Design Sheet for Conservancy East detailed design.

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	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)
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		0.00			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		0.00			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		0.00			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		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		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		0.00		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		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		0.00		0.95	1.04									
Contribution From Peninsula Road, Pipe 89A - 63A								0.17	14				0.00		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		0.00			1.30									
Contribution From Les Emmerson Drive (N), Pipe 70A - 72A								1.09	99				0.00		0.00		0.00		1.09	1.09									
Contribution From Les Emmerson Drive (N), Pipe 71A - 72A								2.25	216				0.00		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		0.00		1.30	4.91									
Contribution From Les Emmerson Drive (S), Pipe 73A - 74A								0.71	76				0.00		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		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	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: 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: Aug 2022	Sheet No. 1 of 6

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	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)
	31A	32A	0.34	9	9		31	0.71	65	3.63	0.77		0.00		0.00		0.00	0.00	0.34	0.71	0.23	1.00	64.0	250	0.25	29.73	0.03	0.61	0.28
To Sapling Grove, Pipe 32A - 37A								0.71	65				0.00		0.00		0.00			0.71									
	30A	33A	0.13	2	2		7	0.13	7	3.74	0.08		0.00		0.00		0.00	0.00	0.13	0.13	0.04	0.13	9.5	200	0.65	26.44	0.00	0.84	0.22
	33A	34A	0.16	3	3		11	0.29	18	3.71	0.22		0.00		0.00		0.00	0.00	0.16	0.29	0.10	0.31	43.5	250	0.25	29.73	0.01	0.61	0.19
	34A	35A	0.12	1	1		4	0.41	22	3.70	0.26		0.00		0.00		0.00	0.00	0.12	0.41	0.14	0.40	11.5	250	0.25	29.73	0.01	0.61	0.21
	35A	36A	0.44	11	11		38	0.85	60	3.64	0.71		0.00		0.00		0.00	0.00	0.44	0.85	0.28	0.99	68.5	250	0.25	29.73	0.03	0.61	0.27
	36A	37A	0.31	9	9		31	1.16	91	3.60	1.06		0.00		0.00		0.00	0.00	0.31	1.16	0.38	1.45	61.5	250	0.25	29.73	0.05	0.61	0.31
To Mineral Street, Pipe 37A - 39A								1.16	91				0.00		0.00		0.00			1.16									
Pollination Place																													
	250A	26A	0.11	2	2		7	0.11	7	3.74	0.08		0.00		0.00		0.00	0.00	0.11	0.11	0.04	0.12	24.5	200	0.65	26.44	0.00	0.84	0.20
								0.11	7				0.00		0.00		0.00		0.00	0.11									
	26A	27A	0.09	1	1		4	0.20	11	3.73	0.13		0.00		0.00		0.00	0.00	0.09	0.20	0.07	0.20	11.0	200	0.65	26.44	0.01	0.84	0.24
	27A	28A	0.39	10	10		34	0.59	45	3.66	0.53		0.00		0.00		0.00	0.00	0.39	0.59	0.19	0.73	63.5	250	0.25	29.73	0.02	0.61	0.25
	28A	29A	0.34	10	10		34	0.93	79	3.62	0.93		0.00		0.00		0.00	0.00	0.34	0.93	0.31	1.23	62.5	250	0.25	29.73	0.04	0.61	0.29
To Sapling Grove, Pipe 29A - 32A								0.93	79				0.00		0.00		0.00			0.93									
	250A	25A	0.09	2	2		7	0.09	7	3.74	0.08		0.00		0.00		0.00	0.00	0.09	0.09	0.03	0.11	20.5	200	0.65	26.44	0.00	0.84	0.20
