MTE Consultants
123 St. George St., London, Ontario N6A 3A1

February 10, 2023

MTE File No.: C48338-100

Michael Tomazincic
Manager, Current Planning

Current Planning
City of London
300 Dufferin Avenue
London, ON N6A 4L9

RE: Sanitary Capacity Analysis
For Site Development at 299 & 307 Sarnia Road West

It is proposed to re-develop the existing residential properties at 299 & 307 Sarnia Road as a residential development consisting of two 4-storey stacked back-to-back townhouse blocks, one 3-storey stacked back-to-back townhouse block, and five 3-storey townhouse blocks. This letter outlines the downstream sanitary capacity analysis for the development.

1.0 Introduction

MTE was retained by 1721 Architects to conduct a downstream sanitary capacity analysis in defense of the proposed development of the above noted properties. The properties combined are approximately 1.12 ha in size and located on the north side of Sarnia Road just east of Stirrup Court. The existing site consists of two single family dwelling units. It is proposed that the site be re-developed as 67 stacked townhouse units.

2.0 Sanitary Servicing

It is proposed that the re-developed site will make connect to the existing 200mm sanitary sewer within the Sarnia Road R.O.W. A downstream capacity analysis has been completed down to the trunk sanitary sewer on Trott Drive to show that there is adequate capacity within the downstream sewers to accommodate the increased flow rate resulting from the proposed re-development.

3.0 Sanitary Capacity Analysis

Effluent from the site is directed east on Sarnia Road and south down Coombs Road to the trunk sanitary sewer at Trott Drive. Based on information provided by the City, the sanitary sewershed was estimated and peak flows tabulated for each sewer run. Record drawings used to compile information have been noted on the design sheet prepared by MTE along with any assumptions made to estimate sanitary flows. Given the number of proposed units (67) and allowing for a population of 2.4 persons per unit, a total population of 161 persons was accounted for.

Allowing for a typical daily consumption rate of 230 L/p/d and a peaking factor of 4, a peak flow rate of 1.7 L/s (161 x 230 x 4 / 86,400 = 1.7) is anticipated from the proposed site.

4.0 Conclusions

Based on the information compiled by MTE, the existing downstream sewers have sufficient capacity to accommodate sanitary effluent from the site. One length of sanitary sewer on Coombs Road was indicated as being over-capacity due to low slope and is noted on the design sheet. Some minor surcharging may occur in this pipe during peak periods but it is expected to be very minor and is not anticipated to impact upstream users. The design sheet for the downstream sewers prepared by MTE is attached to this letter.

Please contact us should you have any comments or questions

Yours Truly,
MTE Consultants Inc.

Joshua Monster
Design Engineer
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jmonster@mte85.com

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RESIDENTIAL POPULATION DENSITIES

THE FOLLOWING POPULATION ALLOWANCES WILL APPLY WHEN DESIGNING SANITARY SEWERS:

(A) HECTARE BASIS

LOW DENSITY (SINGLE FAMILY/SEMI-DETACHED)	= 30 UNITS/HA @ 3 PEOPLE/UNIT
MEDIUM DENSITY (TOWNHOUSES)	= 75 UNITS/HA @ 2.4 PEOPLE/UNIT
HIGH DENSITY (APARTMENTS)	= 150-300 UNITS/HA @ 1.6 PEOPLE/UNIT
COMMERCIAL / INSTITUTIONAL / CHURCH	= 100 PEOPLE/HA
ELEMENTARY SCHOOL	= 400 PEOPLE
SECONDARY SCHOOL	= 1500 PEOPLE

(B) LOT BASIS

SINGLE FAMILY	= 3 PEOPLE
DUPLEX / SEMI	= 6 PEOPLE

SANITARY SEWER DESIGN SHEET

CITY OF LONDON

CITY ENGINEER'S DEPARTMENT

- FUTURE/EXTERNAL/EXISTING DESIGN

PROJECT NAME : 299 & 307 Sarnia Road

DATE : February 2023
DESIGNED BY : JJM
CHECKED BY :
FILE No : 48338-100
SHEET : 1of1

