

Fieldgate East Lands Developments

**1000118982 Ontario Limited (Formerly
1045502 Ontario Limited and
1048605 Ontario Limited)
24T-21005/M, Z-17/21 & LOPA-06/21
Site Specific Water and Wastewater
Functional Servicing Report**

August 2025

File 09102



TYLin

Prepared for: 1000118982 Ontario Ltd.
(Formerly 1045502 Ontario Ltd.
1048605 Ontario Ltd.)

For Submission to: Regional Municipality of Halton and
the Town of Milton

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1. INTRODUCTION / BACKGROUND

The Region of Halton completed the Sustainable Halton Water and Wastewater Master Plan Update (SHW/WWMP) in October 2011 to provide direction for the provision of Regional Water and Wastewater Infrastructure for the urban expansion areas of Halton. The Boyne Survey (Milton Phase 3) community was identified in this plan and several regional services are planned to be constructed in support of the plan.

As a part of the secondary plan process, the Town of Milton retained AMEC Earth and Environmental to expand upon the Master Plan works and to develop an Area Servicing Plan (ASP) in November of 2012. The area servicing plan provides a greater level of detail on the provision of water and wastewater services for the Boyne Survey community.

Subsequent to the Area Servicing Plan, T.Y.Lin (formerly The Municipal Infrastructure Group Ltd.) and MTE Consultants prepared the Subwatershed Impact Study reports (SIS) in December 2018 (addended June 2019) for the Boyne West Community as a requirement of the draft plan process for development in Milton's urban expansion area.

T.Y.Lin was subsequently retained by the Boyne Landowners Group to prepare a Water / Wastewater Area Servicing Plan for the Boyne Survey Secondary Plan Area Phase 1 lands (i.e., Boyne West). The Boyne West ASP was prepared in support of development within Phase 1 of the Boyne Survey Secondary Plan Area, which is bound by 16 Mile Creek to the East, Britannia Road to the South, Tremaine Road to the West and Louis St. Laurent Avenue to the North. Boyne Survey Secondary Plan Area Phase 1 is located within the Indian Creek and 16 Mile Creek watershed. This Boyne West report provides further analysis of the water and wastewater services needed to support the Tertiary Plan as well as individual Draft Plans of Subdivision.

T.Y.Lin has been retained by 1000118982 Ontario Limited (Fieldgate Developments) to assist in obtaining the necessary approvals to permit the Proposed Development of the property generally located on the south side of Louis St. Laurent and west side of Bronte Street South, east of the Canadian National Railway tracks. The Subject Lands are legally described as Part of Lots 7 & 8, Concession 1, New Survey. The entire Draft Plan of Subdivision lands which were Draft Plan Approved in January 2024 and which are subject to the proposed red lined revision consist of 36.5 ha (90.19 acres) and the portion of the Subject Lands that are subject to the proposed Official Plan Amendment and Zoning By-Law Amendment (northern portion of Draft Plan of Subdivision) have an area of 14.74 hectares (36.42 acres). All lands are currently vacant.

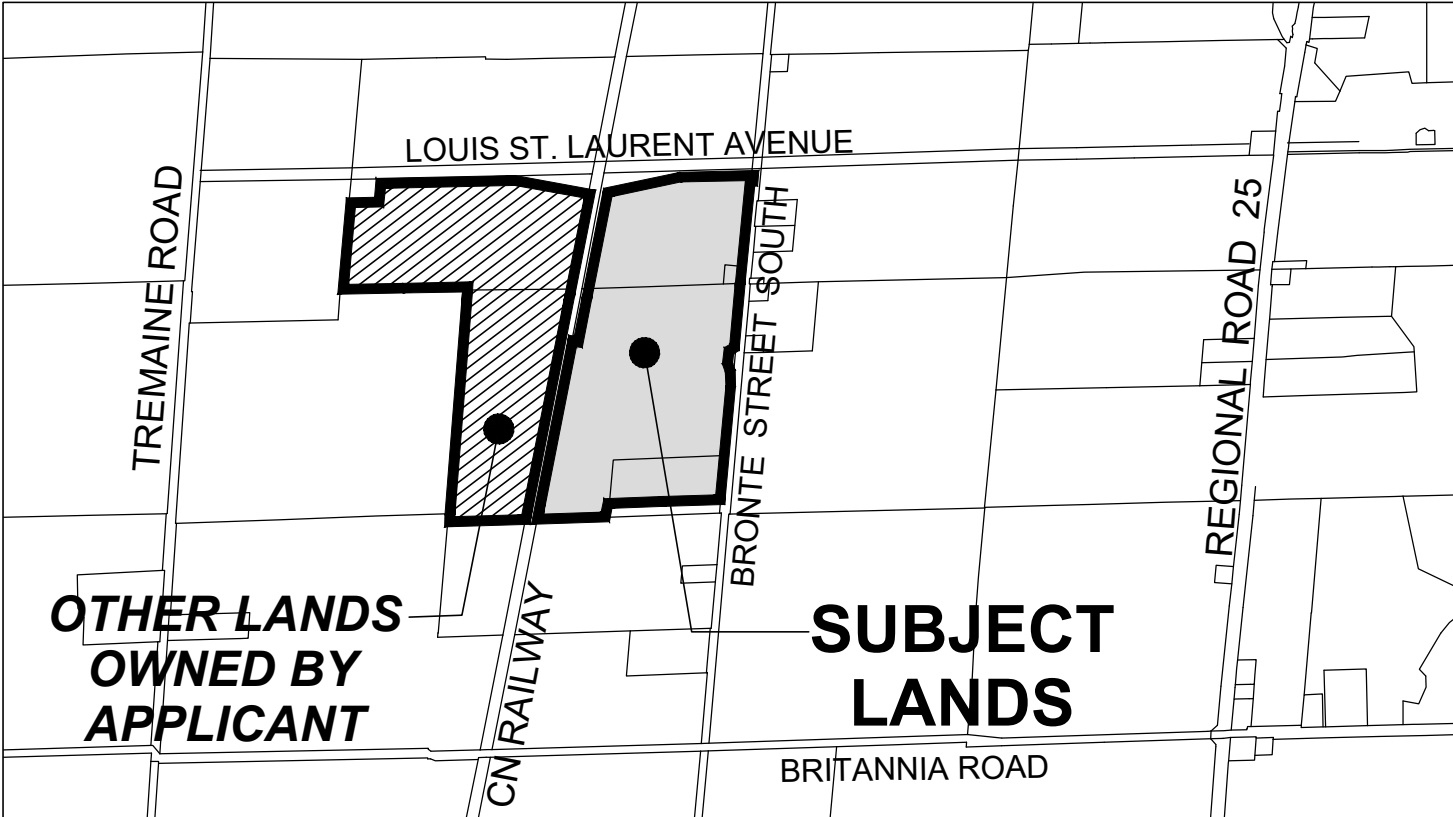
Applications were previously processed and approvals were granted for these lands related to an Official Plan Amendment (OPA No. 77 enacted in March 2023), Zoning By-Law Amendment (By-Law No. 018-2023 enacted in March 2023) and Draft Approved Plan of Subdivision (24T-21005/M approved in January 2024) to permit the development of high density residential uses, townhouse residential uses, commercial uses (all inside of the Secondary Mixed Use Node), a district park, active transportation link, NHS channel, related NHS buffers, and the servicing and stormwater management blocks.

This report has been prepared to support the applications which seek to modify the Draft Approved Plan of Subdivision through a red line revision to create a resized 'Secondary Mixed Use Node' (SMUN) consisting of a commercial component and a high density residential component. Specifically, the SMUN is proposed to consist of three blocks comprised of 2 commercial blocks and one high density residential block, consisting of 6.33 ha (15.64 ac) in total. The applications also seek to facilitate ground-related townhouse development beyond the limits of the SMUN on a new public road network within the northern portion of the Draft Plan of Subdivision.

The proposed resized SMUN and reconfiguration of the townhouse development beyond the limits of the SMUN requires an Official Plan Amendment and Zoning By-Law Amendment. Overall, the development proposal in the northern portion of the Draft Plan of Subdivision consists of townhouses, high-density residential uses, and commercial uses. The modification of the SMUN will now exclude the grade related residential units. The southern portion of the Draft Plan of Subdivision (consisting of the district park, active transportation link, NHS channel, related NHS buffers, and the servicing and stormwater management blocks) is not proposed to be changed through this application.

Figure 1 illustrates the Draft Plan prepared by Glen Schnarr & Associates Inc., dated June 16, 2025.

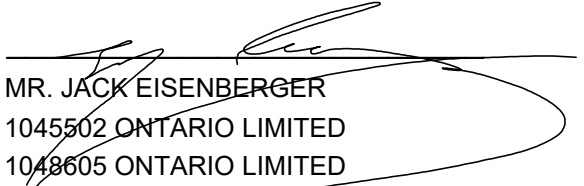
Figure 2 identifies all land uses within the secondary mixed use node.



**DRAFT PLAN OF SUBDIVISION
1045502 ONTARIO LIMITED &
1048605 ONTARIO LIMITED
FIELDGATE DEVELOPMENTS
(EAST LANDS)**

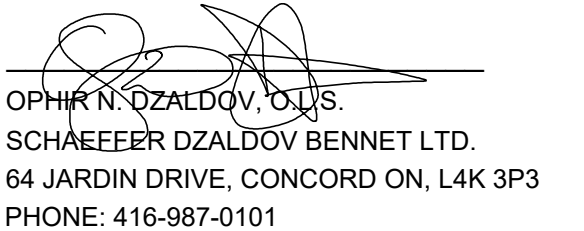
FILE #: 24T-21005/M
PART OF LOTS 7 & 8, CONCESSION 1, NEW SURVEY
TOWN OF MILTON
REGIONAL MUNICIPALITY OF HALTON

OWNERS CERTIFICATE
I HEREBY AUTHORIZE GLEN SCHNARR & ASSOCIATES INC. TO PREPARE AND SUBMIT THIS DRAFT PLAN OF SUBDIVISION TO THE TOWN OF MILTON FOR APPROVAL.

SIGNED 
MR. JACK EISENBERGER
1045502 ONTARIO LIMITED
1048605 ONTARIO LIMITED

DATE: JUNE 11, 2014

SURVEYORS CERTIFICATE
I HEREBY CERTIFY THAT THE BOUNDARIES OF THE LANDS TO BE SUBDIVIDED AS SHOWN ON THIS PLAN AND THEIR RELATIONSHIP TO ADJACENT LANDS ARE CORRECTLY AND ACCURATELY SHOWN.

SIGNED 
OPHIR N. DZALDOV, O.L.S.
SCHAEFER DZALDOV BENNET LTD.
64 JARDIN DRIVE, CONCORD ON, L4K 3P3
PHONE: 416-987-0101

DATE: JUNE 26, 2018

ADDITIONAL INFORMATION
(UNDER SECTION 51(17) OF THE PLANNING ACT) INFORMATION REQUIRED BY CLAUSES A,B,C,D,E,F,G, J, & L ARE SHOWN ON THE DRAFT AND KEY PLANS.
H) MUNICIPAL AND PIPED WATER TO BE PROVIDED
I) SANDY LOAM AND CLAY LOAM
K) SANITARY AND STORM SEWERS TO BE PROVIDED

LAND USE	BLOCKS	AREA (ha)	AREA (ac)	UNITS	DENSITY UPNHA	SDE
STREET TOWNHOMES - 6.4m (21')	1-20	2.34	5.78	114	48.72	86.64
DUAL FRONTAGE TOWNHOMES - 6.4m (21')	21-31	1.11	2.74	55	49.55	41.80
BACK-TO-BACK TOWNHOMES - 6.4m (21')	32-42	1.04	2.57	108	103.85	48.60
SECONDARY MIXED USE NODE	43-45	6.33	15.64			
DISTRICT PARK	46	15.68	38.75			
ACTIVE TRANSPORTATION LINK	47	0.64	1.58			
SERVICING BLOCK	48	1.00	2.47			
NHS (CHANNEL)	49	1.58	3.90			
CHANNEL BUFFER	50,51	0.96	2.37			
SWM POND	52	1.34	3.31			
SWM BUFFER	53	0.19	0.47			
ROAD WIDENING	54	0.02	0.05			
26m ROW (LENGTH: 99m)		0.35	0.86			
20m ROW (LENGTH: 456m)		0.93	2.30			
16m ROW (LENGTH: 1,846m)		2.99	7.39			
TOTAL	54	36.50	90.19	277	61.69	177.04

NOTES
- TYPICAL LOCAL/LOCAL DAYLIGHT RADII: 5m
- LOUIS ST. LAURENT/STREET 'B' DAYLIGHT TRIANGLE: 15.0m x 15.0m
- BRONTE ROAD SOUTH/STREET 'C' DAYLIGHT TRIANGLE: 15.0m x 15.0m
- SDE FACTORS:
STREET TOWNHOMES - 0.76
DUAL FRONTAGE TOWNHOMES - 0.76
BACK-TO-BACK TOWNHOMES - 0.45

 **GSAI**
Glen Schnarr & Associates Inc.

 SCALE 1:2000
(24 x 36)
JUNE 16, 2025

FIGURE 1

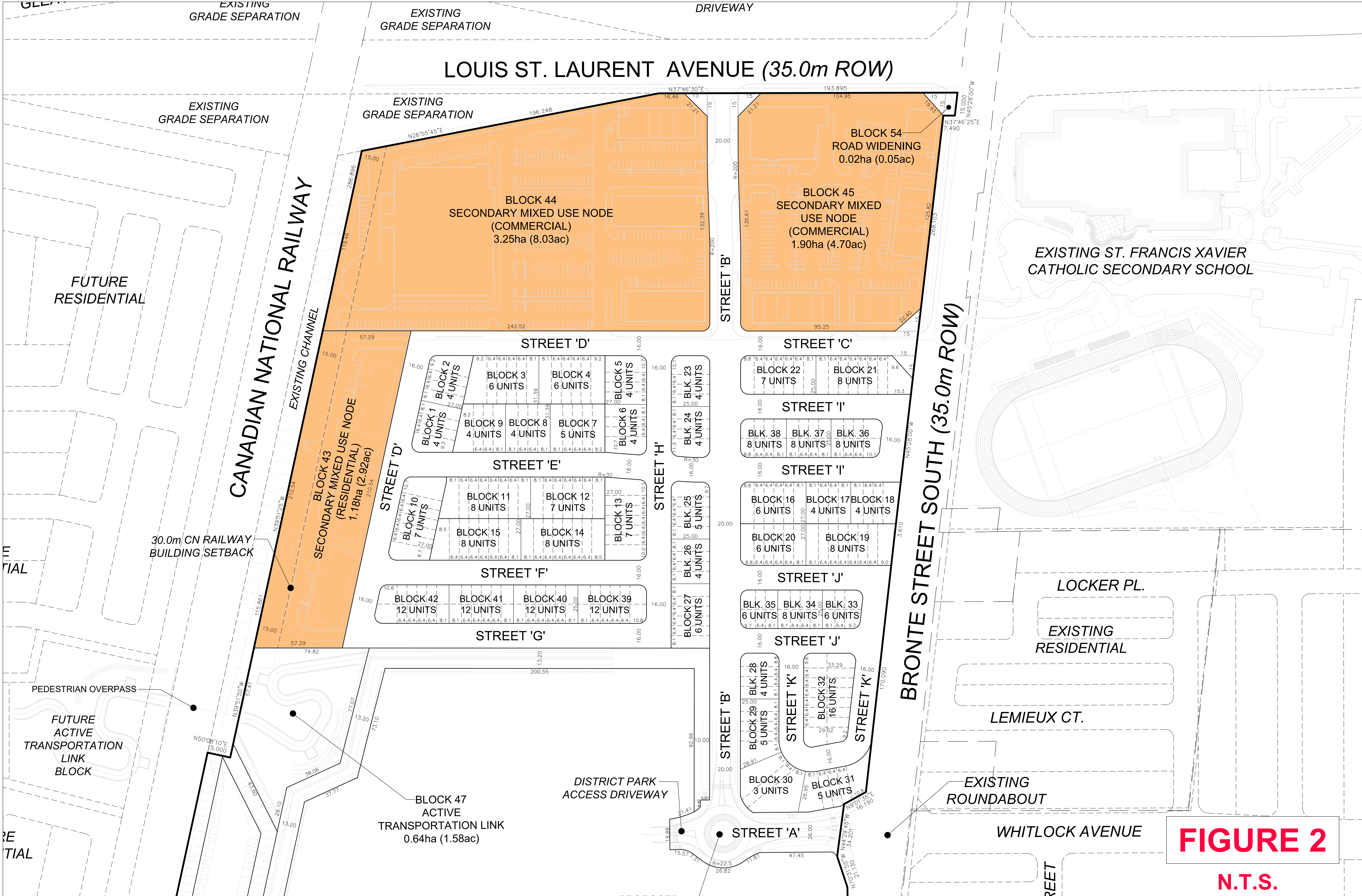


FIGURE 2
N.T.S.

2. PURPOSE OF THE REPORT

This report has been prepared to:

- Provide a location plan and description of the existing land uses.
- Summarize proposed land uses.
- Reference the Regional and Municipal design criteria for design of the proposed infrastructure.
- Provide a description and map of the existing/proposed watermains in the area.
- Provide a hydraulic analysis of various operational scenarios for the proposed water distribution network.
- Identify system redundancy (looping) and consideration of water quality (need for flushing) for any interim or permanent dead ends.
- Provide a preliminary grading plan to demonstrate site grading.
- Provide a description and map of the existing/proposed storm sewers in the area.
- Provide a description and map of the existing/proposed sanitary sewers in the area, and
- Identify development timing, servicing constraints, interim servicing solutions, and potential easements associated with the Draft Plan application.

3. FIELDGATE EAST LANDS

The Fieldgate East Subdivision is located immediately south of Louis St Laurent, east of the Canadian National Railway (CNR) and west of Bronte Street in the Town of Milton. The lands are presently vacant and had previously been used for farming purposes. The site is approximately 36.50 ha (90.19 ac.) in size. Earthworks operations on the site were conducted through a Site Alteration Permit approved in 2021.

As identified on the Draft Plan of Subdivision shown on **Figure 1**, the Fieldgate East Subdivision proposes a mix of land uses including a secondary mixed-use node with commercial and high-density blocks. Also incorporated within the Draft Plan of Subdivision are medium density blocks, a district park, a stormwater management pond and a channel, an Active Transportation Link (ATL) with walkways, trails and all pedestrian connectivity, including the CNR overpass.

