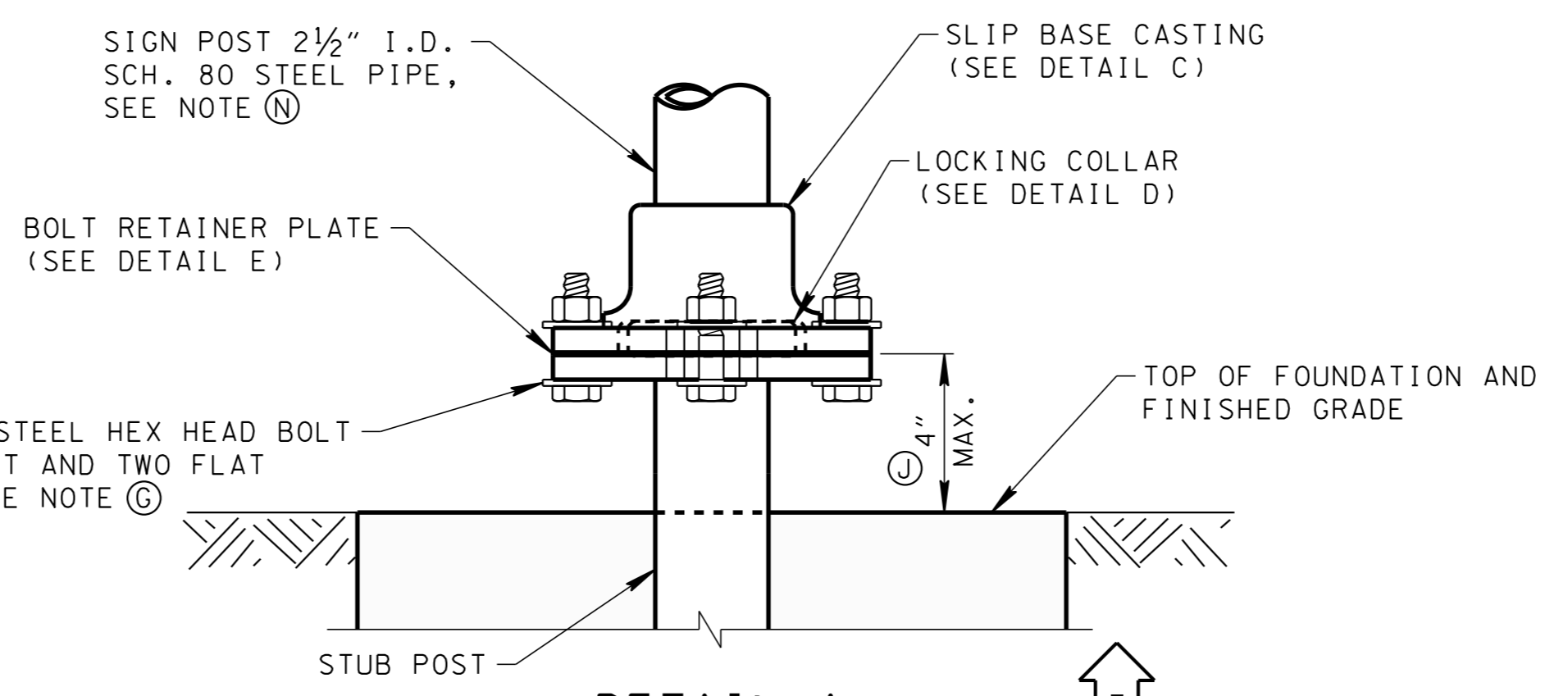
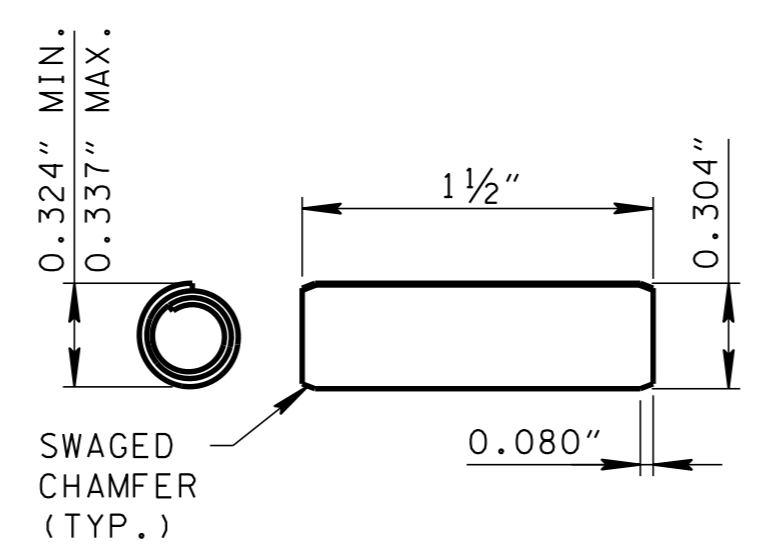


