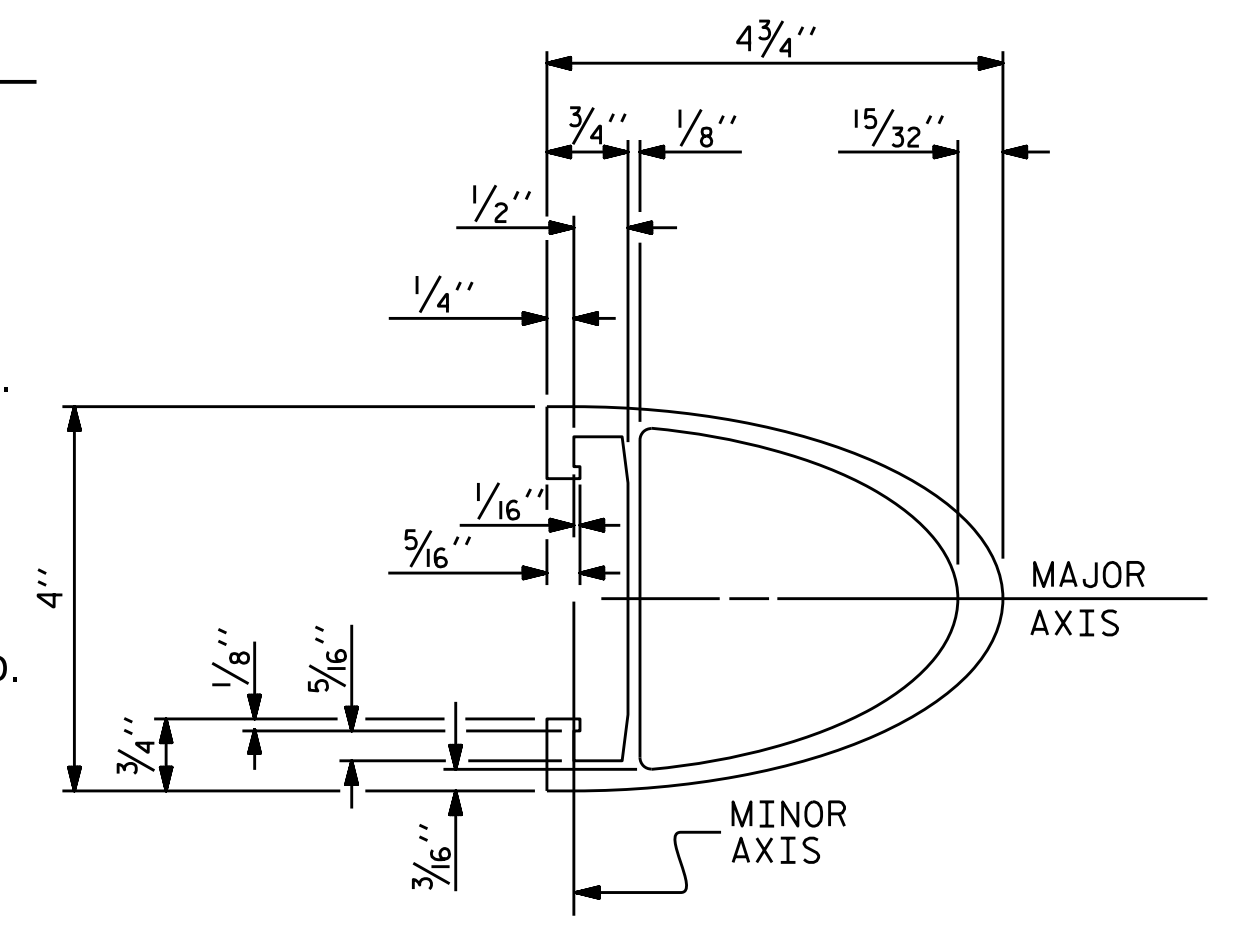
