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June 2, 2022

SBM-22-0021

York Developments (London) Inc.
303 Richmond Street #201
London, Ontario

Attn: Mr. Carlos Ramirez

Re: Sanitary Servicing Feasibility Study
Proposed 6 Story Apartment Building
415-421 Boler Road, London, ON

1. INTRODUCTION

This Sanitary Servicing Feasibility Study (Study) has been prepared by Strik, Baldinelli, Moniz Ltd. (SBM) for York Developments (London) Inc. to address the sanitary servicing feasibility for the proposed 6 story apartment building development located at 415-421 Boler Road in London, Ontario.

The subject site is approximately 0.325 ha in size. The property borders the Boler Road Right of Way (ROW) to the east, the Byron Baseline Road ROW to the south, and residential properties to the west and to the north. The apartment building is proposed to have 6 floors and 2 floors of underground parking. The proposed development includes 90 residential units with a total floor area of 1,627 m^2. Please refer to the proposed Overall Site Plan prepared by Philip Agar Architect Inc (AGAR) dated May 27, 2022 attached to this Study.

This Study is to determine the adequacy of the existing sanitary sewer system along Boler Road in support of a Zoning By-Law Amendment (ZBA) for the proposed development to the section of sewer downstream of the intersection of Boler Road and Commissioners Road West.

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

2. SANITARY SERVICING

As per the attached Site Plan by AGAR, the existing site is composed of three lots with municipal numbers 421, 417, and 415. As stated in the Pre-Consultation Comments by the City of London dated January 28, 2020, the municipal sanitary sewer for the proposed development is the 375mm sanitary sewer within the Boler Road ROW. The size and slope of the sanitary private drain connection (PDC) connecting the proposed building to the mainline sewer will be confirmed during detailed design for Site Plan Application (SPA).

As per the attached City of London Byron Storm & Sanitary Sewer System Plan by R.C. Dunn and Associates dated November 1964 and the City of London Sanitary Sewer Design Sheets 5420 & 5419 dated May 1986, the subject site is located between manhole 60 and manhole 59.

This Study is to determine the adequacy of the existing sanitary sewer on Boler Road between the subject site to the sanitary sewer downstream of the Boler Road and Commissioners Road West intersection in support of a Zoning By-Law Amendment (ZBA) for the proposed development. For the purposes of this Study, the following assumptions have been made:

- Detailed design of the site's proposed servicing will take place at the time of Site Plan Approval application.
- The subject site area is approximately 0.325 ha and is proposed to consist of a 90-unit, 6 story apartment as per the Site Plan prepared by AGAR, dated May 27, 2022.
- The site's occupancy load of 144 people has been calculated per:

  - High density residential classification for the proposed apartment building of 1.6 people/unit (90 units * 1.6 ppl/unit = 144 ppl).
- The area considered in this Study is limited to the areas shown on the attached Sanitary Catchment Area Study Limit drawing. The northern study limit is sanitary manhole 50 (BY581) on Commissioners Road West and the most southern sanitary manhole is BY1900.
- As the latest available Boler Road sanitary design sheets are out-of-date (circa 1977 & 1968) and additional development has taken place since, the upstream sanitary catchment areas and populations were determined by using the City of London Locates Mapping to delineate which catchment areas were tributary to the Boler Road sanitary sewer and the associated populations were determined by preforming dwelling counts within each catchment area. Populations were also calculated for other areas including schools and commercial areas based on densities specified in the DS&RM. Details showing the catchment area measurements and catchment area population calculations can be found attached.
- The City of London Byron Storm & Sanitary Sewer System Plan by R.C. Dunn and Associates dated November 1964 and the City of London Sanitary Sewer Design Sheets 5420 & 5419 dated May 1986 were used to determine the downstream sanitary catchment areas and associated areas and existing sanitary sewer specifications. It is assumed that the drawings are representative of the latest sanitary drainage area parameters and sanitary sewer specifications including but not limited to drainage areas, pipe diameters, and pipe slopes.
- Adjustments to downstream catchment area populations were confirmed using the City of London Mapping website to ensure the correct number of units for each catchment. If the number of units/population calculated based on the City of London Mapping was greater than the number of units/population reported in the sanitary design sheet, the larger of the two was considered for this Study which is noted on the attached Sanitary Design Sheet by SBM.
- Populations and sanitary drainage areas for the future Boler Heights Subdivision (39T-15503) were included within this Study. Details can be found on the attached Upstream Sanitary Catchment Area Detail #3
- As shown on the attached Boler Road 250mm Sanitary Force main Detail, there is an existing 250mm sanitary force main which is connected to a “Temporary Pumping Station” located within the Westfield Village Estates subdivision as shown on the attached City of London record drawing 24382. The pumping station and force main formerly serviced the subdivision and the 250mm connected to the gravity sewer on Boler Road. However, it has been confirmed by the City of London Engineering department that the force main is no longer operational and therefore was not considered within the scope of this Study.
- Assumed 4 persons per single family residential dwelling based on the original Boler Road sanitary sewer design sheets provided attached (whereas 3 people per unit is the standard within the current DS&RM).
- A population of 100 people/hectare has been assumed for existing commercial properties.
- A population of 600 people has been assumed for existing elementary schools.
- A flow criterion of 230 L/capita/day has been used to quantity sewage flows for the proposed development and all other sanitary drainage areas in alignment with current City of London DS&RM standards.
- An uncertainty factor of 1.1 has been applied to all sanitary sewage calculations in this study.
- An infiltration allowance of 8640 L/ha/day was included as per the DS&RM.
- Only dry weather flows were considered in this Study. Evaluation of wet weather flows was not included and is considered outside the scope of this Study.

The proposed flows from the subject site are shown on the Sanitary Sewer Design Sheet attached to this Study. Using a flow of 230 L/capita/day as per the DS&RM for the proposed site’s occupancy load of 144 people, the anticipated peak sanitary flow for the proposed development is 1.77 L/s. When combined with infiltration, this results in a total peak flow of 1.80 L/s. A sanitary sewer PDC connecting to the 375mm sewer on Boler Road will be designed during detailed design for SPA to accommodate the expected flows.

As shown on the attached Sanitary Sewer Design Sheet, the existing sanitary sewers on Boler Road downstream of the proposed development, to the intersection of Boler Road and Commissioners Road West all have adequate capacity to convey the increase in flows from the proposed 6 story apartment building located at 415-421 Boler Road. The sanitary sewer with the highest calculated percentage full is located between manholes 50 and 51 with a total flow of 90.83 L/s and a capacity of 148.23 L/s resulting in the sewer being calculated at 61.27% full.

Based on the above, the City's existing sanitary sewer infrastructure within the study area appears to have sufficient capacity to accommodate the proposed development.

3. LIMITATIONS

This Study was prepared by SBM for York Developments (London) 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. 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 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 SBM 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.

4. 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

Lauren Andersen
Civil Engineering Intern

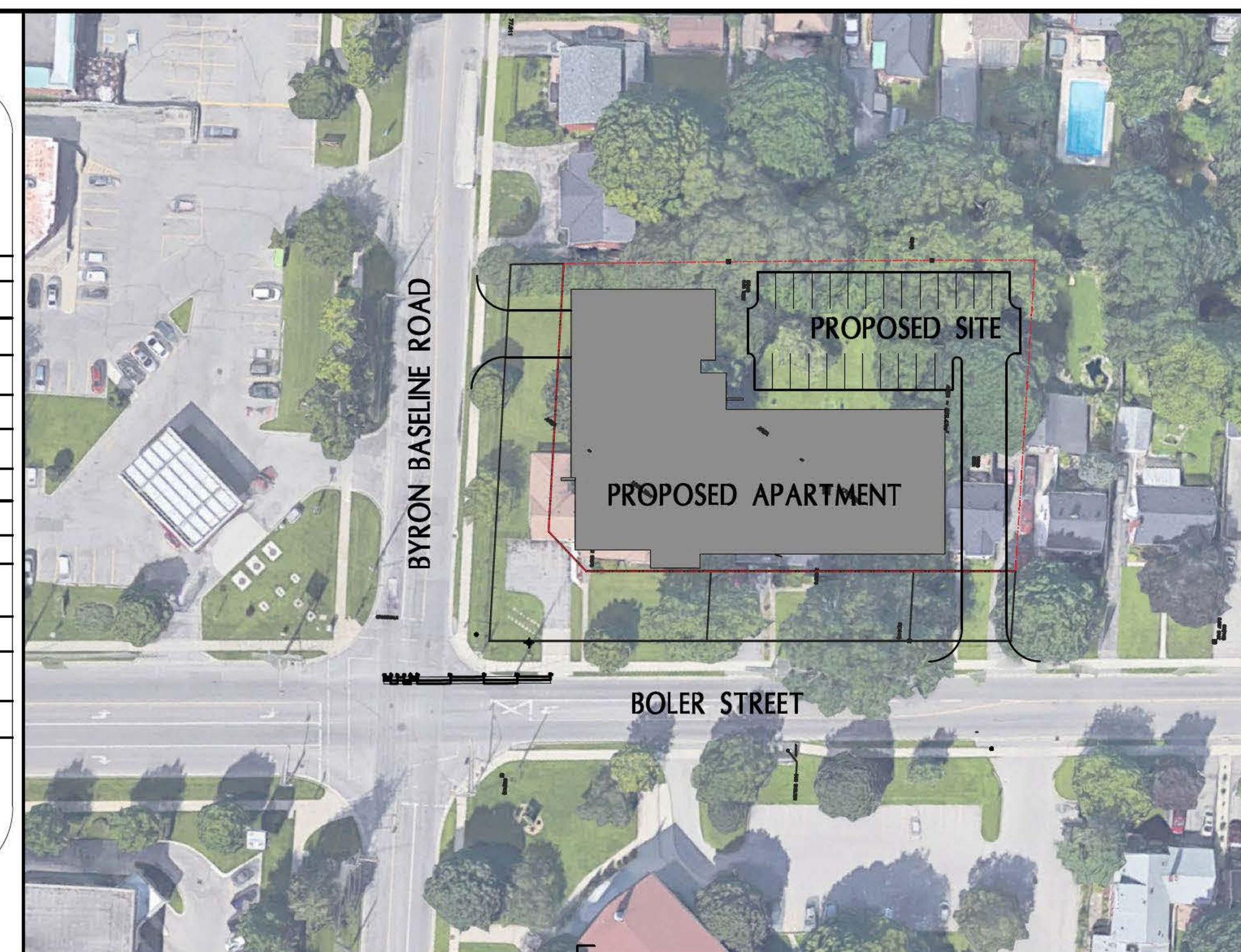
Encl:
- Overall Site Plan prepared by Philip Agar Architect Inc. dated May 27, 2022
- City of London Record Drawing 5415 Byron Storm & Sanitary Sewer System Plan by R.C. Dunn and Associates dated November 1964
- City of London Record Drawings 5419 & 5420 Sanitary Sewer Design Sheets dated May 1986
- City of London Record Drawing 7079 Boler Road Improvements Sanitary Design Area by R.C. Dunn and Associates dated March 1977
- City of London Record Drawing 24382 Westfield Village Estates Interim Sanitary Drainage Area Plan
- Email Confirmation from the City of London
- City of London Mapping Markups by SBM
- Sanitary Service Design Sheet by SBM Dated June 2022

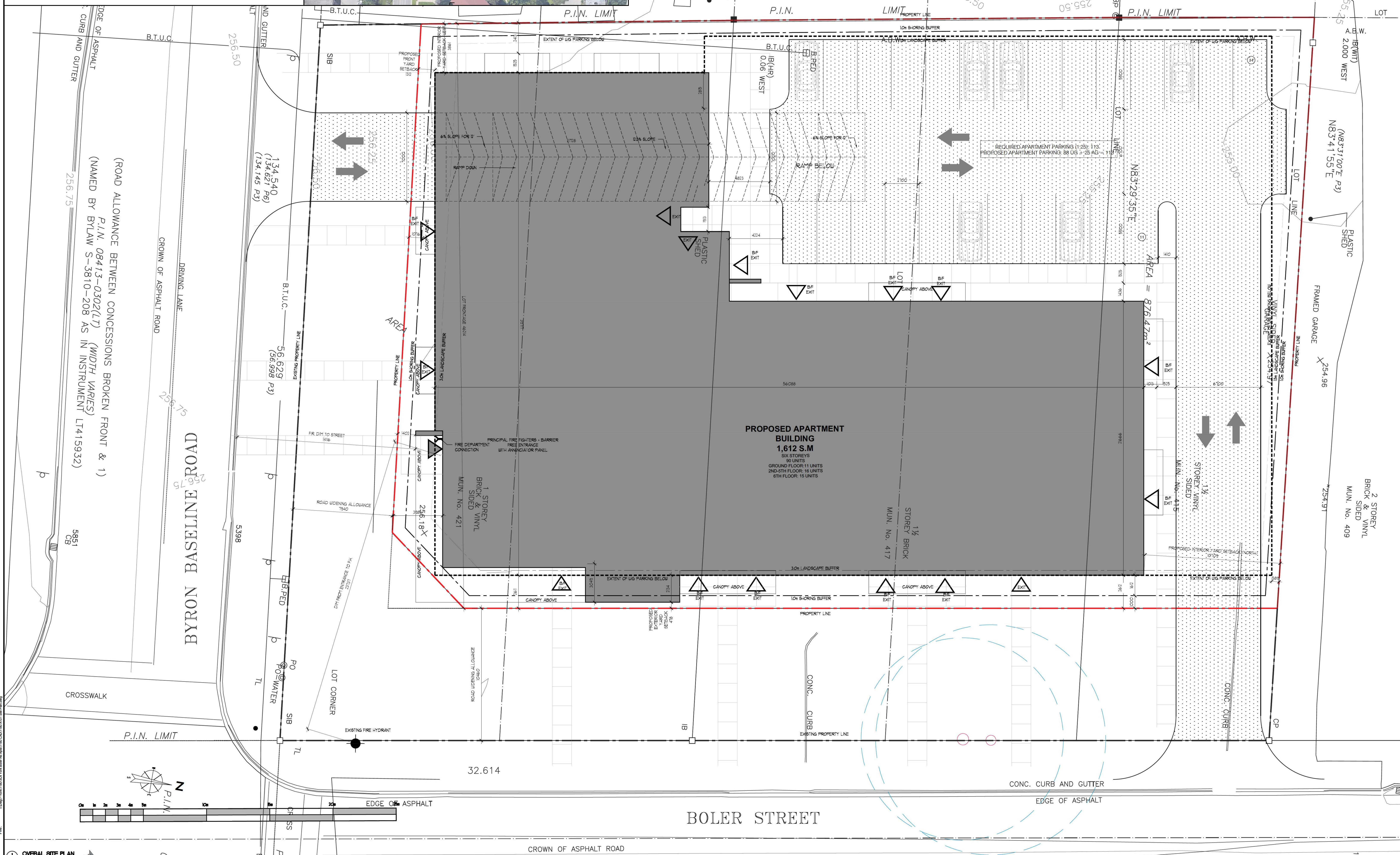
site data

* = BEFORE ROAD WIDENING

1. GROSS SITE AREA: 4,464 s.m. (0.446 HECTARES) AFTER RW : 3,261 s.m. (0.326 HECTARES)
2. BUILDING AREA (B.A): 1,612 s.m.
3. ASPHALT AREA: 1,004 s.m.

