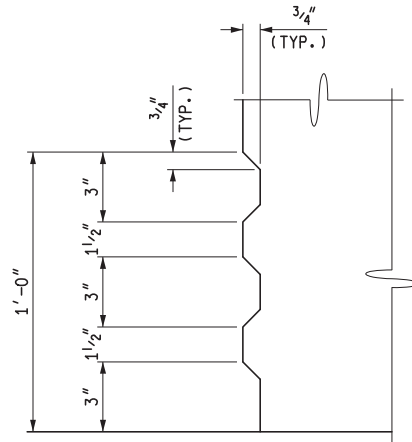


FLUSH MOUNT BRIDGE RAILING

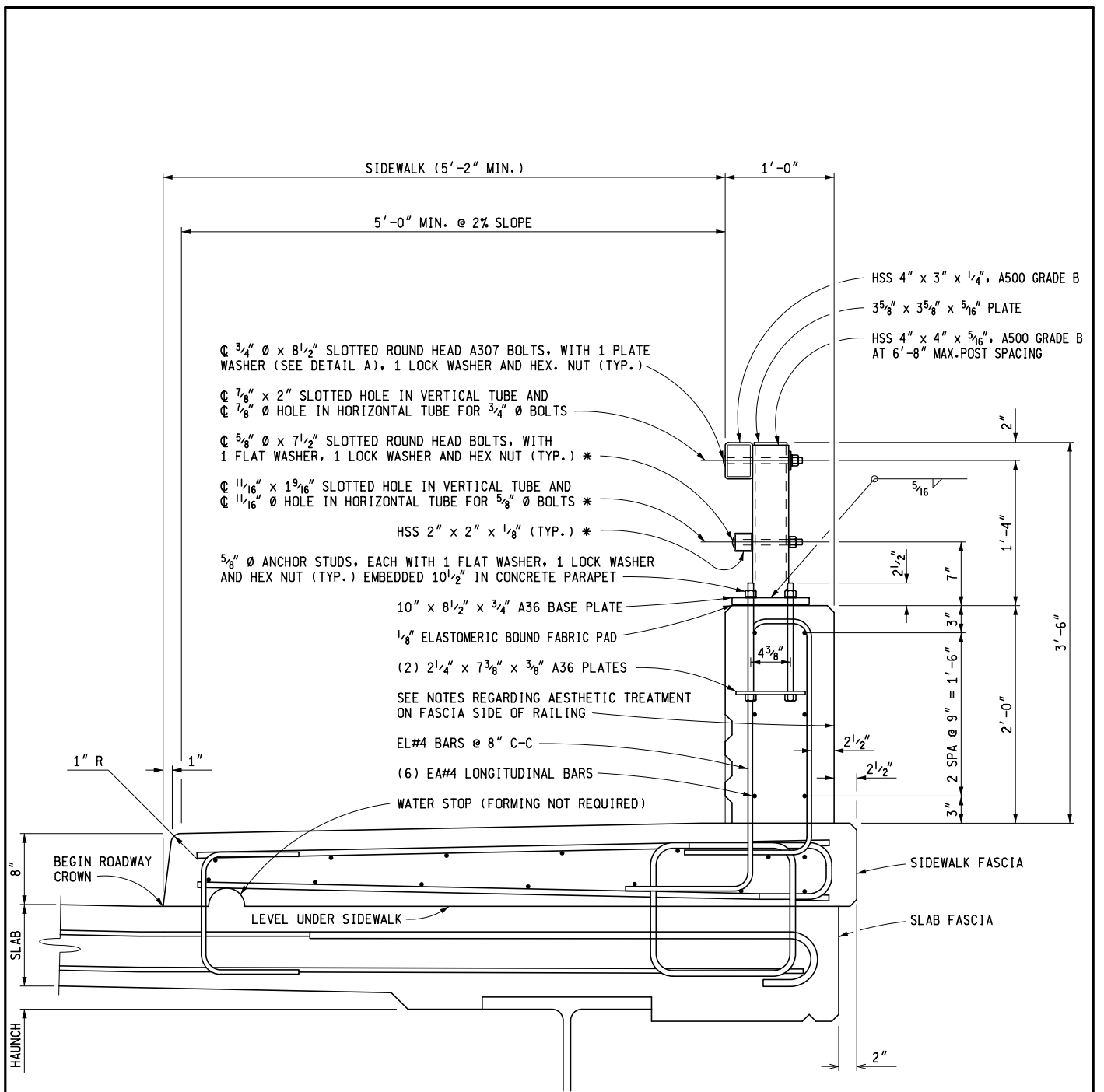
NOTES:

- ALL WORK AND MATERIAL SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
- DETAILS SHOWN ARE IN ACCORDANCE WITH CURRENT AASHTO SPECIFICATIONS.
- BRIDGE RAILING USED WITH SIDEWALK SHALL BE USED ONLY WITH THE SIDEWALK CONFIGURATION (PROFILE) SHOWN ON THIS STANDARD PLAN.
- NO SLIP FORMING OF "BRIDGE RAILING, AESTHETIC PARAPET TUBE" SHALL BE ALLOWED. RAILING SHALL BE CAST IN PLACE.
- THE LIGHT STANDARD ANCHOR BOLT ASSEMBLY IS INCLUDED IN THE BID ITEM "BRIDGE RAILING, AESTHETIC PARAPET TUBE". SEE STANDARD PLAN B-103-SERIES.
- FOR LIGHT STANDARD ANCHOR BOLT ASSEMBLY DETAILS, IF BRIDGE RAILING, AESTHETIC PARAPET TUBE IS PLACED FLUSH ON THE BRIDGE DECK (WITHOUT SIDEWALK), THE LIGHTING CONDUIT SHALL NOT BE PLACED IN THE RAILING.
- A RUBBED FINISH ON THE VERTICAL AND TOP CONCRETE SURFACES OF THE PARAPET RAILING IS REQUIRED.
- AESTHETIC TREATMENT AS DETAILED ON THIS SHEET SHALL BE ADDED TO THE FASCIA SIDE OF RAILING IF NO AESTHETIC TREATMENT IS DETAILED ON THE PLAN SHEETS AND SHALL BE INCLUDED IN THE BID ITEM "BRIDGE RAILING, AESTHETIC PARAPET TUBE". AESTHETIC TREATMENT DETAILED ON THE PLAN SHEETS MAY BE UP TO 1" IN CONCRETE DEPTH WITHOUT MODIFICATION TO THE RAILING WIDTH AND SHALL BE INCLUDED IN THE BID ITEM "BRIDGE RAILING, AESTHETIC PARAPET TUBE". AESTHETIC TREATMENT REQUIRING ADDITIONAL RAILING WIDTH OR THE USE OF ELASTOMERIC FORM LINERS SHALL BE PAID FOR SEPARATELY.
- * THE HSS 2" x 2" x 1/8" RAIL, SLOTTED HOLE, AND 5/8" BOLT ARE NOT REQUIRED WHEN RAILING IS USED IN COMBINATION WITH PEDESTRIAN FENCING (SEE STANDARD PLAN B-41-SERIES).



