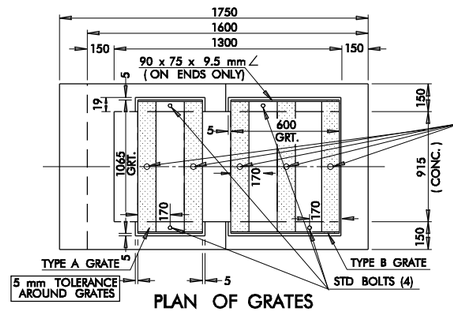
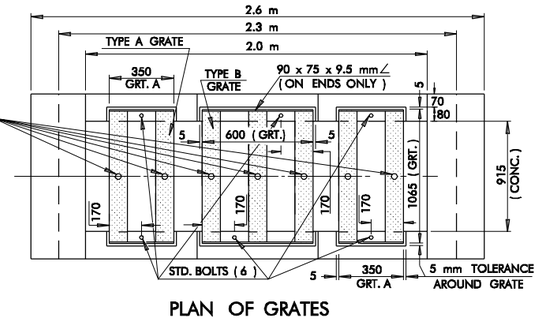
REVISIONS		
DESCRIPTION		DATE
RE-ISSUE W/METRIC 1999 SPECS.		7/99



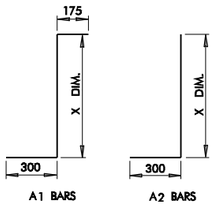
PLAN OF GRATES

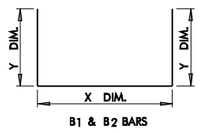
6 mm DIA. (MAX.) DRAIN HOLES TO BE PUNCHED OR DRILLED THROUGH BOTTOM SIDE OF STEEL PIPE AT THE MID POINT, AS SHOWN FOR GRATES THAT ARE HOT–DIPPED GALVANIZED ONLY.

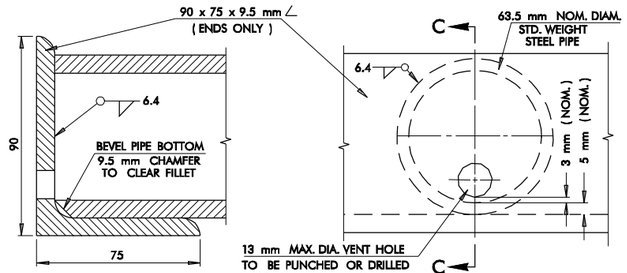


PLAN OF GRATES

NOTE: REINF. STEEL TO BE CUT AND/OR BENT TO CLEAR PIPE IN FIELD.



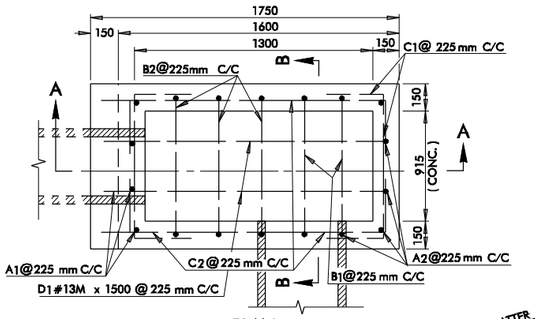




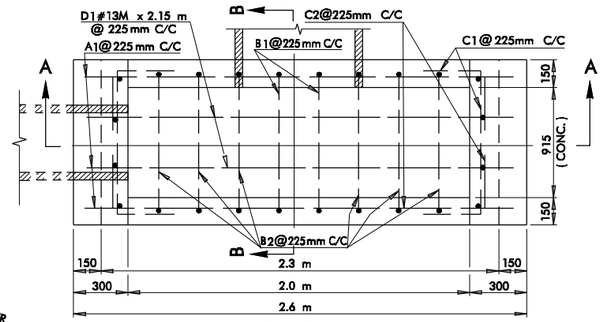
SECTION C – C

13 mm MAX. DIA. VENT HOLE TO BE PUNCHED OR DRILLED THROUGH EACH ANGLE AS SHOWN FOR PIPE RUNNERS (GRATES) THAT ARE HOT–DIP GALVANIZED ONLY.

