

FUNCTIONAL SANITARY SERVICING REPORT

Proposed Industrial Subdivision
1665 Scotch Line Road
Elmira, Ontario

6 March 2025



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London, Ontario, N5X 4E8
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SBM-23-2603

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"Transportation & Environmental Services" GIS Data from the Region of Waterloo, acquired November 8, 2024

"Figure 2.4: Elmira Wastewater Collection System" from the Final Report: St. Jacobs – Elmira Wastewater Treatment Master Plan, by XCG Consultants Ltd., dated February 28, 2023

"PLAN AND PROFILE STA 1+275 to STA 1+490.5" Drawing No. PP02, by Stantec Consulting Ltd., dated January, 2004

"PLAN AND PROFILE STA 1+032 to STA 1+275" Drawing No. PP01, by Stantec Consulting Ltd., dated January, 2004

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Sanitary Sewer Design Sheet – Proposed Development

Sanitary Sewer Analysis – Upstream Conditions

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1. INTRODUCTION

This Functional Sanitary Servicing Report (Report) has been prepared by Strik, Baldinelli, Moniz Ltd. (SBM) to address the requirements of the Township of Woolwich and the Region of Waterloo for the proposed industrial Draft Plan of Subdivision.

This Report is intended to represent a component of the overall Draft Plan of the Subdivision application and should be read in conjunction with all other submitted documents. The subject site is located at 1665 Scotch Line Road in the Town of Elmira and the following, along with the Preliminary Engineering Drawings (provided separately), have been prepared to address the Township's and the Region's requirements.

The 55 ha subject site borders the South Field Drive Right of Way (R.O.W.) to the north, industrial/ commercial lots to the west, farmlands/open space to the east and south. The proposed industrial subdivision will include 11 industrial blocks, 1 stormwater management block, 1 open space block, 1 sanitary pumping station block, and 3 future development blocks. Refer to the Draft Plan of Subdivision, provided separately.

Design requirements have been based on the Design Guidelines and Supplemental Specifications for Municipal Services (DGSSMS) dated February 2024, and the Ministry of the Environment, Conservation, and Parks (MECP) Design Guidelines for Sewage Works 2016 (DGSW).

2. EXISTING SANITARY SERVICING

As shown on the "Elmira Industrial TWP Road 27" drawing No. L8904036-PP2, by Progressive Engineering Services Ltd., provided in Appendix A, there is an existing 250 mm diameter sanitary sewer located within the South Field Drive, also known as Township Road 27, R.O.W.

The Region's GIS as well as the Township's "Elmira - Sanitary" figure 2.4 (both provided in Appendix A) do not show this 250 mm diameter sewer – they only show the existing 450 mm diameter sewer on South Field Drive east of Union Street.

3. PROPOSED SERVICING

Due to existing topography, it is not possible to extend a gravity sewer to the subject site. A sanitary pumping station and forcemain will be required. The pumping station will be located in a new block in the proposed subdivision, and will receive flows from gravity sewers servicing the surrounding lands. The forcemain will extend along South Field Drive from the pumping station to the existing sewer. Gravity sewers within the proposed subdivision are shown on the preliminary engineering drawings provided separately.

It is anticipated the pumping station will be designed to accommodate flows from the subject site as well as the undeveloped employment lands north of South Field Drive. Accordingly, the costs associated with the pumping station and forcemain would be eligible for development charge refunds and/or cost sharing.

4. SANITARY FLOW ANALYSIS

The proposed flows from the subject site are shown on the design sheet titled "Sanitary Sewer Design Sheet – ELMIRA INDUSTRIAL SUBDIVISION", provided in Appendix B. Using the 0.4 L/s/hectare design criteria for industrial land use, as per Section B.3.1.2.2 of the DGSSMS, applied to the area of each industrial block (11 blocks) results in an anticipated peak sanitary flow of 36.05 L/s for all industrial blocks within the proposed subdivision. Since the specific use of each block of the subject site, and the tributary employment lands, are currently unknown, a peaking factor of 2 was applied when calculating the peak sanitary flow as per Section B.3.1.2.2 of

the DGSSMS. When combined with infiltration, the result is a total peak flow of 46.30 L/s conveyed to the proposed pumping station.

Sanitary flows from the adjacent external employment lands with industrial zoning (municipal no. 144 South Field Drive), were also considered as tributary to the proposed pump station. Please refer to the Sanitary Sewer Catchments Area drawing, provided separately. The flows from the adjacent lands (external area EX01) are shown on the design sheet titled “Sanitary Sewer Design Sheet – ELMIRA INDUSTRIAL SUBDIVISION”, provided in Appendix B. Applying the industrial design criteria to the 26.70 ha area of the 144 South Field Drive with a peaking factor of 2.0, results in an anticipated peak sanitary flow of 24.29 L/s. When combined with infiltration, the result is a total peak flow of 31.19 L/s conveyed from 144 South Field Drive to proposed pumping station. A combined peak flow of 77.48 L/s from 144 South Field Drive and the subject site is conveyed to the pumping station, to the proposed forcemain, and to the existing sanitary sewer within the South Field Drive R.O.W.

From South Field Drive, the flows from the subject site are conveyed downstream to the Elmira Wastewater Treatment Plant (WWTP). Based on the “Transportation & Environmental Services” GIS data acquired from the Region on November 8th, 2024, and “Figure 2.4: Elmira Wastewater Collection System” from the Final Report St. Jacobs – Elmira Wastewater Treatment Master Plan, by XCG Consultants Ltd., found in Appendix A, the existing 250 mm diameter sanitary sewer within the South Field Drive R.O.W. connects to a 450 mm diameter sanitary sewer at maintenance hole 646 (MH646). This 450 mm diameter sanitary sewer forms one of two branches of a downstream sanitary trunk sewer—named “South Industrial Trunk Sewer”, and “Oriole Parkway Trunk Sewer”, respectively as per “PLAN AND PROFILE STA 1+275 to STA 1+490.5” drawing No. PP02, by Stantec Consulting Ltd., provided in Appendix A. As shown in “Figure 2.4: Elmira Wastewater Collection System”, at maintenance hole 285 (MH265), the two trunk sewer branches meet and connect to a 600 mm sanitary sewer for conveyance to the Elmira WWTP.

The Elmira sanitary watershed was analyzed to determine the peak flow and verify capacity in the existing sanitary system. The analysis is shown on the design sheet titled “Sanitary Sewer Analysis – Upstream Conditions”, provided in Appendix B. The zoning and footage for all lots tributary to the two trunk sewer branches, were determined using the Township of Woolwich Online Zoning By-Law GIS data. Based on lot zoning and the Township of Woolwich Zoning By-Laws, each lot was denoted as residential, industrial, institutional, or commercial, respectively. The population associated with the residential lots was determined using the “Residential Forecasted 15-year average persons per unit by dwelling type” as reported for the density (Low, Medium, High) of the dwelling in Section 3.3 of the “2024 Development Charges Background Study — Township of Woolwich” by Watson & Associates Economists Ltd., dated May 1, 2024. Using a design flow of 322.1 L/capita/day, as per Region of Waterloo's 2024 “Water and Wastewater Monitoring Report” for the Five Year Average Per Capita Flow for the Town of Elmira, applied to a population as calculated above and a peaking factor calculated with the Harmon Peaking Factor “M” (as per Section B.3. of the DGSSMS), yields the peak residential sanitary flows. Commercial, institutional, and industrial sanitary flows were determined using the lot frontage multiplied by an area basis and peaking factor as per Section B.3. of the DGSSMS. The resulting total peak sanitary flow was calculated to be 112.05 L/s, and 42.36 L/s, for the Oriole Parkway Trunk Sewer and South Elmira Trunk Sewer branches, respectively. When combined with infiltration, this results in a total peak flow of 153.01 L/s, and 54.27 L/s, conveyed to MH646 and MH265, respectively.

The downstream analysis is shown on the design sheet titled “Sanitary Sewer Design Sheet – Downstream Analysis”, provided in Appendix B. The sanitary flows from residential, industrial, institutional, or commercial lots, were calculated using the same methodology of the upstream analysis. The resulting total downstream peak sanitary flow was calculated to be 218.45 L/s received to maintenance hole 266 (MH266), leading to the Elmira WWTP. When combined with infiltration, this results in a total peak flow of 291.88 L/s conveyed to MH266 and the WTP, respectively. With reference to the as-built drawing No. PP01, provided in Appendix A, the pipe with

the lowest available flow capacity (i.e. highest Percent Full) is between maintenance holes 654 (MH654) and MH655, with a utilization of 69.3%. There appears to be sufficient conveyance to accommodate the proposed development as all downstream receiving sewers are calculated to flow within acceptable limits.

5. LIMITATIONS

This Report was prepared by SBM for 1000525725 Ontario Inc., the Township of Woolwich, and the Region of Waterloo. Use of this Report by any third party, or any reliance upon its findings, is solely the responsibility of that party. SBM accepts no responsibility for damages, if any, suffered by a third party as a result of decisions made or actions undertaken as a result of this Report. Third party use of this Report, without the express written consent of the Consultant, denies any claims, whether in contract, tort, and/or any other cause of action in law, against the Consultant.

All findings and conclusions presented in this Report are based on information as it appeared during the design period. This Report is not intended to be exhaustive in scope, or to imply a risk-free facility. It should be recognized that the passage of time may alter the designs, opinions, conclusions, and/or recommendations provided herein.

