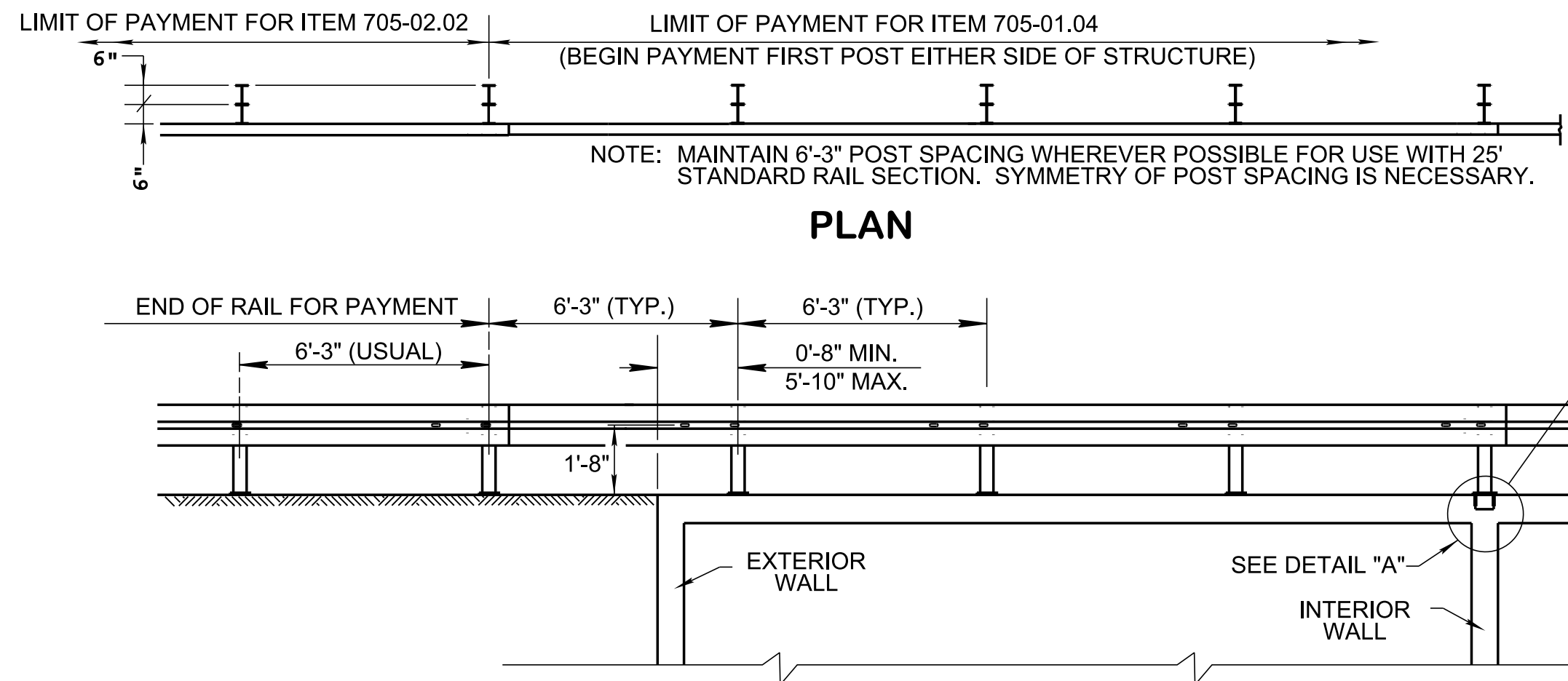
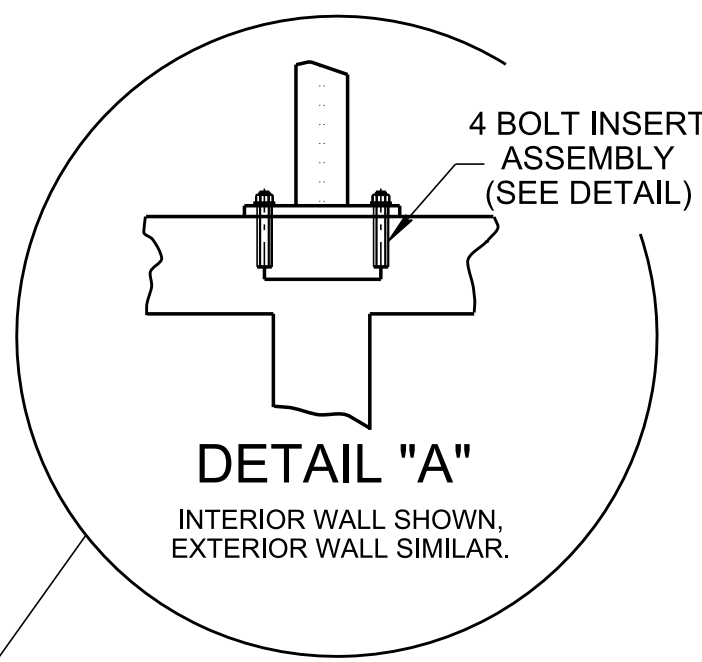


