



DRAINAGE AREA CALCULATIONS

Area Designation	Acreage	Runoff Coefficient		'CxA'		Time of Concentration (min)	2 Year Frequency			100 Year Frequency			Remarks
		Existing	Developed	Existing	Developed		Intensity (in/hr)	Runoff (cfs)		Intensity (in/hr)	Runoff (cfs)		
								Existing	Developed		Existing	Developed	
A-1	0.47	0.9	0.9	0.42	0.42	10	5.21	2.2	2.2	9.8	4.1	4.1	
A-2	0.76	0.9	0.9	0.68	0.68	10	5.21	3.6	3.6	9.8	6.7	6.7	
A-3	0.45	0.9	0.9	0.41	0.41	10	5.21	2.1	2.1	9.8	4.0	4.0	
A-4	0.21	0.9	0.9	0.19	0.19	10	5.21	1.0	1.0	9.8	1.9	1.9	
	1.89			1.70	1.70			8.9	8.9		16.7	16.7	
B-1	8.13	0.35	0.9	2.85	7.32	10	5.21	14.8	38.1	9.8	27.9	71.7	**
B-2	0.96	0.9	0.9	0.86	0.86	10	5.21	4.5	4.5	9.8	8.5	8.5	
B-3	1.2	0.9	0.9	1.08	1.08	10	5.21	5.6	5.6	9.8	10.6	10.6	
B-4	0.37	0.9	0.9	0.33	0.33	10	5.21	1.7	1.7	9.8	3.3	3.3	
B-5	0.34	0.9	0.9	0.31	0.31	10	5.21	1.6	1.6	9.8	3.0	3.0	
B-6	1.09	0.9	0.9	0.98	0.98	10	5.21	5.1	5.1	9.8	9.6	9.6	
B-7	1.09	0.9	0.9	0.98	0.98	10	5.21	5.1	5.1	9.8	9.6	9.6	
B-8.1	2.3	0.35	0.9	0.81	2.07	10	5.21	4.2	10.8	9.8	7.9	20.3	*
B-8.2	1.6	0.35	0.9	0.56	1.44	10	5.21	2.9	7.5	9.8	5.5	14.1	*
	17.08			8.76	15.37			45.6	80.1		85.8	150.6	
C-1	0.59	0.9	0.9	0.53	0.53	10	5.21	2.8	2.8	9.8	5.2	5.2	
C-2	0.59	0.9	0.9	0.53	0.53	10	5.21	2.8	2.8	9.8	5.2	5.2	
C-3	0.45	0.9	0.9	0.41	0.41	10	5.21	2.1	2.1	9.8	4.0	4.0	
C-4	0.45	0.9	0.9	0.41	0.41	10	5.21	2.1	2.1	9.8	4.0	4.0	
C-5	1.48	0.35	0.35	0.52	0.52	10	5.21	2.7	2.7	9.8	5.1	5.1	*
C-6	0.88	0.35	0.35	0.31	0.31	10	5.21	1.6	1.6	9.8	3.0	3.0	*
C-7	1.72	0.35	0.35	0.60	0.60	10	5.21	3.1	3.1	9.8	5.9	5.9	*
C-8	0.89	0.8	0.8	0.71	0.71	10	5.21	3.7	3.7	9.8	7.0	7.0	Designed to drain into inlet C-9
C-9	0.51	0.9	0.9	0.46	0.46	10	5.21	2.4	2.4	9.8	4.5	4.5	
C-10	0.32	0.9	0.9	0.29	0.29	10	5.21	1.5	1.5	9.8	2.8	2.8	
C-10a	0.32	0.9	0.9	0.29	0.29	10	5.21	1.5	1.5	9.8	2.8	2.8	Designed to drain to stubout from C-10
C-11	0.77	0.9	0.9	0.69	0.69	10	5.21	3.6	3.6	9.8	6.8	6.8	
C-12	1.08	0.9	0.9	0.97	0.97	10	5.21	5.1	5.1	9.8	9.5	9.5	
C-13	5.6	0.9	0.9	5.04	5.04	10	5.21	26.3	26.3	9.8	49.4	49.4	Collected by ex. S.D system in Discovery
C-14	30.7	0.35	0.35	10.75	10.75	10	5.21	56.0	56.0	9.8	105.3	105.3	*
C-15	6.3	0.9	0.9	5.67	5.67	10	5.21	29.5	29.5	9.8	55.6	55.6	Collected by ex. S.D system in Springer
C-16	8.32	0.9	0.9	7.49	7.49	10	5.21	39.0	39.0	9.8	73.4	73.4	Designed to drain to stubout
	60.97			35.66	35.66			185.8	185.8		349.4	349.4	
D-1	152.1	0.35	0.9	53.24	136.89	10	5.21	277.4	713.2	9.8	521.7	1341.5	
E-1	3.82	0.35	0.35	1.34	1.34	10	5.21	7.0	7.0	9.8	13.1	13.1	
X-1	4.3	0.9	0.35	3.87	1.51	10	5.21	20.2	7.8	9.8	37.9	14.7	Drains to existing inlet
X-2	31.1	0.35	0.35	10.89	10.89	10	5.21	56.7	56.7	9.8	106.7	106.7	*
	35.4			14.76	12.39			76.9	64.6		144.6	121.4	

