NOT AS BUILT

STORM SEWER DESIGN CALCULATION TABLE (100–yr Return Frequency)

LINE NO.	LINE STA.	STRUC. NUMBERS (from)	STRUC. NUMBERS (to)	LOCAL C	LOCAL A (ac)	LOCAL C X A (ac)	TOTAL C X A (ac)	INLET TIME (min)	TOTAL Tc (min)	100-YR "K" 1.25	"C" (ave.) 256	I (in/hr) 19.8	A (Ac) 331	Q (cfs) 30	PIPE DIA. (in) [3]	MANN N	PIPE SLOPE (%)	MANN'S CAP (cfs)	FULL VEL (fps)	DES VEL (fps)	VEL HEAD (ft)	FLOW DEPTH (in)	PIPE LEN (ft)	FLOW TIME (min)
		-	-																					
1	10+00.00	1-1	-	0.00	0.00	0.00	7.71	0.00	10.95	1.25	0.69	8.33	11.13	80.24	36	0.013								
1	11+08.58	1-2	1-1	0.62	0.56	0.35	7.71	5.98	10.79	1.25	0.69	8.37	11.13	80.62	36	0.013	1.00%	86.70	9.44	11.41	2.02	36.00	108.58	0.16
1	11+56.58	1-3	1-2	0.62	0.54	0.33	7.36	7.15	10.74	1.25	0.70	8.38	10.57	77.08	30	0.013	3.00%	71.04	14.47	15.70	3.83	30.00	48.00	0.05
2	10+00.00	2-1	-	0.00	0.00	0.00	26.57	9.39	11.76	1.25	0.76	8.11	34.99	269.33	54	0.013	0.00%	0.00						
2	12+10.78	2-2	2-1	0.62	0.27	0.17	26.57	7.50	11.55	1.25	0.76	8.16	34.99	270.99	54	0.013	1.00%	196.65	12.36	17.04	4.51	54.00	210.78	0.21
2	13+82.62	2-3	2-2	0.00	0.00	0.00	15.98	0.00	11.33	1.25	0.81	8.22	19.70	161.93	48	0.013	1.00%	143.64	11.43	12.89	2.58	48.00	171.84	0.22
2	15+50.85	2-4	2-3	0.62	0.26	0.16	13.08	7.25	11.13	1.25	0.80	8.28	16.29	134.88	42	0.013	1.00%	100.61	10.46	14.02	3.05	42.00	168.23	0.20
2	18+75.83	2-5	2-4	0.62	0.46	0.29	9.62	7.09	10.68	1.25	0.80	8.40	12.08	100.99	42	0.013	1.00%	100.61	10.46	11.92	2.21	34.58	324.98	0.45
2	19+24.83	2-6	2-5	0.62	0.46	0.29	0.29	7.09	7.09	1.25	0.62	9.52	0.46	3.39	24	0.013	1.00%	22.62	7.20	5.18	0.42	6.28	49.00	0.16
3	10+00.00	3-1	-	0.00	0.00	0.00	10.74	0.00	9.03	1.25	0.83	8.88	12.90	114.55	36	0.013	0.00%	0.00						
3	11+15.94	3-2	3-1	0.62	0.29	0.18	10.74	6.83	8.93	1.25	0.83	8.91	12.90	114.94	36	0.013	3.80%	130.02	18.39	20.77	6.70	26.31	115.94	0.09
3	11+63.94	3-3	3-2	0.62	0.29	0.18	10.56	6.83	8.89	1.25	0.84	8.92	12.61	112.48	36	0.013	3.80%	130.02	18.39	20.70	6.66	25.85	48.00	0.04
3a	10+00.00	3a-1	-	0.00	0.00	0.00	3.88	0.00	8.90	1.25	0.82	8.92	4.75	42.37	24	0.013	0.00%	0.00						
3a	11+05.25	3a-2	3a-1	0.62	0.28	0.17	3.88	6.83	8.80	1.25	0.82	8.95	4.75	42.51	24	0.013	4.40%	47.45	15.10	17.08	4.53	17.73	105.25	0.10
3a	11+53.25	3a-3	3a-2	0.62	0.28	0.17	3.71	6.83	8.74	1.25	0.83	8.97	4.47	40.10	24	0.013	2.00%	31.99	10.18	12.76	2.53	24.00	48.00	0.06
4	10+50.50	4-1	2-2	0.62	0.27	0.17	10.42	7.13	7.13	1.25	0.69	9.50	15.02	123.79	42	0.013	1.00%	100.61	10.46	12.87	2.57	42.00	50.50	0.07
5	10+50.00	5-1	2-4	0.62	0.26	0.16	0.16	7.13	7.13	1.25	0.62	9.50	0.26	1.91	30	0.013	2.20%	60.84	12.39	5.62	0.49	3.65	50.00	0.15
7	10+00.00	7-1	-	0.00	0.00	0.00	8.59	0.00	10.76	1.25	0.81	8.38	10.58	88.66	36	0.013	0.00%	0.00						
7	12+89.33	7-2	7-1	0.62	0.52	0.32	8.59	7.45	10.38	1.25	0.81	8.48	10.58	89.72	36	0.013	1.00%	86.70	9.44	12.69	2.50	36.00	289.33	0.38
7	13+37.33	7-3	7-2	0.62	0.52	0.32	8.27	7.45	10.31	1.25	0.82	8.50	10.06	85.51	36	0.013	1.00%	86.70	9.44	12.10	2.27	36.00	48.00	0.07
10	10+49.00	10-1	6-2	0.62	0.36	0.22	10.00	7.23	8.23	1.25	0.83	9.13	12.09	110.38	42	0.013	1.00%	100.61	10.46	11.47	2.04	42.00	49.00	0.07