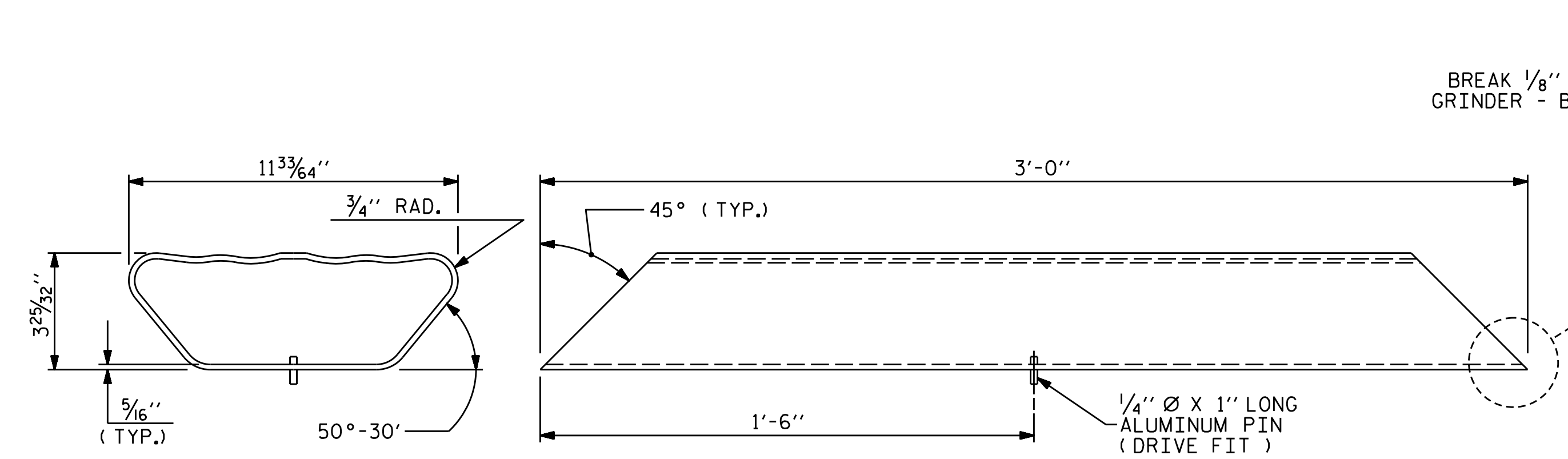


