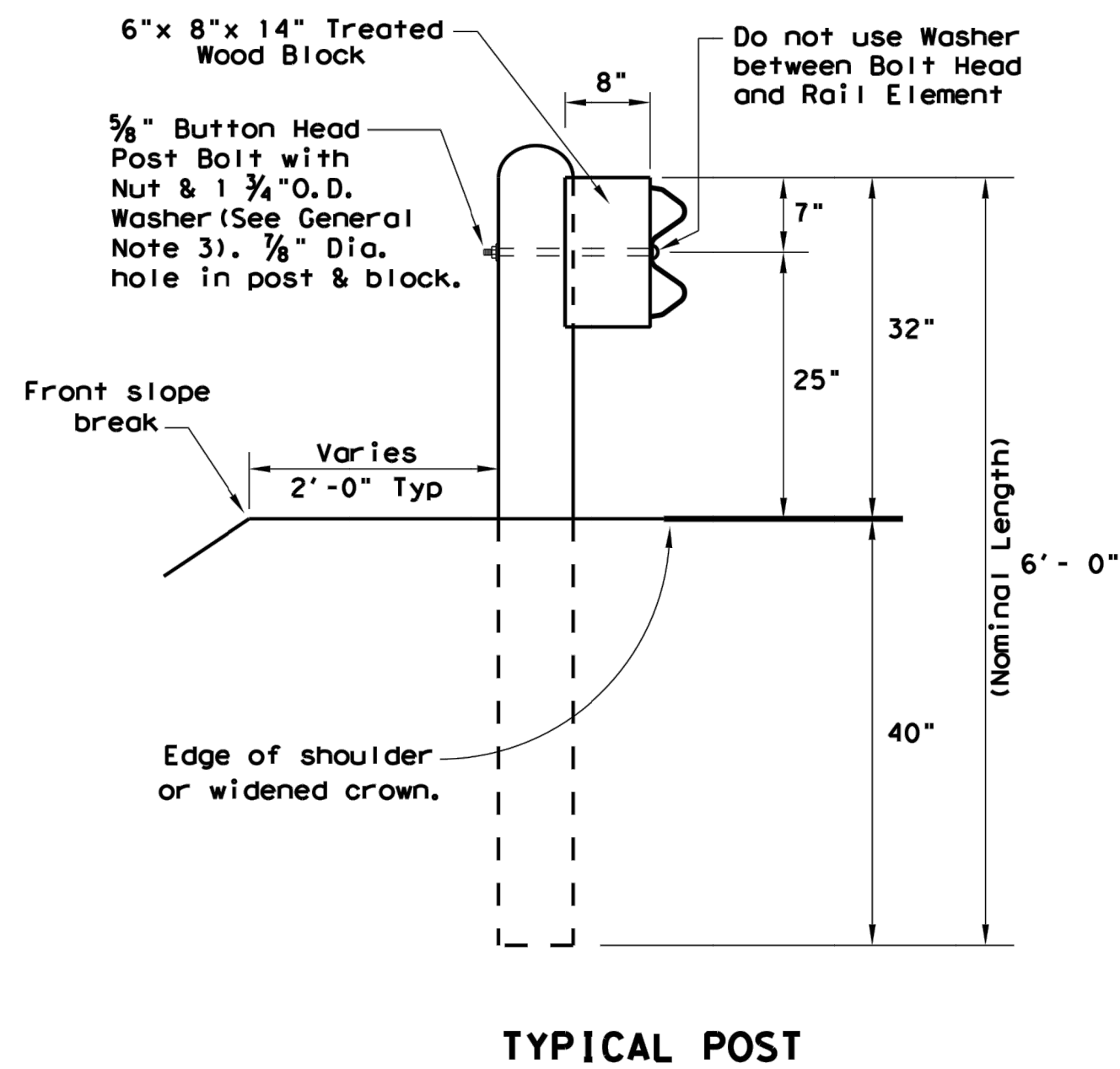
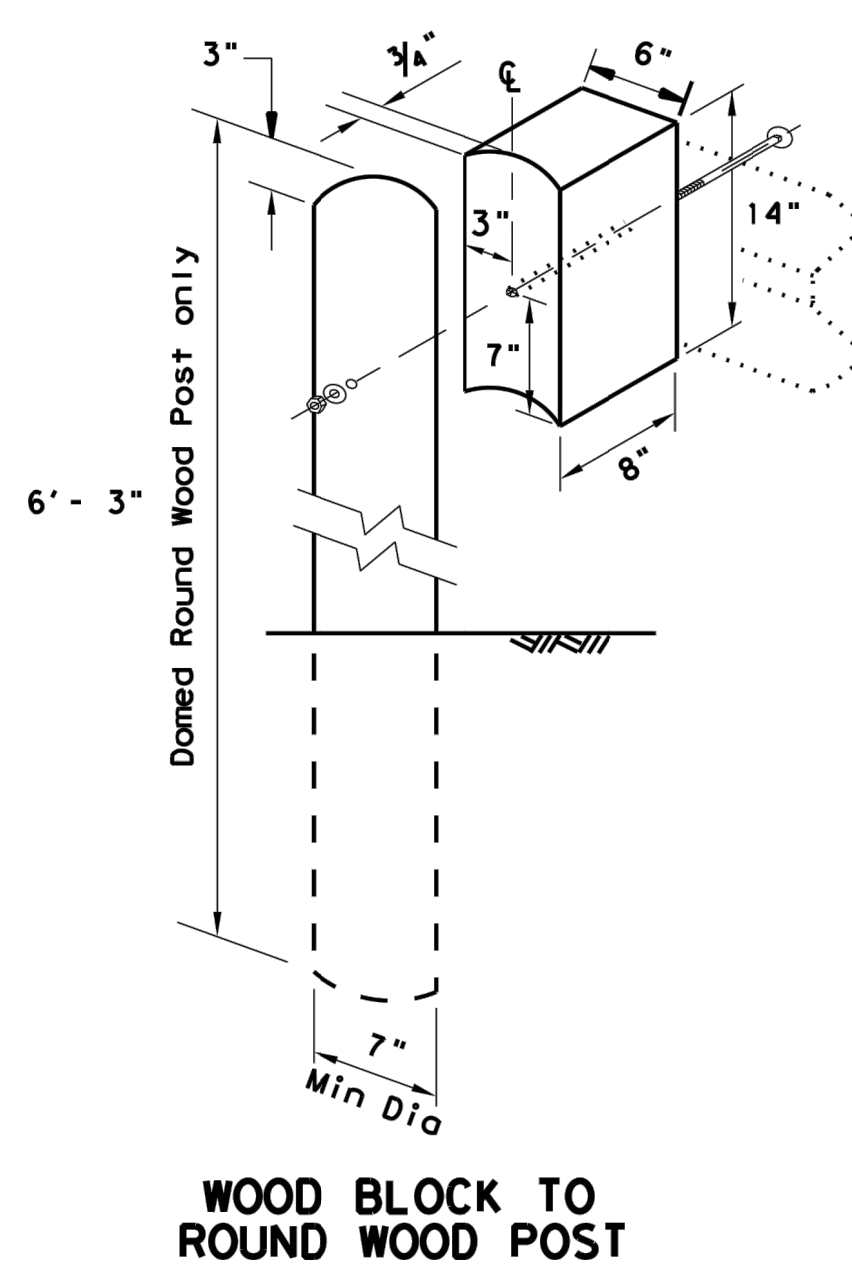


