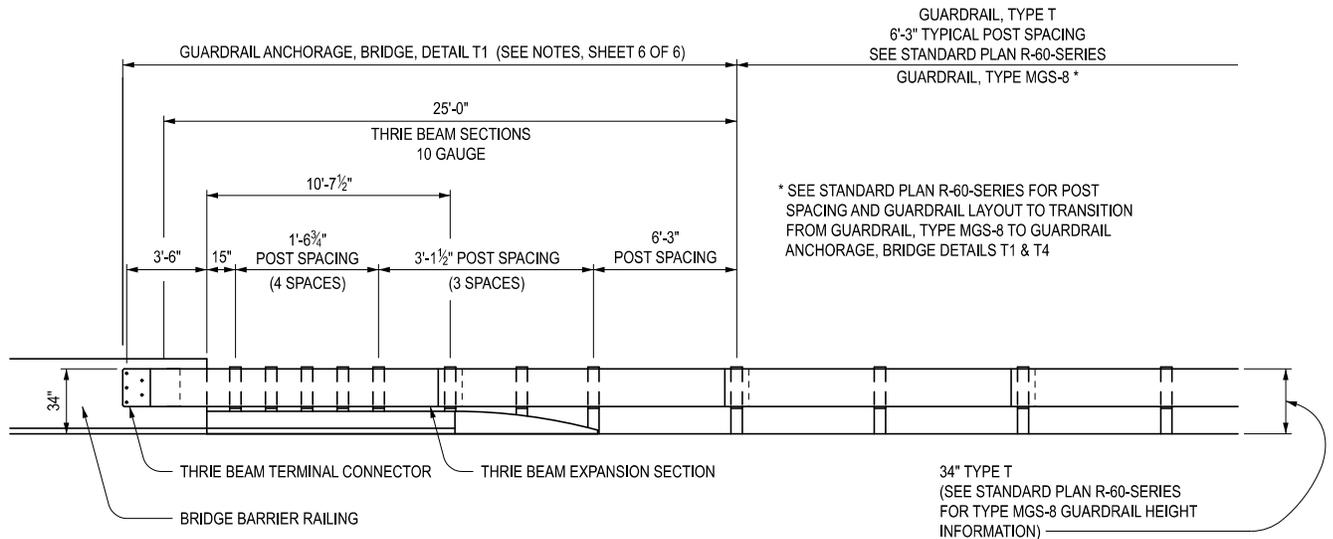
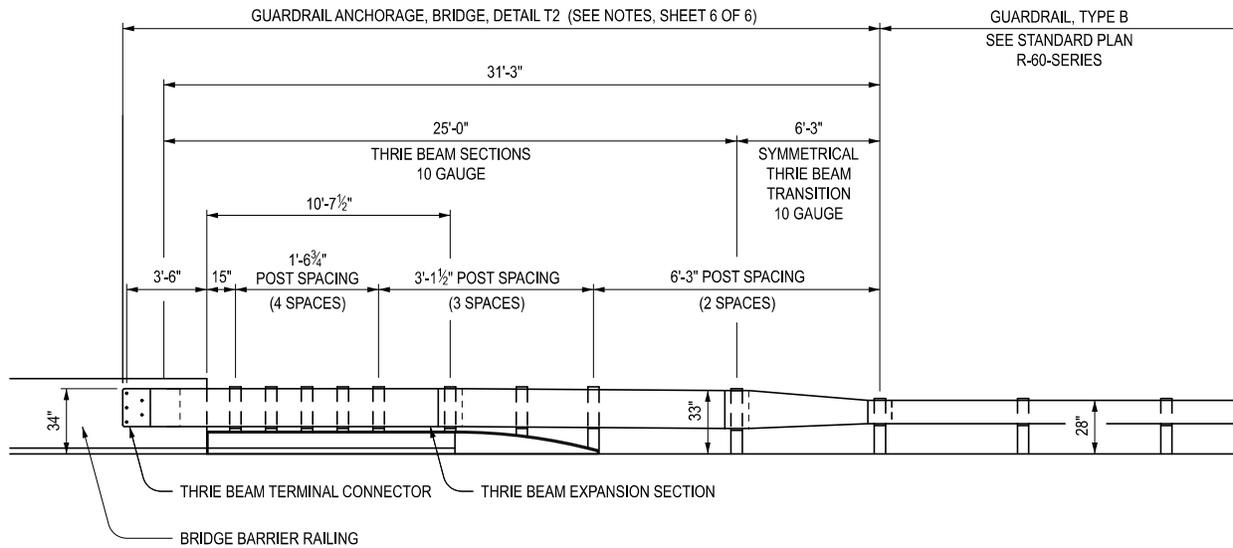


