APPENDIX D

SANITARY SEWER CALCULATION SHEET

Manning's n=0.013

LOCATION			RESIDENTIAL AREA AND POPULATION							COMM		INSTIT		PARK		C+I+I	INFILTRATION					PIPE						
STREET	FROM M.H.	TO M.H.	AREA (ha)	UNITS	POP.	CUMULATIVE AREA (ha)	CUMULATIVE POP.	PEAK FACT.	PEAK FLOW (l/s)	AREA (ha)	ACCU. AREA (ha)	AREA (ha)	ACCU. AREA (ha)	AREA (ha)	ACCU. AREA (ha)	PEAK FLOW (l/s)	TOTAL AREA (ha)	ACCU. AREA (ha)	INFILT. FLOW (l/s)	TOTAL FLOW (l/s)	DIST (m)	DIA (mm)	SLOPE (%)	CAP. (FULL) (l/s)	RATIO Q act/Q cap	VEL. (FULL) (m/s)	VEL. (ACT.) (m/s)
FERN CASEY STREET																												
Contribution From JARGEAU ROAD, Pipe 49A - 51A						1.72	152				0.00		0.00		1.20		2.92	2.92										
Contribution From JARGEAU ROAD, Pipe 50A - 51A						0.30	26				0.00		0.00		0.00		0.30	3.22										
	51A	55A	0.80		70	2.82	248	3.5	2.80		0.00		0.00		1.20	0.19	0.80	4.02	1.33	4.33	83.0	300	0.20	43.25	0.10	0.61	0.39
	55A	61A	0.77		68	3.59	316	3.5	3.54		0.00		0.00		1.20	0.19	0.77	4.79	1.58	5.31	79.0	300	0.20	43.25	0.12	0.61	0.41
	61A	62A	0.79		70	4.38	386	3.4	4.28		0.00		0.00		1.20	0.19	0.79	5.58	1.84	6.32	81.0	300	0.20	43.25	0.15	0.61	0.43
	62A	66A	0.80		70	5.18	456	3.4	5.02		0.00		0.00		1.20	0.19	0.80	6.38	2.11	7.32	82.0	300	0.20	43.25	0.17	0.61	0.45
To FRANK BENDER STREET, Pipe 66A - 76A						5.18	456				0.00		0.00		1.20			6.38										
STREET 5																												
Contribution From JARGEAU ROAD, Pipe 23A - 25A						2.30	204				0.00		0.00		0.00		2.30	2.30										
Contribution From JARGEAU ROAD, Pipe 24A - 25A						0.38	33				0.00		0.00		0.48		0.86	3.16										
	25A	26A	0.56		49	3.24	286	3.5	3.22		0.00		0.00		0.48	0.08	0.56	3.72	1.23	4.52	43.5	200	0.60	25.41	0.18	0.81	0.61
	26A	28A	1.03		91	4.27	377	3.4	4.19		0.00		0.00		0.48	0.08	1.03	4.75	1.57	5.83	79.5	250	0.25	29.73	0.20	0.61	0.47
	28A	30A	0.63		56	4.90	433	3.4	4.78		0.00		0.00		0.48	0.08	0.63	5.38	1.78	6.63	48.5	375	0.15	67.91	0.10	0.61	0.39
	30A	36A	1.02		90	5.92	523	3.4	5.71		0.00		0.00		0.48	0.08	1.02	6.40	2.11	7.90	79.0	375	0.35	103.73	0.08	0.94	0.55
	36A	37A	1.06		93	6.98	616	3.3	6.67		0.00		0.00		0.48	0.08	1.06	7.46	2.46	9.21	82.0	375	0.45	117.62	0.08	1.06	0.63
To FRANK BENDER STREET, Pipe 37A - 38A						6.98	616				0.00		0.00		0.48			7.46										
JARGEAU ROAD																												
	12A	13A	0.18		15	0.18	15	3.7	0.18		0.00		0.00		0.00	0.00	0.18	0.18	0.06	0.24	37.0	200	4.00	65.60	0.00	2.09	0.46
To FRANK BENDER STREET, Pipe 13A - 14A						0.18	15				0.00		0.00		0.00			0.18										
	24A	25A	0.38		33	0.38	33	3.7	0.39		0.00		0.00	0.48	0.48	0.08	0.86	0.86	0.28	0.75	29.5	200	0.35	19.40	0.04	0.62	0.29
To STREET 5, Pipe 25A - 26A						0.38	33				0.00		0.00		0.48			0.86										
	50A	51A	0.30		26	0.30	26	3.7	0.31		0.00		0.00		0.00	0.00	0.30	0.30	0.10	0.41	31.5	200	0.35	19.40	0.02	0.62	0.25
To FERN CASEY STREET, Pipe 51A - 55A						0.30	26				0.00		0.00		0.00			0.30										
	22A	23A	1.15		102	1.15	102	3.6	1.19		0.00		0.00		0.00	0.00	1.15	1.15	0.38	1.57	88.5	200	1.20	35.93	0.04	1.14	0.57
	23A	25A	1.15		102	2.30	204	3.5	2.32		0.00		0.00		0.00	0.00	1.15	2.30	0.76	3.08	88.5	200	0.35	19.40	0.16	0.62	0.45
To STREET 5, Pipe 25A - 26A						2.30	204				0.00		0.00		0.00			2.30										
	48A	49A	0.86		76	0.86	76	3.6	0.89		0.00		0.00		0.00	0.00	0.86	0.86	0.28	1.18	89.0	200	0.65	26.44	0.04	0.84	0.42
	49A	51A	0.86		76	1.72	152	3.6	1.75		0.00		0.00	1.20	1.20	0.19	2.06	2.92	0.96	2.91	89.0	200	0.35	19.40	0.15	0.62	0.44
To FERN CASEY STREET, Pipe 51A - 55A						1.72	152				0.00		0.00		1.20			2.92										
	95A	96A	1.98		174	1.98	174	3.5	1.99		0.00		0.00		0.00	0.00	1.98	1.98	0.65	2.65	108.0	250	0.25	29.73	0.09	0.61	0.37
	96A	99A				1.98	174	3.5	1.99		0.00		0.00		0.00	0.00	0.00	1.98	0.65	2.65	77.5	300	0.20	43.25	0.06	0.61	0.34
To STREET 4, Pipe 99A - 100A						1.98	174				0.00		0.00		0.00			1.98										
	97A	98A				0.00					0.00		0.00		0.00	0.00	0.00	0.00	0.00	0.00	39.5	250	0.25	29.73	0.00	0.61	0.03
	98A	99A				0.00	0				0.00		0.00		0.00	0.00	0.00	0.00	0.00	0.00	81.0	250	0.25	29.73	0.00	0.61	0.03
To STREET 4, Pipe 99A - 100A						0.00	0				0.00		0.00		0.00			0.00										
			0.15		0	0.15	0			1.62	1.62		0.00		0.00		1.77	1.77										
	1A	2A				0.15	0			2.31	3.93		0.00		0.00	1.91	2.31	4.08	1.35	3.26	65.5	250	0.35	35.18	0.09	0.72	0.45
	2A	3A	0.16		0	0.31	0			5.82	9.75		0.00		0.00	4.74	5.98	10.06	3.32	8.06	65.5	250	0.25	29.73	0.27	0.61	0.51

DESIGN PARAMETERS

Park Flow =	9300	L/ha/da	0.10764	l/s/Ha				
Average Daily Flow =	280	l/p/day			Industrial Peak Factor = as per MOE Graph			
Comm/Inst Flow =	28000	L/ha/da	0.3241	l/s/Ha	Extraneous Flow =	0.330	L/s/ha	
Industrial Flow =	35000	L/ha/da	0.40509	l/s/Ha	Minimum Velocity =	0.600	m/s	
Max Res. Peak Factor =	4.00				Manning's n = (Conc)	0.013	(Pvc)	0.013
Commercial/Inst./Park Peak Factor =	1.50				Townhouse coeff=	2.7		
Institutional =	0.32	l/s/Ha			Single house coeff=	3.4		

Designed: C.B.

Checked: S.M.

