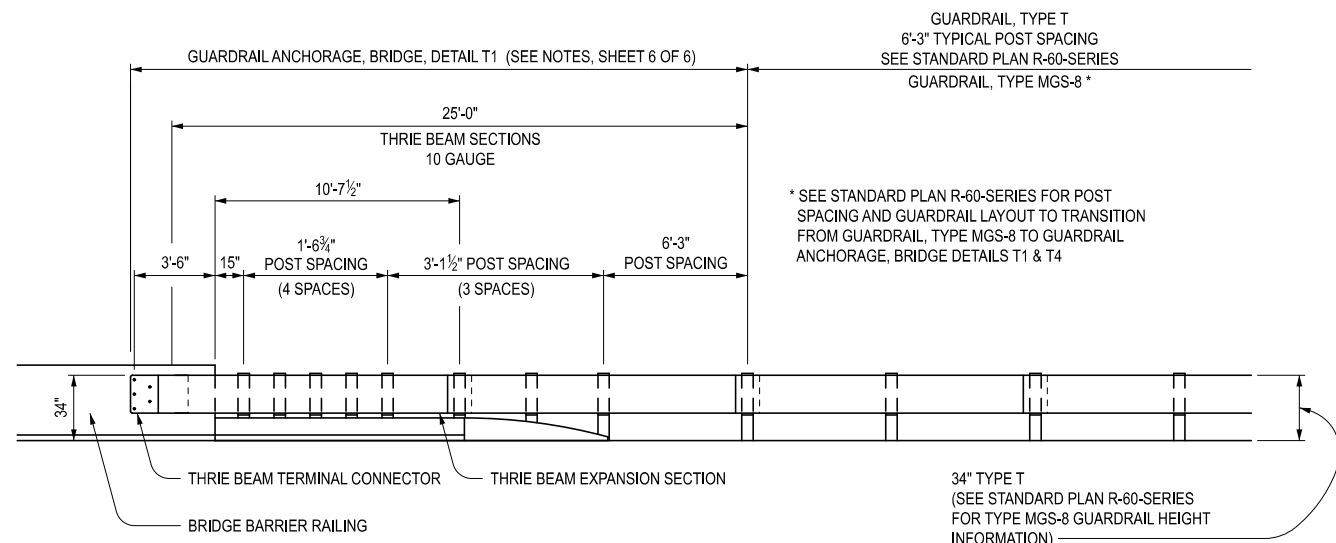
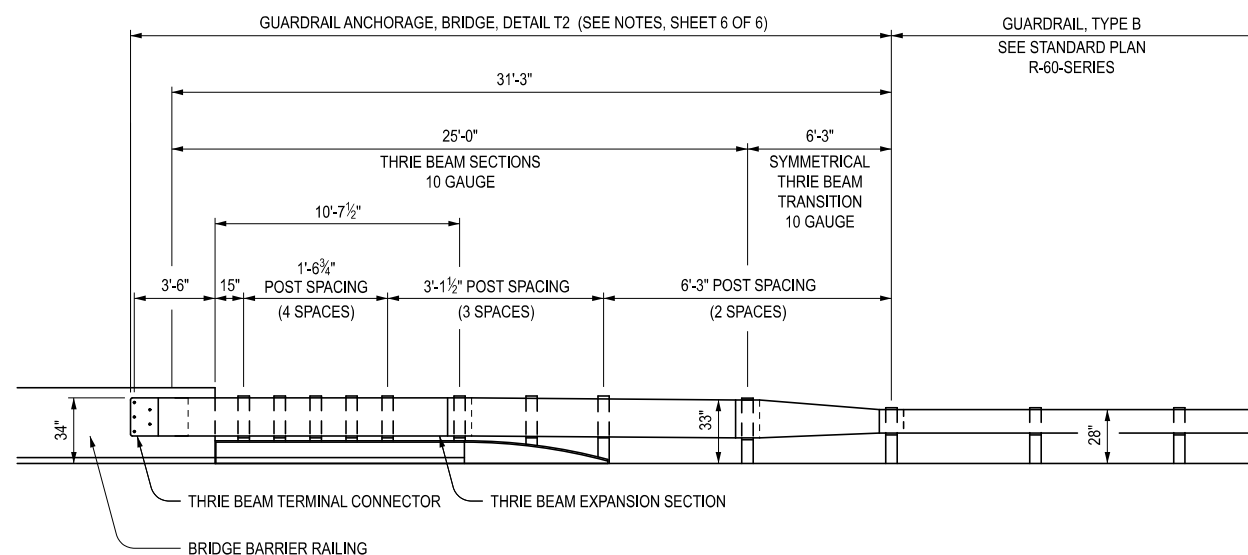