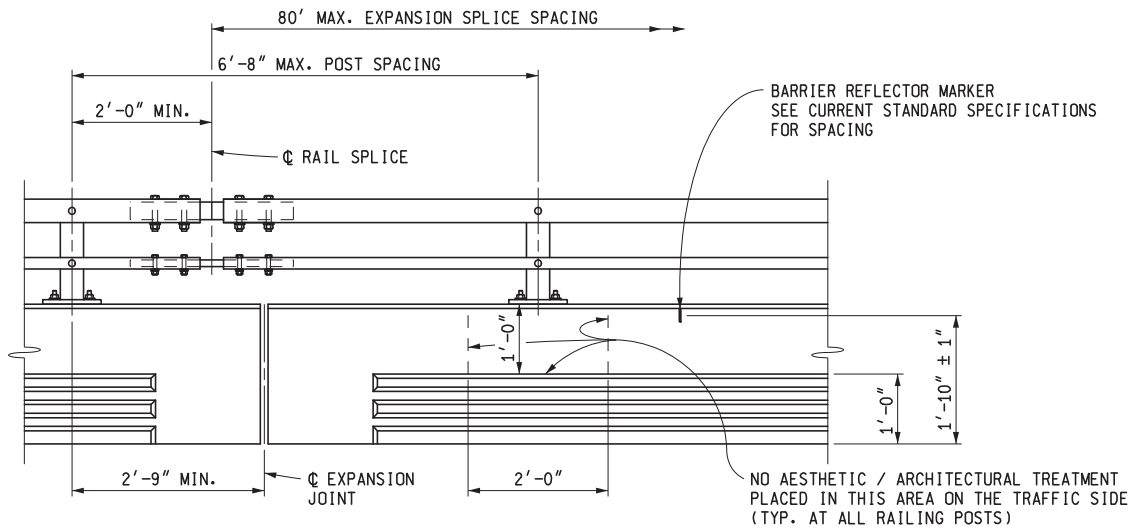
AESTHETIC TREATMENT DETAIL

<p>PREPARED BY DESIGN DIVISION</p> <p>DRAWN BY: <u>B.L.T.</u></p> <p>CHECKED BY: <u>V.Z.</u></p>	<p>DEPARTMENT DIRECTOR Kirk T. Stuedle</p> <p>Kimberly Avery APPROVED BY: DIRECTOR, BUREAU OF FIELD SERVICES</p> <p>Bradley C. Wieferich APPROVED BY: DIRECTOR, BUREAU OF DEVELOPMENT</p>	<p>MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR</p> <p>BRIDGE RAILING, AESTHETIC PARAPET TUBE</p>	
	<p>Digitally signed by Kimberly Avery DN: cn=Kimberly Avery, ou=MDOT, ou=Bureau of Field Services, email=averyk@michigan.gov, c=US Date: 2016.12.15 08:57:18 -05'00'</p> <p>Digitally signed by Bradley C. Wieferich DN: cn=Bradley C. Wieferich, ou=Michigan Department of Transportation, ou=Design Division, email=wieferich@michigan.gov, c=US Date: 2016.12.10 09:46:17 -05'00'</p>	<p>7-25-2017 F.H.W.A. APPROVAL</p>	<p>11-2-2016 PLAN DATE</p>