Dwg. Reference: Sanitary Drainage Plan, Dwgs. No. 3

PROJECT: **TRAILSEDGE PHASE 5**

LOCATION: **City of Ottawa**

File Ref: 20-1195 | Date: June 2, 2026 | Sheet No 1 of 4

LICENSED PROFESSIONAL ENGINEER
S. L. MERRICK
100186523
2026-06-0?
PROVINCE OF ONTARIO
Permit # 20-1195

SANITARY SEWER CALCULATION SHEET

Manning's n=0.013

LOCATION			RESIDENTIAL AREA AND POPULATION							COMM		INSTIT		PARK		C+I+I	INFILTRATION				PIPE						
STREET	FROM M.H.	TO M.H.	AREA (ha)	UNITS	POP.	CUMULATIVE AREA (ha)	CUMULATIVE POP.	PEAK FACT.	PEAK FLOW (l/s)	AREA (ha)	ACCU. AREA (ha)	AREA (ha)	ACCU. AREA (ha)	AREA (ha)	ACCU. AREA (ha)	PEAK FLOW (l/s)	TOTAL AREA (ha)	ACCU. AREA (ha)	INFILT. FLOW (l/s)	TOTAL FLOW (l/s)	DIST (m)	DIA (mm)	SLOPE (%)	CAP. (FULL) (l/s)	RATIO Q act/Q cap	VEL. (FULL) (m/s)	VEL. (ACT.) (m/s)
	3A	4A	0.13		0	0.44	0				9.75		0.00		0.00	4.74	0.13	10.19	3.36	8.10	54.0	250	0.25	29.73	0.27	0.61	0.51
	4A	5A	0.15		0	0.59	0				9.75		0.00		0.00	4.74	0.15	10.34	3.41	8.15	61.5	250	0.25	29.73	0.27	0.61	0.51
	5A	6A	0.15		0	0.74	0			1.18	10.93		0.00		0.00	5.31	1.33	11.67	3.85	9.16	61.5	250	0.25	29.73	0.31	0.61	0.53
	6A	7A	0.20		0	0.94	0				10.93		0.00		0.00	5.31	0.20	11.87	3.92	9.23	83.5	250	0.25	29.73	0.31	0.61	0.53
			0.24		0	1.18	0			2.58	13.51		0.00		0.00		2.82	14.69									
	7A	8A				1.18	0			4.66	18.17		0.00		0.00	8.83	4.66	19.35	6.39	15.22	101.0	250	0.25	29.73	0.51	0.61	0.61
	8A	13A	0.24		0	1.42	0				18.17		0.00		0.00	8.83	0.24	19.59	6.46	15.30	100.5	250	0.25	29.73	0.51	0.61	0.61
To FRANK BENDER STREET, Pipe 13A - 14A						1.42	0				18.17		0.00		0.00			19.59									
FRANK BENDER STREET																											
	11A	13A	1.15		102	1.15	102	3.6	1.19		0.00		0.00		0.00	0.00	1.15	1.15	0.38	1.57	92.5	200	2.80	54.88	0.03	1.75	0.77
Contribution From JARGEAU ROAD, Pipe 12A - 13A						0.18	15				0.00		0.00		0.00		0.18	1.33									
Contribution From JARGEAU ROAD, Pipe 8A - 13A						1.42	0				18.17		0.00		0.00		19.59	20.92									
	13A	14A	0.21		18	2.96	135	3.6	1.56		18.17		0.00		0.00	8.83	0.21	21.13	6.97	17.36	42.5	300	0.20	43.25	0.40	0.61	0.58
	14A	15A	0.46		40	3.42	175	3.5	2.00		18.17		0.00		0.00	8.83	0.46	21.59	7.12	17.96	94.0	300	0.20	43.25	0.42	0.61	0.58
	15A	17A	0.46		40	3.88	215	3.5	2.45		18.17		0.00		0.00	8.83	0.46	22.05	7.28	18.55	94.0	300	0.20	43.25	0.43	0.61	0.59
	17A	18A	0.36		32	4.24	247	3.5	2.79		18.17		0.00		0.00	8.83	0.36	22.41	7.40	19.02	75.5	300	0.20	43.25	0.44	0.61	0.59
	18A	19A	0.37		33	4.61	280	3.5	3.15		18.17		0.00	4.05	4.05	9.49	4.42	26.83	8.85	21.49	75.5	300	0.20	43.25	0.50	0.61	0.61
	19A	20A	0.07		6	4.68	286	3.5	3.22		18.17		0.00		4.05	9.49	0.07	26.90	8.88	21.58	14.0	300	0.20	43.25	0.50	0.61	0.61
	20A	21A	0.48		42	5.16	328	3.4	3.67		18.17		0.00		4.05	9.49	0.48	27.38	9.04	22.19	100.0	300	0.20	43.25	0.51	0.61	0.61
	21A	37A	0.48		42	5.64	370	3.4	4.11		18.17		0.00		4.05	9.49	0.48	27.86	9.19	22.79	99.5	300	0.20	43.25	0.53	0.61	0.62
Contribution From STREET 5, Pipe 36A - 37A						6.98	616				0.00		0.00		0.48		7.46	35.32									
	37A	38A	0.34		30	12.96	1016	3.2	10.66		18.17		0.00		4.53	9.56	0.34	35.66	11.77	31.99	70.5	450	0.12	98.76	0.32	0.62	0.55
			0.34		30	13.30	1046				18.17		0.00		4.53		0.34	36.00									
	38A	47A	2.18		194	15.48	1240	3.2	12.82		18.17		0.00		4.53	9.56	2.18	38.18	12.60	34.98	70.5	450	0.12	98.76	0.35	0.62	0.57
			0.46		40	15.94	1280				18.17		0.00		4.53		0.46	38.64									
	47A	66A	3.00		264	18.94	1544	3.1	15.69		18.17		0.00		4.53	9.56	3.00	41.64	13.74	39.00	94.0	450	0.12	98.76	0.39	0.62	0.58
Contribution From FERN CASEY STREET, Pipe 62A - 66A						5.18	456				0.00		0.00		1.20		6.38	48.02									
			0.47		41	24.59	2041				18.17		0.00		5.73		0.47	48.49									
	66A	76A	1.83		161	26.42	2202	3.0	21.71		18.17		0.00		5.73	9.76	1.83	50.32	16.61	48.07	97.0	450	0.12	98.76	0.49	0.62	0.62
	76A	77A	0.28		25	26.70	2227	3.0	21.93		18.17		0.00		5.73	9.76	0.28	50.60	16.70	48.39	58.0	525	0.10	136.00	0.36	0.63	0.57
			0.33		29	27.03	2256				18.17		0.00		5.73		0.33	50.93									
	77A	117A	3.30		294	30.33	2550	3.0	24.80		18.17		0.00		5.73	9.76	3.30	54.23	17.90	52.45	69.0	525	0.10	136.00	0.39	0.63	0.59
Contribution From STREET 4, Pipe 109A - 117A						15.14	1340				5.09		0.00		0.00		20.23	74.46									
Contribution From STREET 4, Pipe 116A - 117A						2.21	194				0.00		0.00		0.00		2.21	76.67									
	117A	118A	0.33		29	48.01	4113	2.9	38.09		23.26		0.00		5.73	12.23	0.33	77.00	25.41	75.74	67.5	525	0.10	136.00	0.56	0.63	0.64
	118A	126A	0.16		14	48.17	4127	2.9	38.21		23.26		0.00		5.73	12.23	0.16	77.16	25.46	75.90	33.0	525	0.10	136.00	0.56	0.63	0.64
Contribution From STREET 3, Pipe 122A - 126A						1.23	108				0.00		0.00		0.00		1.23	78.39									
Contribution From STREET 3, Pipe 125A - 126A						0.72	64				0.00		0.00		0.00		0.72	79.11									
	126A	127A	0.20		17	50.32	4316	2.8	39.76		23.26		0.00		5.73	12.23	0.20	79.31	26.17	78.17	41.0	525	0.10	136.00	0.57	0.63	0.65
STREET 3																											
	131A	132A	0.15		9	0.15	9	3.7	0.11		0.00		0.00		0.00	0.00	0.15	0.15	0.05	0.16	26.5	200	0.65	26.44	0.01	0.84	0.23
To STREET 4, Pipe 132A - 135A						0.15	9				0.00		0.00		0.00			0.15									
	124A	125A	0.37		33	0.37	33	3.7	0.39		0.00		0.00		0.00	0.00	0.37	0.37	0.12	0.52	72.5	200	0.35	19.40	0.03	0.62	0.26
	125A	126A	0.35		31	0.72	64	3.6	0.75		0.00		0.00		0.00	0.00	0.35	0.72	0.24	0.99	72.5	200	0.35	19.40	0.05	0.62	0.32
To FRANK BENDER STREET, Pipe 126A - 127A						0.72	64				0.00		0.00		0.00			0.72									

DESIGN PARAMETERS

Park Flow =	9300	L/ha/da	0.10764	l/s/Ha				
Average Daily Flow =	280	l/p/day			Industrial Peak Factor = as per MOE Graph			
Comm/Inst Flow =	28000	L/ha/da	0.3241	l/s/Ha	Extraneous Flow =	0.330	L/s/ha	
Industrial Flow =	35000	L/ha/da	0.40509	l/s/Ha	Minimum Velocity =	0.600	m/s	
Max Res. Peak Factor =	4.00				Manning's n = (Conc)	0.013	(Pvc)	0.013
Commercial/Inst./Park Peak Factor =	1.50				Townhouse coeff=	2.7		
Institutional =	0.32	l/s/Ha			Single house coeff=	3.4		

Design: C.B.

Checked: S.M.

Dwg. Reference: Sanitary Drainage Plan, Dwgs. No. 3

PROJECT: **TRAILSEDGE PHASE 5**

LOCATION: **City of Ottawa**

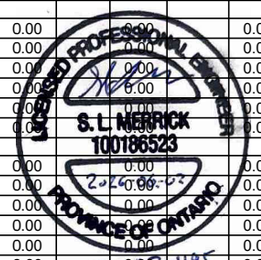
File Ref: 20-1195 | Date: June 2, 2026 | Sheet No. 2 of 4

