

**DESCRIPTION:** THIS STANDARD DRAWING PROVIDES AN UPGRADE RETROFIT TO THE DEEP BEAM BRIDGE GUARDRAIL SYSTEM, DBR-2-73. THE RETROFIT RAILING SYSTEM HAS BEEN ACCEPTED BY FHWA TO NCHRP REPORT 350 TEST LEVEL 3 CRITERIA. SEE FEDERAL ACCEPTANCE LETTER HSSD/B-207 DATED NOVEMBER 10, 2010.

REPAIRS TO THE EXISTING RAILING SYSTEM ARE NOT ADDRESSED BY THIS STANDARD DRAWING. FOR REHABILITATION OR REPLACEMENT OF EXISTING RAILING ITEMS, REFER TO THE DBR-2-73 STANDARD BRIDGE DRAWING.

**MATERIALS:**  
STEEL TUBING SHALL BE ASTM A500, GRADE B IN ACCORDANCE WITH C&MS 707.10.

STEEL ANGLES AND BEVELED WASHERS SHALL BE ASTM A36 GALVANIZED ACCORDING TO C&MS 711.02.

BOLTS AND HARDWARE SHALL BE GALVANIZED ASTM A325 ACCORDING TO C&MS 711.09. INSTALL BOLTS ACCORDING TO C&MS 513.

FABRICATE ALL STEEL IN ACCORDANCE WITH C&MS 513 LEVEL SF.

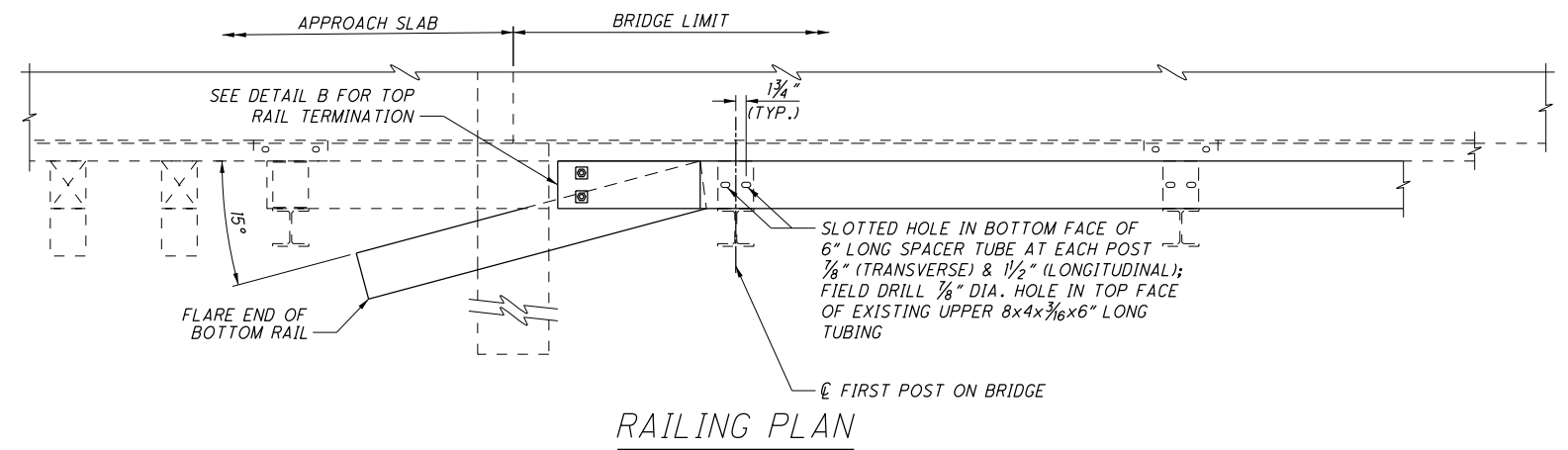
**COATING REPAIRS:** REPAIR EXISTING GALVANIZED COATINGS DAMAGED BY FIELD DRILLING IN ACCORDANCE WITH C&MS 711.02.