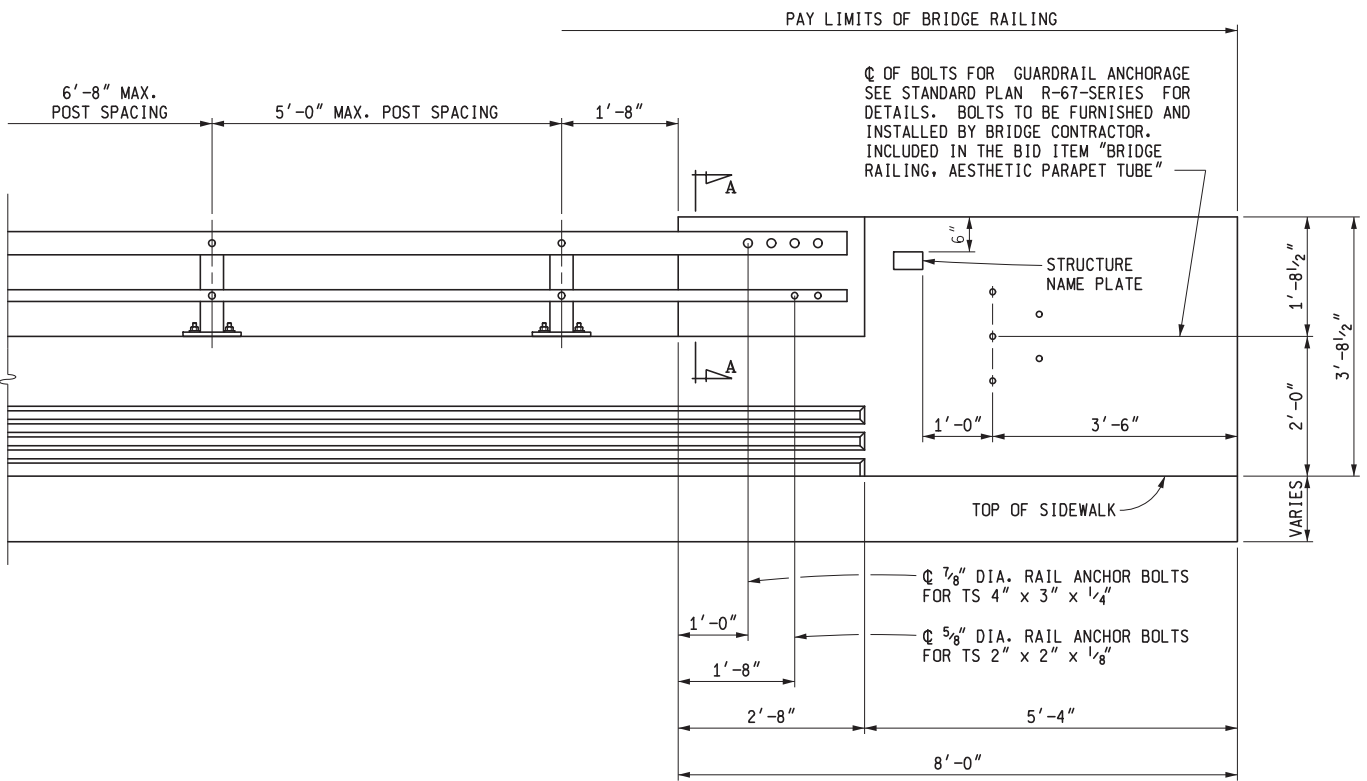


BRIDGE RAILING WITH SIDEWALK

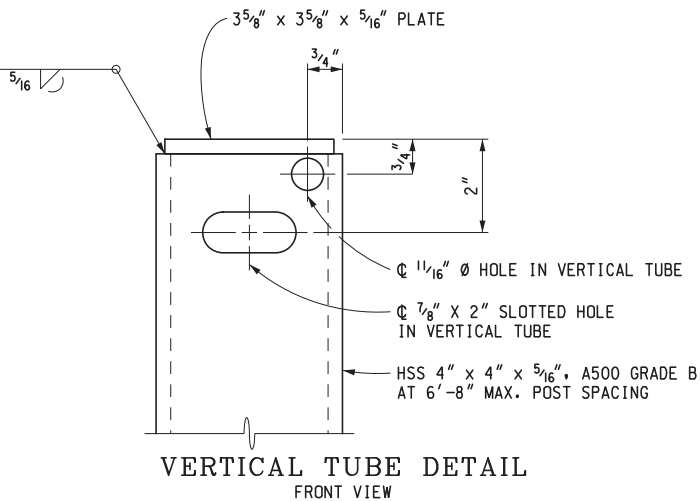
MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR			
BRIDGE RAILING, AESTHETIC PARAPET TUBE			
7-25-2017 F.H.W.A. APPROVAL	11-2-2016 PLAN DATE	B-25-K	SHEET 2 OF 8



RAILING ELEVATION



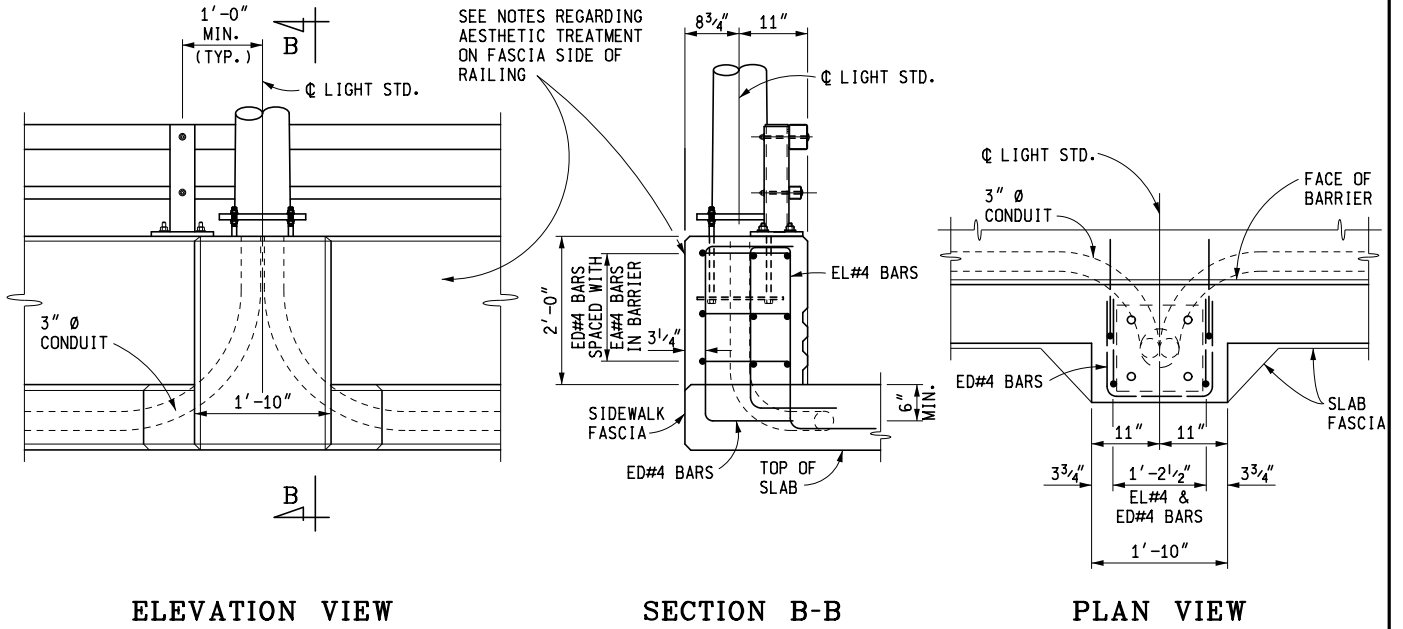
END WALL ELEVATION



MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

**BRIDGE RAILING,
AESTHETIC PARAPET TUBE**

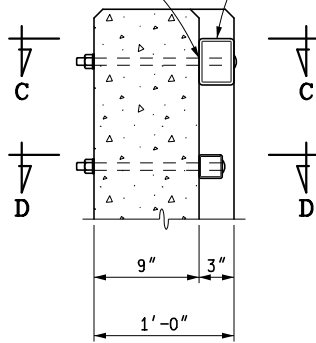
7-25-2017 F.H.W.A. APPROVAL	11-2-2016 PLAN DATE	B-25-K	SHEET 3 OF 8
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LIGHT STANDARD DETAILS

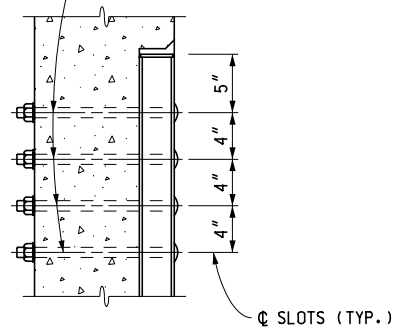
THREADS SHALL BE EXCLUDED FROM SHEAR PLANE (TYP.)