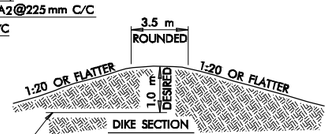
DETAIL VENT HOLE



PLAN

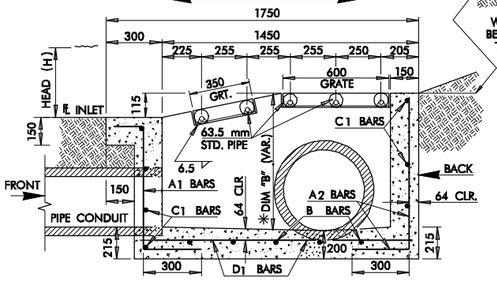


PLAN

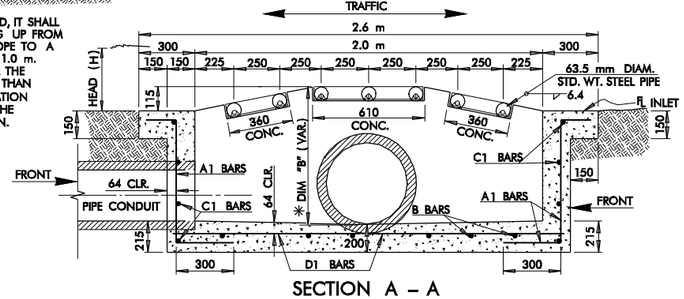


DIKE SECTION

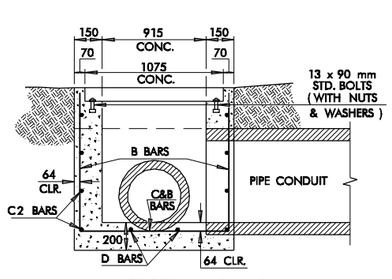
WHEN A DIKE IS REQUIRED, IT SHALL BE CONSTRUCTED SLOPING UP FROM THE INLET IN A 1:20 SLOPE TO A DESIRABLE HEIGHT OF 1.0 m. IN NO CASE SHALL THE DIKE TOP BE HIGHER THAN THE SUBGRADE ELEVATION AT THE EDGE OF THE GRADING SECTION.



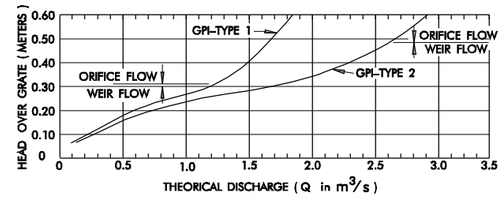
SECTION A – A
TYPE 1



SECTION A – A
TYPE 2



SECTION B – B



HYDRAULIC PERFORMANCE CHART

TO ALLOW FOR CLOGGING 60% THEORETICAL DISCHARGE IS THE RECOMMENDED FACTOR TO USE IN AREAS SUBJECT TO DEBRIS.

GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE 1999 METRIC STANDARD SPECIFICATIONS.
2. EXPOSED CONCRETE EDGES SHALL HAVE A 20 mm CHAMFER, OR AN APPROVED ROUNDED EDGING. ALL EXPOSED SURFACES SHALL BE FINISHED IN ACCORDANCE WITH SECTION 509 OF THE 1999 METRIC STANDARD SPECIFICATIONS.
3. VENT HOLES AND DRAIN HOLES FOR HOT–DIP GALVANIZATION SHALL BE DRILLED OR PUNCHED IN THE GRATE AS SHOWN.
4. ALL REINFORCING STEEL SHALL BE NO. 13M DEFORMED BARS.
5. WHEN INLET DEPTH B (✳) EXCEEDS VALUE LISTED IN TABLE SUMMARY SHOWN IN LOWER LEFT CORNER OF SHEET, THE ADDITIONAL DEPTH SHALL BE PAID FOR AS 'ADDITIONAL DEPTH IN INLET'. SPECIFIC ADDITIONAL DEPTH DATA FOR EACH STRUCTURE SHALL BE SHOWN ON THE PLANS.

BASIS OF PAYMENT		
ITEM NO.	ITEM	UNIT
611.06 (E)	INLET ●	EACH
611.06 (F)	ADDITIONAL DEPTH IN INLET ●	METER

● TYPE & DESIGN NO. OF GRATED PIPE INLET SHALL BE SPECIFIED.

NOTE: COST OF INLET PIPE GRATES (TYPES A & B) SHALL BE INCLUDED IN THE PRICE BID FOR THE INLET.