PLAN VIEW



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)

APPROVED BY: _____
DIRECTOR, BUREAU OF FIELD SERVICES

APPROVED BY: _____
DIRECTOR, BUREAU OF DEVELOPMENT



DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

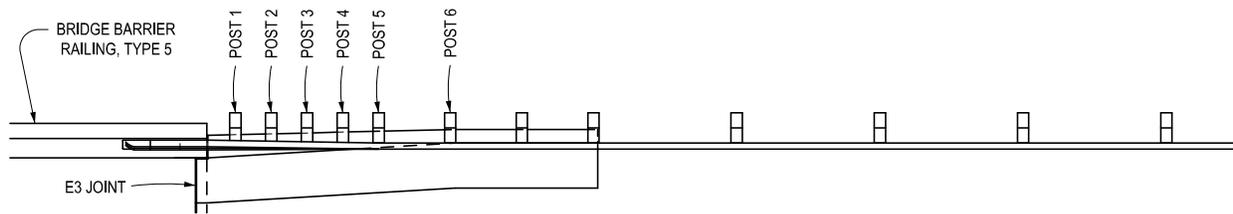
SPECIAL DETAIL FOR
GUARDRAIL ANCHORAGE, BRIDGE, DETAILS
(FOR SAFETY SHAPE BRIDGE BARRIERS & RAILINGS)

