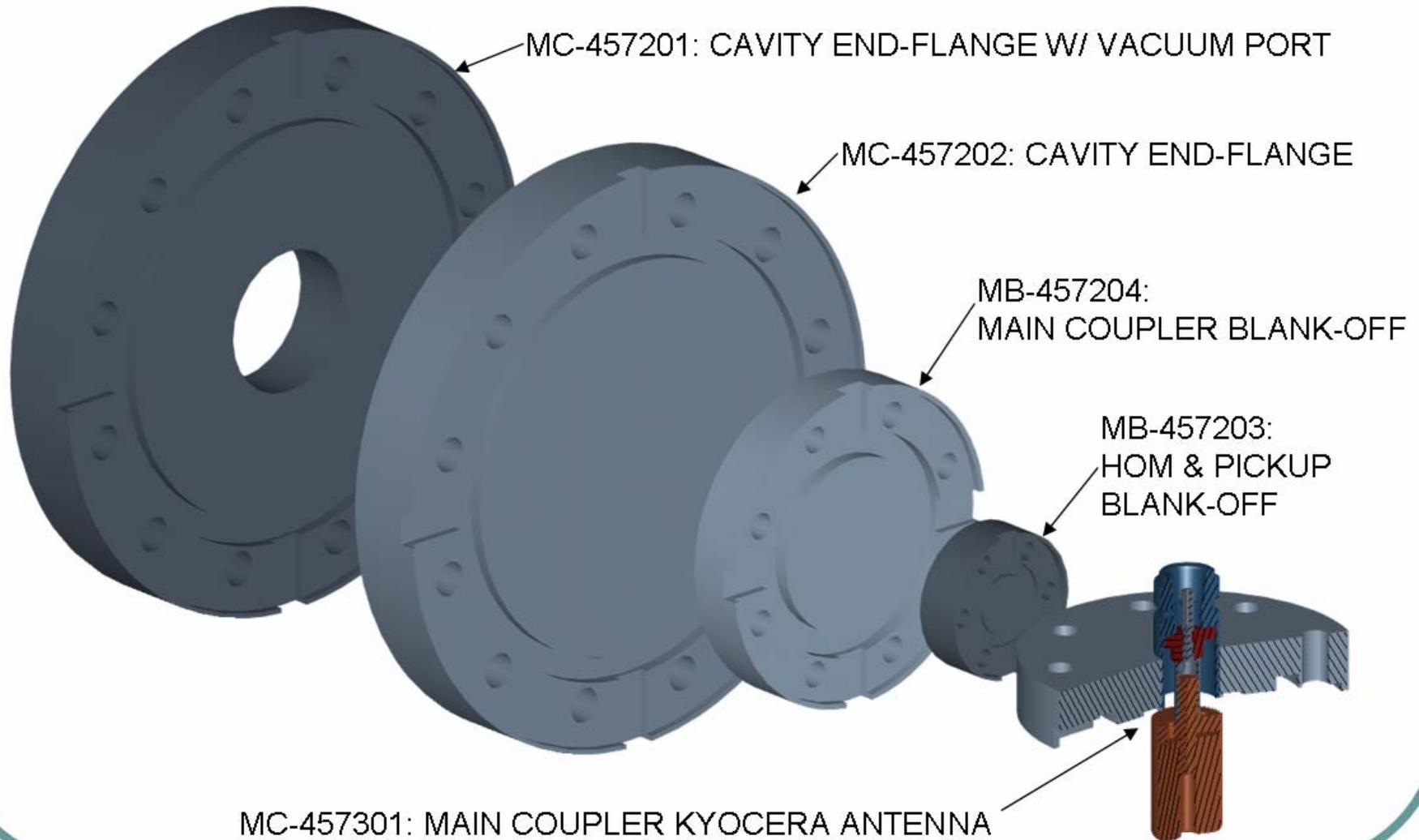


1.3 GHz Processing Flanges



6 August 2007

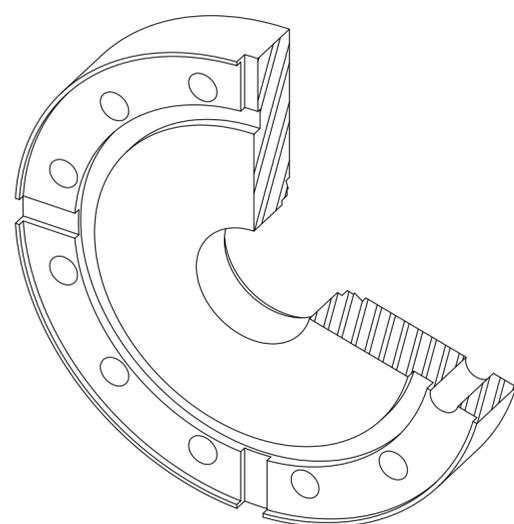
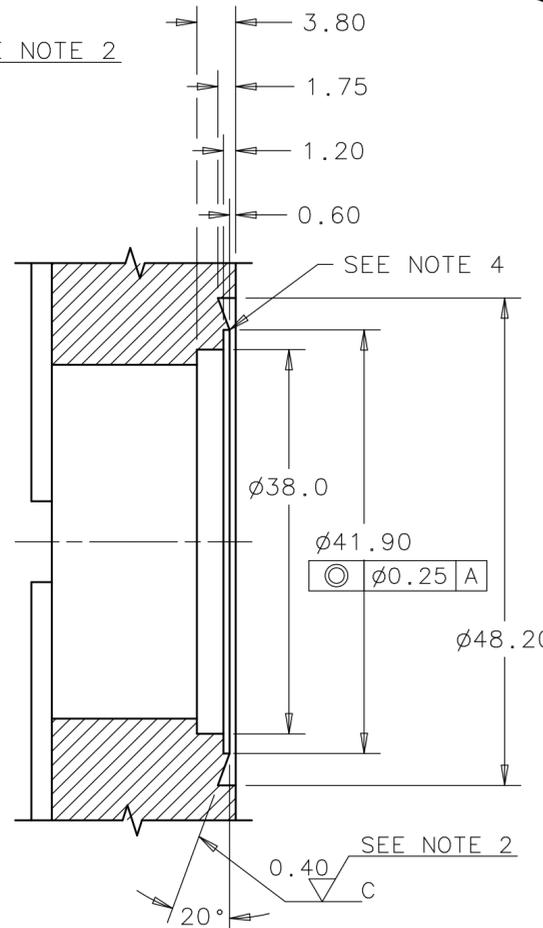
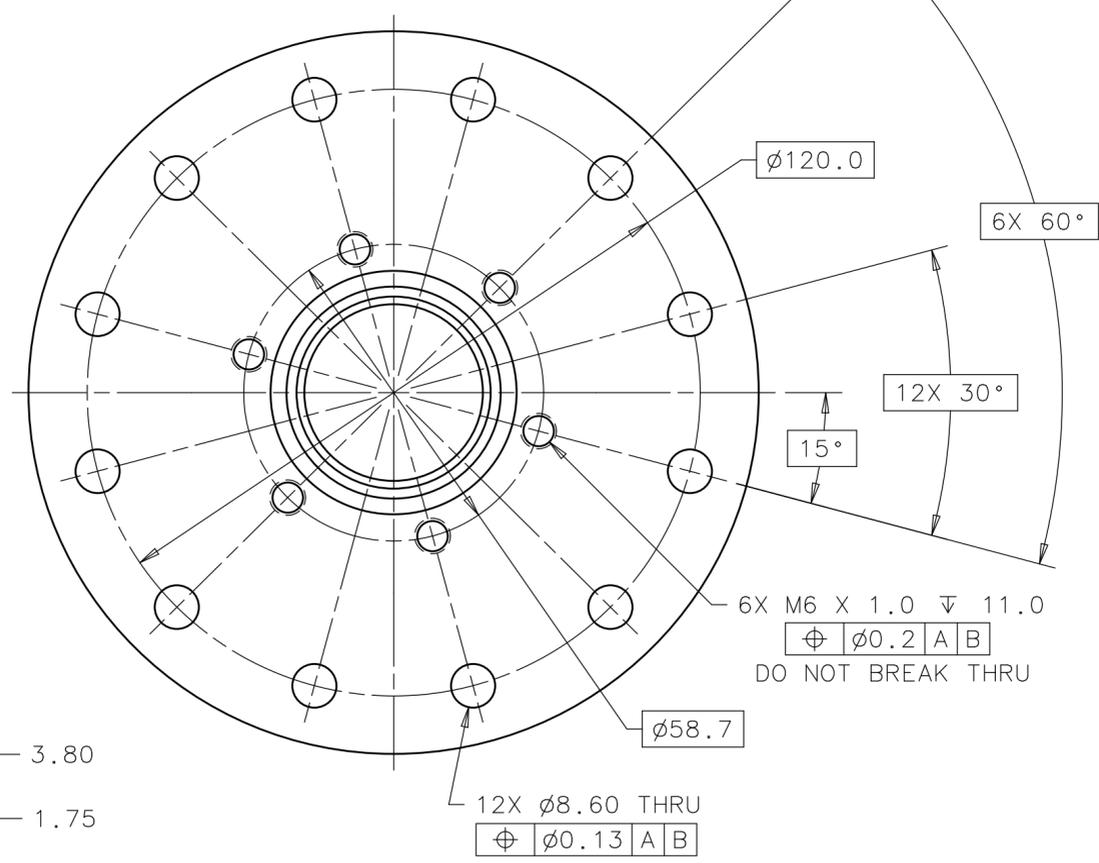
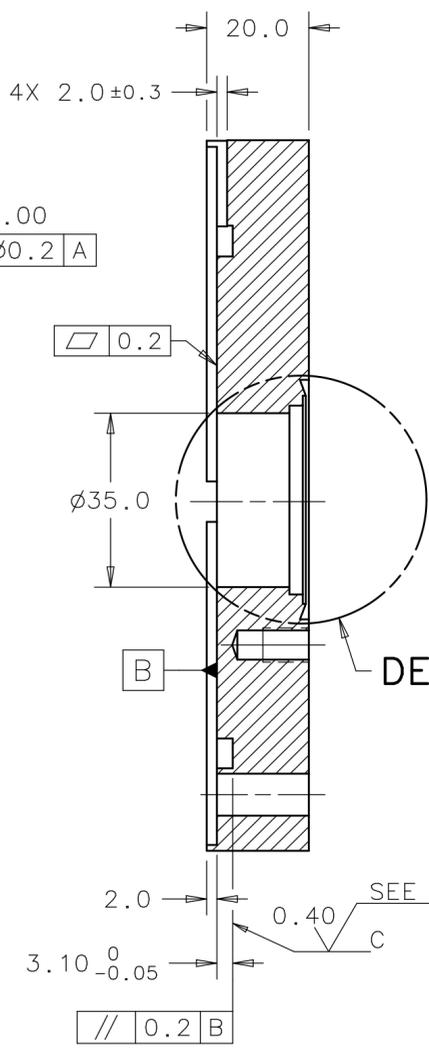
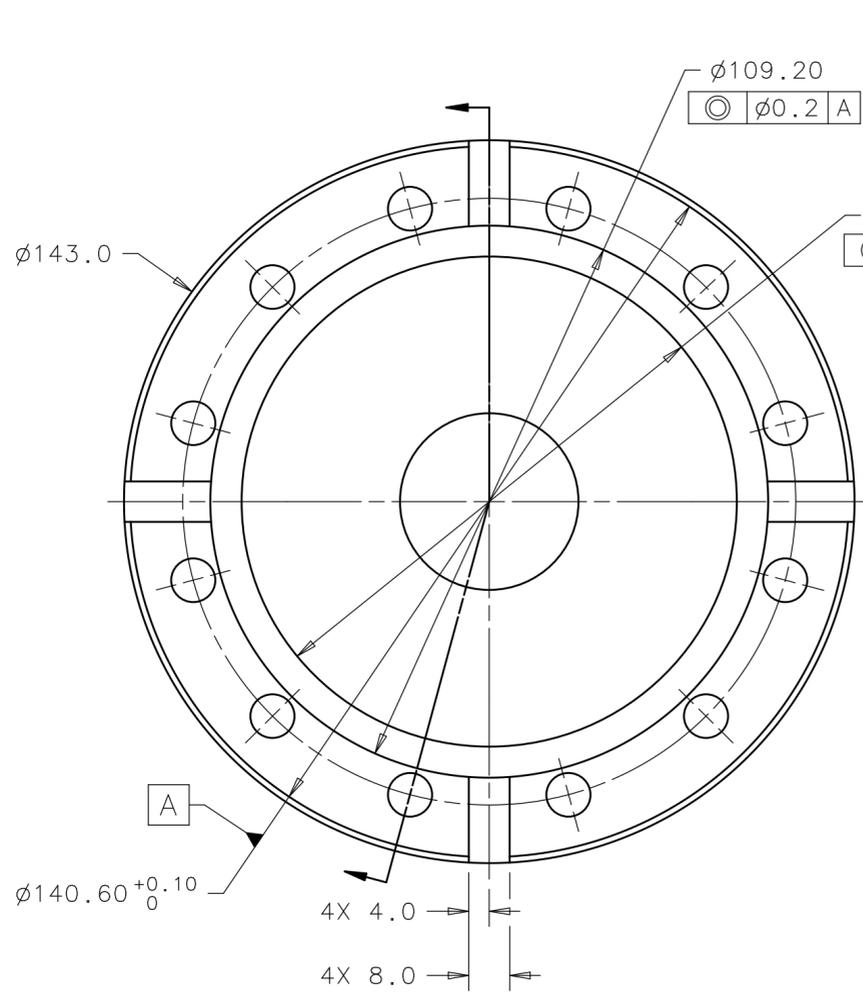
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3

