STORM DRAIN CALCULATIONS FOR STORM DRAIN LINE A

FROM	TO	LENGTH (FT)	CxA	INLET TIME (min.)	TOTAL INTERCEPTED CxA	TIME AT UPSTREAM OF REACH (min)	DESIGN STORM FREQUENCY (yrs)	RAINFALL INTENSITY (in/hr)	INTERCEPTED FLOW (cfs)	STORM DRAIN DIAMETER (in)	VELOCITY (ft/s)	SLOPE OF FRICTION GRADIENT (ft/ft)	STRUCTURE LOSS COEFFICIENT	STRUCTURE LOSS AT UPSTREAM OF REACH	FLOW TIME IN DRAIN (min)	TIME AT DOWNSTREAM OF REACH (min)	H.G. AT UPSTREAM OF REACH (ft)	REMARKS
4+52.71	4+47.71	5.00	-	-	0.00	10.0	100	9.80	30.6	30	6.2	0.0056	0.00	0.00	0.0	10.0	576.88	*
4+47.71	4+15.18	32.53	-	-	0.00	10.0	100	9.80	30.6	30	6.2	0.0056	0.50	0.30	0.1	10.1	576.85	
4+15.18	4+10.18	5.00	-	-	0.00	10.1	100	9.78	30.6	30	6.2	0.0056	0.50	0.30	0.0	10.1	576.37	
INLET A1	4+10.18	24.82	0.42	10	0.42	10.0	100	9.80	4.1	21	1.7	0.0007	1.25	0.06	0.2	10.2	576.12	
4+10.18	2+53.09	157.09	-	-	0.42	10.2	100	9.76	34.6	30	7	0.0071	0.50	0.46	0.4	10.6	576.04	
2+53.09	1+96.50	56.59	-	-	0.42	10.6	100	9.68	34.6	30	7	0.0071	0.50	0.39	0.1	10.7	574.46	
INLET A3	1+83.83	70.48	0.41	10	0.41	10.0	100	9.80	4	21	1.7	0.0006	1.25	0.05	0.1	10.1	574.48	
1+96.50	1+83.83	12.67	-	-	0.42	10.7	100	9.66	34.6	30	7	0.0071	0.00	0.00	0.0	10.7	573.67	
1+83.83	1+69.58	14.25	-	-	0.83	10.7	100	9.66	38.6	30	7.9	0.0089	0.30	0.74	0.0	10.7	573.58	
INLET A2	A2 6.62	58.85	-	-	0.00	10.0	100	9.80	17.6	24	5.6	0.0061	1.25	0.61	0.1	10.1	575.45	**
INLET A4	A2 6.62	14.22	0.20	10	0.20	10.0	100	9.80	2	21	0.8	0.0002	1.25	0.01	0.0	10.0	574.44	
A2 6.62	1+69.58	6.62	-	-	0.20	10.1	100	9.78	19.5	24	6.2	0.0074	0.50	0.35	0.0	10.1	573.11	
1+69.58	1+57.84	11.74	-	-	1.03	10.7	100	9.66	58.1	36	8.2	0.0076	0.50	0.56	0.0	10.7	572.71	
1+57.84	1+37.84	20.00	-	-	1.03	10.7	100	9.66	58.1	36	8.2	0.0076	0.00	0.00	0.0	10.7	572.06	

* UPON COMPLETION OF IMPRROVEMENTS TO I-30 AND FM 3549 (DESIGNED BY CP&Y) AN ADDITIONAL Q OF 30.6 CFS WILL BE INTRODUCED INTO SD LN 'A' AT STA 4+52.71. THIS ADDITIONAL FLOW HAS BEEN ACCOUNTED FOR AND THE PIPES WERE SIZED ACCORDINGLY.

