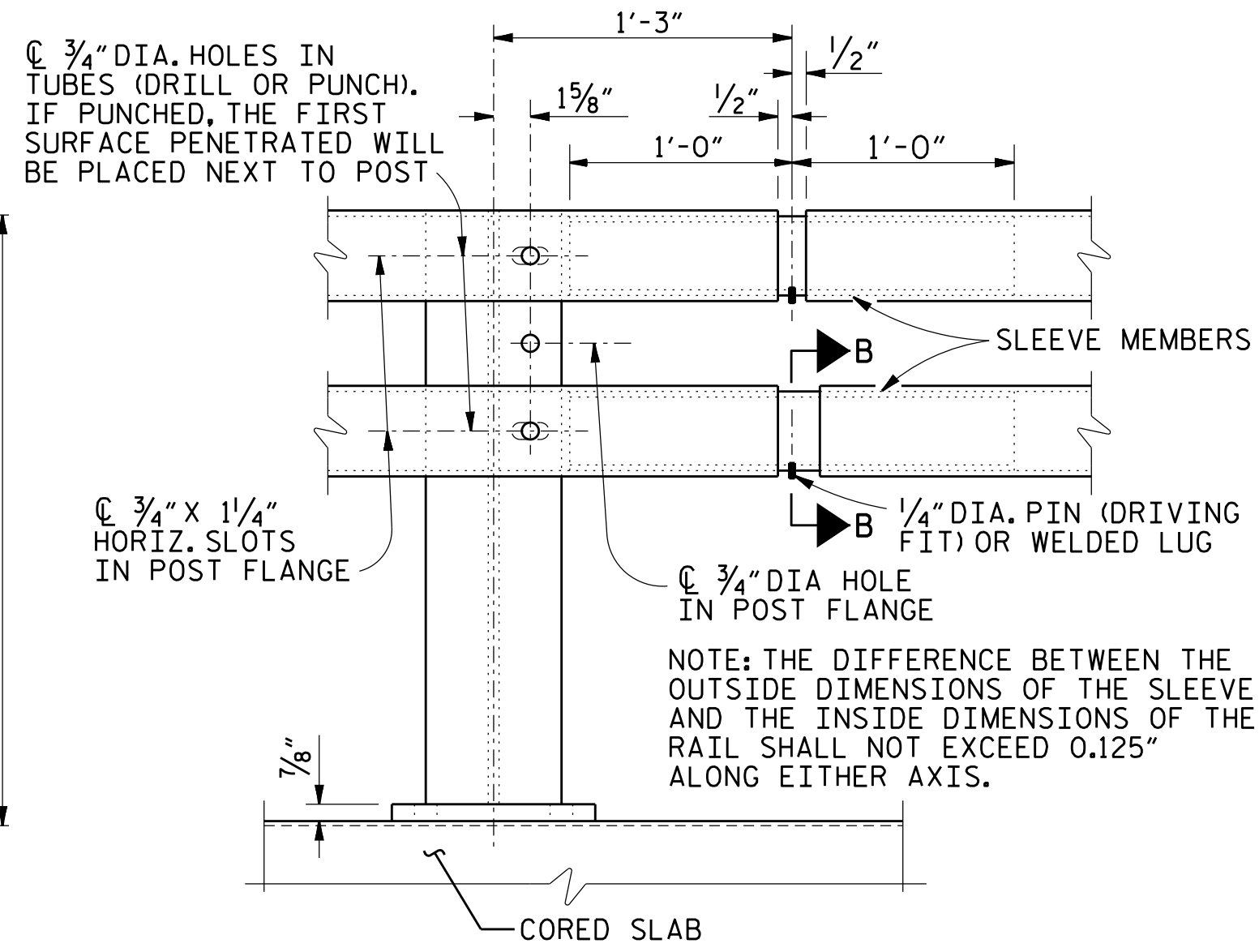