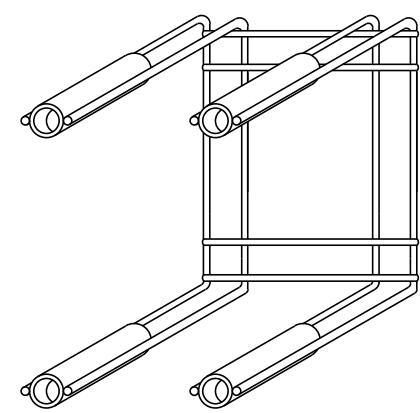
THIS DRAWING IS TO BE USED FOR RESURFACING, MAINTENANCE, AND BRIDGE REPAIR PROJECTS ONLY, THIS DRAWING IS NOT INTENDED TO BE USED FOR NEW CONSTRUCTION OR RECONSTRUCTION PROJECTS.



INSIDE ELEVATION GUARDRAIL



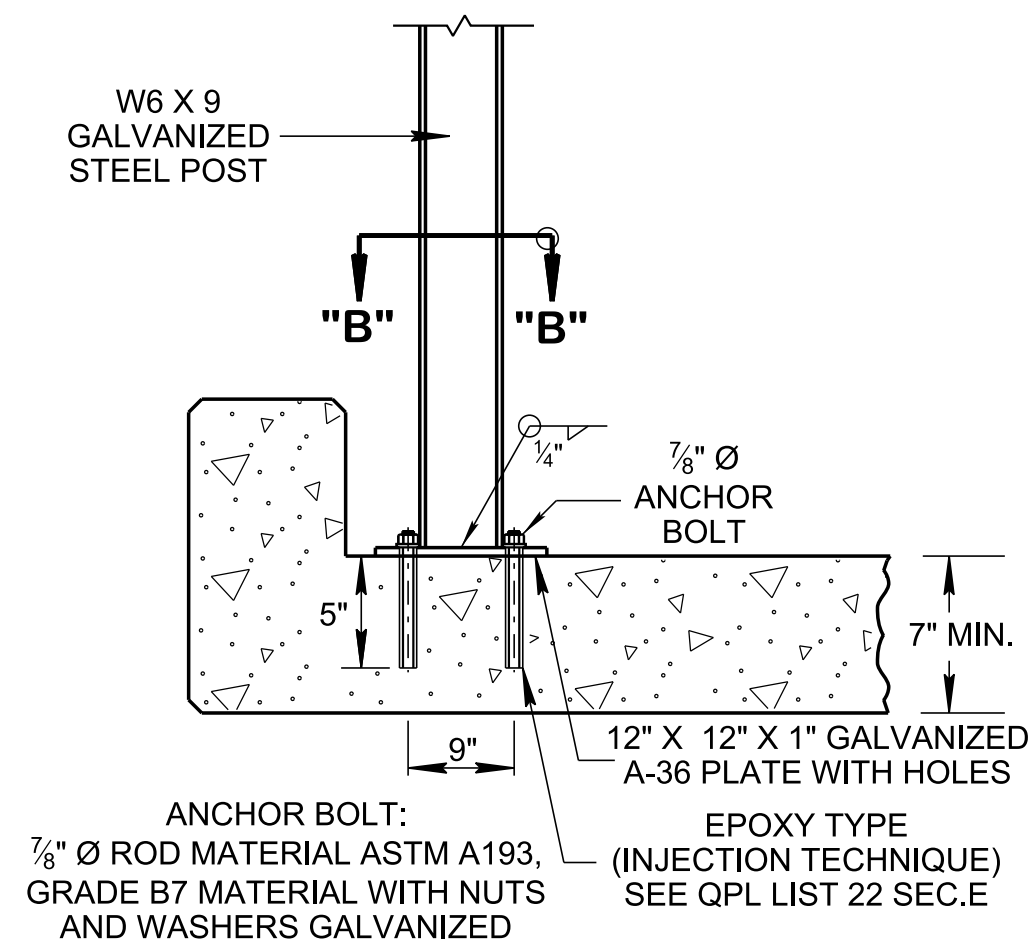
DETAIL "A"
INTERIOR WALL SHOWN,
EXTERIOR WALL SIMILAR.



