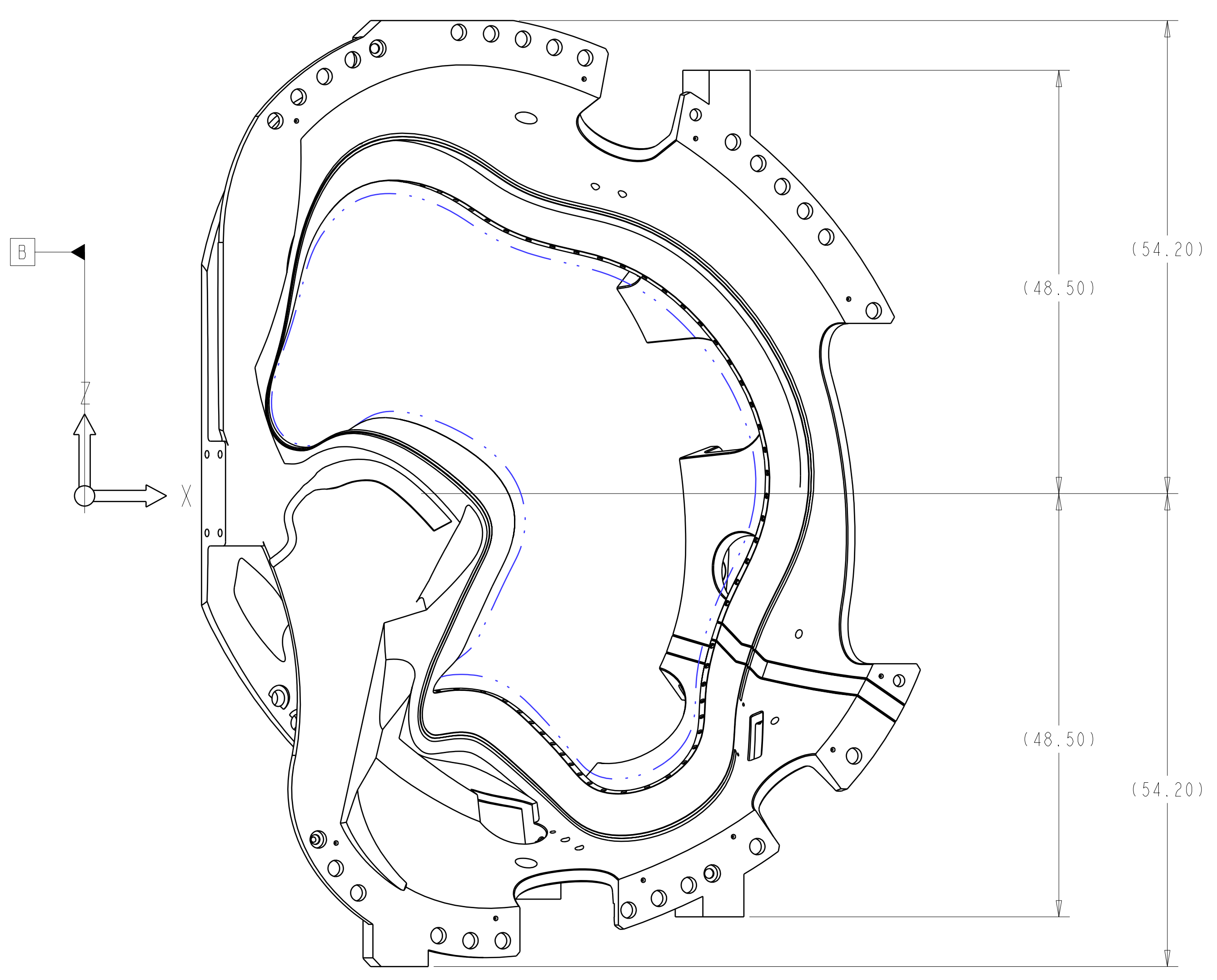


ISOMETRIC VIEW  
 SCALE 0.10

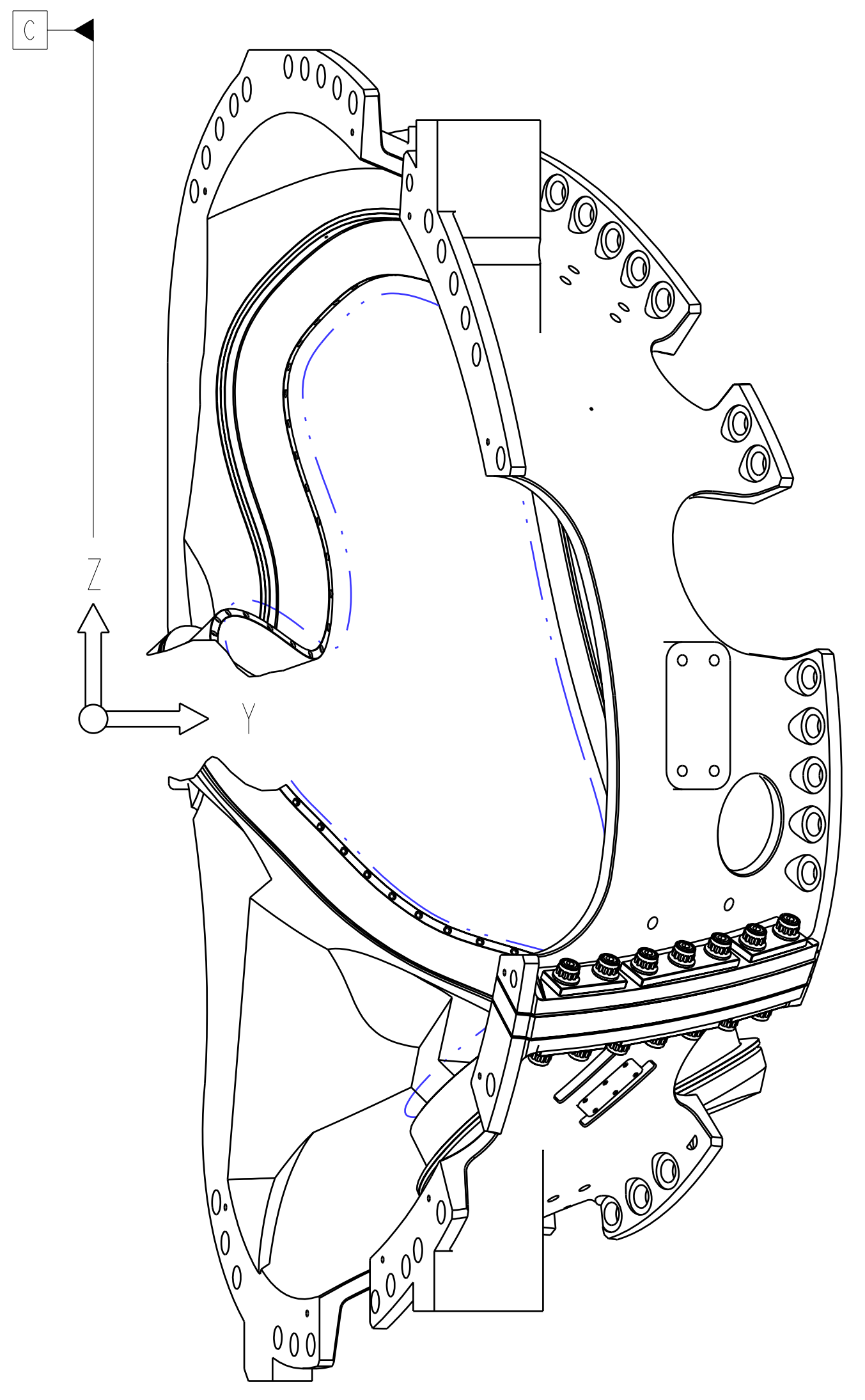
- NOTES:
- DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.8M-1996
  - INTERPRET DIMENSIONS AND TOLERANCES PER ANSI Y14.5M-1994
  - DIMENSIONS ARE IN INCHES
  - DRAWING DEPICTS FINAL MACHINED STATE OF PART DEFINED BY PRO/ENGINEER FILE SE141-102.ASM
  - UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE RELATED 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 = 4950-LBS
  - MATCH DRILL OR REAM AS REQUIRED TO ACHIEVE RUNNING FIT BETWEEN PARTS AT ASSEMBLY
  - LUBRICATE THREADED SURFACES WITH THRED-GARD ANTI-SEIZE COMPOUND FROM FEDERAL PROCESS CORP, CLEVELAND, OH
  - SEE LATEST REVISION OF SPECIFICATION NCSX-CSPEC-141-03 FOR ADDITIONAL REQUIREMENTS
  - BOND INSULATING SLEEVE (F/N 5) INTO WINDING FORM (F/N 2) USING LOCTITE 411 PER MANUFACTURER'S INSTRUCTIONS.
  - ITEM NO. 4 HOLE DIAMETERS TO MATCH OD OF ITEM NO. 6 PLUS .001 TO .002 FOR CLEARANCE FIT.
  - ITEM NO. 7 MAY BE DIVIDED INTO TWO PARTS IF NECESSARY. HOLE DIAMETERS TO MATCH OUTER DIA OF ITEM NO. 5 PLUS .001 TO .002 CLEARANCE FIT.
  - TORQUE ITEM NO.8 TO 1500 +/- 30 FT-LBS.

**Rev 3-a: RFD-14-024 authorized trimming the bearing plate and insulating material to ensure that no interferences will result. NCR 20519 approved this change for the B1 casting and this RFD authorizes these modifications for the remaining B2 through B6 castings. . This is considered a relatively minor change and a drawing change will not be required. (See RFD-14-024 for details)**

**RELEASED FOR FABRICATION / INSTALLATION**  
 PPPL Drafting:



SCALE 0.10



| REV   | QTY | DESCRIPTION | MATERIAL / SPECIFICATION                                | FIND NO |
|---|-----|-------------|---|---------|
| 2   |     | SE141-140   | BEARING PLATE, TYPE "B" LONG                            | 10      |
| 4   |     | DS141-139   | BEARING PLATE, TYPE "B" SHORT                           | 9       |
| 14  |     | DS141-060   | NUT, 12PT HEX 1.375-6UNC-2B                             | 8       |
| 2   |     | -7          | INS SHEET, 26 X 3 X .063 THK NEMA GRADE G-11CR          | 7       |
| 7   |     | DS141-036   | STUD, 1.375-6UNC-2A X 9.5 LG                            | 6       |
| 14  |     | -5          | INS BUSHING, 1.630D X 1.381D X 1.7 LG NEMA GRADE G-11CR | 5       |
| 2   |     | -4          | INS SHEET, 15 X 32 X .063 THK NEMA GRADE G-11CR         | 4       |
| 1   |     | SE141-058   | POL BREAK SHIM ASSEMBLY TYPE-B                          | 3       |
| 1   |     | SE141-115   | PRODUCTION WINDING FORM TYPE-B                          | 2       |
| AR  | X   | -1          | MOD COIL WINDING FORM ASSEMBLY TYPE-B                   | 1       |
| ← CAGE CODE PART OR IDENTIFYING NO NOMENCLATURE OR DESCRIPTION MATERIAL / SPECIFICATION FIND NO |     |             |   |         |
| ← NEXT ASSEMBLY PARTS LIST  |     |             |   |         |

