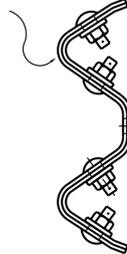
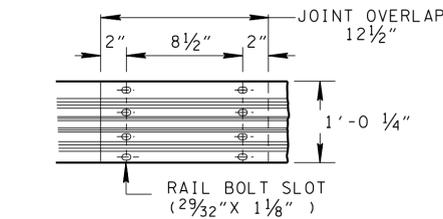


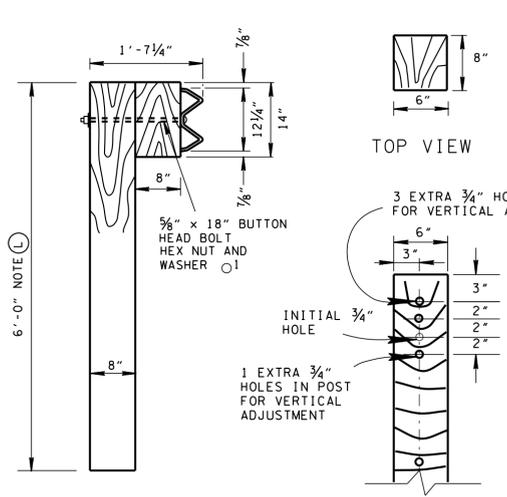
5/8" DIA. x 1 1/4" LENGTH, BUTTON HEAD BOLT WITH HEX NUT AND 1 ROUND WASHERS PER BOLT (TYPICAL).



SECTION A-A  
SPLICE CROSS-SECTION

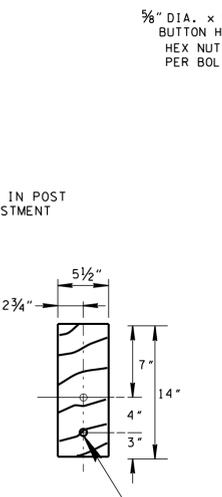


SPLICE DETAIL  
(AT MID SPAN BETWEEN POSTS ONLY)

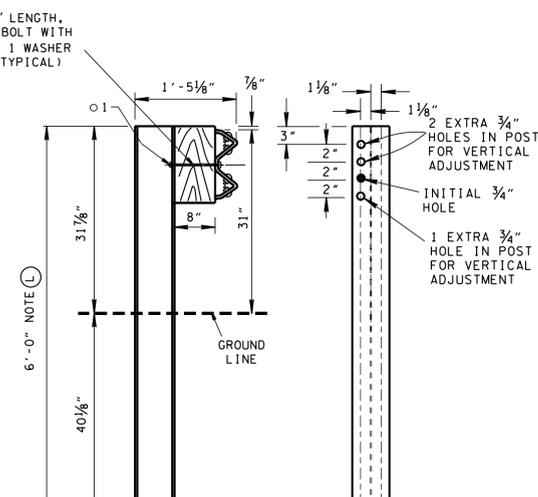


SIDE VIEW  
SINGLE GUARDRAIL  
WOOD POST

FRONT ELEVATION  
WOOD POST

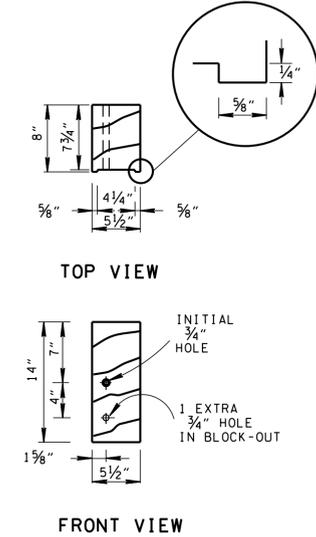


FRONT ELEVATION  
WOOD BLOCK-OUT  
FOR WOOD POST



SIDE VIEW  
SINGLE GUARDRAIL  
STEEL POST

FRONT ELEVATION  
STEEL POST



WOOD BLOCK-OUT DETAIL  
FOR STEEL POST WITH VERTICAL  
ADJUSTMENT HOLES

LEGEND FOR WASHER REQUIREMENTS	
1 OR 2 ROUND WASHERS	o1 o2

NOTE: SIDE VIEW FOR STEEL POST DIMENSIONS BASED ON W6 X 8.5, OTHER DETAILS APPLY TO W6 X 9.0 AND W6 X 15.0 POSTS AND BLOCK-OUTS.

GENERAL NOTES

METAL BEAM

- (A) METAL BEAMS SHALL CONFORM TO AASHTO M 180: TYPE II, CLASS "A" UNLESS OTHERWISE NOTED ON THE PLANS.
- (B) WHERE GUARDRAIL IS PLACED ON A CURVE WITH A RADIUS LESS THAN 150 FEET, THE RAIL IS TO BE SHOP-FORMED TO THE REQUIRED RADIUS.
- (C) 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.

HARDWARE

- (D) BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS TO THE REQUIREMENTS OF ASTM A563M, GRADE "A" OR BETTER, AND BE GALVANIZED IN ACCORDANCE WITH ASTM A153.
- (E) DIMENSIONAL TOLERANCES NOT SHOWN OR IMPLIED ARE INTENDED TO BE THOSE CONSISTENT WITH THE PROPER FUNCTION OF THE PART, INCLUDING ITS APPEARANCE AND ACCEPTED MANUFACTURING PRACTICES.
- (F) BOLTS FOR CONNECTING RAIL TO POST THROUGH BLOCKOUT SHALL BE 5/8" DIAMETER X 9 1/2" (STEEL POST) OR 5/8" DIAMETER BY 18" (WOOD POST) BUTTON HEAD WITH ROUND STEEL WASHER.
- (G) BOLTS SHALL BE OF SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN 3/4" BEYOND IT.

