Inlet Hydraulic Parameters Summary
May 2019

Fort Worth District
Texas Department of Transportation

Curb Inlet Parameters

I-CO(FTW) - HYDRAULIC PARAMETERS

ID	LENGTH (ft)	DEPRESSION WIDTH (ft)	DEPRESSION DEPTH (ft)	CURB OPENING (ft)
I-CO(FTW)-5'-5"CURB	5	1.333	0.333	0.417
I-CO(FTW)-10'-5"CURB	10	1.333	0.333	0.417
I-CO(FTW)-15'-5"CURB	15	1.333	0.333	0.417
I-CO(FTW)-20'-5"CURB	20	1.333	0.333	0.417
I-CO(FTW)-5'-6"CURB	5	1.333	0.333	0.490
I-CO(FTW)-10'-6"CURB	10	1.333	0.333	0.490
I-CO(FTW)-15'-6"CURB	15	1.333	0.333	0.490
I-CO(FTW)-20'-6"CURB	20	1.333	0.333	0.490
I-CO(FTW)-5'-7"CURB	5	1.333	0.333	0.521
I-CO(FTW)-10'-7"CURB	10	1.333	0.333	0.521
I-CO(FTW)-15'-7"CURB	15	1.333	0.333	0.521
I-CO(FTW)-20'-7"CURB	20	1.333	0.333	0.521
I-CO(FTW)-5'-8"CURB	5	1.333	0.333	0.542
I-CO(FTW)-10'-8"CURB	10	1.333	0.333	0.542
I-CO(FTW)-15'-8"CURB	15	1.333	0.333	0.542
I-CO(FTW)-20'-8"CURB	20	1.333	0.333	0.542

Note: Any deviation from the inlet hydraulic parameters listed above requires Ft. Worth District Hydraulics Engineer approval.

I-CO-C(FTW) - HYDRAULIC PARAMETERS

ID	LENGTH (ft)	DEPRESSION WIDTH (ft)	DEPRESSION DEPTH (ft)	CURB OPENING (ft)
I-CO-C(FTW)-5'-5"CURB	5	1.333	0.333	0.417
I-CO-C(FTW)-10'-5"CURB	10	1.333	0.333	0.417
I-CO-C(FTW)-15'-5"CURB	15	1.333	0.333	0.417
I-CO-C(FTW)-20'-5"CURB	20	1.333	0.333	0.417
I-CO-C(FTW)-5'-6"CURB	5	1.333	0.333	0.490
I-CO-C(FTW)-10'-6"CURB	10	1.333	0.333	0.490
I-CO-C(FTW)-15'-6"CURB	15	1.333	0.333	0.490
I-CO-C(FTW)-20'-6"CURB	20	1.333	0.333	0.490
I-CO-C(FTW)-5'-7"CURB	5	1.333	0.333	0.521
I-CO-C(FTW)-10'-7"CURB	10	1.333	0.333	0.521
I-CO-C(FTW)-15'-7"CURB	15	1.333	0.333	0.521
I-CO-C(FTW)-20'-7"CURB	20	1.333	0.333	0.521
I-CO-C(FTW)-5'-8"CURB	5	1.333	0.333	0.542
I-CO-C(FTW)-10'-8"CURB	10	1.333	0.333	0.542
I-CO-C(FTW)-15'-8"CURB	15	1.333	0.333	0.542
I-CO-C(FTW)-20'-8"CURB	20	1.333	0.333	0.542

Note: Any deviation from the inlet hydraulic parameters listed above requires Ft. Worth District Hydraulics Engineer approval.

