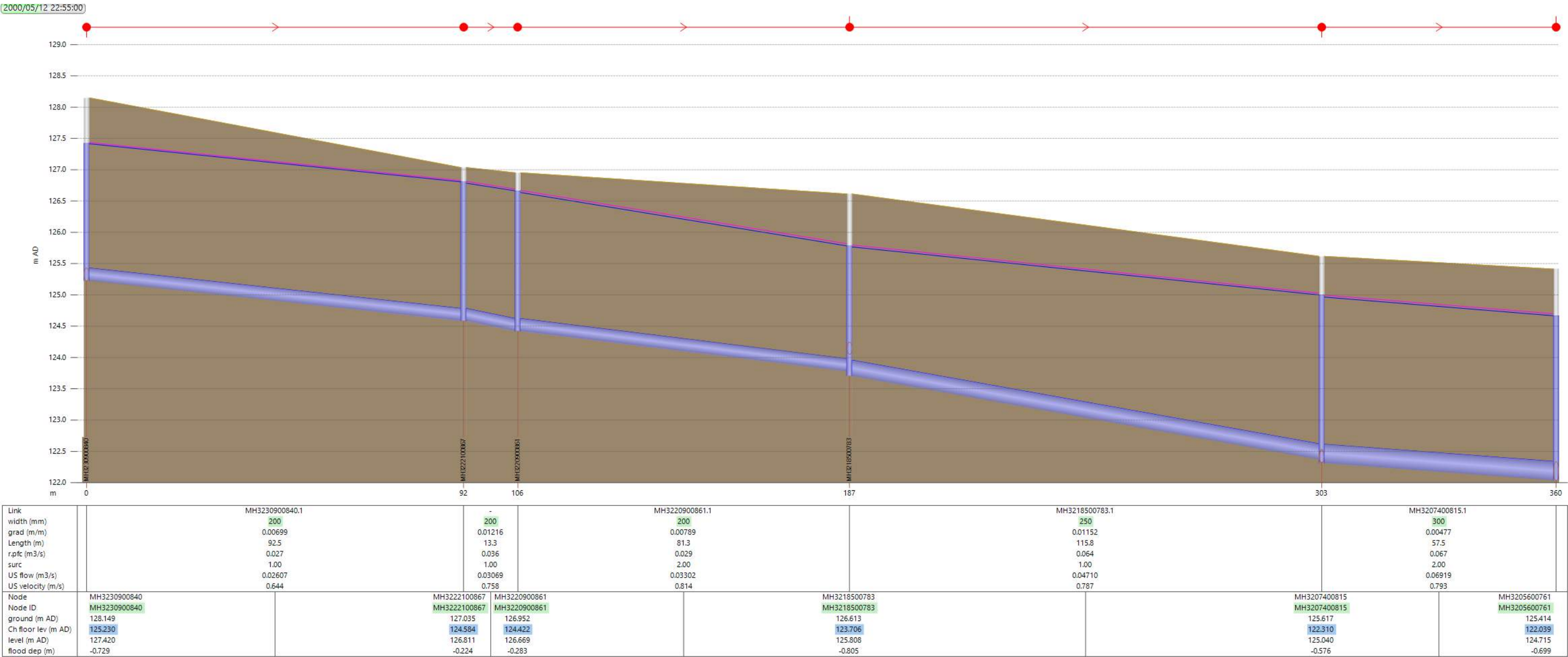


Figure 9 - Easterly Outlet: Existing DWF Downstream HGL on Paulart, Dundas, Shorncliffe

