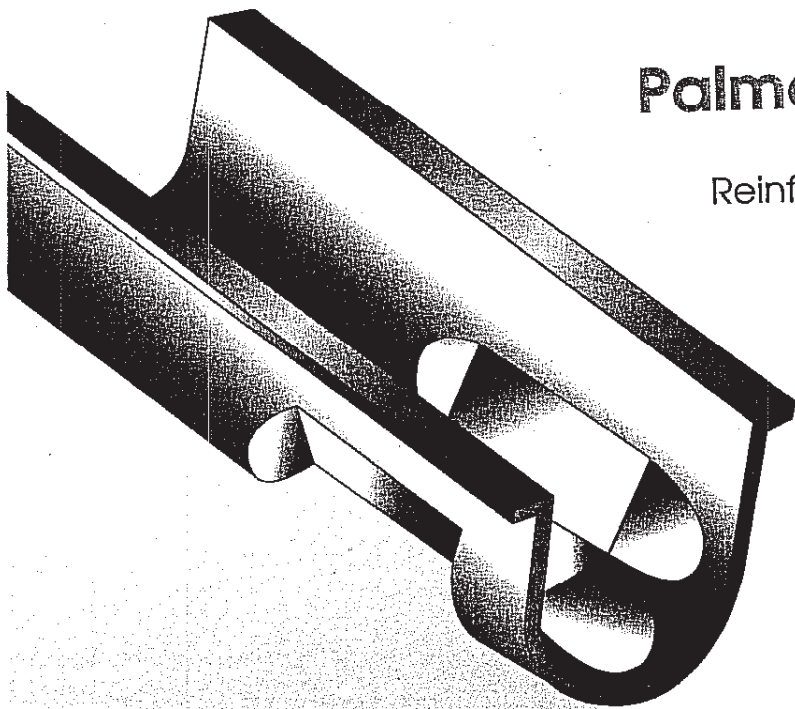


Palmer-Bowlus Flumes

Reinforced Fiberglass Polymer



Permanent Flumes

Insert/Invert Flumes

Cutback/Exit Flumes

Palmer-Bowlus flumes are designed and manufactured to meet or exceed the needs of the wastewater and chemical industry. With over 35 years of manufacturing fiberglass products and providing our customers quality service

Plastics has developed an enviable reputation. Our flumes include features and benefits such as the following:

- ◀ The Palmer-Bowlus trapezoidal throat design is used which assures a high velocity critical flow, translating into minimal flow restriction, low energy loss and better mea-

suring accuracies at both low flow and peak capacity.

- ◀ The smooth gelcoated fluid contact surfaces decreases friction and prevent solids buildup.

- ◀ All flumes are made with chopped and sprayed fiberglass (minimum 30% content by weight) and reinforced polyester materials assuring a long maintenance free performance.

- ◀ A one-piece molded construction makes installation quick, easy, and cost effective.

- ◀ Integral 2 1/2" flanges, anchor clips and right angle

tie-bars are permanently attached for added strength and rigidity during shipping, installation and usage.

- ◀ A wide selection of industry standard optional measuring and interface equipment are available.

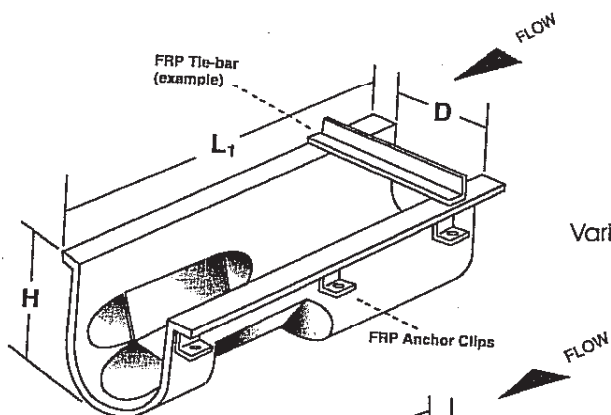
- ◀ All components are made with corrosion resistant materials for maximum application performance.

Sizes Capacities & Weights

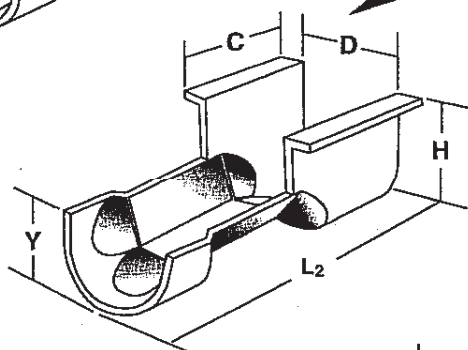
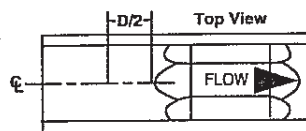
Flume Size "D" Dimension	Approximate Maximum Discharge			Head at Approx. Max. Discharge
	*CFS	*MGD	*GPM	
4"	0.12	.07	54	3.0 in.
6"	0.30	0.19	132	4.2 in.
8"	0.69	0.45	310	6.0 in.
10"	1.12	0.72	502	7.2 in.
12"	1.67	1.08	752	8.4 in.
15"	3.09	1.99	1385	10.8 in.
18"	4.61	2.98	2071	12.6 in.
21"	7.04	4.55	3161	15.0 in.
24"	9.47	6.10	4248	16.8 in.
27"	13.09	8.44	5873	19.2 in.
30"	16.52	10.66	7413	21.0 in.
36"	29.97	19.37	13451	27.0 in.
42"	43.77	28.29	19645	31.4 in.

* Permanent flume only

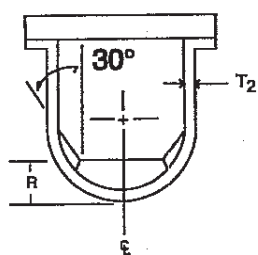
Shipping Weights		
Permanent	Insert/Invert	Exit/Cutback
10 lb.	7 lb.	5 lb.
15 lb.	10 lb.	8 lb.
20 lb.	15 lb.	12 lb.
25 lb.	20 lb.	17 lb.
33 lb.	25 lb.	20 lb.
50 lb.	33 lb.	30 lb.
75 lb.	50 lb.	45 lb.
125 lb.	75 lb.	65 lb.
150 lb.	90 lb.	80 lb.
	110 lb.	100 lb.
	130 lb.	115 lb.
	175 lb.	160 lb.
	200 lb.	185 lb.



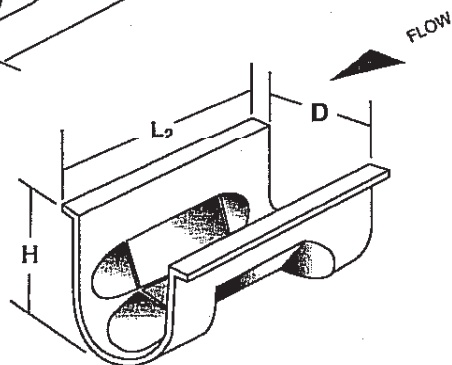
Permanent Flumes
 Typically used in new construction or when it is possible to cement a flume into place between pipe ends. The upstream approach section provides for a smooth flow into the flume. Various optional accessories are sometimes required for installation. (See the back page for details and options available.)



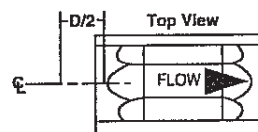
Exit / Cutback Flume
 Generally exit flumes are used within the discharge pipe of a manhole. This type of flume maximizes the space for accurate upstream monitoring and sampling.



T₂ = Wall Thickness



Insert Flumes
 This flume is designed to be placed into an existing half section of pipe. The O.D. of this flume should fit the I.D. of the pipe section.



Note: Dimensions are provided for reference only. All specifications are subject to change without notice.

D	D/2	L ₁	L ₂	H	R	Y	C	T ₁	T ₂
4"	2"	17"	10"	6"	2/3"	1 13/16"	4 5/8"	3/16"	3/16"
6"	3"	25"	14"	8"	1"	2 13/16"	6 5/8"	3/16"	3/16"
8"	4"	33"	18"	10"	1 1/3"	3 13/16"	8 5/8"	3/16"	3/16"
10"	5"	41"	22"	12"	1 2/3"	4 13/16"	10 5/8"	5/16"	3/16"
12"	6"	49"	26"	14"	2"	5 13/16"	12 5/8"	3/16"	3/16"
15"	7 1/2"	61"	32"	17"	2 1/2"	7 5/16"	15 5/8"	3/16"	3/16"
18"	9"	73"	38"	20"	3"	8 13/16"	18 5/8"	3/16"	3/16"
21"	10 1/2"	85"	44"	23"	3 1/2"	10 5/16"	21 5/8"	1/4"	3/16"
24"	12"	97"	50"	26"	4"	11 13/16"	24 5/8"	1/4"	3/16"
27"	13 1/2"	109"	56"	29"	4 1/2"	13 5/16"	27 5/8"	1/4"	3/16"
30"	15"	121"	62"	32"	5"	14 13/16"	30 5/8"	1/4"	3/16"
36"	18"	145"	74"	38"	6"	17 13/16"	36 5/8"	5/16"	3/16"
42"	21"	169"	86"	44"	7"	20 13/16"	42 5/8"	5/16"	3/16"

Engineering Details & Options

Head vs. Flow Sizing

For measurement accuracy use flume sizes to match actual flows. Sizing to nominal pipe size is not always correct. Optimum flow readings are obtained by selecting a flume size that has flow rates between Maximum and Minimum Discharge rates. Typically oversized flumes reduce the accuracy of the flow projections.

When the pipeline size is larger than the flume, the approach section on the permanent flume is needed to smooth the flow before it reaches the point of measurement.

Pipeline Design

Incoming flows should be non-turbulent and be lower than the velocity in the throat of the flume. The upstream pipeline grade should be designed to be equal to or less than 2%.

Downstream fluid depths must be less than 90% of the upstream depth. Any hydraulic jumps must not occur in the flume throat but downstream from the flume throat.

A depth of flow measuring device should be located at a point equal to 1/2 the diameter of the pipe, upstream from the flume entrance.

Options

- ▲ Embedded staff Gauge: Calibration units 1" & 1/4" increments
- ▲ Stilling wells in 12", 10", 8", and 6" I.D. can be supplied attached Material: Fiberglass
- ▲ Ultrasonic level sensor instrumentation support bracket Material: stainless steel
- ▲ Bubbler tube, insert molded and fitted to connect with standard flow meter tubing Material: stainless steel
- ▲ NPT connections available for remote stilling well attachment Material: Fiberglass
- ▲ 2 1/2" wide standard end flanges Material: Fiberglass
- ▲ Bulkheads available for flumes smaller than adjoining pipe Material: Fiberglass
- ▲ Wide variety of adapters for inlet and outlet pipeline connections Material: Fiberglass

Customized Flumes

- ▲ Recessed cavities can be molded for below surface mounting of sensing instruments
- ▲ High-Temp and chemical resistant fiberglass polyester resins are available.
- ▲ Special flume walls with thicker fiberglass laminations are available.

