

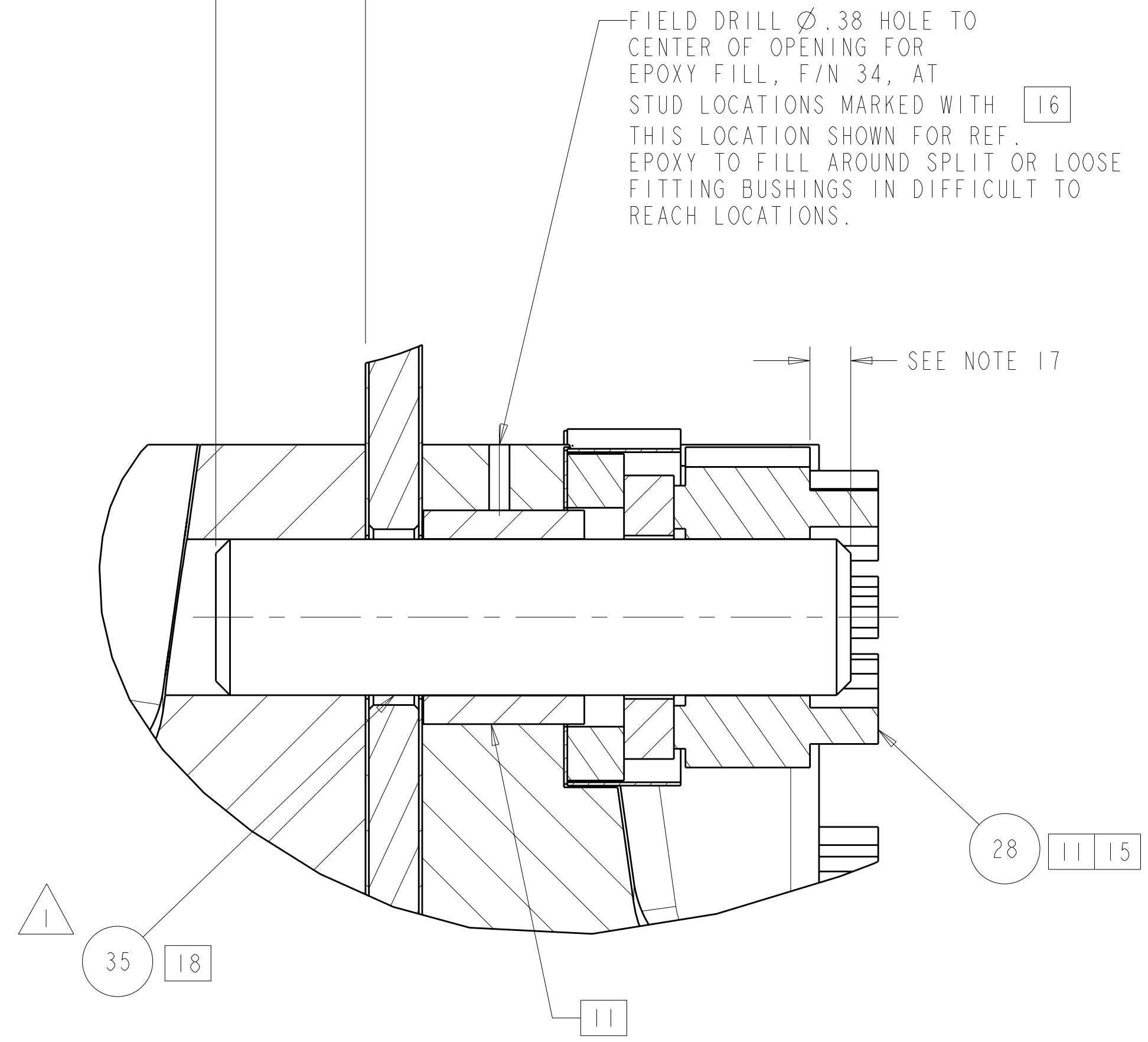
TOP VIEW  
SCALE 0.125

BOTTOM VIEW  
SCALE 0.125

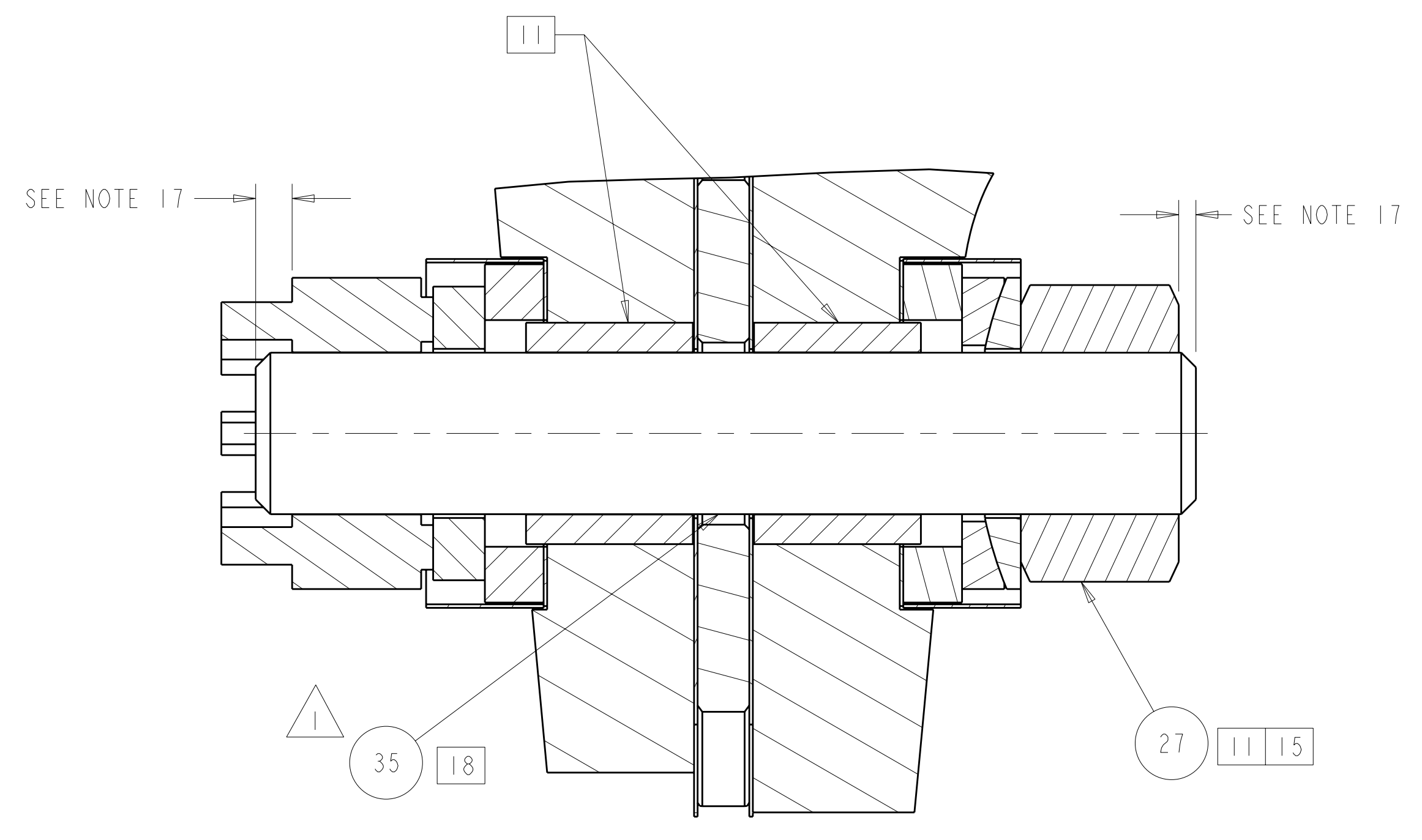
1 THRU -6 MCWF HALF PERIOD ASSY  
SCALE NOTED

1.34 MAX  
1.00 MIN  
THREAD ENGAGEMENT  
STUD SHOULD NOT BOTTOM OUT  
ON THREADS OR BOTTOM OF HOLE

FIELD DRILL  $\varnothing$ .38 HOLE TO  
CENTER OF OPENING FOR  
EPOXY FILL, F/N 34, AT  
STUD LOCATIONS MARKED WITH 16  
THIS LOCATION SHOWN FOR REF.  
EPOXY TO FILL AROUND SPLIT OR LOOSE  
FITTING BUSHINGS IN DIFFICULT TO  
REACH LOCATIONS.



SECTION A-A -TYP TAPPED STUD KIT  
SCALE 1.00



SECTION B-B -TYP THRU STUD KIT  
SCALE 1.00

- NOTES:
- DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.8M-1996.
  - INTERPRET DIMENSIONS AND TOLERANCES PER ANSI Y14.5M-1994.
  - DIMENSIONS ARE IN INCHES.
  - MAGNETIC PERMEABILITY NOT TO EXCEED 1.02 AS TESTED BY A SEVERN INDICATOR. AVAILABLE FROM: SEVERN ENGINEERING, AUBURN, ALABAMA 36830, WWW.SEVERNGINEERING.COM
  - DRAWING DEPICTS FINAL MACHINED STATE OF ASSEMBLY DEFINED BY PRO/ENGINEER FILE SE140-003.ASM.
  - UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE RELATED TO DATUM A- (PRIMARY X-Y PLANE, TOP), DATUM B- (SECONDARY Y-Z PLANE, SIDE), DATUM C- (TERTIARY X-Z PLANE, FRONT)
  - DIMENSIONS APPLY AT TEMPERATURE OF 20-30°C (68-86°F).
  - DIMENSIONS AND TOLERANCES EXCLUDE PROCESS MATERIAL ALLOWANCES WHICH MAY ADD MASS.
  - APPROXIMATE WEIGHT = 24,265 LBS
  - SEE LATEST REVISION OF SPECIFICATION NCSX-CSPEC-185-02-00 FOR ADDITIONAL REQUIREMENTS.