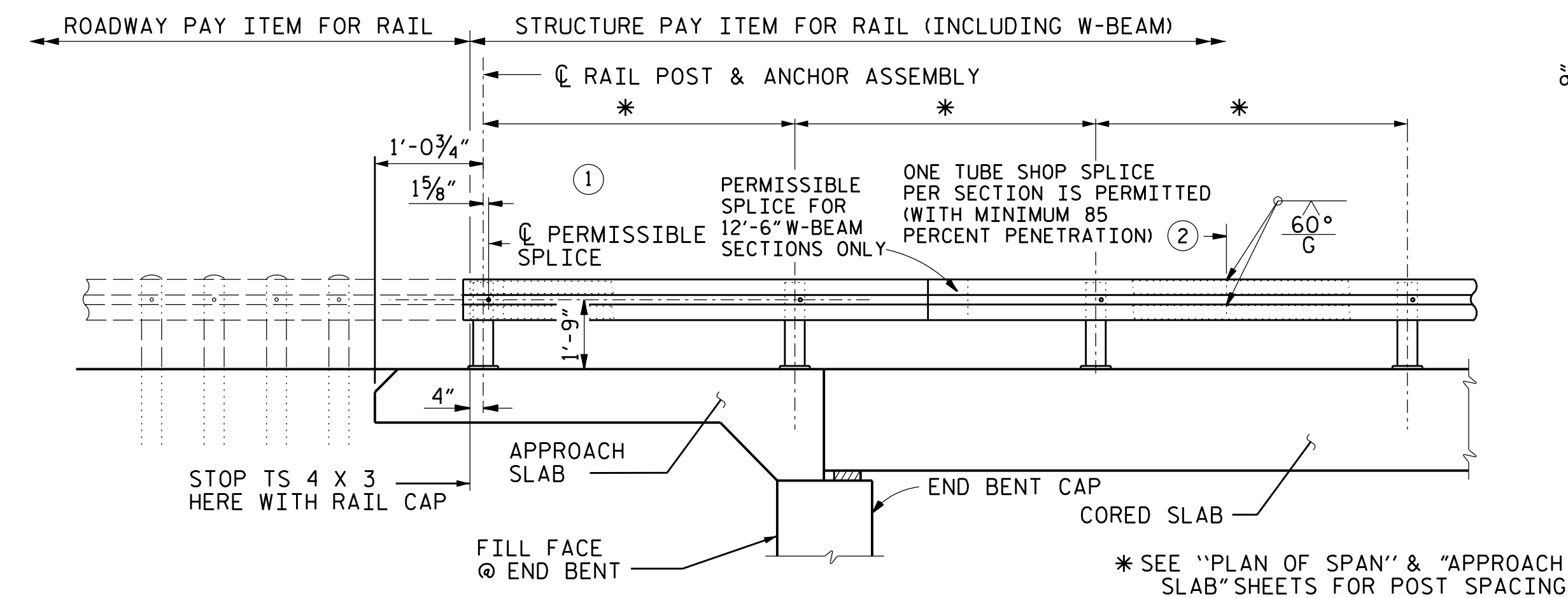


