

STORM SEWER COMPUTATIONS
FOR
EATON S BLDG EXPANSION
 WAUKESHA, WI

DESIGN DATA																					
STRUCTURE DATA			DRAINAGE AREA AND FLOW DATA					PIPE DATA				PIPE CAPACITY INFORMATION					ELEVATIONS			DSPS	
			Flow is determined by SPS 382.36									Pipe capacity is determined by Manning's Equation $Q = 1.486/n AR^{2/3} S^{1/2}$									
Pipe Run	Upstream Structure	Downstream Structure	Roof Area (sf)	Pvmt Area (sf)	Grass Area (sf)	Individual Flow Q (cfs)	Cumulative Flow (cfs)	Length (ft)	Diameter (in)	Slope (%)	Manning Coefficient	Required Drop (ft)	Actual Drop (ft)	Percent Full (%)	Actual Velocity (fps)	Max. Capacity (cfs)	Rim/Toc Up	Invert Up	Invert Down	Individual Flow Q (gpm)	Cumulative Flow (gpm)
	CB 3.0	CB 2.0	0	22337	0	1.53	1.53	109.80	10	2.25	0.012	0.46	2.47	45%	6.28	3.83	36.70	30.86	28.39	687.34	687.34
	CB 2.0	ES 1.0	0	5404	0	0.37	1.90	150.70	12	2.25	0.012	0.37	3.39	37%	6.60	6.23	35.00	28.39	25.00	166.29	853.63
	EAST EX CB	EAST EX CB	0	224375	0	15.38	23.91	132.90	36	0.20	0.012	0.15	0.26	68%	4.96	34.38	32.28	26.98	26.72	6904.31	10732.83
	EAST EX CB	EAST EX CB	0	30407	0	2.08	26.44	199.30	36	0.20	0.012	0.27	0.40	73%	5.11	34.82	32.22	26.62	26.22	935.66	11866.47
	EAST EX CB	EAST EX ES	0	29381	0	2.01	28.45	258.30	36	0.15	0.012	0.40	0.39	89%	4.53	30.20	31.61	26.22	25.83	904.09	12770.56
	NE EX CB	EAST EX CB	0	6434	0	0.44	0.44	199.20	12	1.04	0.012	0.03	2.08	17%	3.32	4.24	33.68	29.00	26.92	197.98	197.98
	BC 5.1	ES 5.0	127815	0	0	10.95	10.95	32.70	18	2.10	0.012	0.30	0.69	62%	9.98	17.74	39.00	33.00	32.31	4916.29	4916.29
	EX CB 6.2	BC 6.1	100000	0	0	8.57	8.57	217.20	30	0.58	0.012	0.08	1.25	30%	5.74	36.26	39.00	27.75	26.50	3846.41	3846.41
	BC 6.1	ES 6.0	100000	0	0	8.57	17.14	58.40	30	1.50	0.012	0.09	0.88	36%	9.82	58.54	39.00	26.50	25.62	3846.41	7692.82
	BC 7.1	ES 7.0	70765	0	0	6.06	6.06	32.80	12	3.20	0.012	0.81	1.05	78%	9.92	7.43	39.00	33.00	31.95	2721.91	2721.91
	N EX CULVERT		0	31363	0	2.15	2.15														
	ES 32.0	CB 31.0	0	65863	16466	4.87	7.02	93.40	18	0.80	0.012	0.36	0.75	64%	6.21	10.95	32.30	28.77	28.02	2185.02	3150.10
	CB 31.0	ES 35.0	0	20909	5227	1.55	8.56	78.50	18	1.30	0.012	0.44	1.02	62%	7.84	13.96	31.50	28.02	27.00	693.66	3843.76