



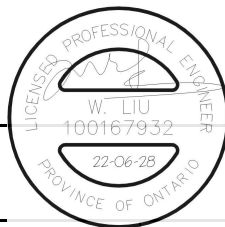
SANITARY SEWER CALCULATION SHEET



Manning's n=0.013

LOCATION			RESIDENTIAL AREA AND POPULATION								COMM		INSTIT		PARK		C+H		INFILTRATION			PIPE											
STREET	FROM M.H.	TO M.H.	AREA (ha)	UNITS	UNITS Singles	UNITS Townhouse	POP.	CUMULATIVE		PEAK FACT.	PEAK FLOW (l/s)	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.							
								AREA (ha)	POP.																	(FULL) (m/s)	(ACT.) (m/s)						
Ainsworth Crescent																																	
	80A	81A	0.51	10	10		34	0.51	34	3.68	0.41				0.00	0.00			0.00	0.00	0.51	0.51	0.17		0.57	69.0	200	0.65	26.44	0.02	0.84	0.34	
	81A	82A	0.38	11	11		38	0.89	72	3.62	0.85				0.00	0.00			0.00	0.00	0.38	0.89	0.29		1.14	70.0	250	0.25	29.73	0.04	0.61	0.29	
To Sapling Grove, Pipe 82A - 85A								0.89	72						0.00	0.00					0.89												
	78A	59A	0.07	1	1		4	0.07	4	3.76	0.05				0.00	0.00			0.00	0.00	0.07	0.07	0.02		0.07	13.0	200	0.65	26.44	0.00	0.84	0.17	
	59A	60A	0.45	11	11		38	0.52	42	3.66	0.50				0.00	0.00			0.00	0.00	0.45	0.52	0.17		0.67	76.0	250	0.25	29.73	0.02	0.61	0.24	
	60A	61A	0.41	12	12		41	0.93	83	3.61	0.97				0.00	0.00			0.00	0.00	0.41	0.93	0.31		1.28	75.0	250	0.25	29.73	0.04	0.61	0.30	
To Sapling Grove, Pipe 61A - 82A								0.93	83						0.00	0.00					0.93												
Syringa Court																																	
	55A	56A	0.14	2	2		7	0.14	7	3.74	0.08				0.00	0.00			0.00	0.00	0.14	0.14	0.05		0.13	11.0	200	0.65	26.44	0.00	0.84	0.22	
	56A	57A	0.42	11	11		38	0.56	45	3.66	0.53				0.00	0.00			0.00	0.00	0.42	0.56	0.18		0.72	67.0	250	0.65	47.94	0.01	0.98	0.35	
	57A	58A	0.34	10	10		34	0.90	79	3.62	0.93				0.00	0.00			0.00	0.00	0.34	0.90	0.30		1.22	67.5	250	0.25	29.73	0.04	0.61	0.29	
To Sapling Grove, Pipe 58A - 61A								0.90	79						0.00	0.00					0.90												
	55A	53A	0.17	3	3		11	0.17	11	3.73	0.13				0.00	0.00			0.00	0.00	0.17	0.17	0.06		0.19	45.5	200	0.65	26.44	0.01	0.84	0.24	
	53A	49A	0.08	1	1		4	0.25	15	3.72	0.18				0.00	0.00			0.00	0.00	0.08	0.25	0.08		0.26	9.0	250	0.25	29.73	0.01	0.61	0.18	
	49A	50A	0.44	11	11		38	0.69	53	3.65	0.63				0.00	0.00			0.00	0.00	0.44	0.69	0.23		0.85	68.5	250	0.25	29.73	0.03	0.61	0.27	
	50A	51A	0.34	10	10		34	1.03	87	3.61	1.02				0.00	0.00			0.00	0.00	0.34	1.03	0.34		1.36	66.5	250	0.25	29.73	0.05	0.61	0.31	
To Sapling Grove, Pipe 51A - 58A								1.03	87						0.00	0.00					1.03												