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JNELSON
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DATE: 9/18/2017
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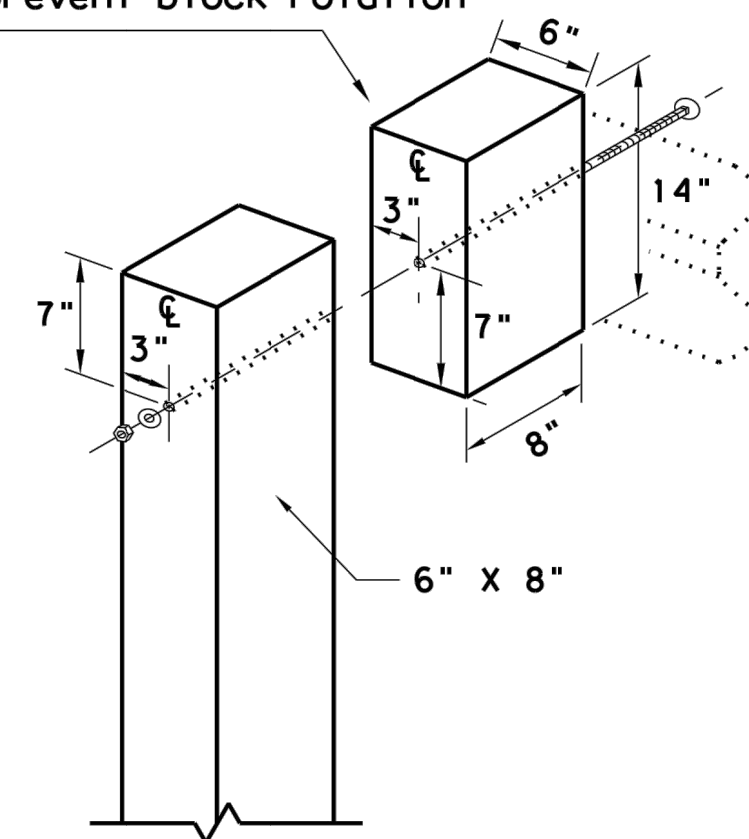