DESIGN CRITERIA

SEWAGE = 250 L/DAY/CAP = 0.00289 x 1.1 l/s/person
INFILTRATION = 8640 L/HA/DAY = infilt. of 0.100 l/s/ha
PEAKING FACTOR = HARMON FORMULA $M = 1 + \frac{14}{4 + P^{0.5}}$

LOCATION				AREA (HECTARES)			POPULATION					SEWAGE FLOW				SEWER DESIGN					PROFILE					
AREA	STREET	FROM	TO	NET OR	DELTA	TOTAL	PER	PER	No. OF	DELTA	TOTAL	M	SEWAGE	INFILT.	TOTAL	DIA.	SLOPE		VELOCITY	CAP.	LENGTH	FALL IN		DROP IN	INVERT ELEV.	
No.		M.H.	M.H.	GROSS	AREA ha	AREA ha	ha	LOT	LOTS	POP.	POP.	Min.2.0	l/s	l/s	l/s	mm	%	n	m / s	l / s	M	SEWER	HEADLOSS	MANHOLE	U.S.	D.S.
*	Sarnia Road	22	21		0.85	0.85		3	5	15.00	15	4.40	0.21	0.09	**0.30**											
	"	21	20		0.32	1.17		3	2	6.00	21	4.38	0.29	0.12	**0.41**											
**	"	20	19		1.41	2.58		3	16	48.00	69	4.28	0.94	0.26	**1.20**											
***	Proposed Site		19		1.12			2.4	67	161.00	161	4.18	2.14	0.00	**2.14**											
	"	19	18		0.20	3.90		3	2	6.00	236	4.12	3.09	0.39	**3.48**	200	1.02	0.013	1.05	33.13	74.20	0.757				
	"	18	100		0.73	4.63		3	3	9.00	245	4.11	3.20	0.46	**3.66**	200	1.02	0.013	1.05	33.13	79.80	0.814				
	Ramsay Road		104		2.57	2.57	100			257.00	257	4.11	3.36	0.26	**3.62**											
****	"	105	104		0.55	0.55		3	3	9.00	9	4.42	0.13	0.06	**0.19**											
	"	106	104		2.27	2.27	100			227.00	227	4.13	2.98	0.23	**3.21**											
	"	104	103		1.78	7.17		3	8	24.00	517	3.97	6.53	0.72	**7.25**											
	"	103	102		2.10	9.27		3	7	21.00	538	3.96	6.78	0.93	**7.71**											
	"	102	101		1.30	10.57		3	6	18.00	556	3.95	6.99	1.06	**8.05**											
	"	101	100		0.00	10.57				0.00	556	3.95	6.99	1.06	**8.05**											
	Sarnia Road	100	16		0.36	15.56		3	1	3.00	804	3.86	9.88	1.56	**11.44**	200	1.43	0.013	1.25	39.22	44.10	0.631				
--- ABOVE INFORMATION WAS OBTAINED FROM THE 'KININVIE & RAMSAY WATERSHED PLAN' AND ACCOMPANYING DESIGN CLACULATIONS COMPLETED BY M. M. DILLON Ltd., DATED 17/12/71 (PLAN FILE # 4412[?]) SUBJECT TO THE FOLLOWING REVISIONS ---																										
--- PIPE INFORMATION FOR SARNIA ROAD OBTAINED FROM 'SARNIA ROAD WATERMAIN REPLACEMENT' PROJECT PREPARED BY DEVELOPMENT ENGINEERING, DATED 3/3/06 (PLAN FILE# 18581) ---																										
*An allowance of 0.32ha and two residential units were added to the area and populations indicated on the plan to account for 340 & 350 Sarnia Road																										
**The information on this design sheet reflects the existing condition of Stirrup Court																										
***Population density based on 210 units @ 1.6 persons per unit																										
****Residential and Instituational portions have been broken out of the bulk area indicated on the plan as 'H.D. Apt'. Single residential lot broken into three lots per existing conditions																										
	Sarnia Road																									
*	*260 Sarnia Rd. Redevelopment*		86		0.25	0.25				38.00	38	4.34	0.52	0.03	**0.55**											
		86	87		0.25	0.50		3	2	6.00	44	4.33	0.61	0.05	**0.66**	200	0.46	0.013	0.71	22.25	43.50	0.200				
**	Brescia Lane		87			1.50	90			135.00	135	4.21	1.81	0.15	**1.96**											
	Sarnia Road	87	88		0.47	2.47		3	2	6.00	185	4.16	2.45	0.25	**2.70**	200	0.47	0.013	0.71	22.44	52.80	0.247				
	"	88	16		0.00	2.47				0.00	185	4.16	2.45	0.25	**2.70**	200	0.56	0.013	0.78	24.52	54.20	0.303				
--- ABOVE INFORMATION WAS ESTIMATED BASED ON INFORMATION OBTAINED FROM THE PLAN AND PROFILE OF SARNIA ROAD PREPARED BY DEVELOPMENT ENGINEERING DATED 03/03/06 (PLAN FILE # 18,580) ---																										
* Indicated population and areas accounts for a proposed redevelopment (0.15ha site, 12 MD units) and the two (2) existing single family residential units to the west (~0.10ha)																										
** The Development Engineering drawing shows a stub coming from Brescia Lane to the north. Based on the 'Platt's Lane, Trott Dr. & Western Road PH 1 & 2 Sanitary Trunk Sewer' Plan prepared by M. M. Dillon, dated May, 1972, areas to the north of Ramsy and east of Brescia Lane have been accounted for and directed to, the sanitary trunk sewer along Western Road.																										
Based on aerial photogarphy, the lands adjacent to Brescia Lane are undeveloped. Area has been estimated to be approximately 1.5ha and accounted for with a population of 90 persons/ha (30 units/ha x 3 persons/unit)																										