PLAN
**EXISTING 5-BOLT
 METAL RAIL ANCHOR ASSEMBLY**

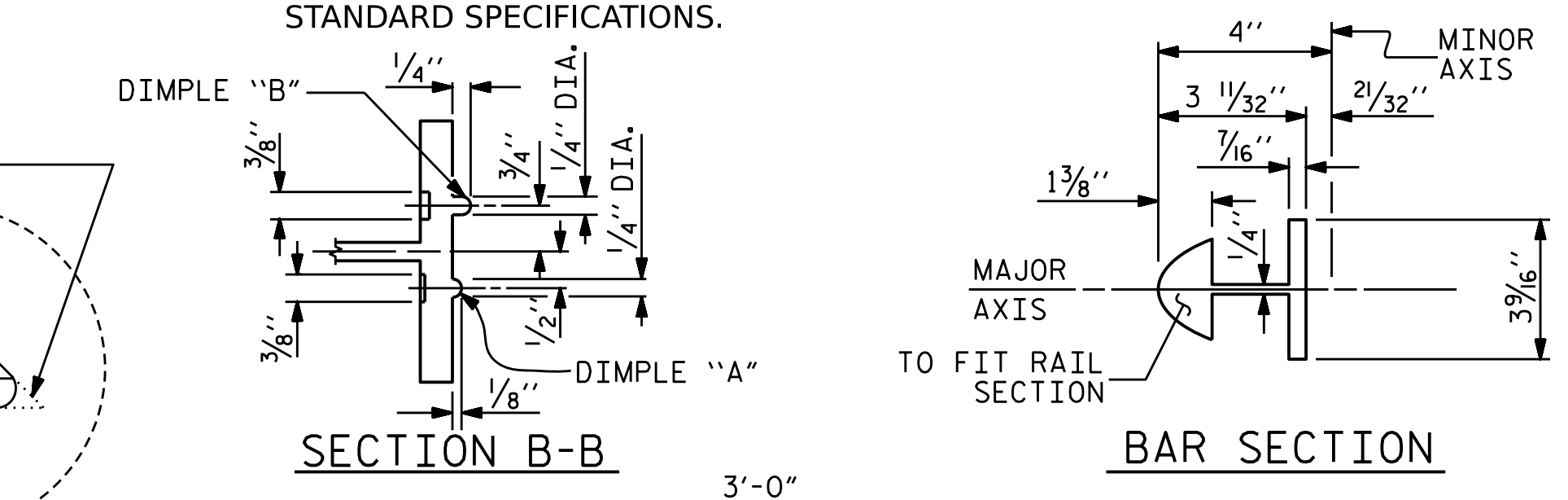
- NOTES**
- STRUCTURAL CONCRETE ANCHOR ASSEMBLY
- IF EXISTING STRUCTURAL CONCRETE ANCHOR ASSEMBLY IS INTACT AND NOT DAMAGED THEN THE EXISTING CONCRETE ANCHOR ASSEMBLY SHALL CONSIST OF THE FOLLOWING COMPONENTS:
- EXISTING EMBEDDED FERRULES HAVE A MINIMUM LENGTH OF THREADS OF 2" FOR 3/4" FERRULES AND 1 3/4" FOR 5/8" FERRULES.
 - 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.
 - 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.
- IF EXISTING STRUCTURAL CONCRETE ANCHOR ASSEMBLY IS DAMAGED SHIFT ANCHOR ASSEMBLY UP TO A MAXIMUM OF 12" AND DRILL NEW ANCHOR ROD HOLES AND INSTALL NEW COMPONENTS:
- 3 - 3/4" Ø THREADED RODS WITH WASHERS. RODS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. RODS, NUTS 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 RODS 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.
 - 2 - 5/8" Ø THREADED RODS WITH WASHERS. RODS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. BOLTS, NUTS 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 RODS 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.
 - ANCHOR ROD LENGTH AND EMBEDMENT LENGTH SHALL CONFORM TO ADHESIVE ANCHOR MANUFACTURER'S RECOMMENDED LENGTH.
 - THE COST OF THE METAL RAIL ANCHOR RODS, NUTS AND WASHERS COMPLETE IN PLACE SHALL BE INCLUDED IN THE PRICE BID FOR LINEAR FEET OF METAL RAIL.
 - ANCHOR ROD NUTS TO BE TIGHTENED ONE-HALF TURN WITH A WRENCH FROM A FINGER-TIGHT POSITION.
 - FOR ADHESIVELY ANCHORED BOLTS, LEVEL ONE FIELD TESTING IS REQUIRED. THE REQUIRED PULLOUT STRENGTH IS 5 KIPS.
 - FOR ADHESIVELY ANCHORED BOLTS OR DOWELS, SEE SECTION 420-13 OF THE STANDARD SPECIFICATIONS.
- D. THE COST OF THE METAL RAIL ANCHOR BOLTS AND WASHERS COMPLETE IN PLACE SHALL BE INCLUDED IN THE PRICE BID FOR LINEAR FEET OF METAL RAIL.
- E. BOLTS TO BE TIGHTENED ONE-HALF TURN WITH A WRENCH FROM A FINGER-TIGHT POSITION.



