HEAD DISCHARGE TABLE FOR CORRUGATED METAL PIPE DROP INLETS (FULL PIPE FLOW CONDITION)

** For Smaller Diameter CMP Drop Inlets Used As Trickle Tubes See Table 4

Barrel		Head In Feet																
Dia. In.	Length Ft.	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5
**	60	5.1	5.3	5.6	5.8	6.0	6.2	6.4	6.6	6.8	7.0	7.2	7.3	7.5	7.7	7.9	8.0
	70	4.8	5.0	5.2	5.5	5.7	5.9	6.1	6.2	6.4	6.6	6.8	6.9	7.1	7.3	7.4	7.6
	80	4.5	4.7	4.9	5.1	5.3	5.5	5.7	5.9	6.0	6.2	6.4	6.5	6.7	6.8	7.0	7.1
	90	4.4	4.6	4.8	5.0	5.2	5.3	5.5	5.7	5.9	6.0	6.2	6.3	6.5	6.6	6.8	6.9
12	100	4.1	4.3	4.5	4.7	4.8	5.0	5.2	5.3	5.5	5.6	5.8	5.9	6.1	6.2	6.3	6.5
	110	3.9	4.1	4.3	4.5	4.7	4.8	5.0	5.1	5.3	5.4	5.6	5.7	5.8	6.0	6.1	6.2
	120	3.8	4.0	4.2	4.3	4.5	4.7	4.8	5.0	5.1	5.2	5.4	5.5	5.6	5.8	5.9	6.0
	130	3.7	3.8	4.0	4.2	4.3	4.5	4.6	4.8	4.9	5.0	5.2	5.3	5.4	5.5	5.7	5.8
	140	3.5	3.7	3.9	4.0	4.2	4.3	4.4	4.6	4.7	4.9	5.0	5.1	5.2	5.3	5.5	5.6
	60	14.0	14.6	15.3	15.9	16.5	17.1	17.7	18.2	18.7	19.3	19.7	20.2	20.7	21.2	21.6	22.1
	70	13.3	14.0	14.6	15.2	15.8	16.3	16.9	17.4	17.9	18.4	18.9	19.3	19.8	20.2	20.7	21.1
	80	12.7	13.3	13.9	14.8	15.0	15.5	16.1	16.6	17.0	17.5	18.0	18.4	18.8	19.2	19.7	20.1
	90	12.1	12.6	13.2	13.7	14.3	14.8	15.3	15.7	16.2	16.6	17.1	17.5	17.9	18.3	18.7	19.1
18	100	11.4	12.0	12.5	13.0	13.5	14.0	14.5	14.9	15.3	15.7	16.2	16.6	16.9	17.3	17.7	18.1
	110	11.1	11.6	12.2	12.7	13.1	13.6	14.0	14.5	14.9	15.3	15.7	16.1	16.5	16.8	17.2	17.6
	120	10.5	11.0	11.5	11.9	12.4	12.8	13.2	13.7	14.1	14.4	14.8	15.2	15.5	15.9	16.2	16.6
	130	10.2	10.7	11.1	11.6	12.0	12.4	12.8	13.2	13.6	14.0	14.4	14.7	15.1	15.4	15.7	16.1
	140	9.8	10.3	10.8	11.2	11.6	12.0	12.4	12.8	13.2	13.6	13.9	14.3	14.6	14.9	15.2	15.6
	60	28.2	29.5	30.8	32.1	33.3	34.5	35.6	36.7	37.8	38.8	39.8	40.8	41.8	42.7	43.6	44.5
	70	26.5	27.8	29.0	30.2	31.3	32.4	33.5	34.5	35.5	36.5	37.4	38.3	39.3	40.1	41.0	41.8
	80	25.3	26.6	27.8	28.9	30.0	31.0	32.0	33.0	34.0	34.9	35.8	36.7	37.6	38.4	39.3	40.1
	90	24.2	25.4	26.5	27.6	28.7	29.6	30.6	31.6	32.5	33.4	34.2	35.1	35.9	36.7	37.5	38.3
24	100	23.1	24.2	25.3	26.3	27.3	28.3	29.2	30.1	31.0	31.8	32.6	33.5	34.2	35.0	35.8	36.5
	110	22.5	23.6	24.7	25.7	26.7	27.6	28.5	29.4	30.2	31.0	31.9	32.6	33.4	34.1	34.9	35.6
	120	21.4	22.4	23.4	24.4	25.3	26.2	27.1	27.9	28.7	29.5	30.3	31.0	31.7	32.4	33.2	33.8
	130	20.8	21.9	22.8	23.8	24.7	25.5	26.4	27.2	28.0	28.7	29.5	30.2	30.9	31.6	32.3	32.9
	140	20.3	21.3	22.2	23.1	24.0	24.8	25.6	26.4	27.2	27.9	28.7	29.4	30.1	30.7	31.4	32.0

Table 3
IL-EFM Notice 1
3/85

HEAD DISCHARGE TABLE FOR CORRUGATED METAL PIPE DROP INLETS (FULL PIPE FLOW CONDITION)

