

STORM DRAIN CALCULATIONS - SPRINGER RD (C=0.35 SITE CONTRIBUTION ASSUMED FROM OVERLAND)

FROM	TO	LENGTH (ft)	"CA"	INLET TIME (min)	TOTAL "CA"	TIME AT UPSTREAM OF REACH (min)	DESIGN STORM FREQUENCY (yr)	RAINFALL INTENSITY (in/hr)	TOTAL FLOW (cfs)	STORM DRAIN DIAMETER (in)	VELOCITY (ft/s)	SLOPE OF FRICTION GRADIENT (ft/ft)	STRUCTURE LOSS COEFF. "Kj"	STRUCTURE LOSS AT UPSTREAM OF REACH (ft)	FLOW TIME IN DRAIN (min)	TIME AT DOWNSTREAM OF REACH (min)	H.G. AT UPSTREAM OF REACH (ft)	REMARKS
INLET C2	STA 14+50.75	25.48	0.35	10.0	0.35	10.0	100	9.80	3.4	18	1.9	0.0010	1.25	0.07	0.2	10.2	601.70	
STA 14+50.75	STA 14+20.56	30.19	-	-	0.35	10.2	100	9.77	3.4	24	1.1	0.0002	0.50	0.00	0.5	10.7	601.61	
INLET C1	STA 14+20.56	25.33	0.36	10.0	0.36	10.0	100	9.80	3.5	18	2.0	0.0011	1.25	0.08	0.2	10.2	601.70	
STA 14+20.56	STA 13+19.68	100.88	-	-	0.71	10.7	100	9.70	6.9	24	2.2	0.0009	0.50	0.07	0.8	11.5	601.60	
STA 13+19.68	STA 13+14.68	5.00	-	-	0.71	11.5	100	9.57	6.8	36	1.0	0.0001	0.50	0.00	0.1	11.6	601.44	
LAT H1	STA 13+14.68	46.19	3.64	10.0	3.64	10.0	100	9.80	35.7	27	9.0	0.0133	1.25	1.56	0.1	10.1	603.61	
STA 13+14.68	STA 11+16.07	198.73	-	-	4.35	11.6	100	9.56	41.6	36	5.9	0.0039	0.50	0.53	0.6	12.2	601.44	
STA 11+16.07	STA 11+11.07	5.00	-	-	4.35	12.2	100	9.47	41.2	42	4.3	0.0017	0.50	0.02	0.0	12.2	600.13	
INLET C3	STA 11+11.07	25.33	0.40	10.0	0.40	10.0	100	9.80	3.9	24	1.2	0.0003	1.25	0.03	0.4	10.4	600.15	
STA 11+11.07	STA 11+00.76	10.31	-	-	4.75	12.2	100	9.47	45.0	42	4.7	0.0020	0.50	0.20	0.0	12.2	600.11	
INLET C4	STA 11+00.76	25.48	0.40	10.0	0.40	10.0	100	9.80	3.9	24	1.2	0.0003	1.25	0.03	0.4	10.4	599.93	
STA 11+00.76	STA 10+64.76	36.00	-	-	5.15	12.2	100	9.47	48.8	45	4.4	0.0016	0.50	0.13	0.1	12.3	599.89	
STA 10+64.76	STA 9+38.52	126.24	-	-	5.15	12.3	100	9.46	48.7	45	4.4	0.0016	0.50	0.15	0.5	12.8	599.70	
STA 9+38.52	STA 9+33.52	5.00	-	-	5.15	12.8	100	9.38	48.3	45	4.4	0.0016	0.50	0.15	0.0	12.8	599.35	
LAT H2	STA 9+33.52	46.19	2.59	10.0	2.59	10.0	100	9.80	25.4	27	6.4	0.0067	1.25	0.79	0.1	10.1	600.29	
STA 9+33.52	STA 7+61.07	172.45	-	-	7.74	12.8	100	9.38	72.6	45	6.6	0.0036	0.50	0.53	0.4	13.2	599.19	
INLET C5	STA 7+61.07	25.33	0.78	10.0	0.78	10.0	100	9.80	7.6	24	2.4	0.0011	1.25	0.11	0.2	10.2	598.19	
STA 7+61.07	STA 7+50.76	10.31	-	-	8.52	13.2	100	9.32	79.4	48	6.3	0.0031	0.50	0.28	0.0	13.2	598.05	
INLET C6	STA 7+50.76	25.48	0.78	10.0	0.78	10.0	100	9.80	7.6	24	2.4	0.0011	1.25	0.11	0.2	10.2	597.88	
STA 7+50.76	STA 6+00.51	150.25	-	-	9.30	13.2	100	9.32	86.7	48	6.9	0.0036	0.50	0.43	0.4	13.6	597.74	
LAT H3	STA 6+00.51	46.19	1.81	10.0	1.81	10.0	100	9.80	17.7	24	5.6	0.0061	1.25	0.62	0.1	10.1	597.66	
STA 6+00.51	STA 5+05.45	96.06	-	-	11.11	13.6	100	9.26	102.9	6x3	5.7	0.0025	0.50	0.13	0.3	13.9	596.76	
STA 5+05.45	STA 4+60.69	44.76	-	-	11.11	13.9	100	9.21	102.3	6x3	5.7	0.0025	0.50	0.25	0.1	14.0	596.39	
INLET C7	STA 4+60.69	25.33	0.71	10.0	0.71	10.0	100	9.80	7.0	24	2.2	0.0010	1.25	0.10	0.2	10.2	596.15	
STA 4+60.69	STA 4+50.37	10.32	-	-	11.82	14.0	100	9.20	108.7	6x3	6.0	0.0028	0.50	0.31	0.0	14.0	596.03	
INLET C8	STA 4+50.37	25.48	0.76	10.0	0.76	10.0	100	9.80	7.4	24	2.4	0.0011	1.25	0.11	0.2	10.2	595.83	
STA 4+50.37	STA 3+20.61	129.76	-	-	12.58	14.0	100	9.20	115.7	6x3	6.4	0.0032	0.50	0.36	0.3	14.3	595.69	
STA 3+20.61	STA 3+15.61	5.00	-	-	12.58	14.3	100	9.15	115.1	8x3	4.8	0.0016	0.50	0.04	0.0	14.3	594.92	
LAT H4	STA 3+15.61	46.19	1.94	10.0	1.94	10.0	100	9.80	19.0	24	6.1	0.0071	1.25	0.71	0.1	10.1	595.91	
STA 3+15.61	STA 1+89.60	126.01	-	-	14.52	14.3	100	9.15	132.9	8x3	5.5	0.0021	0.50	0.29	0.4	14.7	594.87	
INLET C9	STA 1+89.60	25.33	0.74	10.0	0.74	10.0	100	9.80	7.3	24	2.3	0.0010	1.25	0.10	0.2	10.2	594.45	
STA 1+89.60	STA 1+57.73	31.87	-	-	15.26	14.7	100	9.10	138.9	8x3	5.8	0.0023	0.50	0.29	0.1	14.8	594.32	
INLET C10	STA 1+57.73	25.48	0.50	10.0	0.50	10.0	100	9.80	4.9	18	2.8	0.0022	1.25	0.15	0.2	10.2	594.16	
STA 1+57.73	STA 1+15.65	42.08	-	-	15.76	14.8	100	9.08	143.1	8x3	6.0	0.0024	0.50	0.30	0.1	14.9	593.96	
STA 1+15.65	STA 1+05.65	5.00	23.72	0.0	39.48	14.9	100	9.07	358.1	18x3	6.6	0.0024	0.50	0.40	0.0	14.9	593.56	
STA 1+05.65	STA 0+21.90	83.75	-	-	39.48	14.9	100	9.07	358.1	18x3	6.6	0.0024	0.00	0.00	0.2	15.1	593.15	STARTING HGL - LN B
DITCH2	STA 0+21.90	14.85	2.40	20.1	2.40	20.1	100	8.00	19.2	18	10.8	0.0334	1.25	2.29	0.0	20.1	595.73	
STA 0+21.90	STA 0-5.54	27.44	-	-	41.88	20.1	100	8.00	335.0	18x3	6.2	0.0021	0.50	0.30	0.1	20.2	592.95	