2

1

| | | | |
|-----|--|----------|-------------|
| REV | DESCRIPTION | DRAWN | DATE |
| | | APPROVED | DATE |
| -- | NEW RELEASE ER# 7323 | W SHARP | 13-JUL-2007 |
| A | ECO# 8760 - REVISED DESY INTELLECTUAL NOTE TO RESTRICT USAGE TO TTC MEMBERS ONLY. | L ROSINE | 10AUG2007 |



- NOTES:
- PART IS TO BE CLEANED AND DEGREASED.
 - SEALING SURFACE TO BE FREE OF SCRATCHES, DENTS AND RADIAL SCORING.
 - VENDOR MUST SUPPLY MATERIAL CERTIFICATION.
 - DO NOT BREAK KNIFE EDGE, KEEP SHARP.

THIS DESIGN IS THE INTELLECTUAL PROPERTY OF DESY ACCORDING TO DIN 34 / ISO 16016. THIS DRAWING HAS BEEN REDRAWN WITH DESY'S PERMISSION FOR FABRICATION PURPOSES WITHIN THE USA AND IS TO BE USED BY TTC MEMBERS EXCLUSIVELY. USAGE OUTSIDE OF THE TTC MUST BE APPROVED BY DESY.

| | | | | | |
|--|-----------|---------------|-----------------|-------------|-------------|
| UNLESS OTHERWISE SPECIFIED | | | ORIGINATOR | D. MITCHELL | 13-JUL-2007 |
| X.X | X.XX | ANGLE | DRAWN | W. SHARP | 13-JUL-2007 |
| ± 0.5 | ± 0.2 | $\pm 1^\circ$ | CHECKED | C.M. GRIMM | 31-JUL-2007 |
| 1. BREAK ALL SHARP EDGES 0.4mm MAX. | | | APPROVED | D. MITCHELL | 31-JUL-2007 |
| 2. DO NOT SCALE DRAWING. | | | USED ON | | |
| 3. DIMENSIONS BASED UPON ASME Y14.5M-1994 | | | MATERIAL | | |
| 4. MAX. ALL MACH. SURFACES 3.2 | | | STNLS STL 316LN | | |
| 5. DRAWING UNITS: METRIC | | | | | |