1195_SAN.xlsx

SANITARY SEWER CALCULATION SHEET

Manning's n=0.013

LOCATION			RESIDENTIAL AREA AND POPULATION							COMM		INSTIT		PARK		C+I+I	INFILTRATION				PIPE						
STREET	FROM M.H.	TO M.H.	AREA (ha)	UNITS	POP.	CUMULATIVE AREA (ha)	CUMULATIVE POP.	PEAK FACT.	PEAK FLOW (l/s)	AREA (ha)	ACCU. AREA (ha)	AREA (ha)	ACCU. AREA (ha)	AREA (ha)	ACCU. AREA (ha)	PEAK FLOW (l/s)	TOTAL AREA (ha)	ACCU. AREA (ha)	INFILT. FLOW (l/s)	TOTAL FLOW (l/s)	DIST (m)	DIA (mm)	SLOPE (%)	CAP. (FULL) (l/s)	RATIO Q act/Q cap	VEL. (FULL) (m/s)	VEL. (ACT.) (m/s)
	119A	120A	0.16		14	0.16	14	3.7	0.17		0.00		0.00		0.00	0.00	0.16	0.16	0.05	0.22	33.0	200	0.35	19.40	0.01	0.62	0.21
	120A	121A	0.05		4	0.21	18	3.7	0.22		0.00		0.00		0.00	0.00	0.05	0.21	0.07	0.29	11.0	200	0.35	19.40	0.01	0.62	0.21
	121A	122A	0.51		45	0.72	63	3.6	0.74		0.00		0.00		0.00	0.00	0.51	0.72	0.24	0.98	106.0	300	0.20	43.25	0.02	0.61	0.25
	122A	126A	0.51		45	1.23	108	3.6	1.26		0.00		0.00		0.00	0.00	0.51	1.23	0.41	1.66	105.5	300	0.20	43.25	0.04	0.61	0.29
To FRANK BENDER STREET, Pipe 126A - 127A						1.23	108				0.00		0.00		0.00			1.23									
STREET 4																											
Contribution From STREET 1, Pipe 133A - 134A						0.08	4				0.00		0.00		0.00		0.08	0.08									
	134A	135A	0.39		23	0.47	27	3.7	0.32		0.00		0.00		0.00	0.00	0.39	0.47	0.16	0.48	70.5	200	0.35	19.40	0.02	0.62	0.26
To STREET 1, Pipe 135A - 136A						0.47	27				0.00		0.00		0.00			0.47									
	128A	129A	0.40		24	0.40	24	3.7	0.29		0.00		0.00		0.00	0.00	0.40	0.40	0.13	0.42	71.0	200	0.65	26.44	0.02	0.84	0.30
	129A	130A	0.06		3	0.46	27	3.7	0.32		0.00		0.00		0.00	0.00	0.06	0.46	0.15	0.47	11.0	200	0.35	19.40	0.02	0.62	0.26
	130A	132A	0.15		9	0.61	36	3.7	0.43		0.00		0.00		0.00	0.00	0.15	0.61	0.20	0.63	26.5	200	0.35	19.40	0.03	0.62	0.28
Contribution From STREET 3, Pipe 131A - 132A						0.15	9				0.00		0.00		0.00		0.15	0.76									
	132A	135A	0.48		29	1.24	74	3.6	0.87		0.00		0.00		0.00	0.00	0.48	1.24	0.41	1.28	85.5	200	0.35	19.40	0.07	0.62	0.34
To STREET 1, Pipe 135A - 136A						1.24	74				0.00		0.00		0.00			1.24									
	110A	111A	0.44		39	0.44	39	3.7	0.46		0.00		0.00		0.00	0.00	0.44	0.44	0.15	0.61	51.5	200	0.65	26.44	0.02	0.84	0.34
	111A	112A	0.10		8	0.54	47	3.7	0.56		0.00		0.00		0.00	0.00	0.10	0.54	0.18	0.74	11.0	200	0.10	10.37	0.07	0.33	0.19
	112A	114A	0.59		52	1.13	99	3.6	1.15		0.00		0.00		0.00	0.00	0.59	1.13	0.37	1.53	69.5	200	0.35	19.40	0.08	0.62	0.36
	114A	116A	0.67		59	1.80	158	3.5	1.82		0.00		0.00		0.00	0.00	0.67	1.80	0.59	2.41	79.0	200	0.35	19.40	0.12	0.62	0.42
	116A	117A	0.41		36	2.21	194	3.5	2.21		0.00		0.00		0.00	0.00	0.41	2.21	0.73	2.94	48.5	200	0.35	19.40	0.15	0.62	0.44
To FRANK BENDER STREET, Pipe 117A - 118A						2.21	194				0.00		0.00		0.00			2.21									
	94A	99A				0.00				5.09	5.09		0.00		0.00	2.47	5.09	5.09	1.68	4.15	102.0	250	0.25	29.73	0.14	0.61	0.42
Contribution From JARGEAU ROAD, Pipe 96A - 99A						1.98	174				0.00		0.00		0.00		1.98	7.07									
Contribution From JARGEAU ROAD, Pipe 98A - 99A						0.00	0				0.00		0.00		0.00		0.00	7.07									
	99A	100A	3.10		273	5.08	447	3.4	4.92		5.09		0.00		0.00	2.47	3.10	10.17	3.36	10.75	81.0	300	0.20	43.25	0.25	0.61	0.50
	100A	106A	3.10		275	8.18	722	3.3	7.74		5.09		0.00		0.00	2.47	3.10	13.27	4.38	14.60	81.0	300	0.20	43.25	0.34	0.61	0.55
	106A	108A	3.03		270	11.21	992	3.2	10.42		5.09		0.00		0.00	2.47	3.03	16.30	5.38	18.28	79.0	375	0.15	67.91	0.27	0.61	0.52
	108A	109A	1.65		147	12.86	1139	3.2	11.85		5.09		0.00		0.00	2.47	1.65	17.95	5.92	20.25	43.0	375	0.15	67.91	0.30	0.61	0.53
	109A	117A	2.28		201	15.14	1340	3.2	13.77		5.09		0.00		0.00	2.47	2.28	20.23	6.68	22.92	59.5	375	0.15	67.91	0.34	0.61	0.55
To FRANK BENDER STREET, Pipe 117A - 118A						15.14	1340				5.09		0.00		0.00			20.23									
STREET 1																											
	133A	134A	0.08		4	0.08	4	3.8	0.05		0.00		0.00		0.00	0.00	0.08	0.08	0.03	0.08	14.0	200	0.65	26.44	0.00	0.84	0.17
To STREET 4, Pipe 134A - 135A						0.08	4				0.00		0.00		0.00			0.08									
	138A	139A	0.31		19	0.31	19	3.7	0.23		0.00		0.00		0.00	0.00	0.31	0.31	0.10	0.33	55.0	200	0.85	30.24	0.01	0.96	0.31
	139A	140A	0.06		3	0.37	22	3.7	0.26		0.00		0.00		0.00	0.00	0.06	0.37	0.12	0.39	10.0	200	1.10	34.40	0.01	1.09	0.35
	140A	141A	0.30		18	0.67	40	3.7	0.48		0.00		0.00		0.00	0.00	0.30	0.67	0.22	0.70	59.5	200	0.35	19.40	0.04	0.62	0.29
To STREET 2, Pipe 141A - 142A						0.67	40				0.00		0.00		0.00			0.67									
Contribution From STREET 4, Pipe 132A - 135A						1.24	74				0.00		0.00		0.00		1.24	1.24									
Contribution From STREET 4, Pipe 134A - 135A						0.47	27				0.00		0.00		0.00		0.47	1.71									
	135A	136A	0.42		25	2.13	126	3.6	1.46		0.00		0.00		0.00	0.00	0.42	2.13	0.70	2.16	76.0	200	0.35	19.40	0.11	0.62	0.41
	136A	137A	0.06		3	2.19	129	3.6	1.49		0.00		0.00		0.00	0.00	0.06	2.19	0.72	2.21	10.5	200	0.35	19.40	0.11	0.62	0.41



DESIGN PARAMETERS

Park Flow =	9300	L/ha/da	0.10764	l/s/Ha
Average Daily Flow =	280	l/p/day		
Comm/Inst Flow =	28000	L/ha/da	0.3241	l/s/Ha
Industrial Flow =	35000	L/ha/da	0.40509	l/s/Ha
Max Res. Peak Factor =	4.00			
Commercial/Inst./Park Peak Factor =	1.50			
Institutional =	0.32	l/s/Ha		

Industrial Peak Factor = as per MOE Graph

Extraneous Flow = 0.330 L/s/ha

Minimum Velocity = 0.600 m/s

Manning's n = (Conc) 0.013 (Pvc) 0.013

Townhouse coeff= 2.7

Single house coeff= 3.4

Designed: C.B.

Checked: S.M.

Dwg. Reference: Sanitary Drainage Plan, Dwgs. No. 3

PROJECT: **TRAILSEDGE PHASE 5**

LOCATION: **City of Ottawa**

File Ref: 20-1195

Date: June 2, 2026

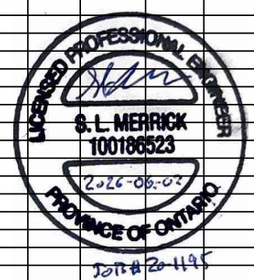
Sheet No. 3 of 4

1195_SAN.xlsx

SANITARY SEWER CALCULATION SHEET

Manning's n=0.013

LOCATION				RESIDENTIAL AREA AND POPULATION							COMM		INSTIT		PARK		C+I+I	INFILTRATION				PIPE						
STREET		FROM M.H.	TO M.H.	AREA (ha)	UNITS	POP.	CUMULATIVE AREA (ha)	CUMULATIVE POP.	PEAK FACT.	PEAK FLOW (l/s)	AREA (ha)	ACCU. AREA (ha)	AREA (ha)	ACCU. AREA (ha)	AREA (ha)	ACCU. AREA (ha)	PEAK FLOW (l/s)	TOTAL AREA (ha)	ACCU. AREA (ha)	INFILT. FLOW (l/s)	TOTAL FLOW (l/s)	DIST (m)	DIA (mm)	SLOPE (%)	CAP. (FULL) (l/s)	RATIO Q act/Q cap	VEL. (FULL) (m/s)	VEL. (ACT.) (m/s)
		137A	141A	0.03		2	2.22	131	3.6	1.51		0.00		0.00		0.00	0.00	0.03	2.22	0.73	2.25	5.5	200	0.35	19.40	0.12	0.62	0.41
To STREET 2, Pipe 141A - 142A							2.22	131				0.00		0.00		0.00			2.22									
STREET 2																												
Contribution From STREET 1, Pipe 137A - 141A							2.22	131				0.00		0.00		0.00		2.22	2.22									
Contribution From STREET 1, Pipe 140A - 141A							0.67	40				0.00		0.00		0.00		0.67	2.89									
		141A	142A	0.06		3	2.95	174	3.5	1.99		0.00		0.00		0.00	0.00	0.06	2.95	0.97	2.97	10.5	200	0.35	19.40	0.15	0.62	0.44



