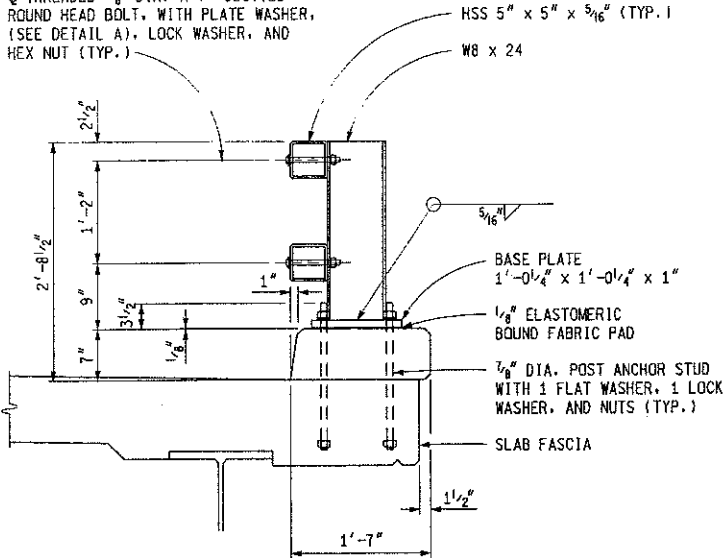
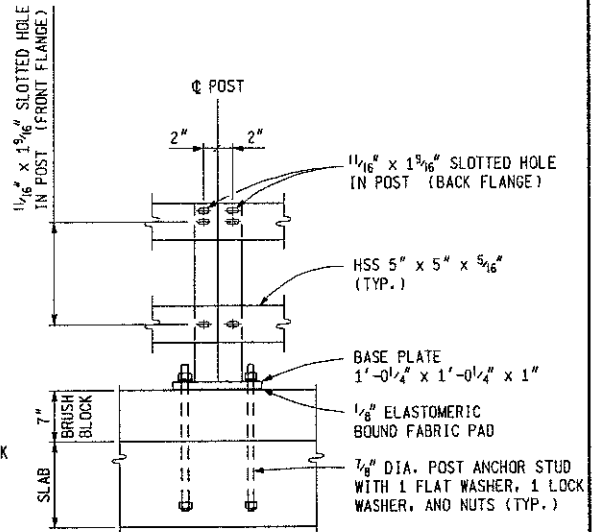


⌀ 1 1/16" DIA. HOLE IN RAIL
 ⌀ THREADED 5/8" DIA. x 7" SLOTTED
 ROUND HEAD BOLT, WITH PLATE WASHER,
 (SEE DETAIL A), LOCK WASHER, AND
 HEX NUT (TYP.)