  - MACHINE BUSHING OD AFTER MATCHING ALIGNMENT WITH CORRESPONDING HOLE ON MATING FLANGE. SEE DRAWING SE140-190 FOR ADDITIONAL INFORMATION ON STUD KITS.
- 12 SHIMS AND SHEAR PLATES TO BE CUSTOM FIT PRIOR TO INSTALLATION SEE DWG SE140-046 FOR WELDING AND OTHER INFORMATION.
- 13 WING BLADDERS, F/N 25, TO BE LOCATED APPROX AS SHOWN ON EITHER COIL FACE AND SECURED WITH ADHESIVE, F/N 32, FOLLOWING MANUFACTURERS' DIRECTIONS.
- 14 WING SUPPORTS, F/N 31, TO BE INSTALLED IF WING DEFLECTION EXCEEDS MAXIMUM ALLOWED TOLERANCE VALUES AFTER FINAL WELDING OF SHIMS IS COMPLETE. SEE DRAWING SE140-060 FOR ADDITIONAL INFORMATION.
- 15 USE STUD KITS SE140-190-1 AND -2, F/N 29 AND 30, IN ANY HOLE WHERE THE FLANGE THICKNESS IS THINNER THAN 1.25. SEE DRAWING SE140-190 FOR ADDITIONAL INFORMATION.
- 16 DRILL  $\varnothing$ .38 HOLES THRU FLANGE AT HOLE LOCATIONS NOTED: C COIL D19, D24, D25, D26 AND THE 6 ADDED INBOARD HOLES. ALSO TO BE DRILLED BUT NOT SHOWN ARE: B COIL E27 AND E28, A COIL E10. OTHER HOLES MAY BE DRILLED WITH PRIOR CONFIRMATION OF ENGINEERING. HOLES TO BE USED TO EPOXY FILL AROUND LOOSE OR SPLIT BUSHINGS IN DIFFICULT TO REACH LOCATIONS.
- 17 FOR PROPER THREAD ENGAGEMENT SEE DRAWING SE140-190.
- 18 WRAP STUD IN AREA WHERE SHIM WILL FIT WITH 1 & 1/4 TURNS, MINIMUM, OF MATERIAL CHOSEN FROM ITEMS IN F/N 35 NOT TO EXCEED .03 MAXIMUM THICKNESS.
- 19 THESE PART NUMBERS ASSIGNED BASED ON CASTING IDENTIFICATIONS, "A1"... "C6"