ITEM	A	ZONING REQUIREMENTS	PROPOSED APARTMENTS
4.	ZONES	R1-8 (CURRENT)	TYPE 2 BONUS
5.	LOT AREA (MIN.)	–	4,464 s.m. *
6.	LOT FRONTAGE (MIN.)	–	46.214 m
7.	FRONT YARD SETBACK	–	1.312 m
8.	REAR YARD SETBACK	–	10.709 m
9.	SIDE YARD SETBACK	–	3.861 m
10.	EXTERIOR YARD SETBACK	–	0.478 m
11.	LANDSCAPED OPEN SPACE	–	41% *
12.	LOT COVERAGE MAX. (ON GROSS SITE)	–	36% *
13.	HEIGHT (MAX.)	6 STOREYS	6 STOREYS ~23m
14.	DENSITY	75 UNITS/HECTARE	215 UPH
15.	UNITS	88 UNITS	90 UNITS
16.	PARKING REQ.	1.25/UNIT = 113 PARKING REQ'D INCLUD. 3 TYPE A + 2 TYPE B B/F (1+3% B/F PARKING REQUIRED) 0.75 SECURE BICYCLE SPACES= 68	25 SURFACE 88 UNDERGROUND = 113 PARKING SPACES TOTAL INCLUDING 3 TYPE A B/F 3 TYPE B B/F 70 SECURE BICYCLE SPACES





PROPOSED APARTMENT BUILDING
1,612 S.M
SIX STOREYS
90 UNITS
GROUND FLOOR: 11 UNITS
2ND-5TH FLOOR: 16 UNITS
6TH FLOOR: 15 UNITS
BYRON BASELINE ROAD
BOLER STREET
(ROAD ALLOWANCE BETWEEN CONCESSIONS BROKEN FRONT & 1)
(NAMED BY BYLAW S-3810-208 AS IN INSTRUMENT LT415932)
P.I.N. 08413-0302(LT) (WIDTH VARIES)
P.I.N. 08413-0248(LT)
P.I.N. 08413-0249(LT)
P.I.N. 08413-0250(LT)
P.I.N. 08413-0251(LT)
N10°19'55"W (N09°53'45"E P3)
30.492 (30.480 P3)
N9°53'45"W
(15.240 P1,P3)
15.444
N83°29'35"E
N83°41'55"E
(N83°31'00"E P3)
AREA = 876.47m²
134.540
(134.621 P6)
(134.145 P3)
56.629
(56.998 P3)
32.614
CROWN OF ASPHALT ROAD
DRIVING LANE
CROSSWALK
EXISTING FIRE HYDRANT
CONC. CURB AND GUTTER
EDGE OF ASPHALT
LOT CORNER
RAMP DOWN
RAMP BELOW
1 STOREY BRICK & VINYL SIDED MUN. No. 421
1½ STOREY BRICK MUN. No. 417
1½ STOREY VINYL SIDED MUN. No. 415
2 STOREY BRICK & VINYL SIDED MUN. No. 409
FRAMED GARAGE
PLASTIC SHED
WOOD SIDED SHED
OVERAL SITE PLAN

AGAR architect
philip agar architect inc.

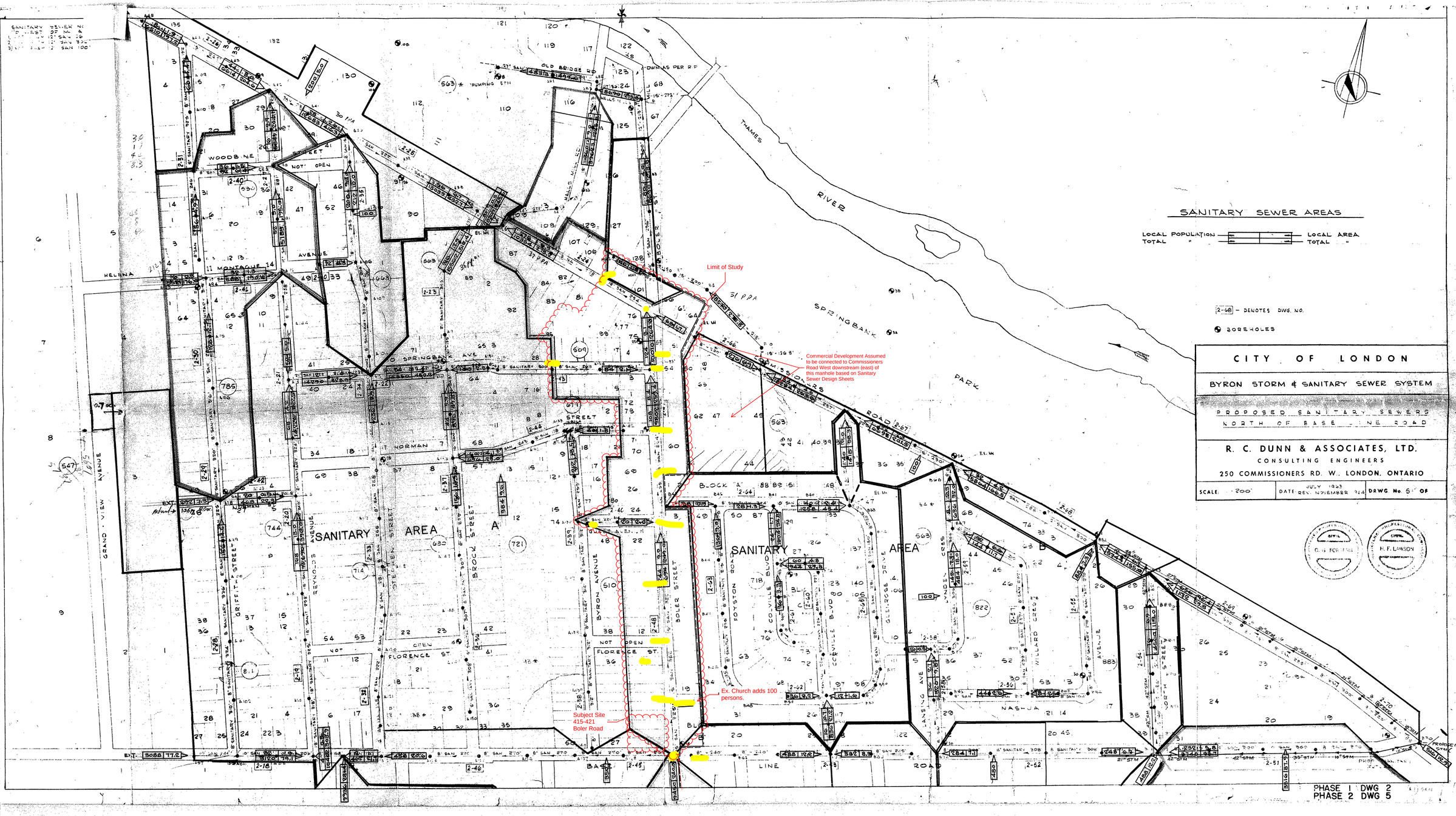
York DEVELOPMENTS

OVERALL SITE PLAN

PROPOSED APARTMENT BUILDING
–
415 BOLER ROAD
LONDON, ONTARIO

Project No:	1180
Scale:	AS NOTED
Dwn/Chkd. By:	SA/PA
Date:	SEPT 2021

Dwg. No:
A101



PHASE 1 DWG 2
PHASE 2 DWG 5

5415

5415

POPULATION DENSITIES:-

SINGLE FAMILY LOTS	4 PEOPLE	
DUPLEX LOT	8	"
APTS: BACH.	1½	"
1 BD. RM.	2½	"
2 BD. RM.	3½	"

LATERALS - AREA 'A' - ①

CITY OF LONDON

CITY ENGINEERS DEPARTMENT

SANITARY SEWER DESIGN SHEET

"AS BUILT"

PROJECT BYRON SEWERS
FILE NO ____ SHEET 1 OF 2
SANITARY AREA LATERAL 'A'
DESIGNED BY CGE/HEL CHECKED BY CGE
DATE MAY 1968

DWG No	SEWER LOCATION STREET	FROM	TO	AREA NET OR GROSS	AREA DIMENSIONS	AREA Δ ACRES	AREA Σ ACRES	POPULATION PER ACRE	POPULATION NO OF LOTS	POPULATION PER LOT	POPULATION Δ POP.	POPULATION Σ POP.	SEWAGE FLOW INFILT. C.F.S.	SEWAGE FLOW SEWAGE C.F.S.	SEWAGE FLOW TOTAL C.F.S.	SEWER DESIGN (MINIMUM) SIZE ins.	SEWER DESIGN S %	SEWER DESIGN n	SEWER DESIGN CAP. C.F.S.	SEWER DESIGN FULL VELOCITY f.p.s.	PROFILE LOSSES IN M.H.	PROFILE FALL IN SEWER	PROFILE LENGTH feet	PROFILE INVERT ELEV. U.S.	PROFILE INVERT ELEV. D.S.
7	WAYNE ROAD	BOLER	JELLICOE	GR.		4.5	4.6		20	4	80	80	0.01	0.03	0.04	8	1.94	0.015	1.44	4.16 / 1.62 / 2.00					
16	JELLICOE CR.	WAYNE	LOLA			7.3	11.8		25		100	180	0.02	0.09	0.11	8	0.94	"	1.01	2.00 / 1.63					
8	REGIS AVE.	"	REGIS PL			1.9	1.9		4		16	16	0.01	0.01	0.02	8	2.64	"	1.49	4.28 / 1.39					
"	" "	N. LIMIT	"			2.5	2.5		7		28	28	0.01	0.01	0.02	8	0.97	"	1.03	2.96 / 1.67					
9	" PLACE	REGIS AVE	W. LIMIT			1.8	6.2		9		36	80	0.01	0.04	0.05	8	1.80	"	1.05	3.00 / 1.55					
10	EASEMENT	" PL	SCHOOL			1.6	7.8		2		8	88	0.01	0.04	0.05	8	0.69	"	0.87	2.49 / 1.17					
11	LOLA ST.	SCHOOL	JELLICOE			6.2	14.0				100	188	0.02	0.10	0.12	8	0.63	"	0.85	2.58 / 1.39					
15	JELLICOE CR.	LOT 6	LOLA			3.1	3.1		13		52	52	0.01	0.03	0.04	8	0.48	"	0.78	2.08 / 0.96					
11	LOLA ST. AVE	JELLICOE	BLAKE			0.9	26.6		4		16	436	0.04	0.20	0.24	8	0.63	"	0.83	2.39 / 1.19					
17	COLLINGWOOD	LOT 4	"			5.6	5.6		19		76	76	0.01	0.03	0.04	8	1.17	"	1.13	3.24 / 1.35					
"	" "	W. LIMIT	"			1.0	1.6		3		12	12	0.01	0.01	0.02	8	1.05	"	1.07	3.07 / 1.10					
14	BLAKE ST.	COLLINGWOOD	LOLA			6.4	13.0		27		108	196	0.02	0.10	0.12	8	1.42	"	1.25	3.61 / 1.90					
	JELLICOE CR.	LOT 5	BLAKE			2.6	2.6		5		20	20	0.01	0.01	0.02	8	3.91	"	1.81	5.20 / 1.35					
13	BLAKE ST.	LOT 7	LOLA			5.4	8.0		16		64	84	0.01	0.04	0.05	8	0.49	"	0.73	2.10 / 1.03					
45,46	BASE LINE ROAD	BOLER	STEPHEN		COMMERCIAL: 35.0	20.6	20.6		25		100	450	0.04	0.26	0.30	8	0.42	"	0.68	1.92 / 1.63					
18	" "	STEPHEN	BELVEDERE			1.1	21.7		3		12	468	0.04	0.26	0.30	8	3.32	"	1.90	5.42 / 2.52					
28,29	GRIFFITH ST.	BASE LINE	NORMAN			14.5	14.5		39		156 / 312	156	0.02	0.09	0.11	8	0.67	"	0.85	2.35 / 4.93					
48	NORMAN ST.	GRIFFITH	REYNOLDS		EXT. 7.3 AC	6.0	27.8	40	5		20	468	0.05	0.26	0.31	12	1.57	"	3.81	5.42 / 2.52					
21	REYNOLDS RD.	HELENA MONTAGUE	SPRINGBANK			5.0	5.0		13		52	52	0.01	0.02	0.03	8	0.47	"	0.72	2.06 / 0.89					
32,33,34	STEPHEN ST.	BASE LINE	SPRINGBANK			19.9	19.9		59		236	236	0.03	0.14	0.17	8	0.44	"	0.69	2.00 / 1.36					
36,37	BROCK ST.	BASE LINE	NORMAN			14.9	14.9		44		156	156	0.02	0.09	0.11	8	0.94	"	1.01	2.91 / 1.60					
37	" "	NORMAN	SPRINGBANK			5.9	49.8		11		44	896	0.08	0.48	0.56	10	0.63	"	1.24	3.58 / 1.88					
38,39	BYRON BLVD.	BASE LINE	NORMAN			13.5	13.5		53		212	212	0.02	0.12	0.14	8	0.68	"	0.84	2.42 / 1.47					
44	NORMAN ST.	BOLER	BYRON			1.8	1.8		10		40	40		0.02	0.02	8	0.58	"	0.80	2.30 / 0.87					
"	" "	BYRON	BROCK		P.U.C. 9.6 AC	4.1	93.0	40	15		60	696	0.05	0.38	0.43	8	0.48	"	0.78	2.08 / 1.87					

TOTAL P.D.C's = 431 2086

POPULATION DENSITIES:-

SINGLE FAMILY LOTS	4 PEOPLE	
DUPLEX LOT	8	"
APTS: BACH.	1½	"
1 BD. RM.	2½	"
2 BD. RM.	3½	"

LATERALS - AREA 'A' - ②

CITY OF LONDON

CITY ENGINEERS DEPARTMENT

SANITARY SEWER DESIGN SHEET

"AS BUILT"

PROJECT BYRON SEWERS
FILE NO ____ SHEET 2 OF 2
SANITARY AREA LATERAL 'A'
DESIGNED BY CGE/HEL CHECKED BY CGE
DATE MAY 1968

DWG No	SEWER LOCATION STREET	FROM	TO	AREA NET OR GROSS	AREA DIMENSIONS	AREA Δ ACRES	AREA Σ ACRES	POPULATION PER ACRE	POPULATION NO OF LOTS	POPULATION PER LOT	POPULATION Δ POP.	POPULATION Σ POP.	SEWAGE FLOW INFILT. C.F.S.	SEWAGE FLOW SEWAGE C.F.S.	SEWAGE FLOW TOTAL C.F.S.	SEWER DESIGN (MINIMUM) SIZE ins.	SEWER DESIGN S %	SEWER DESIGN n	SEWER DESIGN CAP. C.F.S.	SEWER DESIGN FULL VELOCITY f.p.s.	PROFILE LOSSES IN M.H.	PROFILE FALL IN SEWER	PROFILE LENGTH feet	PROFILE INVERT ELEV. U.S.	PROFILE INVERT ELEV. D.S.
43	SPRINGBANK AVE	LOT 26 (153)	BOLER			2.1	2.1	40	19		84	84		0.04	0.04	8	0.58		0.80	2.29 / 2.03					
"	" " "	"	BROCK			0.5	2.1	40	19		100	100		0.06	0.06	8	0.47		0.78	2.05 / 1.90					
42	GUEST AVE.	BYRON	BOLER			2.0	2.0		5		20	20		0.01	0.01	8	0.58		0.80	2.29 / 2.71					
29,30	GRIFFITH ST.	NORMAN	HELENA MONTAGUE			12.7	12.7		32		128	128	0.02	0.08	0.10	8	0.48		0.78	2.08 / 2.60					
40	HELENA MONTAGUE	150' W. STEPHEN	STEPHEN			0.3	0.3		3		12	12		0.01	0.01	8	2.06		1.50	4.31 / 0.86					
34,35	STEPHEN ST.	SPRINGBANK	COMM. RD		SCHOOL: 1.00	9.7	10.0		25		100	212	0.01	0.12	0.13	8	0.49		0.73	2.10 / 1.38					
31	GRIFFITH ST.	HELENA MONTAGUE	WOODBINE			4.9	4.9		14		56	56	0.01	0.02	0.03	8	0.48		0.78	2.08 / 2.00					
"	" "	WOODBINE	COMM. RD			4.4	4.4		15		60	60	0.01	0.03	0.04	8	0.92		1.00	2.88 / 1.24					
40	WOODBINE	GRIFFITH	REYNOLDS			1.5	6.2		9		36	92	0.01	0.04	0.05	8	1.17		1.14	3.36 / 1.43					
66	COMMISSIONERS ROAD	LOT 50	BOLER			1.7	1.7	40	5		68	68		0.03	0.03	8	0.91		0.88	2.34 / 0.99					

