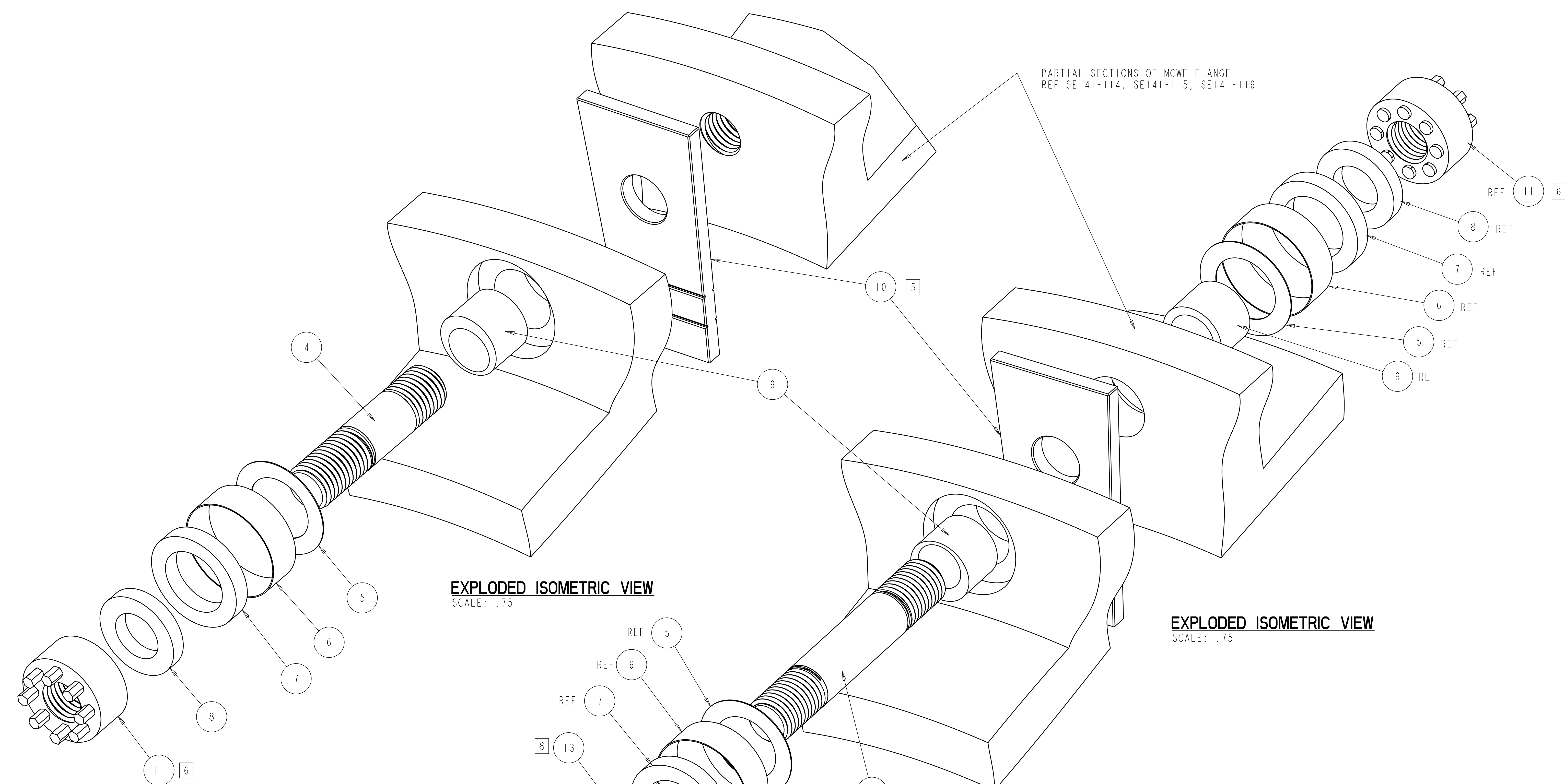


- NOTES
- DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.100-2004.
 - INTERPRET DIMENSIONS AND TOLERANCES PER ASME Y14.5M-1994.
 - DIMENSIONS ARE IN INCHES
 - MAGNETIC PERMEABILITY NOT TO EXCEED 1.02 AS TESTED BY A SEVERN INDICATOR. AVAILABLE FROM:
 SEVERN ENGINEERING
 AUBURN, ALABAMA 36830
 WWW.SEVERNENGINEERING.COM
 - SHIM SIZES DEPENDENT ON LOCATION AT ASSEMBLIES SE140-003, SE100-002, AND SE100-001. CUT AT CUT LINES AS REQUIRED.
 - FASTENER PRELOAD REQUIREMENT IS 72000 ± 1000 LB USING ULTRASONIC INSPECTION
 - OPTIONAL SUPERNUT ON BOTH SIDES OF THRU BOLT CONFIGURATION USE F/N 11 IN PLACE OF F/N 12, F/N 8 IN PLACE OF F/N 13 & 14.
 - LUBRICATE MATING SURFACE OF F/N 13 & 14 WITH F/N 15, MOLYKOTE Z MOLY POWDER.



EXPLODED ISOMETRIC VIEW
 SCALE: .75

EXPLODED ISOMETRIC VIEW
 SCALE: .75

TYPICAL FLANGE ISOMETRIC VIEW
 SCALE: .50

-2 MCWF FLANGE TAPPED STUD KIT
 SCALE NOTED

-1 MCWF FLANGE THRU STUD KIT
 SCALE NOTED

PARTIAL EXPLODED ISOMETRIC VIEW
 SCALE: .75

-1 MCWF FLANGE THRU STUD KIT (OPTIONAL) 7 2
 SCALE NOTED

REV	DESCRIPTION	BY	DATE	CHK	DEPT	DATE	PE	REQ	DATE	ORNL	DOE	DATE
