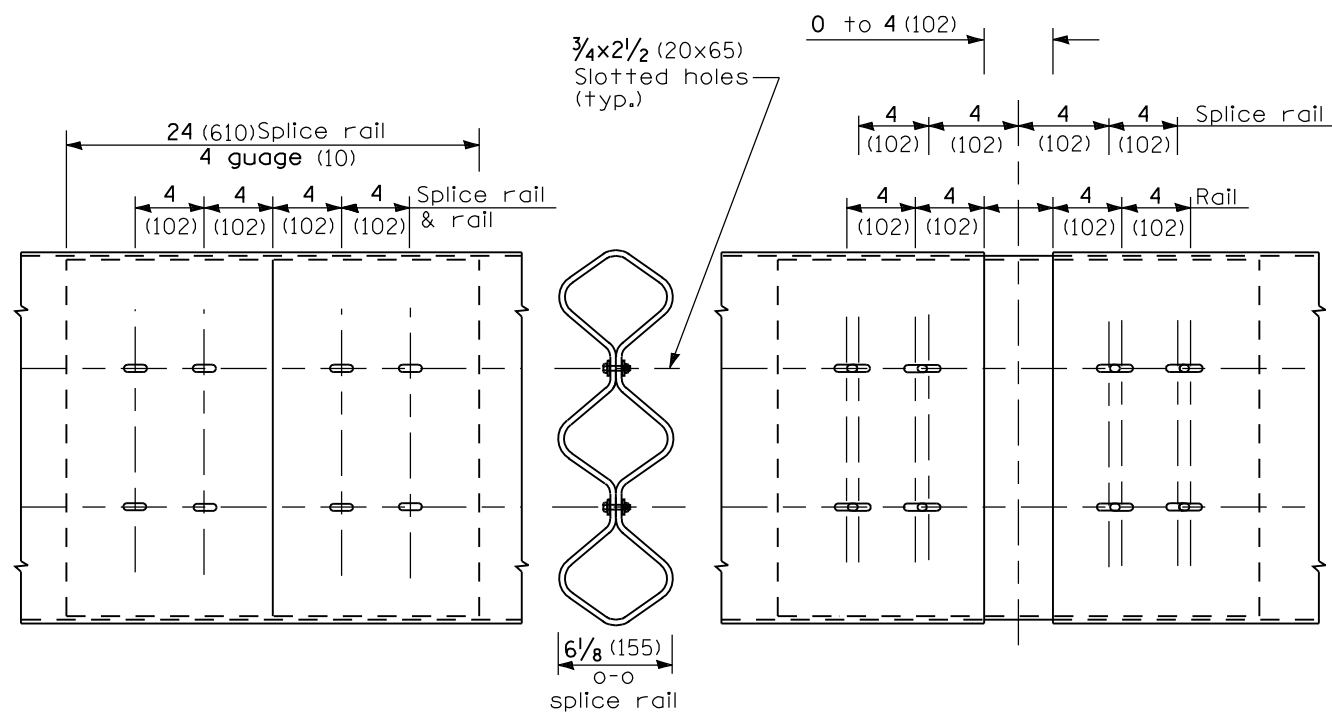
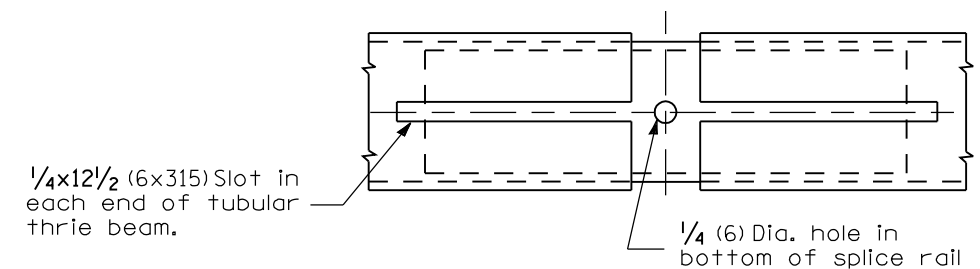


**TUBULAR THRIE BEAM FOR INTERNAL SPLICE JOINT**



**INTERNAL SPLICE JOINT**

**INTERNAL EXPANSION SPLICE JOINT**



**BOTTOM VIEW OF INTERNAL EXPANSION SPLICE JOINT**

**GENERAL NOTES**

Plate Washers B are to be placed under both heads and nuts of splicing bolts for internal splice and internal expansion splice joint.