The proposed land uses are summarized as follows:

Table 3-1: Proposed Land Uses

Land Use	Area	Units	Single Detached Equivalent Units (SDE)
Blocks 1 to 20 - Street Townhomes – 6.4m (21')	2.34	114	86.64
Blocks 21 to 31 - Dual Frontage Townhomes - 6.4m (21')	1.11	55	41.80
Blocks 32 to 42 - Back-to-Back Townhomes - 6.4m (21')	1.04	108	48.60
Blocks 43 to 45 - Secondary Mixed Use Node	6.33	477 (Block 43)	
Block 46 - District Park	15.68		
Block 47 - Active Transportation Link	0.64		
Block 48 - Servicing Block	1.00		
Block 49- NHS (Channel)	1.58		
Blocks 50-51 - Channel Buffer	0.96		
Block 52 - SWM Pond	1.34		
Block 53 - SWM Buffer	0.19		
Block 54 - Road Widening	0.02		
26m ROW (Length: 99m)	0.35		
20m ROW (Length: 456m)	0.93		
16m ROW (Length: 1,846m)	2.99		
TOTAL	36.50	754	177.04

As mentioned previously, the Draft Plan of Subdivision was approved in January 2024. With the proposed addendum, we anticipate the following development schedule:

Table 3-2: Development Schedule

Milestone	Timing
Zoning By-Law Amendment Approval	March 2023
Draft Plan Approval	January 2024
Redline Revisions to Draft Plan Approval	Fall 2025
Site Alteration/Earthworks	On-going to be completed in Fall 2025
Subdivision Design Approval	On-going to be completed Spring 2026
Site Servicing Construction	Spring – Summer 2026
Base Asphalt	Fall 2026
Utility Installation	Fall 2026
Subdivision Agreement & Registration	Winter 2026

4. SERVICING ALLOCATION STAGING

The wastewater drainage from the study area is to be directed to the Mid-Halton Wastewater Treatment Plant (WWTP). As per the Sustainable Halton Water and Wastewater Master Plan, the capacity of the Mid-Halton WWTP will be increased incrementally as development proceeds. The water supply for this area is planned to come from the integrated lake-based water system which includes the Burlington, Burloak, and Oakville Water Treatment Plants (WTP).

Prior to proceeding with development, each developer will be required to enter into an Allocation Agreement with the Region of Halton, which will specify the number of units permitted to develop and the associated costs.

1000118982 Ontario Limited has secured all the necessary servicing allocation for the subdivision through the 2020 and 2023 Allocation Programs, as summarized below.

Table 4-1: Allocation Plan

ALLOCATION PROGRAM	STANDARD SDEs			PURPOSE BUILT RENTAL SDEs		
	MULTI (TOWNHOUSES)			HIGH DENSITY APARTMENT		
	PROPOSED NUMBER OF TH UNITS WITH 3 OR MORE BEDROOMS	CONVERSION FACTOR	STANDARD SDEs REQUIRED	PROPOSED NUMBER OF APARTMENT UNITS WITH 2 OR MORE BEDROOMS	CONVERSION FACTOR	PURPOSE BUILT RENTAL SDEs REQUIRED
2020 ALLOCATION PROGRAM				477	0.45	214.65
2023 ALLOCATION PROGRAM	277	0.81	224.37			
1000118982 ONTARIO LIMITED ALLOCATION ASSIGNMENT			200 (89%)			500 (285.35 REMAINING)

5. WATER SERVICING

5.1 Background

The Fieldgate East Subdivision is located within the Boyne West area within Halton Region's Pressure Zone M4. Regional trunk mains have been constructed around the entire perimeter of the Boyne West lands, along with a trunk main which will bisect the area. The locations and sizes, for the Regional trunks are outlined in the 2011 Sustainable Halton W/WW Master Plan and are as follows:

Table 5-1: Regional Water Infrastructure

Trunk Watermain Projects					
Region IPFS ID	Location	From	To	Size	Project Timing
5947	Louis St. Laurent Ave.	Tremaine Rd.	Bronte Street	750 mm	Completed
5526	Louis St. Laurent Ave.	Bronte Street	Regional Road 25	750 mm	Completed
6660	Tremaine Rd.	Louis St. Laurent Ave.	Britannia Rd.	400 mm	Completed
5870	Bronte Street	Louis St. Laurent Ave.	Britannia Rd.	400 mm	Completed
6656	Britannia Rd.	Tremaine Rd.	Bronte Street	400 mm	Completed
5868	Britannia Rd.	Tremaine Road	Regional Road No. 25	400 mm/ 750 mm	Completed
Water Treatment Plant/Pumping Station Projects					
5061	30 ML Reservoir	Trafalgar Road	No. 5 Side Road (Zone M4)		Completed
6928	Appleby Zone 3 Booster Pumping Station				Completed

5.2 Analysis Methodology

In order to assess the water servicing requirements for the Fieldgate East Subdivision, Halton Region provided T.Y.Lin with its current InfoWater model. This model contained the Region's water demand projections and anticipated infrastructure improvements for 5-year intervals from 2012 through 2031.

While populations were included in the model to account for the development of the Boyne Survey lands, these were assigned to the trunk infrastructure surrounding the Blocks. To assess the specific servicing requirements, T.Y.Lin added the proposed internal distribution system to confirm the pipe sizes needed to supply the projected water demands and fire flows at the required minimum pressures.

5.3 Design Criteria

The Halton Region Water and Wastewater Linear Design Manual was utilized to establish servicing needs for the proposed subdivision. Table 5-2 summarizes the design criteria for population estimates and water design factors.

Table 5-2: Water Design Criteria

Design Criteria - Water	
Average Residential Water Supply Demand	265 L/cap/day
Average Commercial Water Supply Demand	225 L/employee/day
Maximum Day Factor	2.25
Residential Peak Hour Factor	4
ICI Peak Hour Factor	2.25
Equivalent Population Density (per Halton Region Linear Design Manual)	Persons/hectare
Street Townhouse, Intensification Area Townhouse, or Back-to-Back	260
Stacked Townhouses, Low/Mid-Rise Apartments outside Strategic Growth Areas	420
Light Commercial Areas	90
Community Services	40
Equivalent Population Density (per Halton Region 2022 Development Charges Background Study)	Persons/Unit
Single Family and Semi-Detached	3.772
Multiples except apartments (Townhouse)	2.851
Apartments	1.655

5.4 Proposed Water Servicing Plan

External Servicing – Boyne West

The water distribution analysis performed by T.Y.Lin generally confirms the Regional watermain contained in the SHW/WWMP (as listed in **Table 4.1**) provides sufficient water pressure and flow to service the area. The ultimate water servicing of the area includes a 400mm diameter trunk watermain along Bronte Street and 750mm trunk watermain along Louis St. Laurent Avenue. A 300mm-dia water service connection from the 750mm-dia watermain on Louis St. Laurent is provided to the subject site at Street 'B'. The Region's Capital Program also includes a 30 ML water reservoir near Trafalgar Road and No. 5 Side Road to provide storage for the M4 pressure zone.

The external trunk water works projects for Boyne West are shown in **Figure 3**.

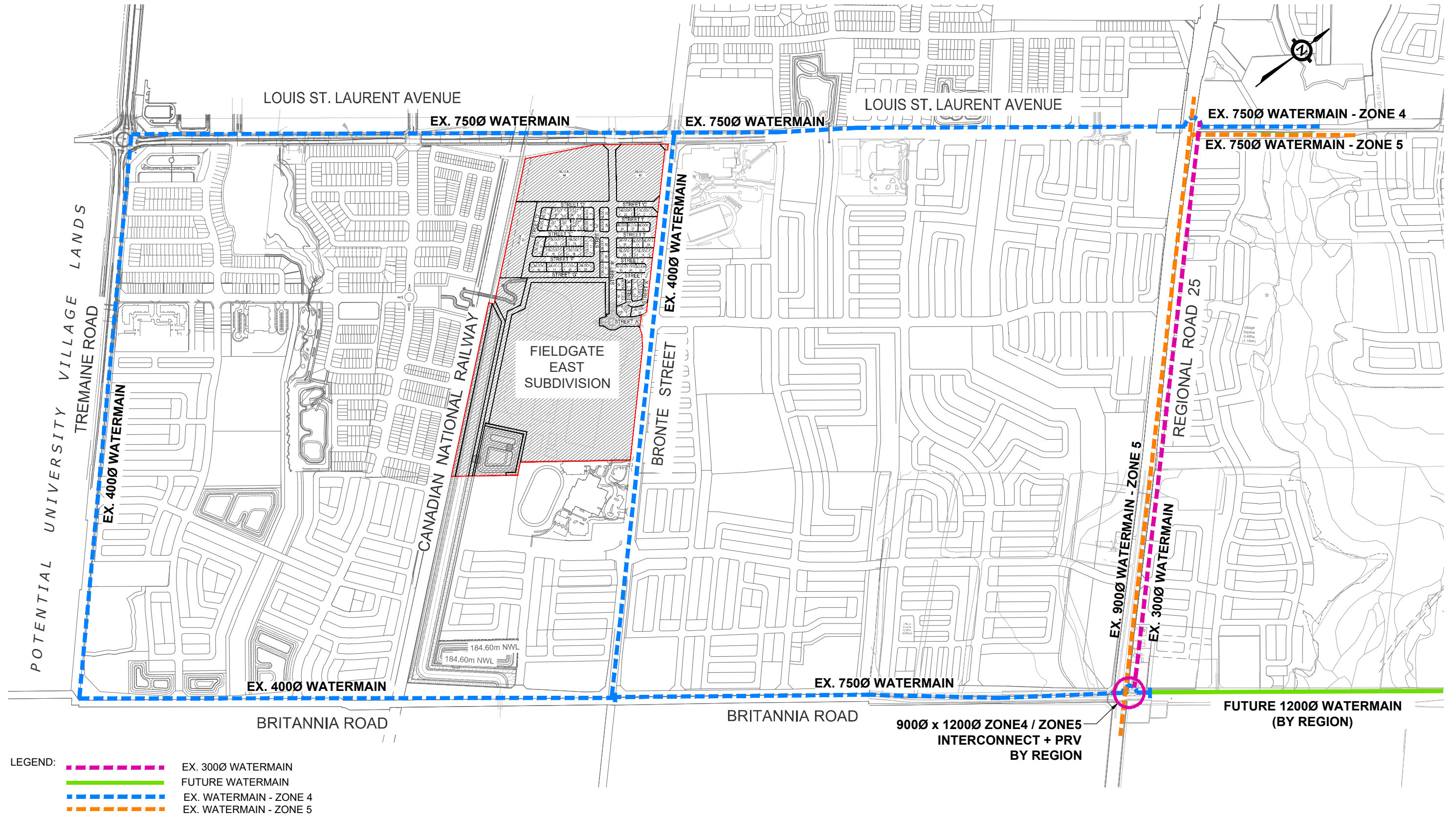
Internal Water Servicing

A 300mm watermain is proposed along Street 'A' and Street 'B' between the existing 400mm municipal watermain along Bronte Street and the existing 750mm watermain along Louis St. Laurent Avenue. A proposed network of 150mm, 200mm, and 300mm watermain has been designed to service the proposed residential and mixed use blocks. Details on the internal service connections shall be provided during the detailed design stage. The water distribution analysis performed by T.Y.Lin generally confirms that the minimum pressures within the service area under peak hour demands meet the Region's design criteria (>275 KPa) with no points within the local distribution system dropping below 310 kPa.

All nodes within the study area have also been evaluated for the available fire flow. All nodes meet the requirement for either residential fire flow (90 L/s) or commercial fire flow (>250 L/s), as appropriate given the adjacent land uses.

The modelling results are provided in **Appendix A**.

File: G:\Projects\2019\09102 - Fieldgate East Detailed Design\SR\FIG 3 & 5 - SNUN - SAN&WM REGIONAL TRUNKING.dwg Layout: FIG 3 - WM-11X17 Date: Aug 15, 2025 11:42am, Edit By: dense, morales

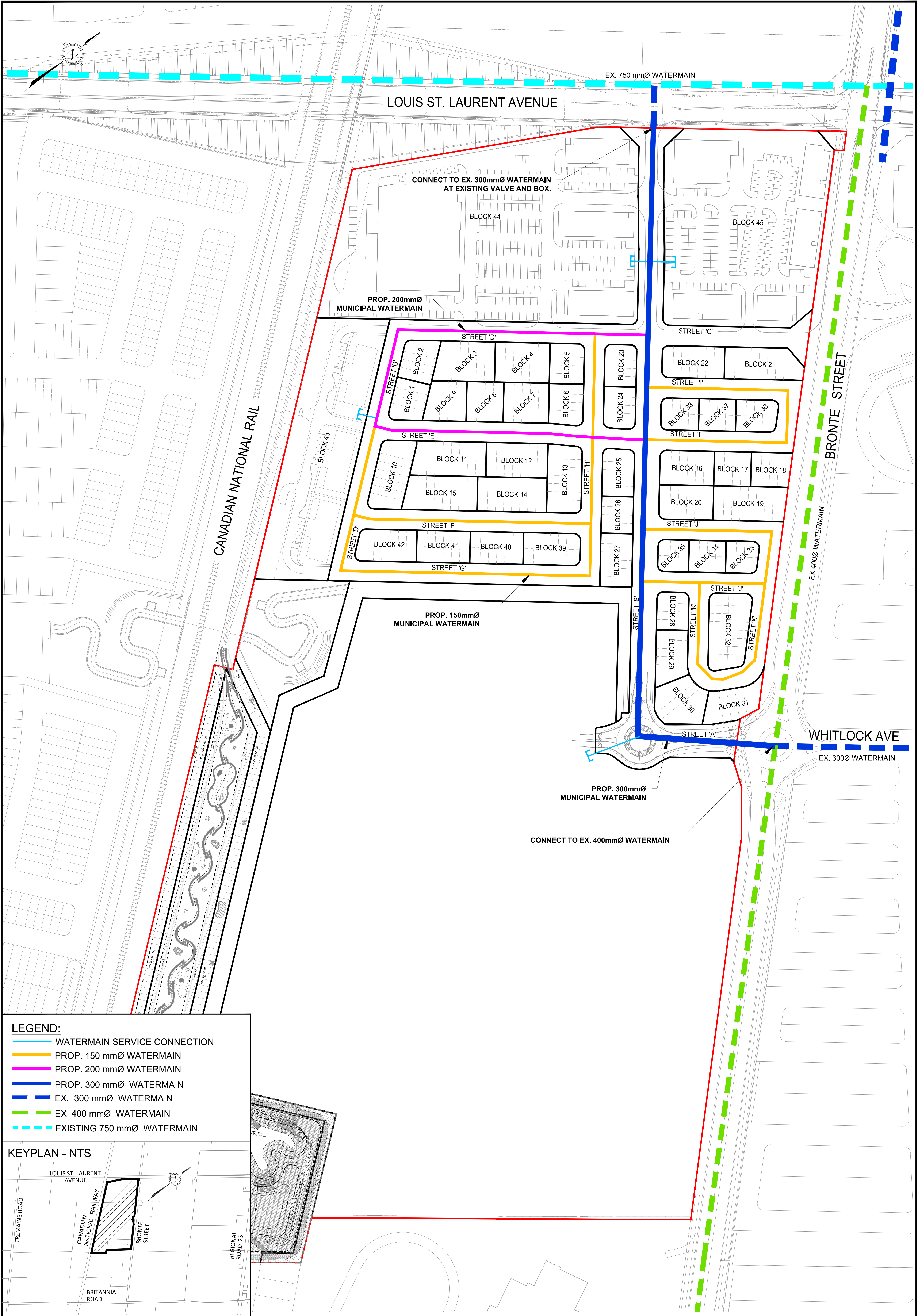


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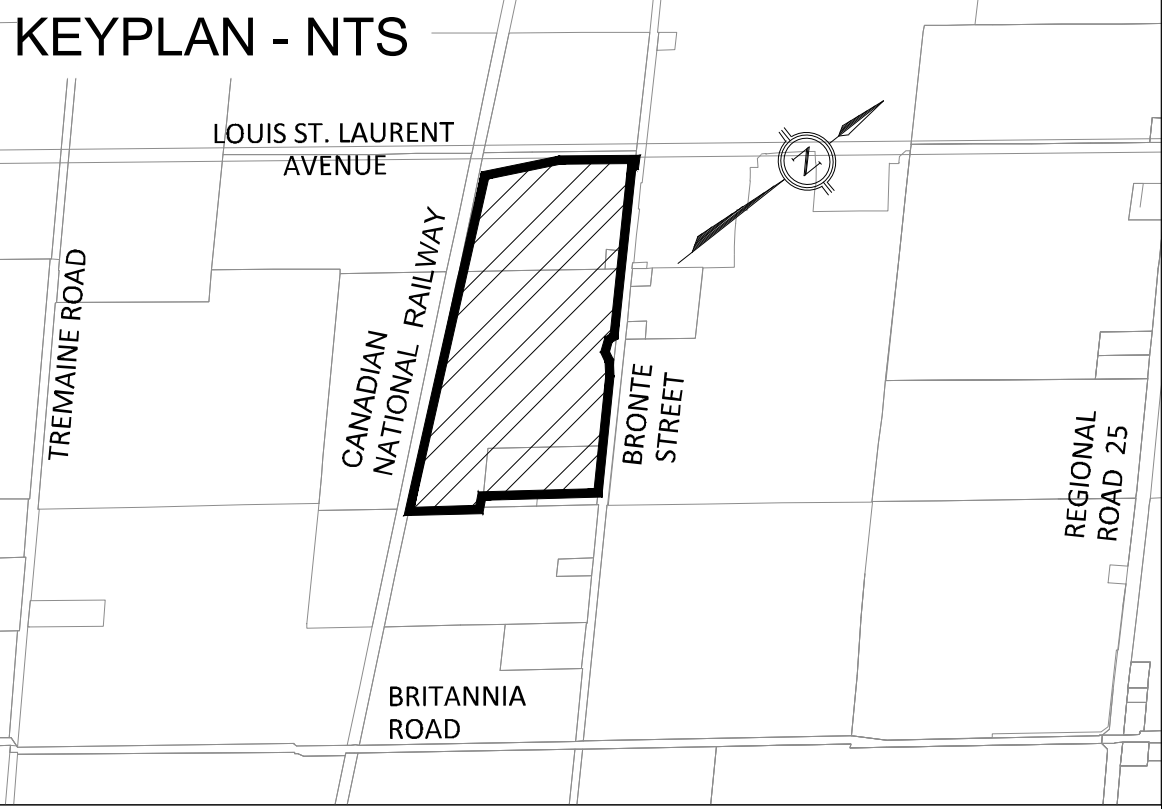
FIELDGATE EAST SUBDIVISION
FUNCTIONAL SERVICING REPORT
REGIONAL WATER DISTRIBUTION SYSTEM

SCALE: 1:10,000		PROJECT No.
DATE: AUGUST 2025		09102
DESIGNED BY: S.S.	DRAWN BY: S.S./T.T.	FIGURE No.
CHECKED BY: D.M.	CHECKED BY: D.M.	3



LEGEND:

- WATERMAIN SERVICE CONNECTION
- PROP. 150 mmØ WATERMAIN
- PROP. 200 mmØ WATERMAIN
- PROP. 300 mmØ WATERMAIN
- EX. 300 mmØ WATERMAIN
- EX. 400 mmØ WATERMAIN
- EXISTING 750 mmØ WATERMAIN



FIELDGATE EAST SUBDIVISION
FUNCTIONAL SERVICING REPORT
PROPOSED LOCAL WATER WORKS

SCALE:	1:1250	PROJECT No.	09102
DATE:	AUGUST 2025	FIGURE No.	4
DESIGNED BY: S.S.	DRAWN BY: S.S./T.T.	CHECKED BY: D.M.	CHECKED BY: D.M.