Ecology Lane																																	
	880A	88A	0.44	10	10		34	0.44	34	3.68	0.41				0.00	0.00			0.00	0.00	0.44	0.44	0.15		0.55	76.0	200	0.65	26.44	0.02	0.84	0.33	
Contribution From Sapling Grove, Pipe 85A - 88A								5.48	453						0.00	0.00					5.48	5.92											
	88A	91A	0.18	4	4		14	6.10	501	3.38	5.49				0.00	0.00			0.00	0.00	0.18	6.10	2.01		7.50	60.0	250	0.25	29.73	0.25	0.61	0.50	
Contribution From Peninsula Road, Pipe 90A - 91A								0.78	79						0.00	0.00					0.78	6.88											
	91A	92A	0.08				0	6.96	580	3.35	6.30				0.00	0.00			0.00	0.00	0.08	6.96	2.30		8.60	62.5	250	0.25	29.73	0.29	0.61	0.52	
To Conservancy Drive, Pipe 92A - 93A								6.96	580						0.00	0.00					6.96												
Anemone Mews																																	
			0.09				0	0.09	0						0.00	0.00			0.00	0.00	0.09	0.09											
Contribution From Peninsula Road, Pipe 62A - 63A								0.95	90						0.00	0.00					0.95	1.04											
Contribution From Peninsula Road, Pipe 89A - 63A								0.17	14						0.00	0.00					0.17	1.21											
	63A	75A	0.09				0	1.30	104	3.59	1.21				0.00	0.00			0.00	0.00	0.09	1.30	0.43		1.64	62.5	250	0.25	29.73	0.06	0.61	0.32	
To Conservancy Drive, Pipe 75A - 76A								1.30	104						0.00	0.00					1.30												
Contribution From Les Emmerson Drive (N), Pipe 70A - 72A								1.09	99						0.00	0.00					1.09	1.09											
Contribution From Les Emmerson Drive (N), Pipe 71A - 72A								2.25	216						0.00	0.00					2.25	3.34											
	72A	74A	0.27	6	6		21	3.61	336	3.45	3.75				0.00	0.00			0.00	0.00	0.27	3.61	1.19		4.94	58.5	250	0.25	29.73	0.17	0.61	0.45	
Contribution From Les Emmerson Drive (S), Pipe 69A - 74A								1.30	132						0.00	0.00					1.30	4.91											
Contribution From Les Emmerson Drive (S), Pipe 73A - 74A								0.71	76						0.00	0.00					0.71	5.62											
	74A	750A	0.26	6	6		21	5.88	565	3.36	6.15				0.00	0.00			0.00	0.00	0.26	5.88	1.94		8.09	52.0	250	0.25	29.73	0.27	0.61	0.51	
	750A	75A	0.01				0	5.89	565	3.36	6.15				0.00	0.00			0.00	0.00	0.01	5.89	1.94		8.09	10.5	250	0.25	29.73	0.27	0.61	0.51	
To Conservancy Drive, Pipe 75A - 76A								5.89	565						0.00	0.00					5.89												
Gallium Crescent																																	
	30A	31A	0.37	10	10		34	0.37	34	3.68	0.41				0.00	0.00			0.00	0.00	0.37	0.37	0.12		0.53	65.0	200	0.65	26.44	0.02	0.84	0.33	