The design was limited to the documents referenced herein. SBM accepts no responsibility for the accuracy of the information provided by others. All designs, opinions, conclusions, and/or recommendations presented in this Report are based on the information available at the time of the review.

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6. CLOSURE

We trust this Report meets your satisfaction and current needs. Should you have any questions or require additional information, please do not hesitate to contact the undersigned.

Respectfully submitted,

Strik, Baldinelli, Moniz Ltd.

Planning • Civil • Structural • Mechanical • Electrical



Ben Hyland, P.Eng., PMP
Civil Team Lead, Eng IV
Associate I



Jacob Jamnicky, EIT
Civil Engineering Trainee I

APPENDIX A

“Elmira Industrial TWP Road 27” Drawing No. L8904036-PP2, by Progressive Engineering Services Ltd., dated March, 1997

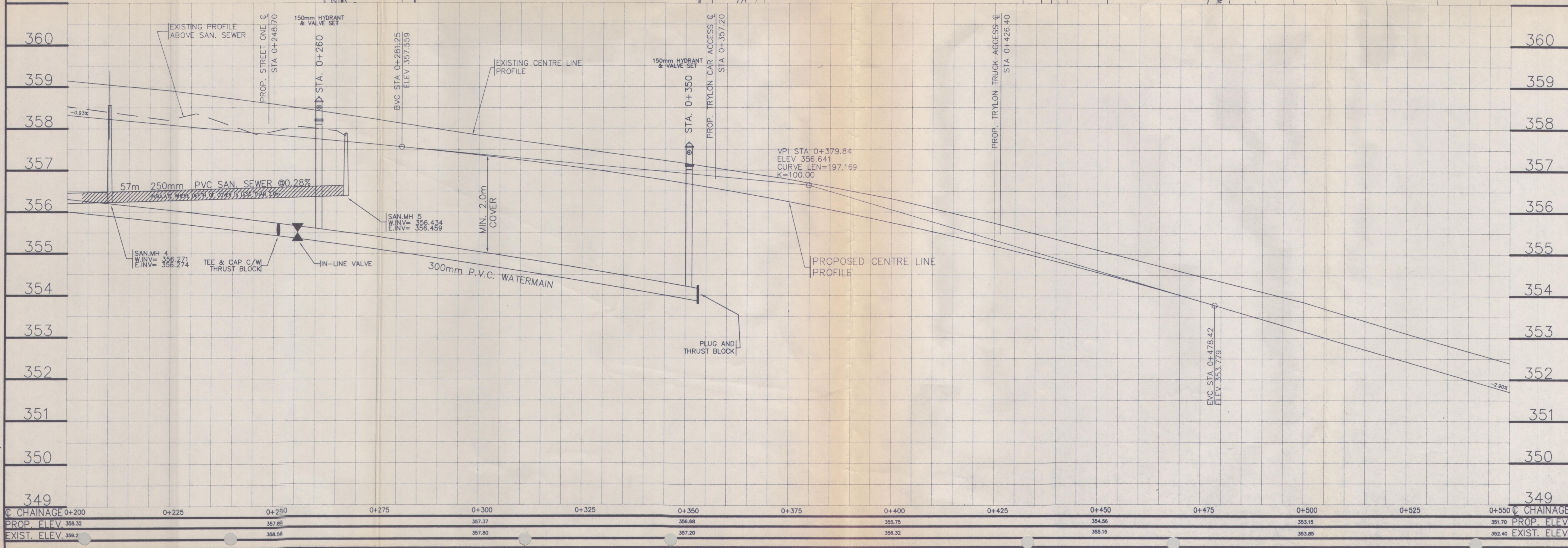
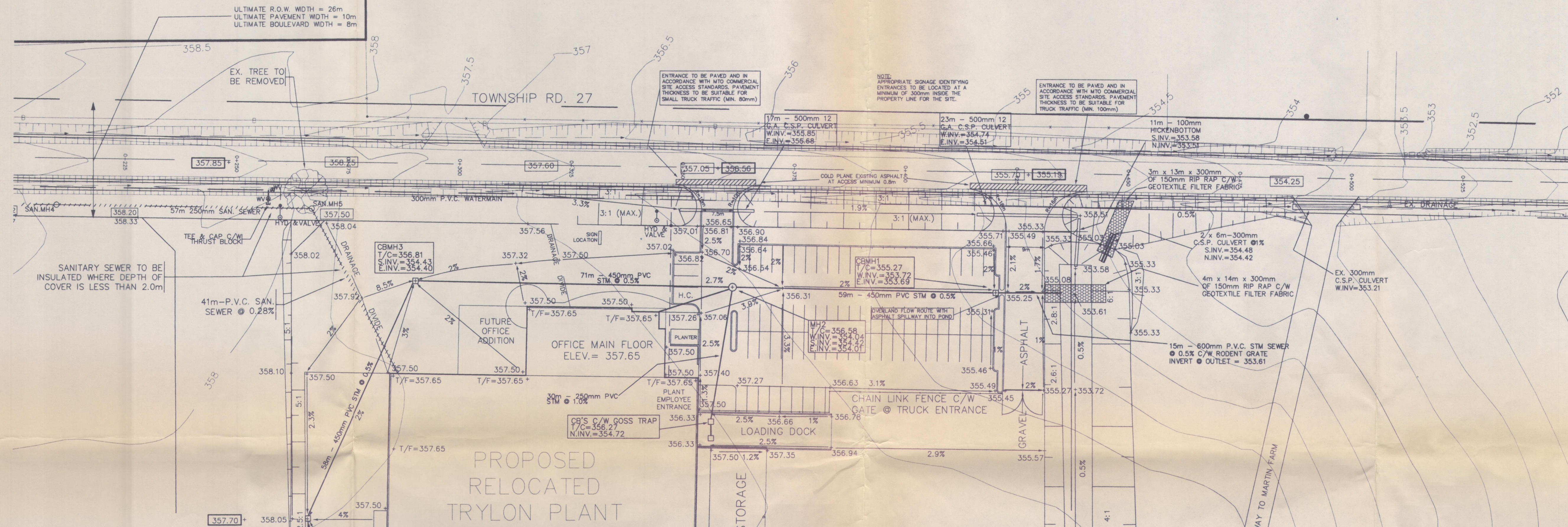
“Transportation & Environmental Services” GIS Data from the Region of Waterloo, acquired November 8, 2024

“Figure 2.4: Elmira Wastewater Collection System” from the Final Report: St. Jacobs – Elmira Wastewater Treatment Master Plan, by XCG Consultants Ltd., dated February 28, 2023

“PLAN AND PROFILE STA 1+275 to STA 1+490.5” Drawing No. PP02, by Stantec Consulting Ltd., dated January, 2004

“PLAN AND PROFILE STA 1+032 to STA 1+275” Drawing No. PP01, by Stantec Consulting Ltd., dated January, 2004

EXISTING BUILDING
(HOME HARDWARE LTD.)



LEGEND

EXISTING

- OHP - HYDRO POLE
- WV - WATER VALVE
- VC - VALVE CHAMBER
- HYD - FIRE HYDRANT
- SAN.MH - SANITARY MANHOLE
- BB - SIGN
- BB - BELL BOX
- DR - DRAINAGE DIRECTION
- WM - WATERMAIN
- SS - SANITARY SEWER
- LB - LEGAL BOUNDARY
- EG - EXISTING GRADE

PROPOSED

- SAN.MH.5 - SANITARY MANHOLE
- SS - SANITARY SEWER
- IS - INSULATED SAN. SEWER
- WM - WATERMAIN
- CC - CONCRETE CURB
- PG - PROPOSED GRADE
- FG - PROPOSED FUTURE GRADE
- WV - WATER VALVE
- HYD - FIRE HYDRANT

NOTE:
THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING
NO. L8904036-PP1

TOWNSHIP OF WOOLWICH
REVIEW IS FOR GENERAL COMPLIANCE
WITH CONTRACT DOCUMENTS
NO RESPONSIBILITY IS ASSUMED FOR
CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN
MAKE CORRECTIONS NOTED
AMEND & RESUBMIT
REJECTED - SEE REMARKS

Date May 13, 1997 By R. K. K. K.

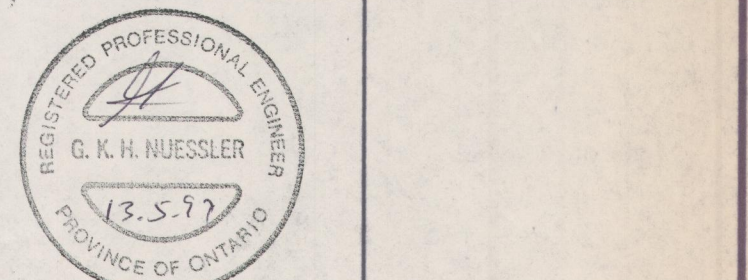
COPYRIGHT 1997, PROGRESSIVE ENGINEERING SERVICES LTD.

