

# HYDRAULIC COMPUTATIONS

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INPUT DATA LISTING

CD	I2	MAX Q	ADJ Q	LENGTH	FL 1	FL 2	CTL/TW	D	W	S	KJ	KE	KM	LC	LI	L3	L4	A1	A3	A4	J	N
8	1	27.9	27.9	19.00	492.70	492.98	.00	27.	0.	3	.00	.00	.00	1	3	9	13	4.	62.	82.	.00	.013
1-2	3	17.9	17.9	213.00	492.98	498.30	.00	21.	0.	3	.00	.00	.00	0	4	8	0	0.	90.	0.	.00	.013
2-3	4	17.0	17.0	80.00	498.30	500.30	.00	21.	0.	3	.00	.00	.00	0	5	8	0	90.	0.	0.	.00	.013
3-4	5	8.3	8.3	146.00	508.58	511.50	.00	15.	0.	3	.00	.00	.00	0	6	0	0	17.	0.	0.	.00	.013
4-5	6	7.0	7.0	200.00	511.50	514.00	.00	15.	0.	3	.00	.00	.00	0	7	0	0	17.	0.	0.	.00	.013
5-5A	7	4.4	4.4	128.00	514.00	515.59	.00	15.	0.	1	.00	.00	.00	0	0	0	0	0.	0.	0.	.00	.013
3-15	8	10.1	10.1	34.00	500.36	512.21	.00	18.	0.	1	.00	.00	.00	4	0	0	0	0.	0.	0.	.00	.013
2-11	9	.9	.9	104.00	498.30	502.14	.00	12.	0.	1	.00	.00	.00	3	0	0	0	0.	0.	0.	.00	.013
1-6	10	8.3	8.3	138.00	492.98	496.28	.00	15.	0.	3	.00	.00	.00	2	11	0	0	30.	0.	0.	.00	.013
6-7	11	7.7	7.7	222.00	496.28	500.72	.00	15.	0.	3	.00	.00	.00	0	12	13	0	34.	88.	0.	.00	.013
7-8	12	3.5	3.5	50.00	500.72	501.22	.00	12.	0.	1	.00	.00	.00	0	0	0	0	0.	0.	0.	.00	.013
1-13	13	2.0	2.0	63.00	500.72	501.35	.00	12.	0.	1	.00	.00	.00	0	0	0	0	0.	0.	0.	.00	.013
1-4	14	1.9	1.9	114.00	492.98	495.00	.00	12.	0.	3	.00	.00	.00	2	15	0	0	84.	0.	0.	.00	.013
9-10	15	1.6	1.6	108.00	495.00	503.00	.00	12.	0.	1	.00	.00	.00	0	0	0	0	0.	0.	0.	.00	.013

STORM DRAIN ANALYSIS RESULTS

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STORM DRAIN ANALYSIS RESULTS

Line No	Q (cfs)	D (in)	W (in)	Dn (ft)	Dc (ft)	Flow Type	Sf-full (ft)	V1 (fps)	V2 (fps)	FL 1 (ft)	FL 2 (ft)	HG 1 Calc	HG 2 Calc	D1 (ft)	D2 (ft)	TW Calc	TW CK
1	27.9	27	0	1.44	1.84	Full	.00812	7.0	7.0	492.70	492.98	495.70	495.85	3.00	2.87	.00	.00
2	17.9	21	0	1.10	1.54	Seal	.01276	7.4	12.1	492.98	498.30	496.47	499.33	3.49	1.03	.00	.00
3	17.0	21	0	1.06	1.51	Part	.01151	13.1	18.7	498.30	500.30	499.23	501.01	.93	.71	.00	.00
4	8.3	15	0	.94	1.13	Part	.01651	8.4	7.1	508.58	511.50	509.52	512.63	.94	1.13	.00	.00
5	7.0	15	0	.99	1.06	Full	.01174	5.7	5.7	511.50	514.00	513.17	515.52	1.67	1.52	.00	.00
6	4.4	15	0	.71	.85	Seal	.00464	3.6	3.8	514.00	515.59	516.15	516.71	2.15	1.12	516.93	.00
7	10.1	18	0	.41	1.22	Part	.00924	22.7	6.5	500.36	512.21	500.81	513.43	.45	1.22	514.10	.00
8	8.3	15	0	.87	1.13	Full	.01651	6.8	6.8	492.98	496.28	495.70	497.98	2.72	1.70	.00	.00
9	7.7	15	0	.88	1.10	Seal	.01421	6.3	6.7	496.28	500.72	498.34	501.82	2.06	1.10	.00	.00
10	3.5	12	0	.80	.80	Full	.00965	4.5	4.5	500.72	501.22	503.07	503.55	2.35	2.33	503.86	.00

Hydraulic grade line control = 498.16

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STORM DRAIN ANALYSIS RESULTS

Line No	Q (cfs)	D (in)	W (in)	Dn (ft)	Dc (ft)	Flow Type	Sf-full (ft)	V1 (fps)	V2 (fps)	FL 1 (ft)	FL 2 (ft)	HG 1 Calc	HG 2 Calc	D1 (ft)	D2 (ft)	TW Calc	TW CK
1	27.9	27	0	1.44	1.84	Full	.00812	7.0	7.0	492.70	492.98	495.70	495.85	3.00	2.87	.00	.00
2	17.9	21	0	1.10	1.54	Seal	.01276	7.4	12.1	492.98	498.30	496.47	499.33	3.49	1.03	.00	.00
3	17.0	21	0	1.06	1.51	Part	.01151	13.1	18.7	498.30	500.30	499.23	501.01	.93	.71	.00	.00
4	8.3	15	0	.94	1.13	Part	.01651	8.4	7.1	508.58	511.50	509.52	512.63	.94	1.13	.00	.00
5	7.0	15	0	.99	1.06	Full	.01174	5.7	5.7	511.50	514.00	513.17	515.52	1.67	1.52	.00	.00
6	4.4	15	0	.71	.85	Seal	.00464	3.6	3.8	514.00	515.59	516.15	516.71	2.15	1.12	516.93	.00
7	10.1	18	0	.41	1.22	Part	.00924	22.7	6.5	500.36	512.21	500.81	513.43	.45	1.22	514.10	.00
8	8.3	15	0	.87	1.13	Full	.01651	6.8	6.8	492.98	496.28	495.70	497.98	2.72	1.70	.00	.00
9	7.7	15	0	.88	1.10	Seal	.01421	6.3	6.7	496.28	500.72	498.34	501.82	2.06	1.10	.00	.00
10	3.5	12	0	.80	.80	Full	.00965	4.5	4.5	500.72	501.22	503.07	503.55	2.35	2.33	503.86	.00

Hydraulic grade line control = 498.16

LIST OF ABBREVIATIONS

V1, FL 1, D1 and HG 1 refer to downstream end  
 V2, FL 2, D2 and HG 2 refer to upstream end  
 X(N) - Distance in feet from downstream end to point where HG intersects soffit in seal condition  
 X(U) - Distance in feet from downstream end to point where water surface reaches normal depth by either drawdown or backwater  
 F(U) - The computed force at the hydraulic jump  
 D(BA) - Depth of water before the hydraulic jump (downstream side)  
 D(AJ) - Depth of water after the hydraulic jump (upstream side)  
 SBL - Indicates flow changes from part to full or from full to part  
 HJ - Indicates that flow changes from subcritical to supercritical through a hydraulic jump  
 H2U - Indicates that hydraulic jump occurs at the junction at the upstream end of the line  
 H1D - Indicates that hydraulic jump occurs at the junction at the downstream end of the line