STRIK BALDINELLI MONIZ
PLANNING · CIVIL · STRUCTURAL · MECHANICAL · ELECTRICAL

LONDON LOCATION
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KITCHENER LOCATION
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Kitchener, ON N2R 0L3
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www.sbmltd.ca

sbm@sbmltd.ca

Brock Development Group Inc.
1584 Routledge Park,
London, ON N6H 5L6

24 May 2022
SBM-22-1218

Attn: Ms. Michelle Doornbosch

Re: **Servicing Feasibility Study**
Proposed Residential Development
1170 Fanshawe Park Road East, London, Ontario

1. INTRODUCTION

This Servicing Feasibility Study (Study) has been prepared by Strik, Baldinelli, Moniz Ltd. (SBM) for Brock Development Group Inc. to address the servicing feasibility for the proposed residential development located at 1170 Fanshawe Park Road East, London. The site is approximately 0.37 ha in area.

The site abuts the Stackhouse Avenue Right-Of-Way (ROW) to the west, Fanshawe Park Road E ROW to the south, an existing residential zone in the southeast corner, agricultural lands to the north and neighborhood facility zone to the northeast corner. See the proposed site plan by Brock Development Group enclosed with this Study.

This Study is to determine the adequacy of the existing City services in support of a Zoning Bylaw Application (ZBA), an official Plan Amendment, and the Site Plan Approval (SPA) application for the proposed redevelopment.

Design requirements have been based on the City of London Design Specifications & Requirements Manual (DS&RM), updated March 2022.

2. WATER SERVICING

As per the City's record drawing 27115, dated as constructed February 24, 2017, there is an existing 400mm PVC watermain on south side of Fanshawe Park Road East. The single 25 mm diameter existing water service connection for 1170 Fanshawe Park Road East per City Record drawing 27115 will be proposed to be decommissioned.

2.1 Domestic Water Supply

Domestic water supply will be provided via the existing watermain on Fanshawe Park Road East. The maximum hour domestic demand, as per the DS&RM for the building occupancy load of 63 people (26 Units at 2.4 people per unit) is 1.45 L/s. See the attached domestic water demand calculations.

2.2 Water Supply for Fire Protection

The proposed residential development is a Part 9 building (3-Storeys high or less and less than 600 m^2), therefore no sprinkler system is required for this development.

Section 7.3.1 of the DS&RM, updated March 2022, requires the minimal residual pressure in a fire flow scenario to be not less than 140 kPa (20 psi) at any hydrant lateral or fire service connection. Section 7.3.1 of the DS&RM also requires that the maximum residual pressure shall not exceed 550 kPa (80 psi).

Upon review of the hydrant flow test results (attached to this Study) as tested on November 18, 2015 and using linear interpolation of the residual pressure readings at the provided flow rates from the hydrant, there is sufficient residual pressure within the system. The flow test results show that the static pressure of the water distribution system in the area is 468.84 kPa (68 psi) and the residual pressure is 448.16 kPa (65 psi) at the test flow rate of 4,391 L/min (1160 USGPM). At the required fire flow + maximum day demand rate of 5439 L/min, the residual pressure in the water main would be approximately 457.56 kPa (66.36 psi) which exceeds the minimum required 140 kPa (20 psi) in fire-flow scenarios and does not exceed the maximum residual pressure of 550 kPa (80 psi). Please refer to the calculations attached to this Study.

Based on the current OBC requirements, a fire hydrant should be located 90 m from the subject property's edge of the building. As per the City's record drawing 27115, dated as constructed February 24, 2017, there is an existing municipal hydrant at the southeast side of Fanshawe Park Road East located at a distance which is greater than 90 m from the subject property's edge of the building. Based on the location of the existing hydrant, a new on-site hydrant will be required. The location of the hydrant will be determined at the time of Site Plan Approval.

The fire-fighting flow calculations is determined as per OBC A-3.2.5.7. Since the proposed building is a residential development, the building is classified as group C (Refer to OBC volume 1 table 3.1.2.1). Type of construction is combustible. To be more conservative, water supply coefficient – K is assumed to be 23 (Refer to OBC volume 2 table 1). Building area is equivalent to the most conservative one which is approximately 373.31 m^2. As per the Site Plan by Brock Development Group attached to this Study, unit 20 abuts units 18 and 22 to the east and west, unit 16 to the north, and the road to the south. Therefore, the spatial coefficient S_{Total} is calculated to be 1.8. Refer to the calculations attached to this Study.

2.3 Water Supply Conclusions

As shown in the attached Domestic and Fire-Flow Water Servicing Calculations (considering the hydrant flow test, OBC A-3.2.5.7 flow demand requirements, and maximum day domestic demand), the water pressure in the Fanshawe Park Road East watermain at the required flow of 5439 L/min (fire flow + maximum day demand), will be around 66.36 psi. It can be concluded that adequate water supply for the proposed development is available from the municipal system with residual pressures greater than the minimum requirement of 140 kPa (20 psi) and does not exceed the maximum requirement of 550 kPa (80 psi).

Based on the above and the Fire-Flow calculations attached, we recommend that a 250 mm diameter water service to be considered for preliminary design purposes for the subject address and proposed development, connected to the existing 400 mm PVC watermain. A new on-site fire hydrant will be required, that will provide the fire protection. Domestic water services will probably be 25 mm per unit, connected to the recommended 250 mm diameter water service.

3. SANITARY SERVICING

The sanitary service connection for the proposed site development is assumed to connect to the existing 150 mm diameter sanitary sewer stub (invert at 252.749) as seen in the City's record drawing 23144 dated March 6, 2012, with the size to be confirmed at the time of Site Plan Approval. As per the City's record drawing 23144 dated March 6, 2012, the site is tributary to the 600 mm diameter sanitary sewer in the Stackhouse Avenue ROW.

The proposed flows from the subject property are shown on the Sanitary Sewer Design Sheet appended to this Study. Using a flow of 230 L/capita/day as per the DS&RM for the building occupancy load of 63 people (26 units at 2.4 people per unit) results in an anticipated peak sanitary flow of 0.79 L/s. When combined with infiltration, this results in a total peak flow of 0.83 L/s. Preliminarily, the existing 150 mm sanitary service stub per City record drawing 23144 at a slope of 7.3% has sufficient capacity to convey these proposed flows and should be considered for preliminary design purposes.

The site is ultimately tributary to the 600 mm diameter sanitary sewer on Fanshawe Park Road East. According to the City's record drawing 23137 Stoney Creek Trunk Sanitary Sewer Design Sheet, dated as constructed January 12, 2012 (Sealed March 6, 2012), the total sewage flow at this location is 223.7 L/s with a capacity of 245.99 L/s (using the sewage flow of 250 L/cap/day). As per 2022 DSRM, the daily flow has been updated in our calculations to reflect 230 L/cap/day. This updated flow combined with the proposed flow of 0.83 L/s produces a total flow of 208.17 L/s which does not exceed the sanitary sewer's capacity of 245.99 L/s. Therefore, there appears to be sufficient capacity in the receiving sewers immediately downstream of the proposed development.

4. STORM SERVICING AND STORMWATER MANAGEMENT

As per the City's record drawing 27101, dated February 24, 2017, the site is tributary to the existing 675 mm diameter storm sewer on Stackhouse Avenue, with a runoff coefficient (C-value) of 0.72 under existing conditions. The proposed site has an existing 300 mm diameter storm service stub on Stackhouse Avenue (found within EXT'L-1 on the City's record drawing 27101).

A Storm/Drainage Servicing Report demonstrating compliance with the SWM criteria and environmental targets identified in the Stoney Creek Subwatershed Study (quality control of 80% TSS removal) will be assessed at the time of Site Plan Approval.

The SWM calculations attached to this Study show that the post development C-value of 0.74 for the entire site is greater than the allowable C-value of 0.72 per City record drawing 27102. Therefore, storm water management quantity controls are proposed for this development. It is proposed to connect a storm service to the existing storm servicing stub at 2U327 in the Stackhouse Avenue to convey minor flows (2-year allowable storm event), while major flows (up to the 100-year storm event) will be managed (stored) on-site. The 250-year storm event will be safety conveyed overland to the Fanshawe Park Road East ROW or the Stackhouse Avenue ROW. Detailed SWM calculations shall be submitted with the first SPA submission.

5. SUMMARY

Based on the above, the existing city infrastructure and proposed site services have sufficient capacity to accommodate the proposed development of the 0.37 ha subject site located at 1170 Fanshawe Park Road East, London.

6. LIMITATIONS

This Study was prepared by Strik, Baldinelli, Moniz Ltd. for Brock Development Group Inc. and the City of London. Use of this Study by any third party, or any reliance upon its findings, is solely the responsibility of that party. Strik, Baldinelli, Moniz Ltd. 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 Study. Third party use of this Study, 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 Study are based on site conditions as they appeared in the information presented to SBM and related to in this document. This Study is not intended to be exhaustive in scope, or to imply a risk-free development. It should be recognized that the passage of time may alter the opinions, conclusions, and recommendations provided herein, as well as any changes in the layout of the development.

The design was limited to the documents referenced herein and Strik, Baldinelli, Moniz Ltd. accepts no responsibility for the accuracy of the information provided by others. All designs and recommendations presented in this Study are based on the information available at the time of the review.

7. CLOSURE

We trust this Study meets your satisfaction. Should you have any questions or require further information, please do not hesitate to contact us.