I-CU(FTW) - HYDRAULIC PARAMETERS

ID	LENGTH (ft)	DEPRESSION WIDTH (ft)	DEPRESSION DEPTH (ft)	CURB OPENING (ft)
I-CU(FTW)-5'-5"CURB	5	1.333	0.333	0.417
I-CU(FTW)-10'-5"CURB	10	1.333	0.333	0.417
I-CU(FTW)-15'-5"CURB	15	1.333	0.333	0.417
I-CU(FTW)-20'-5"CURB	20	1.333	0.333	0.417
I-CU(FTW)-5'-6"CURB	5	1.333	0.333	0.490
I-CU(FTW)-10'-6"CURB	10	1.333	0.333	0.490
I-CU(FTW)-15'-6"CURB	15	1.333	0.333	0.490
I-CU(FTW)-20'-6"CURB	20	1.333	0.333	0.490
I-CU(FTW)-5'-7"CURB	5	1.333	0.333	0.521
I-CU(FTW)-10'-7"CURB	10	1.333	0.333	0.521
I-CU(FTW)-15'-7"CURB	15	1.333	0.333	0.521
I-CU(FTW)-20'-7"CURB	20	1.333	0.333	0.521
I-CU(FTW)-5'-8"CURB	5	1.333	0.333	0.542
I-CU(FTW)-10'-8"CURB	10	1.333	0.333	0.542
I-CU(FTW)-15'-8"CURB	15	1.333	0.333	0.542
I-CU(FTW)-20'-8"CURB	20	1.333	0.333	0.542

Note: Any deviation from the inlet hydraulic parameters listed above requires Ft. Worth District Hydraulics Engineer approval.

I-CU-C(FTW) - HYDRAULIC PARAMETERS

ID	LENGTH (ft)	DEPRESSION WIDTH (ft)	DEPRESSION DEPTH (ft)	CURB OPENING (ft)
I-CU-C(FTW)-5'-5"CURB	5	1.333	0.333	0.417
I-CU-C(FTW)-10'-5"CURB	10	1.333	0.333	0.417
I-CU-C(FTW)-15'-5"CURB	15	1.333	0.333	0.417
I-CU-C(FTW)-20'-5"CURB	20	1.333	0.333	0.417
I-CU-C(FTW)-5'-6"CURB	5	1.333	0.333	0.490
I-CU-C(FTW)-10'-6"CURB	10	1.333	0.333	0.490
I-CU-C(FTW)-15'-6"CURB	15	1.333	0.333	0.490
I-CU-C(FTW)-20'-6"CURB	20	1.333	0.333	0.490
I-CU-C(FTW)-5'-7"CURB	5	1.333	0.333	0.521
I-CU-C(FTW)-10'-7"CURB	10	1.333	0.333	0.521
I-CU-C(FTW)-15'-7"CURB	15	1.333	0.333	0.521
I-CU-C(FTW)-20'-7"CURB	20	1.333	0.333	0.521
I-CU-C(FTW)-5'-8"CURB	5	1.333	0.333	0.542
I-CU-C(FTW)-10'-8"CURB	10	1.333	0.333	0.542
I-CU-C(FTW)-15'-8"CURB	15	1.333	0.333	0.542
I-CU-C(FTW)-20'-8"CURB	20	1.333	0.333	0.542

I-SSB(FTW) - ROADWAY CURB HYDRAULIC PARAMETERS

ID	LENGTH (ft)	DEPRESSION WIDTH (ft)	DEPRESSION DEPTH (ft)	CURB OPENING (ft)
I-SSB(FTW)	10	3.417	0.208	0.438

Note: Any deviation from the inlet hydraulic parameters listed above requires Ft. Worth District Hydraulics Engineer approval.

I-C-OB(FTW) - ROADWAY CURB HYDRAULIC PARAMETERS

ID	LENGTH (ft)	DEPRESSION WIDTH (ft)	DEPRESSION DEPTH (ft)	CURB OPENING (ft)
I-C-OB(FTW)-5'-5"CURB	5	1.333	0.333	0.417
I-C-OB(FTW)-10'-5"CURB	10	1.333	0.333	0.417
I-C-OB(FTW)-15'-5"CURB	15	1.333	0.333	0.417
I-C-OB(FTW)-20'-5"CURB	20	1.333	0.333	0.417
I-C-OB(FTW)-5'-6"CURB	5	1.333	0.333	0.490
I-C-OB(FTW)-10'-6"CURB	10	1.333	0.333	0.490
I-C-OB(FTW)-15'-6"CURB	15	1.333	0.333	0.490
I-C-OB(FTW)-20'-6"CURB	20	1.333	0.333	0.490
I-C-OB(FTW)-5'-7"CURB	5	1.333	0.333	0.521
I-C-OB(FTW)-10'-7"CURB	10	1.333	0.333	0.521
I-C-OB(FTW)-15'-7"CURB	15	1.333	0.333	0.521
I-C-OB(FTW)-20'-7"CURB	20	1.333	0.333	0.521
I-C-OB(FTW)-5'-8"CURB	5	1.333	0.333	0.542
I-C-OB(FTW)-10'-8"CURB	10	1.333	0.333	0.542
I-C-OB(FTW)-15'-8"CURB	15	1.333	0.333	0.542
I-C-OB(FTW)-20'-8"CURB	20	1.333	0.333	0.542