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Suite 315
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6. WASTEWATER SERVICING

6.1 Background

The Fieldgate East Subdivision is located within the existing Mid-Halton wastewater drainage area and is to be serviced by the Mid-Halton WWTP. The locations and sizes, for the Regional trunks constructed to service the Boyne West lands are outlined in the 2011 Sustainable Halton W/WW Master Plan and are as follows:

Table 6-1: Regional Wastewater Infrastructure

Trunk Wastewater Main / Feedermain Projects					
Region IPFS ID	Location	From	To	Size	Project Timing
5900	Britannia Road	Future Savoline Boulevard	300 m West of Regional Road 25	750-1200 mm dia.	Completed
5905	Britannia Road	East of Tremaine Road	Future Savoline Boulevard	375 mm dia.	Completed
5906	Future Savoline Boulevard	Britannia Road	Louis St. Laurent	750 mm dia.	Partially Completed
5945	Mid Halton new sewer/outfall				Completed
6380	New 3 rd Line	700 m north of Dundas Street	Dundas Street	2400 mm dia.	Completed
6381	New Road alignment	Lower Base Line	3 rd Line	2400 mm dia.	Completed
6382	Regional Road 25	Boyne WWPS	Lower Base Line	2100 mm dia.	Completed
6550	Louis St Laurent	Tremaine Road	Tremaine Road WWPS	525 mm dia.	Completed
Wastewater Treatment Plant/Pumping Station					
6383	Mid Halton WWTP Phase 4/5 expansion from 75 ML/d to 125 ML/d				Completed
6384	Mid Halton North Pumping Station expansion				Completed

6.2 Analysis Methodology

Wastewater services for the Boyne Neighbourhood Area will be under the jurisdiction of Halton Region, and the proposed servicing has been designed utilizing the existing models and infrastructure in place. Servicing within Boyne Neighbourhood will be a combination of gravity sewers and pump stations. The Master plan set out the preferred servicing strategy and location of Trunk sewers, pump stations and forcemains to support the development of these lands.

6.3 Design Criteria

The Halton Region Water and Wastewater Linear Design Manual was utilized to establish servicing needs for the proposed subdivision. Table 6-2 summarizes the design criteria for population estimates and wastewater design factors.

Table 6-2: Sanitary Design Criteria

Design Criteria – Wastewater	
Average Residential Flow	215 L/cap/day
Average Commercial Flow	185 L/emp/day
Inflow and Infiltration Design Allowance	0.286 L/s/hectare
Maximum Velocity	3.0 m/s
Minimum Velocity	0.6 m/s
Equivalent Population Density (per Halton Region Linear Design Manual)	Persons/hectare
Street Townhouse, Intensification Area Townhouse, or Back-to-Back	260
Stacked Townhouses, Low/Mid-Rise Apartments outside Strategic Growth Areas	420
Light Commercial Areas	90
Community Services	40
Equivalent Population Density (per Halton Region 2022 Development Charges Background Study)	Persons/Unit
Single Family and Semi-Detached	3.772
Multiples except apartments (Townhouse)	2.851
Apartments	1.655

6.4 Proposed Wastewater Servicing Plan

External Servicing – Boyne West

The primary trunk wastewater infrastructure required for the Boyne West lands consist of an existing 1200mm-dia trunk sewer on Britannia Road, between Bronte Street and Regional Road 25, and an existing 2100mm-2400mm trunk sewer on Regional Road No. 25 from Britannia Road to south of Lower Base Line. This infrastructure is identified in **Table 6-1**. The external trunk wastewater works projects for Boyne West are shown on **Figure 5**.

Other external Regional wastewater servicing works undertaken by the Region of Halton include the Phase 4/5 Mid-Halton WWTP expansion.

Internal Servicing

The Fieldgate East subdivision will be serviced via a crossing on Bronte Street and a connection to the existing 250mm sanitary sewer on Whitlock Avenue within the Mattamy Church lands. This connects to the existing sanitary sewer on the Trinison Main Sail lands down to the existing trunk sewer on Britannia Road. The external sewer infrastructure within the Mattamy Church subdivisions is in place for the development of this area.

A local sanitary sewer network has been designed according to the Region's Water and Wastewater Linear Design Manual. Preliminary sanitary servicing and drainage plans have been prepared and presented in **Figure 6**. A sanitary design sheet is included in **Appendix B**.

Key design criteria of the proposed sanitary sewer network are summarized below.

- The sanitary sewers have been designed with a minimum size of 200mm-diameter per the Region standards.
- The sanitary sewers have been designed with sufficient slopes to ensure the Region's minimum velocity is met where applicable.
- The first leg of each sanitary sewer is graded to a minimum of 1.0%.
- The sanitary sewers will discharge into the existing municipal sanitary sewer network at the Bronte Street and Whitlock intersection.

Due to capacity constraints of the existing 250mm sewer on Whitlock Avenue, the service connection for the district park will be provided through a proposed 200mm sanitary connecting to the existing manhole on Bronte Street. This connects to the existing 200mm sanitary on Holbrook Court and down to the existing trunk sewer on Britannia Road. The proposed sanitary works are shown on **Figure 6**.

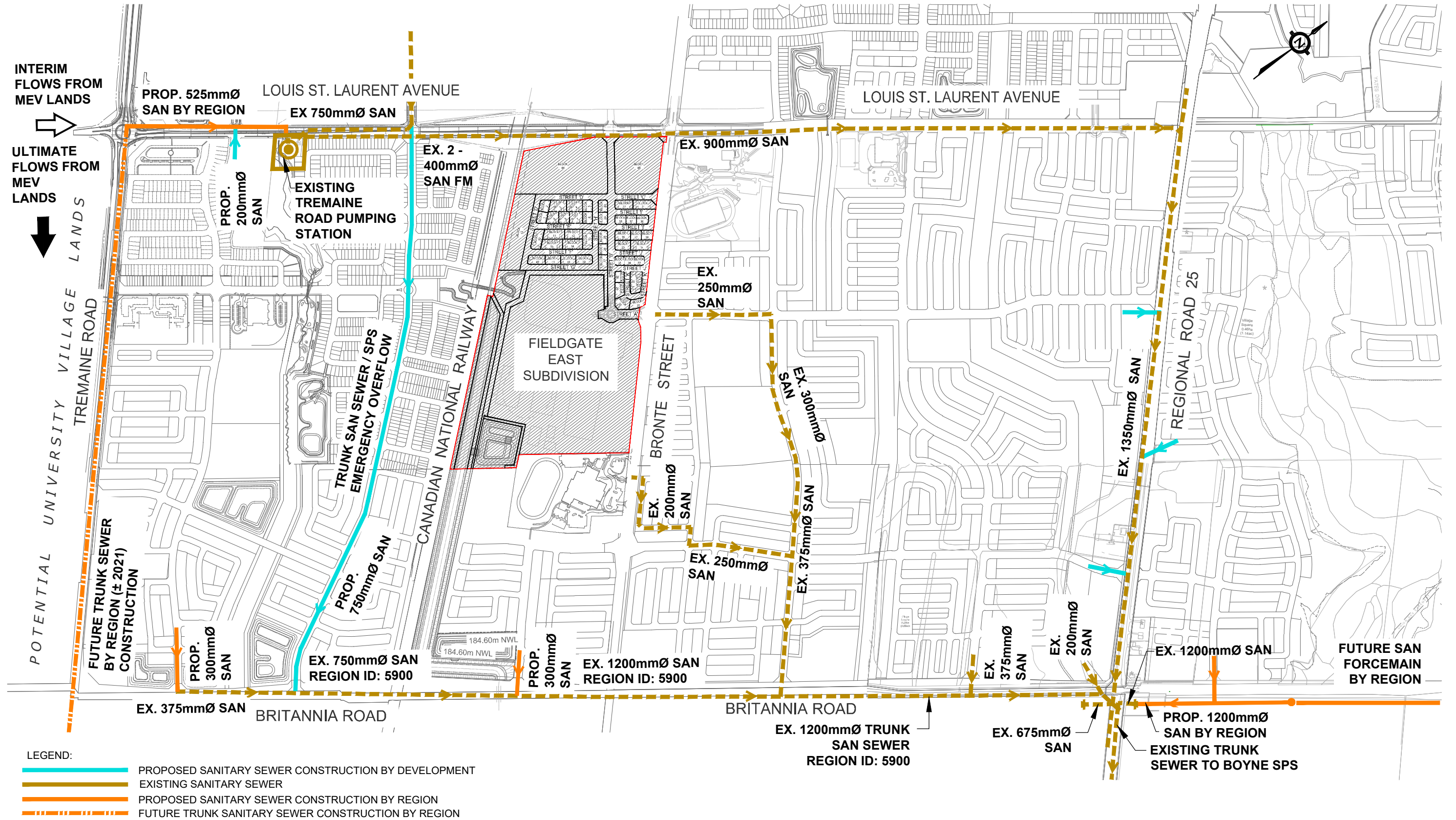
Details on the internal service connections shall be provided during the detailed design stage.

There is no external drainage to be accommodated within the design of the Fieldgate East Subdivisions local sewer network.

There are no downstream sanitary constraints to the development of these lands. No downstream easements are required for the development of these lands.

Sanitary sewer design sheets for this network are presented in **Appendix B**.

File: G:\Projects\2020\09102 - Fieldgate East Detailed Design\SR\FIG 3 & 5 - SAN - SAN\WM REGIONAL TRUNK.dwg, Layout: FIG 5 - SAN-1X17 Date: Aug 15, 2025 - 11:43am, Edit By: denise.morales

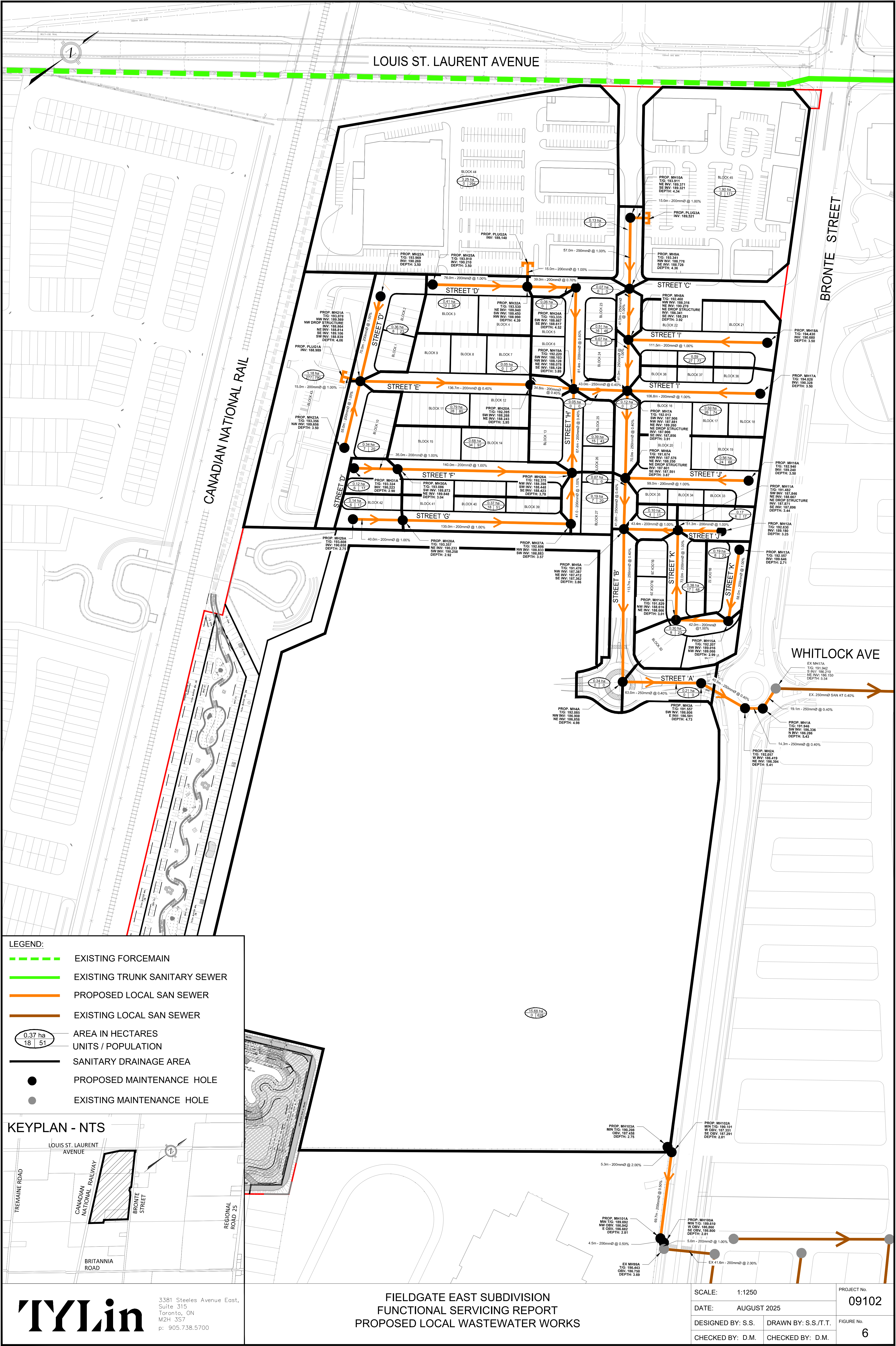


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FIELDGATE EAST SUBDIVISION
FUNCTIONAL SERVICING REPORT
REGIONAL TRUNK WASTEWATER DISTRIBUTION SYSTEM

SCALE: 1:10,000		PROJECT No.
DATE: AUGUST 2025		09102
DESIGNED BY: S.S.	DRAWN BY: S.S./T.T.	FIGURE No.
CHECKED BY: D.M.	CHECKED BY: D.M.	5



FIELDGATE EAST SUBDIVISION
FUNCTIONAL SERVICING REPORT
PROPOSED LOCAL WASTEWATER WORKS

SCALE:	1:1250	PROJECT No.	09102
DATE:	AUGUST 2025	FIGURE No.	6
DESIGNED BY: S.S.	DRAWN BY: S.S./T.T.	CHECKED BY: D.M.	CHECKED BY: D.M.

TYLin

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Suite 315
Toronto, ON
M2H 3S7
p: 905.738.5700

7. STORMWATER SERVICING

A preliminary storm drainage plan for the Fieldgate East Subdivision has been prepared and presented in **Figure 7**. The figure includes proposed municipal sewers, trunk sewers and drainage tributary areas.

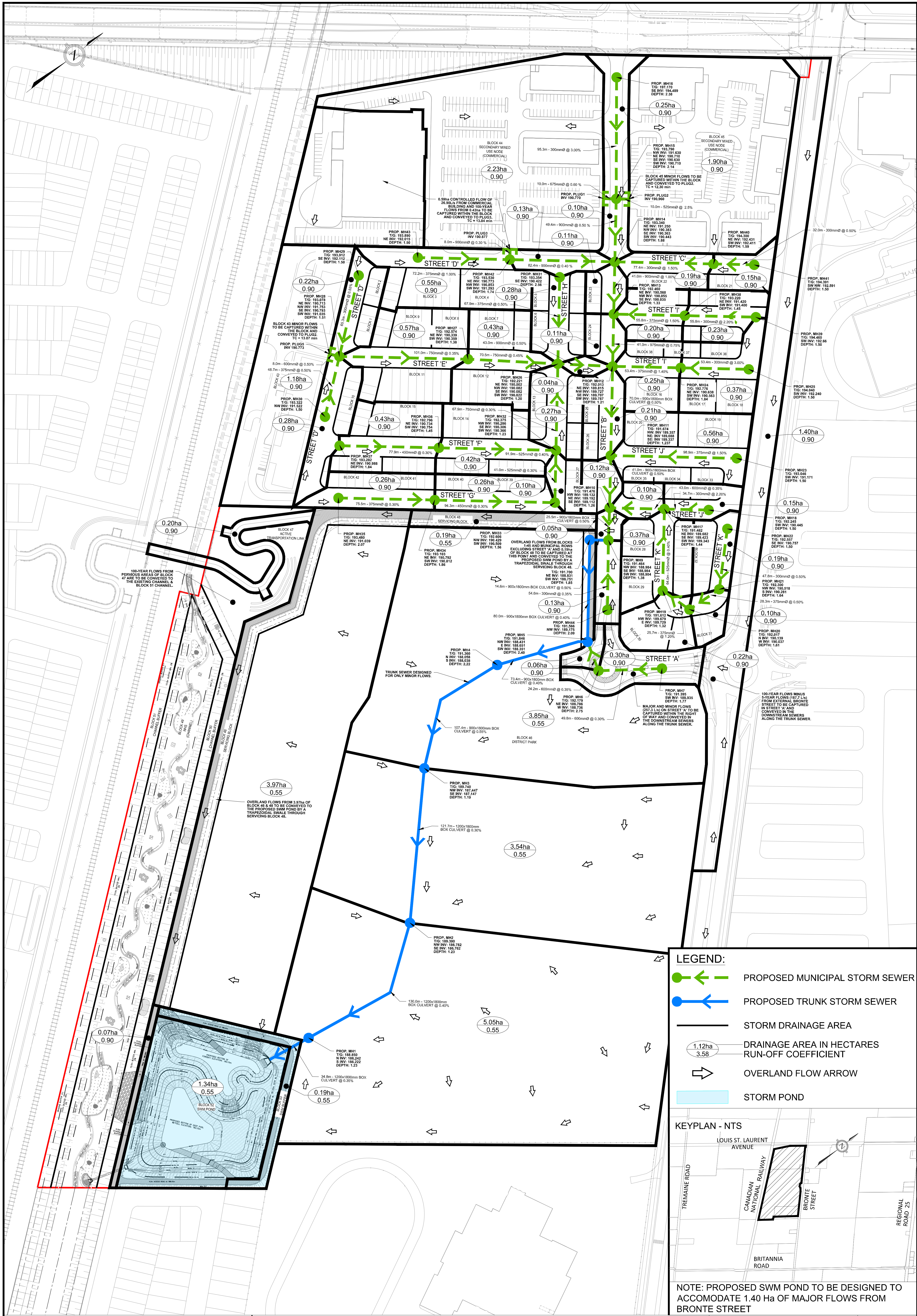
The proposed storm drainage design for the Fieldgate East subdivision will adhere to the Town of Milton Standards. The following is a summary of the storm sewer network for the proposed subdivision.