PLAN VIEW

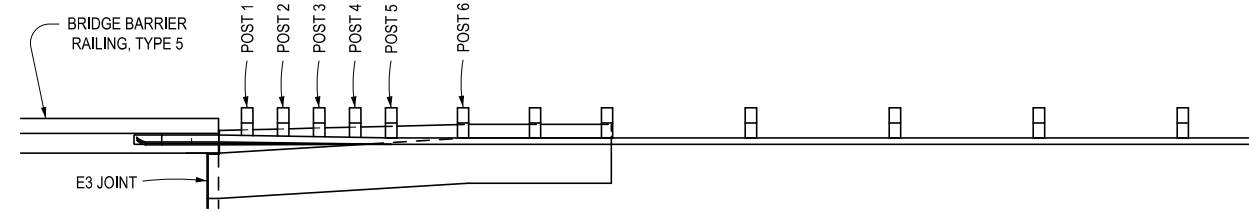


ELEVATION VIEW  
(TO BE USED WITH GUARDRAIL, TYPE T & TYPE MGS-8)

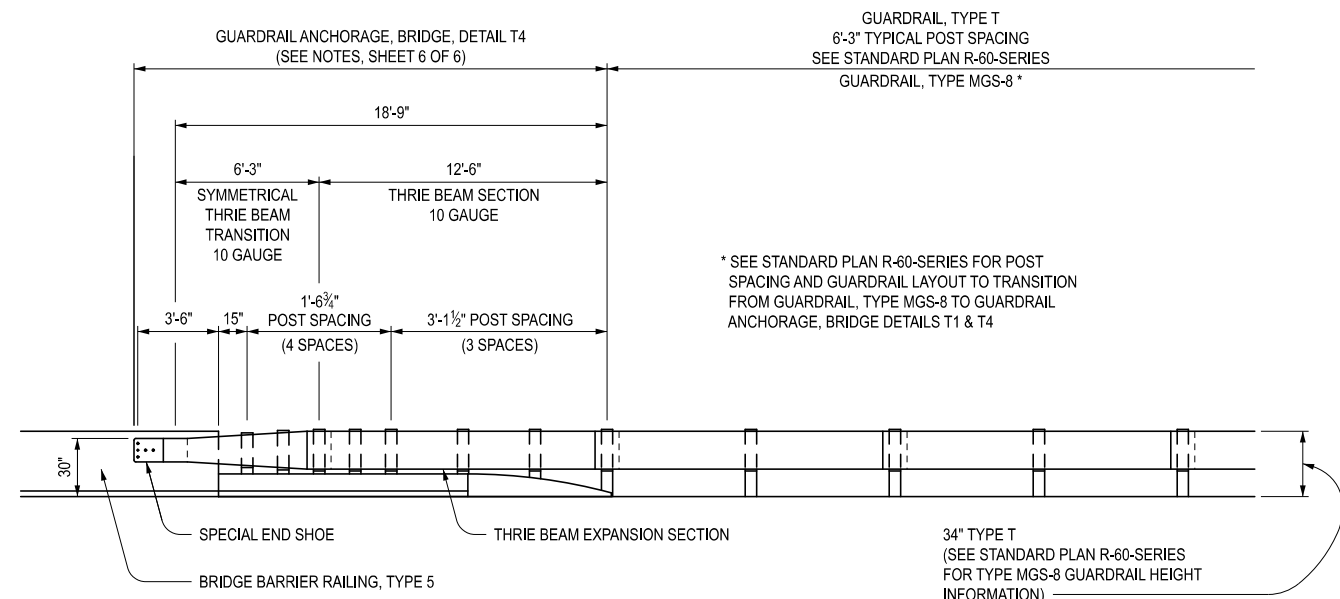


ELEVATION VIEW  
(TO BE USED WITH GUARDRAIL, TYPE B)