Plate Washers C are to be placed under both heads and nuts of splicing bolts for lap expansion and internal lap splice joint.

See Standard 630001 for details of guardrail not shown.

All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-09	Switched units to English (metric). Added Plate Washer F detail.
1-1-97	Renum. Standard 2348-3. Deleted DN Symbol.

**TUBULAR THRIE BEAM RETROFIT RAIL FOR BRIDGES** (Sheet 1 of 3)

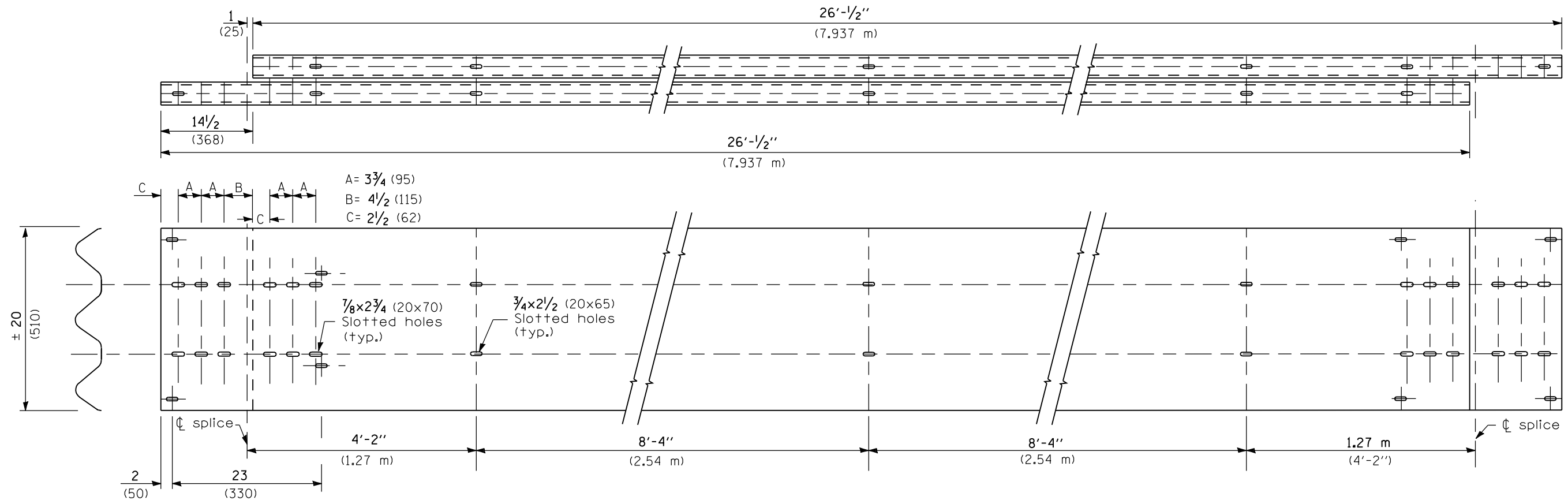
