

# THE PARSHALL FLUME

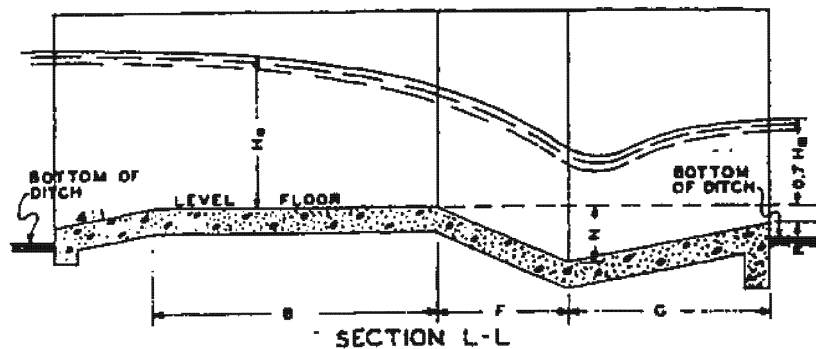
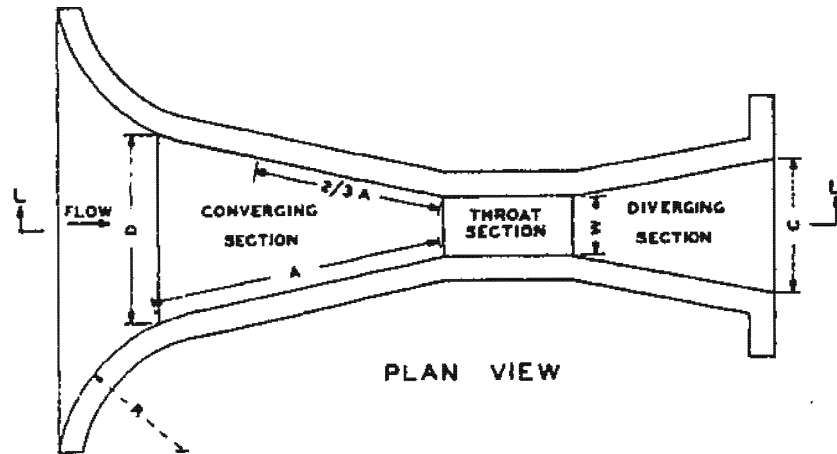
## Instructions for Installation and Table of Discharge

As Developed by the U.S. Department  
of Agriculture---Irrigation Investigations  
Colorado Agricultural Experiment  
Station, Cooperating



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## PARSHALL MEASURING FLUMES GENERAL PLANS



Plan and elevation of a concrete Parshall Measuring Flume showing lettered dimensions as follows: W, size of flume, in inches or feet; A, length of side wall of converging section;  $\frac{2}{3} A$ , distance back from end of crest to gage point; B, axial length of converging section ("floor" of flume); C, width of downstream end of flume; D, width of upstream end of flume; F, length of throat; G, length of diverging section;  $H_a$ , head (gage height); K, difference in elevation between lower end of flume and crest; N, depth of depression in throat below crest; R, radius of curved wing wall. See table on Page 2 for actual dimensions for various sizes of flume.

1. Select from the table of flume capacities the proper depth of water or head ( $H_a$ ) that corresponds with the maximum capacity of the ditch.
2. The proper size of flume for the most accurate and economical operation is determined by the quantity of water to be measured, freeboard and grade of the channel, and possible variations of downstream water surface. Usually width of throat (W) will be from one-third to one-half the width of the channel and more than twice the head ( $H_a$ ).
3. Locate the high water line on the ditch bank where the flume is to be installed, as shown by previous flows.
4. Place the surface of the floor (B) at a depth of 70 per cent of  $H_a$  below the high water line. Floor (B) must be level both lengthwise and crosswise.
5. Place gage on side of flume at a distance upstream from the throat equal to two-thirds the length of the converging section (A).
6. Flumes must be constructed to the specifications shown in the accompanying drawing and in the table on the next page.
7. Special conditions of flow frequently require special considerations in regard to size of flume, setting, cut-off walls, wing walls, etc. The State Engineer or one of his field men will be ready to advise.

### Dimensions and capacities of the Parshall Measuring Flume, for various throat widths, W

(Letters refer to dimensions in drawing on Page 1)

W		A		%A		B		C		D		F		G		K	N	R		Free-flow Capacity	
																				Min.	Max.
Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	In.	In.	Ft.	In.	Sec.-Ft.	Sec.-Ft.		
0	3	1	6½	1	¼	1	6	0	7	0	10⅞	0	6	1	0	1	2¼	1	4	0.03	1.9
0	6	2	⅞	1	4⅞	2	0	1	3½	1	3½	1	0	1	6	3	4½	1	4	0.05	3.9
0	9	2	10½	1	11½	2	10	1	3	1	10½	1	0	2	0	3	4½	1	4	0.09	8.9
1	0	4	6	3	0	4	4½	2	0	2	9¼	2	0	3	0	3	9	1	8	0.11	16.1
1	6	4	9	3	2	4	7½	2	6	3	4¾	2	0	3	0	3	9	1	8	0.15	24.6
2	0	5	0	3	4	4	10½	3	0	3	11½	2	0	3	0	3	9	1	8	0.42	33.1
2	6	5	3	3	6	5	1¾	3	6	4	6½	2	0	3	0	3	9	1	8	0.52	41.7
3	0	5	6	3	8	5	4¾	4	0	5	1¾	2	0	3	0	3	9	1	8	0.61	50.4
4	0	6	0	4	0	5	10½	5	0	6	4¼	2	0	3	0	3	9	2	0	1.3	67.9
5	0	6	6	4	4	6	4½	6	0	7	6½	2	0	3	0	3	9	2	0	1.6	85.6
6	0	7	0	4	8	6	10½	7	0	8	9	2	0	3	0	3	9	2	0	2.6	103.5
7	0	7	6	5	0	7	4¼	8	0	9	11½	2	0	3	0	3	9	2	0	3.0	121.4
8	0	8	0	5	4	7	10½	9	0	11	1¼	2	0	3	0	3	9	2	0	3.5	139.5

# Free-Flow Discharge Table for Parshall Flumes

FORMULAS USED TO COMPUTE THIS TABLE:

$$W=3''; Q=0.992 H_a^{1.547}$$

$$W=9''; Q=3.07 H_a^{1.53}$$

$$W=6''; Q=2.06 H_a^{1.58}$$

$$W=1' \text{ to } 8'; Q=4W H_a^{1.522} W^{0.926}$$

Caution: Discharges shown for low flows, up to the heavy line, represent ideal conditions. Field conditions may cause variations from the formula.