(SPECIAL DETAIL)
FHWA APPROVAL

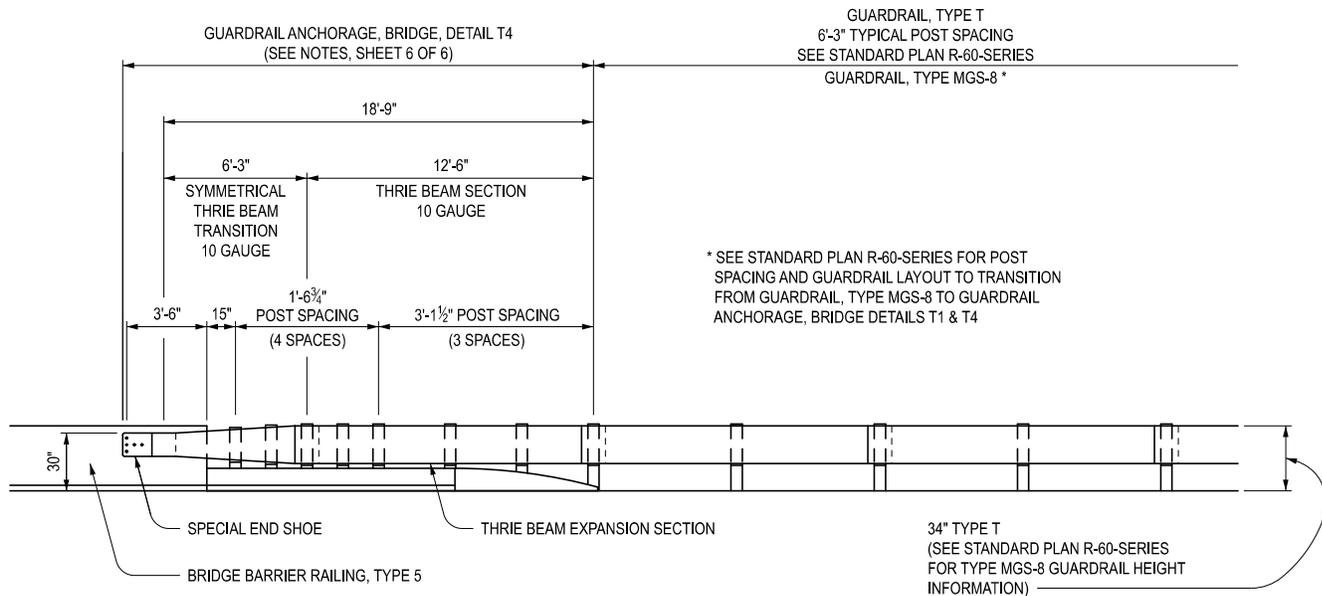
04/04/2023
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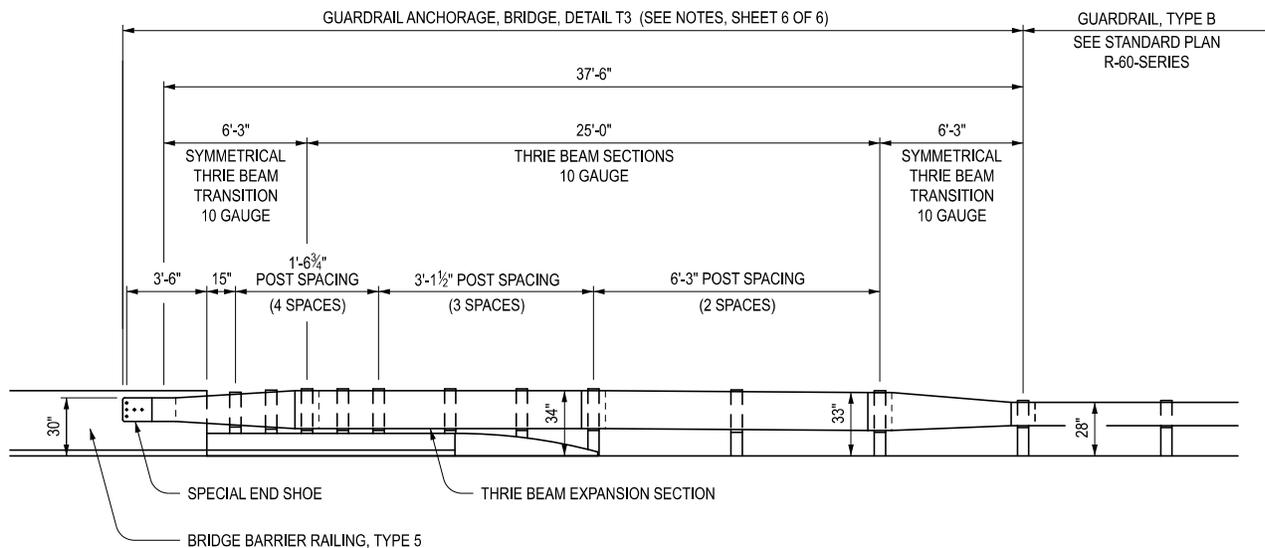


PLAN VIEW



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)



DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

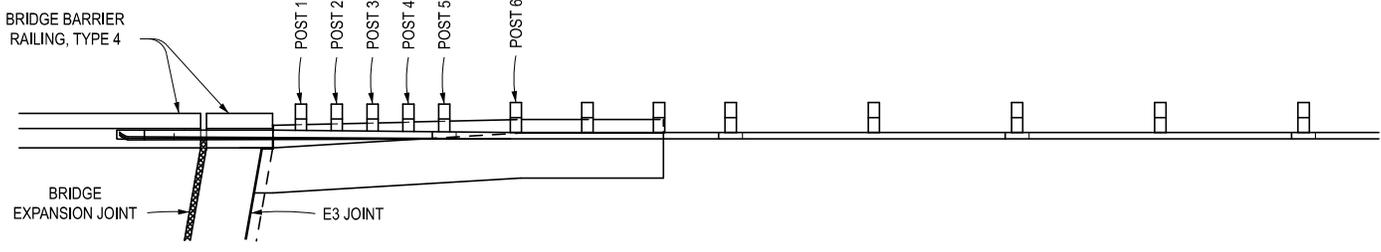
SPECIAL DETAIL FOR
GUARDRAIL ANCHORAGE, BRIDGE, DETAILS
(FOR SAFETY SHAPE BRIDGE BARRIERS & RAILINGS)

