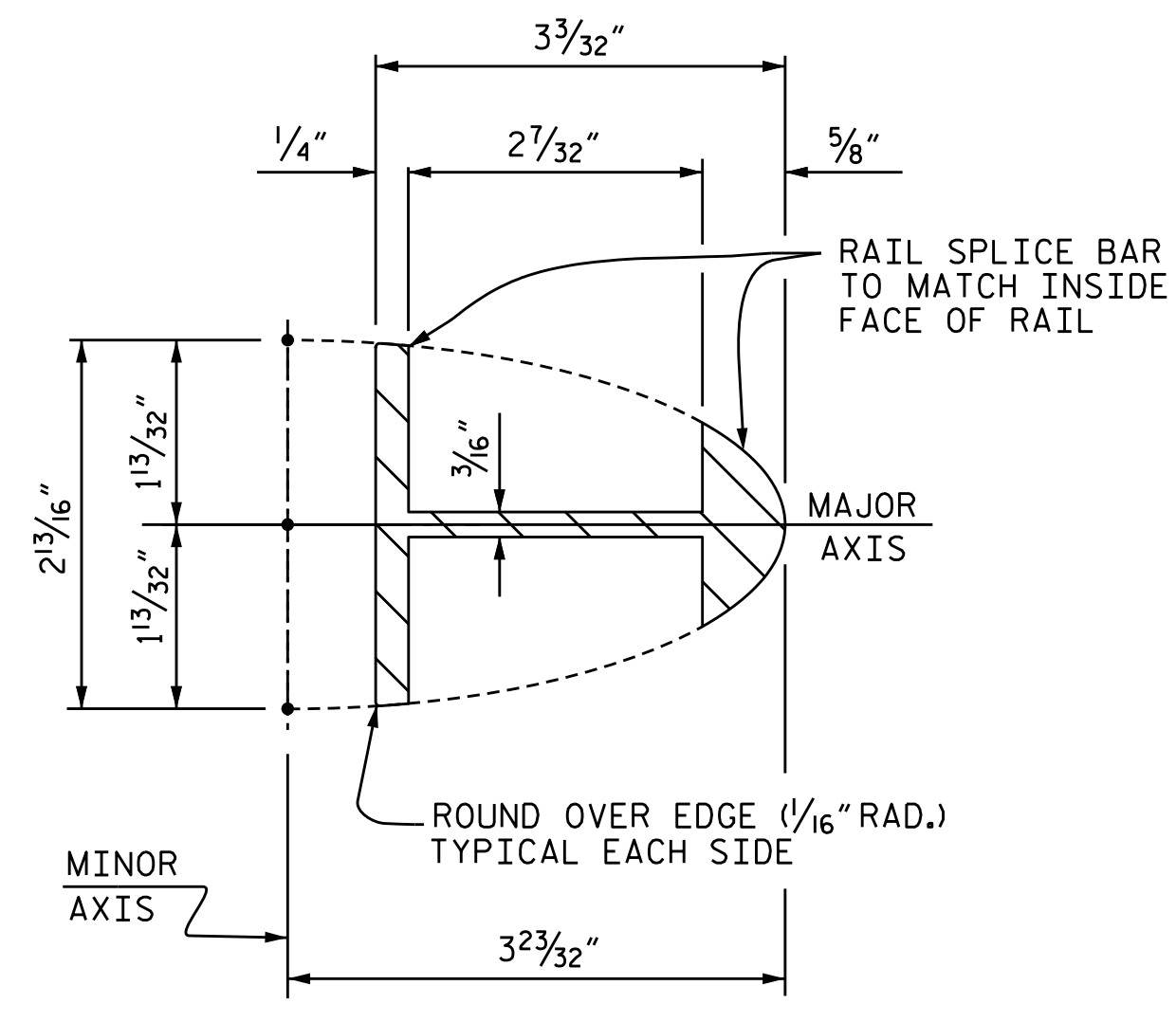
