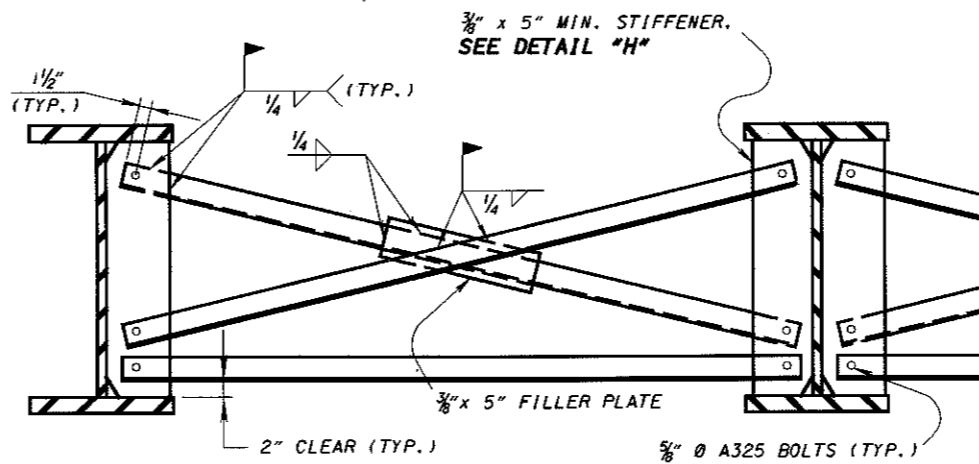


TYPE 1: INTERMEDIATE WELDED CROSSFRAME DETAILS

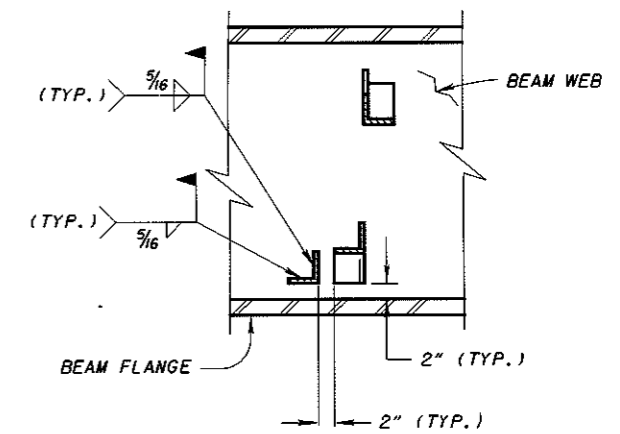
FOR ROLLED BEAM BRIDGES
AASHTO CASE II ONLY

☐ MATCH CROSSFRAME LEGS TO EACH SIDE OF THE WEB.