**TRIANGULAR SLIP BASE PIPE SIGN SUPPORT**  
FOR ALTERNATE INSTALLATION INTO EXISTING CONCRETE SURFACE, SEE DETAIL G

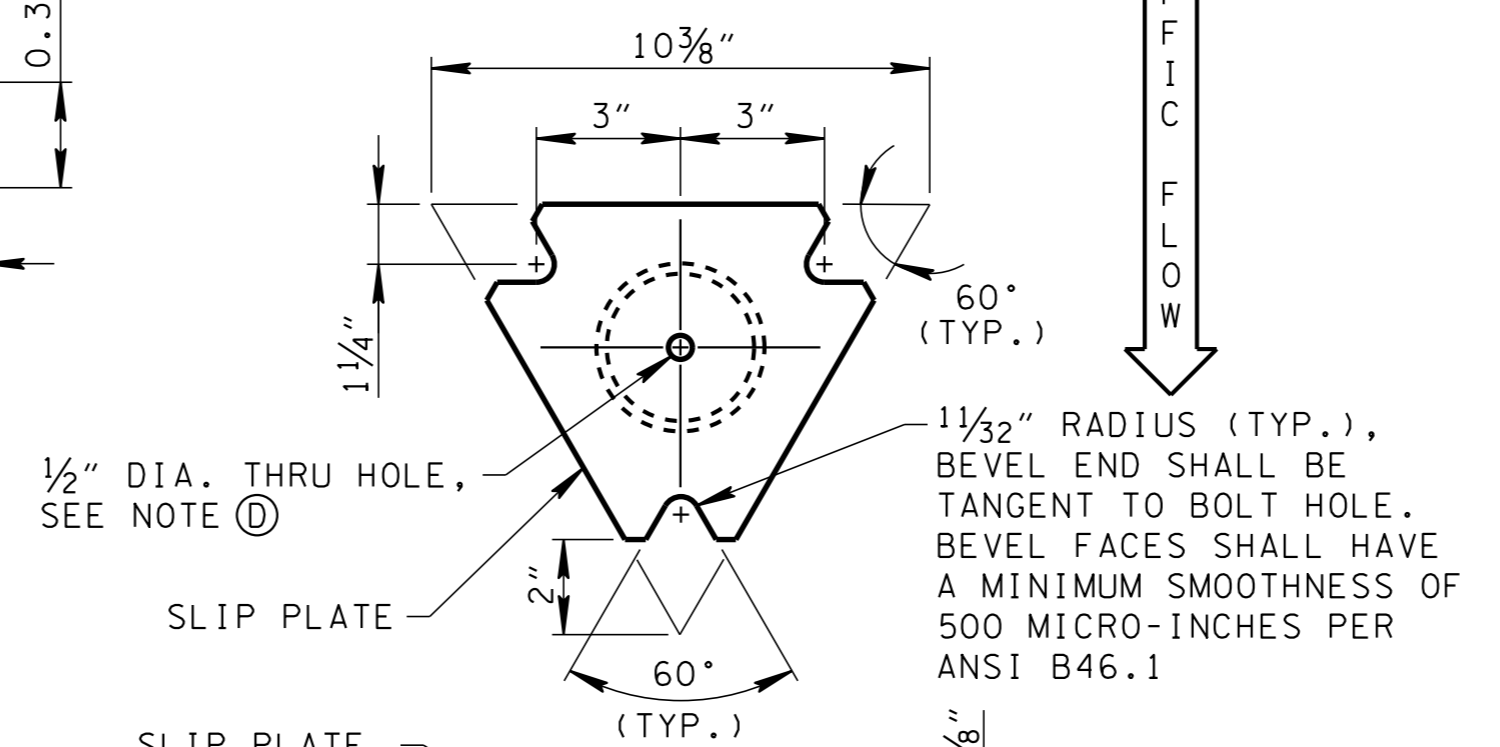
ALL BOLTS, NUTS, AND WASHERS SHALL BE PER ASTM A325 OR A449 AND GALVANIZED TO ASTM A454.