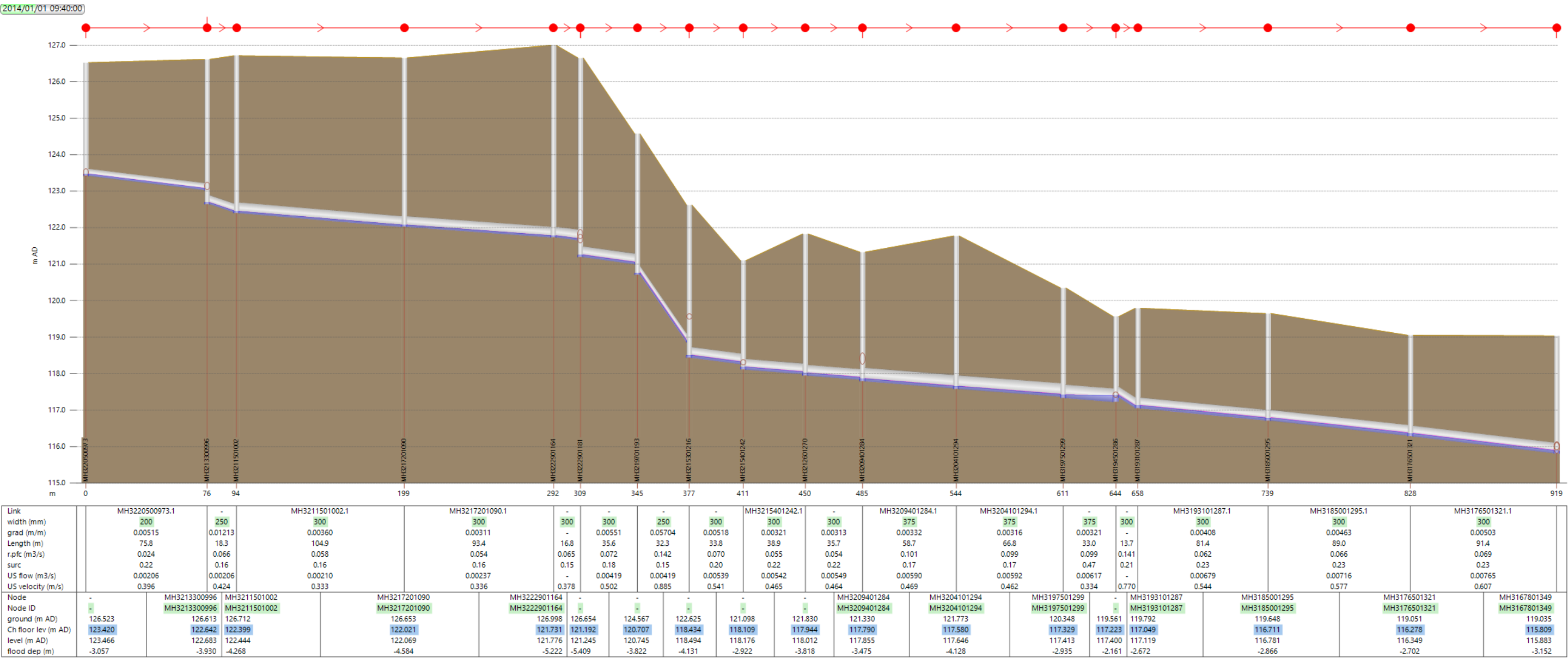


Figure 10 - Easterly Outlet: Existing DWF Downstream HGL on Paulart, Dundas, Shorncliffe (considering Flows from External Proposed Developments and without System Improvements)

