

# STORM SEWER LINES "A,B,C & D"

## STORM SEWER CALCULATIONS

Runoff Collection Point		Distance Between Collection Points	Incremental Drainage Area			Incremental "CA"	Accumulated "CA"	Time at Upstream Station (MIN.)	Design Storm Freq. (Yrs.)	Intensity (I) (in./Hr.)	Runoff (Q) (c.f.s.)	Slope of Hydraulic Gradient (Ft./FL)	No of Pipes	Selected Storm Sewer Size	Velocity Between Points (f.p.s.)	Head Loss Coeff. "K"	Velocity Head Loss Upstream (Feet)	Flow Time Distance/ (Vel*60) (Min.)	Time at Downstream Station (Min.)	Remarks
Upstream Station	Downstream Station		Area. No.	Drainage Area (Ac.)	Runoff Coeff. "C"															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Existing Line A With/ Prop. Parallel Line A1																				
784.55	720.06	64.49	A2	1.06	0.90	0.95	0.95	10.00	100	8.74	8.34	0.0004	1	30	1.70	1	0.00	0.63	10.63	
720.06	717.50	2.56	A3	0.32	0.90	0.29	1.24	10.63	100	8.66	10.76	0.0007	1	30	2.19	1	0.07	0.02	10.65	
717.50	554.79	162.71	A1	1.37	0.90	1.23	2.48	10.65	100	8.65	21.41	0.0027	1	30	4.36	1	0.25	0.62	11.27	
554.79	528.88	27.91	A4	0.17	0.90	0.15	2.63	11.27	100	8.45	22.21	0.0029	1	30	4.52	1	0.02	0.10	11.38	
528.88	294.11	232.77	A5 & A5A	3.60	0.90	3.24	5.87	11.38	100	8.42	49.41	0.0024	1	42	5.14	1	0.09	0.76	12.13	3.00 Ac. To Prop. A1
294.11	242.72	51.39	A6	0.24	0.90	0.22	6.08	12.13	100	8.18	49.77	0.0012	1	48	3.96	1	0.00	0.22	12.35	0.40 Ac. To Prop. A1
242.72	147.84	94.88	A8	0.34	0.90	0.31	6.39	12.35	100	8.15	52.08	0.0013	1	48	4.14	1	0.02	0.38	12.73	0.40 Ac. To Prop. A1
147.84	80.51	67.33	LINE B	2.65	0.90	2.39	8.78	12.73	100	8.06	70.73	0.0024	1	48	5.63	1	0.23	0.20	12.93	3.00 Ac. To Prop. A1
80.51	67.01	13.50	A10	0.70	0.90	0.63	9.41	12.93	100	8.02	75.43	0.0028	1	48	6.00	1	0.07	0.04	12.97	
67.01	0.00	67.01	A12	0.33	0.90	0.30	9.70	12.97	100	8.01	77.71	0.0029	1	48	6.18	1	0.03	0.18	13.15	
				10.78																
Proposed Line A1																				
512.75	495.18	17.57	A5 & A5A	3.00	0.90	2.70	2.70	10.00	100	8.74	23.60	0.0020	1	33	3.97	1	0.00	0.07	10.07	
495.18	284.23	230.95	A7A	0.26	0.90	0.23	2.93	10.07	100	8.70	25.53	0.0023	1	33	4.30	1	0.29	0.90	10.97	
284.23	240.42	23.81	A7B	0.20	0.90	0.18	3.11	10.97	100	8.42	26.22	0.0015	1	36	3.71	1	0.00	0.11	11.08	
240.42	144.00	96.42	A6 & A8	0.80	0.90	0.72	3.83	11.08	100	8.40	32.21	0.0023	1	36	4.56	1	0.11	0.35	11.43	
144.00	103.77	40.23	LINE B	3.00	0.90	2.70	6.53	11.43	100	8.30	54.23	0.0014	1	48	4.32	1	0.00	0.16	11.58	
103.77	89.32	14.45	A9	0.53	0.90	0.48	7.01	11.58	100	8.27	57.98	0.0016	1	48	4.61	1	0.04	0.05	11.64	
89.32	0.00	89.32	A11	0.64	0.90	0.58	7.59	11.64	100	8.25	62.59	0.0014	1	51	4.41	1	0.00	0.34	11.97	
				8.43																
Existing Line C & Proposed Line CE																				
398.00	288.27	109.73	CE	0.26	0.90	0.23	0.23	10.00	100	8.74	2.05	0.0002	1	21	0.85	1	0.00	2.15	12.15	
288.27	282.14	6.13	CE1	0.15	0.90	0.14	0.37	12.15	100	8.12	3.00	0.0002	1	24	0.95	1	0.01	0.11	12.26	
282.14	226.93	55.21	CE3	0.16	0.90	0.14	0.51	12.26	100	8.09	4.15	0.0003	1	24	1.32	1	0.02	0.70	12.95	
226.93	78.22	148.71	C	4.00	0.90	3.60	4.11	12.95	100	7.94	32.66	0.0063	1	30	6.65	1	0.67	0.37	13.33	
78.22	72.50	5.72	CE2	0.15	0.90	0.14	4.25	13.33	100	7.85	33.35	0.0025	1	36	4.72	1	0.32	0.02	13.35	
72.50	0.00	72.50	CE4	0.44	0.90	0.40	4.64	13.35	100	7.84	36.41	0.0030	1	36	5.15	1	0.00	0.23	13.58	
				5.16																
Existing Line D																				
749.90	667.30	82.60	A, A13,C&CE	24.67	0.90	22.20	21.97	12.21	100	8.10	177.96	0.0047	1	60	9.06	1	0.00	0.15	12.36	
667.30	584.60	82.70	D1	0.23	0.90	0.21	22.41	12.36	100	8.07	180.85	0.0048	1	60	9.21	1	0.04	0.15	12.51	
584.60	493.50	91.10	D2	0.23	0.90	0.21	22.62	12.51	100	8.06	182.29	0.0049	1	60	9.28	1	0.02	0.16	12.68	
493.50	0.00	493.50	D3	0.23	0.90	0.21	22.82	12.68	100	8.05	183.73	0.0050	1	60	9.36	1	0.02	0.88	13.55	
				25.36																

*This record drawing is a compilation of the sealed engineering drawing for this project; modified by addenda, change orders and information furnished by the contractor. The information shown on the record drawings that was provided by the contractor or others not associated with the design engineer cannot be verified for accuracy or completeness. This original sealed drawings are on file at the offices of Birkhoff, Hendricks & Carter, L.L.P.*

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BY J.W.B. DATE 05/04/2010

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*J.W.B.*

DATE: 10/31/06



**TOWN OF ADDISON, TEXAS**  
**ADDISON ROAD IMPROVEMENTS**  
**BELT LINE ROAD TO ARAPAHO ROAD PHASE I**  
**STORM SEWER CALCULATIONS**

**BIRKHOFF, HENDRICKS & CONWAY L. L. P.**  
CONSULTING ENGINEERS  
Dallas, Texas

DESIGNED BY: J.W.B. PROJECT: 2002 102 SHEET NO. 34  
DRAWN BY: R.J.L. DATE: SEPTEMBER 2006 OF 68 SHEETS

REVISION: 5/16/10 - RLOWE  
 PLOT SCALE: 1"=10'  
 PLOT STYLE: 11x17.ctb  
 PLOTTED BY: RLOWE ON 5/14/2010  
 H:\Projects\Addison\2002 102\PHASE I\Sheet\Sheet-Js-Built\2002 102C34\_1A82.dwg