TOTAL P.D.C's = 146 664

POPULATION DENSITIES:-

SINGLE FAMILY LOTS	4 PEOPLE	
DUPLEX LOT	8	"
APTS: BACH.	1½	"
1 BD. RM.	2½	"
2 BD. RM.	3½	"

TRUNKS - AREA 'B' - ①

CITY OF LONDON

CITY ENGINEERS DEPARTMENT

SANITARY SEWER DESIGN SHEET

"AS BUILT"

PROJECT BYRON SEWERS
FILE NO ____ SHEET 1 OF 2
SANITARY AREA TRUNK B
DESIGNED BY CGE/HEL CHECKED BY CGE
DATE MAY 1968

DWG No	SEWER LOCATION STREET	FROM	TO	AREA NET OR GROSS	AREA DIMENSIONS	AREA Δ ACRES	AREA Σ ACRES	POPULATION PER ACRE	POPULATION NO OF LOTS	POPULATION PER LOT	POPULATION Δ POP.	POPULATION Σ POP.	SEWAGE FLOW INFILT. C.F.S.	SEWAGE FLOW SEWAGE C.F.S.	SEWAGE FLOW TOTAL C.F.S.	SEWER DESIGN (FULL FLOW) SIZE ins.	SEWER DESIGN S %	SEWER DESIGN n	SEWER DESIGN CAP. C.F.S.	SEWER DESIGN FULL VELOCITY f.p.s.	PROFILE LOSSES IN M.H.	PROFILE FALL IN SEWER	PROFILE LENGTH feet	PROFILE INVERT ELEV. U.S.	PROFILE INVERT ELEV. D.S.
51	BASE LINE RD.	99	98	GR.		2.5	2.5	40	1		40	40		0.05	0.05	8	1.33	0.015	1.21	3.42 / 1.02 / 2.73					
"	" "	98	97			48.8	51.3	"	4		1952	2092	0.02	1.03	1.05	10	0.62	"	1.49	3.43 / 1.63					
"	" "	97	96			24.9	76.2	"	1		996	3088	0.03	1.48	1.51	10	0.76	"	1.65	3.70 / 1.80					
"	" "	.96	NORTH (93)			17.5	93.7	"	0		700	3788	0.04	1.80	1.84	12	0.40	"	1.95	2.89 / 2.86					
54	NORTH ST.	BASE LINE (93)	92		EXT. = 12.8 AC	1.0	113.1		1		10	4494	0.19	2.10	2.29	12	1.92	"	4.28	5.99 / 4.85					
"	" "	92	91			1.0	114.1		1		10	4504	0.19	2.10	2.30	12	1.68	"	4.00	5.59 / 4.54					
"	" "	91	90			1.0	115.1		3		10	4514	0.19	2.11	2.30	12	1.50	"	3.79	4.82 / 4.35					
"	" "	90	89			1.0	116.1		4		10	4524	0.20	2.11	2.31	12	1.65	"	3.96	5.05 / 4.54					
"	" "	89	88			1.0	117.1		6		10	4534	0.20	2.12	2.32	12	1.54	"	3.84	4.89 / 4.46					
"	" "	88	COMM. RD (93)			1.9	119.0		2		20	4560	0.20	2.13	2.33	12	1.38	"	3.63	4.61 / 4.25					
68	COMMISSIONERS ROAD	NORTH (23)	22			3.3	151.6		0			5732	0.25	2.61	2.86	12	1.03	"	3.14	3.99 / 4.07			1.66	168.6	861.47	799.81
"	" "	22	NASHUA (21)			3.4	155.0		3		12	5744	0.26	2.61	2.87	12	0.84	"	2.83	3.60 / 3.75	H:0.04		1.40	171.2	796.91	795.51
"	" "	NASHUA (21)	20			1.4	163.7		3		12	5840	0.27	2.66	2.93	12	0.73	"	2.64	3.73 / 3.74	H:0.51		2.29	302.5	794.63	792.34
"	" "	20	19			1.4	165.1		3		12	5852	0.28	2.66	2.94	12	0.82	"	2.80	3.74 / 3.76	H:0.25		2.30	282.8	791.19	788.89
66A	" "	19	LYNDEN (18)			1.4	166.5		2		8	5864	0.28	2.67	2.95	12	0.93	"	2.98	3.76 / 3.76			2.07	291.7	788.68	786.61
64	GLENROSE DR.	COLVILLE (21)	40			1.2	47.2		6		24	1248	0.08	0.64	0.66	10	0.36	"	1.14	2.68 / 1.84			0.77	207.0	793.09	792.32
"	" "	40 (30)	LOT 134 (32)			1.2	48.4		4		16	1258	0.08	0.64	0.66	10	0.42	"	1.23	2.66 / 1.97			0.90	219.1	792.12	791.22
7	EASEMENT	GLENROSE	31			0.5	57.5	40	0		20	1398	0.03	0.70	0.73	10	0.34	"	1.10	2.60 / 1.87			0.83	246.6	796.43	789.60
"	"	31	COMM. RD. (15)			0.5	58.0	"	0		20	1418	0.03	0.72	0.75	10	0.59	"	1.45	3.00 / 2.67			1.46	250.4	789.59	788.13
9	COMMISSIONERS ROAD	LYNDEN (18)	17		CHURCH - 1.00	9.7	199.7	40	1		128	6628	0.33	2.96	3.29	15	0.25	"	2.82	2.68 / 2.69	H:0.88		0.96	232.3	785.75	785.19
"	" "	17	16			0.9	200.6	"	2		36	6664	0.33	2.97	3.30	15	0.40	"	3.56	2.96 / 3.04			0.89	226.3	785.16	784.21
"	" "	16	15			0.7	201.3	"	3		28	6692	0.33	2.97	3.30	15	0.36	"	3.37	2.74 / 2.84			0.77	218.8	784.11	783.34
8	" "	15	14			2.6	261.9	"	4		104	8214	0.44	3.53	3.97	15	0.37	"	3.48	3.03 / 3.66	H:0.40		1.18	309.6	783.93	781.91
"	" "	14	OUTLET (11)			2.0	263.9	"	3		80	8294	0.44	3.57	4.01	15	0.64	"	4.50	3.66 / 3.74			1.40	221.2	781.78	780.38
10	SPRINGBANK PARK	11	10				270.8					8570	0.45	3.67	4.12	15	0.57	"	4.25	3.87 / 3.96			0.70	167.6	780.18	779.48
"	" "	10	9				270.8					8570	0.45	3.67	4.12	15	0.49	"	3.93	3.36 / 3.82	H:0.11		1.06	286.7	779.30	778.24
"	" "	9	8				270.8					8570	0.45	3.67	4.12	15	0.54	"	4.13	3.36 / 3.87			1.18	282.5	778.22	777.04
"	" "	8	7				270.8					8570	0.45	3.67	4.12	15	0.56	"	4.20	3.36 / 3.86			1.09	199.2	776.92	775.83
"	" "	7	BOLER (5)				270.8					8570	0.45	3.67	4.12	15	0.46	"	3.77		H:0.14		0.69	157.4	775.63	774.94

TOTAL P.D.C's = 57 4324

POPULATION DENSITIES:-

SINGLE FAMILY LOTS	4 PEOPLE	
DUPLEX LOT	8	"
APTS: BACH.	1½	"
1 BD. RM.	2½	"
2 BD. RM.	3½	"

TRUNKS - AREA 'B' - ② AREA 'AB' - ①

CITY OF LONDON

CITY ENGINEERS DEPARTMENT

SANITARY SEWER DESIGN SHEET

"AS BUILT"

PROJECT BYRON SEWERS
FILE NO ____ SHEET 2 OF 2
SANITARY AREA TRUNK B AB
DESIGNED BY CGE/HEL CHECKED BY CGE
DATE MAY 1968

DWG No	SEWER LOCATION STREET	FROM	TO	AREA NET OR GROSS	AREA DIMENSIONS	AREA Δ ACRES	AREA Σ ACRES	POPULATION PER ACRE	POPULATION NO OF LOTS	POPULATION PER LOT	POPULATION Δ POP.	POPULATION Σ POP.	SEWAGE FLOW INFILT. C.F.S.	SEWAGE FLOW SEWAGE C.F.S.	SEWAGE FLOW TOTAL C.F.S.	SEWER DESIGN (FULL FLOW) SIZE ins.	SEWER DESIGN S %	SEWER DESIGN n	SEWER DESIGN CAP. C.F.S.	SEWER DESIGN FULL VELOCITY f.p.s.	PROFILE LOSSES IN M.H.	PROFILE FALL IN SEWER	PROFILE LENGTH feet	PROFILE INVERT ELEV. U.S.	PROFILE INVERT ELEV. D.S.
11	BOLER ROAD	5	4			1.0	272.8	40	1		40	8650	0.46	3.70	4.16	15	0.62	0.015	4.42	3.60 / 3.90			1.80	293.6	774.86	773.05
"	" "	4	3			1.0	273.8				40	8690	0.46	3.71	4.17	15	1.77	"	4.11	5.32	H:0.12		3.51	208.6	767.86	764.37
"	" "	3	2				273.8					8690	0.46	3.71	4.17	12	1.84	"	4.19	5.32			3.57	197.6	762.62	759.05
"	" "	2	HALLS MILL PL (1)				273.8					8690	0.46	3.71	4.17	12	1.77	"	4.11	5.32	H:0.12		3.66	208.4	753.37	749.71
6	HALLS MILL PL.	BOLER (1)	HALLS MILL RD. AB3				273.8					8690	0.46	3.71	4.17	15	0.62	"	4.42	3.60 / 3.69	(d:1.06)		1.48	244.1	748.17	746.69
	AREA AB																								
5	HALLS MILL ROAD	HALLS MILL PL (AB3)	OLD BRIDGE RD. (AB2)			1499.6			0			48313	8.50	15.58	18.08	27	0.75	0.013	26.80	6.74 / 6.31	(d:1.70)		0.83	36.6	744.74	744.51
6	OLD BRIDGE RD.	HALLS MILL PL (AB2)	WEST LIMIT (AB1)			1499.6			0			48313	8.50	15.58	18.08	27	0.85	"	15.49	4.64 / 4.64	(H:0.36)		0.68	243.6	744.34	743.70
67	PUMPING STN SITE	WEST LIMIT (AB1)	PUMP STN.			1499.6						48313	8.50	15.58	18.08	27	0.80	"	15.88	4.64	(H:0.75)		0.80	306.2	743.66	742.86

TOTAL P.D.C's = 1 90

5420

5420

POPULATION DENSITIES:-

SINGLE FAMILY LOTS	4	PEOPLE
DUPLEX LOT	8	"
APTS: BACH.	1½	"
1 BD. RM.	2½	"
2 BD. RM.	3½	"

TRUNKS - AREA 'A' - ①

CITY OF LONDON

CITY ENGINEERS DEPARTMENT

SANITARY SEWER DESIGN SHEET

"AS BUILT"
PROJECT BYRON SEWERS
FILE Nº ____ SHEET 1 OF 3
SANITARY AREA 'A'
DESIGNED BY CGF/HEL CHECKED BY C.G.F.
DATE MAY 1968

SEWER LOCATION				AREA				POPULATION					SEWAGE FLOW			SEWER DESIGN				FULL / PT. FULL	PROFILE				
DWG [redacted] Nº	STREET	FROM	TO	NET OR GROSS	DIMENSIONS	Δ A ACRES	Σ A ACRES	PER ACRE	Nº OF LOTS	PER LOT	Δ POP.	Σ POP.	INFILT. c.f.s.	SEWAGE c.f.s.	TOTAL c.f.s.	SIZE Ins.	S %	n	CAP. c.f.s.	VELOCITY f.p.s.	LOSSES IN M.H.	FALL IN SEWER	LENGTH feet	INVERT ELEV. U.S.	INVERT ELEV. D.S.
11	LOLA ST.	BLAKE (26)	(25) BELVEDERE	GR.		0.9	48.5		3	4	12	728	0.08	0.40	0.48	12	0.53	0.015	2.26	286 / 1.86		1.62	311.4	818.54	816.92
12	BELVEDERE AVE	LOLA (25)	24		EXT. 220.7 AC	1.6	270.8	40	7	4	8828 28	9584	0.46	4.00	4.46	15	0.61	"	4.39	3.64	(H: 0.06)	1.52	263.8	812.00	810.48
"	" "	24	23		EXT. 7.0 AC	1.8	279.6	40	10		280 40	9904	0.47	4.13	4.60	18	0.33	"	5.23	2.96 / 3.00		1.04	319.4	810.21	809.17
"	" "	23	BASE LINE (22)			1.8	281.4		8		32	9936	0.47	4.15	4.62	18	0.24	"	4.45	2.61	(H: 0.05)	0.69	292.3	809.05	808.36
18	BASE LINE RD	87	(86) GRIFFITH		EXT. 77.2 AC.	0.9	78.1	40	3		3088 12	3100	0.16	1.50	1.66	10	1.63	"	2.42	4.43 / 4.19		3.18	198.9	822.42	819.24
"	" " "	86	85			0.5	78.6		2		8	3108	0.16	1.50	1.66	10	1.57	"	2.37	4.36 / 4.12		3.97	256.8	819.13	815.16
"	" " "	85	(84) REYNOLDS			0.5	79.1		3		12	3120	0.16	1.52	1.68	10	1.61	"	2.40	4.41 / 4.16		3.21	203.0	815.12	811.91
18	" " "	(22) BELVEDERE	(21) REYNOLDS			0.8	303.9		1		4	10402	0.51	4.32	4.83	18	0.21	"	4.17	2.73	(H: 0.12)	0.34	170.0	808.07	807.73
19	REYNOLDS RD.	BASE LINE (21)	20			1.5	385.5		5		20	13542	0.64	5.40	6.04	18	0.38	"	5.61	3.42	(H: 0.19)	1.20	323.2	807.62	806.42
"	" "	20	19			3.0	387.0		12		48	13590	0.64	5.40	6.04	18	0.46	"	6.17	3.50 / 3.62		1.47	323.8	806.27	804.80
"	" "	19	18			3.0	390.0		8		32	13622	0.65	5.42	6.07	18	0.57	"	6.87	3.88 / 3.96		1.37	245.6	804.57	803.20
20	" "	18	17			3.0	393.0		10		40	13662	0.65	5.44	6.09	18	0.40	"	5.75	3.44	(H: 0.15)	1.22	306.0	803.02	801.80
"	" "	17	NORMAN (16)			2.5	396.0		7		28	13690	0.66	5.45	6.11	18	0.44	"	6.04	3.46	(H: 0.04)	1.05	245.3	801.09	800.04
"	" "	NORMAN (16)	15			2.1	420.4		8		32	14190	0.70	5.58	6.28	21	0.38	0.013	9.75	4.05 / 3.74		1.18	314.6	798.28	797.10
21	" "	15	(14) SPRINGBANK			2.1	422.5		9		36	14226	0.70	5.62	6.32	21	0.28	"	8.37	3.48 / 3.39		0.90	323.3	796.00	795.10
22	SPRINGBANK AVE	(14) REYNOLDS	13			0.7	428.2		2		8	14286	0.72	5.63	6.35	21	0.34	"	9.23	3.84 / 3.63		0.74	220.5	794.55	793.81
"	" "	13	STEPHEN (12)			0.7	428.9		1		4	14290	0.72	5.63	6.35	21	0.46	"	10.73	4.46 / 4.02		1.07	237.6	791.87	790.80
"	" "	STEPHEN (12)	11			0.7	449.5		3		12	14538	0.75	5.72	6.47	21	0.34	"	9.23	3.84 / 3.62		0.94	282.2	789.94	789.00
"	" "	11	BROCK (10)			0.7	450.2		3		12	14550	0.75	5.72	6.47	21	0.39	"	9.88	4.11 / 3.82		0.58	142.6	788.61	788.03
23	EASEMENT	(10) SPRINGBANK	9			3.5	506.0	40	0		140	15686	0.84	6.11	6.95	21	0.47	"	10.89	4.51 / 4.15		0.86	192.6	787.13	786.27
"	"	9	8			3.6	509.6	40	0		144	15830	0.85	6.18	7.03	21	0.47	"	10.89	4.51 / 4.16		1.63	348.4	786.18	784.55
"	"	8	7-1			0.8	510.4	40	1		32	15862	0.85	6.18	7.03	21	0.40	"	10.02	4.16 / 3.94		0.75	190.9	784.12	783.37
"	"	7-1	COMM. ROAD 7				510.4		1			15862	0.85	6.18	7.03	21	0.43	"	10.40	4.32 / 4.09		0.81	191.6	781.85	781.04
50	BOLER ROAD	66	65		EXT. 139.0 AC.	18.0	157.0	40	3		5560 720	6280	0.26	2.82	3.08	12	1.15	0.015	3.32	4.22 / 4.34		3.40	300.1	874.51	871.11
"	" "	65	WAYNE (64)			17.0	174.0		2		680	6960	0.29	3.08	3.37	12	1.17	"	3.35	4.30		3.47	299.9	869.37	865.90
"	" "	WAYNE (64)	63		EXT. 17.0 AC.	1.5	192.5		3		712	7672	0.32	3.34	3.66	15	1.51	"	6.90	5.62 / 4.85		4.46	298.9	863.89	859.43