DATE ISSUED:

360			
359			
358			
357	2.	AS PER TWP. OF WOOLWICH COMMENTS DATED: MAY 6, 1997	D.L. 08/05/97
	1.	AS PER TWP. OF WOOLWICH COMMENTS DATED: APRIL 23, 1997	D.L. 29/04/97
356	NO.	REVISIONS	BY DATE

Progressive Engineering
Services Ltd.
Consulting Engineers
196 McIntyre Dr. Kitchener Ont. N2R 1H4 (519)748-0101

ELMIRA INDUSTRIAL
TWP ROAD 27
ELMIRA ONTARIO
REALIGNMENT DESIGN
STA 0+200 TO 0+550



DRAWN BY: D.L.
CHECKED BY: G.K.N.
DATE: MARCH 1997
SCALE: HOR=1:500
VER=1:50

CONTRACT NO.
L8904036
DRAWING NO.
L8904036-PP2
SHEET 2 OF 2



Region of Waterloo

Transportation & Environmental Services



EXISTING 450 mm
DIAMETER SEWER

SOUTH FIELD DRIVE

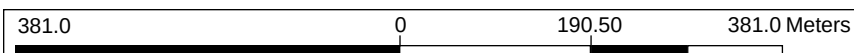
SUBJECT SITE

Legend

- Stormwater Subdrains
- Stormwater Leads
- Stormwater Mains
- Stormwater Culverts
- Stormwater Ditches
- Woolwich - Sanitary Pumping Stations
- Woolwich - Sanitary Laterals
- Woolwich - Sanitary Inverted Siphons
- Woolwich - Sanitary Forcemain
- Woolwich - Sanitary Pipes
- Woolwich - Sanitary Trunk Sewer
- Municipal Wells
 - Production Well, In Service
 - Production Well, Out of Service
 - Production Well, Abandoned
 - Groundwater Monitoring, In Service
 - Groundwater Monitoring, Abandoned
 - Groundwater Monitoring, Unknown
 - Containment Well, In Service
- Water Mains (In Service)
 - Region of Waterloo
 - Dual - Region & Area Municipality
 - Area Municipality
 - Private
- Water Mains (Woolwich)
 - Regional Structures
 - Regional Properties
 - Regional Roads
 - Watercourses
 - Teranet Ownership Parcels
 - Municipal Boundaries

Scale 1: 7,500

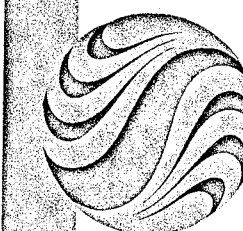
Notes



NAD_1983_UTM_Zone_17N



This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.



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Legend

Notes

DESIGN APPROVED SUBJECT TO DETAIL
CONSTRUCTION CONFORMING TO THE TOWNSHIP OF
WOOLWICH STANDARDS AND SPECIFICATIONS

SIGNED: _____

DATED: _____

MANAGER OF ENGINEERING AND OPERATIONS
TOWNSHIP OF WOOLWICH

Revision	By	Appd.	YY.MM.DD
1 RECORD DRAWING	HA	BR	04.01.22
0 ISSUED FOR TENDER	HA	BR	03.08.15
Issued	By	Appd.	YY.MM.DD
File Name: 61110404P01-02.dwg	BLH	HA	03.07.21
	Dwn	Chkd	Dsgn
			YY.MM.DD

Permit-Seal

Client/Project

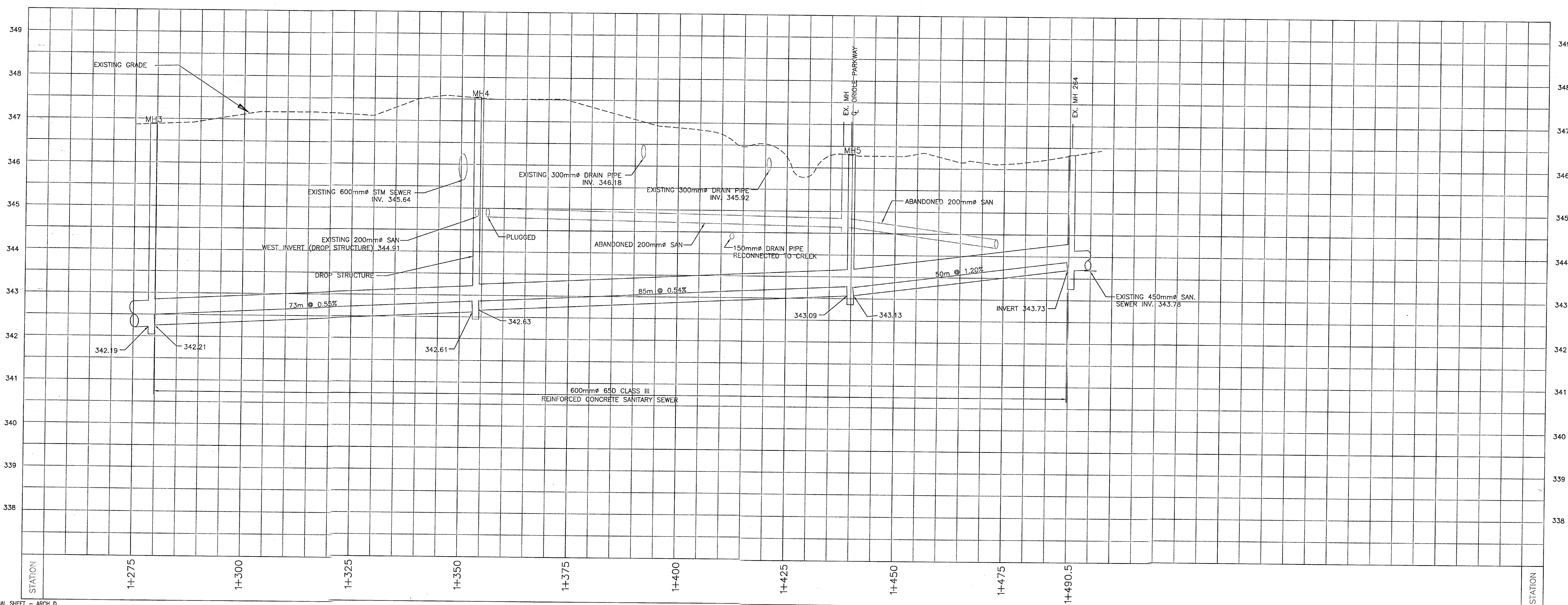
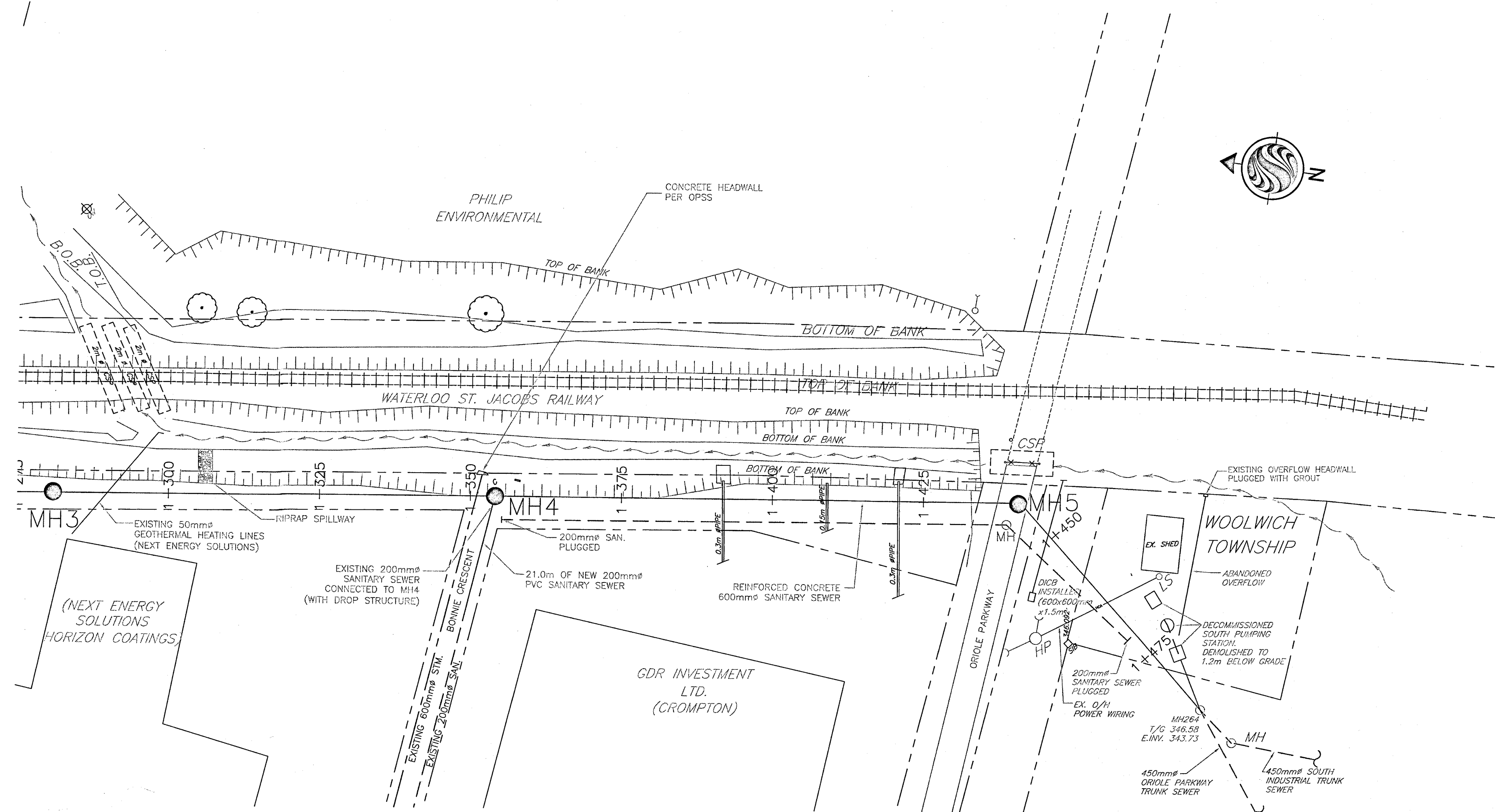
Township of Woolwich
ELMIRA SOUTH TRUNK SEWER
Elmira ON Canada