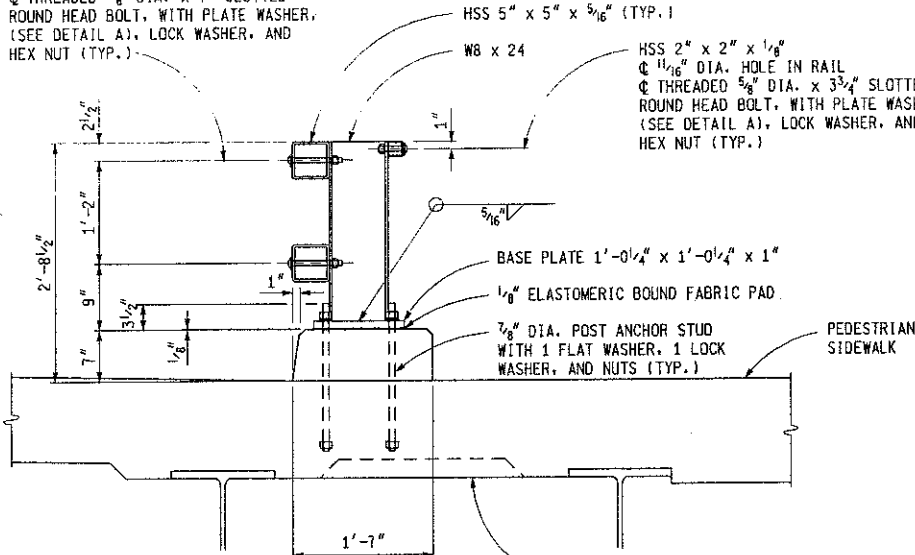


SECTION THROUGH
BRUSH BLOCK AND RAILING



POST ELEVATION

⌀ 1 1/16" DIA. HOLE IN RAIL
 ⌀ THREADED 5/8" DIA. x 7" SLOTTED
 ROUND HEAD BOLT, WITH PLATE WASHER,
 (SEE DETAIL A), LOCK WASHER, AND
 HEX NUT (TYP.)



SECTION THROUGH
BRUSH BLOCK AND RAILING
WITH SIDEWALK

INCREASE SLAB DEPTH TO 11 1/2" (MIN.)
 AT ANCHOR STUDS. AREA TO BE
 2'-0" x 2'-0" OR 2'-0" x BAY WIDTH.



PREPARED
 BY
 DESIGN DIVISION

DRAWN BY: B.L.T.

CHECKED BY: V.Z.

DEPARTMENT DIRECTOR
 Kirk T. Stoudle

APPROVED BY: *John C. Frieel*
 ENGINEER OF DELIVERY

APPROVED BY: *John C. Frieel*
 ENGINEER OF DEVELOPMENT

MICHIGAN DEPARTMENT OF TRANSPORTATION
 BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

