

**DATE:** February 8, 1973

**TO:** BRIDGE DESIGN PERSONNEL  
**FROM:** Frank Harrison, Assistant Bridge Engineer  
**SUBJECT:** Changes in Articles 1.7.5 and 1.7.88 of the AASHO Design Specifications

Article 1.7.5 - Insert the following paragraph after the last paragraph:

Where shown on the design drawings enlarged or slotted holes may be used with high strength bolts proportioned to meet the allowable unit stresses given above except as hereinafter restricted:

- (1) Holes  $3/16$ " larger than bolts  $7/8$ " or less in diameter,  $1/4$ " larger than bolts 1" in diameter, and  $5/16$ " larger than bolts  $1-1/8$ " and greater in diameter may be used in uncoated friction type shear connections provided a hardened washer is inserted under both the head and nut.
- (2) Slotted holes  $1/16$ " wider than the bolt diameter and of a length more than allowed in subparagraph (1) but not more than  $2-1/2$  times the bolt diameter may be used without regard to direction of loading, in enclosed parts of friction type shear connections if  $1/3$  more bolts are provided than needed to satisfy the design requirements.
- (3) When enlarged holes or slotted holes are used, the distances between edges of holes, and edges of members and edged of holes, shall not be less than that permitted with conventional size holes.

Our Office Policy will be to allow subparagraph (1) on secondary members only (struts, cross frames, gusset plates, expansion devices, etc.) of a standard design and to cover by a note on the plans. Subparagraph (3) shall not apply to this condition. For custom design of secondary members, the designer shall determine whether to apply subparagraph (3) with subparagraph (1). *See Example for simple steel spans*

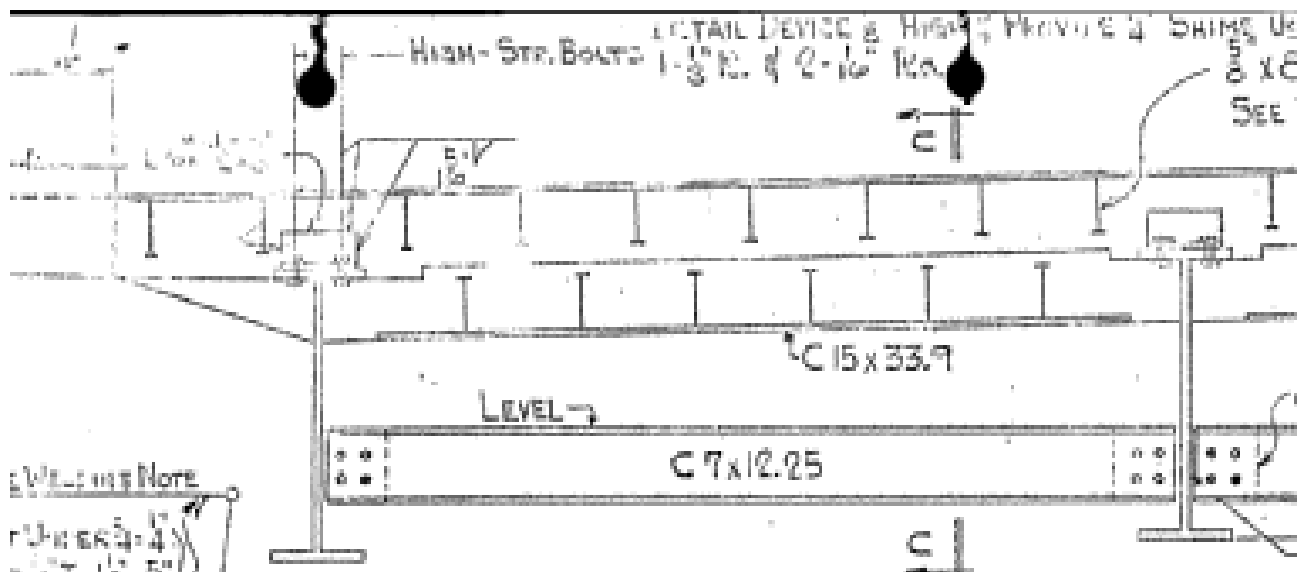
Our Office Policy on subparagraph (2) will be to use only on special occasions, to make full consideration in the design, to cover with a note on the plans and include the requirements of subparagraph (3).

Subparagraphs (1) and (2) shall not be allowed for splices of primary members.