SECTION THRU RAIL

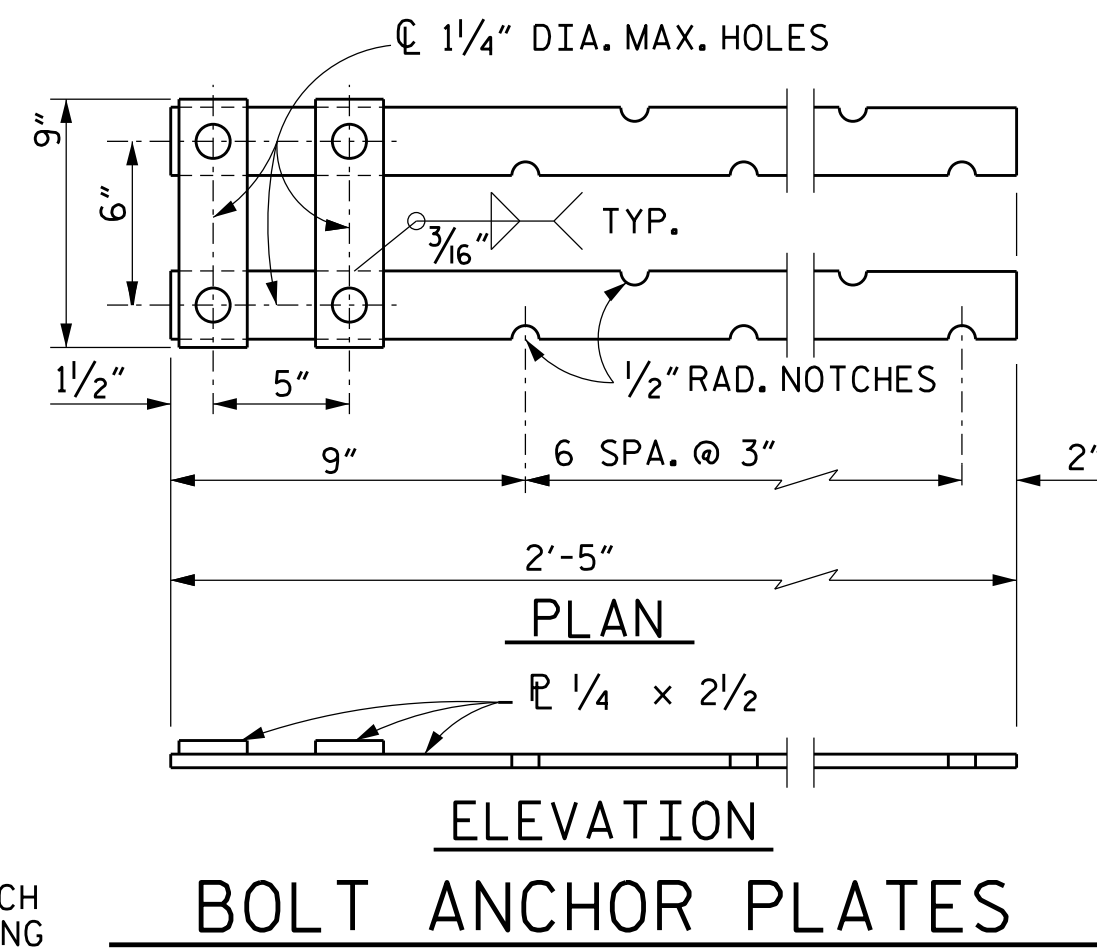


TUBE SPLICE DETAILS



ELEVATION OF T101 RAIL

(EACH END SIMILAR)



BOLT ANCHOR PLATES

NOTES

RAILING SHALL BE CONTINUOUS FROM APPROACH SLAB TO APPROACH SLAB AS DETAILED IN "ELEVATION OF T101 RAIL". TS 4 X 3 MEMBERS SHALL BE ATTACHED CONTINUOUSLY TO A MINIMUM OF THREE POSTS. JOINTS IN TS 4 X 3 MEMBERS SHALL BE SPLICED AS DETAILED.

CERTIFIED MILL REPORTS ARE REQUIRED FOR THE TS 4 X 3 MEMBERS AND THE RAILS POSTS. SHOP INSPECTION IS NOT REQUIRED.

METAL RAIL POSTS SHALL BE SET NORMAL TO CORED SLABS.

SHIMS SHALL BE USED AS NECESSARY FOR POST ALIGNMENT.

ALL RAIL COMPONENTS SHALL BE GALVANIZED UNLESS OTHERWISE SHOWN ON THE PLANS.

MATERIAL AND GALVANIZING SHALL CONFORM TO THE FOLLOWING SPECIFICATIONS:

POSTS, POST BASE PLATE, AND ANCHOR PLATES: AASHTO M270 GRADE 36 STRUCTURAL STEEL-GALVANIZED TO AASHTO M111.

TS 4 X 3 MEMBERS AND SLEEVE MEMBERS: SEE "TUBE AND SLEEVE MEMBERS" CHART - GALVANIZED TO AASHTO M111.

HIGH STRENGTH ANCHOR BOLTS SHALL CONFORM TO ASTM 1554 GRADE 105. HEAVY HEX NUTS SHALL CONFORM TO ASTM A563 DH, AND WASHERS TO ASTM F436, TYPE 1. NUTS AND WASHERS SHALL BE GALVANIZED TO AASHTO M111.

