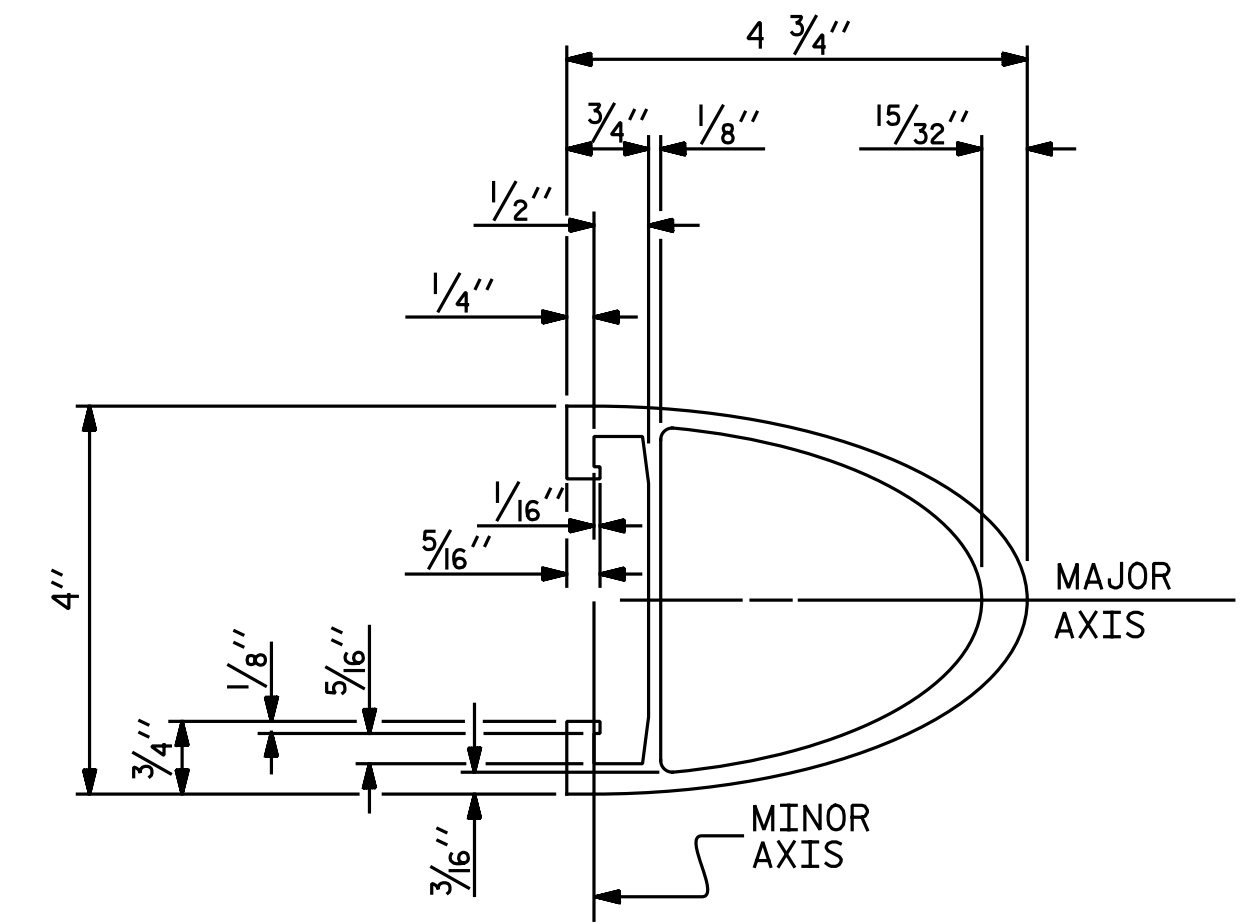


**NOTES**

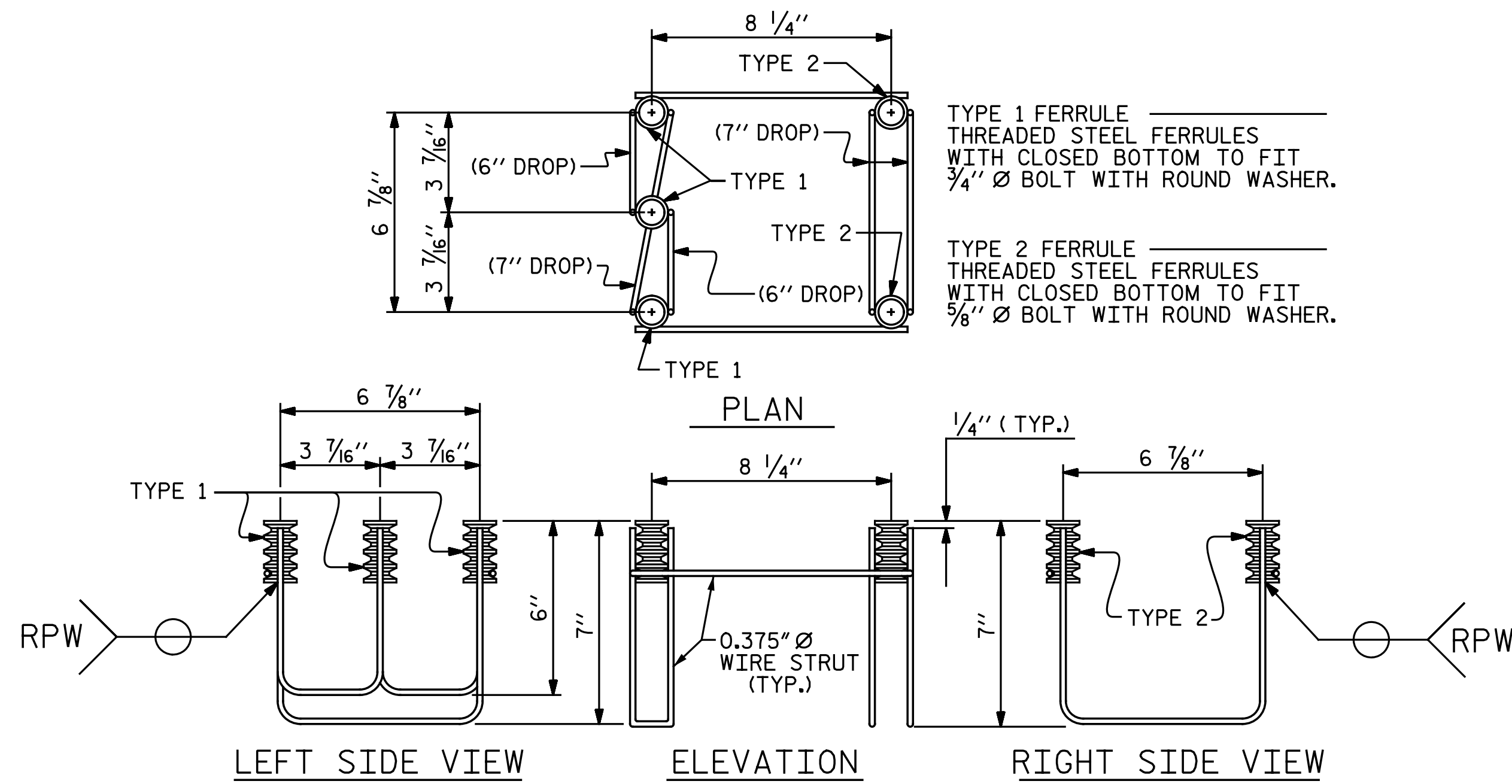
**STRUCTURAL CONCRETE ANCHOR ASSEMBLY**

THE STRUCTURAL CONCRETE ANCHOR ASSEMBLY SHALL CONSIST OF THE FOLLOWING COMPONENTS:

- A. FERRULES SHALL BE MADE FROM STEEL MEETING THE REQUIREMENTS OF AASHTO M169, GRADE 12L14 AND SHALL HAVE A MINIMUM LENGTH OF THREADS OF 2" FOR 3/4" FERRULES AND 1 3/4" FOR 5/8" FERRULES.
- B. 3 - 3/4" Ø X 2 1/2" BOLTS WITH WASHERS. BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. BOLTS AND WASHERS SHALL BE GALVANIZED. AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 3/4" Ø X 2 1/2" GALVANIZED BOLTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.
- C. 2 - 5/8" Ø X 2 1/4" BOLTS WITH WASHERS. BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. BOLTS AND WASHERS SHALL BE GALVANIZED. AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 5/8" Ø X 2 1/4" GALVANIZED BOLTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.
- D. WIRE STRUT SHOWN IN THE CONCRETE ANCHOR ASSEMBLY DETAIL IS THE MINIMUM ALLOWABLE SIZE AND SHALL HAVE A MINIMUM TENSILE STRENGTH OF 100,000 PSI. AS AN OPTION, A 1/16" Ø WIRE STRUT WITH A MINIMUM TENSILE STRENGTH OF 90,000 PSI IS ACCEPTABLE.
- E. THE METAL RAIL ANCHOR ASSEMBLIES TO BE HOT DIPPED GALVANIZED TO CONFORM TO REQUIREMENTS OF AASHTO M111.
- F. THE COST OF THE METAL RAIL ANCHOR ASSEMBLY WITH BOLTS AND WASHERS COMPLETE IN PLACE SHALL BE INCLUDED IN THE PRICE BID FOR LINEAR FEET OF METAL RAIL.
- G. BOLTS TO BE TIGHTENED ONE-HALF TURN WITH A WRENCH FROM A FINGER-TIGHT POSITION.