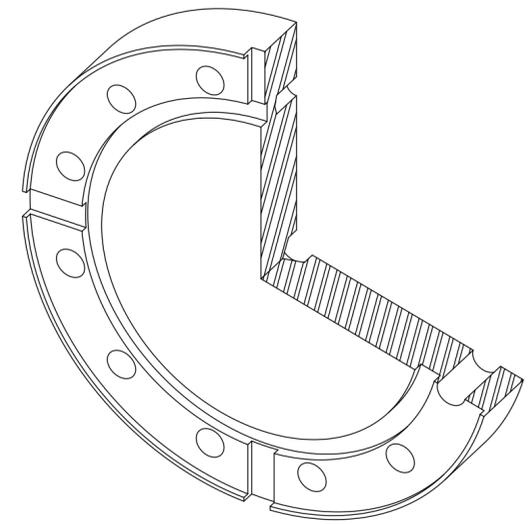
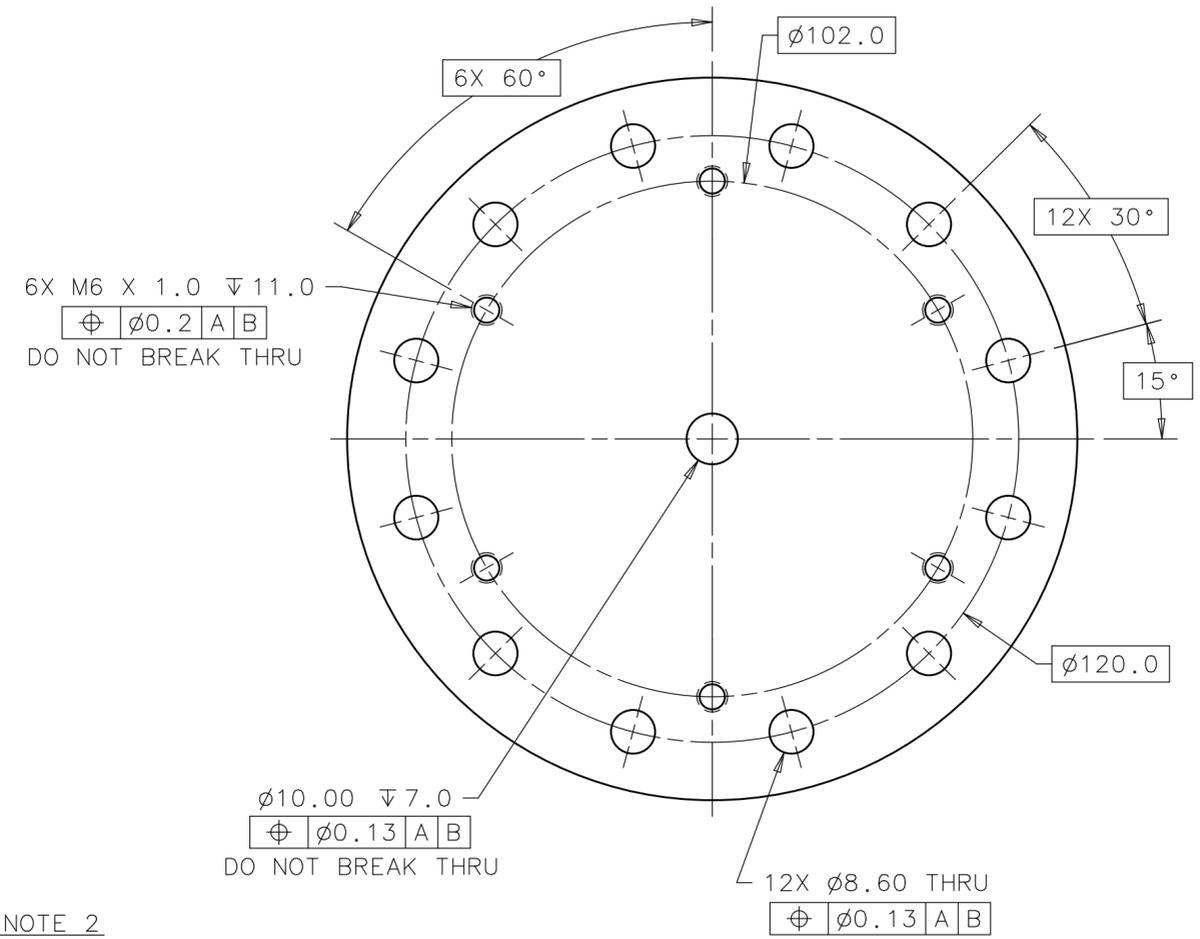
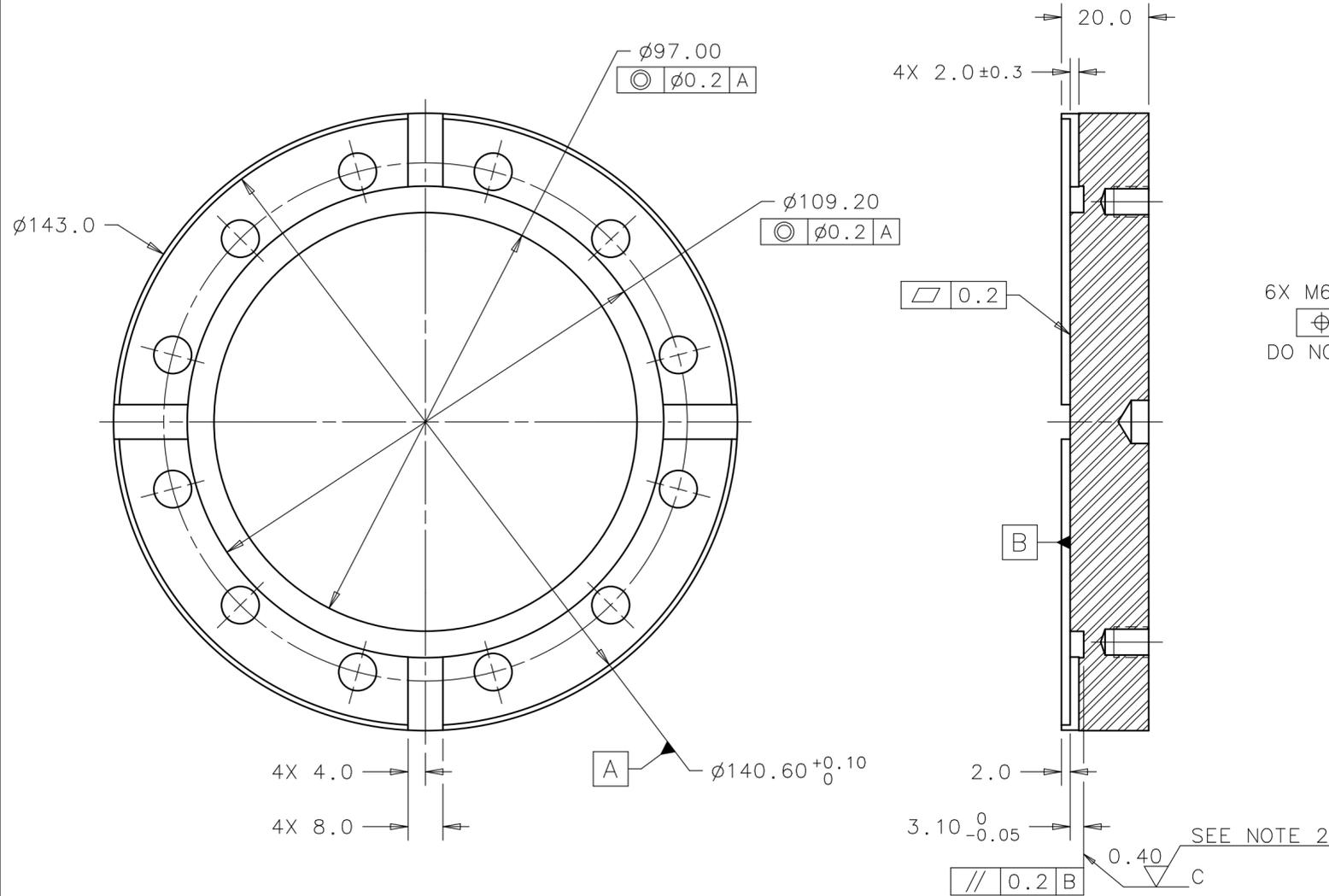
FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

**1.3 GHZ SCRF
CAVITY PROCESSING
FLANGE-W-PORT CAVITY-END**

| | | | |
|----------------------------|--------------------------------------|-----------------|----------|
| SCALE 1:1 & AS NOTED | DRAWING NUMBER 4904.010-MC-457201 | SHEET 1 OF 1 | REV A |
|----------------------------|--------------------------------------|-----------------|----------|

CREATED WITH : Ideas12NXSeries GROUP: TD/DDCIS-DESIGN-COMPUTING

| REV | DESCRIPTION | DRAWN | DATE |
|-----|---|----------|-------------|
| | | APPROVED | DATE |
| -- | NEW RELEASE ER# 7323 | W SHARP | 13-JUL-2007 |
| A | ECO# 8760 - REVISED DESY INTELLECTUAL NOTE TO RESTRICT USEAGE TO TTC MEMBERS ONLY. | L ROSINE | 10AUG2007 |



- NOTES:
- PART IS TO BE CLEANED AND DEGREASED.
 - SEALING SURFACE TO BE FREE OF SCRATCHES, DENTS AND RADIAL SCORING.
 - VENDOR MUST SUPPLY MATERIAL CERTIFICATION.

THIS DESIGN IS THE INTELLECTUAL PROPERTY OF DESY ACCORDING TO DIN 34 / ISO 16016. THIS DRAWING HAS BEEN REDRAWN WITH DESY'S PERMISSION FOR FABRICATION PURPOSES WITHIN THE USA AND IS TO BE USED BY TTC MEMBERS EXCLUSIVELY. USAGE OUTSIDE OF THE TTC MUST BE APPROVED BY DESY.