Barrel		Head In Feet															
Dia. In.	Length Ft.	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5
30	60	47.5	49.9	52.1	54.2	56.3	58.2	60.1	62.0	63.8	65.5	67.2	68.9	70.5	72.1	73.7	75.2
	70	45.8	48.0	50.1	52.2	54.2	56.1	57.9	59.7	61.4	63.1	64.7	66.3	67.9	69.4	70.9	72.4
	80	43.1	45.2	47.3	49.2	51.2	52.8	54.6	56.2	57.9	59.5	61.0	62.5	64.0	65.4	66.8	68.2
	90	41.4	43.4	45.3	47.2	49.0	50.7	52.3	54.0	55.5	57.0	58.5	60.0	61.4	62.7	64.1	65.4
	100	40.5	42.5	44.4	46.2	47.9	49.6	51.2	52.8	54.3	55.8	57.3	58.7	60.1	61.4	62.7	64.0
	110	38.7	40.6	42.4	44.2	45.8	47.4	49.0	50.5	52.0	53.4	54.8	56.1	57.5	58.7	60.0	61.2
	120	37.9	39.7	41.5	43.2	44.8	46.4	47.9	49.4	50.8	52.2	53.5	54.9	56.2	57.4	58.7	59.9
	130	36.1	37.9	39.5	41.2	42.7	44.2	45.7	47.1	48.4	49.8	51.1	52.3	53.6	54.7	55.9	57.1
	140	35.2	36.9	38.6	40.1	41.7	43.1	44.5	45.9	47.3	48.5	49.8	51.0	52.2	53.4	54.6	55.7
36	60	73.6	77.2	80.7	83.9	87.1	90.2	93.1	96.0	98.8	101.5	104.1	106.7	109.2	111.6	114.1	116.4
	70	69.8	73.2	76.5	79.6	82.6	85.5	88.3	91.0	93.7	96.3	98.7	101.2	103.6	105.9	108.2	110.4
	80	67.3	70.6	73.7	76.7	79.6	82.4	85.1	87.7	90.3	92.7	95.2	97.5	99.8	102.0	104.2	106.4
	90	64.8	67.9	70.9	73.8	76.6	79.3	81.9	84.4	86.9	89.3	91.6	93.8	96.1	98.2	100.3	102.4
	100	62.2	65.2	68.1	70.9	73.6	76.2	78.7	81.1	83.5	85.8	88.0	90.1	92.3	94.3	96.4	98.4
	110	60.9	63.9	66.7	69.5	72.1	74.6	77.1	79.4	81.8	84.0	86.2	88.3	90.4	92.4	94.4	96.3
	120	58.4	61.3	64.0	66.6	69.1	71.5	73.9	76.1	78.4	80.5	82.6	84.6	86.6	88.5	90.5	92.3
	130	57.1	59.9	62.6	65.1	67.6	70.0	72.3	74.5	76.7	78.8	80.8	82.8	84.8	86.6	88.5	90.3
	140	55.9	58.6	61.2	63.7	66.1	68.4	70.7	72.8	75.0	77.0	79.0	80.9	82.9	84.7	86.5	88.3

Table 3
IL-EFM Notice 1
3/85

HEAD DISCHARGE TABLE FOR CORRUGATED METAL PIPE DROP INLETS (FULL PIPE FLOW CONDITION)

Barrel		Head In Feet																
Dia. In.	Length Ft.	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5
42	60	103.5	108.6	113.4	118.0	122.5	126.7	130.9	134.9	138.9	142.7	146.4	150.0	153.5	156.9	160.4	163.6
	70	100.1	104.9	109.6	114.1	118.4	122.5	126.5	130.4	134.2	137.9	141.5	145.0	148.4	151.7	155.0	158.2
	80	96.6	101.3	105.8	110.1	114.3	118.3	122.2	125.9	129.6	133.2	136.6	140.0	143.3	146.5	149.7	152.7
	90	93.2	97.7	102.0	106.2	110.2	114.1	117.8	121.4	125.0	128.4	131.7	135.0	138.2	141.2	144.3	147.3
	100	89.7	94.1	98.3	102.3	106.2	109.8	113.5	116.9	120.4	123.6	126.9	130.0	133.1	136.0	139.0	141.8
	110	86.3	90.5	94.5	98.3	102.1	105.6	109.1	112.4	115.7	118.9	122.0	125.0	128.0	130.8	133.6	136.4
	120	84.5	88.7	92.6	96.4	100.0	103.5	106.9	110.2	113.4	116.5	119.5	122.5	125.4	128.2	131.0	133.6
	130	82.8	86.8	90.7	94.4	98.0	101.4	104.7	108.0	111.1	114.1	117.1	120.0	122.8	125.5	128.3	130.9
	140	79.4	83.2	86.9	90.5	93.9	97.2	100.4	103.5	106.5	109.4	112.2	115.0	117.7	120.3	122.9	125.5
48	60	139.8	146.6	153.1	159.3	165.4	171.1	176.8	182.2	187.5	192.6	197.6	202.5	207.3	211.9	216.5	220.9
	70	135.2	141.8	148.1	154.2	160.0	165.6	171.1	176.3	181.5	186.4	191.3	196.0	200.6	205.0	209.5	213.8
	80	130.7	137.1	143.2	149.0	154.7	160.1	165.4	170.4	175.4	180.2	184.9	189.4	193.9	198.2	202.5	206.7
	90	126.2	132.4	138.3	143.9	149.4	154.6	159.7	164.6	169.4	174.0	178.5	182.9	187.3	191.4	195.6	199.6
	100	121.7	127.7	133.3	138.8	144.0	149.0	153.9	158.7	163.3	167.8	172.1	176.4	180.6	184.5	188.6	192.4
	110	119.5	125.3	130.8	136.2	141.4	146.3	151.1	155.7	160.3	164.7	168.9	173.1	177.2	181.1	185.1	188.9
	120	115.0	120.6	125.9	131.1	136.0	140.8	145.4	149.9	154.2	158.5	162.6	166.6	170.5	174.3	178.1	181.7
	130	112.7	118.2	123.4	128.5	133.4	138.0	142.5	146.9	151.2	155.3	159.4	163.3	167.2	170.9	174.6	178.2
	140	110.5	115.8	121.0	125.9	130.7	135.2	139.7	144.0	148.2	152.2	156.2	160.0	163.8	167.5	171.1	174.6

Table 3
IL-EFM Notice 1
3/85

HEAD DISCHARGE TABLE FOR CORRUGATED METAL PIPE
DROP INLETS
(FULL PIPE FLOW CONDITION)