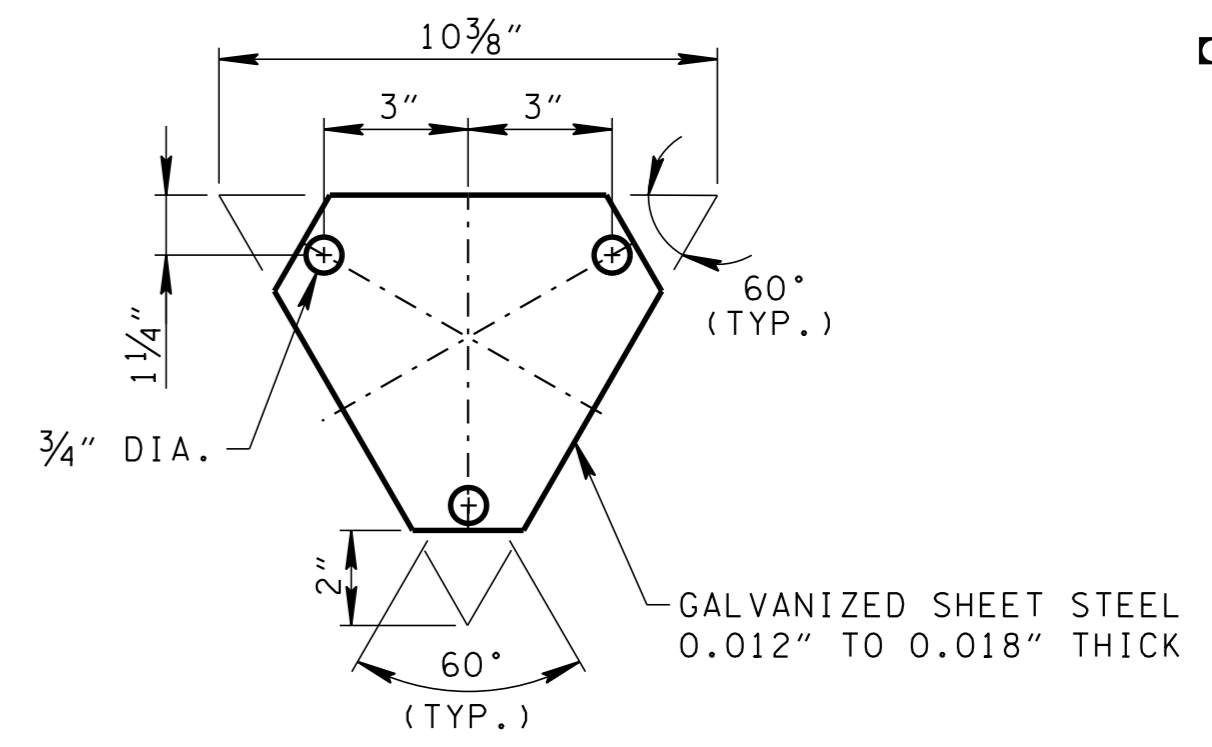
**DETAIL A**  
TRIANGULAR SLIP BASE



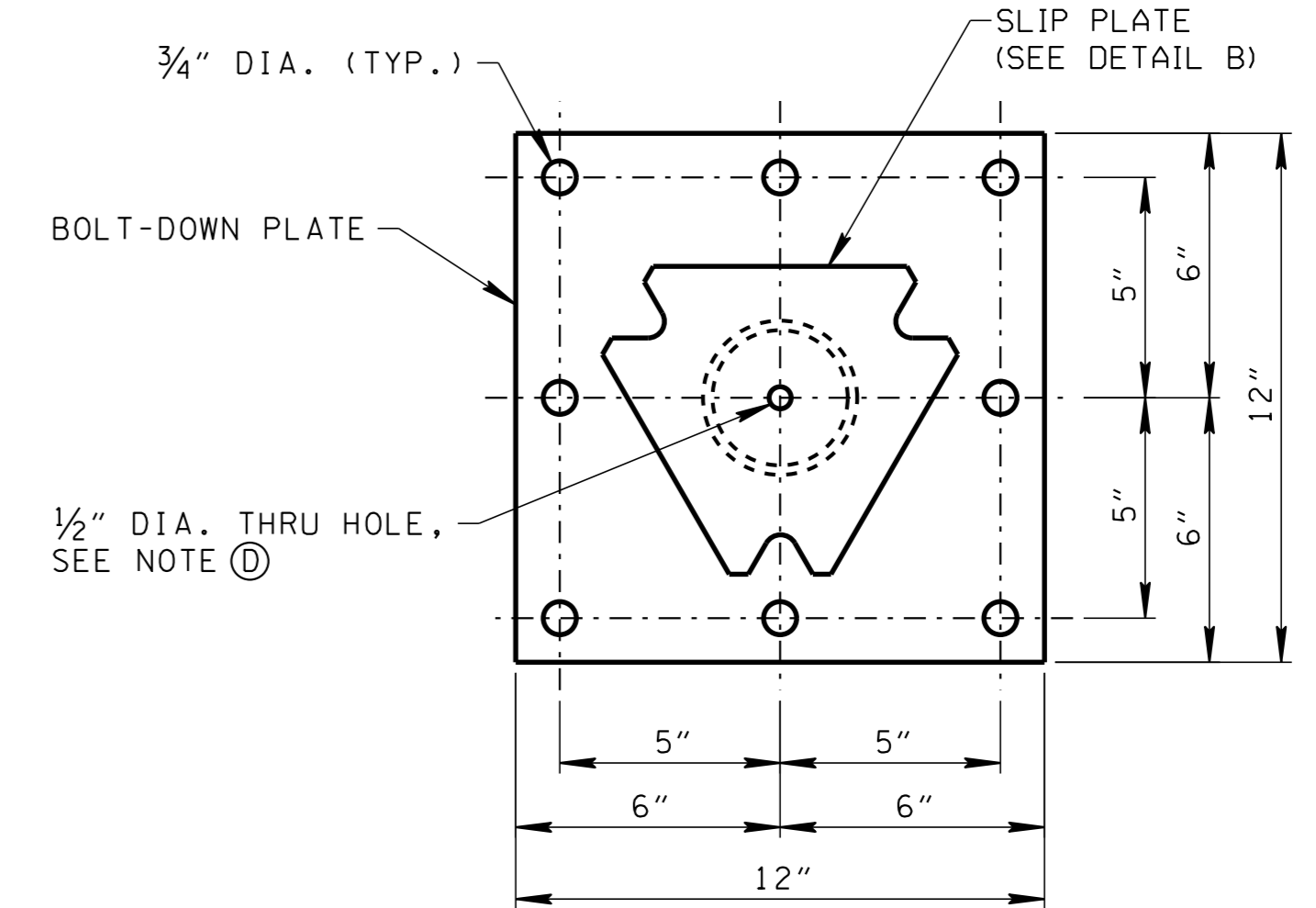