TYPICAL POST

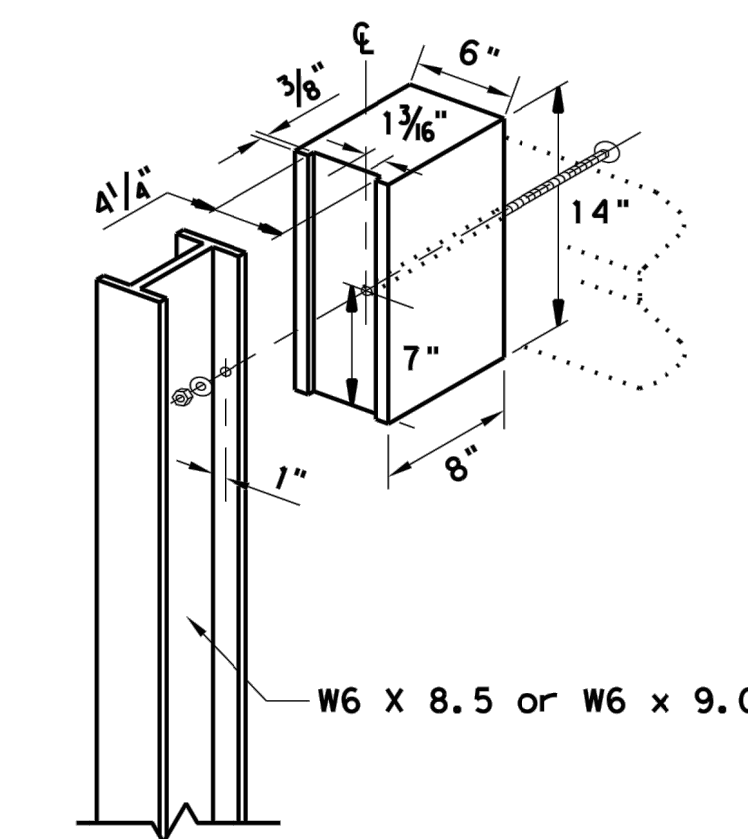


WOOD BLOCK TO ROUND WOOD POST

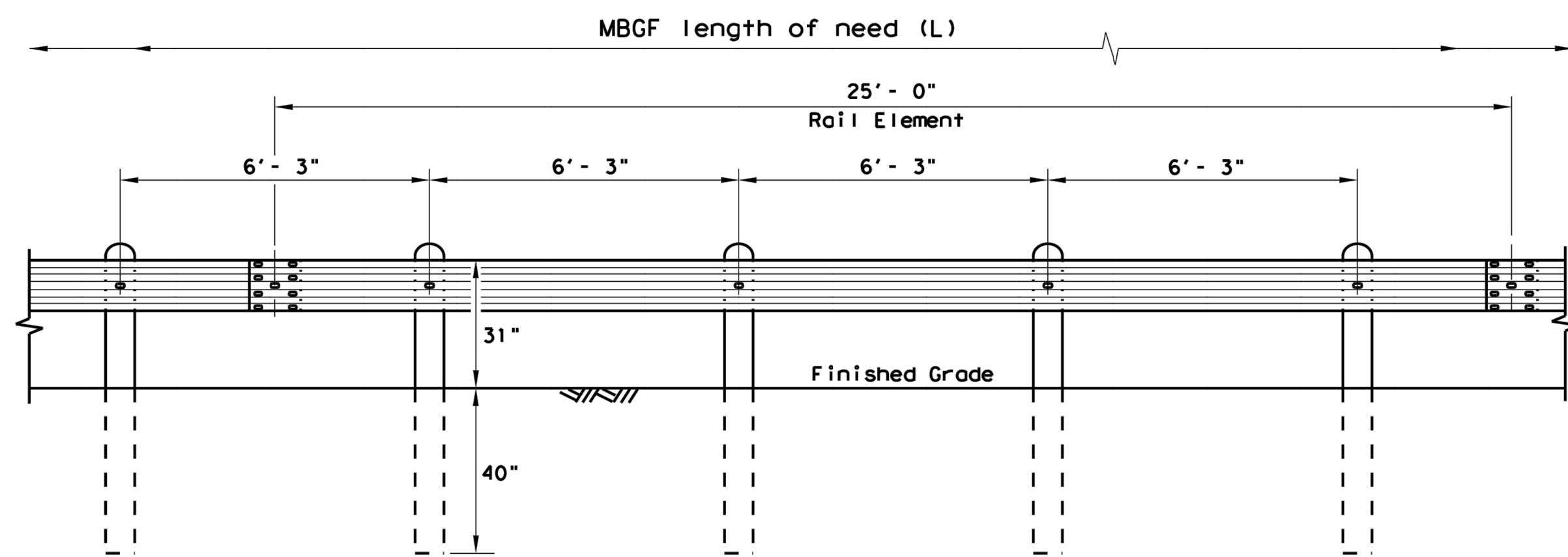
Toenail with one 16d Galv. nail to prevent block rotation