I-C-OB(FTW) - OPEN BACK REAR OPENING HYDRAULIC PARAMETERS

ID	LENGTH (ft)	DEPRESSION WIDTH (ft)	DEPRESSION DEPTH (ft)	CURB OPENING (ft)
I-C-OB(FTW)-5'-5"CURB	5	1.500	0.125	1.000
I-C-OB(FTW)-10'-5"CURB	10	1.500	0.125	1.000
I-C-OB(FTW)-15'-5"CURB	15	1.500	0.125	1.000
I-C-OB(FTW)-20'-5"CURB	20	1.500	0.125	1.000
I-C-OB(FTW)-5'-6"CURB	5	1.500	0.125	1.000
I-C-OB(FTW)-10'-6"CURB	10	1.500	0.125	1.000
I-C-OB(FTW)-15'-6"CURB	15	1.500	0.125	1.000
I-C-OB(FTW)-20'-6"CURB	20	1.500	0.125	1.000
I-C-OB(FTW)-5'-7"CURB	5	1.500	0.125	1.000
I-C-OB(FTW)-10'-7"CURB	10	1.500	0.125	1.000
I-C-OB(FTW)-15'-7"CURB	15	1.500	0.125	1.000
I-C-OB(FTW)-20'-7"CURB	20	1.500	0.125	1.000
I-C-OB(FTW)-5'-8"CURB	5	1.500	0.125	1.000
I-C-OB(FTW)-10'-8"CURB	10	1.500	0.125	1.000
I-C-OB(FTW)-15'-8"CURB	15	1.500	0.125	1.000
I-C-OB(FTW)-20'-8"CURB	20	1.500	0.125	1.000

Note: Any deviation from the inlet hydraulic parameters listed above requires Ft. Worth District Hydraulics Engineer approval.

I-C-OB-C(FTW) - ROADWAY CURB HYDRAULIC PARAMETERS

ID	LENGTH (ft)	DEPRESSION WIDTH (ft)	DEPRESSION DEPTH (ft)	CURB OPENING (ft)
I-C-OB-C(FTW)-5'-5"CURB	5	1.333	0.333	0.417
I-C-OB-C(FTW)-10'-5"CURB	10	1.333	0.333	0.417
I-C-OB-C(FTW)-15'-5"CURB	15	1.333	0.333	0.417
I-C-OB-C(FTW)-20'-5"CURB	20	1.333	0.333	0.417
I-C-OB-C(FTW)-5'-6"CURB	5	1.333	0.333	0.490
I-C-OB-C(FTW)-10'-6"CURB	10	1.333	0.333	0.490
I-C-OB-C(FTW)-15'-6"CURB	15	1.333	0.333	0.490
I-C-OB-C(FTW)-20'-6"CURB	20	1.333	0.333	0.490
I-C-OB-C(FTW)-5'-7"CURB	5	1.333	0.333	0.521
I-C-OB-C(FTW)-10'-7"CURB	10	1.333	0.333	0.521
I-C-OB-C(FTW)-15'-7"CURB	15	1.333	0.333	0.521
I-C-OB-C(FTW)-20'-7"CURB	20	1.333	0.333	0.521
I-C-OB-C(FTW)-5'-8"CURB	5	1.333	0.333	0.542
I-C-OB-C(FTW)-10'-8"CURB	10	1.333	0.333	0.542
I-C-OB-C(FTW)-15'-8"CURB	15	1.333	0.333	0.542
I-C-OB-C(FTW)-20'-8"CURB	20	1.333	0.333	0.542