INSERT ASSEMBLY IS FOR CONNECTION OF POSTS OVER WALLS ONLY AND NOT A SUBSTITUTE FOR PLATE ASSEMBLY ELSEWHERE.

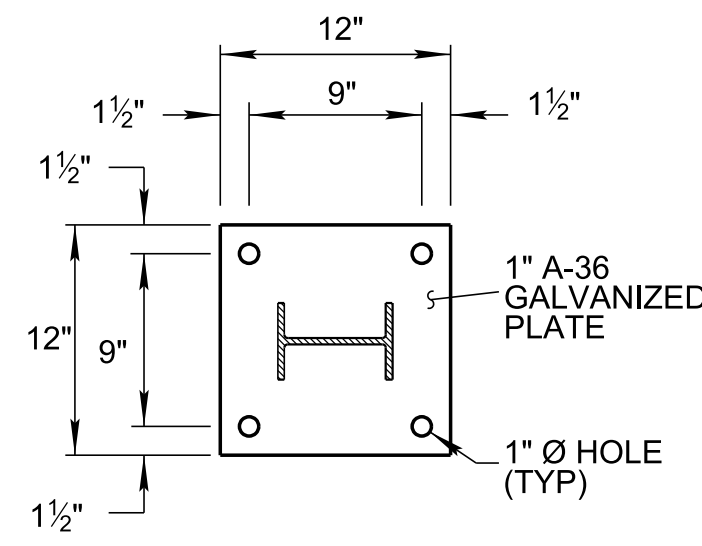
INSERT ASSEMBLY

FOR 3/4" DIAMETER X 4" HEX HEAD BOLTS (ASTM A-307 SPECIFICATION)