	25A	19A	0.04				0	0.13	7	3.74	0.08		0.00		0.00		0.00	0.00	0.04	0.13	0.04	0.13	8.0	250	0.25	29.73	0.00	0.61	0.15
								0.13	7				0.00		0.00		0.00		0.00	0.13									
	19A	20A	0.28	5	5		17	0.41	24	3.70	0.29		0.00		0.00		0.00	0.00	0.28	0.41	0.14	0.42	71.0	250	0.25	29.73	0.01	0.61	0.21
	20A	21A	0.19	4	4		14	0.60	38	3.67	0.45		0.00		0.00		0.00	0.00	0.19	0.60	0.20	0.65	54.5	250	0.25	29.73	0.02	0.61	0.24
To Sapling Grove, Pipe 21A - 29A								0.60	38				0.00		0.00		0.00			0.60									
Sapling Grove																													
Contribution From Pollination Place, Pipe 20A - 21A								0.60	38				0.00		0.00		0.00		0.60	0.60									
	21A	29A	0.23	3	3		11	0.83	49	3.65	0.58		0.00		0.00		0.00	0.00	0.23	0.83	0.27	0.85	59.0	250	0.25	29.73	0.03	0.61	0.27
Contribution From Pollination Place, Pipe 28A - 29A								0.93	79				0.00		0.00		0.00		0.93	1.76									
	29A	32A	0.25	5	5		17	2.01	145	3.56	1.67		0.00		0.00		0.00	0.00	0.25	2.01	0.66	2.33	58.5	250	0.25	29.73	0.08	0.61	0.36
Contribution From Gallium Crescent, Pipe 31A - 32A								0.71	65				0.00		0.00		0.00		0.71	2.72									
	32A	37A	0.19	4	4		14	2.91	224	3.50	2.54		0.00		0.00		0.00	0.00	0.19	2.91	0.96	3.50	58.5	250	0.25	29.73	0.12	0.61	0.40
To Mineral Street, Pipe 37A - 39A								2.91	224				0.00		0.00		0.00			2.91									
	510A	51A	0.18	3	3		11	0.18	11	3.73	0.13		0.00		0.00		0.00	0.00	0.18	0.18	0.06	0.19	48.5	200	0.65	26.44	0.01	0.84	0.24
Contribution From Syringa Court, Pipe 50A - 51A								1.03	87				0.00		0.00		0.00		1.03	1.21									
	51A	58A	0.25	5	5		17	1.46	115	3.58	1.33		0.00		0.00		0.00	0.00	0.25	1.46	0.48	1.82	58.5	250	0.25	29.73	0.06	0.61	0.33
Contribution From Syringa Court, Pipe 57A - 58A								0.90	79				0.00		0.00		0.00		0.90	2.36									
	58A	61A	0.19	4	4		14	2.55	208	3.51	2.37		0.00		0.00		0.00	0.00	0.19	2.55	0.84	3.21	58.5	250	0.25	29.73	0.11	0.61	0.39
Contribution From Ainsworth Crescent, Pipe 60A - 61A								0.93	83				0.00		0.00		0.00		0.93	3.48									
	61A	82A	0.22	4	4		14	3.70	305	3.46	3.42		0.00		0.00		0.00	0.00	0.22	3.70	1.22	4.64	60.0	250	0.25	29.73	0.16	0.61	0.44
Contribution From Ainsworth Crescent, Pipe 81A - 82A								0.89	72				0.00		0.00		0.00		0.89	4.59									
	82A	85A	0.18	4	4		14	4.77	391	3.42	4.34		0.00		0.00		0.00	0.00	0.18	4.77	1.57	5.91	58.5	250	0.25	29.73	0.20	0.61	0.47
Contribution From Meander Way, Pipe 84A - 85A								0.50	45				0.00		0.00		0.00		0.50	5.27									
	85A	88A	0.21	5	5		17	5.48	453	3.40	4.99		0.00		0.00		0.00	0.00	0.21	5.48	1.81	6.79	58.5	250	0.25	29.73	0.23	0.61	0.49
To Ecology Lane, Pipe 88A - 91A								5.48	453				0.00		0.00		0.00			5.48									

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	
Industrial Flow =	35000	L/ha/da	0.40509	
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

LICENSED PROFESSIONAL ENGINEER W. LIU 100167932 22-08-31 PROVINCE OF ONTARIO

Designed: A.K.
Checked: W.L.
Dwg. Reference: Sanitary Drainage Plan, Dwgs. No. 110-112

PROJECT: **BARRHAVEN CONCERVANCY EAST PH2, 3, AND JOCK RIVER**
LOCATION: **City of Ottawa**
File Ref: 20-1180
Date: **Aug 2022**
Sheet No. 2 of 6