I-C-OB-C(FTW) - OPEN BACK REAR OPENING HYDRAULIC PARAMETERS

ID	LENGTH (ft)	DEPRESSION WIDTH (ft)	DEPRESSION DEPTH (ft)	CURB OPENING (ft)
I-C-OB-C(FTW)-5'-5"CURB	5	1.500	0.125	1.000
I-C-OB-C(FTW)-10'-5"CURB	10	1.500	0.125	1.000
I-C-OB-C(FTW)-15'-5"CURB	15	1.500	0.125	1.000
I-C-OB-C(FTW)-20'-5"CURB	20	1.500	0.125	1.000
I-C-OB-C(FTW)-5'-6"CURB	5	1.500	0.125	1.000
I-C-OB-C(FTW)-10'-6"CURB	10	1.500	0.125	1.000
I-C-OB-C(FTW)-15'-6"CURB	15	1.500	0.125	1.000
I-C-OB-C(FTW)-20'-6"CURB	20	1.500	0.125	1.000
I-C-OB-C(FTW)-5'-7"CURB	5	1.500	0.125	1.000
I-C-OB-C(FTW)-10'-7"CURB	10	1.500	0.125	1.000
I-C-OB-C(FTW)-15'-7"CURB	15	1.500	0.125	1.000
I-C-OB-C(FTW)-20'-7"CURB	20	1.500	0.125	1.000
I-C-OB-C(FTW)-5'-8"CURB	5	1.500	0.125	1.000
I-C-OB-C(FTW)-10'-8"CURB	10	1.500	0.125	1.000
I-C-OB-C(FTW)-15'-8"CURB	15	1.500	0.125	1.000
I-C-OB-C(FTW)-20'-8"CURB	20	1.500	0.125	1.000

Note: Any deviation from the inlet hydraulic parameters listed above requires Ft. Worth District Hydraulics Engineer approval.

Grated Inlet Parameters

AREA/DITCH GRATED INLET HYDRAULIC PARAMETERS

STANDARD NAME	INLET SIDES	GRATE TYPE	LENGTH (FT)	WIDTH (FT)	GRATED AREA REDUCTION FACTOR	GRATED AREA (SQ. FT)	UNGRATED AREA REDUCTION FACTOR[1]	UNGRATED AREA (SQ. FT)	PERIMETER (FT)	PERIMETER REDUCTION FACTOR[2]	TOTAL ORIFICE AREA[3] (AFTER REDUCTION) (SQ FT.)	TOTAL WEIR PERIMETER LENGTH[3] (AFTER REDUCTION) (FT.)
I-AD(FTW)	4-SIDED	Parallel	3.000	3.500	0.5	6.018	1	3.36	15.771	1	**6.369**	**15.771**
I-AD-2(FTW)	4-SIDED	Parallel	6.000	3.500	0.5	12.036	1	6.72	25.542	1	**12.738**	**25.542**

Notes[1]: Reduction factor for clogging. Reduction factor of 1 is no reduction.

Notes[2]: Clogging reduction factor for grate-L dimension has minimal effect on capacity during weir flow. Therefore, no clogging reduction is needed during weir flow.

Notes[3]: Clogging reduction factor already factored in total values.

RETAINING WALL FLUME GRATED INLET HYDRAULIC PARAMETERS

STANDARD NAME	INLET SIDES	GRATE TYPE	LENGTH (FT)	WIDTH (FT)	GRATED AREA REDUCTION FACTOR	GRATED AREA (SQ. FT)	UNGRATED AREA REDUCTION FACTOR[1]	UNGRATED AREA (SQ. FT)	PERIMETER (FT)	PERIMETER REDUCTION FACTOR[2]	TOTAL ORIFICE AREA[3] (AFTER REDUCTION) (SQ FT.)	TOTAL WEIR PERIMETER LENGTH[3] (AFTER REDUCTION) (FT.)
I-RWF	4-SIDED	Parallel	1.500	2.000	0.5	1.219	1	1.68	9.833	1	**2.2895**	**9.833**

Notes[1]: Reduction factor for clogging. Reduction factor of 1 is no reduction.

Notes[2]: Clogging reduction factor for grate-L dimension has minimal effect on capacity during weir flow. Therefore, no clogging reduction is needed during weir flow.