Gage Ht.		DISCHARGE IN CUBIC FEET PER SECOND FOR VARIOUS THROAT WIDTHS													Gage Ht.	
Feet	Inches	3 In.	6 In.	9 In.	1 Ft.	1.5 Ft.	2 Ft.	2.5 Ft.	3 Ft.	4 Ft.	5 Ft.	6 Ft.	7 Ft.	8 Ft.	Feet	Inches
.02	¼	.002	.004	0.01	0.01	0.01	0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	.02	¼
.03	⅜	.004	.008	0.01	0.02	0.03	0.03	0.04	0.05	0.06	0.08	0.09	0.10	0.11	.03	⅜
.04	½	.007	.013	0.02	0.03	0.04	0.05	0.07	0.08	0.10	0.12	0.14	0.16	0.18	.04	½
.05	⅝	.010	.018	0.03	0.04	0.06	0.08	0.09	0.11	0.14	0.17	0.20	0.23	0.26	.05	⅝
.06	¾	.013	.024	0.04	0.05	0.08	0.10	0.12	0.15	0.19	0.23	0.27	0.31	0.35	.06	¾
.07	⅞	.016	.031	0.05	0.07	0.10	0.13	0.16	0.19	0.24	0.29	0.35	0.40	0.45	.07	⅞
.08	1⅛	.020	.038	0.06	0.09	0.12	0.16	0.20	0.23	0.30	0.36	0.43	0.49	0.55	.08	1⅛
.09	1¼	.024	.046	0.08	0.10	0.15	0.19	0.24	0.28	0.36	0.44	0.52	0.59	0.67	.09	1¼
.10	1⅓	.028	0.05	0.09	0.12	0.17	0.23	0.28	0.33	0.42	0.52	0.61	0.70	0.79	.10	1⅓
.11	1⅔	.033	0.06	0.10	0.14	0.20	0.26	0.32	0.38	0.49	0.60	0.71	0.82	0.92	.11	1⅔
.12	1⅞	.037	0.07	0.12	0.16	0.23	0.30	0.37	0.43	0.56	0.69	0.82	0.94	1.06	.12	1⅞
.13	1¾	.042	0.08	0.14	0.18	0.26	0.34	0.42	0.49	0.64	0.78	0.93	1.07	1.21	.13	1¾
.14	1⅞	.047	0.09	0.15	0.20	0.29	0.38	0.47	0.55	0.72	0.88	1.04	1.20	1.36	.14	1⅞
.15	1⅞	.053	0.10	0.17	0.22	0.32	0.42	0.52	0.61	0.80	0.98	1.16	1.34	1.52	.15	1⅞
.16	1⅞	.058	0.11	0.19	0.25	0.36	0.47	0.58	0.68	0.89	1.09	1.29	1.49	1.68	.16	1⅞
.17	2⅓	.064	0.12	0.20	0.27	0.39	0.51	0.63	0.75	0.98	1.20	1.42	1.64	1.85	.17	2⅓
.18	2⅓	.070	0.14	0.22	0.29	0.43	0.56	0.69	0.82	1.07	1.32	1.56	1.80	2.03	.18	2⅓
.19	2¼	.076	0.15	0.24	0.32	0.47	0.61	0.75	0.89	1.16	1.44	1.70	1.96	2.22	.19	2¼
.20	2⅝	.082	0.16	0.26	0.35	0.51	0.66	0.81	0.96	1.26	1.56	1.84	2.13	2.41	.20	2⅝
.21	2½	.089	0.18	0.28	0.37	0.55	0.71	0.88	1.04	1.36	1.68	1.99	2.30	2.61	.21	2½
.22	2⅝	.095	0.19	0.30	0.40	0.59	0.77	0.94	1.12	1.47	1.81	2.14	2.48	2.81	.22	2⅝
.23	2¾	.102	0.20	0.32	0.43	0.63	0.82	1.01	1.20	1.58	1.94	2.30	2.66	3.02	.23	2¾
.24	2⅞	.109	0.22	0.35	0.46	0.67	0.88	1.08	1.28	1.69	2.08	2.46	2.85	3.23	.24	2⅞

## Free-Flow Discharge Table for Parshall Flumes

Gage Ht.		DISCHARGE IN CUBIC FEET PER SECOND FOR VARIOUS THROAT WIDTHS													Gage Ht.	
Feet	Inches	3 In.	6 In.	9 In.	1 Ft.	1.5 Ft.	2 Ft.	2.5 Ft.	3 Ft.	4 Ft.	5 Ft.	6 Ft.	7 Ft.	8 Ft.	Feet	Inches
.25	3	.117	0.23	0.37	0.49	0.71	0.93	1.15	1.37	1.80	2.22	2.63	3.04	3.45	.25	3
.26	3 1/8	.124	0.25	0.39	0.51	0.76	0.99	1.23	1.46	1.91	2.36	2.80	3.24	3.67	.26	3 1/8
.27	3 1/4	.131	0.26	0.41	0.54	0.80	1.05	1.30	1.55	2.03	2.50	2.97	3.44	3.90	.27	3 1/4
.28	3 3/8	.138	0.28	0.44	0.58	0.85	1.11	1.38	1.64	2.15	2.65	3.15	3.65	4.14	.28	3 3/8
.29	3 1/2	.146	0.29	0.46	0.61	0.90	1.18	1.46	1.73	2.27	2.80	3.33	3.86	4.38	.29	3 1/2
.30	3 5/8	.154	0.31	0.49	0.64	0.94	1.24	1.53	1.82	2.39	2.96	3.52	4.08	4.62	.30	3 5/8
.31	3 3/4	.162	0.32	0.51	0.68	0.99	1.30	1.61	1.92	2.52	3.12	3.71	4.30	4.88	.31	3 3/4
.32	3 7/8	.170	0.34	0.54	0.71	1.04	1.37	1.69	2.02	2.65	3.28	3.90	4.52	5.13	.32	3 7/8
.33	3 1/2	.179	0.36	0.56	0.74	1.09	1.44	1.78	2.12	2.78	3.44	4.10	4.75	5.39	.33	3 1/2
.34	4 1/8	.187	0.38	0.59	0.77	1.14	1.50	1.86	2.22	2.92	3.61	4.30	4.98	5.66	.34	4 1/8
.35	4 1/4	.196	0.39	0.62	0.80	1.19	1.57	1.95	2.32	3.06	3.78	4.50	5.22	5.93	.35	4 1/4
.36	4 3/8	.205	0.41	0.64	0.84	1.25	1.64	2.03	2.42	3.20	3.95	4.71	5.46	6.20	.36	4 3/8
.37	4 1/2	.213	0.43	0.67	0.88	1.30	1.72	2.12	2.53	3.34	4.13	4.92	5.70	6.48	.37	4 1/2
.38	4 5/8	.222	0.45	0.70	0.92	1.36	1.79	2.21	2.64	3.48	4.31	5.13	5.95	6.76	.38	4 5/8
.39	4 3/4	.231	0.47	0.73	0.95	1.41	1.86	2.30	2.75	3.62	4.49	5.35	6.20	7.05	.39	4 3/4
.40	4 7/8	.241	0.48	0.76	0.99	1.47	1.93	2.40	2.86	3.77	4.68	5.57	6.46	7.34	.40	4 7/8
.41	4 1/2	.250	0.50	0.78	1.03	1.53	2.01	2.49	2.97	3.92	4.86	5.80	6.72	7.64	.41	4 1/2
.42	5 1/8	.260	0.52	0.81	1.07	1.58	2.09	2.59	3.08	4.07	5.05	6.02	6.98	7.94	.42	5 1/8
.43	5 1/4	.269	0.54	0.84	1.11	1.64	2.16	2.68	3.29	4.22	5.24	6.25	7.25	8.24	.43	5 1/4
.44	5 3/8	.279	0.56	0.87	1.15	1.70	2.24	2.78	3.32	4.38	5.43	6.48	7.52	8.55	.44	5 3/8
.45	5 1/2	.289	0.58	0.90	1.19	1.76	2.32	2.88	3.44	4.54	5.63	6.72	7.80	8.87	.45	5 1/2
.46	5 5/8	.299	0.61	0.94	1.23	1.82	2.40	2.98	3.56	4.70	5.83	6.96	8.08	9.19	.46	5 5/8
.47	5 3/4	.309	0.63	0.97	1.27	1.88	2.48	3.08	3.68	4.86	6.03	7.20	8.36	9.51	.47	5 3/4
.48	5 7/8	.319	0.65	1.00	1.31	1.94	2.57	3.19	3.80	5.03	6.24	7.44	8.65	9.84	.48	5 7/8
.49	5 1/2	.329	0.67	1.03	1.35	2.00	2.65	3.29	3.92	5.20	6.45	7.69	8.94	10.2	.49	5 1/2

