

WinStorm (STORM DRAIN DESIGN)

Version 3.05, Jan. 25, 2002  
Run @ 5/28/2008 10:57:06 AM

PROJECT NAME : SYSTEM D  
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)
D-1	0.9	0.64	10.00	10.00	9.80	0.000	5.603
D-2	0.9	0.68	10.00	10.00	9.80	0.000	5.964
D-3	0.9	0.40	10.00	10.00	9.80	0.000	3.547
D-4	0.615	1.68	10.00	10.00	9.80	0.000	10.132
	0.9	0.81					
	0.35	0.87					
D-5	0.9	0.28	10.00	10.00	9.80	0.000	2.431
D-7	0.9	0.71	10.00	10.00	9.80	0.000	6.300
D-8	0.9	0.48	10.00	10.00	9.80	0.000	4.244
D-9	0.9	0.65	10.00	10.00	9.80	0.000	5.732
D-10	0.9	0.94	10.00	10.00	9.80	0.000	8.310
D-11	0.9	0.28	10.00	10.00	9.80	0.000	2.431
OSD1	0.5	5.85	20.00	20.00	8.33	0.000	24.379
D-13	0.9	0.44	10.00	10.00	9.80	0.000	3.890
D-14	0.9	0.44	10.00	10.00	9.80	0.000	3.890
D-15	0.9	0.25	10.00	10.00	9.80	0.000	2.185
D-16	0.9	0.25	10.00	10.00	9.80	0.000	2.185

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)
D-1	Curb	0.900	0.64	10.00	9.80	0.000	0.00	5.603
D-2	Curb	0.900	0.68	10.00	9.80	0.000	0.00	5.964
D-3	Curb	0.900	0.40	10.00	9.80	0.000	0.00	3.547
D-4	Curb	0.615	1.68	10.00	9.80	0.000	0.00	10.132
D-5	Curb	0.900	0.28	10.00	9.80	0.000	0.00	2.431
D-7	Curb	0.900	0.71	10.00	9.80	0.000	0.00	6.300
D-8	Curb	0.900	0.48	10.00	9.80	0.000	0.00	4.244
D-9	Curb	0.900	0.65	10.00	9.80	0.000	0.00	5.732
D-10	Curb	0.900	0.94	10.00	9.80	0.000	0.00	8.310
D-11	Curb	0.900	0.28	10.00	9.80	0.000	0.00	2.431
OSD1	Curb	0.500	5.85	20.00	8.33	0.000	0.00	24.379
D-13	Curb	0.900	0.44	10.00	9.80	0.000	0.00	3.890
D-14	Curb	0.900	0.44	10.00	9.80	0.000	0.00	3.890
D-15	Curb	0.900	0.25	10.00	9.80	0.000	0.00	2.185
D-16	Curb	0.900	0.25	10.00	9.80	0.000	0.00	2.185
m1	Junct	0.900	1.35	10.39	9.73	0.000	0.00	11.819
M2	Junct	0.900	1.83	11.17	9.60	0.000	0.00	15.812
M3	Junct	0.900	2.51	11.78	9.50	0.000	0.00	21.423
M4	Junct	0.900	3.16	12.27	9.42	0.000	0.00	26.748
M5	Junct	0.640	9.01	20.17	8.31	0.000	0.00	47.932
M6	BoxMh	0.651	9.41	20.28	8.30	0.000	0.00	50.862
M7	BoxMh	0.666	12.03	21.04	8.21	0.000	0.00	65.753
M8	Junct	0.674	12.47	21.47	8.16	0.000	0.00	68.590
M9	Junct	0.682	12.91	21.53	8.15	0.000	0.00	71.762
M10	Junct	0.686	13.19	21.60	8.15	0.000	0.00	73.716
M11	Junct	0.691	13.46	21.66	8.14	0.000	0.00	75.671
M12	BoxMh	0.698	13.96	21.73	8.13	0.000	0.00	79.222
m13	BoxMh	0.651	9.41	20.28	8.30	0.000	0.00	50.862
OUT	Outlet	0.698	13.96	21.73	8.13	0.000	0.00	79.222