2	METHODS ON SHEET 2, ECN# 5244	GM	07/07	MC		07/07	DW		07/07			
2	GRINDING NOTE, AND ADDITIONAL INSULATING											
2	ADDED OPTIONAL THRU BOLT CONFIGURATION											
2	ADHESIVE, F/N 16, AND INS SHEET, F/N 17											
2	SUPERNUT, F/N 11, WASHER, F/N 8, SLEEVE, F/N 6											
2	DELETED 1/2 PT NUT & SHIM BUSHING, ADDED											
1	REVISED MATL AND NOTES PER ECN-5232	DW	3/7/07	MC								
0	ORIGINAL ISSUE	GM	02/07									

REV	DESCRIPTION	BY	DATE	CHK	DEPT	DATE	PE	REQ	DATE	ORNL	DOE	DATE
1	REVISION OR ISSUE PURPOSE											

SCALE	TOLERANCES UNLESS OTHERWISE SPECIFIED	FRACTIONS	XX DECIMALS	XXX DECIMALS	ANGLES	BREAK SHARP EDGES	FINISH
NOTED	UNLESS OTHERWISE SPECIFIED		± .01	± .005	± 0°15'	06 MAX	± .125 UNLESS OTHERWISE SPECIFIED

DES	DATE	DRW	DATE	CHK	DATE	SECT	DEPT	PE	CR	PJ	RED	PPPL DRFT	DATE
D WILLIAMSON	02/07	G MCGINNIS	02/07	M COLE	02/07							J SIEGEL	02/07

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

RELEASE LEVEL	PROJECT NAME	SCALE
Fabrication	NATIONAL COMPACT STELLARATOR EXPERIMENT	SE140-190

RELEASED FOR FABRICATION / INSTALLATION
 PPPL Drafting

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P THIS DRAWING PRODUCED ON PRO-ENGINEER

