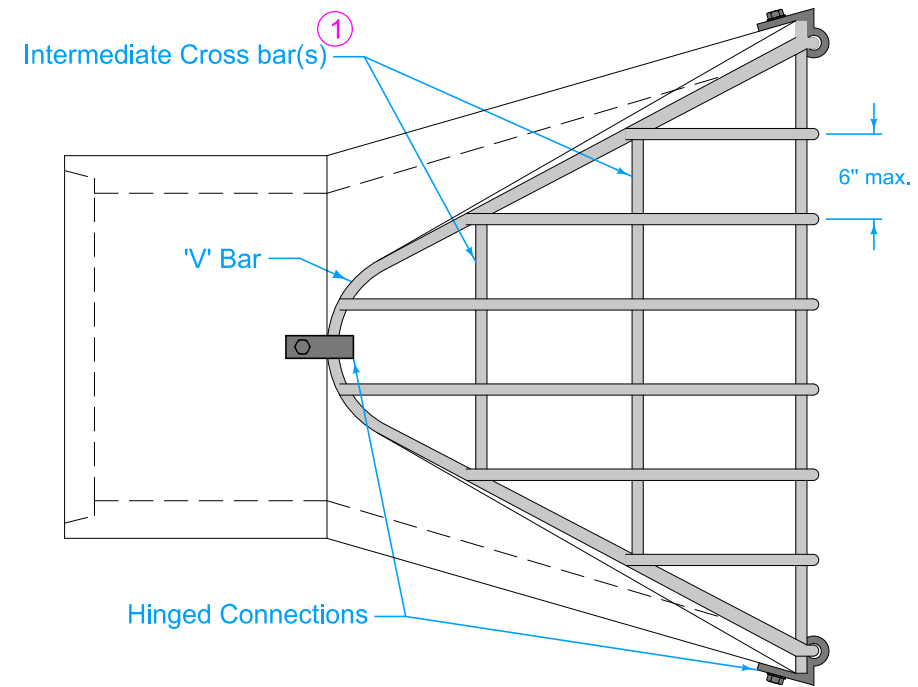
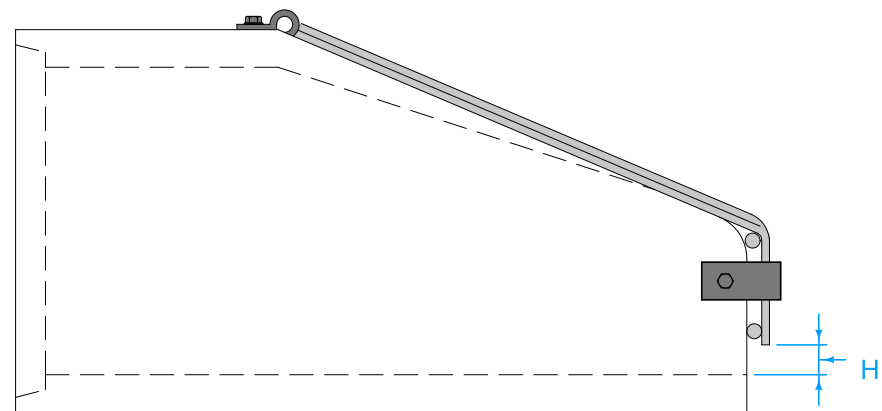