		DESIGN NO.	PIPE SIZE		✳ MIN. DIM. "B"	CLASS A CONC.	REINF. STEEL	CONC. PER ADD'L METER DEPTH	REINF. STEEL PER ADD'L METER DEPTH	"A1" BARS BENT #13M AT 225 C/C			"A2 " BARS BENT #13M AT 225 C/C			"B 1 " BARS BENT #13M AT 225 C/C				"B 2 " BARS BENT #13M AT 225 C/C				"C1" BARS BENT #13M AT 225 C/C			"C2" BARS BENT #13M AT 225 C/C			"D1" BARS STRAIGHT #13M AT 225 C/C	
			in.	mm	mm	m^3	kg	m^3	kg	NO	LGTH	X DIM.	NO	LGTH	X DIM.	NO	LGTH	X DIM.	Y DIM.	NO	LGTH	X DIM.	Y DIM.	NO	LGTH	X DIM.	NO	LGTH	X DIM.	NO	LGTH
TYPE 1	PIPE AT SIDES OR BACK	1	24	600	945	1.07	73.5	0.24	16.6	6	1345	865	6	1290	990	2	3073	1090	990	3	2920 AVG.	1090	865 to 965	10	1665	1065	10	2050	1450	4	1500
		2	30	750	1110	1.16	78.9	0.24	16.6	6	1525	1040	6	1445	1145	2	3378	1090	1145	3	3225 AVG.	1090	990 to 1120	11	1665	1065	10	2050	1450	4	1500
		3	36	900	1275	1.25	89.8	0.24	16.6	6	1675	1195	6	1620	1320	2	3734	1090	1320	3	3580 AVG.	1090	1195 to 1295	13	1665	1065	12	2050	1450	4	1500
		4	42	1050	1440	1.32	99.3	0.24	16.6	6	1370	1370	6	1775	1475	2	4039	1090	1475	3	3885 AVG.	1090	1345 to 1450	14	1665	1065	14	2050	1450	4	1500
	PIPE AT FRONT	5	18/24	450/600	1110	1.20	78.9	0.24	16.6	6	1855	1040	6	1445	1145	2	3378	1090	1145	3	3225 AVG.	1090	990 to 1120	11	1665	1065	10	2050	1450	4	1500
		6	30	750	1275	1.29	89.8	0.24	16.6	6	1675	1195	6	1620	1320	2	3734	1090	1320	3	3590 AVG.	1090	1195 to 1295	13	1665	1065	12	2050	1450	4	1500
		7	36	900	1440	1.37	99.3	0.24	16.6	6	1370	1370	6	1775	1475	2	4039	1090	1475	3	3885 AVG.	1090	1345 to 1450	14	1665	1065	14	2050	1450	4	1500
TYPE 2	PIPE AT SIDES	8	24	600	945	1.45	92.5	0.29	20.2	12	1345	865				2	3073	1090	990	6	2920 AVG.	1090	865 to 965	10	1665	1065	10	2735	2135	4	2185
		9	30	750	1110	1.57	96.6	0.29	20.2	12	1525	1040				2	3378	1090	1145	6	3225 AVG.	1090	990 to 1120	10	1665	1065	10	2735	2135	4	2185
		10	36	900	1275	1.69	110.2	0.29	20.2	12	1675	1195				2	3734	1090	1320	6	3580 AVG.	1090	1195 to 1295	12	1665	1065	12	2735	2135	4	2185
		11	42	1050	1440	1.79	123.4	0.29	20.2	12	1370	1370				2	4039	1090	1475	6	3885 AVG.	1090	1345 to 1450	14	1665	1065	14	2735	2135	4	2185
	PIPE AT FRONT	11A	48	1200	1605	1.92	137.0	0.29	20.2	12	1855	1525				2	4343	1090	1625	6	4190 AVG.	1090	1525 to 1625	16	1665	1065	16	2735	2135	4	2185
		12	18/24	450/600	1110	1.61	96.6	0.29	20.2	12	2005	1040				2	3378	1090	1145	6	3225 AVG.	1090	990 to 1120	10	1665	1065	10	2735	2135	4	2185
		13	30	750	1275	1.73	110.2	0.29	20.2	12	1675	1195				2	3734	1090	1320	6	3590 AVG.	1090	1195 to 1295	12	1665	1065	12	2735	2135	4	2185
		14	36	900	1440	1.85	123.4	0.29	20.2	12	1370	1370				2	4039	1090	1475	6	3885 AVG.	1090	1345 to 1450	14	1665	1065	14	2735	2135	4	2185

APPROVED BY ROADWAY ENGINEER — DATE

OKLAHOMA DEPT. OF TRANSPORTATION
ROADWAY STANDARD (METRIC)

GRATED PIPE INLET
(450 mm – 1050 mm PIPE)

1999 SPECIFICATIONS	GPI–3	00M
ALL DIMENSIONS ON THIS SHEET IN MILLIMETERS UNLESS OTHERWISE NOTED.		R–77M