INSTALLATION INSTRUCTIONS FOR PERMANENT TYPE PALMER-BOWLUS FLUMES
WHICH ARE GROUTED IN PLACE

PERMANENT TYPE PALMER-BOWLUS FLUMES ARE TYPICALLY GROUTED IN PLACE BETWEEN TWO SECTIONS OF PIPE HAVING THE SAME DIAMETER AS THE FLUME. IN EXISTING PIPELINES A SECTION OF PIPE EQUAL TO THE LENGTH OF THE FLUME IS REMOVED AND REPLACED WITH THE FLUME.

FLUME SHOULD NOT BE PLACED AT RIGHT ANGLES TO FLOWING STREAMS SUCH AS IN TURN-OUTS UNLESS THE FLOW IS EFFECTIVELY STRAIGHTENED AND UNIFORMLY REDISTRIBUTED BEFORE IT ENTERS THE FLUMES. SURGES AND WAVES OF ANY APPRECIABLE SIZE SHOULD BE ELIMINATED AND THE FLOW LINES SHOULD BE ESSENTIALLY PARALLEL TO THE FLUME CENTERLINE. ALSO, THE FLOW AT THE FLUME ENTRANCE SHOULD BE FREE OF TURBULENCE IN THE FORM OF VISIBLE SURFACE BOILS. TRANQUIL FLOW CHARACTERISTICS IS A MUST IN ALL CASES.

WHEN INSTALLING FLUME, THE INVERT (INSIDE BOTTOM MOST POINT) SHOULD BE USED AS A REFERENCE. THE INVERT OF THE FLUME MUST BE LEVEL IN BOTH LONGITUDINAL AND TRANSVERSE DIRECTIONS. THE PARALLEL SIDEWALLS MUST BE PLUMB. FLUME SHOULD BE SET ON A SOLID FOUNDATION TO PREVENT SETTLEMENT OR HEAVING. FRP ANCHOR CLIPS ARE PROVIDED FOR ATTACHING WIRE TO THE FLUME TO PREVENT THE FLUME FROM FLOATING OR SHIFTING DURING STAGE POURING OF FLOWABLE GROUT.

INTERNAL BRACING MUST BE PROVIDED ON THE PERPENDICULAR SIDEWALLS OF THE FLUME BY THE INSTALLER TO PREVENT ANY UNDUE STRESS OR DEFORMATION DURING BACKFILLING WITH FLOWABLE GROUT OR OTHER MATERIALS. FLOWABLE GROUT BACKFILL SHOULD BE STAGE POURED IN 6 INCH DEEP INCREMENTS ("LIFTS") WITH MINIMAL USE OF A VIBRATOR. THE FIRST 6 INCH LIFT SHOULD BE SLOWLY POURED ON ONE SIDE SO THAT THE GROUT WILL FLOW UNDER THE FLUME TO THE OTHER SIDE THEREBY HELPING TO ELIMINATE ANY VOID AREAS UNDER THE RAISED TRAPAZOIDAL FLOOR SECTION. EACH LIFT MUST BE ALLOWED TO SET UP BEFORE THE NEXT STAGE IS PURED.

ALL FLUMES ARE SUPPLIED WITH EXTRUDED FRP ANGLES WHICH ARE BOLTED TO THE TOP FLANGES TO MAINTAIN DIMENSIONAL INTEGRITY DURING SHIPMENT AND INSTALLATION. ALTHOUGH THESE ANGLES CAN BE REMOVED AFTER INSTALLATION IS COMPLETE, KENCO RECOMMENDS LEAVING THE ANGLES IN PLACE TO MAINTAIN THE FLUME'S DIMENSIONAL CHARACTERISTICS IN CASE THE GROUT SHRINKS.

NOTES:

1. IF YOUR FLUME CANNOT OR WILL NOT BE GROUTED IN PLACE, IT IS PROBABLY FURNISHED WITH FRP END FLANGES AND/OR FRP PIPE STUBS HAVING AN O.D. EQUAL TO THE PIPE IN WHICH IT IS TO BE INSTALLED.
2. FLUMES WITH END FLANGES (OR NOZZLES) ARE TYPICALLY BOLTED TO PIPE FLANGES.
3. FLUMES WITH FRP PIPE STUBS TYPICALLY REQUIRE A "FASTENER" OF SOME TYPE TO CONNECT THE PIPE STUBS TO THE EXISTING SECTIONS OF NONFLANGED PIPE. THE MOST COMMON "FASTENER" IS A FLEXIBLE PVC COUPLING WITH STAINLESS STEEL BANDS, I.E., FERNCO COUPLING (ALSO KNOWN AS A NO HUB CONNECTOR). IF YOUR FLUME IS FURNISHED WITH FERNCO COUPLINGS, INSTALL PER MANUFACTURER'S INSTRUCTIONS.

Table 14-3:
8 in. Palmer-Bowlus Flume Discharge Table with Head in Feet

Head (feet)	CFS	GPM	MGD	Head (feet)	CFS	GPM	MGD
0.01				0.26	0.1942	87.18	0.1255
0.02				0.27	0.2086	93.61	0.1348
0.03				0.28	0.2235	100.3	0.1445
0.04				0.29	0.2391	107.3	0.1545
0.05				0.30	0.2553	114.6	0.1650
0.06				0.31	0.2720	122.1	0.1768
0.07				0.32	0.2895	129.9	0.1897
0.08				0.33	0.3075	138.0	0.1987
0.09	0.0306	13.75	0.0198	0.34	0.3261	146.4	0.2108
0.10	0.0365	16.39	0.0236	0.35	0.3454	155.0	0.2232
0.11	0.0429	19.24	0.0277	0.36	0.3652	163.9	0.2360
0.12	0.0497	22.29	0.0321	0.37	0.3856	173.1	0.2492
0.13	0.0569	25.56	0.0368	0.38	0.4065	182.5	0.2628
0.14	0.0646	29.07	0.0417	0.39	0.4281	192.1	0.2767
0.15	0.0727	32.81	0.0470	0.40	0.4500	202.0	0.2909
0.16	0.0812	36.85	0.0525	0.41	0.4725	212.1	0.3054
0.17	0.0902	40.50	0.0583	0.42	0.4954	222.3	0.3202
0.18	0.0997	44.76	0.0645	0.43	0.5187	232.8	0.3352
0.19	0.1097	49.24	0.0709	0.44	0.5423	243.4	0.3505
0.20	0.1202	53.94	0.0777	0.45	0.5663	254.2	0.3660
0.21	0.1312	58.87	0.0846	0.46	0.5906	265.0	0.3817
0.22	0.1427	64.04	0.0922	0.47	0.6151	276.1	0.3975
0.23	0.1547	69.44	0.1000	0.48	0.6399	287.2	0.4135
0.24	0.1673	75.10	0.1081	0.49	0.6648	298.4	0.4297
0.25	0.1805	81.01	0.1167	0.50	0.6900	309.7	0.4459

Table 14-1:
4 in. Palmer-Bowlus Flume Discharge Table with Head in Feet

Head (feet)	CFS	GPM	MGD	Head (feet)	CFS	GPM	MGD
0.01				0.14	0.0392	17.57	0.0253
0.02				0.15	0.0447	20.09	0.0289
0.03				0.16	0.0508	22.78	0.0328
0.04				0.17	0.0572	25.67	0.0370
0.05				0.18	0.0641	28.76	0.0414
0.06				0.19	0.0714	32.03	0.0461
0.07	0.0086	3.865	0.0058	0.20	0.0790	35.46	0.0511
0.08	0.0112	5.035	0.0073	0.21	0.0870	39.04	0.0562
0.09	0.0141	6.347	0.0091	0.22	0.0953	42.76	0.0616
0.10	0.0174	7.805	0.0112	0.23	0.1038	46.58	0.0671
0.11	0.0210	9.417	0.0136	0.24	0.1125	50.46	0.0727
0.12	0.0249	11.19	0.0161	0.25	0.1213	54.45	0.0784
0.13	0.0293	13.14	0.0189				
0.14	0.0340	15.26	0.0220				

Table 14-2:
6 in. Palmer-Bowlus Flume Discharge Table with Head in Feet

Head (feet)	CFS	GPM	MGD	Head (feet)	CFS	GPM	MGD
0.01				0.19	0.0998	46.31	0.0581
0.02				0.20	0.0999	44.39	0.0539
0.03				0.21	0.1085	48.70	0.0701
0.04				0.22	0.1168	53.24	0.0767
0.05				0.23	0.1283	58.03	0.0836
0.06				0.24	0.1405	63.07	0.0908
0.07	0.0155	7.016	0.0101	0.25	0.1523	68.95	0.0984
0.08	0.0196	8.911	0.0127	0.26	0.1646	73.86	0.1064
0.09	0.0240	10.78	0.0155	0.27	0.1774	79.61	0.1147
0.10	0.0288	12.91	0.0186	0.28	0.1907	85.59	0.1233
0.11	0.0339	15.22	0.0219	0.29	0.2045	91.78	0.1322
0.12	0.0394	17.70	0.0255	0.30	0.2187	98.17	0.1414
0.13	0.0453	20.35	0.0293	0.31	0.2334	104.7	0.1508
0.14	0.0517	23.18	0.0334	0.32	0.2484	111.5	0.1605
0.15	0.0584	26.20	0.0377	0.33	0.2637	118.3	0.1704
0.16	0.0656	29.42	0.0424	0.34	0.2793	125.3	0.1805
0.17	0.0732	32.84	0.0473	0.35	0.2951	132.4	0.1907
0.18	0.0813	36.47	0.0525				

Table 14-4:

10 in. Palmer-Bowlius Flume Discharge Table with Head in Feet

Head (feet)	CFS	GPM	MGD	Head (feet)	CFS	GPM	MGD
0.01				0.31	0.3093	136.3	0.1962
0.02				0.32	0.3272	145.9	0.2115
0.03				0.33	0.3469	155.7	0.2242
0.04				0.34	0.3673	164.8	0.2374
0.05				0.35	0.3884	174.3	0.2510
0.06				0.36	0.4102	184.1	0.2651
0.07				0.37	0.4328	194.2	0.2797
0.08				0.38	0.4560	204.7	0.2947
0.09				0.39	0.4800	215.4	0.3102
0.10				0.40	0.5047	226.5	0.3262
0.11	0.0520	23.34	0.0958	0.41	0.5302	237.9	0.3426
0.12	0.0601	26.96	0.0388	0.42	0.5563	249.7	0.3595
0.13	0.0688	30.78	0.0443	0.43	0.5831	261.7	0.3769
0.14	0.0776	34.82	0.0501	0.44	0.6106	274.0	0.3946
0.15	0.0870	39.05	0.0562	0.45	0.6387	286.7	0.4128
0.16	0.0969	43.50	0.0626	0.46	0.6675	299.6	0.4314
0.17	0.1073	48.15	0.0693	0.47	0.6968	312.7	0.4504
0.18	0.1181	53.02	0.0763	0.48	0.7268	326.2	0.4697
0.19	0.1294	58.10	0.0837	0.49	0.7573	339.5	0.4894
0.20	0.1413	63.40	0.0919	0.50	0.7883	353.3	0.5095
0.21	0.1536	68.93	0.0993	0.51	0.8197	367.9	0.5298
0.22	0.1664	74.69	0.1076	0.52	0.8517	382.2	0.5504
0.23	0.1796	80.70	0.1162	0.53	0.8840	396.7	0.5713
0.24	0.1937	86.95	0.1252	0.54	0.9167	411.4	0.5925
0.25	0.2083	93.46	0.1346	0.55	0.9498	426.3	0.6139
0.26	0.2233	100.2	0.1443	0.56	0.9832	441.2	0.6354
0.27	0.2390	107.3	0.1545	0.57	1.017	456.3	0.6572
0.28	0.2554	114.6	0.1650	0.58	1.051	471.6	0.6791
0.29	0.2723	122.2	0.1760	0.59	1.085	486.9	0.7012
0.30	0.2900	130.1	0.1874	0.60	1.119	502.3	0.7234

Table 14-5:

12 in. Palmer-Bowlius Flume Discharge Table with Head in Feet

Head (feet)	CFS	GPM	MGD	Head (feet)	CFS	GPM	MGD
0.01				0.36	0.4651	207.9	0.2983
0.02				0.37	0.4871	219.6	0.3148
0.03				0.38	0.5119	230.7	0.3308
0.04				0.39	0.5373	241.2	0.3473
0.05				0.40	0.5635	252.5	0.3642
0.06				0.41	0.5905	265.0	0.3816
0.07				0.42	0.6181	277.4	0.3995
0.08				0.43	0.6465	290.2	0.4179
0.09				0.44	0.6757	303.3	0.4367
0.10				0.45	0.7057	316.7	0.4561
0.11				0.46	0.7364	330.5	0.4759
0.12	0.0895	31.18	0.0449	0.47	0.7679	344.6	0.4963
0.13	0.0995	35.66	0.0514	0.48	0.8001	359.1	0.5171
0.14	0.0900	40.39	0.0562	0.49	0.8331	373.9	0.5384
0.15	0.1011	45.36	0.0653	0.50	0.8668	389.0	0.5602
0.16	0.1127	50.58	0.0728	0.51	0.9014	404.5	0.5825
0.17	0.1249	56.05	0.0807	0.52	0.9366	420.3	0.6053
0.18	0.1376	61.75	0.0889	0.53	0.9726	436.5	0.6286
0.19	0.1508	67.70	0.0975	0.54	1.009	453.0	0.6523
0.20	0.1646	73.89	0.1064	0.55	1.047	469.8	0.6765
0.21	0.1790	80.32	0.1157	0.56	1.085	486.8	0.7011
0.22	0.1938	86.99	0.1253	0.57	1.124	504.2	0.7261
0.23	0.2092	93.90	0.1352	0.58	1.163	521.9	0.7516
0.24	0.2251	101.1	0.1455	0.59	1.203	539.9	0.7775
0.25	0.2417	108.5	0.1562	0.60	1.244	558.1	0.8037
0.26	0.2588	116.1	0.1673	0.61	1.285	576.5	0.8303
0.27	0.2765	124.1	0.1787	0.62	1.327	595.3	0.8573
0.28	0.2947	132.3	0.1905	0.63	1.369	614.3	0.8846
0.29	0.3135	140.7	0.2026	0.64	1.411	633.5	0.9122
0.30	0.3330	149.4	0.2152	0.65	1.455	652.9	0.9402
0.31	0.3531	158.4	0.2282	0.66	1.498	672.4	0.9683
0.32	0.3737	167.7	0.2416	0.67	1.542	692.2	0.9969
0.33	0.3951	177.3	0.2553	0.68	1.587	712.1	1.025
0.34	0.4171	187.2	0.2696	0.69	1.631	732.2	1.054
0.35	0.4398	197.4	0.2842	0.70	1.676	752.4	1.083

Table 14-6:
15 in. Palmer-Bowlius Flume Discharge Table with Head in Feet

Head (feet)	CFS	GPM	MGD	Head (feet)	CFS	GPM	MGD
0.01	0.8441	378.5	0.5455	0.45	0.8441	378.5	0.5455
0.02	0.5783	249.2	0.3577	0.47	0.5783	249.2	0.3577
0.03	0.4133	178.5	0.2553	0.48	0.4133	178.5	0.2553
0.04	0.2992	128.0	0.1814	0.49	0.2992	128.0	0.1814
0.05	0.2188	94.4	0.1337	0.50	0.2188	94.4	0.1337
0.06	0.1623	69.7	0.0986	0.51	0.1623	69.7	0.0986
0.07	0.1162	50.4	0.0711	0.52	0.1162	50.4	0.0711
0.08	0.0844	36.5	0.0515	0.53	0.0844	36.5	0.0515
0.09	0.0613	26.5	0.0375	0.54	0.0613	26.5	0.0375
0.10	0.0448	19.3	0.0273	0.55	0.0448	19.3	0.0273
0.11	0.0328	14.1	0.0199	0.56	0.0328	14.1	0.0199
0.12	0.0241	10.3	0.0145	0.57	0.0241	10.3	0.0145
0.13	0.0178	7.6	0.0106	0.58	0.0178	7.6	0.0106
0.14	0.0133	5.7	0.0078	0.59	0.0133	5.7	0.0078
0.15	0.0100	4.3	0.0058	0.60	0.0100	4.3	0.0058
0.16	0.0074	3.2	0.0043	0.61	0.0074	3.2	0.0043
0.17	0.0054	2.3	0.0032	0.62	0.0054	2.3	0.0032
0.18	0.0040	1.7	0.0023	0.63	0.0040	1.7	0.0023
0.19	0.0029	1.2	0.0017	0.64	0.0029	1.2	0.0017
0.20	0.0021	0.9	0.0012	0.65	0.0021	0.9	0.0012
0.21	0.0015	0.6	0.0009	0.66	0.0015	0.6	0.0009
0.22	0.0011	0.4	0.0006	0.67	0.0011	0.4	0.0006
0.23	0.0008	0.3	0.0004	0.68	0.0008	0.3	0.0004
0.24	0.0006	0.2	0.0003	0.69	0.0006	0.2	0.0003
0.25	0.0004	0.2	0.0002	0.70	0.0004	0.2	0.0002
0.26	0.0003	0.1	0.0001	0.71	0.0003	0.1	0.0001
0.27	0.0002	0.1	0.0001	0.72	0.0002	0.1	0.0001
0.28	0.0002	0.1	0.0001	0.73	0.0002	0.1	0.0001
0.29	0.0001	0.1	0.0001	0.74	0.0001	0.1	0.0001
0.30	0.0001	0.1	0.0001	0.75	0.0001	0.1	0.0001
0.31	0.0001	0.1	0.0001	0.76	0.0001	0.1	0.0001
0.32	0.0001	0.1	0.0001	0.77	0.0001	0.1	0.0001
0.33	0.0001	0.1	0.0001	0.78	0.0001	0.1	0.0001
0.34	0.0001	0.1	0.0001	0.79	0.0001	0.1	0.0001
0.35	0.0001	0.1	0.0001	0.80	0.0001	0.1	0.0001
0.36	0.0001	0.1	0.0001	0.81	0.0001	0.1	0.0001
0.37	0.0001	0.1	0.0001	0.82	0.0001	0.1	0.0001
0.38	0.0001	0.1	0.0001	0.83	0.0001	0.1	0.0001
0.39	0.0001	0.1	0.0001	0.84	0.0001	0.1	0.0001
0.40	0.0001	0.1	0.0001	0.85	0.0001	0.1	0.0001
0.41	0.0001	0.1	0.0001	0.86	0.0001	0.1	0.0001
0.42	0.0001	0.1	0.0001	0.87	0.0001	0.1	0.0001
0.43	0.0001	0.1	0.0001	0.88	0.0001	0.1	0.0001
0.44	0.0001	0.1	0.0001	0.89	0.0001	0.1	0.0001
0.45	0.0001	0.1	0.0001	0.90	0.0001	0.1	0.0001

Table 14-7:
18 in. Palmer-Bowlius Flume Discharge Table with Head in Feet

Head (feet)	CFS	GPM	MGD	Head (feet)	CFS	GPM	MGD
0.01	0.1557	69.89	0.1006	0.51	1.152	517.1	0.7447
0.02	0.1116	50.4	0.0725	0.52	1.193	535.6	0.7773
0.03	0.0814	36.5	0.0523	0.53	1.235	554.4	0.7984
0.04	0.0592	26.5	0.0381	0.54	1.278	573.6	0.8260
0.05	0.0438	19.3	0.0277	0.55	1.322	593.2	0.8542
0.06	0.0328	14.1	0.0204	0.56	1.366	613.1	0.8829
0.07	0.0241	10.3	0.0148	0.57	1.412	633.5	0.9123
0.08	0.0178	7.6	0.0107	0.58	1.458	654.2	0.9421
0.09	0.0133	5.7	0.0078	0.59	1.505	675.4	0.9726
0.10	0.0100	4.3	0.0058	0.60	1.553	697.0	1.004
0.11	0.0074	3.2	0.0043	0.61	1.602	718.9	1.035
0.12	0.0054	2.3	0.0032	0.62	1.652	741.3	1.068
0.13	0.0040	1.7	0.0023	0.63	1.703	764.1	1.100
0.14	0.0029	1.2	0.0017	0.64	1.754	787.4	1.134
0.15	0.0021	0.9	0.0012	0.65	1.807	811.0	1.168
0.16	0.0015	0.6	0.0009	0.66	1.861	835.1	1.203
0.17	0.0011	0.4	0.0006	0.67	1.915	859.7	1.238
0.18	0.0008	0.3	0.0004	0.68	1.971	884.6	1.274
0.19	0.0006	0.2	0.0003	0.69	2.028	910.0	1.310
0.20	0.0004	0.2	0.0002	0.70	2.085	935.8	1.348
0.21	0.0003	0.1	0.0001	0.71	2.144	962.1	1.385
0.22	0.0002	0.1	0.0001	0.72	2.203	988.8	1.424
0.23	0.0002	0.1	0.0001	0.73	2.264	1016	1.463
0.24	0.0001	0.1	0.0001	0.74	2.325	1043	1.503
0.25	0.0001	0.1	0.0001	0.75	2.387	1071	1.543
0.26	0.0001	0.1	0.0001	0.76	2.451	1100	1.584
0.27	0.0001	0.1	0.0001	0.77	2.515	1129	1.625
0.28	0.0001	0.1	0.0001	0.78	2.580	1158	1.667
0.29	0.0001	0.1	0.0001	0.79	2.646	1187	1.710
0.30	0.0001	0.1	0.0001	0.80	2.713	1217	1.753
0.31	0.0001	0.1	0.0001	0.81	2.781	1248	1.797
0.32	0.0001	0.1	0.0001	0.82	2.849	1279	1.841
0.33	0.0001	0.1	0.0001	0.83	2.919	1310	1.886
0.34	0.0001	0.1	0.0001	0.84	2.999	1341	1.932
0.35	0.0001	0.1	0.0001	0.85	3.066	1373	1.978
0.36	0.0001	0.1	0.0001	0.86	3.132	1405	2.024
0.37	0.0001	0.1	0.0001	0.87	3.205	1438	2.071
0.38	0.0001	0.1	0.0001	0.88	3.278	1471	2.119
0.39	0.0001	0.1	0.0001	0.89	3.352	1505	2.167
0.40	0.0001	0.1	0.0001	0.90	3.427	1538	2.215
0.41	0.0001	0.1	0.0001	0.91	3.503	1572	2.264
0.42	0.0001	0.1	0.0001	0.92	3.579	1606	2.313
0.43	0.0001	0.1	0.0001	0.93	3.655	1641	2.363
0.44	0.0001	0.1	0.0001	0.94	3.733	1675	2.413
0.45	0.0001	0.1	0.0001	0.95	3.811	1710	2.463
0.46	0.0001	0.1	0.0001	0.96	3.889	1745	2.513
0.47	0.0001	0.1	0.0001	0.97	3.968	1781	2.564
0.48	0.0001	0.1	0.0001	0.98	4.047	1816	2.616
0.49	0.0001	0.1	0.0001	0.99	4.127	1852	2.667
0.50	0.0001	0.1	0.0001	1.00	4.207	1889	2.719