## Free-Flow Discharge Table for Parshall Flumes

Gage Ht.		DISCHARGE IN CUBIC FEET PER SECOND FOR VARIOUS THROAT WIDTHS													Gage Ht.	
Feet	Inches	3 In.	6 In.	9 In.	1 Ft.	1.5 Ft.	2 Ft.	2.5 Ft.	3 Ft.	4 Ft.	5 Ft.	6 Ft.	7 Ft.	8 Ft.	Feet	Inches
.50	6	.339	0.69	1.06	1.39	2.06	2.73	3.39	4.05	5.36	6.66	7.94	9.23	10.5	.50	6
.51	6 $\frac{1}{8}$	.350	0.71	1.10	1.44	2.13	2.82	3.50	4.18	5.53	6.87	8.20	9.53	10.9	.51	6 $\frac{1}{8}$
.52	6 $\frac{1}{4}$	.361	0.73	1.13	1.48	2.19	2.90	3.61	4.31	5.70	7.09	8.46	9.83	11.2	.52	6 $\frac{1}{4}$
.53	6 $\frac{3}{8}$	.371	0.76	1.16	1.52	2.25	2.99	3.72	4.44	5.88	7.30	8.72	10.1	11.5	.53	6 $\frac{3}{8}$
.54	6 $\frac{1}{2}$	.382	0.78	1.20	1.57	2.32	3.08	3.83	4.57	6.05	7.52	8.98	10.5	11.9	.54	6 $\frac{1}{2}$
.55	6 $\frac{5}{8}$	.393	0.80	1.23	1.62	2.39	3.17	3.94	4.70	6.23	7.74	9.25	10.8	12.2	.55	6 $\frac{5}{8}$
.56	6 $\frac{3}{4}$	.404	0.82	1.26	1.66	2.45	3.26	4.05	4.84	6.41	7.97	9.52	11.1	12.6	.56	6 $\frac{3}{4}$
.57	6 $\frac{7}{8}$	.415	0.85	1.30	1.70	2.52	3.35	4.16	4.98	6.59	8.20	9.79	11.4	13.0	.57	6 $\frac{7}{8}$
.58	6 $\frac{15}{16}$	.427	0.87	1.33	1.75	2.59	3.44	4.28	5.11	6.77	8.43	10.1	11.7	13.3	.58	6 $\frac{15}{16}$
.59	7 $\frac{1}{16}$	.438	0.89	1.37	1.80	2.66	3.53	4.39	5.25	6.96	8.66	10.4	12.0	13.7	.59	7 $\frac{1}{16}$
.60	7 $\frac{1}{8}$	.450	0.92	1.40	1.84	2.73	3.62	4.51	5.39	7.15	8.89	10.6	12.4	14.1	.60	7 $\frac{1}{8}$
.61	7 $\frac{1}{4}$	.462	0.94	1.44	1.88	2.80	3.72	4.63	5.53	7.34	9.13	10.9	12.7	14.5	.61	7 $\frac{1}{4}$
.62	7 $\frac{1}{2}$	.474	0.97	1.48	1.93	2.87	3.81	4.75	5.68	7.53	9.37	11.2	13.0	14.8	.62	7 $\frac{1}{2}$
.63	7 $\frac{3}{8}$	.485	0.99	1.51	1.98	2.95	3.91	4.87	5.82	7.72	9.61	11.5	13.4	15.2	.63	7 $\frac{3}{8}$
.64	7 $\frac{1}{2}$	.497	1.02	1.55	2.03	3.02	4.01	4.99	5.97	7.91	9.85	11.8	13.7	15.6	.64	7 $\frac{1}{2}$
.65	7 $\frac{5}{8}$	.509	1.04	1.59	2.08	3.09	4.11	5.11	6.12	8.11	10.1	12.1	14.1	16.0	.65	7 $\frac{5}{8}$
.66	7 $\frac{3}{4}$	.522	1.07	1.63	2.13	3.17	4.20	5.23	6.26	8.31	10.3	12.4	14.4	16.4	.66	7 $\frac{3}{4}$
.67	8 $\frac{1}{16}$	.534	1.10	1.66	2.18	3.24	4.30	5.36	6.41	8.51	10.6	12.7	14.8	16.8	.67	8 $\frac{1}{16}$
.68	8 $\frac{1}{8}$	.546	1.12	1.70	2.23	3.31	4.40	5.48	6.56	8.71	10.8	13.0	15.1	17.2	.68	8 $\frac{1}{8}$
.69	8 $\frac{1}{4}$	.558	1.15	1.74	2.28	3.39	4.50	5.61	6.71	8.91	11.1	13.3	15.5	17.6	.69	8 $\frac{1}{4}$
.70	8 $\frac{3}{8}$	.571	1.17	1.78	2.33	3.46	4.60	5.74	6.86	9.11	11.4	13.6	15.8	18.0	.70	8 $\frac{3}{8}$
.71	8 $\frac{1}{2}$	.584	1.20	1.82	2.38	3.54	4.70	5.86	7.02	9.32	11.6	13.9	16.2	18.5	.71	8 $\frac{1}{2}$
.72	8 $\frac{3}{4}$	.597	1.23	1.86	2.43	3.62	4.81	5.99	7.17	9.53	11.9	14.2	16.6	18.9	.72	8 $\frac{3}{4}$
.73	8 $\frac{7}{8}$	.610	1.26	1.90	2.48	3.69	4.91	6.12	7.33	9.74	12.1	14.5	16.9	19.3	.73	8 $\frac{7}{8}$
.74	8 $\frac{15}{16}$	.623	1.28	1.94	2.53	3.77	5.02	6.25	7.49	9.95	12.4	14.9	17.3	19.7	.74	8 $\frac{15}{16}$