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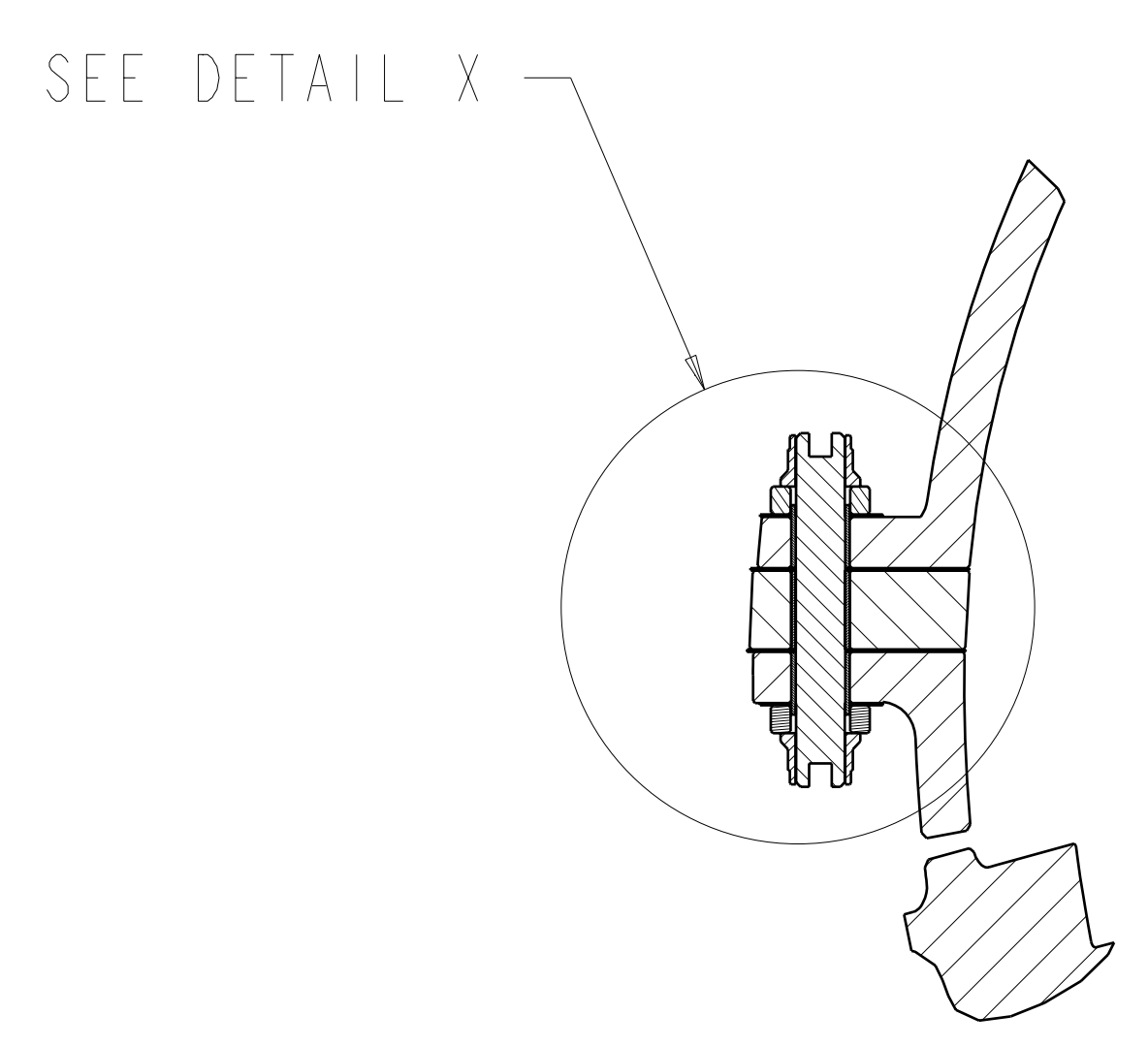
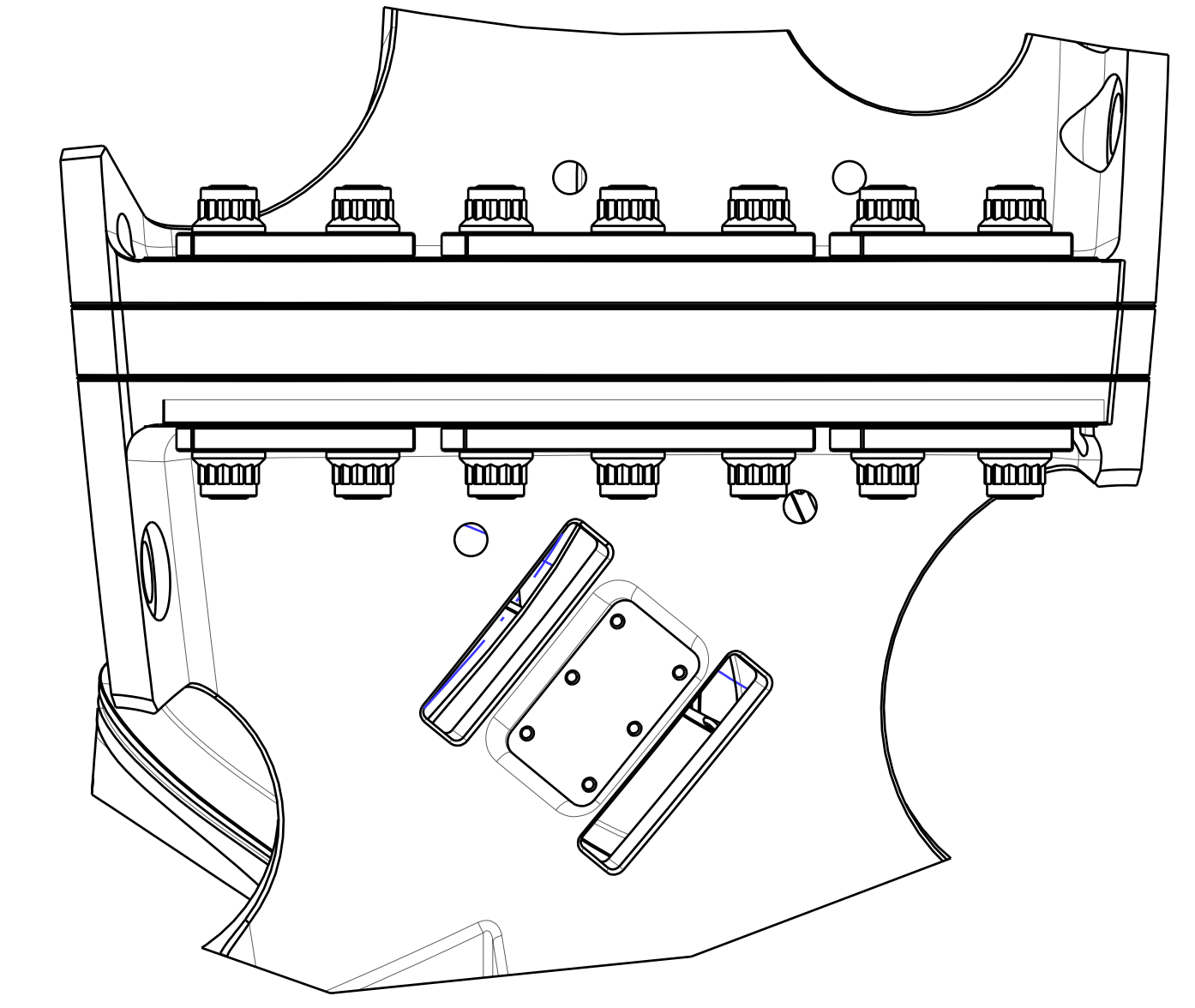
**P** THIS DRAWING PRODUCED ON PRO-ENGINEER