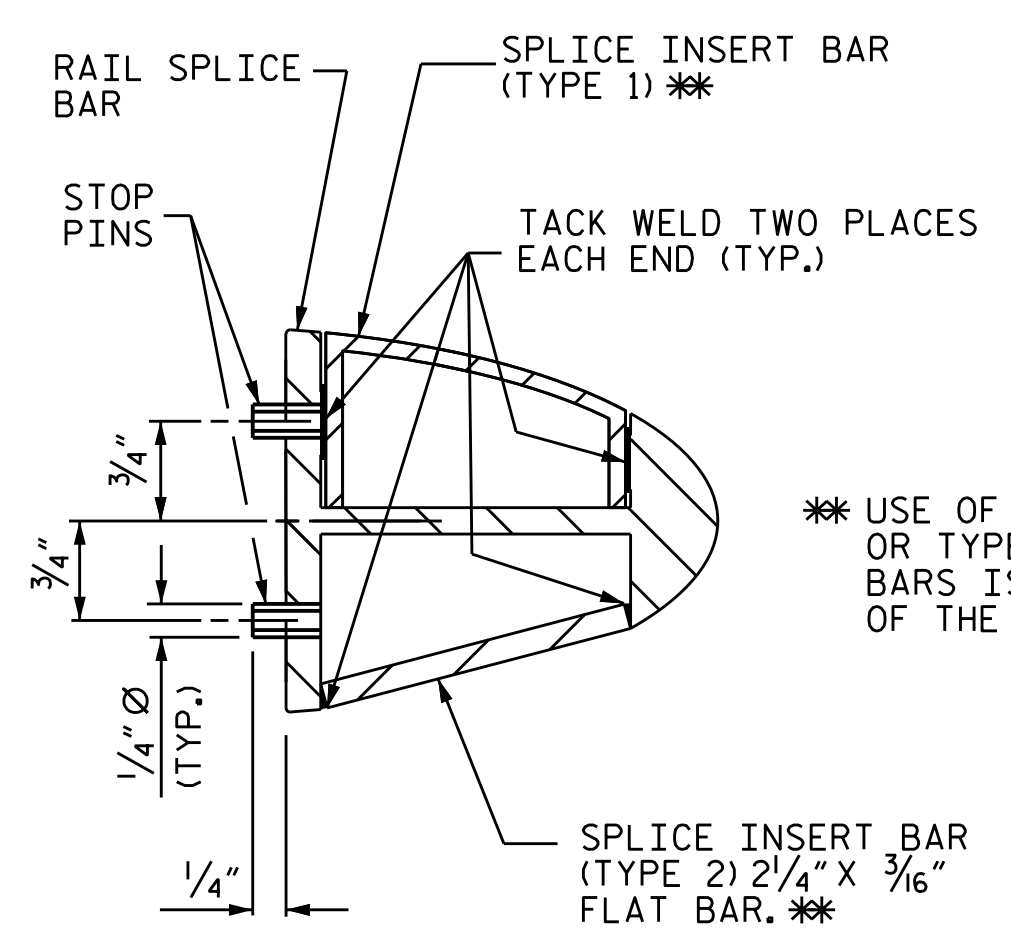