Respectfully submitted,

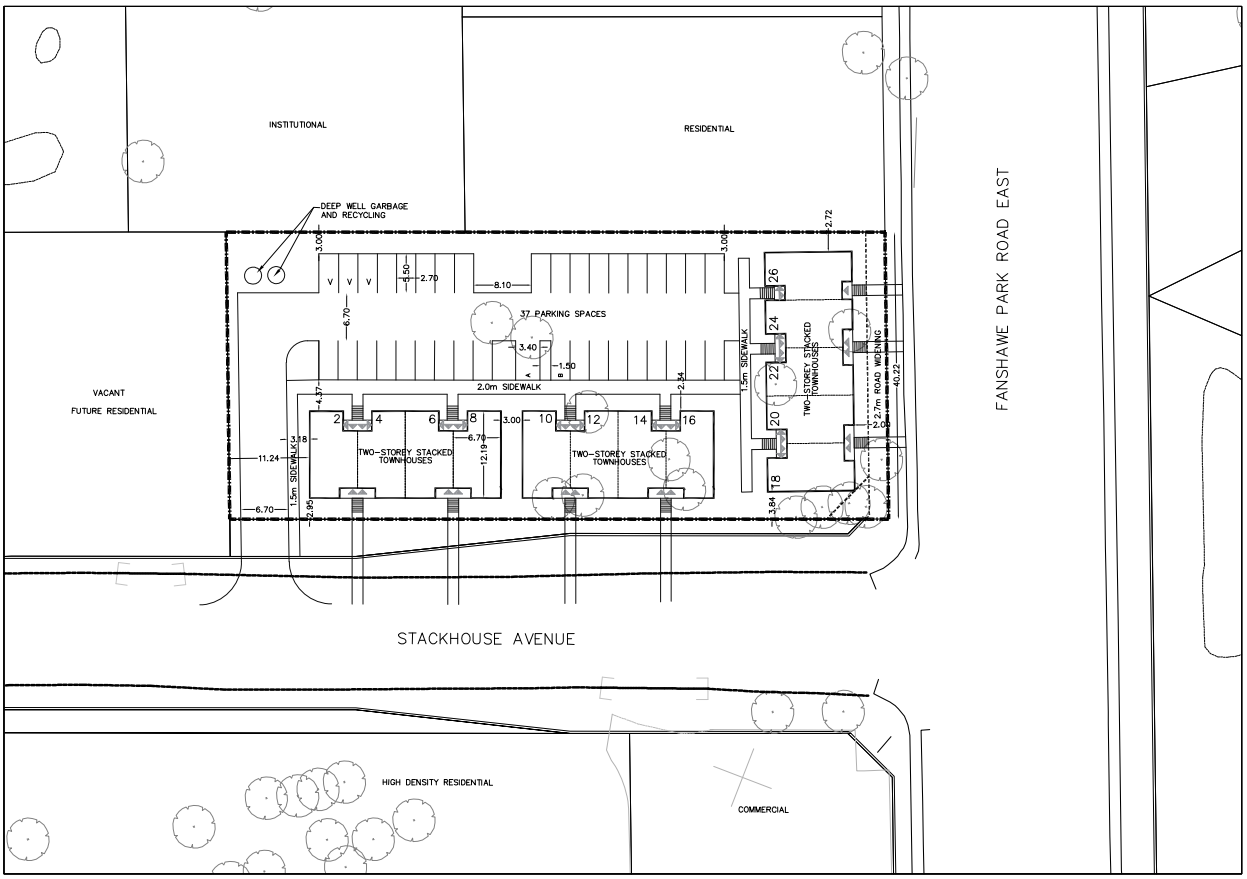
Strik, Baldinelli, Moniz Ltd.

Planning • Civil • Structural • Mechanical • Electrical

Ryan Frouws, P.Eng.
Civil Eng II, Project Lead

Rawan Safieddine
Civil EIT I

Encl: Site Plan by Brock Development Group.
City of London record drawings 27115
Domestic Water Demand Calculations
Hydrant Flow Test
Fire Flow Calculations (as per OBC A-3.2.5.7)
City of London record drawings 23144 and 23137
Sanitary Service Design Sheet
City of London record drawings 27101 and 27102
Runoff Coefficient Calculations



KEY PLAN

PROPOSED SITE PLAN

CONC 5, PART LOT 10 REG

(GEOGRAPHIC TOWNSHIP OF LONDON)
CITY OF LONDON
COUNTY OF MIDDLESEX

SITE STATISTICS
PROPOSED R6-4(*) ZONE

	REQUIRED	PROPOSED
LOT AREA	0.20 ha	0.37 ha
LOT FRONTAGE	22.0 m	38.7 m
LOT DEPTH	N/A	105.5 m
FRONT YARD SETBACK	8.0 m	2.0 m
EXT. YARD SETBACK	6.0 m	2.9 m
SIDEYARD SETBACK (N)	6.0 m	11.2 m
SIDEYARD SETBACK (E)	6.0 m	2.7 m
LANDSCAPED AREA	30%	41%
LOT COVERAGE	40%	29%
HEIGHT	10.5 m	~12m
DENSITY	30 UPH	70 UPH
PARKING	39 SPACES	37 SPACES

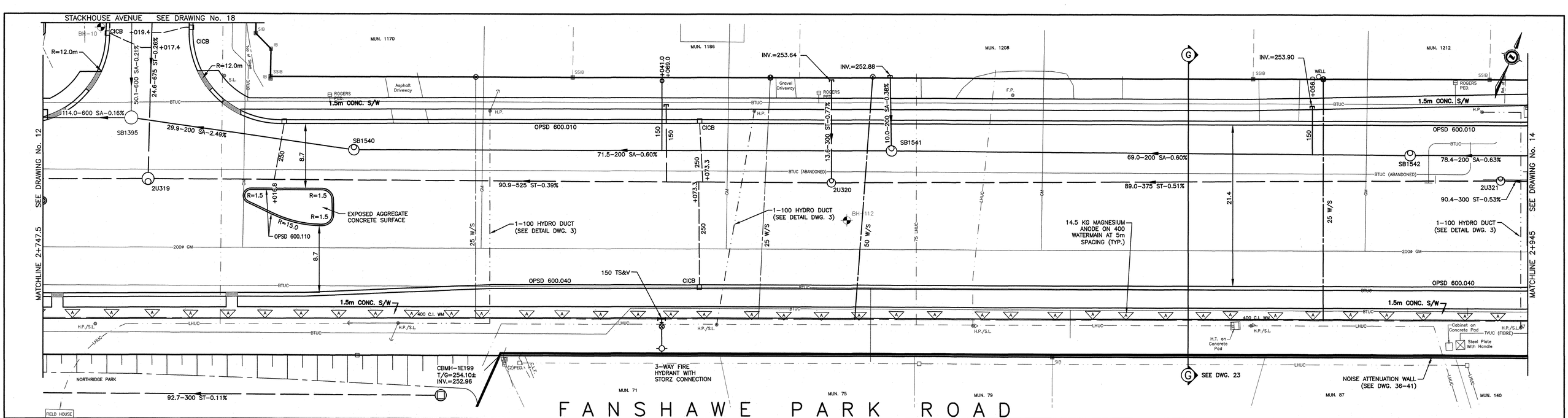
DRAWING BASED ON CITY OF LONDON BASE MAPPING

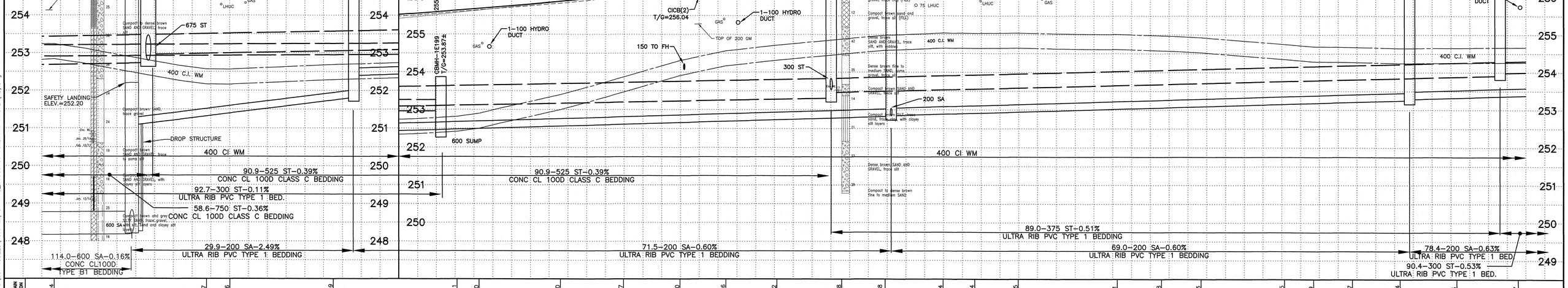
NO.	REVISION	DATE	INITIAL

1170 FANSHAWE PARK ROAD EAST

BROCK DEVELOPMENT GROUP

DRAWN BY: MD
PROJECT NO.:
DATE: DECEMBER 2021
SCALE: 1:500





C/L WATERMAIN ELEVATION	253.04		252.37	252.36	252.49		252.61	252.70	253.20	253.67	254.10	254.36	254.52	254.68	254.78	254.84	254.84	254.85	254.81	254.78	254.73	254.55	254.49	254.47	254.44	254.45	254.47
STORM SEWER INVERT					252.730W 252.954E 252.792N		252.963W							253.307W 253.458E 253.536N													253.910W 253.981E
SANITARY SEWER INVERT		248.19W 248.22N		251.067E					251.812W 252.395E							252.624W 252.643E 252.839W											
STATION	2+749.16	2+759.49 2+760	2+761.67	2+769.41	2+772.52	2+780	2+786.27	2+789.00	2+800 2+800.80	2+802.74	2+805.68	2+816.50	2+820	2+824.92	2+832.43	2+838.54	2+840	2+845.33	2+852.54	2+853.94	2+858.73 2+860.13	2+867.44	2+871.63	2+877.43	2+880	2+890.60	2+896.49	2+900	2+901.76	2+912.86	2+916.74	2+920	2+921.90	2+928.25 2+929.50	2+935.79	2+940	2+941.54	2+943.97

