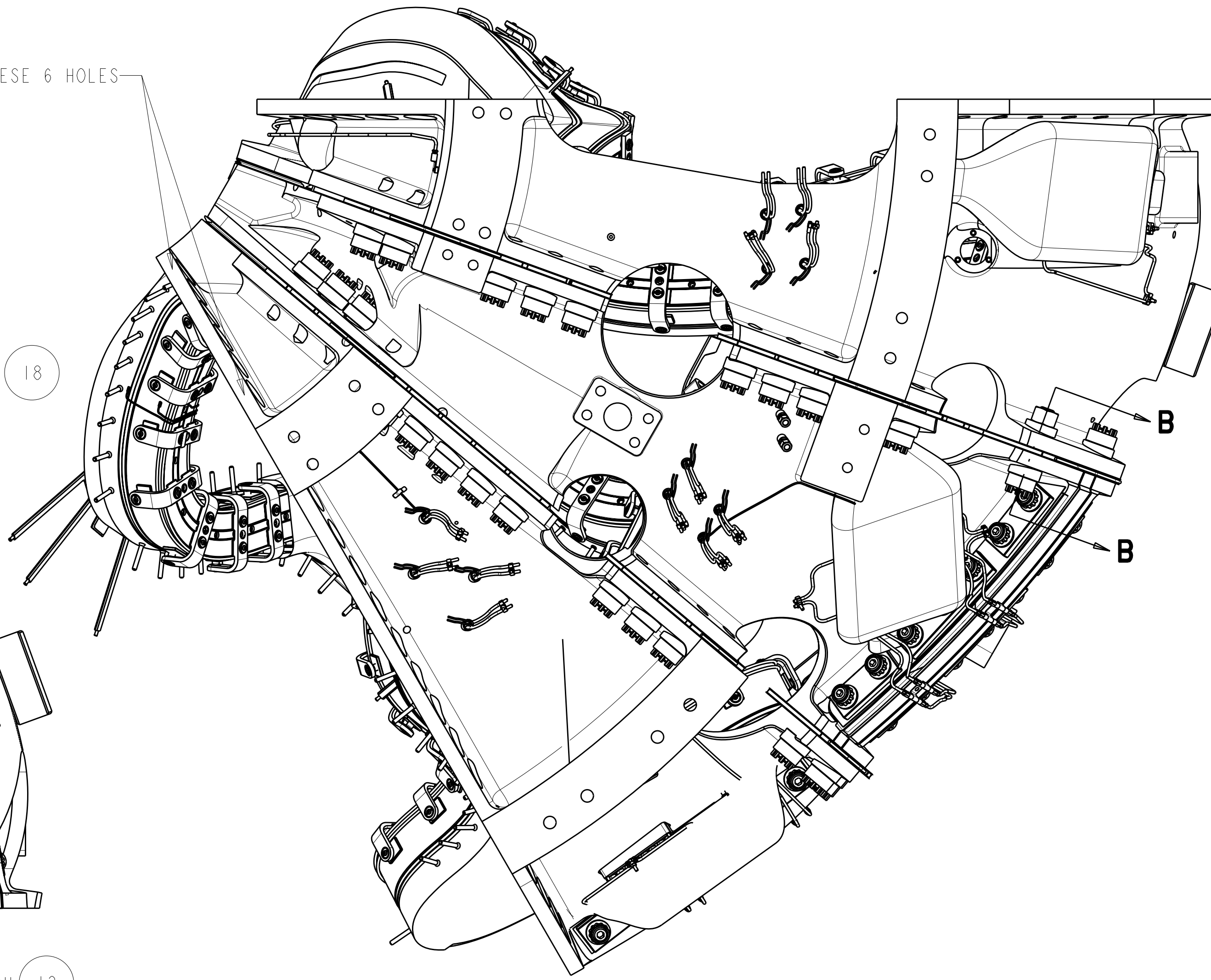


TOP VIEW
SCALE 0.125

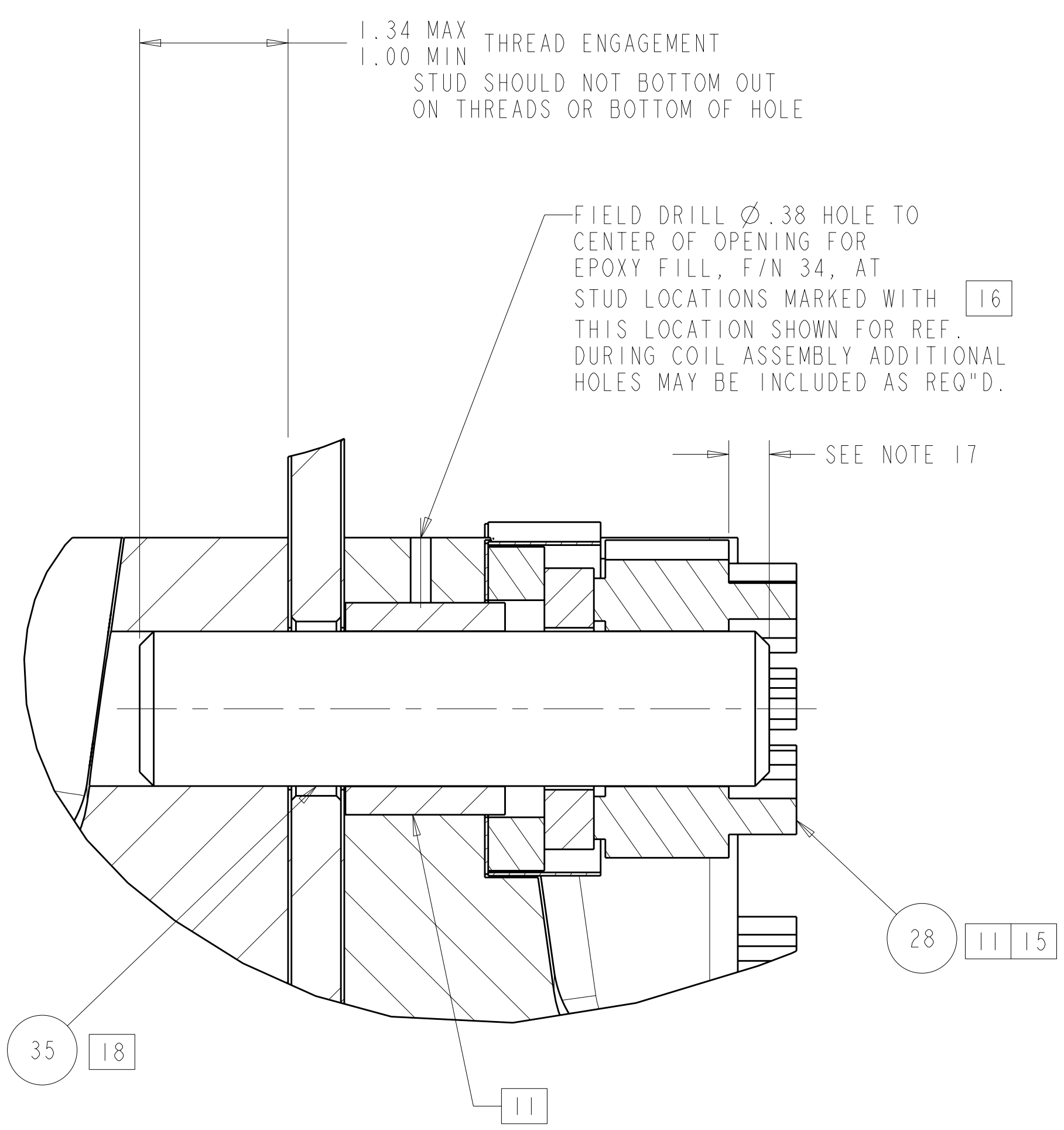


BOTTOM VIEW
SCALE 0.125

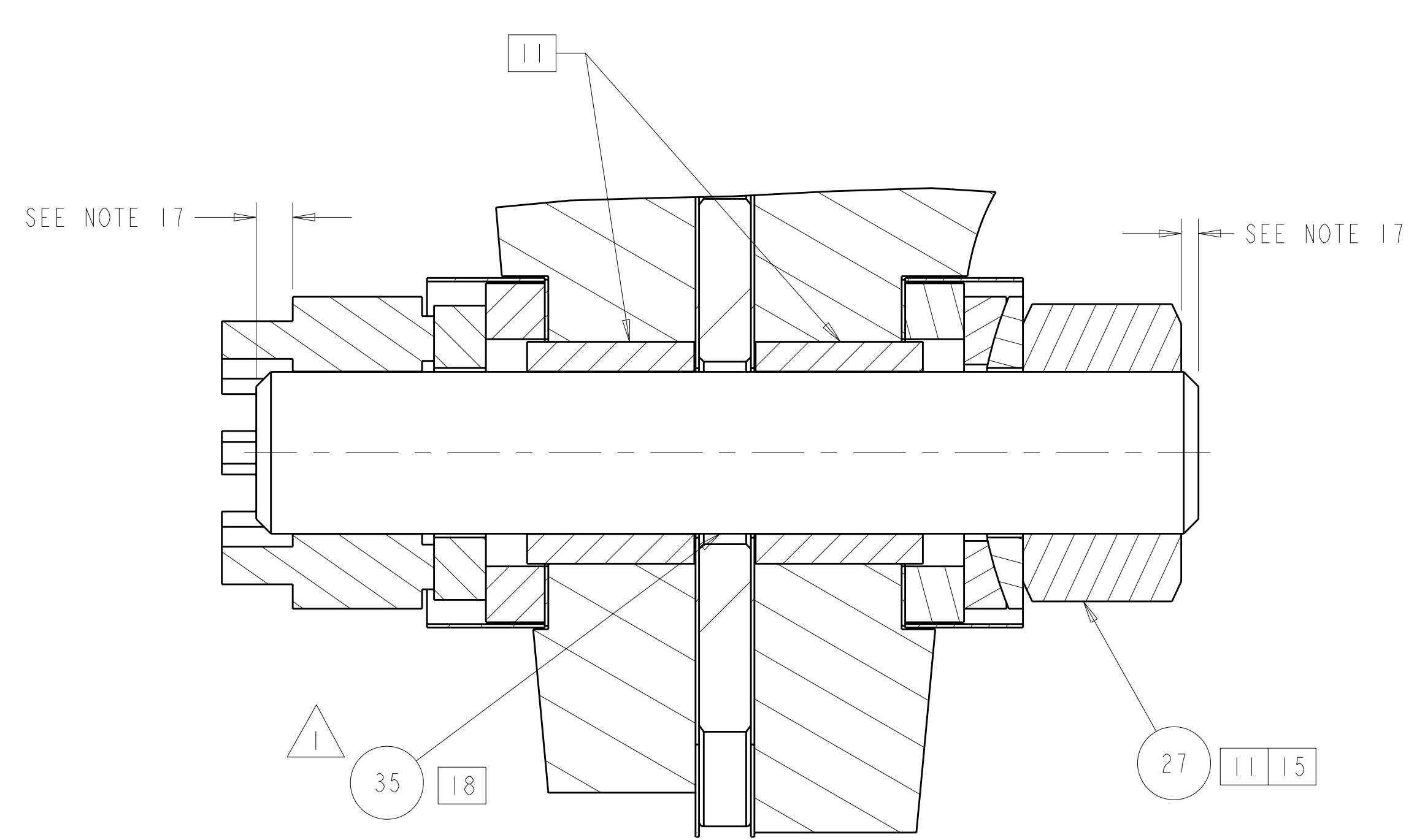
- 12 SHIMS AND SHEAR PLATES TO BE CUSTOM FIT PRIOR TO INSTALLATION SEE DWG SE140-046 FOR WELDING AND OTHER INFORMATION.
- 13 WING BLADDERS, F/N 25, TO BE LOCATED APPROX AS SHOWN ON EITHER COIL FACE AND SECURED WITH ADHESIVE, F/N 32, FOLLOWING MANUFACTURERS' DIRECTIONS.
- 14 WING SUPPORTS, F/N 31, TO 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 ϕ .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 CONFORMATION OF ENGINEERING.
- 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"