Barrel		Head In Feet														
Dia. In.	Length Ft.	13.0	13.5	14.0	14.5	15.0	16.0	17.0	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
12	60	8.2	8.3	8.5	8.6	8.8	9.1	9.3	9.6	9.9	10.1	10.4	10.6	10.9	11.1	11.3	11.6
	70	7.7	7.9	8.0	8.2	8.3	8.6	8.8	9.1	9.3	9.6	9.8	10.0	10.3	10.5	10.7	10.9
	80	7.3	7.4	7.5	7.7	7.8	8.1	8.3	8.5	8.8	9.0	9.2	9.4	9.7	9.9	10.1	10.3
	90	7.0	7.2	7.3	7.4	7.6	7.8	8.0	8.3	8.5	8.7	8.9	9.2	9.4	9.6	9.8	10.0
	100	6.6	6.7	6.8	7.0	7.1	7.3	7.5	7.7	8.0	8.2	8.4	8.6	8.8	8.9	9.1	9.3
	110	6.4	6.5	6.6	6.7	6.8	7.1	7.3	7.5	7.7	7.9	8.1	8.3	8.5	8.6	8.8	9.0
	120	6.1	6.2	6.4	6.5	6.6	6.8	7.0	7.2	7.4	7.6	7.8	8.0	8.2	8.3	8.5	8.7
	130	5.9	6.0	6.1	6.2	6.3	6.5	6.7	6.9	7.1	7.3	7.5	7.7	7.9	8.0	8.2	8.3
	140	5.7	5.8	5.9	6.0	6.1	6.3	6.5	6.7	6.9	7.0	7.2	7.4	7.5	7.7	7.9	8.0
18	60	22.5	23.0	23.4	23.6	24.2	25.0	25.8	26.5	27.2	27.9	28.6	29.3	30.0	30.6	31.2	31.8
	70	21.5	21.9	22.3	22.7	23.1	23.8	24.6	25.3	26.0	26.7	27.3	28.0	28.6	29.2	29.8	30.4
	80	20.5	20.9	21.2	21.6	22.0	22.7	23.4	24.1	24.6	25.4	26.0	26.6	27.2	27.8	28.4	29.0
	90	19.5	19.8	20.2	20.5	20.9	21.6	22.2	22.9	23.5	24.1	24.7	25.3	25.9	26.4	27.0	27.5
	100	18.4	18.8	19.1	19.5	19.8	20.4	21.1	21.7	22.3	22.9	23.4	24.0	24.5	25.0	25.6	26.1
	110	17.9	18.3	18.6	18.9	19.2	19.9	20.5	21.1	21.7	22.2	22.8	23.3	23.8	24.3	24.8	25.3
	120	16.9	17.2	17.5	17.8	18.1	18.7	19.3	19.9	20.4	20.9	21.5	22.0	22.5	22.9	23.4	23.9
	130	16.4	16.7	17.0	17.3	17.6	18.2	18.7	19.3	19.8	20.3	20.8	21.3	21.8	22.3	22.7	23.2
	140	15.9	16.2	16.5	16.8	17.0	17.6	18.1	18.7	19.2	19.7	20.2	20.6	21.1	21.6	22.0	22.4
24	60	45.4	46.3	47.1	48.0	48.8	50.4	51.9	53.4	54.9	56.3	57.7	59.1	60.4	61.7	63.0	64.2
	70	42.7	43.5	44.3	45.1	45.8	47.3	48.8	50.2	51.6	52.9	54.2	55.5	56.8	58.0	59.2	60.4
	80	40.9	41.6	42.4	43.2	43.9	45.3	46.7	48.1	49.4	50.7	51.9	53.1	54.3	55.5	56.7	57.8
	90	39.0	39.8	40.5	41.2	41.9	43.3	44.6	45.9	46.2	48.4	49.6	50.8	51.9	53.1	54.1	55.2
	100	37.2	37.9	38.6	39.3	40.0	41.3	42.6	43.8	45.0	46.2	47.3	48.4	49.5	50.6	51.6	52.6
	110	36.3	37.0	37.7	38.4	39.0	40.3	41.5	42.7	43.9	45.0	46.2	47.2	48.3	49.3	50.4	51.4
	120	34.5	35.2	35.8	36.4	37.1	38.3	39.5	40.6	41.7	42.8	43.9	44.9	45.9	46.9	47.9	48.8
	130	33.6	34.2	34.9	35.5	36.1	37.3	38.4	39.5	40.6	41.7	42.7	43.7	44.7	45.6	46.6	47.5
	140	32.7	33.3	33.9	34.5	35.1	36.3	37.4	38.5	39.5	40.5	41.5	42.5	43.5	44.4	45.3	46.2

Note: See notes on 6-42.2b

Table 3
IL-EFM Notice 1
3/85

HEAD DISCHARGE TABLE FOR CORRUGATED METAL PIPE DROP INLETS (FULL PIPE FLOW CONDITION)

Barrel		Head In Feet																		
Dia. In.	Length Ft.	13.0	13.5	14.0	14.5	15.0	16.0	17.0	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
30	60	76.7	78.1	79.6	81.0	82.4	85.1	87.7	90.2	92.7	95.1	97.5	99.7	102.0	104.2	106.3	108.4
	70	73.8	75.3	76.6	78.0	79.3	81.9	84.4	86.9	89.3	91.6	93.8	96.0	98.2	100.3	102.4	104.4
	80	69.6	70.9	72.2	73.5	74.7	77.2	79.6	81.9	84.1	86.3	88.4	90.5	92.5	94.5	96.5	98.4
	90	66.7	68.0	69.3	70.5	71.7	74.0	76.3	78.5	80.7	82.8	84.8	86.6	88.8	90.7	92.5	94.4
	100	65.3	66.6	67.8	69.0	70.2	72.5	74.7	76.9	79.0	81.0	83.0	85.0	86.9	88.7	90.6	92.4
	110	62.5	63.7	64.8	66.0	67.1	69.3	71.4	73.5	75.5	77.5	79.4	81.3	83.1	84.9	86.6	88.3
	120	61.1	62.2	63.4	64.5	65.6	67.7	69.8	71.8	73.8	75.7	77.6	79.4	81.2	83.0	84.7	86.3
	130	58.2	59.3	60.4	61.5	62.5	64.6	66.6	68.5	70.4	72.2	74.0	75.7	77.4	79.1	80.7	82.3
	140	56.8	57.9	58.9	60.0	61.0	63.0	64.9	66.8	68.7	70.4	72.2	73.9	75.5	77.2	78.8	80.3
36	60	118.8	121.0	123.2	125.4	127.6	131.7	135.8	139.7	143.6	147.3	150.9	154.5	158.0	161.3	164.7	167.9
	70	112.6	114.8	116.9	118.9	121.0	124.9	128.8	132.5	136.1	139.7	143.1	146.5	149.8	153.0	156.2	159.2
	80	108.5	110.6	112.6	114.6	116.6	120.4	124.1	127.7	131.2	134.6	137.9	141.1	144.3	147.4	150.5	153.4
	90	104.4	106.4	108.4	110.3	112.2	115.8	119.4	122.9	126.2	129.5	132.7	135.8	138.9	141.9	144.8	147.7
	100	100.3	102.2	104.1	105.9	107.8	111.3	114.7	118.1	121.3	124.4	127.5	130.5	133.4	136.3	139.1	141.9
	110	98.3	100.2	102.0	103.8	105.6	109.0	112.4	115.6	118.8	121.9	124.9	127.8	130.7	133.5	136.3	139.0
	120	94.2	96.0	97.7	99.5	101.2	104.5	107.7	110.8	113.9	116.8	119.7	122.5	125.3	128.0	130.6	133.2
	130	92.1	93.9	95.6	97.3	99.0	102.2	105.4	108.4	111.4	114.3	117.1	119.8	122.5	125.2	127.8	130.3
	140	90.1	91.8	93.5	95.1	96.8	99.9	103.0	106.0	108.9	111.7	114.5	117.2	119.8	122.4	124.9	127.4