BRIDGE RAILING, 2 TUBE

10-21-2008

F.H.W.A. APPROVAL

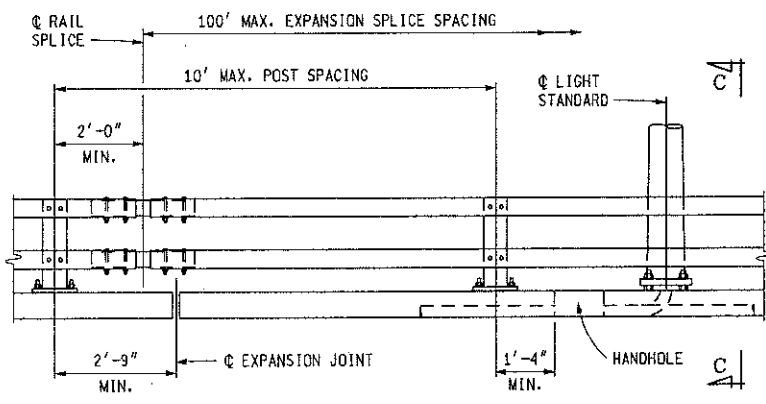
5-31-2007

PLAN DATE

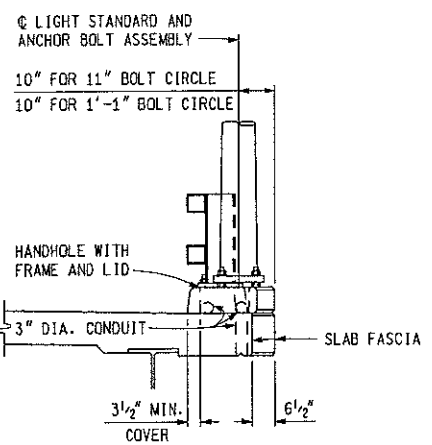
B-21-H

SHEET

1 OF 4

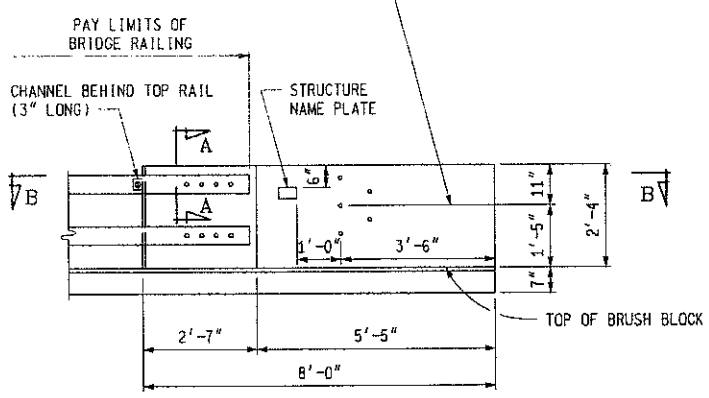


RAILING ELEVATION



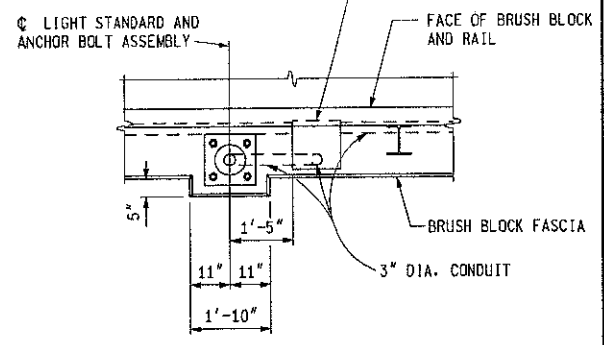
SECTION C-C

ϕ OF BOLTS FOR GUARDRAIL ANCHORAGE
 SEE STANDARD PLAN R-67-SERIES FOR DETAILS
 BOLTS TO BE FURNISHED AND INSTALLED BY
 BRIDGE CONTRACTOR. (INCLUDED IN THE BID
 ITEM "BRIDGE RAILING, 2 TUBE")

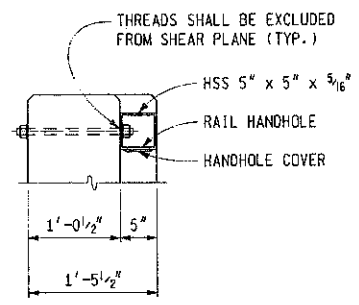


END WALL ELEVATION

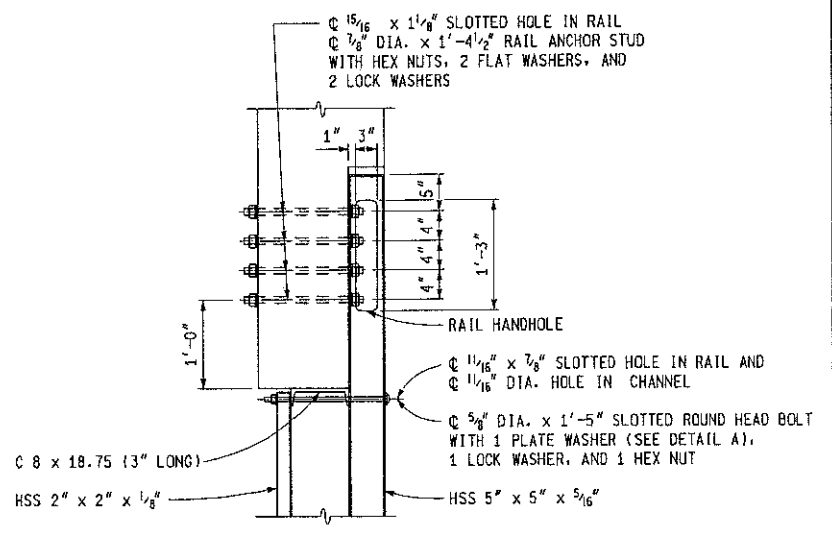
HANDHOLE WITH FRAME ANCHORED AND LID
 BOLTED TO FRAME, FRAME AND LID SHALL
 BE R-6687-A1 NEENAH FOUNDRY COMPANY,
 8111 EAST JORDAN IRON WORKS, OR
 APPROVED EQUAL.



