

POST 1 THROUGH 11 - W6 x 9 OR W6 x 8.5 POST (7'-0" LONG) WITH 12" OFFSET BLOCK
POST 12 THROUGH 14 - W6 x 15 POST (7'-0" LONG) WITH 12" OFFSET BLOCK

DETAILS FOR CONNECTING GUARDRAIL TYPE B TO
2-TUBE, 4-TUBE, AESTHETIC PARAPET TUBE, 3 TUBE WITH PICKETS,
CONCRETE BLOCK RETROFIT, PIER BASE WALL,
TYPE 6*, TYPE 7*, OR SINGLE FACE CONCRETE BARRIER*
(WITHOUT EXPANSION AT BACKWALL)

* TRANSITION BARRIER ENDING FROM SINGLE-SLOPE TO VERTICAL FACE IN ADVANCE OF END SHOE. THEN ATTACH ANCHORAGE TO VERTICAL FACE.



DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

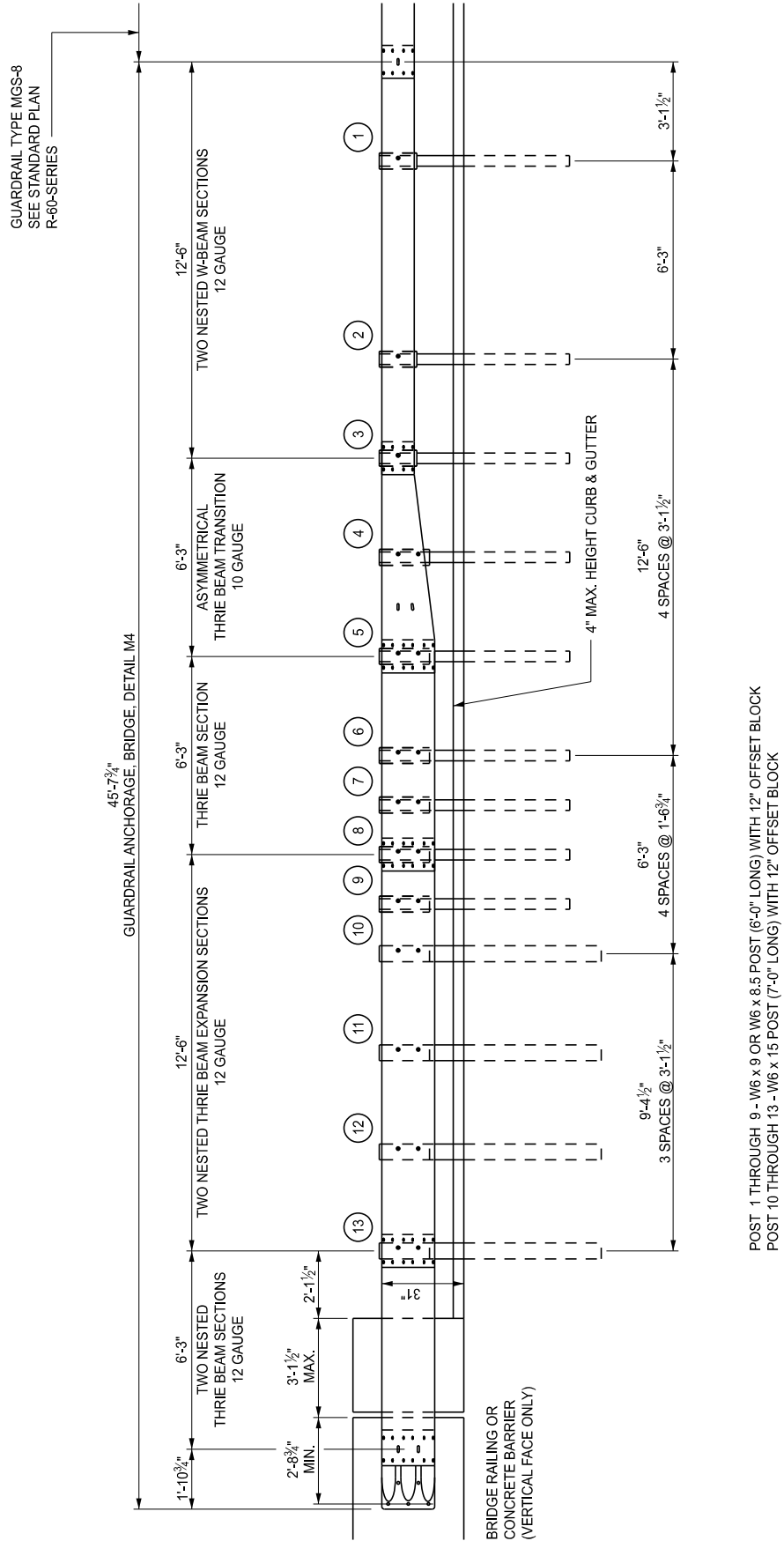
STANDARD PLAN FOR
GUARDRAIL ANCHORAGE, BRIDGE, DETAILS

(SPECIAL DETAIL)
FHWA APPROVAL

01/06/2026
PLAN DATE

R-67-G

SHEET
3 OF 16



POST 1 THROUGH 9 - W6 x 9 OR W6 x 8.5 POST (6'-0" LONG) WITH 12" OFFSET BLOCK
POST 10 THROUGH 13 - W6 x 15 POST (7'-0" LONG) WITH 12" OFFSET BLOCK

DETAILS FOR CONNECTING GUARDRAIL TYPE MGS-8 TO
2-TUBE, 4-TUBE, AESTHETIC PARAPET TUBE,
3 TUBE WITH PICKETS, CONCRETE BLOCK RETROFIT,
TYPE 6*, TYPE 7*, OR SINGLE FACE CONCRETE BARRIER*
(WITH EXPANSION AT BACKWALL/END WALL OR SLEEPER SLAB)

* TRANSITION BARRIER ENDING FROM SINGLE-SLOPE TO VERTICAL FACE IN ADVANCE OF END SHOE. THEN ATTACH ANCHORAGE TO VERTICAL FACE.



DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
GUARDRAIL ANCHORAGE, BRIDGE, DETAILS

(SPECIAL DETAIL)
FHWA APPROVAL

01/06/2026
PLAN DATE

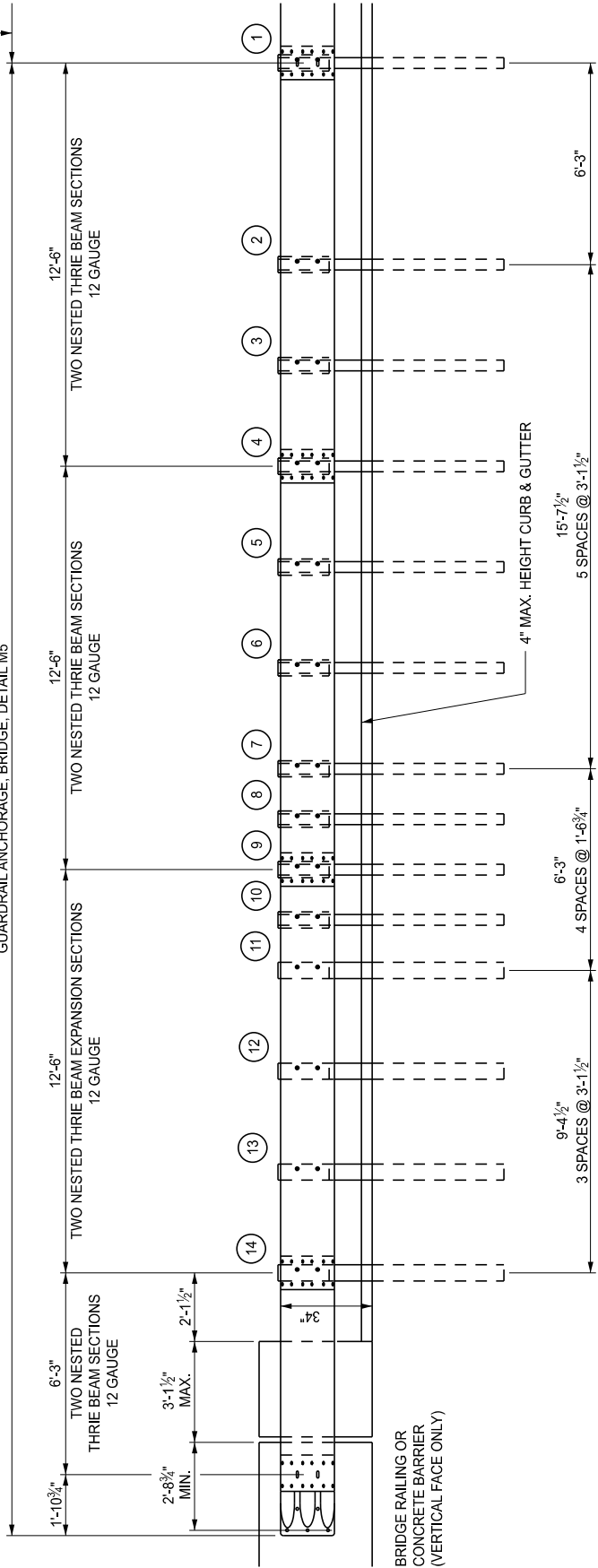
R-67-G

SHEET
4 OF 16

SECT

GUARDRAIL TYPE T
SEE STANDARD PLAN
R-60-SERIES

45'-7¹/₄"
GUARDRAIL ANCHORAGE, BRIDGE, DETAIL M5



POST 1 THROUGH 10 - W6 x 9 OR W6 x 8.5 POST (7'-0" LONG) WITH 12" OFFSET BLOCK
POST 11 THROUGH 14 - W6 x 15 POST (7'-0" LONG) WITH 12" OFFSET BLOCK

DETAILS FOR CONNECTING GUARDRAIL TYPE T TO
2-TUBE, 4-TUBE, AESTHETIC PARAPET TUBE,
3 TUBE WITH PICKETS, CONCRETE BLOCK RETROFIT,
TYPE 6*, TYPE 7*, OR SINGLE FACE CONCRETE BARRIER*
(WITH EXPANSION AT BACKWALL/END WALL OR SLEEPER SLAB)

* TRANSITION BARRIER ENDING FROM SINGLE-SLOPE TO VERTICAL FACE IN ADVANCE OF END SHOE. THEN ATTACH ANCHORAGE TO VERTICAL FACE.



DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
GUARDRAIL ANCHORAGE, BRIDGE, DETAILS

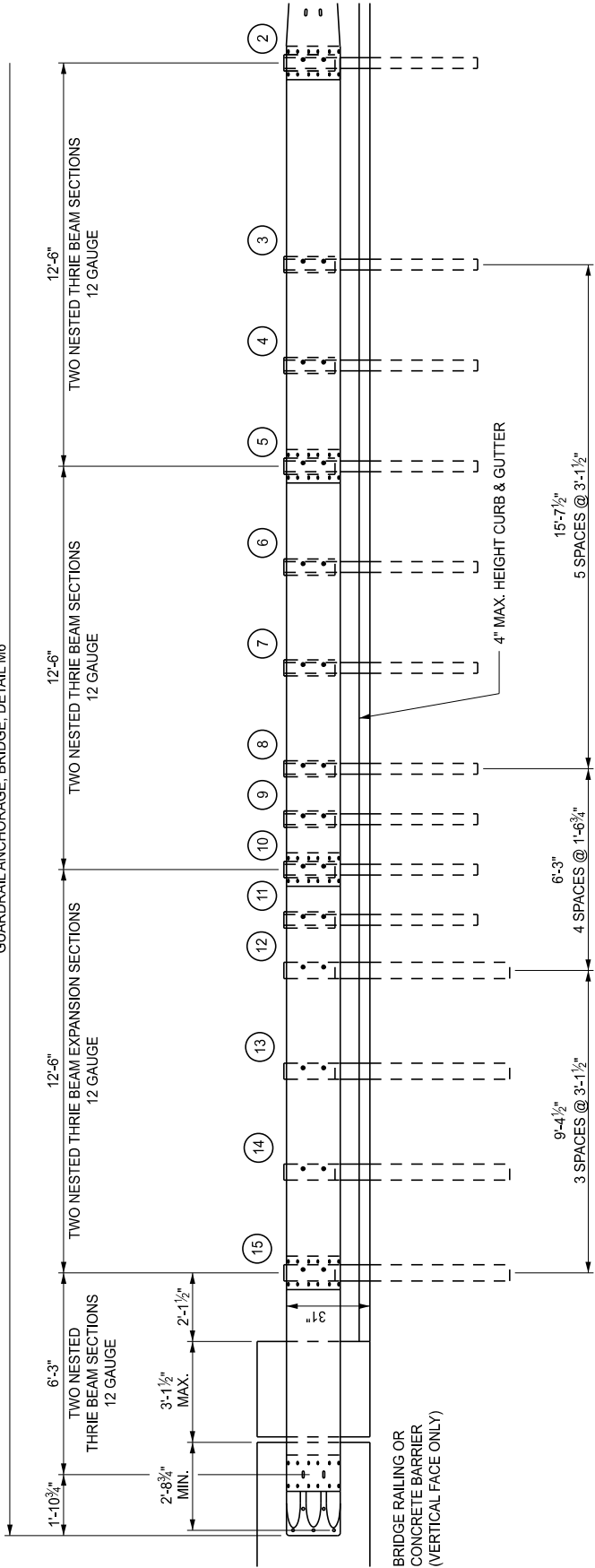
(SPECIAL DETAIL)
FHWA APPROVAL

01/06/2026
PLAN DATE

R-67-G

SHEET
5 OF 16

51'-10³/₄"
GUARDRAIL ANCHORAGE, BRIDGE, DETAIL M6



POST 1 THROUGH 11 - W6 x 9 OR W6 x 8.5 POST (6'-0" LONG) WITH 12" OFFSET BLOCK
POST 12 THROUGH 15 - W6 x 15 POST (7'-0" LONG) WITH 12" OFFSET BLOCK