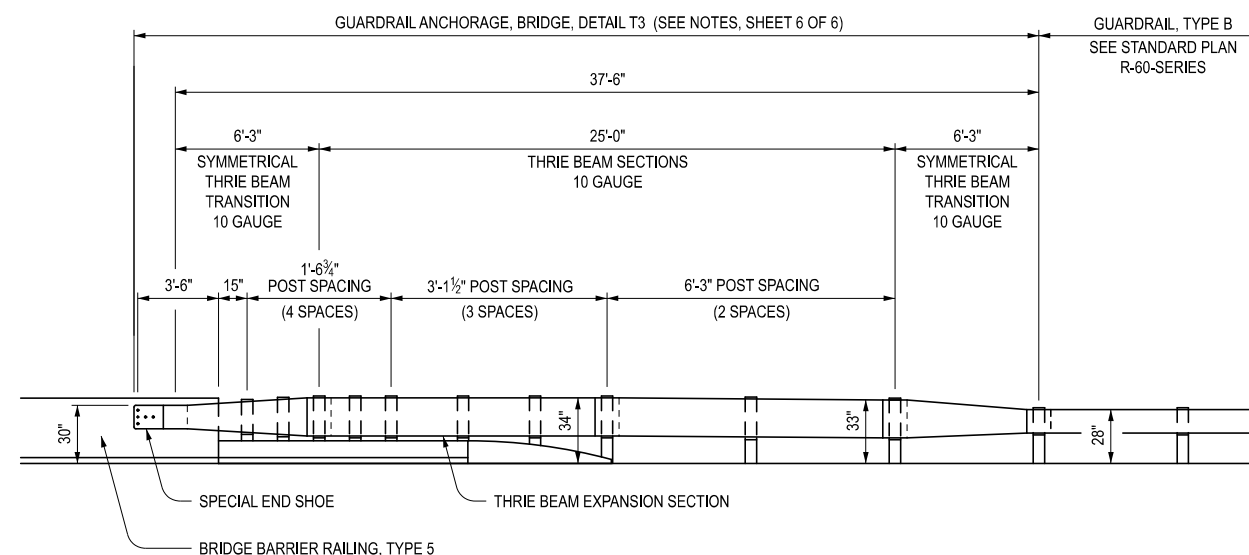
DETAILS FOR CONNECTING GUARDRAIL TO  
BRIDGE BARRIER RAILINGS, TYPE 4, 2-TUBE, 4-TUBE,  
AESTHETIC PARAPET TUBE, OR 3 TUBE WITH PICKETS  
(WITHOUT EXPANSION AT BACKWALL)



PLAN VIEW



ELEVATION VIEW  
(TO BE USED WITH GUARDRAIL, TYPE T & TYPE MGS-8)



ELEVATION VIEW  
(TO BE USED WITH GUARDRAIL, TYPE B)

DETAILS FOR CONNECTING GUARDRAIL TO BRIDGE BARRIER RAILINGS, TYPE 5  
(WITHOUT EXPANSION AT BACKWALL)

APPROVED BY: \_\_\_\_\_  
DIRECTOR, BUREAU OF FIELD SERVICES



APPROVED BY: \_\_\_\_\_  
DIRECTOR, BUREAU OF DEVELOPMENT

DEPARTMENT DIRECTOR  
BRADLEY C. WIEFERICH, PE

SPECIAL DETAIL FOR  
GUARDRAIL ANCHORAGE, BRIDGE, DETAILS  
(FOR SAFETY SHAPE BRIDGE BARRIERS & RAILINGS)