REV	DESCRIPTION	BY	DATE	CHK	DEPT	DATE	PE	REQ	DATE	ORNL	DOE	DATE
2	ADDED F/N 36, PER ECN# 5356	GM	05/08	MC		05/08						
1	DETAIL A SHEET 2, PER ECN # 5332	GM	05/08	MC		05/08						
1	HOLES ZONE G5 AND NOTE 16, DELETED											
1	# 10, ADDED F/N 35, ADDED FIELD DRILL											
1	ADDED NOTE 17, 18, 19, CHANGED SPEC # IN NOTE											
1	F/N'S F/N 26, SE140-046 WAS SE140-040											
1	DELETED F/N 7 THRU 11, RENUMBERED REMAINING											
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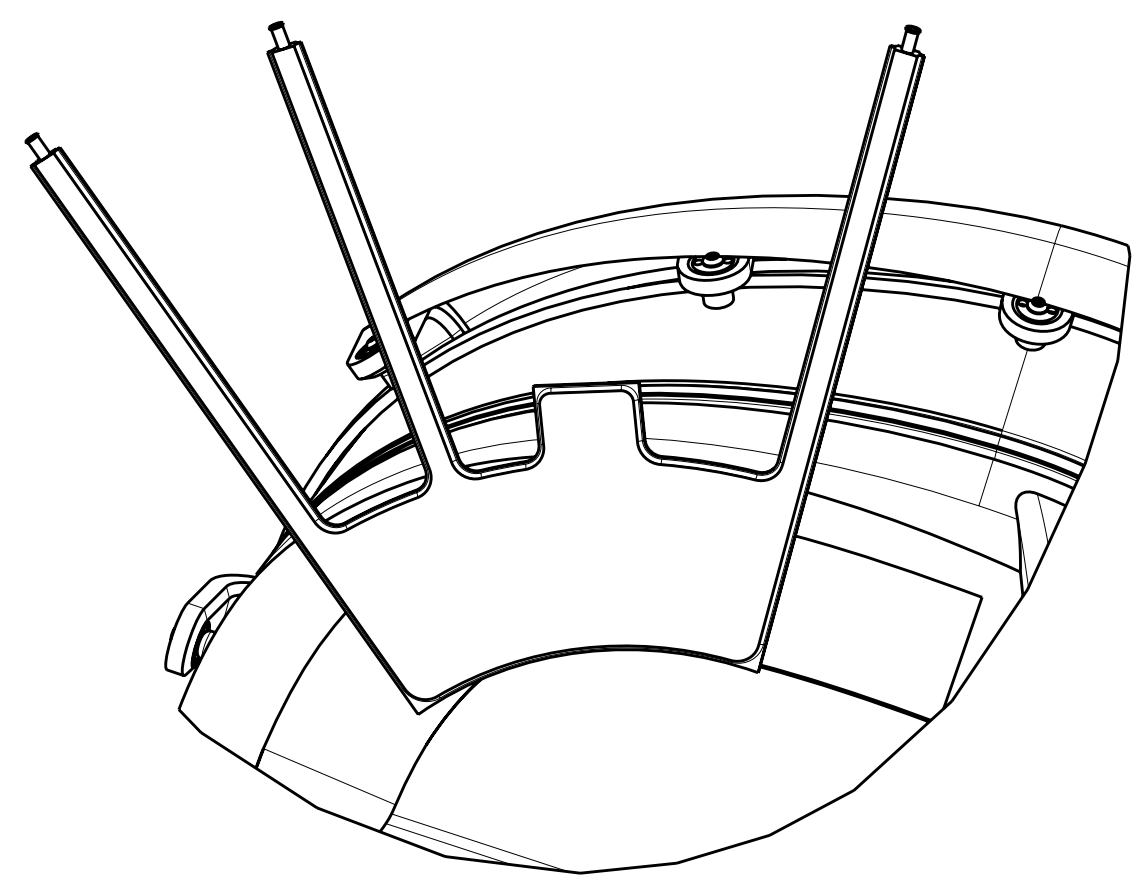
  