(SPECIAL DETAIL)
FHWA APPROVAL

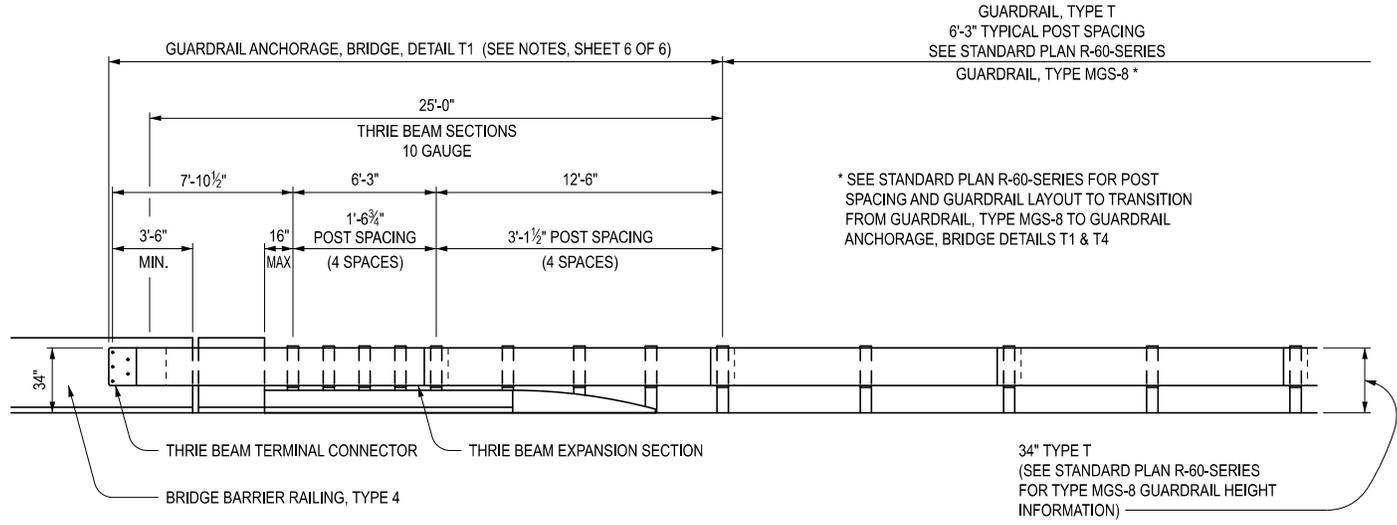
04/04/2023
PLAN DATE

R-67-SD

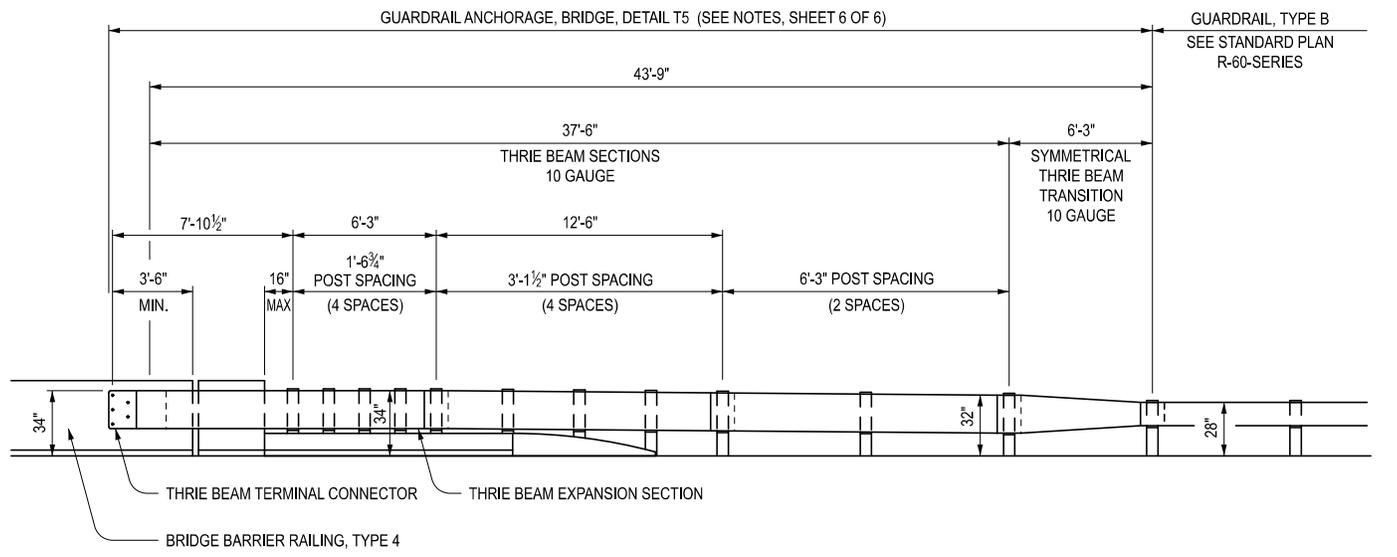
SHEET
2 OF 6



PLAN VIEW



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

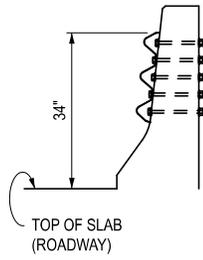


ELEVATION VIEW
(TO BE USED WITH GUARDRAIL, TYPE B)

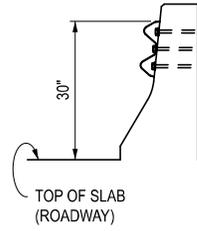
**DETAILS FOR CONNECTING GUARDRAIL TO
BRIDGE BARRIER RAILINGS, TYPE 4, 2-TUBE, 4-TUBE,
AESTHETIC PARAPET TUBE, OR 3 TUBE WITH PICKETS**
(WITH EXPANSION AT BACKWALL/END WALL OR SLEEPER SLAB)

<p>DEPARTMENT DIRECTOR BRADLEY C. WIEFERICH, PE</p>	SPECIAL DETAIL FOR GUARDRAIL ANCHORAGE, BRIDGE, DETAILS (FOR SAFETY SHAPE BRIDGE BARRIERS & RAILINGS)		R-67-SD	SHEET 3 OF 6