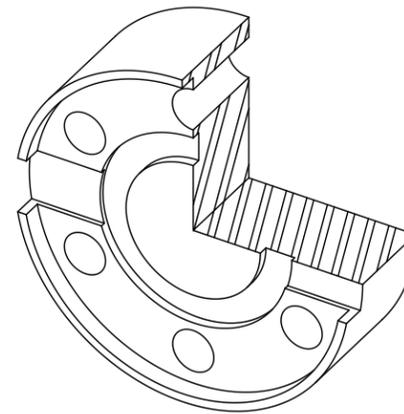
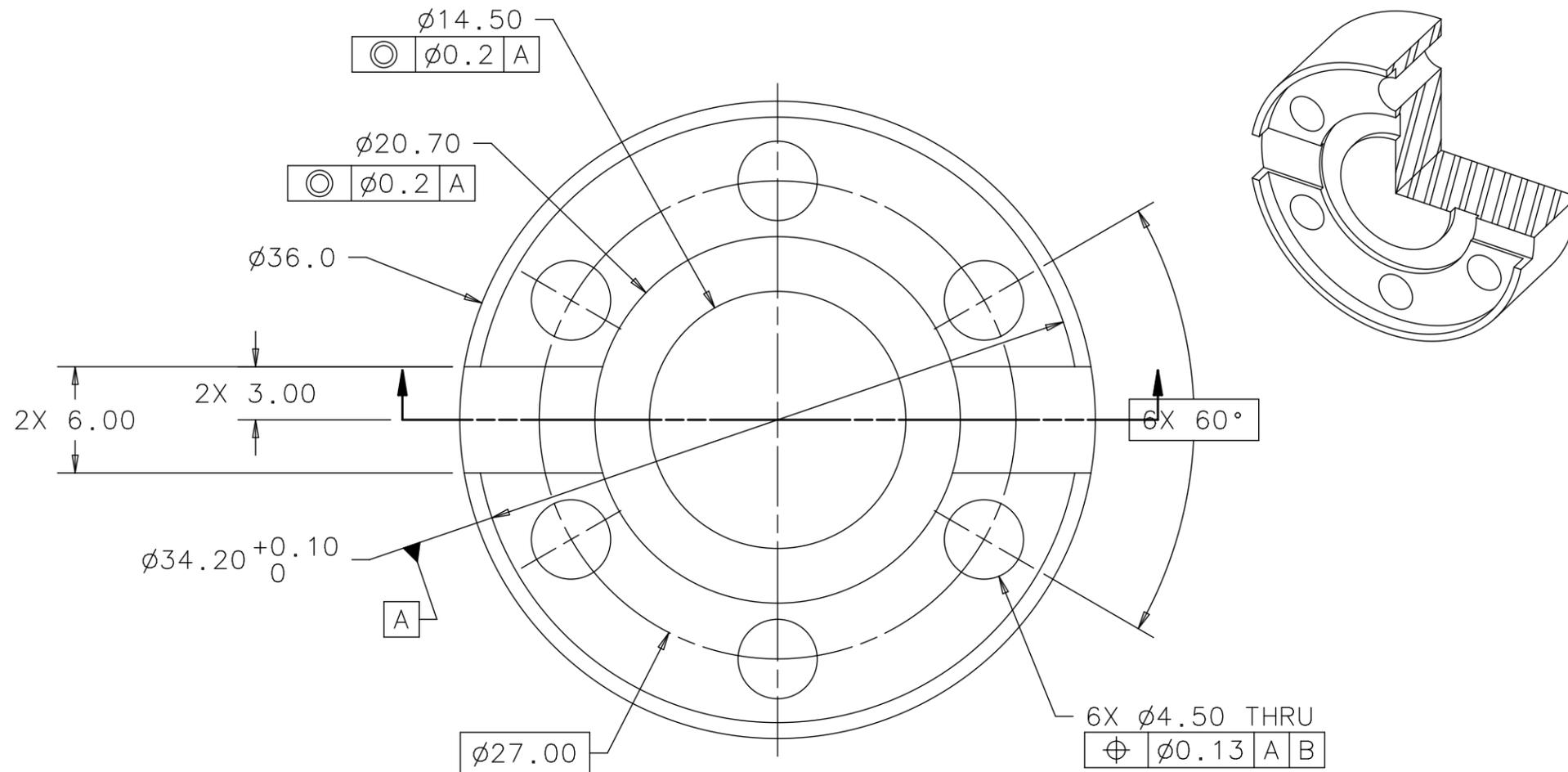
| UNLESS OTHERWISE SPECIFIED | | | ORIGINATOR | D.MITCHELL | 13-JUL-2007 |
|--|-------|-------|-----------------|------------|-------------|
| X.X | X.XX | ANGLE | DRAWN | W.SHARP | 13-JUL-2007 |
| ± 0.5 | ± 0.2 | ± 1° | CHECKED | C.M.GRIMM | 31-JUL-2007 |
| 1. BREAK ALL SHARP EDGES 0.4mm MAX. | | | APPROVED | D.MITCHELL | 31-JUL-2007 |
| 2. DO NOT SCALE DRAWING. | | | USED ON | | |
| 3. DIMENSIONS BASED UPON ASME Y14.5M-1994 | | | MATERIAL | | |
| 4. MAX. ALL MACH. SURFACES 3.2 | | | STNLS STL 316LN | | |
| 5. DRAWING UNITS: METRIC | | | | | |


FERMI NATIONAL ACCELERATOR LABORATORY
 UNITED STATES DEPARTMENT OF ENERGY

**1.3 GHZ SCRF
 CAVITY PROCESSING
 FLANGE BLANKOFF CAVITY-END**

| | | | |
|--------------|--------------------------------------|-----------------|----------|
| SCALE 1:1 | DRAWING NUMBER 4904.010-MC-457202 | SHEET 1 OF 1 | REV A |
|--------------|--------------------------------------|-----------------|----------|

CREATED WITH : Ideas12NXSeries GROUP: TD/DDCIS-DESIGN-COMPUTING

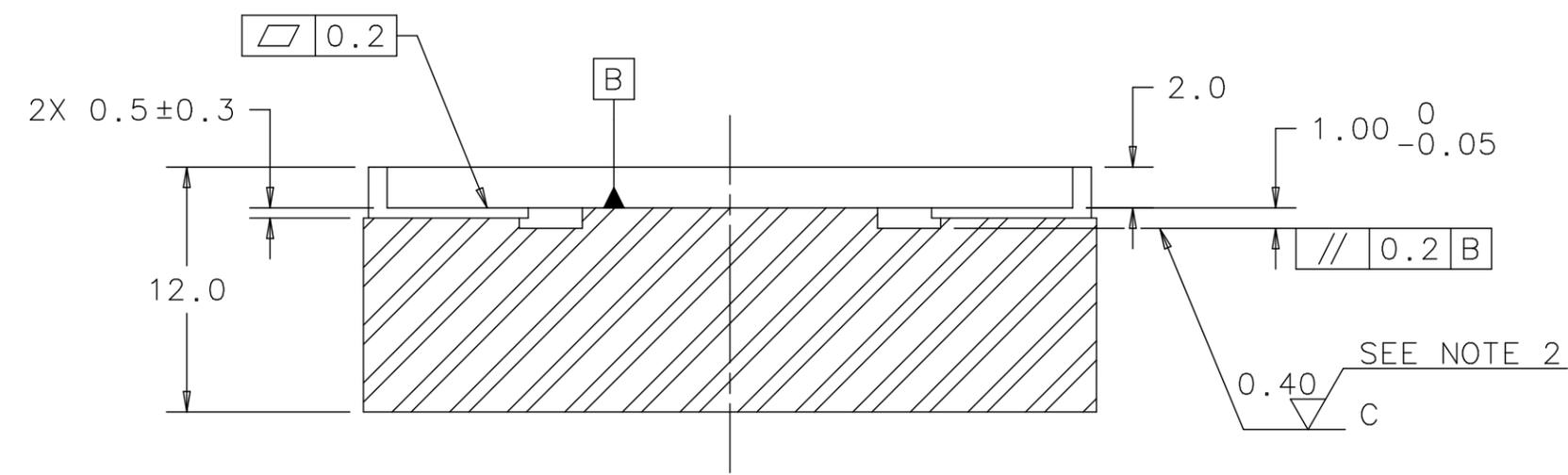


| REV | DESCRIPTION | DRAWN | DATE |
|-----|--|----------|-------------|
| -- | NEW RELEASE ER# 7323 | L ROSINE | 16-JUL-2007 |
| A | ECO# 8760 - REVISED DESY INTELLECTUAL NOTE TO RESTRICT USAGE TO TTC MEMBERS ONLY. | L ROSINE | 10AUG2007 |

NOTES:

- PART IS TO BE CLEANED AND DEGREASED.
- SEALING SURFACE TO BE FREE OF SCRATCHES, DENTS AND RADIAL SCORING.
- VENDOR MUST SUPPLY MATERIAL CERTIFICATION.