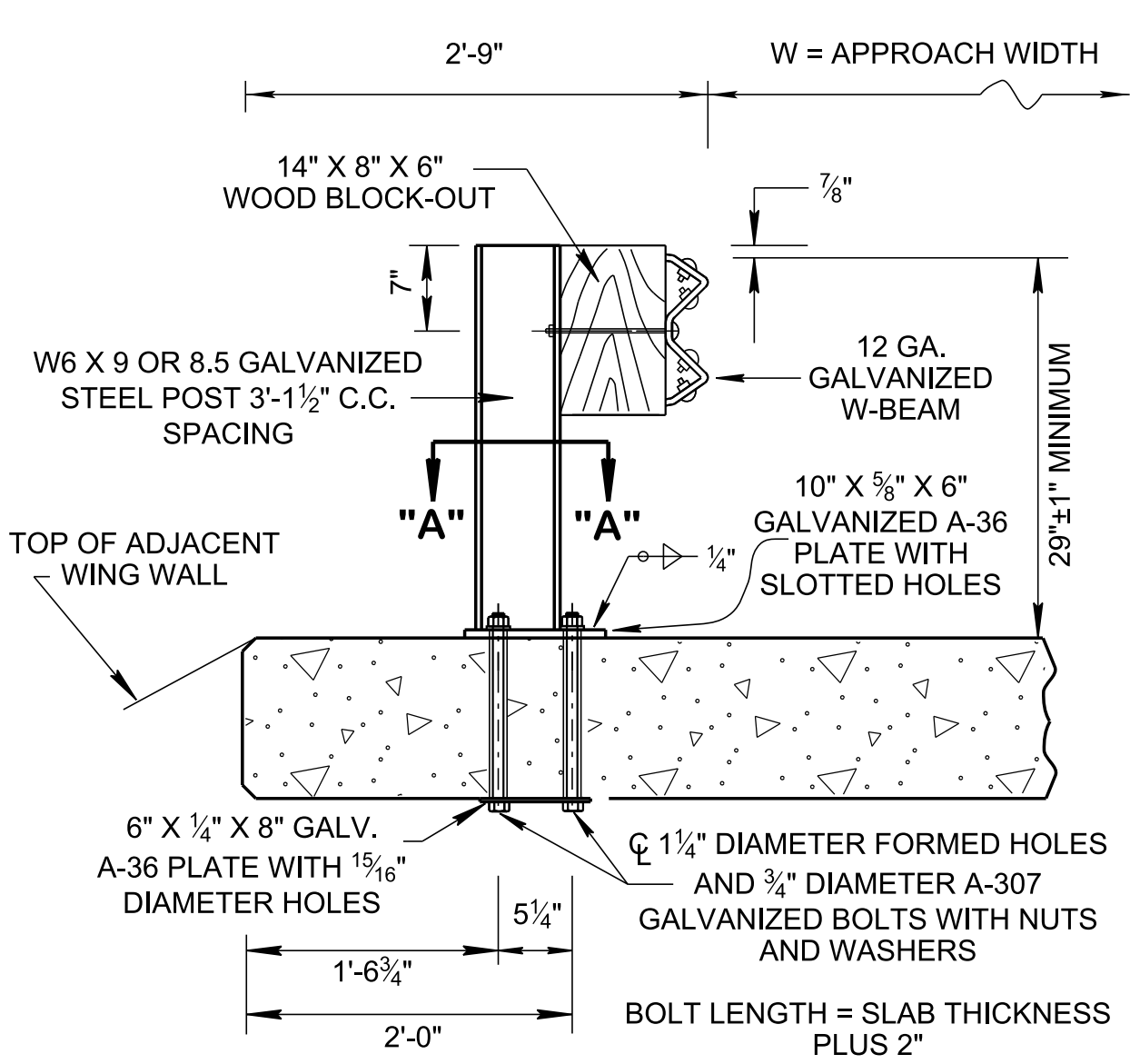


ALTERNATE DETAIL A