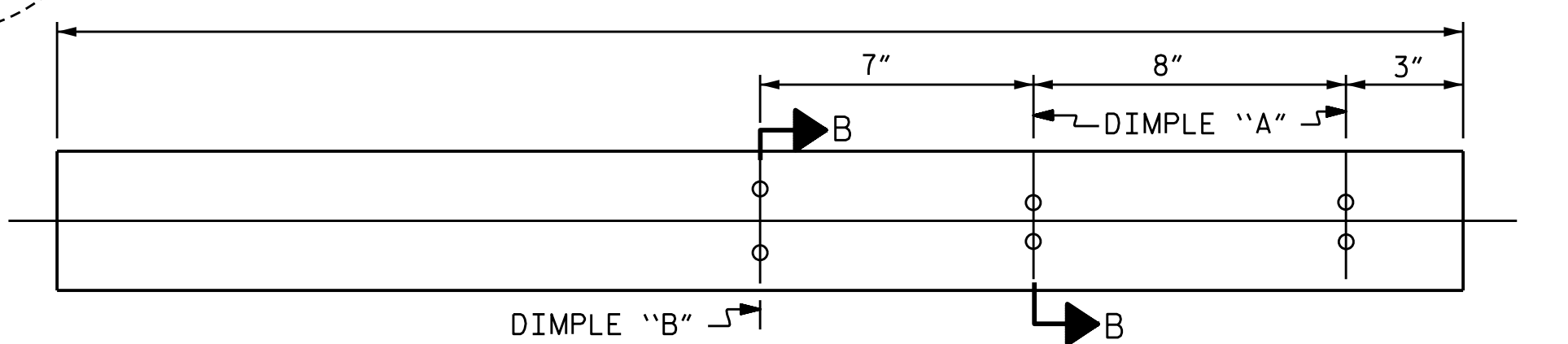
TOP & MIDDLE RAIL SECTION



