

WinStorm (STORM DRAIN DESIGN)

Version 3.05, Jan. 25, 2002
Run @ 5/22/2008 11:13:13 AM

PROJECT NAME : SYSTEM E INLETS
JOB NUMBER :
PROJECT DESCRIPTION :
ANALYSIS FREQUENCY : 100 Years
MEASUREMENT UNITS: ENGLISH

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OUTPUT FOR ANALYSIS FREQUENCY of: 100 Years

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Runoff Computation for Design Frequency.

ID	C Value	Area (acre)	Tc (min)	Tc Used (min)	Intensity (in/hr)	Supply Q (cfs)	Total Q (cfs)
E-1	0.9	0.36	10.00	10.00	9.80	0.000	3.176
E-14	0.9	0.36	10.00	10.00	9.80	0.000	3.176
OSE8	0.9	3.61	10.00	10.00	9.80	0.000	31.851
OSE9	0.9	0.93	10.00	10.00	9.80	0.000	8.205
E-2	0.9	0.41	10.00	10.00	9.80	0.000	3.617
E-13	0.9	0.41	10.00	10.00	9.80	0.000	3.617

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)
OSE8	Curb	0.900	3.61	10.00	9.80	0.000	0.00	31.851
OSE9	Curb	0.900	0.93	10.00	9.80	0.000	0.00	8.205
m26	Junct	0.900	0.82	10.35	9.74	0.000	0.00	7.189
E-2	Curb	0.900	0.41	10.00	9.80	0.000	0.00	3.617
E-13	Curb	0.900	0.41	10.00	9.80	0.000	0.00	3.617
E-1	Curb	0.900	0.36	10.00	9.80	0.000	0.00	3.176
m24	Junct	0.900	1.29	10.65	9.69	0.000	0.00	11.249
E-14	Curb	0.900	0.36	10.00	9.80	0.000	0.00	3.176
m23	Junct	0.900	1.65	10.76	9.67	0.000	0.00	14.361
m25	Junct	0.900	6.08	11.28	9.58	0.000	0.00	52.431
OUT	Outlet	0.900	6.08	11.28	9.58	0.000	0.00	52.431

Conveyance Configuration Data

Run#	Node	I.D.	Flowline Elev. US (ft)	Flowline Elev. DS (ft)	Shape	#	Span (ft)	Rise (ft)	Length (ft)	Slope (%)	n-value
1	m24	m23	536.27	535.82	Circ	1	0.00	2.00	46.13	0.98	0.013
2	m23	m25	535.32	534.59	Circ	1	0.00	2.50	173.30	0.42	0.013
3	m25	OUT	534.09	533.75	Circ	1	0.00	3.00	40.00	0.85	0.013
5	E-1	m24	537.85	536.52	Circ	1	0.00	1.50	11.52	11.62	0.013
6	E-14	m23	537.85	535.82	Circ	1	0.00	1.50	103.94	1.95	0.013
7	OSE8	m25	535.30	534.59	Circ	1	0.00	2.50	113.90	0.62	0.013
4	OSE9	m24	537.27	536.27	Circ	1	0.00	2.00	199.94	0.50	0.013
8	E-2	m26	536.32	535.75	Circ	1	0.00	1.50	57.74	0.99	0.013
9	m26	m25	535.25	535.09	Circ	1	0.00	2.00	24.55	0.65	0.013
10	E-13	m26	536.32	535.50	Circ	1	0.00	1.50	103.94	0.79	0.013

Conveyance Hydraulic Computations. Tailwater = 0.000 (ft)

Run#	Hydraulic Gradeline		Depth		Velocity		Q (cfs)	Cap (cfs)	Junc Loss (ft)	
	US Elev (ft)	DS Elev (ft)	Fr. Slope (%)	Unif. Actual (ft)	Unif. Actual (f/s)	Actual (f/s)				
1*	537.60	536.82	0.247	1.00	1.00	7.13	7.13	11.25	22.35	0.329
2	536.66	536.50	0.123	1.31	1.91	5.52	3.57	14.36	26.62	0.000
3*	536.50	535.88	0.618	2.13	2.13	9.75	9.75	52.43	61.50	0.279
5*	538.28	537.60	0.091	0.30	1.08	12.48	2.32	3.18	35.82	0.063
6*	538.40	536.66	0.091	0.47	0.84	6.63	3.10	3.18	14.68	0.075
7	539.31	536.51	0.603	2.01	2.01	7.52	7.52	31.85	32.39	1.996
4*	538.45	537.60	0.132	1.02	1.33	5.12	3.69	8.21	16.00	0.167
8*	537.03	536.55	0.119	0.61	0.80	5.37	3.78	3.62	10.44	0.103
9*	536.55	536.50	0.101	0.88	1.41	5.44	3.03	7.19	18.27	0.023
10*	537.07	536.55	0.119	0.65	1.05	4.92	2.74	3.62	9.33	0.103

* Super critical flow.