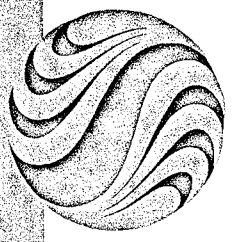


Title
PLAN AND PROFILE
STA 1+275 to 1+490.5

Project No. 611-10404
Drawing No. 3 OF 3
Scale H- 1:500, V-1:50
Sheet
Revision

PP02 3 OF 3 1





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Legend

Notes

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SIGNED: _____

DATED: _____

MANAGER OF ENGINEERING AND OPERATIONS
TOWNSHIP OF WOOLWICH

Revision	By	Appd.	YY.MM.DD
1	RECORD DRAWING	HA	BR 04.01.22
0	ISSUED FOR TENDER	HA	BR 03.08.15
Issued		By	Appd. YY.MM.DD
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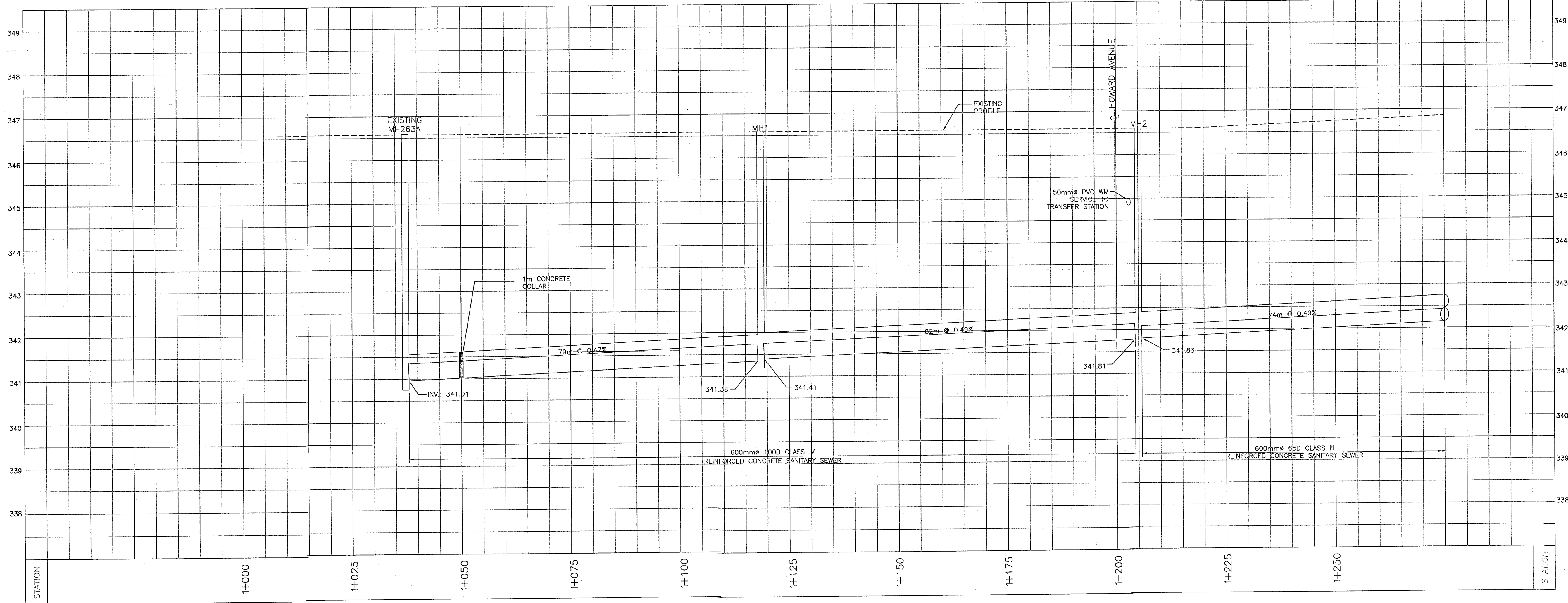
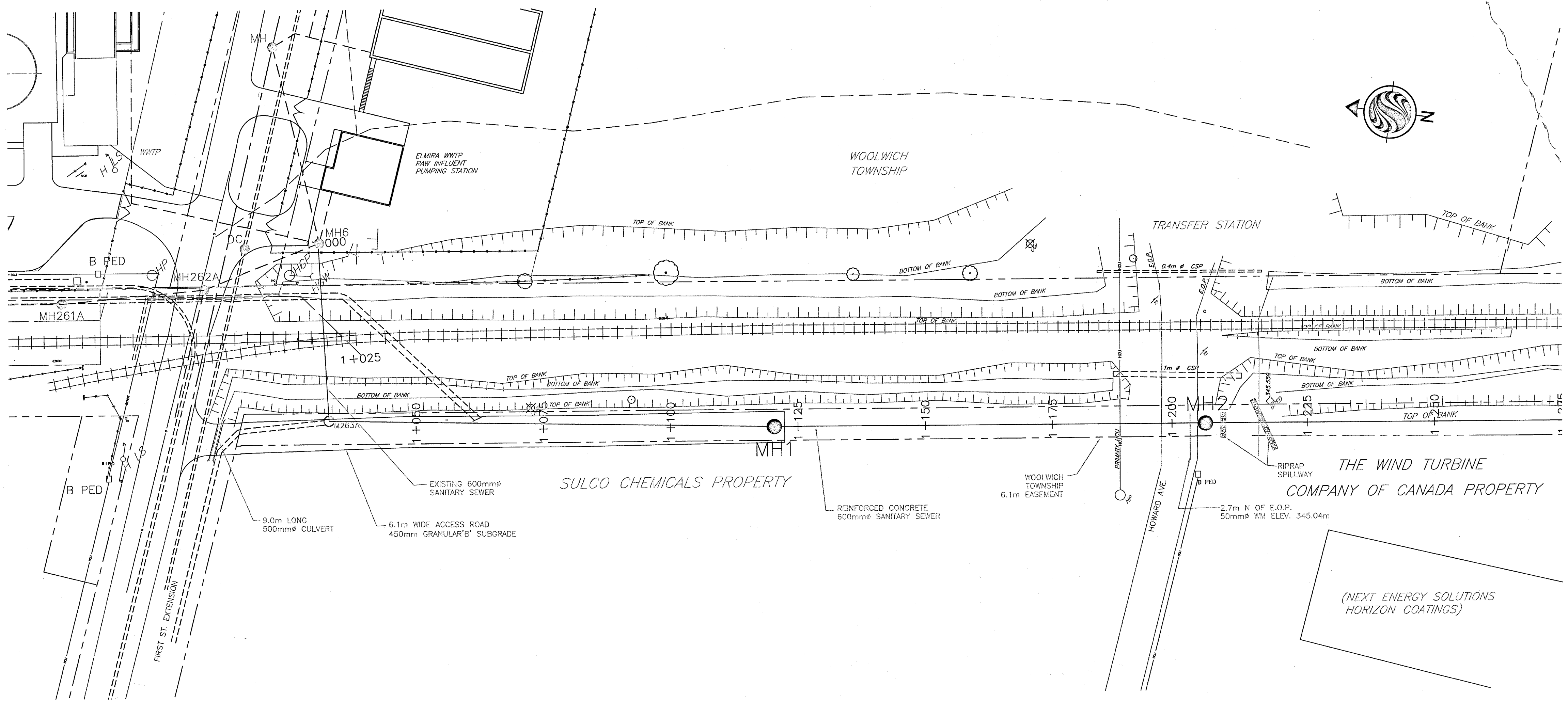
Permit Seal

Client/Project

Township of Woolwich
ELMIRA SOUTH TRUNK SEWER
Elmira ON Canada

Title
PLAN AND PROFILE
STA 1+032 TO 1+275

Project No. 611-10404	Scale H- 1:500, V-1:50
Drawing No. PP01	Sheet 2 OF 3
	Revision 1



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2004-02-10 09:00AM By: cmiller