** UPON COMPLETION OF IMPRROVEMENTS TO I-30 AND FM 3549 (DESIGNED BY CP&Y) AND AFTER THE NORTH SIDE OF CORPORATE CROSSING IS BUILT BETWEEN STREET STATIONS 41+01.07 AND 46+46.82, AN ADDITIONAL Q OF 11.0 CFS WILL BE INTRODUCED INTO SD LN 'A' AT INLET A2. THIS ADDITIONAL FLOW HAS BEEN ACCOUNTED FOR AND THE PIPES WERE SIZED ACCORDINGLY. PRIOR TO THE NORTH SIDE OF COROPORATE CROSSING BEING BUILT, BUT AFTER IMPROVEMENTS TO I-30 AND FM 3549 ARE COMPLETE, THE ADDITIONAL Q OF 11.0 CFS WILL DRAIN TO PROPOSED CULVERT 'A-2.1' AND THEN INTO AN OVERLAND SWALE DRAINING TO THE WEST.

STORM DRAIN CALCULATIONS FOR STORM DRAIN LINE B

FROM	TO	LENGTH (FT)	CxA	INLET TIME (min.)	TOTAL INTERCEPTED CxA	TIME AT UPSTREAM OF REACH (min)	DESIGN STORM FREQUENCY (yrs)	RAINFALL INTENSITY (in/hr)	INTERCEPTED FLOW (cfs)	STORM DRAIN DIAMETER (in)	VELOCITY (ft/s)	SLOPE OF FRICTION GRADIENT (ft/ft)	STRUCTURE LOSS COEFFICIENT	STRUCTURE LOSS AT UPSTREAM OF REACH	FLOW TIME IN DRAIN (min)	TIME AT DOWNSTREAM OF REACH (min)	H.G. AT UPSTREAM OF REACH (ft)	REMARKS
15+69.21	14+73.46	95.75	7.32	10	7.32	10.00	100	9.80	71.7	48	5.7	0.0025	1.25	0.63	0.3	10.3	591.81	
14+73.46	14+61.72	11.74	-	-	7.32	10.30	100	9.74	71.3	48	5.7	0.0025	0.60	0.30	0.0	10.3	590.94	
LAT 8.1A	LAT 8.1A 0+2	27.33	0.30	10	0.30	10.00	100	9.80	2.9	18	1.6	0.0008	1.25	0.05	0.0	10.0	592.55	
LAT 8.1A 0+2	14+61.72	25.00	-	-	0.30	10.00	100	9.80	2.9	18	1.6	0.0008	0.00	0.00	0.3	10.3	590.63	
14+61.72	13+03.87	157.85	-	-	7.62	10.30	100	9.74	74.2	48	5.9	0.0027	0.75	0.16	0.4	10.7	590.61	
LAT 8.1B	LAT 8.1B 0+2	17.72	0.51	10	0.51	10.00	100	9.80	5.0	18	2.8	0.0023	1.25	0.16	0.0	10.0	592.66	
LAT 8.1B 0+2	13+03.87	25.00	-	-	0.51	10.00	100	9.80	5.0	18	2.8	0.0023	0.00	0.00	0.1	10.1	590.08	
13+03.87	11+54.38	149.49	-	-	8.13	10.70	100	9.66	78.5	48	6.2	0.0030	0.50	0.33	0.4	11.1	590.02	
STUB B8.2	INLET B5	7.00	0.56	10	0.56	10.00	100	9.80	5.5	18	3.1	0.0027	0.00	0.00	0.0	10.0	591.98	
INLET B5	B5 24.91	13.78	0.53	10	1.09	10.00	100	9.80	10.7	18	6	0.0104	0.50	0.28	0.0	10.0	591.96	
INLET B3	B5 24.91	51.90	0.86	10	0.86	10.00	100	9.80	8.4	18	4.7	0.0064	1.25	0.44	0.2	10.2	592.31	
B5 24.91	11+54.38	24.91	-	-	1.95	10.20	100	9.76	19.0	18	10.7	0.0327	0.50	1.49	0.0	10.2	591.54	
11+54.38	11+37.63	16.75	-	-	10.08	11.10	100	9.59	96.7	48	7.7	0.0045	0.50	0.62	0.0	11.1	589.24	
INLET B4	LAT B4 57.48	14.69	0.43	10	0.43	10.00	100	9.80	4.2	18	2.4	0.0016	1.25	0.11	0.0	10.0	590.43	
INLET B2	LAT B4 57.48	54.96	0.78	10	0.78	10.00	100	9.80	7.6	18	4.3	0.0052	1.25	0.36	0.1	10.1	590.92	
LAT B4 57.48	11+37.63	57.48	-	-	1.21	10.10	100	9.78	11.8	21	4.9	0.0055	0.50	0.33	0.1	10.2	590.01	
11+37.63	7+00	437.63	-	-	11.29	11.10	100	9.59	108.3	48	8.6	0.0057	0.50	0.69	0.8	11.9	588.54	
7+00	1+88.37	511.63	-	-	11.29	11.90	100	9.45	106.7	48	8.5	0.0055	0.00	0.00	0.5	12.4	585.36	
1+88.37	1+67.38	20.99	-	-	11.29	12.40	100	9.37	105.8	48	8.4	0.0054	0.50	0.55	0.0	12.4	574.41	
INLET B6	1+67.38	80.07	0.98	10	0.98	10.00	100	9.80	9.6	18	5.4	0.0084	1.25	0.57	0.1	10.1	575.11	
1+67.38	1+38.87	28.51	-	-	12.27	12.40	100	9.37	115.0	48	9.1	0.0064	0.50	0.74	0.1	12.5	573.75	
INLET B7	1+38.87	9.33	0.98	10	0.98	10.00	100	9.80	9.6	18	5.4	0.0084	1.25	0.57	0.0	10.0	575.25	
1+38.87	1+31.09	7.78	-	-	13.25	12.50	100	9.35	123.9	48	9.9	0.0074	0.50	0.86	0.0	12.5	572.83	