Notes: 1. The discharge capacities shown in this table are based on the formula $Q_1 = C_1 A_1\sqrt{2H_1}$, where Q_1 = discharge capacity of full pipe, in c.f.s; C_1 = coefficient for corrugated metal pipe from King's "Handbook of Hydraulics", page 79 (old edition) or page 3-42 (new edition); A_1 = cross-sectional area of barrel, in sq. ft.; g = acceleration due to gravity (32.2 ft/sec^2); H_1 = difference in elevation of water surface in reservoir and water surface at outlet for submerged flow or center of barrel at outlet for discharge, in feet.

2. Use this table in conjunction with orifice flow and weir flow conditions to determine capacity of the drop inlet.

Table 3
IL-EFM Notice 1
3/85

HEAD DISCHARGE TABLE FOR CORRUGATED METAL PIPE DROP INLETS (FULL PIPE FLOW CONDITION)

Barrel		Head In Feet																
Dia. In.	Length Ft.	13.0	13.5	14.0	14.5	15.0	16.0	17.0	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
42	60	166.9	170.1	173.2	176.3	179.3	185.2	190.9	196.4	201.8	207.0	212.2	217.1	222.0	226.8	231.5	236.0
	70	161.4	164.4	167.4	170.4	173.3	179.0	184.5	189.9	195.1	200.1	205.1	209.9	214.6	219.2	223.7	228.2
	80	155.8	158.8	161.7	164.5	167.3	172.8	178.1	183.3	188.3	193.2	198.0	202.6	207.2	211.7	216.0	220.3
	90	150.2	153.1	155.9	158.6	161.4	166.6	171.8	176.8	181.6	186.3	190.9	195.4	199.8	204.1	208.1	212.4
	100	144.7	147.4	150.1	152.8	155.4	160.5	165.4	170.2	174.9	179.4	183.9	188.2	192.4	196.5	200.6	204.6
	110	139.1	141.8	144.4	146.9	149.4	154.3	159.0	163.7	168.2	172.5	176.8	180.9	185.0	189.0	192.9	196.7
	120	136.3	138.9	141.5	144.0	146.4	151.2	155.9	160.4	164.8	169.1	173.3	177.3	181.3	185.2	189.0	192.8
	130	133.5	136.1	138.6	141.0	143.4	148.1	152.7	157.1	161.4	165.6	169.7	173.7	177.6	181.4	185.2	188.8
	140	128.0	130.4	132.8	135.1	137.5	142.0	146.3	150.6	154.7	158.7	162.7	166.4	170.2	173.9	177.5	181.0
48	60	225.4	229.7	233.9	238.0	242.1	250.0	257.7	265.2	272.4	279.5	286.4	293.1	299.8	306.2	312.5	318.7
	70	218.1	222.3	226.3	230.3	234.3	241.9	249.4	256.6	263.7	270.5	277.2	283.7	290.1	296.3	302.4	308.1
	80	210.8	214.9	218.8	222.7	226.5	233.9	241.1	248.1	254.9	261.5	268.0	274.2	280.4	286.4	292.4	298.1
	90	203.6	207.5	211.3	215.0	218.6	225.8	232.8	239.5	246.1	252.5	258.7	264.8	270.8	276.6	282.3	287.9
	100	196.3	200.1	203.7	207.3	210.8	217.7	224.4	231.0	237.3	243.4	249.5	255.3	261.1	266.7	272.2	277.6
	110	192.7	196.4	199.9	203.5	206.9	213.7	229.3	226.7	232.9	238.9	244.9	250.6	256.2	261.7	267.1	272.4
	120	185.4	188.9	192.4	195.8	199.1	205.7	212.0	218.1	224.1	229.9	235.6	241.1	246.6	251.9	257.1	262.2
	130	181.8	185.2	188.6	191.9	195.2	201.6	207.8	213.9	219.7	225.4	231.0	236.4	241.7	246.9	252.0	257.0
	140	178.1	181.5	184.4	188.1	191.3	197.6	203.7	209.6	215.3	220.9	226.4	231.7	236.9	242.0	247.0	251.9

Table 3
IL-EFM Notice 1
3/85

HEAD DISCHARGE TABLE FOR SMALL CORRUGATED METAL PIPE DROP INLETS USED AS TRICKLE TUBES (FULL PIPE FLOW CONDITIONS)