EXISTING SERVICES	DRAWING #, SOURCE	DATE	AS CONSTRUCTED SERVICES	COMPLETION	DETAILS		No.	REVISIONS	DATE	CONSULTANT
SAN/STM SEWERS, PDCS & MH'S	23143	JAN. 2012	SAN/STM SEWERS, PDCS & MH'S	NOV. 2016	DESIGN	DCC/RJG	1.	ISSUED FOR 50% REVIEW	MARCH 27/15	AECOM
WM AND WSC'S	23143	JUNE 1964	WM AND WSC'S	NOV. 2016	DRAWN BY	RJG	2.	ISSUED FOR 90% REVIEW	AUGUST 21/15	AECOM
			CURB AND GUTTER	NOV. 2016	CHECKED	JMK	3.	ISSUED FOR 100% REVIEW	NOVEMBER 4/15	AECOM
			GRANULAR BASE	OCT. 2016	APPROVED	DCC	4.	ISSUED FOR TENDER	DECEMBER 2/15	AECOM
			PAVING – I BASE	NOV. 2016	DATE	NOV. 2014	5.	AS-CONSTRUCTED	FEBRUARY 24/17	AECOM
			– II BASE	MAY 2017						

CONSULTANT OR DIVISION

AECOM
London, Ontario
519.673.0510

ENGINEER'S STAMP
LICENSED PROFESSIONAL ENGINEER
D.C. CARTER
Dave Carter
July 17/17
PROVINCE OF ONTARIO

CORPORATION OF THE CITY OF LONDON
London CANADA

SCALE
HORIZONTAL–1:250
2,5 0 5m
VERTICAL–1:50
0,5 0 1m

FANSHAWE PARK ROAD IMPROVEMENTS
ADELAIDE STREET TO McLEAN DRIVE

FANSHAWE PARK ROAD
FROM 365m EAST OF GLENORA DRIVE
TO 183m EAST OF STACKHOUSE AVENUE

PROJECT No. 60333430
SHEET No. 13
27115

P:\60333430 Col. Fanshawe Park Rd Widening\900–Work\910–CAD\05–MODELS\Asbuilts\P04–P18_60333430 Fanshawe–MASTER(AB).dwg

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DOMESTIC WATER DEMAND CALCULATION

DATE:	May 24, 2022
JOB N0.:	SBM-22-1218

Client:	**Brock Development Group Inc.**
Project:	**Proposed Residential Development**
Location:	**1170 Fanshawe Park Road, London, Ontario**

**Avg. Day Demand = 255 L/D/cap =	0.002951389	L/s/cap
**Max. Day Peaking Factor =	3.5	
**Max. Hour Peaking Factor =	7.8	
*Total Building Population =	63	People

	Units	*Population	Avg. Day (L/s)	Max. Hour (L/s)	Max. Day (L/s)
Townhouses	26	63	0.19	1.45	0.65
TOTAL:		63	0.19	1.45	0.65
					39 L/min

VELOCITY CALCULATION

Diameter (mm)	Demand (L/s) - Per Unit	Velocity (m/s)
25	0.06	0.113

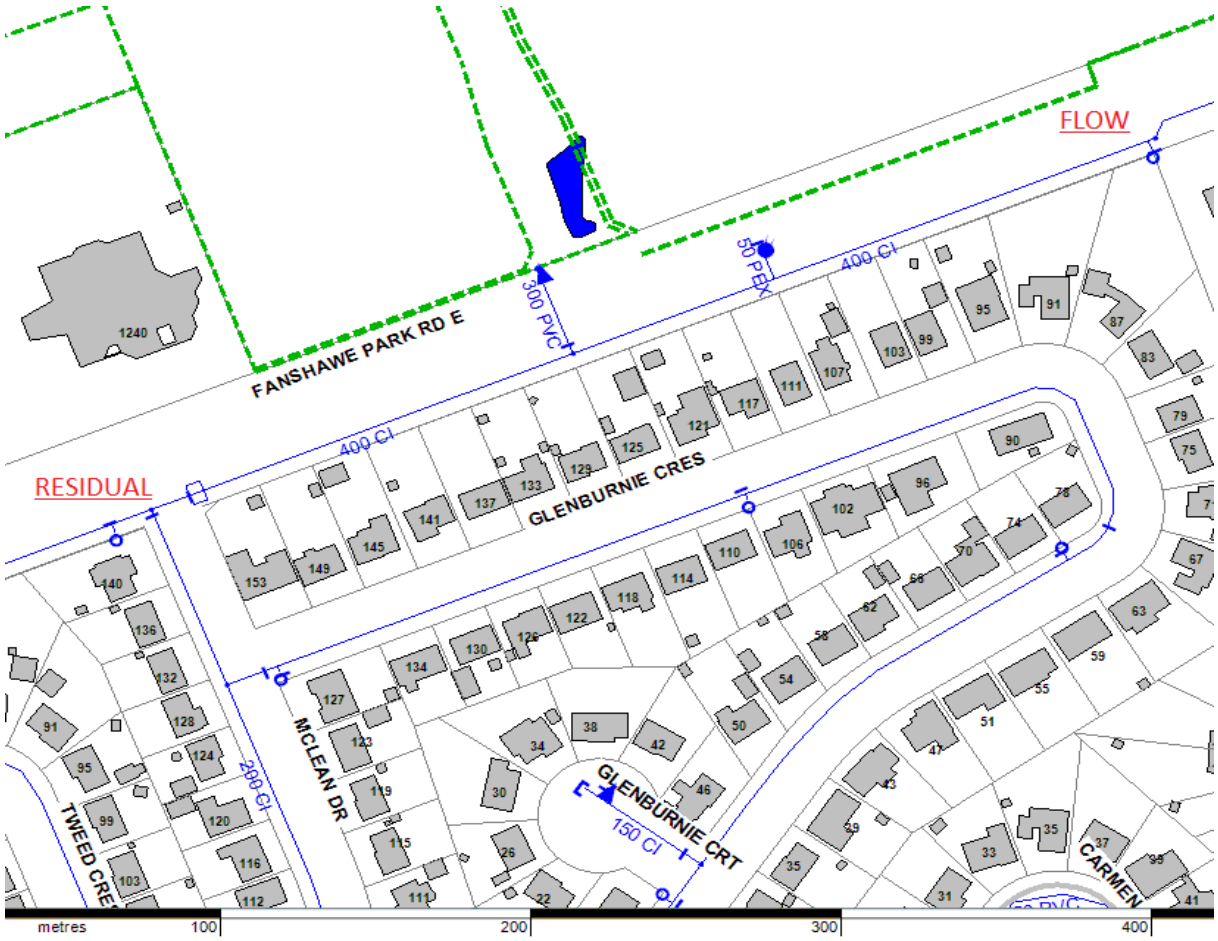
Maximum allowable velocity of 1.5 m/s under maximum hour domestic flow conditions as per Section 7.3.6 of the City of London Design Specifications and Requirements Manual.

*Residential Building population based on 26 units (Medium density residential) at 2.4 person/unit as per Section 7.3.2.2 in DS&RM.
**Domestic Water Demands from Section 7.3.2.2 in DS&RM

WATER SUPPLY DEPARTMENT
FLOW TESTS

DATE:	Wednesday, November 18, 2015	FLOW TEST No.			**15-93**
TIME:	9:00 AM	HYDRANT ID			H12627
OPERATOR:	Roger Ham	CHLORINE RESIDUAL mg/L			1.07
OPERATOR:	City Operator		POOR	GOOD	EXCELLENT
REQUESTED BY:	Spriet & Assoc - John M. Spriet				✔
LOCATION:	**1300 Fanshawe Pk Rd E**	TIME USED FOR FLUSHING			5 min

	FLOW HYDRANT					RESIDUAL HYDRANT	
TEST NUMBER	STATIC PRESSURE P.S.I.	OUTLET SIZE IN.	PITOT READING P.S.I.	INDIVIDUAL FLOW U.S.G.P.M	TOTAL FLOW U.S.G.P.M.	RESIDUAL PRESSURE P.S.I.	STATIC PRESSURE P.S.I.
1	65	2 1/2	48	890	1160	65	68
2		2 1/2	30	920	1840	65	
		2 1/2	30	920			



Information contained in this report is representative of flows and pressure losses at the time of the test and depends on reservoir levels, pump operation and customer water demand. Results will vary throughout the day and time of year. Available pressure at other times should be based on a design hydraulic grade line for the pressure zone in which the hydrants are located. By issuing this information report, neither the City nor any of its employees makes any warranty, express or implied, concerning the location, type or extent of services described in this report. Furthermore, neither the City nor any of its employees shall be liable in any manner for any personal injury or property damage or loss of any kind arising from or connected with this information or incomplete information.

