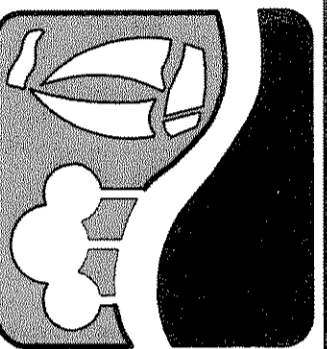


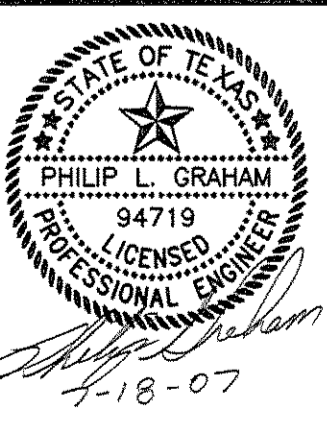
STORM DRAIN DESIGN CALCULATIONS

FROM	REACH TO	INFLOW (INLETS & HEADWALLS)				TOTAL 'CA'	TIME AT UPSTREAM OF REACH (min)	DESIGN STORM FREQUENCY (yr)	RAINFALL INTENSITY 'I' (in/hr)	TOTAL FLOW 'Q' (cfs)	STORM DRAIN SIZE	VELOCITY (ft/sec)	SLOPE OF FRICTION GRADIENT (ft/ft)	STRUCTURE LOSS COEFF. 'Kj'	STRUCTURE LOSS AT UPSTREAM OF REACH (ft)	FLOW TIME IN DRAIN (min)	TIME AT DOWNSTREAM OF REACH (min)	H.G. AT UPSTREAM OF REACH (ft)	REMARKS
		LENGTH (ft)	SOURCE	'CA'	INLET TIME (min)														
SYSTEM "A"																			
1+94.41	1+70.83	23.58		289.90	10.0	289.90	10.0	100	9.80	2841.0	9x9	8.8	0.0020	0.00	0.00	0.0	10.0	544.67	
INLET A-3	1+70.83	54.85		1.21	10.0	1.21	10.0	100	9.80	11.9	21	4.9	0.0056	1.25	0.48	0.2	10.2	545.41	
1+70.83	0+91.06	76.77	-	-	-	291.11	10.2	100	9.77	2844.1	9x9	8.8	0.0020	0.00	0.00	0.1	10.3	544.63	
INLET A-4	13+55.71	16.26		0.56	10.0	0.56	10.0	100	9.80	5.5	18	3.1	0.0027	1.25	0.19	0.0	10.0	565.94	
13+55.71	11+76.18	179.53	-	-	-	0.56	10.0	100	9.80	5.5	18	3.1	0.0027	0.50	0.08	0.3	10.3	565.55	
AREA A-4.1	11+76.18	29.73		2.12	10.0	2.12	10.0	100	9.80	20.8	24	6.6	0.0085	0.00	0.00	0.0	10.0	561.82	FUTURE STORM DRAIN EXTENSION
11+76.18	10+53.31	122.87	-	-	-	2.68	10.3	100	9.76	26.2	27	6.6	0.0072	0.30	0.63	0.2	10.5	561.33	
INLET A-4.2	10+53.31	16.31		0.47	10.0	0.47	10.0	100	9.80	4.6	18	2.6	0.0019	1.25	0.13	0.1	10.1	559.49	
10+53.31	10+24.54	28.77	-	-	-	3.15	10.5	100	9.73	30.6	27	7.7	0.0098	0.30	0.72	0.1	10.6	559.33	
INLET A-4.3	10+24.54	119.54		0.55	10.0	0.55	10.0	100	9.80	5.4	18	3.1	0.0026	1.25	0.18	0.2	10.2	560.69	
10+24.54	9+08.24	116.3	-	-	-	3.70	10.6	100	9.71	35.9	27	9.0	0.0134	0.30	0.98	0.2	10.8	558.33	
INLET A-4.4	9+08.24	42.68		1.67	10.0	1.67	10.0	100	9.80	16.4	24	5.2	0.0053	1.25	0.53	0.0	10.0	557.46	
9+08.24	8+23.81	84.43	-	-	-	5.37	10.8	100	9.68	52.0	30	10.6	0.0161	0.30	1.37	0.1	10.9	555.79	
INLET A-4.5	8+23.81	16.31		0.53	10.0	0.53	10.0	100	9.80	5.2	18	2.9	0.0025	1.25	0.17	0.1	10.1	553.27	
8+23.81	4+82.11	341.7	-	-	-	5.90	10.9	100	9.67	57.1	33	9.6	0.0117	0.30	0.91	0.6	11.5	553.06	
INLET A-4.6	4+82.11	16.31		0.65	10.0	0.65	10.0	100	9.80	6.4	18	3.6	0.0037	1.25	0.25	0.1	10.1	548.47	
4+82.11	4+03.46	78.65	-	-	-	6.55	11.5	100	9.57	62.7	36	8.9	0.0088	0.30	0.80	0.1	11.6	548.15	
INLET A-4.7	4+03.46	126.64		0.66	10.0	0.66	10.0	100	9.80	6.5	18	3.7	0.0038	1.25	0.26	0.6	10.6	547.41	
4+03.46	1+75	228.46	-	-	-	7.21	11.6	100	9.56	68.9	42	7.2	0.0047	0.30	0.44	0.5	12.1	546.66	
1+75	1+46.87	28.13	-	-	-	7.21	12.1	100	9.49	68.4	42	7.1	0.0046	0.00	0.00	0.1	12.2	545.15	