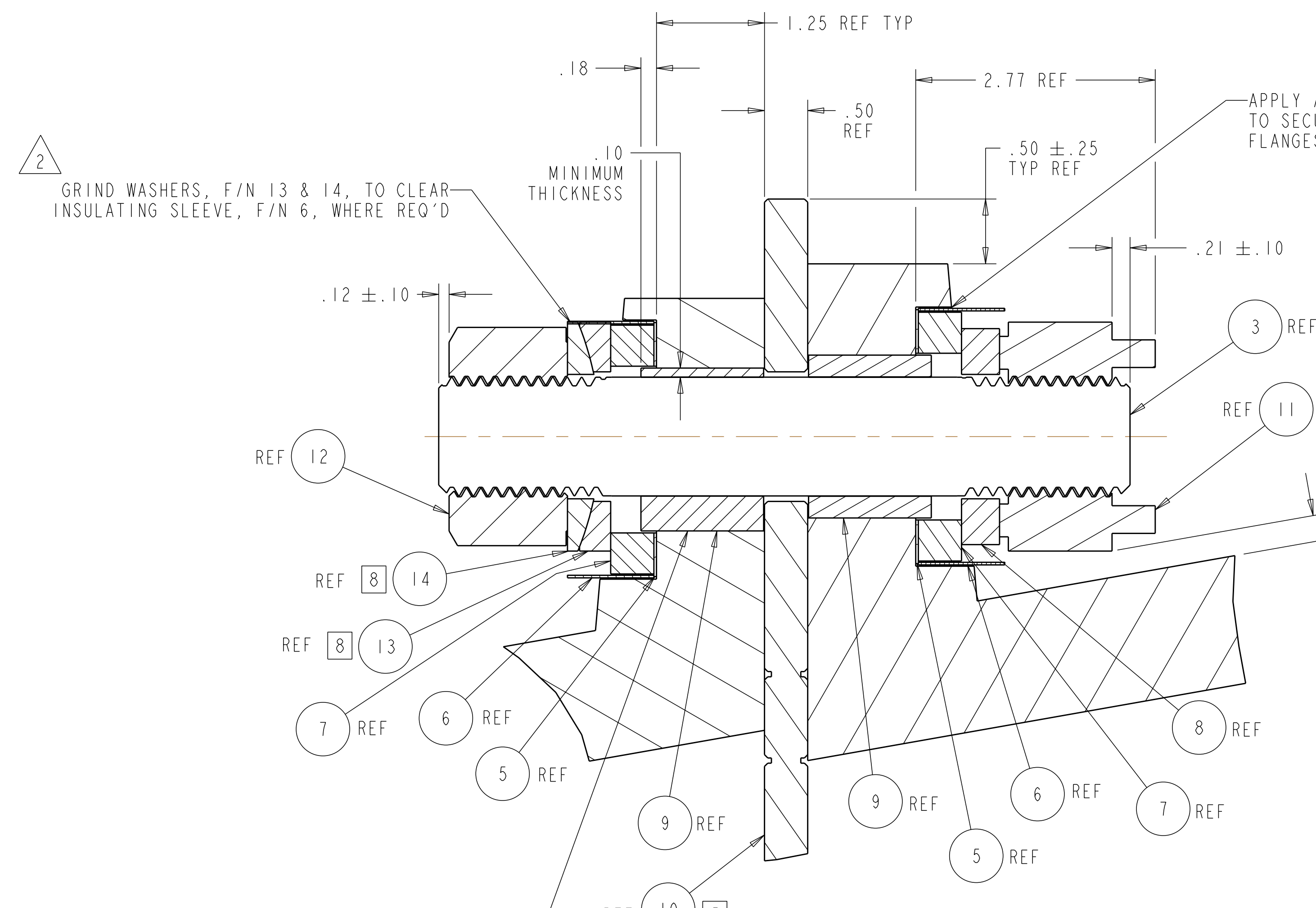
Oak Ridge National Laboratory managed for the DEPARTMENT OF ENERGY under U.S. GOVERNMENT contract DE-AC05-00OR22725 UT-BATTELLE, LLC, Oak Ridge, Tennessee

