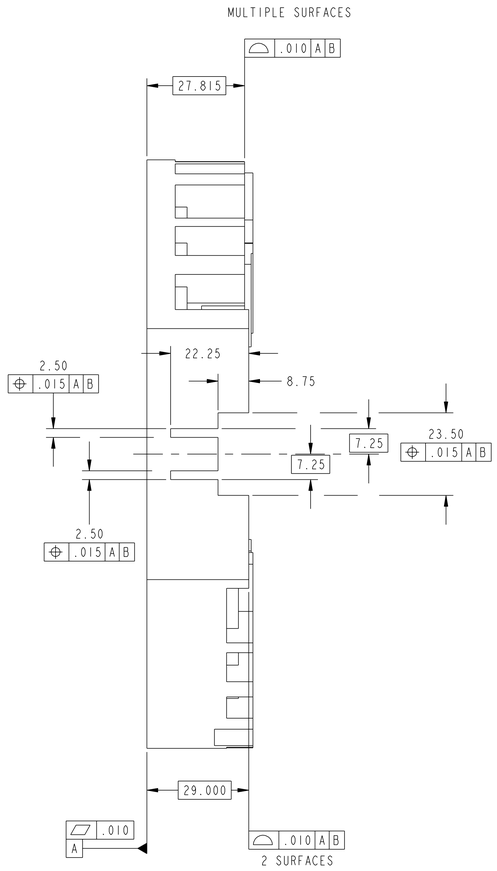
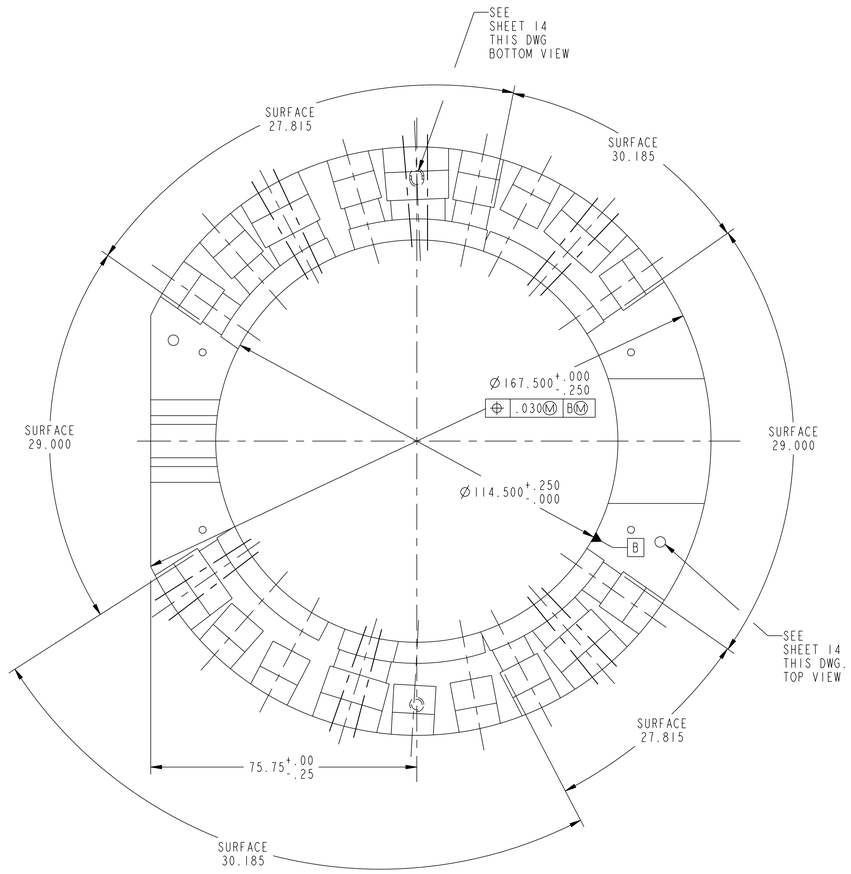
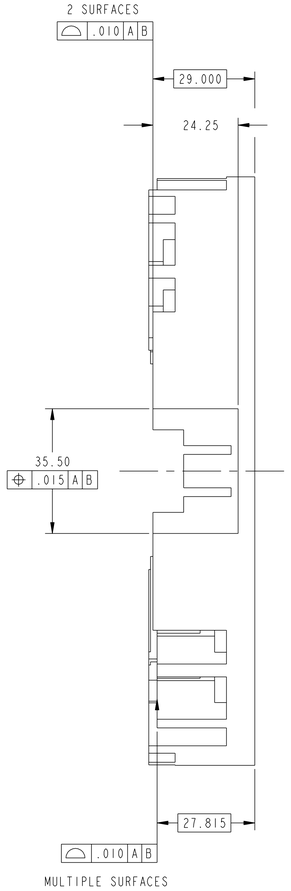
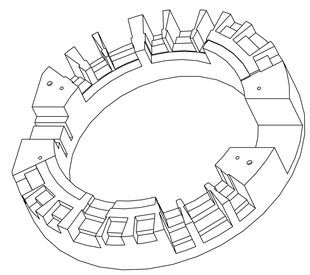




