



STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
NASHVILLE, TENNESSEE 37243-0350

INSTRUCTIONAL BULLETIN No. 02-08

Regarding Standard Drawing To Be Printed With The Plans
When Attaching Guardrail to Top Slab
of Box and Slab Culverts and Bridges

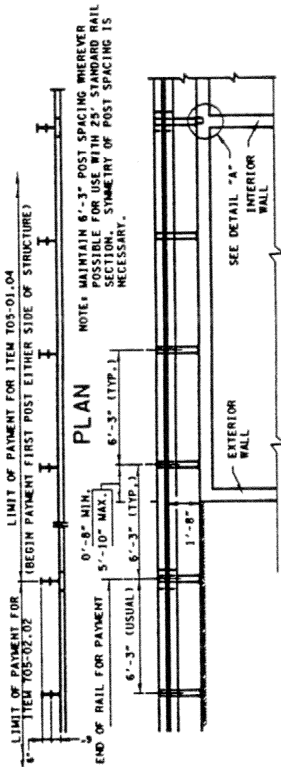
Effective for the July 26, 2002 letting, when attaching guardrail to the top slab of box and/or slab culverts or bridges, the following revised standard drawings are to be printed with the plans. They shall be identified on the lower left hand corner of the index sheet - "**To be printed with the plans.**"

Copies of these drawings are attached to this instructional bulletin.

<u>Drawing number</u>	<u>Current Revision Date</u>	<u>Standard Title</u>
S-GR-22	4-15-02	Guardrail Attachment To Concrete Decks of
SM-GR-22		Box and Slab Culverts and Bridges

A handwritten signature in black ink, appearing to read "Jeff C. Jones", is written over a horizontal line.

Jeff C. Jones, C. E. Director
Design Division

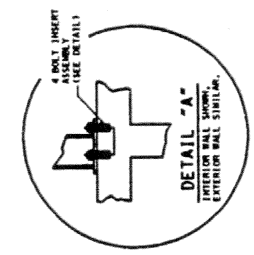
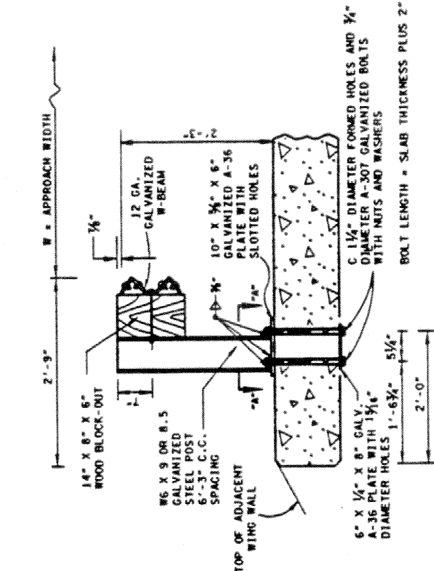


PLAN

NOTE: MAINTAIN 6'-3" POST SPACING WHEREVER POSSIBLE TO MAINTAIN SYMMETRY OF POST SPACING IS NECESSARY.

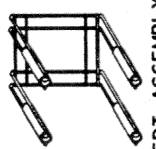
SEE DETAIL "A"

INSIDE ELEVATION OF GUARDRAIL



DETAIL "A"

FOR 1/4" DIAMETER X 4" HEX HEAD BOLTS (ASTM A-307 SPECIFICATION)



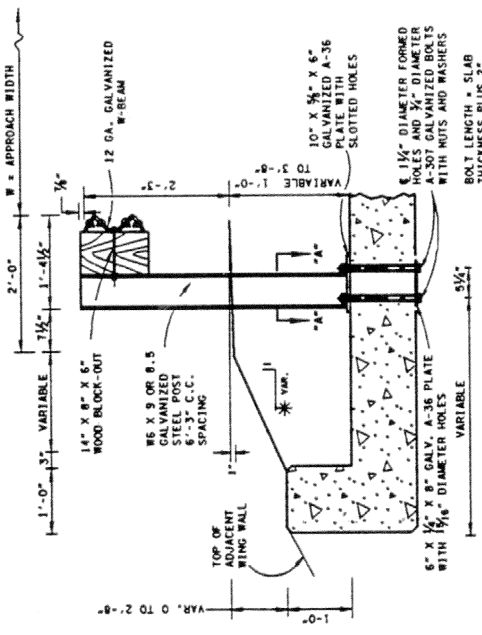
INSERT ASSEMBLY

FOR 1/4" DIAMETER X 4" HEX HEAD BOLTS (ASTM A-307 SPECIFICATION)