- NOTES:
1. DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.8M-1996.
 2. INTERPRET DIMENSIONS AND TOLERANCES PER ANSI Y14.5M-1994.
 3. DIMENSIONS ARE IN INCHES.
 4. MAGNETIC PERMEABILITY NOT TO EXCEED 1.02 AS TESTED BY A SEVERN INDICATOR. AVAILABLE FROM: SEVERN ENGINEERING AUBURN, ALABAMA 36830 WWW.SEVERNGINEERING.COM
 5. DRAWING DEPICTS FINAL MACHINED STATE OF ASSEMBLY DEFINED BY PRO/ENGINEER FILE SE140-003.ASM.
 6. 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)
 7. DIMENSIONS APPLY AT TEMPERATURE OF 20-30°C (68-86°F).
 8. DIMENSIONS AND TOLERANCES EXCLUDE PROCESS MATERIAL ALLOWANCES WHICH MAY ADD MASS.
 9. APPROXIMATE WEIGHT = 24,265 LBS
 10. SEE LATEST REVISION OF SPECIFICATION NCSX-CSPEC-185-02-00 FOR ADDITIONAL REQUIREMENTS.
 11. MACHINE BUSHING OD AFTER MATCHING ALIGNMENT WITH CORRESPONDING HOLE ON MATING FLANGE. SEE DRAWING SE140-190 FOR ADDITIONAL INFORMATION ON STUD KITS.

1 THRU -6 MCWF HALF PERIOD ASSY
SCALE NOTED



SECTION A-A -TYP TAPPED STUD KIT
SCALE 1.00



SECTION B-B -TYP THRU STUD KIT
SCALE 1.00

ITEM NO	QTY	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	FIND NO
18	AR AR AR AR AR AR	-35	INSULATING WRAP	G-10 STRIP OR KAPTON TAPE OR MYLAR TAPE	.015 THICK .002 TO .005 THICK	35
16	AR AR AR AR AR AR	-34	EPOXY	STYCAST 2850FT	CMR-DIRECT CAMBRIDGE, CBS 8HR, UK +44(0)1223 473631 WWW.CMR-DIRECT.COM	34
	AR AR AR AR AR AR	-33	DOW GREAT INSULATING FOAM	POLYMERIC DIISOCYANATE POLYOLS AND HYDROCARBON GAS	BRADCO SUPPLY CORP TRENTON, NJ 08618 609-393-7000 WWW.BRADCOSUPPLY.COM	33
13	AR AR AR AR AR AR	-32	ADHESIVE	CTD-540	COMPOSITE TECHNOLOGY DEVELOPMENT, INC LAFAYETTE, CO 80026 303-664-0394 WWW.CTD-MATERIALS.COM	32
14	AR AR AR AR AR AR	SE140-060	WING SUPPORT			31
15 11	AR AR AR AR AR AR	SE140-190-2	MCWF FLANGE TAPPED STUD KIT			30
15 11	AR AR AR AR AR AR	SE140-190-1	MCWF FLANGE THRU STUD KIT			29
11	54 54 54 54 54 54	SE140-190-4	MCWF FLANGE TAPPED STUD KIT			28
11	1 1 1 1 1 1	SE140-190-3	MCWF FLANGE THRU STUD KIT			27
12	1 1 1 1 1 1	SE140-046-1	SHIM AND SHEAR PLATE KIT			26
13	5 5 5 5 5 5	SE140-050	WING BLADDER			25
1		SE140-103-6	MCWF TYPE "C6" ASSY			24
1		SE140-103-5	MCWF TYPE "C5" ASSY			23
1		SE140-103-4	MCWF TYPE "C4" ASSY			22
1		SE140-103-3	MCWF TYPE "C3" ASSY			21
1		SE140-103-2	MCWF TYPE "C2" ASSY			20
1		SE140-103-1	MCWF TYPE "C1" ASSY			19
1		SE140-102-6	MCWF TYPE "B6" ASSY			18
1		SE140-102-5	MCWF TYPE "B5" ASSY			17
1		SE140-102-4	MCWF TYPE "B4" ASSY			16
1		SE140-102-3	MCWF TYPE "B3" ASSY			15
1		SE140-102-2	MCWF TYPE "B2" ASSY			14
1		SE140-102-1	MCWF TYPE "B1" ASSY			13
1		SE140-101-6	MCWF TYPE "A6" ASSY			12
1		SE140-101-5	MCWF TYPE "A5" ASSY			11
1		SE140-101-4	MCWF TYPE "A4" ASSY			10
1		SE140-101-3	MCWF TYPE "A3" ASSY			9
1		SE140-101-2	MCWF TYPE "A2" ASSY			8
1		SE140-101-1	MCWF TYPE "A1" ASSY			7
AR		SE140-003-6	MCHP - RIGHT SIDE PERIOD 3 -A6/B6/C6			6
AR		SE140-003-5	MCHP - LEFT SIDE PERIOD 3 -A5/B5/C5			5
AR		SE140-003-4	MCHP - RIGHT SIDE PERIOD 2 -A4/B4/C4			4
AR		SE140-003-3	MCHP - LEFT SIDE PERIOD 2 -A3/B3/C3			3
AR		SE140-003-2	MCHP - RIGHT SIDE PERIOD 1 -A2/B2/C2			2
AR		SE140-003-1	MCHP - LEFT SIDE PERIOD 1 -A1/B1/C1			1

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PPPL Drafting

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P THIS DRAWING PRODUCED ON PRO-ENGINEER