WOOD BLOCK TO RECTANGULAR WOOD POST



WOOD BLOCK TO STEEL POST

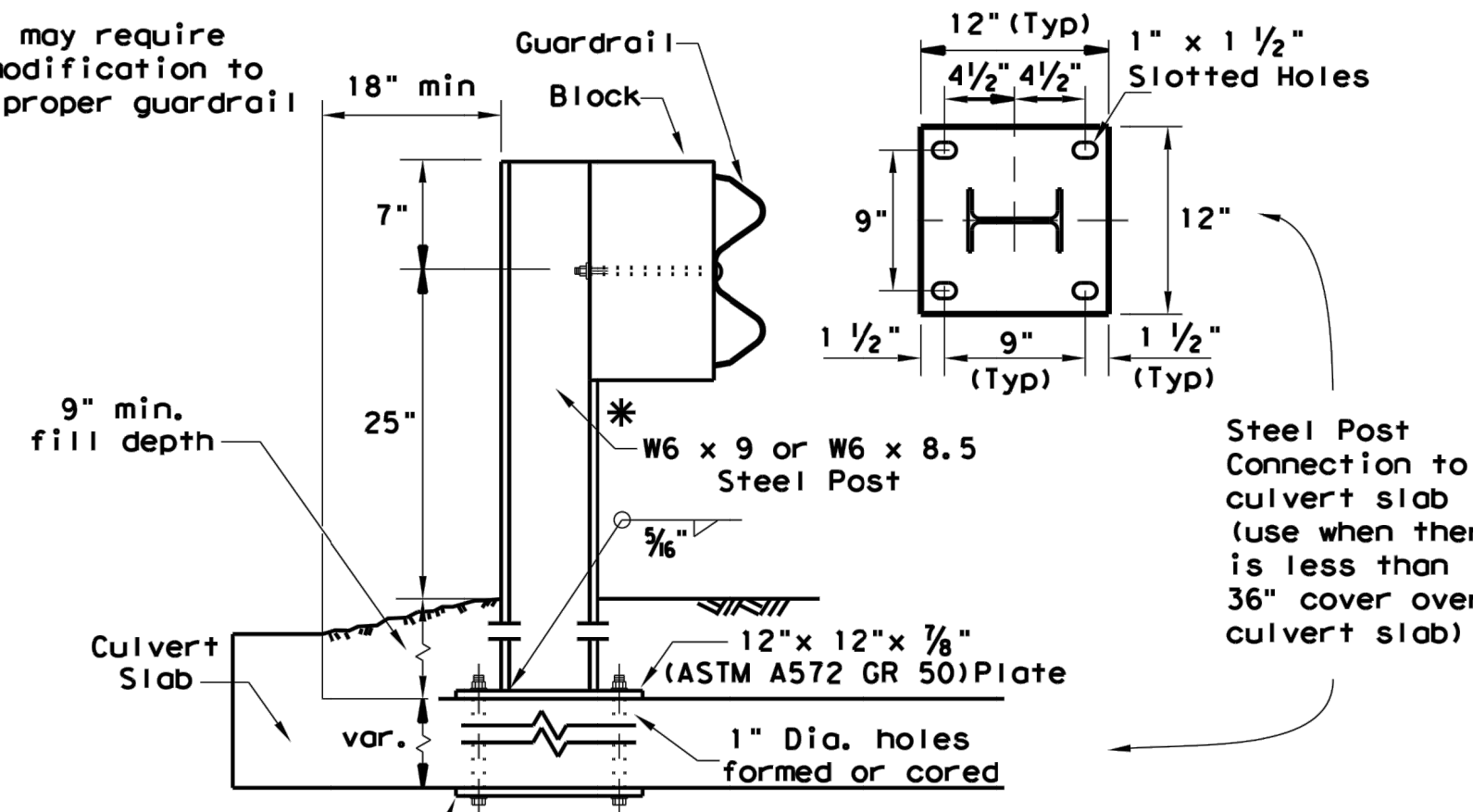


ELEVATION MID-SPAN RAIL SPLICE

Showing a 25'-0" section of W-Beam rail, 12'-6" rail sections may also be supplied (See General Note 2)

Direction of Traffic

* Post(s) may require field modification to ensure proper guardrail height.

