

TIME 9:58 FILE: SDCALCS-04124_01.dwg

STORMDRAIN CALCULATIONS - LINE A

FROM	TO	LENGTH (FT)	CxA	INLET TIME (min.)	TOTAL INTERCEPTED CxA	TIME AT UPSTREAM OF REACH (min)	DESIGN STORM FREQUENCY (yrs)	RAINFALL INTENSITY (in/hr)	INTERCEPTED FLOW (cfs)	STORMDRAIN DIAMETER (in)	VELOCITY (ft/s)	SLOPE OF FRICTION GRADIENT (ft/ft)	STRUCTURE LOSS COEFFICIENT	STRUCTURE LOSS AT UPSTREAM OF REACH	FLOW TIME IN DRAIN (min)	TIME AT DOWNSTREAM OF REACH (min)	H.G. AT UPSTREAM OF REACH (ft)	REMARKS
INLET A-1	12+33.05	11.56	0.47	10	0.47	10.0	100	9.80	4.6	18	2.6	0.0019	1.25	0.13	0.00	10.00	576.77	STREET INLET
12+33.05	12+04.33	28.72	-	-	0.47	10.0	100	9.80	4.6	24	1.5	0.0004	0.50	0.02	0.10	10.10	574.71	-
INLET A-2	12+04.33	69.27	0.47	10	0.47	10.0	100	9.80	4.6	18	2.6	0.0019	1.25	0.13	0.10	10.10	576.77	FUTURE STREET INLET
12+04.33	10+18.92	185.41	-	-	0.94	10.1	100	9.79	9.2	24	2.9	0.0017	0.50	0.11	0.40	10.50	574.38	-
INLET A-3	10+18.92	78.54	2.57	10	2.57	10.0	100	9.80	25.2	24	8.0	0.0124	1.25	1.25	0.20	10.20	576.01	STUB OUT FOR FUTURE DEVELOPEMENT
10+18.92	8+78.21	140.71	-	-	3.51	10.5	100	9.73	34.2	30	7.0	0.0070	0.50	0.70	0.30	10.80	573.78	-
INLET A-4	8+78.21	10.76	0.46	10	0.46	10.0	100	9.80	4.5	18	2.5	0.0018	1.25	0.13	0.10	10.10	572.25	STREET INLET
8+78.21	8+48.70	29.51	-	-	3.97	10.8	100	9.68	38.4	30	7.8	0.0088	0.50	0.56	0.10	10.90	572.10	-
INLET A-4	0+45.96	24.11	0.46	10	0.46	10.0	100	9.80	4.5	18	2.5	0.0018	1.25	0.13	0.00	10.00	571.99	FUTURE STREET INLET
0+45.96	0+45.96	32.85	1.18	10	1.18	10.0	100	9.80	11.6	18	6.6	0.0122	1.25	0.84	0.10	10.10	572.82	STUB OUT FOR FUTURE DEVELOPEMENT
0+45.96	8+48.70	45.96	-	-	1.64	10.1	100	9.79	16.1	24	5.1	0.0051	0.50	0.07	0.20	10.30	571.58	-
8+48.70	5+70.53	278.27	-	-	5.61	10.9	100	9.67	54.2	30	11.0	0.0175	0.50	1.41	0.40	11.30	571.28	-
INLET A-11	5+70.53	80.22	1.38	10	1.38	10.0	100	9.80	13.5	18	7.6	0.0165	1.25	1.13	0.20	10.20	567.46	STUB OUT FOR FUTURE DEVELOPEMENT
5+70.53	5+18.53	51.9	-	-	6.99	11.3	100	9.60	67.1	36	9.5	0.0101	0.50	0.46	0.10	11.40	565.00	-
INLET A-5	5+18.53	10.87	0.46	10	0.46	10.0	100	9.80	4.5	18	2.5	0.0018	1.25	0.13	0.00	10.00	565.33	STREET INLET
5+18.53	4+88.95	29.58	-	-	7.45	11.4	100	9.59	71.4	36	10.1	0.0115	0.50	0.88	0.00	11.40	564.02	-
INLET A-6	4+88.95	69.98	0.46	10	0.46	10.0	100	9.80	4.5	18	2.5	0.0018	1.25	0.13	0.10	10.10	565.33	FUTURE STREET INLET
4+88.95	1+85.30	303.65	-	-	7.91	11.4	100	9.59	75.9	39	9.1	0.0084	0.50	0.49	0.30	11.70	562.79	-
INLET A-7	1+85.30	15.45	0.44	10	0.44	10.0	100	9.80	4.3	24	1.4	0.0004	1.25	0.04	0.20	10.20	559.70	STREET INLET
1+85.30	1+25.25	60.05	-	-	8.35	11.7	100	9.54	79.7	45	7.2	0.0043	0.50	0.16	0.10	11.80	559.65	-
INLET A-8	1+25.25	50.17	0.39	10	0.39	10.0	100	9.80	3.8	18	2.1	0.0013	1.25	0.09	0.40	10.40	559.39	FUTURE STREET INLET
1+25.25	0+72.76	42.37	14.06	10	14.06	10.0	100	9.80	137.8	42	14.3	0.0188	0.50	1.59	0.00	10.00	561.62	CULVERT HEADWALL
0+72.76	0+72.76	52.48	-	-	22.80	11.8	100	9.53	217.3	7x4	7.8	0.0033	0.50	0.54	0.10	11.90	559.23	-
0+72.76	0+68.58	4.19	-	-	22.80	11.9	100	9.51	231.6	7x4	8.3	0.0038	0.50	0.60	0.00	11.90	558.52	-
0+68.58	0+48.80	19.78	-	-	22.80	11.9	100	9.51	231.6	7x4	8.3	0.0038	0.50	0.53	0.00	11.90	557.91	-
0+48.80	0+00	48.8	-	-	22.80	11.9	100	9.51	406.0	8x5	10.1	0.0044	0.50	1.05	0.10	12.00	557.30	-

