

15 YEAR HYDRAULICS

FOR INLET STRUCTURES, FREEBOARD = SILL ELEVATION - HGL FOR THE UPPER STRUCTURE OF EACH LINE

LineNo.	LineID	LineLength (ft)	LineSize (in)	FlowRate (cfs)	KnownQ (cfs)	LineType	Defl.Angle (Deg)	n-value	InvertDn (ft)	InvertUp (ft)	LineSlope (%)	Grnd/RimElev Dn (ft)	Grnd/RimElev Up (ft)	HGLDn (ft)	HGLUp (ft)	MinorLoss (ft)	HGLJct (ft)	Hw (ft)	Rim-Hw (ft)	EnergyLoss (ft)	SfAve (%)	EGLDn (ft)	EGLUp (ft)	EGLJct (ft)	VelDn (ft/s)	VelUp (ft/s)	CapacityFull (cfs)	CriticalDepth (ft)	VelDn (ft/s)	VelUp (ft/s)	PipeTravel (min)	Freeboard
1	EX FE - EX MH	131.23	36	44.44	21.59	Cir	-14.95	0.013	492.82	494.24	1.08	0	500.84	495.82	496.41	n/a	496.41	2.17	4.43	0.674	0.513	496.43	497.43	497.43	0.61	1.02	69.38	2.17	6.29	8.12	0.35	4.43
2	EX MH - EX DCI	112.69	24	22.85	1.35	Cir	-6.85	0.013	494.24	499.49	4.66	500.84	506.76	496.41	501.19	n/a	501.19	1.7	5.57	1.117	0.991	497.23	502.19	502.19	0.82	1	48.82	1.7	7.27	8.03	0.26	4.65
3	EX DCI - EX DCI	34.43	24	21.5	2.01	Cir	30.13	0.013	499.49	500.79	3.78	506.76	506.88	501.19	502.45	n/a	503.38	2.58	3.51	0	0	502.12	503.38	504.3	0.93	0.93	43.95	1.66	7.55	7.72	0.08	2.59
4	EX DCI - MH 123	124.52	18	12.19	0	Cir	-79.84	0.013	500.79	503.94	2.53	506.88	509.4	503.38	505.26	n/a	505.26	1.32	4.14	1.594	1.28	504.12	506.11	506.11	0.74	0.85	16.7	1.32	6.9	7.4	0.3	4.14
5	MH 123 - EX CI	104.2	18	4.67	2.43	Cir	0.36	0.013	503.94	506.57	2.52	509.4	513.01	505.26	507.40	n/a	507.4	0.83	5.61	0	0	505.6	507.74	507.74	0.34	0.34	16.68	0.83	2.83	4.66	0.66	4.69
6	EX CI - EX CI	290.98	15	2.24	0.29	Cir	13.65	0.013	506.57	521.39	5.09	513.01	526.32	507.4	521.99	n/a	521.99	0.6	4.33	0	0	507.63	522.22	522.22	0.23	0.23	14.57	0.6	2.59	3.87	2.66	3.41
7	EX CI - AI 124	57	15	1.95	0.71	Cir	23.39	0.013	521.99	522.8	1.42	526.32	527.75	522.42	523.36	0.03	523.36	0.56	4.39	0	0	522.63	523.57	523.57	0.21	0.21	7.7	0.56	5.23	3.7	0.6	3.47
8	AI 124 - EX MH	53.97	15	1.24	1.24	Cir	0	0.013	522.8	523.56	1.41	527.75	530.81	523.36	524.00	n/a	524	0.44	6.81	0	0	523.52	524.16	524.16	0.16	0.16	7.66	0.44	2.35	3.23	0.89	6.81
9	MH 123 - MH 113	12.12	12	7.52	0	Cir	82.88	0.013	503.94	505.4	12.05	509.4	511.55	505.26	506.38	n/a	506.38	0.98	5.17	0.513	4.231	506.69	507.82	507.82	1.43	1.44	12.36	0.98	9.58	9.62	0.02	5.17
10	MH 113 - MH 114	25	12	7.52	0	Cir	0	0.013	505.6	506.85	5	511.55	521.6	506.38	507.83	0.22	507.83	0.98	13.77	0	0	507.82	509.27	509.27	1.44	1.44	7.96	0.98	11.43	9.62	0.04	13.77
11	MH 114 - DCI 115	76.63	12	7.52	1.11	Cir	0	0.013	516.12	519.95	5	521.6	529.07	516.89	520.93	n/a	520.93	0.98	8.14	0	0	518.33	522.37	522.37	1.44	1.44	7.96	0.98	11.53	9.62	0.13	7.22
12	DCI 115 - DCI 116	35.07	12	4.03	1	Cir	-3.21	0.013	520.15	520.85	2	529.07	529.07	520.93	521.7	n/a	521.7	0.85	7.37	0	0	521.43	522.2	522.2	0.5	0.5	5.03	0.85	6.12	5.67	0.11	6.45
13	DCI 116 - AI 118	110	12	3.03	2.4	Cir	3.83	0.013	521.05	523.25	2	529.07	528.75	521.7	524	0.35	524	0.75	4.75	0	0	522.06	524.36	524.36	0.36	0.36	5.04	0.75	5.61	4.83	0.48	3.83
14	AI 118 - AI 119	151.41	12	0.63	0.63	Cir	-72.73	0.013	523.45	527	2.34	528.75	529.42	524.12	526.22	0.29	526.22	0.66	5.25	0	0	521.22	524.41	524.41	0.29	0.29	5.04	0.66	6.32	4.33	0.52	4.33