Barrel		Head In Feet																				
Dia. In.	Length Ft.	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5	14.0	14.5	15.0	15.5
6	60	.89	.93	.97	1.01	1.05	1.09	1.12	1.16	1.19	1.22	1.25	1.28	1.31	1.34	1.37	1.40	1.43	1.46	1.48	1.51	1.54	1.56
	70	.83	.87	.91	.94	.98	1.01	1.05	1.08	1.11	1.14	1.17	1.20	1.23	1.25	1.28	1.31	1.33	1.36	1.38	1.41	1.43	1.46
	80	.78	.81	.85	.88	.92	.95	.98	1.01	1.04	1.07	1.10	1.12	1.15	1.18	1.20	12.3	1.25	1.27	1.30	1.32	1.34	1.37
	90	.73	.77	.80	.84	.87	.90	.93	.96	.98	1.01	1.04	1.06	1.09	1.11	1.14	1.16	1.18	1.21	1.23	1.25	1.27	1.29
	100	.70	.73	.76	.80	.83	.85	.88	.91	.94	.96	.99	1.01	1.03	1.06	1.08	1.10	1.12	1.15	1.17	1.19	1.21	1.23
	110	.67	.70	.73	.76	.79	.82	.84	.87	.90	.92	.94	.97	.99	1.01	1.03	1.06	1.08	1.10	1.12	1.14	1.16	1.17
	120	.64	.67	.70	.73	.76	.78	.81	.83	.86	.88	.90	.93	.95	.97	.99	1.01	1.03	1.05	1.07	1.09	1.11	1.12
	130	.62	.65	.67	.70	.73	.75	.78	.80	.83	.85	.87	.89	.91	.93	.95	.97	.99	1.01	1.03	1.05	1.07	1.09
	140	.59	.63	.65	.68	.70	.73	.75	.77	.80	.82	.84	.86	.88	.90	.92	.94	.96	.98	.99	1.01	1.03	1.05
8	60	1.85	1.94	2.02	2.10	2.19	2.26	2.34	2.41	2.48	2.55	2.61	2.68	2.74	2.80	2.86	2.92	2.98	3.04	3.09	3.15	3.20	3.25
	70	1.72	1.80	1.88	1.96	2.03	2.10	2.17	2.24	2.30	2.37	2.43	2.49	2.54	2.60	2.66	2.72	2.77	2.82	2.87	2.92	2.97	3.02
	80	1.61	1.69	1.77	1.84	1.91	1.98	2.04	2.11	2.17	2.23	2.28	2.34	2.39	2.45	2.50	2.55	2.60	2.65	2.70	2.75	2.80	2.85
	90	1.53	1.60	1.67	1.74	1.81	1.87	1.93	1.99	2.05	2.10	2.16	2.21	2.26	2.31	2.37	2.42	2.46	2.51	2.56	2.61	2.65	2.69
	100	1.46	1.53	1.60	1.67	1.73	1.79	1.84	1.90	1.96	2.01	2.06	2.11	2.16	2.21	2.26	2.31	2.35	2.40	2.44	2.49	253	2.57
	110	1.39	1.46	1.52	1.58	1.64	1.70	1.76	1.81	1.86	1.91	1.96	2.01	2.06	2.11	2.15	2.20	2.24	2.28	2.32	2.37	2.41	2.45
	120	1.33	1.40	1.46	1.52	1.58	1.64	1.69	1.74	1.79	1.84	1.88	1.93	1.98	2.02	2.06	2.11	2.15	2.19	2.23	2.27	2.31	2.35
	130	1.29	1.35	1.41	1.47	1.53	1.58	1.63	1.68	1.73	1.78	1.82	1.87	1.91	1.96	2.00	2.04	2.08	2.12	2.16	2.20	2.23	2.27
	140	1.25	1.31	1.36	1.42	1.47	1.53	1.58	1.62	1.67	1.72	1.76	1.80	1.85	1.89	1.93	1.97	2.01	2.05	2.08	2.12	2.16	2.19
10	60	3.23	3.38	3.54	3.69	3.82	3.96	4.09	4.21	4.34	4.45	4.57	4.68	4.79	4.90	5.01	5.11	5.21	5.31	5.41	5.50	5.60	5.69
	70	3.01	3.16	3.30	3.43	3.56	3.69	3.81	3.92	4.04	4.15	4.26	4.36	4.47	4.57	4.67	4.76	4.86	4.95	5.04	5.13	5.22	5.30
	80	2.84	2.97	3.11	3.23	3.36	3.47	3.59	3.70	3.80	3.91	4.01	4.11	4.21	4.30	4.39	4.48	4.57	4.66	4.75	4.83	4.91	4.99
	90	2.73	2.86	2.99	3.11	3.23	3.34	3.45	3.56	3.66	3.76	3.86	3.95	4.05	4.14	4.23	4.32	4.40	4.48	4.57	4.65	4.73	4.81
	100	2.53	2.65	2.77	2.88	2.99	3.09	3.20	3.29	3.39	3.48	3.57	3.66	3.75	3.83	3.91	3.99	4.07	4.15	4.23	4.30	4.38	4.45
	110	2.48	2.60	2.71	2.83	2.93	3.04	3.14	3.23	3.33	3.42	3.50	3.59	3.68	3.76	3.84	3.92	4.00	4.07	4.15	4.22	4.29	4.36
	120	2.36	2.47	2.58	2.68	2.79	2.88	2.98	3.07	3.16	3.24	3.33	3.41	3.49	3.57	3.65	3.72	3.80	3.87	3.94	4.01	4.08	4.14
	130	2.27	2.38	2.48	2.59	2.68	2.78	2.88	2.96	3.04	3.13	3.21	3.29	3.36	3.44	3.51	3.59	3.66	3.73	3.79	3.86	3.93	3.99
	140	2.19	2.30	2.40	2.50	2.60	2.68	2.77	2.85	2.94	3.02	3.10	3.17	3.25	3.32	3.39	3.46	3.53	3.60	3.66	3.73	3.79	3.86

Table 4

HEAD DISCHARGE TABLE FOR SMALL CORRUGATED METAL PIPE DROP INLETS USED AS TRICKLE TUBES (FULL PIPE FLOW CONDITIONS)

(ORIFICE FLOW CONDITION)

Diameter Barrel	Head In Feet													
	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0
6”	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.2	2.3	2.4	2.5	2.5	2.6	2.7	2.7
8”	3.2	3.3	3.5	3.7	3.9	4.0	4.2	4.3	4.5	4.6	4.7	4.9	5.0	5.1	5.2
10”	5.3	5.6	5.9	6.2	6.5	6.8	7.0	7.3	7.5	7.8	8.0	8.2	8.4	8.6	8.8

