

STORM DRAINAGE - DESIGN COMPUTATIONS

Project - WHEATLAND ADDITION Design Storm Frequency - 2 Yr. Sheet 1 of 1
 SYSTEM 100 Mannings "n" = 0.013 Computed By -
 Plan - Profile - Checked By -

Line	Length	Struct.	Contrib. Drg. Area (Ac.)	Runoff "C"	I For 24 Hr. (in./hr.)	Σ Q Pipe (CFS)	Pipe Size	Pipe Friction Head	V	V ² /2g	Time in Minutes		Constr. Slope %	Req'd Hydr. Slope %	Struct. Head Loss	Hydraulic Grade Elevation		Structure Elevation		Upper Street Elev.	Remarks
											1	Σ				Upper	Lower	Upper	Lower		
108	40	Curb Inlet	6.93	0.45	3.11	9.70	21"	0.15	4.03	0.25	0.17	23.08	0.24	0.38	0.38	1305.95	1305.42	1301.67	1301.57	1307.17	Hydr. Grade Elev. 0.67' below FL Gutter
107	290	"	2.23	0.45	3.09	12.81	24"	0.93	4.07	0.26	1.19	24.27	0.20	0.32	0.20	1305.22	1304.29	1301.32	1300.74	1307.17	Ditto = 1.4' below
109	40	"	7.62	0.45	3.11	10.66	21"	0.18	4.43	0.30	0.15	22.95	0.24	0.45	0.45	1304.92	1304.29	1301.09	1300.99	1307.11	Ditto = 2.19' below
106	300	"	1.00	0.45	3.01	24.83	36"	0.42	3.51	0.19	1.42	24.37	0.12	0.14	0.02	1304.27	1303.85	1299.74	1299.38	1307.11	Ditto = 2.84' below
111	30	"	5.70	0.45	3.58	3.30	18"	0.03	1.87	0.05	0.27	17.54	0.38	0.10	0.08	1304.17	1304.06	1301.07	1300.96	1307.37	Ditto = 3.20' below
110	40	"	3.46	0.45	3.56	14.72	24"	0.17	4.68	0.34	0.14	17.68	0.20	0.42	0.04	1304.02	1303.85	1300.46	1300.38	1306.97	Ditto = 2.92' below
105	300	"	1.09	0.45	3.00	41.02	42"	0.50	4.26	0.28	0.85	25.22	0.10	0.17	0.16	1303.69	1303.19	1298.88	1298.58	1306.97	Ditto = 3.28' below
112	40	"	5.91	0.45	3.38	8.99	21"	0.13	3.74	0.22	0.18	19.61	0.24	0.32	0.33	1303.65	1303.19	1300.43	1300.33	1306.83	Ditto = 3.18' below
104	290	"	1.26	0.45	2.95	51.68	48"	0.37	4.11	0.26	1.18	26.40	0.08	0.13	0.03	1303.16	1302.79	1298.08	1297.85	1306.83	Ditto = 3.67' below
103	300	MH	-	-	-	-	48"	0.38	4.11	0.26	1.22	27.62	0.08	0.13	0	1302.79	1302.41	1297.85	1297.60	1307.23	Ditto = 4.44' below
114	40	C.I.	8.70	0.45	3.83	14.99	24"	0.18	4.77	0.35	0.14	15.16	0.20	0.44	0.58	1303.85	1303.09	1300.08	1300.0	1307.84	Ditto = 3.99' below
113	270	"	2.01	0.45	3.81	18.44	30"	0.55	3.76	0.22	1.20	16.36	0.15	0.20	0.13	1302.96	1302.41	1299.50	1299.10	1307.84	Ditto = 4.88' below
102	125	"	1.76	0.45	2.80	71.39	48"	0.31	5.68	0.50	0.37	27.99	0.08	0.24	0.29	1302.12	1301.81	1297.40	1297.30	1305.96	Ditto=3.84' below
101	240	"	2.46	0.45	2.78	74.47	48"	0.64	5.93	0.55	0.68	28.67	0.08	0.27	0.07	1301.74	1301.10	1297.30	1297.10	1305.00	Ditto=3.26' below