UT-BATTELLE

NATIONAL COMPACT STELLARATOR EXPERIMENT

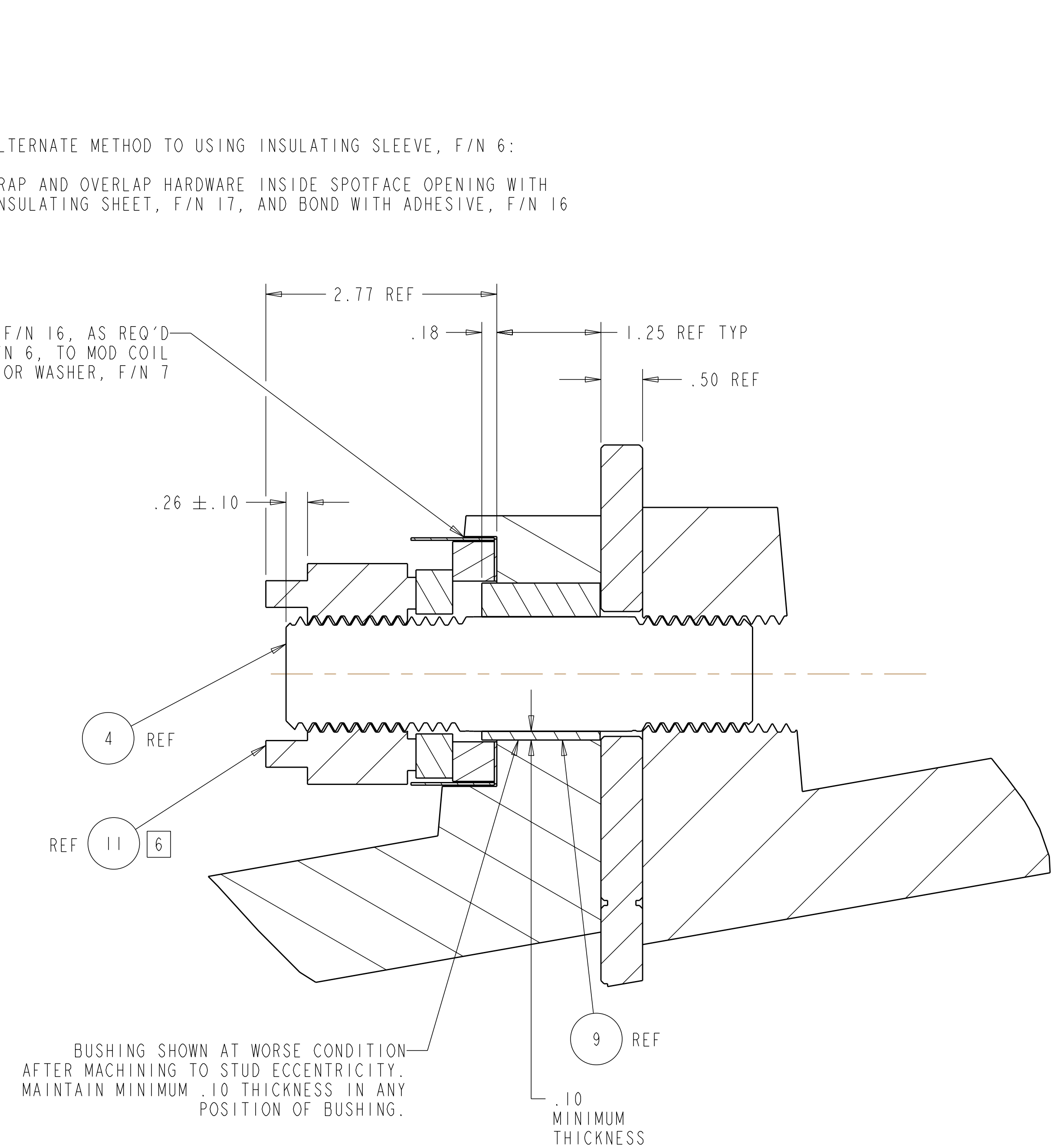
MCWF FLANGE STUD KITS

SE140-190



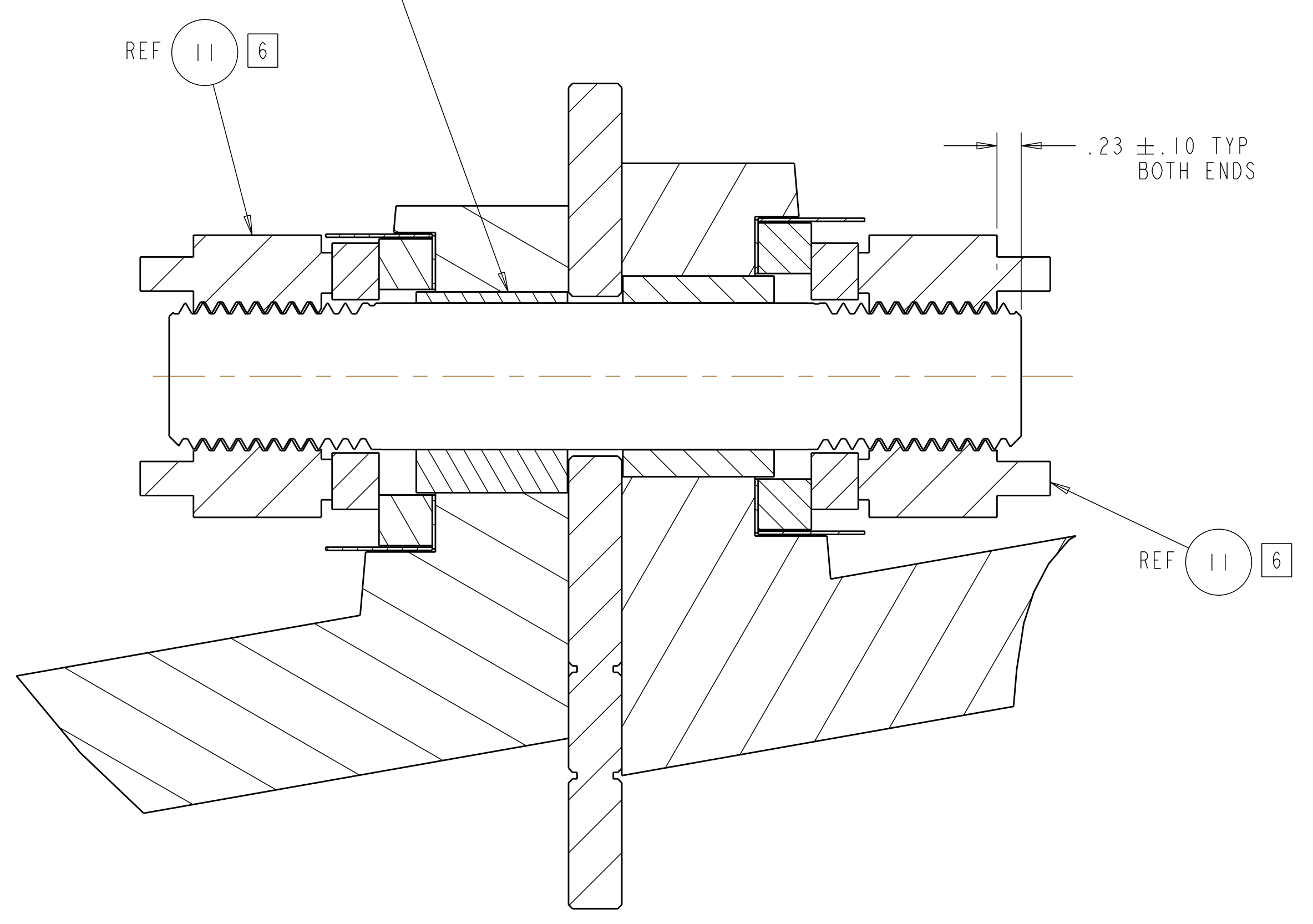
THRU BOLT SECTION
 SCALE 1.00

BUSHING SHOWN AT WORSE CONDITION AFTER MACHINING TO STUD ECCENTRICITY. MAINTAIN MINIMUM .10 THICKNESS IN ANY POSITION OF BUSHING.



TAPPED BOLT SECTION
 SCALE 1.00

BUSHING SHOWN AT WORSE CONDITION AFTER MACHINING TO STUD ECCENTRICITY. MAINTAIN MINIMUM .10 THICKNESS IN ANY POSITION OF BUSHING.



THRU BOLT SECTION (OPTIONAL)
 SCALE 1.00

RELEASED FOR FABRICATION / INSTALLATION
 PPPL Drafting

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							
MCWF FLANGE STUD KITS							
VERSION NO.	PLANT	BLDG	FL	SHT OF	TYPE	CLASS	
17	ORNL	5700	3	2	2	A	U
RELEASE LEVEL		SEI40-190				REV	
Fabrication						2	

H
G
F
E
D
C
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A