REV	DESCRIPTION	BY	DATE	CHK	DEPT	DATE	PE	REQ	DATE	ORNL	DOE	DATE
1	DETAIL A SHEET 2, PER ECN # 5332	GM	05/08	MC		05/08						
2	HOLE'S ZONE G5 AND NOTE 16, DELETED											
3	# 10, ADDED F/N 35, ADDED FIELD DRILL											
4	ADDED NOTE 17, 18, 19, CHANGED SPEC # IN NOTE											
5	F/N'S F/N 26, SE140-046 WAS SE140-040											
6	DELETED F/N 7 THRU 11, RENUMBERED REMAINING											
7	ORIGINAL ISSUE	GM	01/08	MC		01/08						

SCALE NOTED
TOLERANCES UNLESS OTHERWISE SPECIFIED

DES: D WILLIAMSON 01/2008
DRW: G LOVETT 01/2008
CHK: M COLE 01/2008

FRACTIONS: 1/16
XX DECIMALS: ±.01
XXX DECIMALS: ±.005
ANGLES: ±0°15'
BREAK SHARP EDGES OF MAX
FINISH: 125 UNLESS OTHERWISE SPECIFIED

PPPL DRFT J SEIGEL 12/2007

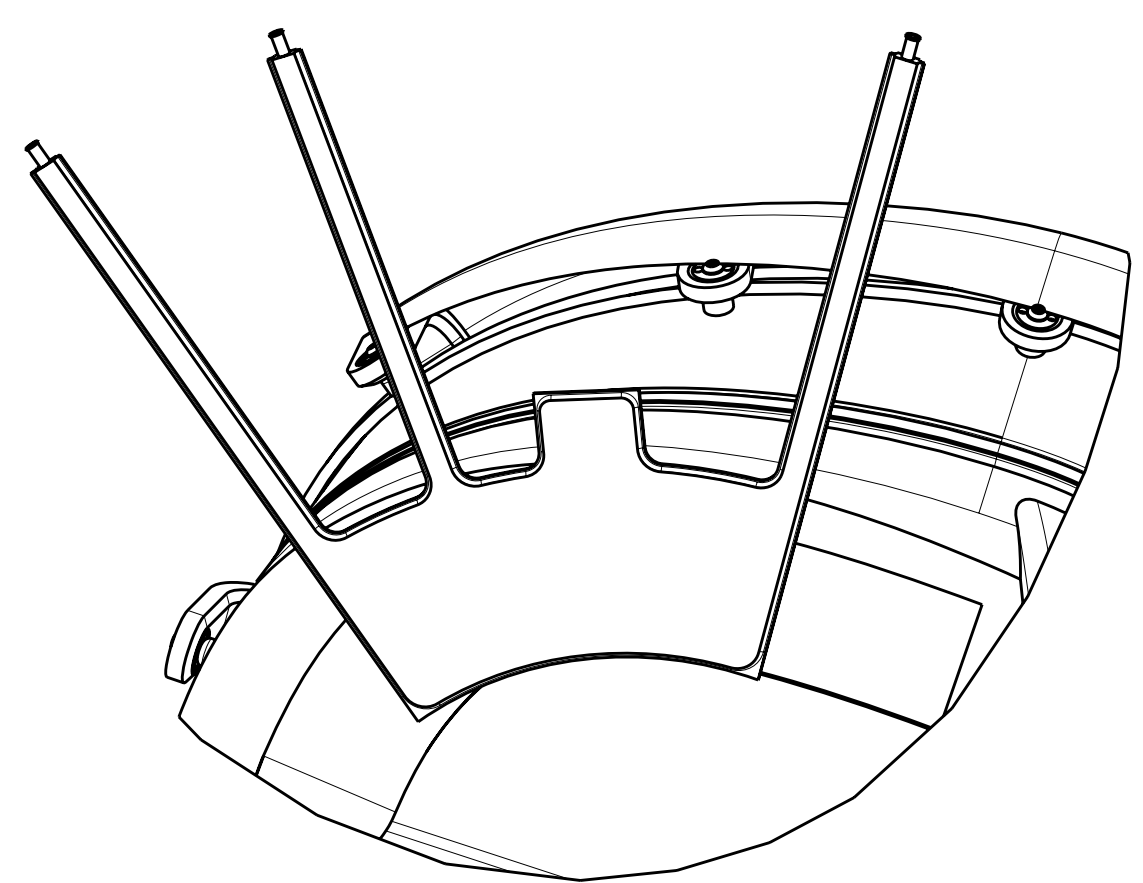
Oak Ridge National Laboratory managed for the DEPARTMENT OF ENERGY under U.S. GOVERNMENT contract DE-AC05-00OR22725 UT-BATTELLE, LLC, Oak Ridge, Tennessee PROJECT SWAC