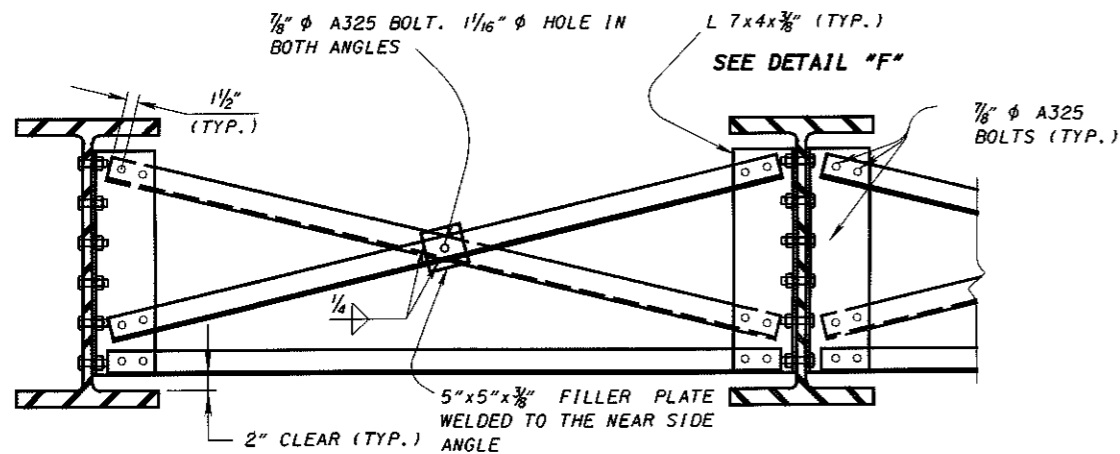


TYPE 3 INTERMEDIATE WELDED CROSSFRAME DETAILS

FOR GIRDER BRIDGES AND AASHTO CASE I ROLLED BEAM BRIDGES

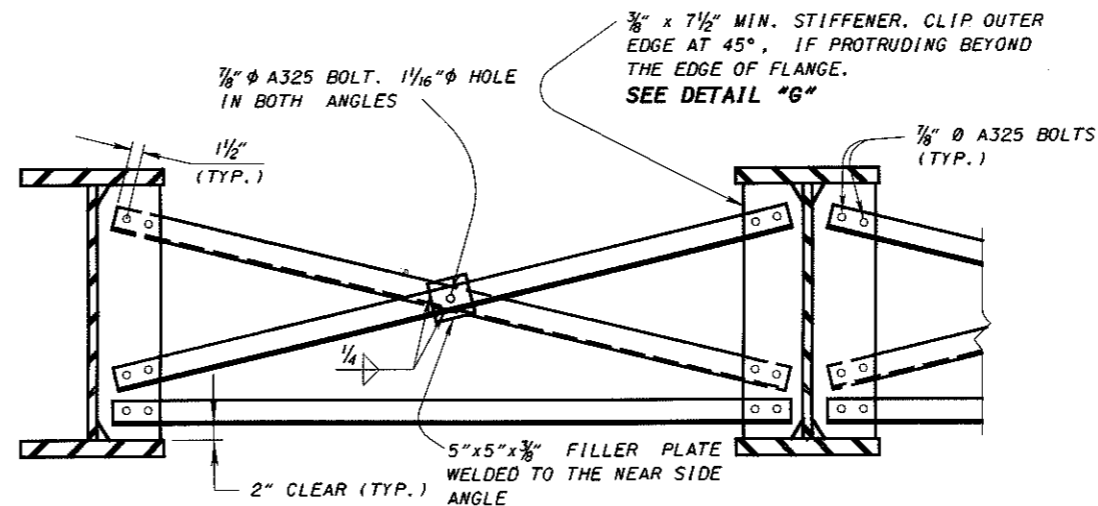


SECTION A-A



TYPE 2: INTERMEDIATE BOLTED CROSSFRAME DETAILS

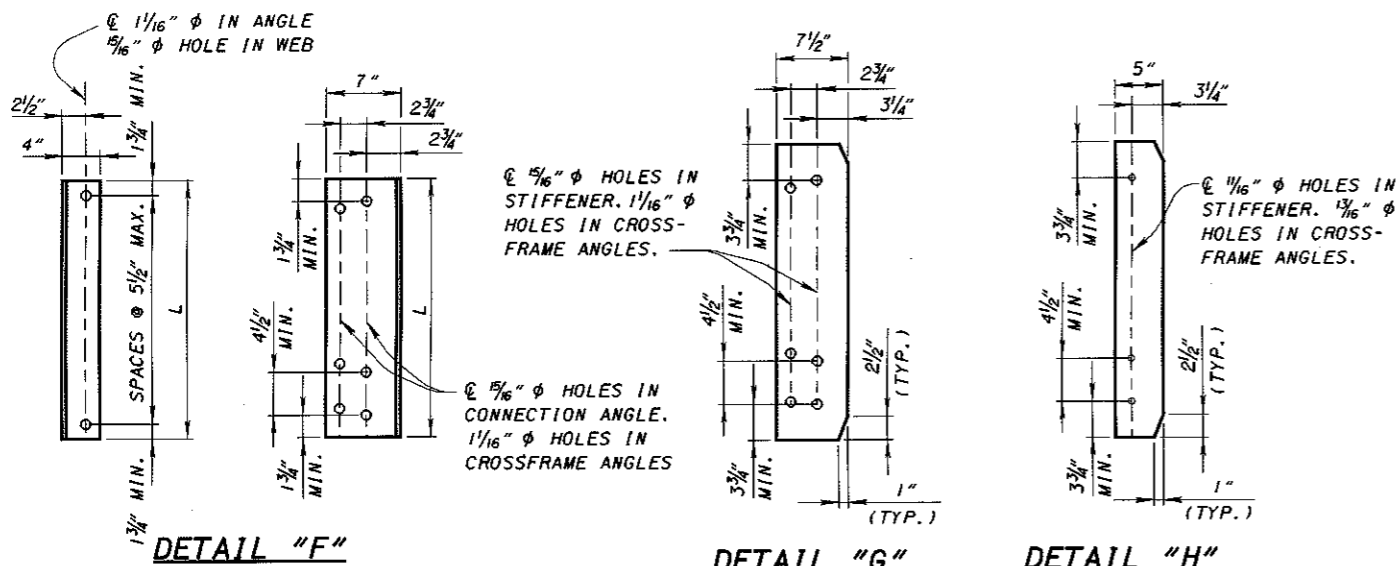
FOR ROLLED BEAM BRIDGES
AASHTO CASE I OR CASE II