COMPUTATION SHEETS



- COMPUTATIONS FOR OFFSITE AREAS OSE2, OSE3, OSE4, OSE5, OSE6, OSE7, OSE8, AND OSE9 ARE BASED ON PROPOSED WATERSHED CONDITIONS. COMPUTATIONS FOR OFFSITE AREA OSE1 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

I		WINSTORM OUTPUT		THG	5/22/08
NO.	REVISION			BY	DATE
 City of Rockwall, Texas					
205 BYPASS PHASE 3					
HYDRAULIC DATA STORM SYSTEM E-100 YR FLOWS					
2 OF 2					
		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	Checked	TCB		Project No.	60004153
Drawn	Approved	TCB		Sheet	75 of 215

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 11/23/2009

PROJECT NAME : SYSTEM H INLETS
JOB NUMBER :
PROJECT DESCRIPTION :
ANALYSYS FREQUENCY : 100 Years
MEASUREMENT UNITS: ENGLISH

COMPUTATION SHEETS

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

OUTPUT FOR ANALYSYS 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)
OSHI	0.495	27.47	50.00	50.00	5.00	0.000	67.983
	0.9	7.24	Pavement				
	0.35	20.23	Undeveloped				
OSH2	0.35	28.11	40.00	40.00	5.50	0.000	54.112
H-3	0.9	0.96	10.00	10.00	9.80	0.000	8.467
H-4	0.9	0.78	10.00	10.00	9.80	0.000	6.880
H-5	0.9	0.35	10.00	10.00	9.80	0.000	3.087
H-6	0.9	0.82	10.00	10.00	9.80	0.000	7.232
H-7	0.9	0.42	10.00	10.00	9.80	0.000	3.704
stb-h	0.9	3.68	10.00	10.00	9.80	0.000	32.458
OSH3	0.9	1.11	10.00	10.00	9.80	0.000	9.790

On Grade Inlet Configuration Data

Inlet ID	Inlet Type	Inlet Length (ft)	Inlet Slopes Long Trans (%)	Inlet Slopes Right Trans (%)	Gutter n	Gutter Depr. (ft)	Grate Width (ft)	Grate Type	Pond Width Allowed (ft)	Critic Elev. (ft)
H-3	Curb	15.00	2.00	2.00	0.016	0.25	n/a	n/a	14.00	552.60
H-4	Curb	15.00	1.44	2.00	0.016	0.25	n/a	n/a	14.00	552.80
H-6	Curb	15.00	1.44	2.00	0.016	0.25	n/a	n/a	14.00	552.58

On Grade Inlets Computation Data.

Inlet ID	Inlet Type	Total Q (cfs)	Intercept Capacity (cfs)	Q Allow (cfs)	Q Bypass Actual (cfs)	To Inlet ID	Inlet Required Length (ft)	Actual Length (ft)	Ponded Width (ft)
H-3	Curb	8.467	7.010	0.000	1.458		24.05	15.00	14.10
H-4	Curb	6.880	6.339	0.000	0.541	H-5	19.83	15.00	13.85
H-6	Curb	7.232	6.567	0.000	0.665	H-7	20.42	15.00	14.15

Sag Inlets Configuration Data.

Inlet ID	Inlet Type	Inlet Length (ft)	Grate Perim Area (sf)	Left-Slope Long Trans (%)	Right-Slope Long Trans (%)	Gutter n	Gutter DeprW (ft)	Depth Allowed (ft)	Critic Elev. (ft)		
OSH2	Curb	20.00	n/a	0.50	2.00	0.50	2.00	0.016	2.00	0.42	549.50
OSHI	Curb	20.00	n/a	0.50	2.00	0.50	2.00	0.016	2.00	0.42	550.00
H-5	Curb	15.00	n/a	0.15	2.00	0.15	2.00	0.016	2.00	0.42	551.96
H-7	Curb	15.00	n/a	0.15	2.00	0.15	2.00	0.016	2.00	0.42	551.74
OSH3	Curb	12.00	n/a	0.50	2.00	0.50	2.00	0.016	2.00	0.42	553.50

Sag Inlets Computation Data.

Inlet ID	Inlet Type	Inlet Length (ft)	Grate Perim Area (sf)	Total Q (cfs)	Inlet Capacity (cfs)	Total Head (ft)	Ponded Left (ft)	Ponded Right (ft)	Width (ft)
OSH2	Curb	20.00	n/a	54.112	20.438	1.668	28.25	28.25	28.25
OSHI	Curb	20.00	n/a	67.983	20.438	2.513	30.80	30.80	30.80
H-5	Curb	15.00	n/a	3.628	11.503	0.193	12.85	12.85	12.85
H-7	Curb	15.00	n/a	4.370	11.503	0.219	13.80	13.80	13.80
OSH3	Curb	12.00	n/a	9.790	12.263	0.341	14.90	14.90	14.90

NORMAL TERMINATION OF WINSTORM.

RECORD DRAWING

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ORIGINAL DRAWING SEALED & SIGNED BY

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

NO.	REVISION	BY	DATE
1	WINSTORM OUTPUT	THG	5/20/08



City of Rockwall, Texas

205 BYPASS
PHASE 3

HYDRAULIC DATA
SYSTEM H INLETS

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	SB	Checked	TCB	Project No.	60004153
Drawn	EG	Approved	TCB	Sheet	68 of 215