DESIGN PARAMETERS

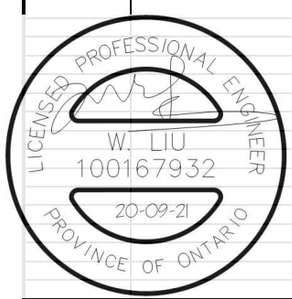
Park Flow =	9300	L/ha/da	0.10764	l/s/Ha				
Average Daily Flow =	280	l/p/day			Industrial Peak Factor = as per MOE Graph			
Comm/Inst Flow =	28000	L/ha/da	0.3241	l/s/Ha	Extraneous Flow =	0.330	L/s/ha	
Industrial Flow =	35000	L/ha/da	0.40509	l/s/Ha	Minimum Velocity =	0.600	m/s	
Max Res. Peak Factor =	4.00				Manning's n = (Conc)	0.013	(Pvc)	0.013
Commercial/Inst./Park Peak Factor =	1.50				Townhouse coeff=	2.7		
Institutional =	0.32	l/s/Ha			Single house coeff=	3.4		

Designed: C.B.	PROJECT: TRAILSEDGE PHASE 5		
Checked: S.M.	LOCATION: City of Ottawa		
Dwg. Reference: Sanitary Drainage Plan, Dwgs. No. 3	File Ref: 20-1195	Date: June 2, 2026	Sheet No. 4 of 4

SANITARY SEWER CALCULATION SHEET

Manning's n=0.013

LOCATION			RESIDENTIAL AREA AND POPULATION							COMM		INSTIT		PARK		C+I+I	INFILTRATION			TOTAL	PIPE						
STREET	FROM M.H.	TO M.H.	AREA (ha)	UNITS	POP.	CUMULATIVE AREA (ha)	CUMULATIVE POP.	PEAK FACT.	PEAK FLOW (l/s)	AREA (ha)	ACCU. AREA (ha)	AREA (ha)	ACCU. AREA (ha)	AREA (ha)	ACCU. AREA (ha)	PEAK FLOW (l/s)	TOTAL AREA (ha)	ACCU. AREA (ha)	INFILT. FLOW (l/s)	TOTAL FLOW (l/s)	DIST (m)	DIA (mm)	SLOPE (%)	CAP. (FULL) (l/s)	RATIO Q act/Q cap	VEL. (FULL) (m/s)	VEL. (ACT.) (m/s)
TRUNK 2																											
	1203A	1204A	0.36		52	0.36	52	3.6	0.61		0.00		0.00	4.59	4.59	0.74	4.95	4.95	1.63	2.99	81.0	300	0.65	77.96	0.04	1.10	0.52
	1204A	1205A	0.75		108	1.11	160	3.5	1.84		0.00		0.00		4.59	0.74	0.75	5.70	1.88	4.46	111.0	300	0.20	43.25	0.10	0.61	0.39
	1205A	1206A	0.77		111	1.88	271	3.5	3.05		0.00		0.00		4.59	0.74	0.77	6.47	2.14	5.93	74.0	300	0.20	43.25	0.14	0.61	0.43
	1206A	1207A	0.97		140	2.85	411	3.4	4.55		0.00		0.00		4.59	0.74	0.97	7.44	2.46	7.74	75.0	300	0.20	43.25	0.18	0.61	0.46
	1207A	1208A				2.85	411	3.4	4.55		0.00		0.00		4.59	0.74	0.00	7.44	2.46	7.74	100.5	300	0.20	43.25	0.18	0.61	0.46
	1208A	1209A	1.77		255	4.62	666	3.3	7.18		0.00		0.00		4.59	0.74	1.77	9.21	3.04	10.96	14.5	300	0.20	43.25	0.25	0.61	0.51
	1209A	1210A	1.64		237	6.26	903	3.3	9.55		0.00		0.00		4.59	0.74	1.64	10.85	3.58	13.87	112.5	300	0.20	43.25	0.32	0.61	0.54
	1210A	1211A	2.83		408	9.09	1311	3.2	13.50		0.00		0.00		4.59	0.74	2.83	13.68	4.51	18.75	120.0	300	0.20	43.25	0.43	0.61	0.59
	1211A	1212A				9.09	1311	3.2	13.50		0.00		0.00		4.59	0.74	0.00	13.68	4.51	18.75	43.5	300	0.20	43.25	0.43	0.61	0.59
	1212A	1091A				9.09	1311	3.2	13.50		0.00		0.00		4.59	0.74	0.00	13.68	4.51	18.75	10.0	300	0.20	43.25	0.43	0.61	0.59
	1091A	1093A				9.09	1311	3.2	13.50		0.00		0.00		4.59	0.74	0.00	13.68	4.51	18.75	33.5	300	0.20	43.25	0.43	0.61	0.59
	1093A	1094A	1.16		118	10.25	1429	3.2	14.61		0.00		0.00		4.59	0.74	1.16	14.84	4.90	20.25	84.0	450	0.12	98.76	0.21	0.62	0.49
	1094A	1095A	0.52		53	10.77	1482	3.1	15.11		0.00		0.00		4.59	0.74	0.52	15.36	5.07	20.92	81.0	450	0.12	98.76	0.21	0.62	0.49
To TRUNK 1, Pipe 1095A - 1096A						10.77	1482				0.00		0.00		4.59			15.36									
TRUNK 1																											
	1007A	1008A				0.00				1.87	1.87		0.00		0.00	1.14	1.87	1.87	0.62	1.75	58.0	300	0.65	77.96	0.02	1.10	0.44
	1008A	1009A				0.00	0			1.19	3.06		0.00		0.00	1.86	1.19	3.06	1.01	2.87	86.5	300	0.25	48.35	0.06	0.68	0.37
	1009A	1010A				0.00	0			0.90	3.96		0.00		0.00	2.41	0.90	3.96	1.31	3.71	86.5	300	0.25	48.35	0.08	0.68	0.40
	1010A	1011A				0.00	0			2.04	6.00		0.00		0.00	3.65	2.04	6.00	1.98	5.63	46.0	300	0.25	48.35	0.12	0.68	0.46
	1011A	1012A				0.00	0			1.02	7.02		0.00		0.00	4.27	1.02	7.02	2.32	6.58	97.5	375	0.15	67.91	0.10	0.61	0.39
	1012A	1013A				0.00	0			2.12	9.14		0.00		0.00	5.55	2.12	9.14	3.02	8.57	125.5	375	0.15	67.91	0.13	0.61	0.42
	1013A	1014A				0.00	0			2.12	11.26		0.00		0.00	6.84	2.12	11.26	3.72	10.56	88.0	375	0.15	67.91	0.16	0.61	0.45
	1014A	1022A				0.00	0			1.18	12.44		0.00		0.00	7.56	1.18	12.44	4.11	11.66	93.0	375	0.15	67.91	0.17	0.61	0.46
	1022A	1023A				0.00	0			6.81	19.25		0.00		0.00	11.70	6.81	19.25	6.35	18.05	100.5	375	0.15	67.91	0.27	0.61	0.52
	1023A	1024A	0.72		73	0.72	73	3.6	0.86		19.25		0.00		0.00	11.70	0.72	19.97	6.59	19.14	82.0	450	0.12	98.76	0.19	0.62	0.48
	1024A	1025A	0.19		20	0.91	93	3.6	1.09		19.25		0.00		0.00	11.70	0.19	20.16	6.65	19.44	79.0	450	0.12	98.76	0.20	0.62	0.48
	1025A	1026A	0.14		15	1.05	108	3.6	1.26		19.25		0.00		0.00	11.70	0.14	20.30	6.70	19.65	58.0	450	0.12	98.76	0.20	0.62	0.48
	1026A	1027A	0.24		25	1.29	133	3.6	1.54		19.25		0.00		0.00	11.70	0.24	20.54	6.78	20.01	63.5	450	0.12	98.76	0.20	0.62	0.49
	1027A	1028A				1.29	133	3.6	1.54		19.25		0.00		0.00	11.70	0.00	20.54	6.78	20.01	25.0	450	0.12	98.76	0.20	0.62	0.49
	1028A	1029A	0.52		53	1.81	186	3.5	2.13		19.25		0.00		0.00	11.70	0.52	21.06	6.95	20.77	93.0	450	0.12	98.76	0.21	0.62	0.49
	1029A	1037A	0.48		49	2.29	235	3.5	2.66		19.25		0.00		0.00	11.70	0.48	21.54	7.11	21.47	93.0	450	0.12	98.76	0.22	0.62	0.49
	1037A	1040A	3.56		360	5.85	595	3.3	6.45		19.25		0.00		0.00	11.70	3.56	25.10	8.28	26.43	79.0	450	0.12	98.76	0.27	0.62	0.52
	1040A	1049A	1.54		156	7.39	751	3.3	8.03		19.25		0.00		0.00	11.70	1.54	26.64	8.79	28.52	79.0	450	0.12	98.76	0.29	0.62	0.53
	1049A	1058A	4.52		457	11.91	1208	3.2	12.51		19.25		0.00		0.00	11.70	4.52	31.16	10.28	34.49	81.0	450	0.12	98.76	0.35	0.62	0.56
	1058A	1059A	5.68		574	17.59	1782	3.1	17.90		19.25		0.00	1.37	1.37	11.92	7.05	38.21	12.61	42.43	121.5	450	0.12	98.76	0.43	0.62	0.60
	1059A	1090A	0.46		47	18.05	1829	3.1	18.33		19.25		0.00		1.37	11.92	0.46	38.67	12.76	43.01	121.5	450	0.12	98.76	0.44	0.62	0.60
			2.41		348	20.46	2177			5.07	24.32		0.00	0.59	1.96		8.07	46.74									
	1090A	1095A	14.50		1465	34.96	3642	2.9	34.18		24.32		0.00		1.96	15.09	14.50	61.24	20.21	69.48	68.5	450	0.15	110.42	0.63	0.69	0.73
Contribution From TRUNK 1, Pipe 1094A - 1095A						10.77	1482				0.00		0.00		4.59		15.36	76.60									
	1095A	1096A	0.50		51	46.23	5175	2.8	46.71		24.32		0.00		6.55	15.84	0.50	77.10	25.44	87.98	79.5	525	0.12	148.98	0.59	0.69	0.72
	1096A	1107A	1.98		200	48.21	5375	2.8	48.30		24.32		0.00		6.55	15.84	1.98	79.08	26.10	90.23	76.0	525	0.10	136.00	0.66	0.63	0.67
			1.91		276	50.12	5651				24.32		0.00		6.55		1.91	80.99									
			4.43		448	54.55	6099				24.32		0.00		6.55		4.43	85.42									
	1107A	1108A	9.77		987	64.32	7086	2.7	61.57	4.28	28.60		0.00		6.55	18.44	14.05	99.47	32.83	112.83	97.5	525	0.22	201.72	0.56	0.93	0.95
	1108A	1133A	0.31		32	64.63	7118	2.7	61.81		28.60		0.00	1.16	7.71	18.62	1.47	100.94	33.31	113.75	47.5	600	0.22	288.00	0.39	1.02	0.96
	1133A	1A (B.O.)				64.63	7118	2.7	61.81		28.60		0.00		7.71	18.62	0.00	100.94	33.31	113.75	15.5	600	0.10	194.17	0.59	0.69	0.71