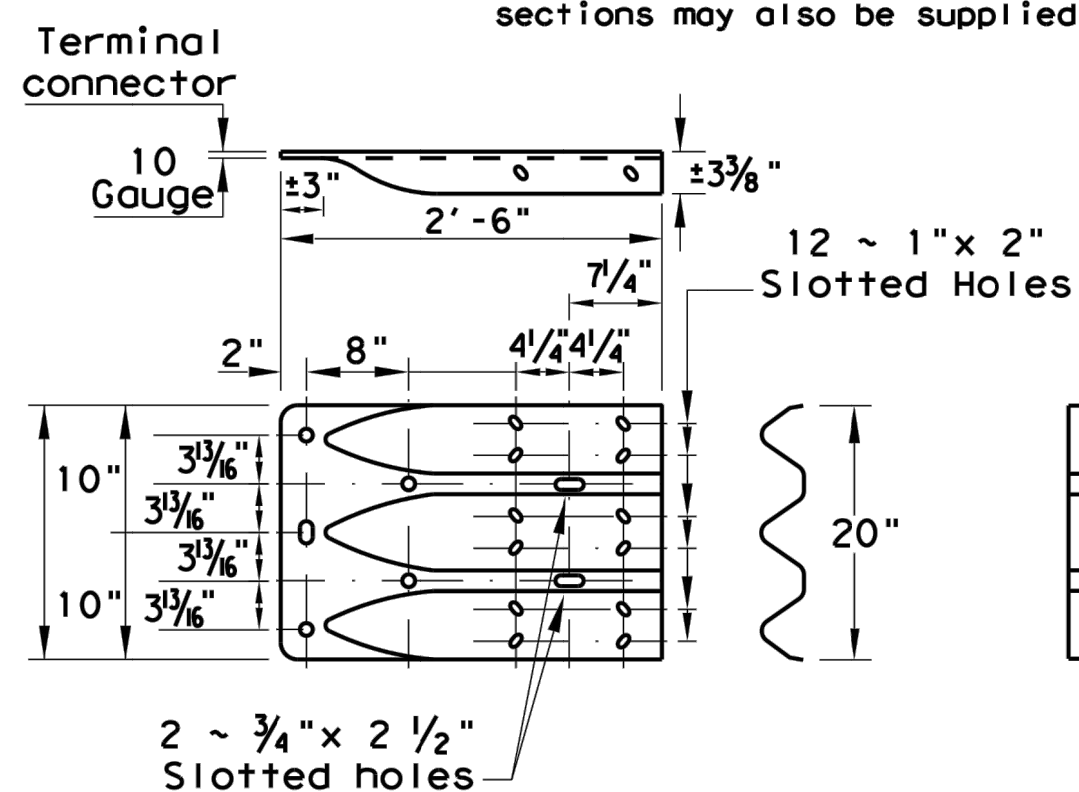


LOW FILL CULVERT POST

Culverts of 25 ft. or less, see GF(31)LS standard for "Long Span" option.

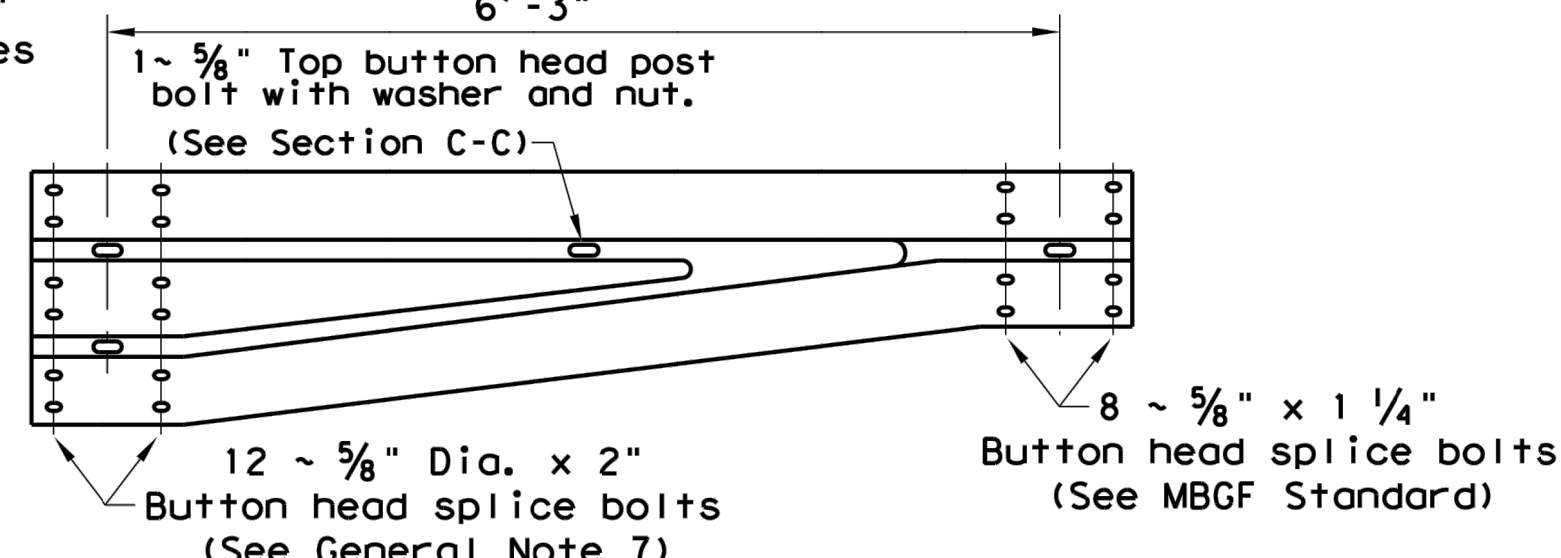
Epoxy Note:
Epoxy Anchor Option: This option may only be used if the culvert slab is 8" min. thick. Threaded anchor rods must be 3/8" Dia. ASTM A449 or A193 Grade B7 with heavy hex nut, and one hardened washer each. Embed anchor rods 6" with Hilti HIT RE 500 epoxy adhesive. Other Type III Class C epoxy adhesives meeting the requirements of DMS-6100, "Epoxyes and Adhesives", may be used if it can be demonstrated that they meet or exceed the strength of Hilti HIT RE 500 with the same embedment depth and threaded rod dia. Follow the manufacturer's requirements for installing epoxied threaded rods. Extend rods 1/4" min. beyond nut.