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	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)
Mineral Street																													
	430A	46A	0.29	6	6		21	0.29	21	3.70	0.25		0.00		0.00		0.00	0.00	0.29	0.29	0.10	0.35	45.5	200	0.65	26.44	0.01	0.84	0.29
Contribution From Les Emmerson Drive (S), Pipe 45A - 46A								0.87	95				0.00		0.00		0.00		0.87	1.16									
	46A	47A	0.29	6	6		21	1.45	137	3.56	1.58		0.00		0.00		0.00	0.00	0.29	1.45	0.48	2.06	62.5	250	0.25	29.73	0.07	0.61	0.34
To Conservancy Drive, Pipe 47A - 48A								1.45	137				0.00		0.00		0.00			1.45									
Contribution From Sapling Grove, Pipe 32A - 37A								2.91	224				0.00		0.00		0.00		2.91	2.91									
Contribution From Gallium Crescent, Pipe 36A - 37A								1.16	91				0.00		0.00		0.00		1.16	4.07									
	37A	39A	0.08				0	4.15	315	3.46	3.53		0.00		0.00		0.00	0.00	0.08	4.15	1.37	4.90	60.0	250	0.25	29.73	0.16	0.61	0.44
Contribution From Peninsula Road, Pipe 38A - 39A								1.05	83				0.00		0.00		0.00		1.05	5.20									
	39A	47A	0.08				0	5.28	398	3.42	4.41		0.00		0.00		0.00	0.00	0.08	5.28	1.74	6.15	62.5	250	0.25	29.73	0.21	0.61	0.47
To Conservancy Drive, Pipe 47A - 48A								5.28	398				0.00		0.00		0.00			5.28									
Les Emmerson Drive (S)																													
	44A	17A	0.39	16		16	44	0.39	44	3.66	0.52		0.00		0.00		0.00	0.00	0.39	0.39	0.13	0.65	73.0	200	0.65	26.44	0.02	0.84	0.35
To Les Emmerson Drive (N), Pipe 17A - 18A								0.39	44				0.00		0.00		0.00			0.39									
	44A	45A	0.64	27		27	73	0.64	73	3.62	0.86		0.00		0.00		0.00	0.00	0.64	0.64	0.21	1.07	111.0	200	0.65	26.44	0.04	0.84	0.41
	45A	46A	0.23	8		8	22	0.87	95	3.60	1.11		0.00		0.00		0.00	0.00	0.23	0.87	0.29	1.40	61.5	250	0.25	29.73	0.05	0.61	0.31
To Mineral Street, Pipe 46A - 47A								0.87	95				0.00		0.00		0.00			0.87									
	730A	73A	0.46	20		20	54	0.46	54	3.65	0.64		0.00		0.00		0.00	0.00	0.46	0.46	0.15	0.79	74.0	200	0.65	26.44	0.03	0.84	0.37
	73A	74A	0.25	8		8	22	0.71	76	3.62	0.89		0.00		0.00		0.00	0.00	0.25	0.71	0.23	1.13	68.5	250	0.25	29.73	0.04	0.61	0.29
To Anemone Mews, Pipe 74A - 750A								0.71	76				0.00		0.00		0.00			0.71									
	65A	66A	0.17	5		5	14	0.17	14	3.72	0.17		0.00		0.00		0.00	0.00	0.17	0.17	0.06	0.22	37.5	200	0.65	26.44	0.01	0.84	0.26
	66A	67A	0.14	3		3	9	0.31	23	3.70	0.28		0.00		0.00		0.00	0.00	0.14	0.31	0.10	0.38	11.0	250	0.25	29.73	0.01	0.61	0.20
	67A	69A	0.58	24		24	65	0.89	88	3.61	1.03		0.00		0.00		0.00	0.00	0.58	0.89	0.29	1.32	100.0	250	0.25	29.73	0.04	0.61	0.30
	69A	74A	0.41	16		16	44	1.30	132	3.57	1.53		0.00		0.00		0.00	0.00	0.41	1.30	0.43	1.95	93.0	250	0.25	29.73	0.07	0.61	0.34
To Anemone Mews, Pipe 74A - 750A								1.30	132				0.00		0.00		0.00			1.30									
Les Emmerson Drive (N)																													
	16A	17A	0.22	4	4		14	0.22	14	3.72	0.17		0.00		0.00		0.00	0.00	0.22	0.22	0.07	0.24	52.5	200	0.65	26.44	0.01	0.84	0.26
Contribution From Les Emmerson Drive (S), Pipe 44A - 17A								0.39	44				0.00		0.00		0.00		0.39	0.61									
	17A	18A	0.22	5	5		17	0.83	75	3.62	0.88		0.00		0.00		0.00	0.00	0.22	0.83	0.27	1.15	63.0	250	0.25	29.73	0.04	0.61	0.29
To Conservancy Drive, Pipe 18A - 23A								0.83	75				0.00		0.00		0.00			0.83									
	64A	70A	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	70.5	200	0.65	26.44	0.02	0.84	0.33
	70A	72A	0.65	19	19		65	1.09	99	3.60	1.15		0.00		0.00		0.00	0.00	0.65	1.09	0.36	1.51	119.0	250	0.25	29.73	0.05	0.61	0.31
To Anemone Mews, Pipe 72A - 74A								1.09	99				0.00		0.00		0.00			1.09									
	16A	40A	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	10.0	200	0.65	26.44	0.00	0.84	0.17
	40A	41A	0.36	10	10		34	0.43	38	3.67	0.45		0.00		0.00		0.00	0.00	0.36	0.43	0.14	0.59	58.0	250	0.65	47.94	0.01	0.98	0.33
	41A	42A	0.63	20	20		68	1.06	106	3.59	1.23		0.00		0.00		0.00	0.00	0.63	1.06	0.35	1.58	108.5	250	0.25	29.73	0.05	0.61	0.32
	42A	43A	0.31	7	7		24	1.37	130	3.57	1.50		0.00		0.00		0.00	0.00	0.31	1.37	0.45	1.96	64.5	250	0.25	29.73	0.07	0.61	0.34
	43A	71A	0.50	14	14		48	1.87	178	3.53	2.04		0.00		0.00		0.00	0.00	0.50	1.87	0.62	2.66	98.0	250	0.25	29.73	0.09	0.61	0.37
	71A	72A	0.38	11	11		38	2.25	216	3.51	2.46		0.00		0.00		0.00	0.00	0.38	2.25	0.74	3.20	76.5	250	0.25	29.73	0.11	0.61	0.39
To Anemone Mews, Pipe 72A - 74A								2.25	216				0.00		0.00		0.00			2.25									