HSS 4" x 3" x 1/4", A500 GRADE B



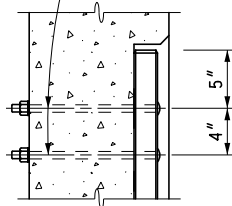
SECTION A-A

CL 1 5/16" x 1 1/8" SLOTTED HOLE IN RAIL, CL 7/8" Ø x 1'-2" SLOTTED ROUND HEAD BOLTS WITH HEX. NUT, 1 FLAT WASHER, 1 LOCK WASHER (TYP.)



SECTION C-C

CL 1 1/16" x 7/8" SLOTTED HOLE IN RAIL, CL 5/8" Ø x 1'-1" SLOTTED ROUND HEAD BOLTS WITH HEX. NUT, 1 FLAT WASHER, 1 LOCK WASHER (TYP.)

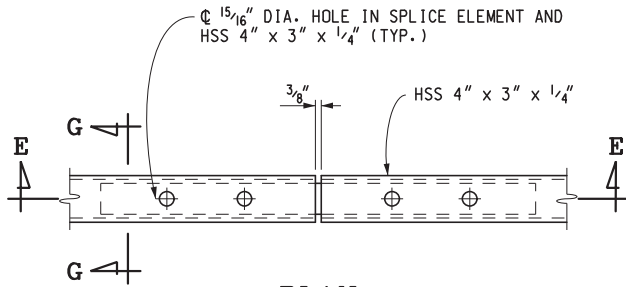


SECTION D-D

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

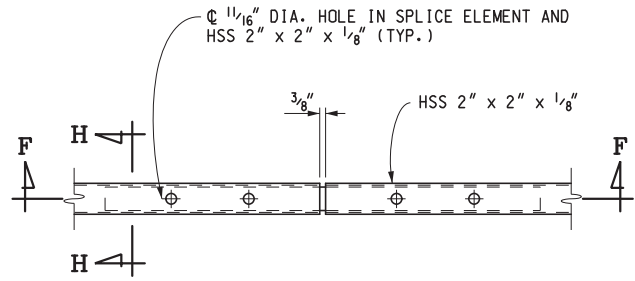
**BRIDGE RAILING,
AESTHETIC PARAPET TUBE**

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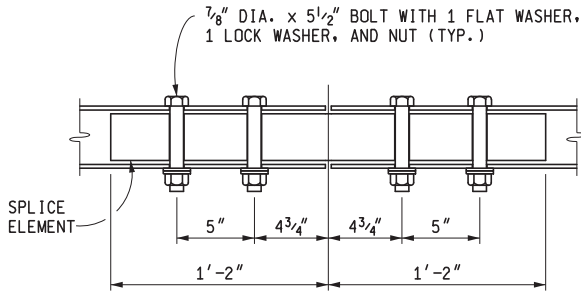
PLAN

HSS 4" x 3" x 1/4"



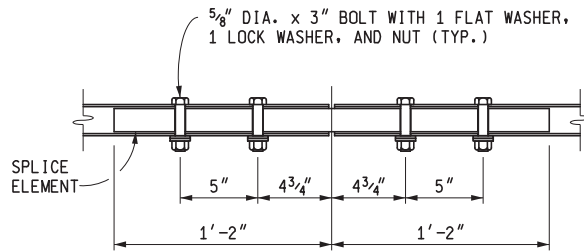
PLAN

HSS 2" x 2" x 1/8"



SECTION E-E

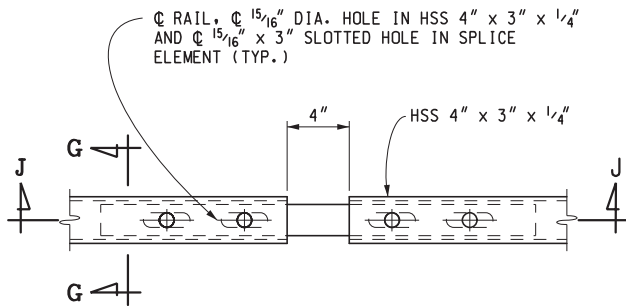
HSS 4" x 3" x 1/4"