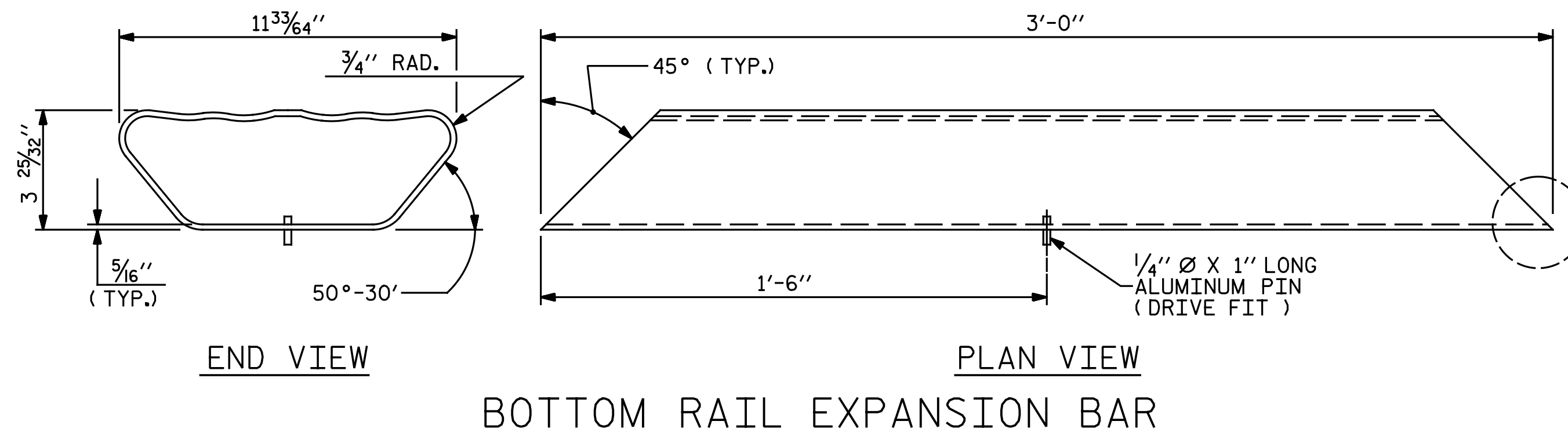
**TOP & MIDDLE RAIL SECTION**



**LEFT SIDE VIEW      ELEVATION      RIGHT SIDE VIEW**

**5-BOLT METAL RAIL ANCHOR ASSEMBLY**

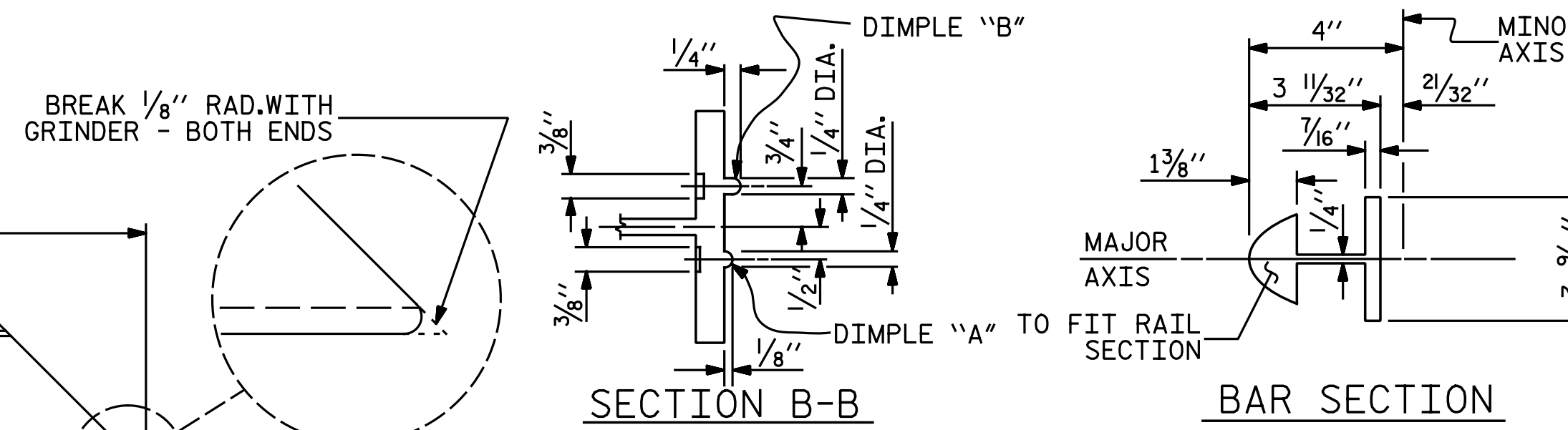
( 36 ASSEMBLIES REQUIRED )