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P: 519-725-8093

www.sbmltd.ca

sbm@sbmltd.ca

Fire-Fighting Flow (OBC A-3.2.5.7.) Calculations

For data entry
Calculated, not for data entry

DATE: May 20, 2022
JOB N0.: SBM-22-1218

Client: **Brock Development Group Inc.**
Project: **Proposed Stacked Townhouse Development**
Location: **1170 Fanshawe Park Rd. E., London, Ontario**

$Q=K*V*S_{Tot}$ Fire Flow Demand

Building Classification (3.1.2.1):	C	
Type of Construction:	Combustible	
K (Table 1):	23.00	To be conservative
Building Area, m^2:	373.31	
Building Height, m:	12.00	
Building Volume, m^3:	**4479.72**	

$S_{Tot} = 1.0 + (S_{side1} + S_{side2} + S_{side3} + S_{side4})$

*S_{side1} (Figure 1) =	0.25	(North)
*S_{side2} (Figure 1) =	0.50	(East)
*S_{side3} (Figure 1) =	0.00	(South)
*S_{side4} (Figure 1) =	0.00	(West)
S_{Tot} =	1.8	
S_{Tot} < or = 2, therefore S_{Tot} =	**1.8**	
Q, L =	**180309**	

Required Supply Flow Rate, L/min (OBC V2 Table 2) =	**5400**	= 90LPS
****Site Domestic Water Demand, L/min (Max. Day) =**	39.00	
Total Required Flow Rate, L/min =	5439	

Hydrant Flow Test - 1300 Fanshawe Pk Rd E. Hydrant (H12627) Flow Test - 15-93

Static Pressure	**68.00**	psi (468.84 kPa) =	**0**	L/min (0 USGPM)
Provided Supply Flow Rate @	**68.00**	psi (468.84 kPa) =	**4391**	L/min (1160 USGPM)
Provided Supply Flow Rate @	**65.00**	psi (448.16 kPa) =	**6965**	L/min (1840 USGPM)
Using linear interpolation, residual pressure at hydrant =	**66.36**	psi (457.56 kPa) =	**5439**	L/min (1437 USGPM)

Calculated Pressure Drop =	1.64	psi
Calculated Pressure Drop =	1.15	m head
HGL from DS&RM (Low Level System) =	301.80	m
Total Head Under Fire Flow Conditions =	300.65	m head
Approximate Elevation of Proposed Connection =	252.51	m***
Total Pressure Head =	48.14	m head

Water Pressure Under Firefighting Conditions Excluding Losses = 48.14 m head (68.45 psi, 471.97 kPa)

Therefore, water supply pressure at the proposed building under fire flow conditions not accounting for losses = 48.14 m head (68.45 psi, 471.97 kPa) which is greater than 140 kPa (20 psi) required per Section 7.3.1 of the City of London DS&RM.

*Refer to attached Figure 1 (Spatial Coefficient vs Exposure Distance)
**Refer to attached Domestic Water Demand Calculations.
***Assumed From Plan and profile as built drawing 27115. To be confirmed at a later stage.

q = volume flow (L/s) [refer to fire-fighting demand calculations]	90.7	L/s
d = inside or hydraulic diameter (mm) [refer to drawing C3]	250	mm

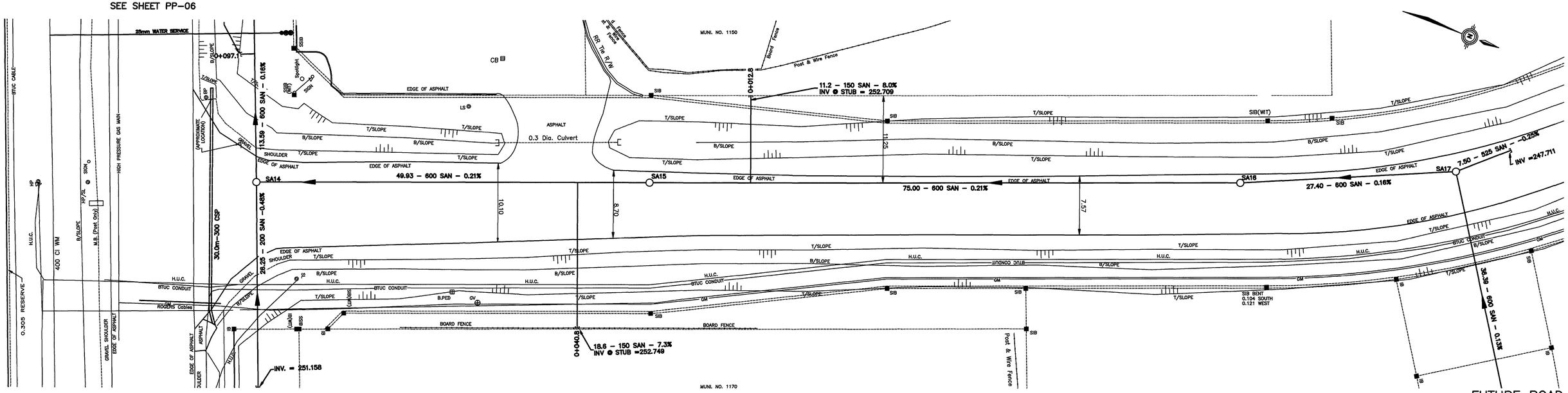
Calculated Flow Velocity

v = flow velocity (m/s) 1.85

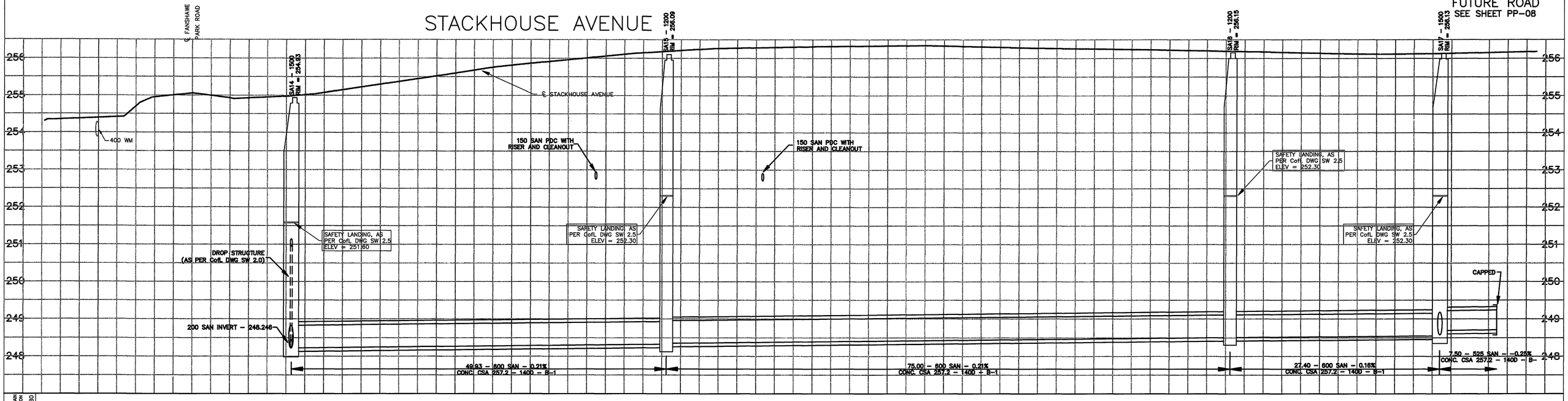
Maximum allowable velocity of 2.4 m/s during fire flow conditions as per Section 7.3.6 of the City of London Design Specifications and Requirements Manual.

FANSHAWE PARK ROAD

SEE SHEET PP-06



STACKHOUSE AVENUE



STATION	SANITARY SEWER INVERT	STORM SEWER INVERT	C/L WATERMAIN ELEVATION
1+000			265.080
1+006.8	248.186 W 250.746 E 248.221 N		
1+020			
1+040			
1+060			
1+063.1	248.326 248.349		
1+067.5			
1+080			
1+100			
1+120			
1+138.1	248.504 248.504		
1+140			
1+160			
1+166	248.549 S 248.579 E 248.692 N		
1+173.5	248.711 (STUB)		

EXISTING SERVICES	DRAWING #, SOURCE	DATE
ROAD STRUCTURE	20154	APRIL 2008

AS CONSTRUCTED SERVICES	COMPLETION
SANITARY TRUNK SEWER, MH'S & PDC'S	2011-11-04
SIDEWALKS	2011-09-31
CURB & GUTTER	2011-11-28
PAVING - HL8 BASE	2011-11-16

DETAILS	
DESIGN	SAH
DRAWN BY	MWB
CHECKED	___
APPROVED	___
DATE	

PP-07(REV).DWG

No.	REVISIONS	DATE	CONSULTANT
1	ISSUED FOR REVIEW	2011-03-17	
2	ISSUED FOR REVIEW	2011-03-30	
3	MOE SUBMISSION	2011-04-11	
4	ISSUED FOR TENDER	2011-04-18	
A	PDC & PIPE CLASSIFICATION REVISED	2011-05-24	
6	ISSUED FOR CONSTRUCTION	2011-05-31	
7	AS CONSTRUCTED	2012-01-12	

CONSULTANT OR DIVISION

IBI GROUP
IBI Group
203 - 350 Oxford Street West
London ON N6H 1T3 Canada
tel 519 472 7328
fax 519 472 9354

ENGINEER'S STAMP

LICENSED PROFESSIONAL ENGINEER
S. A. HAYMAN
PROVINCE OF ONTARIO

London CANADA

CORPORATION OF THE CITY OF LONDON

SCALE
HORZ 1:250
VERT 1:50
2.5 0 5m HORIZONTAL
0.5 0 1m VERTICAL

TITLE
STONEY CREEK SANITARY TRUNK SEWER
ES4402

STACKHOUSE AVENUE
FROM FANSHAWE PARK ROAD TO FUTURE STREET

PROJECT No. 12021
SHEET No. PP-07
PLAN FILE No. 23144

A:\12021\9.0 Drawings\As Constructed\10 PP-07-As_Built(2012-01-05).dwg

SANITARY SEWER DESIGN SHEET
CITY OF LONDON

POPULATION DENSITIES	Lot Basis	Hectare Basis
LOW DENSITY	3.0 ppu	30
MED. DENSITY	2.4 ppu	75
HIGH DENSITY	1.8 ppu	150
COMMERCIAL	------- ppu	100
INDUSTRIAL (LIGHT - 20,000 l/h/d)	------- ppu	68
(HEAVY - 50,000 l/h/d)	------- ppu	169