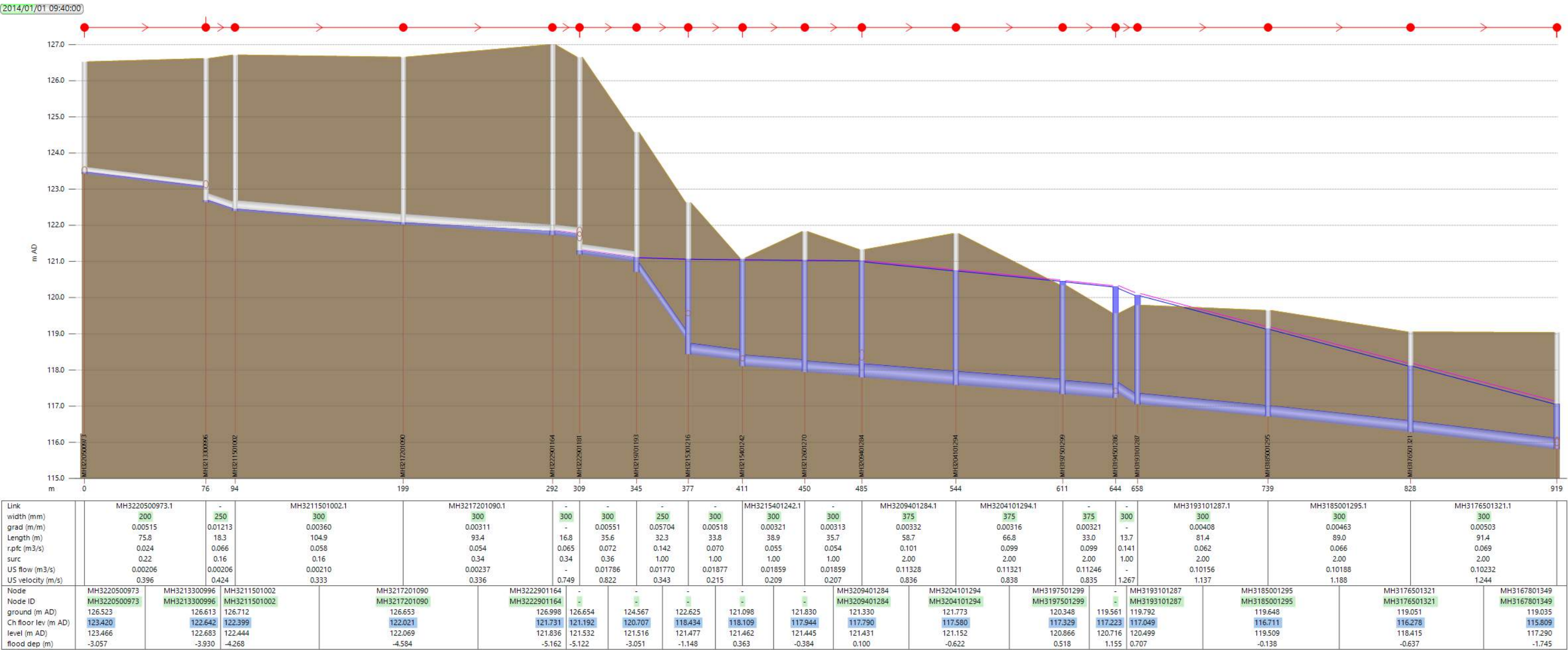


Figure 11 - Easterly Outlet: Existing DWF Downstream HGL on Paulart, Dundas, Shorncliffe (considering Flows from External Proposed Developments and with System Improvements Proposed by 5415 Dundas St. W. Development)