DETAILS FOR CONNECTING GUARDRAIL TYPE B TO
2-TUBE, 4-TUBE, AESTHETIC PARAPET TUBE,
3 TUBE WITH PICKETS, CONCRETE BLOCK RETROFIT,
TYPE 6*, TYPE 7*, OR SINGLE FACE CONCRETE BARRIER*
(WITH EXPANSION AT BACKWALL/END WALL OR SLEEPER SLAB)

* TRANSITION BARRIER ENDING FROM SINGLE-SLOPE TO VERTICAL FACE IN ADVANCE OF END SHOE. THEN ATTACH ANCHORAGE TO VERTICAL FACE.



DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
GUARDRAIL ANCHORAGE, BRIDGE, DETAILS

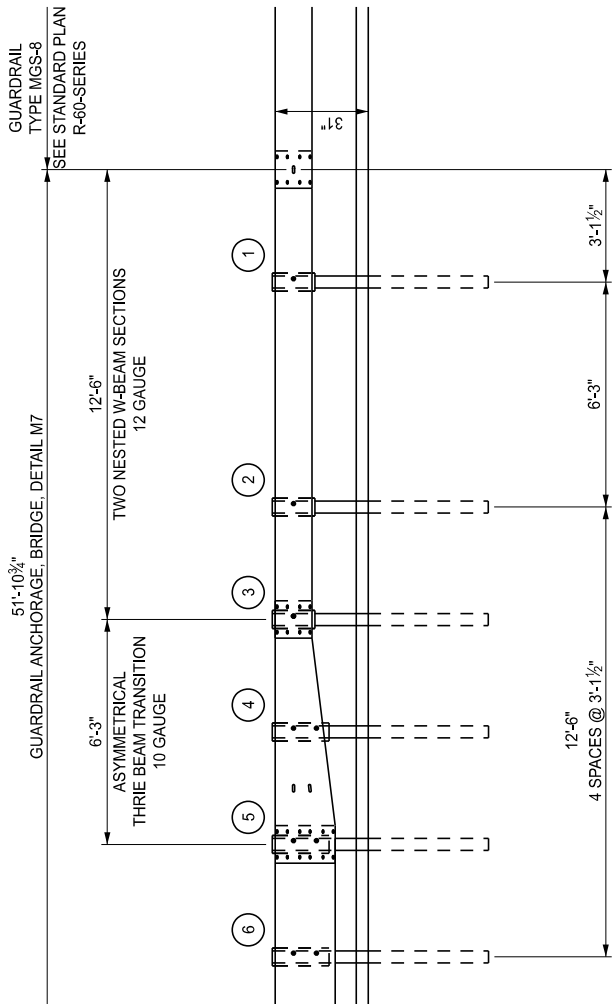
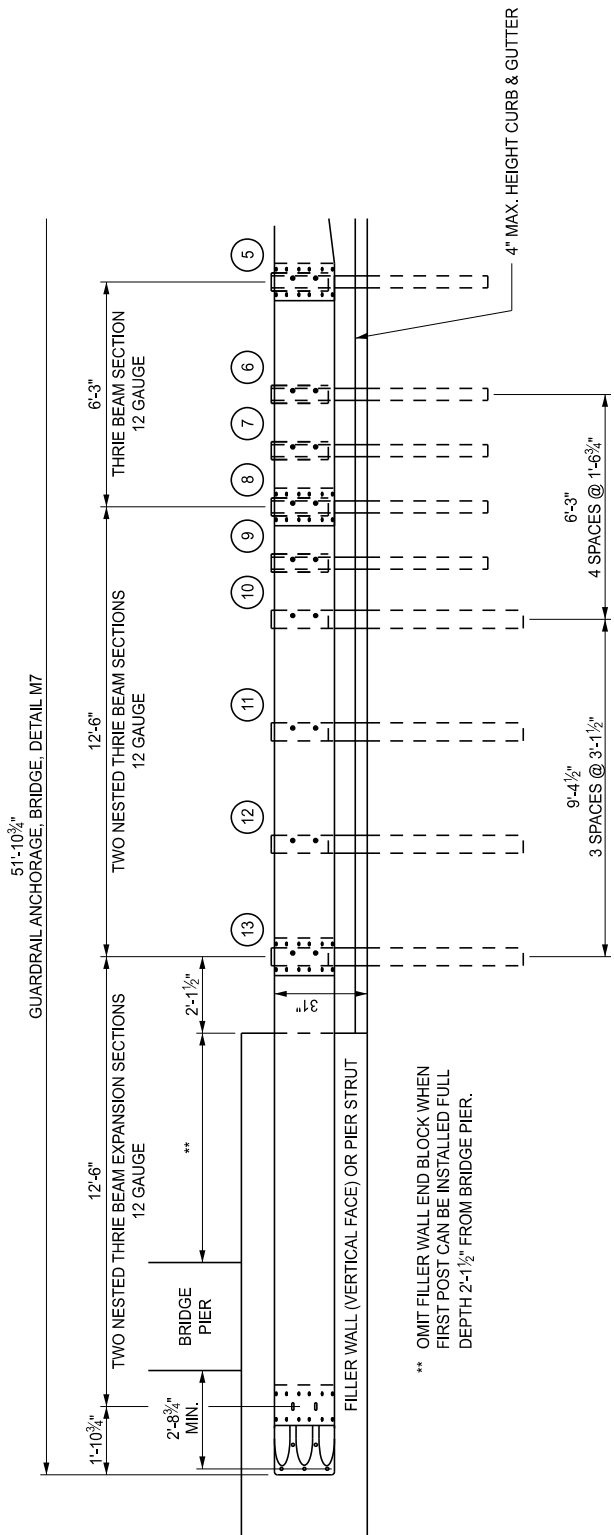
(SPECIAL DETAIL)
FHWA APPROVAL