- The proposed municipal storm sewers have been designed to capture and convey 5-year storm flows to the proposed trunk storm sewer at MH8 from residential Blocks 1-42, Mixed Use Node Blocks 43-45 and public ROWs excluding Street 'A' within the subdivision.
- The proposed storm sewer network will convey 100-year flows from the western portion of Block 44. Roof run-off from the largest building in Block 44 will be controlled to 26.90 L/s. The difference between the 100-yr and 5-yr run-off from the western portion of Block 44 (i.e. 177.76 L/s) and the controlled run-off from the roof top of one of the buildings in Block 44 has been accounted for as point loads in the storm sewer design sheets.
- The municipal storm sewers within Street 'A' have been designed to capture and convey 100-year storm flows from 1.40ha of Bronte Street (i.e. 187.70 L/s) as well as 100-year flows from Street 'A' to the trunk storm sewer at MH5 (i.e. 257.30 L/s).
- The 900mm x 1800mm & 1200mm x 1800mm storm trunk sewers through the District Park Block 46 have been designed to convey flows from all municipal storm sewers as well as 5-year storm flows from 12.44ha of Block 46 (District Park) to the proposed SWM Pond.
- 100-year overland flows less 5-year storm flows from Blocks 1-45 and all public ROWs, excluding Street 'A' and a portion of Block 44, will be conveyed via the ROWs to a capture point at the North end of Servicing Block 48 to be conveyed to the SWM Pond via a trapezoidal channel located within Block 48.
- Due to site grade constraints, the proposed trunk storm sewer pipes will consist of 900mm x 1800mm and 1200mm x 1800mm box culverts and will be constructed at 0.35% to 0.55% slopes. The anticipated cover on the box culverts will satisfy the 1.20m minimum cover.

Figure 7 can be referenced to review the overland flow routes for storm events greater than the 5-year storm.

For more details regarding the stormwater management approach and design please reference the ***Fieldgate East Subdivision Stormwater Management Study***, dated August 2025.

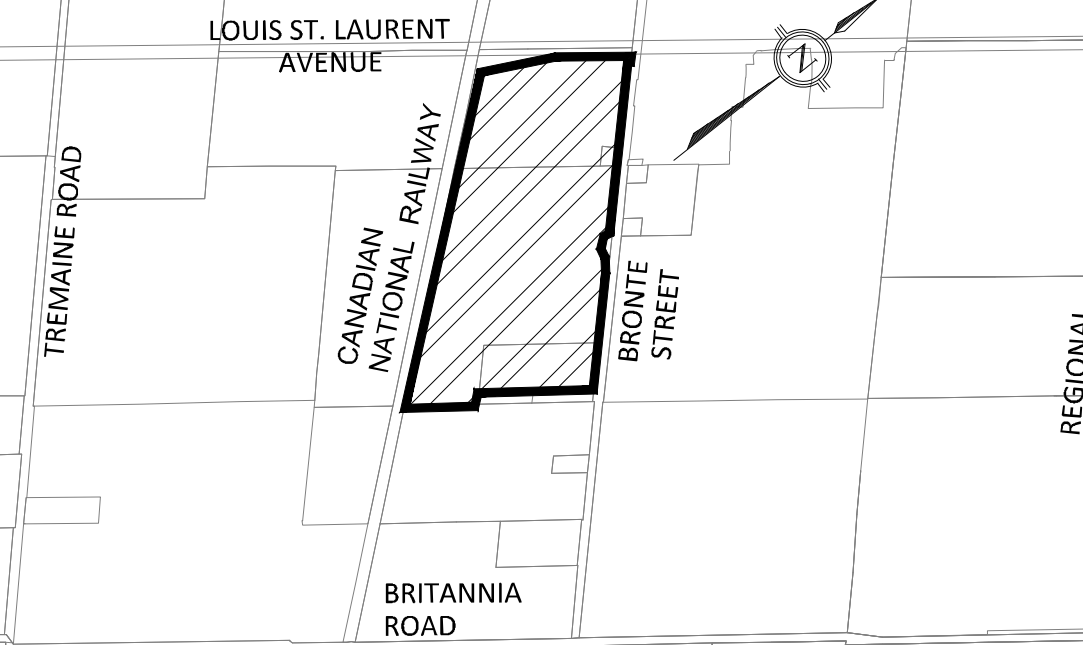
Storm sewer design sheets for this network are presented in **Appendix C**.



LEGEND:

- PROPOSED MUNICIPAL STORM SEWER
- PROPOSED TRUNK STORM SEWER
- STORM DRAINAGE AREA
- DRAINAGE AREA IN HECTARES
RUN-OFF COEFFICIENT
- OVERLAND FLOW ARROW
- STORM POND

KEYPLAN - NTS



NOTE: PROPOSED SWM POND TO BE DESIGNED TO ACCOMMODATE 1.40 Ha OF MAJOR FLOWS FROM BRONTE STREET

8. GRADING

A preliminary grading plan for the Fieldgate East Subdivision has been prepared and presented in **Figure 8**. This shows the relationship between the proposed road and the existing ground. **Figure 9.1** and **Figure 9.2** provide cross-section views.

Site grading for the Fieldgate East subdivision will adhere to the Town of Milton Standards. Road grades will use the Town minimum of 0.5%. The proposed grading design has been prepared in accordance with the Town of Milton Standards with centerline grades varying from 0.5% to 5.0%.

Roads have been graded to ensure positive drainage of major system flows from Blocks 1-45 towards a 100-year capture north of Street 'A' at Block 48. Overland flow is to be conveyed via a trapezoidal channel within the Block 48 to the proposed SWM Pond. No major flows from Blocks 1-45 and public ROWs are to enter the District Park Block.

Proposed grades will match existing elevations and proposed grades (future subdivisions) along the property limits. Sufficient cover has been considered for proposed below ground municipal services such as storm sewers, sanitary sewers and watermains.

KEYPLAN - NTS



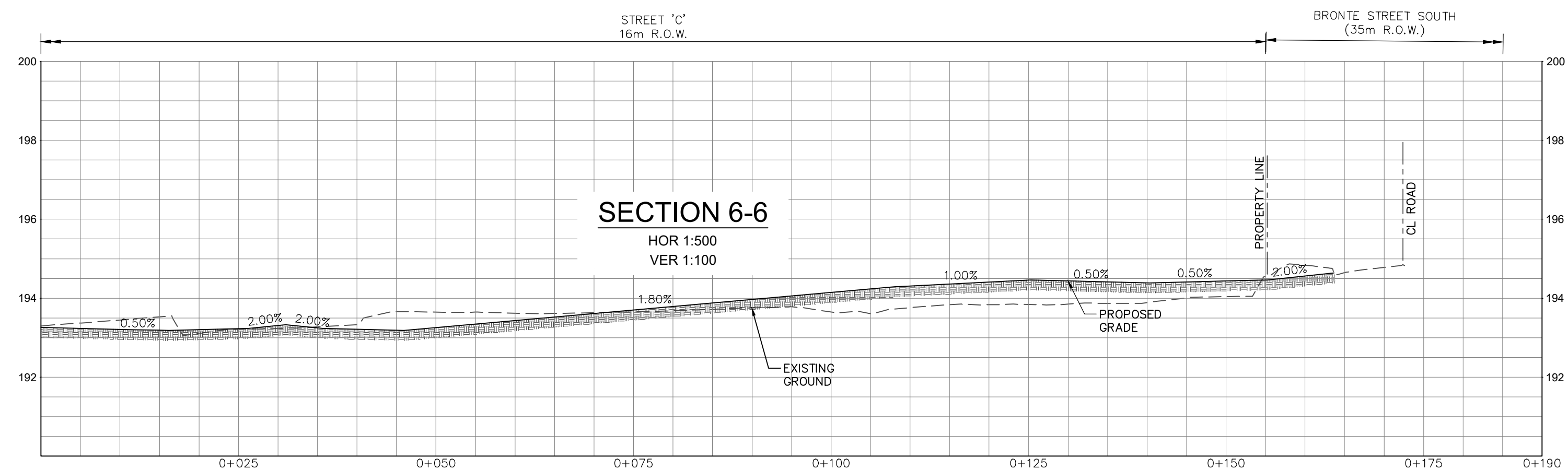
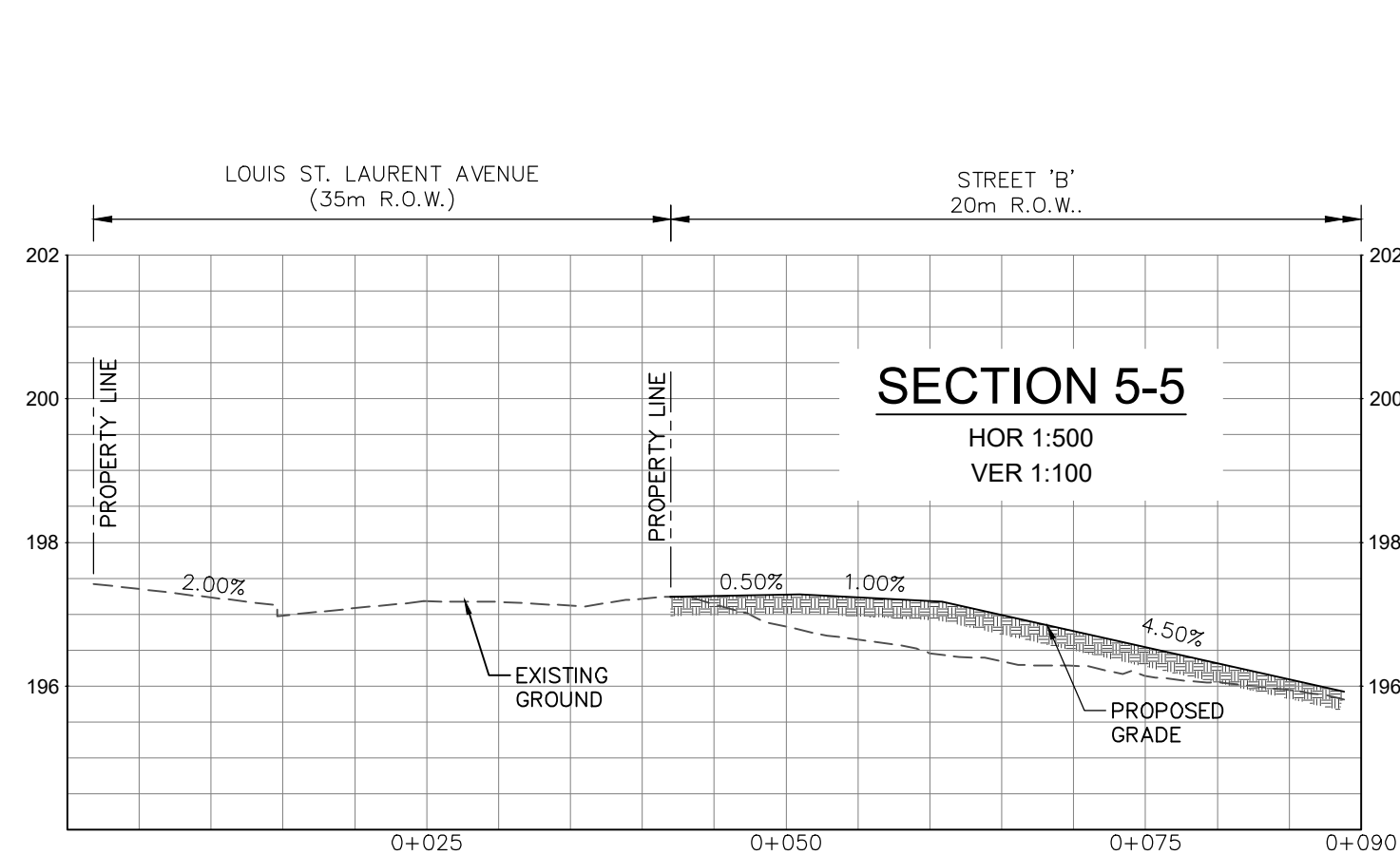
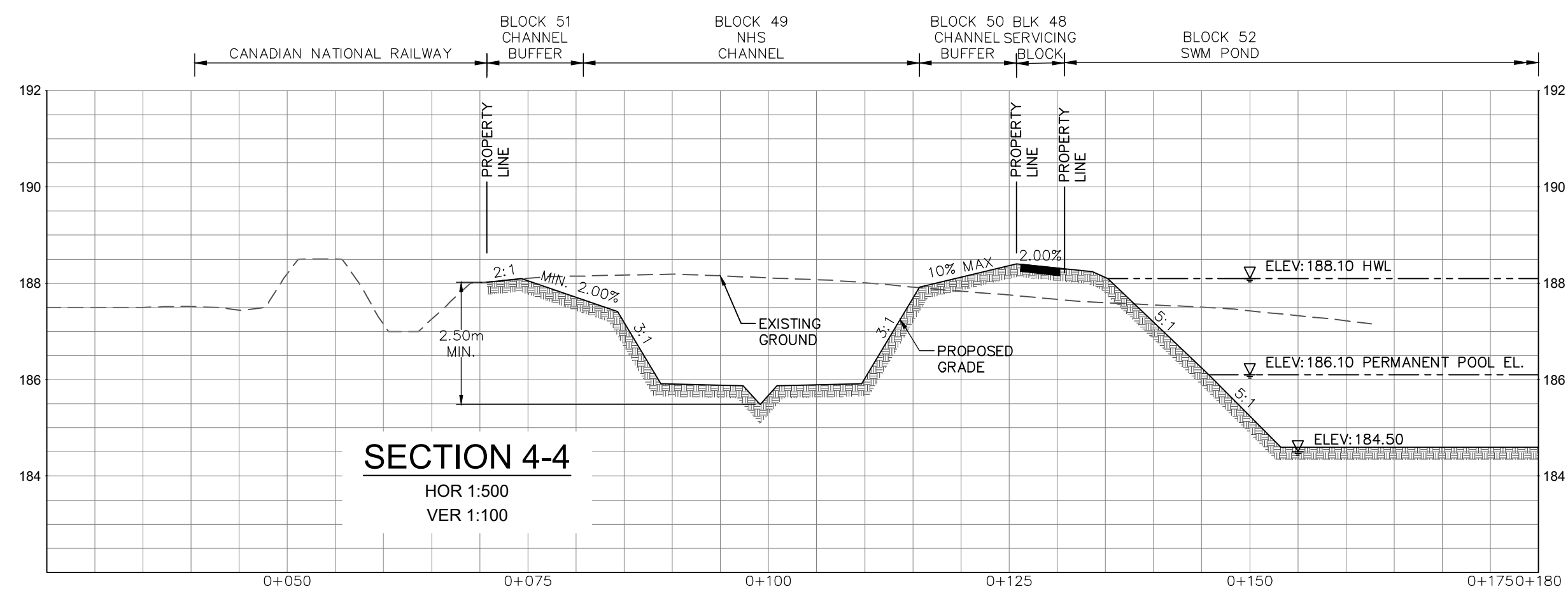
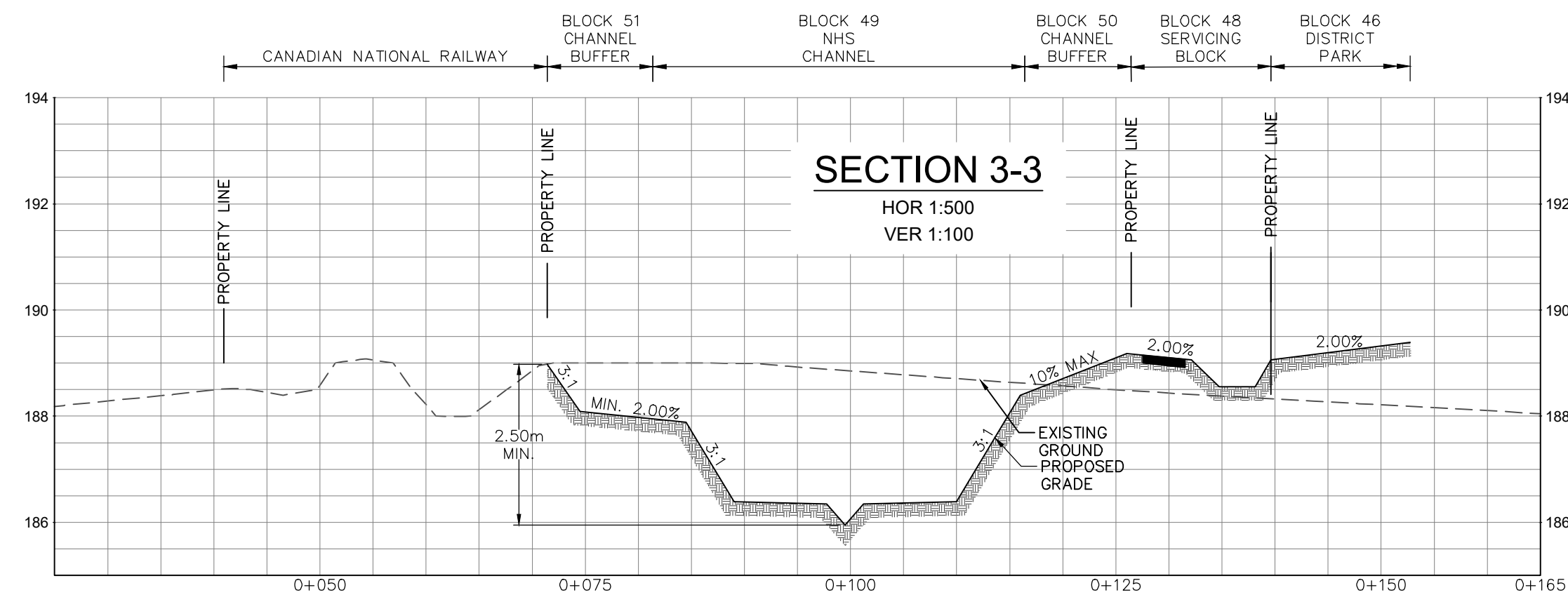
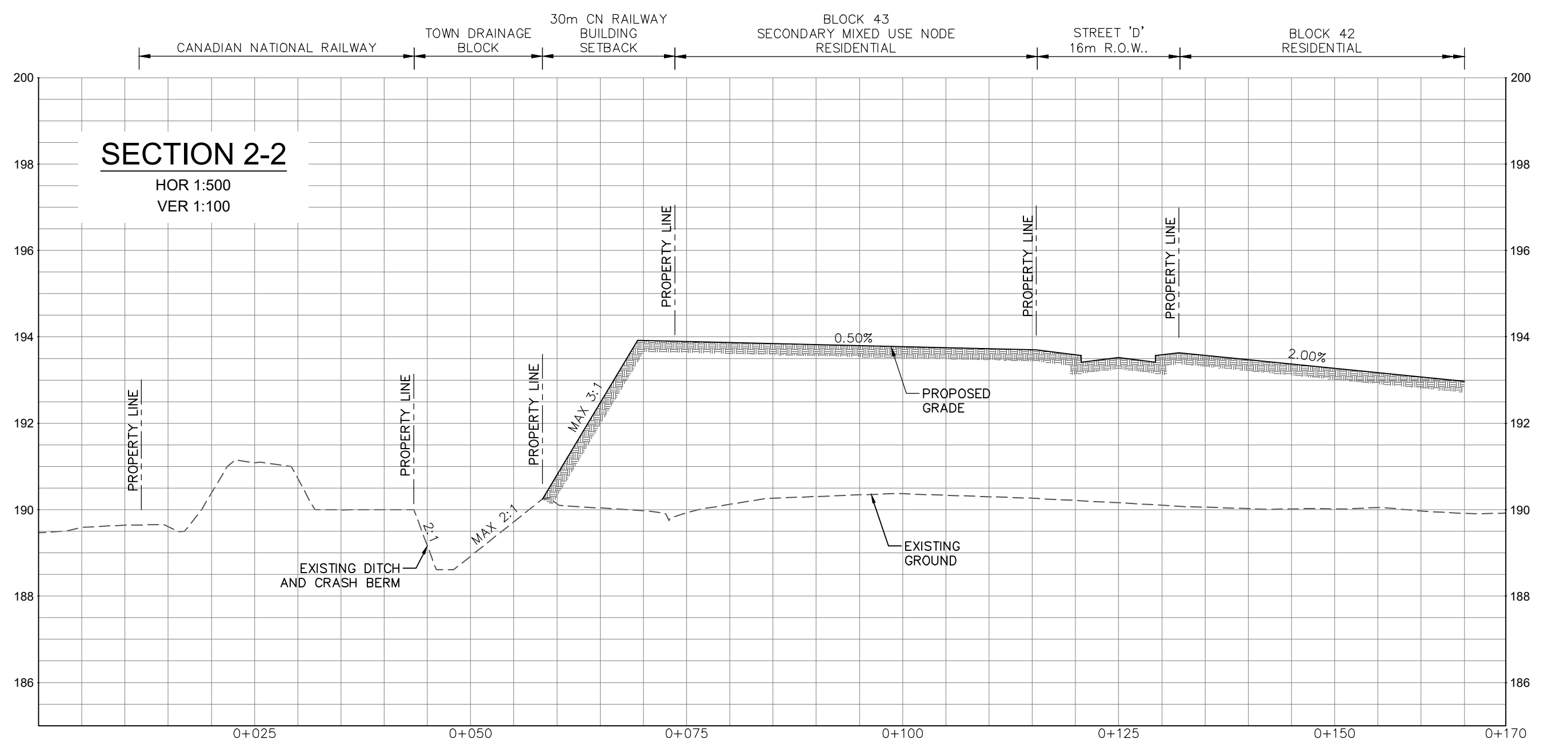
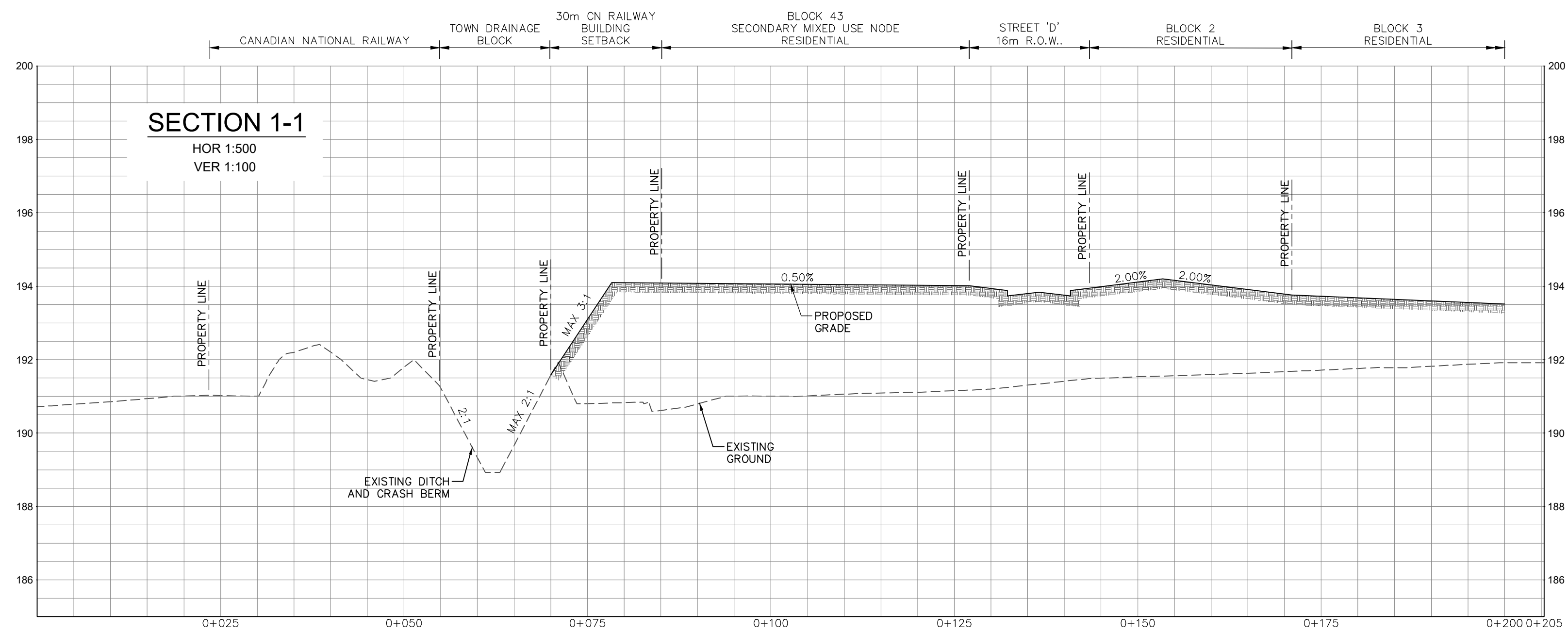
FIELDGATE EAST SUBDIVISION
FUNCTIONAL SERVICING REPORT
CONCEPTUAL GRADING PLAN