| 3                         | REVISED ASM AND DRAWING PER ECN 5059      | GLL 12/08 MJC     | DEW  |     |      |      |    |     |      |      |     |      |  |  |  |  |  |  |  |  |
|---------------------------|---|-------------------|------|-----|------|------|----|-----|------|------|-----|------|--|--|--|--|--|--|--|--|
| 2                         | REVISED ASSEMBLY AND DRAWING PER ECN 5009 | GLL 7/08 MJC      | DEW  |     |      |      |    |     |      |      |     |      |  |  |  |  |  |  |  |  |
| 1                         | REVISED F/N 2 PER ECN-4903                | DW 9/04 MJC       | DEW  |     |      |      |    |     |      |      |     |      |  |  |  |  |  |  |  |  |
| REV                       | DESCRIPTION                               | BY                | DATE | CHK | DEPT | DATE | PE | REQ | DATE | ORNL | DOE | DATE |  |  |  |  |  |  |  |  |
| REVISION OR ISSUE PURPOSE |   | REVISION APPROVAL |      |     |      |      |    |     |      |      |     |      |  |  |  |  |  |  |  |  |

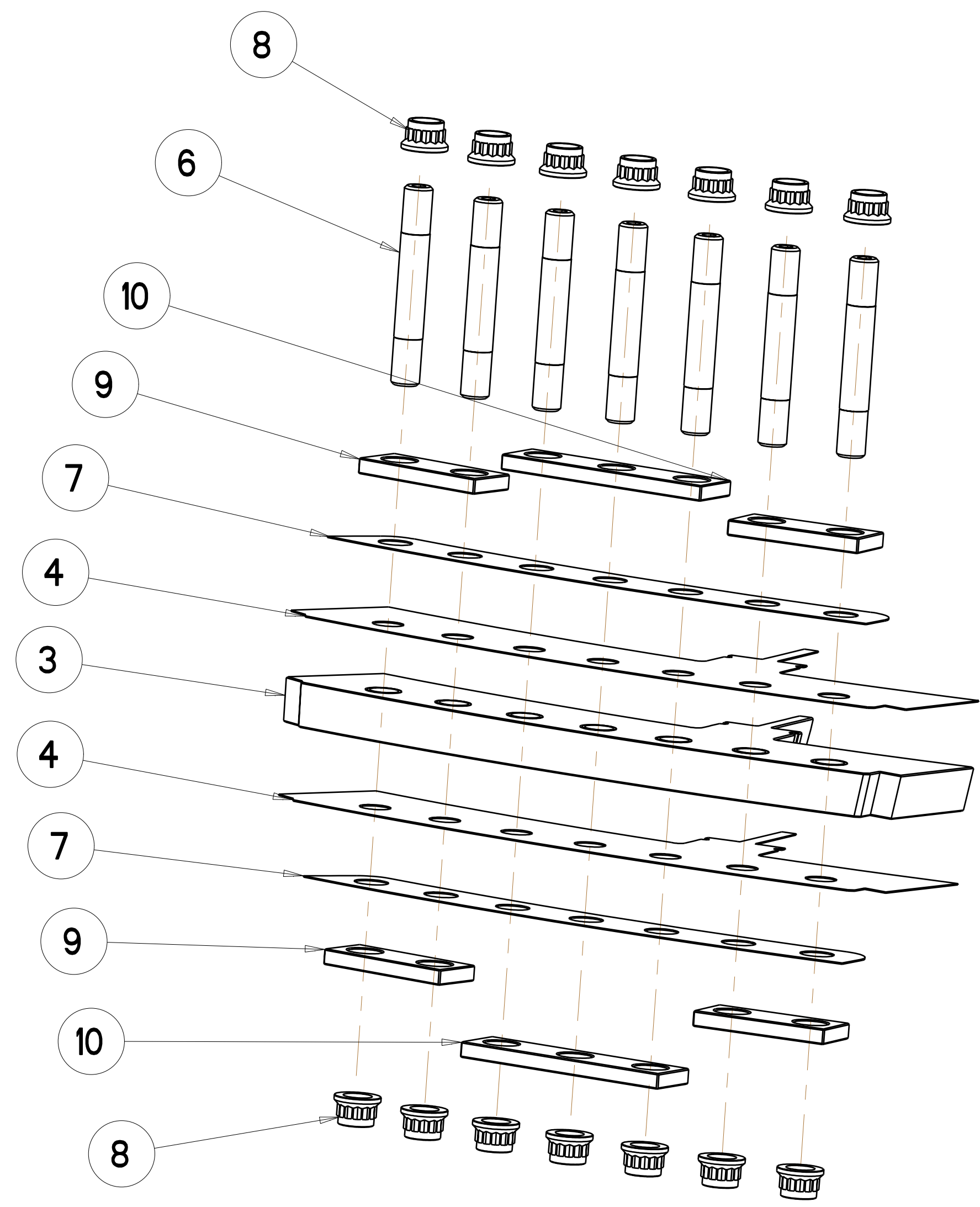
|  |                             |                         |      |    |        |      |       |  |  |  |  |
|--|-----------------------------|-------------------------|------|----|--------|------|-------|--|--|--|--|
| SCALE NOTED                            | DES T. BROWN 6-30-04        | DRW PAUL MILLER 6-30-04 |      |    |        |      |       |  |  |  |  |
| TOLERANCES UNLESS OTHERWISE SPECIFIED  | CHK M. COLE 6-30-04         | SECT :                  |      |    |        |      |       |  |  |  |  |
| FRACTIONS                              | DEPT :                      |                         |      |    |        |      |       |  |  |  |  |
| XX DECIMALS ± .01                      | PE D. WILLIAMSON 6-30-04    |                         |      |    |        |      |       |  |  |  |  |
| XXX DECIMALS ± .005                    | CR :                        |                         |      |    |        |      |       |  |  |  |  |
| ANGLES ± 0°15'                         | PJ :                        |                         |      |    |        |      |       |  |  |  |  |
| BREAK SHARP EDGES .06 MAX              | RED :                       |                         |      |    |        |      |       |  |  |  |  |
| FINISH .125 UNLESS OTHERWISE SPECIFIED | PPPL DRFT J. STEGEL 6-30-04 |                         |      |    |        |      |       |  |  |  |  |
|  | VERSION NO.                 | PLANT                   | BLDG | FL | SHT OF | TYPE | CLASS |  |  |  |  |
|  | 4                           | X-10                    | 5700 | 3  | 1      | 2    | S U   |  |  |  |  |
|  | RELEASE LEVEL               | Fabrication             |      |    |        |      |       |  |  |  |  |
|  | DRAWING APPROVALS           | SE141-102               |      |    |        |      |       |  |  |  |  |

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  
 NATIONAL COMPACT STELLARATOR EXPERIMENT  
 MOD COIL WINDING FORM ASSEMBLY TYPE-B