	(SPECIAL DETAIL) FHWA APPROVAL	04/04/2023 PLAN DATE		

HIGH STRENGTH $\frac{3}{8}$ " 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.

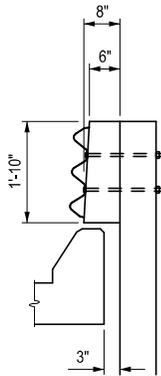


BRIDGE BARRIER RAILING TYPE 4

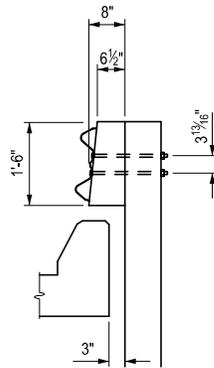


BRIDGE BARRIER RAILING TYPE 5

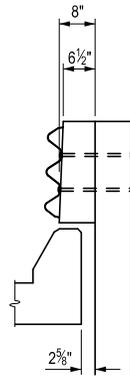
SECTIONS AT BRIDGE RAILINGS



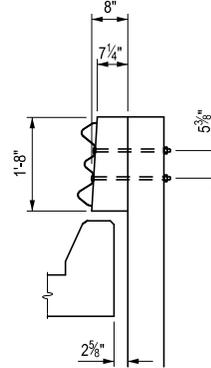
POST 1 FOR BRIDGE BARRIER RAILING, TYPE 4



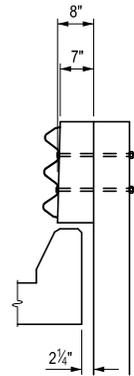
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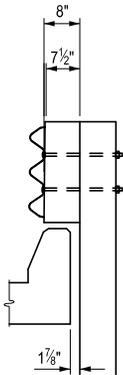
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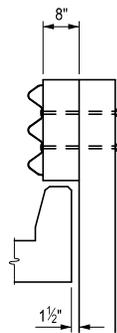
POST 2 FOR BRIDGE BARRIER RAILING, TYPE 5