	Coombs Road	16	201		0.16	18.19				0.00	989	3.80	11.96	1.82	**13.78**	200	3.17	0.013	1.86	58.40	54.40	1.724				
	"	201	202		0.17	18.36				0.00	989	3.80	11.96	1.84	**13.80**	200	3.20	0.013	1.87	58.67	56.80	1.818				
	Neville Drive		202		0.96	0.96		3	10	30.00	30	4.35	0.42	0.10	**0.52**										
	Coombs Road	202	203		0.19	19.51		3	2	6.00	1025	3.79	12.36	1.95	**14.31**	200	1.58	0.013	1.31	41.23	76.50	1.209				
	"	203	204		0.58	20.09		3	6	18.00	1043	3.79	12.58	2.01	**14.59**	200	1.64	0.013	1.34	42.00	74.70	1.225				
	"	204	205		0.58	20.66		3	6	18.00	1061	3.78	12.77	2.07	**14.84**	200	1.65	0.013	1.34	42.13	75.30	1.242				
*	Western University (Residence)		205		2.80	2.80	480			1344.00	1344	3.71	15.87	0.28	**16.15**										
*	Western University (Campus)		205		5.60	5.60	100			560.00	560	3.95	7.04	0.56	**7.60**										
**	University Heights Public School & Community Living		205		2.50	2.50				285.00	285	4.09	3.71	0.25	**3.96**										
	Ford Crescent		205		2.98	2.98		3	31	93.00	93	4.25	1.26	0.30	**1.56**										
	Coombs Road	205	206		0.38	34.92		3	4	12.00	3355	3.40	36.31	3.49	**39.80**	300	0.37	0.013	0.83	58.82	71.10	0.263				
	Edgar Dr.		206		2.21	2.21		3	23	69.00	69	4.28	0.94	0.22	**1.16**										
	Coombs Road	206	207		0.38	37.52		3	4	12.00	3436	3.39	37.07	3.75	**40.82**	300	0.52	0.013	0.99	69.73	57.70	0.300				
	"	207	208		0.58	38.09		3	6	18.00	3454	3.39	37.27	3.81	**41.08**	300	0.15	0.013	0.53	37.45	81.20	0.122				
	"	208	209		0.67	38.76		3	7	21.00	3475	3.39	37.50	3.88	**41.38**	300	0.38	0.013	0.84	59.61	83.90	0.319				
	Edgar Drive		209		2.30	2.30		3	24	72.00	72	4.28	0.98	0.23	**1.21**										
	Coombs Road	209	210		0.19	41.26		3	2	6.00	3553	3.38	38.22	4.13	**42.35**	300	0.24	0.013	0.67	47.38	55.80	0.134				
	"	210	Ex. 113		0.00	41.26				0.00	3553	3.38	38.22	4.13	**42.35**	300	0.32	0.013	0.77	54.70	24.80	0.079				