# Free-Flow Discharge Table for Parshall Flumes

Gage Ht.		DISCHARGE IN CUBIC FEET PER SECOND FOR VARIOUS THROAT WIDTHS													Gage Ht.	
Feet	Inches	3 In.	6 In.	9 In.	1 Ft.	1.5 Ft.	2 Ft.	2.5 Ft.	3 Ft.	4 Ft.	5 Ft.	6 Ft.	7 Ft.	8 Ft.	Feet	Inches
.75	9	.636	1.31	1.98	2.58	3.85	5.12	6.39	7.65	10.2	12.7	15.2	17.7	20.1	.75	9
.76	9 1/8	.649	1.34	2.02	2.63	3.93	5.23	6.52	7.81	10.4	12.9	15.5	18.0	20.6	.76	9 1/8
.77	9 1/4	.662	1.36	2.06	2.68	4.01	5.34	6.65	7.97	10.6	13.2	15.8	18.4	21.0	.77	9 1/4
.78	9 1/2	.675	1.39	2.10	2.74	4.09	5.44	6.79	8.13	10.8	13.5	16.2	18.8	21.5	.78	9 1/2
.79	9 1/2	.689	1.42	2.14	2.80	4.17	5.55	6.92	8.30	11.0	13.8	16.5	19.2	21.9	.79	9 1/2
.80	9 5/8	.702	1.45	2.18	2.85	4.26	5.66	7.06	8.46	11.3	14.0	16.8	19.6	22.4	.80	9 5/8
.81	9 3/4	.716	1.48	2.22	2.90	4.34	5.77	7.20	8.63	11.5	14.3	17.2	20.0	22.8	.81	9 3/4
.82	9 7/8	.730	1.50	2.27	2.96	4.42	5.88	7.34	8.79	11.7	14.6	17.5	20.4	23.3	.82	9 7/8
.83	9 7/8	.744	1.53	2.31	3.02	4.50	6.00	7.48	8.96	11.9	14.9	17.8	20.8	23.7	.83	9 7/8
.84	10 1/8	.757	1.56	2.35	3.07	4.59	6.11	7.62	9.13	12.2	15.2	18.2	21.2	24.2	.84	10 1/8
.85	10 1/8	.771	1.59	2.39	3.12	4.67	6.22	7.76	9.30	12.4	15.5	18.5	21.6	24.6	.85	10 1/8
.86	10 1/4	.786	1.62	2.44	3.18	4.76	6.33	7.91	9.48	12.6	15.8	18.9	22.0	25.1	.86	10 1/4
.87	10 1/4	.800	1.65	2.48	3.24	4.84	6.44	8.05	9.65	12.8	16.0	19.2	22.4	25.6	.87	10 1/4
.88	10 1/2	.814	1.68	2.52	3.29	4.93	6.56	8.19	9.82	13.1	16.3	19.6	22.8	26.1	.88	10 1/2
.89	10 1/2	.828	1.71	2.57	3.35	5.01	6.68	8.34	10.0	13.3	16.6	19.9	23.2	26.5	.89	10 1/2
.90	10 3/4	.843	1.74	2.61	3.41	5.10	6.80	8.49	10.2	13.6	16.9	20.3	23.7	27.0	.90	10 3/4
.91	10 3/4	.858	1.77	2.66	3.46	5.19	6.92	8.63	10.4	13.8	17.2	20.7	24.1	27.5	.91	10 3/4
.92	11 1/8	.872	1.81	2.70	3.52	5.28	7.03	8.78	10.5	14.0	17.5	21.0	24.5	28.0	.92	11 1/8
.93	11 1/8	.887	1.84	2.75	3.58	5.37	7.15	8.93	10.7	14.3	17.8	21.4	24.9	28.5	.93	11 1/8
.94	11 1/4	.902	1.87	2.79	3.64	5.46	7.27	9.08	10.9	14.5	18.1	21.8	25.4	29.0	.94	11 1/4
.95	11 1/4	.916	1.90	2.84	3.70	5.55	7.39	9.23	11.1	14.8	18.4	22.1	25.8	29.5	.95	11 1/4
.96	11 1/2	.931	1.93	2.88	3.76	5.64	7.51	9.38	11.3	15.0	18.8	22.5	26.2	30.0	.96	11 1/2
.97	11 1/2	.946	1.97	2.93	3.82	5.73	7.63	9.54	11.4	15.3	19.1	22.9	26.7	30.5	.97	11 1/2
.98	11 3/4	.961	2.00	2.98	3.88	5.82	7.75	9.69	11.6	15.5	19.4	23.2	27.1	31.0	.98	11 3/4
.99	11 3/4	.977	2.03	3.02	3.94	5.91	7.88	9.85	11.8	15.8	19.7	23.6	27.6	31.5	.99	11 3/4

## Free-Flow Discharge Table for Parshall Flumes

Gage Ht.		DISCHARGE IN CUBIC FEET PER SECOND FOR VARIOUS THROAT WIDTHS													Gage Ht.	
Feet	Inches	3 In.	6 In.	9 In.	1 Ft.	1.5 Ft.	2 Ft.	2.5 Ft.	3 Ft.	4 Ft.	5 Ft.	6 Ft.	7 Ft.	8 Ft.	Feet	Inches
1.00	12	.992	2.06	3.07	4.00	6.00	8.00	10.0	12.0	16.0	20.0	24.0	28.0	32.0	1.00	12
1.01	12 1/8	1.01	2.09	3.12	4.06	6.09	8.12	10.2	12.2	16.3	20.3	24.4	28.5	32.5	1.01	12 1/8
1.02	12 1/4	1.02	2.12	3.17	4.12	6.19	8.25	10.3	12.4	16.5	20.6	24.8	28.9	33.0	1.02	12 1/4
1.03	12 3/8	1.04	2.16	3.21	4.18	6.28	8.38	10.5	12.6	16.8	21.0	25.2	29.4	33.6	1.03	12 3/8
1.04	12 1/2	1.05	2.19	3.26	4.25	6.37	8.50	10.6	12.8	17.0	21.3	25.6	29.8	34.1	1.04	12 1/2
1.05	12 5/8	1.07	2.22	3.31	4.31	6.47	8.63	10.8	13.0	17.3	21.6	25.9	30.3	34.6	1.05	12 5/8
1.06	12 3/4	1.09	2.26	3.36	4.37	6.56	8.76	11.0	13.2	17.5	21.9	26.3	30.7	35.1	1.06	12 3/4
1.07	12 7/8	1.10	2.29	3.40	4.43	6.66	8.88	11.1	13.3	17.8	22.3	26.7	31.2	35.7	1.07	12 7/8
1.08	12 15/16	1.12	2.32	3.45	4.50	6.75	9.01	11.3	13.5	18.1	22.6	27.1	31.7	36.2	1.08	12 15/16
1.09	13 1/16	1.13	2.36	3.50	4.56	6.85	9.14	11.4	13.7	18.3	22.9	27.5	32.1	36.8	1.09	13 1/16
1.10	13 1/8	1.15	2.40	3.55	4.62	6.95	9.27	11.6	13.9	18.6	23.3	27.9	32.6	37.3	1.10	13 1/8
1.11	13 1/4	1.16	2.43	3.60	4.68	7.04	9.40	11.8	14.1	18.9	23.6	28.4	33.1	37.8	1.11	13 1/4
1.12	13 1/2	1.18	2.46	3.65	4.75	7.14	9.54	11.9	14.3	19.1	23.9	28.8	33.6	38.4	1.12	13 1/2
1.13	13 5/8	1.20	2.50	3.70	4.82	7.24	9.67	12.1	14.5	19.4	24.3	29.2	34.1	38.9	1.13	13 5/8
1.14	13 3/4	1.21	2.53	3.75	4.88	7.34	9.80	12.3	14.7	19.7	24.6	29.6	34.5	39.5	1.14	13 3/4
1.15	13 7/8	1.22	2.57	3.80	4.94	7.44	9.94	12.4	14.9	19.9	25.0	30.0	35.0	40.1	1.15	13 7/8
1.16	13 15/16	1.25	2.60	3.85	5.01	7.54	10.1	12.6	15.1	20.2	25.3	30.4	35.5	40.6	1.16	13 15/16
1.17	14 1/16	1.26	2.64	3.90	5.08	7.64	10.2	12.8	15.3	20.5	25.7	30.8	36.0	41.2	1.17	14 1/16
1.18	14 1/8	1.28	2.68	3.95	5.15	7.74	10.3	12.9	15.6	20.8	26.0	31.3	36.5	41.8	1.18	14 1/8
1.19	14 1/4	1.30	2.71	4.01	5.21	7.84	10.5	13.1	15.8	21.1	26.4	31.7	37.0	42.3	1.19	14 1/4
1.20	14 3/8	1.32	2.75	4.06	5.28	7.94	10.6	13.3	16.0	21.3	26.7	32.1	37.5	42.9	1.20	14 3/8
1.21	14 1/2	1.33	2.78	4.11	5.34	8.05	10.8	13.5	16.2	21.6	27.1	32.5	38.0	43.5	1.21	14 1/2
1.22	14 5/8	1.35	2.82	4.16	5.41	8.15	10.9	13.6	16.4	21.9	27.4	33.0	38.5	44.1	1.22	14 5/8
1.23	14 3/4	1.37	2.86	4.22	5.48	8.25	11.0	13.8	16.6	22.2	27.8	33.4	39.0	44.6	1.23	14 3/4
1.24	14 7/8	1.38	2.89	4.27	5.55	8.36	11.2	14.0	16.8	22.5	28.1	33.8	39.5	45.2	1.24	14 7/8