**SECTION B-B**  
(TYPICAL SECTION THRU RAIL)



**SECTION C-C**  
RAIL SPLICE BAR  
(RAIL NOT SHOWN FOR CLARITY)



**SECTION D-D**

\* USE OF EITHER TYPE 1 OR TYPE 2 SPLICE INSERT BARS IS AT THE OPTION OF THE CONTRACTOR.

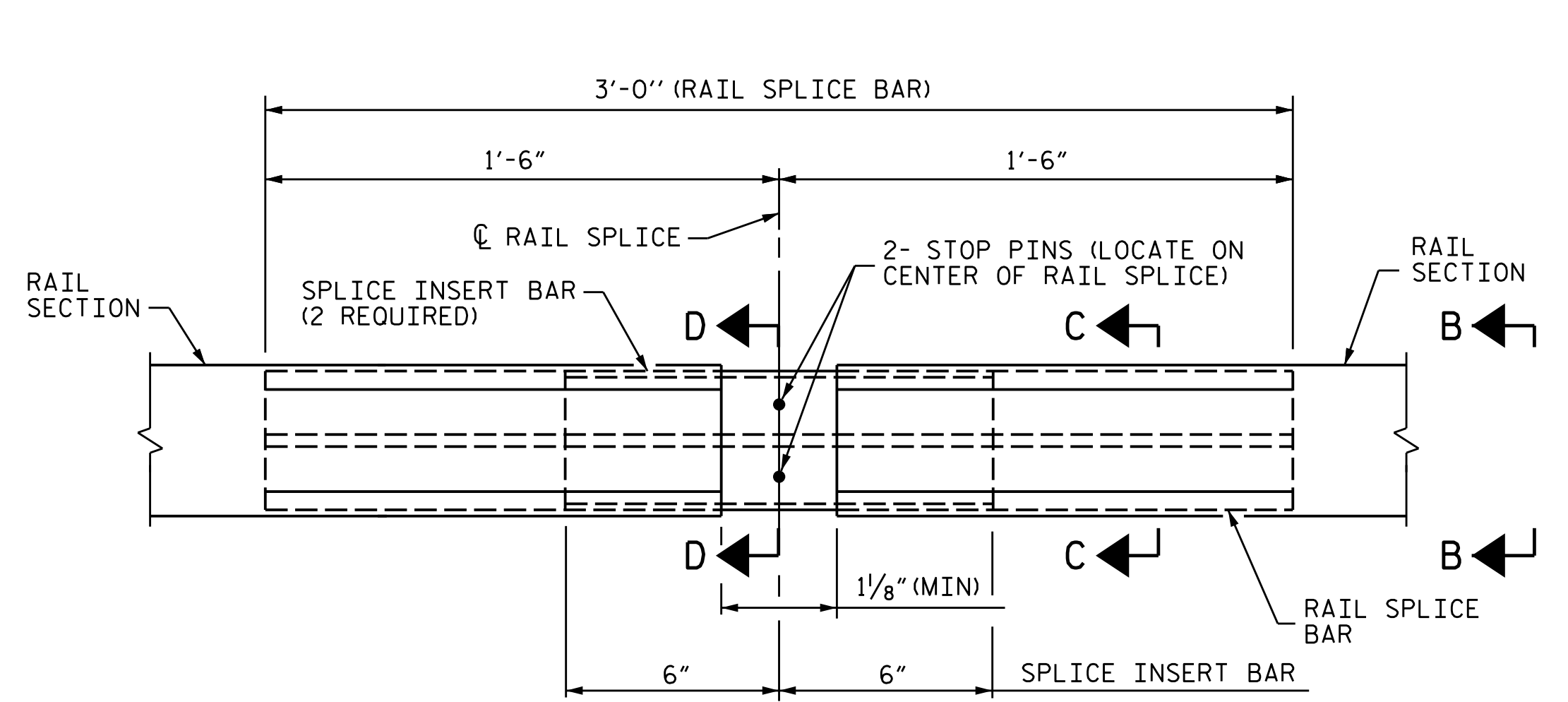
**NOTES**

THE CONTRACTOR SHALL USE ADHESIVELY ANCHORED THREADED RODS TO PERMANENTLY ATTACH THE METAL RAIL POSTS TO THE TOP OF THE EXISTING LEFT CONCRETE BARRIER RAIL. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE 3/4" Ø THREADED ROD IS 3 KIPS. FOR ADHESIVELY ANCHORED THREADED RODS, SEE THE STANDARD SPECIFICATIONS.