DESIGN PARAMETERS Park Flow = 9300 L/ha/da Average Daily Flow = 280 l/p/day Comm/Inst Flow = 28000 L/ha/da Industrial Flow = 35000 L/ha/da 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: A.K. Checked: W.L. Dwg. Reference: Sanitary Drainage Plan, Dwg. No. 110-112						PROJECT: BARRHAVEN CONCERVANCY EAST PH2, 3, AND JOCK RIVER LOCATION: City of Ottawa File Ref: 20-1180 Date: Jun 2022 Sheet No. 1 of 6					
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SANITARY SEWER CALCULATION SHEET

Manning's n=0.013

LOCATION			RESIDENTIAL AREA AND POPULATION							COMM		INSTIT		PARK		C+I		INFILTRATION			PIPE								
STREET	FROM M.H.	TO M.H.	AREA (ha)	UNITS	UNITS Singles	UNITS Townhouse	POP.	CUMULATIVE		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.	
								AREA (ha)	POP.																			(FULL) (m/s)	(ACT.) (m/s)
Deciduous Crescent																													
	8A	9A	0.44	17		17	46	0.44	46	3.66	0.55		0.00		0.00	0.00	0.00	0.44	0.44	0.15	0.69	62.0	200	0.65	26.44	0.03	0.84	0.36	
	9A	11A	0.26	10		10	27	0.70	73	3.62	0.86		0.00		0.00	0.00	0.00	0.26	0.70	0.23	1.09	66.0	250	0.25	29.73	0.04	0.61	0.29	
To Conservancy Drive, Pipe 11A - 15A								0.70	73				0.00		0.00				0.70										
	12A	13A	0.09	2		2	6	0.09	6	3.75	0.07		0.00		0.00	0.00	0.00	0.09	0.09	0.03	0.10	7.5	200	0.65	26.44	0.00	0.84	0.20	
	13A	14A	0.38	15		15	41	0.47	47	3.66	0.56		0.00		0.00	0.00	0.00	0.38	0.47	0.16	0.71	66.0	250	0.25	29.73	0.02	0.61	0.25	
	14A	15A	0.30	11		11	30	0.77	77	3.62	0.90		0.00		0.00	0.00	0.00	0.30	0.77	0.25	1.16	69.5	250	0.25	29.73	0.04	0.61	0.29	
To Conservancy Drive, Pipe 15A - 18A								0.77	77				0.00		0.00				0.77										
Ephemeral Crescent																													
	2A	3A	0.16	1	1		4	0.16	4	3.76	0.05		0.00		0.00	0.00	0.00	0.16	0.16	0.05	0.10	13.0	200	0.70	27.44	0.00	0.87	0.19	
			0.25	5	5		17	0.41	21				0.00		0.00	0.00	0.00	0.25	0.41										
	3A	4A	0.31	13		13	36	0.72	57	3.64	0.67		0.00		0.00	0.00	0.00	0.31	0.72	0.24	0.91	107.5	250	0.25	29.73	0.03	0.61	0.27	
	4A	15A	0.35	9		9	25	1.07	82	3.61	0.96		0.00		0.00	0.00	0.00	0.35	1.07	0.35	1.31	112.0	250	0.25	29.73	0.04	0.61	0.30	
To Conservancy Drive, Pipe 15A - 18A								1.07	82				0.00		0.00				1.07										
	5A	500A	0.14	6		6	17	0.14	17	3.71	0.20		0.00		0.00	0.00	0.00	0.14	0.14	0.05	0.25	21.0	200	0.65	26.44	0.01	0.84	0.26	
	500A	6A	0.45	22		22	60	0.59	77	3.62	0.90		0.00		0.00	0.00	0.00	0.45	0.59	0.19	1.10	78.5	250	0.25	29.73	0.04	0.61	0.29	
	6A	11A	0.48	21		21	57	1.07	134	3.57	1.55		0.00		0.00	0.00	0.00	0.48	1.07	0.35	1.90	104.5	250	0.25	29.73	0.06	0.61	0.34	