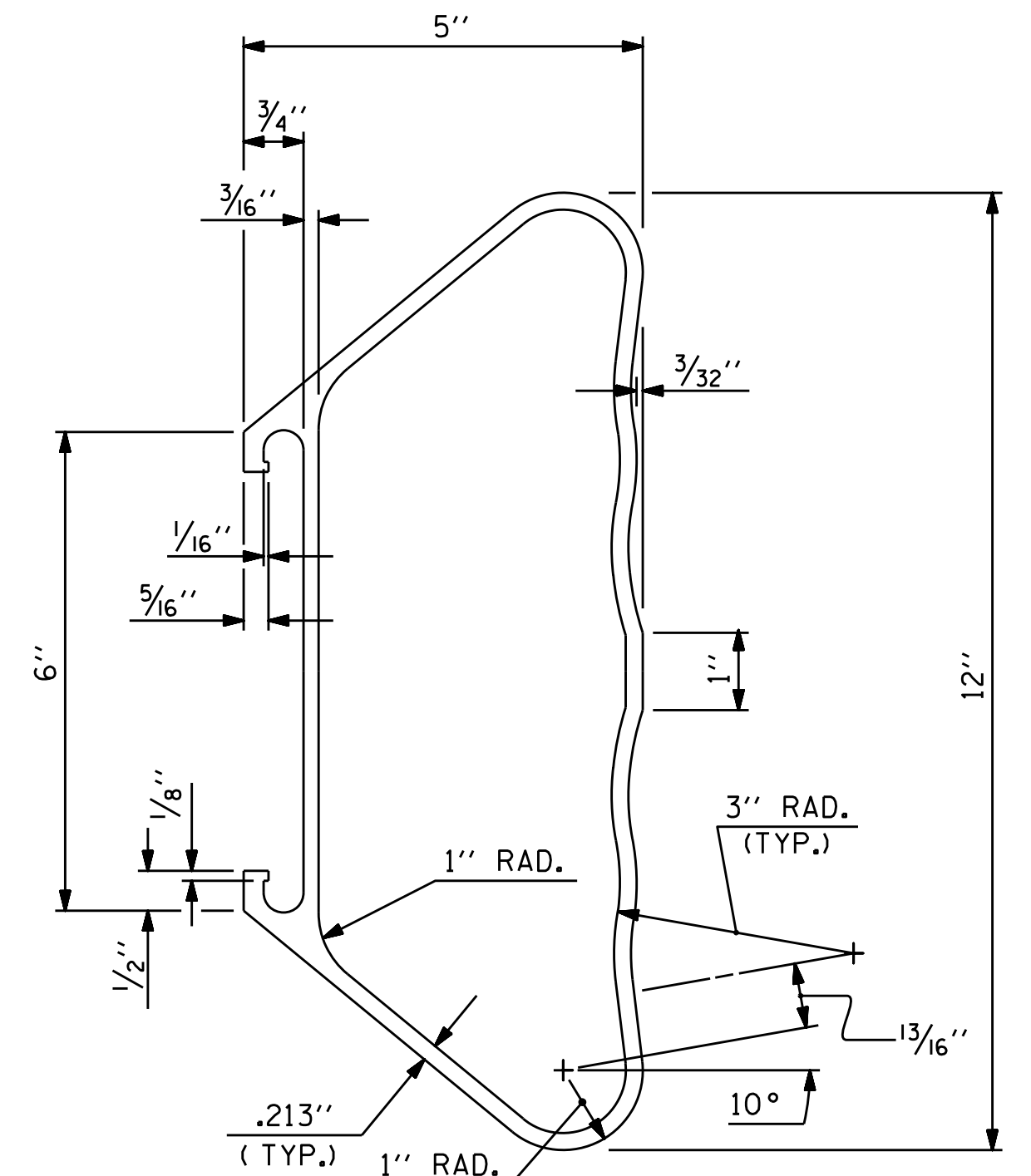
END VIEW
PLAN VIEW
BOTTOM RAIL EXPANSION BAR



