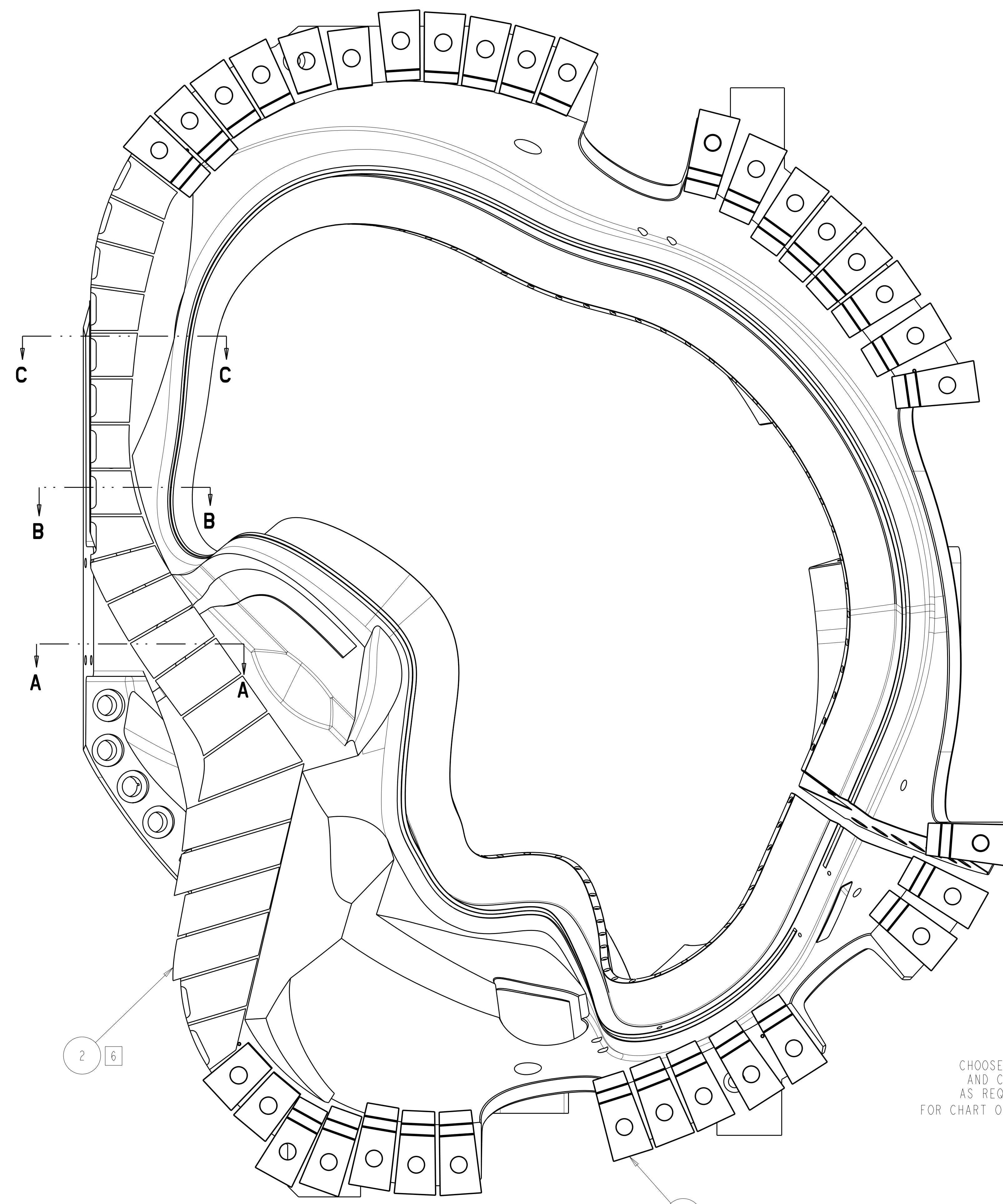
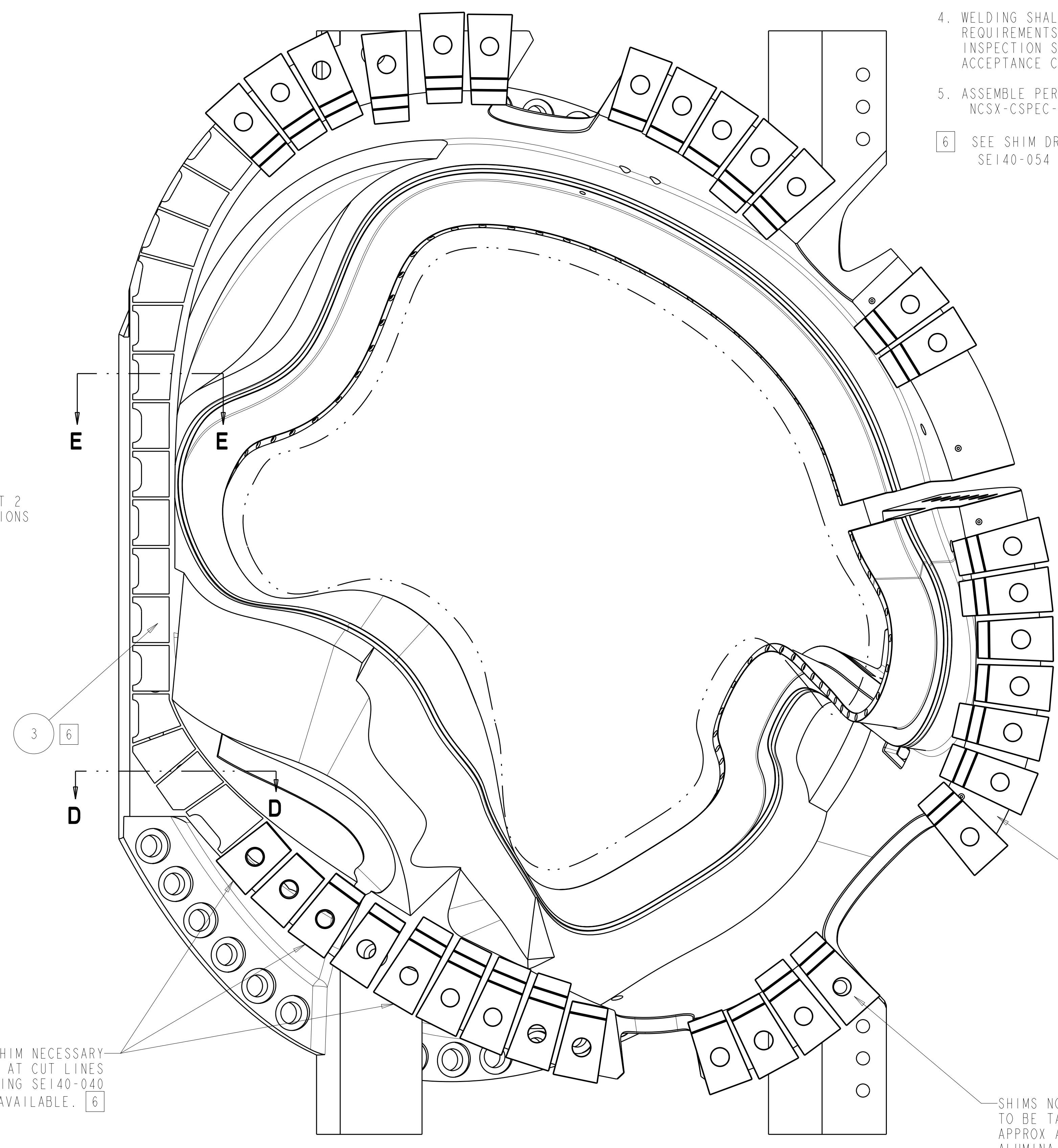