SECTION F-F

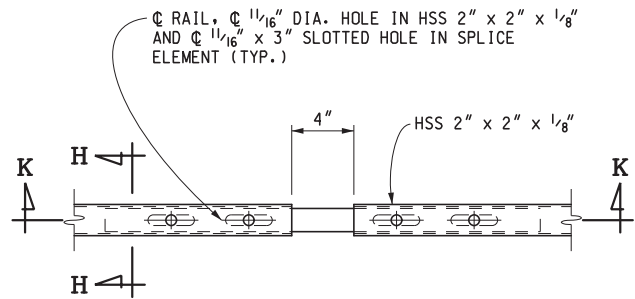
HSS 2" x 2" x 1/8"

FIXED SPLICE DETAILS



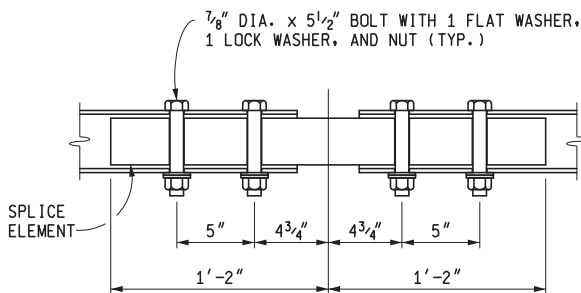
PLAN

HSS 4" x 3" x 1/4"



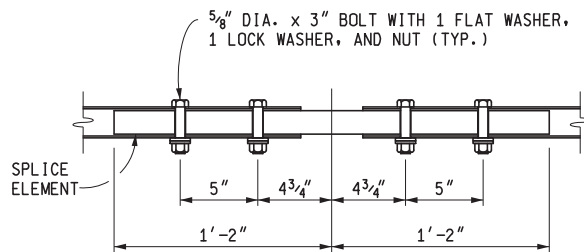
PLAN

HSS 2" x 2" x 1/8"



SECTION J-J

HSS 4" x 3" x 1/4"



SECTION K-K

HSS 2" x 2" x 1/8"

EXPANSION SPLICE DETAILS

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

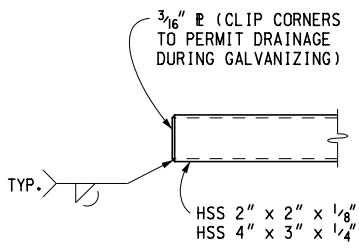
BRIDGE RAILING,
AESTHETIC PARAPET TUBE

7-25-2017
F.H.W.A. APPROVAL

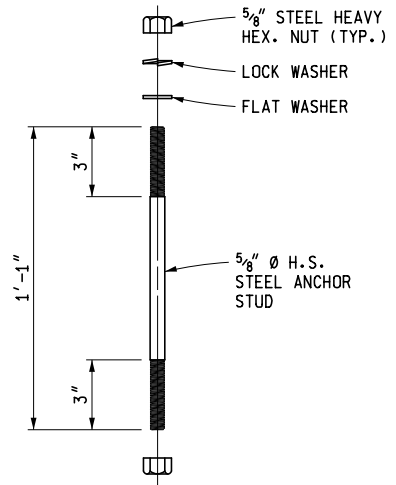
11-2-2016
PLAN DATE

B-25-K

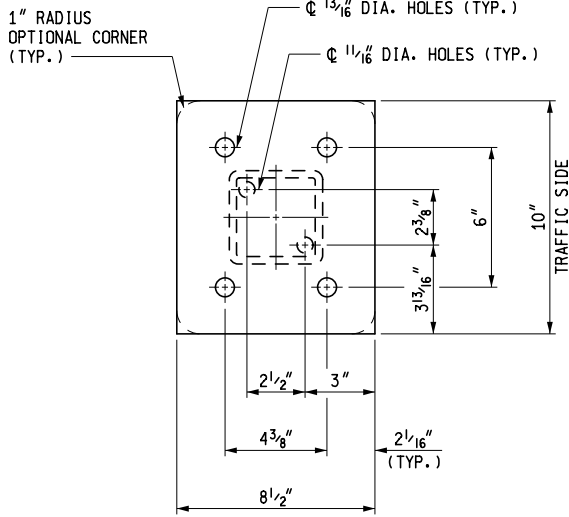
SHEET
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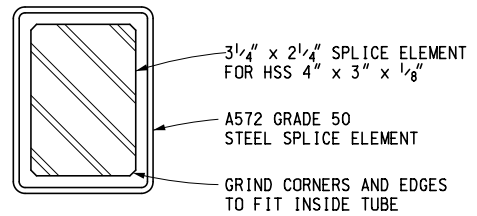
END OF RAIL