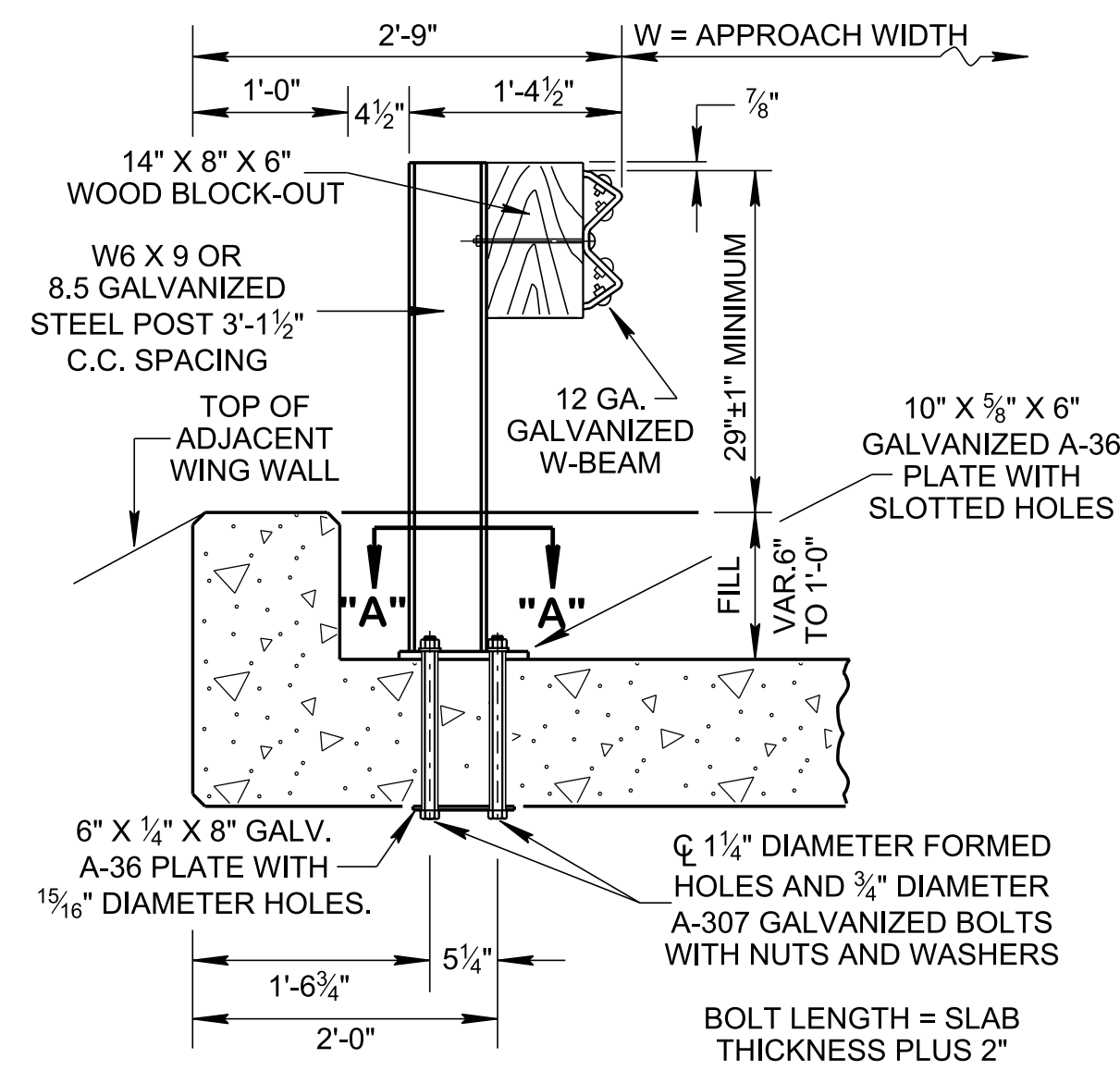
ALTERNATE POST ATTACHMENT USING ANCHOR BOLTS