STORM DRAIN CALCULATIONS - BETWEEN SPRINGER & DISCOVERY (C=0.35 SITE CONTRIBUTION ASSUMED FROM OVERLAND)

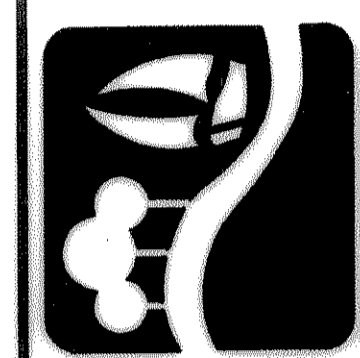
FROM	TO	LENGTH (ft)	"CA"	INLET TIME (min)	TOTAL "CA"	TIME AT UPSTREAM OF REACH (min)	DESIGN STORM FREQUENCY (yr)	RAINFALL INTENSITY (in/hr)	TOTAL FLOW (cfs)	STORM DRAIN DIAMETER (in)	VELOCITY (ft/s)	SLOPE OF FRICTION GRADIENT (ft/ft)	STRUCTURE LOSS COEFF. "Kj"	STRUCTURE LOSS AT UPSTREAM OF REACH (ft)	FLOW TIME IN DRAIN (min)	TIME AT DOWNSTREAM OF REACH (min)	H.G. AT UPSTREAM OF REACH (ft)	REMARKS
STA 7+37.88	STA 0+12.70	725.18	5.37	14.7	5.37	14.7	100	9.10	48.9	45	4.4	0.0016	0.50	0.15	2.7	17.4	594.47	STARTING HGL - LN A

NOTES:

- THE STORM DRAIN SYSTEM IS DESIGNED ASSUMING ALL DEVELOPMENT WILL DETAIN ON-SITE. THE BOX CULVERT TRANSITION/CROSSING IS DESIGNED FOR FULL RELEASE (C=0.9) FOR THE CONTRIBUTING WATERSHED. IN ADDITION, THE STREET (R.O.W. TO R.O.W.) CAN CONVEY THE 100 YEAR UNDETAINED, FULLY DEVELOPED FLOW TO THE POSITIVE OVERFLOW SUMPS. THEREFORE, THE DESIGNED SYSTEM, IN PLACE, CAN ACCOMMODATE THE 100 YEAR FULLY DEVELOPED FLOW BEFORE THE CROSSING AT FM. 549.
- THE STARTING HGL FOR THE LINE BETWEEN SPRINGER & DISCOVERY (LINE B) WAS TAKEN FROM THE STORM DRAIN CALCULATIONS FOR SPRINGER AT THE JUNCTION BOX WHICH CORRESPONDS TO THE DISCHARGE POINT OF LINE B. THE HGL AT THE UPSTREAM OF LINE C WAS NOT ASSUMED AT THE TOP OF THE PIPE, BUT WAS CALCULATED USING MANNINGS EQUATION. THE CALCULATED HGL WAS THEN USED AS THE DOWNSTREAM HGL IN CALCULATIONS FOR LINE A.

RECORD DRAWING
08/04/06

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ROCKWALL TECHNOLOGY PARK PHASE II

STORM DRAIN CALCULATIONS



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