ORIGINAL SHEET - ARCH D



EXISTING CONDITIONS

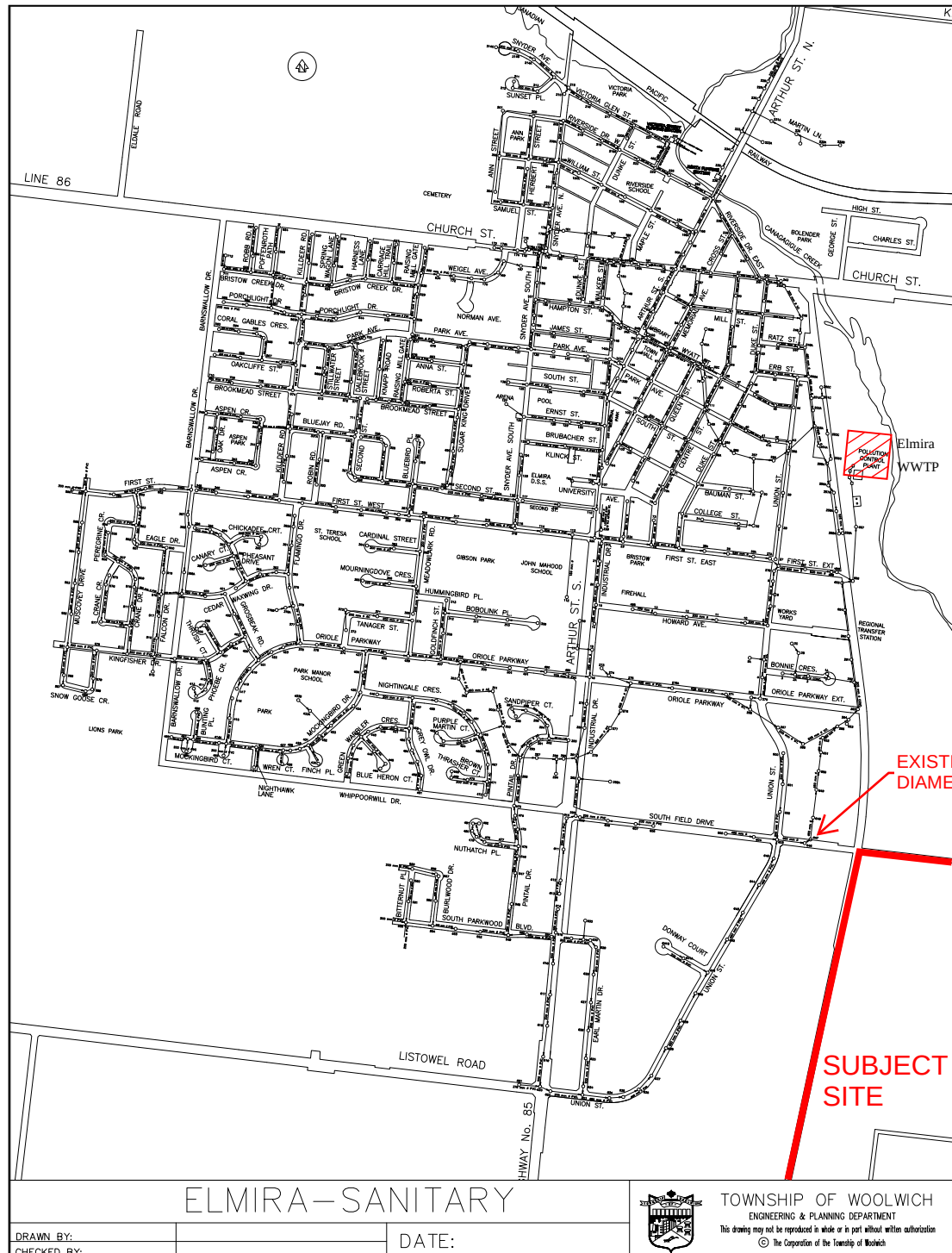


Figure 2.4 Elmira Wastewater Collection System

APPENDIX B

Sanitary Sewer Design Sheet – ELMIRA INDUSTRIAL SUBDIVISION
Sanitary Sewer Analysis – Upstream Conditions
Sanitary Sewer Design Sheet – Downstream Analysis

Sanitary Sewer Design Sheet – ELMIRA INDUSTRIAL SUBDIVISION
Township of Woolwich, and the Region of Waterloo

Industrial Design Criteria*:
Sewage Infiltration*:
Industrial Peaking Factor*:

0.4
0.25
Minimum: 2
Maximum: 4
0.3321
332.1
1.1

L/s/ha
L/s/ha

m³/c/d
L/c/d

Five Year Average Per Capita Flow**:

Uncertainty Factor:

Date: March 6, 2025
Job Number: SBM-23-2603
Client: 1000529725 Ontario Inc.
Project: Industrial Subdivision
Designed By: J.P./J.Z.
Reviewed By: BH
Project File No.: SBM-23-2603

Location				Area		Industrial Sewage Flows					Sewer design												
Area No.	Street Name	From MH	To MH	Delta Hectare	Total Hectare	Peaking Factor	Infit L/S	Sewage L/S	Total L/S	n	Pipe Slope %	Calc'd Dia. mm	Dia. mm	Capacity L/S	Velocity m/s	Length m	Fall in Sewer	Headloss	Drop in U.S. Mh	U.S. Invert	D.S. Invert	Percent Full (%)	
A202	Street A	CAP10	SAMH18	4.62	4.62	2.00	1.16	4.07	5.22	0.013	0.50%	114.33	200	23.21	0.74	17.4	0.09			351.24	351.16	22.5	
	Street A	SAMH18	SAMH17	0.00	4.62	2.00	1.16	4.07	5.22	0.013	0.50%	114.33	200	23.21	0.74	70.0	0.35		0.06	351.10	350.75	22.5	
A212	Street A	CAP9	SAMH17	3.65	3.65	2.00	0.91	3.21	4.12	0.013	0.50%	104.66	200	23.21	0.74	17.5	0.09			350.86	350.78	17.8	
A203	Street A	CAP7	SAMH17	2.50	2.50	2.00	0.63	2.20	2.83	0.013	0.50%	90.82	200	23.21	0.74	17.5	0.09			350.86	350.78	12.2	
	Street A	SAMH17	SAMH16	0.00	10.77	2.00	2.69	9.48	12.17	0.013	0.50%	157.04	200	23.21	0.74	90.0	0.45		0.03	350.72	350.27	52.4	
	Street A	SAMH16	SAMH15	0.00	10.77	2.00	2.69	9.48	12.17	0.013	0.50%	157.04	200	23.21	0.74	90.0	0.45		0.03	350.24	349.79	52.4	
A204	Street A	CAP8	SAMH15	2.67	2.67	2.00	0.67	2.35	3.02	0.013	0.50%	93.08	200	23.21	0.74	17.5	0.09			349.90	349.82	13.0	
	Street A	SAMH15	SAMH14	0.00	13.44	2.00	3.36	11.83	15.19	0.013	0.50%	170.64	200	23.21	0.74	90.0	0.45			349.76	349.31	65.4	
	Street A	SAMH14	SAMH11	0.00	13.44	2.00	3.36	11.83	15.19	0.013	0.50%	170.64	200	23.21	0.74	89.5	0.45		0.03	349.28	348.83	65.4	
A201	Street A	CAP5	SAMH11	9.80	9.80	2.00	2.45	8.62	11.07	0.013	0.50%	151.58	200	23.21	0.74	17.5	0.09			348.89	348.80	47.7	
A208	Street A	CAP4	SAMH13	2.23	2.23	2.00	0.56	1.96	2.52	0.013	0.50%	87.01	200	23.21	0.74	17.5	0.09			349.53	349.44	10.9	
	Street A	SAMH13	SAMH12	0.00	2.23	2.00	0.56	1.96	2.52	0.013	0.50%	87.01	200	23.21	0.74	26.2	0.13		0.06	349.38	349.25	10.9	
	Street A	SAMH12	SAMH11	0.00	2.23	2.00	0.56	1.96	2.52	0.013	0.50%	87.17	200	23.09	0.73	79.6	0.39		0.03	349.22	348.83	10.9	
	Street B	SAMH11	SAMH10	0.00	25.47	2.00	6.37	22.41	28.78	0.013	0.50%	216.87	250	42.07	0.86	67.2	0.34		0.06	348.77	348.44	68.4	
	Street B	SAMH10	SAMH9	0.00	25.47	2.00	6.37	22.41	28.78	0.013	0.50%	216.87	250	42.07	0.86	90.0	0.45		0.03	348.41	347.96	68.4	
	Street B	SAMH9	SAMH8	0.00	25.47	2.00	6.37	22.41	28.78	0.013	0.50%	216.87	250	42.07	0.86	90.0	0.45		0.03	347.93	347.48	68.4	
A206	Street B	CAP1	SAMH8	2.51	2.51	2.00	0.63	2.21	2.84	0.013	2.17%	69.07	200	48.34	1.54	11.5	0.25			347.76	347.51	5.9	
	Street B	SAMH8	SAMH5	0.00	27.98	2.00	7.00	24.62	31.62	0.013	0.50%	224.65	250	42.07	0.86	67.2	0.34		0.03	347.45	347.11	75.1	
A205	Street A	CAP11	SAMH7	2.67	2.67	2.00	0.67	2.35	3.02	0.013	5.43%	59.52	250	138.66	2.82	17.5	0.95			349.00	348.05	2.2	
A211	Street A	CAP6	SAMH7	3.68	3.68	2.00	0.92	3.24	4.16	0.013	0.50%	104.98	200	23.21	0.74	17.5	0.09			348.14	348.05	17.9	
	Street A	SAMH7	SAMH6	0.00	6.35	2.00	1.59	5.59	7.18	0.013	0.50%	128.82	250	42.07	0.86	90.0	0.45		0.06	347.99	347.54	17.1	
	Street A	SAMH6	SAMH5	0.00	6.35	2.00	1.59	5.59	7.18	0.013	0.50%	128.82	250	42.07	0.86	87.0	0.44		0.03	347.51	347.08	17.1	
	Street A	SAMH5	SAMH4	0.00	34.33	2.00	8.58	30.21	38.79	0.013	0.61%	233.68	300	75.57	1.07	73.1	0.45		0.03	347.05	346.60	51.3	
A207	Street A	CAP3	SAMH4	2.49	2.49	2.00	0.62	2.19	2.81	0.013	0.52%	90.01	200	23.67	0.75	17.0	0.09			346.72	346.63	11.9	
	Street A	SAMH4	SAMH3A	0.00	36.82	2.00	9.21	32.40	41.61	0.013	0.50%	249.01	300	68.42	0.97	33.8	0.17		0.03	346.57	346.40	60.8	
	Street A	SAMH3A	SAMH3	0.00	36.82	2.00	9.21	32.40	41.61	0.013	0.50%	249.01	300	68.42	0.97	83.3	0.42		0.03	346.37	345.96	60.8	
	Street A	SAMH3	SAMH2	0.00	36.82	2.00	9.21	32.40	41.61	0.013	0.50%	249.01	300	68.42	0.97	57.6	0.29		0.03	345.93	345.64	60.8	
A209	Street A	CAP2	SAMH2	2.52	2.52	2.00	0.63	2.22	2.85	0.013	1.00%	79.99	200	32.82	1.04	17.5	0.18			346.37	346.20	8.7	
A210	Street A	CAP19	SAMH2	1.63	1.63	2.00	0.41	1.43	1.84	0.013	1.00%	67.93	200	32.82	1.04	19.1	0.19			346.39	346.20	5.6	
	Street A	SAMH2	SAMH1	0.00	40.97	2.00	10.24	36.05	46.30	0.013	0.50%	259.18	300	68.42	0.97	59.2	0.30		0.59	345.61	345.31	67.7	
	Street A	CAP14	SAMH0	27.60	27.60	2.00	6.90	24.29	31.19	0.013	0.50%	223.50	300	68.42	0.97	5.1	0.03			345.56	345.53	45.6	
EX01	Street A	SAMH0	SAMH1	0.00	27.60	2.00	6.90	24.29	31.19	0.013	0.50%	223.50	300	68.42	0.97	30.7	0.15		0.03	345.50	345.35	45.6	
	Street A	SAMH1	PUMP STATION	0.00	68.57	2.00	17.14	60.34	77.48	0.013	1.00%	276.08	375	175.43	1.59	24.3	0.24		0.06	345.25	345.01	44.2	
	South Field Street	PUMP STATION	SAMHFM	0.00	68.57	2.00	17.14	60.34	77.48			Forcemain Size 180											
	South Field Street	SAMHFM	MH646	0.00	68.57	2.00	17.14	60.34	77.48			Forcemain Size TBD											