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SCALE:	1:1250	PROJECT No.	09102
DATE:	AUGUST 2025	FIGURE No.	8
DESIGNED BY: S.S.	DRAWN BY: S.S./T.T.	CHECKED BY: D.M.	CHECKED BY: D.M.

File: G:\Projects\2019\09102 - Fieldgate East Subdivision\Drawings - S\JUN - X-SECTIONS.dwg, Layout: FIG 9.1 Date: Aug 15, 2025 - 1:48pm, Edit By: denise.morales



NOTE:
CROSS-SECTIONS ARE PRELIMINARY BASED ON
CURRENT INFORMATION AND WILL BE FURTHER
STUDIED AND REFINED AT THE DETAILED DESIGN
STAGE, AS REQUIRED.

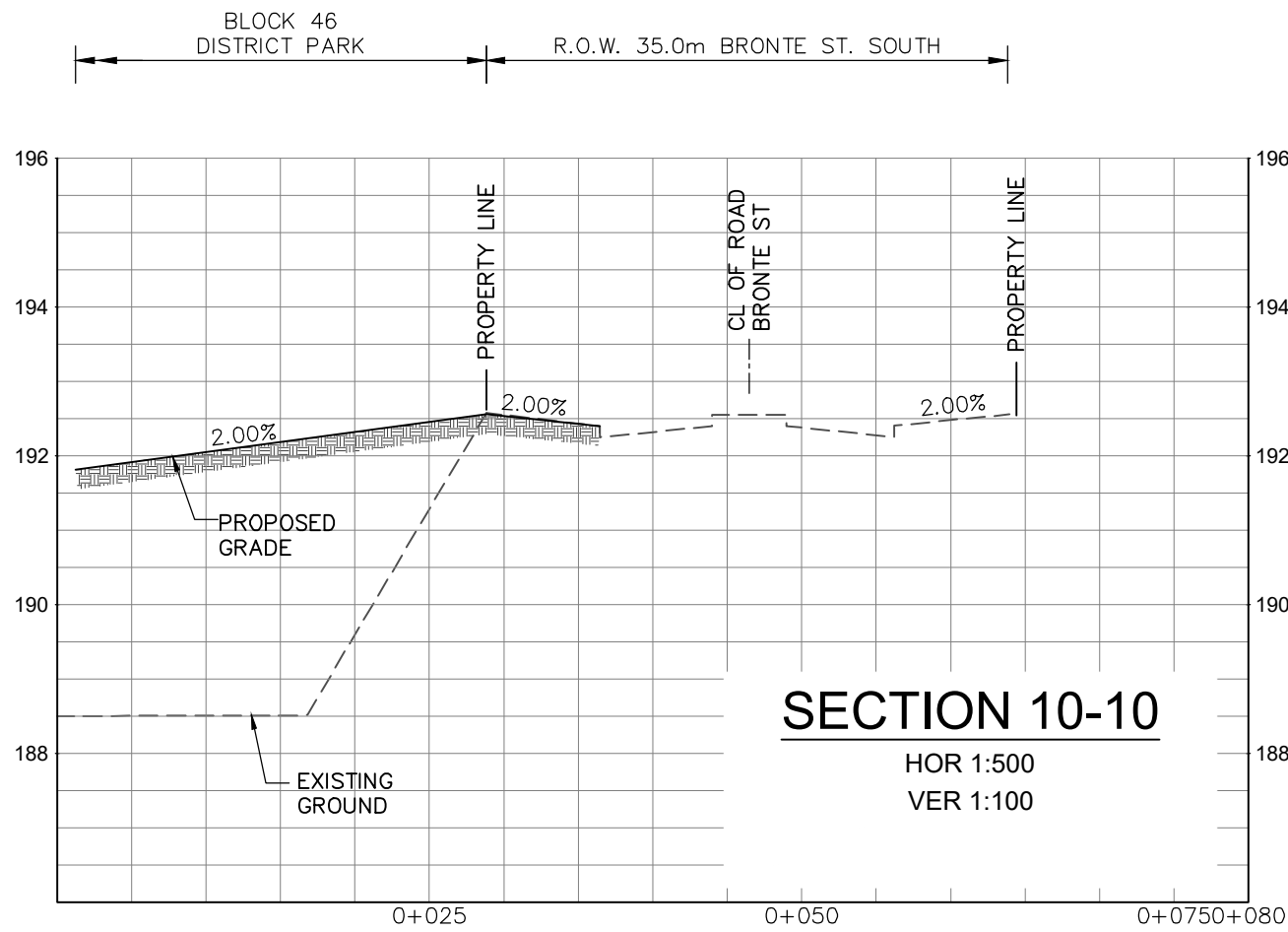
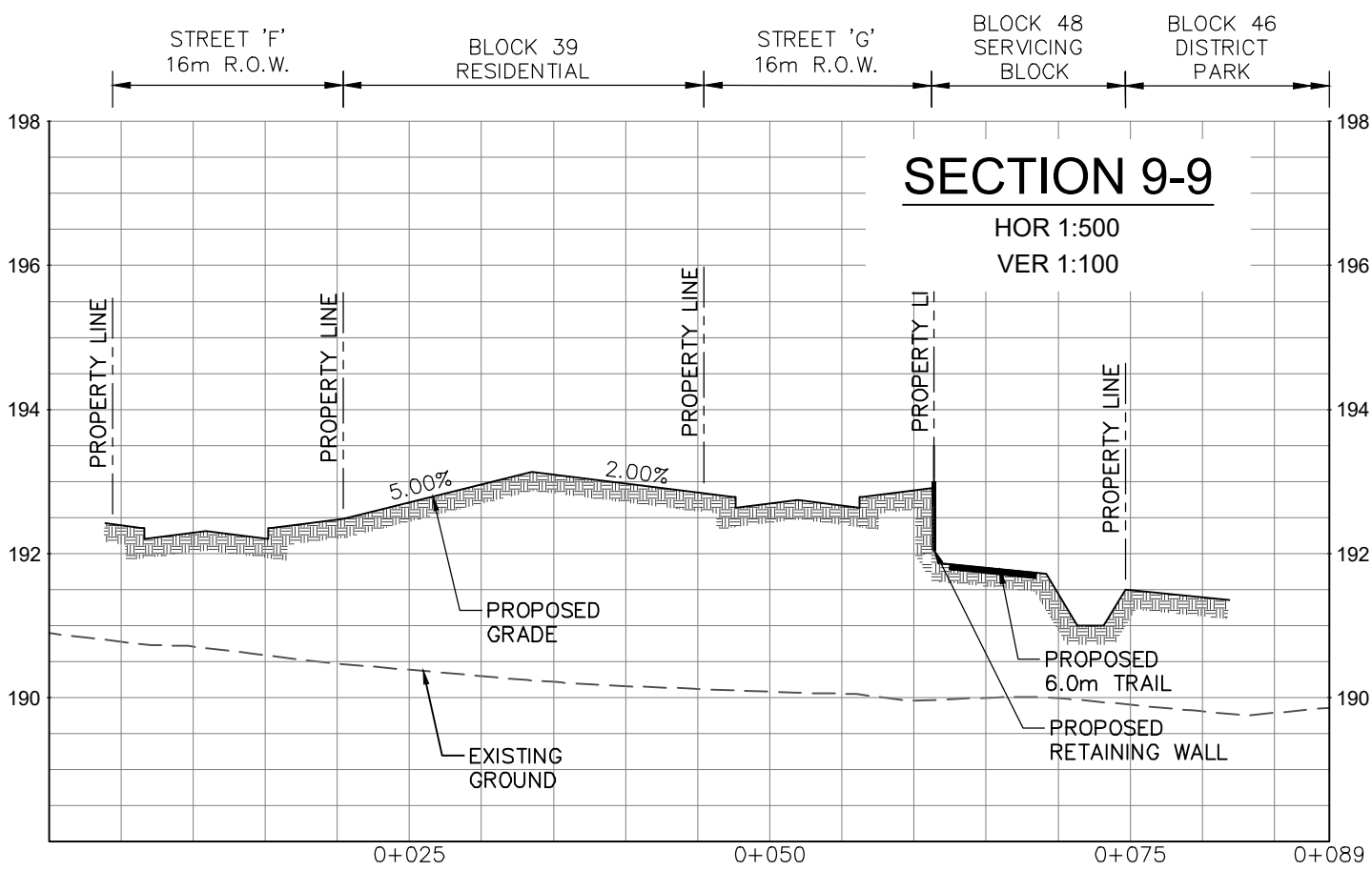
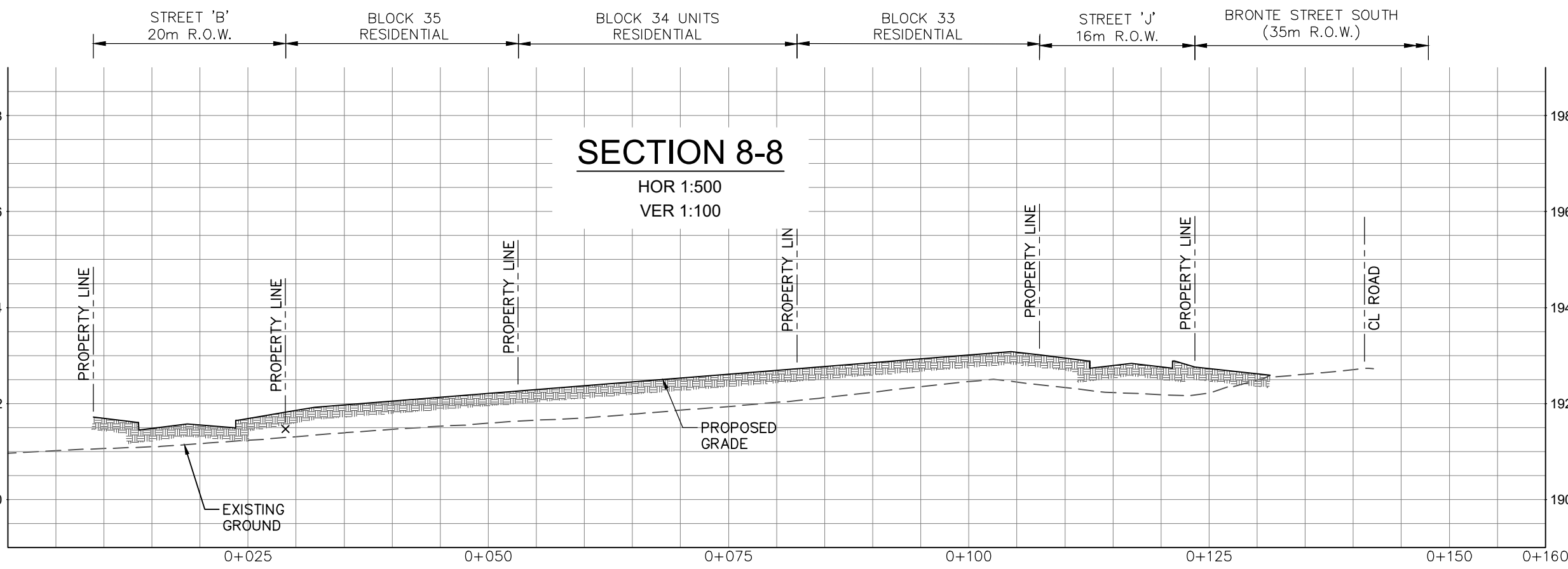
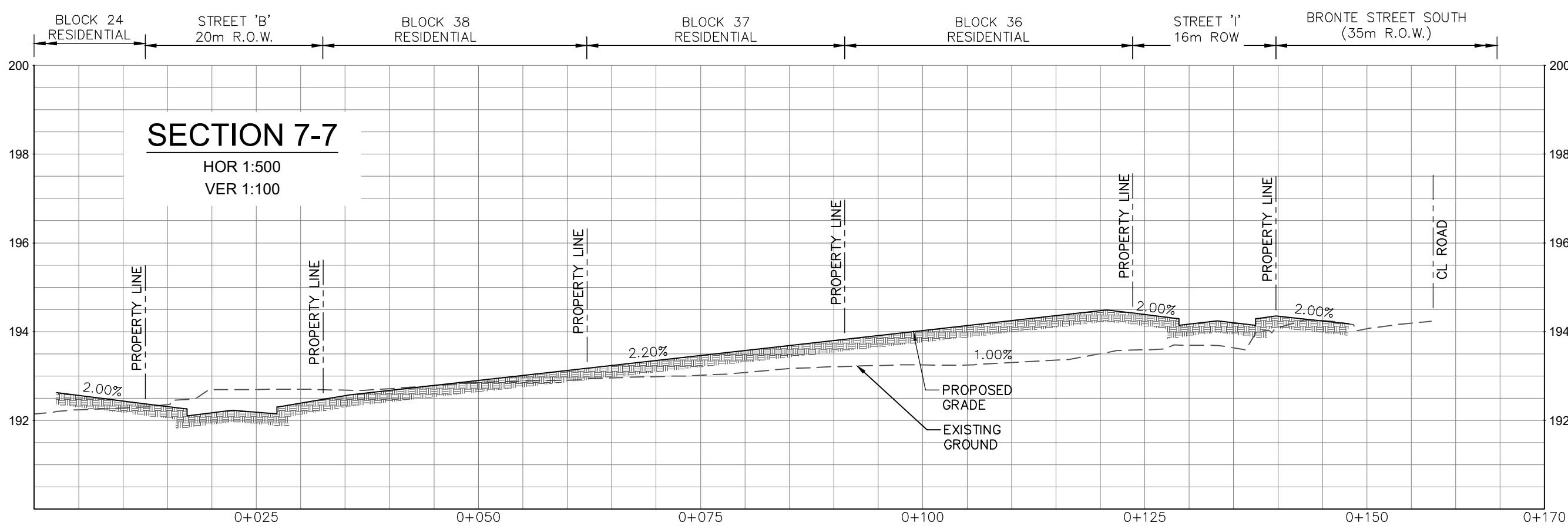
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FIELDGATE EAST SUBDIVISION FUNCTIONAL SERVICING REPORT CROSS SECTIONS