**END VIEW**

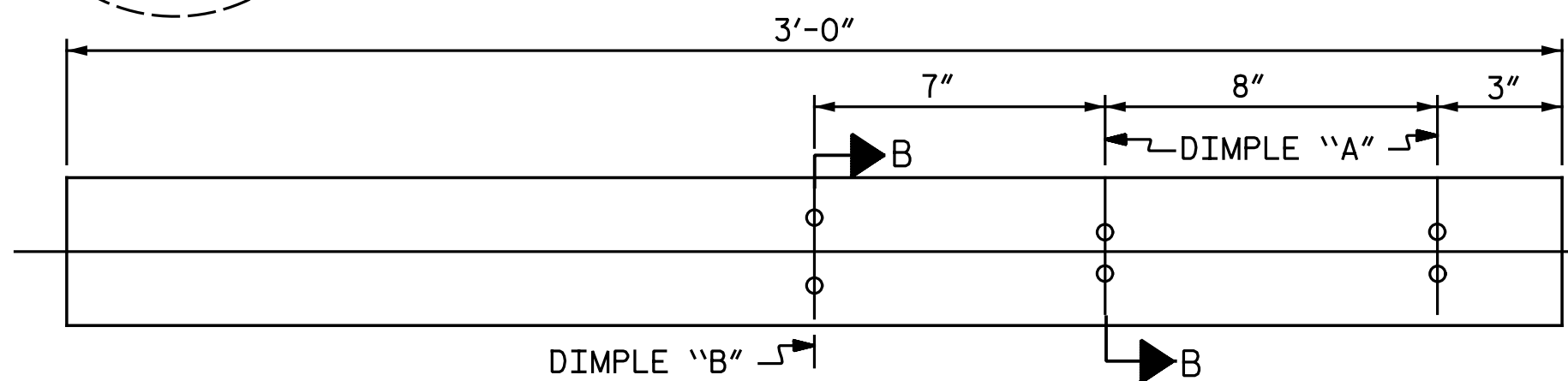
**PLAN VIEW**

**BOTTOM RAIL EXPANSION BAR**



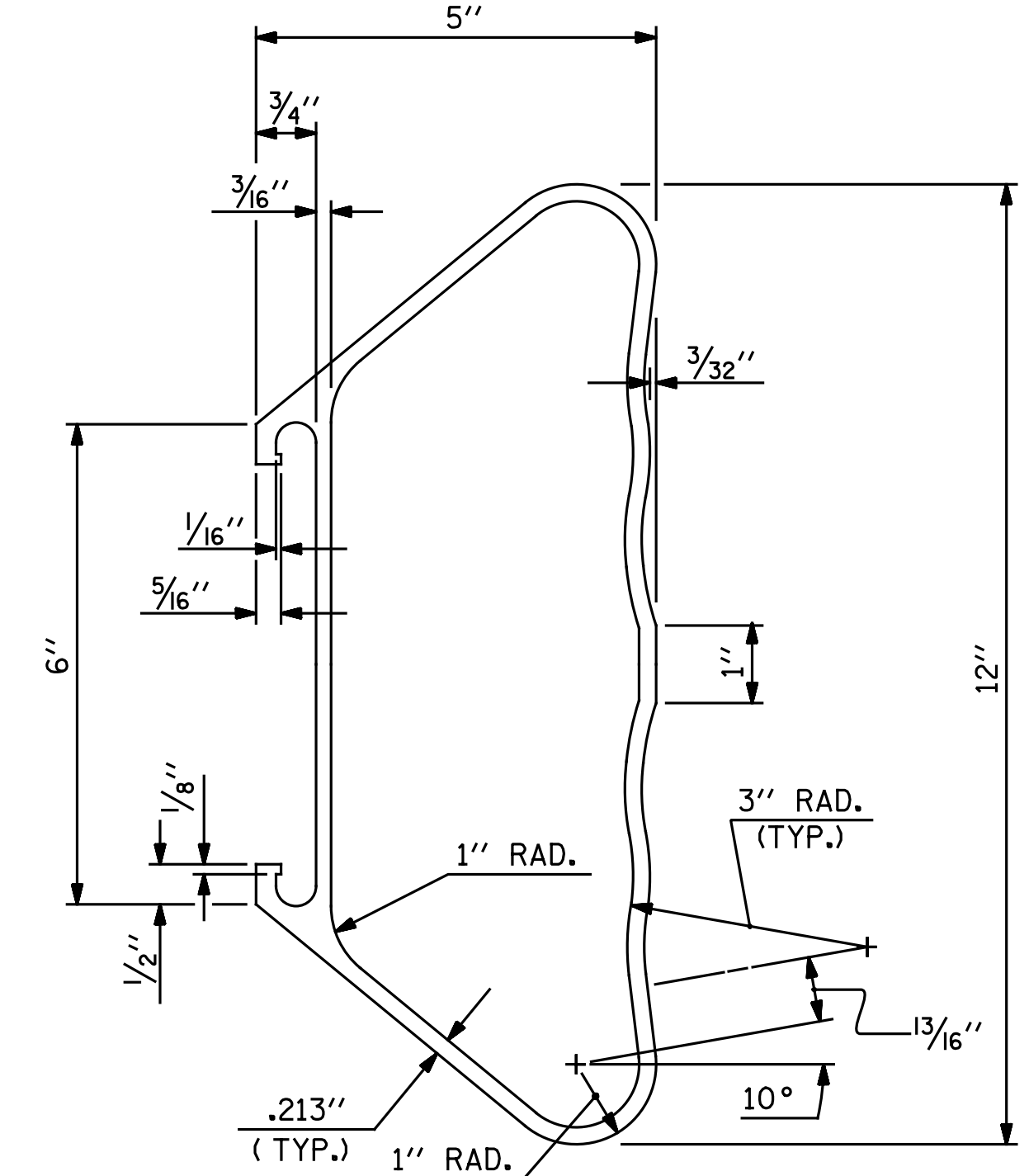
**SECTION B-B**

**BAR SECTION**

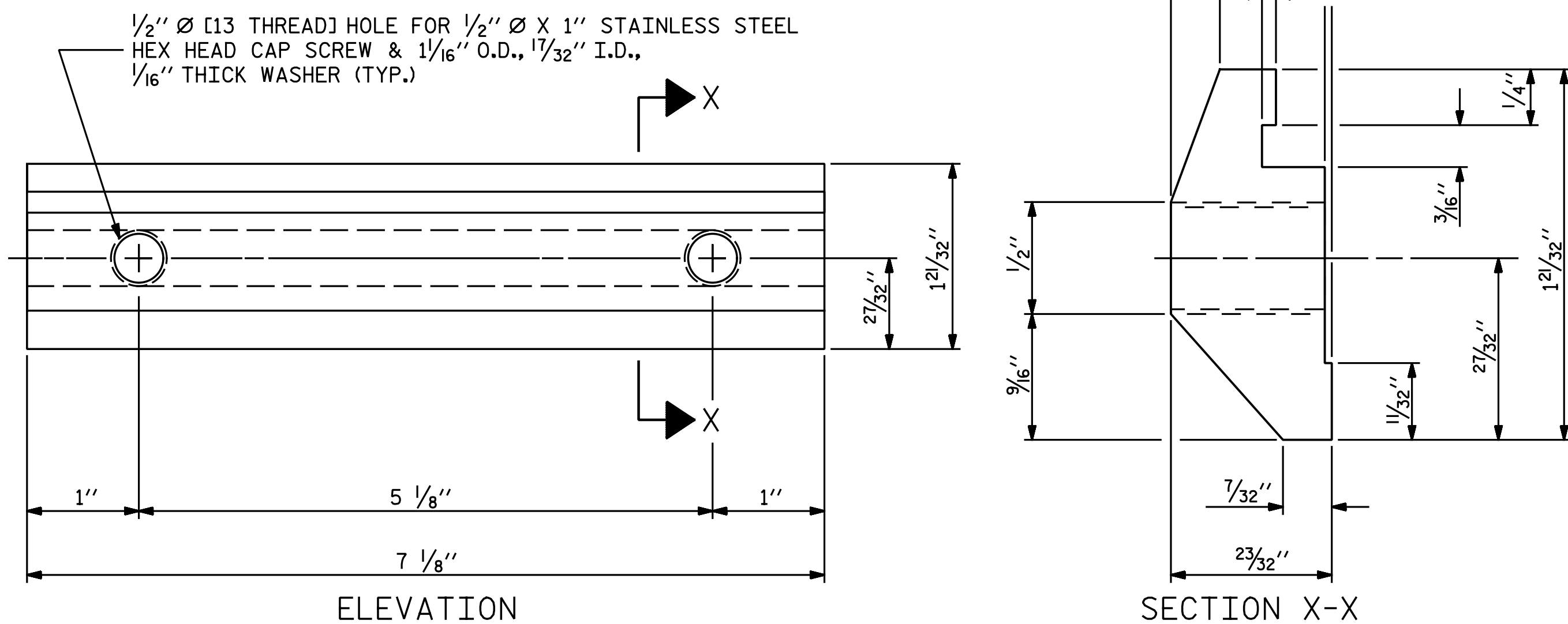


**BACK ELEVATION**

**TOP & MIDDLE RAIL EXPANSION BAR**



**BOTTOM RAIL SECTION**

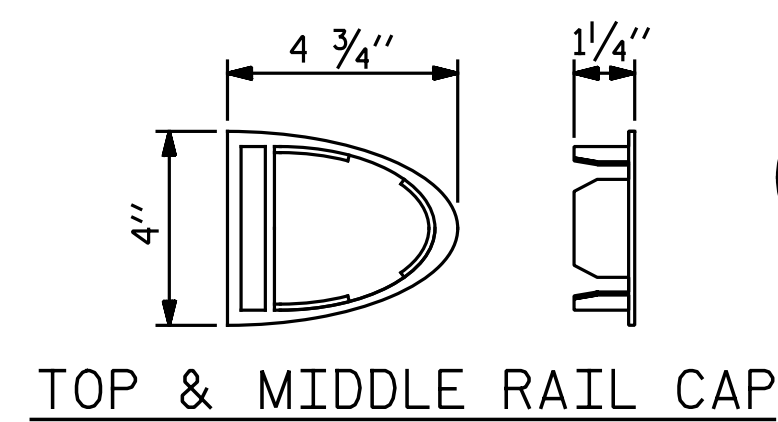


**ELEVATION**

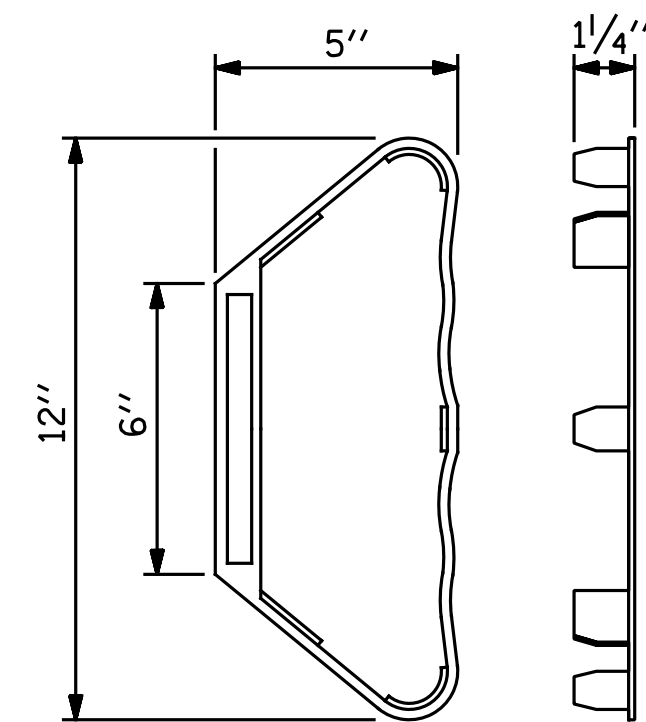
**SECTION X-X**

**CLAMP BAR DETAIL**

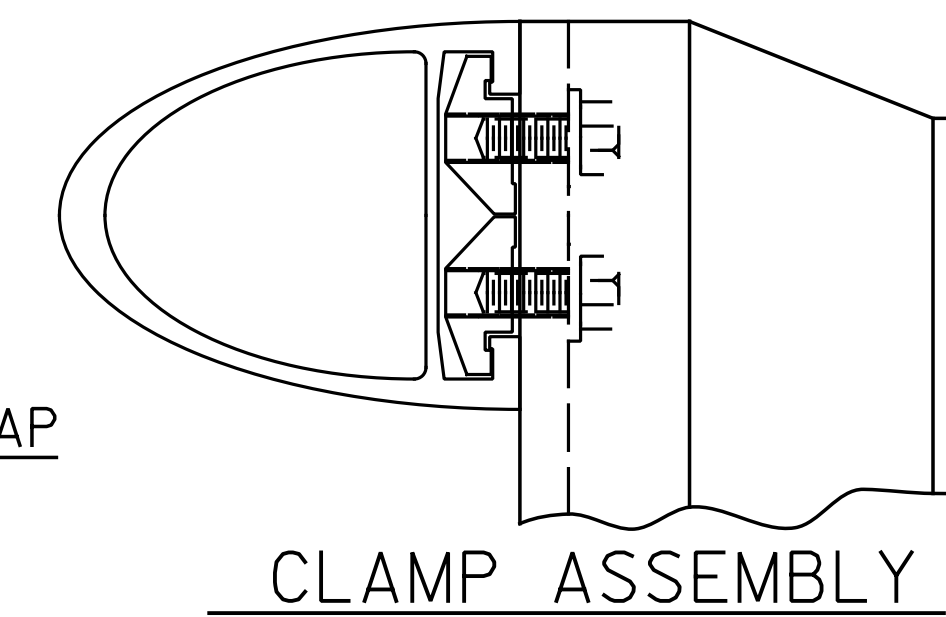