01/06/2026
PLAN DATE

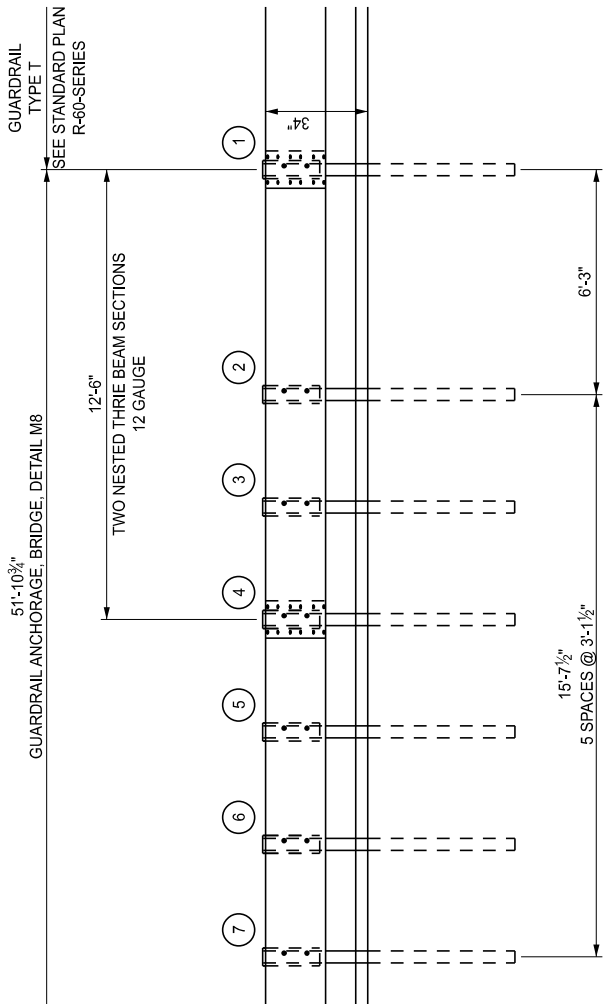
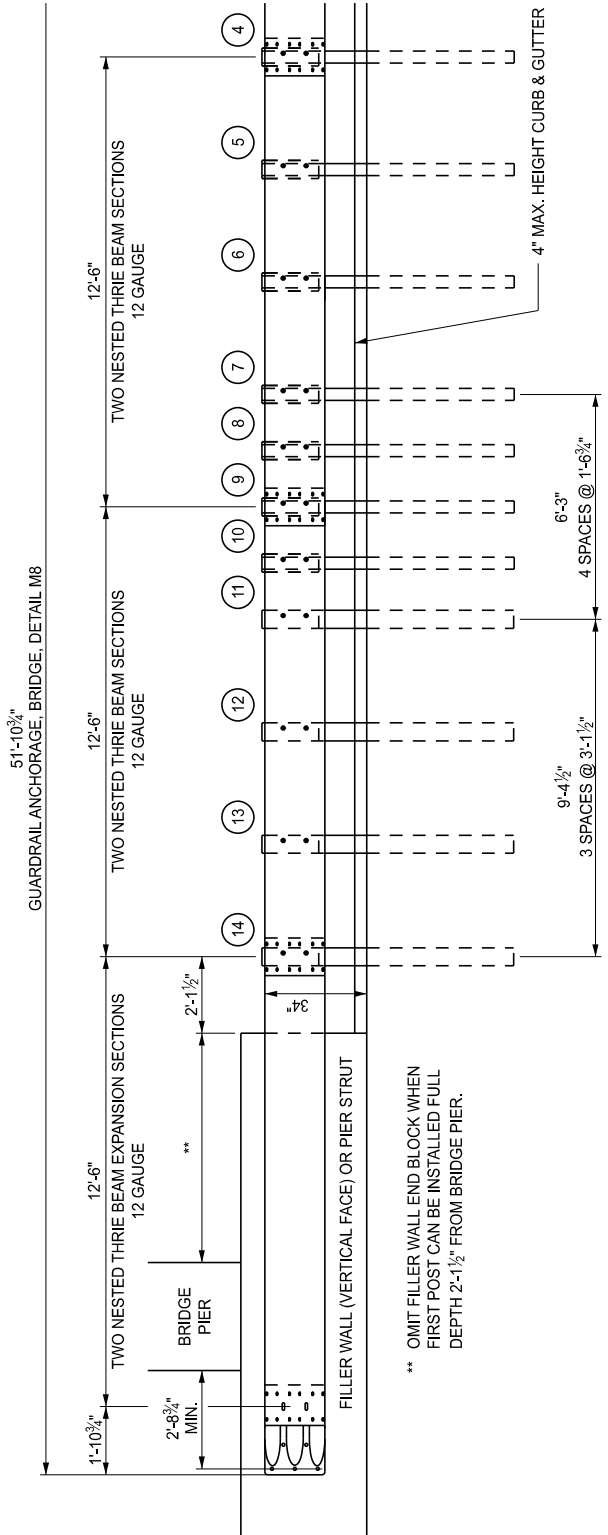
R-67-G

SHEET
6 OF 16

SECT



DETAILS FOR CONNECTING GUARDRAIL TYPE MGS-8 TO FILLER WALL OR PIER STRUT



DETAILS FOR CONNECTING GUARDRAIL TYPE T TO FILLER WALL OR PIER STRUT



DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
GUARDRAIL ANCHORAGE, BRIDGE, DETAILS

(SPECIAL DETAIL)
FHWA APPROVAL

01/06/2026
PLAN DATE

R-67-G

SHEET
7 OF 16



DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
GUARDRAIL ANCHORAGE, BRIDGE, DETAILS