(SPECIAL DETAIL)	04/04/2023	R-67-SD	SHEET 1 OF 6
FHWA APPROVAL	PLAN DATE		

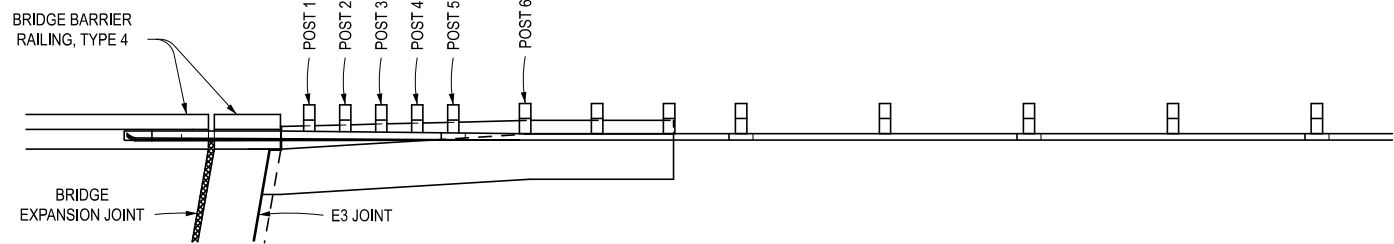


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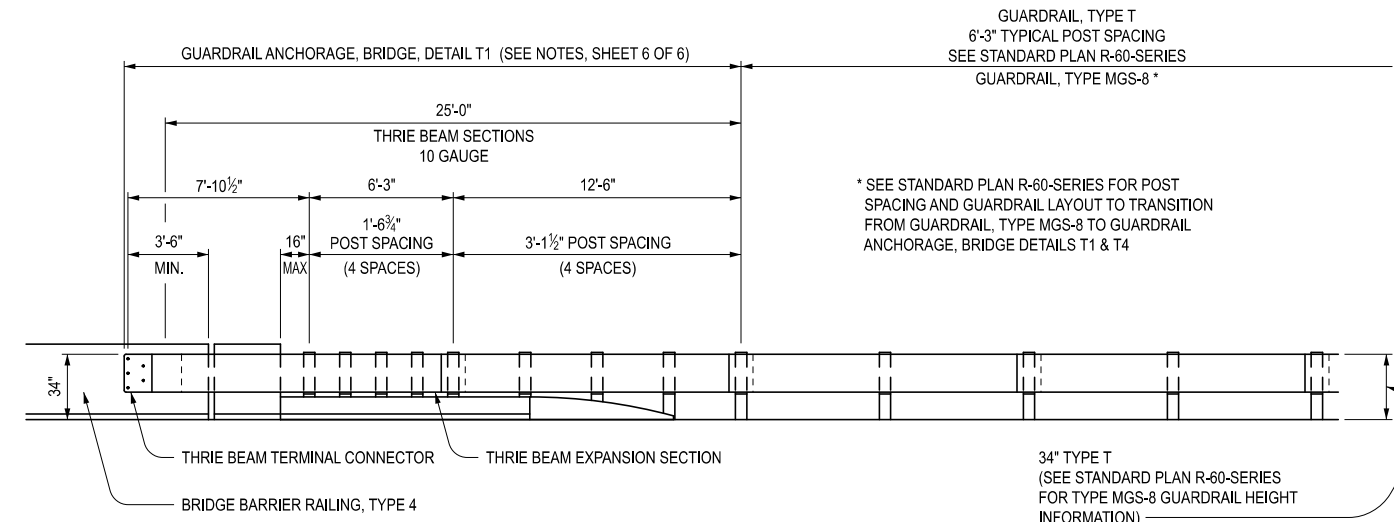
SPECIAL DETAIL FOR  
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(SPECIAL DETAIL)	04/04/2023	R-67-SD	SHEET 2 OF 6
FHWA APPROVAL	PLAN DATE		