--- ABOVE INFORMATION WAS COMPILED FROM PLAN & PROFILE DRAWINGS FOR COOMBS AVENUE PREPARED BY STANTEC CONSULTING INC. DATED JANUARY, 2006 [FILE # 18856 - 18860] ---

AREAS AND POPULATIONS FOR COOMBS ROAD, NEVILLE DR, FORD CRES, AND EDGAR DRIVE BASED OFF OF UNIT COUNTS AND ASSUMING AN AVERAGE DEVELOPED AREA OF 0.096HA/LOT (~ 70' x 115' LOTS FRONTING ON 66' R.O.W.)

INFORMATION FOR PIPE RUN 210-Ex. 113 ESTIMATED BASED ON INFORMATION FROM P&P DRAWING FOR TROTT DR PREPARED BY M. M. DILLON, DATED SEPTEMBER, 1967 [FILE # 2491]

* Western University area estimated to be approximately 8.4ha and was assumed to be 1/3 high density residential (300 units/ha, 1.6 person/unit) and 2/3 institutional (100 persons/ha)

** Population for the School was estimated based on an equivalent population for an Elementary School as per section 3.8.1.v in the City's Design Manual. Community Living Building was assigned a population of 50 persons based on the area of the property (~0.5ha) and assuming a population of 100 persons/ha

SITE DATA CHART

GROSS SITE AREA 11,200.0 m2

BUILDING FOOT PRINT: ALL UNITS 3,112.7 m2

EXISTING ZONING: R1-10
PROPOSED ZONING: R5-7

ITEM	ZONES	REQUIRED	PROPOSED
1	PERMIT USES	SINGLE DETACHED DWELLINGS	MEDIUM DENSITY RESIDENTIAL DEVELOPMENT
2	LOT AREA (m2, MINIMUM)	1000 m2	2,155 m2
3	LOT FRONTAGE (m, MINIMUM)	30 m	80,9 m.
4	FRONT YARD DEPTH (m MINIMUM)	6,0 m	7.3 m.
5	REAR YARD DEPTH (m. MINIMUM)	6,0 m	10,0 m
6	INTERIOR SIDE YARD (m, MINIMUM)	6,0 m	6,0 m
7	LOT COVERAGE (% MAXIMUM)	45%	27,8%
8	LANDSCAPED OPEN SPACE (% MAXIMUM)	30%	44,0%
9	HEIGHT (m, MAXIMUM)	12,0 m	12,0 m
10	VEHICLE PARKING		SEE CALCULATION PARKING CHART
11	DENSITY UNITS PER HECTARE	60	62,5