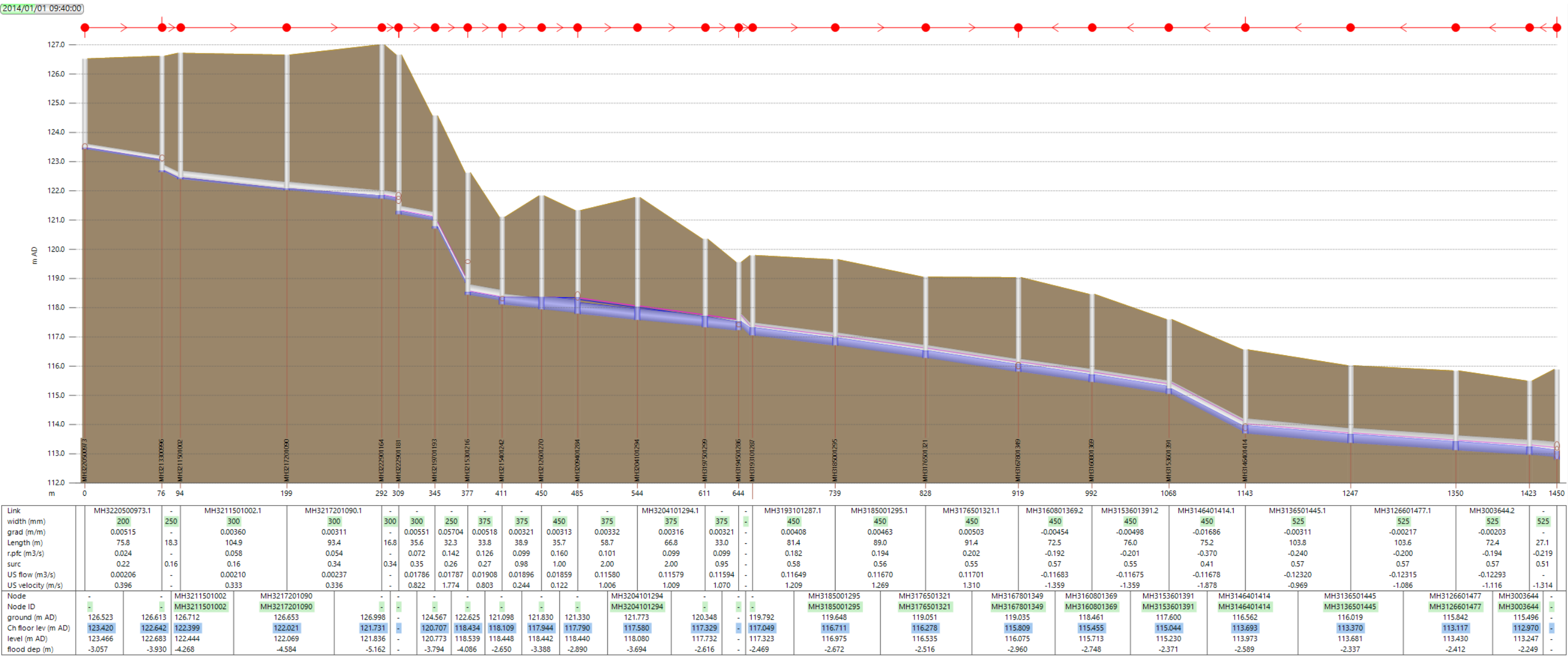


Figure 12 - Easterly Outlet: Existing DWF Downstream HGL on Paulart, Dundas, Shorncliffe (considering Flows from External Proposed Developments and with System Improvements Proposed by 5415 Dundas St. W. Development, and with subject Proposed Development)