- GENERAL NOTES**
- The type of post (round wood post, rectangular wood post, or steel post) will be as shown in the plans. The exact position of MBSG shall be shown in the plans or as directed by the Engineer. Steel posts to be galvanized in accordance with Item 445, "Galvanizing."
 - Rail element shall meet the requirements of Item 540, "Metal Beam Guard Fence" except as modified in the plans. The Contractor may furnish rail elements of 25'-0", or 12'-6" (nom.) lengths. Rail elements may have slotted holes at 3'-1 1/2" C-C or 6'-3" C-C. A special length of rail may be manufactured to accommodate the downstream anchor terminal (DAT) and the transition sections of guardrail.
 - Button head "post" bolts (ASTM A307) shall be of sufficient length to extend through the full thickness of the nut (ASTM A563) and Type A (1 3/4" O.D.) washer and not more than 1" beyond it. Button head "splice" bolts (ASTM A307) are 5/8" x 1 1/4" (or 2" long at triple rail splices) with a 5/8" double recessed nut (ASTM A563). Thrie beam "connection" 7/8" dia. (ASTM A325) hex bolts shall be of sufficient length to extend through the full thickness of the rail, washers, and nuts.
 - Fittings (bolts, nuts, and washers) shall be galvanized in accordance with Item 445, "Galvanizing." Fittings shall be subsidiary to the bid item.
 - Crown shall be widened to accommodate the Metal Beam Guard Fence.
 - The lateral approach to the guard fence, shall have a maximum slope of 1V:10H.
 - If shown elsewhere in the plans or as directed by the Engineer, the guard fence may be flared at a rate of 25:1 or flatter.
 - Unless otherwise shown in the plans, guard fence placed in the vicinity of curbs shall be positioned so that the face of curb is located directly below or behind the face of the rail. Rail placed over curbs shall be installed so that the post bolt is located approximately 25 inches above the gutter pan or edge of shoulder.
 - If solid rock is encountered within 0 to 18" of the finished grade, drill a 22" dia. hole, or drill two 12" dia. front to back overlapping holes, 24" into the rock. If solid rock is encountered below 18", drill a 12" dia. hole, 12" into the rock or to the standard embedment depth, whichever maybe less. Any excess post length, after meeting these depths, may be field cut to ensure proper guardrail mounting height. Backfill with a cohesionless material.
 - Posts shall not be set in concrete, of any depth.
 - Special fabrication will be required at installations having a curvature of less than 150 ft. radius.
 - Unless otherwise shown in the plans, a composite material post and/or block that meets the requirements of DMS-7210, "Composite Material Posts and Blocks for Metal Beam Guard Fence" may be substituted for posts and/or blocks of similar dimensions. The Construction Division, TxDOT maintains a Material Producer List (MPL) for producers of materials conforming to DMS-7210. Only producers on the MPL may furnish composite material posts and/or blocks.
 - For posts located partially or wholly between precast box culvert units, the use of a cast-in-place concrete closure between boxes is required. See Detail "A" on Bridge Standard SCP-MD.