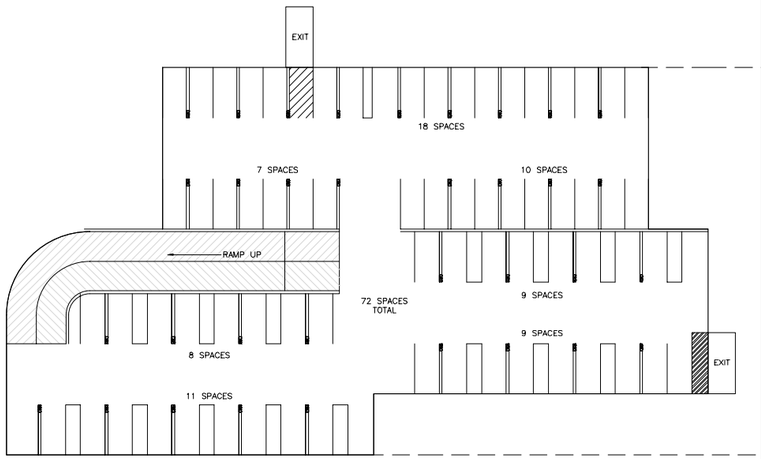
PARKING CHART

ITEM	ZONES	REQUIRED		PROPOSED	
1	RESIDENTIAL	RESIDENTIAL PARKING SPACES: 66 UNITS x 1 VISITOR PARKING SPACES:	66 SPACES 07 SPACES	RESIDENTIAL PARKING SPACES: VISITOR PARKING SPACES:	104 SPACES 07 SPACES
		TOTAL:	77 SPACES	SURFACE PARKING: UNDERGROUND PARKING: TOTAL:	39 SPACES 72 SPACES 111 SPACES