15	DCI 115 - MH 120	54.63	12	2.38	0	Cir	-82.85	0.013	520.15	523.46	6.06	529.07	531.47	524.14	526.22	0.29	526.22	0.66	5.25	0	0	524.44	526.51	526.51	0.29	0.29	5.04	0.66	6.32	4.33	0.52	4.33
16	MH 120 - CI 121	95	12	2.38	1.03	Cir	8.15	0.013	523.66	525.56	2	529.42	531.47	526.22	526.96	0.19	526.96	0.49	4.51	0	0	526.41	527.15	527.15	0.19	0.19	5.07	0.49	3.83	3.52	0.34	3.59
17	CI 121 - CI 122	35	12	1.35	1.35	Cir	90	0.013	525.76	526.47	2.03	531.47	531.47	526.22	526.96	n/a	526.96	1.13	4.84	0	0	502.93	503.1	503.19	0.48	0.48	12.13	1.05	4.16	5.55	0.18	4.84
18	EX DCI 100 - MH 101	44.22	18	7.3	0	Cir	89.95	0.013	500.99	501.58	1.33	506.88	507.55	502.45	502.63	n/a	502.63	1.26	4.41	0.3	0.5	503.34	503.64	503.78	0.36	0.36	7.43	1.05	4.79	4.79	0.24	5.18
19	MH 101 - MH 105	60	18	7.3	0	Cir	-7.9	0.013	501.78	502.08	0.5	507.55	508.6	502.45	503.49	0.05	503.49	1.26	4.41	0.3	0.5	503.84	504.14	504.2	0.36	0.36	7.42	1.05	4.79	4.79	0.24	4.41
20	MH 105 - MH 105B	60.04	18	7.3	0	Cir	-19.11	0.013	502.28	502.58	0.5	508.6	508.25	503.49	503.79	0.05	503.79	1.26	4.41	0.3	0.5	504.32	507.52	507.6	0.48	0.48	29.79	1.05	5.47	5.55	0.16	3.16
21	MH 105B - AI 106	40	18	7.3	0.76	Cir	0	0.013	502.78	506	8.05	508.25	511.2	503.84	507.05	n/a	507.12	1.12	4.08	0	0	504.32	507.52	507.6	0.48	0.48	14.84	0.99	3.7	5.3	0.42	3.79
22	AI 106 - AI 107	92.67	18	6.54	0.42	Cir	-0.19	0.013	505.45	507.3	2	511.2	513	507.12	508.29	n/a	508.29	0.99	4.71	0.482	0.52	507.33	508.72	508.72	0.21	0.44	14.84	0.99	3.7	5.3	0.42	3.79
23	AI 107 - AI 108	34.92	18	6.12	0.9	Cir	-74.19	0.013	507.5	509.6	6.01	513	519.35	508.29	510.55	0.19	510.55	0.95	8.8	0	0	508.7	510.97	510.97	0.41	0.41	25.75	0.95	6.51	5.16	0.17	7.88
24	AI 108 - DCI 109	85	18	5.22	1.5	Cir	-24.31	0.013	514.64	520.26	6.61	519.35	527.21	515.09	521.14	n/a	521.14	0.88	6.07	0	0	515.45	521.5	521.5	0.37	0.37	27	0.88	11.81	4.85	0.48	5.15
25	DCI 109 - DCI 110	35.07	15	3.72	2.06	Cir	0	0.013	520.46	521.16	2	527.21	527.21	521.14	521.94	n/a	521.94	0.78	5.27	0	0	521.47	522.27	522.27	0.33	0.33	9.12	0.78	5.46	4.63	0.19	4.35
26	DCI 110 - MH 111	48.8	15	1.66	0	Cir	-41.86	0.013	521.36	521.85	1	527.21	528.6	521.94	522.36	n/a	522.36	0.51	6.24	0	0	522.13	522.55	522.55	0.19	0.19	6.47	0.51	2.99	3.52	0.6	6.24
27	MH 111 - AI 112	80.24	12	1.66	1.66	Cir	69.38	0.013	522.05	522.85	1	528.6	527.85	522.36	523.4	n/a	523.4	0.55	4.45	0	0	522.75	523.62	523.62	0.22	0.22	3.56	0.55	4.45	3.78	0.63	3.53
28	MH 100 - OS 102	32	18	15.85	15.85	Cir	67.05	0.013	501.38	501.7	1	501.38	506.92	503.75	504.48	1.25	505.73	4.03	1.19	0.729	2.279	505	505.73	506.98	1.25	1.25	10.5	1.42	8.97	8.97	0.06	0.27

REVISION #7,
8-1-2013

ISSUE REMARKS/DATE

- 1 10-16-2012, INITIAL SUBMITTAL
- 2 11-29-2012, CITY COMMENTS
- 3 1-14-2013, CITY & DCSD COMMENTS
- 4 2-13-2013, CITY COMMENTS
- 5 3-13-2013, REVISED STORM & SANITARY
- 6 3-22-2013, REVISED UNDERDRAIN
- 7 8-1-2013, REVISED STORM SEWERS

PROJECT TITLE

**BOARDWALK
GARDENS**

OF FALLON, MISSOURI

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HYDRAULIC CALCULATIONS

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Job No. 12-05-128

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