PLAN VIEW AT LIGHT STANDARD



SECTION A-A

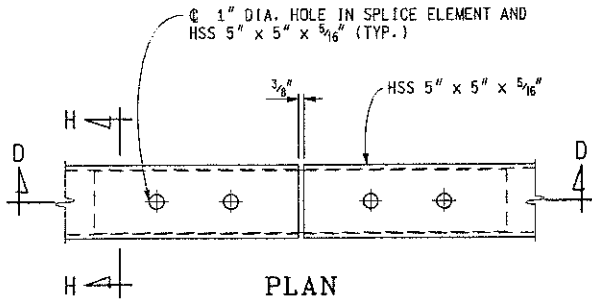


SECTION B-B

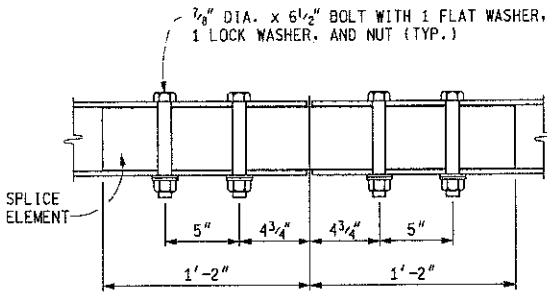
MICHIGAN DEPARTMENT OF TRANSPORTATION
 BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR
BRIDGE RAILING, 2 TUBE

F.H.W.A. APPROVAL	5-31-2007 PLAN DATE	B-21-H	SHEET 2 OF 4
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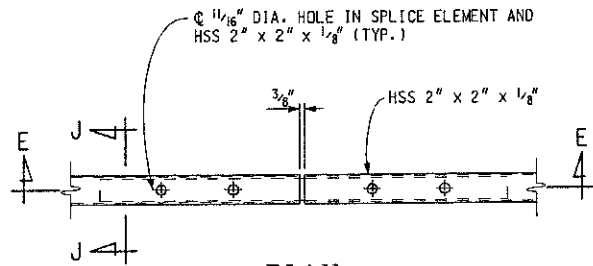
NOTE: THIS PLAN IS NOT A LEGAL ENGINEERING DOCUMENT BUT AN ELECTRONIC DUPLICATE. THE ORIGINAL SIGNED COPY APPROVED FOR PUBLICATION, IS KEPT ON FILE AT THE MICHIGAN DEPARTMENT OF TRANSPORTATION.



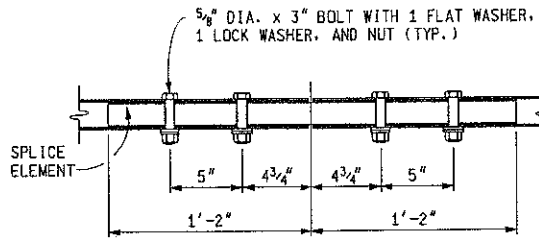
PLAN
 HSS $5'' \times 5'' \times \frac{5}{16}''$