TOTAL P.D.C.'S = 115   20604

POPULATION DENSITIES:-
SINGLE FAMILY LOTS 4 PEOPLE
DUPLEX LOT 8 "
APTS: BACH. 1½ "
1 BD. RM. 2½ "
2 BD. RM. 3½ "

TRUNKS - AREA 'A' - ②

CITY OF LONDON

CITY ENGINEERS DEPARTMENT

SANITARY SEWER DESIGN SHEET

"AS BUILT"
PROJECT BYRON SEWERS
FILE Nº ____ SHEET 2 OF 3
SANITARY AREA 'A'
DESIGNED BY CGF/HEL CHECKED BY C.G.F.
DATE MAY 1968

SEWER LOCATION				AREA				POPULATION					SEWAGE FLOW			SEWER DESIGN				FULL / PT. FULL	PROFILE				
DWG [redacted] Nº	STREET	FROM	TO	NET OR GROSS	DIMENSIONS	Δ A ACRES	Σ A ACRES	PER ACRE	Nº OF LOTS	PER LOT	Δ POP.	Σ POP.	INFILT. c.f.s.	SEWAGE c.f.s.	TOTAL c.f.s.	SIZE Ins.	S %	n	CAP. c.f.s.	VELOCITY f.p.s.	LOSSES IN M.H.	FALL IN SEWER	LENGTH feet	INVERT ELEV. U.S.	INVERT ELEV. D.S.
50	BOLER ROAD	63	62		EXTERIOR - 16.0 AC	2.0	210.5		3		682	8354	0.35	3.59	3.94	15	1.51	0.015	6.90	5.62 / 6.00		4.47	299.1	857.52	853.05
49	" "	62	61		" - 16.0 AC	2.0	228.5		9		683	9037	0.38	3.83	4.21	15	1.03	"	5.71	4.65 / 4.49		3.10	304.7	850.53	847.43
"	" "	61	60		" - 8.0 AC	1.8	238.3		7		358	9395	0.40	3.95	4.35	15	0.94	"	5.45	4.44 / 4.40		2.78	299.6	842.70	839.92
"	" "	60	BASE LINE (59)		" - 1.0 AC	0.7	240.0		2		55	9450	0.40	3.97	4.37	15	1.04	"	5.74	4.67 / 4.57		3.04	295.7	833.41	830.37
48	" "	BASE LINE (59)	58		+ CHURCH (100)	3.0	243.0		5		120	9570	0.40	4.00	4.40	15	1.03	"	5.71	4.65 / 4.55		3.30	323.7	824.73	821.43
"	" "	58	57			2.0	245.0		10		40	9610	0.41	4.02	4.43	15	1.06	"	5.77	4.70 / 4.59		3.39	323.1	817.29	813.90
"	" "	57	56			2.0	247.0		11		44	9654	0.41	4.03	4.44	15	1.15	"	6.04	4.91 / 4.74		3.66	322.8	810.38	806.72
"	" "	56	GUEST (55)			2.0	249.0		10		40	9694	0.41	4.04	4.45	15	1.07	"	5.82	4.74 / 4.64		3.15	323.2	802.67	799.52
47	" "	GUEST (55)	54			2.8	252.8		5		20	9734	0.42	4.05	4.47	18	0.40	"	5.75	3.25 / 3.19		1.06	259.6	797.60	796.54
"	" "	54	NORMAN (53)			2.8	256.6		8		32	9766	0.42	4.07	4.49	18	0.44	"	6.03	3.41 / 3.30		1.07	249.0	796.09	795.02
"	" "	NORMAN (53)	SPRING-BANK (52)			2.8	259.4		9		36	9802	0.42	4.09	4.51	18	0.49	"	6.37	3.61 / 3.43		1.64	340.4	793.49	791.85
"	" "	SPRING-BANK (52)	COMM. (51)			3.1	264.4	40	4		124	10010	0.43	4.11	4.54	18	0.42	"	5.89	3.34 / 3.28		1.28	306.7	791.10	789.82
24	ROAD COMMISSIONERS	BOLER (51)	50			1.6	267.9	40	4		64	10142	0.45	4.22	4.67	18	0.27	"	4.73	2.65		0.76	290.4	789.39	788.63
"	" "	50	HALLS MILL (49)			4.2	272.1	40	10		168	10310	0.45	4.28	4.73	18	0.28	"	4.82	2.67		1.03	329.8	788.55	787.52
"	" "	49	A6			1.1	273.2	40	3		44	10354	0.45	4.29	4.74	12	2.72	"	5.10	6.48 / 6.67		7.70	287.5	786.86	779.16
41	HELENA MONTAGUE	W. LIMIT (103)	(94) GRIFFITH		EXTERIOR - 127.7 AC	0.5	176.0	37	174	4	4725 796	5521	0.29	2.52	2.81	15	0.50	"	3.98	3.23 / 3.06		1.17	239.4	803.57	802.40
"	" "	GRIFFITH (94)	93		+ SCHOOL (100)	0.4	189.1		5		20	5669	0.32	2.58	2.90	15	0.53	"	4.10	3.33 / 3.16		1.08	207.0	802.27	801.19
"	" "	93	(92) REYNOLDS			0.9	190.0		3		12	5681	0.32	2.59	2.91	15	0.55	"	4.16	3.38 / 3.20		1.13	209.4	800.99	799.86
27	REYNOLDS RD.	HELENA MONT. (92)	91			2.6	192.6		7		28	5709	0.32	2.60	2.92	15	0.51	"	4.01	3.26 / 3.12		1.50	294.4	789.79	788.29
"	" "	91	(90) WOODBINE			2.4	195.0		6		24	5733	0.33	2.61	2.94	15	0.51	"	4.01	3.26 / 3.12		1.41	281.2	788.24	786.83
"	" "	(90) WOODBINE	89			1.2	202.6		2		8	5833	0.33	2.65	2.98	15	0.56	"	4.17	3.39 / 3.24		1.12	205.1	786.81	785.69
"	" "	89	COMM. RD. (42)			1.5	204.1		2		8	5841	0.34	2.65	2.99	15	0.60	"	4.36	3.55 / 3.35		1.31	220.8	785.67	784.36
26	ROAD COMMISSIONERS	W. LIMIT (45)	(44) GRIFFITH		EXTERIOR - 159.5 AC	1.9	197.2	37	152	4	5902 608	6510	0.33	2.87	3.20	12	2.23	"	4.61	5.86 / 5.54		6.11	278.2	797.63	791.52
"	" "	(44) GRIFFITH	43			1.4	203.0		6		24	6594	0.34	2.90	3.24	15	0.28	"	2.97	2.64	(H: 0.13)	0.70	255.8	789.69	788.99
"	" "	43	(42) REYNOLDS			1.6	204.6		5		20	6614	0.34	2.92	3.26	15	0.34	"	3.27	2.66		0.91	270.7	788.78	787.87
25	" "	(42) REYNOLDS	41			1.4	409.9		3		12	12470	0.68	5.01	5.69	21	0.22	0.013	7.42	3.09 / 3.02		0.51	235.1	782.88	782.37
"	" "	41	(40) STEPHEN		EXTERIOR - 5.0 AC	1.2	416.3	40	4		213	12683	0.70	5.08	5.78	21	0.25	"	7.92	3.29 / 3.16		0.63	253.7	782.36	781.73
"	" "	(40) STEPHEN	39			1.0	427.0		4		16	12999	0.71	5.20	5.91	21	0.19	"	6.91	2.87 / 2.88		0.62	332.6	781.65	781.03
"	" "	39	38			3.7	430.7		10		40	13039	0.72	5.23	5.95	21	0.23	"	7.60	3.15 / 3.10		0.66	331.5	781.01	780.35

TOTAL P.D.C.'s = 483   14966

POPULATION DENSITIES:-
SINGLE FAMILY LOTS 4 PEOPLE
DUPLEX LOT 8 "
APTS: BACH. 1½ "
1 BD. RM. 2½ "
2 BD. RM. 3½ "

TRUNKS - AREA A - ③

CITY OF LONDON

CITY ENGINEERS DEPARTMENT

SANITARY SEWER DESIGN SHEET

"AS BUILT"
PROJECT BYRON SEWERS
FILE Nº ____ SHEET 3 OF 3
SANITARY AREA A
DESIGNED BY CGF/HEL CHECKED BY CGF
DATE MAY 1968

PHASE I

SEWER LOCATION				AREA				POPULATION					SEWAGE FLOW			SEWER DESIGN				FULL / PT. FULL	PROFILE				
DWG [redacted] Nº	STREET	FROM	TO	NET OR GROSS	DIMENSIONS	Δ A ACRES	Σ A ACRES	PER ACRE	Nº OF LOTS	PER LOT	Δ POP.	Σ POP.	INFILT. c.f.s.	SEWAGE c.f.s.	TOTAL c.f.s.	SIZE Ins.	S %	n	CAP. c.f.s.	VELOCITY f.p.s.	LOSSES IN M.H.	FALL IN SEWER	LENGTH feet	INVERT ELEV. U.S.	INVERT ELEV. D.S.
25	ROAD COMMISSIONERS	38	7			2.0	432.7		0			13039	0.72	5.23	5.95	21	0.27	0.013	8.24	3.42 / 3.27	(d=1.24)	0.39	169.3	780.29	779.90
24	" "	7	6			0.5	943.6		2	4	8	28909	1.57	10.18	11.75	18	0.97	0.015	8.96	6.65	(H=1.23)	1.62	171.5	778.90	777.28
4	TRUNK OUTLET	COMM. ROAD (6)	LOT 109 (5)				1216.8		0			39263	2.03	13.10	15.13	21	0.86	0.013	14.70	6.30	(H: 0.03)	0.45	56.5	776.83	776.38
"	" "	LOT 109 (5)	HALLS MILL RD (4)			1.0	1217.8	40			40	39303	2.03	13.10	15.13	24	0.55	"	16.82	5.35 / 5.45		1.45	267.6	776.17	774.72
5	HALLS MILL RD.	4	3			0.5	1218.3	40	1		20	39323	2.04	13.08	15.12	24	0.77	"	19.90	6.32 / 6.16		1.44	192.1	774.24	772.80
"	" " "	3	2			4.8	1223.1	40	3		192	39515	2.04	13.16	15.20	18	3.95	0.015	18.10	10.25 / 10.32		13.75	352.4	772.18	758.43
"	" " "	2	HALLS MILL PL. AB 3			2.7	1225.8	40	3		108	39623	2.05	13.18	15.23	18	5.02	"	20.40	11.55 / 11.18		10.59	215.0	756.53	745.94

TOTAL P.D.C.'s = 9   368

POPULATION DENSITIES:-
SINGLE FAMILY LOTS 4 PEOPLE
DUPLEX LOT 8 "
APTS: BACH. 1½ "
1 BD. RM. 2½ "
2 BD. RM. 3½ "

LATERALS - AREA B - ①

CITY OF LONDON

CITY ENGINEERS DEPARTMENT

SANITARY SEWER DESIGN SHEET

"AS BUILT"
PROJECT BYRON SEWERS
FILE Nº ____ SHEET 1 OF 1
SANITARY AREA LATERAL - B
DESIGNED BY CGF/HEL CHECKED BY C.G.F.
DATE MAY 1968

SEWER LOCATION				AREA				POPULATION					SEWAGE FLOW			SEWER DESIGN	MINIMUM			FULL / PT. FULL	PROFILE				
DWG [redacted] Nº	STREET	FROM	TO	NET OR GROSS	DIMENSIONS	Δ A ACRES	Σ A ACRES	PER ACRE	Nº OF LOTS	PER LOT	Δ POP.	Σ POP.	INFILT. c.f.s.	SEWAGE c.f.s.	TOTAL c.f.s.	SIZE Ins.	S %	n	CAP. c.f.s.	VELOCITY f.p.s.	LOSSES IN M.H.	FALL IN SEWER	LENGTH feet	INVERT ELEV. U.S.	INVERT ELEV. D.S.
53	BASE LINE RD	BOLER (63)	(60) COLVILLE			12.2	12.2	40	10		488	488	0.02	0.28	0.30	8	0.47	0.015	0.72	2.06 / 1.67					
"	" " "	65	" 60			8.3	8.3	"	11		332	332	0.02	0.19	0.20	8	0.75	"	0.91	2.60 / 1.72					
60	COLVILLE BLVD	BASE LINE 60	57			0.7	21.2		4	4	16	836	0.02	0.45	0.47	8	2.41	"	0.72	2.60 / 2.42					
62	FOYSTON RD.	48	57			2.2	2.2		9		36	36		0.02	0.02	8	0.74	"	0.90	2.58 / 2.95					
62	GLENROSE DR.	39	57			1.6	1.6		3		12	12		0.01	0.01	8	1.91	"	1.45	4.14 / 1.16					
60	COLVILLE BLVD	57	49			4.8	29.8		15		60	944	0.05	0.50	0.55	8	0.92	"	1.01	2.88 / 2.50					
61	" "	52	49			3.3	3.3		9		36	36		0.02	0.02	8	1.96	"	1.47	4.29 / 0.63					
"	" "	49	(41) GLENROSE			1.7	34.8		6		24	1004	0.06	0.53	0.59	8	1.93	"	1.01	2.89 / 2.60					
63	FOYSTON RD.	48	" 42			9.0	9.0		34		136	136	0.02	0.08	0.10	8	1.32	"	1.20	3.44 / 1.77					
64	GLENROSE DR.	43	(42) FOYSTON		CHURCH - (50)	0.9	0.9		2		58	58		0.03	0.03	8	1.00	"	1.05	3.00 / 1.20					
"	" "	(42) FOYSTON	(41) COLVILLE			1.3	11.8		5		20	214	0.02	0.13	0.15	8	0.50	"	0.73	2.12 / 1.37					
65	" "	39	LOT 134 (32)			8.6	8.6		30		120	120	0.02	0.07	0.09	8	1.25	"	1.17	3.35 / 1.69					
52	BASE LINE RD.	95	(74) LANSING			7.1	7.1	40	15		284	284	0.02	0.17	0.19	8	0.57	"	0.79	2.26 / 1.52					
58	LANSING AVE	BASE LINE (74)	(71) LYNDEN			2.7	9.8		9	4	36	320	0.02	0.18	0.20	8	2.83	"	1.76	5.05 / 2.80					
"	LYNDEN CR.	72	(71) LANSING			0.5	0.5		4		16	16		0.01	0.01	8	1.00	"	1.05	3.00 / 0.87					
58,59	" "	(71) LANSING	(67) WILLARD		SCHOOL - (100)	7.7	18.0		12		48	484	0.03	0.27	0.30	8	2.00	"	1.48	4.25 / 2.72					
56	NASHUA AVE	82	" (80)			2.6	2.6		11		44	44		0.02	0.02	8	0.38	"	0.64	1.85 / 0.74					
"	" "	83	" (80)			2.5	2.5		2		8	8		0.01	0.01	8	0.48	"	0.73	2.08 / 0.66					
57	WILLARD CR.	(80) NASHUA	(67) LYNDEN			6.6	11.7		23		92	144	0.02	0.09	0.11	8	2.46	"	1.64	4.70 / 2.30					
52	BASE LINE RD.	95	NORTH (92)			6.2	6.2	40	9		248	248	0.01	0.15	0.16	8	0.45	"	0.70	2.01 / 1.34					
69,70	ROAD COMMISSIONERS	BASE LINE (30)	NORTH (23)		EXT. = 12.9 AC.	16.4	29.3	40	7		1172	1172	0.05	0.60	0.65	8	1.00	"	1.05	3.00 / 2.73					
72	BUSINESS BLOCK EASEMENT					1.0	1.0	40	5		40	40		0.02	0.02	8	2.06	"	1.50	4.31 / 1.34					
11	BOLER RD.						1.0	40	0		0	40		0.02	0.02	8	1.39	"	1.23	3.53 / 1.17					
8	ROAD COMMISSIONERS	LOT 50 (13)	OUTLET (11)			6.9	6.9	40	4		276	276	0.01	0.16	0.17	8	0.53	"	0.76	2.19 / 1.44					
56,55	NASHUA AVE.	83	COMM. (21)			7.3	7.3		22		88	88	0.01	0.04	0.05	8	2.66	"	1.71	4.89 / 1.95					
59	LYNDEN CR	WILLARD	"			2.3	32.0		2		8	636	0.05	0.35	0.40	8	2.00	"	1.48	4.25 / 2.97					