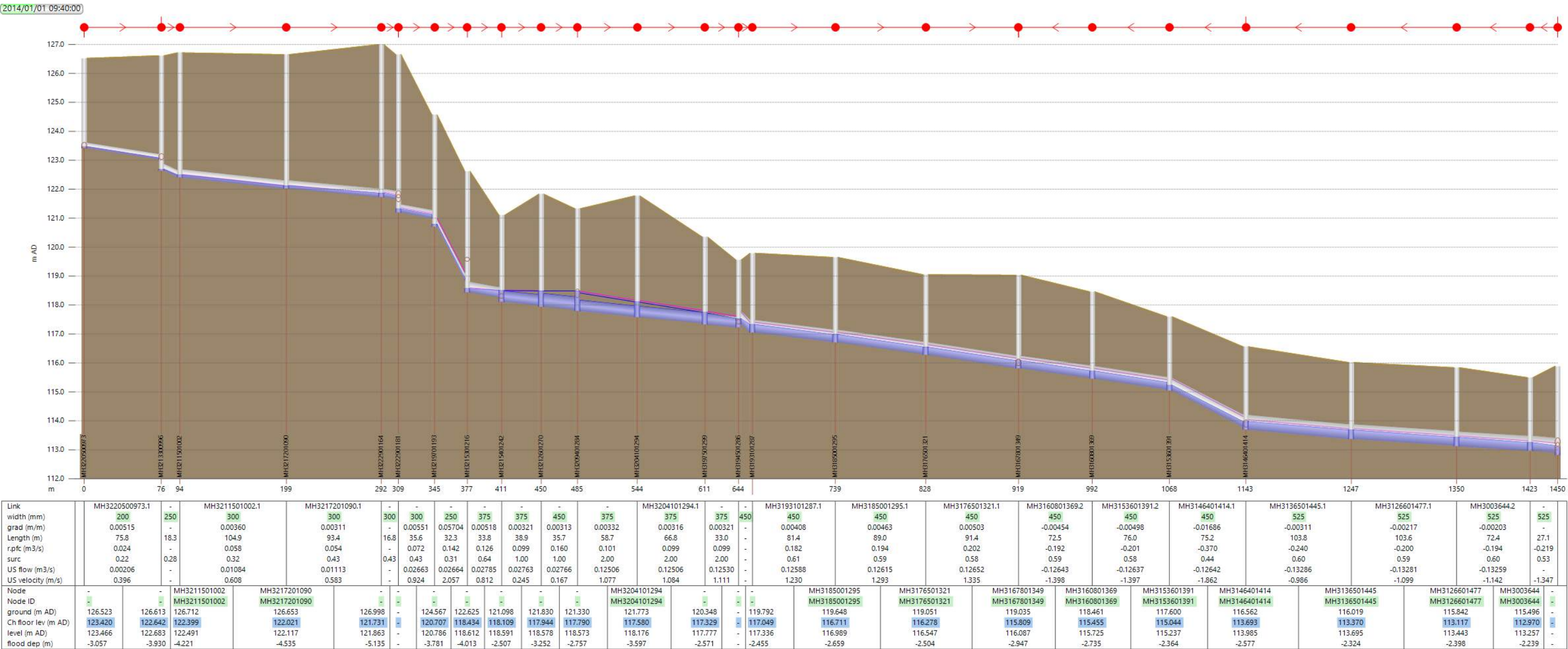


Figure 13 - Easterly Outlet: Existing WWF (May 12th, 2000 Storm) Downstream HGL on Paulart, Dundas, Shorncliffe