Table 14-7:
18 in. Palmer-Bowlus Flume Discharge Table with Head in Feet
(continued)

Head (feet)	CFS	GPM	MGD	Head (feet)	CFS	GPM	MGD
1.01	4,288	1924	2.771	1.04	4,552	2034	2.929
1.02	4,369	1961	2.824	1.05	4,614	2071	2.962
1.03	4,450	1997	2.876				

Table 14-8:
21 in. Palmer-Bowlus Flume Discharge Table with Head in Feet

Head (feet)	CFS	GRM	MGD	Head (feet)	CFS	GPM	MGD
0.0				0.51	1,283	5756	0.8289
0.0				0.52	1,327	5957	0.8579
0.0				0.53	1,373	6162	0.8874
0.0				0.54	1,420	6371	0.9174
0.0				0.55	1,467	6583	0.9480
0.0				0.56	1,515	6799	0.9792
0.0				0.57	1,564	7019	1.011
0.0				0.58	1,614	7243	1.043
0.0				0.59	1,665	7471	1.076
0.0				0.60	1,716	7703	1.109
0.1				0.61	1,769	7939	1.143
0.1				0.62	1,822	8179	1.178
0.1				0.63	1,877	8423	1.213
0.1				0.64	1,932	8671	1.249
0.1				0.65	1,988	8923	1.285
0.1				0.66	2,045	9179	1.322
0.1				0.67	2,103	9440	1.359
0.1				0.68	2,162	9705	1.398
0.1	0.2223	99.75	0.1436	0.69	2,222	9974	1.436
0.1	0.2431	109.1	0.1571	0.70	2,283	1025	1.476
0.2	0.2646	118.8	0.1710	0.71	2,345	1063	1.516
0.2	0.2869	128.7	0.1854	0.72	2,409	1081	1.556
0.2	0.3098	139.0	0.2002	0.73	2,472	1109	1.599
0.2	0.3334	149.6	0.2155	0.74	2,537	1139	1.640
0.2	0.3577	160.5	0.2312	0.75	2,603	1169	1.682
0.2	0.3827	171.8	0.2474	0.76	2,669	1198	1.725
0.2	0.4084	183.3	0.2640	0.77	2,737	1229	1.769
0.2	0.4348	195.1	0.2810	0.78	2,806	1259	1.814
0.2	0.4619	207.3	0.2985	0.79	2,876	1291	1.859
0.2	0.4897	219.8	0.3165	0.80	2,947	1322	1.904
0.3	0.5181	232.5	0.3349	0.81	3,018	1355	1.951
0.3	0.5473	245.5	0.3537	0.82	3,091	1387	1.998
0.3	0.5772	259.0	0.3730	0.83	3,165	1420	2.046
0.3	0.6077	272.7	0.3926	0.84	3,240	1454	2.094
0.3	0.6390	286.8	0.4130	0.85	3,316	1488	2.143
0.3	0.6709	301.1	0.4336	0.86	3,393	1523	2.193
0.3	0.7036	315.8	0.4547	0.87	3,470	1557	2.243
0.3	0.7370	330.8	0.4763	0.88	3,549	1593	2.294
0.3	0.7711	346.1	0.4984	0.89	3,629	1629	2.345
0.3	0.8059	361.7	0.5209	0.90	3,710	1665	2.398
0.4	0.8415	377.7	0.5439	0.91	3,791	1702	2.450
0.4	0.8778	394.0	0.5673	0.92	3,874	1739	2.504
0.4	0.9148	410.6	0.5913	0.93	3,958	1775	2.558
0.4	0.9526	427.5	0.6157	0.94	4,042	1814	2.612
0.4	0.9911	444.8	0.6406	0.95	4,128	1852	2.666
0.4	1.030	462.5	0.6660	0.96	4,214	1891	2.724
0.4	1.070	480.4	0.6919	0.97	4,301	1930	2.780
0.4	1.111	498.8	0.7183	0.98	4,390	1970	2.837
0.4	1.153	517.4	0.7452	0.99	4,479	2010	2.895
0.4	1.195	536.5	0.7726	1.00	4,569	2050	2.953
0.5	1.239	555.9	0.8005				

Table 14-8:
21 in. Palmer-Bowlius Flume Discharge Table with Head in Feet

(continued)

Head (feet)	CFS	GPM	MGD	Head (feet)	CFS	GPM	MGD
1.01	4.659	2051	3.011	1.14	5.909	2552	3.819
1.02	4.751	2132	3.071	1.15	6.009	2697	3.884
1.03	4.843	2174	3.130	1.16	6.111	2742	3.949
1.04	4.937	2216	3.191	1.17	6.212	2788	4.015
1.05	5.031	2258	3.251	1.18	6.315	2834	4.081
1.06	5.125	2300	3.313	1.19	6.417	2880	4.148
1.07	5.221	2343	3.374	1.20	6.520	2926	4.214
1.08	5.317	2386	3.437	1.21	6.624	2973	4.281
1.09	5.414	2430	3.499	1.22	6.728	3020	4.348
1.10	5.512	2474	3.562	1.23	6.833	3066	4.415
1.11	5.610	2518	3.625	1.24	6.937	3113	4.484
1.12	5.709	2562	3.689	1.25	7.043	3161	4.552
1.13	5.809	2607	3.754				

Table 14-9:

24 in. Palmer-Bowlius Flume Discharge Table with Head in Feet

Head (feet)	CFS	GPM	MGD	Head (feet)	CFS	GPM	MGD
0.01				0.51	1.419	536.9	0.9172
0.02				0.52	1.458	558.7	0.9485
0.03				0.53	1.517	600.8	0.9804
0.04				0.54	1.567	703.3	1.013
0.05				0.55	1.618	726.2	1.046
0.06				0.56	1.670	748.5	1.079
0.07				0.57	1.723	773.1	1.113
0.08				0.58	1.776	797.1	1.148
0.09				0.59	1.830	821.5	1.183
0.10				0.60	1.886	846.3	1.219
0.11				0.61	1.942	871.4	1.255
0.12				0.62	1.999	897.0	1.292
0.13				0.63	2.056	923.0	1.329
0.14				0.64	2.115	949.3	1.367
0.15				0.65	2.175	976.1	1.406
0.16				0.66	2.235	1003	1.445
0.17				0.67	2.297	1031	1.484
0.18				0.68	2.359	1059	1.525
0.19				0.69	2.423	1087	1.566
0.20	0.2935	131.7	0.1897	0.70	2.487	1116	1.607
0.21	0.3162	142.8	0.2056	0.71	2.552	1145	1.650
0.22	0.3436	154.2	0.2221	0.72	2.619	1175	1.692
0.23	0.3699	166.0	0.2391	0.73	2.686	1205	1.736
0.24	0.3971	178.2	0.2566	0.74	2.754	1236	1.780
0.25	0.4250	190.7	0.2747	0.75	2.823	1267	1.825
0.26	0.4537	203.6	0.2932	0.76	2.893	1299	1.870
0.27	0.4832	216.9	0.3123	0.77	2.965	1331	1.916
0.28	0.5135	230.5	0.3319	0.78	3.037	1363	1.963
0.29	0.5446	244.4	0.3520	0.79	3.110	1396	2.010
0.30	0.5764	258.7	0.3725	0.80	3.185	1429	2.058
0.31	0.6090	273.3	0.3936	0.81	3.260	1463	2.107
0.32	0.6424	288.3	0.4152	0.82	3.336	1497	2.156
0.33	0.6765	303.6	0.4372	0.83	3.414	1532	2.206
0.34	0.7113	319.2	0.4597	0.84	3.493	1567	2.257
0.35	0.7470	335.2	0.4828	0.85	3.572	1603	2.309
0.36	0.7833	351.6	0.5063	0.86	3.653	1639	2.361
0.37	0.8204	368.2	0.5302	0.87	3.735	1676	2.414
0.38	0.8583	385.2	0.5547	0.88	3.817	1713	2.467
0.39	0.8969	402.5	0.5797	0.89	3.901	1751	2.521
0.40	0.9362	420.2	0.6051	0.90	3.986	1789	2.576
0.41	0.9763	438.2	0.6310	0.91	4.073	1828	2.632
0.42	1.017	456.5	0.6574	0.92	4.160	1867	2.688
0.43	1.059	475.2	0.6843	0.93	4.248	1907	2.745
0.44	1.101	494.2	0.7117	0.94	4.337	1947	2.803
0.45	1.144	513.5	0.7395	0.95	4.428	1987	2.862
0.46	1.188	533.2	0.7679	0.96	4.519	2028	2.921
0.47	1.233	553.3	0.7967	0.97	4.612	2070	2.981
0.48	1.278	573.6	0.8261	0.98	4.706	2112	3.041
0.49	1.324	594.4	0.8559	0.99	4.800	2154	3.103
0.50	1.371	615.5	0.8863	1.00	4.896	2197	3.164