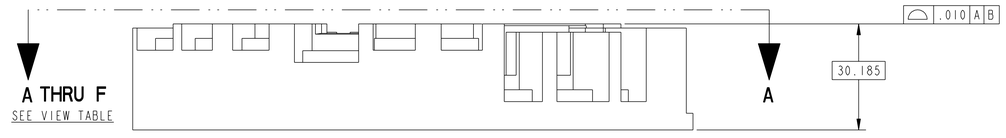


NOTES (UNLESS OTHERWISE SPECIFIED)

1. INTERPRET DRAWING PER GLOBAL ENGINEERING DOCUMENTS DRAWING REQUIREMENTS MANUAL, LATEST REVISION.
2. INTERPRET DIMENSIONS AND TOLERANCES PER ASME Y14.5M, LATEST REVISION.
3. DIMENSIONS ARE IN INCHES.
4. SEE SNS EQUIP. SPECIFICATION #I06040100-EQ0002 FOR REQUIREMENTS FOR MATERIALS OF CONSTRUCTION, FABRICATION, INSPECTION, TESTING AND DELIVERY.
5. ALL TOOL RADIUS SHALL BE .030 MAX. UNLESS OTHERWISE SPECIFIED.



SCALE 0.03



1

OUTER VESSEL LOWER SHIELDING

VIEWS	SHOWN ON DRAWING SHEET NUMBER
A	2 AND 3
B	4 AND 5
C	6 AND 7
D	8 and 9
E	10 and 11
F	12 and 13

AR	AR			I06040106M8E8700A001-1	OUTER VESSEL LOWER SHIELDING	CARBON STEEL		1
I06040100M8E8700A008	I06040100M8E8700A002	-	CAGE CODE	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	FIND NO
			NEXT ASSEMBLY		PARTS LIST			

QUALITY VERIFICATION
MECHANICAL AND STRUCTURAL
REFERENCE SNS-TS-G002

QV CLAUSE	DOCUMENTS REQUIRED	APPLICABLE TO PART NO *
303	MATERIAL MILL TEST REPORT	-
325	MATERIAL SELLER CERT	-
326	SPECIAL MATERIAL INSPECTION REPORT	-
205	MANUFACTURING, INSPECTION, AND TEST PLAN	-
312	FIELD INSPECTION AND TEST PLAN	-
321	WELD AND BRAZE INSPECTION REPORT	-
322	HEAT TREAT REPORT (W/CHART)	-
310	LEAK TEST REPORT	-
315	CLEANING CERT	-
318	DEVIATION REQUEST	-
319	NONCONFORMANCE PROCESS	-
323	DIMENSIONAL REPORT	-
330	FUNCTIONAL TEST REPORT	-
100	DOCUMENTATION	-

* SYMBOL X INDICATES APPLICABLE TO ALL PARTS OR ITEMS

QA REP ..... DATE .....