(WEIR FLOW CONDITION)

Diameter Riser	Head In Feet													
	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8
12”	2.2	3.0	4.0	5.0	6.1	7.3	8.6	9.9	11.2	12.7	14.2	15.7	17.3	18.9	20.6
18”	3.3	4.5	6.0	7.5	9.2	11.0	12.8	14.8	16.9	19.0	21.3	23.6	26.0	28.5	31.0
21”	3.8	5.3	7.0	8.8	10.7	12.8	15.0	17.3	19.7	22.2	24.8	27.5	30.3	33.2	36.2

Table 4

HEAD DISCHARGE TABLE FOR SMALL CORRUGATED METAL PIPE DROP INLETS USED AS TRICKLE TUBES (FULL PIPE FLOW CONDITIONS)

Barrel		Head In Feet																						
Dia. In.	Length Ft.	16.0	16.5	17.0	17.5	18.0	18.5	19.0	19.5	20.0	20.5	21.0	21.5	22.0	22.5	23.0	23.5	24.0	24.5	25.0	25.5	26.0	26.5
6	60	1.59	1.61	1.63	1.66	1.68	1.70	1.73	1.75	1.77	1.79	1.82	1.84	1.86	1.88	1.90	1.92	1.94	1.96	1.98	2.00	2.02	2.04
	70	1.48	1.50	1.52	1.55	1.57	1.59	1.61	1.63	1.65	1.67	1.69	1.71	1.73	1.75	1.77	1.79	1.81	1.83	1.85	1.87	1.89	1.90
	80	1.39	1.41	1.43	1.45	1.47	1.49	1.51	1.53	1.55	1.57	1.59	1.61	1.63	1.65	1.66	1.68	1.70	1.72	1.73	1.75	1.77	1.79
	90	1.31	1.33	1.35	1.37	1.39	1.41	1.43	1.45	1.47	1.49	1.50	1.52	1.54	1.56	1.57	1.59	1.61	1.62	1.64	1.66	1.67	1.69
	100	1.25	1.27	1.29	1.30	1.32	1.34	1.36	1.38	1.39	1.41	1.43	1.45	1.46	1.48	1.50	1.51	1.53	1.54	1.56	1.58	1.59	1.61
	110	1.19	1.21	1.23	1.25	1.27	1.28	1.30	1.31	1.33	1.35	1.37	1.38	1.40	1.42	1.43	1.45	1.46	1.48	1.49	1.51	1.52	1.54
	120	1.14	1.16	1.18	1.19	1.21	1.23	1.24	1.26	1.28	1.29	1.31	1.32	1.34	1.35	1.37	1.38	1.40	1.41	1.43	1.44	1.46	1.47
	130	1.10	1.12	1.14	1.15	1.17	1.19	1.20	1.22	1.23	1.25	1.26	1.28	1.29	1.31	1.32	1.34	1.35	1.37	1.38	1.39	1.41	1.42
	140	1.06	1.08	1.10	1.11	1.13	1.14	1.16	1.17	1.19	1.20	1.22	1.23	1.25	1.26	1.27	1.29	1.30	1.31	1.33	1.34	1.35	1.37
8	60	3.31	3.36	3.41	3.46	3.51	3.55	3.60	3.65	3.70	3.74	3.79	3.83	3.88	3.92	3.96	4.00	4.05	4.09	4.13	4.17	4.21	4.25
	70	3.07	3.12	3.16	3.21	3.25	3.30	3.34	3.39	3.43	3.48	3.52	3.56	3.60	3.64	3.68	3.72	3.76	3.80	3.84	3.87	3.91	3.94
	80	2.89	2.94	2.98	3.02	3.06	3.11	3.15	3.19	3.23	3.27	3.31	3.35	3.39	3.43	3.46	3.50	3.54	3.58	3.61	3.65	3.68	3.71
	90	2.73	2.78	2.82	2.86	2.90	2.94	2.98	3.02	3.05	3.09	3.13	3.17	3.20	3.24	3.28	3.32	3.35	3.39	3.42	3.45	3.48	3.51
	100	2.61	2.65	2.69	2.73	2.77	2.81	2.84	2.88	2.92	2.96	2.99	3.03	3.06	3.10	3.13	3.16	3.19	3.23	3.26	3.29	3.32	3.35
	110	2.48	2.52	2.56	2.60	2.63	2.67	2.71	2.75	2.78	2.82	2.85	2.88	2.91	2.95	2.98	3.01	3.04	3.08	3.11	3.14	3.17	3.20
	120	2.38	2.42	2.46	250	2.53	2.57	2.60	2.64	2.67	2.70	2.73	2.77	2.80	2.83	2.86	2.89	2.92	2.95	2.98	3.01	3.04	3.07
	130	2.31	2.35	2.38	2.42	2.45	2.49	2.52	2.55	2.58	2.61	2.64	2.68	2.71	2.74	2.77	2.80	2.83	2.86	2.89	2.92	2.94	2.95
	140	2.22	2.25	2.28	2.32	2.35	2.38	2.41	2.45	2.48	2.51	2.54	2.57	2.60	2.63	2.66	2.69	2.71	2.74	2.77	2.80	2.82	2.84
10	60	5.78	5.87	5.96	6.05	6.13	6.22	6.30	6.38	6.46	6.54	6.62	6.70	6.78	6.86	6.93	7.00	7.08	7.15	7.23	7.30	7.37	7.44
	70	5.39	5.47	5.55	5.63	5.71	5.79	5.87	5.95	6.02	6.10	6.17	6.25	6.32	6.39	6.46	6.53	6.60	6.67	6.73	6.80	6.87	6.93
	80	5.07	5.15	5.23	5.30	5.38	5.45	5.53	5.60	5.67	5.74	5.81	5.88	5.95	6.02	6.08	6.15	6.21	6.28	6.23	6.40	6.47	6.53
	90	4.88	4.96	5.03	5.11	5.18	5.25	5.32	5.39	5.46	5.53	5.59	5.66	5.72	5.79	5.85	5.92	5.98	6.04	6.10	6.16	6.22	6.28
	100	4.52	4.59	4.66	4.73	4.79	4.86	4.92	4.99	5.05	5.12	5.18	5.24	5.30	5.36	5.42	5.48	5.53	5.59	5.65	5.71	5.76	5.81
	110	4.43	4.50	4.57	4.64	4.70	4.77	4.83	4.90	4.96	5.02	5.08	5.14	5.20	5.26	5.32	5.37	5.43	5.49	5.54	5.60	5.65	5.71
	120	4.21	4.28	4.34	4.40	4.47	4.53	4.59	4.65	4.71	4.77	4.82	4.88	4.94	4.99	5.05	5.10	5.16	5.21	5.26	5.32	5.37	5.42
	130	4.06	4.12	4.18	4.24	4.30	4.36	4.42	4.48	4.53	4.59	4.65	4.70	4.76	4.81	4.86	4.92	4.97	5.02	5.07	5.12	5.17	5.22
	140	3.92	3.98	4.04	4.10	4.16	4.21	4.27	4.32	4.38	4.43	4.49	4.54	4.59	4.64	4.70	4.75	4.80	4.85	4.90	4.95	4.99	5.04