- NOTES
- DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.100-2004.
  - INTERPRET DIMENSIONS AND TOLERANCES PER ASME Y14.5M-1994.
  - DIMENSIONS ARE IN INCHES
  - MAGNETIC PERMEABILITY NOT TO EXCEED 1.02 AS TESTED BY A SEVERN INDICATOR. AVAILABLE FROM:  
SEVERN ENGINEERING  
AUBURN, ALABAMA 36830  
WWW.SEVERNGINEERING.COM
  - WELDING SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF PPPL PROCEDURE ENG-037. VISUAL WELD INSPECTION SHALL BE PERFORMED IN ACCORDANCE WITH THE ACCEPTANCE CRITERIA OF AWS D1.1 SECTION 6.
  - ASSEMBLE PER THIS DRAWING AND SPECIFICATION NCSX-CSPEC-185-01.
  - SEE SHIM DRAWINGS SE140-040, SE140-052, SE140-053, SE140-054 AND SE140-055 FOR ADDITIONAL INFORMATION.



A-B SHIMS LOOKING AT THE B COIL FLANGE  
(A COIL REMOVED)

SEE SHEET 2 FOR SECTIONS



B-C SHIMS LOOKING AT THE C COIL FLANGE  
(B COIL REMOVED)

CHOOSE THICKNESS SHIM NECESSARY AND CUT TO LENGTH AT CUT LINES AS REQ'D. SEE DRAWING SE140-040 FOR CHART OF THICKNESS AVAILABLE. 6

ALL GAPS TO BE FILLED WITH F/N 6 AFTER MOD COILS ARE BOLTED TOGETHER

SHIMS NOT LOCATED ON STUD TO BE TACK WELDED IN PLACE APPROX AS SHOWN. GRIND OFF ALUMINA COATING AS REQ'D.