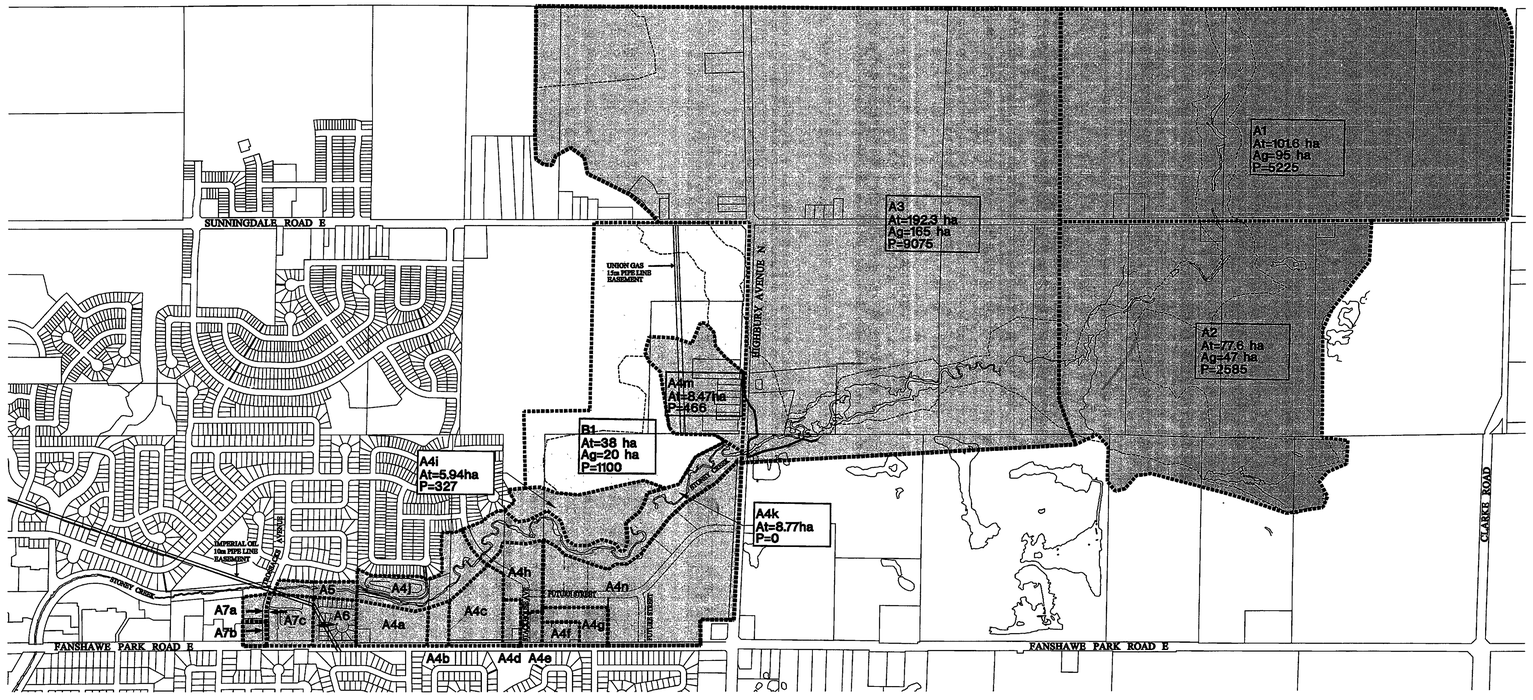
DESIGN CRITERIA				
SEWAGE	=	250.00 l/cap/day	0.0029 l/cap/s	
SEWAGE (INCL. UNCERTAINTY)			0.0032 l/cap/s	
UNCERTAINTY	=	10%		
INFILTRATION	=	8640 l/ha/day	0.1000 l/s/ha	
PEAKING FACTOR	=	1+(14/(4+P.5))		

DATE April 2011
DESIGN SH
CHECKED
PROJECT 12021

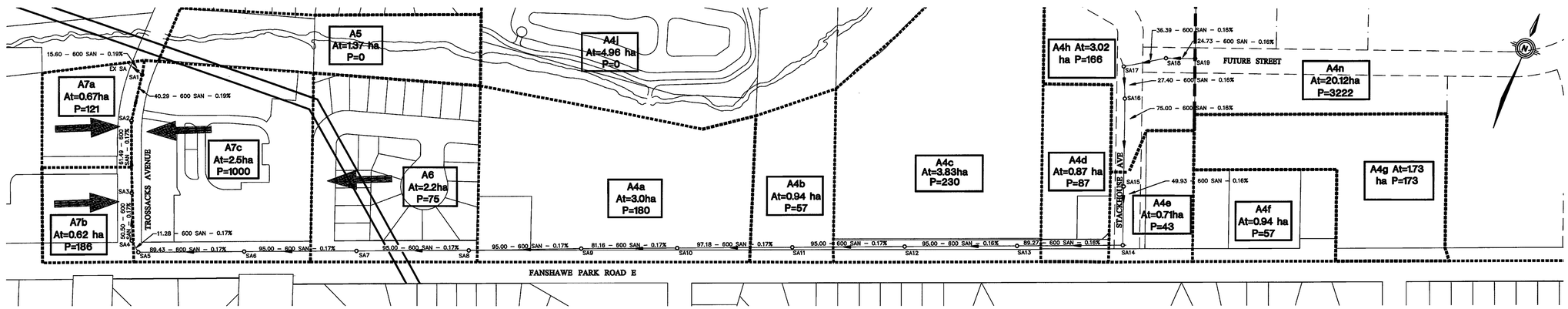
PROJECT NAME **Stoney Creek Trunk Sanitary Sewer**

LOCATION									POPULATION			SEWAGE FLOW			SEWER DESIGN					PROFILE				
AREA NO.	STREET	FROM	TO	NET OR GROSS	DELTA HEC.	TOTAL HEC.	PER HEC.	PER LOT	No. OF LOTS	DELTA POP.	TOTAL POP.	PEAKING FACT.	INFIL l/sec	SEW. l/sec	TOTAL l/sec	SIZE mm	n	SLOPE %	CAP. l/sec	VEL. m/sec	LENGTH m	FALL IN SEWER	DROP in MH	INVERT ELEV. U.S.	INVERT ELEV. D.S.
A1				GROSS	95.00	95.00	55			5225	5225	3.23	9.50	54.01	63.51										
A2				GROSS	47.00	142.00	55			2585	7810	3.06	14.20	76.48	90.68										
A3				GROSS	165.00	307.00	55			9075	16885	2.73	30.70	147.51	178.21										
A4m, A4n	Future Street	Stub	SA19	GROSS	28.59	335.59				3888	20573	2.64	33.56	173.80	207.36	600	0.013	0.16	245.99	0.87	4.72	0.008	0.000	248.657	248.649
	Future Street	SA19	SA18	GROSS	0.00	335.59	55			0	20573	2.64	33.56	173.80	207.36	600	0.013	0.16	245.99	0.87	20.00	0.032	0.000	248.649	248.617
	Future Street	SA18	SA17	GROSS	0.00	335.59	0			0	20573	2.64	33.56	173.80	207.36	600	0.013	0.16	245.99	0.87	36.39	0.058	0.000	248.617	248.559
A4k	Stackhouse Ave.	N. Stub	SA17	GROSS	8.77	8.77	0			0	0	4.50	0.88	0.00	0.88										
B1	Stackhouse Ave.	N. Stub	SA17	GROSS	20.00	28.77	55			1100	1100	3.77	2.68	13.27	16.15										
A4h, A4i	Stackhouse Ave.	N. Stub	SA17	GROSS	6.96	37.73	55			493	1593	3.66	3.77	18.65	22.42	525	0.013	0.10	198.36	0.63	7.5	0.008	0.000	248.641	248.634
	Stackhouse Ave.	SA17	SA16	GROSS	0.00	373.32	0			0	22166	2.61	37.33	185.13	222.46	600	0.013	0.16	245.99	0.87	27.40	0.044	0.000	248.559	248.515
	Stackhouse Ave.	SA16	SA15	GROSS	0.00	373.32	0			0	22166	2.61	37.33	185.13	222.46	600	0.013	0.16	245.99	0.87	75.00	0.120	0.000	248.515	248.395
A4d	Stackhouse Ave (commercial)	SA15	SA14	GROSS	0.87	374.19	100			87	22253	2.61	37.42	185.85	223.27	600	0.013	0.16	245.99	0.87	0.00	0.000	0.000	248.395	248.395
A4e	Stackhouse Ave (low density)	SA15	SA14	GROSS	0.71	374.90	60			43	22295	2.61	37.49	186.21	223.70	600	0.013	0.16	245.99	0.87	49.93	0.080	0.000	248.395	248.315
A4g	Fanshawe Park Rd (Church)	E. Stub	SA14	GROSS	1.73	1.73	100			173	173	4.17	0.17	2.31	2.48	200	0.013	0.60	25.45	0.81	0.00	0.000	0.000	251.158	251.158
A4f	Fanshawe Park Rd (low density)	E. Stub	SA14	GROSS	0.94	2.67	60			58	229	4.13	0.27	3.03	3.30	200	0.013	0.60	25.45	0.81	26.25	0.158	0.000	251.158	251.000
	Fanshawe Park Rd	SA14	SA13	GROSS	0.00	377.57	60			0	22525	2.60	37.76	187.41	225.17	600	0.013	0.16	245.99	0.87	89.27	0.143	0.075	248.240	248.097
	Fanshawe Park Rd	SA13	SA12	GROSS	0.00	377.57	0			0	22525	2.60	37.76	187.41	225.17	600	0.013	0.16	245.99	0.87	95.00	0.152	0.000	248.097	247.945
A4c	Fanshawe Park Rd (low density)	SA12	SA11	GROSS	3.83	381.40	60			230	22754	2.60	38.14	189.32	227.46	600	0.013	0.17	254.47	0.90	95.00	0.162	0.000	247.945	247.784
A4b	Fanshawe Park Rd (low density)	SA11	SA10	GROSS	0.94	382.34	60			56	22811	2.60	38.23	189.79	228.02	600	0.013	0.17	254.47	0.90	97.18	0.165	0.000	247.784	247.619
A4a	Fanshawe Park Rd (low density)	SA10	SA9	GROSS	3.00	385.34	60			180	22991	2.59	38.53	190.55	229.08	600	0.013	0.17	254.47	0.90	81.16	0.138	0.000	247.619	247.481
	Fanshawe Park Rd	SA9	SA8	GROSS	0.00	385.34	0			0	22991	2.59	38.53	190.55	229.08	600	0.013	0.17	254.47	0.90	95.00	0.162	0.000	247.481	247.319
A4j	Fanshawe Park Rd (Open space)	SA8	SA7	GROSS	4.96	390.30	0			0	22991	2.59	39.03	190.55	229.58	600	0.013	0.17	254.47	0.90	95.00	0.162	0.000	247.319	247.158
	Fanshawe Park Rd	SA7	SA6	GROSS	0.00	390.30	0			0	22991	2.59	39.03	190.55	229.58	600	0.013	0.17	254.47	0.90	95.00	0.162	0.000	247.158	246.996
	Fanshawe Park Rd	SA6	SA5	GROSS	0.00	390.30	0			0	22991	2.59	39.03	190.55	229.58	600	0.013	0.17	254.47	0.90	89.43	0.152	0.000	246.996	246.844
	Trossacks Ave (Med/High density)	SA5	SA4	GROSS	0.00	390.30	300			0	22991	2.59	39.03	190.55	229.58	600	0.013	0.17	254.47	0.90	11.28	0.019	0.000	246.844	246.825
A7b	Trossacks Ave (Med/High density)	SA4	SA3	GROSS	0.62	390.92	300			186	23177	2.59	39.09	192.09	231.18	600	0.013	0.17	254.47	0.90	40.68	0.069	0.000	246.825	246.756
A7a	Trossacks Ave (med density)	SA3	SA2	GROSS	0.67	391.59	180			121	23297	2.59	39.16	193.09	232.25	600	0.013	0.17	254.47	0.90	61.49	0.105	0.000	246.756	246.651
A6	Trossacks Ave (single family)	SA2	SA1	GROSS	2.20	393.79		3	25	75	23372	2.58	39.38	192.96	232.34	600	0.013	0.17	254.47	0.90	0.00	0.000	0.000	246.651	246.651
A7c	Trossacks Ave (Med/High density)	SA2	SA1	GROSS	2.50	396.29	400			1000	24372	2.57	39.63	200.44	240.07	600	0.013	0.19	268.61	0.95	40.29	0.077	0.000	246.651	246.575
A5	Trossacks Ave (Open space)	SA1	Exist MH	GROSS	1.37	397.66	0			0	24372	2.57	39.77	200.44	240.21	600	0.013	0.19	268.61	0.95	15.60	0.030	0.000	246.575	246.545

