



Provide guard dimensions to fit with Type of apron provided (RF-3, Type 1 or Type 2 or RF-42). V Bar to completely rest on apron.

Use ASTM A615, Grade 40, or merchant quality, smoothed or deformed steel bars in construction of the guard. Conform to fabrication requirements of Standard Specifications Section 2404.

Hot-dip galvanize the completed apron guard in accordance with ASTM A123.

① All guards 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

ROUND		ARCH	
PIPE SIZE	H	PIPE SIZE	H
12"	2½"	22" x 14" to 29" x 18"	4"
15"	3"	37" x 23" to 44" x 27"	5"
18" - 24"	4"	52" x 32" to 65" x 40"	6"
27" - 36"	5"	73" x 45" to 88" x 54"	7"
42" - 54"	6"		
60" - 72"	7"		
78" - 90"	8"		

BAR SIZES				
	PIPE SIZE	HOLE DIA. REQ'D.	BOLT DIA.	BAR SIZE
ROUND	12" - 18"	¾"	¾"	¾"
	21" - 42"	7/8"	¾"	1"
	48" - 90"	1 1/8"	1"	1 1/4"
ARCH	up to 22" x 14"	¾"	¾"	¾"
	29" x 18" to 52" x 32"	7/8"	¾"	1"
	59" x 36" to 88" x 54"	1 1/8"	1"	1 1/4"

BOLT LENGTH = PIPE WALL THICKNESS + 2 1/2"

<p>Iowa Department of Transportation</p> <p>STANDARD ROAD PLAN</p> <p>REVISIONS: New design. Added arch pipe sizes.</p> <p><i>Deanna Maifield</i> APPROVED BY DESIGN METHODS ENGINEER</p>	<p>REVISION</p> <table border="1"> <tr> <td>8</td> <td>10-18-11</td> </tr> </table>	8	10-18-11
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<p>RF-26</p> <p>SHEET 1 of 1</p>	<p>PIPE APRON GUARD</p>		