**STANDARD 509001-01**

Illinois Department of Transportation

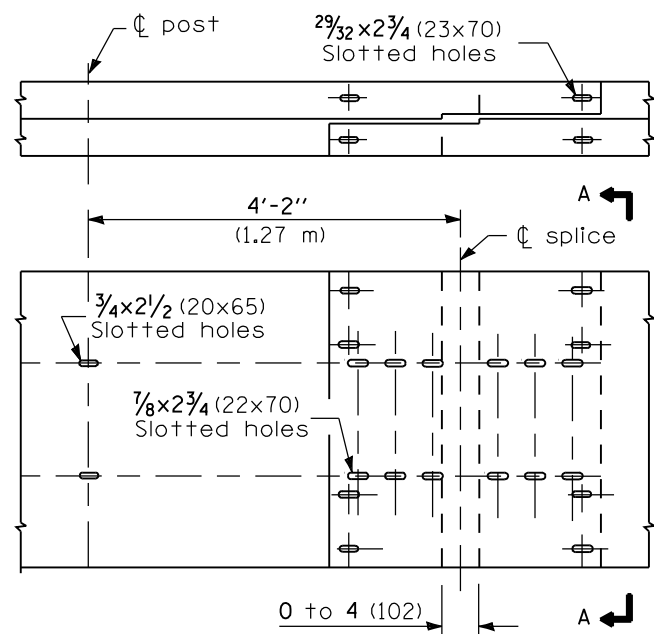
PASSED January 1, 2009  
*Scott S. Cox*  
 ENGINEER OF POLICY AND PROCEDURES

APPROVED January 1, 2009  
*Ken E. Han*  
 ENGINEER OF DESIGN AND ENVIRONMENT

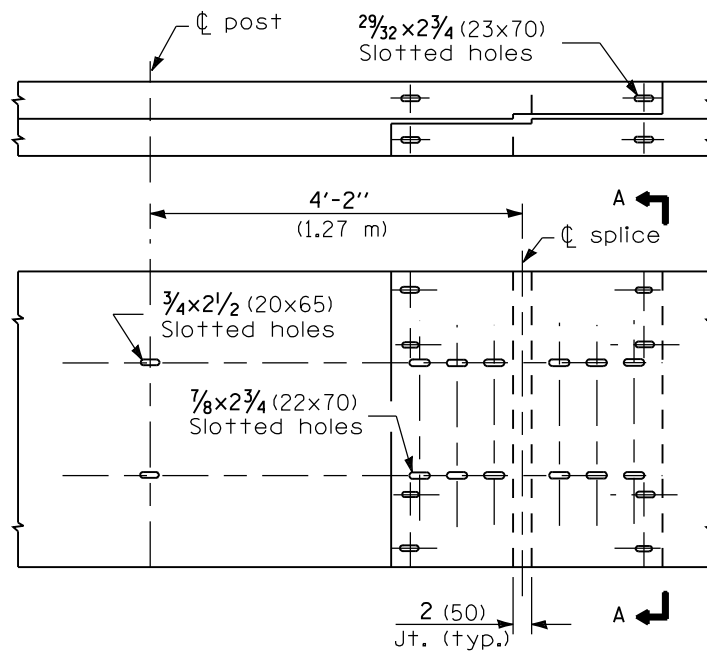
ISSUED 1-1-97



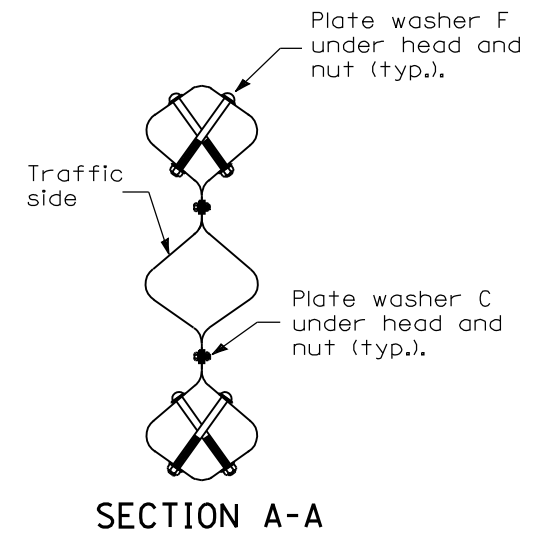
**TUBULAR THRIE BEAM FOR LAP SPLICE JOINT**