* As per the DGSMS, "Design Guidelines and Supplemental Specifications for Municipal Services" (2024)
** As per the Region of Waterloo's "Water and Wastewater Monitoring Report" (2024)

Sanitary Sewer Analysis – Upstream Conditions
Township of Woolwich, and the Region of Waterloo

Population Densities														
Low Density (Single Family/Semi-Detached)** :				3.416	People/unit									
Medium Density (Duplex/Townhouse Units)** :				2.579	People/unit									
High Density Residential (Apartment Building)** :				1.887	People/unit									
Area Basis														
Industrial*** :				0.4	L/s/ha									
Institutional*** :				0.25	L/s/ha									
Commercial — Core*** :				0.95	L/s/ha									
Commercial — Shopping Mall*** :				0.3	L/s/ha									
Commercial — General*** :				0.5	L/s/ha									
Design Criteria:														
Sewage Infiltration*** :				0.25										
Harmon Formula (Peaking Factor)*** :				$M = (1 + 14/(4+P^{0.5}))$										
Industrial Peaking Factor*** :				Minimum: 2										
				Maximum: 4										
Institutional Peaking Factor**** :				Minimum: 1.5										
Commercial Peaking Factor*** :				2.5										
Five Year Average Per Capita Flow***** :				0.3321	m ³ /L/d									
				332.1	L/c/d									
Uncertainty Factor*** :				1.1										
Date: March 6, 2025														
Job Number: SBM-23-2603														
Client: 1000525725 Ontario Inc.														
Project: Industrial Subdivision														
Designed By: J.P.J.														
Reviewed By: BH														
Project File No.: SBM-23-2603														

Location				Area		Residential Population					Sewage Flows			
Lot Numbers*	Street Name	From MH	To MH	Zoning Footage* m ²	Delta Hectre	Total Hectare	People Per Lot	No. of Lots / Units	Delta Pop.	Total Pop.	Harmon Peaking Factor	Infil L/S	Sewage L/S	Total L/S
TRUNK SEWER BRANCH A — ORIOLE PARKWAY EAST CONNECTION TO MH265														
UPSTREAM ANALYSIS: TIMBER TRAIL ROAD TO MH289														
218-260	Timber Trail Road	Timber Trail Rd	Woodberry Crescent		2.45	2.45	2.88	28	81	81	4.27	0.61	1.45	2.06
123-187	Woodberry Crescent	Woodberry Crescent	Timber Trail Road Intersection		2.54	2.54	2.85	58	165	165	4.18	0.63	2.91	3.54
174-219	Timber Trail Road	Timber Trail Road	Weymouth Street Intersection		1.03	6.02	3.42	23	79	324	4.06	1.51	5.57	7.08
71-141	Future Developments — South Parkwood	South Parkwood Boulevard	Weymouth Street Intersection		3.82	3.82	2.75	89	245	245	4.11	0.96	4.26	5.22
25-76	Future Developments — Weymouth Street	Weymouth Street	Woodberry Crescent Intersection		1.47	5.30	3.42	22	75	320	4.07	1.32	5.51	6.83
111-122	Woodberry Crescent	Woodberry Crescent	Weymouth Street Intersection		0.405	0.41	2.86	12	34	34	4.35	0.10	0.63	0.73
158-168	Timber Trail Road	Timber Trail Road	South Parkwood Boulevard Intersection		0.43	12.16	3.42	10	34	713	3.89	3.04	11.72	14.76
49-53	South Parkwood Boulevard	South Parkwood Boulevard	MH555		0.15	12.31	3.42	3	10	723	3.89	3.08	11.88	14.96
1-29	Bitternut Place	MH560	MH555		0.92	0.92	2.62	23	60	60	4.30	0.23	1.09	1.32
14-43	Bur Oak Drive	Bur Oak Drive	Richard Park Rd Intersection		2.21	2.21	2.58	54	140	140	4.20	0.55	2.49	3.04
10-30	Richard Rank Drive	Richard Rank Drive	Woodberry Crescent Intersection		0.27	2.48	3.42	6	20	161	4.18	0.62	2.84	3.46
11-31	Woodberry Crescent	Woodberry Crescent	Timber Trail Rd Intersection		0.38	2.86	3.42	7	24	185	4.16	0.72	3.25	3.97
35-109	Woodberry Crescent	Woodberry Crescent	Timber Trail Rd Intersection		1.53	1.53	3.12	37	116	116	4.23	0.38	2.06	2.44
10-97	Timber Trail Road	Timber Trail Road	Burwood Drive Intersection		1.93	6.32	3.42	34	116	416	4.01	1.58	7.07	8.65
101-147	Timber Trail Road	Timber Trail Road	Burwood Drive Intersection		1.07	1.07	2.90	29	84	84	4.26	0.27	1.51	1.78
27-35	Burwood Drive	Burwood Drive	MH559		0.34	7.74	3.42	5	17	517	3.97	1.93	8.68	10.61
1-25	Burwood Drive	MH559	MH554		1.52	9.26	3.42	21	72	589	3.94	2.32	9.81	12.13
37-47	South Parkwood Boulevard	MH555	MH554		0.32	13.54	3.42	6	20	804	3.86	3.39	13.11	16.50
15-35	South Parkwood Boulevard	MH554	MH549		1.49	24.30	3.42	11	38	1430	3.69	6.08	22.34	28.42
10-13	South Parkwood Boulevard	MH551	MH549		0.31	0.31	3.42	2	7	7	4.43	0.08	0.13	0.21
39-62	Pintail Drive	MH549	MH476		2.27	26.87	3.42	22	75	1512	3.68	6.72	23.51	30.23
1-16	Nuthatch Place	MH482	MH476		2.12	2.12	3.42	14	48	48	4.32	0.53	0.87	1.40
13-37	Pintail Drive	MH476	MH2889		2.05	31.04	3.42	23	79	1639	3.65	7.76	25.30	33.06
1-5	Pintail Drive	MH293	MH292		0.40	0.40	3.42	4	14	14	4.40	0.10	0.25	0.35
4-20	Sandpiper Drive	MH298	MH292		2.02	2.02	3.42	19	65	65	4.29	0.51	1.18	1.69
7-15	Pintail Drive	MH292	MH289		0.67	3.09	3.42	8	27	106	4.24	0.77	1.90	2.67
UPSTREAM ANALYSIS: MUSCOVEY DRIVE TO MH289														
115-134	Muscovey Drive	MH585	MH586		0.47	0.47	3.42	9	31	31	4.35	0.12	0.57	0.69
214-218	First Street West	MH596	MH586		0.24	0.24	3.42	3	10	10	4.41	0.06	0.19	0.25
174-210	First Street West	MH86	MH600		0.91	1.62	3.42	17	58	99	4.24	0.40	1.78	2.18
43-49	Eagle Drive	MH603	MH600		0.10	0.10	3.42	2	7	7	4.43	0.03	0.13	0.16
142-173	First Street West	MH600	MH348A		0.60	2.31	3.42	12	41	147	4.19	0.58	2.60	3.18
112-116	Barnswallow Drive	Barnswallow Drive	MH348A		0.40	0.40	3.42	2	7	7	4.43	0.10	0.13	0.23
118-128	Barnswallow Drive	MH348A	MH399		1.84	4.56	2.40	61	114	268	4.10	1.14	4.88	6.02
30-45	Cedar Waxwing Drive	MH399	MH401		0.88	5.44	3.42	15	51	319	4.07	1.36	5.73	7.09
4-23	Grosbeak Road	MH401	MH403		0.78	6.22	2.86	15	43	362	4.04	1.56	6.43	7.98
10-114	Muscovey Drive	MH585	MH581		2.43	2.43	3.26	52	169	169	4.17	0.61	2.99	3.60
89-109	Snow Goose Crescent	MH580	MH581		0.53	0.53	3.00	12	36	36	4.34	0.13	0.66	0.79
82-103	Kingfisher Drive	MH581	MH578		0.54	3.50	3.42	13	44	250	4.11	0.88	4.34	5.22
15-90	Snow Goose Crescent	MH580	MH578		1.57	1.57	2.82	28	79	79	4.27	0.39	1.42	1.81
51-74	Kingfisher Drive	MH578	MH513		1.66	6.74	3.42	10	34	363	4.04	1.69	6.20	7.89
2-19	Peregrine Crescent	MH505	MH506		0.92	0.92	3.42	9	31	31	4.35	0.23	0.57	0.80
22-82	Crane Drive	MH506	MH512		1.73	2.65	3.42	29	99	130	4.21	0.66	2.31	2.97
12-64	Crane Drive	MH575	MH512		1.67	1.67	3.42	23	79	79	4.27	0.42	1.42	1.84
2-18	Crane Drive	MH512	MH513		0.51	4.83	3.42	9	31	239	4.12	1.21	4.16	5.37
29-47	Kingfisher Drive	MH513	MH514		0.32	11.89	2.58	10	26	628	3.92	2.97	10.41	13.38
18-38	Eagle Drive	MH603	MH503		0.37	0.37	3.42	8	27	27	4.36	0.09	0.50	0.59
18-43	Peregrine Crescent	MH504	MH503		0.47	0.47	3.42	7	24	24	4.37	0.12	0.44	0.56