## Free-Flow Discharge Table for Parshall Flumes

Gage Ht.		DISCHARGE IN CUBIC FEET PER SECOND FOR VARIOUS THROAT WIDTHS													Gage Ht.	
Feet	Inches	3 In.	6 In.	9 In.	1 Ft.	1.5 Ft.	2 Ft.	2.5 Ft.	3 Ft.	4 Ft.	5 Ft.	6 Ft.	7 Ft.	8 Ft.	Feet	Inches
1.25	15	1.40	2.93	4.32	5.62	8.46	11.3	14.2	17.0	22.8	28.5	34.3	40.0	45.8	1.25	15
1.26	15 $\frac{1}{8}$	1.42	2.97	4.37	5.69	8.56	11.5	14.3	17.2	23.0	28.9	34.7	40.5	46.4	1.26	15 $\frac{1}{8}$
1.27	15 $\frac{1}{4}$	1.44	3.01	4.43	5.76	8.67	11.6	14.5	17.4	23.3	29.2	35.1	41.1	47.0	1.27	15 $\frac{1}{4}$
1.28	15 $\frac{3}{8}$	1.45	3.04	4.48	5.82	8.77	11.7	14.7	17.7	23.6	29.6	35.6	41.6	47.6	1.28	15 $\frac{3}{8}$
1.29	15 $\frac{1}{2}$	1.47	3.08	4.53	5.89	8.88	11.9	14.9	17.9	23.9	30.0	36.0	42.1	48.2	1.29	15 $\frac{1}{2}$
1.30	15 $\frac{5}{8}$	1.49	3.12	4.59	5.96	8.99	12.0	15.1	18.1	24.2	30.3	36.5	42.6	48.8	1.30	15 $\frac{5}{8}$
1.31	15 $\frac{3}{4}$	1.50	3.16	4.64	6.03	9.09	12.2	15.2	18.3	24.5	30.7	36.9	43.1	49.4	1.31	15 $\frac{3}{4}$
1.32	15 $\frac{7}{8}$	1.52	3.19	4.69	6.10	9.20	12.3	15.4	18.5	24.8	31.1	37.4	43.7	50.0	1.32	15 $\frac{7}{8}$
1.33	15 $\frac{1}{2}$	1.54	3.23	4.75	6.18	9.30	12.4	15.6	18.8	25.1	31.4	37.8	44.2	50.6	1.33	15 $\frac{1}{2}$
1.34	16 $\frac{1}{8}$	1.56	3.27	4.80	6.25	9.41	12.6	15.8	19.0	25.4	31.8	38.3	44.7	51.2	1.34	16 $\frac{1}{8}$
1.35	16 $\frac{1}{4}$	1.58	3.31	4.86	6.32	9.52	12.7	16.0	19.2	25.7	32.2	38.7	45.3	51.8	1.35	16 $\frac{1}{4}$
1.36	16 $\frac{3}{8}$	1.59	3.35	4.92	6.39	9.63	12.9	16.2	19.4	26.0	32.6	39.2	45.8	52.5	1.36	16 $\frac{3}{8}$
1.37	16 $\frac{1}{2}$	1.61	3.39	4.97	6.46	9.74	13.0	16.3	19.6	26.3	33.0	39.7	46.4	53.1	1.37	16 $\frac{1}{2}$
1.38	16 $\frac{3}{4}$	1.63	3.43	5.03	6.53	9.85	13.2	16.5	19.9	26.6	33.3	40.1	46.9	53.7	1.38	16 $\frac{3}{4}$
1.39	16 $\frac{7}{8}$	1.65	3.47	5.08	6.60	9.96	13.3	16.7	20.1	26.9	33.7	40.6	47.4	54.3	1.39	16 $\frac{7}{8}$
1.40	17 $\frac{1}{8}$	1.67	3.51	5.14	6.68	10.1	13.5	16.9	20.3	27.2	34.1	41.1	48.0	55.0	1.40	17 $\frac{1}{8}$
1.41	17 $\frac{1}{4}$	1.69	3.55	5.19	6.75	10.2	13.6	17.1	20.6	27.5	34.5	41.5	48.5	55.6	1.41	17 $\frac{1}{4}$
1.42	17 $\frac{3}{8}$	1.70	3.59	5.25	6.82	10.3	13.8	17.3	20.8	27.8	34.9	42.0	49.1	56.2	1.42	17 $\frac{3}{8}$
1.43	17 $\frac{1}{2}$	1.72	3.63	5.31	6.89	10.4	13.9	17.5	21.0	28.1	35.3	42.5	49.6	56.9	1.43	17 $\frac{1}{2}$
1.44	17 $\frac{3}{4}$	1.74	3.67	5.37	6.97	10.5	14.1	17.6	21.2	28.5	35.7	42.9	50.2	57.5	1.44	17 $\frac{3}{4}$
1.45	17 $\frac{7}{8}$	1.76	3.71	5.42	7.04	10.6	14.2	17.8	21.5	28.8	36.1	43.4	50.8	58.1	1.45	17 $\frac{7}{8}$
1.46	17 $\frac{1}{2}$	1.78	3.75	5.48	7.12	10.7	14.4	18.0	21.7	29.1	36.5	43.9	51.3	58.8	1.46	17 $\frac{1}{2}$
1.47	17 $\frac{5}{8}$	1.80	3.79	5.54	7.19	10.8	14.5	18.2	21.9	29.4	36.9	44.4	51.9	59.4	1.47	17 $\frac{5}{8}$
1.48	17 $\frac{3}{4}$	1.82	3.83	5.59	7.26	11.0	14.7	18.4	22.2	29.7	37.3	44.9	52.5	60.1	1.48	17 $\frac{3}{4}$
1.49	17 $\frac{7}{8}$	1.84	3.87	5.65	7.34	11.1	14.9	18.6	22.4	30.0	37.7	45.3	53.0	60.7	1.49	17 $\frac{7}{8}$