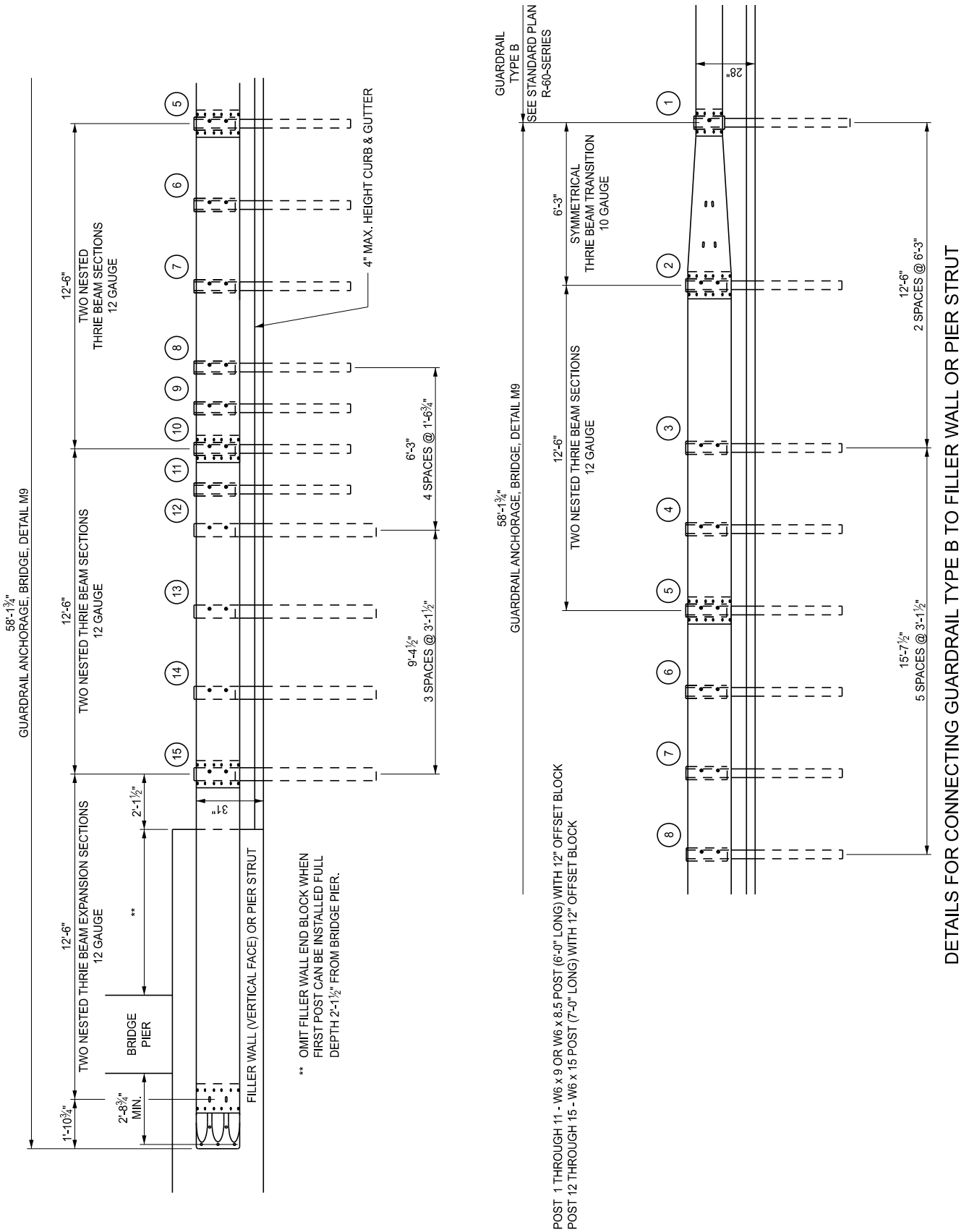
(SPECIAL DETAIL)
FHWA APPROVAL

01/06/2026
PLAN DATE

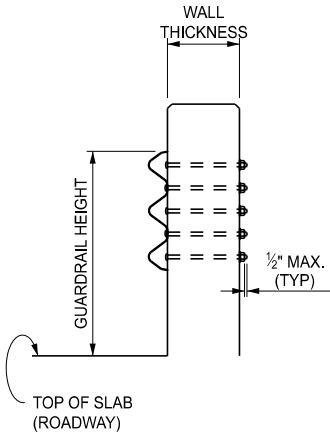
R-67-G

SHEET
8 OF 16

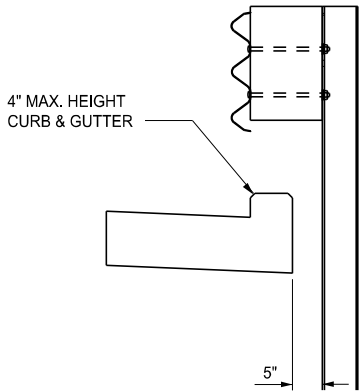
SECT



REFER TO GUARDRAIL ANCHORAGE BRIDGE, DETAIL M1 THROUGH M9 FOR GUARDRAIL HEIGHT.

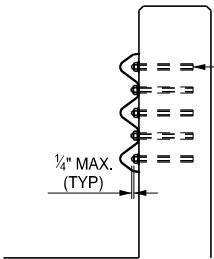


BRIDGE RAILING & FILLER WALL



POST DETAIL

USE HIGH STRENGTH 7/8" DIA. HEX HEAD BOLT AND NUTS TO CONNECT GUARDRAIL TO BRIDGE RAILINGS WITH ROUND WASHERS ON FRONT AND SQUARE WASHERS ON BACK. (SEE CHART BELOW FOR BOLT LENGTH REQUIRED.) WASHER DETAILS ARE SHOWN ON SHEET 11.



USE 7/8" DIA. ADHESIVE ANCHORED BOLTS EMBEDDED 8" TO ATTACH GUARDRAIL TO PIER BASE WALLS AND PIER STRUTS.

** USE 7/8" DIA. ADHESIVE ANCHORED BOLTS EMBEDDED 8" INSTEAD OF BOLTING THROUGH THE FILLER WALL UNDER THE FOLLOWING CONDITIONS:

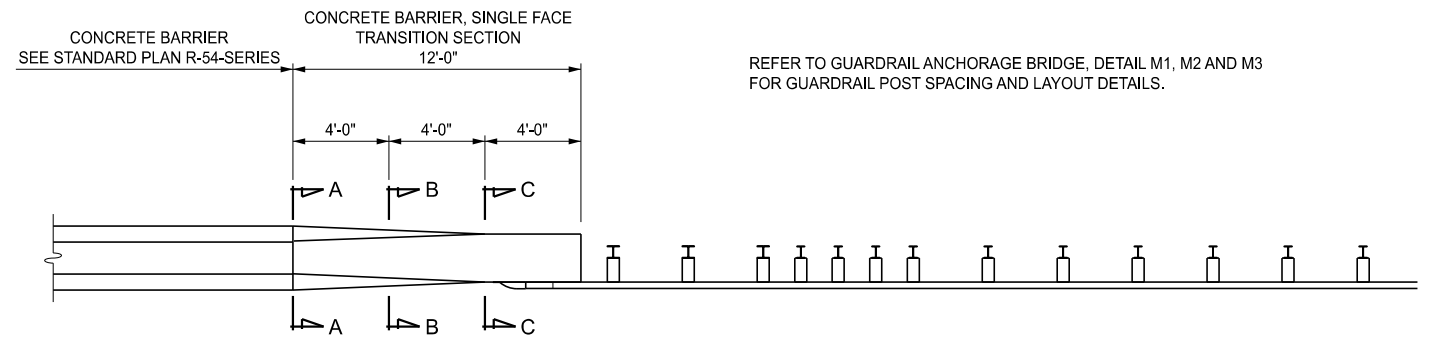
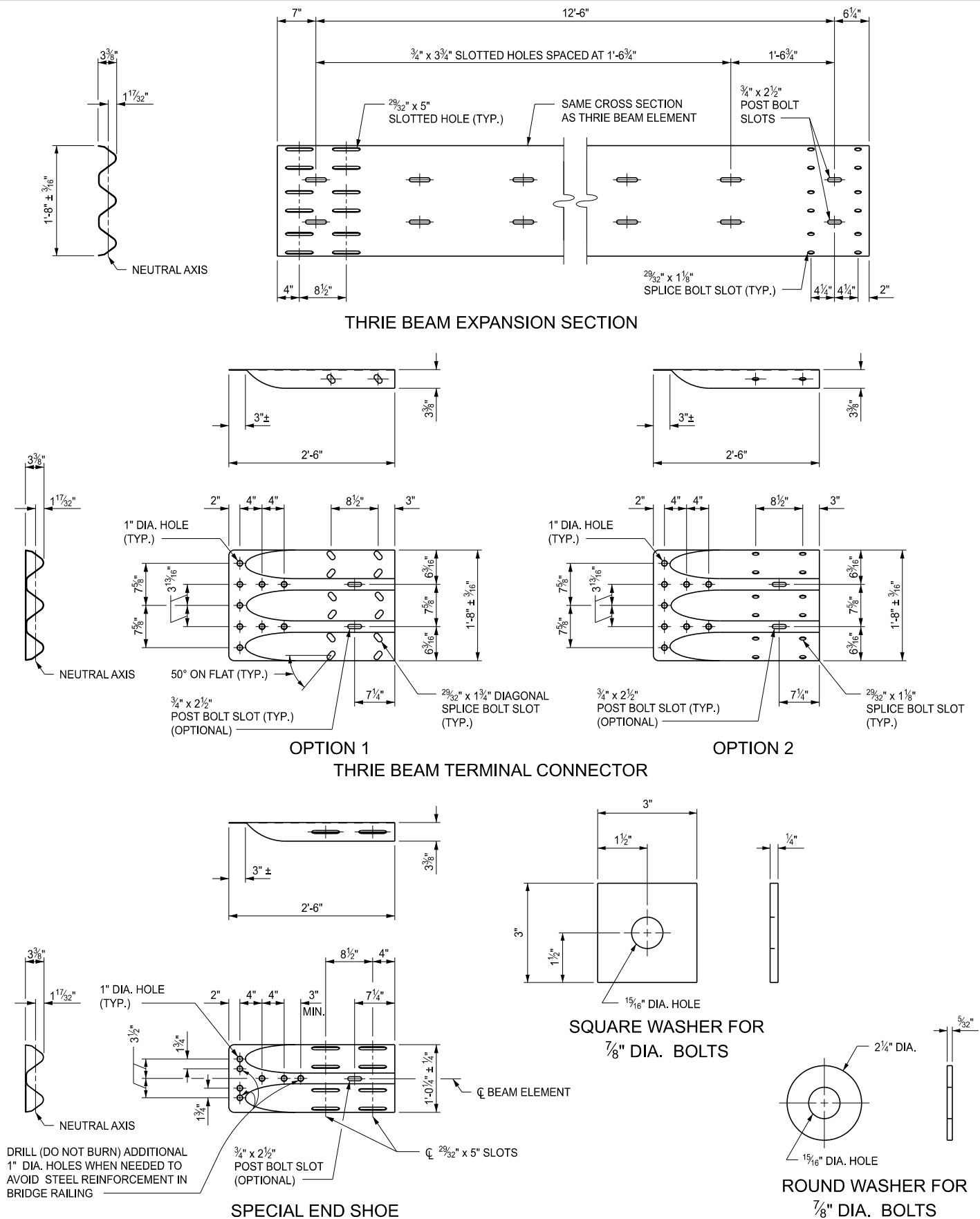
1. AT OR NEAR THE JOINT LINE WHEN A FILLER WALL IS A DIFFERENT THICKNESS THAN THE FILLER WALL EXTENSION
2. IN EXISTING FILLER WALLS THICKER THAN 1'-6"
3. WHEN CONDITIONS PROHIBIT THE USE OF BOLTS

ALTERNATE CONSTRUCTION METHOD

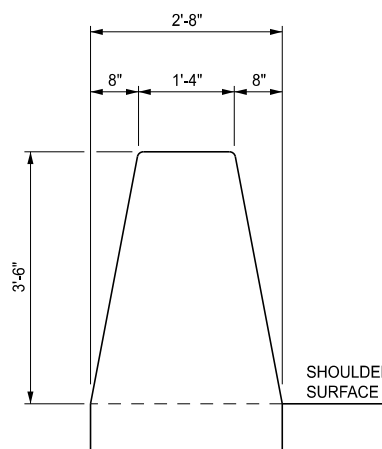
APPLIES TO PIER BASE WALLS, PIER STRUTS AND FILLER WALLS MEETING CERTAIN CONDITIONS

BOLT REQUIREMENTS FOR CONNECTING GUARDRAIL TO BRIDGE RAILINGS			
BRIDGE RAILING	WALL THICKNESS	BOLT LENGTH	MINIMUM THREAD LENGTH
2 TUBE	1'-5 1/2"	1'-7 1/2"	4"
4 TUBE	1'-7"	1'-9"	4"
AESTHETIC PARAPET TUBE	1'-0"	1'-2"	4"
3 TUBE WITH PICKETS	1'-4 1/2"	1'-6 1/2"	4"
TYPE 6	1'-5 3/4" / 1'-6 3/4" ***	1'-7 3/4" / 1'-8 3/4" ***	4"
TYPE 7	1'-2 1/2" / 1'-3 1/2" ***	1'-4 1/2" / 1'-5 1/2" ***	4"
CONCRETE BLOCK RETROFIT	1'-3 3/4"	1'-5 3/4"	4"
FILLER WALL (WITH THROUGH BOLTS) **	VARIES	WALL THK + 2"	4"
PIER BASE WALL, PIER STRUT, FILLER WALL (WITH ADHESIVE ANCHORED BOLTS) **	VARIES	****	4"
SHORTER BOLT LENGTHS MAY BE USED PROVIDED THE BOLT EXTENDS 1/4" BEYOND THE NUT WHEN TIGHTENED.			
** REFER TO APPLICABLE NOTES UNDER ALTERNATE CONSTRUCTION METHOD TO DETERMINE APPLICABLE BOLTING METHOD FOR FILLER WALL			
*** THICKNESS/LENGTH DEPENDENT UPON AESTHETIC TREATMENT ON RAILING			
**** ENSURE LENGTH PROVIDES 8" EMBEDMENT AND BOLT EXTENDING 1/4" MAXIMUM BEYOND NUT WHEN FULLY ENGAGED			