Notes[3]: Clogging reduction factor already factored in total values.

PAVEMENT GRATED INLET HYDRAULIC PARAMETERS

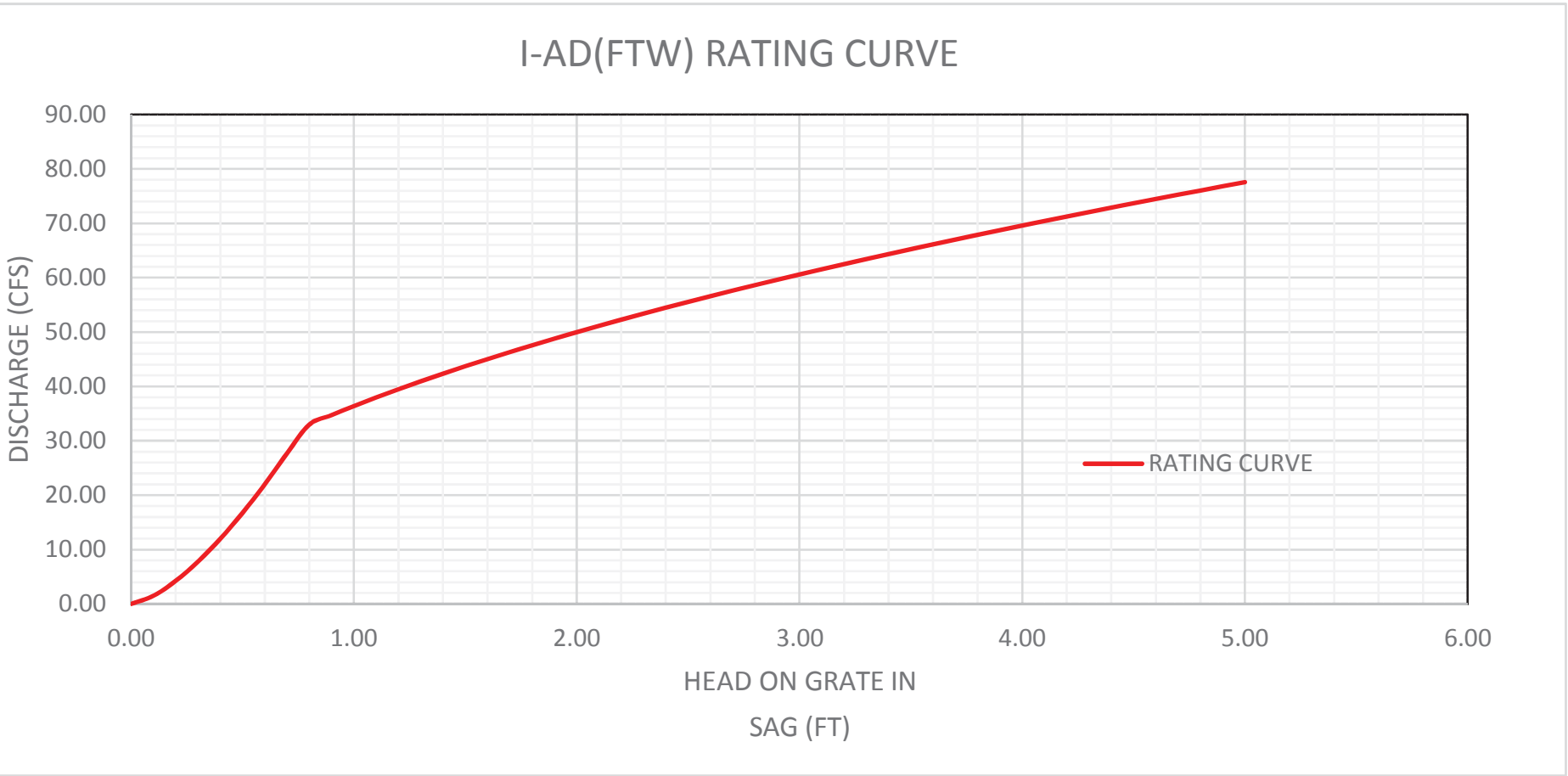
STANDARD NAME	INLET SIDES	GRATE TYPE	LENGTH (FT)	WIDTH (FT)	GRATED AREA REDUCTION FACTOR[1]	GRATED AREA (SQ. FT)	PERIMETER (FT)	PERIMETER REDUCTION FACTOR[1]	TOTAL ORIFICE AREA[2] (AFTER REDUCTION) (SQ FT.)	TOTAL WEIR PERIMETER LENGTH[2] (AFTER REDUCTION) (FT.)
I-FG(FTW)	3-SIDED	Parallel	3.542	3.375	0.5	6.903	8.667	0.5	**3.4515**	**4.334**
I-FG-2(FTW)	3-SIDED	Parallel	7.084	3.375	0.5	13.806	12.083	0.5	**6.903**	**6.042**