DESIGN PARAMETERS

Park Flow =	9300	L/ha/da	0.10764	l/s/Ha			
Average Daily Flow =	280	l/p/day			Industrial Peak Factor = as per MOE Graph		
Comm/Inst Flow =	35000	L/ha/da	0.4051	l/s/Ha	Extraneous Flow =	0.330	L/s/ha
Industrial Flow =	35000	L/ha/da	0.40509	l/s/Ha	Minimum Velocity =	0.600	m/s
Max Res. Peak Factor =	4.00				Manning's n = (Conc)	0.013	(Pvc) 0.013
Commercial/Inst./Park Peak Factor =	1.50				Townhouse coeff=	2.7	
Institutional =	0.41	l/s/Ha			Single house coeff=	3.4	

Designed: V.W.	PROJECT: **Trailsedge North**		
Checked: W.L.	LOCATION: **City of Ottawa**		
Dwg. Reference: Sanitary Drainage Plan, Dwgs. No.	File Ref: 20-1195	Date: **21 Sep 2020**	Sheet No. 1 of 1

SANITARY SEWER DESIGN SHEET

NOVATECH
Engineers, Planners & Landscape Architects

Novatech Project #: 118224
Project Name: BMR
Date Prepared: 10/4/2019
Date Revised: 3/10/2022
Input By: Dan Coffey
Reviewed By: Sam Bahia
Drawing Reference: 118224-GP AND 118224-SAN

Legend:
- PROJECT SPECIFIC INFO
- USER DESIGN INPUT
- CUMILATIVE CELL
- CALCULATED DESIGN CELL OUTPUT
- CALCULATED ANNUAL CELL OUTPUT
- CALCULATED RARE CELL OUTPUT
- USER AS-BUILT INPUT