RPE

REV. XX DATE XX/XX/XX

I06040106M8E8700A001

REV	CHANGE TYPE	CHANGE CONTROL SYSTEM	CHANGE CONTROL NUMBER	REVISION OR ISSUE PURPOSE	BY	CHK	SECT	DEPT	DATE	PE	REQ	DOE	L3
001	-	3	-	⚠1 ADDED TAPPED HOLES	RWT	KKC			1/2/02				DAER
000	-	3	-	ISSUED FOR PROCUREMENT	RWT				10/1/01				

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

DRAWING APPROVALS		DATE
DES	DA EVERITT	12/11/00
DRW	RON TAYLOR	12/11/00
CHK	KK CHIPLEY	10/01
L3	DA EVERIT	12/02/01
L2	:	:
:	:	:
:	:	:
:	:	:
:	:	:
:	:	:
:	:	:
:	:	:

ornl Oak Ridge National Laboratory
operated for the DEPARTMENT OF ENERGY under U.S. GOVERNMENT contract DE-AC05-00OR22725
Oak Ridge, Tennessee

SNS Spallation Neutron Source

TARGET SYSTEMS
CORE VESSEL
OUTER VESSEL LOWER SHIELDING

BLDG	FL	SHT	OF	CLASS
8700		1	14	U

I06040106M8E8700A001 REV 001

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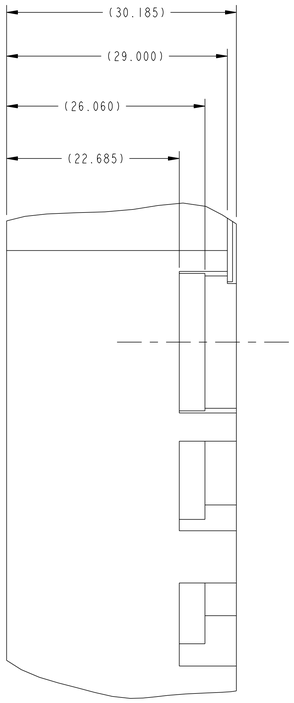
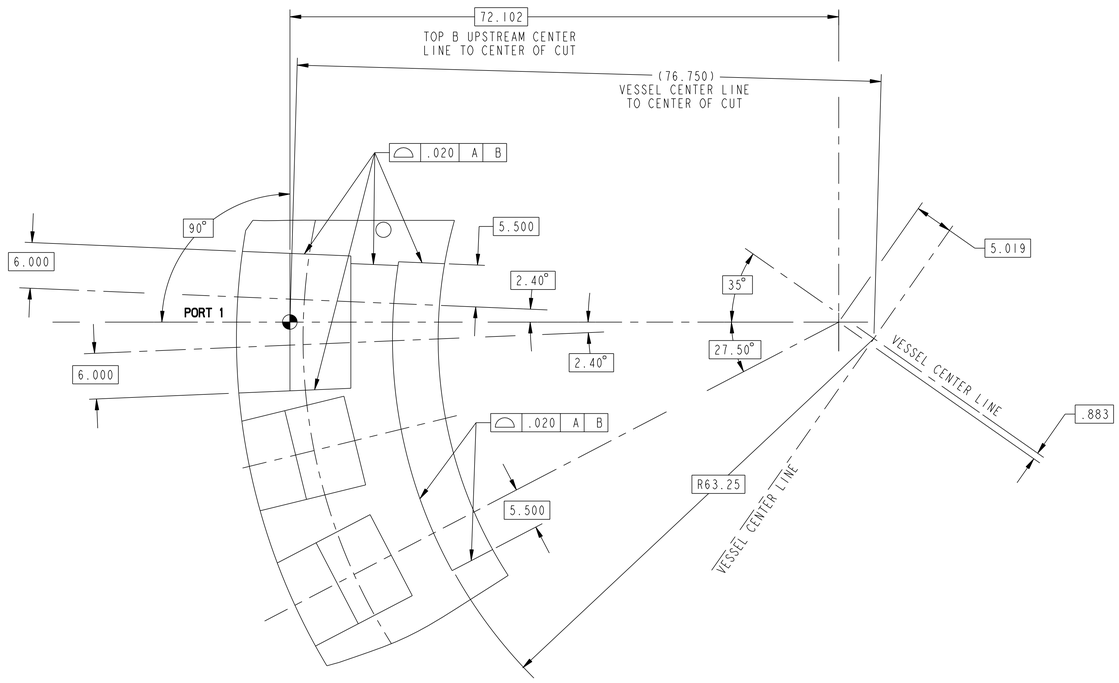
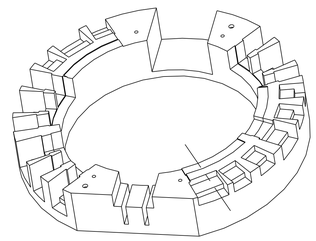
P THIS DRAWING PRODUCED ON PRO-ENGINEER