Notes[1]: Reduction factor of 50% for clogging.

Notes[2]: Clogging reduction factor already factored in total values.

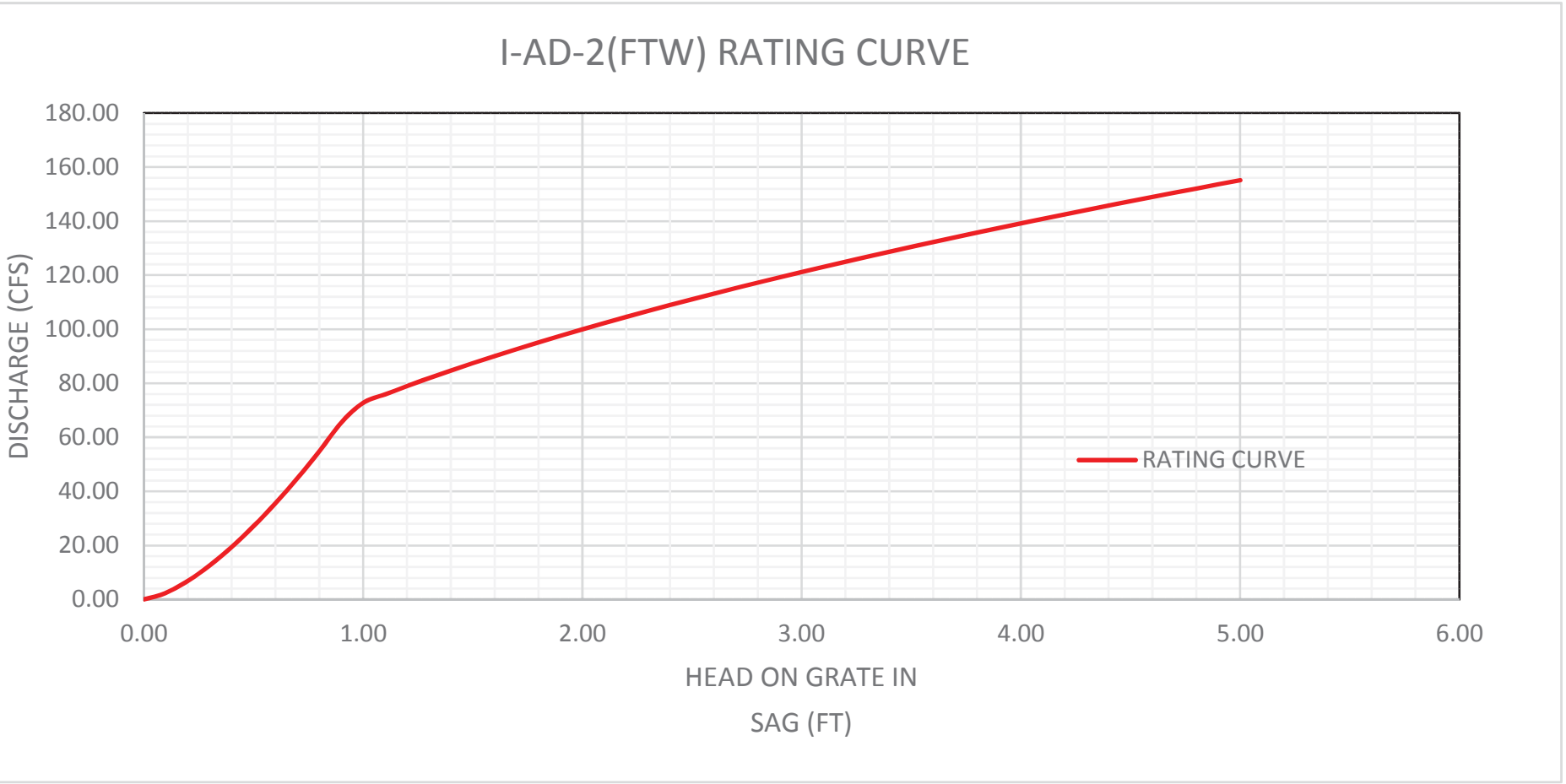
Note: Any deviation from the inlet hydraulic parameters listed above requires Ft. Worth District Hydraulics Engineer approval.