LOCATION				DEMAND																		DESIGN CAPACITY							
				RESIDENTIAL FLOW											INDUSTRIAL / COMMERICAL / INSTITUIONAL FLOW						EXTRANOUS FLOW AREA METHOD		TOTAL DESIGN FLOW	PROPOSED SEWER PIPE SIZING / DESIGN							
STREET	AREA	FROM MH	TO MH	SINGLES	SEMIS/ TOWNS	APARTS	PARK. AREA (ha)	POPULATION (in 1000's)	CUMULATIVE POPULATION (in 1000's)	PEAK FACTOR M	AVG POPULATION FLOW Q(q) (L/s)	PEAKED DESIGN POP FLOW Q(p) (L/s)	PEAKED ANNUAL/RARE POP FLOW Q(AR - Res) (L/s)	RESIDENTIAL DRAINAGE AREA (ha.)	CUMULATIVE RES DRAINAGE AREA (ha.)	COMMERICAL / INSTITUTIONAL AREA (ha.)	CUMULATIVE COMMERICAL / INSTIUTIONAL AREA (ha.)	AVG DESIGN COMMERICAL / INSTIUTIONAL FLOW Q (ci) (L/s)	COMMERICAL / INSTITUTIONAL PEAK FACTOR	CUMULATIVE ICI DRAINAGE AREA (ha.)	PEAKED DESIGN ICI FLOW Q (CI) (L/s)	CUMULATIVE EXTRANOUS DRAINAGE AREA (ha.)	DESIGN EXTRAN. FLOW Q(e) (L/s)	TOTAL DESIGN FLOW Q(D) (L/s)	LENGTH (m)	PIPE SIZE (mm) AND MATERIAL	PIPE ID ACTUAL (m)	ROUGH. (n)	DESIGN GRADE (%)	CAPACITY (L/s)	FULL FLOW VELOCITY (m/s)	Qpeak Design / Qcap
Street 9	A1, A2	165	163			168		0.353	0.353	4.00	1.14	3.66	1.96	2.730	2.730	0.000	0.000	0.00	1.00	0.000	0.00	2.730	0.90	4.56	57.8	250 PVC	0.254	0.013	0.30	34.0	0.67	13.4%
	A3	163	161		14			0.038	0.391	4.00	1.27	4.05	2.17	0.470	3.200	0.000	0.000	0.00	1.00	0.000	0.00	3.200	1.06	5.11	109.4	250 PVC	0.254	0.013	0.25	31.0	0.61	16.5%
	A4	161	159		4			0.011	0.401	4.00	1.30	4.16	2.23	0.150	3.350	0.000	0.000	0.00	1.00	0.000	0.00	3.350	1.11	5.27	14.1	250 PVC	0.254	0.013	0.50	43.9	0.87	12.0%
	A5	159	151		28			0.076	0.477	3.98	1.55	4.93	2.64	0.830	4.180	0.000	0.000	0.00	1.00	0.000	0.00	4.180	1.38	6.31	112.1	250 PVC	0.254	0.013	0.25	31.0	0.61	20.3%
Street 2	A6	157	155		27			0.073	0.073	4.00	0.24	0.76	0.41	0.760	0.760	0.000	0.000	0.00	1.00	0.000	0.00	0.760	0.25	1.01	102.8	200 PVC	0.203	0.013	0.35	20.2	0.62	5.0%
	A7	155	153		4			0.011	0.084	4.00	0.27	0.87	0.47	0.170	0.930	0.000	0.000	0.00	1.00	0.000	0.00	0.930	0.31	1.17	13.8	200 PVC	0.203	0.013	0.50	24.2	0.75	4.9%
	A8	153	151		10			0.027	0.111	4.00	0.36	1.15	0.62	0.330	1.260	0.000	0.000	0.00	1.00	0.000	0.00	1.260	0.42	1.56	62.5	200 PVC	0.203	0.013	0.35	20.2	0.62	7.7%
Street 2	A9	151	145		8			0.022	0.609	3.93	1.97	6.21	3.32	0.330	5.770	0.000	0.000	0.00	1.00	0.000	0.00	5.770	1.90	8.11	76.3	250 PVC	0.254	0.013	0.25	31.0	0.61	26.1%
Chemin de Jargeau Road	A10	147	145		14			0.038	0.038	4.00	0.12	0.39	0.21	0.450	0.450	0.000	0.000	0.00	1.00	0.000	0.00	0.450	0.15	0.54	63.2	250 PVC	0.254	0.013	0.25	31.0	0.61	1.7%
	A11	147	EX		25			0.068	0.068	4.00	0.22	0.70	0.38	0.780	0.780	0.000	0.000	0.00	1.00	0.000	0.00	0.780	0.26	0.96	99.4	200 PVC	0.203	0.013	0.65	27.6	0.85	3.5%
Voie de Cerulean Way	A12	145	141		9			0.024	0.671	3.90	2.18	6.80	3.64	0.330	6.550	0.000	0.000	0.00	1.00	0.000	0.00	6.550	2.16	8.96	77.3	300 PVC	0.305	0.013	0.20	45.1	0.62	19.9%
	A13	143	141		2			0.005	0.005	4.00	0.02	0.06	0.03	0.080	0.080	0.000	0.000	0.00	1.00	0.000	0.00	0.080	0.03	0.08	16.6	200 PVC	0.203	0.013	0.65	27.6	0.85	0.3%
Lumen Place	A14	141	139	20				0.068	0.745	3.88	2.41	7.49	4.01	0.800	7.430	0.000	0.000	0.00	1.00	0.000	0.00	7.430	2.45	9.94	113.9	300 PVC	0.305	0.013	0.20	45.1	0.62	22.0%
	A15	139	137	2				0.007	0.752	3.88	2.44	7.55	4.05	0.180	7.610	0.000	0.000	0.00	1.00	0.000	0.00	7.610	2.51	10.07	14.6	300 PVC	0.305	0.013	0.50	71.3	0.98	14.1%
	A16	137	129	6				0.020	0.772	3.87	2.50	7.75	4.15	0.270	7.880	0.000	24.320	7.88	1.50	24.320	11.82	32.200	10.63	30.19	62.8	300 PVC	0.305	0.013	0.20	45.1	0.62	66.9%
Voie de Cerulean Way	A17	143	133		6			0.016	0.016	4.00	0.05	0.17	0.09	0.210	0.210	0.000	0.000	0.00	1.00	0.000	0.00	0.210	0.07	0.24	56.5	200 PVC	0.203	0.013	0.65	27.6	0.85	0.9%
Street 5	A18	135	133	3				0.010	0.010	4.00	0.03	0.11	0.06	0.150	0.150	0.000	0.000	0.00	1.00	0.000	0.00	0.150	0.05	0.16	33.1	200 PVC	0.203	0.013	0.65	27.6	0.85	0.6%
Street 5	A19	133	131	7				0.024	0.050	4.00	0.16	0.52	0.28	0.280	0.640	0.000	0.000	0.00	1.00	0.000	0.00	0.640	0.21	0.73	40.4	200 PVC	0.203	0.013	0.35	20.2	0.62	3.6%
	A20	131	129	14				0.048	0.098	4.00	0.32	1.01	0.54	0.560	1.200	0.000	0.000	0.00	1.00	0.000	0.00	1.200	0.40	1.41	84.3	200 PVC	0.203	0.013	0.35	20.2	0.62	7.0%
Lumen Place	A21	129	127	6				0.020	0.890	3.83	2.88	8.84	4.74	0.330	9.410	0.000	0.000	0.00	1.00	0.000	0.00	9.410	3.11	11.95	73.0	300 PVC	0.305	0.013	0.20	45.1	0.62	26.5%
	A22	127	125	10				0.034	0.924	3.82	3.00	9.16	4.91	0.440	9.850	0.000	0.000	0.00	1.00	0.000	0.00	9.850	3.25	12.41	55.7	300 PVC	0.305	0.013	0.20	45.1	0.62	27.5%
	A23	125	123	2				0.007	0.931	3.82	3.02	9.22	4.94	0.120	9.970	0.000	0.000	0.00	1.00	0.000	0.00	9.970	3.29	12.51	12.4	300 PVC	0.305	0.013	0.50	71.3	0.98	17.5%
	A24	123	121	3				0.010	0.941	3.82	3.05	9.31	4.99	0.150	10.120	0.000	0.000	0.00	1.00	0.000	0.00	10.120	3.34	12.65	23.0	300 PVC	0.305	0.013	0.20	45.1	0.62	28.0%
	A25	121	113	15				0.051	0.992	3.80	3.22	9.78	5.24	0.620	10.740	0.000	0.000	0.00	1.00	0.000	0.00	10.740	3.54	13.32	96.2	300 PVC	0.305	0.013	0.20	45.1	0.62	29.5%
Voie de Persimmon Way	A26	119	117	17				0.058	0.058	4.00	0.19	0.60	0.32	0.710	0.710	0.000	0.000	0.00	1.00	0.000	0.00	0.710	0.23	0.83	103.0	200 PVC	0.203	0.013	0.35	20.2	0.62	4.1%
	A27	117	115	2				0.007	0.065	4.00	0.21	0.67	0.36	0.160	0.870	0.000	0.000	0.00	1.00	0.000	0.00	0.870	0.29	0.96	14.0	200 PVC	0.203	0.013	0.50	24.2	0.75	4.0%
	A28	115	113	7				0.024	0.088	4.00	0.29	0.92	0.49	0.330	1.200	0.000	0.000	0.00	1.00	0.000	0.00	1.200	0.40	1.31	63.2	200 PVC	0.203	0.013	0.35	20.2	0.62	6.5%
Voie de Persimmon Way	A29	113	201	6				0.020	1.101	3.77	3.57	10.77	5.77	0.290	12.230	0.000	0.000	0.00	1.00	0.000	0.00	12.230	4.04	14.80	73.8	300 PVC	0.305	0.013	0.20	45.1	0.62	32.8%
Street 8	FUTURE	CAP	99					0.375	0.375	4.00	1.22	3.89	2.08	3.090	3.090	0.000	0.000	0.00	1.00	0.000	0.00	3.090	1.02	4.91	31.6	200 PVC	0.203	0.013	0.35	20.2	0.62	24.2%
	-	99	101					0.000	0.375	4.00	1.22	3.89	2.08	3.090	3.090	0.000	0.000	0.00	1.00	0.000	0.00	3.090	1.02	4.91	39.6	200 PVC	0.203	0.013	0.35	20.2	0.62	24.2%
	A30	101	103	8				0.027	0.402	4.00	1.30	4.17	2.23	0.550	3.640	0.000	0.000	0.00	1.00	0.000	0.00	3.640	1.20	5.37	12.3	200 PVC	0.203	0.013	0.50	24.2	0.75	22.2%
	A31	103	201	5				0.017	0.419	4.00	1.36	4.35	2.33	0.270	3.910	0.000	0.000	0.00	1.00	0.000	0.00	3.910	1.29	5.64	47.9	200 PVC	0.203	0.013	0.35	20.2	0.62	27.8%
Rue de Beaugency Street	A32	105	107	12				0.041	0.041	4.00	0.13	0.42	0.23	0.500	0.500	0.000	0.000	0.00	1.00	0.000	0.00	0.500	0.17	0.59	83.4	200 PVC	0.203	0.013	0.35	20.2	0.62	2.9%
	A33	107	109	2				0.007	0.048	4.00	0.15	0.49	0.26	0.120	0.620	0.000	0.000	0.00	1.00	0.000	0.00	0.620	0.20	0.70	28.3	200 PVC	0.203	0.013	0.35	20.2	0.62	3.4%
	A34	109	111	4				0.014	0.061	4.00	0.20	0.63	0.34	0.210	0.830	0.000	0.000	0.00	1.00	0.000	0.00	0.830	0.27	0.91	26.6	200 PVC	0.203	0.013	0.35	20.2	0.62	4.5%
	-	111	207	0				0.000	0.061	4.00	0.20	0.63	0.34	0.000	0.830	0.000	0.000	0.00	1.00	0.000	0.00	0.830	0.27	0.91	1.8	200 PVC	0.203	0.013	0.50	24.2	0.75	3.8%
TRUNK SANITARY SEWER																													
Rue de Beaugency Street	FUTURE, A35	CAP1	201				6.550	5.545	5.545	3.20	17.97	46.05	24.67	54.930	54.930	24.320	24.320	7.88	1.50	24.320	11.82	79.250	26.15	84.02	36.6	525 CONC	0.533	0.013	0.10	141.9	0.63	59.2%
	-	201	203					0.000	7.066	3.10	22.90	56.84	30.45	0.500	71.570	0.000	24.320	7.88	1.50	24.320	11.82	95.890	31.64	100.30	96.7	525 CONC	0.533	0.013	0.10	141.9	0.63	70.7%
	-	203	205					0.000	7.066	3.10	22.90	56.84	30.45	0.120	71.690	0.000	24.320	7.88	1.50	24.320	11.82	96.010	31.68	100.34	29.2	600 CONC	0.610	0.013	0.10	202.6	0.69	49.5%
	-	205	207					0.000	7.066	3.10	22.90	56.84	30.45	0.000	71.690	0.000	24.320	7.88	1.50	24.320	11.82	96.010	31.68	100.34	27.7	600 CONC	0.610	0.013	0.10	202.6	0.69	49.5%
	A36	207	1A				1.000	0.011	7.138	3.10	23.13	57.34	30.72	1.000	73.520	0.000	24.320	7.88	1.50	24.320	11.82	97.840	32.29	101.45	11.9	600 CONC	0.610	0.013	0.10	202.6	0.69	50.1%
TOTALS				151	151	168	7.550		7.138						73.52		24.320					96.010									

DEMAND EQUATION

Design Parameters:

1. Q(D), Q(A), Q(R) = Q(p) + Q(fd) + Q(ici) + Q(e)
2. Q(p) = (P x q x M x K / 86,400)
3. q Avg capita flow 280 L/per/day (design)
   (L/per/day)= 200 L/per/day (annual and rare)
4. M = Harmon Formula (maximum of 4.0)
5. K = 0.8 (design)
   0.6 (annual and rare)
6. Park flow is considered equivalent to a single unit / ha
   Park Demand = 3.25 Single Unit Equivalent / Park ha
7. Foundation Drains 0.45 L/s/unit
8. Q(ici) = ICI Area x ICI Flow x ICI Peak
9. Q(e) = 0.33 L/sec/ha (design)
   0.30 L/sec/ha (annual)
   0.55 L/sec/ha (rare)

Definitions:

Q(D) = Peak Design Flow (L/sec) Q(A) = Peak Annual Flow (L/sec) Q(R) = Peak Rare Flow (L/sec)
Q(e) = Extraneous Flow (L/sec)
Q(p) = Population Flow (L/sec)
K = Harmon Correction Factor

	Singles	Semis/Towns	Apts (2-BR)
P = Residential Population	3.4	2.7	2.1
Typ Service Diameter (mm)		135	
Typ Service Length (m)	15	15	
I/I Pipe Rate (L/mm dia/m/hr) =	0.007		

Q(fd) = Foundation Flow (L/sec)
Q(ici) = Industrial / Commercial / Institutional Flow (L/sec)

Institutional / Commercial / Industrial		Industrial	Commercial / Institutional	
	Design =	35000	28000	L/gHa/d
	Annual / Rare =	10000	17000	L/gHa/d
ICI Peak *	Design = Std ICI -->	1.0	1.5	* ICI Peak = 1.0 Default, 1.5 if ICI in contributing area is >20% (design only)
	Annual / Rare =	1.0		

CAPACITY EQUATION

Q full= (1/n) A R^(2/3)So^(1/2)
Where : Q full = Capacity (L/s)
n = Manning coefficient of roughness (0.013)
A = Flow area (m^2)
R = Wetter perimenter (m)
So = Pipe Slope/gradient

NOTES

External Flows to be determined as part of detailed design process. Futher coordination with DSEL required.