SECTION D-D
 HSS $5'' \times 5'' \times \frac{5}{16}''$

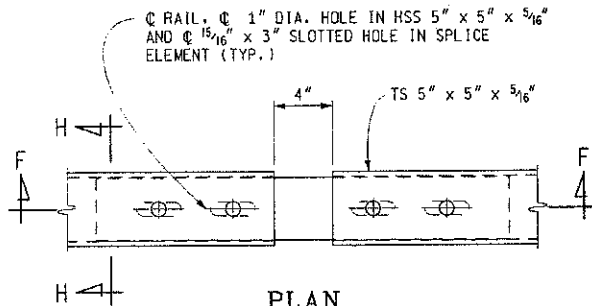


PLAN
 HSS $2'' \times 2'' \times \frac{1}{8}''$

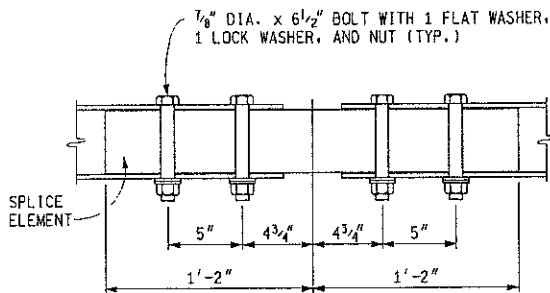


SECTION E-E
 HSS $2'' \times 2'' \times \frac{1}{8}''$

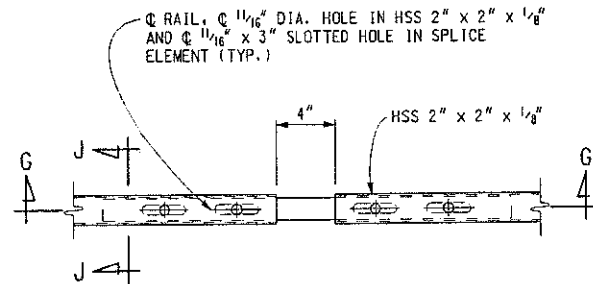
FIXED SPLICE DETAILS



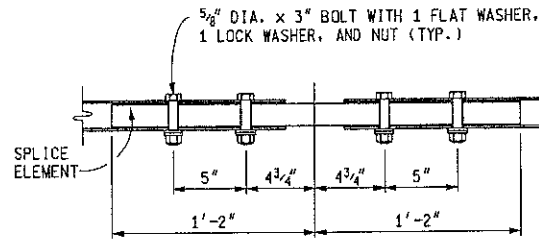
PLAN
 HSS $5'' \times 5'' \times \frac{5}{16}''$



SECTION F-F
 HSS $5'' \times 5'' \times \frac{5}{16}''$



PLAN
 HSS $2'' \times 2'' \times \frac{1}{8}''$



SECTION G-G
 HSS $2'' \times 2'' \times \frac{1}{8}''$

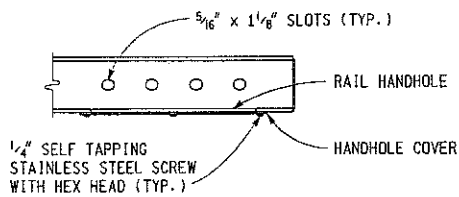
EXPANSION SPLICE DETAILS

MICHIGAN DEPARTMENT OF TRANSPORTATION
 BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

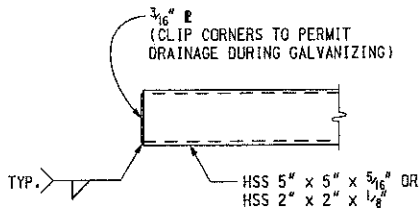
BRIDGE RAILING, 2 TUBE

F.H.W.A. APPROVAL	5-31-2007 PLAN DATE	B-21-H	SHEET 3 OF 4
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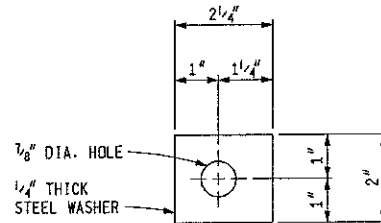
NOTE: THIS PLAN IS NOT A LEGAL ENGINEERING DOCUMENT BUT AN ELECTRONIC DUPLICATE. THE ORIGINAL SIGNED COPY APPROVED FOR PUBLICATION, IS KEPT ON FILE AT THE MICHIGAN DEPARTMENT OF TRANSPORTATION.