Rating Curves



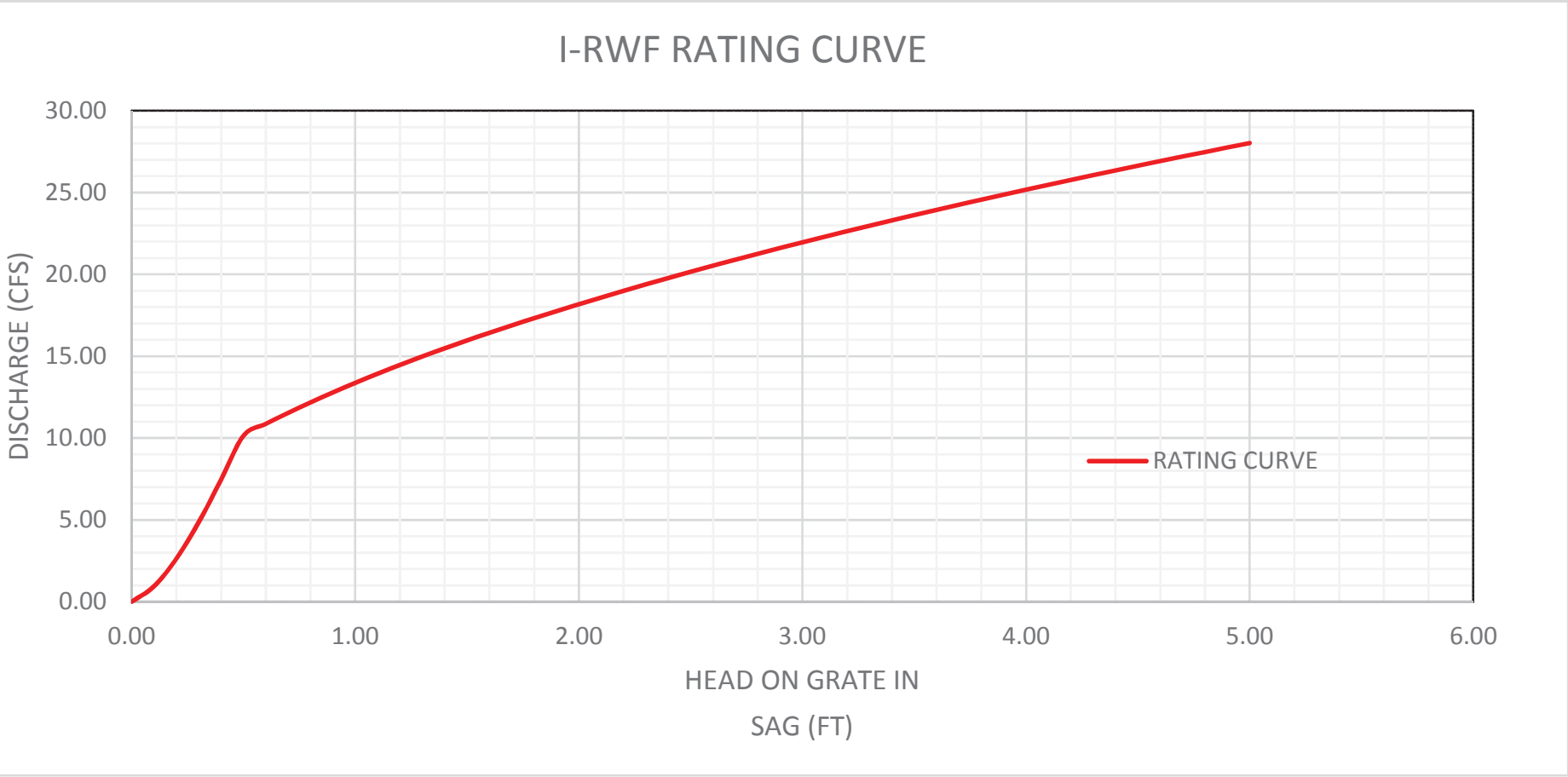
Note: Rating curves are meant to be used for preliminary engineering only. Hydraulic calculations for inlet design are required for review on the construction plans.