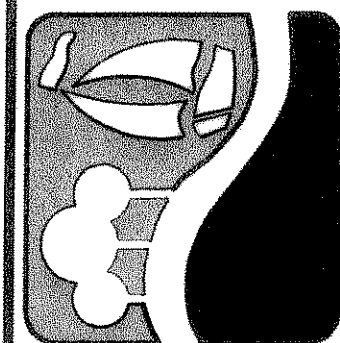
STORMDRAIN CALCULATIONS - LINE B AND C

FROM	TO	LENGTH (FT)	CxA	INLET TIME (min.)	TOTAL INTERCEPTED CxA	TIME AT UPSTREAM OF REACH (min)	DESIGN STORM FREQUENCY (yrs)	RAINFALL INTENSITY (in/hr)	INTERCEPTED FLOW (cfs)	STORMDRAIN DIAMETER (in)	VELOCITY (ft/s)	SLOPE OF FRICTION GRADIENT (ft/ft)	STRUCTURE LOSS COEFFICIENT	STRUCTURE LOSS AT UPSTREAM OF REACH	FLOW TIME IN DRAIN (min)	TIME AT DOWNSTREAM OF REACH (min)	H.G. AT UPSTREAM OF REACH (ft)	REMARKS
INLET B-1	B1-60.00	44.74	0.38	10	0.38	10.0	100	9.80	3.7	18	2.1	0.0012	1.25	0.09	0.10	10.10	577.20	STREET INLET
B1-60.00	12+75.45	60	-	-	0.38	10.1	100	9.79	3.7	18	2.1	0.0012	0.50	0.03	0.20	10.30	574.94	-
INLET B-2	12+75.45	11.51	0.41	10	0.41	10.0	100	9.80	4.0	18	2.3	0.0015	1.25	0.10	0.00	10.00	576.11	STREET INLET
12+75.45	8+85.70	389.74	-	-	0.79	10.3	100	9.76	7.7	24	2.5	0.0012	0.60	0.06	1.00	11.30	574.37	-
INLET B-4	8+85.70	15.85	0.62	10	0.62	10.0	100	9.80	6.1	18	3.5	0.0034	1.25	0.23	0.00	10.00	573.39	DETAINED FLOW FROM WHITMORE'S MANUFACTURING (SD LINE C)
8+85.70	8+57.66	28.04	-	-	1.41	11.3	100	9.60	13.5	24	4.3	0.0036	0.60	0.23	0.10	11.40	572.71	LINE C
INLET B-3	8+57.66	72.86	0.61	10	0.61	10.0	100	9.80	6.0	18	3.4	0.0033	1.25	0.22	0.10	10.10	573.41	LINE C
8+57.66	6+39.02	218.64	-	-	2.02	11.4	100	9.59	19.4	27	4.9	0.0039	0.50	0.23	0.70	12.10	572.38	-
INLET B-9	6+39.02	18	3.62	10	3.62	10.0	100	9.80	35.5	30	7.2	0.0075	1.25	1.02	0.00	10.00	572.44	STREET INLET
6+39.02	4+15.68	223.34	-	-	5.64	12.1	100	9.49	53.6	36	7.6	0.0065	0.60	0.67	0.50	12.60	571.29	-
INLET B-6	4+15.68	11.3	0.42	10	0.42	10.0	100	9.80	4.1	18	2.3	0.0015	1.25	0.10	0.00	10.00	569.87	STREET INLET
4+15.68	3+84.39	31.29	-	-	6.06	12.6	100	9.41	57.1	36	8.1	0.0073	0.60	0.48	0.10	12.70	569.17	-
INLET B-5	3+84.39	69.56	0.44	10	0.44	10.0	100	9.80	4.3	18	2.4	0.0017	1.25	0.11	0.10	10.10	569.88	STUB OUT FOR FUTURE DEVELOPEMENT
3+84.39	1+99.90	184.48	-	-	6.50	12.7	100	9.40	61.1	39	7.4	0.0055	0.60	0.24	0.40	13.10	568.46	-
1+99.90	1+20.84	79.06	-	-	6.50	13.1	100	9.34	60.7	39	7.3	0.0054	0.60	0.50	0.20	13.30	567.21	-

