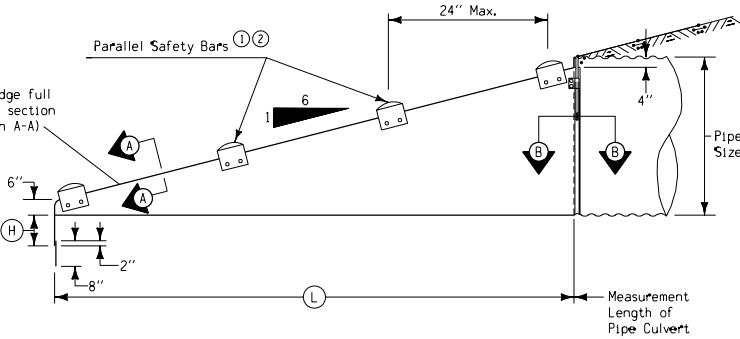
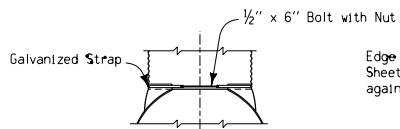


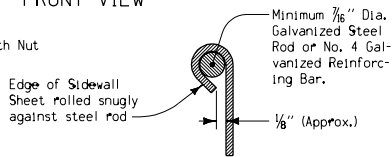
FRONT VIEW



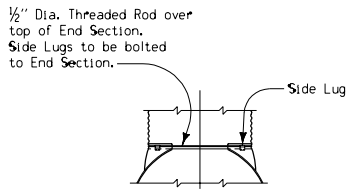
SIDE ELEVATION



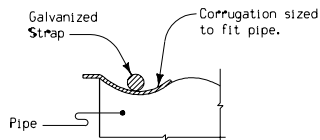
CONNECTOR DETAIL  
(15''-24'' Dia.)



SECTION A-A

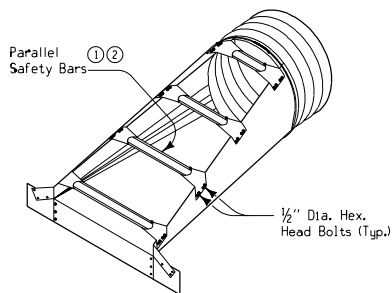


CONNECTOR DETAIL  
(30''-60'' Dia.)

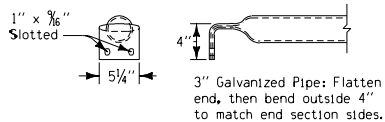


SECTION B-B

Pipe Dia. (In.)	Min. Thick. In.	Dimensions (Inches)					
		Gage	A	H	W	Overall Width	L
15	.064	16	8	6	21	37	30
18	.064	16	8	6	24	40	48
21	.064	16	8	6	27	43	66
24	.064	16	8	6	30	46	84
30	.109	12	12	9	36	60	120
36	.109	12	12	9	42	66	156
42	.109	12	16	12	48	80	192
48	.109	12	16	12	54	86	228
54	.109	12	16	12	60	92	264
60	.109	12	16	12	66	98	300



PERSPECTIVE VIEW OF APRON



PARALLEL BARS  
DETAIL OF SAFETY BARS

**GENERAL NOTES:**

Details on this sheet indicate the typical requirements for Metal Safety Slope Aprons. Refer to appropriate other Standard Road Plans as well as project plans for additional details of individual culverts installations. Alternate design details may be submitted to the Engineer for approval.

Materials and methods of construction shall be in accordance with current Standard and Supplemental Specifications.

Furnishing and installing the metal safety slope aprons shall conform to the requirements of current specifications for "Corrugated Culverts."

Apron may be attached to culvert pipe as follows:

- A. If normal culvert is of circumferential corrugation type:
  1. Use an approved bolt or clamp to fasten apron directly to culvert.
- B. If normal culvert is of helical corrugation type:
  1. Use an approved sizing ring securely fastened to inside diameter of apron to connect to the culvert pipe using special dimple band connector.
  2. "Dimple" bands are not allowed when a positive joint is specified.

See Materials I.M. 441 for Approved Coupling Devices and specific requirements.

Any damage to galvanizing coat resulting from installation of culvert shall be repaired as directed by the Engineer.

Price bid for "Safety Slope Aprons" of the size specified shall be considered full compensation for fabrication and installation of metal aprons as indicated hereon.

- ① Number of bars required will vary depending on the length of the end section.
- ② Parallel safety bars are required for pipes 30" diameter and larger. For pipes 24" diameter and smaller, parallel safety bars will be required only when specified in project plans.

<b>Iowa Department of Transportation</b> Project Development Division	
<b>STANDARD ROAD PLAN</b>	<b>RF-44</b>
REVISION: Delete M and Q Dimensions	REVISION NO. 3
06-07-00	REVISION DATE 10-03-00
APPROVED BY DESIGN METHODS ENGINEER	
METAL SAFETY SLOPE APRON 6:1 SLOPE	