



**STORM SEWER CALCULATION SHEET (RATIONAL METHOD)**

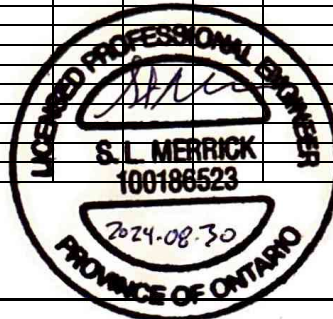
Local Roads Return Frequency = 2 years  
 Collector Roads Return Frequency = 5 years  
 Arterial Roads Return Frequency = 10 years

Manning 0.013

LOCATION			AREA (Ha)																FLOW					SEWER DATA											
			2 YEAR				5 YEAR				10 YEAR				100 YEAR				Time of	Intensity	Intensity	Intensity	Intensity	Peak Flow	DIA. (mm)	DIA. (mm)	TYPE	SLOPE	LENGTH	CAPACITY	VELOCITY	TIME OF	RATIO		
Location	From Node	To Node	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	Conc. (min)	2 Year (mm/h)	5 Year (mm/h)	10 Year (mm/h)	100 Year (mm/h)	Q (l/s)	(actual)	(nominal)	(%)	(m)	(l/s)	(m/s)	LOW (min)	Q/Q full			
Contribution From Private Street 3, Pipe 77 - 78					0.00	1.38			0.00	0.00			0.00	0.00			0.06	0.67	0.11	1.81					12.37										
					0.00	3.19			0.00	0.00			0.00	0.00	0.06	0.67	0.11	1.81																	
					0.00	3.19			0.00	0.00			0.00	0.00	0.14	0.60	0.23	2.04																	
			0.15	0.84	0.35	3.54			0.00	0.00			0.00	0.00			0.00	2.04																	
	78	79	0.16	0.84	0.37	3.92			0.00	0.00			0.00	0.00			0.00	2.04	12.37	68.75	93.13	109.11	159.42	594	825	825	CONC	0.40	110.5	907.8492	1.6983	1.0844	0.655		
To Private Street 5, Pipe 79 - 81						3.92				0.00				0.00				2.04	13.46																
Private Street 5																																			
Contribution From Private Street 1, Pipe 78 - 79						3.92				0.00				0.00				2.04	13.46																
	79	81			0.00	3.92			0.00	0.00			0.00	0.00			0.00	2.04	13.46	65.66	88.89	104.13	152.11	567	825	825	CONC	0.35	12.5	849.2152	1.5886	0.1311	0.668		
Contribution From Private Street 4, Pipe 80 - 81						0.58				0.00				0.00				0.00	11.22																
	81	82	0.15	0.84	0.35	4.85			0.00	0.00			0.00	0.00			0.00	2.04	13.59	65.31	88.41	103.56	151.27	625	825	825	CONC	0.25	41.5	717.7178	1.3426	0.5152	0.871		
	82	87			0.00	4.85			0.00	0.00			0.00	0.00	0.11	0.68	0.21	2.25	14.10	63.96	86.57	101.39	148.09	643	825	825	CONC	0.30	24.5	786.2205	1.4708	0.2776	0.818		
Contribution From Private Street 1, Pipe 86 - 87						1.84				0.00				0.00				0.50	12.97																
	87	89	0.11	0.83	0.25	6.94			0.00	0.00			0.00	0.00			0.00	2.75	14.38	63.26	85.61	100.26	146.43	841	825	825	CONC	0.50	32.5	1015.0063	1.8988	0.2853	0.829		
Contribution From Park Block, Pipe 88 - 89						0.50				0.00				0.00				0.00	10.09																
	89	90			0.00	7.44			0.00	0.00			0.00	0.00			0.00	2.75	14.67	62.56	84.65	99.13	144.78	863	825	825	CONC	0.50	15.5	1015.0063	1.8988	0.1361	0.850		
To Avenue de Larmarche Avenue, Pipe 90 - 151						7.44				0.00				0.00				2.75	14.80																

Definitions:  
 Q = 2.78 AIR, where  
 Q = Peak Flow in Litres per second (L/s)  
 A = Areas in hectares (ha)  
 I = Rainfall Intensity (mm/h)  
 R = Runoff Coefficient

Notes:  
 1) Ottawa Rainfall-Intensity Curve  
 2) Min. Velocity = 0.80 m/s



2024-08-30

Designed:	CPB	PROJECT:	Orleans Village Phase 4			
Checked:	SLM	LOCATION:	City of Ottawa			
Dwg. Reference:	22	File Ref:	Date:	30 Aug 2024	Sheet No.	SHEET 2 OF 2