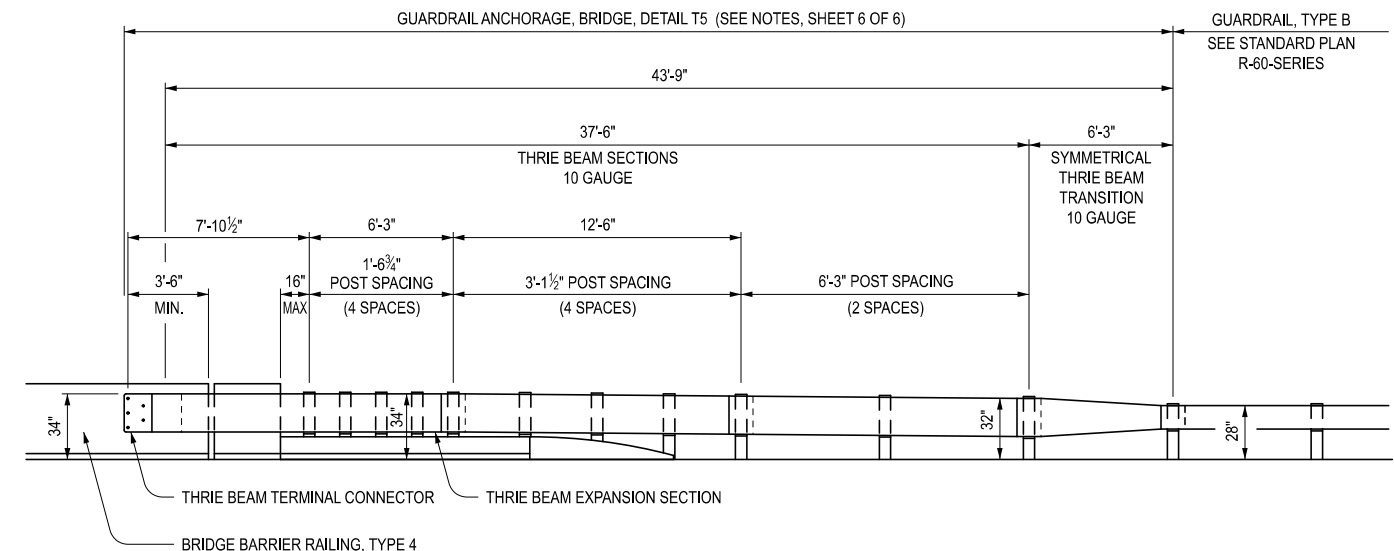
SECT



PLAN VIEW



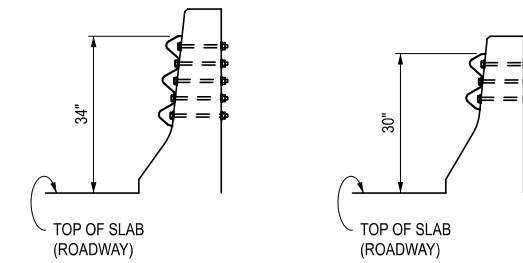
ELEVATION VIEW  
(TO BE USED WITH GUARDRAIL, TYPE T & TYPE MGS-8)



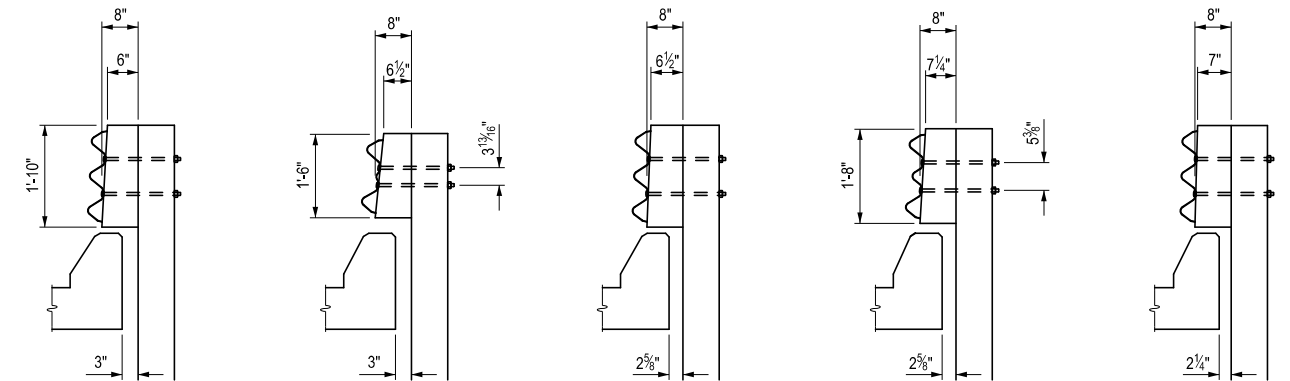
ELEVATION VIEW  
(TO BE USED WITH GUARDRAIL, TYPE B)

DETAILS FOR CONNECTING GUARDRAIL TO  
BRIDGE BARRIER RAILINGS, TYPE 4, 2-TUBE, 4-TUBE,  
AESTHETIC PARAPET TUBE, OR 3 TUBE WITH PICKETS  
(WITH EXPANSION AT BACKWALL/END WALL OR SLEEPER SLAB)

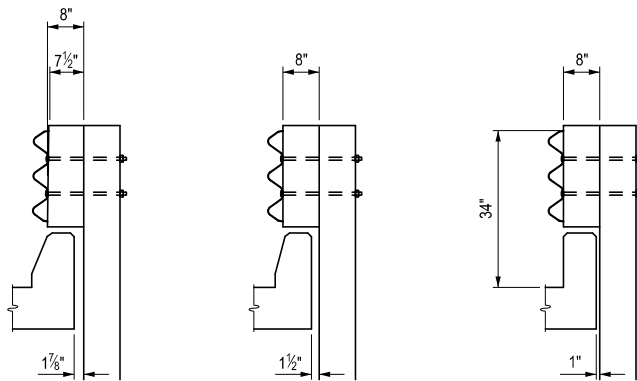
HIGH STRENGTH 7/8" DIA. HEX HEAD BOLT AND NUTS SHALL BE USED TO CONNECT GUARDRAIL TO BRIDGE RAILINGS WITH ROUND WASHERS ON FRONT AND SQUARE WASHERS ON BACK. (SEE CHART BELOW FOR LENGTHS AND NUMBER REQUIRED.) WASHER DETAILS ARE SHOWN ON SHEET 5 OF 6.