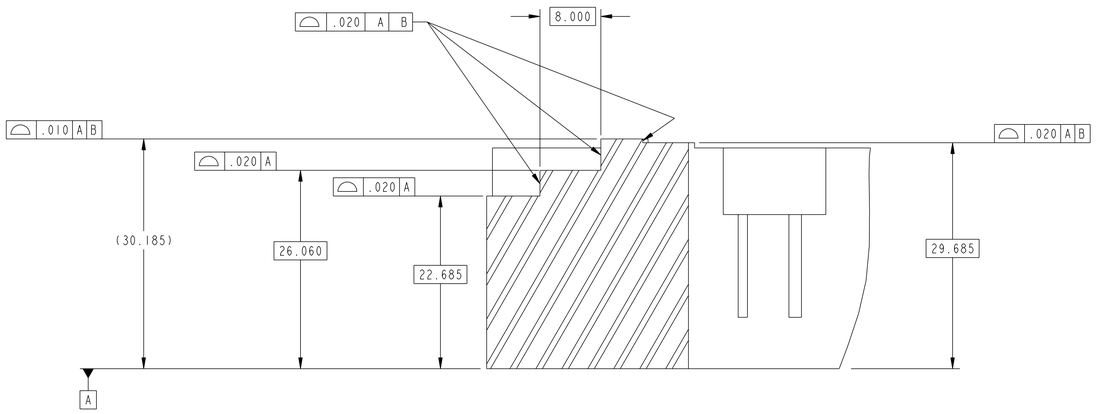
THIS DOCUMENT CONTROLLED BY
CHANGE CONTROL SYSTEM 3
SNS PROCEDURE SNS-TS-G001



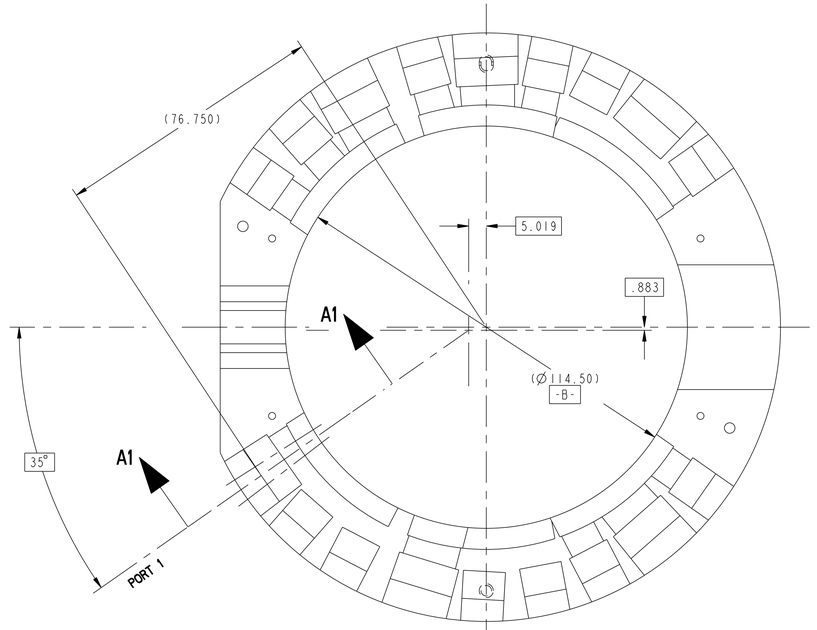




SCALE 0.03



SECTION A1-A1
SECTION SHOWN ROTATED 35° CLOCKWISE
SCALE 0.13