To Conservancy Drive, Pipe 11A - 15A								1.07	134				0.00		0.00				1.07										
Borrisokane Road																													
	1002A	1001A	0.18	4		4	11	0.18	11	3.73	0.13		0.00		0.00	0.00	0.00	0.18	0.18	0.06	0.19	40.0	200	0.65	26.44	0.01	0.84	0.24	
	1001A	10A	0.40	12		12	33	0.58	44	3.66	0.52		0.00		0.00	0.00	0.00	0.40	0.58	0.19	0.71	100.0	250	0.25	29.73	0.02	0.61	0.25	
To Conservancy Drive, Pipe 10A - 11A								0.58	44				0.00		0.00				0.58										
	1004A	1003A	0.50	14		14	38	0.50	38	3.67	0.45		0.00		0.00	0.00	0.00	0.50	0.50	0.17	0.62	98.5	200	0.65	26.44	0.02	0.84	0.35	
	1003A	10A	0.41	13		13	36	0.91	74	3.62	0.87		0.00		0.00	0.00	0.00	0.41	0.91	0.30	1.17	100.0	250	0.25	29.73	0.04	0.61	0.29	
To Conservancy Drive, Pipe 10A - 11A								0.91	74				0.00		0.00				0.91										
Conservancy Drive																													
			12.88				1182	12.88	1182			4.21	4.21		0.00	0.58	0.58		17.67	17.67									
	PLUG	10A	36.45				3771	49.33	4953	2.80	44.93	13.70	17.91		0.00	3.47	4.05	9.36	53.62	71.29	23.53	77.81	20.5	525	0.10	136.00	0.57	0.63	0.65
Contribution From Borrisokane Road, Pipe 1001A - 10A								0.58	44				0.00		0.00				0.58	71.87									
Contribution From Borrisokane Road, Pipe 1003A - 10A								0.91	74				0.00		0.00				0.91	72.78									
	10A	11A	0.15				0	50.97	5071	2.79	45.87		17.91		0.00	4.05	9.36	0.15	72.93	24.07	79.30	71.5	525	0.10	136.00	0.58	0.63	0.65	
Contribution From Ephemeral Crescent, Pipe 6A - 11A								1.07	134				0.00		0.00				1.07	74.00									
Contribution From Deciduous Crescent, Pipe 9A - 11A								0.70	73				0.00		0.00				0.70	74.70									
	11A	15A	0.30	6	6		21	53.04	5299	2.78	47.69		17.91		0.00	4.05	9.36	0.30	75.00	24.75	81.80	59.0	525	0.10	136.00	0.60	0.63	0.66	
Contribution From Deciduous Crescent, Pipe 14A - 15A								0.77	77				0.00		0.00				0.77	75.77									
Contribution From Ephemeral Crescent, Pipe 4A - 15A								1.07	82				0.00		0.00				1.07	76.84									
	15A	18A	0.12				0	55.00	5458	2.77	48.95		17.91		0.00	4.05	9.36	0.12	76.96	25.40	83.71	58.5	525	0.10	136.00	0.62	0.63	0.66	
Contribution From Les Emmerson Drive (N), Pipe 17A - 18A								0.83	75				0.00		0.00				0.83	77.79									
	18A	23A	0.31	5	5		17	56.14	5550	2.76	49.68		17.91		0.00	4.05	9.36	0.31	78.10	25.77	84.81	76.5	525	0.10	136.00	0.62	0.63	0.66	
	23A	24A	0.49	11	11		38	56.63	5588	2.76	49.98		17.91		0.00	4.05	9.36	0.49	78.59	25.93	85.28	71.0	525	0.10	136.00	0.63	0.63	0.66	
	24A	47A	0.61	15	15		51	57.24	5639	2.76	50.38		17.91		0.00	4.05	9.36	0.61	79.20	26.14	85.88	106.0	525	0.10	136.00	0.63	0.63	0.66	