SCALE: HOR 1:500 VER 1:100	PROJECT No. 09102
DATE: AUGUST 2025	FIGURE No. 9.1
DESIGNED BY: S.S.	DRAWN BY: S.S./N.C.
CHECKED BY: D.M.	CHECKED BY: D.M.

File: C:\Projects\2019\09102 - Fieldgate (Milton Ph.3)\Drawings_ Fieldgate East Detailed Design\FSR\FIG 9 - SMUN - X-SECTIONS.dwg, Layout: FIG 9.2 Date: Aug 15, 2025 - 1:49pm, Edit By: denise.morales



NOTE:
CROSS-SECTIONS ARE PRELIMINARY BASED ON
CURRENT INFORMATION AND WILL BE FURTHER
STUDIED AND REFINED AT THE DETAILED DESIGN
STAGE, AS REQUIRED.

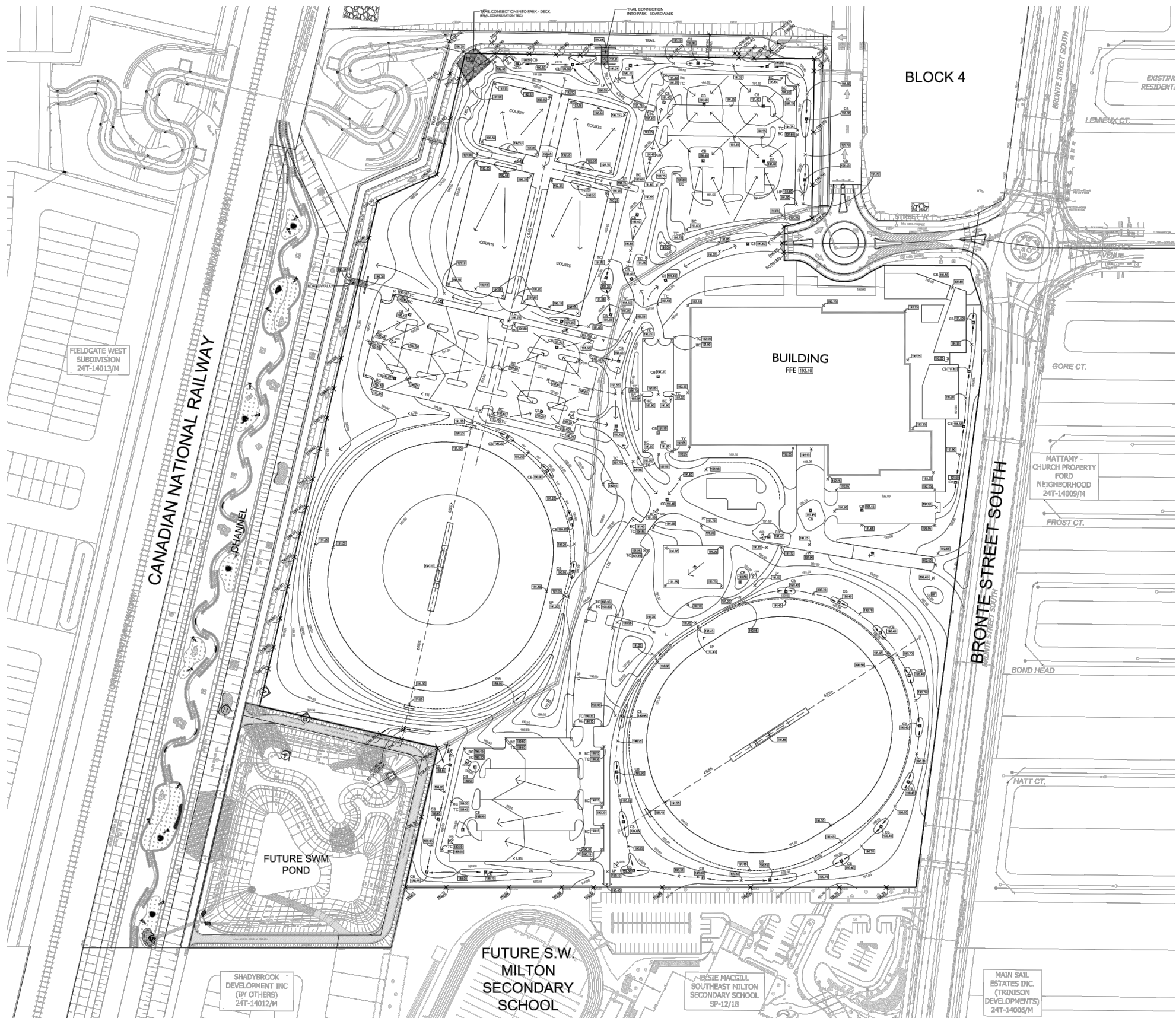
TYLin

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FIELDGATE EAST SUBDIVISION FUNCTIONAL SERVICING REPORT CROSS SECTIONS

SCALE:	HOR 1:500 VER 1:100	PROJECT No.	09102
DATE:	AUGUST 2025	FIGURE No.	9.2
DESIGNED BY:	S.S.	DRAWN BY:	S.S./N.C.
CHECKED BY:	D.M.	CHECKED BY:	D.M.

File: C:\Projects\2020\09102 - Fieldgate East Detailed Design\FSR\FIG 10 - SNUN - PARK CONCEPT PLAN.dwg, Layout: FIG 10 - PARK CONCEPT, Date: Aug 15, 2025 - 1:55pm, Edit By: denise.morales



BOYNE DISTRICT PARK
GRADING CONCEPT PLAN 1:750

THE MBTW GROUP
APRIL 2025
(TMN035)



TYLin

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M2H 3S7
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FIELDGATE EAST SUBDIVISION
FUNCTIONAL SERVICING REPORT
CONCEPTUAL PARK DESIGN (PREPARED BY MBTW)

SCALE: NTS		PROJECT No.
DATE: AUGUST 2025		09102
DESIGNED BY: S.S.	DRAWN BY: S.S./T.T.	FIGURE No.
CHECKED BY: D.M.	CHECKED BY: D.M.	10

9. SUMMARY / CONCLUSION

In summary, this report has outlined how the water and wastewater will be serviced for the Fieldgate East Subdivision. The residential blocks and secondary mixed use node will be serviced via proposed municipal sewers with a connection to the existing wastewater infrastructure on Whitlock Avenue whereas the district park will be serviced via connections to Street 'A' and Bronte Street. The residential blocks and secondary mixed use node will be serviced via proposed watermain with connections to existing watermain on Louis St. Laurent Avenue and Bronte Street.

Grading design has been prepared in accordance with the Town of Milton Standards and such that major system minus minor system flows from the residential blocks and secondary mixed use node will be conveyed to the proposed SWM Pond via overland flow routes designed for 100-year event.

We trust that this Functional Servicing Report is sufficient for your purposes. If you have any questions or comments, please contact the undersigned.

Sincerely,

T.Y.LIN INTERNATIONAL CANADA INC.

Prepared By:



Sean Stok

CAD Design Technologist,

Land Development

Reviewed By:



Abdul Ahmadzai, P.Eng

Director, Land Development



Appendix A

Water Models

Memorandum

Project:	Fieldgate East Subdivision – Milton
TYLin Project No.:	09102
Date	July 16, 2025
To	Town of Milton and Halton Region
From	TYLin International Canada Inc.
Subject	Fieldgate East Functional Servicing Report - Water Servicing Review

1 DEVELOPMENT REVIEW

1.1 Introduction and Background

TYLin International Canada (TYLin) was retained by 1000118982 Ontario Limited (formerly 1045502 Ontario Limited and 1048605 Ontario Limited) to prepare a Site-Specific Water/Wastewater Functional Servicing Report (FSR). This Site-Specific Water/ Wastewater FSR for the Fieldgate East subdivision provides servicing details specific to the Fieldgate East Subdivision in support of the redline revision to the approved Draft Plan of Subdivision. As part of the FSR, a water model analysis was prepared to confirm the Region of Halton water network has adequate capacity to accommodate water demands and fire flow requirements at the Fieldgate East Subdivision at appropriate pressures. This memo will review the project specifics, document design criteria applied and report on the results of the water model analysis. Halton Region provided the base water model for this analysis. Autodesk InfoWater Pro has been utilized as the tool for the analysis.

The Fieldgate East Subdivision is located immediately south of Louis St Laurent Avenue, west of Bronte Street, and east of CN Railway in the Town of Milton. The lands are presently vacant and had previously been used for agricultural purposes. The site is approximately 36.50 ha in size. The Fieldgate East Subdivision proposes a mix of land uses including a secondary mixed-use node with commercial and high-density blocks. Also incorporated within the Draft Plan of Subdivision are medium density blocks, a district park, a stormwater management pond and a channel, an Active Transportation Link (ATL) with walkways, trails and all pedestrian connectivity, including the CNR overpass.

1.2 Site Information and Statistics

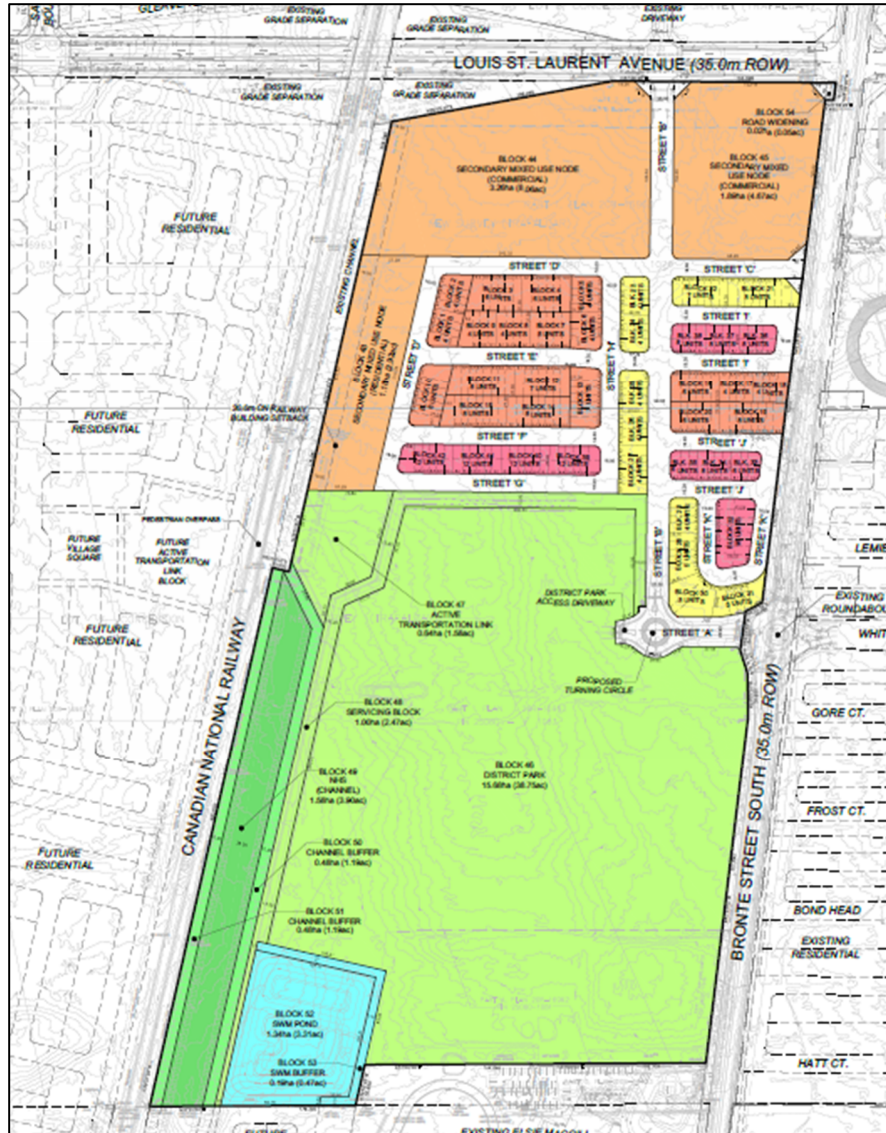
The property spans multiple blocks, incorporating residential, commercial/mixed-use, and parkland areas. The details of the proposed development used for servicing analysis are outlined

in **Table 1**. The information on residential units and area were utilized to estimate the population for the following analysis. **Figure 1** displays the land use layout of the subdivision.

Table 1 – Development Land Use and Population Details (From Draft Plan of the Subdivision)

Land Use	Area (ha)	Units	Persons Per Hectare	Population
Street Townhomes	2.34	114		326
Dual Frontage Townhomes	1.11	55		157
Back-To-Back Townhomes	1.04	108		308
Secondary Mixed Use (Residential) (Block 43)	1.18	477		790
Secondary Mixed Use (Commercial) (Block 44)	3.26		90	294
Secondary Mixed Use (Commercial) (Block 45)	1.89		90	171
District Park	15.68		40	628
			TOTAL	2674

Figure 1 – Draft Plan of Subdivision (From Glen Schnarr & Associates Inc.)



1.3 Design Criteria

The Halton Region Water and Wastewater Linear Design Manual was utilized to establish servicing needs for the proposed subdivision. **Table 2** summarizes the design criteria for population estimates, water and wastewater design factors.