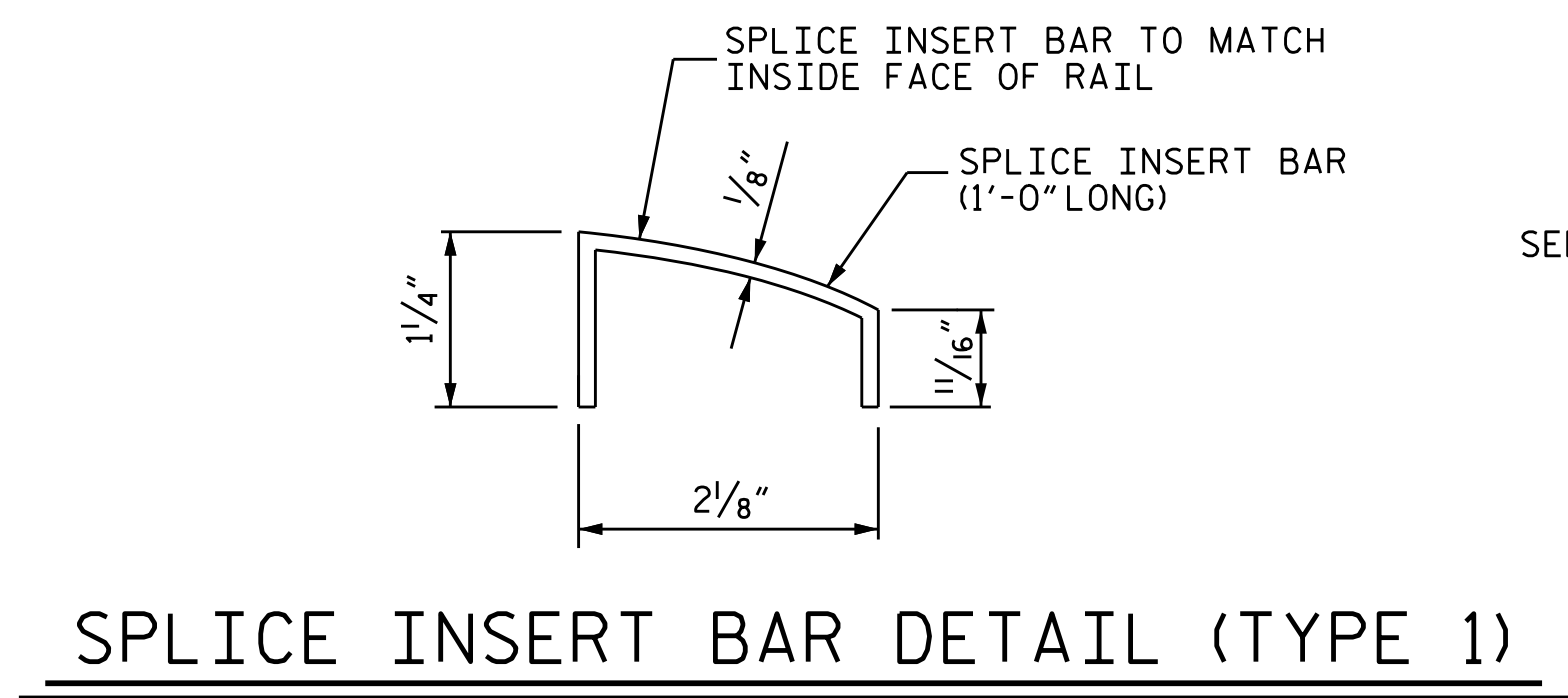
THE COST OF THE THREADED RODS AND WASHERS COMPLETE IN PLACE SHALL BE INCLUDED IN THE PRICE BID FOR LINEAR FEET OF 2 BAR METAL RAIL RETROFIT.

AFTER NUTS HAVE BEEN TIGHTENED, THE THREADED ROD THREADS SHALL BE DEFORMED TO PREVENT REMOVAL OF NUTS. TACK WELDING OF NUTS TO THREADED RODS, TO PREVENT THEFT, IS PERMITTED.