DESIGN PARAMETERS

Park Flow =	9300	L/ha/da	0.10764	I/s/ha
Average Daily Flow =	280	l/p/day		
Comm/Inst Flow =	28000	L/ha/da	0.3241	I/s/ha
Industrial Flow =	35000	L/ha/da	0.40509	I/s/ha
Max Res. Peak Factor =	4.00			
Commercial/Inst./Park Peak Factor =	1.50			
Institutional =	0.32	I/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 =	0.013	(Conc) (Pvc)	0.013	
Townhouse coeff=	2.7			
Single house coeff=	3.4			

Designed:	A.K.	PROJECT:	BARRHAVEN CONCERVANCY EAST PH2, 3, AND JOCK RIVER		
Checked:	W.L.	LOCATION:	City of Ottawa		
Dwg. Reference:	Sanitary Drainage Plan, Dwgs. No. 110-112	File Ref:	20-1180	Date:	Jun 2022
				Sheet No.	4
				of	6



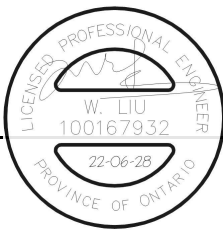
SANITARY SEWER CALCULATION SHEET



Manning's n=0.013

LOCATION			RESIDENTIAL AREA AND POPULATION						COMM		INSTIT		PARK		C+I		INFILTRATION			PIPE									
STREET	FROM M.H.	TO M.H.	AREA (ha)	UNITS	UNITS Singles	UNITS Townhouse	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)
Contribution From Mineral Street, Pipe 39A - 47A							5.28	398					0.00	0.00			3.22		8.50	87.70									
Contribution From Mineral Street, Pipe 46A - 47A							1.45	137					0.00	0.00			0.00		1.45	89.15									
	47A	48A	0.56	14	14		48	64.53	6222	2.72	54.94	17.91	0.00	0.00	7.27	9.88	0.56	89.71	29.60	94.42	99.0	525	0.10	136.00	0.69	0.63	0.68		
	48A	75A	0.42	10	10		34	64.95	6256	2.72	55.20	17.91	0.00	0.00	7.27	9.88	0.42	90.13	29.74	94.82	76.5	525	0.10	136.00	0.70	0.63	0.68		
Contribution From Anemone Mews, Pipe 63A - 75A							1.30	104					0.00	0.00			0.00		1.30	91.43									
Contribution From Anemone Mews, Pipe 750A - 75A							5.89	565					0.00	0.00			0.00		5.89	97.32									
	75A	76A	0.31	7	7		24	72.45	6949	2.69	60.53	17.91	0.00	0.00	7.27	9.88	0.31	97.63	32.22	102.63	62.0	525	0.10	136.00	0.75	0.63	0.69		
	76A	77A	0.39	11	11		38	72.84	6987	2.69	60.82	17.91	0.00	0.00	7.27	9.88	0.39	98.02	32.35	103.04	60.0	525	0.10	136.00	0.76	0.63	0.69		
	77A	92A	0.33	9	9		31	73.17	7018	2.68	61.05	17.91	0.00	0.00	7.27	9.88	0.33	98.35	32.46	103.39	53.0	525	0.10	136.00	0.76	0.63	0.69		
Contribution From Ecology Lane, Pipe 91A - 92A							6.96	580					0.00	0.00			0.00		6.96	105.31									
	92A	93A	0.51	12	12		41	80.64	7639	2.66	65.75	17.91	0.00	0.00	7.27	9.88	0.51	105.82	34.92	110.55	90.5	525	0.10	136.00	0.81	0.63	0.70		
	93A	119A	0.37	6	6		21	81.01	7660	2.65	65.91	17.91	0.00	0.00	7.79	9.96	0.89	106.71	35.21	111.08	88.0	525	0.10	136.00	0.82	0.63	0.70		
To Canoe Street, Pipe 119A - 120A							81.01	7660					17.91	0.00	0.52	7.79	9.96	0.89	106.71										
Meander Way																													
	84A	85A	0.50	13	13		45	0.50	45	3.66	0.53	0.00	0.00	0.00	0.00	0.50	0.50	0.17	0.70	92.5	200	0.65	26.44	0.03	0.84	0.36			