UT-BATTELLE
NATIONAL COMPACT STELLARATOR EXPERIMENT

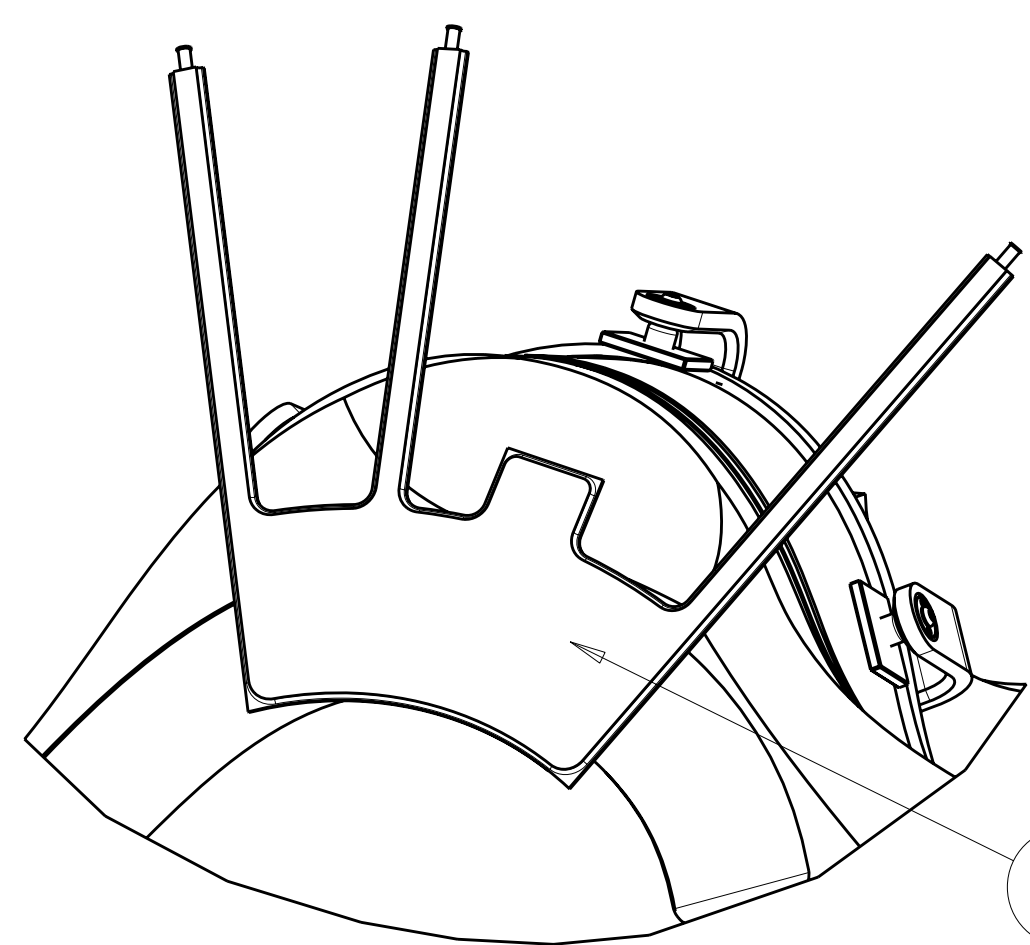
MODULAR COILS ASSEMBLY
1/2 FIELD PERIOD

VERSION NO.	PLANT ORNL	BLDG	FL	SHT	OF	TYPE	CLASS
7		5700	3	1	2	A	U

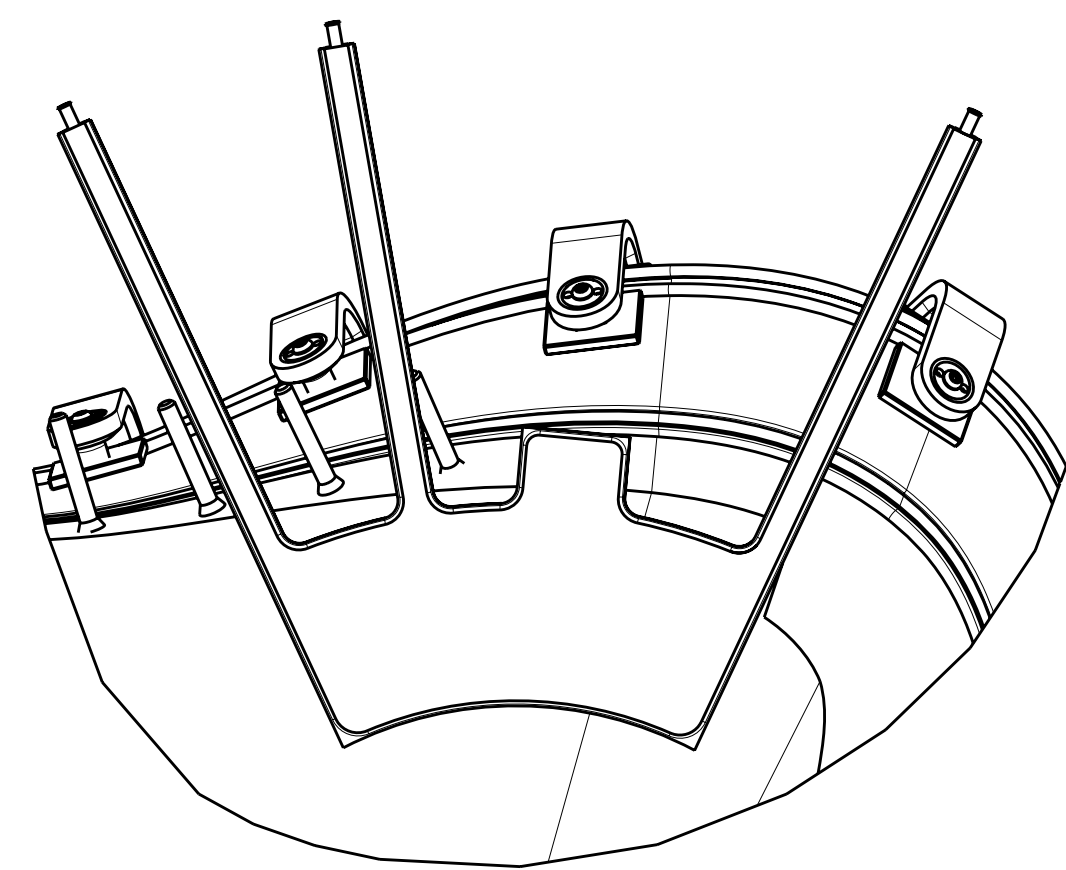
RELEASE LEVEL: Fabrication
SE140-003



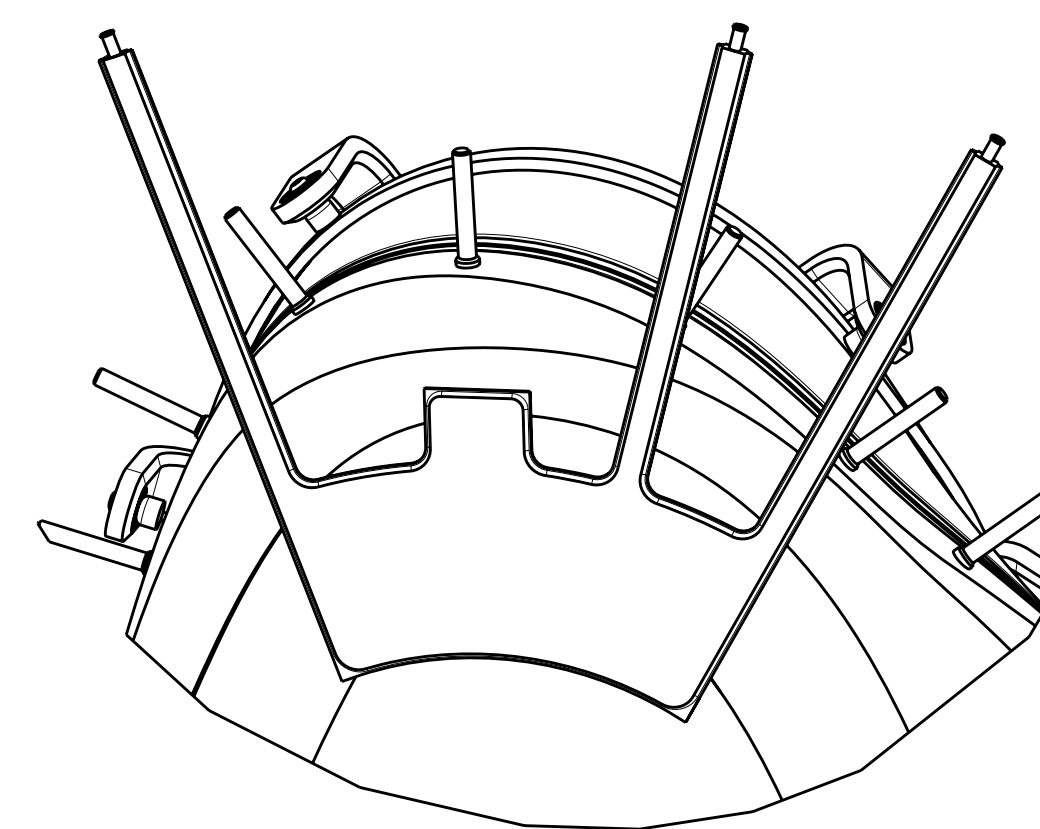
WING BLADDER #2 BETWEEN A AND B COIL - SHOWN ON B WING [13]
SCALE .25