Table 14-9:
24 in. Palmer-Bowlus Flume Discharge Table with Head in Feet
(continued)

Head (feet)	CFS	GPM	MGD	Head (feet)	CFS	GPM	MGD
1.01	4,993	2241	3,227	1.21	7,159	3204	4,614
1.02	5,091	2285	3,290	1.22	7,256	3256	4,689
1.03	5,190	2329	3,354	1.23	7,373	3309	4,765
1.04	5,290	2374	3,419	1.24	7,491	3362	4,842
1.05	5,391	2420	3,484	1.25	7,610	3415	4,918
1.06	5,493	2465	3,550	1.26	7,730	3469	4,996
1.07	5,596	2512	3,617	1.27	7,850	3523	5,073
1.08	5,701	2558	3,684	1.28	7,971	3577	5,152
1.09	5,806	2606	3,752	1.29	8,092	3632	5,230
1.10	5,912	2653	3,821	1.30	8,215	3687	5,309
1.11	6,019	2701	3,890	1.31	8,337	3742	5,389
1.12	6,127	2750	3,960	1.32	8,461	3797	5,468
1.13	6,236	2799	4,030	1.33	8,584	3853	5,548
1.14	6,346	2848	4,101	1.34	8,709	3909	5,629
1.15	6,456	2898	4,173	1.35	8,834	3965	5,709
1.16	6,568	2948	4,24	1.36	8,959	4021	5,790
1.17	6,681	2998	4,31	1.37	9,085	4077	5,872
1.18	6,794	3049	4,381	1.38	9,211	4134	5,953
1.19	6,908	3100	4,455	1.39	9,336	4191	6,036
1.20	7,023	3152	4,530	1.40	9,465	4248	6,117

Table 14-10:
27 in. Palmer-Bowlus Flume Discharge Table with Head in Feet

Head (feet)	CFS	GPM	MGD	Head (feet)	CFS	GPM	MGD
0.01	0.01	0.01	0.01	0.51	1,565	697.3	1,005
0.02	0.02	0.02	0.02	0.52	1,607	721.4	1,039
0.03	0.03	0.03	0.03	0.53	1,661	745.4	1,073
0.04	0.04	0.04	0.04	0.54	1,715	769.8	1,109
0.05	0.05	0.05	0.05	0.55	1,770	794.6	1,144
0.06	0.06	0.06	0.06	0.56	1,825	819.6	1,180
0.07	0.07	0.07	0.07	0.57	1,883	845.1	1,217
0.08	0.08	0.08	0.08	0.58	1,941	871.0	1,254
0.09	0.09	0.09	0.09	0.59	1,999	897.2	1,292
0.10	0.10	0.10	0.10	0.60	2,058	923.8	1,330
0.11	0.11	0.11	0.11	0.61	2,119	950.8	1,369
0.12	0.12	0.12	0.12	0.62	2,180	978.2	1,409
0.13	0.13	0.13	0.13	0.63	2,241	1,006	1,449
0.14	0.14	0.14	0.14	0.64	2,304	1,034	1,489
0.15	0.15	0.15	0.15	0.65	2,368	1,063	1,530
0.16	0.16	0.16	0.16	0.66	2,432	1,092	1,572
0.17	0.17	0.17	0.17	0.67	2,498	1,121	1,614
0.18	0.18	0.18	0.18	0.68	2,564	1,151	1,657
0.19	0.19	0.19	0.19	0.69	2,631	1,181	1,701
0.20	0.20	0.20	0.20	0.70	2,700	1,212	1,745
0.21	0.21	0.21	0.21	0.71	2,769	1,243	1,789
0.22	0.22	0.22	0.22	0.72	2,839	1,274	1,835
0.23	0.23	0.23	0.23	0.73	2,910	1,306	1,881
0.24	0.24	0.24	0.24	0.74	2,982	1,338	1,927
0.25	0.25	0.25	0.25	0.75	3,055	1,371	1,974
0.26	0.26	0.26	0.26	0.76	3,129	1,404	2,022
0.27	0.27	0.27	0.27	0.77	3,204	1,436	2,071
0.28	0.28	0.28	0.28	0.78	3,280	1,472	2,120
0.29	0.29	0.29	0.29	0.79	3,357	1,506	2,169
0.30	0.30	0.30	0.30	0.80	3,435	1,542	2,220
0.31	0.31	0.31	0.31	0.81	3,514	1,577	2,271
0.32	0.32	0.32	0.32	0.82	3,594	1,613	2,323
0.33	0.33	0.33	0.33	0.83	3,675	1,649	2,375
0.34	0.34	0.34	0.34	0.84	3,757	1,686	2,428
0.35	0.35	0.35	0.35	0.85	3,840	1,724	2,482
0.36	0.36	0.36	0.36	0.86	3,925	1,761	2,537
0.37	0.37	0.37	0.37	0.87	4,010	1,800	2,592
0.38	0.38	0.38	0.38	0.88	4,097	1,839	2,648
0.39	0.39	0.39	0.39	0.89	4,184	1,878	2,704
0.40	0.40	0.40	0.40	0.90	4,273	1,918	2,762
0.41	0.41	0.41	0.41	0.91	4,363	1,958	2,820
0.42	0.42	0.42	0.42	0.92	4,454	1,999	2,878
0.43	0.43	0.43	0.43	0.93	4,546	2,040	2,938
0.44	0.44	0.44	0.44	0.94	4,639	2,082	2,998
0.45	0.45	0.45	0.45	0.95	4,733	2,124	3,059
0.46	0.46	0.46	0.46	0.96	4,829	2,167	3,121
0.47	0.47	0.47	0.47	0.97	4,925	2,210	3,183
0.48	0.48	0.48	0.48	0.98	5,023	2,254	3,246
0.49	0.49	0.49	0.49	0.99	5,122	2,299	3,310
0.50	0.50	0.50	0.50	1.00	5,222	2,344	3,375

Table 14-11:
30 In. Palmer-Bowlus Flume Discharge Table with Head in Feet

Head (feet)	CFS	GPM	MGD	Head (feet)	CFS	GPM	MGD
0.01	1.589	757.8	1.091	0.51	1.589	757.8	1.091
0.02	1.744	822.8	1.127	0.52	1.744	822.8	1.127
0.03	1.801	869.2	1.164	0.53	1.801	869.2	1.164
0.04	1.858	833.9	1.201	0.54	1.858	833.9	1.201
0.05	1.916	850.1	1.238	0.55	1.916	850.1	1.238
0.06	1.976	866.6	1.277	0.56	1.976	866.6	1.277
0.07	2.036	913.6	1.316	0.57	2.036	913.6	1.316
0.08	2.097	940.9	1.355	0.58	2.097	940.9	1.355
0.09	2.158	968.7	1.395	0.59	2.158	968.7	1.395
0.10	2.221	998.9	1.436	0.60	2.221	998.9	1.436
0.11	2.285	1025	1.477	0.61	2.285	1025	1.477
0.12	2.350	1054	1.518	0.62	2.350	1054	1.518
0.13	2.415	1084	1.561	0.63	2.415	1084	1.561
0.14	2.482	1114	1.604	0.64	2.482	1114	1.604
0.15	2.549	1144	1.647	0.65	2.549	1144	1.647
0.16	2.618	1175	1.692	0.66	2.618	1175	1.692
0.17	2.687	1206	1.737	0.67	2.687	1206	1.737
0.18	2.757	1238	1.782	0.68	2.757	1238	1.782
0.19	2.829	1270	1.828	0.69	2.829	1270	1.828
0.20	2.901	1302	1.875	0.70	2.901	1302	1.875
0.21	2.975	1335	1.922	0.71	2.975	1335	1.922
0.22	3.049	1368	1.971	0.72	3.049	1368	1.971
0.23	3.124	1402	2.019	0.73	3.124	1402	2.019
0.24	3.201	1436	2.069	0.74	3.201	1436	2.069
0.25	3.278	1471	2.119	0.75	3.278	1471	2.119
0.26	3.357	1506	2.169	0.76	3.357	1506	2.169
0.27	3.436	1542	2.221	0.77	3.436	1542	2.221
0.28	3.517	1578	2.273	0.78	3.517	1578	2.273
0.29	3.599	1615	2.326	0.79	3.599	1615	2.326
0.30	3.681	1652	2.379	0.80	3.681	1652	2.379
0.31	3.765	1690	2.433	0.81	3.765	1690	2.433
0.32	3.850	1728	2.488	0.82	3.850	1728	2.488
0.33	3.935	1766	2.543	0.83	3.935	1766	2.543
0.34	4.022	1805	2.600	0.84	4.022	1805	2.600
0.35	4.110	1845	2.657	0.85	4.110	1845	2.657
0.36	4.200	1885	2.714	0.86	4.200	1885	2.714
0.37	4.290	1925	2.773	0.87	4.290	1925	2.773
0.38	4.381	1966	2.832	0.88	4.381	1966	2.832
0.39	4.474	2008	2.891	0.89	4.474	2008	2.891
0.40	4.567	2050	2.952	0.90	4.567	2050	2.952
0.41	4.662	2092	3.013	0.91	4.662	2092	3.013
0.42	4.758	2135	3.075	0.92	4.758	2135	3.075
0.43	4.855	2179	3.137	0.93	4.855	2179	3.137
0.44	4.954	2223	3.201	0.94	4.954	2223	3.201
0.45	5.054	2267	3.265	0.95	5.054	2267	3.265
0.46	5.155	2312	3.330	0.96	5.155	2312	3.330
0.47	5.257	2358	3.395	0.97	5.257	2358	3.395
0.48	5.360	2404	3.462	0.98	5.360	2404	3.462
0.49	5.464	2450	3.529	0.99	5.464	2450	3.529
0.50	5.569	2497	3.596	1.00	5.569	2497	3.596