To Sapling Grove, Pipe 85A - 88A							0.50	45					0.00	0.00			0.00		0.50										
	84A	86A	0.16	1	1		4	0.16	4	3.76	0.05	0.00	0.00	0.00	0.00	0.16	0.16	0.05	0.10	13.0	200	0.65	26.44	0.00	0.84	0.20			
	86A	87A	0.22	4	4		14	0.38	18	3.71	0.22	0.00	0.00	0.00	0.00	0.22	0.38	0.13	0.34	50.5	250	0.65	47.94	0.01	0.98	0.28			
	87A	114A	0.23	5	5		17	0.61	35	3.67	0.42	0.00	0.00	0.00	0.00	0.23	0.61	0.20	0.62	58.0	250	0.25	29.73	0.02	0.61	0.24			
	114A	115A	0.07	1	1		4	0.68	39	3.67	0.46	0.00	0.00	0.00	0.00	0.07	0.68	0.22	0.69	10.0	250	0.25	29.73	0.02	0.61	0.25			
	115A	116A	0.63	17	17		58	1.31	97	3.60	1.13	0.00	0.00	0.00	0.00	0.63	1.31	0.43	1.56	110.5	250	0.25	29.73	0.05	0.61	0.32			
To Peninsula Road, Pipe 116A - 117A							1.31	97					0.00	0.00			0.00		1.31										
Peninsula Road																													
	89A	63A	0.17	4	4		14	0.17	14	3.72	0.17	0.00	0.00	0.00	0.00	0.17	0.17	0.06	0.22	41.0	200	0.65	26.44	0.01	0.84	0.26			
To Anemone Mews, Pipe 63A - 75A							0.17	14					0.00	0.00			0.00		0.17										
	380A	38A	0.45	8	8		28	0.45	28	3.69	0.33	0.00	0.00	0.00	0.00	0.45	0.45	0.15	0.48	57.0	200	0.65	26.44	0.02	0.84	0.32			
	38A	39A	0.60	16	16		55	1.05	83	3.61	0.97	0.00	0.00	0.00	0.00	0.60	1.05	0.35	1.32	108.5	250	0.25	29.73	0.04	0.61	0.30			
To Mineral Street, Pipe 39A - 47A							1.05	83					0.00	0.00			0.00		1.05										
	620A	62A	0.50	13	13		45	0.50	45	3.66	0.53	0.00	0.00	0.00	0.00	0.50	0.50	0.17	0.70	83.0	200	0.65	26.44	0.03	0.84	0.36			
	62A	63A	0.45	13	13		45	0.95	90	3.60	1.05	0.00	0.00	0.00	0.00	0.45	0.95	0.31	1.36	82.0	250	0.25	29.73	0.05	0.61	0.31			
To Anemone Mews, Pipe 63A - 75A							0.95	90					0.00	0.00			0.00		0.95										
	89A	90A	0.41	13	13		45	0.41	45	3.66	0.53	0.00	0.00	0.00	0.00	0.41	0.41	0.14	0.67	67.0	200	0.65	26.44	0.03	0.84	0.35			
	90A	91A	0.37	10	10		34	0.78	79	3.62	0.93	0.00	0.00	0.00	0.00	0.37	0.78	0.26	1.18	68.5	250	0.75	51.50	0.02	1.05	0.42			
To Ecology Lane, Pipe 91A - 92A							0.78	79					0.00	0.00			0.00		0.78										
	91A	116A	0.18	4	4		14	0.18	14	3.72	0.17	0.00	0.00	0.00	0.00	0.18	0.18	0.06	0.23	58.5	200	0.65	26.44	0.01	0.84	0.26			
Contribution From Meander Way, Pipe 115A - 116A							1.31	97					0.00	0.00			0.00		1.31	1.49									
	116A	117A	0.23	6	6		21	1.72	132	3.57	1.53	0.00	0.00	0.00	0.00	0.23	1.72	0.57	2.09	58.5	250	0.25	29.73	0.07	0.61	0.34			
Contribution From Elation Heights, Pipe 109A - 117A							0.74	55					0.00	0.00			0.74	2.46											
	117A	118A	0.18	3	3		11	2.64	198	3.52	2.26	0.00	0.00	0.00	0.00	0.18	2.64	0.87	3.13	59.0	250	0.25	29.73	0.11	0.61	0.39			
To Canoe Street, Pipe 118A - 1180A							2.64	198					0.00	0.00			0.00		2.64										