W-BEAM RAILING SHALL BE 12 GAGE STEEL NOMINAL THICKNESS OF 0.1046", EXCLUSIVE OF PROTECTIVE COATING. RAILING MAY VARY SLIGHTLY AND SHALL CONFORM TO AASHTO M-180.

AT EXPANSION SLOTS IN W-BEAM RAIL, TIGHTEN BOLTS SLIGHTLY.

NUTS FOR ANCHOR BOLTS SHALL BE TIGHTENED FINGER TIGHT AND GIVEN AN ADDITIONAL 1/4 TURN. THE THREAD OF THE NUT AND BOLT SHALL THEN BE BURRED WITH A SHARP POINTED TOOL.

METHOD OF MEASUREMENT FOR METAL RAILS: FOR LENGTH OF METAL RAILS TO BE PAID FOR, SEE THE STANDARD SPECIFICATIONS.

CURVED RAIL USAGE: WHERE RAILS ARE TO BE USED ON BRIDGES ON HORIZONTAL AND/OR VERTICAL CURVATURE THE CONTRACTOR MAY, AT HIS OPTION, HAVE THE REQUIRED CURVATURE IN THE RAIL FORMED IN THE SHOP OR IN THE FIELD. IN EITHER EVENT, THE RAIL SHALL CONFORM WITHOUT BUCKLING OR KINKING TO THE REQUIRED CURVATURE IN A UNIFORM MANNER ACCEPTABLE TO THE ENGINEER.

TO INSURE FUTURE IDENTIFICATION OF THE FABRICATOR, A PERMANENT IDENTIFYING MARK SHALL BE PLACED ON EACH POST. THE METHOD OF MARKING AND LOCATION SHALL BE SUCH THAT IT DOES NOT DETRACT FROM THE APPEARANCE OF THE POST, BUT REMAINS VISIBLE AFTER RAIL PLACEMENT.

MINOR VARIATIONS IN DETAILS OF METAL RAIL WILL BE CONSIDERED. DETAILS OF SUCH VARIATIONS, IF DESIRED, SHALL BE SUBMITTED FOR APPROVAL.

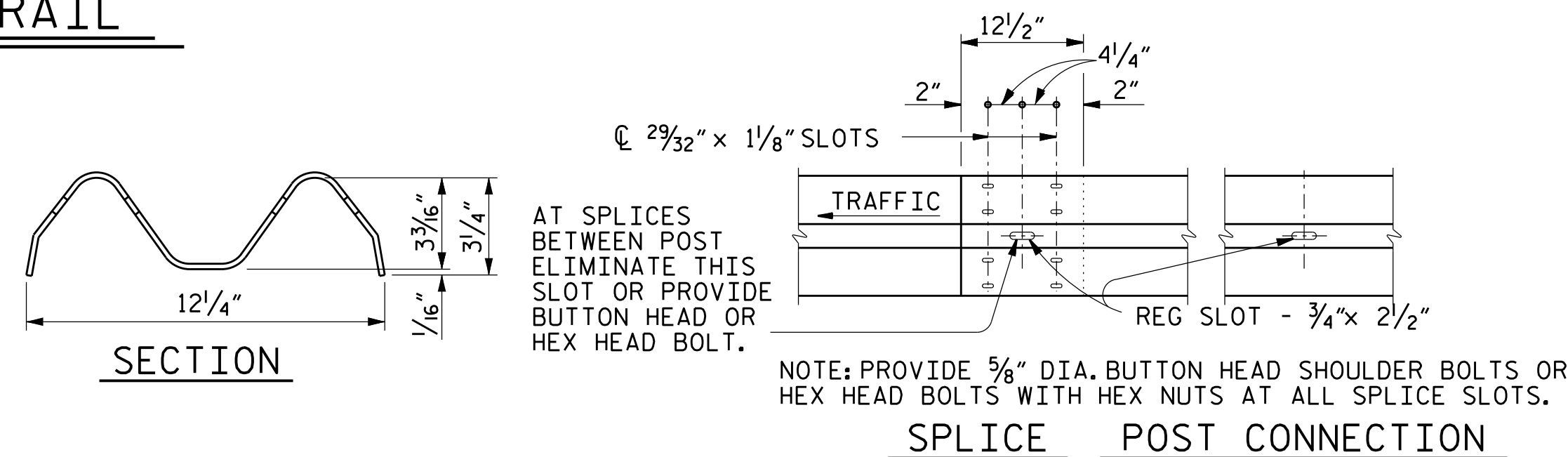
ERECTION DRAWINGS SHOWING SECTION LENGTHS, SPLICE LOCATIONS, RAIL POST SPACING AND ANCHOR BOLT SETTING SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

