WinStorm (STORM DRAIN DESIGN) Version 3.05, Jan. 25, 2002
Run @ 10/3/2007 8:28:09 AM

PROJECT NAME : SYSTEM K
JOB NUMBER :
PROJECT DESCRIPTION :
DESIGN FREQUENCY : 100 Years
MEASUREMENT UNITS: ENGLISH

OUTPUT FOR DESIGN FREQUENCY of: 100 Years

Runoff Computation for Design Frequency.

ID	C Value	Area (acre)	Tc (min)	Tc Used (min)	Intensity (in/hr)	Supply Q (cfs)	Total Q (cfs)
K-1	0.9	0.57	10.00	10.00	9.80	0.000	5.000
K-2	0.9	0.59	10.00	10.00	9.80	0.000	5.162
K-3	0.9	0.30	10.00	10.00	9.80	0.000	2.680
K-4	0.9	0.56	10.00	10.00	9.80	0.000	4.959
K-5	0.9	0.59	10.00	10.00	9.80	0.000	5.164
K-6	0.9	0.32	10.00	10.00	9.80	0.000	2.788
K-7	0.9	0.75	10.00	10.00	9.80	0.000	6.584
K-8	0.9	0.78	10.00	10.00	9.80	0.000	6.915

On Grade Inlets Conmputation Data.

Inlet ID	Inlet Type	Total Q (cfs)	Intercept Capacity (cfs)	Q Bypass Allow (cfs)	Q Bypass Actual (cfs)	To Inlet ID	Required Length (ft)	Actual Length (ft)	Ponded Width (ft)
K-1	Curb	5.000	5.000	0.000	0.000	K-2	13.59	15.00	14.50
K-2	Curb	5.162	5.162	0.000	0.000	K-3	13.85	15.00	14.70
K-4	Curb	4.959	4.959	0.000	0.000	K-5	13.52	15.00	14.45
K-5	Curb	5.164	5.164	0.000	0.000	K-6	13.85	15.00	14.70
K-7	Curb	6.584	6.234	0.000	0.350	K-3	18.66	15.00	14.10
K-8	Curb	6.915	6.469	0.000	0.446	K-6	19.18	15.00	14.35

Sag Inlets Computation Data.

Inlet ID	Inlet Type	Length (ft)	Grate Perim (ft)	Grate Area (sf)	Total Q (cfs)	Inlet Capacity (cfs)	Total Head (ft)	Ponded Width Left (ft)	Ponded Width Right (ft)
K-3	Curb	15.00	n/a	n/a	3.031	11.503	0.171	11.40	11.40
K-6	Curb	15.00	n/a	n/a	3.234	11.503	0.179	11.65	11.65

Cumulative Junction Discharge Computations

Node I.D.	Node Type	Weighted C-Value	Cumulat. Dr. Area (acres)	Cumulat. Tc (min)	Intens. (in/hr)	User Supply Q cfs)	Additional Q in Node (cfs)	Total Disch. (cfs)
K-1	Curb	0.900	1.13	10.38	9.74	0.000	0.00	9.895
K-2	Curb	0.900	2.30	11.72	9.51	0.000	0.00	19.682
K-4	Curb	0.900	0.56	10.00	9.80	0.000	0.00	4.960
K-5	Curb	0.900	0.59	10.00	9.80	0.000	0.00	5.166
k-bndl	Junct	0.900	2.30	11.72	9.51	0.000	0.00	19.682
OUT	Outlt	0.900	2.30	11.72	9.51	0.000	0.00	19.682

Conveyance Configuration Data

Run#	Node I.D. US	Node I.D. DS	Flowline Elev. US (ft)	Flowline Elev. DS (ft)	Shape #	Span (ft)	Rise (ft)	Length (ft)	Slope (%)	n_value
1	K-4	K-1	496.57	496.07	Circ 1	0.00	1.50	100.50	0.50	0.013
2	K-1	K-2	495.57	493.53	Circ 1	0.00	2.00	424.44	0.48	0.013
3	K-2	k-bndl	493.03	492.22	Circ 1	0.00	2.00	39.46	2.06	0.013
4	K-5	K-2	494.43	494.03	Circ 1	0.00	1.50	100.50	0.40	0.013
5	k-bndl	OUT	492.22	492.00	Circ 1	0.00	2.00	10.36	2.10	0.013

Conveyance Hydraulic Computations. Tailwater = 494.035 (ft)

Run#	Hydraulic Gradeline US Elev (ft)	Hydraulic Gradeline DS Elev (ft)	Fr. Slope (%)	Depth Unif. (ft)	Depth Actual (ft)	Velocity Unif. (f/s)	Velocity Actual (f/s)	Q (cfs)	Cap (cfs)	Junc Loss (ft)
1	497.86	496.93	0.223	0.90	0.90	4.47	4.47	4.96	7.41	0.388
2	496.73	495.20	0.191	1.16	1.67	5.26	3.53	9.89	15.69	-0.001
3*	495.20	494.33	0.757	1.13	2.00	10.81	6.26	19.68	32.48	0.570
4	495.63	495.20	0.242	1.00	1.17	4.15	3.48	5.17	6.63	0.165
5*	494.33	494.04	0.757	1.12	2.00	10.91	6.26	19.68	32.75	0.221