TOTAL P.D.C.'s = 263   3698

5419

CITY OF LONDON
CITY ENGINEERS DEPARTMENT
SANITARY SEWER DESIGN SHEET

SEWER — LOCATION — AREA — POPULATION — SEWAGE FLOW — SEWER DESIGN — PROFILE

OPTIMISTS' SPORTS COMPLEX
ARENA ALLOWANCE
A. = 3.3 ac. 400 people
SOUTH CITY LIMIT
FOXCROFT CRESCENT
GRIFFITH STREET
HALIBURTON CRESCENT
GATINEAU CRESCENT
WAYNE ROAD
REGIS AVE.
BYRON BLVD.
BASE LINE ROAD
BOLER ROAD
A = 2.42 D = 4 p.p.l. 1 LOT
A = 2.71 D = 4 p.p.l. 3 LOTS
A = 2.71 D = 4 p.p.l. 2 LOTS
A = 92.12 ac. D = 20 p.p.a.
A = 2.21 D = 64 p.p.a.
A = 2.46 D = 64 p.p.a.
A = 0.63
A = 110.0 ac.
A = 1.47
A = 1.75
A = 2.30
A = 1.39
A = 1.22
A = 2.25
A = 2.00
A = 1.02
SOMERSET RIDGE DEVELOPMENT PHASE 1
SOMERSET RIDGE DEVELOPMENT PHASE 2
GRAVEL PIT
COLVILLE BLVD.
LANSING AVE
NASHUA AVE
NORTH TALBOT ROAD
NORTH STREET
CONCESSION 2 ROAD
REGISTERED PROFESSIONAL ENGINEER R. C. STEVENSON PROVINCE OF ONTARIO
1. AS PER CITY REQUIREMENTS
NO. REVISION DATE
CITY OF LONDON
BOLER ROAD IMPROVEMENTS
EADIE & WILLCOCK LIMITED
SANITARY DESIGN AREA
DESIGN: R. C. STEVENSON
DRAWN: R. LEE
CHECKED: C. G. FORBERG
SCALE 1" = 200'
DATE MARCH 1977
R. C. DUNN & ASSOCIATES LIMITED
CONSULTING ENGINEERS
747 HYDE PARK RD. LONDON, ONT.
JOB. No. 77-104
DRAWING No.


LEGEND
LIMIT OF SUBDIVISION
DRAINAGE AREA
EX. SANITARY SEWER
PROPOSED SANITARY SEWER
FUTURE SANITARY SEWER
PROPOSED MANHOLE
EX. MANHOLE
FUTURE MANHOLE
B.O. BY OTHERS
151 DENOTES DRAFT PLAN LOT/BLOCK NUMBERS
(4) DENOTES REGISTERED PLAN LOT/BLOCK NUMBERS
SOUTHDALE ROAD WEST
POMEROY LANE
VALLAS CIRCLE
NAVIN CRESCENT
TILLMANN ROAD
EXT 7 CRESTWOOD SUBDIVISION AREA= 69.90ha. POP.= 3686
EXT 6 151 UNITS/ha .34ha POP=82
EXT1-EXT5, A18 5.67ha POP=308
A18 0.64ha POP=64
A19 151 UNITS/ha. 1.79ha POP=432
A20 150 UNITS/ha. 1.00ha POP=240
A21 0.15ha POP=0
A22 0.18ha POP=3
A29 100 PPL/ha. 0.51ha POP=51
A8 0.27ha POP=18
A1 0.46ha POP=21
A2 0.46ha POP=27
A3 0.28ha POP=12
A4 0.60ha POP=45
A5 0.62ha POP=42
A6 0.51ha POP=27
A7 0.31ha POP=15
A9 0.54ha POP=43
A10 0.24ha POP=20
A11 0.56ha POP=36
A12 0.20ha POP=9
A13 0.08ha POP=3
A14 0.26ha POP=12
A15 0.20ha POP=9
A16 0.50ha POP=33
A17 0.47ha POP=27
A23 0.33ha POP=15
A24 0.16ha POP=6
A25 0.40ha POP=21
A26 0.17ha POP=6
A27 0.15ha POP=6
A28 0.17ha POP=15
BLOCK 138 AREA = 0.6349 Ha COMMERCIAL
BLOCK 139 AREA = 1.7817 Ha HIGH DENSITY
BLOCK 140 (PART 1) AREA = 0.9886 ha HIGH DENSITY
BLOCK 140 (PART 5) AREA = 0.5081 ha COMMERCIAL
BLOCK 146 0.300 RESERVE
BLOCK 147 0.300 RESERVE
TEMPORARY PUMPING STATION
NOTE: AREA A10 & A28 CONTRIBUTE TO TALBOT VILLAGE
SANITARY SEWER (S15 TO P/L SOUTH) TO REMAIN INACTIVE UNTIL THE TEMPORARY SANITARY PUMPING STATION IS REMOVED.
NOTE:
1. THIS SUBDIVISION IS DEPENDENT ON TEMPORARY SANITARY PUMPING STATION ON POMEROY LANE AND THE DOWNSTREAM SANITARY SYSTEM UNTIL AN ADEQUATE OUTLET IS AVAILABLE APPROVED BY AND TO THE SATISFACTION OF THE CITY ENGINEER.
2. THE SANITARY SEWER ON TILLMAN ROAD FROM MH S15 TO THE SOUTH LIMITS OF THIS SUBDIVISION ARE INACTIVE UNTIL AN ADEQUATE SANITARY OUTLET IS AVAILABLE (INCLUDING THE DOWNSTREAM SANITARY SYSTEM) AS APPROVED BY AND TO THE SATISFACTION OF THE CITY ENGINEER.

EXISTING SERVICES	DRAWING #, SOURCE	DATE	CONSTRUCTED SERVICES	COMPLETION	DETAILS	No.	REVISIONS	DATE	CONSULTANT
			SAN SEWERS, PDC's & M.H.'s	JAN 2011	DESIGN JKA	1	PER C.O.L. COMMENTS	AUG 07, 2009	JKA
			STM SEWERS, PDC's & M.H.'s	JAN 2011	DRAWN BY JKA	2	PER C.O.L. COMMENTS	OCT 27, 2009	JKA
			W.M. & W.S	JAN 2011	CHECKED DWH	3	PER C.O.L. COMMENTS	NOV 26/09	JKA
			GRANULAR BASE	OCT 2011	APPROVED DWH	4	REVISED BLOCK 140	NOV 3/2010	DJL
			CURBS & GUTTERS	OCT 2011	DATE NOV 2008	5	PER C.O.L. COMMENTS	DEC 3/2010	DJL
			PAVING – I BASE	OCT 2011		6	AS-CONSTRUCTED	SEPT 13	PS
			II SURFACE						
					161403231San.dwg				

CONSULTANT OR DIVISION

Stantec Consulting Ltd.
171 Queens Avenue, 8th Floor
London ON Canada N6A 5J7
Phone: (519) 645-2007
Fax: (519) 645-6575
E-mail:london@stantec.com

ENGINEER'S STAMP: LICENSED PROFESSIONAL ENGINEER, D.W. HERN, 100077071, PROVINCE OF ONTARIO, Oct 25/13

CORPORATION OF THE CITY OF LONDON

SCALE: HORZ 1:750

TITLE: WESTFIELD VILLAGE ESTATES
YORK DEVELOPMENTS

INTERIM SANITARY DRAINAGE AREA PLAN

PROJECT No. 33M-621

SHEET No. 3 of 29

PLAN FILE No. 24382

Kurtis Caron

From: Winters, Devin <dwinters@london.ca>
Sent: February 15, 2022 10:59 AM
To: Kurtis Caron
Subject: RE: SBM-22-0021 York Developments - 415 Boler Road - Sanitary Design Sheet Request

Hi Kurtis,

I confirmed with our stormwater division that this pumping station is no longer operational.

Regards,

Devin Winters
Technologist I
Geomatics Division
City of London

300 Dufferin Ave., P.O. Box 5035, London ON, N6A 4L9
P: 519.661.2489 x 2337 | Fax: 519.661.6422
dwinters@london.ca | www.london.ca

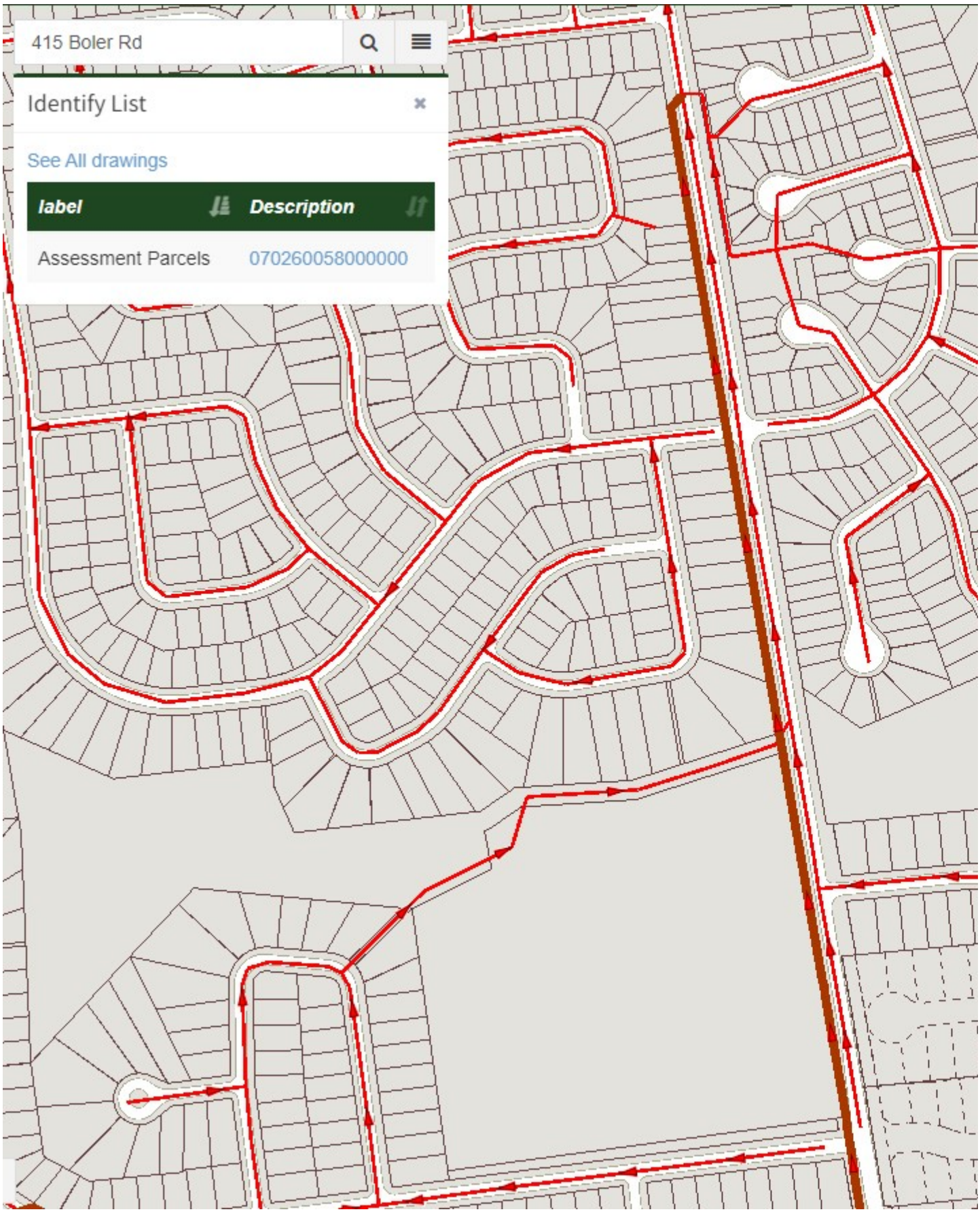
From: Kurtis Caron <kcaron@sbmltd.ca>
Sent: Tuesday, February 15, 2022 8:47 AM
To: Winters, Devin <dwinters@london.ca>
Subject: [EXTERNAL] RE: SBM-22-0021 York Developments - 415 Boler Road - Sanitary Design Sheet Request