- ① SPLICE MAY BE ON EITHER SIDE OF BRIDGE RAIL POST WEB.
- ② THE WELD MAY BE SQUARE GROOVE OR SINGLE VEE GROOVE. GRIND SMOOTH.
- ③ IN LIEU OF FRONT FLANGE WELD SHOWN, A 3/8" FILLET WELD ALL AROUND INCLUDING EDGES OF FLANGE MAY BE USED.

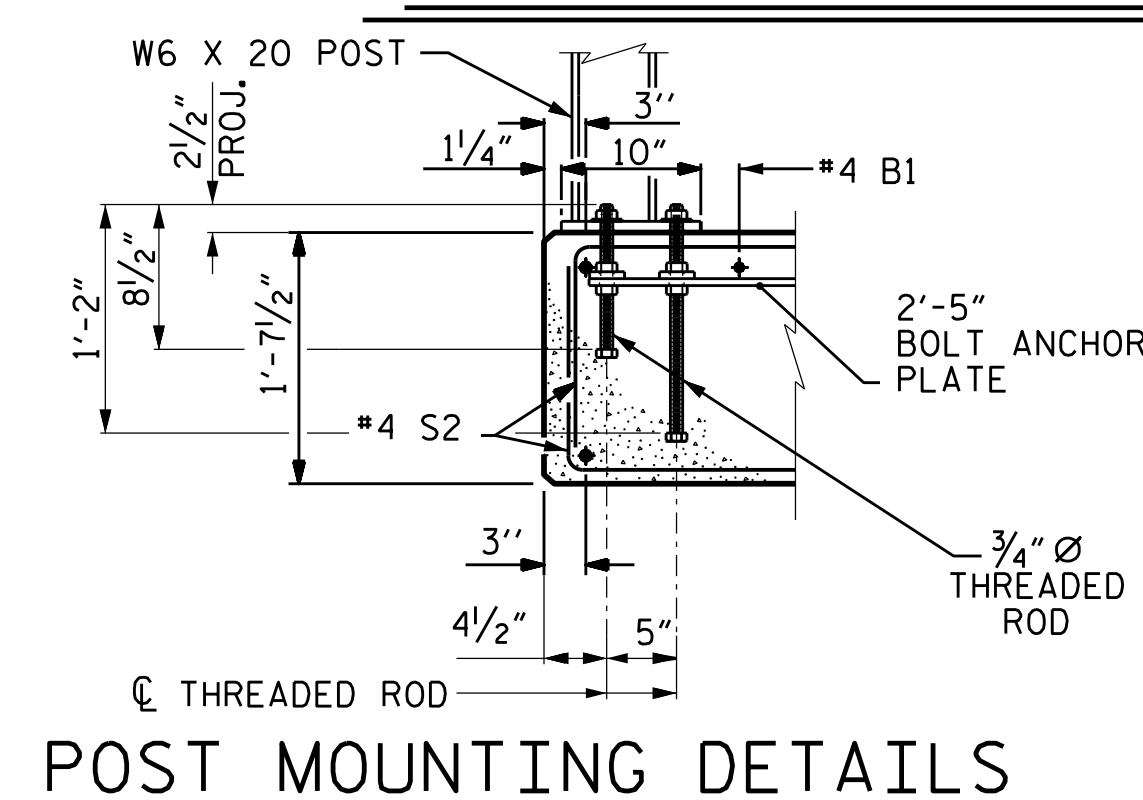