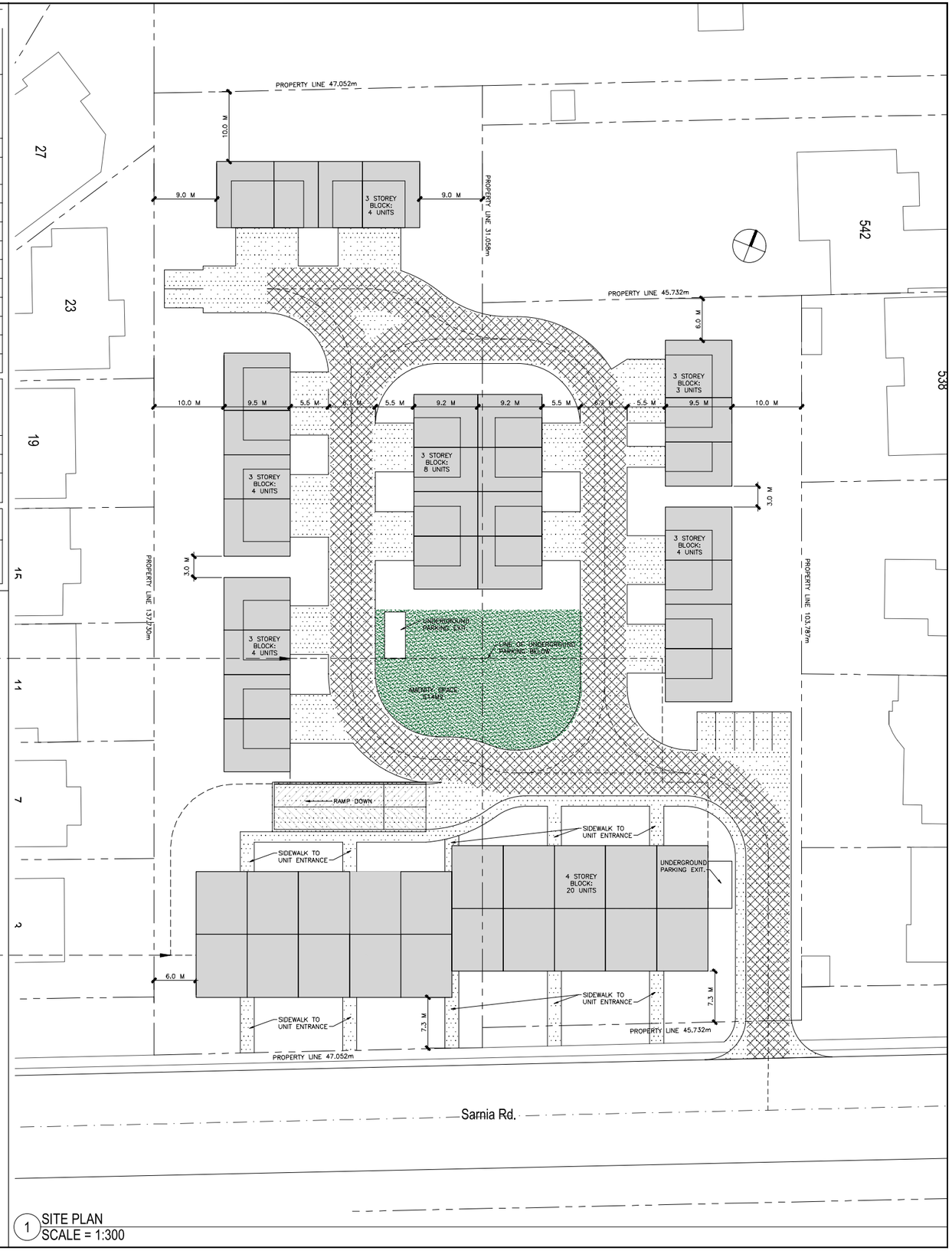
DENSITY

GROSS SITE AREA: 11,200m2 (1,12 HA)

RESIDENTIAL TOTAL: 67 UNITS
PROPOSED DENSITY: 60 UNITS PER HECTARE



2 UNDERGROUND PARKING PLAN
SCALE = 1:300



1 SITE PLAN
SCALE = 1:300

17|21 ARCHITECTS
280 QUEENS AVENUE, SUITE 10, LONDON ONTARIO, N6B 1X3
T. 519.439.0611 info@1721architects.ca www.1721architects.ca