**DETAIL F**  
COILED PIN



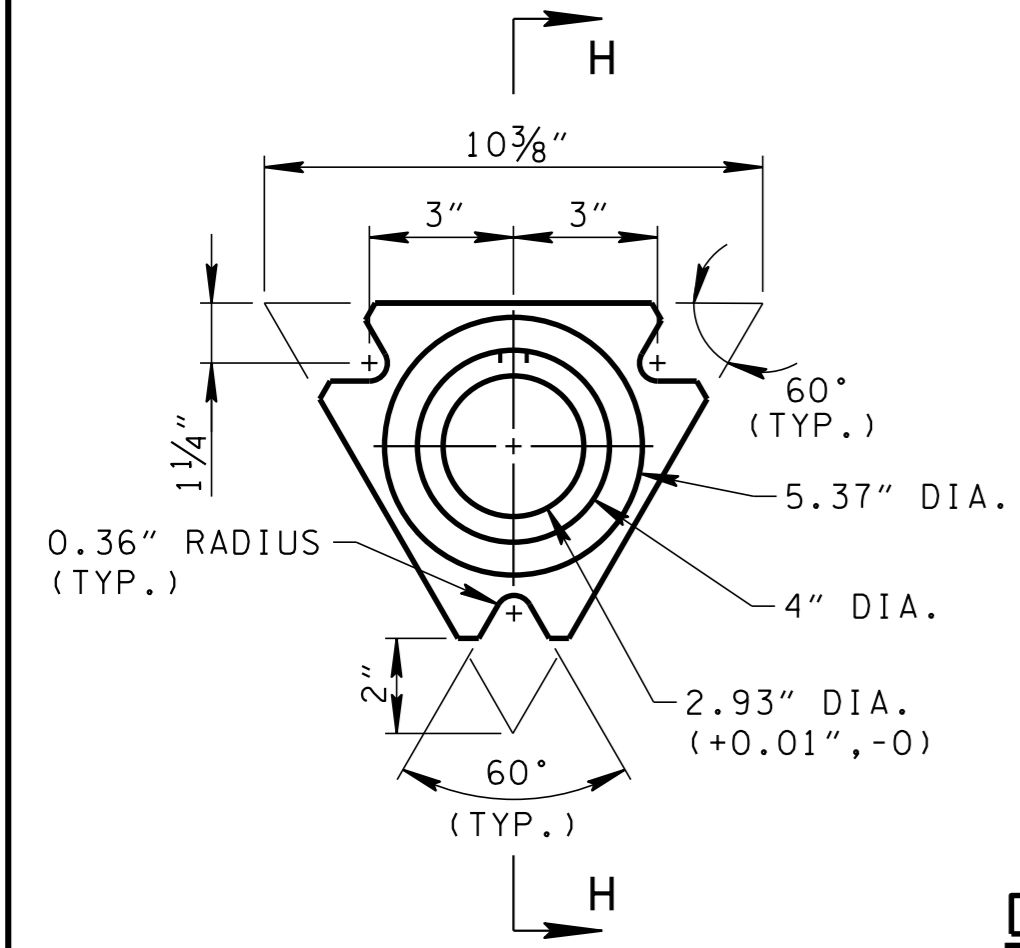
**DETAIL B**  
STUB POST



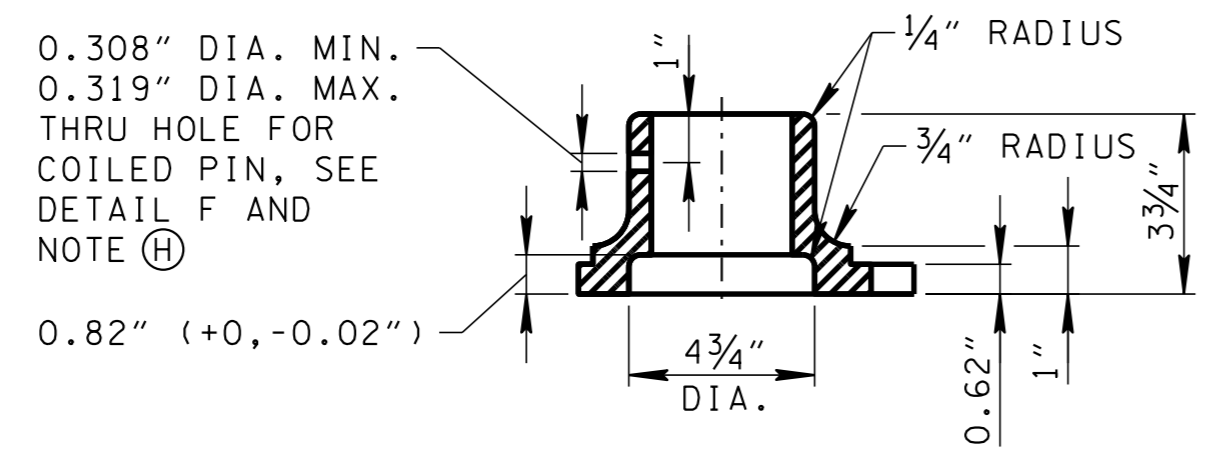