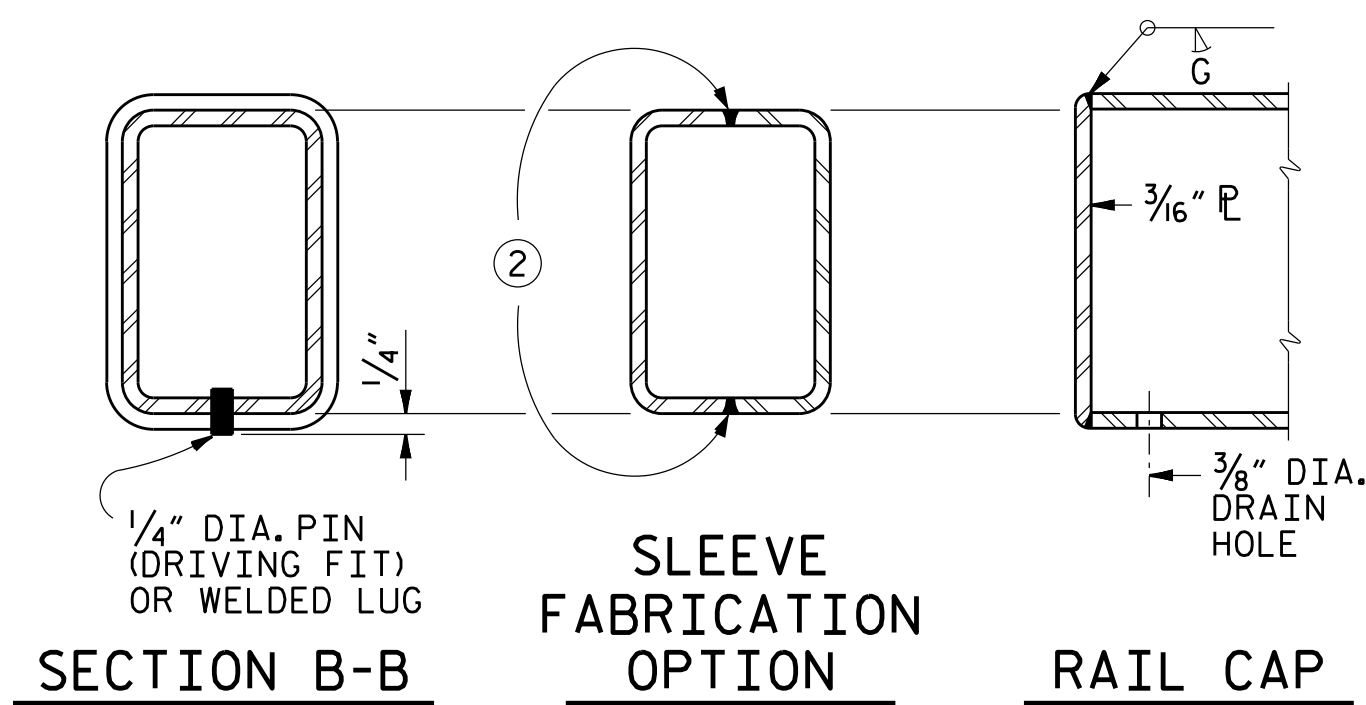
PAY LENGTH = 282.00 LIN. FT.

TUBE & SLEEVE MEMBERS		
RAIL MEMBER	SLEEVE THICKNESS	
MATERIAL	THICKNESS	MATERIAL - A36
A 500 GRADE C	0.188"	0.188"
A 500 GRADE B	0.250"	0.250"
A 500 GRADE A OR A 501	0.313"	0.250"