Table 2 – Halton Region Water and Wastewater Design Criteria

Equivalent Population by Unit (per Halton Region 2022 Development Charges Background Study)	
Single Family and Semi-Detached	3.772 person/unit
Multiples except apartments (Townhouse)	2.851 person/unit
Apartments	1.655 person/unit

Equivalent Population by Area (per Halton Region Linear Design Manual)	
Street Townhouse, Intensification Area Townhouse, or Back-to-Back	260 persons/hectare
Stacked Townhouses, Low/Mid-Rise Apartments outside Strategic Growth Areas	420 persons/hectare
Light Commercial	90 persons/hectare
Community Services	40 persons/hectare
Design Criteria - Water	
Average Residential Water Supply Demand	265 L/cap/day
Average Commercial Water Supply Demand	225 L/employee/day
Maximum Day Factor	2.25
Residential Peak Hour Factor	4
ICI Peak Hour Factor	2.25

2 ASSESSMENT OF SERVICING IMPACTS

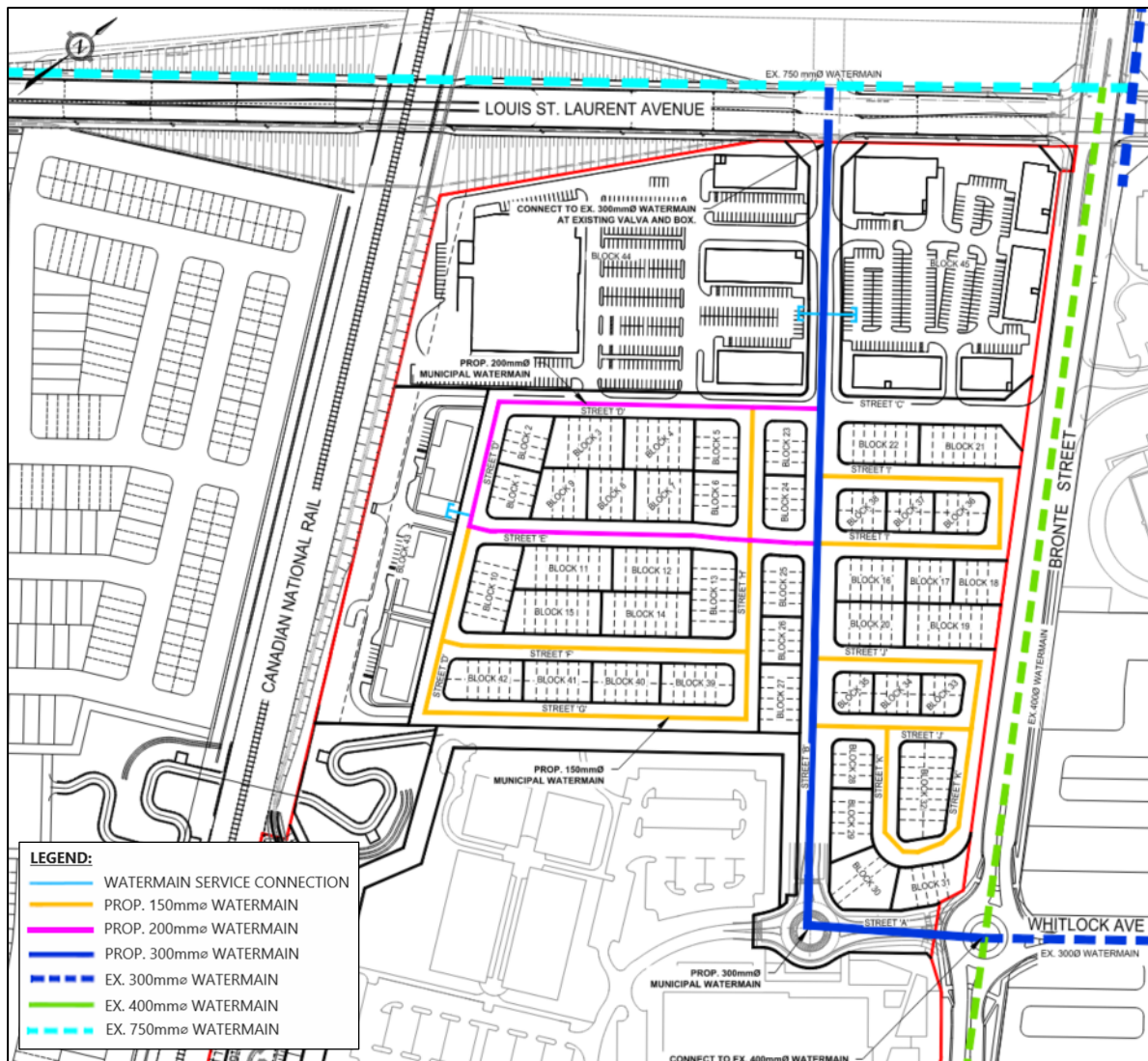
2.1 Water System

The following four scenarios were analyzed to assess the system performance and conformance with the pressure level of service:

- Average Day Demand (ADD)
- Maximum Day Demand (MDD)
- Peak Hour Demand (PHD)
- Maximum Day plus Fire Flow Demand (MDD+FF)

The water model provided by the Halton Region (the Region) includes three time-horizons: 2021 (existing), 2026 (future), and 2031 (future). The 2031 future scenario was modelled for the capacity analysis. The provided model was updated to include the internal network for the Fieldgate East Subdivision. The proposed watermain layout is shown in Figure 2.

Figure 2 – Proposed Local Watermains Layout

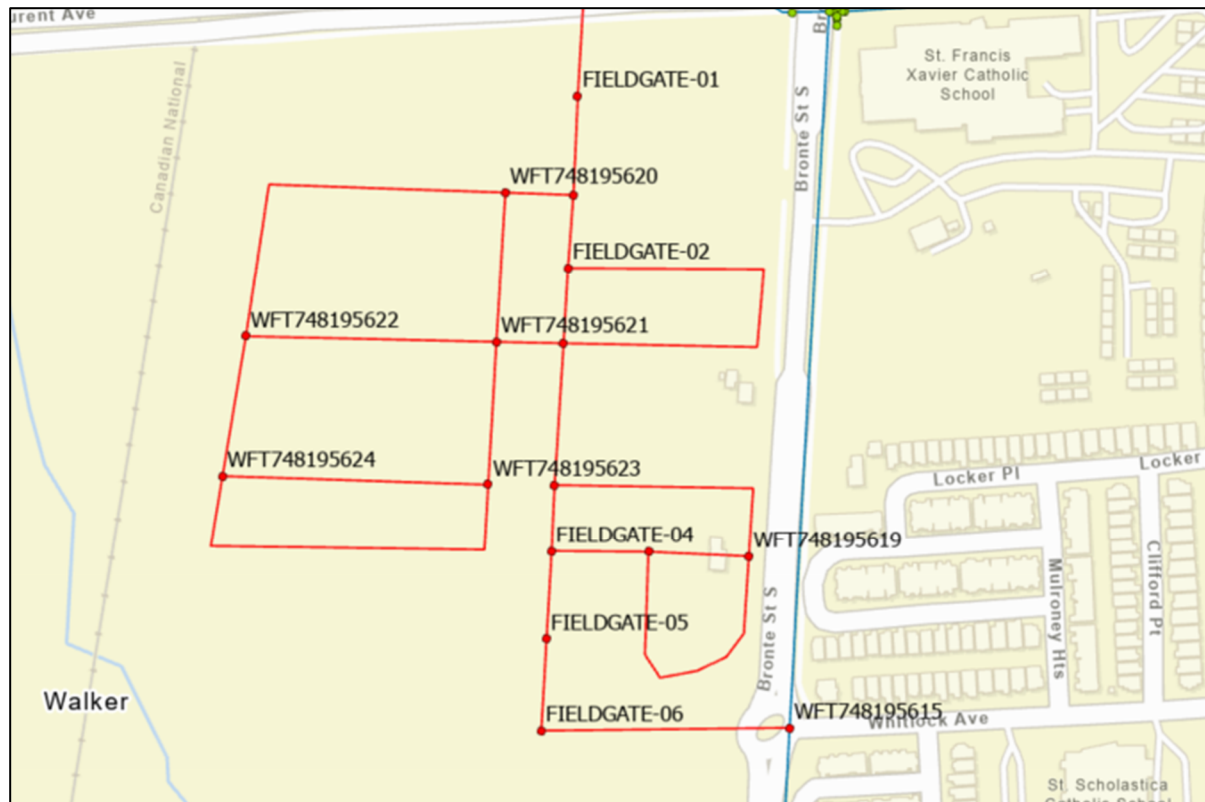


Demands for the proposed subdivision were assigned to the newly created junctions along the internal watermains. Table 3 shows the estimated demands under ADD, MDD and PHD demand scenarios. Note that only the junction FIELDGATE-01 was assigned the demands from commercial area, all the other junctions were assigned the demands from residential area. Commercial area has the same peaking factor of 2.25 for MDD and PHD conditions based on the Halton Region design criteria, therefore the MDD and PHD demands for FIELDGATE-01 are the same (see Figure 3 for locations of the demand junctions). The demands for the district park were assigned to the junction FIELDGATE-06.

Table 3 – Halton Region Water and Wastewater Design Criteria

Junction ID	ADD (L/s)	MDD (L/s)	PHD (L/s)
FIELDGATE-01	1.143	2.572	2.572
FIELDGATE-02	0.405	0.911	1.620
FIELDGATE-03	0.291	0.655	1.164
FIELDGATE-04	0.207	0.466	0.828
FIELDGATE-05	0.088	0.198	0.352
FIELDGATE-06	1.636	3.681	3.835
WFT748195616	0.083	0.187	0.332
WFT748195617	0.124	0.279	0.496
WFT748195618	0.166	0.374	0.664
WFT748195620	0.426	0.959	1.704
WFT748195621	0.478	1.076	1.912
WFT748195622	1.435	3.229	5.740
WFT748195623	0.497	1.118	1.988
WFT748195624	1.435	3.229	5.740

Figure 3 – Water Demand Junctions Map



Following Halton Region standards, the system is designed to maintain normal operating pressures between 50 psi and 80 psi, and a minimum pressure of 20 psi under maximum day demand plus fire flow. According to the Region's Design Criteria, the maximum working pressures under normal condition should be less than 689 kPa (100 psi). In all cases, the maximum pressures should not exceed 700 kPa (100 psi), under any condition. Figure 4 and Figure 5 display the modelled pressures under MDD and PHD scenarios. It can be observed that the modelled pressures are within the range of 427 kPa (62 psi) to 462 kPa (67 psi) under PHD scenario.

Figure 4 – Modelled Pressured under MDD scenario within the proposed subdivision



Figure 5 – Modelled Pressured under PHD scenario within the proposed subdivision

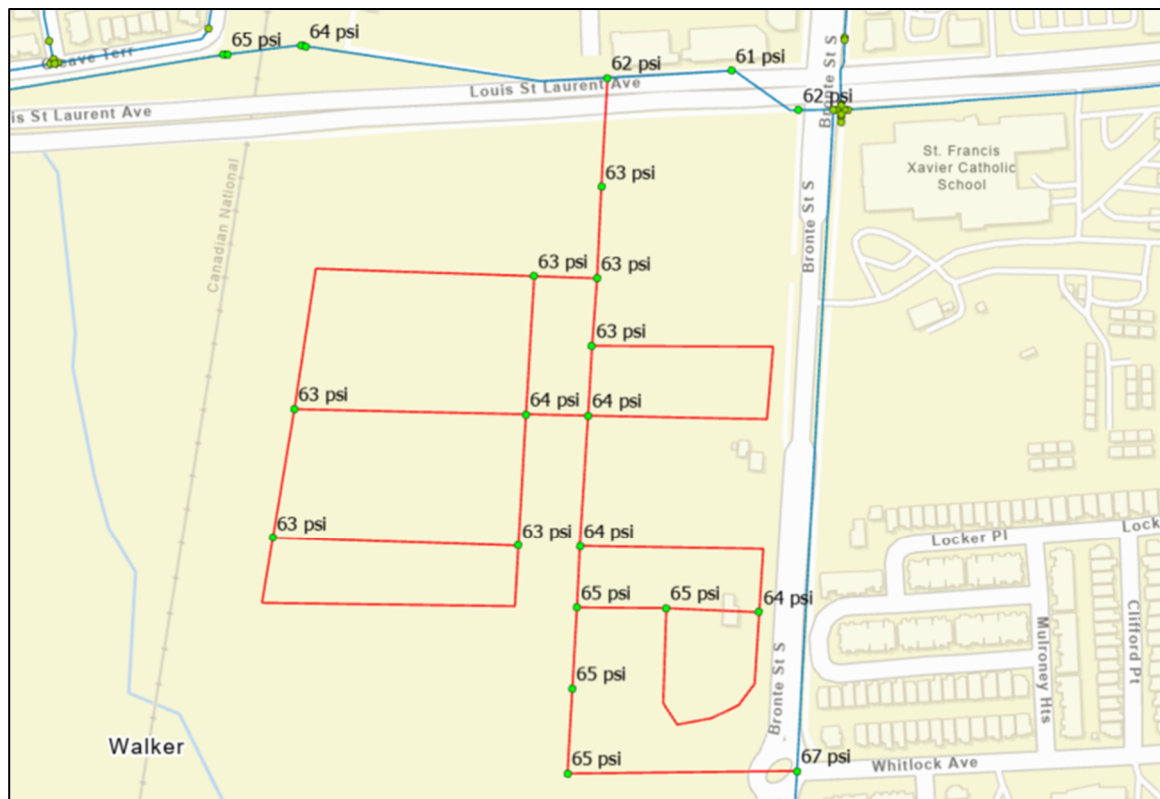
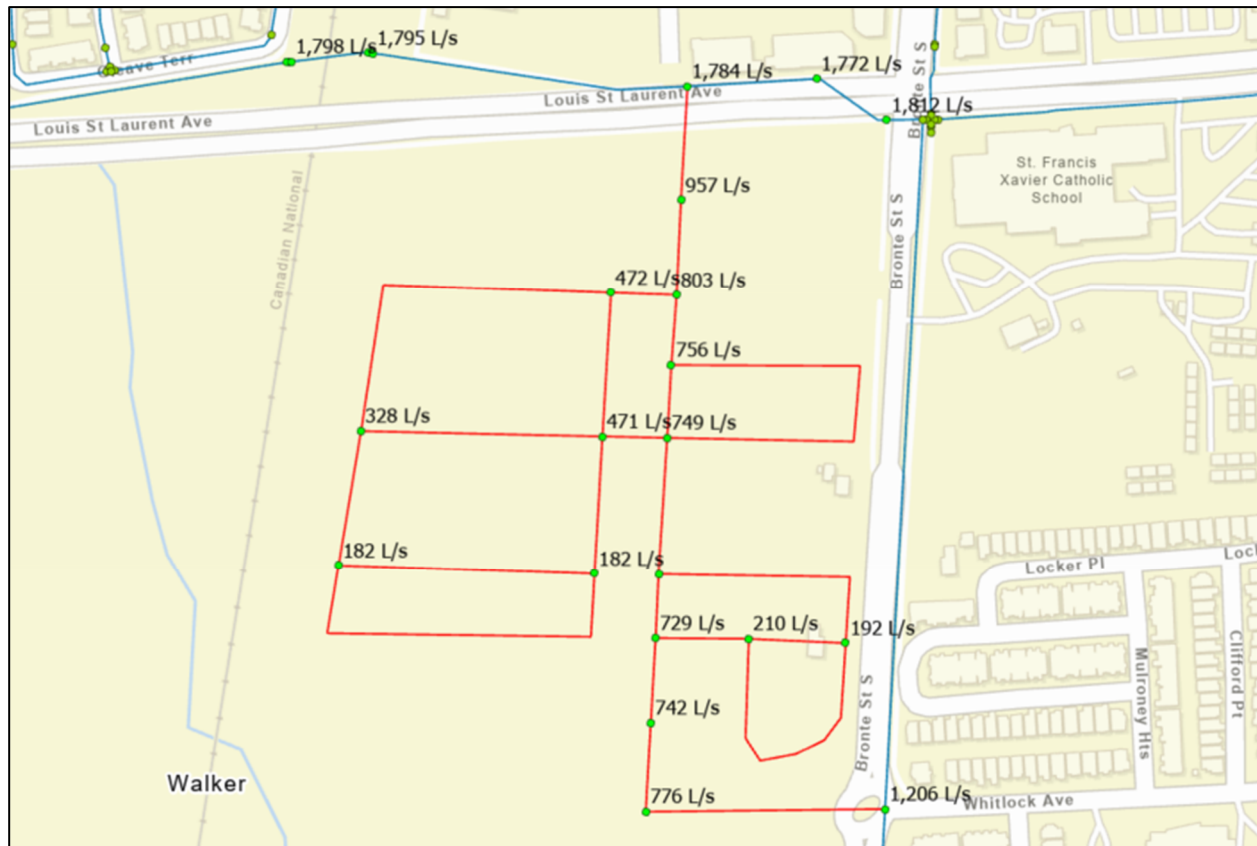


Figure 6 shows the simulated available fire hydrant flow under MDD demand condition. The required fire flow was calculated using the Fire Underwriters Survey. The results of this calculation identified a fire flow of 150 L/s for medium density residential, 200 L/s for light commercial, 283 L/s for high density residential and 267 L/s for the district park. Refer to Appendix A for the fire flow calculations. The results indicate that the available fire flow meets the fire flow requirements for all residential types within the proposed subdivision.

Figure 6 – Modelled Available Fire Flow (in L/s) under MDD scenario within the proposed subdivision



3 ASSESMENT OF REQUIRED UPGRADES

Table 4 summarizes the modelled results under different demand scenarios. The modelling results indicate that the levels of service (flow and pressure) meet the minimum requirements identified by the design criteria with the layout shown in **Table 2**. As such, the proposed watermain infrastructure has sufficient capacity to accommodate the proposed subdivision.

Table 4 – Water Hydraulic Model Results

Scenario	Condition	Modelled Pressure Range within Subject Site	Criteria
Maximum Day Demand	2031	517 kPa to 545 kPa (75 psi to 79 psi)	Node pressure is between 275 kPa and 690 kPa
Peak Hour Demand - Minimum Pressure	2031	427 kPa to 462 kPa (62 psi to 67 psi)	Node pressure is > 275 kPa and < 690 kPa
Scenario	Condition	Modelled Available Fire Flow Range within Subject Site	Criteria
Maximum Day Demand plus Fire Flow (Outer loop upsized to 200 mm)	2031	182 L/s to 957 L/s	150 L/s for med-density residential; 200 L/s for light commercial; 283 L/s for high-density residential

Appendix B

Sanitary Sewer Design Sheets

SANITARY SEWER DESIGN
The Regional Municipality of Halton

Project No. 09102
Location Fieldgate East Lands
Town of Milton

Date July 2025
Designed By D.M.
Checked By A.A.