Sanitary Sewer Analysis – Upstream Conditions
Township of Woolwich, and the Region of Waterloo

Population Densities														
Low Density (Single Family/Semi-Detached)** :				3.416	People/unit									
Medium Density (Duplex/Townhouse Units)** :				2.579	People/unit									
High Density Residential (Apartment Building)** :				1.887	People/unit									
Area Basis														
Industrial*** :				0.4	L/s/ha									
Institutional*** :				0.25	L/s/ha									
Commercial — Core*** :				0.95	L/s/ha									
Commercial — Shopping Mall*** :				0.3	L/s/ha									
Commercial — General*** :				0.5	L/s/ha									
Design Criteria:														
Sewage Infiltration*** :				0.25										
Harmon Formula (Peaking Factor)*** :				M = (1 + 14/(4+P^0.5))										
Industrial Peaking Factor*** :				Minimum: 2										
				Maximum: 4										
				Minimum: 1.5										
Institutional Peaking Factor**** :				2.5										
Commercial Peaking Factor*** :				0.3321	m ³ /L/d									
Five Year Average Per Capita Flow***** :				332.1	L/c/d									
Uncertainty Factor*** :				1.1										
Date: March 6, 2025														
Job Number: SBM-23-2603														
Client: 1000525725 Ontario Inc.														
Project: Industrial Subdivision														
Designed By: J.P.J.														
Reviewed By: BH														
Project File No.: SBM-23-2603														

Location				Area			Residential Population					Sewage Flows		
Lot Numbers*	Street Name	From MH	To MH	Zoning Footage* m ²	Delta Hectre	Total Hectare	People Per Lot	No. of Lots / Units	Delta Pop.	Total Pop.	Harmon Peaking Factor	Infil L/S	Sewage L/S	Total L/S
1-14	Blue Heron Court	MH444	MH447		1.50	1.50	3.42	13	44	44	4.32	0.38	0.81	1.19
1-14	Green Warbler Crescent	MH447	MH456		0.97	3.57	3.42	11	38	126	4.21	0.89	2.25	3.14
7-24	Grey Owl Drive	MH451	MH456		1.45	1.45	3.42	16	55	55	4.31	0.36	1.00	1.36
1-5	Grey Owl Drive	MH456	MH457		0.47	5.50	3.42	5	17	198	4.15	1.37	3.48	4.85
16-34	Nightingale Crescent	MH457	MH465		1.96	7.46	3.42	17	58	256	4.11	1.86	4.45	6.31
2-12	Purple Martin Crescent	MH462	MH465		1.27	1.27	3.42	11	38	38	4.34	0.32	0.69	1.01
47-52	Nightingale Crescent	MH472	MH471		0.28	0.28	3.42	3	10	10	4.41	0.07	0.19	0.26
1-10	Brown Thrasher Court	MH469	MH471		1.38	1.38	3.42	10	34	34	4.35	0.34	0.63	0.97
38-50	Nightingale Crescent	MH471	MH465		1.10	2.76	3.42	11	38	82	4.27	0.69	1.48	2.17
		MH465	MH300		0.00	11.49	—	—	—	376	—	2.87	6.41	9.28
14	Pintrail Drive	MH300	MH289	7567.98	0.757	82.77	—	—	—	3240	—	20.69	52.39	73.08
UPSTREAM ANALYSIS: INDUSTRIAL DRIVE TO MH265														
13	Pintrail Drive	MH289	MH287	4178.96	0.418	117.31	—	—	—	4878	—	29.33	72.77	102.10
		MH287	MH286		0.00	117.31	—	—	—	4878	—	29.33	72.77	102.10
290	Arthur Street South	MH284	MH286	12988.70	1.299	1.30	—	1	—	—	1.50	0.32	0.54	0.86
		MH286	MH281		0.00	118.61	—	—	—	4878	—	29.65	73.31	102.96
232-250	Arthur Street South	MH18	MH15		1.26	1.26	3.42	3	7	7	4.43	0.32	1.43	1.74
21-23	Industrial Drive	MH15	MH16	5845.98	0.58	1.85	—	4	—	7	4.43	0.46	2.23	2.69
2-14	Oriole Parkway	MH491	MH489		1.51	1.51	3.42	11	38	38	4.34	0.38	0.69	1.07
254	Arthur Street South	MH489	MH16	3066.91	0.31	1.82	3.42	1	3	41	4.33	0.45	0.75	1.20
256-264	Arthur Steet South	MH16	MH280		0.47	4.14	3.42	3	10	58	4.30	1.03	3.16	4.19
	Arthur Steet South	MH280	MH281		0.00	4.14	—	—	—	58	—	1.03	3.16	4.19
300-329	Arthur Steet South	MH613	MH283		7.43	7.43	1.95	14	27	27	4.36	1.86	7.12	8.98
3	Whippoorwill Drive	MH610	MH283	1387.98	0.14	0.14	3.42	1	3	3	4.45	0.03	0.06	0.09
15-21	South Field Drive	MH606	MH608		4.15	4.15	—	1	—	—	2.00	1.04	2.86	3.90
305	Arthur Street South	MH608	MH609	3979.64	0.40	4.54	—	1	—	—	2.50	1.14	3.41	4.54
	South Field Drive	MH609	MH283		0.00	4.54	—	—	—	—	—	1.14	3.41	4.54
	Industrial Drive	MH283	MH282		0.00	12.11	—	—	—	31	—	3.03	10.59	13.62
45-59	Industrial Drive	MH282A	MH282	86910.30	8.69	8.69	—	1	—	—	2.00	2.17	7.65	9.82
	Industrial Drive	MH282	MH281		0.00	20.80	—	—	—	31	—	5.20	18.24	23.44
33-47A	Industrial Drive	MH281	MH275		4.22	147.78	—	3	—	4967	2.17	36.94	98.25	135.20
25	Industrial Drive	MH273	MH275	8079.07	0.808	0.81	—	3	—	—	2.50	0.20	1.11	1.31
14-20	Oriole Parkway	MH273	MH275		0.72	1.53	—	2	—	—	2.00	0.38	1.60	1.99
25-35	Oriole Parkway	MH275	MH271		6.11	155.42	—	6	—	4967	2.00	38.85	105.23	144.08
	Oriole Parkway	MH271	MH268		0.00	155.42	—	—	—	4967	—	38.85	105.23	144.08
49	Howard Avenue	MH5A	MH5	40312.30	4.03	4.03	—	1	—	—	2.00	1.01	3.55	4.56
	Union Street	MH5	MH4		0.00	4.03	—	—	—	—	—	1.01	3.55	4.56
90	Union Street	MH4	MH270	6745.97	0.67	4.71	—	1	—	—	2.00	1.18	4.14	5.32
	Oriole Parkway	MH270	MH269		0.00	4.71	—	—	—	—	—	1.18	4.14	5.32
No Address	Oriole Parkway	MH269	MH268	6745.97	0.67	5.38	—	—	—	—	—	1.35	4.14	5.49
65-100	Oriole Parkway	MH268	MH266		3.05	163.85	—	4	—	4967	2.00	40.96	112.05	153.01
		MH266	MH265		0.00	163.85	—	—	—	4967	—	40.96	112.05	153.01
BRANCH A (ORIOLE PARKWAY E.) TOTAL		MH266	MH265		163.85	163.85	2.89	1719	4967	4967	3.25	40.96	112.05	153.01
TRUNK SEWER BRANCH B — SOUTH ELMIRA INDUSTRIAL CONNECTION TO MH646														
330-384	Arthur Street South	MH614	MH620		7.89	7.89	1.98	19	38	38	4.34	1.97	5.65	7.62
390	Arthur Street South	MH621	MH620	3455.58	0.35	0.35	—	3	—	—	3.00	0.09	0.46	0.54
401	Arthur Street South	MH620	MH623	25778.36	2.58	10.81	—	—	—	38	—	2.70	6.10	8.81
25-115	Earl Martin Drive	MH632	MH623		6.88	6.88	—	11	—	—	2.11	1.72	5.88	7.60
	Union Street	MH623	MH635		0.00	17.69	—	—	—	38	—	4.42	11.98	16.41
275-315	Union Street	MH635	MH641		8.80	26.49	—	4	—	38	2.00	6.62	18.71	25.33