Note: Areas A1, A2, A3, A4 and B1 are gross areas. The prior EA and 1996 Study were based upon gross areas which excluded Stoney Creek Corridor/ESA areas.



DRAINAGE AREA PLAN – TRIBUTARY AREAS
NOT TO SCALE



LEGEND	
▬▬▬▬	DRAINAGE AREA BOUNDARY
- - - - - -	APPROXIMATE ESA/PSW/CREEK BOUNDARY (TAKEN OUT OF At)
A2	AREA ID.
At=40 ha	TOTAL AREA IN HECTARES
Ag=35 ha	GROSS AREA IN HECTARES (TOTAL AREA MINUS AN ESTIMATED AREA FOR THE STONEY CREEK CORRIDOR)
P=2200	POPULATION

NOTES:
AREAS A1, A2, A3 AND A4 AS PER "CITY OF LONDON SANITARY SEWAGE SERVICING STUDY 20 YEAR PLAN" STANLEY ASSOCIATES, MAY 1996.
AREAS A3 AND A4 ADJUSTED BASED ON KILALLY NORTH SANITARY TRUNK SEWER STUDY (CLASS EA 2001), AND DRAINAGE AREAS ON MARSMAN LANDS RECEIVED FROM THE CITY OF LONDON ON MARCH 30, 2011.
POTENTIAL OVERLAP AREA FROM FUTURE SUBDIVISION (AREA B1), INCLUDED AT CITY'S REQUEST.
AREAS A6 AND A7 DIVERTED FROM EXISTING SANITARY SYPHON UNDER STONEY CREEK.

EXISTING SERVICES	DRAWING #, SOURCE	DATE	AS CONSTRUCTED SERVICES	COMPLETION

DETAILS	
DESIGN	SAH
DRAWN BY	SAH/JCW
CHECKED	RCW
APPROVED	SAH
DATE	2011-03-07
	SA-01.DWG

No.	REVISIONS	DATE	CONSULTANT
1	ISSUED FOR REVIEW	2011-03-17	
2	ISSUED FOR REVIEW	2011-03-30	
3	MOE SUBMISSION	2011-04-11	
4	ISSUED FOR TENDER	2011-04-18	
5	AS CONSTRUCTED	2012-01-12	

CONSULTANT OR DIVISION

IBI GROUP
IBI Group
203 - 350 Oxford Street West
London ON N6H 1T3 Canada
tel 519 472 7328
fax 519 472 9354

ENGINEER'S STAMP
LICENSED PROFESSIONAL ENGINEER
S. A. HAYMAN
PROVINCE OF ONTARIO

CORPORATION OF THE CITY OF LONDON
London CANADA

SCALE
HORZ 1:2000
10 0 20m
HORIZONTAL

TITLE
STONEY CREEK SANITARY TRUNK SEWER
ES4402
SANITARY DRAINAGE AREAS

PROJECT No. 12021
SHEET No. SA-01
PLAN FILE No. 23137

STRIK BALDINELLI MONIZ
PLANNING · CIVIL · STRUCTURAL · MECHANICAL · ELECTRICAL

Sanitary Service Design Sheet

City of London

Residential Population Densities

(A) Area Basis

Low Density Residential (Single Family/Semi-Deta = 30 Units/hectare @ 3 people/unit
Medium Density Residential (Multi-Family/Tow =75 Units/hectare @ 2.4 people/unit
High Density Residential (Apartment Buildings) =150-300 Units/hectare @ 1.6 people/unit
Commercial = 100 people/hectare

~~Daily Flow (L/cap/day)~~ ~~250~~
Daily Flow (L/cap/day) 230
Sewage Infiltration (Litres/hectare/day) 8640
Harmon Formula (Peaking Factor)
M = (1 + 14/(4+P^0.5))
Uncertainty Factor 1.1

Date: May 11, 2022
Job Number: SBM-22-1218
Client: Brock Development
Project: Proposed Residential Development
Location: 1170 Fanshawe Park Road E.

Designed By: RS
Reviewed By: RF

Location			Area		Population					Sewage Flows				Sewer design				
Area No.	From MH	To MH	Delta Hectare	Total Hectare	*No. of Units	**People Per Unit	People Per Hectare	Delta Pop.	Total Pop.	Harmon Peaking Factor	Infilt L/S	Sewage L/S	Total L/S	n	Pipe Slope %	Dia. mm	Capacity L/S	Velocity m/s
***Upstream Conditions																		
Area 4d	SA15	SA14	0.87	374.19	0	0.0	100	87	22253	2.61	37.42	184.58	222.00	0.013	0.16%	600	245.75	0.87
***Existing Condition (A4e)																		
Area 4e	SA15	SA14	0.71	374.9	0	0.0	60	42.6	22296	2.61	37.49	170.09	207.58	0.013	0.16%	600	245.75	0.87
Proposed Condition																		
Medium Density	SA15	SA14	0.37	0.37	26	2.4		62.4	63	4.29	0.04	0.79	0.83	0.013	7.30%	150	41.17	2.33
***Downstream Conditions																		
Area 4e	SA15	SA14	0.71	375.61	26	2.4	60	62.4	22379	2.60	37.56	170.61	208.17	0.013	0.16%	600	245.75	0.87

*Based on Proposed site plan by Brock Development Group
**Medium Density Residential (Multi-family/Townhouse) 75 Units/hectare @ 2.4 people/unit
***Based on City of London Record Drawing 23144

LEGEND

- STORM MANHOLE
- OGS — OIL GRIT SEPARATOR
- 87.0–300 ST–0.54% — STORM SEWER
- STMH 2U0018 — EXISTING STORM MANHOLE
- 300 ST — EXISTING STORM SEWER
- STORM CATCHMENT AREA
- A–1 / 1.06Ha / C=0.70 — STORM AREA No. / STORM CATCHMENT AREA / RUNOFF COEFFICIENT

ADELAIDE STREET NORTH

STONEY CREEK

FANSHAWE PARK ROAD EAST

FREMONT AVE.

TROSSACKS AVE.

STONEY CREEK CRESC.

STONEY CREEK PL.

GLENGARRY AVE.

McTAVISH CRESC.

McLEOD CRES.

DUNBOYNE CRESC.

GLENORA DR.

HOWLETT CIRCLE

STACKHOUSE AVE.

MAXWELL CRESC.

TWEED CRESC.

McLEAN DR.