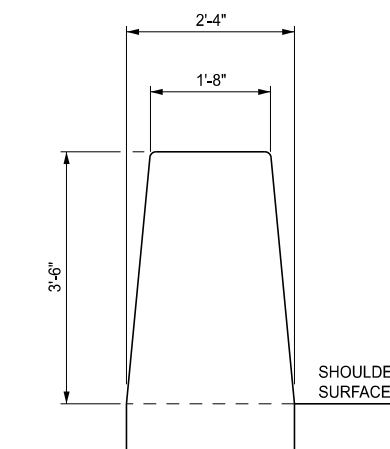
GUARDRAIL POST SECTIONS FOR GUARDRAIL ANCHORAGE, BRIDGE, DETAIL M1 THROUGH M9



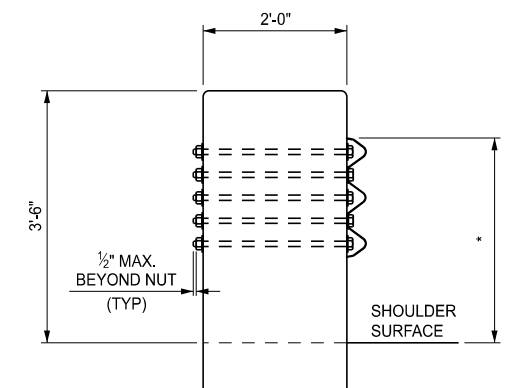
PLAN VIEW



SECTION A-A



SECTION B-B
UNIFORMLY TRANSITION THE BARRIER FACES FROM SINGLE SLOPE SHAPE TO VERTICAL WALL



SECTION C-C

USE HIGH STRENGTH 7/8" DIAMETER x 26" LONG HEX HEAD BOLTS WITH 2" MINIMUM THREAD LENGTH AND NUTS WITH ROUND WASHERS FRONT AND BACK TO CONNECT GUARDRAIL TO CONCRETE BARRIER, SINGLE FACE TRANSITION SECTION.

DETAILS FOR CONNECTING GUARDRAIL TO CONCRETE BARRIER, SINGLE FACE



DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
GUARDRAIL ANCHORAGE, BRIDGE, DETAILS

(SPECIAL DETAIL)
FHWA APPROVAL

01/06/2026
PLAN DATE

R-67-G

SHEET
11 OF 16



DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
GUARDRAIL ANCHORAGE, BRIDGE, DETAILS

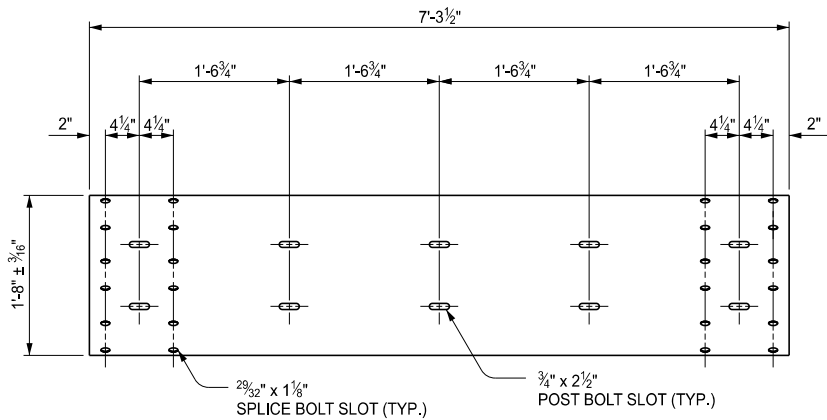
(SPECIAL DETAIL)
FHWA APPROVAL

01/06/2026
PLAN DATE

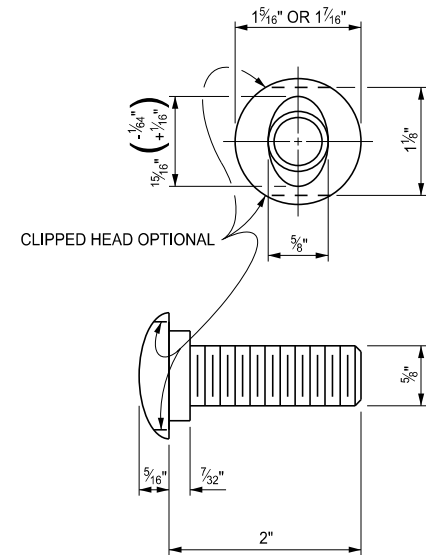
R-67-G

SHEET
12 OF 16

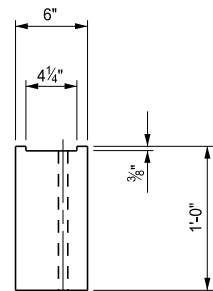
SECT



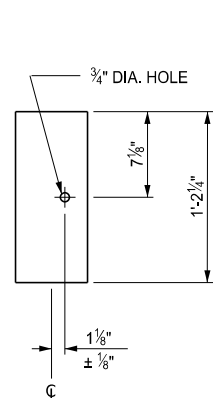
6'-3" THRIE BEAM SECTION



SPLICE BOLT
FOR USE WITH NESTED
GUARDRAIL BEAM ELEMENTS

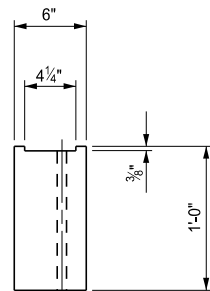


TOP

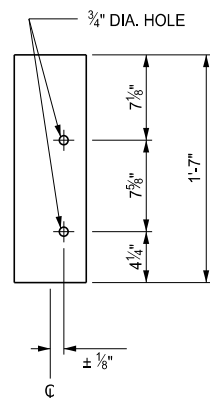


FRONT

OFFSET BLOCK FOR
W BEAM GUARDRAIL

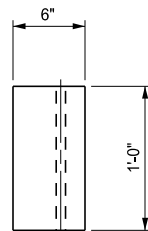


TOP

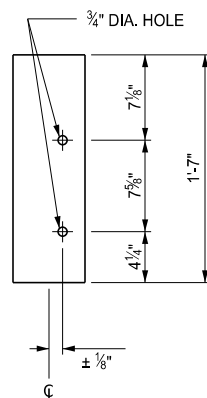


FRONT

OFFSET BLOCK FOR
THRIE BEAM GUARDRAIL
USE WITH W6 x 8.5 OR W6 x 9 POSTS



TOP



FRONT

OFFSET BLOCK FOR
THRIE BEAM GUARDRAIL
USE WITH W6 x 15 POSTS



DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
GUARDRAIL ANCHORAGE, BRIDGE, DETAILS