INSERT ASSEMBLY IS FOR CORRECTOR OF BOLTS WHICH WERE NOT A SUBSTITUTE FOR PLATE ASSEMBLY ELSEWHERE.

- REV. 8-5-97, MODIFIED INSIDE ELEVATION OF GUARDRAIL DETAIL.
- REV. 7-29-94, CHANGED STEEL WOOD BLOCK-OUT DIMENSIONS IN ALL DETAILS AND NOTES.
- REV. 5-27-91, RELOCATED 1 1/4" SLOTTED HOLES OUTWARDLY 1 1/4".
- REV. 10-26-90, ELIMINATED CONCRETE DECK PANELS FOR HEIGHT OF FILLS OVER 1'-6". CHANGED DESIGN ITEM 10.
- REV. 9-27-01, CHANGED ITEM NO. 105-06.01 TO 105-01.04.
- REV. 4-15-02, CHANGED SHEET NAME, ELIMINATED DETAILS FOR PRECAST, PRESTRESSED CONCRETE DECK PANELS. CHANGED ITEM NO. 105-06.01 TO 105-01.04.
- REV. 1-6-88, CHANGED TYPE OF CUB TO COMPLY WITH NEW STANDARD DRAWINGS STD-15-6 AND STD-15-7.

SECTION "A-A"



DETAIL FOR CONCRETE DECK WITH 1'-0" TO 3'-6" OF COVER SHOWING OUTLET END

DETAIL FOR CONCRETE DECK WITH 6" TO 1'-0" OF COVER SHOWING OUTLET END

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

* DENOTES ADJOINING ROADWAY SIDE SLOPE

BOLT LENGTH = SLAB THICKNESS PLUS 2"

BOLT LENGTH = SLAB THICKNESS PLUS 2"

BOLT LENGTH = SLAB THICKNESS PLUS 2"

DESIGN NOTES

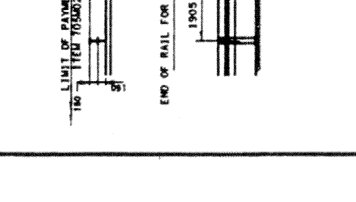
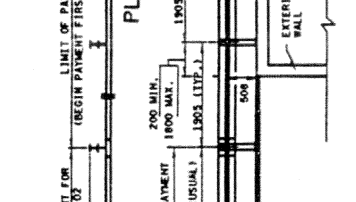
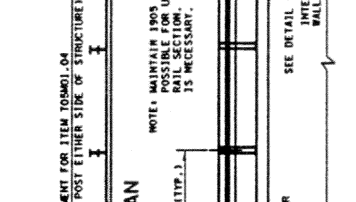
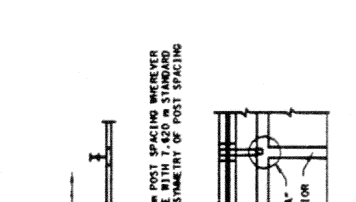
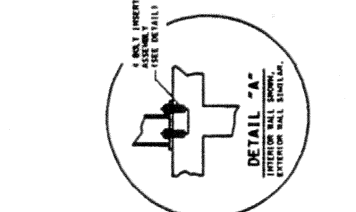
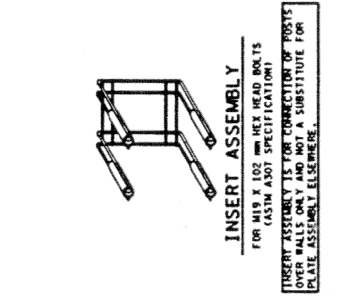
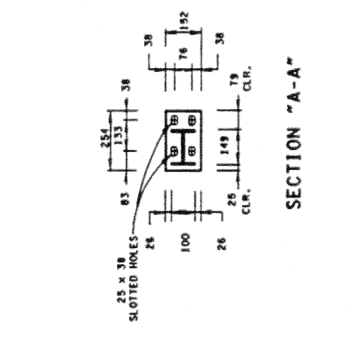
1. MIN. DEPTH OF FILL AT FACE OF GUARDRAIL EXCEEDS 3'-6" DELETE THE USE OF BOLTED BASE PLATES AND DRIVE POSTS.
2. THE USE OF PRECAST, PRESTRESSED CONCRETE DECK PANELS IN BOX AND SLAB TYPE CURBS IS PROHIBITED.
3. THIS RAIL SYSTEM HAS BEEN TESTED IN ACCORDANCE WITH THE CRITERIA SET FORTH IN NCHRP REPORT NUMBER 230. THE REPORT RECOMMENDS A MAXIMUM IMPACT ANGLE OF 25.3 DEGREES. REFERENCE REPORT FHWA/TX-86/64-405-2F, NOVEMBER 1986.
4. ANY REINFORCING STEEL THAT INTERFERES WITH THE 1 1/4" DIAMETER CLEARANCE TO THE HOLE.