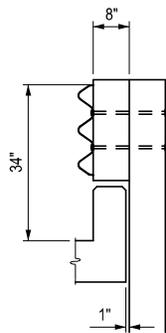
POST 3



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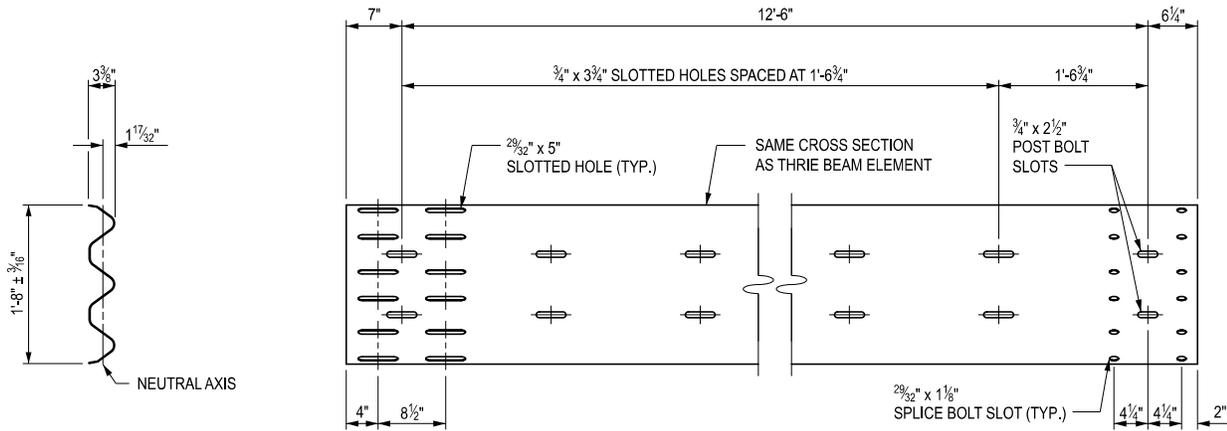
SPECIAL DETAIL FOR
GUARDRAIL ANCHORAGE, BRIDGE, DETAILS
(FOR SAFETY SHAPE BRIDGE BARRIERS & RAILINGS)