DESIGN PARAMETERS Park Flow = 9300 L/ha/day Average Daily Flow = 280 l/p/day Comm/Inst Flow = 28000 L/ha/day Industrial Flow = 35000 L/ha/day 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 = 0.013 (Pvc) 0.013 Townhouse coeff= 2.7 Single house coeff= 3.4										Designed: A.K. Checked: W.L. Dwg. Reference: Sanitary Drainage Plan, Dwgs. No. 110-112					PROJECT: BARRHAVEN CONCERNANCY EAST PH2, 3, AND JOCK RIVER LOCATION: City of Ottawa File Ref: 20-1180 Date: Jun 2022 Sheet No. 5 of 6				
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SANITARY SEWER CALCULATION SHEET

Manning's n=0.013

LOCATION			RESIDENTIAL AREA AND POPULATION							COMM		INSTIT		PARK		C+I		INFILTRATION			PIPE								
STREET	FROM M.H.	TO M.H.	AREA (ha)	UNITS	UNITS Singles	UNITS Townhouse	POP.	CUMULATIVE		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.	
								AREA (ha)	POP.																			(FULL) (m/s)	(ACT.) (m/s)
Elation Heights																													
	112A	113A	0.05	1	1		4	0.05	4	3.76	0.05		0.00	0.00	0.00	0.00	0.00	0.05	0.05	0.02	0.07	15.5	200	0.65	26.44	0.00	0.84	0.17	
To Canoe Street, Pipe 113A - 118A																													
	110A	109A	0.16	1	1		4	0.16	4	3.76	0.05		0.00	0.00	0.00	0.00	0.16	0.16	0.05	0.10	13.5	200	0.65	26.44	0.00	0.84	0.20		
	109A	117A	0.58	15	15		51	0.74	55	3.64	0.65		0.00	0.00	0.00	0.00	0.58	0.74	0.24	0.89	103.0	250	0.25	29.73	0.03	0.61	0.27		
To Peninsula Road, Pipe 117A - 118A																													
Jollity Crescent																													
	104A	105A	0.39	10	10		34	0.39	34	3.68	0.41		0.00	0.00	0.00	0.00	0.39	0.39	0.13	0.53	69.0	200	0.80	29.34	0.02	0.93	0.35		
To Canoe Street, Pipe 105A - 108A																													
	106A	107A	0.15	1	1		4	0.15	4	3.76	0.05		0.00	0.00	0.00	0.00	0.15	0.15	0.05	0.10	12.0	200	0.70	27.44	0.00	0.87	0.19		
	107A	108A	0.48	12	12		41	0.63	45	3.66	0.53		0.00	0.00	0.00	0.00	0.48	0.63	0.21	0.74	87.0	250	0.25	29.73	0.02	0.61	0.25		
To Canoe Street, Pipe 108A - 113A																													
Euphoria Crescent																													
	101A	102A	0.36	7	7		24	0.36	24	3.70	0.29		0.00	0.00	0.00	0.00	0.36	0.36	0.12	0.41	62.5	250	0.65	47.94	0.01	0.98	0.30		
To Canoe Street, Pipe 102A - 105A																													
	98A	99A	0.28	5	5		17	0.28	17	3.71	0.20		0.00	0.00	0.00	0.00	0.28	0.28	0.09	0.30	41.5	200	1.20	35.93	0.01	1.14	0.33		
To Canoe Street, Pipe 99A - 102A																													
Canoe Street																													
	94A	95A	0.52	3	3		11	0.52	11	3.73	0.13		0.00	0.00	0.00	0.00	0.52	0.52	0.17	0.30	38.5	200	0.65	26.44	0.01	0.84	0.28		
	95A	96A	0.49	9	9		31	1.01	42	3.66	0.50		0.00	0.00	0.00	0.00	0.49	1.01	0.33	0.83	83.5	250	0.25	29.73	0.03	0.61	0.26		
	96A	99A	0.10	2	2		7	1.11	49	3.65	0.58		0.00	0.00	0.00	0.00	0.10	1.11	0.37	0.95	22.0	250	0.25	29.73	0.03	0.61	0.27		