SANITARY SEWER CALCULATION SHEET

Manning's n=0.013

LOCATION			RESIDENTIAL AREA AND POPULATION						COMM		INSTIT		PARK		C+I+I	INFILTRATION				PIPE					
STREET	FROM M.H.	TO M.H.	AREA (ha)	POP.	CUMULATIVE AREA (ha)	CUMULATIVE POP.	PEAK FACT.	PEAK FLOW (l/s)	AREA (ha)	ACCU. AREA (ha)	AREA (ha)	ACCU. AREA (ha)	AREA (ha)	ACCU. AREA (ha)	PEAK FLOW (l/s)	TOTAL AREA (ha)	ACCU. AREA (ha)	INFILT. FLOW (l/s)	TOTAL FLOW (l/s)	DIST (m)	DIA (mm)	SLOPE (%)	CAP. (FULL) (l/s)	RATIO Q act/Q cap	VEL (FULL) (m/s)	VEL (ACT.) (m/s)
North West Sanitary Trunk																									
Trunk 1	1007A	1008A			0.00	0			2.58	2.58					1.57	2.58	2.58	0.85	2.42	58.00	200.00	0.65	26.44	0.09	0.84	0.52
COMMERCIAL	1008A	1009A			0.00	0				2.58					1.57	0.00	2.58	0.85	2.42	86.50	250.00	0.25	29.73	0.08	0.61	0.37
COMMERCIAL	1009A	1010A			0.00	0			1.29	3.87					2.35	1.29	3.87	1.28	3.63	86.50	250.00	0.25	29.73	0.12	0.61	0.41
COMMERCIAL					0.00	0			0.22	4.09						0.22	4.09								
COMMERCIAL	1010A	1011A			0.00	0			1.63	5.72					3.48	1.63	5.72	1.89	5.37	39.50	300.00	0.20	43.25	0.12	0.61	0.00
COMMERCIAL	1011A	1012A			0.00	0			0.99	6.71					4.08	0.99	6.71	2.21	6.29	99.50	375.00	0.15	67.91	0.09	0.61	0.38
COMMERCIAL	1012A	1013A			0.00	0			1.41	8.12					4.93	1.41	8.12	2.68	7.61	117.00	375.00	0.15	67.91	0.11	0.61	0.40
COMMERCIAL	1013A	1014A			0.00	0			1.41	9.53					5.79	1.41	9.53	3.14	8.93	112.00	375.00	0.15	67.91	0.13	0.61	0.41
COMMERCIAL	1014A	1022A			0.00	0			1.54	11.07					6.73	1.54	11.07	3.65	10.38	83.50	375.00	0.15	67.91	0.15	0.61	0.44
COMMERCIAL	1022A	1023A			0.00	0			7.02	18.09					10.99	7.02	18.09	5.97	16.96	96.50	375.00	0.15	67.91	0.25	0.61	0.51
	1023A	1024A	0.65	66	0.65	66	3.63	0.78		18.09					10.99	0.65	18.74	6.18	17.95	81.00	450.00	0.12	98.76	0.18	0.62	0.47
	1024A	1025A	0.20	21	0.85	87	3.61	1.02		18.09					10.99	0.20	18.94	6.25	18.26	79.00	450.00	0.12	98.76	0.18	0.62	0.47
	1025A	1026A	0.13	14	0.98	101	3.59	1.18		18.09					10.99	0.13	19.07	6.29	18.46	51.00	450.00	0.12	98.76	0.19	0.62	0.48
	1026A	1027A	0.20	21	1.18	122	3.58	1.42		18.09					10.99	0.20	19.27	6.36	18.77	74.00	450.00	0.12	98.76	0.19	0.62	0.48
	1027A	1028A			1.18	122				18.09					10.99	0.00	19.27	6.36	17.35	11.00	450.00	0.12	98.76	0.18	0.62	0.47
	1028A	1029A	0.40	41	1.58	163	3.54	1.87		18.09					10.99	0.40	19.67	6.49	19.35	100.00	450.00	0.12	98.76	0.20	0.62	0.48
	1029A	1037A	0.60	61	2.18	224	3.50	2.54		18.09					10.99	0.60	20.27	6.69	20.22	94.00	450.00	0.12	98.76	0.20	0.62	0.48
	1037A	1040A	3.30	334	5.48	558	3.36	6.08		18.09					10.99	3.30	23.57	7.78	24.85	79.00	450.00	0.12	98.76	0.25	0.62	0.51
	1040A	1049A	1.45	147	6.93	705	3.31	7.56		18.09					10.99	1.45	25.02	8.26	26.81	79.00	450.00	0.12	98.76	0.27	0.62	0.52
	1049A	1058A	4.50	455	11.43	1160	3.21	12.07		18.09					10.99	4.50	29.52	9.74	32.80	81.50	450.00	0.12	98.76	0.33	0.62	0.56
PARK	1058A	1059A	5.80	586	17.23	1746	3.10	17.54		18.09			1.27	1.27	11.20	7.07	36.59	12.07	40.81	120.50	450.00	0.12	98.76	0.41	0.62	0.59
	1059A	1090A	0.70	71	17.93	1817	3.09	18.20		18.09				1.27	11.20	0.70	37.29	12.31	41.71	123.00	450.00	0.12	98.76	0.42	0.62	0.59
PARK, EXT FUT			4.30	620	22.23	2437			5.27	23.36			0.56	1.83		10.13	47.42									
	1090A	1095A	12.65	1278	34.88	3715	2.89	34.79		23.36				1.83	14.49	12.65	60.07	19.82	69.10	75.00	450.00	0.15	110.42	0.63	0.69	0.73
Contribution from Trunk 2, MH 1094A-1095A					10.74	1478				0.00				4.64			15.38									
	1095A	1096A	0.50	51	46.12	5244	2.78	47.24		23.36				6.47	15.24	0.50	75.95	25.06	87.54	79.00	525.00	0.12	148.98	0.59	0.69	0.72
	1096A	1107A	2.26	229	48.38	5473	2.77	49.13		23.36				6.47	15.24	2.26	78.21	25.81	90.18	86.50	525.00	0.10	136.00	0.66	0.63	0.67
	1107A	1108A	4.24	429	52.62	5902	2.74	52.41		23.36				6.47	15.24	4.24	82.45	27.21	94.86	87.00	525.00	0.42	278.71	0.34	1.29	1.16
PARK	1108A	1132A	0.06	8	52.68	5910	2.74	52.48		23.36			1.16	7.63	15.43	1.22	83.67	27.61	95.52	31.50	525.00	0.10	136.00	0.70	0.63	0.68
CONTRIBUTION FROM EXTERNAL			0.96	144	53.64	6054	2.73	53.56	4.42	27.78				7.63		5.38	89.05									
			0.95	137	54.59	6191				27.78				7.63		0.95	90.00									
	1132A	1133A	9.80	990	64.39	7181	2.68	62.37		27.78				7.63	18.11	9.80	99.80	32.93	113.41	15.50	600.00	0.10	194.17	0.58	0.69	0.72
	1133A	1A (B.O.)			64.39	7181	2.68	62.37		27.78				7.63	18.11	0.00	99.80	32.93	113.41	15.50	600.00	0.10	194.17	0.58	0.69	0.72
To MH 1A By Others																										
Trunk 2																										
PARK	1203A	1204A	0.40	58	0.40	58				0.00			4.64	4.64	0.75	5.04	5.04	1.66	2.41	81.00	300.00	0.65	77.96	0.03	1.10	0.48
	1204A	1205A	0.89	129	1.29	187	3.53	2.14		0.00				4.64	0.75	0.89	5.93	1.96	4.85	111.00	300.00	0.20	43.25	0.11	0.61	0.40
	1205A	1206A	0.83	120	2.12	307	3.46	3.44		0.00				4.64	0.75	0.83	6.76	2.23	6.42	74.00	300.00	0.20	43.25	0.15	0.61	0.44
	1206A	1207A	1.03	149	3.15	456	3.40	5.02		0.00				4.64	0.75	1.03	7.79	2.57	8.34	75.00	300.00	0.20	43.25	0.19	0.61	0.47
	1207A	1208A			3.15	456				0.00				4.64	0.75	0.00	7.79	2.57	3.32	100.50	300.00	0.20	43.25	0.08	0.61	0.37

LICENSED PROFESSIONAL ENGINEER
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OCT. 18, 2019
PROVINCE OF ONTARIO

DESIGN PARAMETERS

Park Flow =	9300	L/ha/da	0.108	Harmon Correction Factor =	0.800		
Average Daily Flow =	280	l/p/day		Industrial Peak Factor = as per MOE Graph			
Comm/Inst Flow =	35000	L/ha/da	0.405	Extraneous Flow =	0.330	L/s/ha	
Industrial Flow =	35000	L/ha/da	0.405	Minimum Velocity =	0.600	m/s	
Max Res. Peak Factor =	4.00			Manning's n = (Conc)	0.013	(Pvc)	0.013
Commercial/Inst./Park Peak Factor =	1.50	if ICI >20%	1.00	if ICI <20%			
Mixed Use	35000.00	L/ha/da					
Institutional =	0.405	l/s/Ha					

Designed: R.B	PROJECT: Orleans EUC MUC		
Checked: K.M	LOCATION: City of Ottawa		
Dwg. Reference:	File Ref: 14-733	Date: October, 2019	Sheet No. 1 of 2