**APPROACH RAILING:** REFER TO STANDARD CONSTRUCTION DRAWING GR-3.4, BRIDGE TERMINAL ASSEMBLY, TYPE 4.

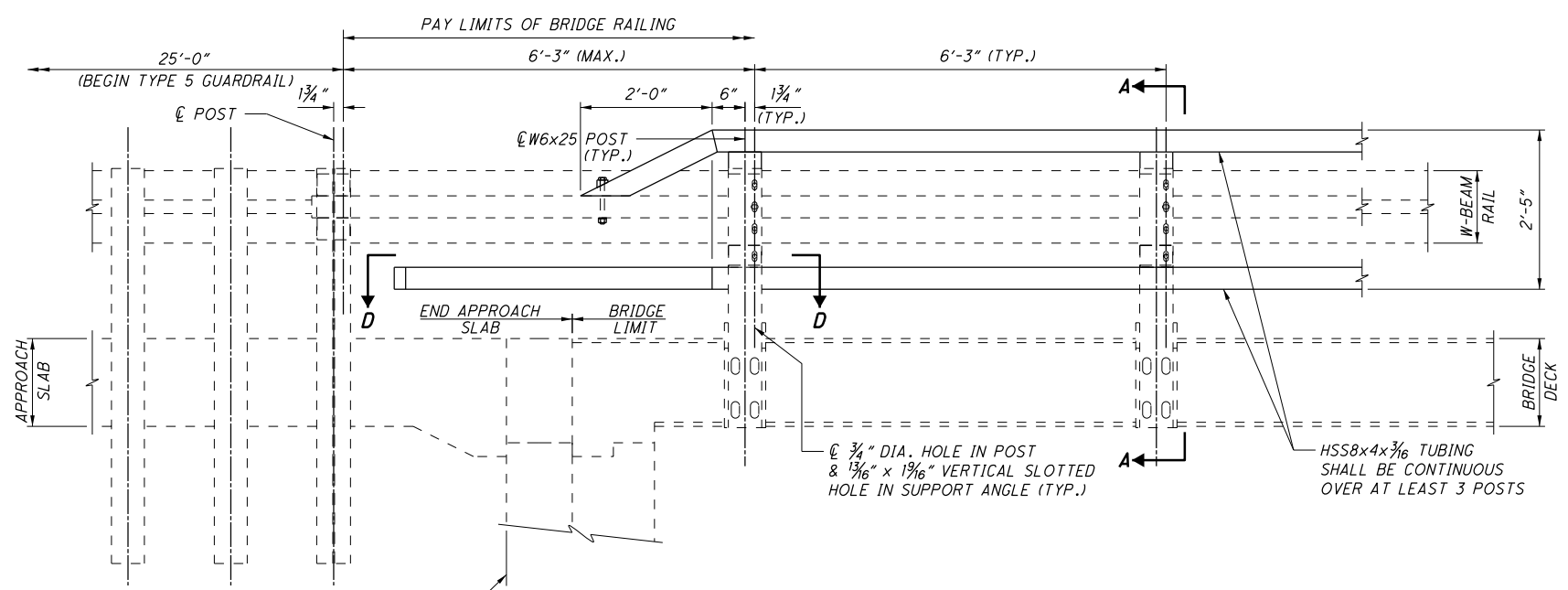
**METHOD OF MEASUREMENT:** THE DEPARTMENT WILL MEASURE THE DEEP BEAM BRIDGE RETROFIT RAILING BY THE NUMBER OF FEET BETWEEN THE FIRST POSTS OFF THE BRIDGE AS SHOWN HEREIN.

**BASIS OF PAYMENT:** THE DEPARTMENT WILL PAY FOR THE FIRST POST OFF THE STRUCTURE AT EACH END OF THE BRIDGE RAILING, SEPARATELY. THE DEPARTMENT WILL PAY FOR ACCEPTED QUANTITIES AT THE CONTRACT PRICE AS FOLLOWS:

ITEM	UNIT	DESCRIPTION
517	FOOT	DEEP BEAM BRIDGE RETROFIT RAILING

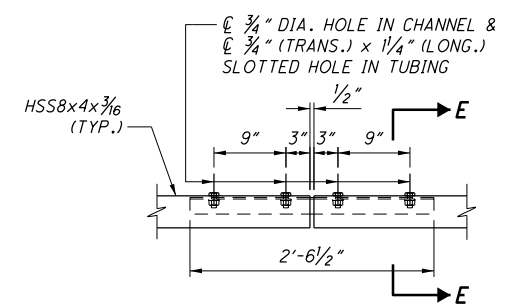


RAILING PLAN

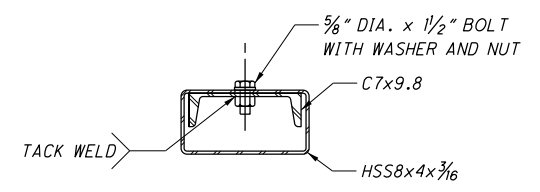


RAILING ELEVATION

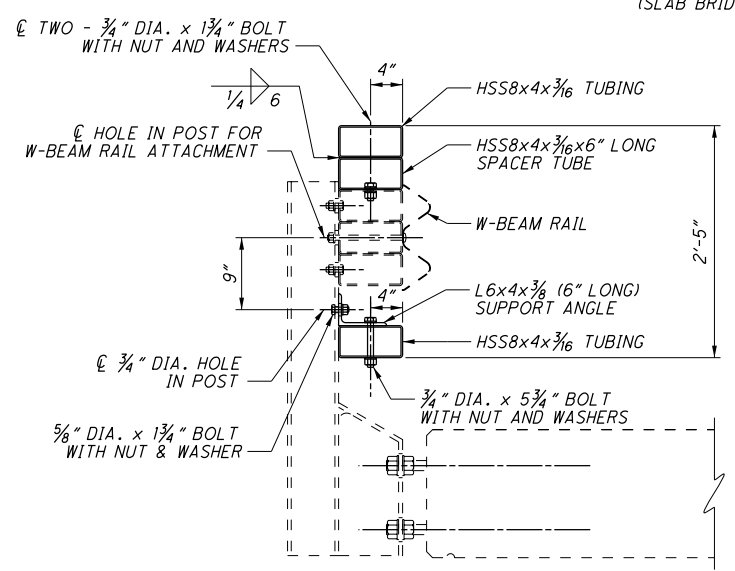
(SLAB BRIDGE SHOWN, OTHER BRIDGE TYPES SIMILAR)



HSS SPLICE DETAIL

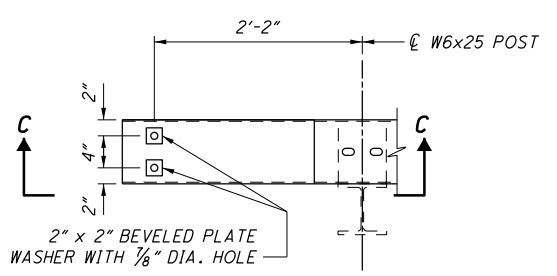


SECTION E-E



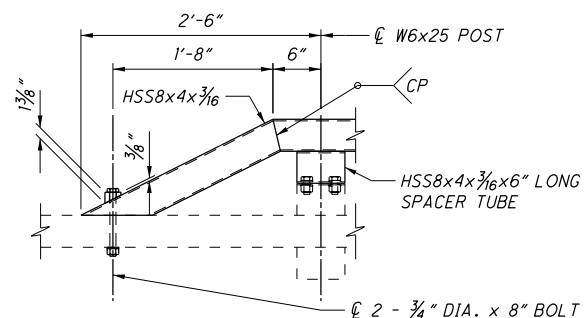
SECTION A-A

(TYPE 2 POST SHOWN, TYPE 1 POST SIMILAR)



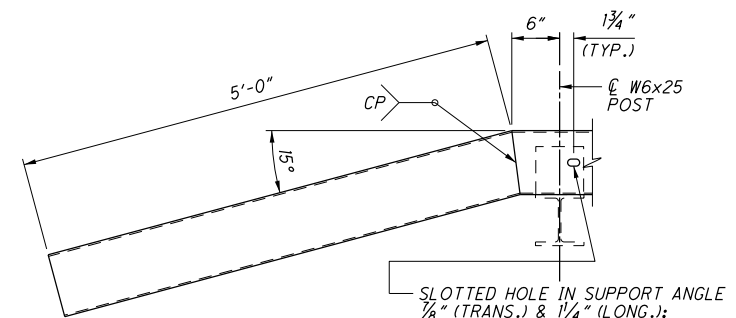
DETAIL B

(W-BEAM RAIL NOT SHOWN)



VIEW C-C

(W6x25 POST NOT SHOWN)



SECTION D-D

(W-BEAM RAIL NOT SHOWN)

2 - 3/4" DIA. x 8" BOLT WITH BEVELED PLATE WASHER, WASHER & NUT. 1/8" DIA. HOLE IN UPPER TUBE. FIELD DRILL 1/8" DIA. THROUGH HOLE IN EXISTING TUBE.

SLOTTED HOLE IN SUPPORT ANGLE 1/8" (TRANS.) & 1/4" (LONG.); SLOTTED HOLE IN TOP & BOTTOM FACE OF TUBING 1/8" (TRANS.) & 1/2" (LONG.)