THIS DESIGN IS THE INTELLECTUAL PROPERTY OF DESY ACCORDING TO DIN 34 / ISO 16016. THIS DRAWING HAS BEEN REDRAWN WITH DESY'S PERMISSION FOR FABRICATION PURPOSES WITHIN THE USA AND IS TO BE USED BY TTC MEMBERS EXCLUSIVELY. USAGE OUTSIDE OF THE TTC MUST BE APPROVED BY DESY.



| UNLESS OTHERWISE SPECIFIED | | | ORIGINATOR | D.MITCHELL | 16-JUL-2007 |
|--|-------|--------|-----------------|------------|-------------|
| .X | .XX | ANGLES | DRAWN | L.ROSINE | 16-JUL-2007 |
| ± 0.5 | ± 0.2 | ± 1° | CHECKED | C.M.GRIMM | 31-JUL-2007 |
| 1. BREAK ALL SHARP EDGES 0.4mm MAX. 2. DO NOT SCALE DRAWING. 3. DIMENSIONS BASED UPON ASME Y14.5M-1994 4. MAX. ALL MACH. SURFACES 3.2/ 5. DRAWING UNITS: METRIC | | | APPROVED | D.MITCHELL | 31-JUL-2007 |
| | | | USED ON | | |
| MATERIAL | | | STNLS STL 316LN | | |

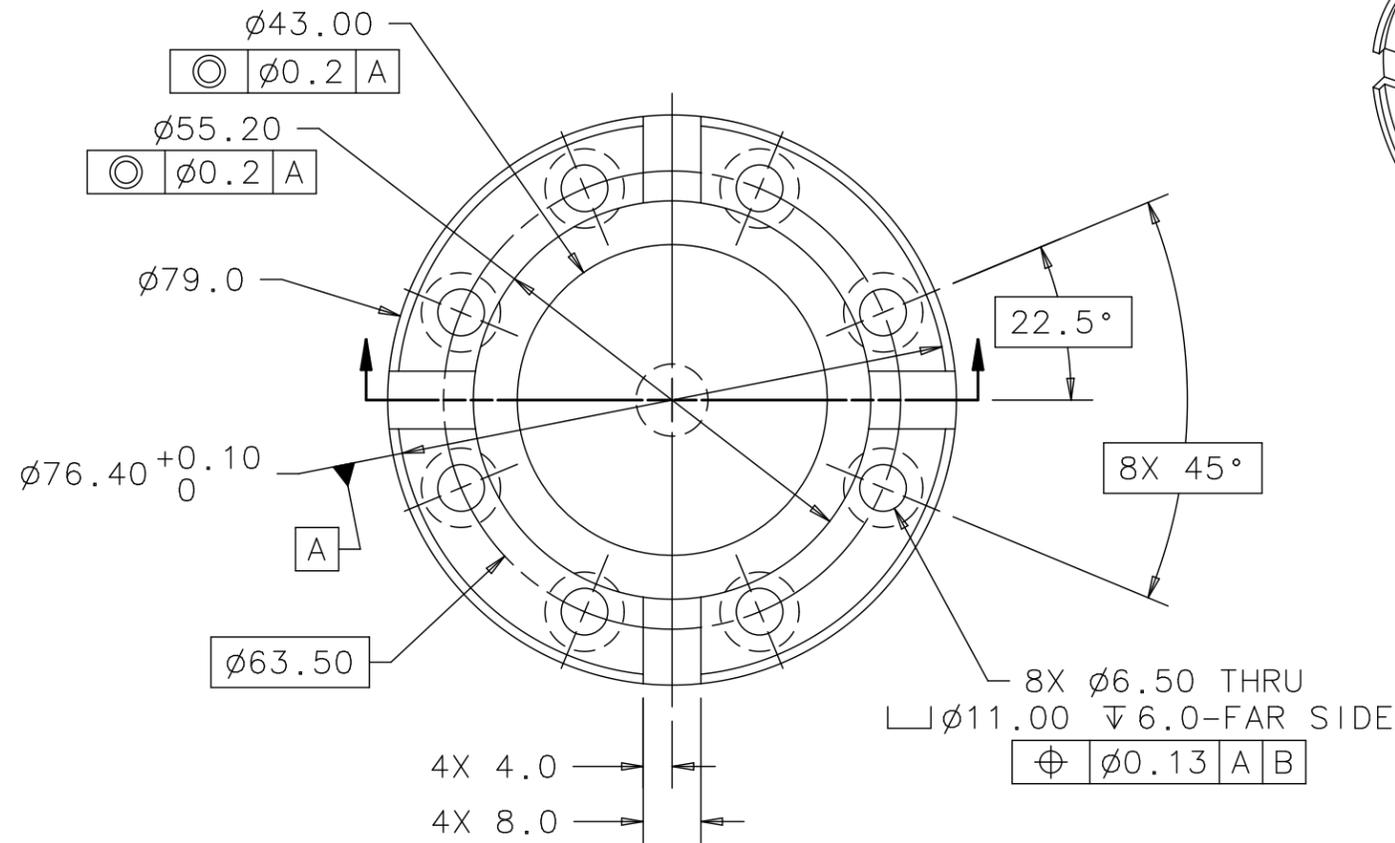
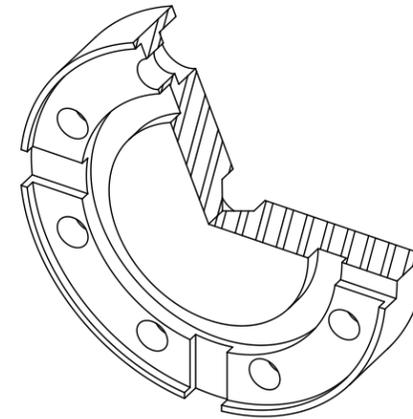
FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

**1.3 GHZ SCRF
 CAVITY PROCESSING
 FLANGE BLANKOFF HOM AND PICKUP**

| SCALE | DRAWING NUMBER | SHEET | REV |
|-------|--------------------|--------|-----|
| 3:1 | 4904.010-MB-457203 | 1 OF 1 | A |

CREATED WITH : Ideas12NXSeries GROUP: TD/DDCIS-DESIGN-COMPUTING

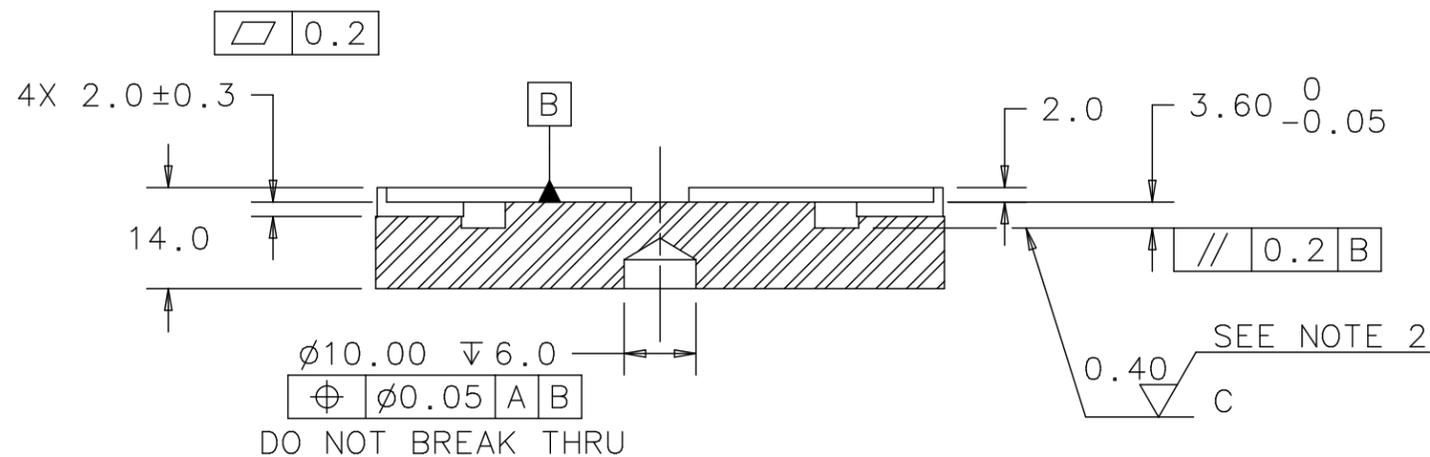
| REV | DESCRIPTION | DRAWN | DATE |
|-----|--|----------|-------------|
| | | APPROVED | DATE |
| -- | NEW RELEASE ER# 7323 | L ROSINE | 16-JUL-2007 |
| A | ECO# 8760 - REVISED DESY INTELLECTUAL NOTE TO RESTRICT USAGE TO TTC MEMBERS ONLY. | L ROSINE | 10AUG2007 |



NOTES:

- PART IS TO BE CLEANED AND DEGREASED.
- SEALING SURFACE TO BE FREE OF SCRATCHES, DENTS AND RADIAL SCORING.
- VENDOR MUST SUPPLY MATERIAL CERTIFICATION.