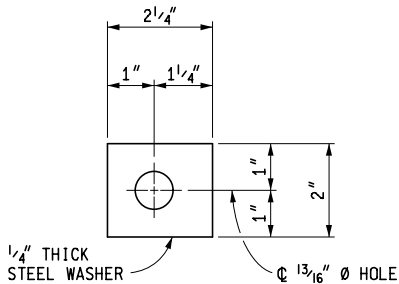
ANCHOR STUD DETAIL



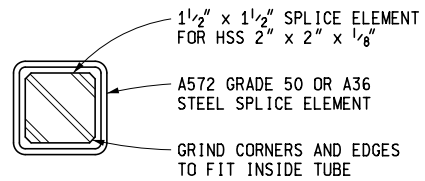
EXTERIOR BASE PLATE



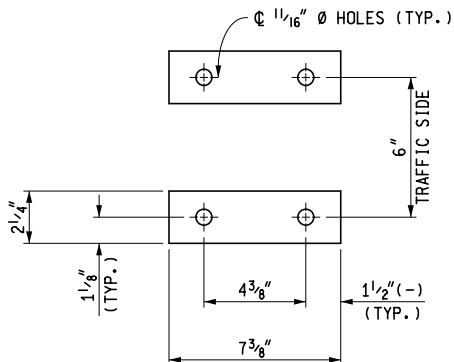
SECTION G-G



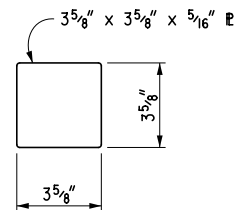
DETAIL A



SECTION H-H



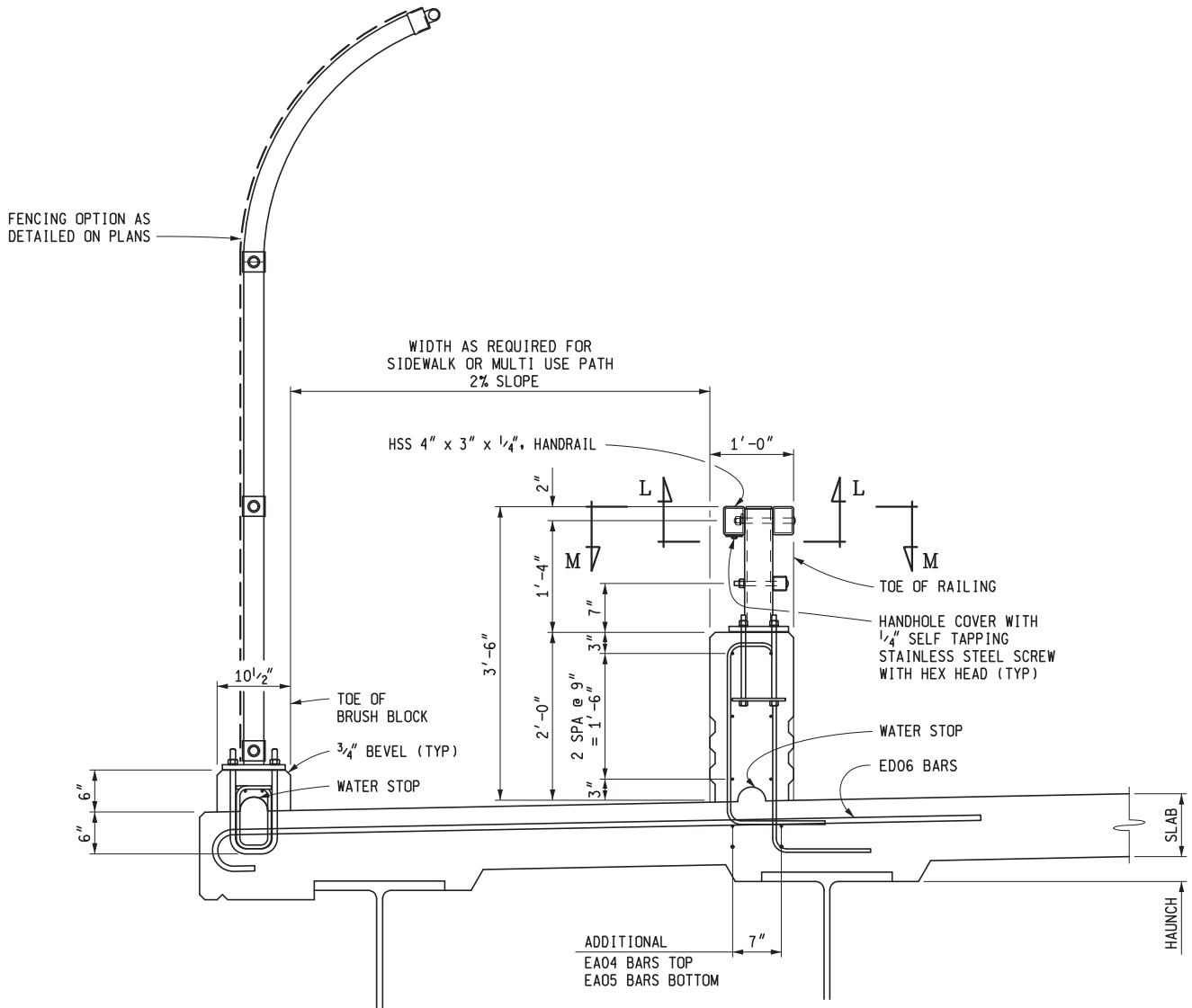
EMBEDDED ANCHOR STUD PLATES



POST COVER PLATE

MICHIGAN DEPARTMENT OF TRANSPORTATION
 BUREAU OF DEVELOPMENT STANDARD PLAN FOR
**BRIDGE RAILING,
 AESTHETIC PARAPET TUBE**