TYPE 4 INTERMEDIATE BOLTED CROSSFRAME DETAILS

FOR GIRDER BRIDGES AND AASHTO CASE I ROLLED BEAM BRIDGES

INTERMEDIATE CROSSFRAME ANGLE SIZE	
DEPTH OF BEAM/GIRDER	MINIMUM SIZE ANGLE
D < 48 INCH	L3 x 3 x 5/16"
48 INCH < D < 52 INCH	L3 1/2 x 3 1/2 x 3/8"
52 INCH < D < 60 INCH	L4 x 4 x 3/8"



DETAIL "F"

DETAIL "G"

DETAIL "H"

L = [D - (2 x T_f) - 4]
WHERE:
L = LENGTH (INCH)
D = DEPTH OF ROLLED BEAM (INCH)
T_f = THICKNESS OF FLANGE (INCH)

SEE SHEET 2 / 3 FOR STIFFENER WELDS.

INTERMEDIATE CROSSFRAME NOTES:

GENERAL: THESE STANDARD CROSSFRAMES ARE LIMITED TO TANGENT STEEL MEMBERS WITH DEAD LOAD DEFLECTIONS BETWEEN ADJACENT MEMBERS LESS THAN 1/2 INCH. REFER TO THE BRIDGE DESIGN MANUAL FOR THE MODIFICATIONS REQUIRED WHEN THESE LIMITATIONS ARE NOT MET.

CROSSFRAMES SHALL BE PERPENDICULAR TO BEAMS/GIRDERS AND BE IN A LINE ACROSS THE TOTAL WIDTH OF THE STRUCTURE.

THE FABRICATOR SHALL CHECK LONGITUDINAL CROSSFRAME SPACING SO THAT INTERFERENCE WITH BOLTED SPLICES, ANCHOR BOLTS, COMPLETE PENETRATION WEB OR FLANGE WELDED SPLICES AND BEARING STIFFENERS CAN BE AVOIDED. SPACING SHALL BE ADJUSTED TO PROVIDE AT LEAST SIX (6) INCHES OF LONGITUDINAL CLEARANCE. THE FABRICATOR MAY ADJUST CROSSFRAME SPACES UP TO A MAXIMUM OF 25'-0" CENTER TO CENTER UNLESS THE CONTRACT CRITERIA/DRAWINGS SHOW OTHERWISE.

IF INTERFERENCE WITH BOLTED SPLICES CAN NOT BE AVOIDED, AN ANGLE CONNECTION TO THE WEB SPLICE, SIMILAR TO "DETAIL F", SHALL BE PROVIDED.

FOR COMPLETELY SHOP PAINTED, METALIZED OR GALVANIZED SYSTEMS, A TYPE 2 OR TYPE 4 CROSSFRAME SHALL BE USED.

AT THE OPTION OF THE CONTRACTOR, TYPE 2 CROSSFRAMES CAN BE USED IN LIEU OF TYPE 1 CROSSFRAMES AND TYPE 4 CROSSFRAMES CAN BE USED IN LIEU OF TYPE 3 CROSSFRAMES.

MATERIAL: ALL INTERMEDIATE CROSSFRAME MATERIAL SHALL BE A709 GRADE 36, 50 OR 50W. THE TYPE AND GRADE SHALL BE THE SAME AS THAT SPECIFIED FOR THE SUPERSTRUCTURE MAIN STEEL.

FASTENERS: ALL BOLTS SHALL BE A325. FOR GALVANIZED, METALIZED AND PAINTED STEEL, TYPE 1 GALVANIZED BOLTS SHALL BE USED. FOR BARE A709 GRADE 50W STEEL, TYPE 3 BOLTS SHALL BE USED. EACH ANCHOR ASSEMBLY SHALL INCLUDE A BOLT, NUT AND TWO (2) WASHERS, TIGHTENED PER CMS 513/SS863.