VIEW A-A
TOP B UPSTREAM

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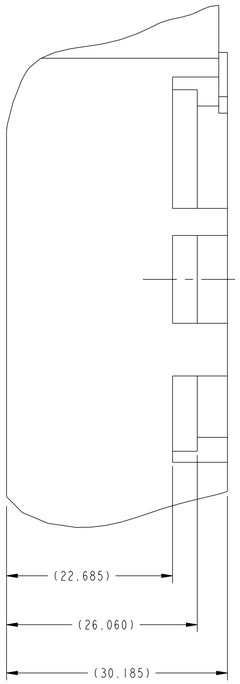
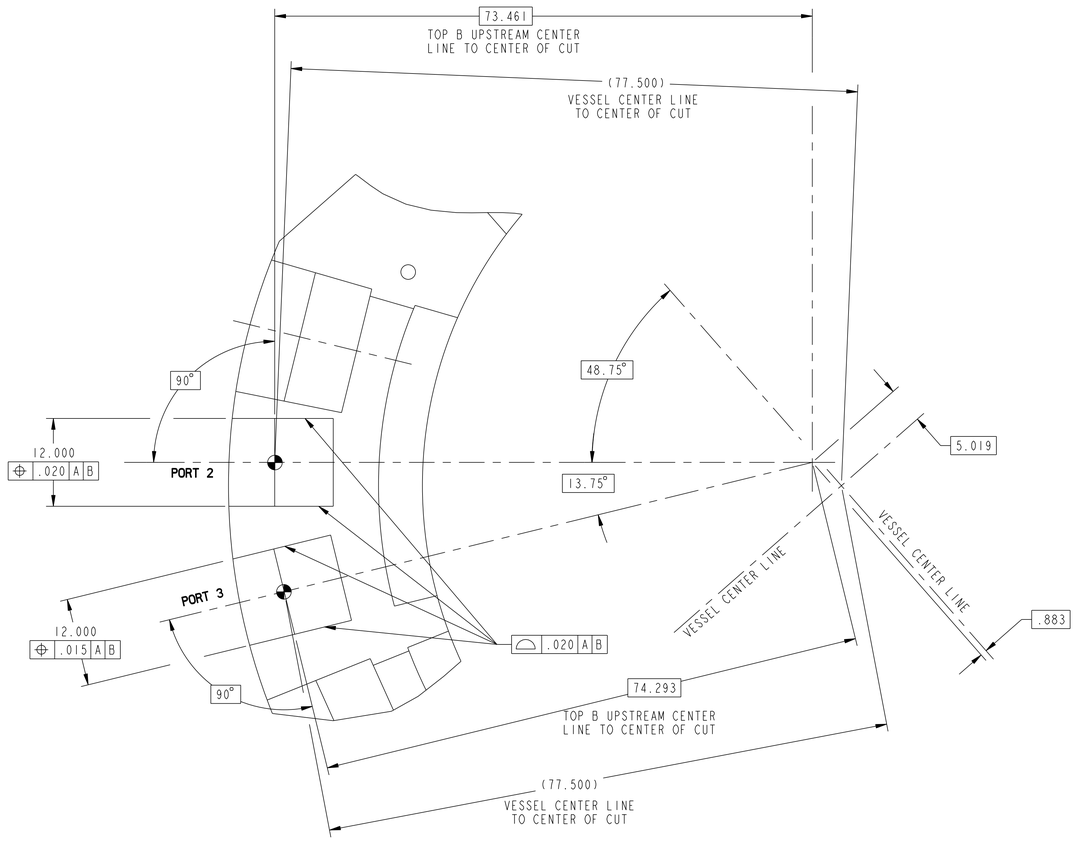
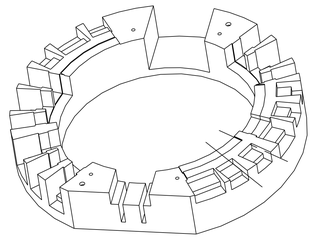
P THIS DRAWING PRODUCED ON PRO-ENGINEER