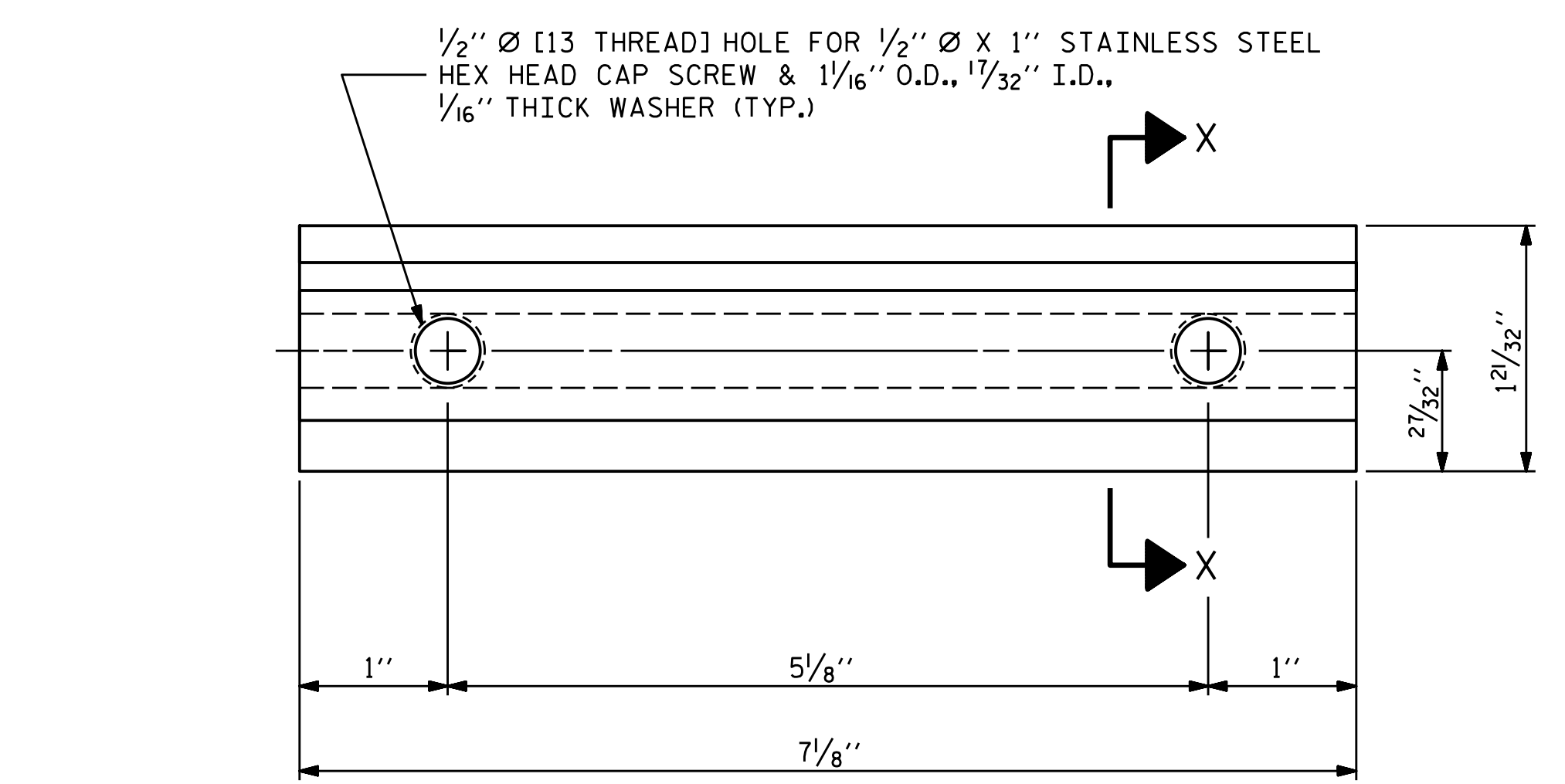
SECTION B-B
BAR SECTION



BACK ELEVATION

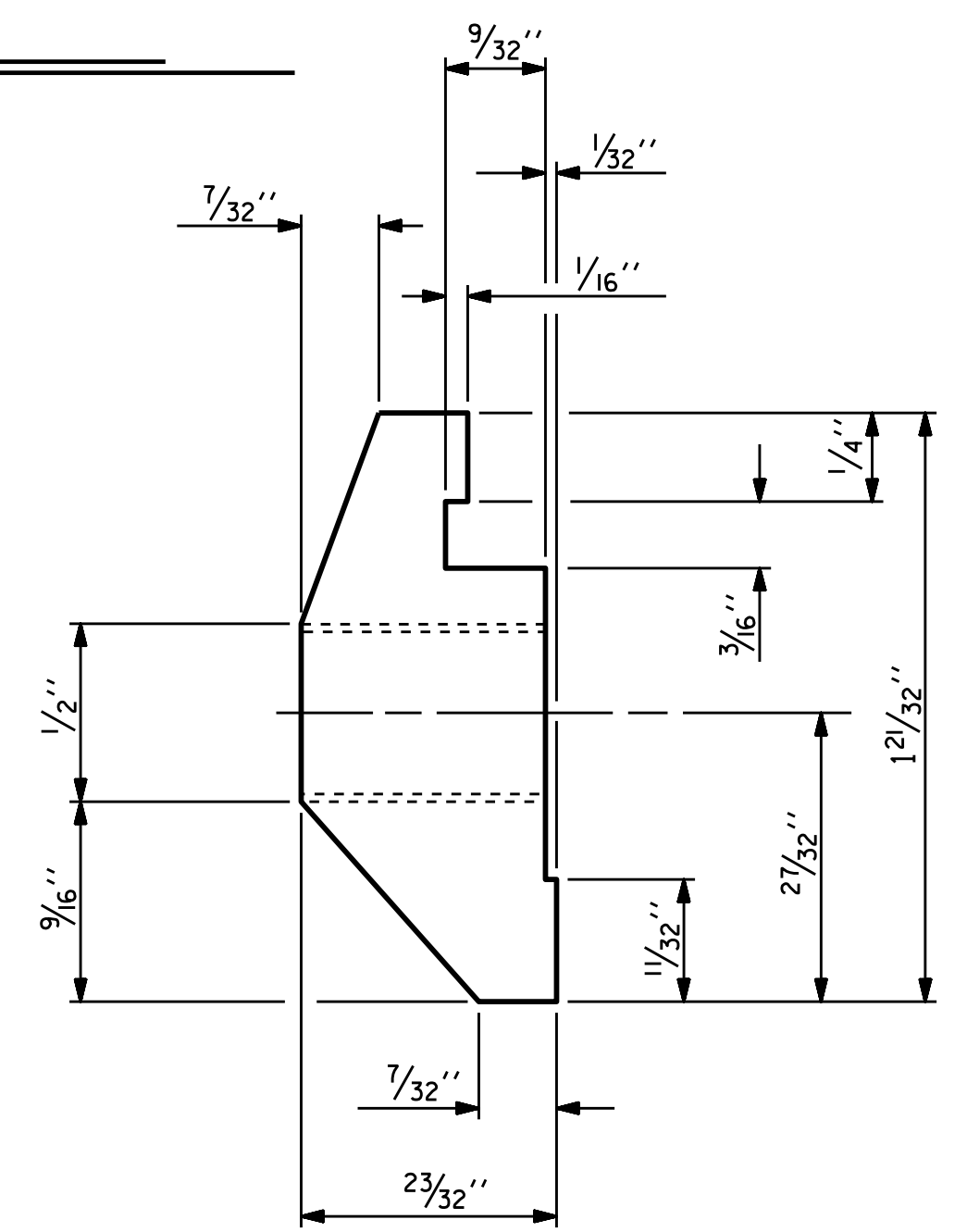


BOTTOM RAIL SECTION



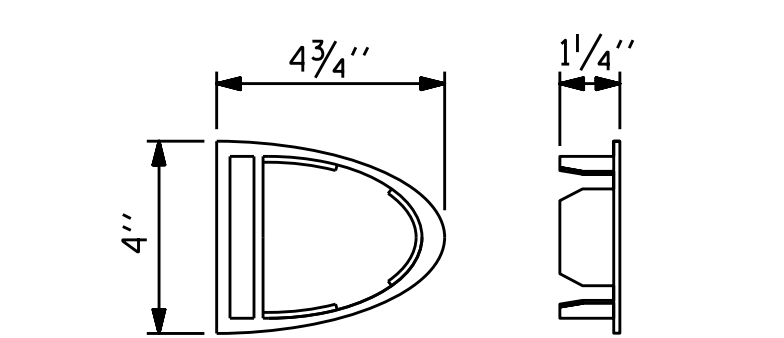
ELEVATION
CLAMP BAR DETAIL

(6 REQUIRED PER POST)