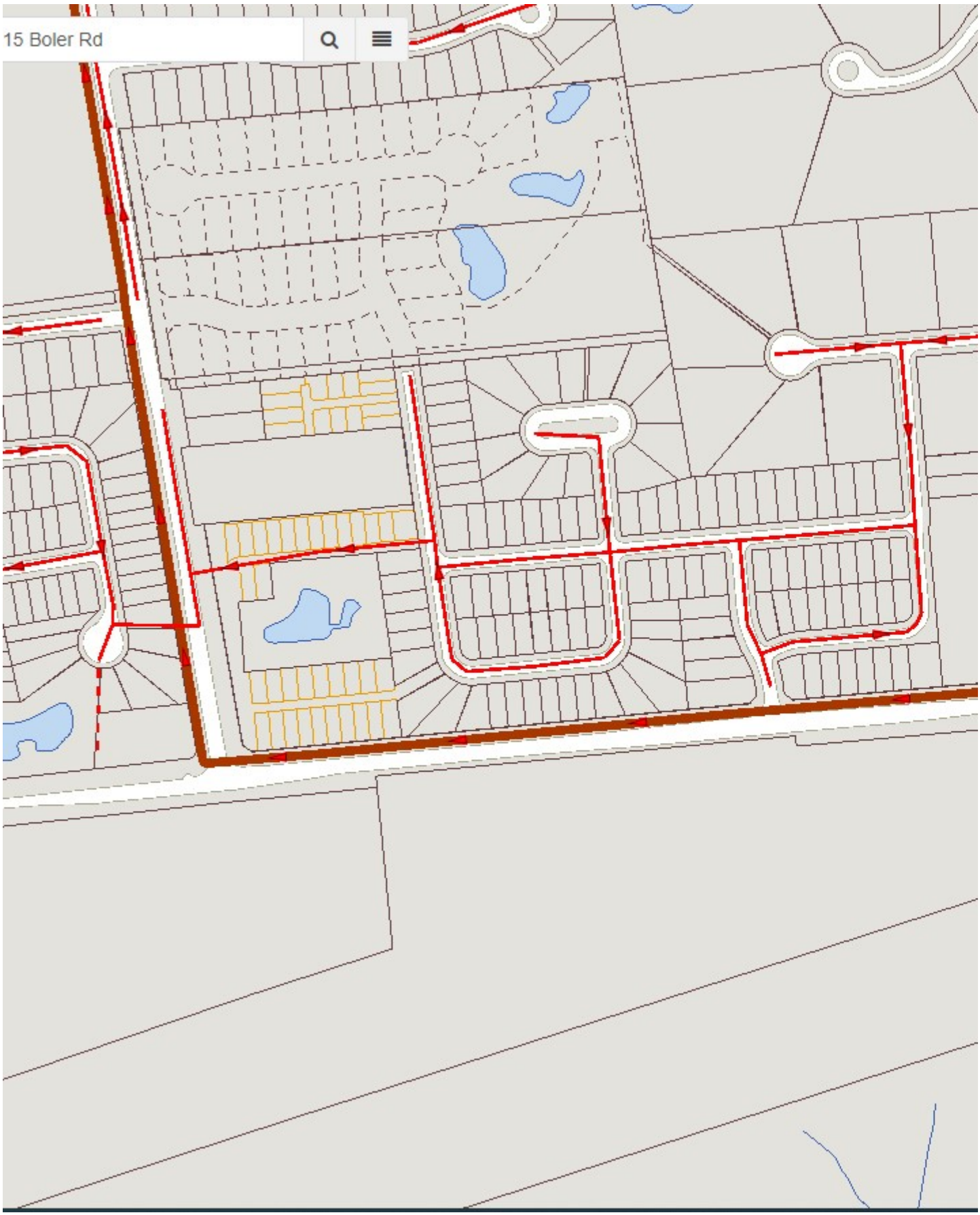
Hi Devin,

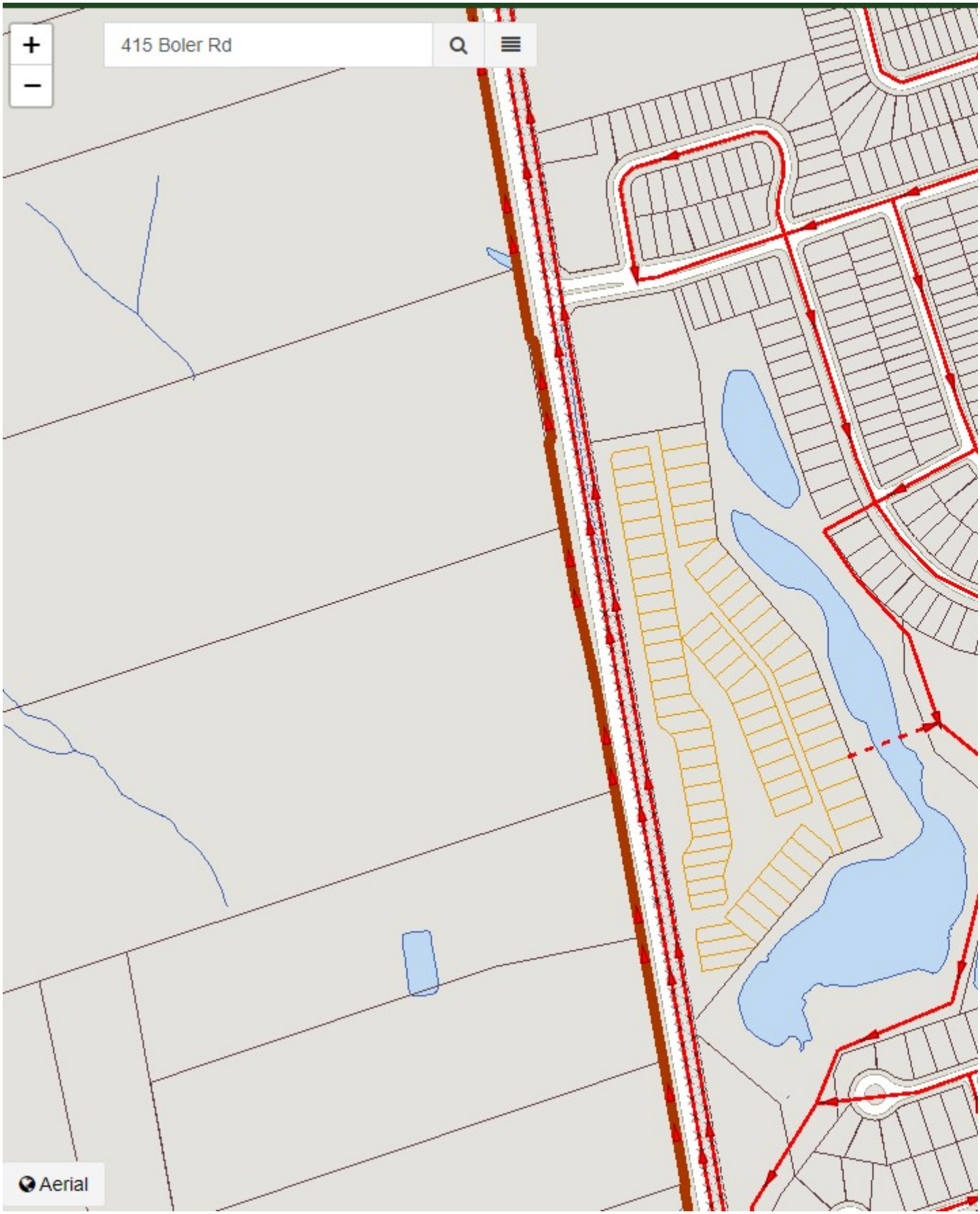
I'm working on analyzing the sanitary network connected to Boler Road and there appears to be a "temporary sanitary pumping station" which seems to have formerly serviced a portion of the Westfield Village Estates subdivision.

I've included some images below from the locates website indicating the alignment of the sanitary sewer which shows it connecting the subdivision to Boler Road. It appears to me that the pumping station is no longer operational as flows from that phase of the subdivision, will now connect to the southern portion of the Westfield Village Estates subdivision, and then will be pumped to the 350mm forcemain which runs North on Colonel Talbot Road.

Can you please confirm that the temporary pumping station as shown on the attached record drawing 24382 is no longer operational? I would assume if that is the case, the associated 200mm sanitary force main connecting the Westfield Village Estates subdivision to Boler road would also no longer be operational.


415 Boler Rd
Identify List
See All drawings
label
Description
Assessment Parcels
070260058000000


15 Boler Rd

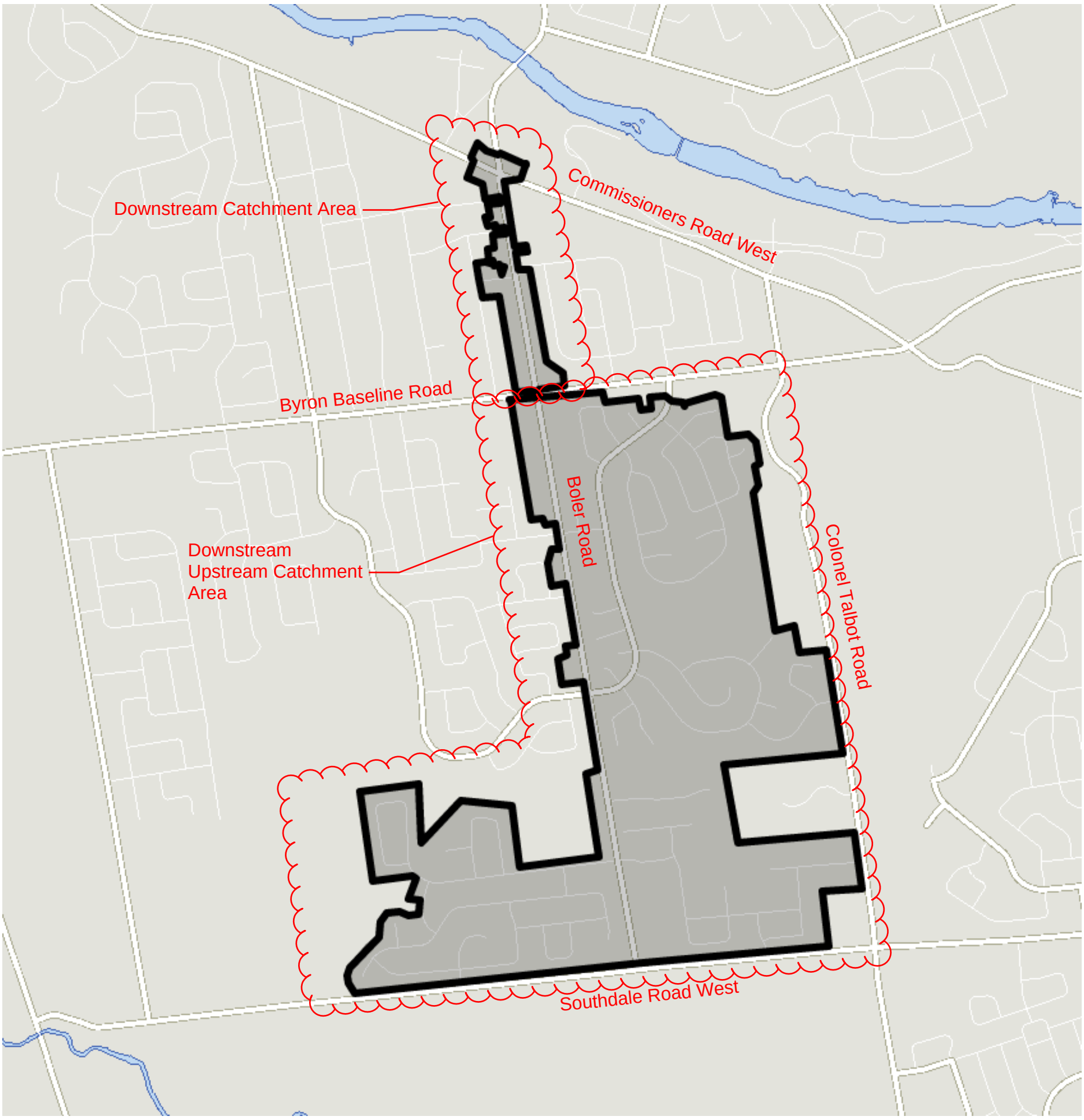


Please feel free to give me a call at 905 988 0057 to discuss if needed.

Thanks,

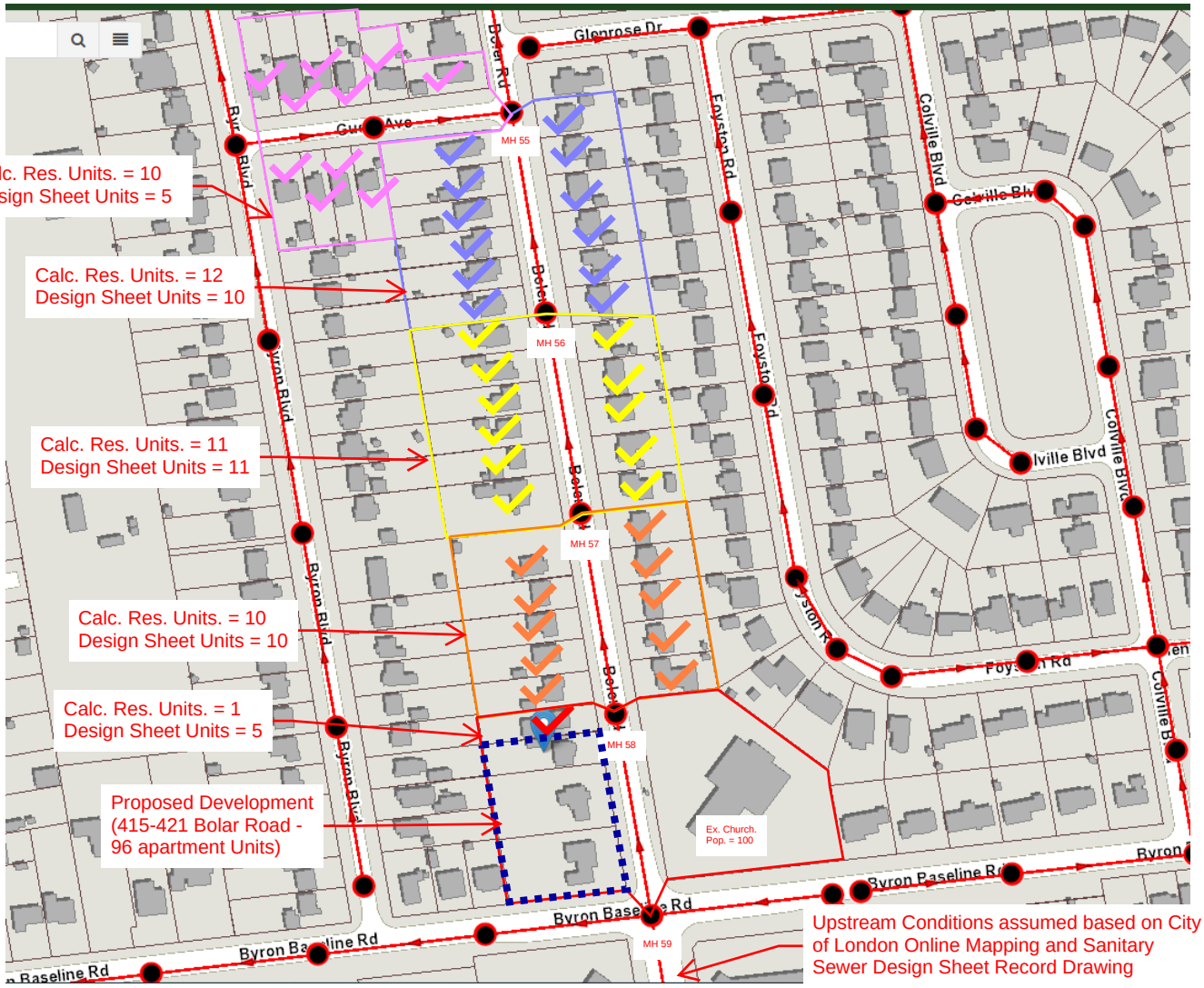
Kurtis Caron
Civil EIT II
P: 519-725-8093 x416
C: 905-988-0057
E: kcaron@sbmltd.ca