END

Cumulative Junction Discharge Computations

Node I.D.	Node Type	Weighted C-Value	Cumulat. Dr. Area (acres)	Cumulat. Tc (min)	Intens. (in/hr)	User Supply Q cfs)	Additional Q in Node (cfs)	Total Disch. (cfs)
K-6	Curb	0.900	0.32	10.00	9.80	0.000	0.00	2.789
OUT	Outlt	0.900	0.32	10.00	9.80	0.000	0.00	2.789

Conveyance Configuration Data

Run#	Node I.D. US	Node I.D. DS	Flowline Elev. US (ft)	Flowline Elev. DS (ft)	Shape #	Span (ft)	Rise (ft)	Length (ft)	Slope (%)	n_value
1	K-6	OUT	493.37	492.75	Circ 1	0.00	1.50	33.81	1.83	0.013

Conveyance Hydraulic Computations. Tailwater = 494.035 (ft)

Run#	Hydraulic Gradeline US Elev (ft)	Hydraulic Gradeline DS Elev (ft)	Fr. Slope (%)	Depth Unif. (ft)	Depth Actual (ft)	Velocity Unif. (f/s)	Velocity Actual (f/s)	Q (cfs)	Cap (cfs)	Junc Loss (ft)
1*	494.11	494.04	0.070	0.45	1.29	6.26	1.73	2.79	14.23	0.048

END

Cumulative Junction Discharge Computations

Node I.D.	Node Type	Weighted C-Value	Cumulat. Dr. Area (acres)	Cumulat. Tc (min)	Intens. (in/hr)	User Supply Q cfs)	Additional Q in Node (cfs)	Total Disch. (cfs)
K-3	Curb	0.900	1.83	10.58	9.70	0.000	0.00	16.016
K-7	Curb	0.900	1.53	10.35	9.74	0.000	0.00	13.418
K-8	Curb	0.900	0.78	10.00	9.80	0.000	0.00	6.917
OUT	Outlt	0.900	1.83	10.58	9.70	0.000	0.00	16.016

Conveyance Configuration Data

Run#	Node I.D. US	Node I.D. DS	Flowline Elev. US (ft)	Flowline Elev. DS (ft)	Shape #	Span (ft)	Rise (ft)	Length (ft)	Slope (%)	n_value
1	K-8	K-7	493.96	493.46	Circ 1	0.00	1.50	100.50	0.50	0.013
2	K-7	K-3	492.96	492.37	Circ 1	0.00	2.00	88.92	0.66	0.013
3	K-3	OUT	492.37	492.00	Circ 1	0.00	2.00	75.15	0.49	0.013

Conveyance Hydraulic Computations. Tailwater = 494.035 (ft)

Run#	Hydraulic Gradeline US Elev (ft)	Hydraulic Gradeline DS Elev (ft)	Fr. Slope (%)	Depth Unif. (ft)	Depth Actual (ft)	Velocity Unif. (f/s)	Velocity Actual (f/s)	Q (cfs)	Cap (cfs)	Junc Loss (ft)
1	495.88	495.15	0.434	1.15	1.50	4.76	3.91	6.92	7.41	0.297
2*	495.15	494.67	0.352	1.27	2.00	6.40	4.27	13.42	18.43	0.164
3	494.67	494.04	0.501	1.66	2.00	5.76	5.10	16.02	15.88	0.262

END

COMPUTATION SHEETS

1. THIS OUTPUT FILE SHOWS RESULTS FOR ROCKWALL'S 100-YR DISCHARGE CONDITIONS FOR ENTIRE SYSTEM; HOWEVER, INLETS ARE SIZED AND PLACED BASED ON 25-YR CRITERIA, AND PIPES ARE DESIGNED BASED ON 100-YR CRITERIA.
2. ALL COMPUTATIONS ARE BASED ON EXISTING WATERSHED CONDITIONS
3. JUNCTION LOSSES WERE DETERMINED BASED ON CITY OF ROCKWALL "VELOCITY HEAD LOSS COEFFICIENTS FOR CLOSED CONDUITS"

RECORD DRAWING

This drawing is a compilation of the original sealed engineering drawing and modifications by addenda, change orders and information furnished by the contractor. Information shown that was provided by the contractor and others not associated with the design engineer cannot be verified for accuracy or completeness. Original sealed drawing is on file at the office of AECOM USA Group, Inc., TBPE REG. NO. F-3062

ORIGINAL DRAWING SEALED & SIGNED BY
Matthew L. Abbe, P.E.
TX NO. 92715

NO.	REVISION	BY	DATE

City of Rockwall, Texas

205 BYPASS
PHASE 6

HYDRAULIC DATA
STORM SYSTEM K - 100 YR FLOWS

6 OF 10

TCB | AECOM
TCB INC.
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17300 DALLAS PARKWAY, SUITE 1010
DALLAS, TEXAS 75248

Unit PW-DAL-FW	Scale: Horz: AS SHOWN Vert: AS SHOWN	Date	11/24/2009
Designed RI	Checked TCB	Project No.	60004153
Drawn FC	Approved TCB	Sheet	73 of 216

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11/24/2009