Rating Curve for I-AD(FTW)	
h	Q
(ft)	(cfs)
0.00	0.00
0.10	1.50
0.20	4.23
0.30	7.77
0.40	11.97
0.50	16.73
0.60	21.99
0.70	27.71
0.80	32.98
0.90	34.72
1.00	36.38
1.10	37.96
1.20	39.48
1.30	40.94
1.40	42.35
1.50	43.71
1.60	45.04
1.70	46.32
1.80	47.57
1.90	48.79
2.00	49.98
2.10	51.14
2.20	52.27
2.30	53.38
2.40	54.47
2.50	55.54
2.60	56.59
2.70	57.61
2.80	58.62
2.90	59.61
3.00	60.59
3.10	61.55
3.20	62.50
3.30	63.43
3.40	64.35
3.50	65.25
3.60	66.14
3.70	67.03
3.80	67.89
3.90	68.75
4.00	69.60
4.10	70.44
4.20	71.27
4.30	72.08
4.40	72.89
4.50	73.69
4.60	74.48
4.70	75.27
4.80	76.04
4.90	76.81
5.00	77.57



Note: Rating curves are meant to be used for preliminary engineering only. Hydraulic calculations for inlet design are required for review on the construction plans.

Rating Curve for I-AD-2(FTW)	
h	Q
(ft)	(cfs)
0.00	0.00
0.10	2.42
0.20	6.85
0.30	12.59
0.40	19.39
0.50	27.09
0.60	35.61
0.70	44.88
0.80	54.83
0.90	65.42
1.00	72.75
1.10	75.92
1.20	78.95
1.30	81.88
1.40	84.70
1.50	87.43
1.60	90.07
1.70	92.64
1.80	95.14
1.90	97.58
2.00	99.96
2.10	102.28
2.20	104.55
2.30	106.77
2.40	108.95
2.50	111.08
2.60	113.17
2.70	115.23
2.80	117.24
2.90	119.23
3.00	121.18
3.10	123.10
3.20	124.99
3.30	126.86
3.40	128.69
3.50	130.50
3.60	132.29
3.70	134.05
3.80	135.79
3.90	137.51
4.00	139.20
4.10	140.88
4.20	142.53
4.30	144.17
4.40	145.79
4.50	147.39
4.60	148.97
4.70	150.54
4.80	152.09
4.90	153.62
5.00	155.14



Note: Rating curves are meant to be used for preliminary engineering only. Hydraulic calculations for inlet design are required for review on the construction plans.

Rating Curve for I-RWF	
h	Q
(ft)	(cfs)
0.00	0.00
0.10	0.93
0.20	2.64
0.30	4.85
0.40	7.46
0.50	10.14
0.60	10.87
0.70	11.55
0.80	12.19
0.90	12.80
1.00	13.38
1.10	13.93
1.20	14.47
1.30	14.98
1.40	15.48
1.50	15.96
1.60	16.43
1.70	16.89
1.80	17.33
1.90	17.76
2.00	18.18
2.10	18.60
2.20	19.00
2.30	19.39
2.40	19.78
2.50	20.16
2.60	20.53
2.70	20.90
2.80	21.26
2.90	21.61
3.00	21.96
3.10	22.30
3.20	22.64
3.30	22.97
3.40	23.30
3.50	23.62
3.60	23.94
3.70	24.26
3.80	24.57
3.90	24.87
4.00	25.18
4.10	25.48
4.20	25.77
4.30	26.06
4.40	26.35
4.50	26.64
4.60	26.92
4.70	27.20
4.80	27.48
4.90	27.75
5.00	28.02