STORM DRAINAGE - DESIGN COMPUTATIONS

Project - WHEATLAND ADDITION
SYSTEM 100

Design Storm Frequency - 5 Yr.
Mannings $n = 0.013$

Sheet 1 of 1
Computed By -
Checked By -

TC

Line	Length		Struct.	Contrib. Drg. Area (Ac.)	Contrib. Runoff "C"	I For 1 (in./hr.)	Σ Q Pipe (CFS)	Pipe Size	Pipe Friction Head	V	V ² / 2g	Time in Minutes		Constr. Slope %	Req'd Hydr. Slope %	Struct. Head Loss	Hydraulic Grade Elevation		Structure Flowline Elevation		Upper Street Elev.	Remarks	
	Upper	Lower										1	Σ 1				Upper	Lower	Upper	Lower			
1	108	107	40	curb inlet	6.93	0.47	3.74	12.18	21"	0.24	5.06	0.40	0.13	23.04	0.24	0.59	0.48	1308.41	1307.69	1301.67	1301.57	1307.17	Hydr. Grade Elev. 1.79' above FL
2	107	106	290	"	2.23	0.47	3.73	16.09	24"	1.47	5.12	0.41	0.94	23.98	0.20	0.51	0.25	1307.44	1305.97	1301.32	1300.74	1307.17	Ditto = 0.82' above gutter
3	109	106	40	"	7.62	0.47	3.75	13.43	21"	0.29	5.58	0.48	0.12	22.91	0.24	0.72	0.57	1306.83	1305.97	1301.09	1300.99	1307.11	Ditto = 0.27' above
4	106	105	300	"	1.00	0.47	3.65	31.24	36"	0.66	4.42	0.30	1.13	25.11	0.12	0.22	0.03	1305.94	1305.28	1299.74	1299.38	1307.11	Ditto = 0.62' below
5	111	110	30	"	5.70	0.47	4.28	4.13	18"	0.05	2.34	0.09	0.21	17.48	0.38	0.15	0.10	1305.75	1305.60	1301.07	1300.96	1307.37	Ditto = 1.07' below
6	110	105	40	"	3.46	0.47	4.26	18.40	24"	0.27	5.86	0.53	0.11	17.59	0.20	0.66	0.05	1305.55	1305.28	1300.46	1300.38	1306.97	Ditto = 0.87' below
7	105	104	300	"	1.09	0.47	3.56	51.47	42"	0.79	5.35	0.44	0.93	26.04	0.10	0.26	0.20	1305.08	1304.29	1298.88	1298.58	1306.97	Ditto = 1.34' below
8	112	104	40	"	5.91	0.47	4.06	11.28	21"	0.20	4.69	0.34	0.14	19.57	0.24	0.51	0.41	1304.90	1304.29	1300.43	1300.33	1306.83	Ditto = 1.38' below
9	104	103	290	"	1.26	0.47	3.50	64.82	48"	0.58	5.16	0.41	0.94	26.98	0.08	0.20	0.04	1304.25	1303.67	1298.08	1297.85	1306.83	Ditto = 2.03' below
10	103	102	300	MH	-	-	-	64.82	48"	0.60	5.16	0.41	0.97	27.95	0.08	0.20	0	1303.67	1303.07	1297.85	1297.60	1307.23	Ditto = 3.01' below
11	114	113	40	C.I.	8.70	0.47	4.56	18.65	24"	0.27	5.94	0.55	0.11	15.13	0.20	0.68	0.72	1305.07	1304.08	1300.08	1300.0	1307.84	Ditto = 2.22' below
12	113	102	270	"	2.01	0.47	4.54	22.94	30"	0.85	4.67	0.34	0.96	16.09	0.15	0.31	0.16	1303.92	1303.07	1299.50	1299.10	1307.84	Ditto = 3.37' below
13	102	101	125	"	1.76	0.47	3.37	90.55	48"	0.49	7.21	0.81	0.29	28.24	0.08	0.39	0.37	1302.70	1302.21	1297.40	1297.30	1305.96	Ditto=2.71' below
101	101	100	240	"	2.46	0.47	3.35	94.43	48"	1.02	7.51	0.88	0.53	28.77	0.08	0.43	0.09	1302.12	1301.10	1297.30	1297.10	1305.00	Ditto=2.33' below