GLENBURNIE CRESC.

SEE EXTERNAL AREA (DWG. 1B)

FOR CONTINUATION SEE ABOVE (TOP–RIGHT)

FOR CONTINUATION SEE BELOW (MIDDLE–LEFT)

FOR CONTINUATION SEE ABOVE (MIDDLE–RIGHT)

FOR CONTINUATION SEE BELOW (BOTTOM–LEFT)

EXISTING SERVICES	DRAWING #, SOURCE	DATE	AS CONSTRUCTED SERVICES	COMPLETION

DETAILS	
DESIGN	DCC/RJG
DRAWN BY	RJG
CHECKED	JKK
APPROVED	DCC
DATE	NOV. 2014

No.	REVISIONS	DATE	CONSULTANT
1.	ISSUED FOR 50% REVIEW	MARCH 27/15	AECOM
2.	ISSUED FOR 90% REVIEW	AUGUST 21/15	AECOM
3.	ISSUED FOR 100% REVIEW	NOVEMBER 4/15	AECOM
4.	ISSUED FOR TENDER	DECEMBER 2/15	AECOM
5.	RECORD DRAWING	FEBRUARY 24/17	AECOM

CONSULTANT OR DIVISION

AECOM
London, Ontario
519.673.0510

ENGINEER'S STAMP

LICENSED PROFESSIONAL ENGINEER
D.C. CARTER
July 17/17
PROVINCE OF ONTARIO

CORPORATION OF THE CITY OF LONDON
London CANADA

SCALE

SCALE–1:1000
10 0 20m

FANSHAWE PARK ROAD IMPROVEMENTS
ADELAIDE STREET TO McLEAN DRIVE

STORM AREA PLAN

PROJECT No. 60333430
SHEET No. 1A
27101

P:\60333430 CoL Fanshawe Park Rd Widening\900–Work\910–CAD\05–MODELS\xbuilts\P01A–P01B_60333430 Fanshawe–STMAREA(AB).dwg

RUNOFF COEFFICIENT 'C'

PARKS & PLAYGROUNDS	- 0.20
RESIDENTIAL- SINGLE & DUPLEX	- 0.40 to 0.50
- ROWHOUSING	- 0.65
- APARTMENTS	- 0.65 to 0.70
COMMERCIAL & INDUSTRIAL	- 0.90 & 0.70
DENSELY BUILT, PAVED	- 0.90

FLOW, Q = 2.78 CIA

WHERE Q = PEAK FLOW IN LITRES PER SECOND (L/s)

C = RUNOFF COEFFICIENT (See Above)

i = RAINFALL INTENSITY (mm/hr), RETURN PERIOD = 2 years

A = AREA IN HECTARES (ha)

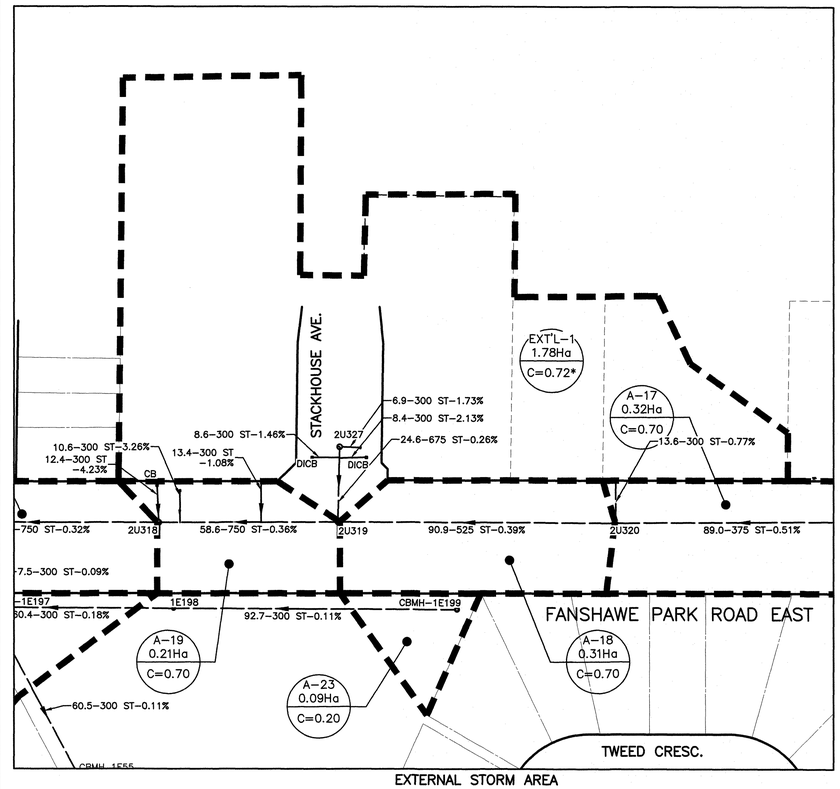
STORM SEWER DESIGN SHEET

(BASED ON CITY OF LONDON 2-YR STORM)

PROJECT Fanshawe Park Road Widening
PROJECT NO. 60333430
DRAINAGE AREA
DESIGNED BY RJG
CHECKED BY DCC
DATE 12/01/15