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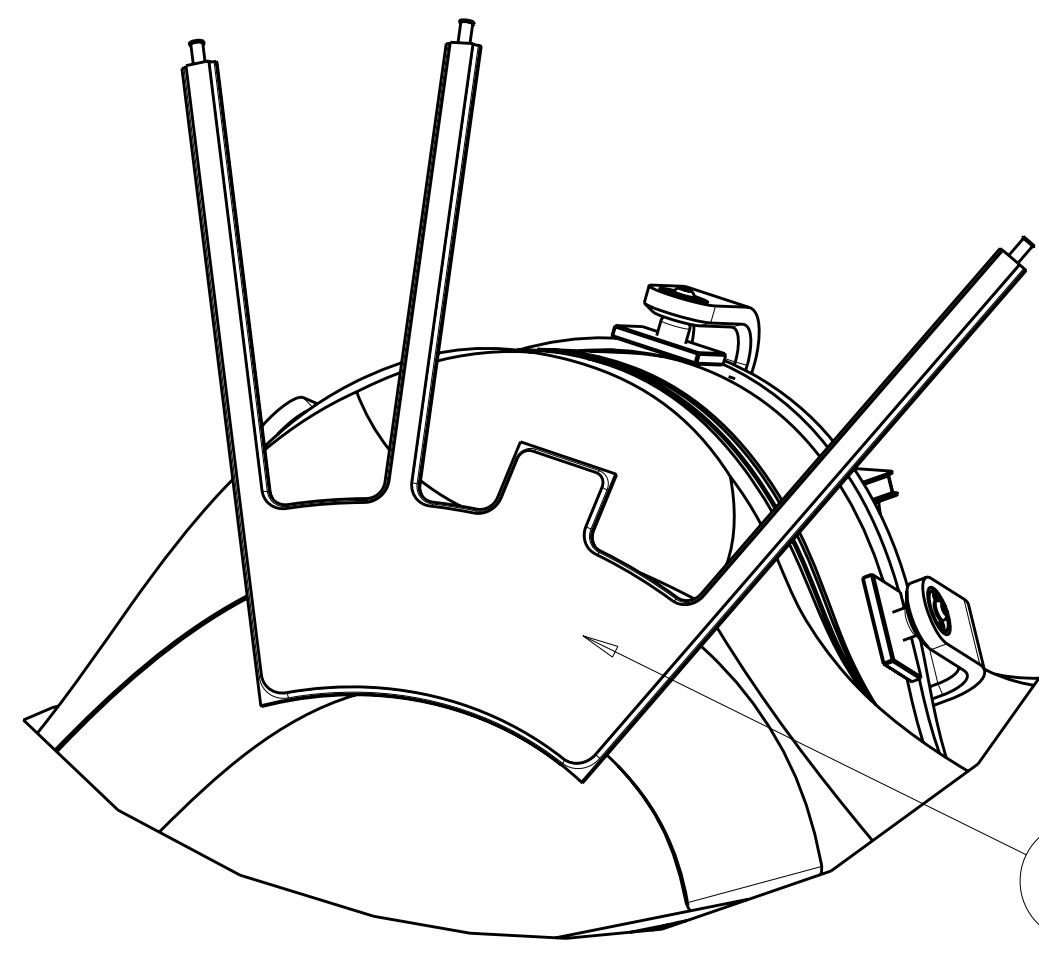
  

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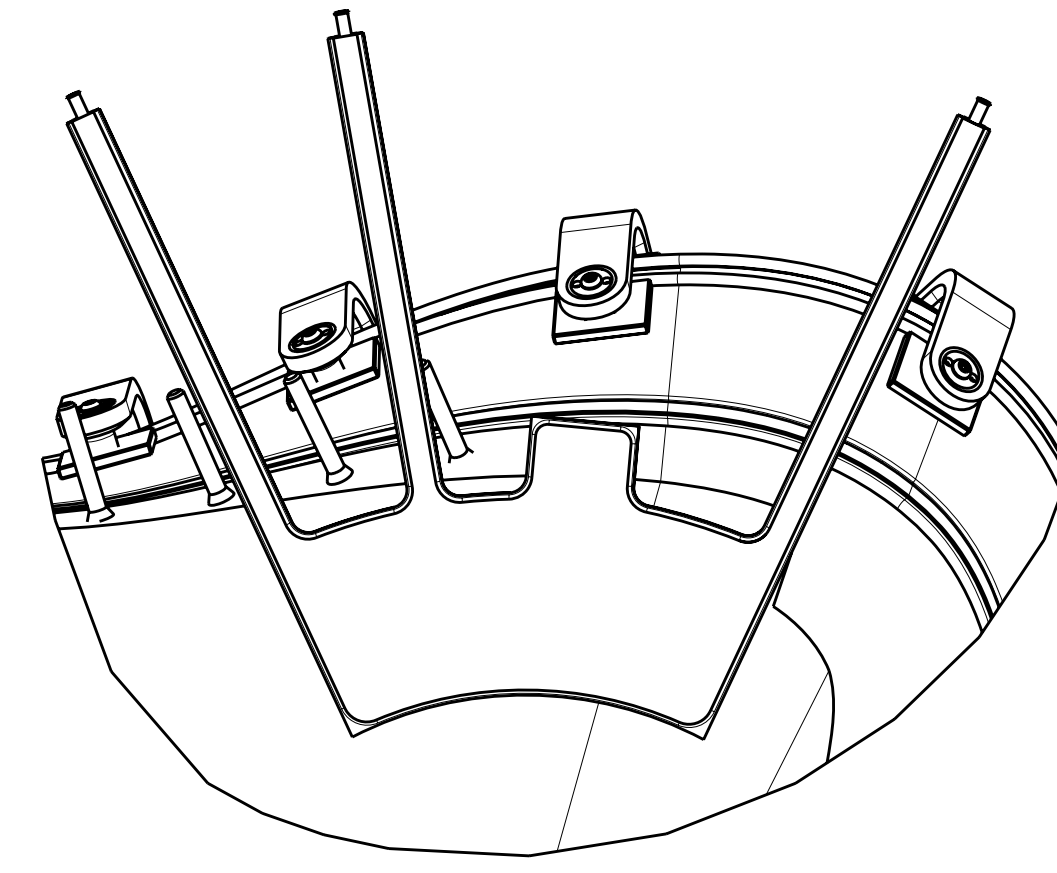