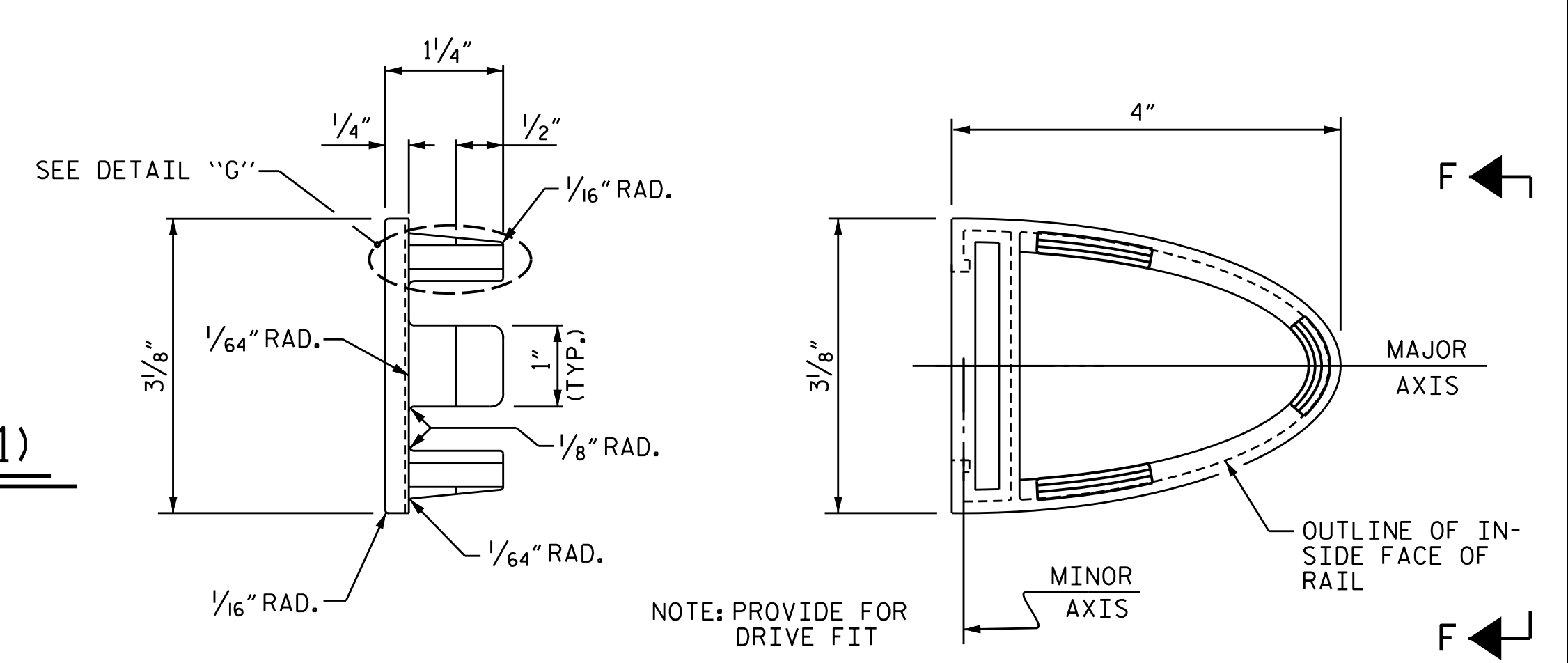
THE ADHESIVELY ANCHORED THREADED ROD SHALL MEET THE REQUIREMENTS OF ASTM F593 ALLOY 304 STAINLESS STEEL WITH MINIMUM 75,000 PSI ULTIMATE STRENGTH. NUTS SHALL MEET THE REQUIREMENTS OF ASTM F594 ALLOY 304 STAINLESS STEEL AND WASHERS SHALL MEET THE REQUIREMENTS OF ASTM F844 EXCEPT THEY SHALL BE MADE FROM ALLOY 304 STAINLESS STEEL.