Table 4

HEAD DISCHARGE TABLE FOR SMALL CORRUGATED METAL PIPE DROP INLETS USED AS TRICKLE TUBES (FULL PIPE FLOW CONDITIONS)

(ORIFICE FLOW CONDITION)

Diameter Barrel	Head In Feet														
	12.0	13.0	14.0	15.0	16.0	17.0	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
6"	2.8	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.8	3.9	4.0	4.1	4.2
8"	5.5	5.7	5.9	6.1	6.3	6.5	6.7	6.9	7.1	7.2	7.4	7.6	7.7	7.9	8.1
10"	9.2	9.6	9.9	10.3	10.6	11.0	11.3	11.6	11.9	12.2	12.5	12.7	13.0	13.3	13.6

(WEIR FLOW CONDITION)

Diameter Riser	Head In Feet														
	2.0	2.2	2.4	2.6	2.8	3.0	3.2	3.4	3.6	3.8	4.0	4.2	4.4	4.6	4.8
12"	24.2	27.9	31.8	35.9	40.1	44.5	49.0	54.0	58.0	63.0	68.0	74.0	79.0	84.0	90.1
18"	36.3	41.9	47.7	53.8	60.2	66.7	73.5	80.5	87.7	95.1	102.7	110.5	118.5	126.7	135.1
21"	42.4	48.9	55.7	62.8	70.2	77.8	85.8	93.9	102.3	111.0	119.8	128.9	138.3	147.8	157.6

Table 4

HEAD DISCHARGE TABLE FOR SMALL CORRUGATED METAL PIPE DROP INLETS
(WEIR FLOW CONDITION)

Riser Dia In Inches	Head In Feet													
	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7
15	2.7	3.8	4.9	6.3										
18	3.2	4.5	5.9	7.6	9.3	10.9	ORIFICE FLOW CONDITIONS CONTROL							
21	3.7	5.2	6.9	8.8	10.8	12.7	15.0							
24	4.3	6.0	7.9	10.1	12.3	14.6	17.1	19.7	22.4					
30	5.4	7.5	9.8	12.6	15.4	18.2	21.4	24.6	28.0	31.7	35.5			
36	6.4	9.0	11.8	15.1	18.5	21.8	25.7	29.5	33.6	38.0	42.6	47.2	51.9	
42	7.5	10.5	13.8	17.7	21.6	25.5	30.0	34.5	39.3	44.4	49.8	55.1	60.5	66.5
48	8.6	12.0	15.7	20.2	24.6	29.1	34.2	39.4	44.8	50.7	56.8	63.0	69.1	76.0
54	9.6	13.5	17.7	22.7	27.7	32.8	38.5	44.3	50.5	57.0	64.0	70.9	77.8	85.5
60	10.7	15.0	19.7	25.2	30.8	36.4	42.8	49.2	56.1	63.3	71.0	78.7	86.4	95.0
66	11.8	16.5	21.7	27.8	33.9	40.0	47.1	54.1	61.7	69.7	78.1	86.6	95.1	104.5
72	12.8	18.0	23.6	30.3	37.0	43.6	51.4	59.1	67.3	76.0	85.2	94.5	103.7	114.0

Riser Dia In Inches	Head In Feet												
	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	3.0	3.5	4.0	4.5	5.0
15													
18													
21													
24				ORIFICE FLOW CONDITIONS CONTROL									
30													
36													
42	72.5												
48	82.8	89.7	96.9	104.1									
54	93.2	100.9	109.0	117.1	125.6	134.5	143.3						
60	103.6	112.1	121.1	130.1	139.5	149.3	159.2	169.0					
66	113.9	123.3	133.2	143.1	153.4	164.3	175.1	185.9					
72	124.3	134.5	145.3	156.1	167.4	179.2	191.0	202.8					

Notes:

1. The discharge capacities shown in this table are based on the formula $Q_2 = C_2 L H_2^{3/2}$ where
   Q_2 = discharge capacity of weir, in c.f.s.
   C_2 = weir coefficient = 3.33
   L = length of weir crest, in feet (for circular riser with headwall,
   L = 2.57 times diameter of riser)
   H_2 = distance from crest of riser to water surface in reservoir, in feet.
2. Use this table in conjunction with orifice flow and full pipe flow conditions to determine capacity of the drop inlet.
3. Riser orifice flow controls for weir flow conditions to the right of the heavy line.