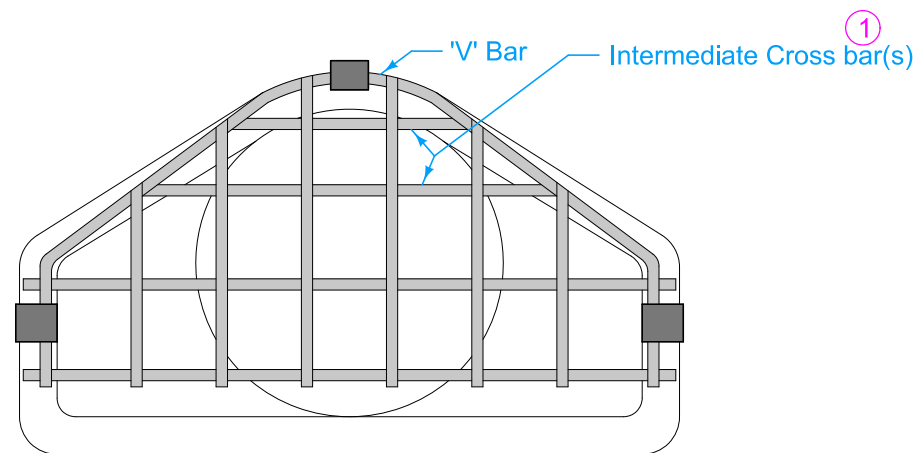
DESIGNER INFORMATION



PLAN



PROFILE



FRONT (Round Shown)

ROUND		ARCH		ELLIPTICAL	
PIPE SIZE	H	PIPE SIZE	H	PIPE SIZE	H
12"	2 $\frac{1}{2}$ "	22" x 14" to 29" x 18"	4"	23" x 14" to 30" x 19"	4"
15"	3"	37" x 23" to 44" x 27"	5"	38" x 24" to 45" x 29"	5"
18" - 24"	4"	52" x 32" to 65" x 40"	6"	53" x 34" to 68" x 43"	6"
27" - 36"	5"	73" x 45" to 88" x 54"	7"	76" x 48" to 91" x 58"	7"
42" - 54"	6"				
60" - 72"	7"				
78" - 90"	8"				

BAR SIZES				
	PIPE SIZE	HOLE DIA. REQ'D.	BOLT DIA.	BAR SIZE
ROUND	12" - 24"	$\frac{3}{4}$ "	$\frac{5}{8}$ "	$\frac{3}{4}$ "
	27" - 48"	$\frac{7}{8}$ "	$\frac{3}{4}$ "	1"
	54" - 90"	1 $\frac{1}{8}$ "	1"	1 $\frac{1}{4}$ "
ARCH	up to 29" x 18"	$\frac{3}{4}$ "	$\frac{5}{8}$ "	$\frac{3}{4}$ "
	37" x 23" to 59" x 36"	$\frac{7}{8}$ "	$\frac{3}{4}$ "	1"
	65" x 40" to 88" x 54"	1 $\frac{1}{8}$ "	1"	1 $\frac{1}{4}$ "
ELLIPTICAL	up to 30" x 19"	$\frac{3}{4}$ "	$\frac{5}{8}$ "	$\frac{3}{4}$ "
	38" x 24" to 60" x 38"	$\frac{7}{8}$ "	$\frac{3}{4}$ "	1"
	68" x 43" to 91" x 58"	1 $\frac{1}{8}$ "	1"	1 $\frac{1}{4}$ "

BOLT LENGTH = PIPE WALL THICKNESS + 2 $\frac{1}{2}$ "

Provide guard dimensions to fit with Type of apron provided (DR-201, DR-202, DR-205, or DR-206). 'V' Bar is to completely rest on apron.

Use Grade 40, Grade 60 or merchant quality, smoothed or deformed steel bars in construction of the guard. Comply with fabrication requirements of Section 2404 of the Standard Specifications.

Hot-dip galvanize the completed apron guard according to ASTM A123.

Use bolts, nuts, washers, and fasteners complying with Article 4153.06 of the Standard Specifications.

- ① All guards are to have at least one intermediate cross bar. If pipe size is 60 inches or greater, use two intermediate cross bars equally spaced.

Possible Tabulation:
104-3

	REVISION	
	3	10-18-22
STANDARD ROAD PLAN		DR-213
REVISIONS: Modified note about grade of steel.		SHEET 1 of 1
APPROVED BY DESIGN METHODS ENGINEER		
PIPE APRON GUARD		