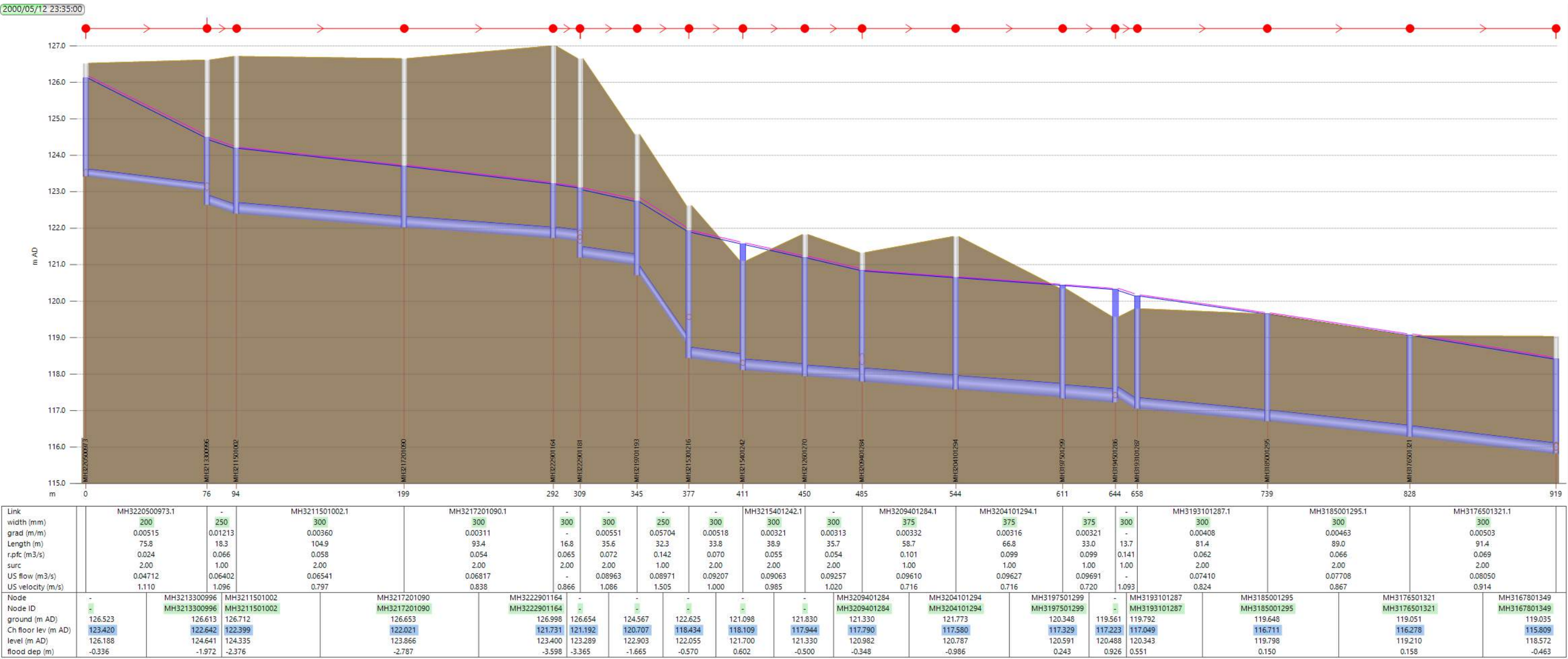
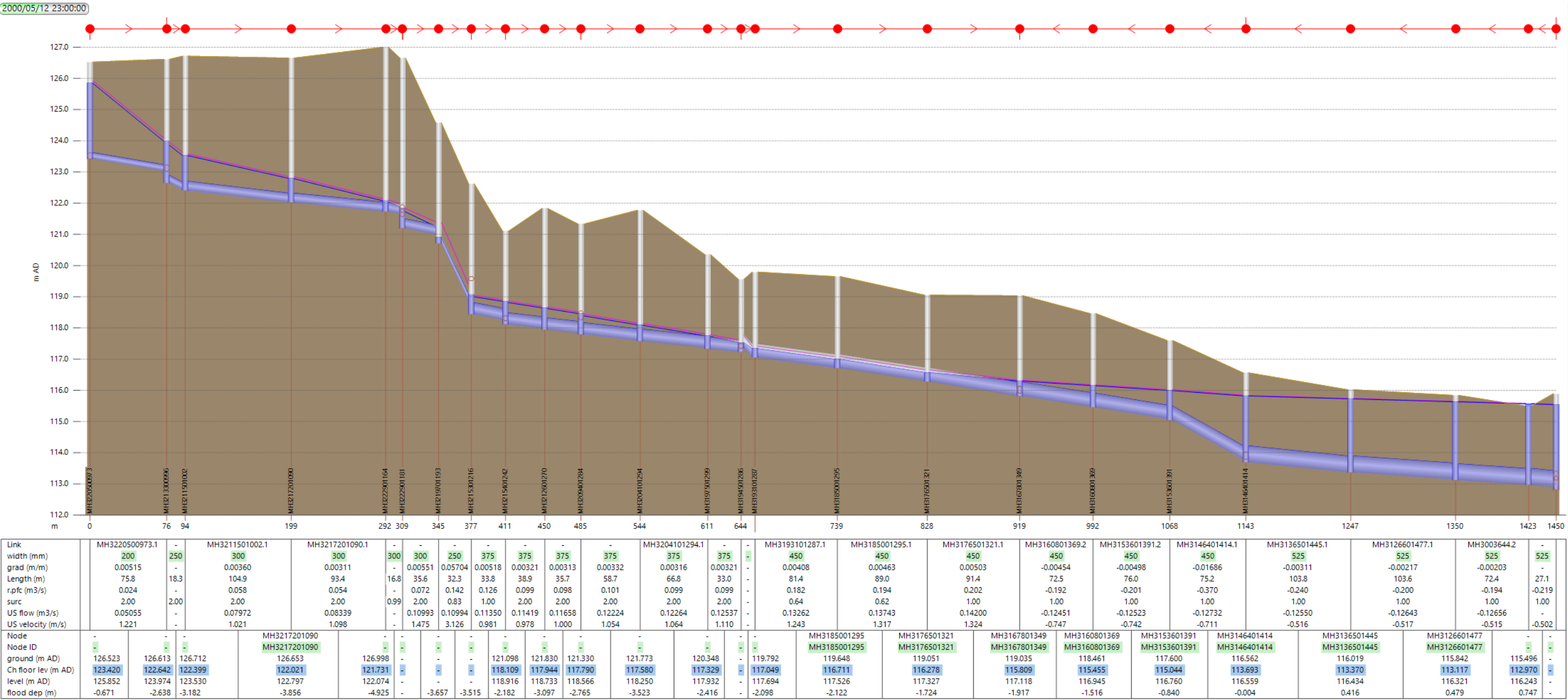