SECTIONS AT BRIDGE RAILINGS



POST 1 FOR BRIDGE BARRIER RAILING, TYPE 4  
POST 1 FOR BRIDGE BARRIER RAILING, TYPE 5  
POST 2 FOR BRIDGE BARRIER RAILING, TYPE 4  
POST 2 FOR BRIDGE BARRIER RAILING, TYPE 5  
POST 3



POST 4  
POST 5  
POST 6

BOLT REQUIREMENTS FOR CONNECTING GUARDRAIL TO BRIDGE RAILINGS & FILLER WALLS			
BRIDGE RAILING	BOLT LENGTH	MINIMUM THREAD LENGTH	NUMBER REQUIRED
TYPE 4	12 1/2"	4"	5
TYPE 5	11 1/2"	4"	4
SHORTER BOLT LENGTHS MAY BE USED PROVIDED THE BOLT EXTENDS 1/4" BEYOND THE NUT WHEN TIGHTENED.			

GUARDRAIL POST SECTIONS FOR GUARDRAIL ANCHORAGE, BRIDGE

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FHWA APPROVAL PLAN DATE

R-67-SD

SHEET 3 OF 6

**MDOT**  
Michigan Department of Transportation

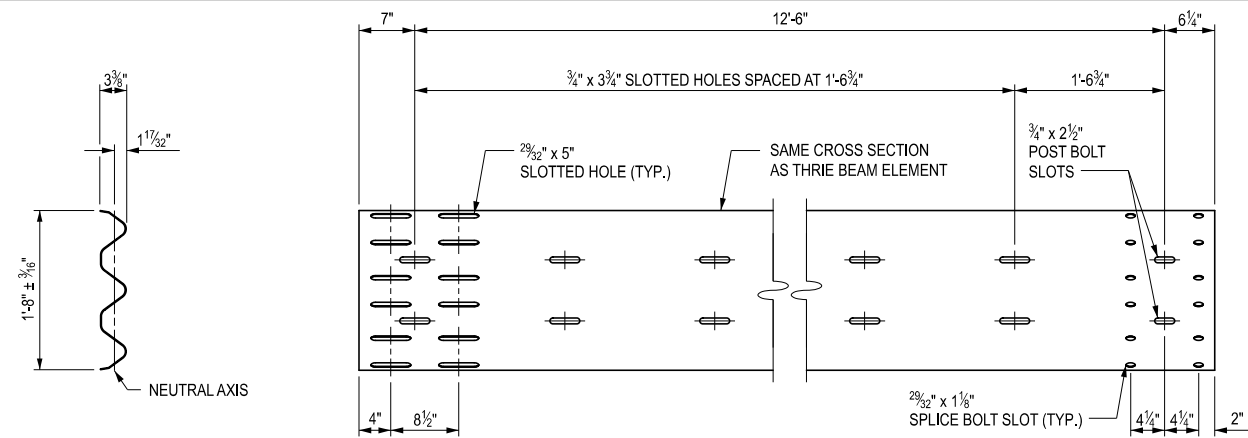
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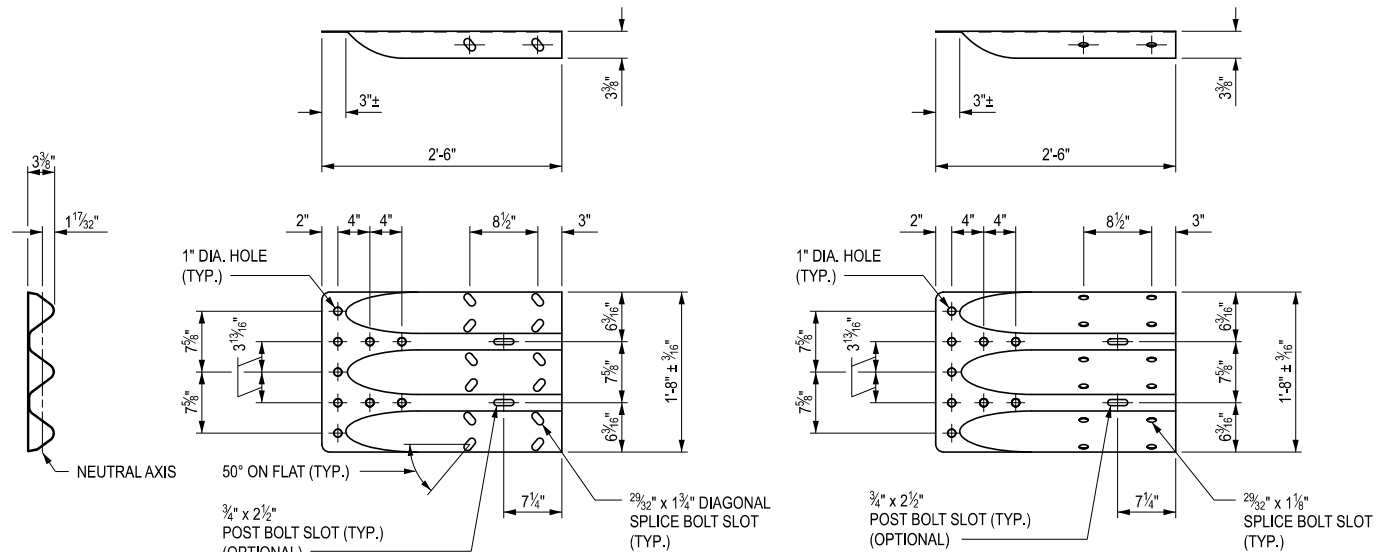
(SPECIAL DETAIL) 04/04/2023  
FHWA APPROVAL PLAN DATE