**DETAIL E**  
BOLT RETAINER PLATE



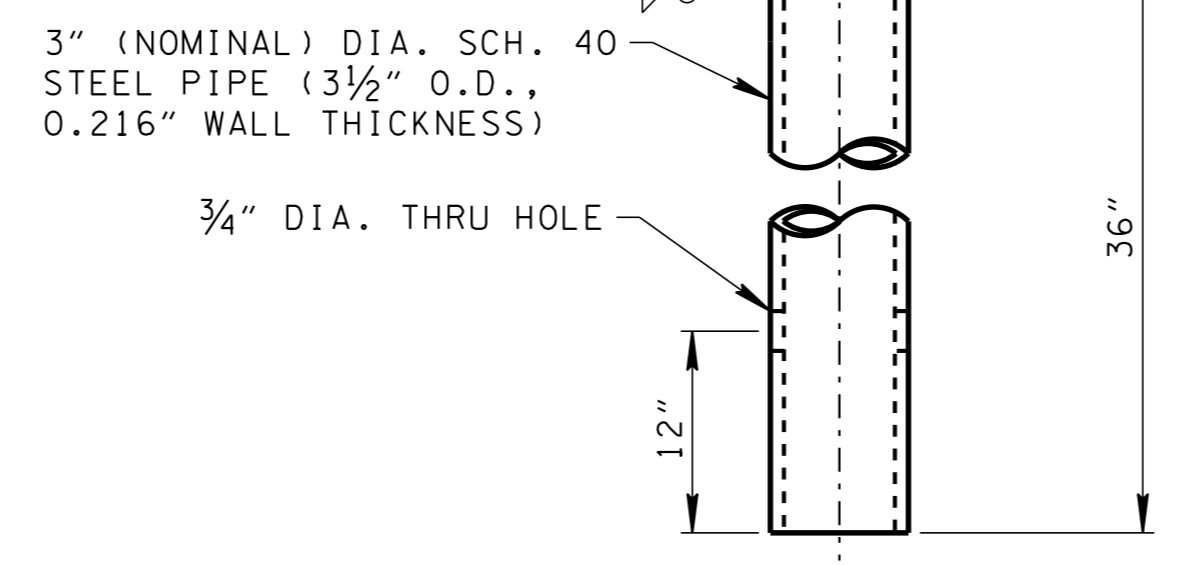
**DETAIL G**  
BOLT-DOWN ANCHOR INTO EXISTING CONCRETE