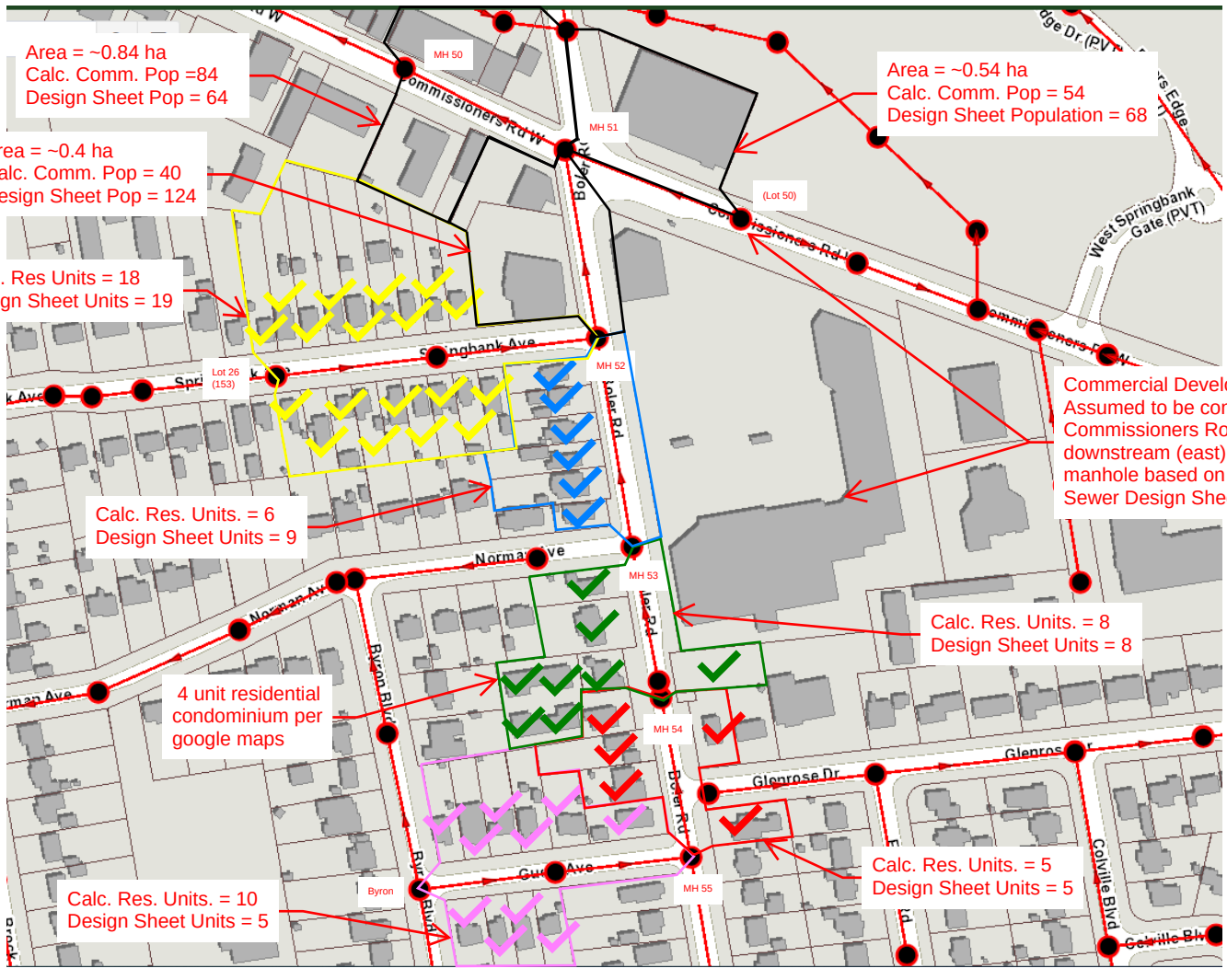
Study Catchment Area Limits



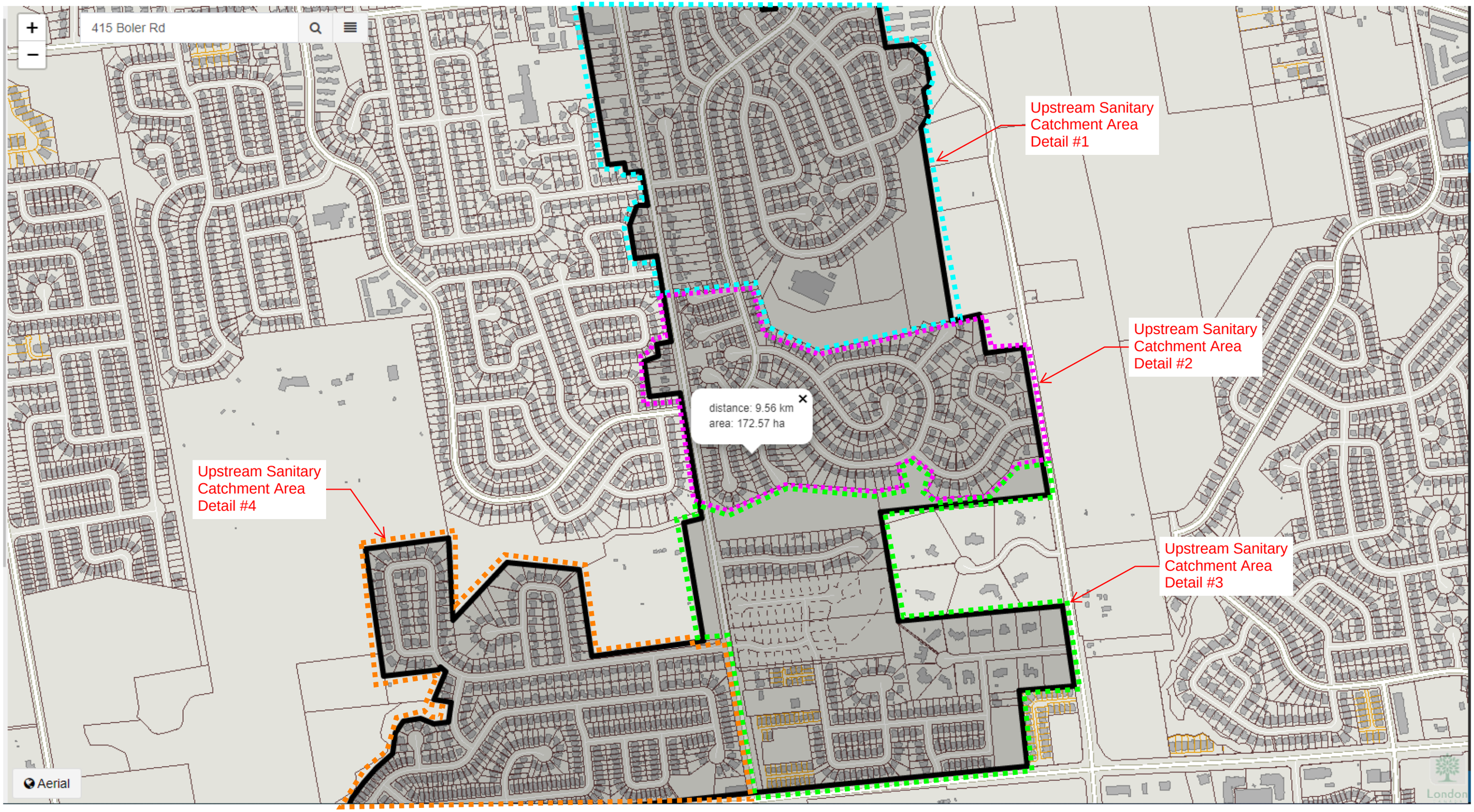
- Background image sourced from City of London Locates Map (https://maps.london.ca/LocatesMap/LocatesMap/Map#)

Downstream Area: City of London Mapping Markup



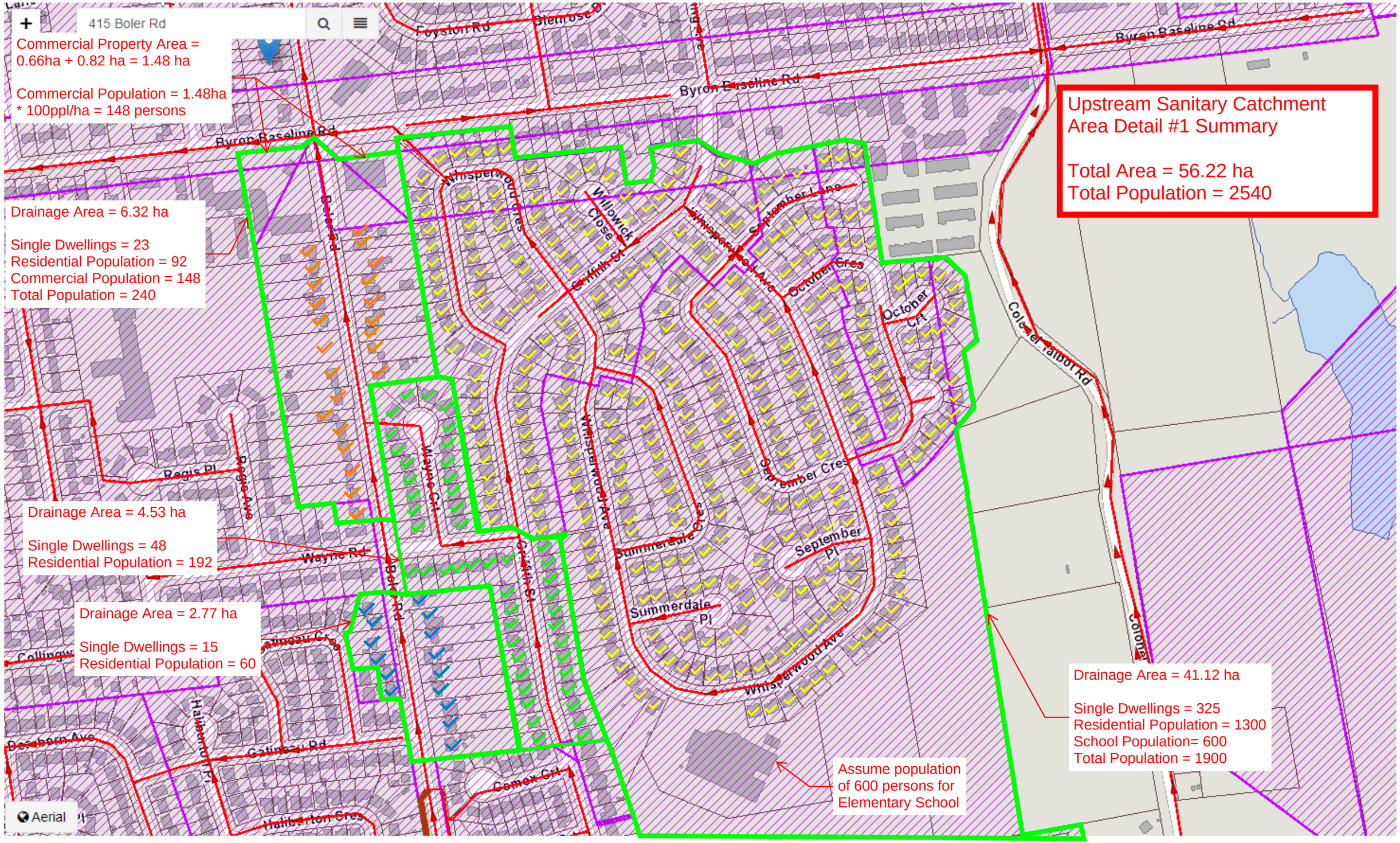


Upstream Sanitary Catchment Area



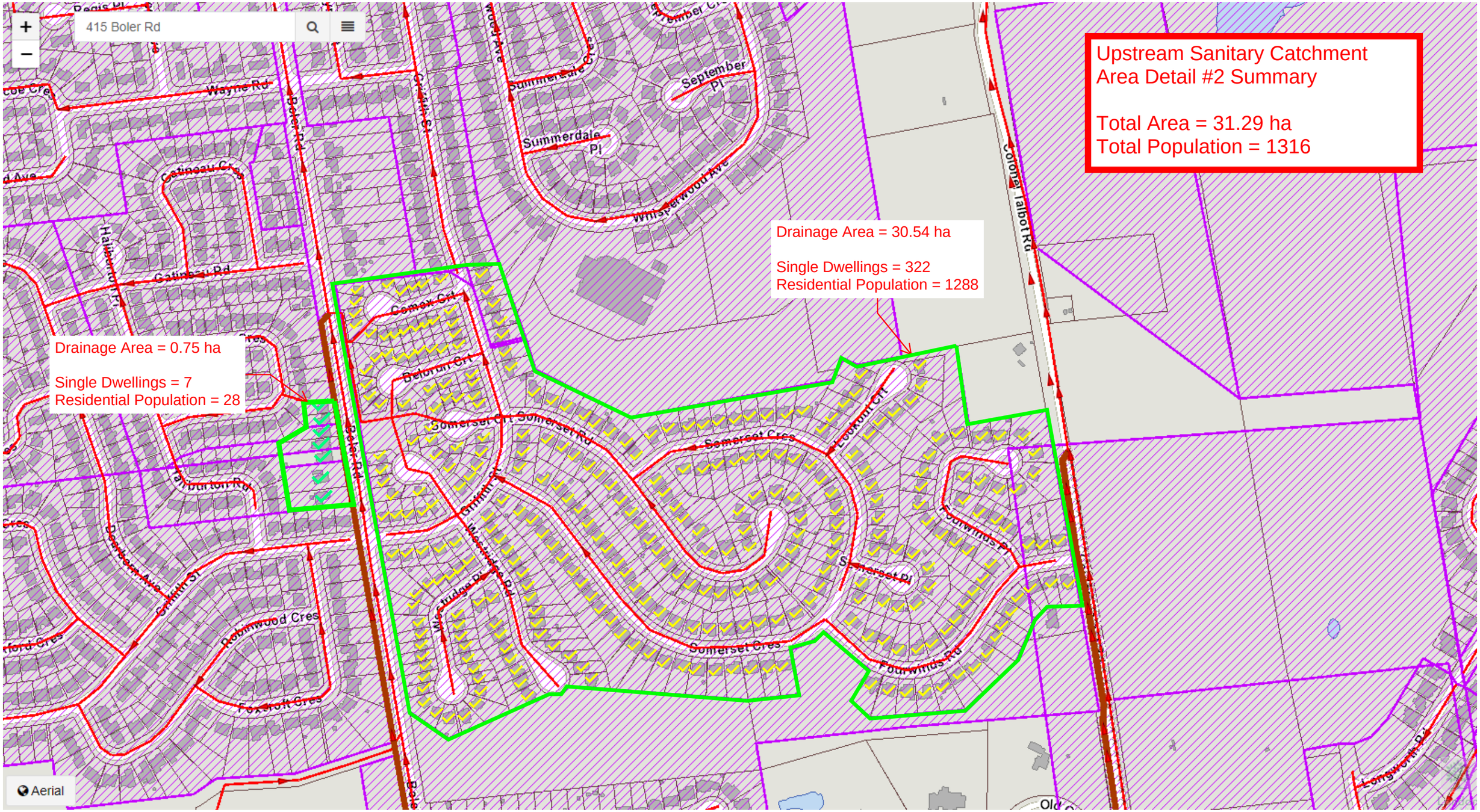
- Background image sourced from City of London Locates Map (https://maps.london.ca/LocatesMap/LocatesMap/Map#)