R-67-SD

SHEET 4 OF 6  
SECT

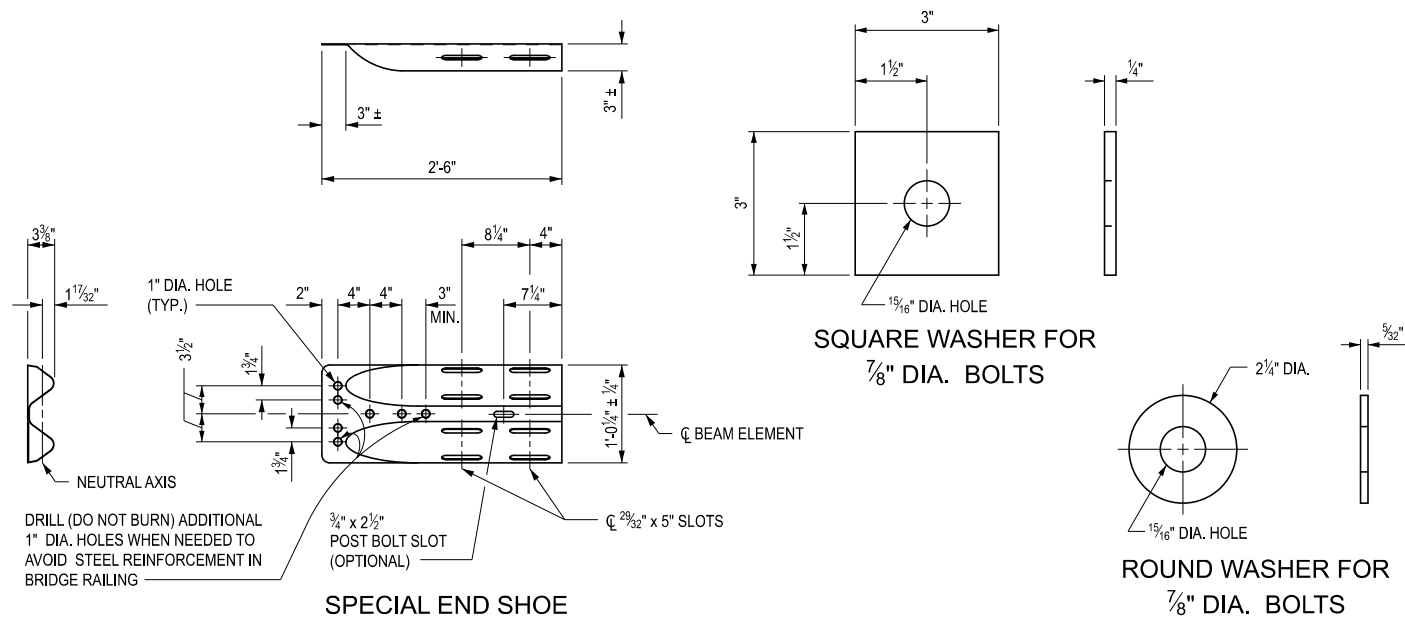


THRIE BEAM EXPANSION SECTION



OPTION 1  
THRIE BEAM TERMINAL CONNECTOR

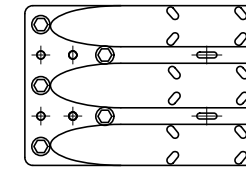
OPTION 2



SPECIAL END SHOE

SQUARE WASHER FOR  
7/8" DIA. BOLTS

ROUND WASHER FOR  
7/8" DIA. BOLTS



THRIE BEAM TERMINAL CONNECTOR  
BOLT LOCATION FOR  
GUARDRAIL ANCHORAGE TYPE T1, T2, T5

⊙ = REQUIRED BOLT LOCATION TO ANCHOR INTO CONCRETE

NOTES:

ALL POSTS, OFFSET BLOCKS, BEAM ELEMENTS, REFLECTORS, AND HARDWARE, (INCLUDING BOLTS, NUTS, AND WASHERS) SHALL CONFORM TO THE STANDARD SPECIFICATIONS FOR CONSTRUCTION AND TO STANDARD PLAN R-60-SERIES, WHERE APPLICABLE, EXCEPT AS SPECIFIED ON THIS STANDARD.

BEAM ELEMENTS IDENTIFIED AS 12 GAUGE MUST MEET CLASS A REQUIREMENTS PER AASHTO M 180. BEAM ELEMENTS IDENTIFIED AS 10 GAUGE MUST MEET CLASS B REQUIREMENTS PER AASHTO M 180.

ALL POSTS USED TO CONSTRUCT GUARDRAIL ANCHORAGE, BRIDGE, DETAIL T1 THROUGH T5, SHALL BE 7'-0" LONG STEEL POSTS (W6 x 8.5 OR W6 x 9) OR WOOD POSTS (6" x 8").

THE THRIE BEAM TERMINAL CONNECTOR AND SPECIAL END SHOE SHALL BE THE SAME MATERIAL AS ADJACENT RUN OF GUARDRAIL, AND SHALL NOT BE LIGHTER THAN 10 GAUGE (0.138").

SECTIONS OF THE THRIE BEAM ELEMENT REQUIRED TO BE TWISTED FOR USE IN ANCHORAGE SHALL BE FIELD BENT.