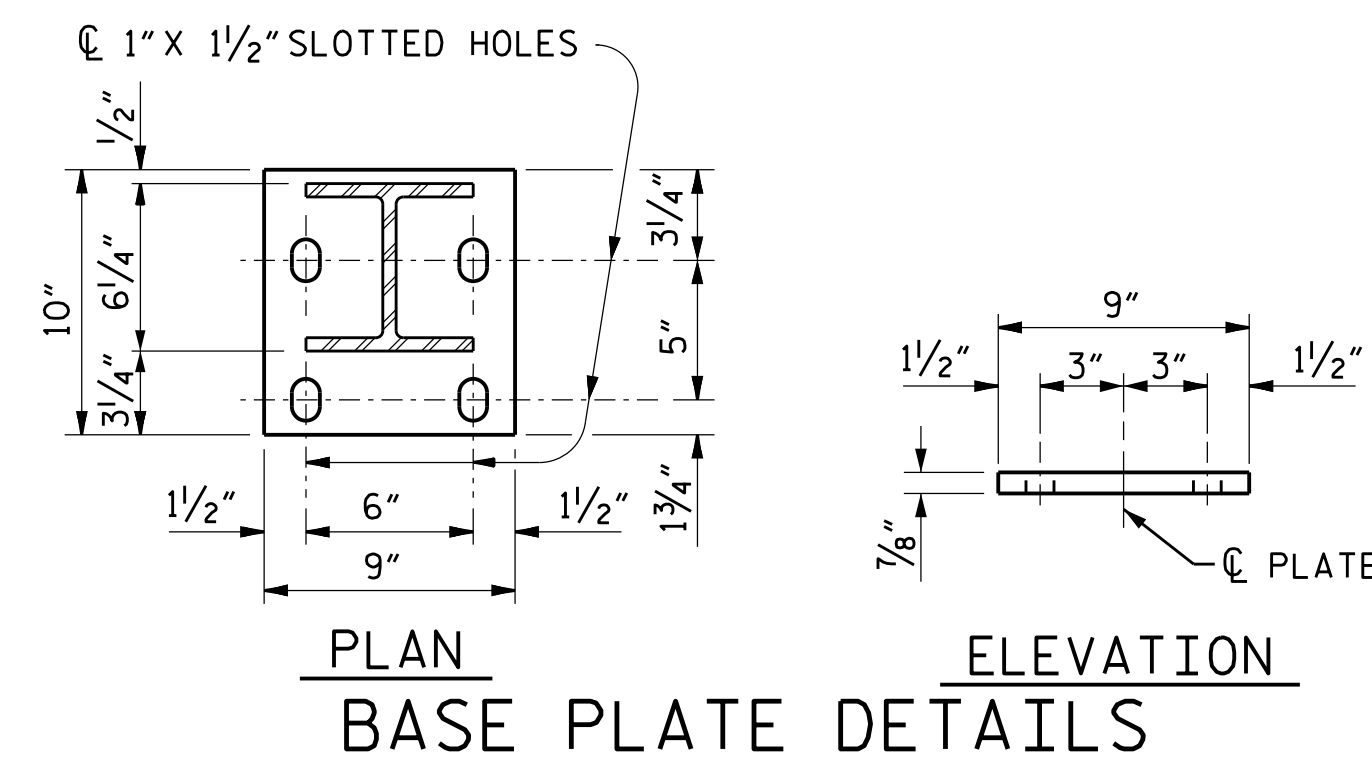
NOTE: OTHER SECTIONS OF EQUAL OR GREATER STRENGTH ARE ACCEPTABLE FOR SLEEVES.



W-BEAM DETAILS



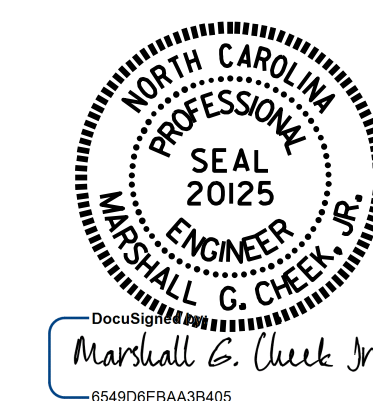
POST MOUNTING DETAILS



BASE PLATE DETAILS

PROJECT NO. B-5383
AVERY COUNTY
 STATION: 12+71.00 -L-

SHEET 5 OF 5



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUPERSTRUCTURE
 RAIL DETAILS
 (T101 RAIL)**

DRAWN BY: M. POOLE DATE: 07/16
 CHECKED BY: W.J. HARRIS DATE: 10/16
 DESIGN ENGINEER OF RECORD: W.J. HARRIS DATE: 10/16

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-8
2			4			TOTAL SHEETS 16