THIS DESIGN IS THE INTELLECTUAL PROPERTY OF DESY ACCORDING TO DIN 34 / ISO 16016. THIS DRAWING HAS BEEN REDRAWN WITH DESY'S PERMISSION FOR FABRICATION PURPOSES WITHIN THE USA AND IS TO BE USED BY TTC MEMBERS EXCLUSIVELY. USAGE OUTSIDE OF THE TTC MUST BE APPROVED BY DESY.



| UNLESS OTHERWISE SPECIFIED | | | ORIGINATOR | D. MITCHELL | 16-JUL-2007 |
|--|-------|--------|-----------------|-------------|-------------|
| .X | .XX | ANGLES | DRAWN | L. ROSINE | 16-JUL-2007 |
| ± 0.5 | ± 0.2 | ± 1° | CHECKED | C.M. GRIMM | 31-JUL-2007 |
| 1. BREAK ALL SHARP EDGES 0.4mm MAX. 2. DO NOT SCALE DRAWING. 3. DIMENSIONS BASED UPON ASME Y14.5M-1994 4. MAX. ALL MACH. SURFACES 3.2/ 5. DRAWING UNITS: METRIC | | | APPROVED | D. MITCHELL | 31-JUL-2007 |
| | | | USED ON | | |
| MATERIAL | | | STNLS STL 316LN | | |

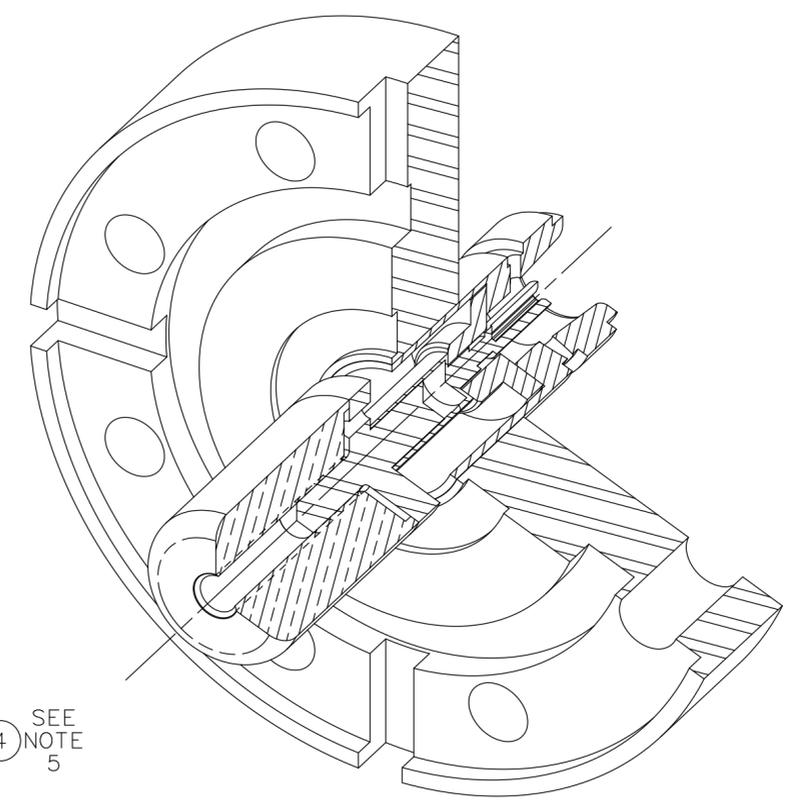
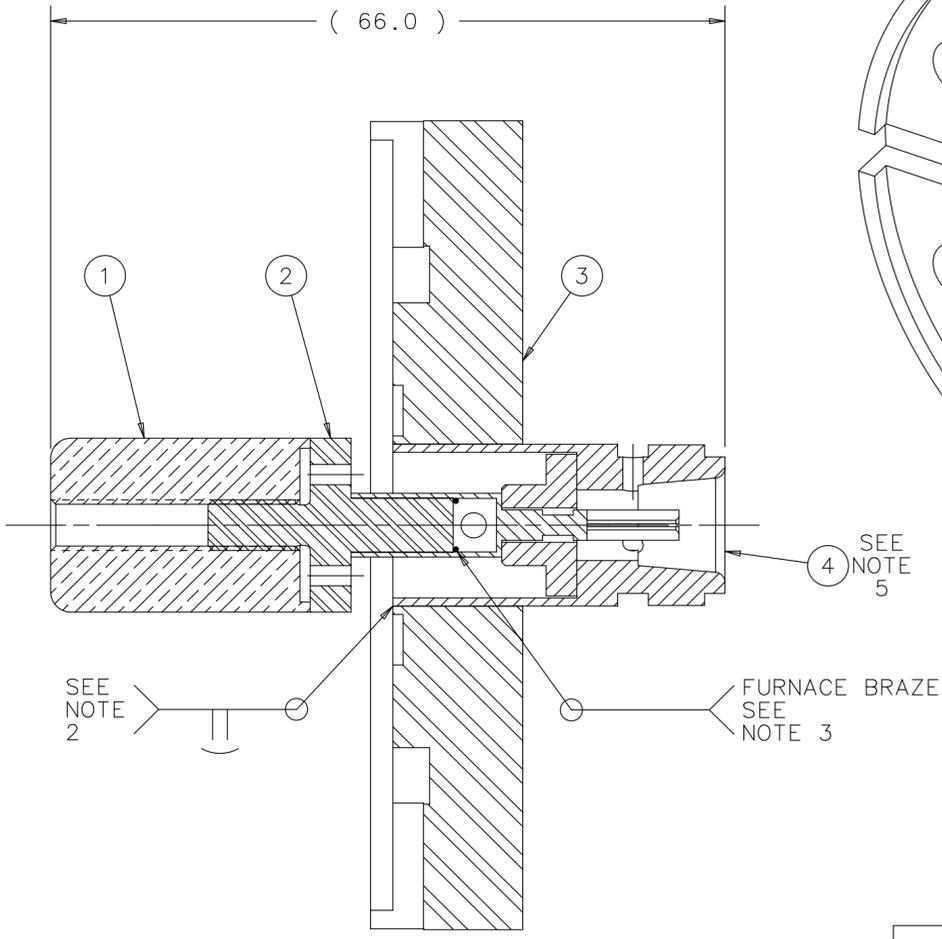
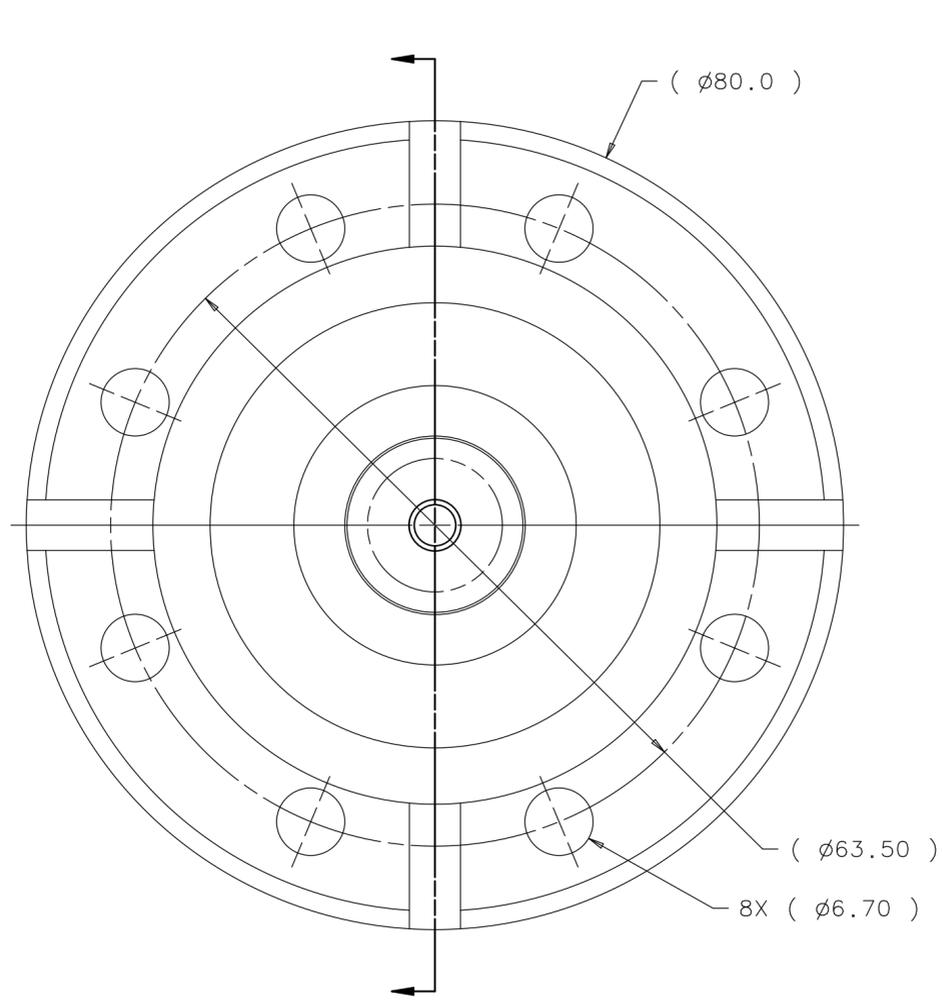


FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

1.3 GHZ SCRF
CAVITY PROCESSING
FLANGE BLANKOFF MAIN-COUPLER

| SCALE | DRAWING NUMBER | SHEET | REV |
|--------------------------------|--------------------|----------------------------------|-----|
| 1:1 | 4904.010-MB-457204 | 1 OF 1 | A |
| CREATED WITH : Ideas12NXSeries | | GROUP: TD/DDCIS-DESIGN-COMPUTING | |

| | | | |
|-----|-------------------------|----------|-------------|
| REV | DESCRIPTION | DRAWN | DATE |
| -- | NEW RELEASE ER #7554 | L ROSINE | 26-JUL-2007 |



NOTES:

- STEEL WELDS SHALL BE IN ACCORDANCE WITH THE LATEST REVISION OF ANSI/AWS D1.1, STRUCTURAL WELDING CODE - STEEL.
 - THE WELDS SHALL HAVE NO CRACKS, THOROUGH FUSION, AND PROPER PROFILES. THE UNDERRUN, UNDERCUT, AND POROSITY OF THE WELDS MUST CONFORM TO THE CODE. ALL OF THE ABOVE PROPERTIES SHALL BE VISUALLY INSPECTED PER THE ACCEPTANCE CRITERIA IN AWS D1.1, TABLE 6.1. (REVISION 98).
- ALL WELDS TO BE VACUUM TIGHT. NO LEAK SHALL BE DETECTABLE ON THE MOST SENSITIVE SCALE OF A HELIUM DETECTOR WITH A MINIMUM SENSITIVITY OF 2×10^{-10} ATM, CC/SEC.
- RECOMMENDED BRAZING PROCEDURE:
BRAZING MAT'L TO BE Cu/Si1.
RAMP FURNACE TEMPERATURE 3°C/MINUTE.
SOAK AT 750°C FOR 30 MINUTES.
BRAZE AT 780°C FOR 7-8 MINUTES.
LOCATION OF BRAZE WIRE OR PASTE DEFINED BY ●.
- ASSEMBLY MUST BE FREE OF DIRT, GREASE, OIL AND CHIPS.
- THE OUTER MATERIAL OF ITEM #4 IS KOVAR.
- ITEM #3, STAINLESS STEEL FLANGE, SHALL BE PASSIVATED PRIOR TO BRAZING.

| | | | |
|---|-----------|-------------------------------|---|
| 4 | COM'L | KYOCERA CONNECTOR - GMM87157A | 1 |
| 3 | MB-457315 | FLANGE KYOCERA CONN | 1 |
| 2 | MB-457313 | ADAPTER ANTENNA EXTENSION | 1 |
| 1 | MB-457314 | EXTENSION ANTENNA | 1 |

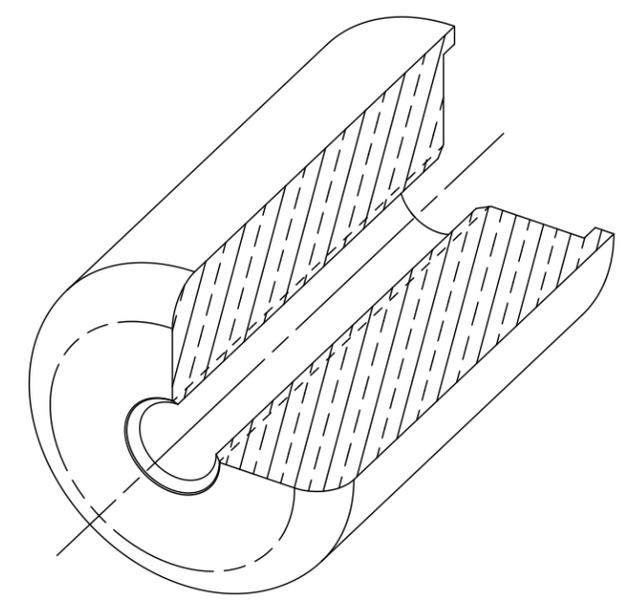
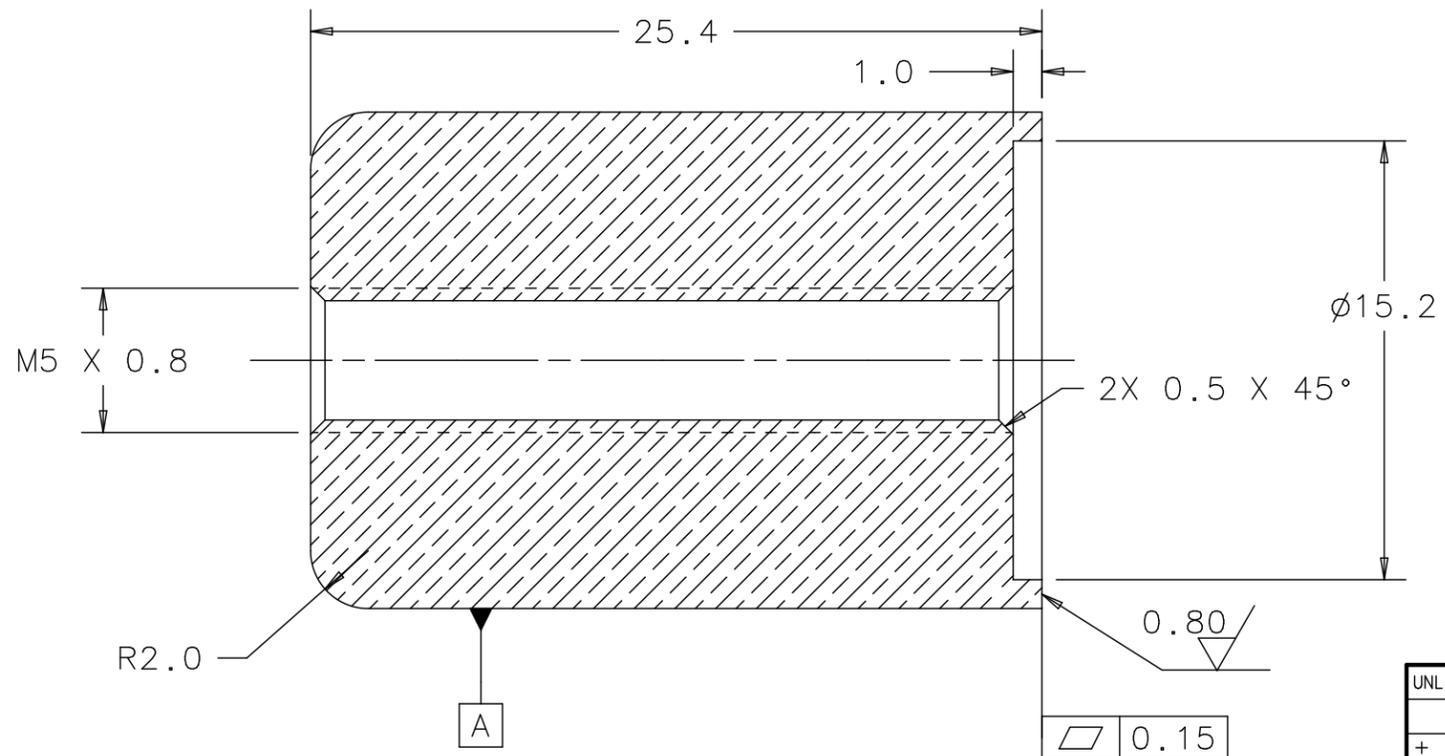
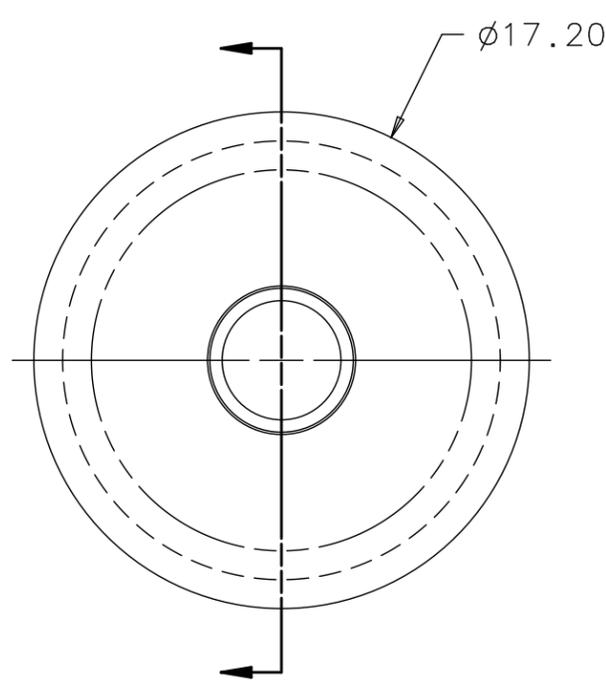
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|--|-----|--------|----------------|-------------|-------------|
| UNLESS OTHERWISE SPECIFIED | | | ORIGINATOR | D. MITCHELL | 26-JUL-2007 |
| .X | .XX | ANGLES | DRAWN | L. ROSINE | 26-JUL-2007 |
| ± | -- | ± | CHECKED | | |
| 1. BREAK ALL SHARP EDGES -- MAX. | | | APPROVED | | |
| 2. DO NOT SCALE DRAWING. | | | USED ON | | |
| 3. DIMENSIONS BASED UPON ASME Y14.5M-1994 | | | MATERIAL | | |
| 4. MAX. ALL MACH. SURFACES | | | AS NOTED ABOVE | | |
| 5. DRAWING UNITS: METRIC | | | | | |

FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

1.3 GHZ SCRF
VERTICAL CAVITY TESTING
KYOCERA CONN AND FLNG WLDMT

| | | | |
|--------------------------------|--------------------|----------------------------------|-----|
| SCALE | DRAWING NUMBER | SHEET | REV |
| 2:1 | 4904.010-MC-457301 | 1 OF 1 | |
| CREATED WITH : Ideas12NXSeries | | GROUP: TD/DDCIS-DESIGN-COMPUTING | |

| | | | |
|-----|--------------------------|----------|-------------|
| REV | DESCRIPTION | DRAWN | DATE |
| -- | NEW RELEASE ER # 7554 | L ROSINE | 26-JUL-2007 |



| | |
|--|--------|
| | 0.15 |
| | 0.15 A |

| | | | |
|--|------------|-------------|-------------------------------|
| UNLESS OTHERWISE SPECIFIED | ORIGINATOR | D. MITCHELL | 26-JUL-2007 |
| .X | .XX | ANGLES | DRAWN |
| ± 0.5 | ± 0.2 | ± 1° | L. ROSINE |
| 1. BREAK ALL SHARP EDGES 0.5 MAX. | | | CHECKED |
| 2. DO NOT SCALE DRAWING. | | | APPROVED |
| 3. DIMENSIONS BASED UPON ASME Y14.5M-1994 | | | USED ON |
| 4. MAX. ALL MACH. SURFACES 1.6 | | | MC-457301 |
| 5. DRAWING UNITS: METRIC | | | MATERIAL |
| | | | COPPER OFE C10100 OR 10200 |

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UNITED STATES DEPARTMENT OF ENERGY

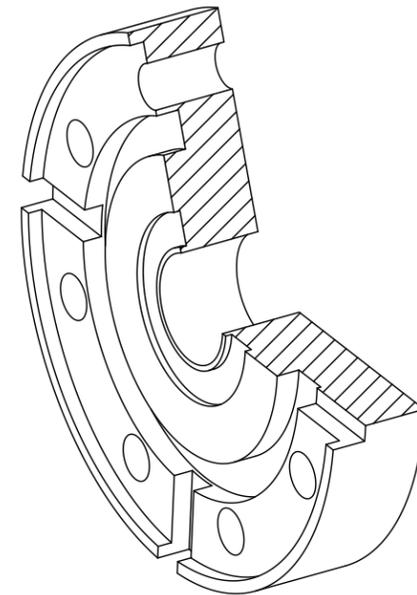
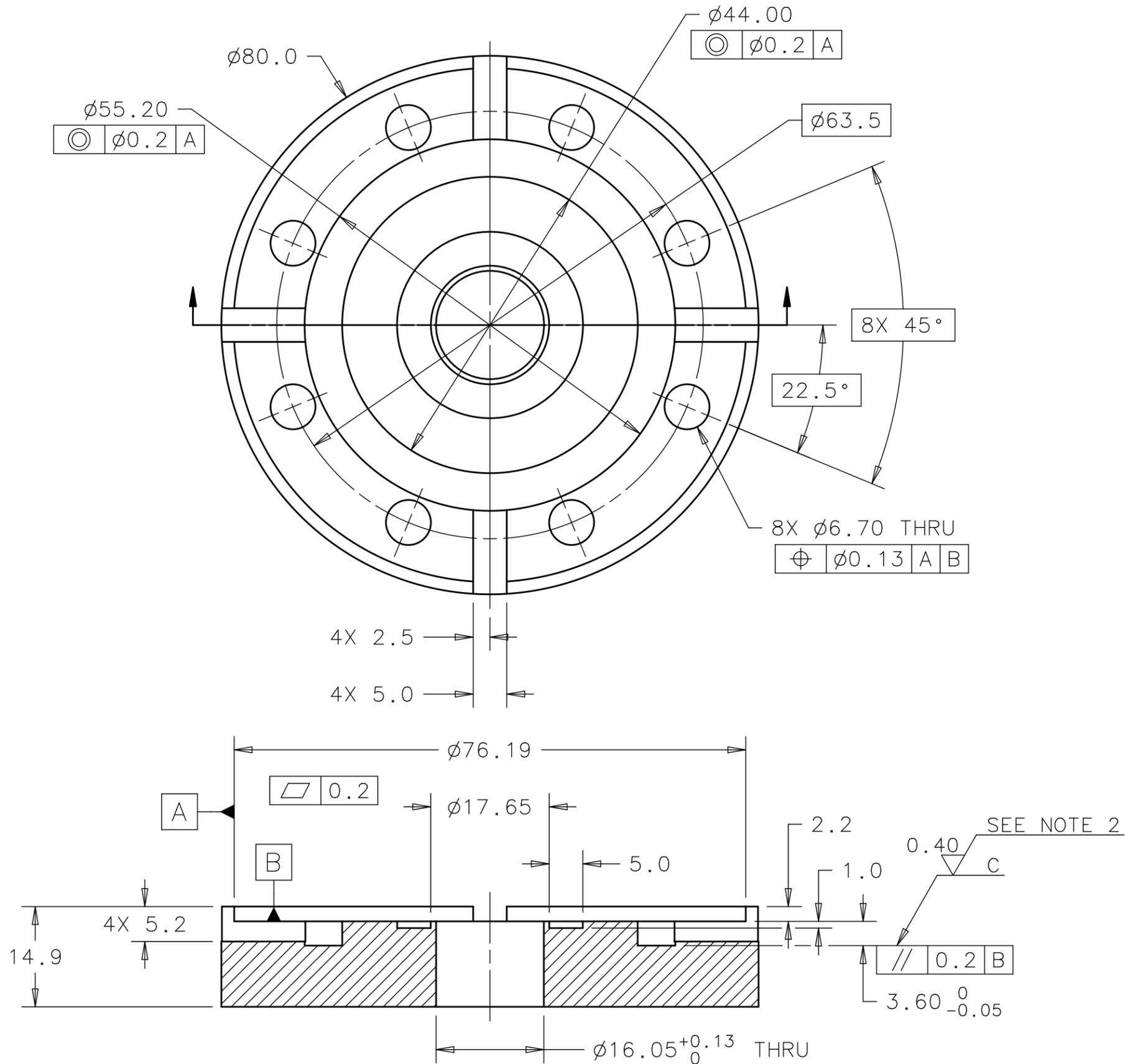
**1.3 GHZ SCRF
VERTICAL CAVITY TESTING
EXTENSION ANTENNA**

| | | | |
|--------------------------------|--------------------|----------------------------------|-----|
| SCALE | DRAWING NUMBER | SHEET | REV |
| 4:1 | 4904.010-MB-457314 | 1 OF 1 | |
| CREATED WITH : Ideas12NXSeries | | GROUP: TD/DDCIS-DESIGN-COMPUTING | |

NOTES:

- PART MUST BE FREE OF DIRT, GREASE, OIL AND CHIPS.

| REV | DESCRIPTION | DRAWN | DATE |
|-----|-------------------------------|----------|-------------|
| -- | NEW RELEASE ER# 7554 | W. SHARP | 26-JUL-07 |
| A | DELETE DESY INTELLECTUAL NOTE | L ROSINE | 10-AUG-2007 |



| UNLESS OTHERWISE SPECIFIED | | | ORIGINATOR | D. MITCHELL | 26-JUL-2007 |
|--|-------|-------|-----------------------------------|-------------|-------------|
| X.X | X.XX | ANGLE | DRAWN | W. SHARP | 26-JUL-2007 |
| ± 0.5 | ± 0.2 | ± 1° | CHECKED | C. M. GRIMM | 31-JUL-2007 |
| 1. BREAK ALL SHARP EDGES 0.4 MM MAX. | | | APPROVED | D. MITCHELL | 31-JUL-2007 |
| 2. DO NOT SCALE DRAWING. | | | USED ON | | |
| 3. DIMENSIONS BASED UPON ASME Y14.5M-1994 | | | 457301 | | |
| 4. MAX. ALL MACH. SURFACES 3.2 | | | MATERIAL | | |
| 5. DRAWING UNITS: METRIC | | | STAINLESS STEEL 316LN, PASSIVATED | | |



FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

1.3 GHZ SCRF
VERTICAL CAVITY TESTING
FLANGE KYOCERA CONN

| SCALE | DRAWING NUMBER | SHEET | REV |
|--------------------------------|--------------------|----------------------------------|-----|
| 1.5:1 | 4904.010-MB-457315 | 1 OF 1 | A |
| CREATED WITH : Ideas12NXSeries | | GROUP: TD/DDCIS-DESIGN-COMPUTING | |