PIPE CAPACITY CALCULATIONS

UPSTREAM STATION	DNSTREAM STATION	DISTANCE	INLET/ AREA NO.	AREA "A" (ACRES)	RUNOFF COEF. "C"	INCREM. "CA"	ACCUM. "CA"	TIME AT UPSTREAM STATION (MIN)	STORM FREQ. (YEARS)	INTENSITY "I" (IN/HR)	RUNOFF "Q" (CFS)	SLOPE HYDRAULIC GRADIENT "S" (FT/FT)	STORM SEWER SIZE (IN)	VELOCITY "V" (FPS)	VELOCITY HEAD (FT)	"L" X "S"	K	FLOW TIME (MIN)	TIME AT DNSTREAM STATION (MIN)	HGL	PROP TC
LINE A1																	0.60			569.75	**572.00**
442.79	325.31	117.48	EX. 18" SYSTEM	1.91	0.50	0.95	0.95	10.00	100.00	9.80	9.36	0.0079	18.00	5.30	0.44	0.93		0.37	10.37	569.49	
																	0.50			568.56	
325.31	275.89	49.42	LAT A1a	0.56	0.90	0.50	1.46	10.37	100.00	9.70	14.2	0.0039	24.00	4.50	0.32	0.19		0.18	10.55	568.47	
																	0.50			568.27	
275.89	228.05	47.84	LAT A1	2.35	0.90	2.12	3.57	10.55	100.00	9.70	34.7	0.0027	36.00	4.90	0.37	0.13		0.16	10.72	568.06	
																	0.6			567.93	
228.05	167.93	60.12	LAT A1b	0.50	0.90	0.45	4.02	10.72	100.00	9.60	38.6	0.0015	42.00	4.02	0.25	0.09		0.25	10.96	567.90	
																	0.50			567.82	
167.93	110.00	57.93	45 BEND	0.00	0.90	0.00	4.02	10.96	100.00	9.60	38.6	0.0015	42.00	4.02	0.25	0.08		0.24	11.21	567.69	
																	0.60			567.61	
110.00	100.00	10.00	60 BEND	0.00	0.90	0.00	4.02	11.21	100.00	9.70	39.0	0.0010	42.00	4.06	0.26	0.01		0.04	11.25	567.50	
														0.00						567.49	
																				567.49	
LAT A1a																	1.50			568.91	**569.79**
109.74	100.00	9.74	INLET A1a	0.28	0.90	0.25	0.25	10.00	100	9.80	2.5	0.0006	18.00	1.40	0.03	0.01		0.12	10.12	568.86	
														4.50						568.86	
																				568.56	
LAT A1																	1.50			568.81	**569.69**
109.51	100.00	9.51	INLET A1	2.88	0.90	2.59	2.59	10.00	100	9.80	25.4	0.0014	36.00	3.59	0.20	0.01		0.04	10.04	568.51	
														4.90						568.50	
																				568.27	
LAT A1b																	1.50			568.20	**569.79**
109.74	100.00	9.74	INLET A1b	0.25	0.90	0.23	0.23	10.00	100	9.80	2.2	0.0004	18.00	1.25	0.02	0.00		0.13	10.13	568.17	
														4.02						568.16	
																				567.93	
LINE A AND EX. SYSTEM																	1.50			564.68	**569.20**
1722.93	1668.63	54.30	"INLET"	2.00	0.50	1.00	1.00	15.00	100.00	9.00	9.0	0.0032	21.00	3.74	0.22	0.17		0.24	15.24	564.35	
																	0.40			564.18	
1668.63	1500.01	168.62	"LINE G"	5.90	0.50	2.95	3.95	15.24	100.00	9.00	35.6	0.0075	30.00	7.24	0.81	1.26		0.39	15.63	563.45	
																	0.60			562.19	
1500.01	1378.40	121.61	LATERAL A2	1.57	0.90	1.41	5.36	15.63	100.00	9.00	48.3	0.0138	30.00	9.83	1.50	1.68		0.21	15.84	561.18	
																	0.50			559.50	
1378.40	1088.41	289.99	"LINE F"	3.40	0.50	1.70	7.06	15.84	100.00	8.90	62.9	0.0088	36.00	8.89	1.23	2.56		0.54	16.38	559.02	
																	0.50			556.46	
1088.41	855.61	232.80	"LINE E"	4.20	0.50	2.10	9.16	16.38	100.00	8.90	81.6	0.0065	42.00	8.48	1.12	1.52		0.46	16.84	555.96	
																	0.60			554.44	
855.61	801.63	53.98	"60 CONN"	2.20	0.50	1.10	10.26	16.84	100.00	8.80	90.3	0.0080	42.00	9.39	1.37	0.43		0.10	16.93	553.74	
																	0.50			553.30	
801.63	506.29	295.34	"LINE D"	8.50	0.50	4.25	14.51	16.93	100.00	8.70	126.3	0.0077	48.00	10.05	1.57	2.27		0.49	17.42	552.42	
																	0.50			550.15	
506.29	407.28	99.01	"LINE C"	14.10	0.50	7.05	21.56	17.42	100.00	8.40	181.1	0.0084	54.00	11.39	2.01	0.84		0.14	17.57	548.92	
																	0.60			548.08	
407.28	367.54	39.74	LATERAL A3	1.40	0.90	1.26	22.82	17.57	100.00	8.40	191.7	0.0095	54.00	12.05	2.26	0.38		0.05	17.62	547.04	
																	0.60			546.66	
367.54	139.31	228.23	CONNECT TO EX.	0.00	0.90	0.00	22.82	17.62	100.00	8.40	191.7	0.0095	54.00	12.05	2.26	2.16		0.32	17.94	545.76	
																	0.50			543.60	
139.31	100.00	39.31	45 BEND	0.00	0.90	0.00	22.82	17.94	100.00	8.40	191.7	0.0095	54.00	12.05	2.26	0.37		0.05	17.99	542.47	
														0.00						542.10	
																				542.10	
LAT A2																	1.50			565.41	**567.90**
158.38	100.00	58.38	INLET A2	1.57	0.90	1.41	1.41	10.00	100	9.80	13.8	0.0173	18.00	7.84	0.95	1.01		0.12	10.12	563.98	
														9.83						562.98	
																				562.19	
LAT A3																	1.50			548.75	**549.55**
194.57	100.00	94.57	INLET A3	1.43	0.90	1.29	1.29	10.00	100	9.80	12.6	0.0031	24.00	4.01	0.25	0.29		0.39	10.39	548.38	
														12.05						548.08	
																				548.08	

