

**CONCRETE QUANTITY REDUCTION TABLE**

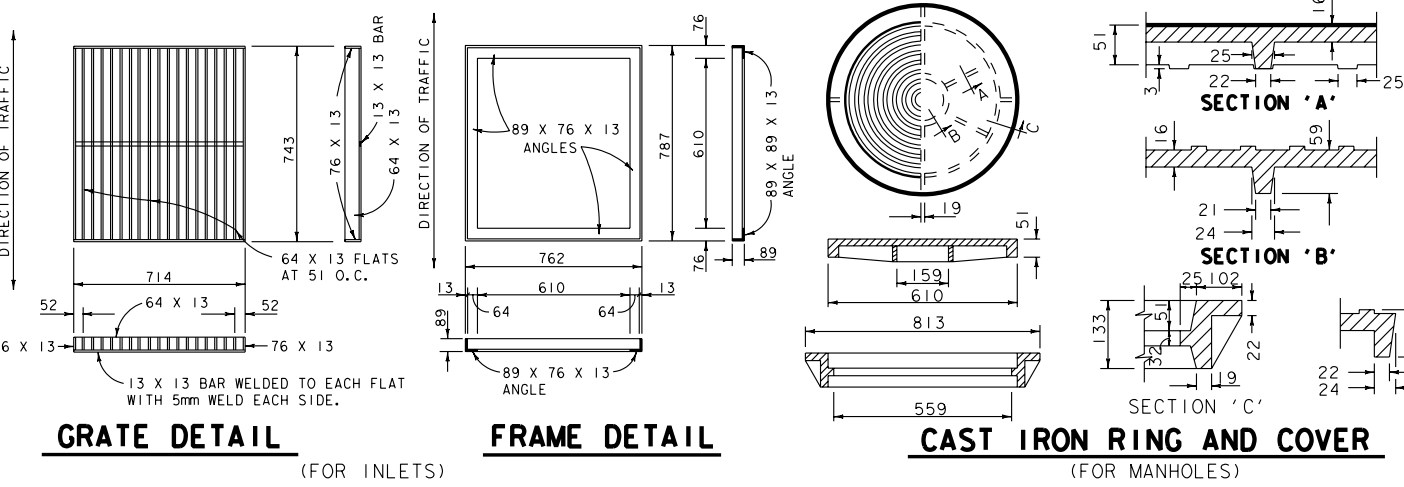
Pipe Diameter (mm)	Reduction One Pipe (m <sup>3</sup> )
375	0.03
450	0.04
525	0.06
600	0.07
675	0.08
750	0.11
825	0.13
900	0.15
1050	0.20
1200	0.27

**TYPE "U" GRATED INLET AND MANHOLE QUANTITIES**

BARS	SIZE	SPAC.	D = 915		D = 1220		D = 1525		D = 1830		D = 2135		D = 3050		D = 6095		D = 9145										
			NO.	LNTH.	WT.	NO.	LNTH.	WT.	NO.	LNTH.	WT.	NO.	LNTH.	WT.	NO.	LNTH.	WT.	NO.	LNTH.	WT.							
A1	No. 4	305	6	2388	14	8	2388	19	10	2388	24	12	2388	29	14	2388	33	20	2388	48	30	2388	71	30	2388	71	
A2	No. 4	305																									
B	No. 4	-	2	1778	4	2	1778	4	2	1778	4	2	1778	4	2	1778	4	2	1778	4	2	1778	4	2	1778	4	
C1	No. 4	305	6	2972	18	6	3581	21	6	4191	25	6	4801	29	6	5410	32	6	7239	43							
C2	No. 4	305																									
D	No. 4	-	4	762	3	4	762	3	4	762	3	4	762	3	4	762	3	4	762	3	4	762	3	4	762	3	
E	No. 4	-	12	483	6	12	483	6	12	483	6	12	483	6	12	483	6	12	483	6	12	483	6	12	483	6	
STEPS	No. 6	305	1	864	2	2	864	4	3	864	6	3	864	8	5	864	10	8	864	15	18	864	35	28	864	54	
TOTAL STEEL - kg			46		57		67		78		88		119		225		330		487		765		1117		1700		
CLASS "A" CONC. - m <sup>3</sup>			1.10		1.30		1.50		1.70		1.90		2.48		4.87		7.65		12.48		20.48		33.00		52.00		
D = 915 TO D = 4570			kg STEEL	46 + 33.86	kg/m																						
D = 4570 TO D = 9145			m <sup>3</sup> CONC.	1.10 + 0.650	m <sup>3</sup> /m																						