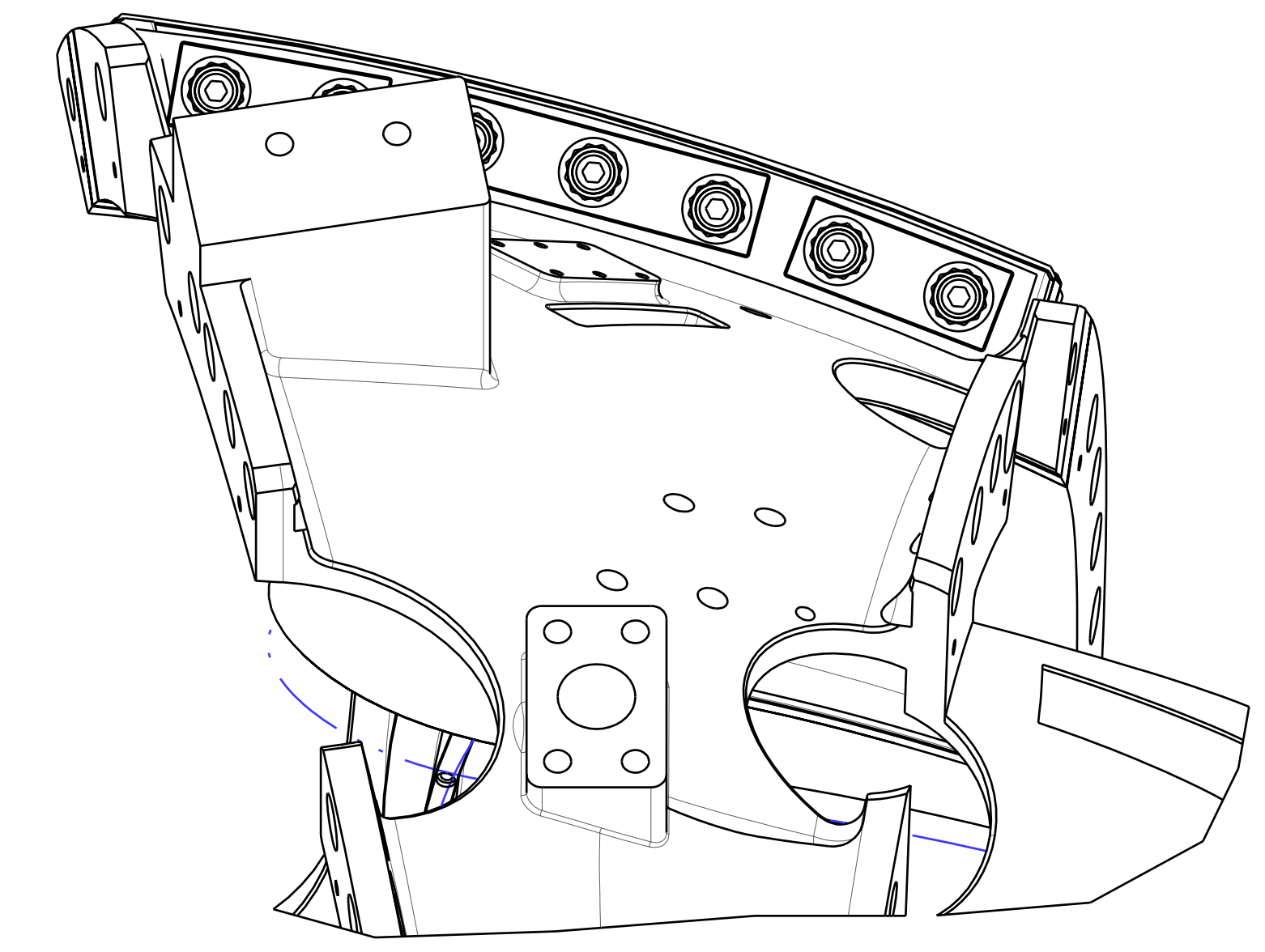