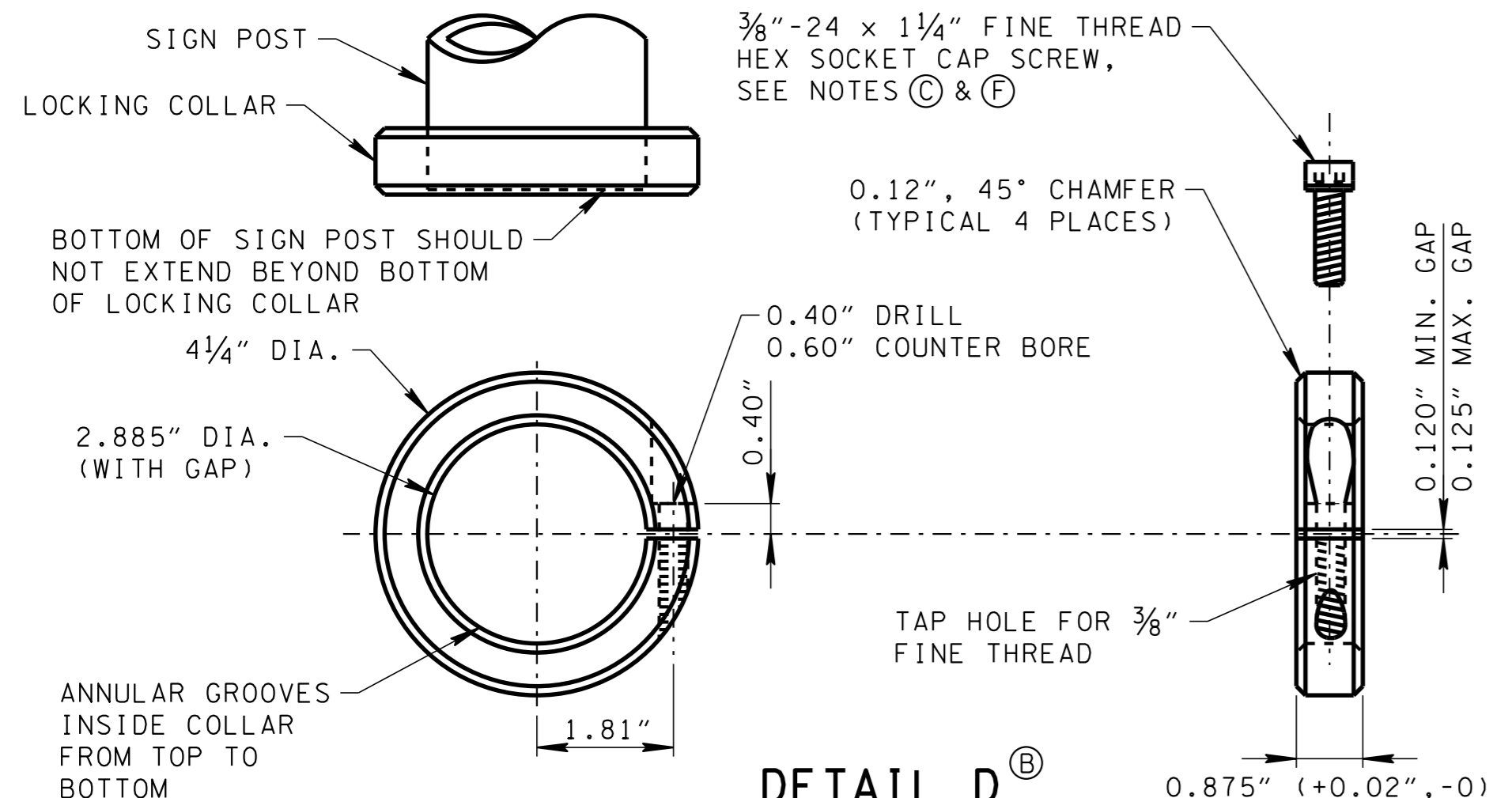
**DETAIL C**  
SLIP BASE CASTING



**SECTION H-H**



SCH. 40 STEEL PIPE SHALL CONFORM TO ASTM A53 GR. B, A500 GR. B, OR A501. GALVANIZE ACCORDING TO ASTM A123 AFTER FABRICATION.