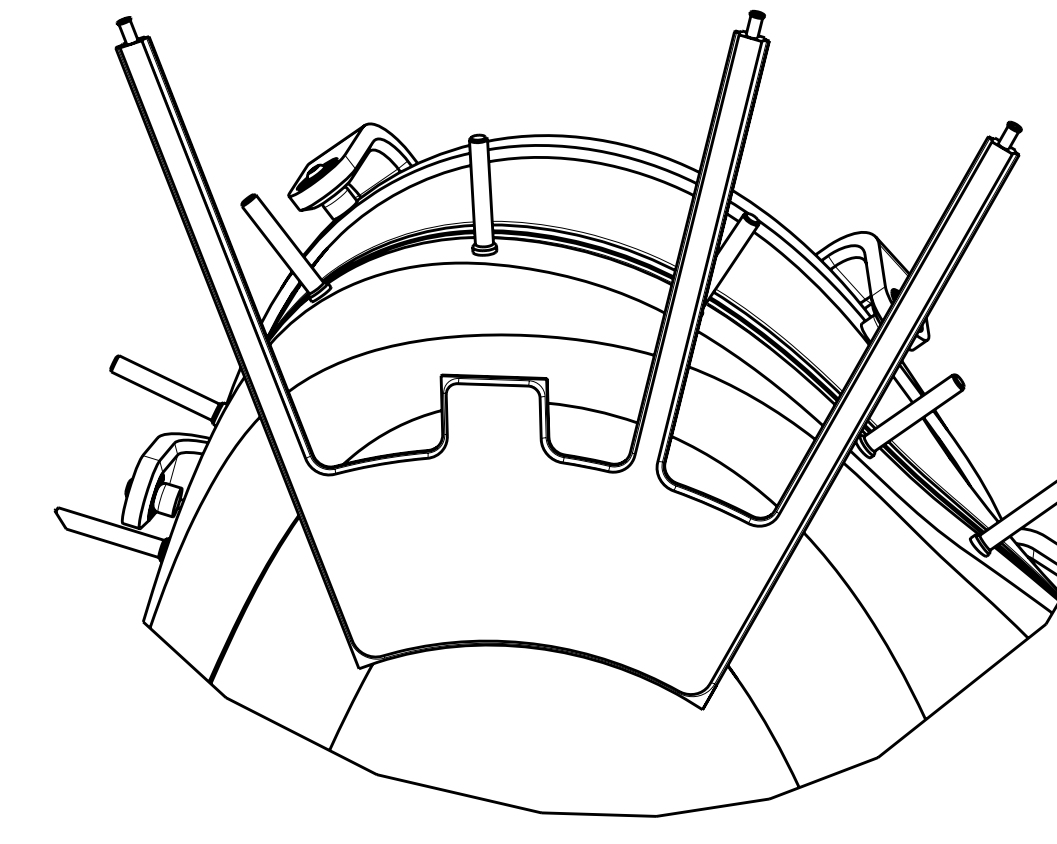
WING BLADDER #2 BETWEEN A AND B COIL - SHOWN ON B WING [13]  
SCALE .25



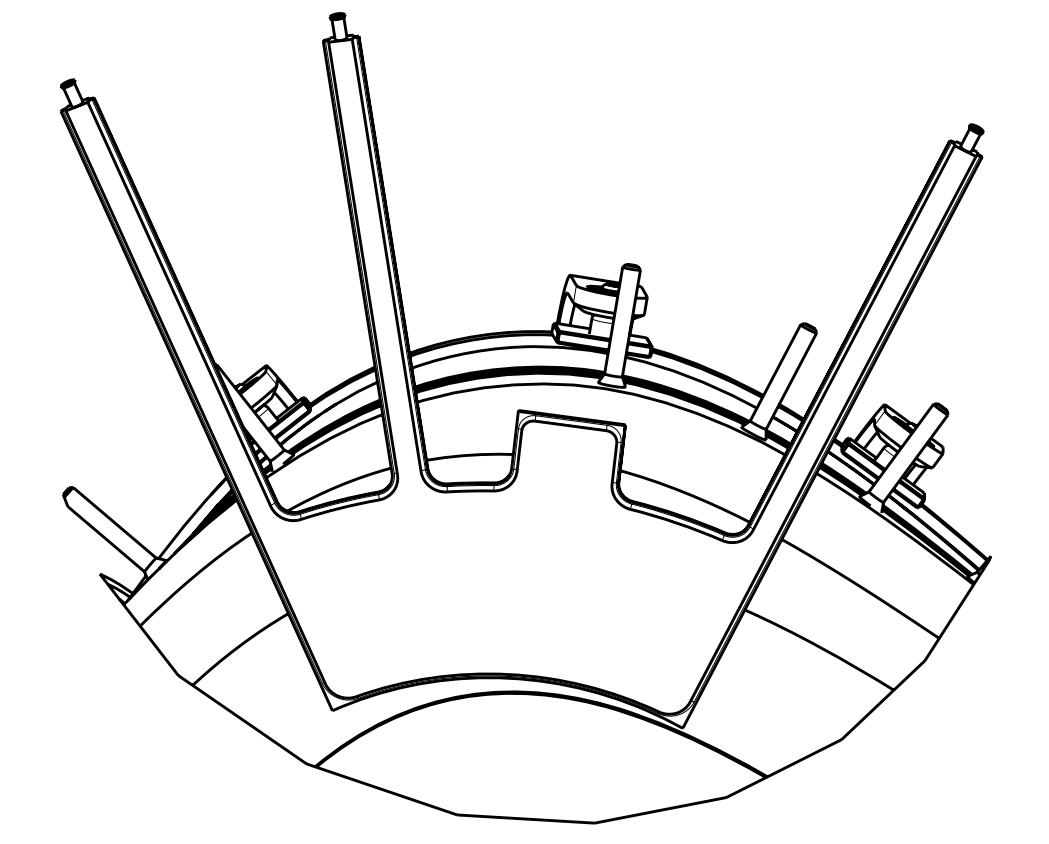
WING BLADDER #3 BETWEEN A AND B COIL - SHOWN ON A WING [13]  