## Free-Flow Discharge Table for Parshall Flumes

Gage Ht.		DISCHARGE IN CUBIC FEET PER SECOND FOR VARIOUS THROAT WIDTHS													Gage Ht.	
Feet	Inches	3 In.	6 In.	9 In.	1 Ft.	1.5 Ft.	2 Ft.	2.5 Ft.	3 Ft.	4 Ft.	5 Ft.	6 Ft.	7 Ft.	8 Ft.	Feet	Inches
1.50	18	1.86	3.91	5.71	7.41	11.2	15.0	18.8	22.6	30.3	38.1	45.8	53.6	61.4	1.50	18
1.51	18 $\frac{1}{8}$	.....	.....	5.77	7.49	11.3	15.2	19.0	22.9	30.7	38.5	46.3	54.2	62.1	1.51	18 $\frac{1}{8}$
1.52	18 $\frac{1}{4}$	.....	.....	5.83	7.57	11.4	15.3	19.2	23.1	31.0	38.9	46.8	54.7	62.7	1.52	18 $\frac{1}{4}$
1.53	18 $\frac{3}{8}$	.....	.....	5.89	7.64	11.5	15.5	19.4	23.4	31.3	39.3	47.3	55.3	63.4	1.53	18 $\frac{3}{8}$
1.54	18 $\frac{1}{2}$	.....	.....	5.94	7.72	11.7	15.6	19.6	23.6	31.6	39.7	47.8	55.9	64.0	1.54	18 $\frac{1}{2}$
1.55	18 $\frac{5}{8}$	.....	.....	6.00	7.80	11.8	15.8	19.8	23.8	32.0	40.1	48.3	56.5	64.7	1.55	18 $\frac{5}{8}$
1.56	18 $\frac{3}{4}$	.....	.....	6.06	7.87	11.9	15.9	20.0	24.1	32.3	40.5	48.8	57.1	65.4	1.56	18 $\frac{3}{4}$
1.57	18 $\frac{7}{8}$	.....	.....	6.12	7.95	12.0	16.1	20.2	24.3	32.6	40.9	49.3	57.7	66.1	1.57	18 $\frac{7}{8}$
1.58	19 $\frac{1}{8}$	.....	.....	6.18	8.02	12.1	16.3	20.4	24.6	32.9	41.3	49.8	58.2	66.7	1.58	18 $\frac{7}{8}$
1.59	19 $\frac{1}{4}$	.....	.....	6.24	8.10	12.2	16.4	20.6	24.8	33.3	41.8	50.3	58.8	67.4	1.59	19 $\frac{1}{4}$
1.60	19 $\frac{1}{2}$	.....	.....	6.31	8.18	12.4	16.6	20.8	25.1	33.6	42.2	50.8	59.4	68.1	1.60	19 $\frac{1}{2}$
1.61	19 $\frac{3}{8}$	.....	.....	6.37	8.26	12.5	16.7	21.0	25.3	33.9	42.6	51.3	60.0	68.8	1.61	19 $\frac{3}{8}$
1.62	19 $\frac{1}{2}$	.....	.....	6.43	8.34	12.6	16.9	21.2	25.5	34.3	43.0	51.8	60.6	69.5	1.62	19 $\frac{1}{2}$
1.63	19 $\frac{5}{8}$	.....	.....	6.49	8.42	12.7	17.1	21.4	25.8	34.6	43.4	52.3	61.2	70.2	1.63	19 $\frac{5}{8}$
1.64	19 $\frac{3}{4}$	.....	.....	6.55	8.49	12.8	17.2	21.6	26.0	34.9	43.9	52.8	61.8	70.9	1.64	19 $\frac{3}{4}$
1.65	19 $\frac{7}{8}$	.....	.....	6.61	8.57	13.0	17.4	21.8	26.3	35.3	44.3	53.3	62.4	71.6	1.65	19 $\frac{7}{8}$
1.66	20 $\frac{1}{8}$	.....	.....	6.67	8.65	13.1	17.6	22.0	26.5	35.6	44.7	53.9	63.0	72.3	1.66	19 $\frac{7}{8}$
1.67	20 $\frac{1}{4}$	.....	.....	6.73	8.73	13.2	17.7	22.2	26.8	35.9	45.1	54.4	63.6	73.0	1.67	20 $\frac{1}{4}$
1.68	20 $\frac{3}{8}$	.....	.....	6.79	8.81	13.3	17.9	22.4	27.0	36.3	45.6	54.9	64.3	73.7	1.68	20 $\frac{3}{8}$
1.69	20 $\frac{1}{2}$	.....	.....	6.86	8.89	13.5	18.0	22.7	27.3	36.6	46.0	55.4	64.9	74.4	1.69	20 $\frac{1}{2}$
1.70	20 $\frac{3}{4}$	.....	.....	6.92	8.97	13.6	18.2	22.9	27.6	37.0	46.4	56.0	65.5	75.1	1.70	20 $\frac{3}{4}$
1.71	20 $\frac{7}{8}$	.....	.....	6.98	9.05	13.7	18.4	23.1	27.8	37.3	46.9	56.5	66.1	75.8	1.71	20 $\frac{7}{8}$
1.72	21 $\frac{1}{8}$	.....	.....	7.04	9.13	13.8	18.5	23.3	28.1	37.7	47.3	57.0	66.7	76.5	1.72	20 $\frac{7}{8}$
1.73	21 $\frac{1}{4}$	.....	.....	7.11	9.21	13.9	18.7	23.5	28.3	38.0	47.7	57.5	67.3	77.2	1.73	21 $\frac{1}{4}$
1.74	21 $\frac{3}{8}$	.....	.....	7.17	9.29	14.1	18.9	23.7	28.6	38.3	48.2	58.1	68.0	77.9	1.74	21 $\frac{3}{8}$