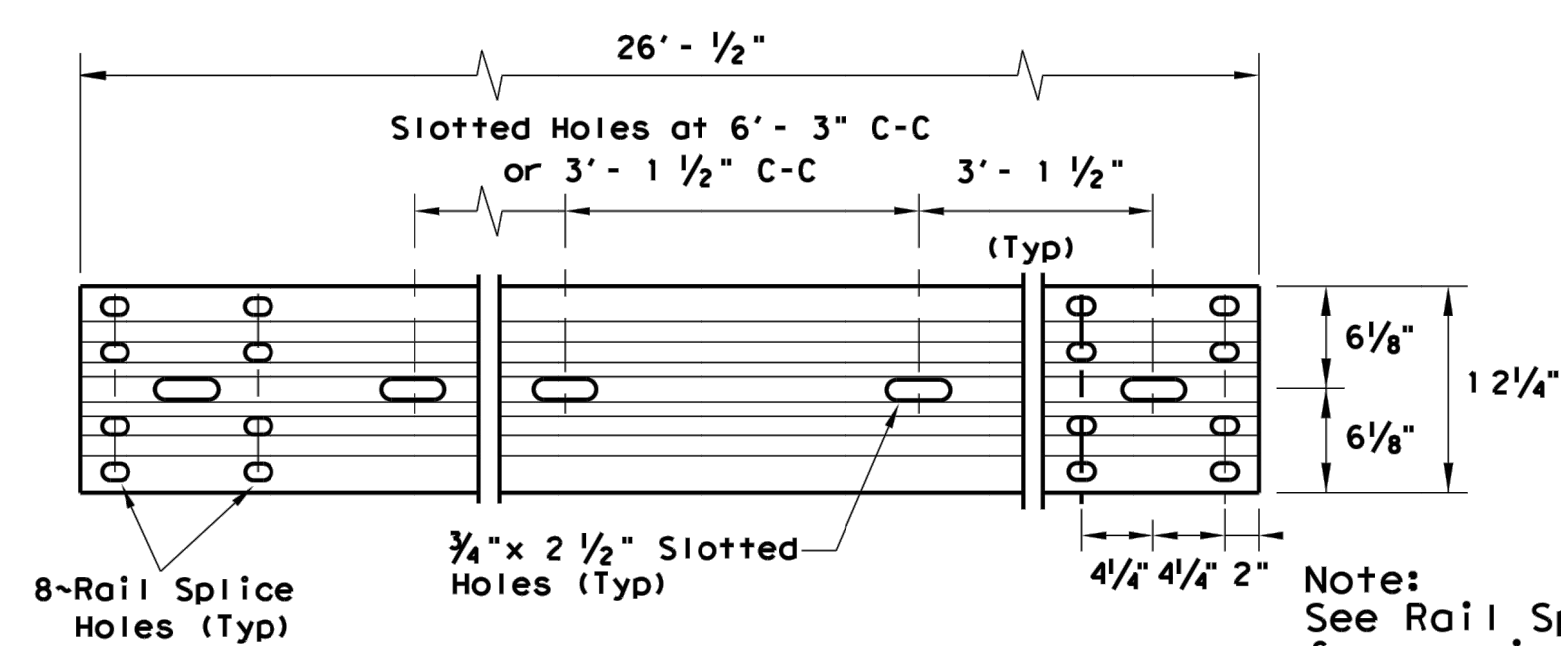


THRIE-BEAM TERMINAL CONNECTION

(SEE GENERAL NOTES 6 & 7 FOR REQUIRED HARDWARE)

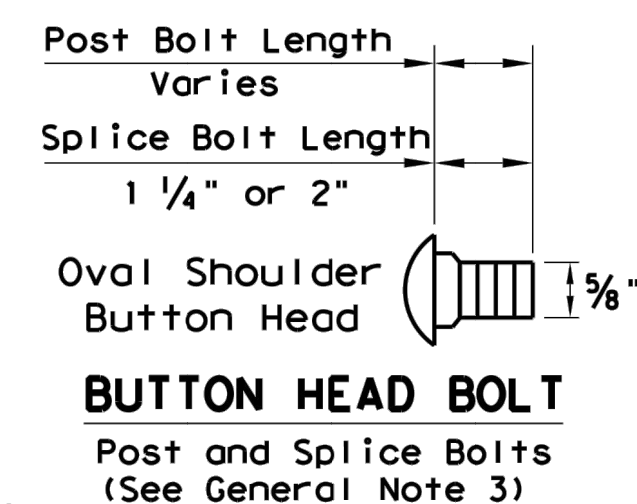


NON-SYMMETRICAL TRANSITION TO W-BEAM (10 GAUGE)



