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)
L-17	Curb	0.900	0.74	10.43	8.25	0.000	0.00	5.495
L-9	Curb	0.900	0.37	10.00	8.25	0.000	0.00	2.747
Lbnd3	Junct	0.900	0.74	10.49	8.25	0.000	0.00	5.495
OUT	Outlt	0.900	0.74	10.49	8.25	0.000	0.00	5.495

Conveyance Configuration Data

Run#	Node US	I.D. DS	Flowline Elev. US (ft)	DS (ft)	Shape #	Span (ft)	Rise (ft)	Length (ft)	Slope (%)	n_value
1	L-9	L-17	456.54	456.04	Circ 1	0.00	1.50	100.50	0.50	0.013
2	L-17	Lbnd3	456.04	454.98	Circ 1	0.00	1.50	31.30	3.39	0.013
3	Lbnd3	OUT	454.98	454.00	Circ 1	0.00	1.50	29.00	3.38	0.013

Conveyance Hydraulic Computations. Tailwater = 460.110 (ft)

Run#	Hydraulic Gradeline US Elev (ft)	DS Elev (ft)	Fr. Slope (%)	Depth Unif. (ft)	Actual (ft)	Velocity Unif. (f/s)	Actual (f/s)	Q (cfs)	Cap (cfs)	Junc Loss (ft)
1	460.57	460.46	0.068	0.63	1.50	3.88	1.55	2.75	7.41	0.047
2*	460.46	460.24	0.274	0.55	1.50	9.42	3.11	5.49	19.34	0.132
3*	460.24	460.11	0.274	0.55	1.50	9.41	3.11	5.49	19.32	0.053

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)
N-19	Curb	0.900	3.61	12.18	8.25	0.000	0.00	26.782
N-20	Curb	0.900	2.78	11.04	8.25	0.000	0.00	20.649
Nbnd-1	Junct	0.900	3.61	12.80	8.25	0.000	0.00	26.782
N-1	Curb	0.900	0.27	10.00	8.25	0.000	0.00	2.012
N-11	Curb	0.900	0.37	10.00	8.25	0.000	0.00	2.777
N-12	Curb	0.900	0.41	10.00	8.25	0.000	0.00	3.015
N-24	Curb	0.900	2.02	10.71	8.25	0.000	0.00	14.976
N-25	Curb	0.900	1.47	10.36	8.25	0.000	0.00	10.878
N-26	Curb	0.900	0.74	10.00	8.25	0.000	0.00	5.495
OUT	Outlt	0.900	3.61	12.80	8.25	0.000	0.00	26.782

Conveyance Configuration Data

Run#	Node US	I.D. DS	Flowline Elev. US (ft)	DS (ft)	Shape #	Span (ft)	Rise (ft)	Length (ft)	Slope (%)	n_value
1	N-26	N-25	445.18	444.68	Circ 1	0.00	1.50	100.50	0.50	0.013
2	N-25	N-24	444.18	443.77	Circ 1	0.00	2.00	103.14	0.40	0.013
3	N-24	N-20	443.27	442.91	Circ 1	0.00	2.50	103.12	0.35	0.013
4	N-1	N-24	444.63	444.27	Circ 1	0.00	1.50	100.50	0.36	0.013
5	N-11	N-20	445.01	443.91	Circ 1	0.00	1.50	100.50	1.09	0.013
6	N-20	N-19	442.91	442.50	Circ 1	0.00	2.50	286.92	0.14	0.013
7	N-12	N-19	444.40	443.50	Circ 1	0.00	1.50	100.50	0.90	0.013
8	N-19	Nbnd-1	442.00	440.10	Circ 1	0.00	3.00	285.26	0.67	0.013
9	Nbnd-1	OUT	440.10	440.00	Circ 1	0.00	3.00	15.35	0.65	0.013

Conveyance Hydraulic Computations. Tailwater = 446.000 (ft)

Run#	Hydraulic Gradeline US Elev (ft)	DS Elev (ft)	Fr. Slope (%)	Depth Unif. (ft)	Actual (ft)	Velocity Unif. (f/s)	Actual (f/s)	Q (cfs)	Cap (cfs)	Junc Loss (ft)
1	448.73	448.27	0.274	0.96	1.50	4.59	3.11	5.49	7.41	0.188
2	448.27	447.92	0.231	1.31	2.00	4.98	3.46	10.88	14.27	0.111
3	447.92	447.68	0.133	1.43	2.50	5.18	3.05	14.98	24.24	0.098
4	447.98	447.92	0.037	0.59	1.50	3.15	1.14	2.01	6.29	0.025
5*	447.80	447.68	0.070	0.51	1.50	5.18	1.57	2.78	10.99	0.048
6	447.68	446.72	0.253	2.50	2.50	4.21	4.21	20.65	15.51	0.239
7*	446.86	446.72	0.082	0.57	1.50	4.95	1.71	3.01	9.94	0.057
8*	446.72	446.10	0.161	1.49	3.00	7.65	3.79	26.78	54.44	0.154
9*	446.10	446.00	0.161	1.50	3.00	7.58	3.79	26.78	53.84	0.078

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)
M-18	Curb	0.900	1.47	10.47	8.25	0.000	0.00	10.915
M-10	Curb	0.900	0.74	10.00	8.25	0.000	0.00	5.495
OUT	Outlt	0.900	1.47	10.47	8.25	0.000	0.00	10.915

Conveyance Configuration Data

Run#	Node US	I.D. DS	Flowline Elev. US (ft)	DS (ft)	Shape #	Span (ft)	Rise (ft)	Length (ft)	Slope (%)	n_value
3	M-18	OUT	449.80	448.25	Circ 1	0.00	1.50	154.00	1.01	0.013
5	M-10	M-18	450.07	449.80	Circ 1	0.00	1.50	100.50	0.27	0.013

Conveyance Hydraulic Computations. Tailwater = 449.500 (ft)

Run#	Hydraulic Gradeline US Elev (ft)	DS Elev (ft)	Fr. Slope (%)	Depth Unif. (ft)	Actual (ft)	Velocity Unif. (f/s)	Actual (f/s)	Q (cfs)	Cap (cfs)	Junc Loss (ft)
3	451.65	449.54	1.079	1.29	1.29	6.76	6.76	10.91	10.54	0.563
5	452.14	451.65	0.274	1.22	1.50	3.57	3.11	5.49	5.45	0.211

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"

ORIGINAL DRAWING SEALED & SIGNED BY

T.H. Gaertner, P.E.

TX NO. 37124

NO.	REVISION	BY	DATE
1	DELETE SYSTEM O DATA	THG	2/11/08

City of Rockwall, Texas

205 BYPASS
PHASE 6

HYDRAULIC DATA
STORM SYSTEM L,M&N - 100 YR FLOWS

8 OF 10

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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	75A of 216