# Free-Flow Discharge Table for Parshall Flumes

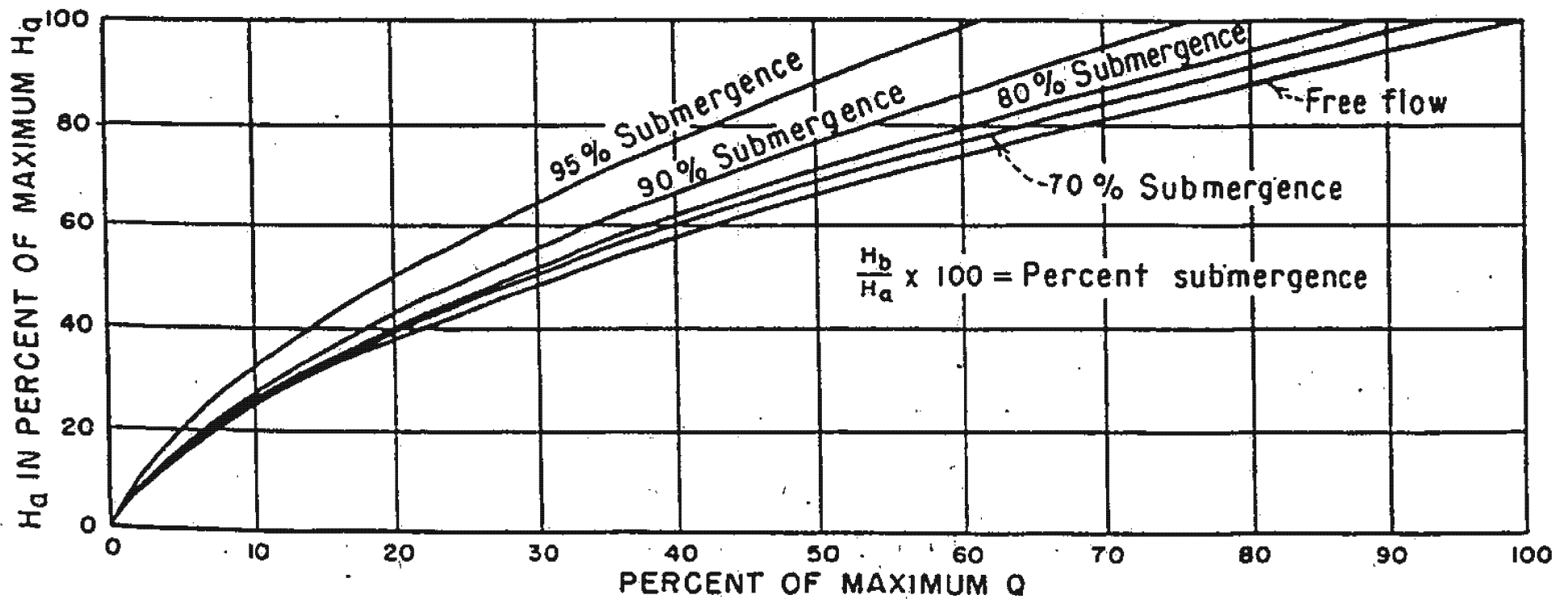
Gage Ht.		DISCHARGE IN CUBIC FEET PER SECOND FOR VARIOUS THROAT WIDTHS													Gage Ht.	
Feet	Inches	3 In.	6 In.	9 In.	1 Ft.	1.5 Ft.	2 Ft.	2.5 Ft.	3 Ft.	4 Ft.	5 Ft.	6 Ft.	7 Ft.	8 Ft.	Feet	Inches
1.75	21	.....	.....	7.23	9.38	14.2	19.0	23.9	28.8	38.7	48.6	58.6	68.6	78.7	1.75	21
1.76	21 <sup>1</sup> / <sub>8</sub>	.....	.....	7.29	9.46	14.3	19.2	24.1	29.1	39.0	49.1	59.1	69.2	79.4	1.76	21 <sup>1</sup> / <sub>8</sub>
1.77	21 <sup>1</sup> / <sub>4</sub>	.....	.....	7.36	9.54	14.4	19.4	24.4	29.3	39.4	49.5	59.7	69.9	80.1	1.77	21 <sup>1</sup> / <sub>4</sub>
1.78	21 <sup>3</sup> / <sub>8</sub>	.....	.....	7.42	9.62	14.6	19.6	24.6	29.6	39.7	49.9	60.2	70.5	80.8	1.78	21 <sup>3</sup> / <sub>8</sub>
1.79	21 <sup>1</sup> / <sub>2</sub>	.....	.....	7.48	9.70	14.7	19.7	24.8	29.9	40.1	50.4	60.7	71.1	81.6	1.79	21 <sup>1</sup> / <sub>2</sub>
1.80	21 <sup>5</sup> / <sub>8</sub>	.....	.....	7.54	9.79	14.8	19.9	25.0	30.1	40.5	50.8	61.3	71.8	82.3	1.80	21 <sup>5</sup> / <sub>8</sub>
1.81	21 <sup>3</sup> / <sub>4</sub>	.....	.....	7.61	9.87	15.0	20.1	25.2	30.4	40.8	51.3	61.8	72.4	83.0	1.81	21 <sup>3</sup> / <sub>4</sub>
1.82	21 <sup>7</sup> / <sub>8</sub>	.....	.....	7.68	9.95	15.1	20.2	25.4	30.7	41.2	51.7	62.4	73.0	83.8	1.82	21 <sup>7</sup> / <sub>8</sub>
1.83	21 <sup>1</sup> / <sub>2</sub>	.....	.....	7.74	10.0	15.2	20.4	25.6	30.9	41.5	52.2	62.9	73.7	84.5	1.83	21 <sup>1</sup> / <sub>2</sub>
1.84	22 <sup>1</sup> / <sub>8</sub>	.....	.....	7.81	10.1	15.3	20.6	25.9	31.2	41.9	52.6	63.5	74.3	85.3	1.84	22 <sup>1</sup> / <sub>8</sub>
1.85	22 <sup>1</sup> / <sub>4</sub>	.....	.....	7.87	10.2	15.5	20.8	26.1	31.5	42.2	53.1	64.0	75.0	86.0	1.85	22 <sup>1</sup> / <sub>4</sub>
1.86	22 <sup>3</sup> / <sub>8</sub>	.....	.....	7.94	10.3	15.6	20.9	26.3	31.7	42.6	53.6	64.6	75.6	86.8	1.86	22 <sup>3</sup> / <sub>8</sub>
1.87	22 <sup>1</sup> / <sub>2</sub>	.....	.....	8.00	10.4	15.7	21.1	26.5	32.0	43.0	54.0	65.1	76.3	87.5	1.87	22 <sup>1</sup> / <sub>2</sub>
1.88	22 <sup>5</sup> / <sub>8</sub>	.....	.....	8.06	10.5	15.8	21.3	26.7	32.3	43.3	54.5	65.7	76.9	88.3	1.88	22 <sup>5</sup> / <sub>8</sub>
1.89	22 <sup>3</sup> / <sub>4</sub>	.....	.....	8.13	10.5	16.0	21.5	27.0	32.5	43.7	54.9	66.3	77.6	89.0	1.89	22 <sup>3</sup> / <sub>4</sub>
1.90	22 <sup>7</sup> / <sub>8</sub>	.....	.....	8.20	10.6	16.1	21.6	27.2	32.8	44.1	55.4	66.8	78.2	89.8	1.90	22 <sup>7</sup> / <sub>8</sub>
1.91	23 <sup>1</sup> / <sub>8</sub>	.....	.....	8.26	10.7	16.2	21.8	27.4	33.1	44.4	55.9	67.4	78.9	90.5	1.91	23 <sup>1</sup> / <sub>8</sub>
1.92	23 <sup>1</sup> / <sub>4</sub>	.....	.....	8.33	10.8	16.4	22.0	27.6	33.3	44.8	56.3	67.9	79.6	91.3	1.92	23 <sup>1</sup> / <sub>4</sub>
1.93	23 <sup>3</sup> / <sub>8</sub>	.....	.....	8.40	10.9	16.5	22.2	27.9	33.6	45.2	56.8	68.5	80.2	92.1	1.93	23 <sup>3</sup> / <sub>8</sub>
1.94	23 <sup>1</sup> / <sub>2</sub>	.....	.....	8.46	11.0	16.6	22.4	28.1	33.9	45.5	57.3	69.1	80.9	92.8	1.94	23 <sup>1</sup> / <sub>2</sub>
1.95	23 <sup>5</sup> / <sub>8</sub>	.....	.....	8.52	11.1	16.7	22.5	28.3	34.1	45.9	57.7	69.6	81.6	93.6	1.95	23 <sup>5</sup> / <sub>8</sub>
1.96	23 <sup>3</sup> / <sub>4</sub>	.....	.....	8.59	11.1	16.9	22.7	28.6	34.4	46.3	58.2	70.2	82.2	94.4	1.96	23 <sup>3</sup> / <sub>4</sub>
1.97	23 <sup>7</sup> / <sub>8</sub>	.....	.....	8.66	11.2	17.0	22.9	28.8	34.7	46.6	58.7	70.8	82.9	95.1	1.97	23 <sup>7</sup> / <sub>8</sub>
1.98	24 <sup>1</sup> / <sub>8</sub>	.....	.....	8.73	11.3	17.2	23.1	29.0	35.0	47.0	59.1	71.4	83.6	95.9	1.98	24 <sup>1</sup> / <sub>8</sub>
1.99	23 <sup>1</sup> / <sub>2</sub>	.....	.....	8.80	11.4	17.3	23.2	29.2	35.3	47.4	59.6	71.9	84.3	96.7	1.99	23 <sup>1</sup> / <sub>2</sub>