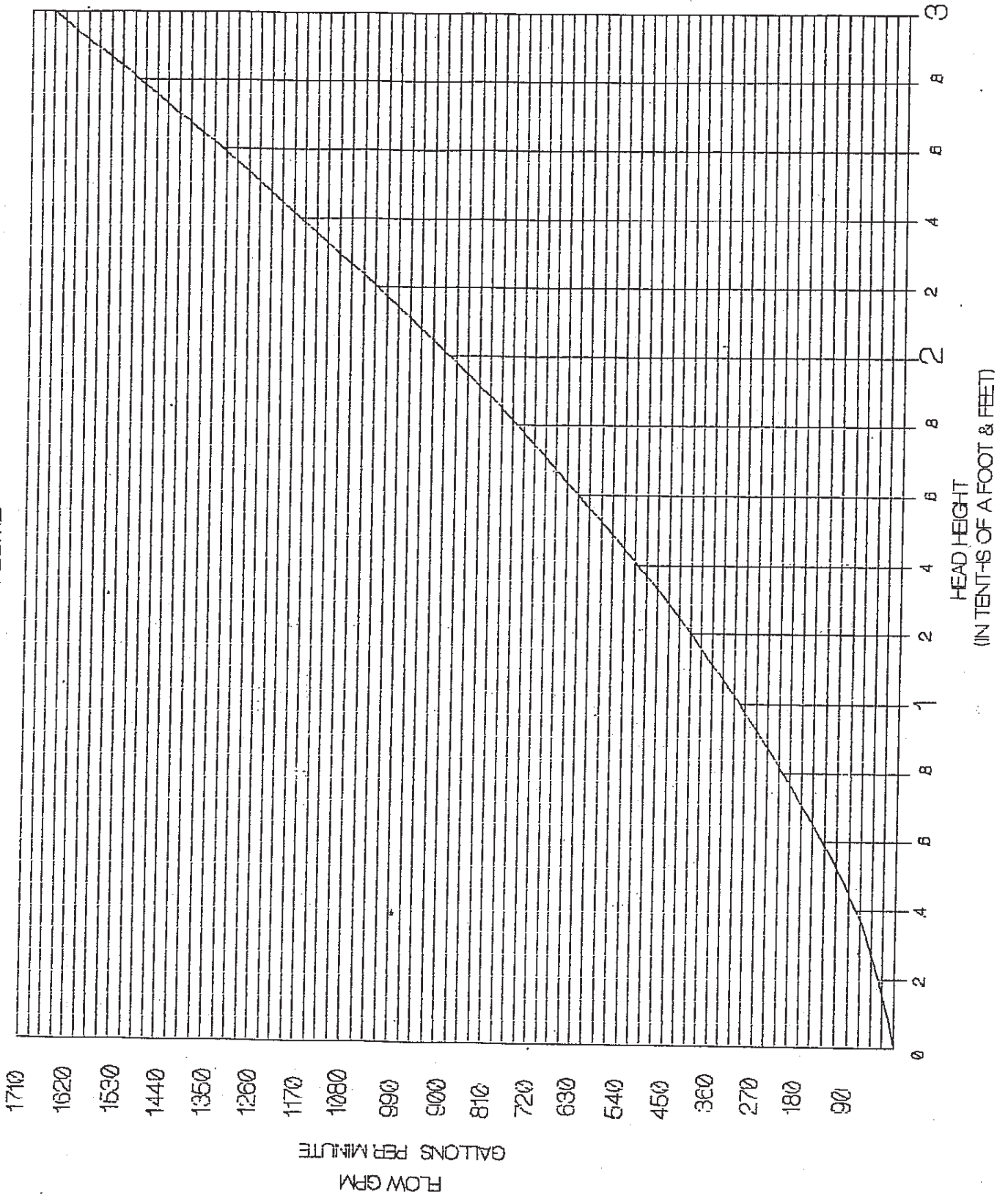
Table 14-10:
27 In. Palmer-Bowlus Flume Discharge Table with Head in Feet
(continued)

Head (feet)	CFS	GPM	MGD	Head (feet)	CFS	GPM	MGD
1.01	5.323	2389	3.440	1.31	6.882	3086	5.740
1.02	5.425	2435	3.506	1.32	6.917	4047	5.828
1.03	5.529	2481	3.573	1.33	6.952	4108	5.915
1.04	5.633	2528	3.641	1.34	6.989	4169	6.003
1.05	5.739	2576	3.709	1.35	7.026	4231	6.092
1.06	5.846	2624	3.778	1.36	7.065	4293	6.182
1.07	5.954	2672	3.848	1.37	7.104	4355	6.272
1.08	6.064	2721	3.919	1.38	7.144	4418	6.362
1.09	6.174	2771	3.990	1.39	7.184	4481	6.453
1.10	6.286	2821	4.062	1.40	7.225	4545	6.544
1.11	6.398	2872	4.135	1.41	7.267	4609	6.635
1.12	6.512	2923	4.209	1.42	7.310	4672	6.729
1.13	6.627	2974	4.283	1.43	7.354	4737	6.822
1.14	6.743	3026	4.358	1.44	7.400	4802	6.915
1.15	6.861	3079	4.434	1.45	7.447	4867	7.009
1.16	6.979	3132	4.511	1.46	7.495	4932	7.103
1.17	7.098	3185	4.588	1.47	7.544	4998	7.197
1.18	7.219	3240	4.666	1.48	7.594	5064	7.292
1.19	7.341	3295	4.744	1.49	7.645	5130	7.388
1.20	7.463	3350	4.824	1.50	7.697	5196	7.483
1.21	7.587	3405	4.904	1.51	7.750	5263	7.578
1.22	7.712	3461	4.984	1.52	7.804	5330	7.676
1.23	7.838	3518	5.066	1.53	7.859	5397	7.772
1.24	7.965	3575	5.148	1.54	7.915	5465	7.869
1.25	8.093	3632	5.231	1.55	7.972	5532	7.967
1.26	8.222	3690	5.314	1.56	8.030	5600	8.064
1.27	8.352	3748	5.398	1.57	8.089	5668	8.162
1.28	8.483	3807	5.483	1.58	8.149	5736	8.260
1.29	8.615	3866	5.568	1.59	8.210	5805	8.359
1.30	8.748	3926	5.654	1.60	8.272	5873	8.458

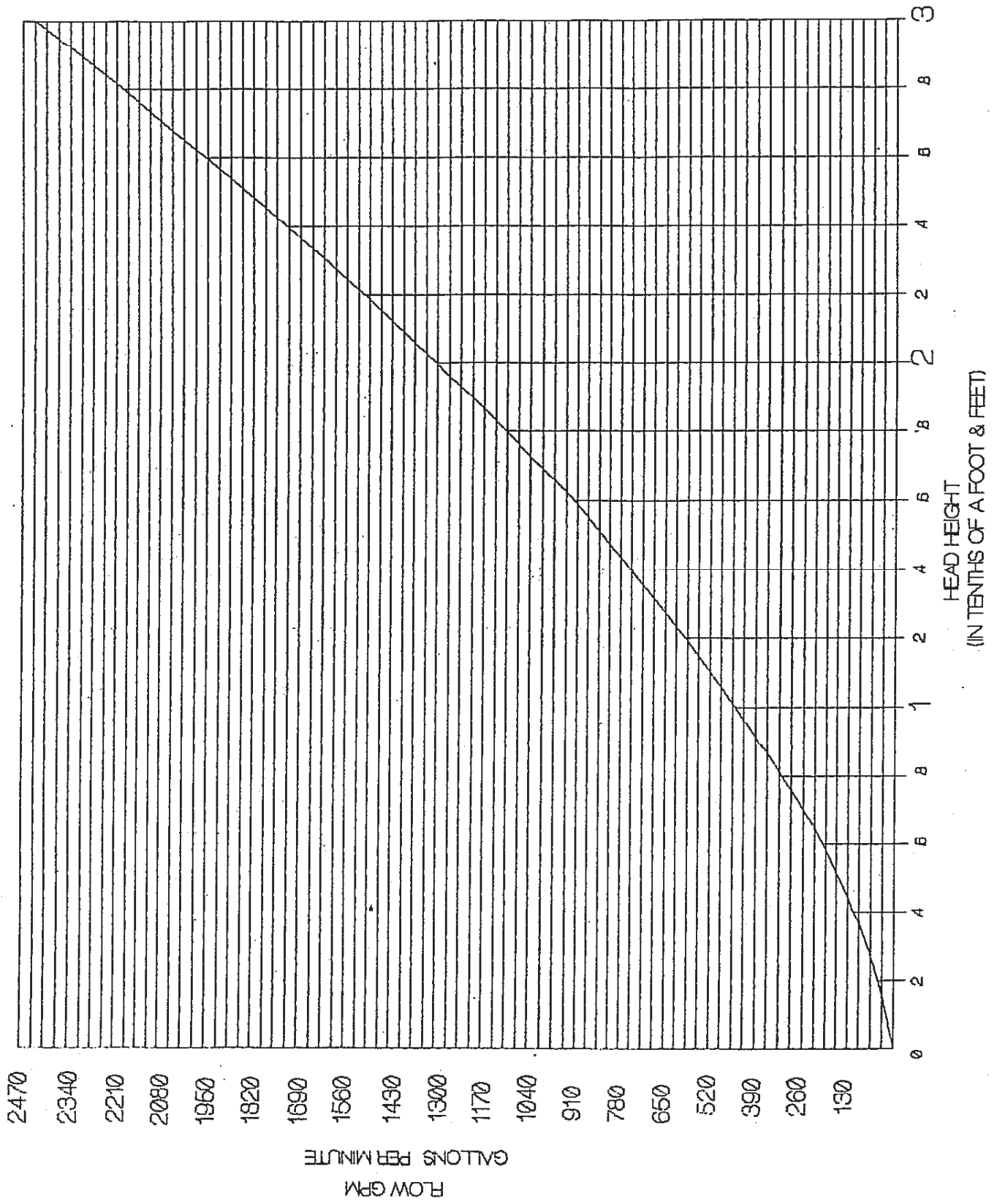
Table 14-11:
30 in. Palmer-Bowlus Flume Discharge Table with Head in Feet
(continued)

Head (feet)	CFS	GPM	MGD	Head (feet)	CFS	GPM	MGD
1.01	5.671	2545	3.665	1.39	10.55	4735	6.819
1.02	5.778	2593	3.734	1.40	10.70	4802	6.976
1.03	5.885	2642	3.804	1.41	10.85	4870	7.033
1.04	5.995	2691	3.875	1.42	11.00	4939	7.112
1.05	6.106	2741	3.947	1.43	11.16	5007	7.211
1.06	6.218	2791	4.019	1.44	11.31	5076	7.310
1.07	6.331	2841	4.092	1.45	11.47	5146	7.411
1.08	6.445	2893	4.166	1.46	11.62	5216	7.511
1.09	6.561	2944	4.240	1.47	11.78	5287	7.618
1.10	6.677	2997	4.315	1.48	11.94	5357	7.715
1.11	6.795	3049	4.391	1.49	12.10	5429	7.818
1.12	6.913	3103	4.468	1.50	12.26	5500	7.921
1.13	7.033	3157	4.546	1.51	12.42	5573	8.025
1.14	7.154	3211	4.624	1.52	12.58	5646	8.128
1.15	7.277	3266	4.703	1.53	12.74	5718	8.235
1.16	7.400	3321	4.783	1.54	12.90	5792	8.340
1.17	7.525	3377	4.863	1.55	13.07	5865	8.446
1.18	7.650	3433	4.944	1.56	13.23	5939	8.553
1.19	7.777	3490	5.026	1.57	13.40	6014	8.661
1.20	7.905	3548	5.109	1.58	13.57	6089	8.768
1.21	8.034	3606	5.193	1.59	13.75	6164	8.877
1.22	8.165	3664	5.277	1.60	13.90	6240	8.985
1.23	8.296	3723	5.362	1.61	14.07	6316	9.095
1.24	8.429	3783	5.447	1.62	14.24	6392	9.205
1.25	8.562	3843	5.534	1.63	14.41	6469	9.316
1.26	8.697	3903	5.621	1.64	14.59	6546	9.425
1.27	8.833	3964	5.708	1.65	14.76	6623	9.538
1.28	8.970	4025	5.798	1.66	14.93	6701	9.650
1.29	9.109	4088	5.887	1.67	15.10	6779	9.762
1.30	9.248	4150	5.977	1.68	15.28	6857	9.875
1.31	9.388	4213	6.068	1.69	15.45	6936	9.988
1.32	9.530	4277	6.159	1.70	15.63	7015	10.10
1.33	9.672	4341	6.251	1.71	15.81	7094	10.22
1.34	9.816	4405	6.344	1.72	15.98	7173	10.33
1.35	9.961	4470	6.438	1.73	16.16	7253	10.44
1.36	10.11	4536	6.532	1.74	16.34	7333	10.56
1.37	10.25	4602	6.627	1.75	16.52	7413	10.68
1.38	10.40	4668	6.723				