NOTE: STORM CALCULATION INFORMATION FOR CULVERT A & B IS AVAILABLE IN THE ATTACHED HEC-RAS MODEL STUDY PERFORMED FOR THIS PROJECT.

UPSTREAM STATION	DNSTREAM STATION	DISTANCE	INLET/ AREA NO.	AREA "A" (ACRES)	RUNOFF COEF. "C"	INCREM. "CA"	ACCUM. "CA"	TIME AT UPSTREAM STATION (MIN)	STORM FREQ. (YEARS)	INTENSITY "I" (IN/HR)	RUNOFF "Q" (CFS)	SLOPE HYDRAULIC GRADIENT "S" (FT/FT)	STORM SEWER SIZE (IN)	VELOCITY "V" (FPS)	VELOCITY HEAD (FT)	"L" X "S"	K	FLOW TIME (MIN)	TIME AT DNSTREAM STATION (MIN)	HGL	PROP TC
LAT A6																	1.50			544.20	**547.09**
146.16	116.19	29.97	INLET A6	2.84	0.90	2.56	2.56	10.00	100.00	9.80	25.0	0.0037	30.00	5.10	0.40	0.11		0.10	10.10	543.59	
																	0.60			543.48	
116.19	115.13	1.06	LATERAL A8	2.01	0.90	1.81	4.37	10.10	100.00	9.80	42.8	0.0108	30.00	8.71	1.18	0.01		0.00	10.10	542.54	
														0.00						542.53	
																				542.53	
LAT A8																	1.50			546.78	**548.78**
377.52	335.36	42.16	INLET A8	1.36	0.90	1.22	1.22	10.00	100.00	9.80	12.0	0.0057	21.00	4.99	0.39	0.24		0.14	10.14	546.21	
	.																0.45			545.97	
335.36	201.85	133.51	15 BEND	0.00	0.90	0.00	1.22	10.14	100.00	9.80	12.0	0.0057	21.00	4.99	0.39	0.76		0.45	10.59	545.75	
																	0.60			544.99	
201.85	130.65	71.20	LATERAL A7	0.66	0.90	0.59	1.82	10.59	100.00	9.80	17.8	0.0033	27.00	4.48	0.31	0.23		0.26	10.85	544.91	
																	0.50			544.68	
130.65	100.00	30.65	45 BEND	0.00	0.90	0.00	1.82	10.85	100.00	9.70	17.6	0.0032	27.00	4.44	0.31	0.10		0.12	10.97	544.53	
														8.71						544.43	
																				543.48	
LAT A7																	1.50			545.46	**546.13**
109.70	100.00	9.70	INLET A7	0.66	0.90	0.59	0.59	10.00	100	9.80	5.8	0.0031	18.00	3.29	0.17	0.03		0.05	10.05	545.21	
														4.48						545.18	
																				544.99	
LINE D																	1.50			577.70	
264.96	221.35	43.61	EX HDWL	1.68	0.70	1.18	1.18	15.00	100.00	9.80	11.5	0.0053	21.00	4.79	0.36	0.23		0.15	15.15	577.16	
																	0.35			576.94	
221.35	177.80	43.55	EX SDMH	3.85	0.70	2.70	3.87	15.15	100.00	9.80	37.9	0.0029	2-4x2	4.74	0.35	0.13		0.15	15.30	576.71	
																	0.60			576.58	
177.80	120.80	57.00	CONNECT TO EX.	0.00	0.50	0.00	3.87	15.30	100.00	9.80	37.9	0.0029	2-4x2	4.74	0.35	0.17		0.20	15.51	576.45	
														0.00						576.28	
																				576.28	
LINE B																	1.50			545.36	**547.00**