Figure 14 - Easterly Outlet: Post-Development WWF (May 12th, 2000 Storm) Downstream HGL on Paulart, Dundas, Shorncliffe (considering Flows from External Proposed Developments and with System Improvements Proposed by 5415 Dundas St. W. Development, and with subject Proposed Development)



f. Discussion

The results of the analysis are provided in the Hydraulic-Grade-Line (HGL) plots, provided in Figures 2-14, above. The results are summarized as follows.

- 1.1. With respect to Criterion 1, “Design Function”, which requires that there will be no surcharge in the sewer system under ‘design flow conditions’ (DWF), the results are:

- 1.1.1. In the Existing/Pre-Development Scenario: All downstream pipe segments are flowing well-within their respective capacities and Criteria 1 is satisfied.

- 1.1.1.1. Building B/Westerly Outlet: All downstream pipe segments are flowing well-within their respective capacities and Criteria 1 is satisfied.
- 1.1.1.2. Building A/Easterly Outlet: All downstream pipe segments are flowing well-within their respective capacities and Criteria 1 is satisfied.

- 1.1.2. In the Proposed/Post-Development Scenario:

- 1.1.2.1. Building B/Westerly Outlet: All downstream pipe segments are flowing well-within their respective capacities and Criteria 1 is satisfied. This applies, considering, even, the possibility that the Proposed/Future Development of 2-10 East Mall Cresc. Drains to this sewer.
- 1.1.2.2. Building A/Easterly Outlet:
- 1.1.2.2.1. There are two other proposed/future developments in this sewer-shed, which are considered herein both with, and without, the subject proposed development. These developments (5509 Dundas St. W. and 5415-5487 Dundas St. W.) cause the existing sewer to be non-compliant with Criterion 1 DWF scenarios. The FSR for 5415-5487 Dundas St. W. proposes improvements to the existing downstream sanitary sewer within Shorncliffe Road. These upgrades have been modelled herein. It was noted that, even with the upgrades proposed by 5415-5487 Dundas St. W., there remains some segments which do not comply with Criterion 1.
- 1.1.2.2.2. An additional scenario was completed by considering the Proposed Development, as a new, further, development in this sewer shed (in addition to 5509 and 5415-5487). This compounds the results arrived-at for the external developments, alone.
- 1.1.2.2.3. Consideration is therefore warranted for system improvements, on account of the external proposed developments and the proposed development, with respect to Criterion 1. A number of system improvements were proposed on account of the proposed development of 5415-5487 Dundas St. W.; increasing sanitary-sewer pipe sizes within Shorncliffe Road. This was modelled in Figures 11/12 (DWF) and Figure 14 (WWF), above, as per the FSR for 5415-5487 Dundas St. W. City staff are requested to investigate the status of the improvements proposed within Shorncliffe Road.