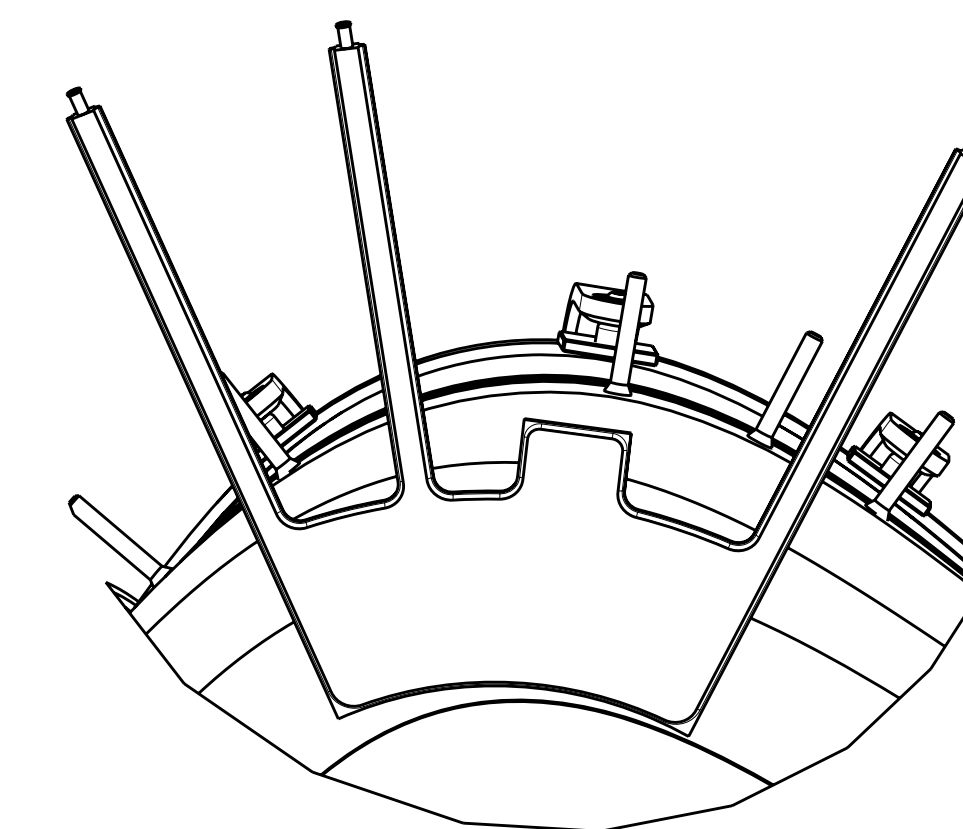
WING BLADDER #3 BETWEEN A AND B COIL - SHOWN ON A WING [13]
SCALE .25



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

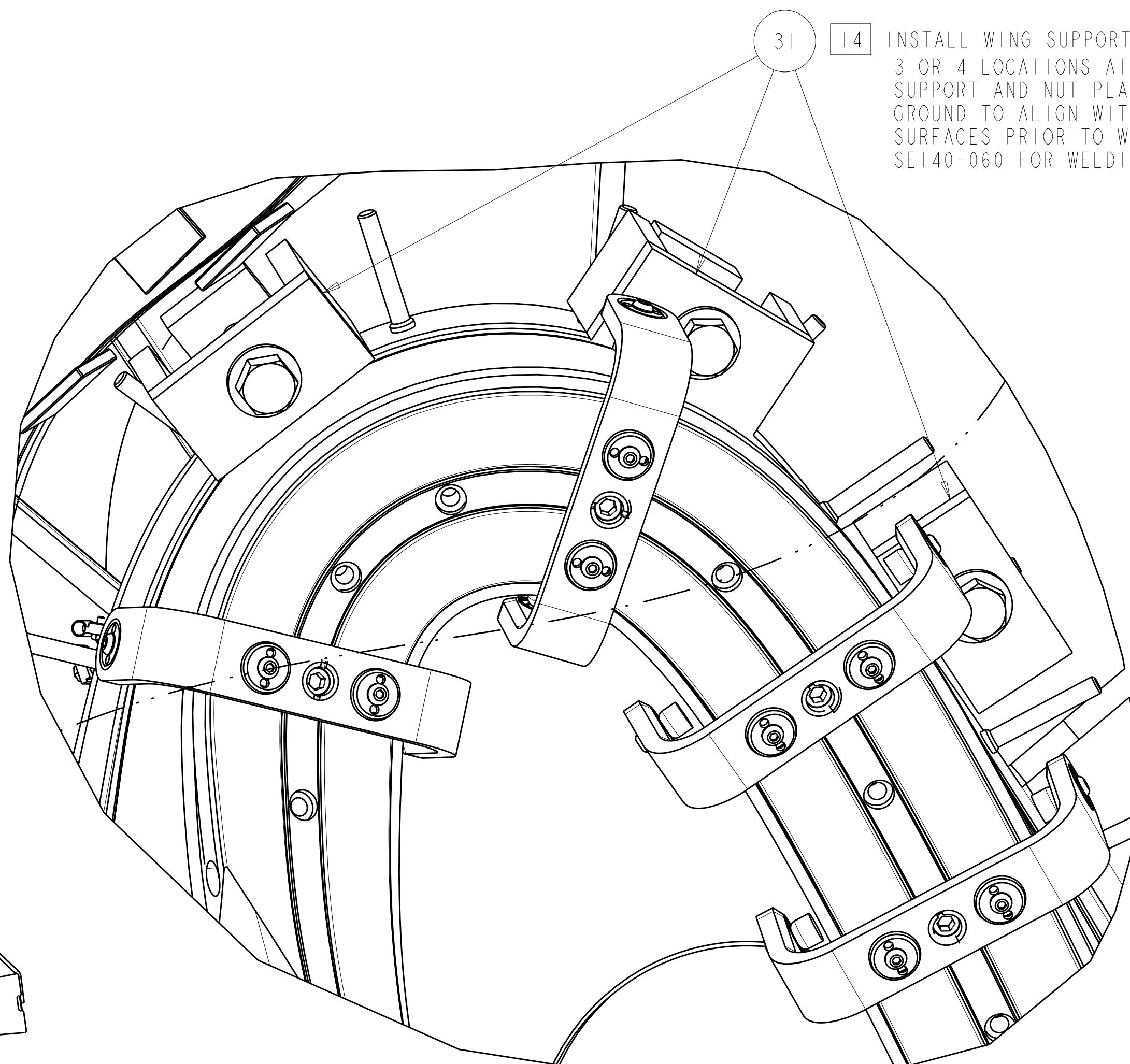


WING BLADDER #7 BETWEEN B AND C COIL - SHOWN ON B WING [13]
SCALE .25



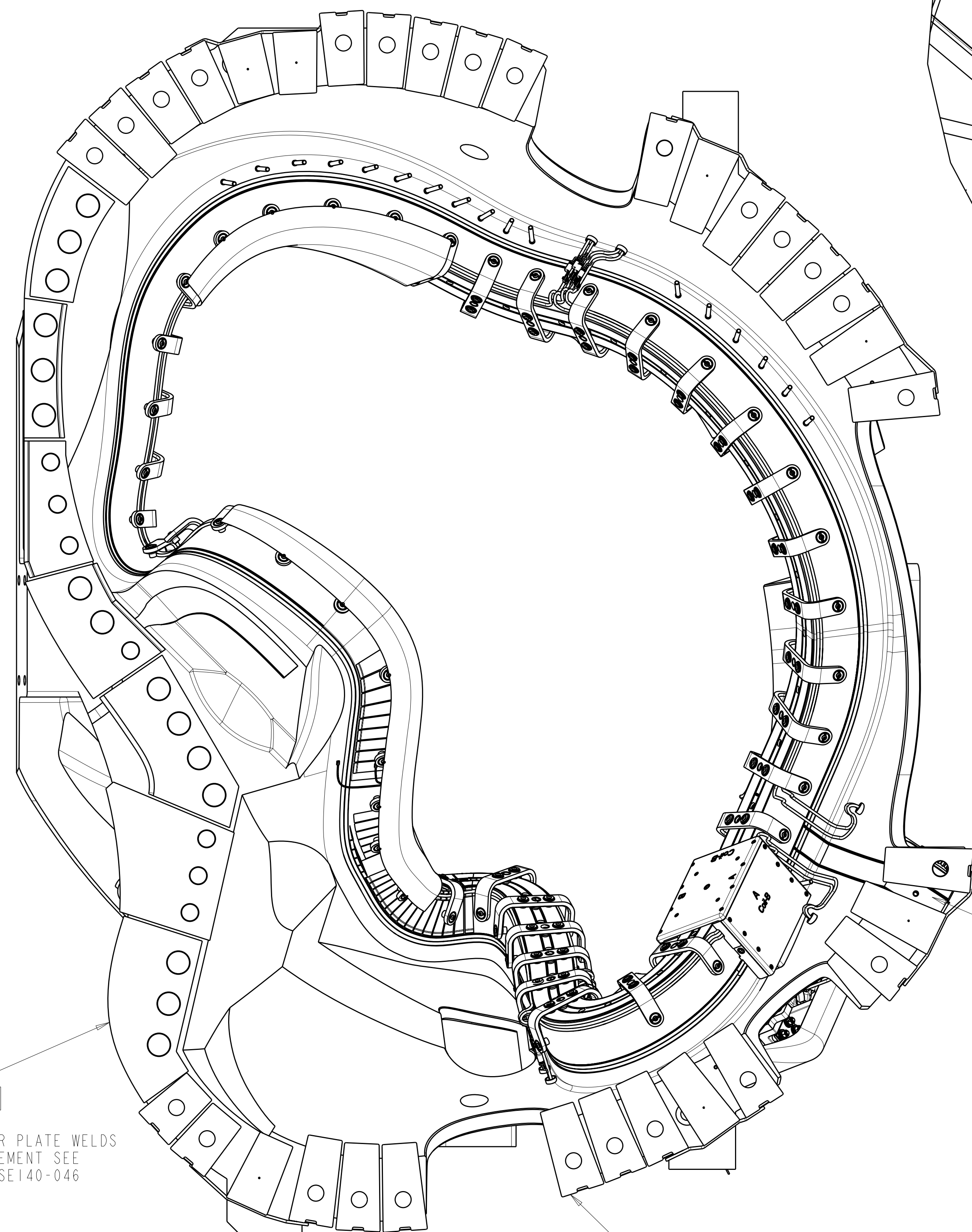
WING BLADDER #9 BETWEEN C AND C COIL - SHOWN ON C WING [13]
SCALE .25

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