220.54	188.21	32.33	INLET	0.00	0.90	0.00	0.00	10.00	100.00	9.80	67.0	0.0100	36.00	11.72	2.13	0.32		0.05	10.05	542.16	
	.																0.20			541.84	
188.21	157.96	30.25	LAT B3	1.50	0.90	1.35	1.35	10.05	100.00	9.80	13.2	0.0004	36.00	7.42	0.85	0.01		0.07	10.11	541.41	
																	0.45			541.39	
157.96	100.00	57.96	30 BEND	0.00	0.90	0.00	1.35	10.11	100.00	9.80	13.2	0.0004	36.00	7.42	0.85	0.02		0.13	10.24	540.92	
																	0.50			540.90	
156.74	100.00	56.74	INLET B2	1.00	0.90	0.90	2.25	10.24	100.00	9.70	21.8	0.0011	36.00	9.04	1.27	0.06		0.10	10.35	540.06	
														0.00						540.00	
																				540.00	
LAT B3																	1.50			543.24	**545.63**
270.39	265.32	5.07	INLET B3	1.50	0.90	1.35	1.35	10.00	100.00	9.80	13.2	0.0034	24.00	4.21	0.28	0.02		0.02	10.02	542.83	
																	0.45			542.81	
265.32	121.11	144.21	45 BEND	0.00	0.90	0.00	1.35	10.02	100.00	9.80	13.2	0.0029	24.00	4.74	0.35	0.42		0.51	10.53	542.59	
																	0.20			542.17	
121.11	100.00	20.00	30 BEND	0.00	0.90	0.00	1.35	10.53	100.00	9.80	13.2	0.0029	24.00	4.74	0.35	0.06		0.07	10.60	541.89	
														0.00						541.83	
																				541.83	
LAT B1																	1.50			543.65	**546.13**
157.48	100.00	57.48	INLET A7	1.66	0.90	1.49	1.49	10.00	100	9.80	14.6	0.0042	24.00	4.66	0.34	0.24		0.21	10.21	543.15	
														4.74						542.91	
																				542.81	
LINE C																	1.50			540.09	**549.50**
155.12	100.00	55.12	INLET	1.40	0.50	0.70	0.70	10.00	100.00	9.00	6.3	0.0008	24.00	2.01	0.06	0.04		0.46	10.46	540.00	
																	0.20			539.95	
238.82	155.12	83.70	30 BEND	0.00	0.90	0.00	0.70	10.46	100.00	9.00	6.3	0.0008	24.00	2.01	0.06	0.06		0.70	11.15	539.90	
														0.00						539.84	
																				539.84	

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CITY OF ROCKWALL, TEXAS

205 BYPASS CONSTRUCTION

CIVIL

STORM SEWER CALCULATIONS

FAN JOB NO.	DATE	BY	NO.	ISSUE
ROK06114				
DATE 05/2007				
DESIGNED KAS				
DRAWN KAS				
REVISED				
CHECKED TBS				
FILE NAME CV-ALL-PL-DRNG05.dwg				

RECORD DRAWINGS
VERIFY SCALE Bar is one inch on original drawing. If not, one inch on this sheet, adjust scale.
0 1

SHEET DA-5

SEQ. 26 OF 86

ACAD Rel 17.0s (LMS Tech) User: MML
FROK06114 (DALSRV2JN:V:\DRAWINGS\CV-ALL-PL-DRNG05.DWG LAYOUT: Layout1 (2)
MAY 01, 2007 11:03:40 PM CDT PSLTS: 1:1 PSLTSCALE: 1.00 TWIST: 0.0, 0.0, 0.0
2 REFERENCE FILES: ..\..STANDARD\34BORDER and 93882