**LAP EXPANSION SPLICE JOINT**



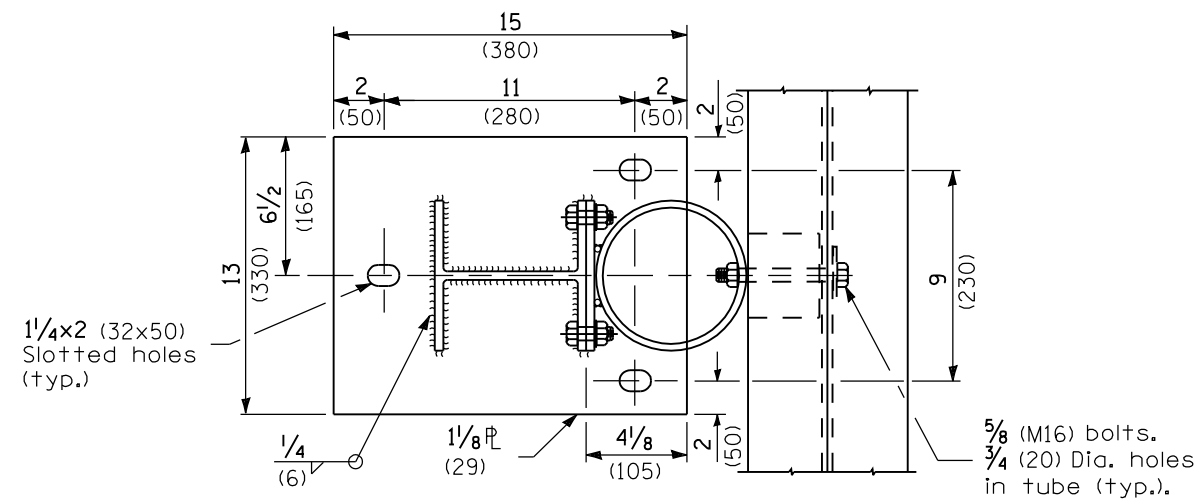
**LAP SPLICE JOINT**



**SECTION A-A**

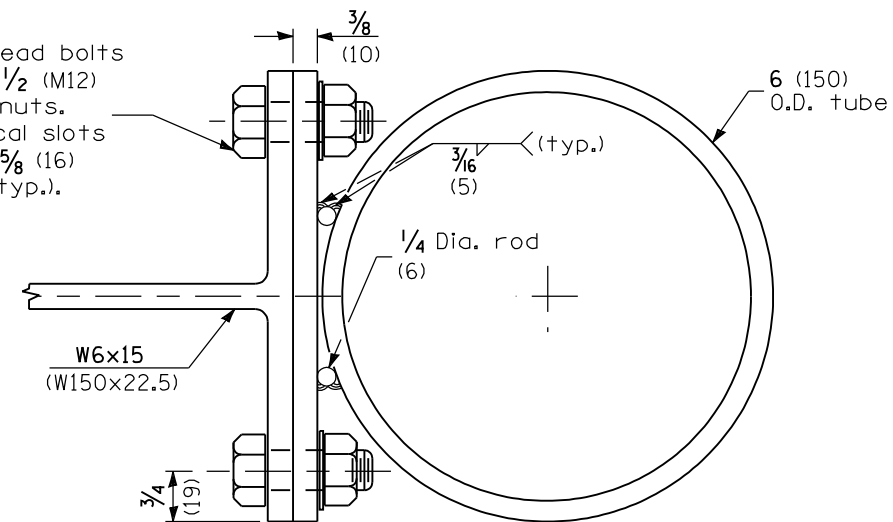
Illinois Department of Transportation  
 PASSED January 1, 2009  
 ENGINEER OF POLICY AND PROCEDURES  
 APPROVED January 1, 2009  
 ENGINEER OF DESIGN AND ENVIRONMENT