MODULAR COIL SHIM PLATE LAYOUT

SCALE .18

NOTE: MOD COILS SHOW AS PART ONLY FOR CLARITY  
SHIMS TO BE INSTALLED ON MOD COIL ASSEMBLIES

| AR        | AR        | AR        |           | -6                     | FILLER                      | GREAT STUFF | 6             |         |
|-----------|-----------|-----------|-----------|------------------------|-----------------------------|-------------|---------------|---------|
| REF(3)    |           |           |           | SE140-055              | C-C INBOARD SHIMS           |             | 5             |         |
|           | REF(1)    |           |           | SE140-054              | A-A INBOARD SHIMS           |             | 4             |         |
|           |           | REF(1)    |           | SE140-053              | B-C INBOARD SHIMS           |             | 3             |         |
|           |           |           | REF(1)    | SE140-052              | A-B INBOARD SHIMS           |             | 2             |         |
| REF(150)  | REF(28)   | REF(68)   |           | SE140-040              | SINGLE HOLE SHIM            |             | 1             |         |
| SE100-001 | SE100-002 | SE140-003 | CAGE CODE | PART OR IDENTIFYING NO | NOMENCLATURE OR DESCRIPTION | MATERIAL    | SPECIFICATION | FIND NO |
|           |           |           |           | ←                      | NEXT ASSEMBLY               |             |               |         |

PARTS LIST

**PRELIMINARY**  
8-1-2007

WELDING ENGINEER  
APPROVED G. GETTELFINGER DATE: 07/07

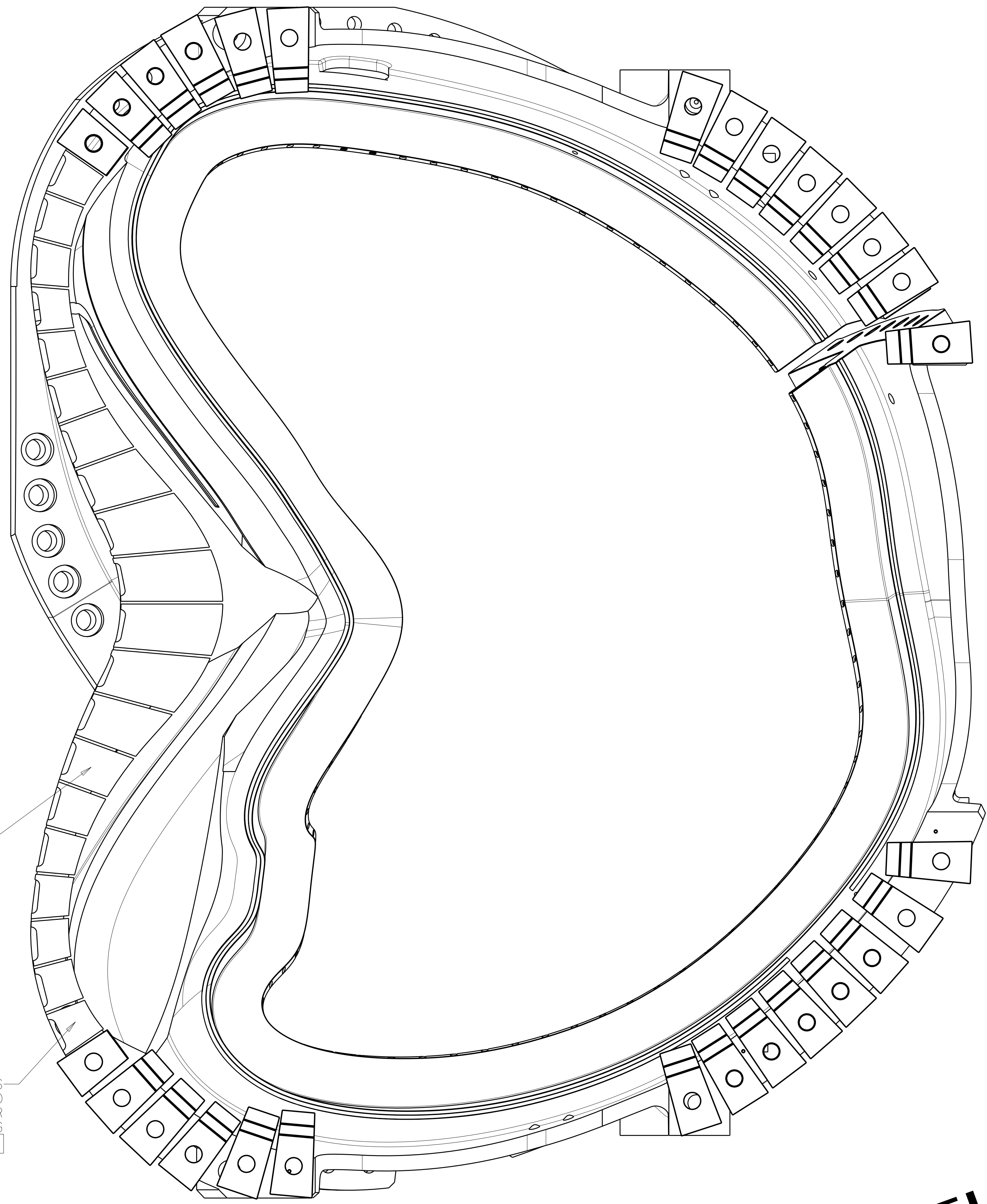
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**P** THIS DRAWING PRODUCED ON PRO-ENGINEER