Conveyance Configuration Data

Run#	Node US	I.D. DS	Flowline US (ft)	Elev. DS (ft)	Shape #	Span (ft)	Rise (ft)	Length (ft)	Slope (%)	n-value
14	OSD1	M5	524.50	523.98	Circ	1	0.00	2.50	76.68	0.68
15	D-1	m1	530.13	529.66	Circ	1	0.00	1.50	103.94	0.45
16	D-2	M3	526.96	526.14	Circ	1	0.00	1.50	103.94	0.79
17	D-3	M6	524.75	524.50	Circ	1	0.00	1.50	41.17	0.61
18	D-4	M7	506.39	506.03	Circ	1	0.00	1.50	10.25	3.51
19	D-5	M10	497.03	496.32	Circ	1	0.00	1.50	11.57	6.15
21	D-8	M2	528.10	527.88	Circ	1	0.00	1.50	11.57	1.90
22	D-9	M4	525.13	524.82	Circ	1	0.00	1.50	11.57	2.68
23	D-10	M7	506.39	506.03	Circ	1	0.00	1.50	90.28	0.40
24	D-11	M11	498.03	495.69	Circ	1	0.00	1.50	103.94	2.25
25	D-13	M8	498.02	497.37	Circ	1	0.00	1.50	11.57	5.63
26	D-14	M9	497.52	496.85	Circ	1	0.00	1.50	103.94	0.64
27	D-15	M12	496.68	495.81	Circ	1	0.00	1.50	10.25	8.52
28	D-16	M12	498.68	495.81	Circ	1	0.00	1.50	90.25	3.18
29	m13	M7	510.10	505.03	Circ	1	0.00	2.50	302.44	1.68
1	D-7	m1	530.12	529.91	Circ	1	0.00	1.50	57.08	0.37
2	m1	M2	529.41	527.63	Circ	1	0.00	2.00	284.22	0.63
3	M2	M3	527.63	526.14	Circ	1	0.00	2.00	236.64	0.63
4	M3	M4	525.64	524.32	Circ	1	0.00	2.50	209.01	0.63
5	M4	M5	524.32	523.98	Circ	1	0.00	2.50	43.51	0.78
6	M5	M6	523.98	523.50	Circ	1	0.00	2.50	62.10	0.77
7	M6	m13	518.50	514.00	Circ	1	0.00	2.50	262.72	1.71
8	M7	M8	501.53	496.87	Circ	1	0.00	3.00	325.04	1.43
9	M8	M9	496.37	495.85	Circ	1	0.00	3.50	46.16	1.13
10	M9	M10	495.85	495.32	Circ	1	0.00	3.50	46.46	1.14
11	M10	M11	495.32	494.69	Circ	1	0.00	3.50	46.19	1.36
12	M11	M12	494.69	493.81	Circ	1	0.00	3.50	56.24	1.56
13	M12	OUT	491.56	490.84	Circ	1	0.00	3.50	92.16	0.78

Conveyance Hydraulic Computations. Tailwater = 498.250 (ft)

Run#	Hydraulic US Elev (ft)	Gradeline DS Elev (ft)	Fr. Slope (%)	Depth (ft)	Unif. Actual (ft)	Velocity Unif. Actual (f/s)	Q (cfs)	Cap (cfs)	Junc Loss (ft)
14*	528.96	528.21	0.353	1.57	2.50	7.50	4.97	24.38	33.78
15	531.92	531.43	0.284	1.01	1.50	4.44	3.17	5.60	7.06
16*	529.76	529.20	0.322	0.87	1.50	5.59	3.38	5.96	9.33
17*	525.83	525.19	0.114	0.69	0.69	4.46	4.46	3.55	8.19
18*	509.60	506.79	0.930	0.76	0.76	11.22	11.22	10.13	19.69
19*	500.54	500.50	0.054	0.31	1.50	9.23	1.38	2.43	26.05
21*	530.72	530.59	0.163	0.56	1.50	7.11	2.40	4.24	14.49
22*	528.87	528.63	0.298	0.60	1.50	8.76	3.24	5.73	17.20
23	508.32	507.15	0.626	1.50	1.50	4.70	4.70	8.31	6.63
24*	500.08	499.99	0.054	0.40	1.50	6.46	1.38	2.43	15.77
25*	501.33	501.23	0.137	0.40	1.50	10.26	2.20	3.89	24.92
26*	501.25	501.01	0.137	0.71	1.50	4.68	2.20	3.89	8.43
27*	499.43	499.39	0.043	0.27	1.50	10.05	1.24	2.18	30.66
28*	499.46	499.39	0.043	0.35	1.50	7.09	1.24	2.18	18.74
29*	513.20	506.99	1.537	1.96	1.96	12.30	12.30	50.86	53.12
1	531.89	531.43	0.360	1.22	1.50	4.10	3.56	6.30	6.37
2*	531.43	530.59	0.273	1.19	2.00	6.08	3.76	11.82	17.91
3	530.59	529.20	0.488	1.45	2.00	6.47	5.03	15.81	17.95
4*	529.20	528.63	0.273	1.48	2.50	7.05	4.36	21.42	32.60
5*	528.63	528.21	0.425	1.60	2.50	8.05	5.45	26.75	36.26
6	528.21	525.77	1.365	2.50	2.50	9.76	9.76	47.93	36.07
7*	522.10	515.94	1.537	1.94	1.94	12.42	12.42	50.86	53.69
8*	504.75	501.23	0.972	2.07	3.00	12.61	9.30	65.75	79.88
9*	501.23	501.01	0.465	2.04	3.50	11.80	7.13	68.59	106.80
10*	501.01	500.50	0.509	2.09	3.50	11.96	7.46	71.76	107.48
11*	500.50	499.99	0.537	2.01	3.50	12.90	7.66	73.72	117.52
12*	499.99	499.39	0.566	1.96	3.50	13.69	7.87	75.67	125.88
13*	499.39	498.25	0.620	2.57	3.50	10.46	8.23	79.22	88.94

\* Super critical flow.

COMPUTATION SHEETS

- ALL COMPUTATIONS ARE BASED ON EXISTING WATERSHED CONDITIONS.

- TIME OF CONCENTRATION IS DETERMINED ACCORDING TO CITY OF ROCKWALL CRITERIA.

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-3082

ORIGINAL DRAWING SEALED & SIGNED BY

T.H. Gaertner, P.E.  
TX NO. 37124

NO.	REVISION	BY	DATE



City of Rockwall, Texas

205 BYPASS  
PHASE 2

HYDRAULIC DATA  
SYSTEM D-100 YR FLOWS

1 OF 2

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

Unit	PW-DAL-FW	Scale	Horz: AS SHOWN Vert: AS SHOWN	Date	11/23/2009
Designed	SDB	Checked	TCB	Project No.	60004153
Drawn	FG	Approved	TCB	Sheet	52 of 142