**TUBULAR THRIE BEAM  
 RETROFIT RAIL FOR  
 BRIDGES** (Sheet 2 of 3)  
**STANDARD 509001-01**

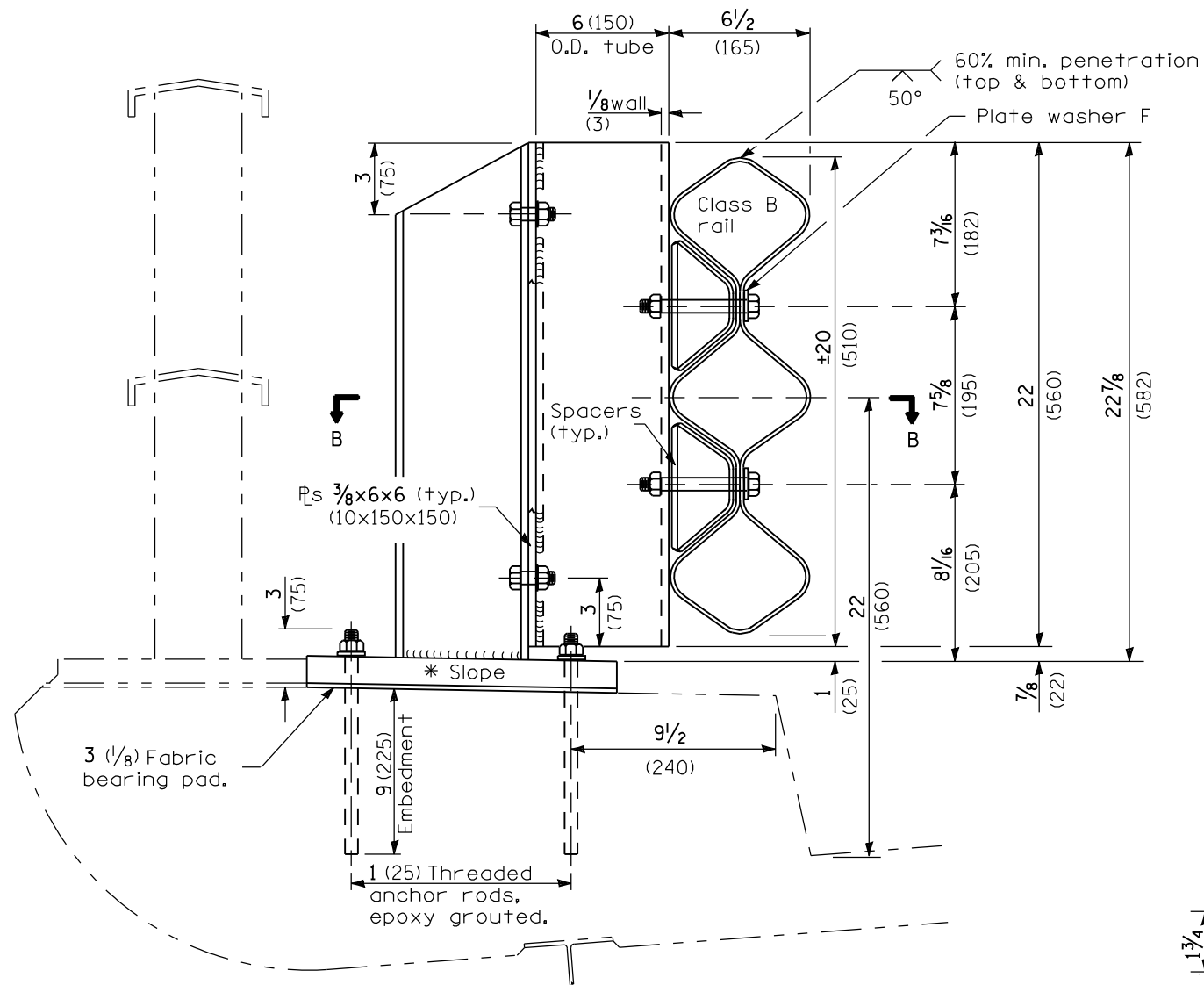


**SECTION B-B**

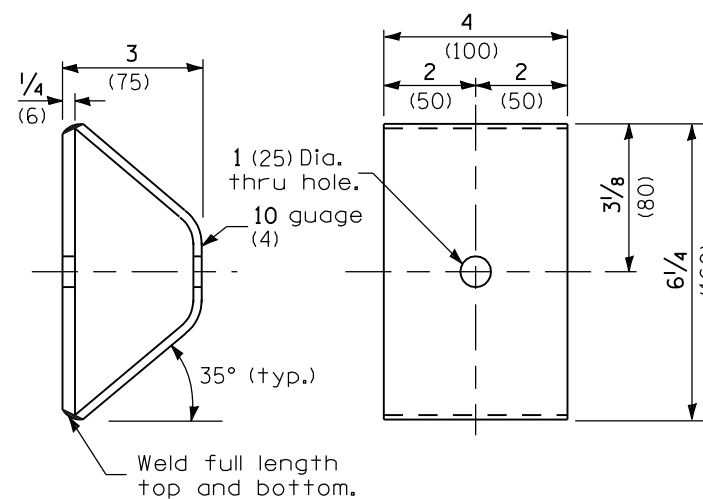
1/2 x 1/4 (M12x32) hex head bolts with hex nuts and 1/2 (M12) flat washer under nuts. 5/8 x 1/2 (16x38) vertical slots in 3/8 (10) plate and 5/8 (16) dia. holes in post (typ.).