7-25-2017 F.H.W.A. APPROVAL	11-2-2016 PLAN DATE	B-25-K	SHEET 6 OF 8
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SECTION WITH PEDESTRIAN / MULTI USE PATH

MICHIGAN DEPARTMENT OF TRANSPORTATION
 BUREAU OF DEVELOPMENT STANDARD PLAN FOR

**BRIDGE RAILING,
 AESTHETIC PARAPET TUBE**

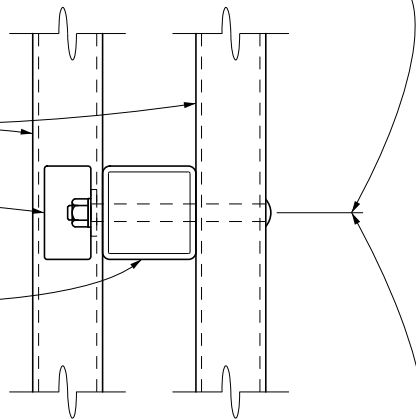
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☉ 3/4" x 8 1/2" SLOTTED ROUND HEAD BOLTS WITH PLATE WASHER, LOCK WASHER, AND HEX NUT (TYP.)

HSS 4" x 3" x 1/4", A500 GRADE B

4" x 2" HANDHOLE

HSS 4" x 4" x 5/16", A500 GRADE B



☉ 7/8" x 2" SLOTTED HOLE. BOTH FACES OF TRAFFIC SIDE TUBE AND INTERIOR FACE OF PEDESTRIAN SIDE TUBE.

SECTION L-L

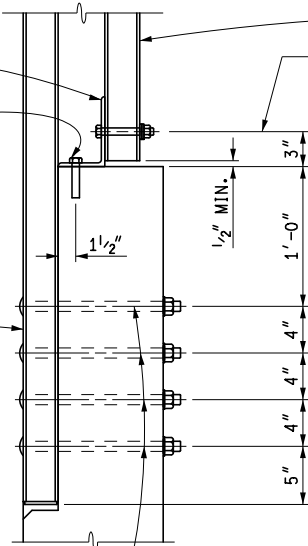
6" x 4" x 5/16" (4" LONG) ANGLE

☉ 5/8" Ø STAINLESS STEEL ADHESIVE ANCHORED BOLT

HSS 4" x 3" x 1/4" RAIL

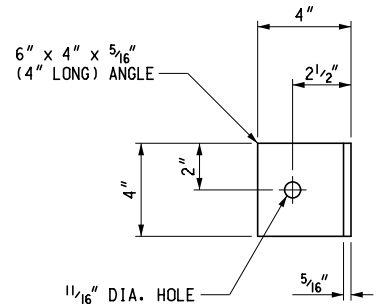
☉ 5/8" Ø x 4 1/2" BOLT WITH 1 PLATE WASHER, 1 LOCK WASHER, AND 1 HEX NUT

☉ 1 1/16" x 2" SLOTTED HOLE IN ANGLE AND ☉ 1 1/16" Ø HOLE IN HSS 4" x 3" x 1/4" RAIL



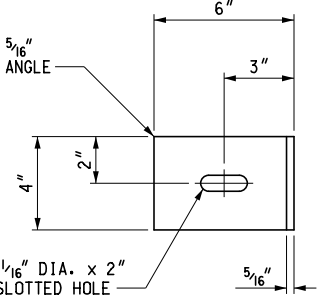
HSS 4" x 3" x 1/4" RAIL

☉ 1 5/16" x 1 1/8" SLOTTED HOLE IN RAIL, ☉ 7/8" Ø x 1'-2" SLOTTED ROUND HEAD BOLTS WITH HEX. NUT, 1 FLAT WASHER, 1 LOCK WASHER (TYP.)



6" x 4" x 5/16" (4" LONG) ANGLE

☉ 1 1/16" DIA. x 2" SLOTTED HOLE



SECTION M-M

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

**BRIDGE RAILING,
AESTHETIC PARAPET TUBE**

7-25-2017
F.H.W.A. APPROVAL

11-2-2016
PLAN DATE

B-25-K

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