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	
Industrial Flow =	35000	L/ha/da	0.40509	
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, Dwgs. No. 110-112

PROJECT: **BARRHAVEN CONCERVANCY EAST PH2, 3, AND JOCK RIVER**

LOCATION: **City of Ottawa**

File Ref: 20-1180

Date: **Aug 2022**

Sheet No. 3 of 6

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	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)
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		0.00			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		0.00			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		0.25	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		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		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		0.00			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		0.00			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		0.00		0.58	71.87									
Contribution From Borrisokane Road, Pipe 1003A - 10A								0.91	74				0.00		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		0.00		1.07	74.00									
Contribution From Deciduous Crescent, Pipe 9A - 11A								0.70	73				0.00		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		0.00		0.77	75.77									
Contribution From Ephemeral Crescent, Pipe 4A - 15A								1.07	82				0.00		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		0.00		0.83	77.79									
Contribution From Park (Block 773), Pipe 210A - 18A								0.00	0.00				0.00		0.00		3.22		3.22	81.01									
	18A	23A	0.31	5	5		17	56.14	5550	2.76	49.68		17.91		0.00		4.05	9.36	0.31	81.32	26.84	85.88	76.5	525	0.10	136.00	0.63	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	81.81	27.00	86.34	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	82.42	27.20	86.94	106.0	525	0.10	136.00	0.64	0.63	0.67

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
Industrial Flow =	35000	L/ha/da	0.40509
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		