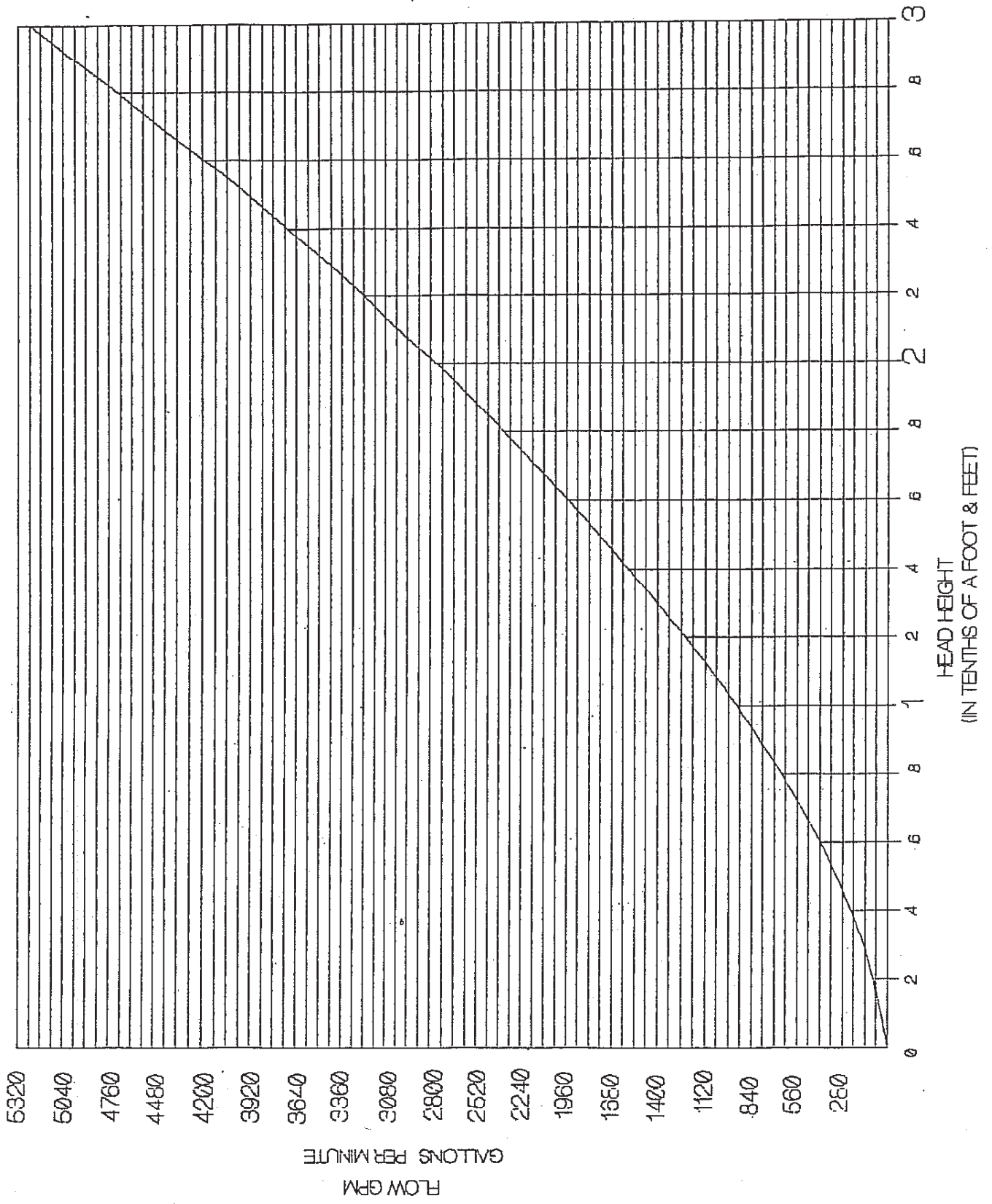
2 IN. PARSHALL FLUME



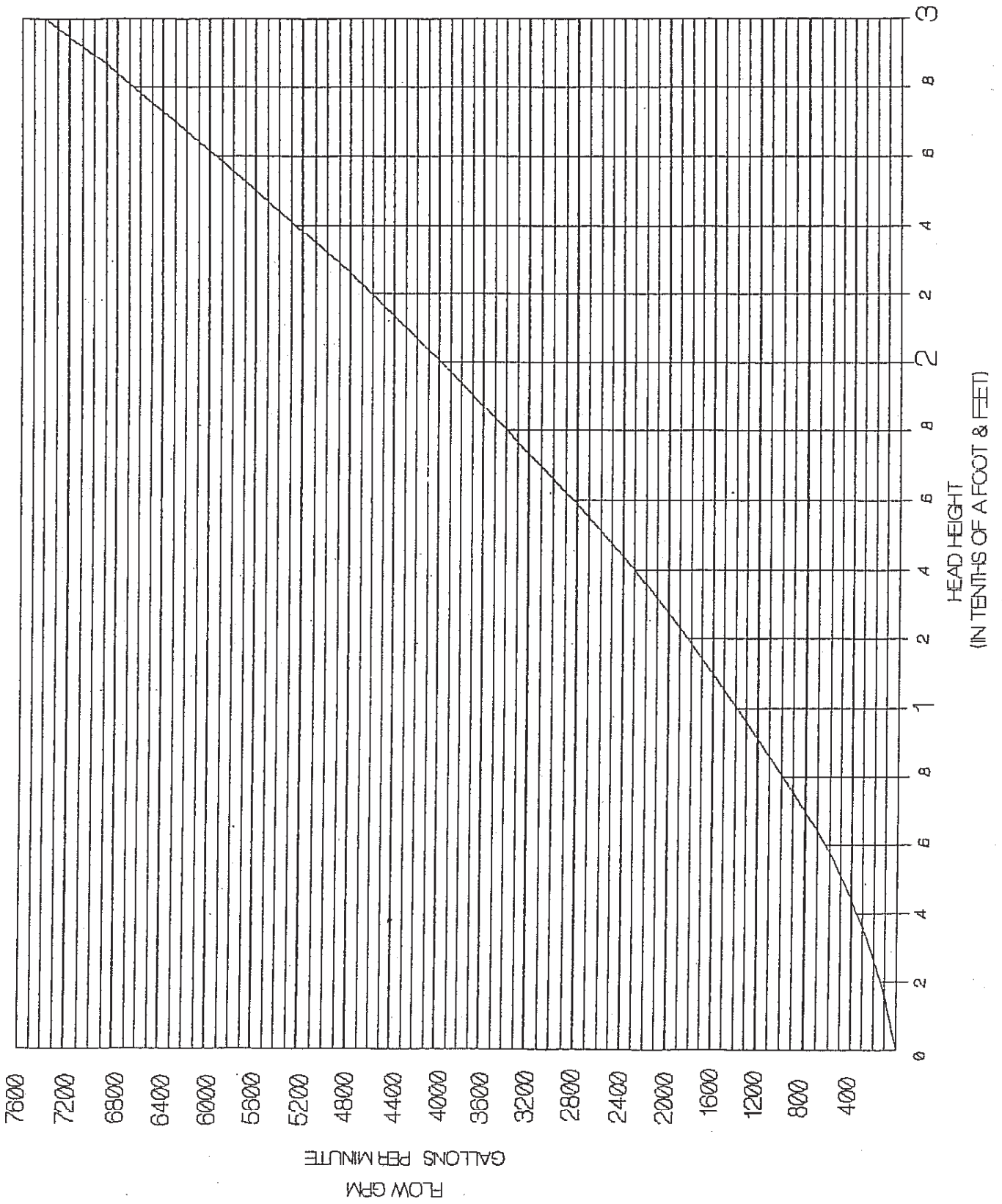
3 IN. PARSHALL FLUME



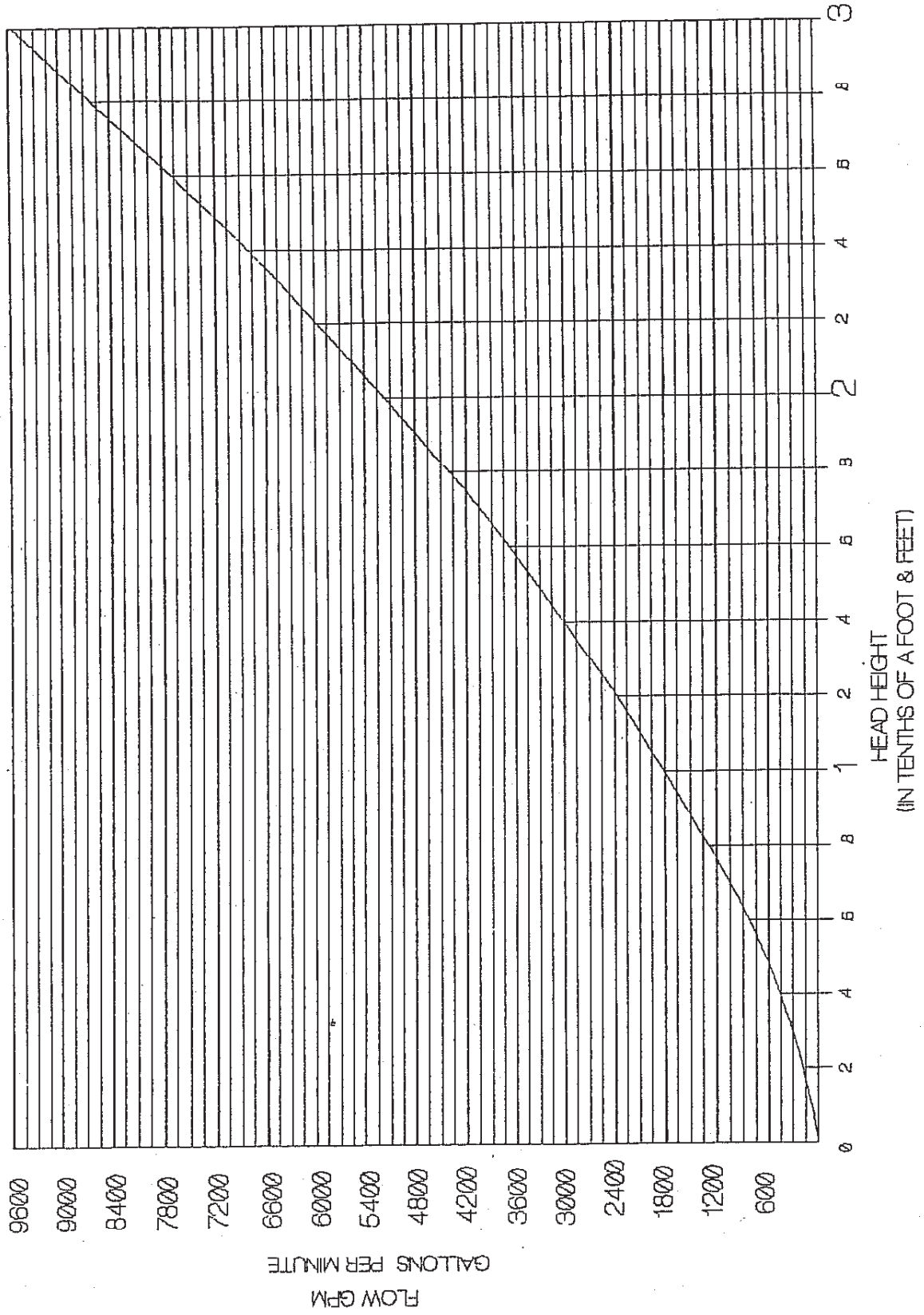
6 IN. PARSHALL FLUME



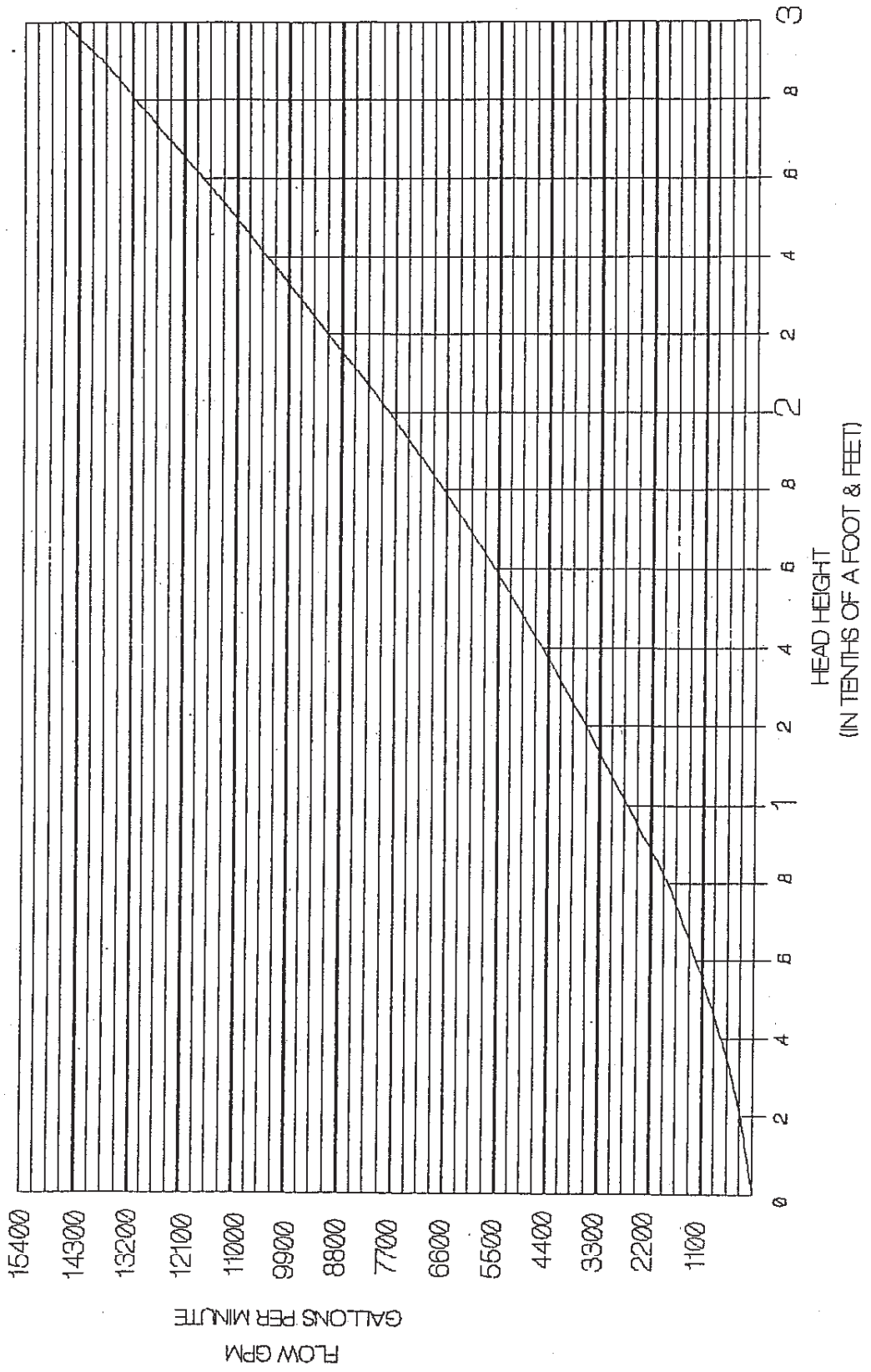
9 IN. PARSHALL FLUME



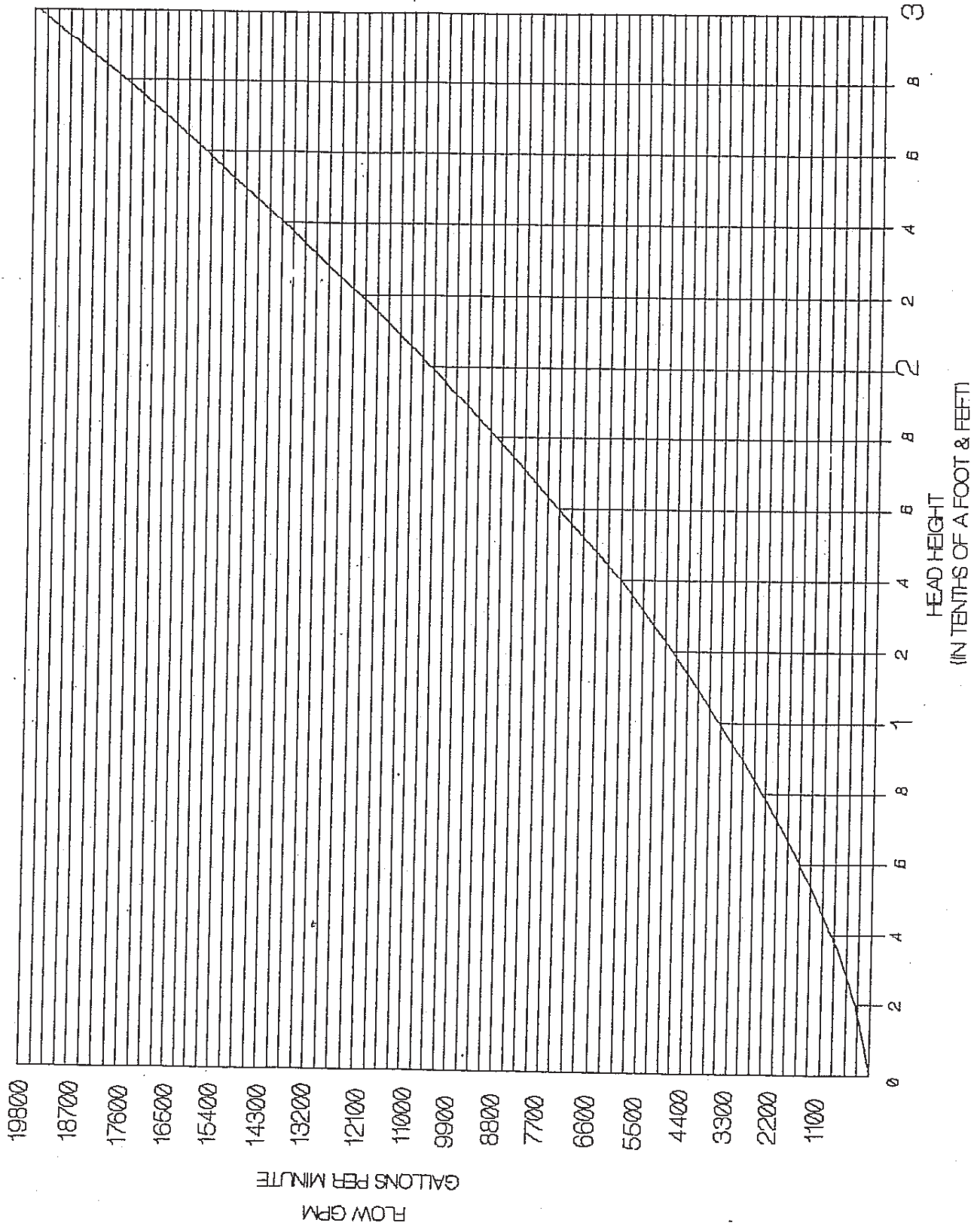
12 IN. PARSHALL FLUME



18 IN. PARSHALL FLLUME



24 IN. PARSHALL FLUME





STAFF GAUGE SPECIFICATIONS

- A. Material--Fiberglass reinforced polyester
- B. Thickness--.090"
- C. Width--2.5"
- D. Length--dependent upon flume height.
- E. Calibration increments--Hundredths and tenths of a foot and feet.
- F. Molded to flume at dimension 2/3 A, embedded flush into wall of flume with layer of clear gelcoat over gauge to prevent calibration markings from deteriorating.

KENCO  PLASTICS COMPANY, INC.

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PHONE 608-665-2203
FAX 608-665-7747

STAFF GAUGE SPECIFICATIONS

SCALE: FULL	REVISED:
DATE: 7-25-91	DRAWING NO.:
DRAWN BY: KAN	KM-0035