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 TRANSPORTED 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 FINISHED IN EITHER 15 1/4" 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 CURVE WITH A RADIUS OF 150 FEET OR LESS SHALL BE SHOP CURVED.
- E. STEEL POST SHALL BE BLOCED OUT, A 6" X 6" WOOD BLOCK-OUT SHALL BE USED WITH EACH STEEL POST. SEE STANDARD DRAWING S-GR-13 FOR SPECIFICATIONS AND DETAILS.
- F. WELDED STEEL POSTS SHALL MEET THE REQUIREMENTS OF ASTM A-169. THE FLANGE BIRTH AND THICKNESS, WEB THICKNESS, AND DEPTH OF WELDED POSTS SHALL EQUAL OR EXCEED THE DIMENSIONS OF A STANDARD ROLLED 6 X 6.5 OR 6 X 5.0 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.
- H. FOR DIMENSIONS AND DETAILS NOT SHOWN SEE STANDARD DRAWING NOS. STD-15-6, STD-15-7, AND THE S-GR-SERIES.

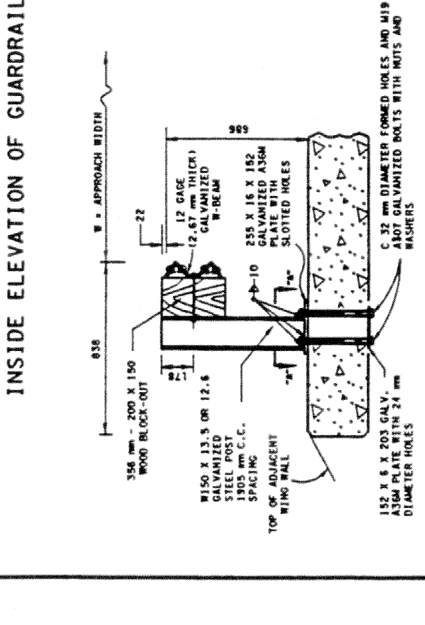
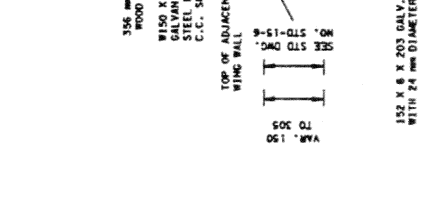
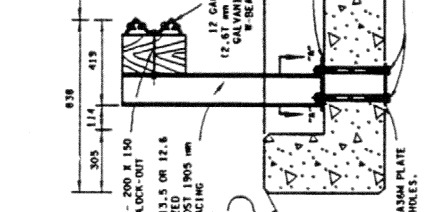
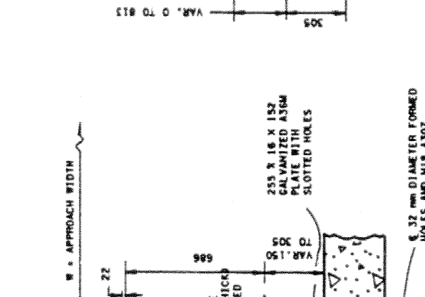
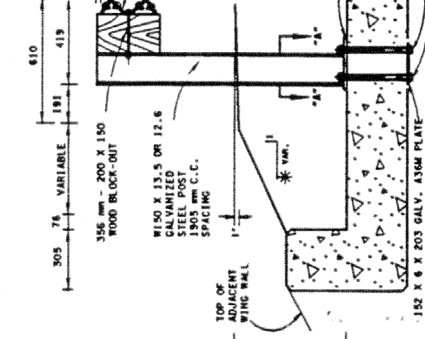
<input type="checkbox"/> SHOW REVISION -- FINE APPROVAL NOT REQUIRED.
STATE OF TENNESSEE DEPARTMENT OF TRANSPORTATION GUARDRAIL ATTACHMENT TO CONCRETE DECKS OF BOX AND SLAB CURBS AND BRIDGES
6-22-89
S-GR-22