GUARDRAIL BEAM ELEMENTS SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC, EXCEPT FOR THE THRIE BEAM TERMINAL CONNECTOR WHICH MAY BE LAPPED IN EITHER DIRECTION.

SPLICE BOLTS SHALL BE USED WHEN SPLICING THE THRIE BEAM TERMINAL CONNECTOR TO THE THRIE BEAM EXPANSION SECTION AND WHEN SPLICING THE SPECIAL END SHOE TO THE TRANSITION SECTION. THE SPLICE BOLT NUT SHALL BE INSTALLED FINGER-TIGHT AND SHALL FULLY ENGAGE THE SPLICE BOLT WITH A MINIMUM OF ONE THREAD EXTENDING BEYOND THE NUT. THIS SHALL BE FOLLOWED UP BY UPSETTING THE FIRST THREAD ON THE OUTSIDE OF THE NUT WITH A CENTER PUNCH OR COLD CHISEL, SO THAT IT WILL NOT LOOSEN.

GUARDRAIL ANCHORAGE, BRIDGE, DETAILS T1, T2, AND T5 REQUIRE THAT THE THRIE BEAM TERMINAL CONNECTOR BE ATTACHED TO THE 2 5/32" x 5" LONG SLOTTED HOLES IN THE THRIE BEAM EXPANSION SECTION.

SEE APPROPRIATE PLANS TO DETERMINE WHETHER GUARDRAIL ANCHORAGE, BRIDGE SPANS A BRIDGE EXPANSION JOINT.

SEE STANDARD PLAN R-55-SERIES FOR FILLER WALLS AND FILLER WALL END BLOCK.

SEE STANDARD PLAN R-54-SERIES FOR CONCRETE BARRIER, SINGLE FACE, TYPE \_\_.

CONCRETE BARRIER, SINGLE FACE TRANSITION SECTION SHALL BE INCLUDED IN THE PAY ITEM "CONC BARRIER, SINGLE FACE, TYPE \_\_".



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FHWA APPROVAL	PLAN DATE		



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