| REV                       | DESCRIPTION    | BY | DATE  | CHK | DEPT | DATE | PE | REQ | DATE | ORNL | DOE | DATE |
|---------------------------|----------------|----|-------|-----|------|------|----|-----|------|------|-----|------|
| 0                         | ORIGINAL ISSUE |    | 08/07 |     |      |      |    |     |      |      |     |      |
| REVISION OR ISSUE PURPOSE |                |    |       |     |      |      |    |     |      |      |     |      |
| REVISION APPROVAL         |                |    |       |     |      |      |    |     |      |      |     |      |

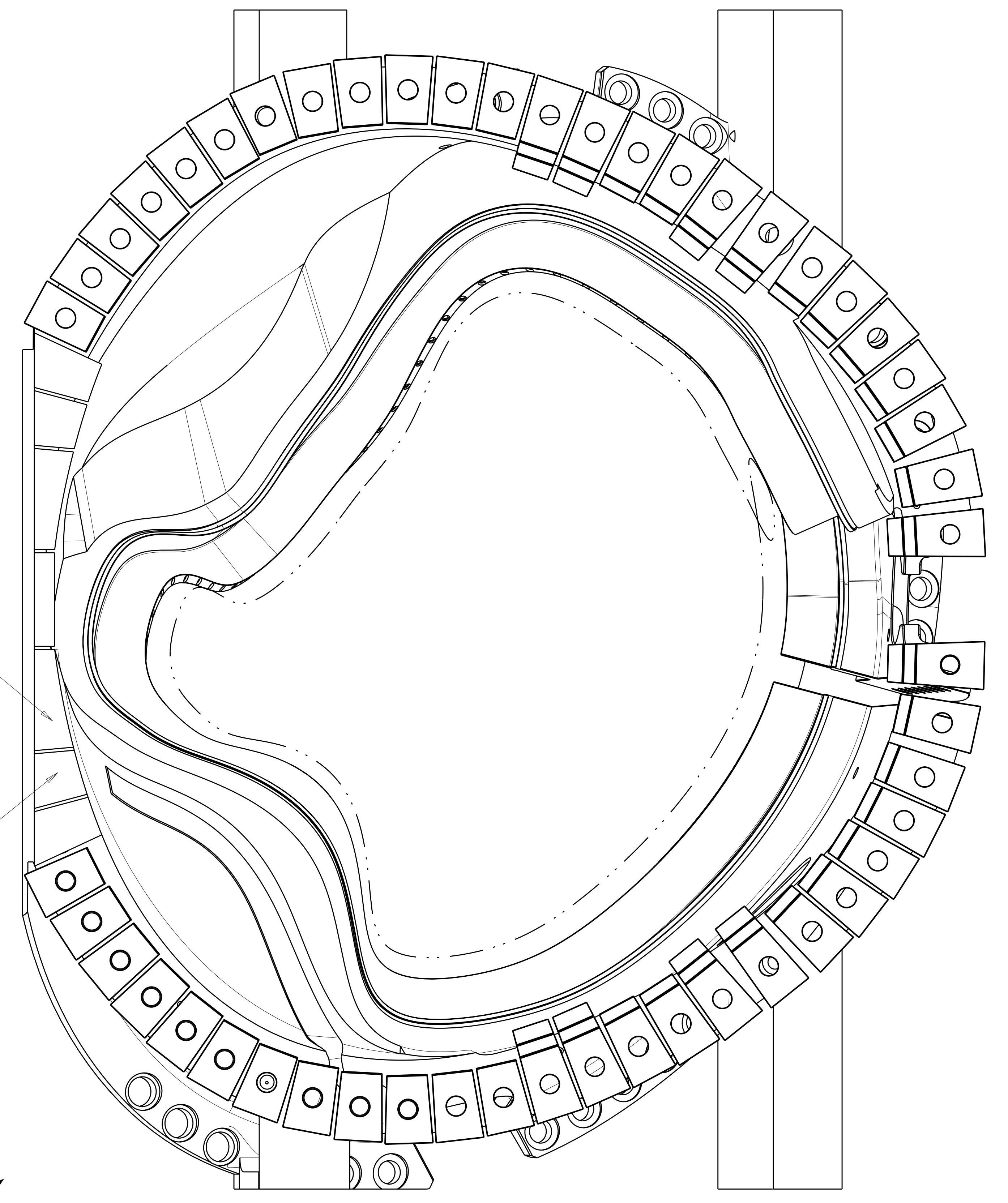
|  |                          |                        |                    |
|--|--------------------------|------------------------|--------------------|
| SCALE NOTED                            | DES D WILLIAMSON 08/2007 | DRW G MCGINNIS 08/2007 | CHK M COLE 08/2007 |
| TOLERANCES UNLESS OTHERWISE SPECIFIED  |                          |                        |                    |
| FRACTIONS                              |                          |                        |                    |
| XX DECIMALS ±.01                       |                          |                        |                    |
| XXX DECIMALS ±.005                     |                          |                        |                    |
| ANGLES ±0'15"                          |                          |                        |                    |
| BREAK SHARP EDGES OR MAX               |                          |                        |                    |
| FINISH .125 UNLESS OTHERWISE SPECIFIED |                          |                        |                    |