- 1.2. With respect to Criterion 2, “Basement Flooding Protection”, which requires that any surcharging in the sewer system will be at least 1.8m-below-grade under the ‘May 12th, 2000 Storm Event’ (WWF), the results are:

1.2.1. In the Existing/Pre-Development Scenario:

- 1.2.1.1. Building B/Westerly Outlet: Three segments downstream of the Site do not comply with Criterion 2.
- 1.2.1.2. Building A/Easterly Outlet: A number of pipe segments downstream (within Shorncliffe Road) do not comply with Criterion 2.
- 1.2.1.3. There are various solutions to addressing this result, which warrant discussion with City staff, as well as consideration for the development of 2-10 East Mall which will be subject to the same criteria:
 - 1.2.1.3.1. Increasing pipe sizes
 - 1.2.1.3.2. Inline sewage storage (for addressing WWF, only; which is suitable given that the system operates acceptable in DWF but not WWF).
 - 1.2.1.3.3. Re-measurement and calibration of the WWF system model, with additional sewer flow monitoring, to verify whether the WWF in the model is accurate.

1.2.2. In the Proposed/Post-Development Scenario:

- 1.2.2.1. Building B/Westerly Outlet: Three segments downstream of the Site do not comply with Criterion 2.
- 1.2.2.2. Building A/Easterly Outlet: A number of pipe segments downstream (within Shorncliffe Road) do not comply with Criterion 2. Improvements have previously been recommended (as part of the development of 5415-5487 Dundas St. W.) whereby the WWF results would be rectified. City staff are requested to confirm the status of the improvements proposed by that external development, as it relates to the system’s capacity to also address Criterion 2 pertaining-to the subject proposed development.

3. Conclusion

This report has provided an analysis by which it is concluded that the downstream local sanitary sewers in the area of 5500 Dundas Street West, extending westerly from the Site, have available capacity to accommodate the Proposed Development on the basis of Criterion 1, but that further review and consideration is required with respect to Criterion 2. For the downstream sanitary sewers extending easterly from the Site, the sewers' capacity requires further consideration with respect to other proposed developments in that sewer-shed.

Please contact the undersigned with any questions.

Respectfully submitted,



Daniel Bancroft, P.Eng.,
civilGo Engineering Inc.

APPENDIX A

- Sanitary Sewer Inspection Report by Aquaflow Technology – verification of Existing 600mm-dia. Sanitary Sewer Segment within Dundas St. W.



226 WILKINSON ROAD, BRAMPTON, ONTARIO L6T 4N7
(905) 792-8169

SANITARY SEWER INSPECTION REPORT

300 MM + 600 MM DIAMETER SANITAY SEWER

FOR

DUNDAS STREET WEST

CITY OF TORONTO

CONSULTANT: CIVIL GO
CONSULTANT'S REPRESENTATIVE: DANIEL BANCROFT

TUESDDAY, OCTOBER 28, 2025

INDEX:

- 1. TITLE PAGE AND INDEX**
- 2. SUMMARY REPORT AND CONCLUSIONS**
- 3. SKETCH OF SEWERS INSPECTED**

**SEWER CLEANING, VIDEO INSPECTION, INSITU REPAIRS &
MUNICIPAL ENGINEERING SERVICES**

2. SUMMARY REPORT AND CONCLUSIONS:

The inspection of the sanitary sewer for Dundas Street West was carried out by Steven Lostracco, P.Eng. of Aquaflow Technology, and was authorized by Daniel Bancroft of Civil Go. The inspection was carried out on Tuesday, October 31, 2025.

The purpose of this report was to confirm the pipe diameter, see attached drawing with pipe diameter and invert measure down information.

Report Prepared by:

A handwritten signature in blue ink, appearing to read 'S. Lostracco', with a long horizontal stroke extending to the right.

Steven Lostracco, P. Eng.

SAN MH 3201600635

E - 5.53m, 6004 CONC. SAN

N.W. - 5.58m, 3004 CONC. SAN

MH NOT VISIBLE
BURIED OR DOES
NOT EXIST.