Sanitary Sewer Design Sheet – Downstream Analysis
Township of Woolwich, and the Region of Waterloo

Population Densities
Low Density (Single Family/Detached)** :
Medium Density (Duplex/Townhouse Units)** :
High Density Residential (Apartment Building)** :

3,416 People/unit
2,579 People/unit
1,887 People/unit

Area Basis

Industrial*** :
Institutional*** :
Commercial – Core*** :
Commercial – Shopping Mall*** :
Commercial – General*** :

0.4 L/u/ha
0.25 L/u/ha
0.96 L/u/ha
0.3 L/u/ha
0.5 L/u/ha

Design Criteria

Sewage Infiltration*** :
Harmon Formula (Peaking Factor)*** :
Industrial Peaking Factor*** :
Institutional Peaking Factor*** :
Commercial Peaking Factor*** :
Five Year Average Per Capita Flow**** :
Uncertainty Factor*** :

0.25
M = (1 + 14.56 * I^{0.75})^{0.48}
Minimum: 2
Maximum: 4
Minimum: 1.5
Maximum: 2.5
0.322 m³/c/d
1.1 L/c/d

Date: March 6, 2025
Job Number: SBM-23-2603
Client: 1000231725 Ontario Inc.
Project: Industrial Subdivision
Designed By: J.P.J.
Reviewed By: BH
Project File No.: SBM-23-2603

Location		Area		Residential Population				Sewage Flows				Sewer design										
Lot Numbers*	Street Name	From MH	To MH	Zoning Footage* m ²	Delta Hectre	Total Hectre	People Per Lot	No. of Units/ Units	Delta Pop.	Total Pop.	Harmon Peaking Factor	Infilr L/S	Sewage L/S	Total L/S	n	Pipe Slope %	Calc'd Dia. mm	Dia. mm	Capacity L/S	Velocity m/s	Pipe Length m	Percent Full (%)
UPSTREAM ANALYSIS: TRUNK SEWER BRANCH A – ORIOLE PARKWAY EAST CONNECTION TO MH645																						
	BRANCH A (ORIOLE PARKWAY E.) TOTAL	MH266	MH265		2.00	163.85	2.89	1719	4967	4967	3.25	40.96	112.03	153.01								
UPSTREAM ANALYSIS: TRUNK SEWER BRANCH B – SOUTH ELMIRA INDUSTRIAL CONNECTION TO MH646																						
	BRANCH B (S.E. INDUSTRIAL) TOTAL	MH646	MH646		47.62	47.62	0.74	51	38	38	4.34	11.91	42.36	54.27								
PROPOSED INDUSTRIAL SUBDIVISION – 1865 SCOTCH LINE, ELMIRA, ON																						
	South Field Drive	PUMP STATION	SAMHFM		0.00	68.57	—	—	—	—	2.00	17.34	49.34	77.68								
	South Field Drive	SAMHFM	MH646		0.00	68.57	—	—	—	—	2.00	17.34	60.34	77.68								
FARMLOTS + ELMIRA SELF STORAGE EAST OF MH646																						
144	South Field Drive			71,892.59	71,306	71.31	—	—	—	—	—	—	—	—								
150	South Field Drive	MH646A	MH646	5,967.44	5,967	0.90	3,416	1	3	3	4.45	0.15	0.06	0.21								
1-3-10	South Field Drive			23,344.55	2,334	2.33	—	—	—	3	—	—	—	—								
180	South Field Drive	MH646A	MH646	1,661.53	0,960	1.15	—	—	—	3	—	0.29	0.06	0.35								
100-110	South Field Drive	MH646A	MH646		1.15	1.15	3,416	1	3	3	4.45	0.29	0.06	0.35								
DOWNSTREAM ANALYSIS: TRUNK SEWER																						
95	South Field Drive	MH646	MH647	6536.05	0,654	117.99	—	1	—	41	2.00	29.50	103.34	132.83								
89	South Field Drive	MH647	MH646	98168.47	18,136	18.13	—	—	—	—	—	—	—	—								
96	South Field Drive	MH647	MH265	52387.15	5,239	123.23	—	—	—	41	—	30.81	103.34	134.14								
89-96	South Field Drive		MH265	5.89	123.23	—	1	—	41	2.00	30.81	103.34	134.14									
75	Oriole Parkway	MH265	MH264	0.00	287.08	—	—	—	—	5008	—	71.77	215.39	287.16	0.013	1.20%	456.06	400	475.02	2.38	50.0	42.7
		MH264	MH262	0.00	287.18	—	—	—	—	5008	—	71.80	215.39	287.19	0.013	0.54%	506.49	400	451.47	1.60	85.0	63.6
100	Bonnie Crescent	MH3	MH2A	2220.60	0,222	0.22	—	1	—	—	2.00	0.06	0.20	0.25								
101	Bonnie Crescent	MH3	MH2A	4038.20	0,404	0.63	—	2	—	—	2.00	0.16	0.35	0.71								
104	Bonnie Crescent	MH3	MH2A	1815.32	0,183	0.81	—	1	—	—	2.00	0.10	0.71	0.91								
100-104	Bonnie Crescent	MH3	MH2A	0.81	0.81	—	4	—	—	2.00	0.30	0.71	0.91									
105	Howard Avenue	MH2C	MH2B	1367.60	0,517	0.52	3,416	1	3	3	4.45	0.13	0.06	0.19								
125	Howard Avenue	MH2B	MH2A	10441.89	1,044	1.56	—	—	3	—	0.39	0.06	0.45									
109-125	Howard Avenue		MH2A	1.56	1.56	3,416	1	3	3	4.45	0.39	0.06	0.45									
108-112	Bonnie Crescent	MH2B	MH2A	4943.37	0,404	1.97	—	4	—	—	2.00	0.49	0.42	0.91								
108-112	Bonnie Crescent	MH2B	MH2A		0.40	1.97	—	4	—	—	2.00	0.49	0.42	0.91								
115	Bonnie Crescent	MH2A	MH2	6063.26	0,607	2.57	—	1	—	3	2.00	0.64	0.95	1.59								
116	Bonnie Crescent	MH2A	MH2	3760.09	0,374	2.96	—	1	—	3	2.00	0.74	1.28	2.00								
129	Bonnie Crescent	MH2	MH1	8654.07	0,963	3.91	—	1	—	3	2.00	0.88	2.13	3.11								
115-129	Bonnie Crescent		MH1	1.95	3.91	—	3	—	3	2.00	0.98	2.13	3.11									
124	Bonnie Crescent	MH1A	MH1	3740.09	0.37	0.37	—	1	—	—	2.00	0.09	0.33	0.42								
126	Bonnie Crescent	MH1	MH262	6824.37	0.68	4.97	—	1	—	3	2.00	1.24	3.06	4.30								
		MH262	MH261	0.00	292.15	—	—	—	—	5012	—	73.04	218.45	291.49	0.013	0.55%	507.57	400	455.63	1.61	73.0	64.0
		MH261	MH654	0.00	292.15	—	—	—	—	5012	—	73.04	218.45	291.49	0.013	0.49%	518.69	400	430.06	1.52	74.0	67.8
		MH654	MH655	0.00	292.15	—	—	—	—	5012	—	73.04	218.45	291.49	0.013	0.49%	518.69	400	430.06	1.52	62.0	67.8
61	First Street	MH654	MH655	15760.59	1,575	283.73	—	—	—	5012	—	73.43	218.45	291.88	0.013	0.47%	523.02	400	421.20	1.49	79.0	69.3
		MH655	MH656	0.00	293.73	—	—	—	—	5012	—	73.43	218.45	291.88								

* Based on Woolwich Zoning By-Law (2015) data, As of access (online) date: 11-26-2024 through 01-08-2025
** Based on the Township of Woolwich Zoning By-Laws and the "2024 Development Charges Background Study – Township of Woolwich" reported by Watson & Associates Economists Ltd. dated May 1, 2024
*** As per the DGSMS, "Design Guidelines and Supplemental Specifications for Municipal Services" (2024)
**** As per Section 2.1.6. of the MFCO, "Design Criteria for Sanitary Sewers, Storm Sewers and Force Mains for Alterations Authorized under an Environmental Compliance Approval" (2023)
***** As per the Region of Waterloo's "Water and Wastewater Monitoring Report" (2024)