(SPECIAL DETAIL)
FHWA APPROVAL

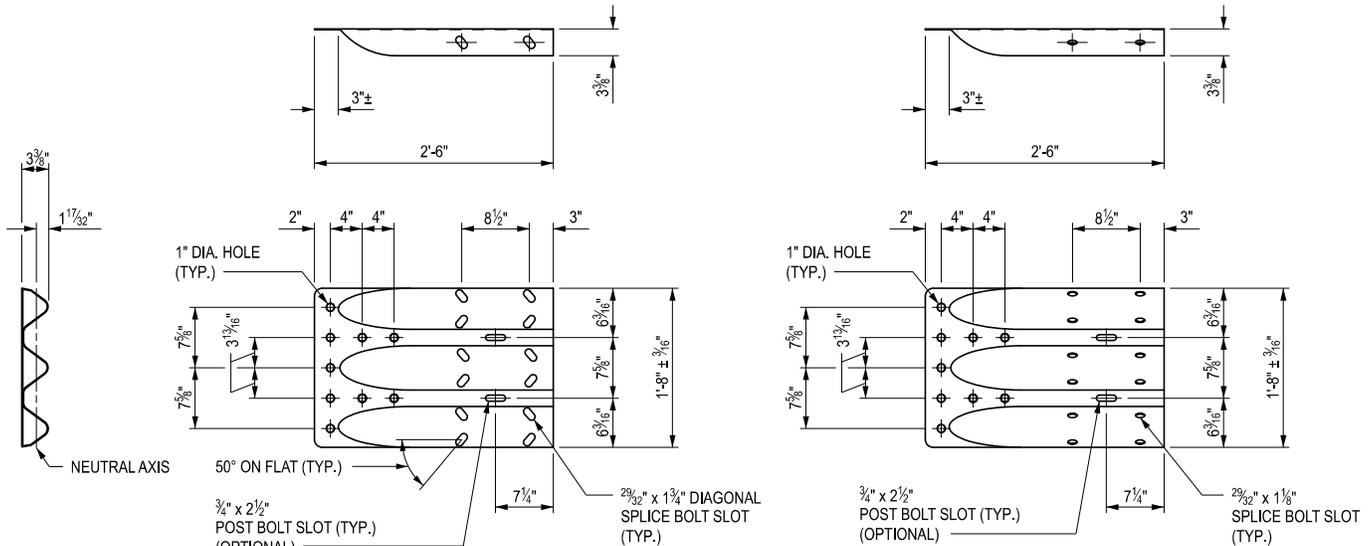
04/04/2023
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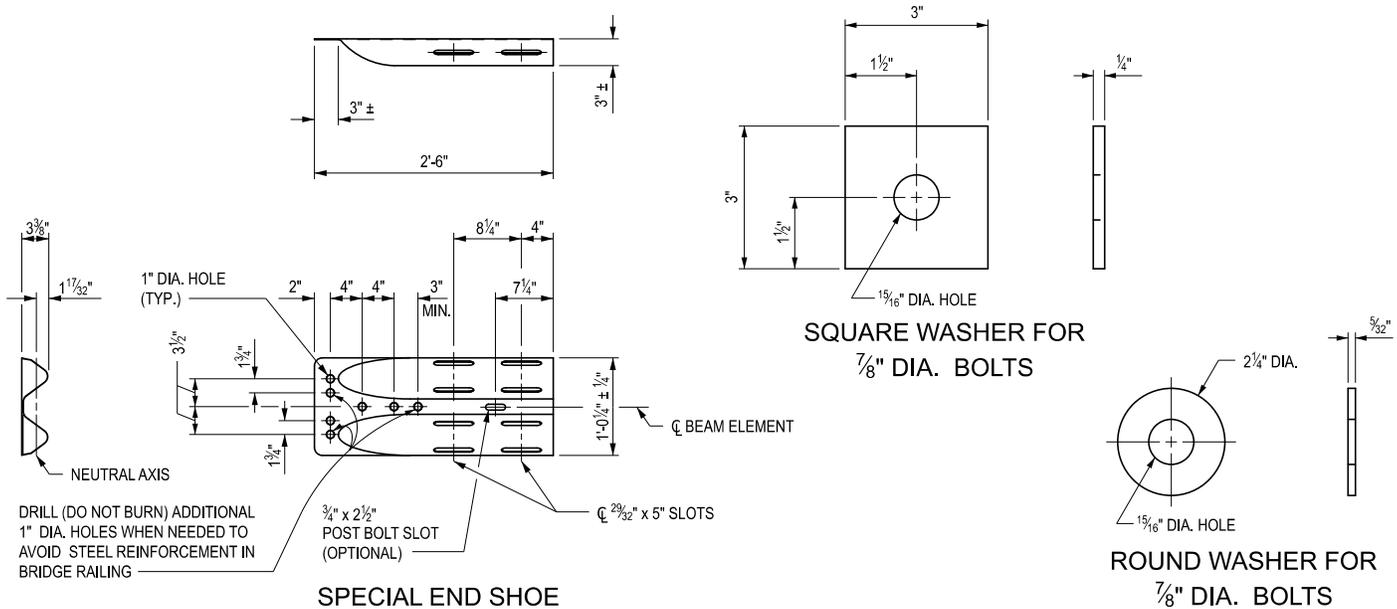
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THRIE BEAM EXPANSION SECTION

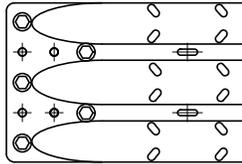


THRIE BEAM TERMINAL CONNECTOR



SPECIAL END SHOE

<p>MDOT Michigan Department of Transportation</p> <p>DEPARTMENT DIRECTOR BRADLEY C. WIEFERICH, PE</p>	<p>SPECIAL DETAIL FOR GUARDRAIL ANCHORAGE, BRIDGE, DETAILS (FOR SAFETY SHAPE BRIDGE BARRIERS & RAILINGS)</p>			<p>SHEET 5 OF 6</p>
	<p>(SPECIAL DETAIL) FHWA APPROVAL</p>	<p>04/04/2023 PLAN DATE</p>	<p>R-67-SD</p>	



**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 2³/₃₂" 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 ___".



DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

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

(SPECIAL DETAIL)
FHWA APPROVAL

04/04/2023
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