POSTS

- (H) THE CONTRACTOR MAY HAVE THE CHOICE OF EITHER HOT ROLLED OR WELDED STEEL W6 X 8.5 OR W6 X 9 OR 8" X 6" WOOD POST. EXCEPT AS NOTED
  - ① THE MIXING OF ANY POST TYPES ON A GIVEN PROJECT WILL BE AVOIDED IF AT ALL POSSIBLE.
  - ② SHOULD IT BECOME NECESSARY TO MIX POST TYPES ON A GIVEN PROJECT POSTS SHALL NOT BE MIXED ON A SINGLE RUN OF GUARDRAIL EXCEPT AS NECESSARY AT END TERMINALS.
  - ③ W6 X 15 IS USED WITH GUARDRAIL CONNECTION TO STRUCTURES.

- (I) STEEL POSTS SHALL CONFORM TO ASTM A36 AND BE GALVANIZED IN ACCORDANCE WITH ASTM A123. BOLT HOLES SHALL BE APPROXIMATELY CENTERED BETWEEN WEB AND EDGE OF FLANGE OF SPACERS AND POSTS.
- (J) WOOD POSTS SHALL CONFORM WITH TDOT CONSTRUCTION STANDARD SPECIFICATION.
- (K) WELDED STEEL POSTS SHALL CONFORM TO ASTM A769 AND BE GALVANIZED IN ACCORDANCE WITH ASTM A123, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
- (L) ON STEEP SLOPES, WHEN GUARDRAIL IS PLACED AT SLOPE BREAK, MINIMUM POST LENGTH SHALL BE 8 FEET. ADDITIONAL EXPENSE TO BE INCLUDED IN THE COST OF THE RUN OF GUARDRAIL (SEE S-GR31-1A).

BLOCKOUTS

- (M) BLOCKOUTS SHALL BE WOOD CONFORMING TO THE REQUIREMENTS OF TDOT CONSTRUCTION STANDARD SPECIFICATIONS OR PLASTIC GUARDRAIL BLOCKOUTS LISTED ON THE TDOT QUALIFIED PRODUCT LIST.
- (N) ONLY WOODEN BLOCKOUTS MAY BE USED WITH WOODEN POSTS, PLASTIC OR WOODEN BLOCKOUTS MAY BE USED WITH STEEL POSTS.
- (O) ALL BLOCKOUTS SHALL MEET NCHRP-350 OR MASH GUIDELINES.
- (P) MIXING THE BLOCKOUT MATERIAL ON A GIVEN PROJECT SHOULD BE AVOIDED. IF MIXING OF BLOCKOUT MATERIAL IS NECESSARY, BLOCKOUTS SHALL NOT BE MIXED ON A SINGLE RUN OF GUARDRAIL.

FUTURE ADJUSTMENTS

- (Q) BLOCKOUTS SHALL HAVE ONE ADDITIONAL 3/4" HOLE, FOUR INCHES BELOW THE INITIAL HOLE FOR FUTURE ADJUSTMENT.
- (R) INITIAL INSTALLATION REQUIRES ONE BOLT CONNECTION, EACH ADJUSTMENT THEREAFTER REQUIRES TWO BOLT CONNECTIONS.

END TREATMENTS

- (S) ALL RUNS OF GUARDRAIL WILL BEGIN AND END WITH AN ANCHOR SYSTEM (SEE S-GRA-SERIES).
- (T) GUARDRAIL ENDS THAT ARE INSIDE THE CLEARZONE AND EXPOSED TO ONCOMING TRAFFIC SHALL HAVE A CRASH WORTHY END TERMINAL AS NOTED:
  - ① ANY ROAD WITH SUITABLE BACKSLOPES SHALL USE END TERMINALS BURIED IN BACK SLOPE (SEE S-GRT-1).
  - ② ALL HIGHWAY SYSTEM ROADS WITHOUT SUITABLE BACKSLOPES SHALL USE TANGENTIAL END TERMINALS (SEE S-GRT-2).
  - ③ ALL OTHER ROADS SHALL USE SLOTTED RAIL END TERMINALS UNLESS OTHERWISE NOTED (SEE S-GRT-3).

DESIGN

- (U) 4' BEHIND GUARDRAIL SHALL BE CLEAR AT OBSTRUCTION FOR DEFLECTION.
- (V) REFER TO SAFETY PLAN STANDARDS FOR HOW TO DETERMINE THE BEGINNING AND END.

PAYMENT

- (W) PAYMENT FOR GUARDRAIL WILL BE UNDER ITEM:  
705-02.02 SINGLE GUARDRAIL (TYPE 2) LF
- (X) GUARDRAIL WILL BE PAID FOR ONLY IN LENGTHS THAT ARE MULTIPLES OF 6'-3".
- (Y) PAYMENT FOR SPECIAL CONNECTIONS AND GUARDRAIL SECTIONS REQUIRED FOR END TREATMENTS WILL BE AS NOTED ON THOSE DRAWINGS.

MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE  
DEPARTMENT OF TRANSPORTATION

W-BEAM  
GUARDRAIL