INLET A-4.8	1+46.87	16.26		1.14	10.0	1.14	10.0	100	9.80	11.2	24	3.6	0.0025	1.25	0.25	0.1	10.1	545.31	
1+46.87	0+91.06	55.81	-	-	-	8.35	12.2	100	9.47	79.1	48	6.3	0.0030	0.30	0.38	0.1	12.3	545.02	
INLET A-5	7+35.89	16.23		0.43	10.0	0.43	10.0	100	9.80	4.2	18	2.4	0.0016	1.25	0.11	0.0	10.0	566.08	
7+35.89	5+38.11	197.78	-	-	-	0.43	10.0	100	9.80	4.2	18	2.4	0.0016	0.50	0.04	0.3	10.3	565.41	
INLET A-5.1	5+38.11	128.85		0.47	10.0	0.47	10.0	100	9.80	4.6	18	2.6	0.0019	1.25	0.13	0.2	10.2	561.15	
5+38.11	5+18.87	19.24	-	-	-	0.90	10.3	100	9.76	8.8	18	5.0	0.0070	0.30	0.36	0.1	10.4	557.50	
INLET A-5.2	5+18.87	16.26		0.36	10.0	0.36	10.0	100	9.80	3.5	18	2.0	0.0011	1.25	0.08	0.1	10.1	557.10	
5+18.87	3+40.87	178	-	-	-	1.26	10.4	100	9.74	12.3	18	7.0	0.0137	0.30	0.64	0.2	10.6	557.00	
INLET A-5.3	3+40.87	126.57		0.41	10.0	0.41	10.0	100	9.80	4.0	18	2.3	0.0015	1.25	0.10	0.3	10.3	552.56	
3+40.87	2+68.87	72	-	-	-	1.67	10.6	100	9.71	16.2	18	9.2	0.0238	0.30	1.09	0.1	10.7	550.79	
INLET A-5.4	2+68.87	16.26		0.32	10.0	0.32	10.0	100	9.80	3.1	18	1.8	0.0009	1.25	0.06	0.0	10.0	547.84	
2+68.87	1+90.87	78	-	-	-	1.99	10.7	100	9.70	19.3	24	6.1	0.0073	0.30	0.18	0.1	10.8	547.58	
INLET A-5.5	1+90.87	126.57		0.27	10.0	0.27	10.0	100	9.80	2.6	18	1.5	0.0006	1.25	0.04	0.3	10.3	547.32	
1+90.87	0+91.06	92.9	-	-	-	2.26	10.8	100	9.68	21.9	24	7.0	0.0094	0.30	0.59	0.2	11.0	545.93	
0+91.06	0+74.41	16.65	-	-	-	301.72	12.3	100	9.46	2854.3	9x9	8.8	0.0020	0.00	0.00	0.0	12.3	544.47	
SYSTEM "B"																			
INLET B-1	2+30.00	117.50		1.89	10.0	1.89	10.0	100	9.80	18.5	24	5.9	0.0067	1.25	0.67	0.3	10.3	575.19	
INLET B-2	2+30.00	88.63		0.90	10.0	0.90	10.0	100	9.80	8.8	21	3.7	0.0031	1.25	0.26	0.4	10.4	574.25	
2+30.00	2+05.00	25.00	-	-	-	2.79	10.4	100	9.74	27.2	30	5.5	0.0044	0.50	0.20	0.1	10.5	573.72	
SYSTEM "C"																			
INLET C-1	INLET C-2	370.00		0.22	10.0	0.22	10.0	100	9.80	2.2	18	1.2	0.0004	1.25	0.03	1.3	11.3	580.88	
INLET C-2	1+46.00	104.00		0.90	10.0	1.12	11.3	100	9.60	10.8	18	6.1	0.0106	0.50	0.57	0.3	11.6	578.16	

WIER & ASSOCIATES, INC.
 ENGINEERS SURVEYORS LAND PLANNERS
 4300 BELTWAY PLACE SUITE 130 ARLINGTON, TEXAS 76010 METRO (817)467-7700
 1380 U.S. HIGHWAY 287 N. SUITE 101 MANSFIELD, TEXAS 76063 METRO (817)477-8700
 6849 ELM STREET FRODO, TEXAS 75004 METRO (214)387-9000
 www.WierAssociates.com



PHASE I S.H. 205 BYPASS
 FROM S.H. 276 TO INTERSTATE 30
**STORM DRAIN
 DESIGN CALCULATIONS**



RECORD PLANS
 MARCH 28, 2008

COPYRIGHT ©
 WIER & ASSOCIATES, INC.
 LAST SHEET EDIT
 DATE 07-18-2007
 WA# 04141

SHEET NO.
 D103