( 6 REQUIRED PER POST )



**TOP & MIDDLE RAIL CAP**



**BOTTOM RAIL CAP**



**CLAMP ASSEMBLY**

TOP RAIL SHOWN  
(MIDDLE & BOTTOM RAIL ARE SIMILAR)

PROJECT NO. U-3330

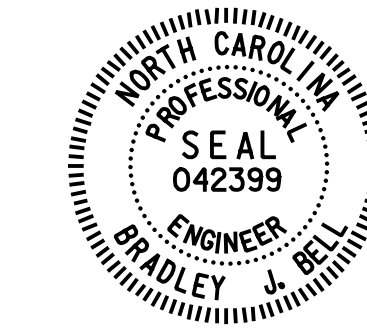
NASH COUNTY

STATION: 18+22.61 -Y1-

SHEET 2 OF 3

ASSEMBLED BY : N.B. SPEAKS	DATE : 4-28-16
CHECKED BY : A.H. SHARPE	DATE : 5-1-16
DRAWN BY : JMB 1/88	REV. 5/7/03 RWW/JTE
CHECKED BY : GGH 1/88	REV. 5/1/06 TLA/GM
	REV. 10/1/11 MAA/GM

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



DocuSigned by:  
Bradley J. Bell  
CA143F8EC3A3434  
1/27/2017

**Michael Baker**  
INTERNATIONAL

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8000 Regency Parkway, Suite 600  
Cary, North Carolina 27518  
NC License No.: F-1084

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
STANDARD

**3 BAR METAL RAIL**

LEFT LANES

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	SI-18
1			3			TOTAL SHEETS
2			4			38

STD. NO. BMR6