**DETAIL D**  
LOCKING COLLAR

**GENERAL NOTES**

- ① FURNISH SLIP BASE CASTING FABRICATED FROM DUCTILE IRON CONFORMING TO ASTM A 536 GRADE 65-45-12 AND GALVANIZED ACCORDING TO ASTM A 153, CLASS A. IF FABRICATION CONSISTS OF STEEL, IT SHALL CONFORM TO ASTM A36 OR A572.
- ② FURNISH LOCKING COLLAR MACHINED FROM STEEL BAR CONFORMING TO ASTM A 108 GRADE 12L14, STEEL BAR CONFORMING TO ASTM A 576 GRADE 12L14 OR 1026, OR STEEL TUBING CONFORMING TO ASTM A 519 GRADE 12L14 OR 1026, AND ELECTRODEPOSITED ZINC COATED AND SUPPLEMENTAL CHROMATE CONVERSION COATED TO ASTM B 633 CLASS FE/ZN 12 TYPE II.
- ③ FURNISH HEX SOCKET CAP SCREW MANUFACTURED ACCORDING TO ASTM A 574 WITH ELECTRODEPOSITED ZINC COATING AND SUPPLEMENTAL CHROMATE CONVERSION COATING TO ASTM B 633 CLASS FE/ZN 12 TYPE II.
- ④ CENTER HOLES IN THE SLIP BASE AND BOLT-DOWN ANCHOR ARE FOR GALVANIZING VENTING AND DRAINAGE. EXACT HOLE PLACEMENT MAY VARY AS NEEDED.
- ⑤ USE BOLT-DOWN ANCHOR FOR INSTALLATIONS ON EXISTING CONCRETE SURFACES.
- ⑥ TIGHTEN HEX SOCKET CAP SCREW TO 60 FOOT-POUNDS. DO NOT OVERTIGHTEN.
- ⑦ TIGHTEN SLIP BASE BOLTS TO BETWEEN 40 AND 80 FOOT-POUNDS. TIGHTEN ALL BOLTS EVENLY BY WORKING AROUND THE SUPPORT IN APPROXIMATELY 10 FOOT-POUND INCREMENTS TO ASSURE BALANCED TENSION IN THE BOLTS. TIGHTEN ALL THREE BOLTS TO THE SAME TORQUE. DO NOT OVERTIGHTEN.
- ⑧ AFTER TIGHTENING SLIP BASE BOLTS, DRILL A ⅝" INCH DIAMETER HOLE IN THE PIPE THROUGH THE HOLE IN THE SLIP BASE CASTING, AND DRIVE IN THE COILED PIN TO PREVENT PIPE TWISTING IN THE SLIP BASE. DRIVE THE COILED PIN IN, SUCH THAT APPROXIMATELY ¼" TO ⅜" INCHES OF THE PIN REMAINS PROTRUDING BEYOND THE OUTSIDE DIAMETER OF THE SLIP BASE CASTING. THE COILED PIN SHALL BE STANDARD DUTY, STAINLESS STEEL.