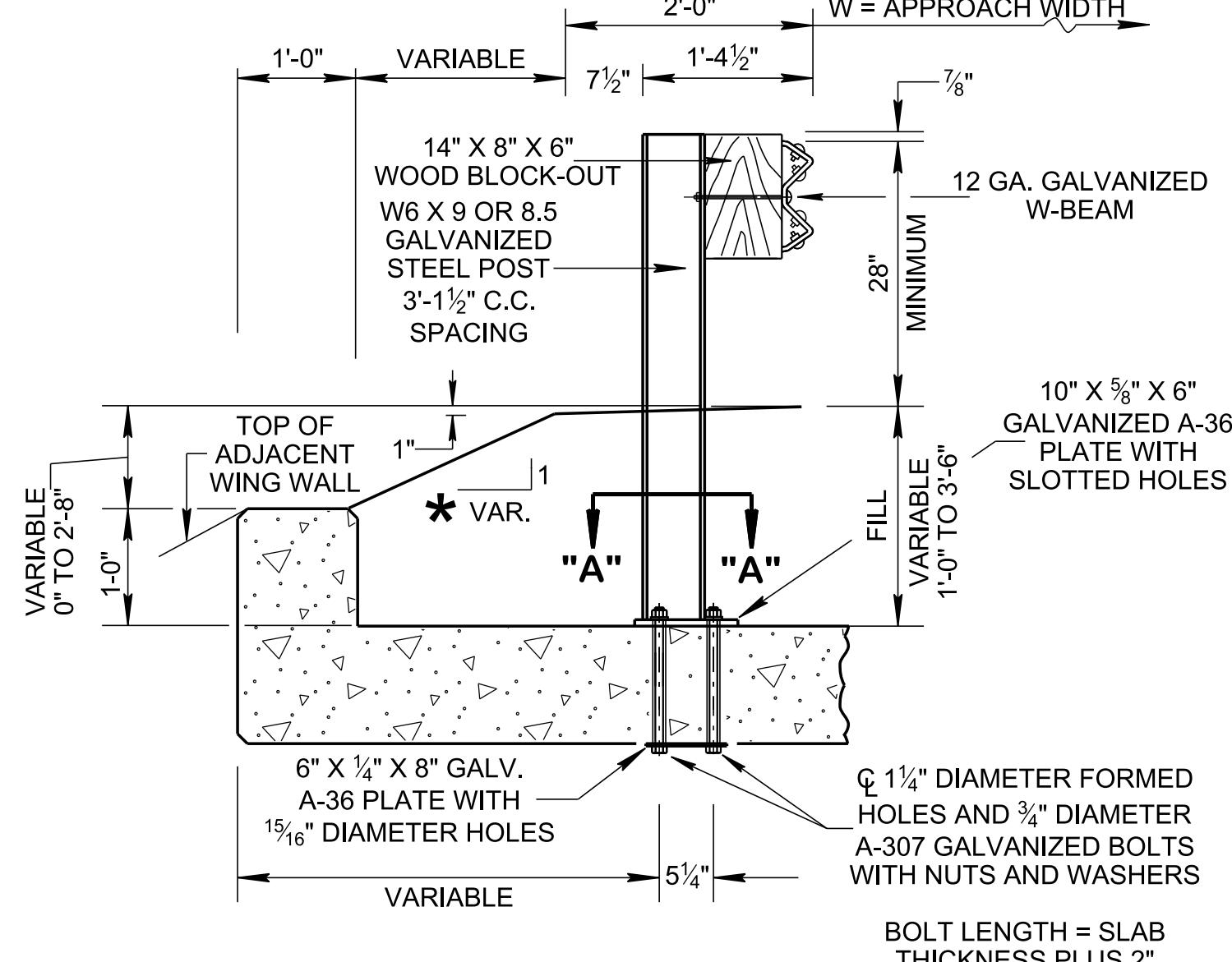
SECTION "B-B" BASEPLATE DETAIL



DETAIL FOR CONCRETE DECK USED AS A RIDING SURFACE SHOWING OUTLET END

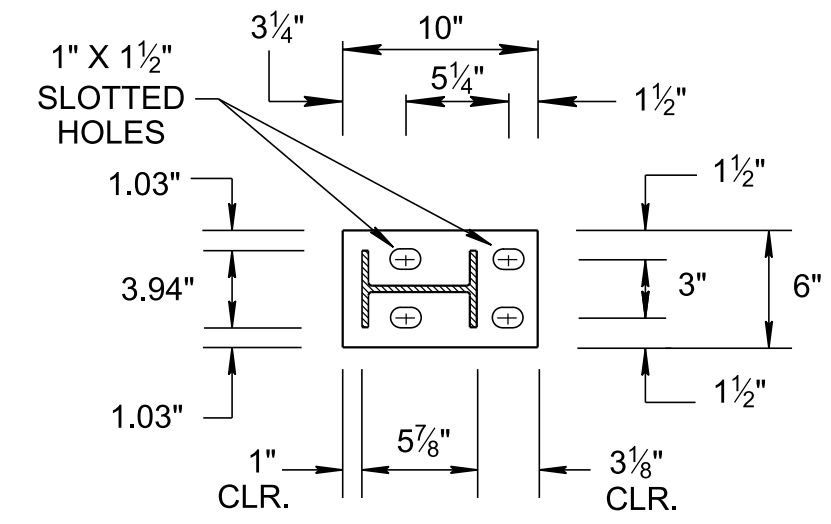


DETAIL FOR CONCRETE DECK WITH 6" TO 1'-0" OF ROADWAY FILL COVER



DETAIL FOR CONCRETE DECK WITH 1'-0" TO 3'-6" OF ROADWAY FILL COVER

* DENOTES ADJOINING ROADWAY SIDE SLOPE



SECTION "A-A" BASEPLATE DETAIL

DESIGN NOTES

- ① WHEN DEPTH OF FILL AT THE FACE OF GUARDRAIL EXCEEDS 3'-6" DELETE THE USE OF BOLTED BASE PLATES AND DRIVE POSTS.
- ② THE USE OF PRECAST, PRESTRESSED CONCRETE DECK PANELS IN BOX AND SLAB TYPE CULVERTS IS PROHIBITED.
- ③ THIS RAIL SYSTEM HAS BEEN TESTED BY MIDWEST ROADSIDE SAFETY FACILITY IN ACCORDANCE WITH THE CRITERIA SET FORTH IN NCHRP REPORT NUMBER 350 TL-3, REFERENCE REPORT STR-3(017), NOVEMBER 1986.
- ④ ANY REINFORCING STEEL THAT INTERFERES WITH THE 1/4" DIAMETER FORMED HOLES SHALL BE MOVED HORIZONTALLY TO PROVIDE A 1" MINIMUM CLEARANCE TO THE HOLE.
- ⑤ GUARDRAIL POST ATTACHMENT USING BASE PLATE AND ANCHOR BOLTS HAS BEEN TESTED PER NCHRP 350-TL3 BY TEXAS TRANSPORTATION INSTITUTE. REPORT NUMBER 405160-12, JANUARY 29, 2009.
- ⑥ DURING REPAIR A NEW POST MAY BE ATTACHED TO THE DECK BY USING ANCHOR BOLTS. POST LOCATION CAN BE MOVED BUT NOT TO EXCEED 6'-3" TYPICAL SPAN AND NOT LESS THAN 3'-1/2". ALL SHOP DRILLED HOLES TO W-BEAM RAIL OR CUT POST SHALL RECEIVE GALVANIZED COATING.