(SPECIAL DETAIL)
FHWA APPROVAL

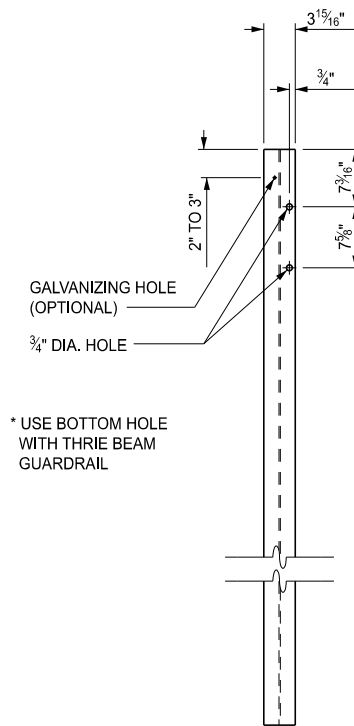
01/06/2026
PLAN DATE

R-67-G

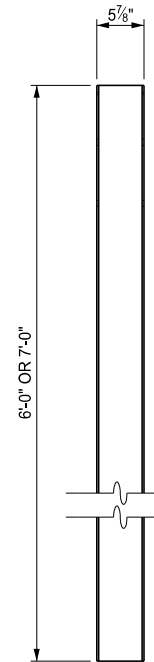
SHEET
13 OF 16



TOP



FRONT

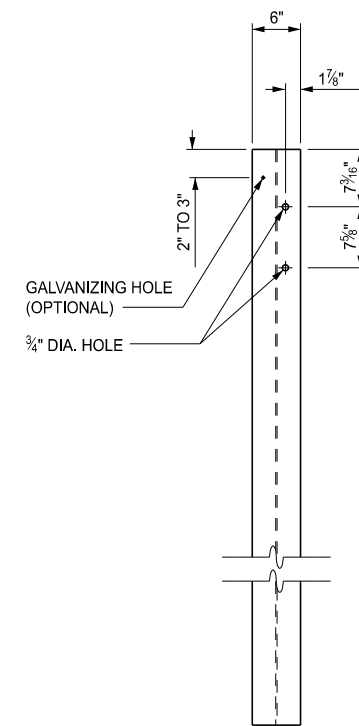


SIDE

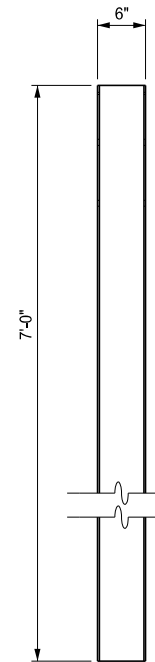
W6 x 9 OR
W6 x 8.5 POST



TOP



FRONT



SIDE

W6 x 15 POST



DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
GUARDRAIL ANCHORAGE, BRIDGE, DETAILS

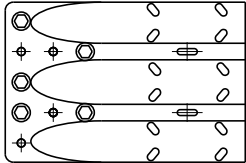
(SPECIAL DETAIL)
FHWA APPROVAL

01/06/2026
PLAN DATE

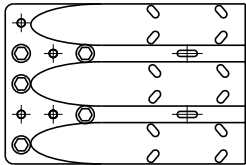
R-67-G

SHEET
14 OF 16

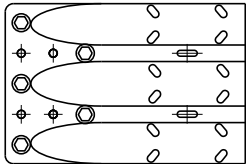
SECT




THRIE BEAM TERMINAL CONNECTOR
BOLT LOCATION FOR
GUARDRAIL ANCHORAGE TYPE M1, M3, M4, M6
⊙ = REQUIRED BOLT LOCATION TO ANCHOR INTO CONCRETE



THRIE BEAM TERMINAL CONNECTOR
BOLT LOCATION FOR
GUARDRAIL ANCHORAGE TYPE M2, M5
⊙ = REQUIRED BOLT LOCATION TO ANCHOR INTO CONCRETE



THRIE BEAM TERMINAL CONNECTOR
BOLT LOCATION FOR
GUARDRAIL ANCHORAGE TYPE M7, M8, M9
⊙ = REQUIRED BOLT LOCATION TO ANCHOR INTO CONCRETE

 Michigan Department of Transportation	STANDARD PLAN FOR GUARDRAIL ANCHORAGE, BRIDGE, DETAILS			
	(SPECIAL DETAIL)	01/06/2026	R-67-G	SHEET 15 OF 16
	FHWA APPROVAL	PLAN DATE		

NOTES:

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

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

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

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

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

USE SPLICE BOLTS WHEN SPLICING THE THRIE BEAM TERMINAL CONNECTOR TO THE THRIE BEAM EXPANSION SECTION AND WHEN SPLICING THE SPECIAL END SHOE TO THE TRANSITION SECTION. INSTALL THE SPLICE BOLT NUT FINGER-TIGHT AND FULLY ENGAGE THE SPLICE BOLT A MINIMUM OF ONE THREAD EXTENDING BEYOND THE NUT. THEN UPSET THE FIRST THREAD ON THE OUTSIDE OF THE NUT WITH A CENTER PUNCH OR COLD CHISEL SO THAT IT WILL NOT LOOSEN.

SEE STANDARD PLAN R-32-SERIES FOR APPROACH CURB AND GUTTER AND DOWNSPOUT HEADER.


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

SEE APPROPRIATE PLANS FOR PIER BASE WALL OR PIER STRUT.

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 __.

INCLUDE CONCRETE BARRIER, SINGLE FACE TRANSITION SECTION IN THE PAY ITEM "CONC BARRIER, SINGLE FACE, TYPE __".

 Michigan Department of Transportation	STANDARD PLAN FOR GUARDRAIL ANCHORAGE, BRIDGE, DETAILS			
	(SPECIAL DETAIL)	01/06/2026	R-67-G	SHEET 16 OF 16
	FHWA APPROVAL	PLAN DATE		

SECT