FANSHAWE PARK ROAD WIDENING

SEWER LOCATION				AREA		A X C					RAINFALL INTENSITY			Q								PROFILE			
AREA NO.	STREET	FROM MH	TO MH	AREA ha.	TOT. AREA ha.	RUNOFF COEFF. (above)	INCR AxC	TOTAL SECT. AxC A X C	TOTAL LAT. A X C	CUM. SEWER (2.78 x) A x C	TIME ENT. SECT. min.	ACCUM. min.	INTENSITY 'i' mm/hr	l/s	"n"	NOM. PIPE D mm	STORM SLOPE %	CAPACITY Q l/s	VELOCITY m./s. (min. 1.0 m/s	LENGTH m.	FLOW TIME minutes	SEWER FALL m	DROP IN MANHOLE m	INVERT ELEVATION U.S. m	INVERT ELEVATION D.S. m
	OUTLET #1 - STONEY CREEK																								
A1	FANSHAWE PARK ROAD E.	1	2	0.33	0.33	0.70	0.23			0.64		12.50	95.16	61.11	0.013	300	0.54	74.14	1.05	91.0	1.45	0.49		252.720	252.229
A2	FANSHAWE PARK ROAD E.	2	3	0.33	0.66	0.70	0.23	0.23		1.28	1.45	13.95	90.15	115.78	0.013	375	0.70	153.05	1.39	91.0	1.09	0.64	0.075	252.154	251.517
A3	FANSHAWE PARK ROAD E.	3	4	0.54	1.20	0.75	0.41	0.46		2.41	1.09	15.04	86.68	208.92	0.013	450	0.90	282.21	1.77	91.0	0.85	0.82	0.075	251.442	250.623
A4	FANSHAWE PARK ROAD E.	4	5	0.50	1.70	0.75	0.38	0.87		3.45	0.85	15.90	84.14	290.52	0.013	525	0.45	301.01	1.39	91.0	1.09	0.41	0.211	250.412	250.002
A5	FANSHAWE PARK ROAD E.	5	6	0.59	2.29	0.75	0.44	1.24		4.68	1.09	16.99	81.10	379.79	0.013	600	0.45	429.28	1.52	91.0	1.00	0.41	0.075	249.927	249.519
A6	FANSHAWE PARK ROAD E.	6	7	0.49	2.78	0.75	0.37	1.68		5.70	1.00	17.98	78.49	447.78	0.013	600	0.55	475.11	1.68	91.0	0.90	0.50	0.025	249.494	248.993
A7	FANSHAWE PARK ROAD E.	7	8	0.75	3.53	0.75	0.56	2.05		7.27	0.90	18.89	76.27	554.37	0.013	750	0.25	580.78	1.31	91.0	1.15	0.23	0.699	248.294	248.067
A8	FANSHAWE PARK ROAD E.	8	9	0.89	4.42	0.75	0.67	2.61		9.12	1.15	20.04	73.60	671.53	0.013	825	0.25	748.85	1.40	91.0	1.08	0.23	0.075	247.992	247.764
A9	FANSHAWE PARK ROAD E.	9	10	0.65	5.07	0.75	0.49	3.28		10.48	1.08	21.12	71.25	746.64	0.013	900	0.20	844.71	1.33	91.0	1.14	0.18	0.075	247.689	247.507
A10	FANSHAWE PARK ROAD E.	10	11	0.77	5.84	0.75	0.58	3.77		12.08	1.14	22.27	68.92	832.87	0.013	900	0.20	844.71	1.33	91.0	1.14	0.18	0.025	247.482	247.300
A11	FANSHAWE PARK ROAD E.	11	OGS	1.23	7.07	0.75	0.92	4.35		14.65	1.14	23.41	66.73	977.55	0.013	975	0.20	1045.70	1.40	91.0	1.08	0.18	0.075	247.225	247.043
	FANSHAWE PARK ROAD E.	OGS	12	0.00	7.07	0.75	0.00	5.27		14.65	1.08	24.49	64.77	948.88	0.013	975	0.20	1045.70	1.40	5.5	0.07	0.01	0.075	246.968	246.957
	FANSHAWE PARK ROAD E.	*12*	*EX. 2U0031*	*0.00*	*7.07*	*0.75*	*0.00*	*5.27*		*14.65*	*0.07*	*24.56*	*64.66*	*947.20*	*0.013*	*1200*	*0.28*	*2156.33*	*1.91*	*22.4*	*0.20*	*0.06*	*0.047*	*246.910*	*246.847*
	FANSHAWE PARK ROAD E.	*EX. 2U0031*	*EX. 2U0029*	*0.00*	*7.07*	*0.75*	*0.00*	*5.27*		*14.65*	*0.20*	*24.75*	*64.32*	*942.21*	*0.013*	*1200*	*0.47*	*2779.85*	*2.46*	*20.3*	*0.14*	*0.09*	*0.270*	*246.577*	*246.482*
	FANSHAWE PARK ROAD E.	*EX. 2U0029*	*OUTLET*	*0.00*	*7.07*	*0.75*	*0.00*	*5.27*		*14.65*	*0.14*	*24.89*	*64.08*	*938.72*	*0.013*	*1200*	*2.71*	*6696.49*	*5.92*	*9.4*	*0.03*	*0.25*	*0.268*	*246.214*	*245.960*
	OUTLET #2 - 1010-1066 FANSHAWE PARK RD. CONDO SITE																								
A12	FANSHAWE PARK ROAD E.	1	13	0.49	0.49	0.70	0.34			0.95		12.50	95.16	90.74	0.013	300	0.85	93.02	1.32	86.7	1.10	0.74		252.019	251.282
A13	FANSHAWE PARK ROAD E.	13	14	0.26	0.75	0.70	0.18	0.34		1.46	1.10	13.60	91.31	133.26	0.013	450	0.30	162.93	1.02	74.3	1.21	0.22	0.150	251.132	250.909
A14	FANSHAWE PARK ROAD E.	15	16	0.31	0.31	0.70	0.22			0.60		12.50	95.16	57.41	0.013	300	0.54	74.14	1.05	80.0	1.27	0.43		252.040	251.608
A15	FANSHAWE PARK ROAD E.	16	14	0.30	0.61	0.70	0.21	0.22		1.19	1.27	13.77	90.73	107.70	0.013	375	0.60	141.70	1.28	84.0	1.09	0.50	0.075	251.533	251.029
	1010/1066 FANSHAWE PARK RD. CONDO SITE	14	*EX. PLUG*	0.00	1.36	0.70	0.00		0.95	2.65		13.68	91.05	240.96	0.013	600	0.25	320.32	1.13	4.2	0.06	0.01	0.158	250.751	250.740
	1010/1066 FANSHAWE PARK RD. CONDO SITE	*EX. PLUG*	*EX. STMH*	*0.00*	*1.36*	*0.70*	*0.00*	*0.95*		*2.65*	*0.06*	*13.74*	*90.84*	*240.59*	*0.013*	*600*	*0.25*	*320.32*	*1.13*	*19.7*	*0.29*	*0.05*	*0.000*	*250.740*	*250.691*
	OUTLET #3 - HOWLETT CIRCLE																								
A16	FANSHAWE PARK ROAD E.	17	18	0.32	0.32	0.70	0.22			0.62		12.50	95.16	59.26	0.013	300	0.54	74.14	1.05	90.0	1.43	0.49		254.476	253.990
A17	FANSHAWE PARK ROAD E.	18	19	0.32	0.64	0.70	0.22	0.22		1.25	1.43	13.93	90.20	112.34	0.013	375	0.50	129.35	1.17	90.0	1.28	0.45	0.075	253.915	253.465
A18	FANSHAWE PARK ROAD E.	19	20	0.31	0.95	0.70	0.22	0.45		1.85	1.28	15.21	86.16	159.29	0.013	525	0.40	283.79	1.31	90.0	1.14	0.36	0.150	253.315	252.955
EXT'L-1	STACKHOUSE AVENUE	20A	20	1.78	1.78	0.72	1.28			3.56		12.30	95.89	341.65	0.013	675	0.25	438.52	1.23	24.0	0.33	0.06		252.865	252.805
A19	FANSHAWE PARK ROAD E.	20	21	0.21	1.16	0.70	0.15		1.95	5.82	1.14	13.23	92.58	538.84	0.013	750	0.35	688.17	1.56	59.7	0.64	0.21	0.225	252.730	252.519
A20	FANSHAWE PARK ROAD E.	21	22	0.28	1.44	0.70	0.20	2.09		6.37	0.64	13.86	90.42	575.52	0.013	750	0.35	688.17	1.56	77.7	0.83	0.27	0.025	252.494	252.222
A21	FANSHAWE PARK ROAD E.	22	23	0.25	1.69	0.70	0.18	2.29		6.85	0.83	14.70	87.74	601.19	0.013	750	0.35	688.17	1.56	68.7	0.74	0.24	0.025	252.197	251.956
	HOWLETT CIRCLE	23	*EX. 900 ST*	0.00	1.69	0.70	0.00	*2.46*		6.85	0.74	15.43	85.50	585.83	0.013	900	0.13	681.03	1.07	9.9	0.15	0.01	0.163	251.793	251.780
	HOWLETT CIRCLE	*EX. 900 ST*	*EX. STMH*	*0.00*	*1.69*	*0.70*	*0.00*	*2.46*		*6.85*	*0.15*	*15.58*	*85.05*	*582.71*	*0.013*	*900*	*0.13*	*681.03*	*1.07*	*33.9*	*0.53*	*0.04*	*0.000*	*251.780*	*251.736*
	OUTLET #4 - MAXWELL CRESCENT																								
A22	FANSHAWE PARK ROAD E.	24	25	0.39	0.39	0.20	0.08			0.22		19.00	76.00	16.48	0.013	300	0.30	55.26	0.78	87.9	1.87	0.26		252.513	252.249
	FANSHAWE PARK ROAD E.	25	CBMH-26	0.00	0.39	0.20	0.00	0.08		0.22	1.87	20.87	71.78	15.56	0.013	300	0.30	55.26	0.78	7.9	0.17	0.02	0.050	252.199	252.175
A23	NORTHRIDGE PARK	CBMH-27	28	0.09	0.09	0.20	0.02			0.05		19.00	76.00	3.80	0.013	300	0.30	55.26	0.78	93.0	1.98	0.28		252.684	252.405
	NORTHRIDGE PARK	28	CBMH-26	0.00	0.09	0.20	0.00	0.02		0.05	1.98	20.98	71.55	3.58	0.013	300	0.30	55.26	0.78	60.0	1.28	0.18	0.025	252.380	252.200
A24	NORTHRIDGE PARK	CBMH-26	*EX. CBMH*	0.16	0.64	0.20	0.03		0.10	0.36		20.89	71.74	25.53	0.013	300	0.30	55.26	0.78	60.0	1.28	0.18	0.050	252.150	251.970
	WALWAY TO MAXWELL CRESC.	*EX. CBMH*	*EX. STMH*	*0.00*	*0.64*	*0.70*	*0.00*	*0.13*		*0.36*	*1.28*	*22.17*	*69.10*	*24.59*	*0.013*	*300*	*0.58*	*76.84*	*1.09*	*37.2*	*0.57*	*0.22*	*0.050*	*251.920*	*251.704*



EXTERNAL STORM AREA
SCALE 1:1000

P:\60333430 Col. Fanshawe Park Rd Widening\300-Work\910-CAD\05-MODELS\Vebuilt\P01A-P01B_60333430 Fanshawe-STMAREA(AB).dwg

EXISTING SERVICES	DRAWING #, SOURCE	DATE	AS CONSTRUCTED SERVICES	COMPLETION

DETAILS	
DESIGN	DCC/RJG
DRAWN BY	RJG
CHECKED	JKK
APPROVED	DCC
DATE	NOV. 2014

No.	REVISIONS	DATE	CONSULTANT
1.	ISSUED FOR 50% REVIEW	MARCH 27/15	AECOM
2.	ISSUED FOR 90% REVIEW	AUGUST 21/15	AECOM
3.	ISSUED FOR 100% REVIEW	NOVEMBER 4/15	AECOM
4.	ISSUED FOR TENDER	DECEMBER 2/15	AECOM
5.	RECORD DRAWING	FEBRUARY 24/17	AECOM

CONSULTANT OR DIVISION

AECOM
London, Ontario
519.673.0510

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LICENSED PROFESSIONAL ENGINEER
D.C. CARTER
July 17/17
PROVINCE OF ONTARIO

London CANADA
CORPORATION OF THE CITY OF LONDON

SCALE

FANSHAWE PARK ROAD IMPROVEMENTS
ADELAIDE STREET TO McLEAN DRIVE

STORM DESIGN SHEET

PROJECT No. 60333430
SHEET No. 1B
27102

STRIK BALDINELLI MONIZ
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Runoff Coefficient Calculations

DATE:	May 3, 2022
JOB No.:	SBM-22-1218

Client:	**Brock Development Group Inc.**
Project:	**Proposed Residential Development**
Location:	**1170 Fanshawe Park Road, London, Ontario**

PRE-DEVELOPMENT AREA (TOTAL SITE)

	*Area (m^2)	C	AxC
Total Area:	3722.04		
Building Area:	426.10	0.9	383.49
Concrete/Asphalt:	168.00	0.9	151.2
Gravel:	0.00	0.7	0
Landscaped/Open:	3127.94	0.2	625.588
Totals:	3722.04		1160.278
$C_{eq} = \sum(A*C)/\sum(A) =$	**0.40**		
$C_{allowable}$	**0.72**	City record drawing 27102	

POST-DEVELOPMENT AREA (TOTAL SITE)

	*Area (m^2)	C	AxC
Total Area:	3722.04		
Building Area:	954.82	0.9	859.338
Green Roof:	0.00	0.6 *	0
Concrete/Asphalt:	1599.53	0.9	1439.577
Gravel:	0.00	0.7	0
Landscaped/Open	1167.69	0.4 *	467.076
Totals:	3722.04		2765.991
$C_{eq} = \sum(A*C)/\sum(A) =$	**0.74**		

* Pre-Development Areas are approximate and taken from CAD drawings - City of London Mapping - Topo 2015 - 2D - 7964t_15