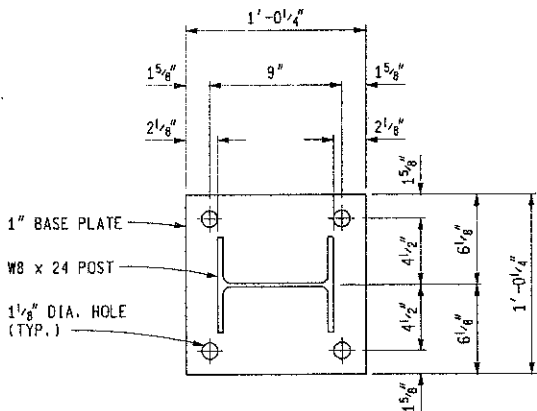
END OF RAIL SECTION



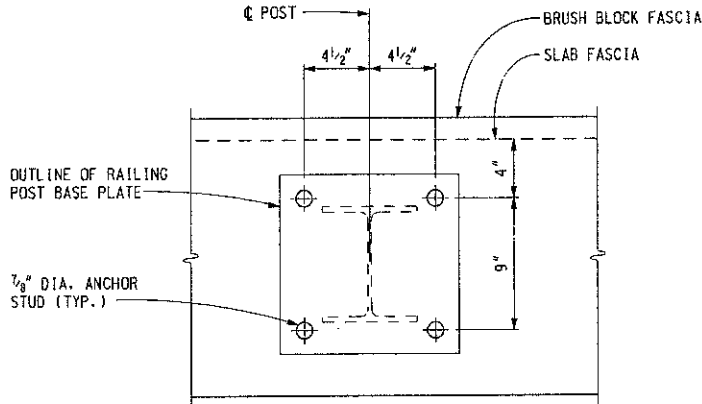
END OF RAIL



DETAIL A

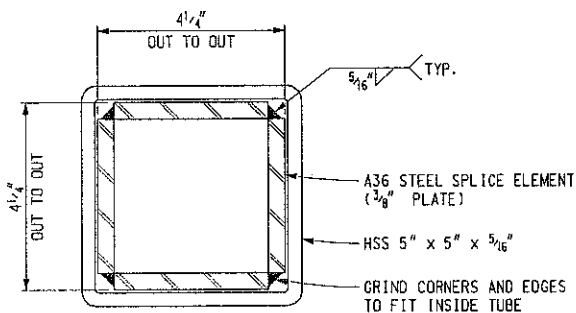


BASE PLATE DETAIL

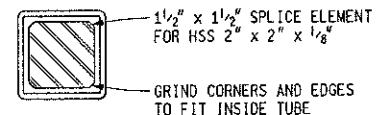


ANCHOR STUD LAYOUT

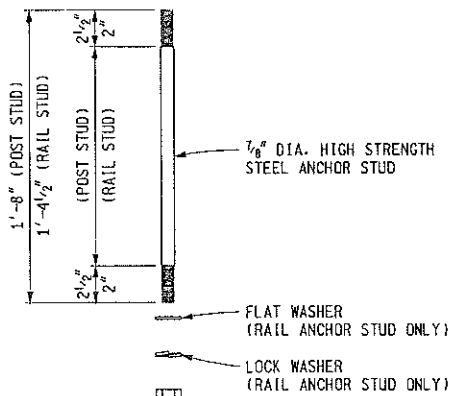
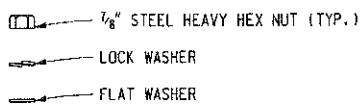
NOTE: SURFACE UNDER POST IS TO BE FINISHED LEVEL



SECTION H-H



SECTION J-J



ANCHOR STUD DETAIL

NOTES:

DETAILS SHOWN ARE IN ACCORDANCE WITH CURRENT AASHTO SPECIFICATIONS.

ALL WORK AND MATERIAL SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

THIS RAILING SHALL BE USED ONLY WITH THE BRUSH BLOCK SHOWN ON THIS SHEET.

FOR LIGHT STANDARD ANCHOR BOLT ASSEMBLY DETAILS, SEE STANDARD PLAN B-103-SERIES.

USE THE HSS 2" x 2" x 1/8" RAIL ONLY WHEN A SIDEWALK IS LOCATED BEHIND THE 2 TUBE RAILING.

ALL LABOR, MATERIALS AND EQUIPMENT REQUIRED TO INSTALL THE HSS 2" x 2" x 1/8" RAIL SHALL BE INCLUDED IN THE BID ITEM "BRIDGE RAILING, 2 TUBE".

FENCING MAY BE ATTACHED TO THE NON-TRAFFIC SIDE OF THE 2 TUBE RAILING TO PROTECT PEDESTRIANS.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

BRIDGE RAILING, 2 TUBE

F.H.W.A. APPROVAL	5-31-2007 PLAN DATE	B-21-H	SHEET 4 OF 4
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