LICENSED PROFESSIONAL ENGINEER W. LIU 100167932 22-08-31 PROVINCE OF ONTARIO

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

SANITARY SEWER CALCULATION SHEET

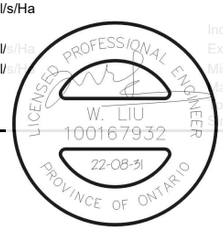
Manning's n=0.013

LOCATION			RESIDENTIAL AREA AND POPULATION									COMM		INSTIT		PARK		C+I+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		0.00		5.28	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		4.05	9.36	0.56	89.71	29.60	93.90	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		4.05	9.36	0.42	90.13	29.74	94.30	76.5	525	0.10	136.00	0.69	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		4.05	9.36	0.31	97.63	32.22	102.11	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		4.05	9.36	0.39	98.02	32.35	102.52	60.0	525	0.10	136.00	0.75	0.63	0.69
	77A	92A	0.33	9	9		31	73.17	7018	2.68	61.05		17.91		0.00		4.05	9.36	0.33	98.35	32.46	102.87	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		4.05	9.36	0.51	105.82	34.92	110.03	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	0.52	4.57	9.44	0.89	106.71	35.21	110.56	88.0	525	0.10	136.00	0.81	0.63	0.70
To Canoe Street, Pipe 119A - 120A								81.01	7660				17.91		0.00		4.57			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		0.00		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/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: A.K.

Checked: W.L.

Dwg. Reference: Sanitary Drainage Plan, Dwgs. No. 110-112

PROJECT: **BARRHAVEN CONCERVANCY EAST PH2, 3, AND JOCK RIVER**

LOCATION: **City of Ottawa**

File Ref: 20-1180

Date: **Aug 2022**

Sheet No. 5 of 6

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	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)
Elation Heights																													
	112A	113A	0.05	1	1		4	0.05	4	3.76	0.05		0.00		0.00		0.00	0.00	0.05	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								0.05	4				0.00		0.00		0.00			0.05									
	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								0.74	55				0.00		0.00		0.00			0.74									
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								0.39	34				0.00		0.00		0.00			0.39									
	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								0.63	45				0.00		0.00		0.00			0.63									
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								0.36	24				0.00		0.00		0.00			0.36									
	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								0.28	17				0.00		0.00		0.00			0.28									
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								0.28	17				0.00		0.00		0.00		0.28	1.39									
	99A	102A	0.18	3	3		11	1.57	77	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								0.36	24				0.00		0.00		0.00		0.36	1.93									
	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								0.39	34				0.00		0.00		0.00		0.39	2.54									
	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								0.63	45				0.00		0.00		0.00		0.63	3.38									
	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								0.05	4				0.00		0.00		0.00		0.05	3.63									
	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								2.64	198				0.00		0.00		0.00		2.64	6.70									
	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								81.01	7660				17.91		0.00		4.57		106.71	113.60									
	119A	120A	0.17				0	88.07	8129	2.63	69.41		17.91		0.00		4.57	9.44	0.17	113.77	37.54	116.40	75.0	525	0.10	136.00	0.86	0.63	0.71
	120A	121A	0.21	4	4		14	88.28	8143	2.63	69.51		17.91		0.00		4.57	9.44	0.21	113.98	37.61	116.57	87.5	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		4.57	9.44	0.00	113.98	37.61	116.57	10.0	525	0.10	136.00	0.86	0.63	0.71
Park (Block 773)																													
	210A	18A						0.00					0.00		0.00	3	3.22	0.52	3.22	3.22	1.06	1.58	11.5	200	0.65	26.44	0.06	0.84	0.46
To Conservancy Drive, Pipe 18A - 23A								0.00	0				0.00		0.00		3.22			3.22									

DESIGN PARAMETERS

Park Flow =	9300	L/ha/da	0.10764
Average Daily Flow =	280	l/p/day	
Comm/Inst Flow =	28000	L/ha/da	0.3241
Industrial Flow =	35000	L/ha/da	0.40509
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

LICENSED PROFESSIONAL ENGINEER
W. LIU
100167932
22-08-31
PROVINCE OF ONTARIO

Designed: A.K.

Checked: W.L.

Dwg. Reference: Sanitary Drainage Plan, Dwgs. No. 110-112

PROJECT: **BARRHAVEN CONCERVANCY EAST PH2, 3, AND JOCK RIVER**

LOCATION: **City of Ottawa**

File Ref: 20-1180

Date: **Aug 2022**

Sheet No. 6 of 6