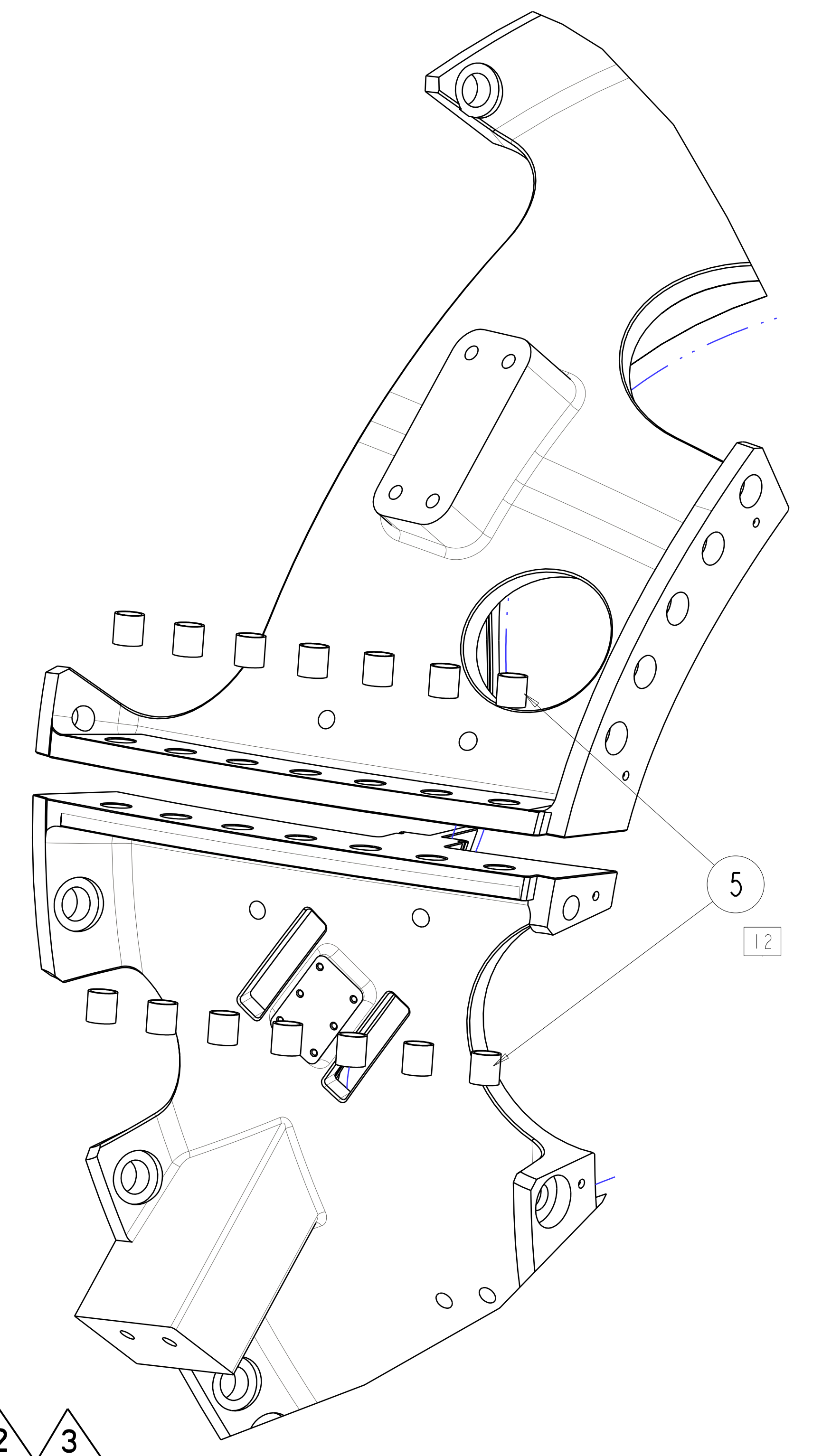
FOR NOTES AND PARTS LIST SEE SHEET 1