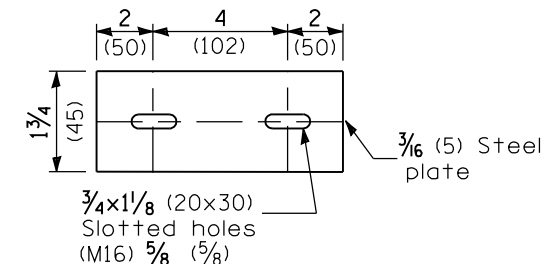
**TUBE TO POST ATTACHMENT**



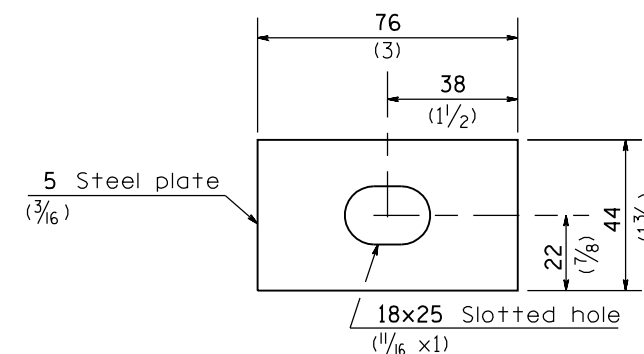
**POST**



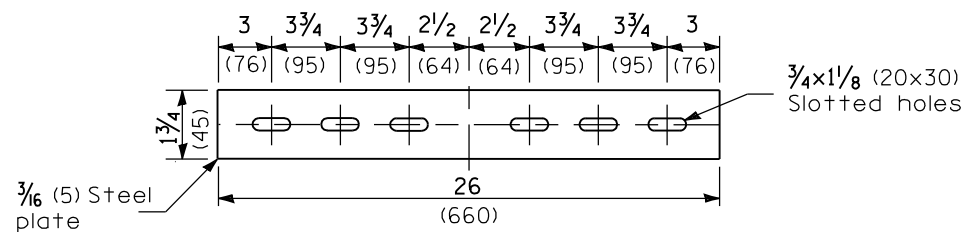
**SPACER**



**PLATE WASHER B**



**PLATE WASHER F**



**PLATE WASHER C**

12 1/4  
\* Cut bottom of post to slope