Article 1.7.88 - Change the last paragraph to read as follows:

The diameter of the hole shall be taken as  $1/8$ " greater than the nominal diameter of the rivet or high strength bolt unless larger holes are permitted in accordance with Article 1.7.5.

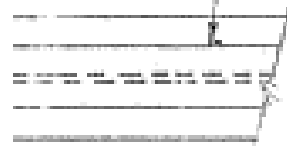
Our Office Policy will be to apply the revision of Article 1.7.88 on jobs on which structural steel design is started after the date of this memorandum, and as stated for Article 1.7.5 above to be covered by notes on the plans.



**HALF SECTION B-B**

1'-0"

**WELDING NOTE**  
 1/2" WELDS  
 1/4" TYP.  
 1/2" TYP.  
 1/4" TYP.



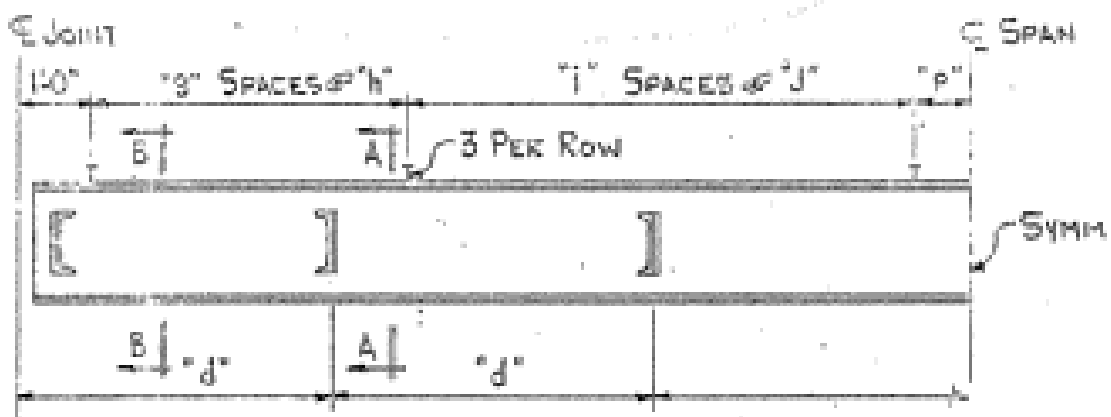
**PLATE DETAIL**

SCALE

MIN.

MIN.

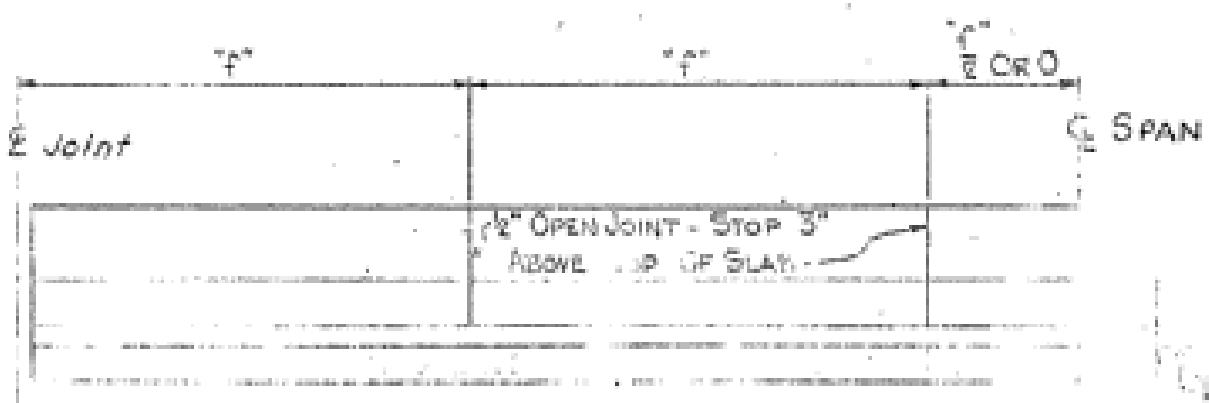
MIN.



**SPACING FOR 3/4" STUDS SHEAR CONNECTORS & DIAPHRAGMS**

No SCALE

ELECT TO  
 OF THE SLAB  
 ICE BEAMS  
 N FOR  
 . WHEN THIS  
 CENTERLINE  
 1/2"



**SECTION D-D**

No SCALE

REINFORCING STEEL PER SPAN