HEAD DISCHARGE TABLE FOR CORRUGATED METAL PIPE DROP INLETS

(ORIFICE CONTROL CONDITIONS AT CREST OF RISER OR ENTRANCE TO BARREL)

Diameter In Inches	Head In Feet													
	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0
12		4.0	4.9	5.7	6.4	7.0	7.6	8.1	8.6	9.0	9.5	9.9	10.3	10.7
15		6.7	8.2	9.4	10.6	11.6	12.5	13.4	14.2	15.0	15.7	16.4	17.1	17.7
18		10.1	12.3	14.2	15.9	17.4	18.8	20.1	21.3	22.5	23.6	24.6	25.7	26.7
21			16.9	19.6	21.9	24.0	26.0	27.8	29.4	31.1	32.6	34.0	35.4	36.8
24			22.4	25.9	29.1	31.8	34.4	36.8	39.0	41.2	43.2	45.0	46.9	48.8
30			35.1	40.5	45.4	49.7	53.7	57.5	60.9	64.4	67.5	70.5	73.4	76.2
36				58.4	65.4	71.6	77.4	82.8	87.7	92.7	97.3	101.4	105.5	109.7
42				79.4	89.0	97.5	105.3	112.7	119.4	126.2	132.4	138.0	143.6	149.3
48					114.7	125.6	135.7	145.2	153.9	162.6	170.6	177.8	185.1	192.3
54					143.1	156.6	169.3	181.1	191.9	202.8	212.8	221.8	230.9	239.9
60	WEIR FLOW CONDITIONS CONTROL					190.6	206.1	220.4	233.6	246.8	259.0	270.0	281.0	292.0
66						224.2	242.3	259.2	274.7	290.3	304.5	317.5	330.4	343.4
72						262.8	284.1	303.8	322.0	340.3	357.0	372.2	387.4	402.6

Note: Weir flow controls for riser orifice conditions to the left of the heavy line.

Diameter In Inches	Head In Feet													
	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5	14.0
12	11.1	11.4	11.8	12.1	12.4	12.8	13.1	13.4	13.7	14.0	14.3	14.6	14.8	15.1
15	18.3	18.9	19.5	20.1	20.6	21.1	21.7	22.2	22.7	23.1	23.7	24.2	24.6	25.0
18	27.6	28.5	29.4	30.2	31.0	31.8	32.6	33.4	34.1	34.8	35.6	36.3	36.9	37.6
21	38.1	39.3	40.6	41.7	42.8	43.9	45.0	46.1	47.1	48.1	49.2	50.1	51.0	52.0
24	50.4	52.1	53.7	55.2	56.7	58.1	59.6	61.1	62.4	63.7	65.1	66.4	67.5	68.9
30	78.8	81.3	83.9	86.3	88.6	90.9	93.2	95.5	97.5	99.5	101.8	103.8	105.6	107.5
36	113.4	117.1	120.9	124.2	127.5	130.8	134.1	137.4	140.3	143.2	146.5	149.4	151.9	154.8
42	154.3	159.4	164.5	169.0	173.5	178.0	182.5	187.0	191.0	194.9	199.4	203.4	206.7	210.7
48	198.9	205.4	211.9	217.7	223.5	229.4	235.2	241.0	246.0	251.1	256.9	262.0	266.4	271.4
54	248.1	256.2	264.4	271.6	278.9	286.1	293.3	300.6	306.9	313.3	320.5	326.8	332.3	338.6
60	301.9	311.9	321.8	330.6	339.4	348.2	357.0	365.9	373.6	381.3	390.1	397.8	404.4	412.1
66	355.0	366.7	378.4	388.7	399.1	409.5	419.8	430.2	439.3	448.3	458.7	467.8	475.6	484.6
72	416.2	429.9	443.6	455.7	467.9	480.0	492.2	504.3	515.0	525.6	537.8	548.4	557.5	568.1

Note: See page 12 for discharge formula and notes.

HEAD DISCHARGE TABLE FOR CORRUGATED METAL PIPE DROP INLETS

(ORIFICE CONTROL CONDITIONS AT CREST OF RISER OR ENTRANCE TO BARREL)

Riser Dia In Inches	Head In Feet												
	14.5	15.0	16.0	17.0	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
12	15.4	15.6	16.2	16.6	17.1	17.6	18.1	18.5	18.9	19.4	19.8	20.2	20.6
15	25.5	25.9	26.8	27.6	28.4	29.2	29.9	30.6	31.4	32.1	32.8	33.5	34.2
18	38.3	38.9	40.2	41.4	42.7	43.9	45.0	46.1	47.2	48.3	49.3	50.3	51.3
21	52.9	53.8	55.6	57.2	58.9	60.6	62.1	63.6	65.1	66.7	68.1	69.5	70.8
24	70.1	71.2	73.6	75.8	78.0	80.2	82.2	84.3	86.3	88.3	90.2	92.2	93.8
30	109.6	111.3	115.0	118.4	121.9	125.3	128.5	131.6	134.8	138.0	140.8	143.7	146.6
36	157.7	160.2	165.6	170.5	175.5	180.5	185.0	189.6	194.1	198.7	202.8	207.0	211.1
42	214.6	218.0	225.3	232.1	238.8	245.6	251.8	258.0	264.2	270.4	276.0	281.7	287.3
48	276.5	280.9	290.3	299.0	307.7	316.4	324.4	332.4	340.4	348.4	355.6	362.9	370.2
54	345.0	350.4	362.2	373.0	383.9	394.8	404.7	414.7	424.6	434.6	443.6	452.7	461.8
60	419.9	426.5	440.8	454.0	467.2	480.5	492.6	504.7	516.8	529.0	540.0	551.0	562.0
66	493.7	501.5	518.3	533.9	549.4	565.0	579.2	593.5	607.7	622.0	634.9	647.9	660.9
72	578.8	587.9	607.6	625.9	644.1	662.3	679.0	695.7	712.5	729.2	744.4	759.6	774.7

Notes: 1. The discharge capacities shown in this table are based on the formula

$$Q_3 = C_3 A_3 \sqrt{2gH_3}$$ where

Q_3 = discharge capacity of orifice, in c.f.s.
C_3 = orifice coefficient = c_1 for 10 foot length minus 0.02 x pipe diameter in feet
A_3 = cross-sectional area of orifice, in sq. ft.
g = acceleration due to gravity (32.2 ft./sec.^{2})
H_3 = distance from center of barrel at the inlet to the water surface for orifice control at the entrance to the barrel or distance from the crest of the riser to the water surface for orifice control at the crest of the riser.

2. Use this table in conjunction with weir flow and full pipe flow conditions to determine the capacity of the drop inlet.