SCALE .25



WING BLADDER #6 BETWEEN B AND C COIL - SHOWN ON C WING [13]  
SCALE .25



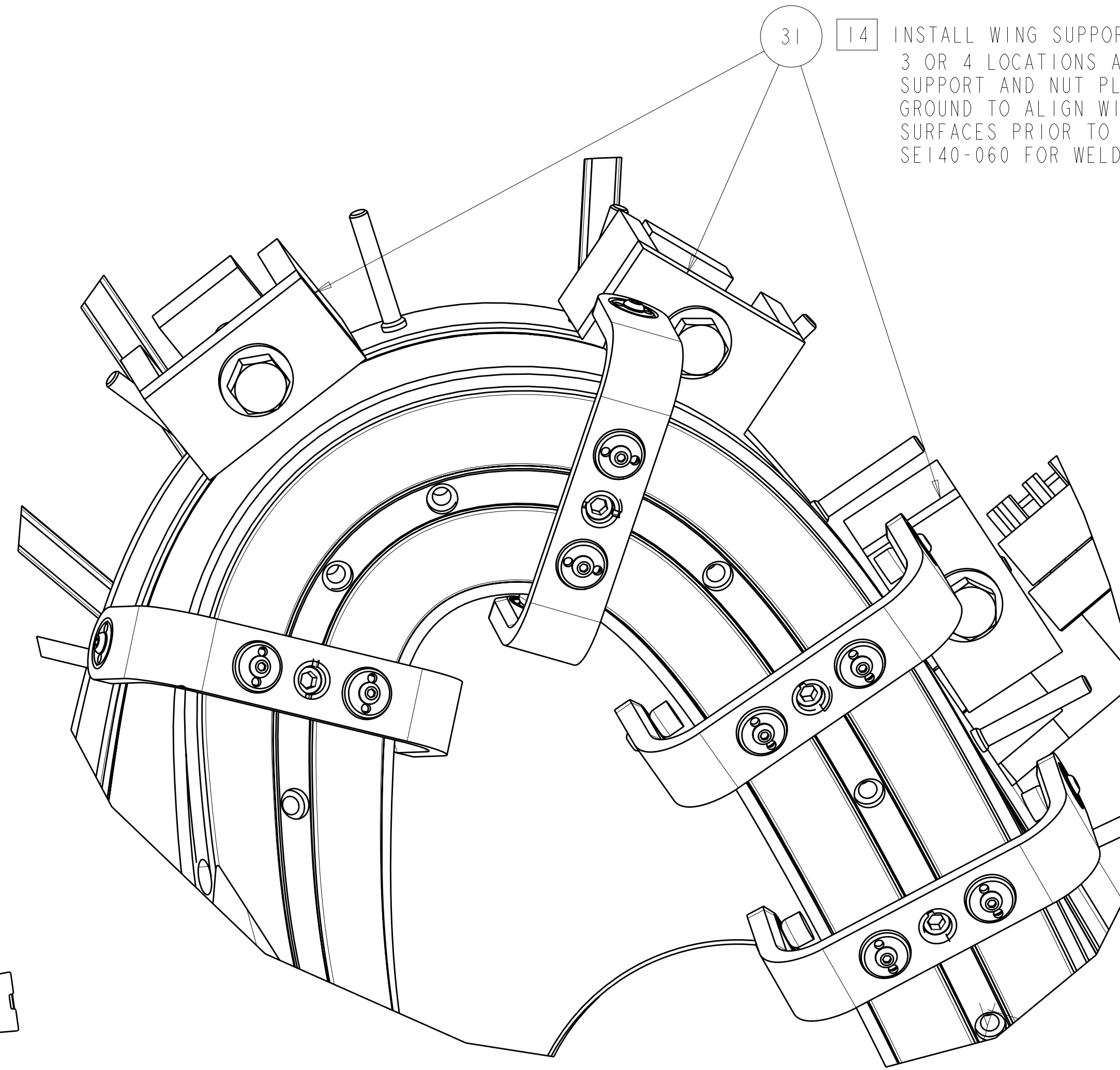
WING BLADDER #7 BETWEEN B AND C COIL - SHOWN ON B WING [13]  
SCALE .25