STORM DRAIN CALCULATIONS FOR STORM DRAIN LINE C

FROM	TO	LENGTH (FT)	CxA	INLET TIME (min.)	TOTAL INTERCEPTED CxA	TIME AT UPSTREAM OF REACH (min)	DESIGN STORM FREQUENCY (yrs)	RAINFALL INTENSITY (in/hr)	INTERCEPTED FLOW (cfs)	STORM DRAIN DIAMETER (in)	VELOCITY (ft/s)	SLOPE OF FRICTION GRADIENT (ft/ft)	STRUCTURE LOSS COEFFICIENT	STRUCTURE LOSS AT UPSTREAM OF REACH	FLOW TIME IN DRAIN (min)	TIME AT DOWNSTREAM OF REACH (min)	H.G. AT UPSTREAM OF REACH (ft)	REMARKS
INLET C12A	C12 1+26.64	88.27	0.52	10	0.52	10.0	100	9.80	5.1	18	2.9	0.0024	1.25	0.16	0.5	10.5	595.47	
INLET C12B	C12 1+26.64	27.00	0.45	10	0.45	10.0	100	9.80	4.4	18	2.5	0.0018	1.25	0.12	0.2	10.2	595.27	
C12 1+26.64	EX 1+03.24	126.64	-	-	0.97	10.5	100	9.70	9.4	24	3.0	0.0017	0.50	0.07	0.7	11.2	595.10	
EX 1+03.24	EX 1+5.65	725.18	5.04	14.5	6.01	14.5	100	9.06	54.5	45	4.9	0.0020	0.50	0.19	2.0	16.5	594.81	
EX 1+5.65	7+62.43	30.95	16.42	15.1	22.43	16.5	100	8.76	196.5	6x3	5.5	0.0023	0.00	0.00	0.1	16.6	592.74	
7+62.43	7+51.85	10.58	-	-	22.43	16.6	100	8.75	196.3	6x4	4.1	0.0010	0.00	0.00	0.0	16.6	592.67	
7+51.85	7+49.15	2.70	-	-	22.43	16.6	100	8.75	196.3	8x4	3.1	0.0005	0.50	0.07	0.0	16.6	592.66	
INLET C2	LATC 3+70.93	57.09	0.50	10	0.50	10.0	100	9.80	4.9	18	2.8	0.0022	1.25	0.15	0.3	10.3	593.64	
LATC 3+70.93	LATC 3+62.51	8.42	-	-	0.50	10.3	100	9.74	4.9	24	1.6	0.0005	0.60	0.02	0.1	10.4	593.36	
INLET C1	LATC 3+62.51	53.76	0.50	10	0.50	10.0	100	9.80	4.9	18	2.8	0.0022	1.25	0.15	0.3	10.3	593.61	
LATC 3+62.51	LATC 3+22.70	39.81	-	-	1.00	10.4	100	9.72	9.7	24	3.1	0.0018	0.50	0.13	0.2	10.6	593.34	
INLET C4	LATC 3+22.70	57.09	0.44	10	0.44	10.0	100	9.80	4.3	18	2.4	0.0017	1.25	0.11	0.4	10.4	593.35	
LATC 3+22.70	LATC 3+14.27	8.43	-	-	1.44	10.6	100	9.68	13.9	27	3.5	0.0020	0.50	0.12	0.0	10.6	593.14	
INLET C3	LATC 3+14.27	53.76	0.44	10	0.44	10.0	100	9.80	4.3	18	2.4	0.0017	1.25	0.11	0.4	10.4	593.20	