GENERAL NOTES

- (A) THE EXACT POSITION OF GUARDRAIL SHALL BE AS SHOWN ELSEWHERE ON THE PLANS OR AS DIRECTED BY THE ENGINEER. GUARDRAIL SHALL BE TRANSITIONED TO A SMOOTH CONNECTION WITH OTHER GUARDRAIL OR STRUCTURE RAILING AS SHOWN ELSEWHERE ON PLANS.
- (B) AT THE OPTION OF THE CONTRACTOR THE RAIL ELEMENTS FOR THE GUARDRAIL MAY BE FURNISHED IN EITHER 12 1/2" OR 25 FOOT NOMINAL LENGTHS WITH POST BOLT SLOTS FOR CONNECTION TO POSTS.
- (C) BOLTS SHALL BE OF SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN 3/4" BEYOND IT.
- (D) GUARDRAIL THAT IS INSTALLED ON A CURVE WITH A RADIUS OF 150 FEET OR LESS SHALL BE SHOP BENT.
- (E) STEEL POST SHALL BE BLOCKED OUT. A 8" X 6" WOOD BLOCK-OUT SHALL BE USED WITH EACH STEEL POST. SEE STANDARD DRAWING S-GR28-2M FOR SPECIFICATIONS AND DETAILS.
- (F) WELDED STEEL POSTS SHALL MEET THE REQUIREMENTS OF ASTM A-769. THE FLANGE WIDTH AND THICKNESS, WEB THICKNESS, AND DEPTH OF WELDED POSTS SHALL EQUAL OR EXCEED THE DIMENSIONS OF A STANDARD ROLLED W6 X 8.5 OR W6 X 9.0 STEEL POST.
- (G) STEEL POSTS SHALL MEET THE REQUIREMENTS OF ASTM A-36. BOLT HOLES SHALL BE APPROXIMATELY CENTERED BETWEEN WEB AND EDGE OF FLANGE OF SPACERS AND POSTS.

MINOR REVISION -- FHWA APPROVAL NOT REQUIRED

STATE OF TENNESSEE
STANDARD DRAWING
DEPARTMENT OF TRANSPORTATION

GUARDRAIL ATTACHMENT TO CONCRETE DECKS