TYPICAL WING 4 PLACES
SCALE .50

31 [14] 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.

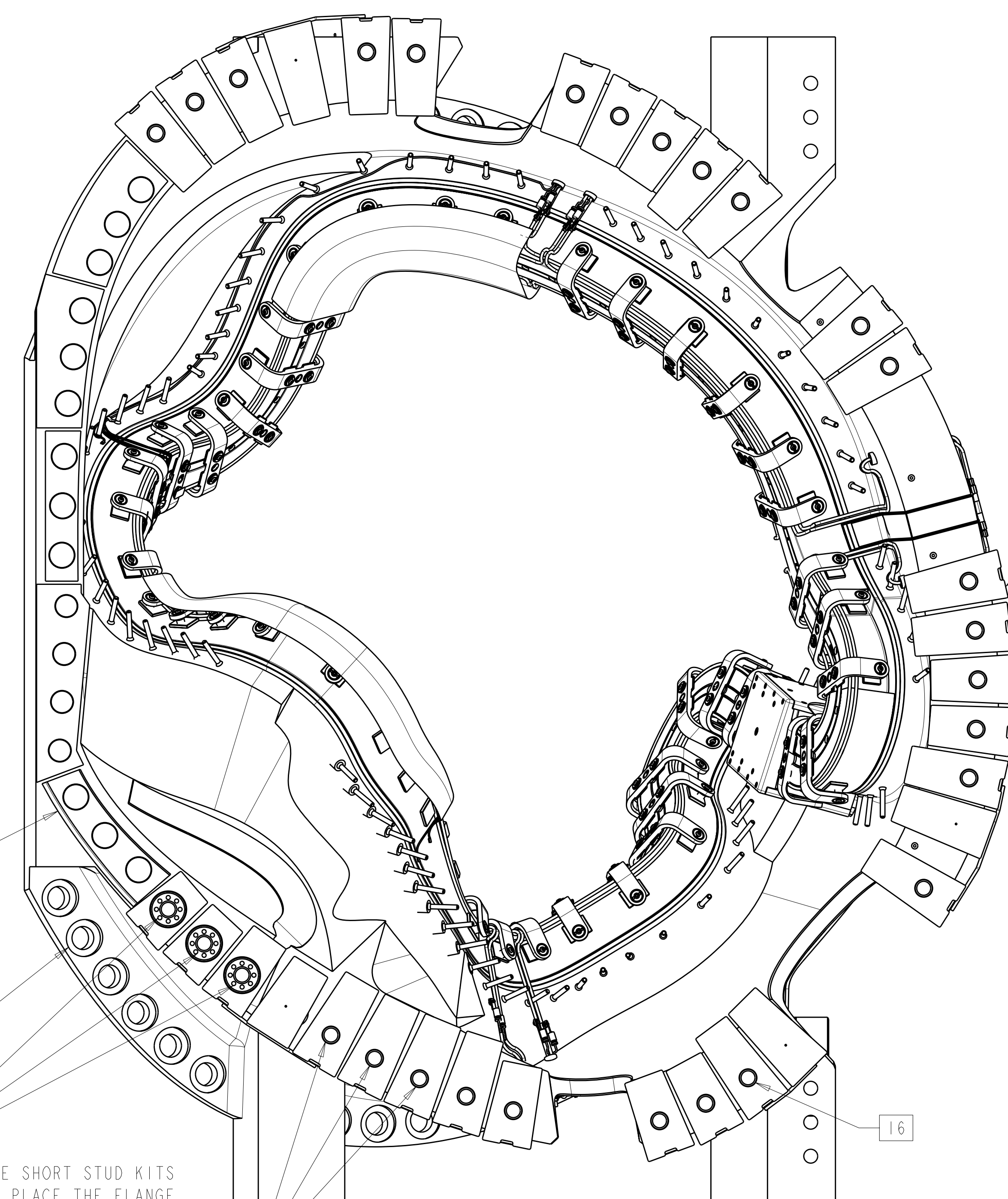


VIEW OF B COIL A FLANGE A COIL REMOVED
SCALE 0.15

26 [12] FOR SHEAR PLATE WELDS AND PLACEMENT SEE DRAWING SE140-046

REF 26 [12]

33 FILL ALL GAPS WITH FILLER AFTER COILS ARE WELDED TOGETHER



VIEW OF C COIL B FLANGE B COIL REMOVED
SCALE 0.15

26 [12] FOR SHEAR PLATE WELDS AND PLACEMENT SEE DRAWING SE140-046

16 [16] THESE 6 INBOARD HOLES

30 [15] USE SHORT STUD KITS ANY PLACE THE FLANGE THICKNESS IS BELOW 1.25

26 [12] REF

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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.	PLANT	BLDG	FL	SHT	OF	TYPE	CLASS		
7	ORNL	5700	3	2	2	A	U		
RELEASE LEVEL									
Fabrication		SE140-003							
								REV	
								1	