## Free-Flow Discharge Table for Parshall Flumes

Gage Ht.		DISCHARGE IN CUBIC FEET PER SECOND FOR VARIOUS THROAT WIDTHS													Gage Ht.	
Feet	Inches	3 In.	6 In.	9 In.	1 Ft.	1.5 Ft.	2 Ft.	2.5 Ft.	3 Ft.	4 Ft.	5 Ft.	6 Ft.	7 Ft.	8 Ft.	Feet	Inches
2.00	24	.....	.....	8.87	11.5	17.4	23.4	29.5	35.5	47.8	60.1	72.5	84.9	97.5	2.00	24
2.01	24 1/8	.....	.....	.....	11.6	17.6	23.6	29.7	35.8	48.1	60.6	73.1	85.6	98.3	2.01	24 1/8
2.02	24 1/4	.....	.....	.....	11.7	17.7	23.8	29.9	36.1	48.5	61.0	73.7	86.3	99.1	2.02	24 1/4
2.03	24 3/8	.....	.....	.....	11.8	17.8	24.0	30.2	36.4	48.9	61.5	74.2	87.0	99.8	2.03	24 3/8
2.04	24 1/2	.....	.....	.....	11.8	18.0	24.2	30.4	36.7	49.3	62.0	74.8	87.7	101.	2.04	24 1/2
2.05	24 5/8	.....	.....	.....	11.9	18.1	24.3	30.6	36.9	49.7	62.5	75.4	88.4	101.	2.05	24 5/8
2.06	24 3/4	.....	.....	.....	12.0	18.2	24.5	30.8	37.2	50.1	63.0	76.0	89.1	102.	2.06	24 3/4
2.07	24 7/8	.....	.....	.....	12.1	18.4	24.7	31.1	37.5	50.4	63.5	76.6	89.8	103.	2.07	24 7/8
2.08	24 7/8	.....	.....	.....	12.2	18.5	24.9	31.3	37.8	50.8	63.9	77.2	90.4	104.	2.08	24 7/8
2.09	25 1/8	.....	.....	.....	12.3	18.7	25.1	31.5	38.1	51.2	64.4	77.8	91.1	105.	2.09	25 1/8
2.10	25 1/8	.....	.....	.....	12.4	18.8	25.3	31.8	38.4	51.6	64.9	78.4	91.8	105.	2.10	25 1/8
2.11	25 1/8	.....	.....	.....	12.5	18.9	25.5	32.0	38.6	52.0	65.4	79.0	92.5	106.	2.11	25 1/8
2.12	25 1/8	.....	.....	.....	12.6	19.0	25.6	32.2	38.9	52.4	65.9	79.6	93.3	107.	2.12	25 1/8
2.13	25 1/8	.....	.....	.....	12.6	19.2	25.8	32.5	39.2	52.8	66.4	80.2	94.0	108.	2.13	25 1/8
2.14	25 1/4	.....	.....	.....	12.7	19.3	26.0	32.7	39.5	53.2	66.9	80.8	94.7	109.	2.14	25 1/4
2.15	25 1/4	.....	.....	.....	12.8	19.5	26.2	33.0	39.8	53.5	67.4	81.4	95.4	110.	2.15	25 1/4
2.16	25 1/4	.....	.....	.....	12.9	19.6	26.4	33.2	40.1	53.9	67.9	82.0	96.1	110.	2.16	25 1/4
2.17	26 1/8	.....	.....	.....	13.0	19.7	26.6	33.4	40.4	54.3	68.4	82.6	96.8	111.	2.17	26 1/8
2.18	26 1/8	.....	.....	.....	13.1	19.9	26.8	33.7	40.7	54.7	68.9	83.2	97.5	112.	2.18	26 1/8
2.19	26 1/4	.....	.....	.....	13.2	20.0	27.0	33.9	41.0	55.1	69.4	83.8	98.2	113.	2.19	26 1/4
2.20	26 3/8	.....	.....	.....	13.3	20.2	27.2	34.2	41.3	55.5	69.9	84.4	98.9	114.	2.20	26 3/8
2.21	26 1/2	.....	.....	.....	13.4	20.3	27.3	34.4	41.5	55.9	70.4	85.0	99.7	114.	2.21	26 1/2
2.22	26 3/4	.....	.....	.....	13.5	20.5	27.5	34.6	41.8	56.3	70.9	85.6	100.	115.	2.22	26 3/4
2.23	26 3/4	.....	.....	.....	13.6	20.6	27.7	34.9	42.1	56.7	71.4	86.3	101.	116.	2.23	26 3/4
2.24	26 3/4	.....	.....	.....	13.7	20.7	27.9	35.1	42.4	57.1	71.9	86.9	102.	117.	2.24	26 3/4

## Free-Flow Discharge Table for Parshall Flumes

Gage Ht.		DISCHARGE IN CUBIC FEET PER SECOND FOR VARIOUS THROAT WIDTHS													Gage Ht.	
Feet	Inches	3 in.	6 in.	9 in.	1 Ft.	1.5 Ft.	2 Ft.	2.5 Ft.	3 Ft.	4 Ft.	5 Ft.	6 Ft.	7 Ft.	8 Ft.	Feet	Inches
2.25	27	.....	.....	.....	13.7	20.9	28.1	35.4	42.7	57.5	72.4	87.5	103.	118.	2.25	27
2.26	27 1/8	.....	.....	.....	13.8	21.0	28.3	35.6	43.0	57.9	72.9	88.1	103.	119.	2.26	27 1/8
2.27	27 1/4	.....	.....	.....	13.9	21.2	28.5	35.9	43.3	58.3	73.5	88.7	104.	120.	2.27	27 1/4
2.28	27 3/8	.....	.....	.....	14.0	21.3	28.7	36.1	43.6	58.7	74.0	89.4	105.	120.	2.28	27 3/8
2.29	27 1/2	.....	.....	.....	14.1	21.4	28.9	36.4	43.9	59.2	74.5	90.0	106.	121.	2.29	27 1/2
2.30	27 5/8	.....	.....	.....	14.2	21.6	29.1	36.6	44.2	59.6	75.0	90.6	106.	122.	2.30	27 5/8
2.31	27 3/4	.....	.....	.....	14.3	21.7	29.3	36.9	44.5	60.0	75.5	91.2	107.	123.	2.31	27 3/4
2.32	27 7/8	.....	.....	.....	14.4	21.9	29.5	37.1	44.8	60.4	76.1	91.9	108.	124.	2.32	27 7/8
2.33	28 1/8	.....	.....	.....	14.5	22.0	29.7	37.4	45.1	60.8	76.6	92.5	108.	125.	2.33	28 1/8
2.34	28 1/4	.....	.....	.....	14.6	22.2	29.9	37.6	45.4	61.2	77.1	93.1	109.	125.	2.34	28 1/4
2.35	28 1/2	.....	.....	.....	14.7	22.4	30.1	37.9	45.7	61.6	77.6	93.8	110.	126.	2.35	28 1/2
2.36	28 3/8	.....	.....	.....	14.8	22.5	30.3	38.1	46.0	62.0	78.1	94.4	111.	127.	2.36	28 3/8
2.37	28 1/2	.....	.....	.....	14.9	22.6	30.5	38.4	46.4	62.4	78.7	95.1	112.	128.	2.37	28 1/2
2.38	28 5/8	.....	.....	.....	15.0	22.8	30.7	38.6	46.7	62.9	79.2	95.7	112.	129.	2.38	28 5/8
2.39	28 3/4	.....	.....	.....	15.1	22.9	30.9	38.9	47.0	63.3	79.7	96.3	113.	130.	2.39	28 3/4
2.40	28 7/8	.....	.....	.....	15.2	23.0	31.1	39.1	47.3	63.7	80.3	97.0	114.	131.	2.40	28 7/8
2.41	29 1/8	.....	.....	.....	15.3	23.2	31.3	39.4	47.6	64.1	80.8	97.6	114.	132.	2.41	29 1/8
2.42	29 1/4	.....	.....	.....	15.4	23.3	31.5	39.6	47.9	64.5	81.3	98.3	115.	132.	2.42	29 1/4
2.43	29 1/2	.....	.....	.....	15.5	23.5	31.7	39.9	48.2	65.0	81.8	98.9	116.	133.	2.43	29 1/2
2.44	29 3/4	.....	.....	.....	15.6	23.7	31.9	40.1	48.5	65.4	82.4	99.6	117.	134.	2.44	29 3/4
2.45	29 5/8	.....	.....	.....	15.6	23.8	32.1	40.4	48.8	65.8	82.9	100.	118.	135.	2.45	29 5/8
2.46	29 1/2	.....	.....	.....	15.7	23.9	32.3	40.7	49.1	66.2	83.5	101.	118.	136.	2.46	29 1/2
2.47	29 3/4	.....	.....	.....	15.9	24.1	32.5	40.9	49.5	66.7	84.0	102.	119.	137.	2.47	29 3/4
2.48	29 3/8	.....	.....	.....	15.9	24.2	32.7	41.2	49.8	67.1	84.5	102.	120.	138.	2.48	29 3/8
2.49	29 1/2	.....	.....	.....	16.0	24.4	32.9	41.4	50.1	67.5	85.1	103.	121.	139.	2.49	29 1/2
2.50	30	.....	.....	.....	16.1	24.6	33.1	41.7	50.4	67.9	85.6	104.	121.	140.	2.50	30



Typical discharge curves for Parshall flumes with free flow and with submerged conditions.