|   |  |           |      |       |      |        |         |
|---|--|-----------|------|-------|------|--------|---------|
| 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 COIL SHIM PLATE LAYOUT                        |  |           |      |       |      |        |         |
| VERSION NO. 6+  | PLANT ORNL   | BLDG 5700 | FL 3 | SHT 1 | OF 2 | TYPE S | CLASS U |
| RELEASE LEVEL WIP                                     | SE140-046  |           |      | REV 0 |      |        |         |



AFTER SIZING FOR THICKNESS  
TACK WELD THE A-A INBOARD  
SHIMS TO EITHER COIL PRIOR  
TO FINAL ASSEMBLY WELDING  
SEE DRAWING SE100-002 [6]

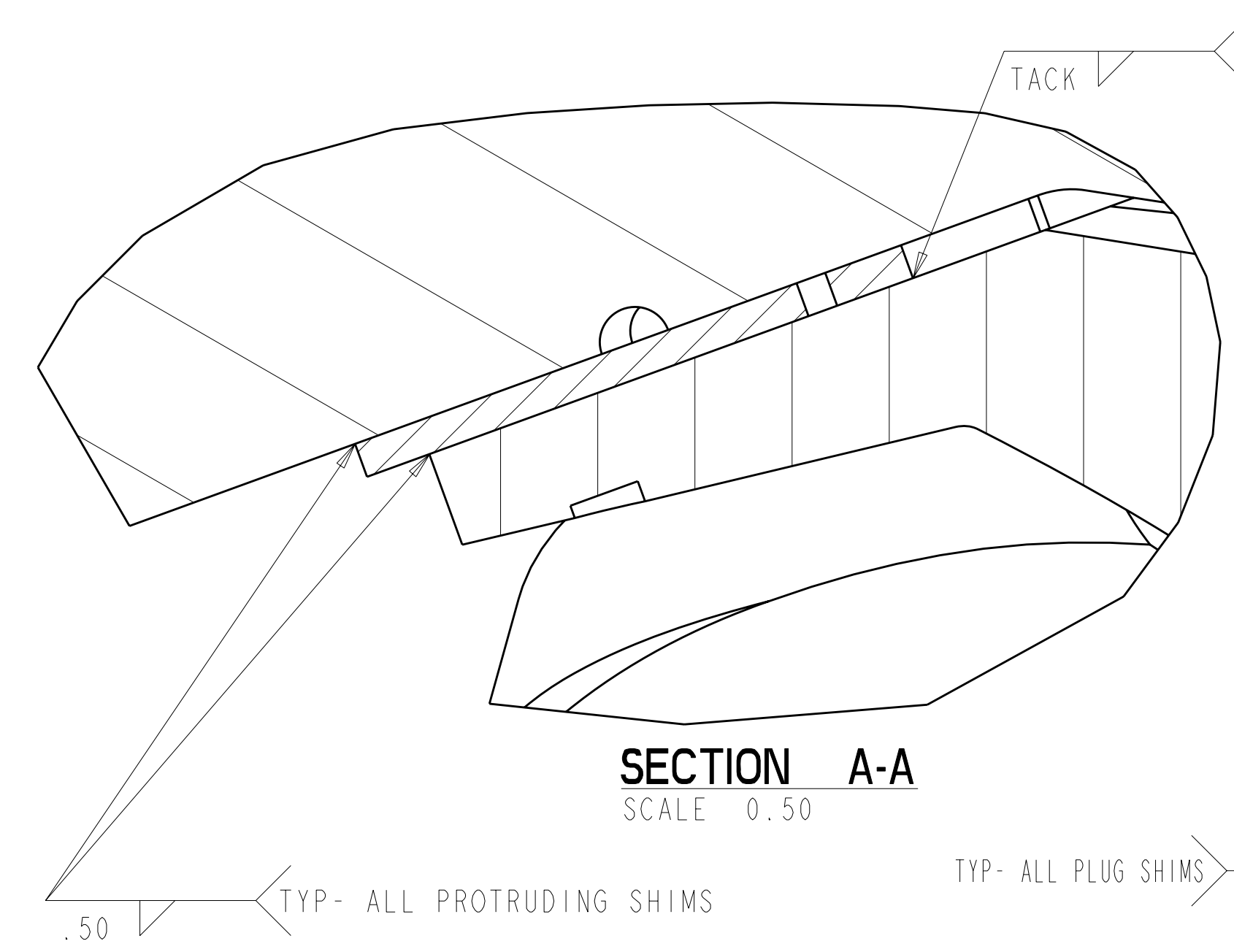
**A-A SHIMS LOOKING AT THE A COIL FLANGE**  
(ONE A COIL REMOVED)