* Detention to existing runoff is required
 ** Detention required but crossing is designed for undetained flow

**RECORD
 DRAWING
 10/11/2013**
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100 YR. STORM INLET AND STREET FLOW CALCULATIONS

STREET STA	INLET NO.	CONTRIBUTING DRAINAGE AREAS	DESIGN STORM FREQUENCY (yr)	TIME OF CONC (min)	RAINFALL INTENSITY (in/hr)	DRAINAGE AREA (Ac)	C' FACTOR	CxA	CA INTERCEPTED	GUTTER FLOW (cfs)	GUTTER SLOPE (%)	STREET SECTION	CROWN	DEPTH OF FLOW AT INLET (ft)	WIDTH OF FLOW IN STREET @ GUTTER (ft)	INLET LENGTH (ft)	FLOW COLLECTED (cfs)	FLOW BYPASSED (cfs)	REMARKS
42+96.17	A1	A1	100	10	9.8	0.47	0.9	0.42	0.43	4.2	0.5	TRIANGULAR	0.5	0.29	13.7	10	4.2	0.0	*
41+33.36	A2	A2	100	10	9.8	0.76	0.9	0.68	0.67	6.7	0.5	TRIANGULAR	0.5	0.34	16.3	10	6.6	0.1	*
40+77.70	A3	A3	100	10	9.8	0.45	0.9	0.41	0.41	4.0	-	TRIANGULAR	0.5	0.35	-	15	4.0	0.0	
40+77.70	A4	A4	100	10	9.8	0.21	0.9	0.19	0.20	2.0	-	TRIANGULAR	0.5	0.27	-	15	2.0	0.0	
29+25.97	B2	B2	100	10	9.8	0.96	0.9	0.86	0.78	8.5	0.5	TRIANGULAR	0.5	0.37	17.9	10	7.6	0.9	
29+25.97	B3	B3	100	10	9.8	1.2	0.9	1.08	0.86	10.6	0.5	TRIANGULAR	0.5	0.40	19.4	10	8.4	2.2	
29+74.21	B4	B4	100	10	9.8	0.37	0.9	0.33	0.43	4.2	-	TRIANGULAR	0.5	0.36	-	15	4.2	0.0	
29+74.21	B5	B5	100	10	9.8	0.34	0.9	0.31	0.53	5.2	-	TRIANGULAR	0.5	0.39	-	15	5.2	0.0	
39+95	B6	B6	100	10	9.8	1.09	0.9	0.98	0.98	9.6	0.85	TRIANGULAR	0.5	0.35	17.0	15	9.6	0.0	
39+87.60	B7	B7	100	10	9.8	1.09	0.9	0.98	0.98	9.6	0.85	TRIANGULAR	0.5	0.35	17.0	15	9.6	0.0	
17+31.08	C1	C1	100	10	9.8	0.59	0.9	0.53	0.37	5.2	0.5	TRIANGULAR	0.5	0.31	14.9	5	3.6	1.6	
17+41.17	C2	C2	100	10	9.8	0.59	0.9	0.53	0.37	5.2	0.5	TRIANGULAR	0.5	0.31	14.9	5	3.6	1.6	
16+82.84	C3	C3	100	10	9.8	0.45	0.9	0.41	0.57	5.6	-	TRIANGULAR	0.5	0.40	-	15	5.6	0.0	
16+92.93	C4	C4	100	10	9.8	0.45	0.9	0.41	0.57	5.6	-	TRIANGULAR	0.5	0.40	-	15	5.6	0.0	
10+45.50	C9	C9	100	10	9.8	0.51	0.9	0.46	0.46	4.5	0.5	TRIANGULAR	0.5	0.29	14.1	10	4.5	0.0	
9+25	C10	C10	100	10	9.8	0.32	0.9	0.29	1.00	9.8	-	TRIANGULAR	0.5	0.49	-	15	9.8	0.0	
7+95.22	C11	C11	100	10	9.8	0.77	0.9	0.69	0.67	6.8	0.54	TRIANGULAR	0.5	0.34	16.2	10	6.6	0.2	
21+89.96	C12A	C12A	100	10	9.8	0.58	0.9	0.52	0.52	5.1	-	TRIANGULAR	0.5	0.42	-	10	5.1	0.0	
21+14.21	C12B	C12B	100	10	9.8	0.5	0.9	0.45	0.45	4.4	0.95	TRIANGULAR	0.5	0.26	12.4	10	4.4	0.0	

* PER I-30 AND FM3549 PLANS BY CP&Y, ZERO BYPASS WILL BE COLLECTED BY INLETS A1 AND A2. THE ONLY FLOW THAT WILL BE COLLECTED BY INLETS A1 AND A2 WILL BE FROM DRAINAGE AREAS 'A-1' AND 'A-2' RESPECTIVELY.