LEGEND

- FIRE ROUTE
- PROPOSED BUILDING
- PROPOSED PAVING

ISSUED

DATE	DESCRIPTION	No.
2022-08-26	ZONING APPLICATION	1

299-307 SARNIA RD
RESIDENTIAL DEVELOPMENT

299-307 SARNIA RD, LONDON ON

DRAWING TITLE:
SITE PLAN

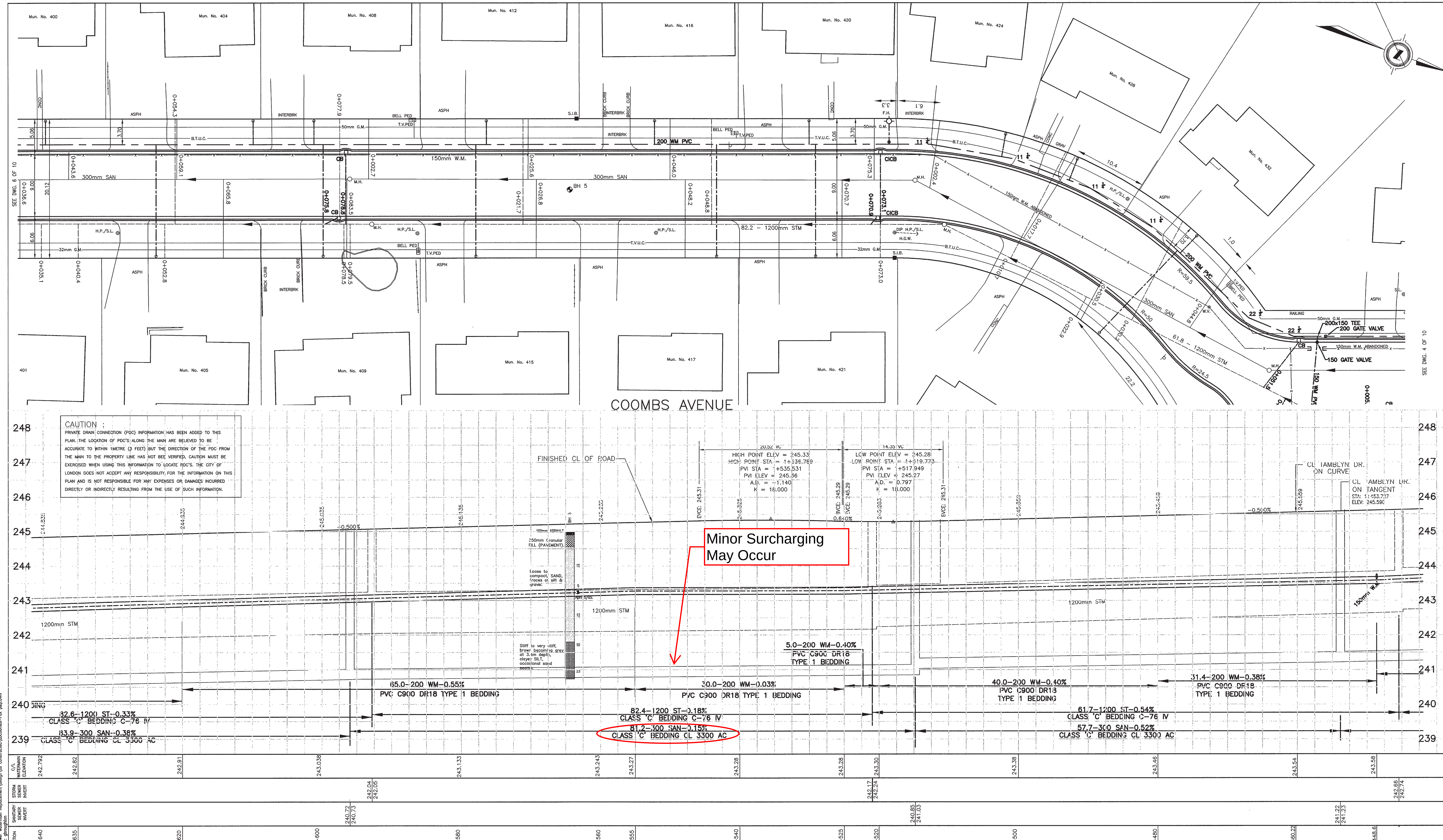
CHECKED: M.B.
DRAWN: MFPU
PROJECT No. 2131

SCALE: AS NOTED

A010

Z:\2131 - 299 SARNIA ROAD\1.0 DESIGN\1.12 DESIGN DRAWINGS\SITE PLAN.DWG

DATE PLOTTED: YYYY.MM.DD



EXISTING SERVICES	DRAWING #, SOURCE	DATE
STORM & SAN SEWERS	# 1648	JAN 1965

AS CONSTRUCTED SERVICES	COMPLETION
STORM SEWERS, MH'S, CB'S	SEP 05
WATERMAIN	SEP 05
GRANULAR BASE	OCT 05
SIDEWALK	OCT 05
PAVING –BINDER	OCT 05
–SHEET	

DETAILS	
DESIGN	
DRAWN BY	GB
CHECKED	RH
APPROVED	RH
DATE	APRIL–05

No.	REVISIONS	DATE	CONSULTANT
1	ISSUED FOR TENDER	APR 28/05	
2	ISSUED FOR CONSTRUCTION	MAY /05	
3	CB STA. & ELEV.	JULY /05	
4	'AS CONSTRUCTED'	JAN /06	

CONSULTANT OR DIVISION

Stantec
Stantec Consulting Ltd.
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www.stantec.com
JOB NO. 1655–00451

ENGINEER'S STAMP

CORPORATION OF THE CITY OF LONDON

London CANADA

SCALE
SCALE – 1 : 250
SCALE – 1 : 50

TITLE

CONTRACT 5

2005 SEWER / WATERMAIN REPLACEMENT PROGRAM

COOMBS AVENUE

TAMBLYN DRIVE TO 180m SOUTH OF TAMLYN DRIVE

PROJECT No. EW–3760

SHEET No. 5

PLAN FILE No. 18859R1

W:\165500451 – 2005 Sewer Watermain Replacement ... By: gbroughton 2006-09-05 10:12AM
655–00451