- ⑨ MULTI-DIRECTIONAL SLIP BASE BREAKAWAY STRUCTURAL PIPE SIGN SUPPORT STANDARD SHALL BE USED FOR ALL STRUCTURAL PIPE SIGN POSTS LOCATED WITHIN THE CLEAR ZONE AND NOT PROTECTED BY AN APPROVED BARRIER SYSTEM.
- ⑩ POST STUB HEIGHT SHALL BE 4 INCHES OR LESS ABOVE FINISHED GROUND SURFACE.
- ⑪ ALL FINISHED COMPONENTS OF THE SLIP BASE SYSTEM SHALL BE PERMANENTLY MARKED TO INDICATE THE MANUFACTURER, METHOD, DESIGN, AND LOCATION OF MARKING SHALL BE AS APPROVED BY THE ENGINEER.
- ⑫ ANCHORS MAY BE EXPANSION TYPE AS SHOWN OR ADHESIVE TYPE LISTED ON THE OPL MEETING THE STRENGTH REQUIREMENTS. EXPANSION ANCHORS SHALL CONSIST OF 5/8 INCH DIAMETER STUD BOLT WITH UNC-SERIES BOLT THREADS ON THE UPPER END WITH HEAVY HEX NUT PER ASTM A563, AND HARDENED WASHER PER ASTM F436. THE STUD BOLT SHALL HAVE A MINIMUM YIELD STRENGTH OF 50 KSI AND ULTIMATE TENSILE STRENGTH OF 75 KSI.
- ⑬ INSTALL MULTI-DIRECTIONAL SLIP BASE STRUCTURAL SIGN SUPPORT SYSTEM AS SHOWN OR APPROVED EQUAL. ONLY THOSE SYSTEMS APPROVED BY FHWA ACCEPTANCE LETTER AND FOUND ON THE TDOT OPL SHALL BE USED.
- ⑭ SCHEDULE 80 PIPE SPECIFICATIONS (SIGN POST):  
2.875" OUTSIDE DIAMETER  
0.276" NOMINAL WALL THICKNESS  
STEEL TUBING PER ASTM A500 GRADE C  
OTHER SEAMLESS OR ELECTRIC-RESISTANCE WELDED STEEL TUBING OR PIPE WITH EQUIV. OUTSIDE DIA. AND WALL THICKNESS MAY BE USED IF THEY MEET THE FOLLOWING:  
46,000 PSI MINIMUM YIELD STRENGTH, 62,000 PSI MINIMUM TENSILE STRENGTH  
WALL THICKNESS (UNCOATED) SHALL BE WITHIN THE RANGE OF 0.248" TO 0.304"  
OUTSIDE DIAMETER (UNCOATED) SHALL BE WITHIN THE RANGE OF 2.855" TO 2.895"  
GALVANIZATION PER ASTM A123
- ⑮ TO PAID FOR UNDER ITEM NO 713-11.23 ROUND POST SLIP BASE PER EACH (INCLUDES COST OF SLIP BASE AND STUB)

MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE  
DEPARTMENT OF TRANSPORTATION

**MULTI-DIRECTIONAL  
SLIP BASE BREAKAWAY  
STRUCTURAL PIPE  
SIGN SUPPORT**