Street	Manhole		Length in metres	Tributary Area Hectare								Population Tributary								Average Increment m3/s	Average Total m3/s	Peaking Factor	Peak Flow m3/s	Infiltration m3/s	Design Flow m3/s	SEWER					REMARKS CAPACITY
	From	To		Increment					Total	Increment							Total									V m/s					
				Res.						Res.					Size (mm) Slope (%) Q (m3/s)			Full Flow	Act. Flow												
				S.F.	Townhouse	Semi	Apt.	Comm.		Park	Infilt	S.F.	Townhouse	Semi	Apt.	Comm.										Park					
FIELDGATE EAST LANDS																															
STREET D	PLUG1A	MH21A	15.0				1.18					1.18		0		790	0	0	790	0.00196	0.00196	3.86	0.00759	0.00034	0.00793	200	1.00	0.033	1.04	0.85	24.2%
STREET D	MH23A	MH21A	55.0		0.34							0.34		20		0	0	0	20	0.00005	0.00005	4.38	0.00022	0.00010	0.00031	200	1.00	0.033	1.04	0.09	1.0%
STREET D	MH22A	MH21A	70.0		0.36							0.36		23		0	0	0	23	0.00006	0.00006	4.37	0.00025	0.00010	0.00035	200	1.00	0.033	1.04	0.10	1.1%
STREET E	MH21A	MH20A	136.7		0.79							2.67		80		0	0	0	912	0.00020	0.00227	3.83	0.00868	0.00076	0.00945	200	0.40	0.021	0.66	0.64	45.5%
STREET E	MH20A	MH19A	34.8		0.05							2.72		0		0	0	0	912	0.00000	0.00227	3.83	0.00868	0.00078	0.00946	200	0.40	0.021	0.66	0.64	45.6%
STREET D	MH25A	MH32A	76.0		0.41							0.41		35		0	0	0	35	0.00009	0.00009	4.34	0.00038	0.00012	0.00050	200	1.00	0.033	1.04	0.16	1.5%
STREET D	PLUG2A	MH32A	15.0					3.25				3.25		0		0	294	0	294	0.00063	0.00063	4.08	0.00257	0.00093	0.00350	200	1.00	0.033	1.04	0.66	10.7%
STREET D	MH32A	MH24A	39.0		0.06							3.72		0		0	0	0	329	0.00000	0.00072	4.06	0.00291	0.00106	0.00397	200	0.70	0.027	0.87	0.61	14.5%
STREET H	MH24A	MH19A	81.4		0.51							4.23		46		0	0	0	375	0.00011	0.00083	4.04	0.00335	0.00121	0.00456	200	0.60	0.025	0.81	0.60	17.9%
STREET G	MH29A	MH28A	40.0		0.14							0.14		17		0	0	0	17	0.00004	0.00004	4.39	0.00019	0.00004	0.00023	200	1.00	0.033	1.04	0.06	0.7%
STREET G	MH28A	MH27A	135.0		0.37							0.52		51		0	0	0	68	0.00013	0.00017	4.29	0.00073	0.00015	0.00088	200	1.00	0.033	1.04	0.27	2.7%
STREET H	MH27A	MH26A	41.0		0.19							0.71		20		0	0	0	88	0.00005	0.00022	4.26	0.00094	0.00020	0.00114	200	1.00	0.033	1.04	0.35	3.5%
STREET F	MH31A	MH30A	35.0		0.12							0.12		17		0	0	0	17	0.00004	0.00004	4.39	0.00019	0.00003	0.00022	200	1.00	0.033	1.04	0.06	0.7%
STREET F	MH30A	MH26A	140.0		0.68							0.80		97		0	0	0	114	0.00024	0.00028	4.23	0.00120	0.00023	0.00143	200	1.00	0.033	1.04	0.45	4.4%
STREET H	MH26A	MH19A	67.4		0.39							1.89		43		0	0	0	245	0.00011	0.00061	4.11	0.00251	0.00054	0.00305	200	0.40	0.021	0.66	0.47	14.7%
STREET E	MH19A	MH7A	43.0		0.05							8.89		0		0	0	0	1532	0.00000	0.00371	3.67	0.01363	0.00254	0.01617	250	0.40	0.038	0.77	0.74	43.0%
STREET B	PLUG3A	MH10A	15.0					1.90				1.90		0		0	171	0	171	0.00037	0.00037	4.17	0.00153	0.00054	0.00207	200	1.00	0.033	1.04	0.56	6.3%
STREET B	MH10A	MH9A	40.0									2.03		0		0	0	0	171	0.00000	0.00037	4.17	0.00153	0.00058	0.00211	250	1.00	0.059	1.21	0.42	3.5%
STREET B	MH9A	MH8A	41.0									2.10		0		0	0	0	171	0.00000	0.00037	4.17	0.00153	0.00060	0.00213	250	1.00	0.059	1.21	0.42	3.6%
STREET I	MH18A	MH8A	111.5		0.59							0.59		77		0	0	0	77	0.00019	0.00019	4.27	0.00082	0.00017	0.00099	200	1.00	0.033	1.04	0.31	3.0%
STREET B	MH8A	MH7A	41.0									2.76		0		0	0	0	248	0.00000	0.00056	4.11	0.00229	0.00079	0.00308	250	1.00	0.059	1.21	0.61	5.2%
STREET I	MH17A	MH7A	106.8		0.59							0.59		74		0	0	0	74	0.00018	0.00018	4.28	0.00079	0.00017	0.00096	200	1.00	0.033	1.04	0.30	2.9%
STREET B	MH7A	MH6A	70.0									12.36		0		0	0	0	1854	0.00000	0.00445	3.61	0.01608	0.00353	0.01961	250	0.40	0.038	0.77	0.76	52.1%
STREET J	MH16A	MH6A	99.0		0.56							0.56		68		0	0	0	68	0.00017	0.00017	4.29	0.00073	0.00016	0.00089	200	1.00	0.033	1.04	0.28	2.7%
STREET B	MH6A	MH5A	41.0									12.98		0		0	0	0	1922	0.00000	0.00462	3.60	0.01664	0.00371	0.02035	250	0.40	0.038	0.77	0.77	54.1%
STREET J	MH12A	MH11A	51.3		0.17							0.17		17		0	0	0	17	0.00004	0.00004	4.39	0.00019	0.00005	0.00023	200	1.00	0.033	1.04	0.07	0.7%
STREET K	MH13A	MH15A	60.0		0.19							0.19		23		0	0	0	23	0.00006	0.00006	4.37	0.00025	0.00005	0.00030	200	1.00	0.033	1.04	0.09	0.9%
STREET K	MH15A	MH14A	35.0		0.30							0.50		23		0	0	0	46	0.00006	0.00011	4.32	0.00049	0.00014	0.00063	200	1.00	0.033	1.04	0.20	1.9%
STREET K	MH14A	MH11A	72.0		0.38							0.87		48		0	0	0	94	0.00012	0.00023	4.25	0.00100	0.00025	0.00125	200	1.00	0.033	1.04	0.39	3.8%
STREET J	MH11A	MH5A	43.4		0.10							1.14		11		0	0	0	123	0.00003	0.00031	4.22	0.00129	0.00033	0.00161	200	1.00	0.033	1.04	0.51	4.9%
STREET B	MH5A	MH4A	113.7		0.34							14.46		0		0	0	0	2046	0.00000	0.00493	3.58	0.01763	0.00414	0.02177	250	0.40	0.038	0.77	0.78	57.9%

SANITARY SEWER DESIGN																																	
Project No.		09102																															
Location		Fieldgate East Lands Town of Milton																															
		Date July 2025 Designed By D.M. Checked By A.A.																															
Street	Manhole		Length in metres	Tributary Area Hectare								Population Tributary						Average Increment m3/s	Average Total m3/s	Peaking Factor	Peak Flow m3/s	Infiltration m3/s	Design Flow m3/s	SEWER			REMARKS CAPACITY						
	From	To		Increment						Total	Increment						Total								V m/s								
				Res.							Res.														Size (mm)	Slope (%)		Q (m3/s)	Full Flow	Act. Flow			
				S.F.	Townhouse	Semi	Apt.	Comm.	Park	Infilt	S.F.	Townhouse	Semi	Apt.	Comm.	Park	Size (mm)							Slope (%)	Q (m3/s)	Full Flow	Act. Flow						
STREET A	MH4A	MH3A	63.0		0.21						14.67		0		0	0	0	2046	0.00000	0.00493	3.58	0.01763	0.00419	0.02183	250	0.40	0.038	0.77	0.78	58.0%			
STREET A	MH3A	MH2A	40.5		0.00						14.67		0		0	0	0	2046	0.00000	0.00493	3.58	0.01763	0.00419	0.02183	250	0.40	0.038	0.77	0.78	58.0%			
STREET A	MH2A	MH1A	14.3		0.00						14.67		0		0	0	0	2046	0.00000	0.00493	3.58	0.01763	0.00419	0.02183	250	0.40	0.038	0.77	0.78	58.0%			
WHITLOCK CONNECTION	MH1A	EXMH17A	19.1		0.00						14.67		0		0	0	0	2046	0.00000	0.00493	3.58	0.01763	0.00419	0.02183	250	0.40	0.038	0.77	0.78	58.0%			
DISTRICT PARK	MH103A	MH102A	5.3						15.68		15.68	0	0	0	0	0	628	628	0.00134	0.00134	3.92	0.00527	0.00448	0.00976	200	2.00	0.046	1.48	1.16	21.0%			
BRONTE STREET SOUTH	MH102A	MH101A	69.7								15.68	0	0	0	0	0	0	628	0.00000	0.00134	3.92	0.00527	0.00448	0.00976	200	0.50	0.023	0.74	0.71	42.1%			
BRONTE STREET SOUTH	MH101A	MH100A	4.5								15.68	0	0	0	0	0	0	628	0.00000	0.00134	3.92	0.00527	0.00448	0.00976	200	0.50	0.023	0.74	0.71	42.1%			
BRONTE STREET SOUTH	MH100A	EX MH99A	5.0								15.68	0	0	0	0	0	0	628	0.00000	0.00134	3.92	0.00527	0.00448	0.00976	200	1.00	0.033	1.04	0.91	29.7%			
2024 HALTON REGION STANDARDS																																	
Residential Design Parameters:														Commercial Design Parameters:																			
Flow (m3/cap./day) - 0.215														Flow (m3/emp./day) - 0.185																			
Street Towns, Intensitifacion Area Towns, B2B Towns (pers/ha) - 260														Density (persons/ha) - 90																			
Stacked Town, Low/Mid Rise Apts outside Strategic Growth Areas (pers/ha) - 420														Institutional Design Parameters:																			
Minimum Pipe Size - 200 mm														Flow (m3/emp./day) - 0.185																			
														Density (persons/ha) - 40																			
2022 HALTON REGION DEVELOPMENT CHARGES BACKGROUND STUDY																																	
Single Family and Semi-Detached (per/unit) - 3.772																																	
Multiples except apartments (Townhouse) (per/unit) - 2.851																																	
Apartments (per/unit) - 1.655																																	

Appendix C

Storm Sewer Design Sheets

Town of Milton Storm Drainage Design Chart

5-YEAR FLOWS

[illegible]

Town of Milton Storm Drainage Design Chart																								
5-YEAR FLOWS																								
Street	From	To	Area	Runoff 'C'	Section Area (4)x(5)	Accum Section Area (7)	Rainfall Intensity 'I' (8) 100-yr	Rainfall Intensity 'I' (8) 5-yr	Flow 2.778 x (7) x (8) 'Q' 100-yr	Flow 2.778 x (7) x (8) 'Q' 5-yr	Flow 2.778 x (7) x (8) 'Q' 100-yr minus 5-yr	Design Flow 2.778 x (7) x (8) 'Q'	Length	Slope	Dia. (height)	Dia. (width)	Material	Full Flow Capacity	Full Flow Velocity	Flow Time in Pipe (10)/(14)/6 0	Time of Conc.	Time of Conc. Down- stream	Q/Qf	Notes
			ha		ha	ha	mm/hr	mm/hr	L/s	L/s	L/s	L/s	m	%	mm	mm		L/s	m/s	min	min	m	%	
Street E	MH28	MH27	0.57	0.90	0.513	2.025	150.41	90.86	846.1	511.1	335.0	511.1	101.0	0.35%	750		CONC	658.6	1.49	1.13	13.16	14.29	77.6	
	MH27	MH26	0.43	0.90	0.387	2.412	143.61	86.72	962.3	581.1	381.2	581.1	70.5	0.45%	750		CONC	746.8	1.69	0.70	14.29	14.98	77.8	
Street H	MH31	MH26	0.28	0.90	0.252	0.252	174.10	105.25	121.9	73.7	48.2	73.7	67.9	0.50%	375		PVC	124.0	1.12	1.01	10.00	11.01	59.4	
Street G	MH35	MH34	0.26	0.90	0.234	0.234	174.10	105.25	113.2	68.4	44.8	68.4	75.5	0.30%	375		PVC	96.0	0.87	1.45	10.00	11.45	71.2	
	MH34	MH33	0.26	0.90	0.234	0.468	162.25	98.06	210.9	127.5	83.5	127.5	94.3	0.30%	450		PVC	156.2	0.98	1.60	11.45	13.05	81.6	
Street H	MH33	MH32	0.10	0.90	0.090	0.558	151.11	91.29	234.2	141.5	92.7	141.5	41.0	0.30%	525		CONC	235.6	1.09	0.63	13.05	13.68	60.1	
Street F	MH37	MH36	0.43	0.90	0.387	0.387	174.10	105.25	187.2	113.2	74.0	113.2	77.9	0.30%	450		PVC	156.2	0.98	1.32	10.00	11.32	72.5	
	MH36	MH32	0.42	0.90	0.378	0.765	163.20	98.64	346.8	209.6	137.2	209.6	91.9	0.40%	525		CONC	272.0	1.26	1.22	11.32	12.54	77.1	
Street H	MH32	MH26	0.27	0.90	0.243	1.566	147.20	88.90	640.4	386.8	253.6	386.8	67.9	0.30%	750		CONC	609.8	1.38	0.82	13.68	14.50	63.4	
Street E	MH26	MH12	0.04	0.90	0.036	4.266	139.76	84.37	1656.3	999.9	656.4	999.9	43.0	0.50%	900		CONC	1280.1	2.01	0.36	14.98	15.34	78.1	
Street I	MH25	MH24	0.37	0.90	0.333	0.333	174.10	105.25	161.1	97.4	63.7	97.4	53.4	3.00%	300		PVC	167.5	2.37	0.38	10.00	10.38	58.1	
	MH24	MH12	0.25	0.90	0.225	0.558	170.84	103.27	264.8	160.1	104.7	160.1	53.4	1.40%	375		PVC	207.5	1.88	0.47	10.38	10.85	77.2	
Street B	MH12	MH11	0.21	0.90	0.189	10.551	137.88	83.23	4041.5	2439.4	1602.0	2644.1	70.0	0.50%	900	1800	CONC	3629.2	2.36	0.50	15.34	15.83	72.9	
Street J	MH23	MH11	0.56	0.90	0.504	0.504	174.10	105.25	243.8	147.4	96.4	147.4	98.9	1.50%	375		PVC	214.7	1.94	0.85	10.00	10.85	68.6	
Street B	MH11	MH10	0.12	0.90	0.108	11.163	135.36	81.69	4197.7	2533.2	1664.4	2737.9	41.0	0.50%	900	1800	CONC	3629.2	2.36	0.29	15.83	16.12	75.4	
Street J	MH18	MH17	0.15	0.90	0.135	0.135	174.10	105.25	65.3	39.5	25.8	39.5	34.7	2.20%	300		PVC	143.4	2.03	0.29	10.00	10.29	27.5	
Street K	MH22	MH21	0.19	0.90	0.171	0.171	174.10	105.25	82.7	50.0	32.7	50.0	47.8	0.50%	300		PVC	68.4	0.97	0.82	10.00	10.82	73.1	
	MH21	MH20	0.10	0.90	0.090	0.261	167.13	101.02	121.2	73.2	47.9	73.2	28.3	0.50%	375		PVC	124.0	1.12	0.42	10.82	11.24	59.1	
	MH20	MH19	0.22	0.90	0.198	0.459	163.81	99.01	208.9	126.2	82.6	126.2	25.7	1.20%	375		PVC	192.1	1.74	0.25	11.24	11.49	65.7	
	MH19	MH17	0.37	0.90	0.333	0.792	161.93	97.87	356.3	215.3	140.9	215.3	64.0	0.40%	525		CONC	272.0	1.26	0.85	11.49	12.34	79.2	
Street J	MH17	MH10	0.10	0.90	0.090	1.017	155.82	94.15	440.2	266.0	174.2	266.0	43.0	0.35%	600		CONC	363.3	1.28	0.56	12.34	12.90	73.2	
Street B	MH44	MH9	0.13	0.90	0.117	0.117	174.10	105.25	56.6	34.2	22.4	34.2	54.6	0.35%	300		PVC	57.2	0.81	1.12	10.00	11.12	59.8	
	MH10	MH9	0.05	0.90	0.045	12.225	133.93	80.81	4548.5	2744.6	1803.9	2949.2	25.5	0.50%	900	1800	CONC	3629.2	2.36	0.18	16.12	16.30	81.3	
	MH9	MH8	0.00	0.00	0.000	12.342	133.06	80.28	4562.1	2752.6	1809.5	2957.3	14.6	0.50%	900	1800	CONC	3629.2	2.36	0.10	16.30	16.41	81.5	
Block 48 (Servicing Block)	MH8	MH5	0.00	0.00	0.000	12.342	132.56	79.98	4545.2	2742.3	1802.9	2947.0	80.0	0.40%	900	1800	CONC	3246.1	2.11	0.63	16.41	17.04	90.8	
External (From Bronte Street) (See Note 4)		Street A	1.40	0.90	1.260	1.260	135.27	81.63	473.5	285.7	187.7	187.7									15.85			

Town of Milton Storm Drainage Design Chart

5-YEAR FLOWS

[illegible]

All storm sewers have been designed for 5-year flows unless otherwise specified.

Note 1: Time of Concentration for Block 43 based on 200m sewer length at 1.09 m/s (3.07min) + 10min initial TC.

Note 2: Time of Concentration for Block 44 based on Odan-Detech Storm Design Sheet. TC = 11.83 min

Note 3: Time of Concentration for Block 45 is based on 150m sewer length at 1.09m/s (2.30min) + 10min initial TC.

Note 4: Time of Concentration for major flows from Bronte Street based on 374m length at a slope of 0.50%. 100-year minus 5-year (187.7 L/s) flows from Bronte street has been added to all downstream pipes.

Note 5: Major flows to on Street A be captured within the right of way and conveyed in the downstream storm sewers along the trunk sewer.

Note 6: Flows based on Odan-Detech Storm Design Sheet.

Note 7: Time of Concentration for Block 44 major flows (257.3 L/s) and commercial building controlled flows (26.9 L/s) to be captured and conveyed to proposed Storm Sewers based on Odan-Detech Storm Design Sheet. TC = 13.04 min

Contract Name:	Fieldgate East Lands	Drainage Area	28.93	ha	STM Return Period:	5	year	STM Return Period:	5	year
		Design Storm -	Milton		A -	959		A -	959	
Location:	Town of Milton	Mannings "n" -	0.013		B -	5.7		B -	5.7	
Project No.:	09102	Entry Time -	10.00		C -	0.8024		C -	0.8024	
					STM Return Period:	100	year	STM Return Period:	100	year
Designed by:	SS				A -	1435		A -	1435	
Checked by:	DM				B -	5.2		B -	5.2	
Date:	14-Jul-25				C -	0.7751		C -	0.7751	