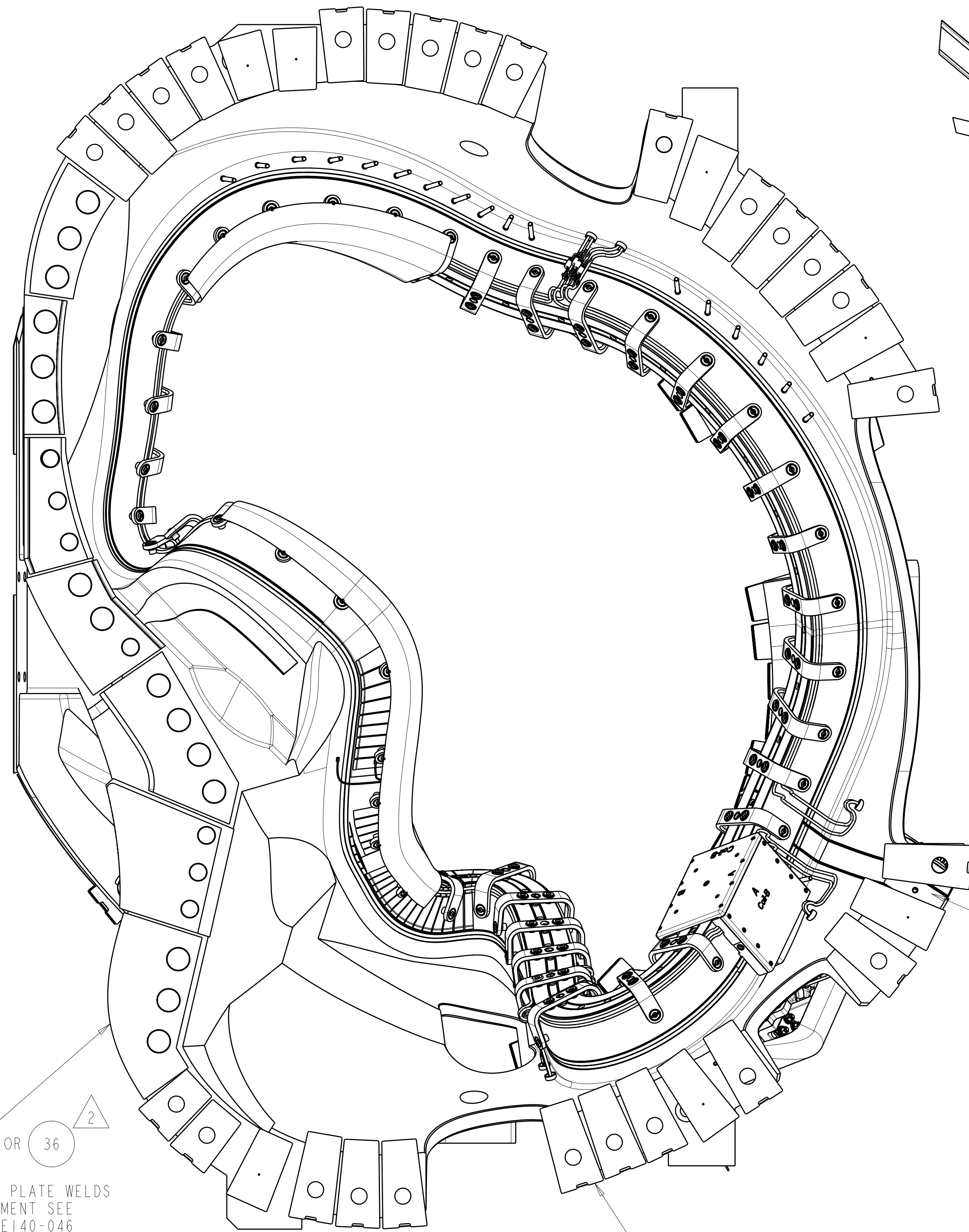
WING BLADDER #9 BETWEEN C AND C COIL - SHOWN ON C WING [13]  
SCALE .25

NOTE: WING SUPPORTS CANNOT BE USED FOR THIS WING UNTIL FINAL MACHINE ASSEMBLY SE100-001

INSTALL WING SUPPORTS, IF NEEDED, AT 3 OR 4 LOCATIONS AT EACH WING AS SHOWN. SUPPORT AND NUT PLATES WILL NEED TO BE GROUND TO ALIGN WITH WING AND COIL SURFACES PRIOR TO WELDING. SEE DRAWING SE140-060 FOR WELDING AND OTHER INFORMATION.