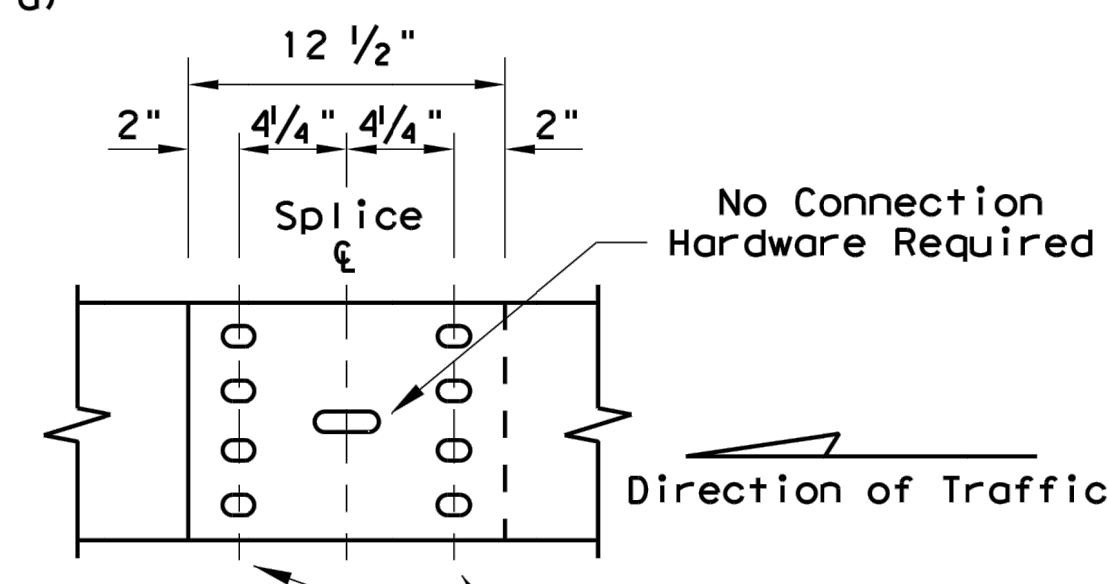
ELEVATION 25'-0" (NOM.) W-BEAM SECTION

12'-6" RAIL SECTIONS MAY ALSO BE SUPPLIED (SEE GENERAL NOTE 2)



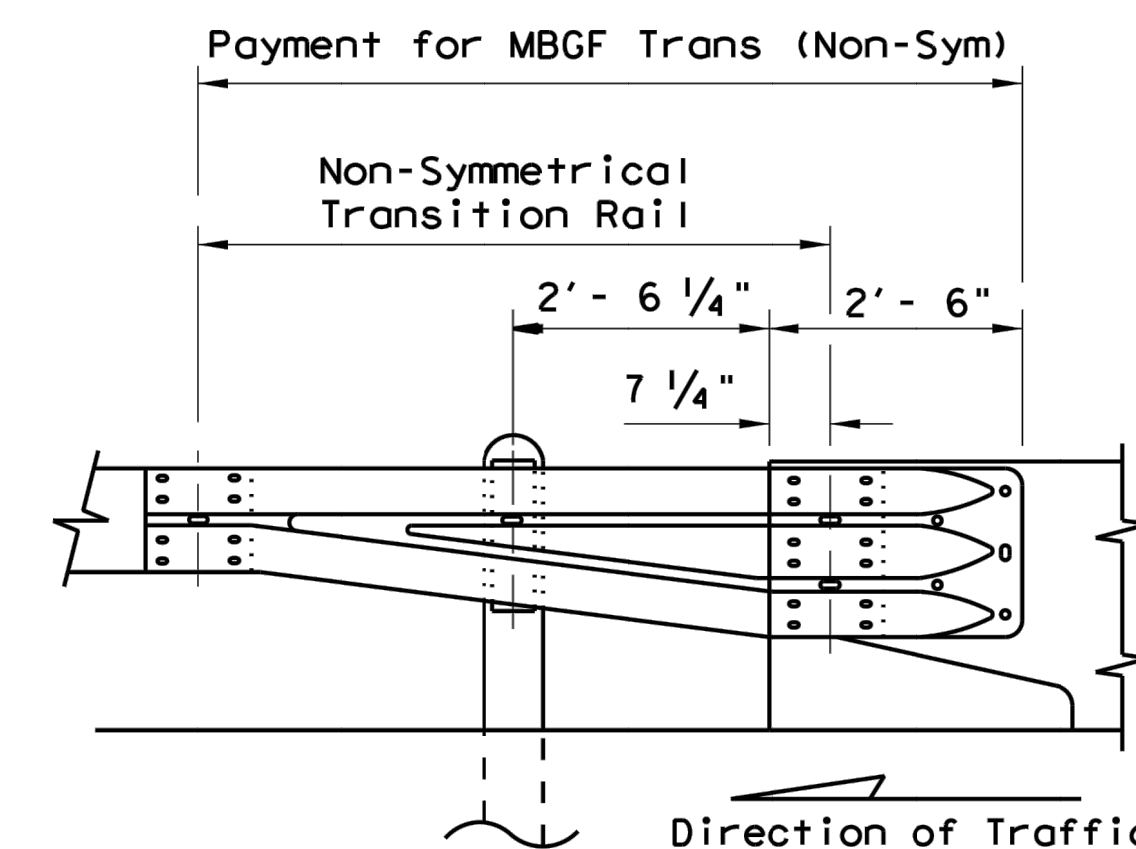
BUTTON HEAD BOLT

Post and Splice Bolts (See General Note 3)



MID-SPAN RAIL SPLICE DETAIL

Note: GF(31), Mid-Span rail splices are required with 6'-3" post spacings.



DOWNSTREAM RAIL ATTACHMENT

Note: All rail elements shall be lapped in the direction of adjacent traffic.

Texas Department of Transportation
Design Division Standard

METAL BEAM GUARD FENCE

GF(31)-14

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