**PLAN OF RAIL SPLICE ASSEMBLY**  
(TYPICAL AT RAIL SPLICE LOCATIONS)

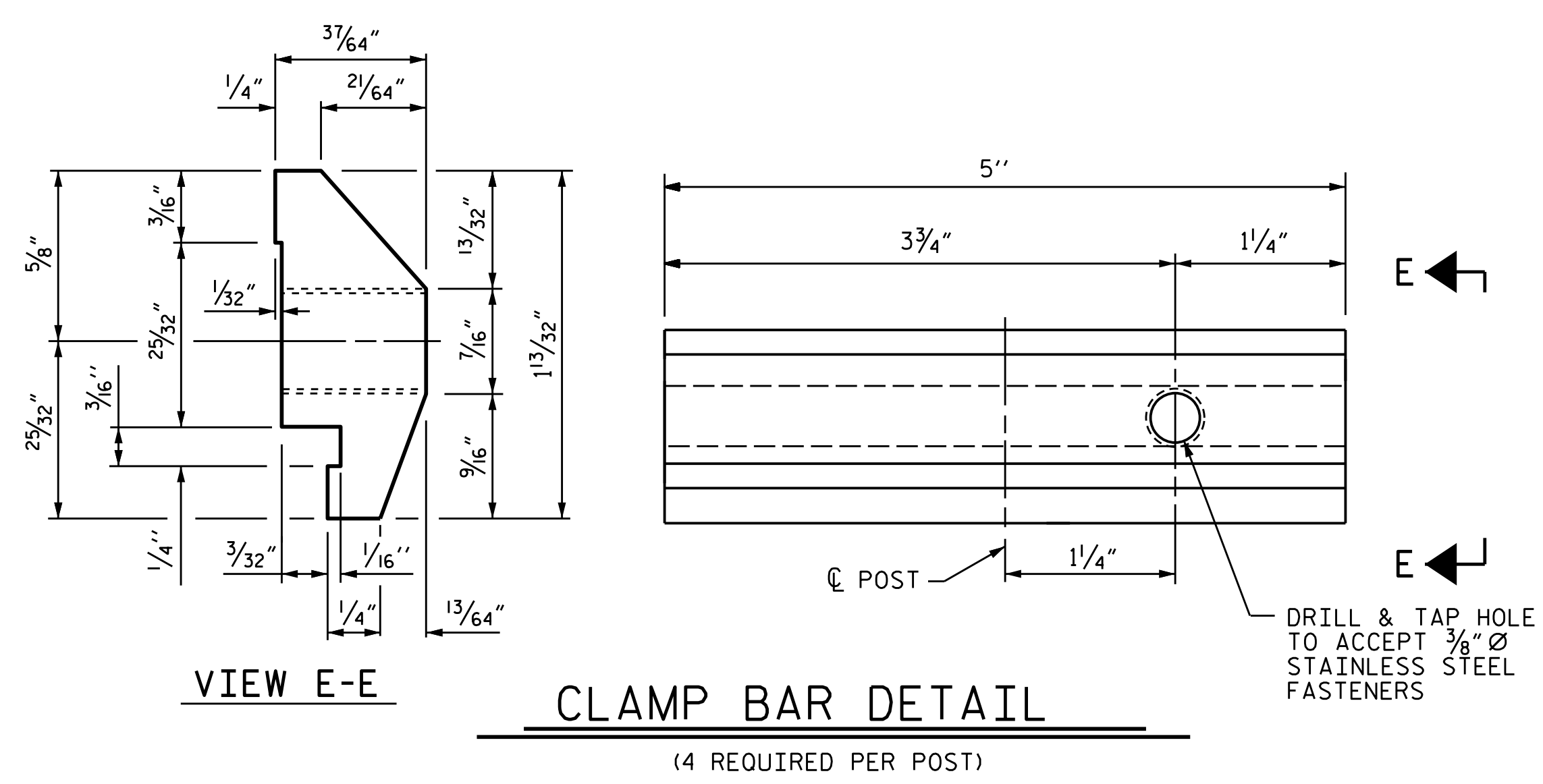


**SPLICE INSERT BAR DETAIL (TYPE 1)**



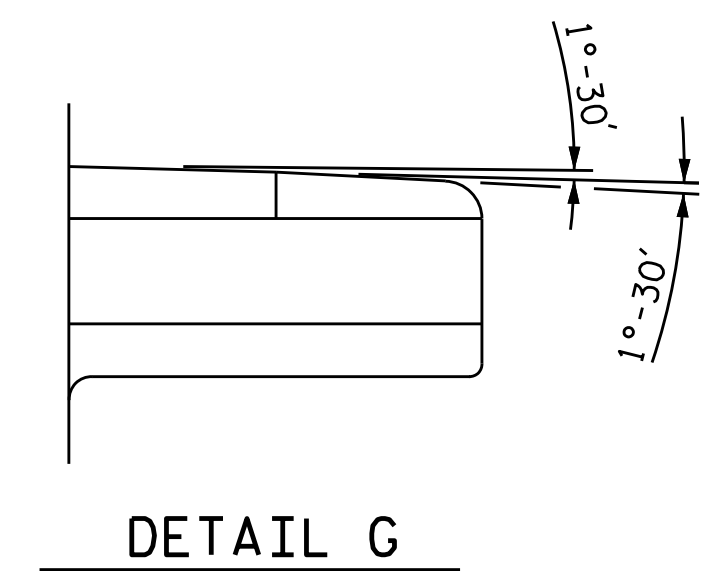
**VIEW F-F**

**RAIL END CAP DETAIL**



**VIEW E-E**

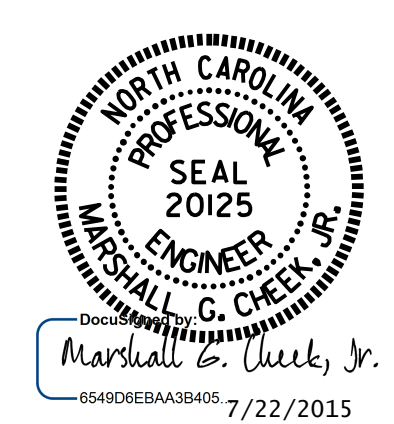
**CLAMP BAR DETAIL**  
(4 REQUIRED PER POST)



**DETAIL G**

PROJECT NO. R-2603  
WILKES COUNTY  
STATION: 117+35.00 -L-

SHEET 4 OF 5



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO. S-4
2 BAR METAL RAIL RETROFIT						TOTAL SHEETS 47
REVISIONS						
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			

DRAWN BY : B. A. DUKE DATE : 5-23-14  
CHECKED BY : W.J. HARRIS DATE : 6-15  
DESIGN ENGINEER OF RECORD: S.T. CHAMPION DATE : 6-15