TYPICAL WING 4 PLACES  
SCALE .50



VIEW OF B COIL A FLANGE A COIL REMOVED  
SCALE 0.15

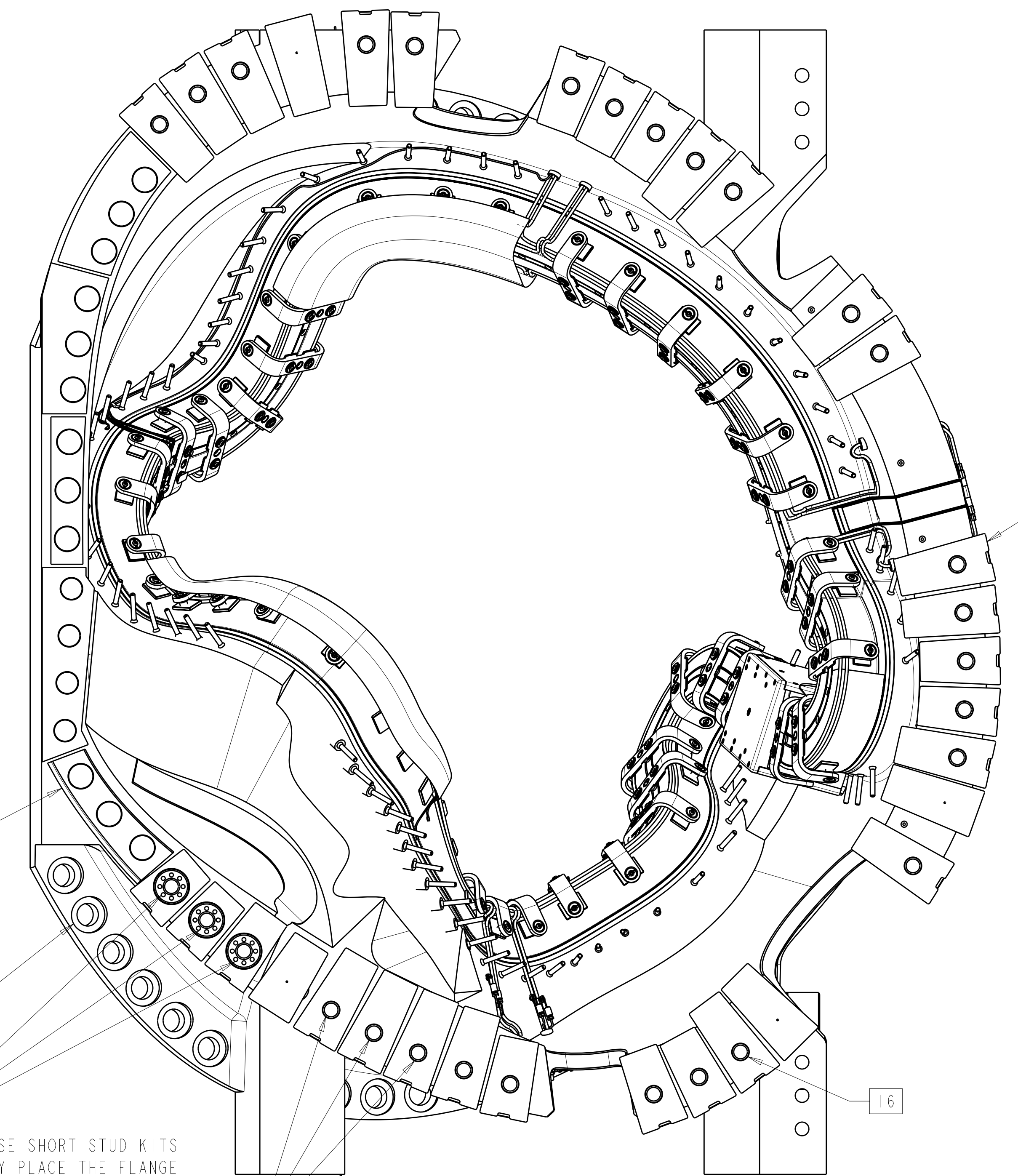
FOR SHEAR PLATE WELDS AND PLACEMENT SEE DRAWING SE140-046

FILL ALL GAPS WITH FILLER AFTER COILS ARE WELDED TOGETHER

FOR SHEAR PLATE WELDS AND PLACEMENT SEE DRAWING SE140-046

THESE 6 INBOARD HOLES

USE SHORT STUD KITS ANY PLACE THE FLANGE THICKNESS IS BELOW 1.25



VIEW OF C COIL B FLANGE B COIL REMOVED  
SCALE 0.15

UT-BATTELLE		Oak Ridge National Laboratory managed for the DEPARTMENT OF ENERGY under U.S. GOVERNMENT contract DE-AC05-00OR22725 UT-BATTELLE, LLC. Oak Ridge, Tennessee	
PROJECT NAME NATIONAL COMPACT STELLARATOR EXPERIMENT			
MODULAR COILS ASSEMBLY 1/2 FIELD PERIOD			
VERSION NO. 4	PLANT ORNL	BLDG 5700	FL SHT OF TYPE CLASS 3 2 2 A U
RELEASE LEVEL Fabrication		SE140-003	
		REV 2	

RELEASED FOR FABRICATION/INSTALLATION  
PPPL Drafting