STORMDRAIN CALCULATIONS - CROSS CULVERT

FROM	TO	LENGTH (FT)	CxA	INLET TIME (min.)	TOTAL INTERCEPTED CxA	TIME AT UPSTREAM OF REACH (min)	DESIGN STORM FREQUENCY (yrs)	RAINFALL INTENSITY (in/hr)	INTERCEPTED FLOW (cfs)	STORMDRAIN DIAMETER (in)	VELOCITY (ft/s)	SLOPE OF FRICTION GRADIENT (ft/ft)	STRUCTURE LOSS COEFFICIENT	STRUCTURE LOSS AT UPSTREAM OF REACH	FLOW TIME IN DRAIN (min)	TIME AT DOWNSTREAM OF REACH (min)	H.G. AT UPSTREAM OF REACH (ft)	REMARKS
2+17.27	1+67.75	49.52	8.25	15	8.25	15.0	100	9.05	74.7	45	6.8	0.0033	1.25	0.89	0.10	15.10	569.05	HEADWALL AT UPSTREAM REACH OF CROSS CULVERT
INLET B-7	1+67.75	42.4	0.71	10	0.71	10.0	100	9.80	7.0	18	4.0	0.0038	1.25	0.30	0.20	10.20	568.47	FUTURE STREET INLET
1+67.75	1+17.80	62.03	-	-	8.96	15.1	100	9.03	80.9	45	7.3	0.0038	0.40	0.54	0.10	15.20	568.00	-
INLET B-8	1+17.80	25.24	0.73	10	0.73	10.0	100	9.80	7.2	18	4.1	0.0040	1.25	0.32	0.00	10.00	568.44	STREET INLET
1+17.80	1+07.27	19.52	-	-	9.69	15.2	100	9.01	87.3	45	7.9	0.0044	0.40	0.64	0.00	15.20	567.22	-

PREPARED BY:
WIA WIER & ASSOCIATES, INC.
 ENGINEERS SURVEYORS LAND PLANNERS
 701 HIGHLANDER BLVD., SUITE 300 ARLINGTON, TEXAS 76015 METRO (817)467-7700
 6849 ELM STREET FRISCO, TEXAS 75034 METRO (214)387-0000
 www.wierassociates.com



**CITY OF
 ROCKWALL
 JUSTIN ROAD
 EXTENSION**

**STORMDRAIN
 CALCULATIONS**

**RECORD
 DRAWING
 2/18/09**



Ronald Ramirez

COPYRIGHT ©
 WIER & ASSOCIATES, INC.
 LAST SHEET EDIT
 DATE 02-16-2009
 WAA 04124_01

SHEET NO.
 D005