**TYPE "V" GRATED INLET AND MANHOLE QUANTITIES**

BARS	SIZE	SPAC.	C = 455		C = 610		C = 915		C = 1220		C = 1525		C = 1830		C = 2135		C = 3050		C = 6095		C = 9145													
			NO.	LNTH.	WT.	X	LNTH.	WT.	NO.	LNTH.	WT.	NO.	LNTH.	WT.	NO.	LNTH.	WT.	NO.	LNTH.	WT.	NO.	LNTH.	WT.	NO.	LNTH.	WT.								
A1	No. 4	305	4	2388	10	4	2388	10	6	2388	14	8	2388	19	10	2388	24	12	2388	29	14	2388	33	20	2388	48	30	2388	71	30	2388	71		
A2	No. 4	305																																
B	No. 4	-	2	1778	4	2	1778	4	2	1778	4	2	1778	4	2	1778	4	2	1778	4	2	1778	4	2	1778	4	2	1778	4	2	1778	4		
C1	No. 4	305																																
C2	No. 4	305																																
D	No. 4	-	4	762	3	4	762	3	4	762	3	4	762	3	4	762	3	4	762	3	4	762	3	4	762	3	4	762	3	4	762	3		
E	No. 4	305	12	483	6	12	483	6	12	483	6	12	483	6	12	483	6	12	483	6	12	483	6	12	483	6	12	483	6	12	483	6		
STEPS	No. 6	305																																
TOTAL STEEL - kg			22		29		39		49		59		70		80		111		215		330		487		765		1117		1700		2700			
CLASS "A" CONC. - m <sup>3</sup>			0.50		0.60		0.80		0.99		1.19		1.39		1.59		2.18		4.56		7.35		12.48		20.48		33.00		52.00		84.00			
C = 455 TO C = 4570			kg STEEL	27 + 33.86	kg/m																													
C = 4570 TO C = 9145			m <sup>3</sup> CONC.	0.50 + 0.650	m <sup>3</sup> /m																													



- GENERAL NOTES:**
- ALL CONCRETE SHALL BE CLASS "A" CONCRETE.
  - ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTERS OF BARS. REINFORCING STEEL SHALL BE PLACED WITH THE CENTERS OF OUTSIDE LAYERS OF BARS 76mm FROM THE CONCRETE SURFACE WHERE THE WALL THICKNESS, T, IS 152mm AND SHALL BE PLACED WITH THE CENTERS OF OUTSIDE LAYERS OF BARS 102mm FROM THE CONCRETE SURFACE WHERE THE WALL THICKNESS, T, IS 203mm UNLESS OTHERWISE NOTED.
  - GRATE, FRAME, RING AND COVER SHALL CONFORM TO ITEM 471.
  - CONSTRUCT TOP TO CONFORM TO SLOPE OF SURFACE.
  - LOCATION GIVEN IN PLANS IS TO CENTROID OF TOP STRUCTURE. BOTTOM STRUCTURE MAY BE POSITIONED AS REQUIRED TO ALIGN WITH TOP STRUCTURE, STORM DRAIN PIPES AND OTHER ADJACENT STRUCTURES.
  - ALL DIMENSIONS ARE mm UNLESS SHOWN OTHERWISE.

REVISIONS:

Texas Department of Transportation

**TYPES "U" & "V" GRATED INLET & MANHOLE DETAILS**

MI-11 (FW) (M)

ORIG DRAW DATE: MAR. 1996

DESIGNER: 6

CHECKED: 6

DRAWN: FTW

FED. REG. STATE TEXAS

FEDERAL AID PROJ. NO. COUNTY TARRANT

CONTROL SECTION JOB SHEET