Contribution From Euphoria Crescent, Pipe 98A - 99A																													
	99A	102A	0.18	3	3		11	1.28	17	3.62	0.90		0.00	0.00	0.00	0.00	0.18	1.57	0.52	1.42	58.5	250	0.25	29.73	0.05	0.61	0.31		
Contribution From Euphoria Crescent, Pipe 101A - 102A																													
	102A	105A	0.22	4	4		14	2.15	115	3.58	1.33		0.00	0.00	0.00	0.00	0.22	2.15	0.71	2.04	58.5	250	0.25	29.73	0.07	0.61	0.34		
Contribution From Jollity Crescent, Pipe 104A - 105A																													
	105A	108A	0.21	4	4		14	2.75	163	3.54	1.87		0.00	0.00	0.00	0.00	0.21	2.75	0.91	2.78	58.5	250	0.25	29.73	0.09	0.61	0.38		
Contribution From Jollity Crescent, Pipe 107A - 108A																													
	108A	113A	0.20	4	4		14	3.58	222	3.50	2.52		0.00	0.00	0.00	0.00	0.20	3.58	1.18	3.70	60.0	250	0.25	29.73	0.12	0.61	0.41		
Contribution From Elation Heights, Pipe 112A - 113A																													
	113A	118A	0.43	10	10		34	4.06	260	3.48	2.94		0.00	0.00	0.00	0.00	0.43	4.06	1.34	4.27	74.0	250	0.25	29.73	0.14	0.61	0.43		
Contribution From Peninsula Road, Pipe 117A - 118A																													
	118A	1180A	0.16	3	3		11	6.86	469	3.39	5.15		0.00	0.00	0.00	0.00	0.16	6.86	2.26	7.42	42.5	250	0.25	29.73	0.25	0.61	0.50		
	1180A	119A	0.03				0	6.89	469	3.39	5.15		0.00	0.00	0.00	0.00	0.03	6.89	2.27	7.43	20.0	250	0.25	29.73	0.25	0.61	0.50		
Contribution From Conservancy Drive, Pipe 93A - 119A																													
	119A	120A	0.17				0	81.01	7660				17.91	0.00	7.79		106.71	113.60											
	120A	121A	0.21	4	4		14	88.07	8129	2.63	69.41		17.91	0.00	7.79	9.96	0.17	113.77	37.54	116.92	75.0	525	0.10	136.00	0.86	0.63	0.71		
	121A	Ex. MH 8						88.28	8143	2.63	69.51		17.91	0.00	7.79	9.96	0.21	113.98	37.61	117.09	87.5	525	0.10	136.00	0.86	0.63	0.71		
								88.28	8143	2.63	69.51		17.91	0.00	7.79	9.96	0.00	113.98	37.61	117.09	10.0	525	0.10	136.00	0.86	0.63	0.71		

DESIGN PARAMETERS										Designed:		PROJECT:										
Park Flow =	9300	L/ha/da	0.10764	I/s/ha							A.K.		BARRHAVEN CONCERNVANCY EAST PH2, 3, AND JOCK RIVER									
Average Daily Flow =	280	l/p/day								Industrial Peak Factor = as per MOE Graph												
Comm/Inst Flow =	28000	L/ha/da	0.3241	I/s/ha							Checked:		LOCATION: City of Ottawa									
Industrial Flow =	35000	L/ha/da	0.40509	I/s/ha							W.L.											
Max Res. Peak Factor =	4.00								Extraneous Flow = 0.330 L/s/ha													
Commercial/Inst./Park Peak Factor =	1.50								Minimum Velocity = 0.600 m/s													
Institutional =	0.32	I/s/ha								Manning's n = (Conc) 0.013 (Pvc) 0.013												
										Townhouse coeff= 2.7												
										Single house coeff= 3.4												
										Dwg. Reference: Sanitary Drainage Plan, Dwgs. No. 110-112		File Ref: 20-1180		Date: Jun 2022		Sheet No. 6 of 6						