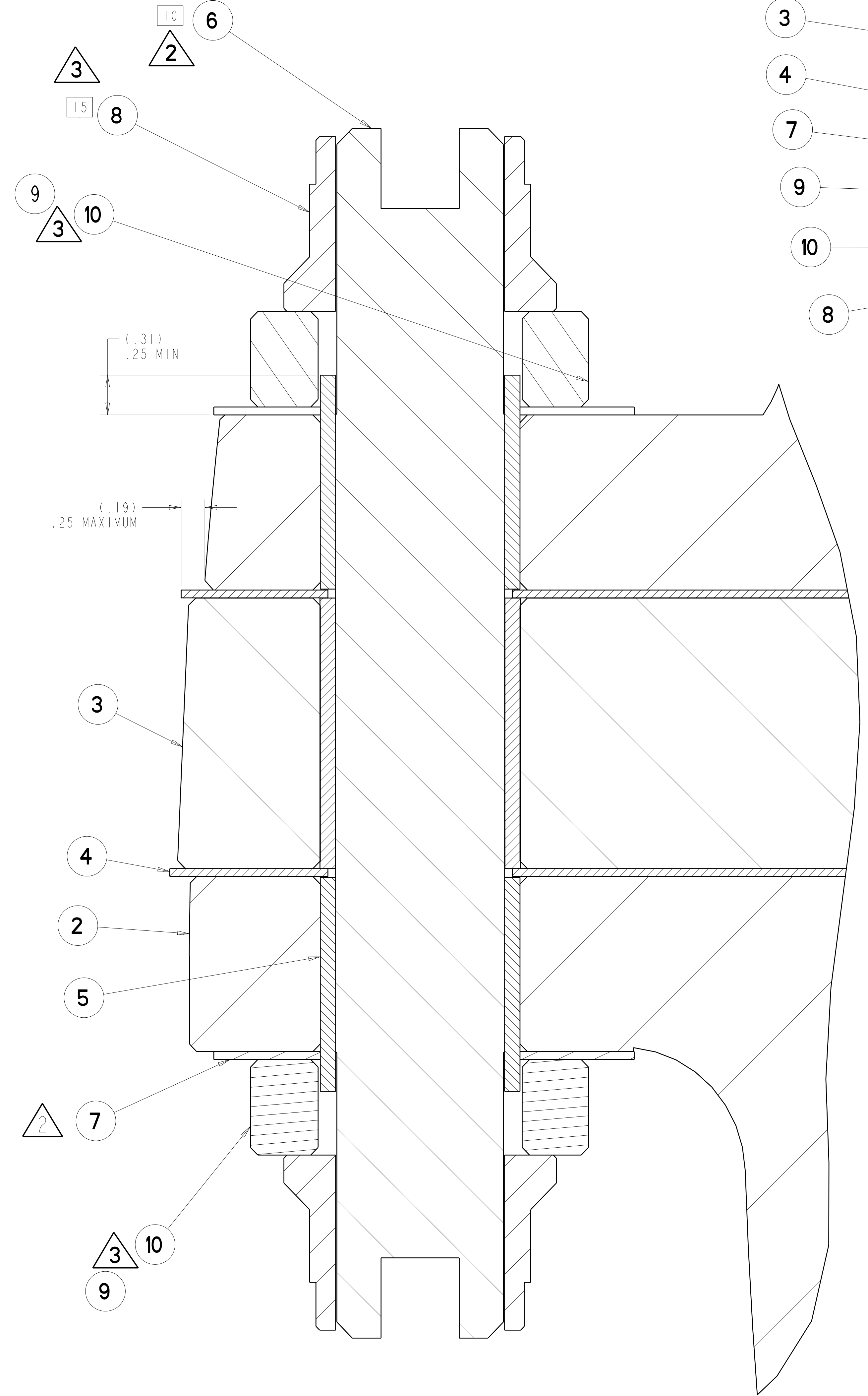
SECTION A-A  
 SCALE 0.20



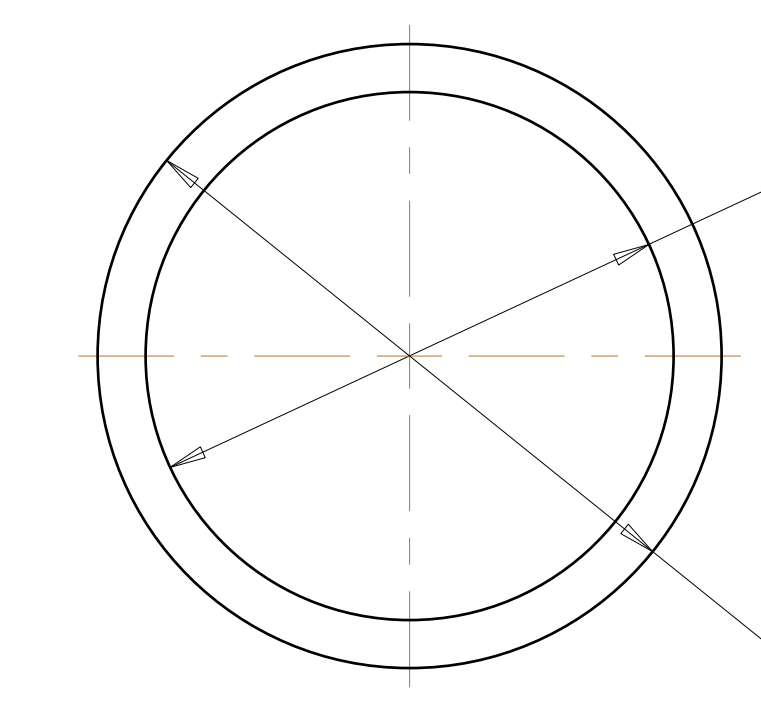
EXPLODED VIEW 2 3  
 SCALE 0.200



POLOIDAL BREAK DETAIL

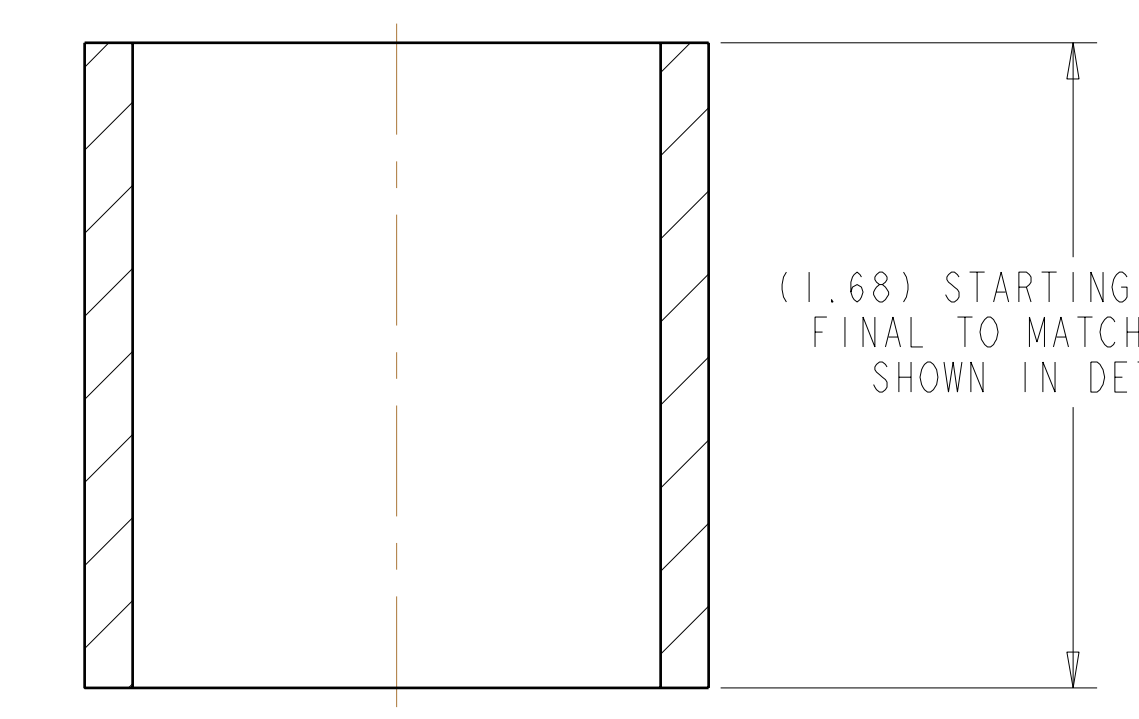
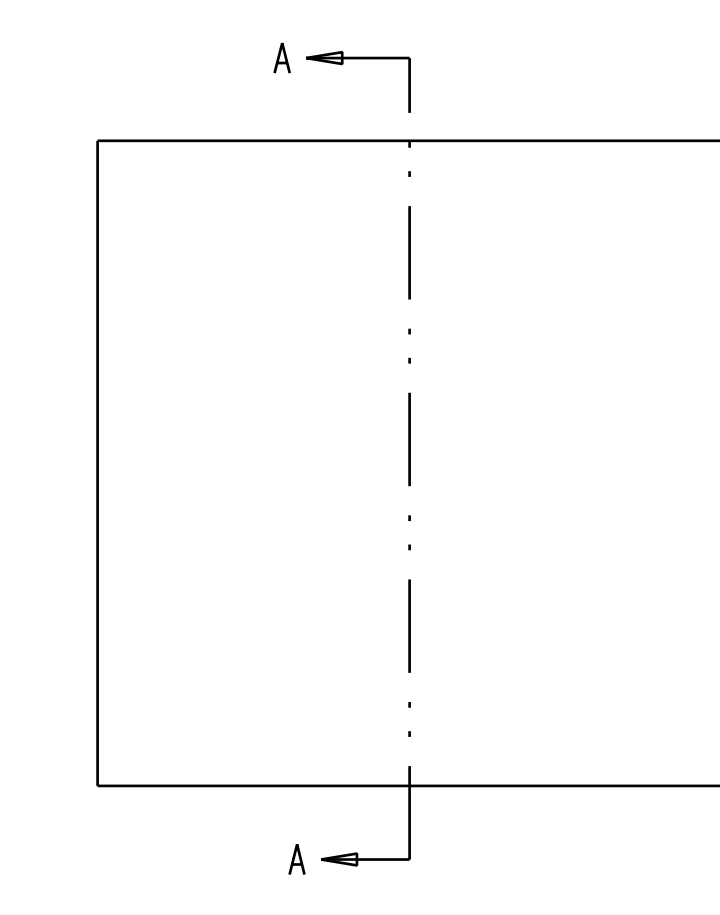


DETAIL X  
 SCALE 2.00



Ø1.38 REAM AT ASSEMBLY FOR .001 TO .002 DIA CLEARANCE WITH ITEM 6

Ø1.63 OD TO MATCH HOLE DIA MINUS .001 TO .002 FOR CLEARANCE FIT



(1.68) STARTING DIMENSION FINAL TO MATCH OVERLAP SHOWN IN DETAIL-X

SECTION A-A  
 SCALE 200

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|  |           |      |    |        |      |       |     |
|--|-----------|------|----|--------|------|-------|-----|
| Oak Ridge National Laboratory<br>managed for the DEPARTMENT OF ENERGY under<br>U.S. GOVERNMENT contract DE-AC05-00OR22725<br>UT-BATTELLE, LLC, Oak Ridge, Tennessee<br>PROJECT NAME: |           |      |    |        |      |       |     |
| <b>UT-BATTELLE</b><br>NATIONAL COMPACT STELLARATOR EXPERIMENT  |           |      |    |        |      |       |     |
| MOD COIL WINDING FORM ASSEMBLY TYPE-B  |           |      |    |        |      |       |     |
| VERSION NO.  | PLANT     | BLDG | FL | SHT OF | TYPE | CLASS |     |
| 4  | X-10      | 5700 | 3  | 2 2    | S    | U     |     |
| RELEASE LEVEL  | SEI41-102 |      |    |        |      |       | REV |
| Fabrication  |           |      |    |        |      |       | 3   |

SEI41-102