LATC 3+14.27	7+49.15	302.50	-	-	1.88	10.6	100	9.68	18.2	33	3.1	0.0012	0.50	0.05	1.6	12.2	593.00	
7+49.15	7+35.08	14.07	-	-	24.31	16.6	100	8.75	212.7	8x4	3.3	0.0006	0.50	0.09	0.1	16.7	592.59	
7+35.08	7+04.08	31.00	-	-	24.31	16.7	100	8.73	212.2	8x4	3.3	0.0006	0.50	0.09	0.2	16.9	592.49	
STUB C16	7+04.08	62.61	7.49	10	7.49	10.0	100	9.80	73.4	45	6.6	0.0037	0.00	0.00	0.2	10.2	592.61	
7+04.08	5+91.96	112.12	-	-	31.80	16.9	100	8.70	276.7	8x4	4.3	0.0010	0.50	0.20	0.4	17.3	592.38	
INLET C6	5+91.96	90.11	0.83	10	0.83	10.0	100	9.80	8.1	18	4.6	0.0059	1.25	0.41	0.3	10.3	593.01	
5+91.96	4+05.41	186.55	-	-	32.63	17.3	100	8.65	282.2	8x4	4.4	0.0010	0.50	0.16	0.7	18.0	592.07	
STUB C7	INLET C9	11.90	0.60	10	0.60	10.0	100	9.80	5.9	18	3.3	0.0032	0.00	0.00	0.1	10.1	593.07	
INLET C9	4+05.41	58.44	0.46	10	1.06	10.1	100	9.78	10.4	18	5.9	0.0098	0.50	0.46	0.1	10.2	593.03	
4+05.41	2+90.91	114.50	-	-	33.69	18.0	100	8.55	288.0	8x4	4.5	0.0011	0.50	0.16	0.4	18.4	591.72	
INLET C10	2+90.91	58.44	1.29	10	1.29	10.0	100	9.80	12.6	18	7.1	0.0144	1.25	0.99	0.1	10.1	593.26	
2+90.91	1+87.66	103.25	-	-	34.98	18.4	100	8.50	297.3	8x4	4.6	0.0011	0.50	0.17	0.4	18.8	591.43	
1+87.66	1+32.81	54.85	-	-	34.98	18.8	100	8.45	295.6	8x4	4.6	0.0011	0.50	0.17	0.2	19.0	591.15	
INLET C11	1+32.81	32.02	0.69	10	0.69	10.0	100	9.80	6.8	18	3.8	0.0042	1.25	0.29	0.0	10.0	591.61	
1+32.81	1+07.65	25.16	-	-	35.67	19.0	100	8.42	300.3	8x4	4.7	0.0011	0.50	0.18	0.1	19.1	590.92	
STUB X1	1+07.65	13.72	3.90	10	3.90	10.0	100	9.80	38.2	3x2	6.4	0.0061	0.20	0.13	0.0	10.0	590.92	
1+07.65	0+95.53	12.12	-	-	39.57	19.1	100	8.41	332.8	8x4	5.2	0.0014	0.20	0.35	0.0	19.1	590.71	
0+95.53	0+72.13	23.40	-	-	39.57	19.1	100	8.41	332.8	8x4	5.2	0.0014	0.50	0.21	0.1	19.2	590.34	

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CITY OF ROCKWALL
IMPROVEMENTS TO
CORPORATE CROSSING
(FROM S.H. 276 TO I.H. 30)

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