Upstream Sanitary Catchment Area Detail #1



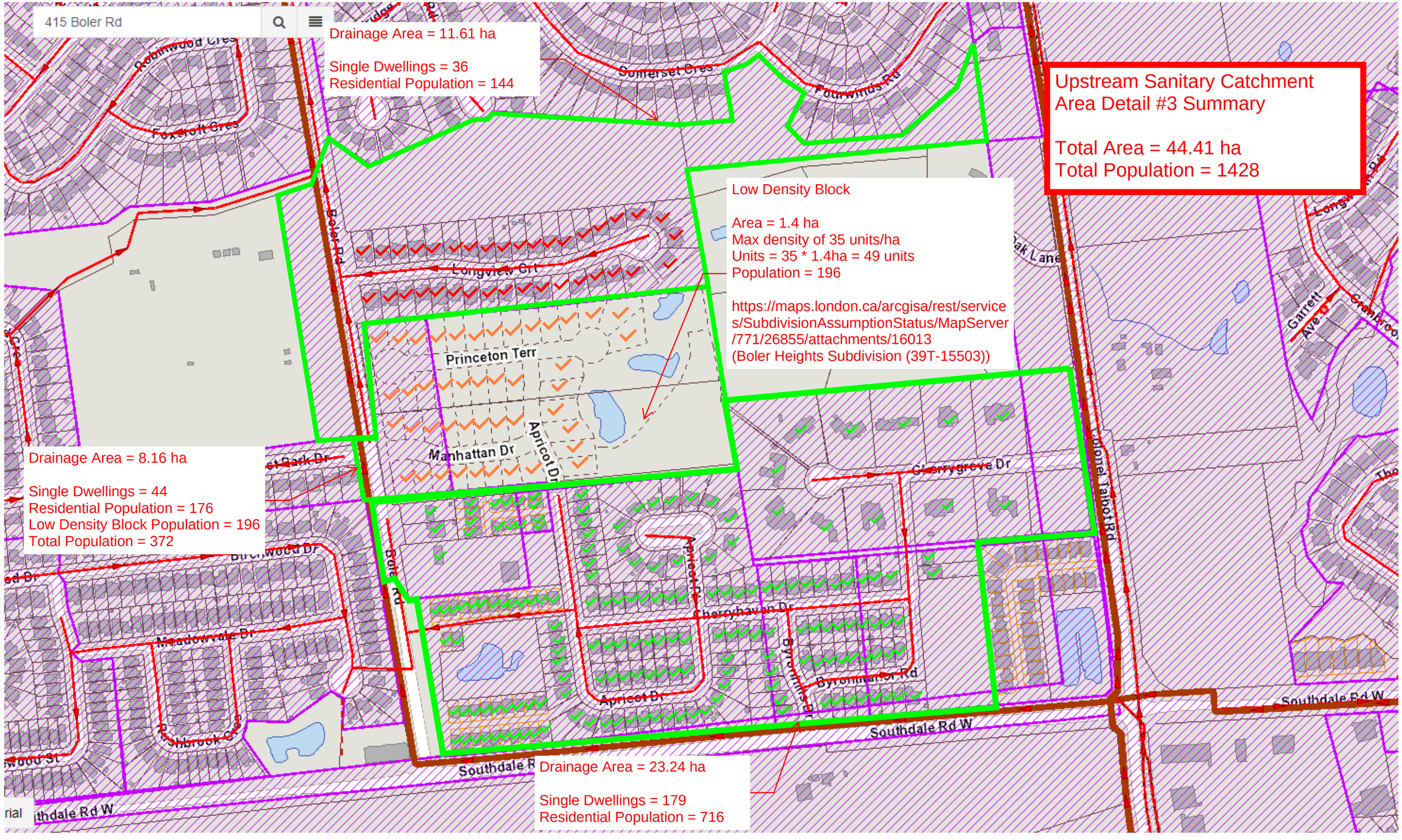
- Residential populations assumed 4 people/unit per "Low Density Residential" Density noted on Record Drawings 5415 and 5420 (Sanitary Area and Sanitary Design Sheets)
- Elementary school population per DS&RM section 3.8.1
- Commercial area population density per DS&RM 3.8.1
- Background image sourced from City of London Locates Map (https://maps.london.ca/LocatesMap/LocatesMap/Map#)

Upstream Sanitary Catchment Area Detail #2



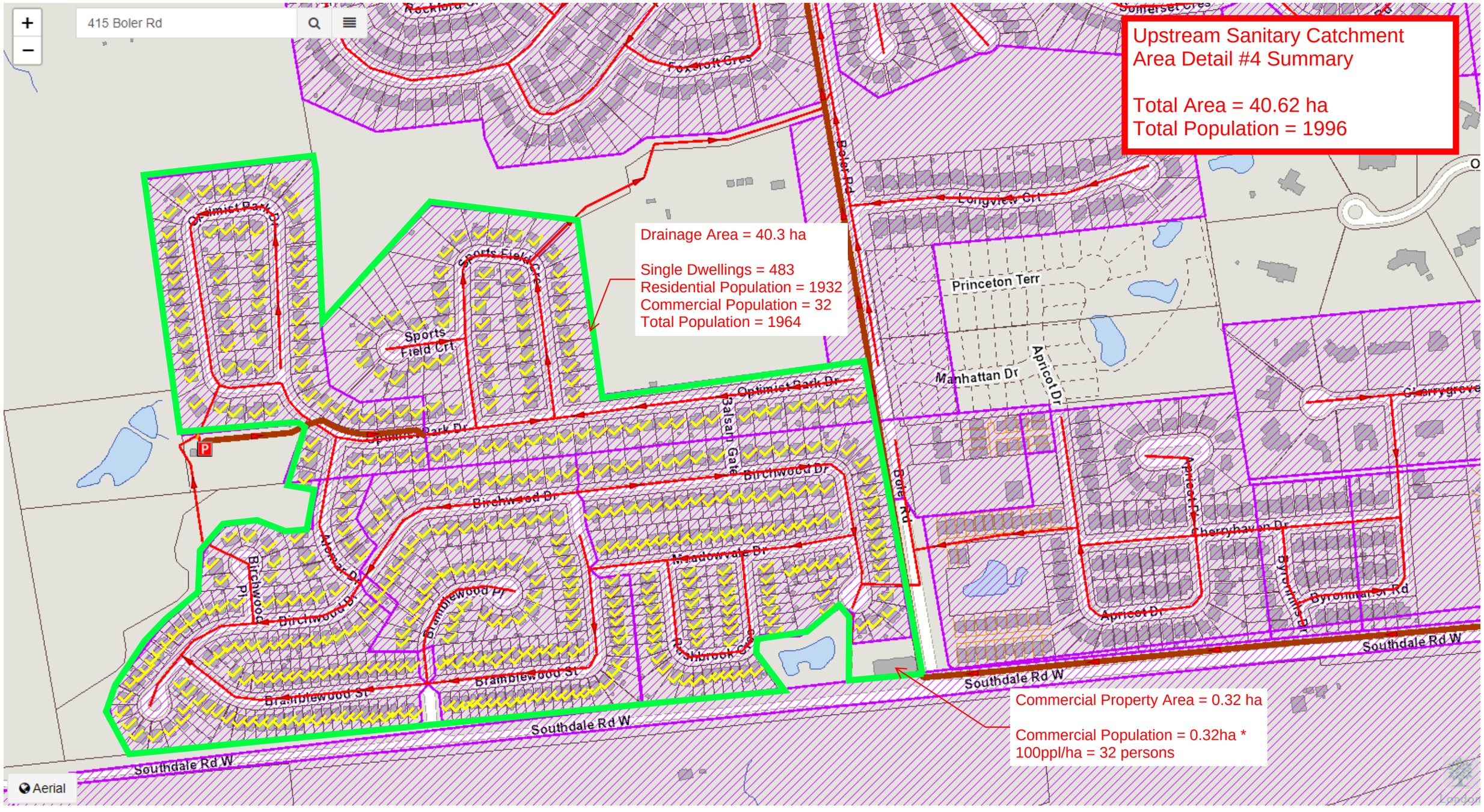
- Residential populations assumed 4 people/unit per "Low Density Residential" Density noted on Record Drawings 5415 and 5420 (Sanitary Area and Sanitary Design Sheets)
- Elementary school population per DS&RM section 3.8.1
- Commercial area population density per DS&RM 3.8.1
- Background image sourced from City of London Locates Map (https://maps.london.ca/LocatesMap/LocatesMap/Map#)

Upstream Sanitary Catchment Area Detail #3



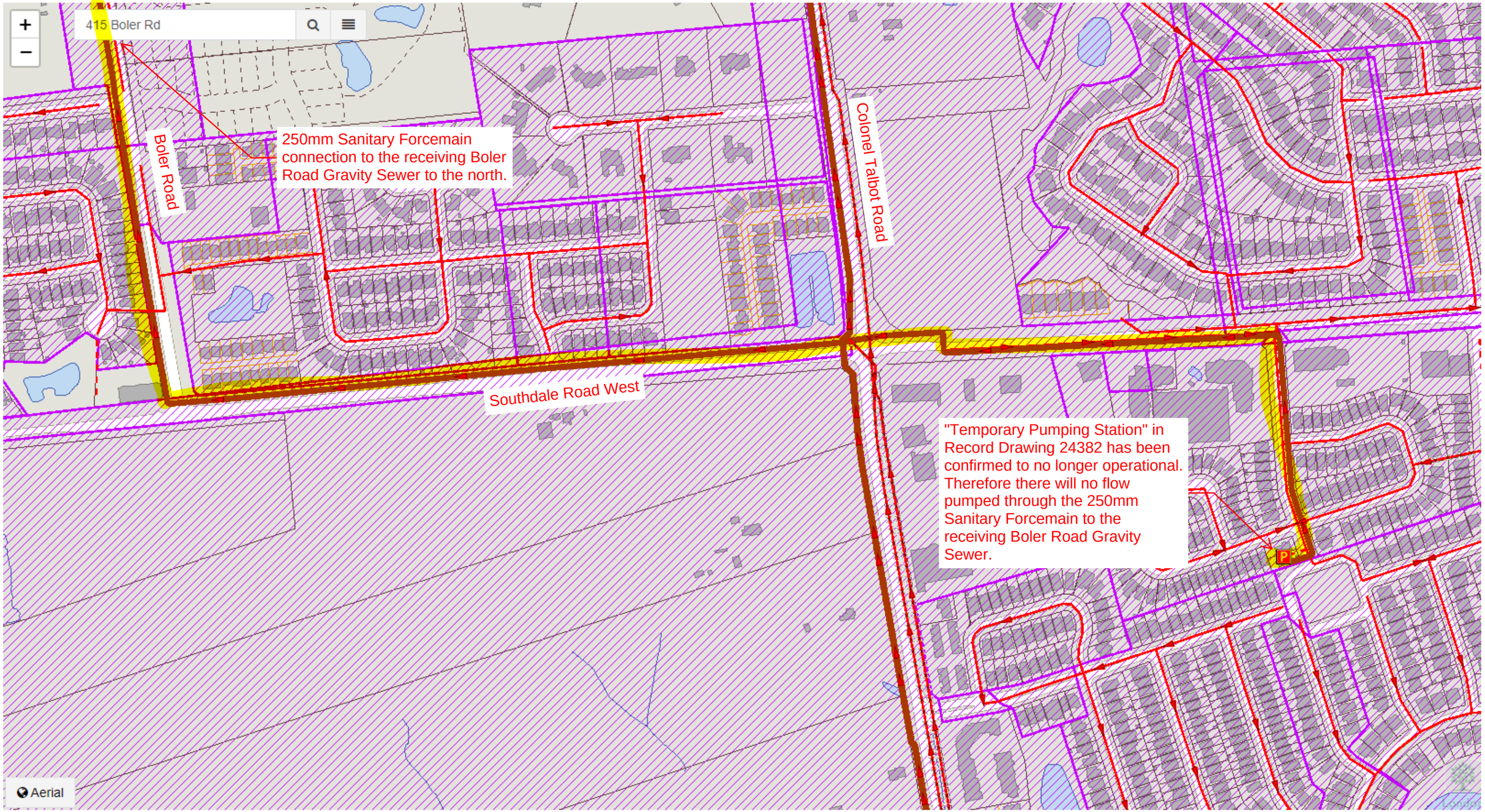
- Residential populations assumed 4 people/unit per "Low Density Residential" Density noted on Record Drawings 5415 and 5420 (Sanitary Area and Sanitary Design Sheets)
- Elementary school population per DS&RM section 3.8.1
- Commercial area population density per DS&RM 3.8.1
- Background image sourced from City of London Locates Map (https://maps.london.ca/LocatesMap/LocatesMap/Map#)

Upstream Sanitary Catchment Area Detail #4



- Residential populations assumed 4 people/unit per "Low Density Residential" Density noted on Record Drawings 5415 and 5420 (Sanitary Area and Sanitary Design Sheets)
- Elementary school population per DS&RM section 3.8.1
- Commercial area population density per DS&RM 3.8.1
- Background image sourced from City of London Locates Map (https://maps.london.ca/LocatesMap/LocatesMap/Map#)

Boler Road 250mm Sanitary Forcemain Detail



- Background image sourced from City of London Locates Map (https://maps.london.ca/LocatesMap/LocatesMap/Map#)

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Sanitary Service Design Sheet

City of London

Residential Population Densities

(A) Area Basis

Low Density Residential (Single Family/Semi-Detached) = 30 Units/hectare @ 3 people/unit
Medium Density Residential (Multi-Family/Townhouse) =75 Units/hectare @ 2.4 people/unit
High Density Residential (Apartment Buildings) =150-300 Units/hectare @ 1.6 people/unit
Commercial = 100 people/hectare
Low Density Residential (Per 1964 & 1698 Sanitary Design Sheets) = 4 people/unit

Design Parameters
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: June 2, 2022
Job Number: SBM-22-0021
Client: York Developments (London) Inc.
Project: Proposed 6 Story Residential Building
Location: 415 Boler Road, London, Ontario

Designed By: KJC/LA
Reviewed By: RF

Location			Area				Population			Sewage Flows				Sewer design							
Area No.	From MH*	To MH*	Delta Acre	Total Acre	Delta Hectare	Total Hectare	No. of Units/Lots	People Per Unit/Lots	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	Percentage Full %	Velocity m/s
Upstream Conditions																					
Boler Road	60	Base Line (59)			-	172.6 *		-	-		7280*	3.09	17.26	65.87	83.13	0.013	1.04%	375	178.91	46.47	1.62
Proposed Development																					
415 Boler Road			0.803	0.803	0.325	0.325	90.0	1.6	-	144	144	4.20	0.03	1.77	1.80						
Downstream Conditions																					
Boler Road (Inc. 415 Boler Rd)	Base line (59)	58	3.0	3.0	1.2	173.8	1.0**	4.0	-	248***	7528	3.08	17.38	67.81	85.19	0.013	1.03%	375	178.05	47.85	1.61
Boler Road	58	57	2.0	5.0	0.8	174.6	10.0	4.0	-	40	7568	3.07	17.46	68.12	85.58	0.013	1.06%	375	180.62	47.38	1.64
Boler Road	57	56	2.0	7.0	0.8	175.4	11.0	4.0	-	44	7612	3.07	17.54	68.46	86.00	0.013	1.15%	375	188.13	45.71	1.70
Boler Road	56	Guest (55)	2.0	9.0	0.8	176.2	12.0****	4.0	-	48	7660	3.07	17.62	68.83	86.45	0.013	1.07%	375	181.47	47.64	1.64
Guest St	Byron	Boler	2.0	2.0	0.8	0.8	10.0*****	4.0	-	40	40	4.33	0.08	0.51	0.59	0.013	0.58%	200	24.99	2.36	0.80
Boler Road	Guest (55)	54	2.8	13.8	1.1	178.2	5.0	4.0	-	0	7700	3.07	17.82	69.14	86.96	0.013	0.40%	450	180.42	48.20	1.13
Boler Road	54	Norman (53)	2.8	16.6	1.1	179.3	8.0	4.0	-	32	7732	3.06	17.93	69.39	87.32	0.013	0.44%	450	189.23	46.14	1.19
Boler Road	Norman (53)	Spring Bank (52)	2.8	19.4	1.1	180.5	9.0	4.0	-	36	7768	3.06	18.05	69.67	87.72	0.013	0.49%	450	199.69	43.93	1.26
Springbank Ave	Lot 26 (153)	Boler	2.1	2.1	0.8	0.8	19.0	-	-	84	84	4.26	0.08	1.05	1.13	0.013	0.58%	200	24.99	4.52	0.80
Boler Road	Spring Bank (52)	Comm. (51)	3.1	24.6	1.3	182.6	4.0	-	-	124	7976	3.05	18.26	71.27	89.53	0.013	0.42%	450	184.88	48.43	1.16
Commissioners Road West	Lot 50	Boler	1.7	1.7	0.7	0.7	5.0	-	-	68	68	4.29	0.07	0.85	0.92	0.013	0.61%	200	25.63	3.59	0.82
Commissioners Road West	Boler (51)	50	1.6	27.9	0.6	183.9	4.0	-	100	84******	8128	3.04	18.39	72.44	90.83	0.013	0.27%	450	148.23	61.27	0.93

*Total upstream population and drainage area confirmed based on City of London Locates Website calculated areas and dwelling counts. See attached PDF markups for additional details.
** Residential Units reduced to 1 resulting from proposed development
*** Population includes 4 from single residential unit, 100 from church, and 154 from proposed development
****12 residential units counted from London Mapping
*****10 residential units counted from London Mapping
****** 84 person population calculated based on commercial area
Refer to Site Plan prepared by Philip Agar Architect Inc.
Design Parameters obtained from Section 3.8 in the City of London DS&RM
Downstream conditions based on City of London drawing 5415 dated November 1964