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D1

SANITARY SEWER CALCULATION SHEET

Manning's n=0.013

LOCATION			RESIDENTIAL AREA AND POPULATION						COMM		INSTIT		PARK		C+I+I	INFILTRATION				PIPE						
STREET	FROM M.H.	TO M.H.	AREA (ha)	POP.	CUMULATIVE AREA (ha)	CUMULATIVE POP.	PEAK FACT.	PEAK FLOW (l/s)	AREA (ha)	ACCU. AREA (ha)	AREA (ha)	ACCU. AREA (ha)	AREA (ha)	ACCU. AREA (ha)	PEAK FLOW (l/s)	TOTAL AREA (ha)	ACCU. AREA (ha)	INFILT. FLOW (l/s)	TOTAL FLOW (l/s)	DIST (m)	DIA (mm)	SLOPE (%)	CAP. (FULL) (l/s)	RATIO Q act/Q cap	VEL. (FULL) (m/s)	VEL. (ACT.) (m/s)
	1208A	1209A	1.90	274	5.05	730	3.31	7.83		0.00				4.64	0.75	1.90	9.69	3.20	11.78	14.50	300.00	0.20	43.25	0.27	0.61	0.51
	1209A	1210A			5.05	730				0.00				4.64	0.75	0.00	9.69	3.20	3.95	112.50	300.00	0.20	43.25	0.09	0.61	0.38
	1210A	1211A			5.05	730				0.00				4.64	0.75	0.00	9.69	3.20	3.95	120.00	300.00	0.20	43.25	0.09	0.61	0.38
	1211A	1212A	3.98	574	9.03	1304	3.18	13.44		0.00				4.64	0.75	3.98	13.67	4.51	18.70	43.50	300.00	0.20	43.25	0.43	0.61	0.59
	1212A	1091A			9.03	1304				0.00				4.64	0.75	0.00	13.67	4.51	5.26	10.00	300.00	0.20	43.25	0.12	0.61	0.41
	1091A	1093A	0.53	54	9.56	1358	3.17	13.95		0.00				4.64	0.75	0.53	14.20	4.69	19.39	33.00	300.00	0.20	43.25	0.45	0.61	0.59
	1093A	1094A	0.64	65	10.20	1423	3.16	14.57		0.00				4.64	0.75	0.64	14.84	4.90	20.22	84.00	375.00	0.15	67.91	0.30	0.61	0.53
	1094A	1095A	0.54	55	10.74	1478	3.15	15.09		0.00				4.64	0.75	0.54	15.38	5.08	20.92	84.50	375.00	0.15	67.91	0.31	0.61	0.54
To Trunk 1, Pipe 1095A-1096A					10.74	1478				0.00				4.64			15.38									
North East Sanitary Trunk																										
External Commercial					0.00	0			10.40	10.40						10.40	10.40									
Mixed Use Block*			2.43	2531	2.43	2531	3.00	24.61	2.43	12.83						4.86	15.26									
					2.43	2531			3.45	16.28						3.45	18.71									
	204A	205A			2.43	2531			6.33	22.61			0.19	0.19	13.77	6.52	25.23	8.33	22.10	525.00	375.00	0.14	65.60	0.34	0.59	0.53
To Pipe 205A - 206A					2.43	2531				22.61				0.19			25.23		22.10							
	201A	202A			0.00	0			5.67	5.67					3.45	5.67	5.67	1.87	5.32	266.00	200.00	0.32	18.55	0.29	0.59	0.51
	202A	203A			0.00	0			0.00	5.67					3.45	0.00	5.67	1.87	5.32	176.00	250.00	0.24	29.13	0.18	0.59	0.44
	203A	205A			0.00	0			10.44	16.11					9.79	10.44	16.11	5.32	15.11	292.50	250.00	0.24	29.13	0.52	0.59	0.60
Contribution from Pipe 204A - 205A					2.43	2531				22.61				0.19			25.23									
	205A	206A			2.43	2531				38.72				0.19	23.56	0.00	41.34	13.64	37.20	150.50	375.00	0.20	78.41	0.47	0.71	0.70
To Existing Vanguard Drive Sanitary					2.43	2531				38.72				0.19			41.34		37.20							
South West Sanitary Trunk																										
Mixed Use Block			3.66	528	3.66	528			3.66	3.66					2.22	7.32	7.32									
Mid-High Density Residential			15.19	1535	18.85	2063	3.06	20.46	4.32	7.98					4.85	19.51	26.83									
	301A	302A	2.28	329	21.13	2392	3.02	23.41		7.98			0.43	0.43	4.92	2.71	29.54	9.75	38.08	791.00	375.00	0.14	65.60	0.58	0.59	0.61
To Sanitary By Others					21.13	2392				7.98				0.43			29.54		38.08							
Road			0.89	0	0.89	0									0.00	0.89	0.89	0.29	0.29	49.00	200.00	0.32	18.55	0.02	0.59	0.23
To Existing Sanitary, Fern Casey Street					0.89	0				0.00				0.00			0.89		0.29							
Mid-High Density Residential			3.69	532	3.69	532	3.37	5.81		0.00				0.00	0.00	3.69	3.69	1.22	7.03	49.00	200.00	0.32	18.55	0.38	0.59	0.55
To Existing Sanitary, Axis Way					3.69	532				0.00				0.00			3.69		7.03							
South East Sanitary Trunk											9.11	9.11	0.36	0.36		9.47	9.47									
Existing Medium Density**	401A	402A	0.99	227	0.99	227	3.50	2.57		0.00	0.23	9.34		0.36	5.73	1.22	10.69	3.53	11.83	114.00	250.00	0.24	29.13	0.41	0.59	0.56
To Existing Sanitary to Gerry Lalonde Drive					0.99	227				0.00		9.34		0.36			10.69		11.83							

*Note: Proposed population 2531 per background servicing study

**Note: Existing population 227 per background servicing study

DESIGN PARAMETERS

Park Flow =	9300	L/ha/da	0.108	Harmon Correction Factor =	0.800		
Average Daily Flow =	280	l/p/day		Industrial Peak Factor = as per MOE Graph			
Comm/Inst Flow =	35000	L/ha/da	0.405	Extraneous Flow =	0.330	L/s/ha	
Industrial Flow =	35000	L/ha/da	0.405	Minimum Velocity =	0.600	m/s	
Max Res. Peak Factor =	4.00			Manning's n = (Conc)	0.013	(Pvc)	0.013
Commercial/Inst./Park Peak Factor =	1.50	if ICI >20%	1.00	if ICI <20%			
Mixed Use	35000.00	L/ha/da					
Institutional =	0.405	l/s/Ha					

LICENSED PROFESSIONAL ENGINEER
K. MITIC
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OCT. 18/2019
PROVINCE OF ONTARIO

Designed: R.B	PROJECT: Orleans EUC MUC		
Checked: K.M	LOCATION: City of Ottawa		
Dwg. Reference:	File Ref: 14-733	Date: October, 2019	Sheet No. 2 of 2

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D2

SANITARY SEWER CALCULATION SHEET

Manning's n=0.013

LOCATION			RESIDENTIAL AREA AND POPULATION						COMM		INSTIT		PARK		C+I+I	INFILTRATION				PIPE						
STREET	FROM M.H.	TO M.H.	AREA (ha)	POP.	CUMULATIVE AREA (ha)	CUMULATIVE POP.	PEAK FACT.	PEAK FLOW (l/s)	AREA (ha)	ACCU. AREA (ha)	AREA (ha)	ACCU. AREA (ha)	AREA (ha)	ACCU. AREA (ha)	PEAK FLOW (l/s)	TOTAL AREA (ha)	ACCU. AREA (ha)	INFILT. FLOW (l/s)	TOTAL FLOW (l/s)	DIST (m)	DIA (mm)	SLOPE (%)	CAP. (FULL) (l/s)	RATIO Q act/Q cap	VEL. (FULL) (m/s)	VEL. (ACT.) (m/s)
NW Quadrant to Nature Trail Crescent	1133A	1A (B.O.)			64.33	7168	2.68	62.26		35.83				7.63	23.00	0.00	107.79	35.57	120.83							
Per Sanitary Sewer Calculation Sheet - prepared by DSEL, October 2018					64.33	7168	2.68			35.83				7.63					120.83							
3490 Innes Rd. Future Dev. Blocks					4.33	1402	3.16	14.36	5.40	5.40				0.00	3.28	9.73	9.73	3.21	20.85							
Future Dev. Blocks taken at EUC Phase 3 CDP Mid-High Residential Density (144 pop/ha)																										
3490 Innes Road					19.75	1516	3.14	15.43	0.00	0.00			1.42	1.42	0.23	21.17	21.17	6.99	22.65							
Per Sanitary Sewer Calculation Sheet - Caivan Communities Orleans Village - prepared by DSEL, May 2018																										
Total to Existing Nature Trail Crescent sewer					88.41	10086	2.56	83.68	41.23	41.23			9.05	9.05	26.51	138.69	138.69	45.77	155.96							

DESIGN PARAMETERS

Park Flow =	9300	L/ha/da	0.108	Harmon Correction Factor =		0.800		
Average Daily Flow =	280	l/p/day		Industrial Peak Factor = as per MOE Graph				
Comm/Inst Flow =	35000	L/ha/da	0.405	Extraneous Flow =		0.330	L/s/ha	
Industrial Flow =	35000	L/ha/da	0.405	Minimum Velocity =		0.600	m/s	
Max Res. Peak Factor =	4.00			Manning's n =	(Conc)	0.013	(Pvc)	0.013
Commercial/Inst./Park Peak Factor =	1.50	if ICI >20%	1.00	if ICI <20%				
Mixed Use	28000.00	L/ha/da						
Institutional =	0.405	l/s/Ha						

Designed: BK

Checked:

Dwg. Reference:

PROJECT: **Orleans EUC MUC**

LOCATION: **City of Ottawa**

File Ref: 14-733

Date: October, 2018

Sheet No. 1 of 1

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PROVINCE OF ONTARIO