INLET DESIGN TABLE (100–yr Return Frequency)

LINE NO.	LINE STA.	STRUC. NO.	LEN (ft)	OVERLAND S (%)	GUTTER S (%)	FLOW VEL (fps)	TIME (min)	INLET TIME (min)	100-YR "K" 1.25	"C" 256.00	I (in/hr) 19.80	A (Ac) 331.00	Q (cfs) 30.00	US BYPASS (cfs)	TOTAL FLOW (cfs)	STREET SLOPE (%)	STREET XSLOPE (%)	12 CG-1 CAP (cfs)	INLET LEN (ft)	0.83 INLET CAP. (cfs) 0.83	80% CAP. (cfs)	BYPASS DS (cfs)
		-																				
1	10+00.00	1-1																				
1	11+08.58	1-2	18	2.0%	1.6%	3.55	1.13	5.98	1.25	0.62	9.93	0.56	4.31		4.31		2.08%	SUMP	5	15.46	12.37	
1	11+56.58	1-3	18	2.0%	1.6%	3.55	2.30	7.15	1.25	0.62	9.50	0.54	3.98	7.10	11.07		2.08%	SUMP	5	15.46	12.37	
2	10+00.00	2-1	50	2.0%	1.2%	3.08	1.31	9.39									2.08%	SUMP	5	15.46	12.37	
2	12+10.78	2-2	18	2.0%	1.2%	3.08	2.65	7.50	1.25	0.62	9.38	0.27	1.96		1.96	1.20%	2.08%	4.68	5	7.74	6.19	
2	13+82.62	2-3															2.08%	SUMP	5	15.46	12.37	
2	15+50.85	2-4	18	2.0%	1.2%	3.08	2.41	7.25	1.25	0.62	9.46	0.26	1.91		1.91	1.20%	2.08%	4.68	5	7.74	6.19	
2	18+75.83	2-5	18	2.0%	1.2%	3.08	2.24	7.09	1.25	0.62	9.52	0.46	3.39		3.39	1.20%	2.08%	4.68	5	7.74	6.19	
2	19+24.83	2-6	18	2.0%	1.2%	3.08	2.24	7.09	1.25	0.62	9.52	0.46	3.39		3.39	1.20%	2.08%	4.68	5	7.74	6.19	
3	10+00.00	3-1															2.08%	SUMP	5	15.46	12.37	
3	11+15.94	3-2	18	2.0%	2.6%	4.50	1.98	6.83	1.25	0.62	9.61	0.29	2.16		2.16	1.19%	2.08%	4.66	5	7.74	6.19	
3	11+63.94	3-3	18	2.0%	2.6%	4.50	1.98	6.83	1.25	0.62	9.61	0.29	2.16		2.16	1.19%	2.08%	4.66	5	7.74	6.19	
3a	10+00.00	3a-1															2.08%	SUMP	5	15.46	12.37	
3a	11+05.25	3a-2	18	2.0%	2.6%	4.50	1.98	6.83	1.25	0.62	9.61	0.28	2.09		2.09	1.19%	2.08%	4.66	5	7.74	6.19	
3a	11+53.25	3a-3	18	2.0%	2.6%	4.50	1.98	6.83	1.25	0.62	9.61	0.28	2.09		2.09	1.19%	2.08%	4.66	5	7.74	6.19	
4	10+50.50	4-1	18	2.0%	1.6%	3.55	2.28	7.13	1.25	0.62	9.50	0.27	1.99		1.99	1.20%	2.08%	4.68	5	7.74	6.19	
5	10+50.00	5-1	18	2.0%	1.6%	3.55	2.28	7.13	1.25	0.62	9.50	0.26	1.91		1.91	1.20%	2.08%	4.68	5	7.74	6.19	
7	10+00.00	7-1															2.08%	SUMP	5	15.46	12.37	
7	12+89.33	7-2	18	2.0%	1.0%	2.81	2.60	7.45	1.25	0.62	9.40	0.52	3.79		3.79		2.08%	SUMP	5	15.46	12.37	
7	13+37.33	7-3	18	2.0%	1.0%	2.81	2.60	7.45	1.25	0.62	9.40	0.52	3.79		3.79		2.08%	SUMP	5	15.46	12.37	
10	10+49.00	10-1	18	2.0%	1.7%	3.68	2.38	7.23	1.25	0.62	9.47	0.36	2.64		2.64	5.85%	2.08%	10.33	5	5.60	4.48	

BASED ON TRAVEL TIME CALCULATION APWA SECTION 5602.5 B.
GUTTER CAPACITIES BASED ON MAXIMUM ALLOWABLE SPREAD.

DATE	P.E. SIGNATURE	DESCRIPTION
09-07-07	R.J.S.	Prepared for Review.
01-25-08	R.J.S.	⚠1 Revised drainage table values

DRAINAGE TABLES

CENTERPOINT-KCS
INTERMODAL CENTER

STATE OF MISSOURI
ROBERT J. SUNTA
E-25751
REGISTERED PROFESSIONAL ENGINEER

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Designed By:	R.J.S.
Drafted By:	J.W.W.
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Location: N:\Engineering\Richard Gebaur – 07165 & 07166\Drafting\Andrews Road\As built\Street & Storm\DR3 – 07216.dwg