- REV. 11-1-78: CHANGED TO METRIC.
- REV. 2-29-78: MAKE MINOR DIMENSIONING CHANGES.
- REV. 8-2-78: MODIFIED DRAWING ELEVATION OF GUARDRAIL DETAIL.
- REV. 2-28-79: CHANGED STEEL BLOCK-OUTS TO WOOD BLOCK-OUTS IN ALL DETAILS AND NOTES.
- REV. 8-27-81: RELOCATED 32 mm DIAMETER FORMED HOLES OUTWARDLY 54 mm.
- REV. 10-24-81: ELIMINATED DETAILS FOR CONNECTION OF POSTS TO CONCRETE DECK PANELS FOR HEIGHT OF FILLS OVER 455 mm. CHANGED DESIGN NOTE 2, TO SHOW 01 TO 105001-04.
- REV. 4-18-82: CHANGED ITEM NO. 4 ELIMINATED DETAILS FOR PRECAST. PANELS FOR HEIGHTS LESS THAN 455 mm. CHANGED TYPE OF CUBER TO DRAWINGS STD-15-6 AND STD-15-1.



SM-GR-22
11-1-78

- REV. 11-1-78: CHANGED TO METRIC.
- REV. 2-29-78: MAKE MINOR DIMENSIONING CHANGES.
- REV. 8-2-78: MODIFIED DRAWING ELEVATION OF GUARDRAIL DETAIL.
- REV. 2-28-79: CHANGED STEEL BLOCK-OUTS TO WOOD BLOCK-OUTS IN ALL DETAILS AND NOTES.
- REV. 8-27-81: RELOCATED 32 mm DIAMETER FORMED HOLES OUTWARDLY 54 mm.
- REV. 10-24-81: ELIMINATED DETAILS FOR CONNECTION OF POSTS TO CONCRETE DECK PANELS FOR HEIGHT OF FILLS OVER 455 mm. CHANGED DESIGN NOTE 2, TO SHOW 01 TO 105001-04.
- REV. 4-18-82: CHANGED ITEM NO. 4 ELIMINATED DETAILS FOR PRECAST. PANELS FOR HEIGHTS LESS THAN 455 mm. CHANGED TYPE OF CUBER TO DRAWINGS STD-15-6 AND STD-15-1.



SM-GR-22
11-1-78

SM-GR-22
11-1-78

SM-GR-22
11-1-78

SM-GR-22
11-1-78

SM-GR-22
11-1-78

SM-GR-22
11-1-78

SM-GR-22
11-1-78

SM-GR-22
11-1-78



STATE OF TEXAS
DEPARTMENT OF TRANSPORTATION
GUARDRAIL ATTACHMENT
TO CONCRETE DECKS OF
BOX AND
SLAB CULVERTS
AND BRIDGES

11-1-78