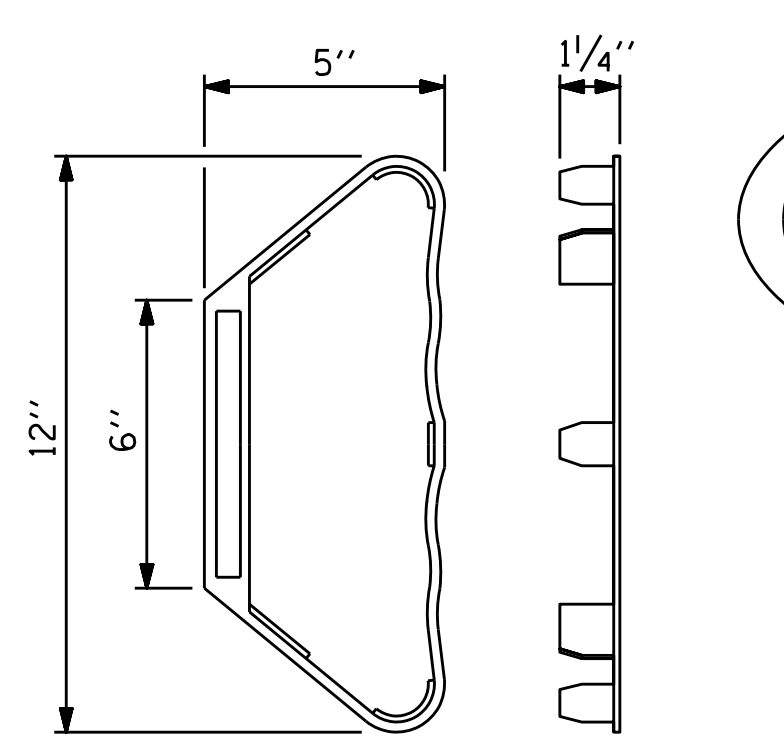


SECTION X-X

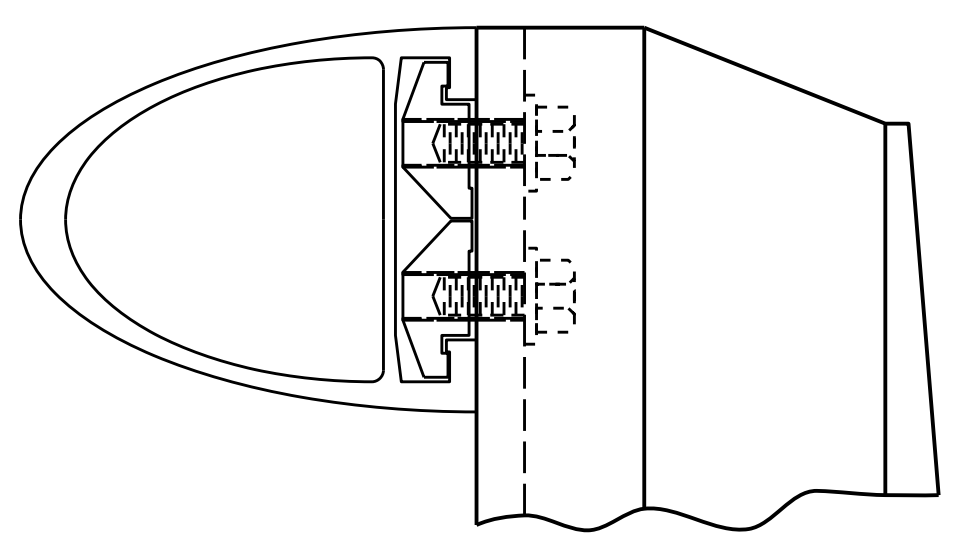
TOP & MIDDLE RAIL EXPANSION BAR



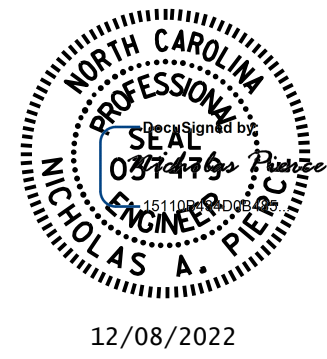
TOP & MIDDLE RAIL CAP



BOTTOM RAIL CAP



CLAMP ASSEMBLY



PROJECT NO. **15BPR.59**
DURHAM/WAKE COUNTY
 BRIDGE NO. **911039**
 SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**3 BAR METAL RAIL
 REPAIR DETAILS**

ASSEMBLED BY: N.A. PIERCE DATE: 10/2022
 CHECKED BY: A.Y. GODFREY DATE: 11/2022
 DRAWN BY:
 CHECKED BY:

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
1			3			52-10
2			4			TOTAL SHEETS 19