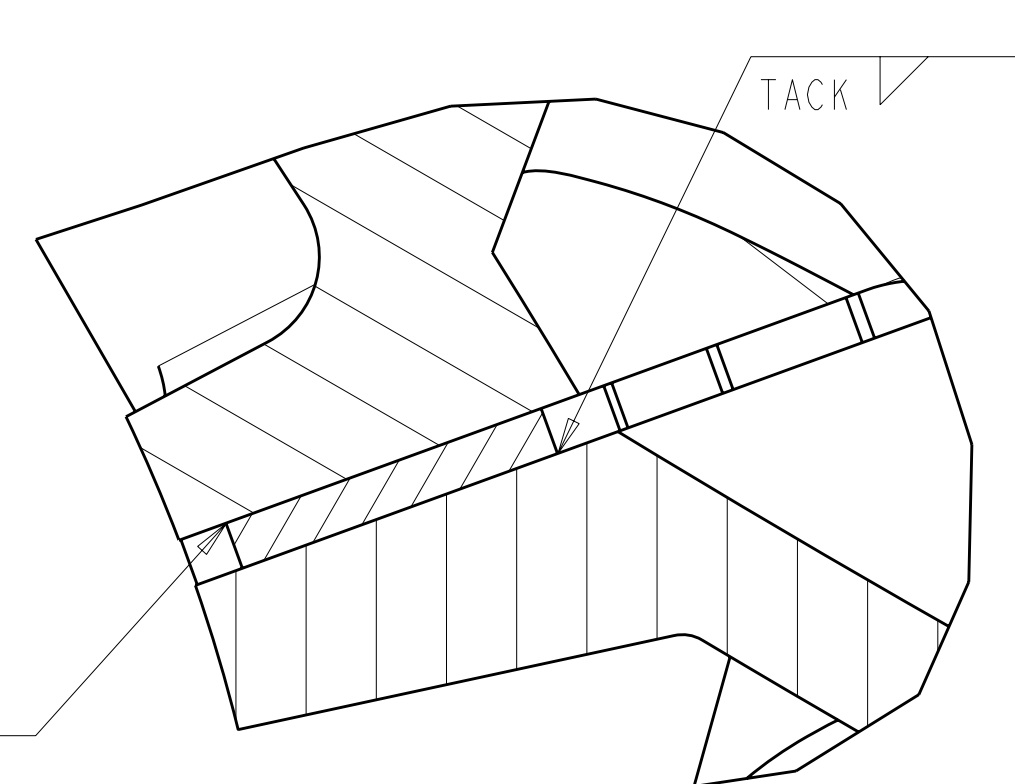
AFTER SIZING FOR THICKNESS  
TACK WELD THE C-C INBOARD  
SHIMS TO EITHER COIL PRIOR  
TO FINAL ASSEMBLY WELDING  
SEE DRAWING SE100-001 [6]

**C-C SHIMS LOOKING AT THE C COIL FLANGE**  
(ONE C COIL REMOVED)

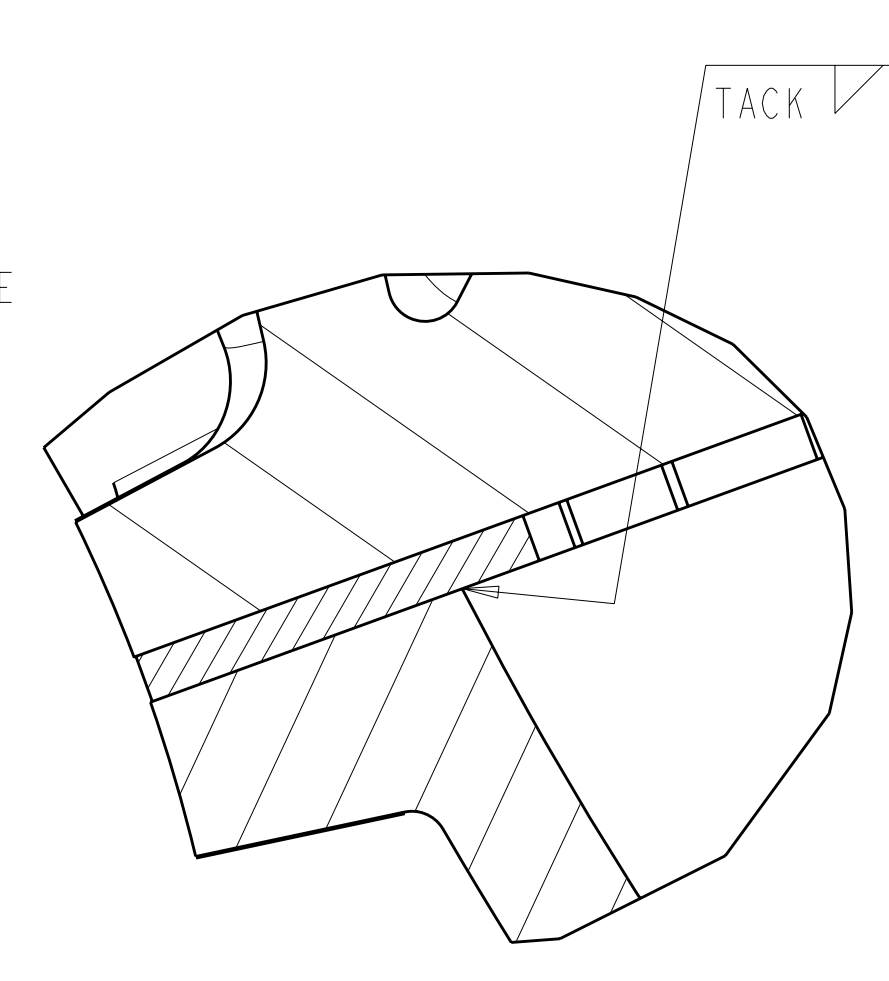
**PRELIMINARY**  
**8-1-2007**



**SECTION A-A**  
SCALE 0.50

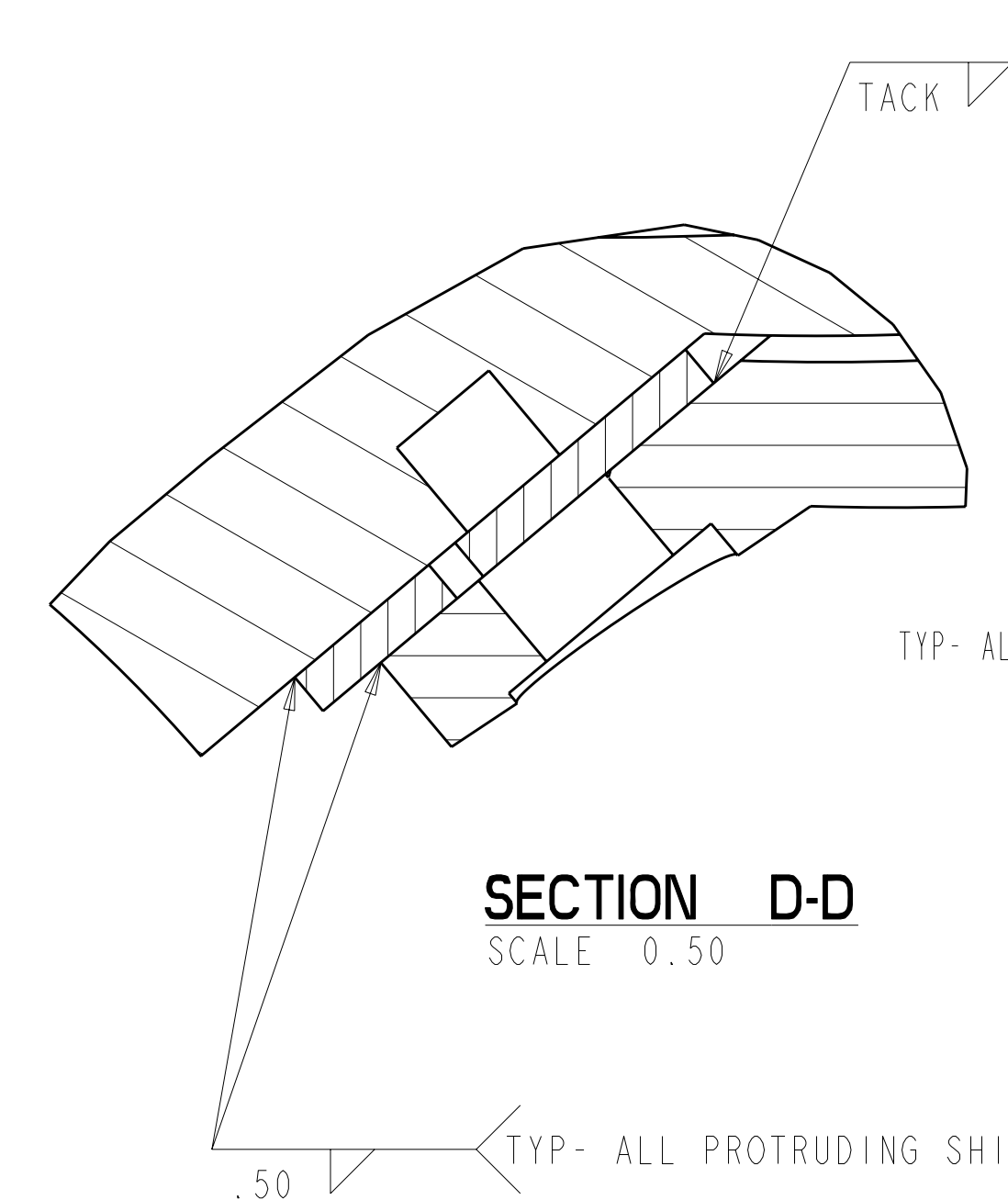


**SECTION B-B**  
SCALE 0.50

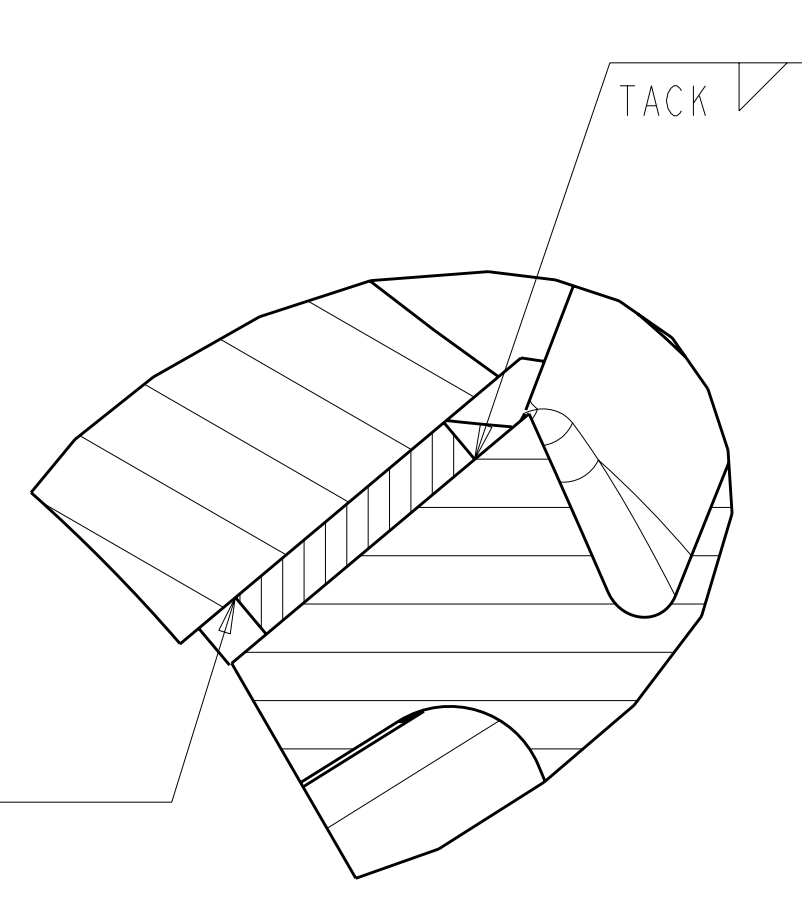


**SECTION C-C**  
SCALE 0.50

SEE SHEET 1 NOTE 3 FOR WELDING SPECIFICATION



**SECTION D-D**  
SCALE 0.50



**SECTION E-E**  
SCALE 0.50

|   |               |              |         |             |           |            |
|---|---------------|--------------|---------|-------------|-----------|------------|
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| PROJECT NAME<br><b>NATIONAL COMPACT STELLARATOR EXPERIMENT</b>  |               |              |         |             |           |            |
| TITLE<br><b>MODULAR COIL SHIM<br/>PLATE LAYOUT</b>  |               |              |         |             |           |            |
| VERSION NO.<br>6+   | PLANT<br>ORNL | BLDG<br>5700 | FL<br>3 | SHT OF<br>2 | TYPE<br>2 | CLASS<br>S |
| RELEASE LEVEL<br>WIP  |               | SE140-046    |         |             | REV<br>0  | U          |