SCALE .06	ornl Oak Ridge National Laboratory
TOLERANCES UNLESS OTHERWISE SPECIFIED	operated for the DEPARTMENT OF ENERGY under U.S. GOVERNMENT contract DE-AC05-00OR22725 Oak Ridge, Tennessee
FRACTIONS :	SNS Spallation Neutron Source
XX DECIMALS ±.01	TARGET SYSTEMS
XXX DECIMALS ±.005	CORE VESSEL
ANGLES ±0°15'	OUTER VESSEL LOWER SHIELDING
BREAK SHARP EDGES .06 MAX	
FINISH 125 RMS UNLESS OTHERWISE SPECIFIED	BLDG 8700 · FL · SHT OF 2 14 · CLASS U · REV 001
	106040106M8E8700A001

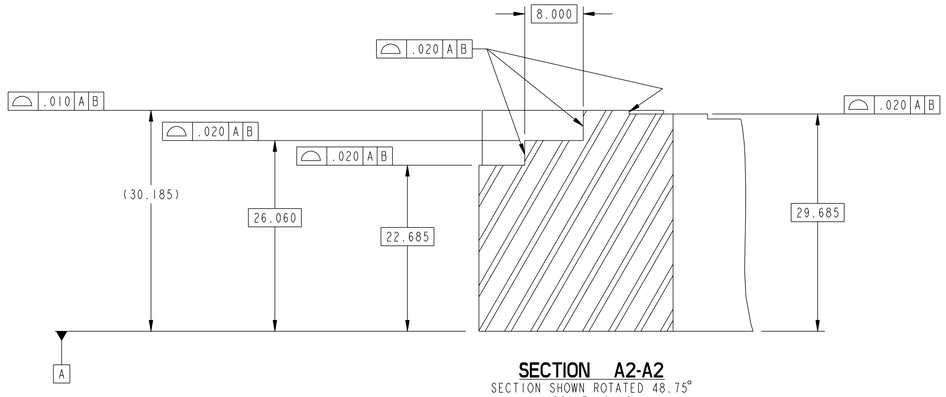
106040106M8E8700A001



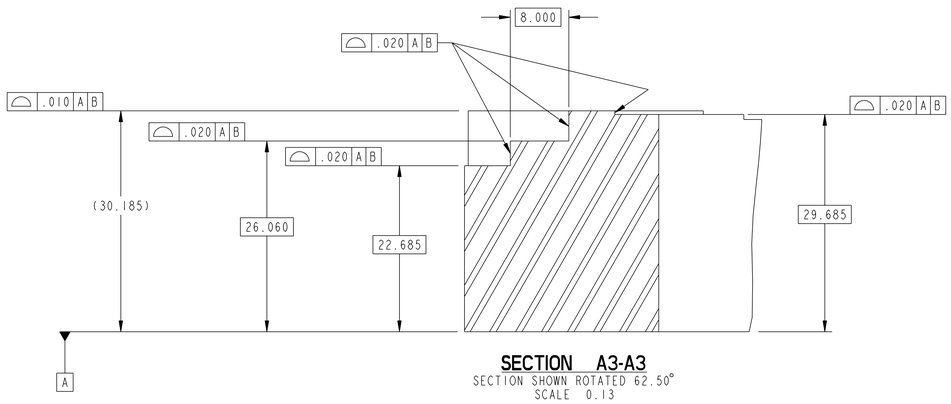




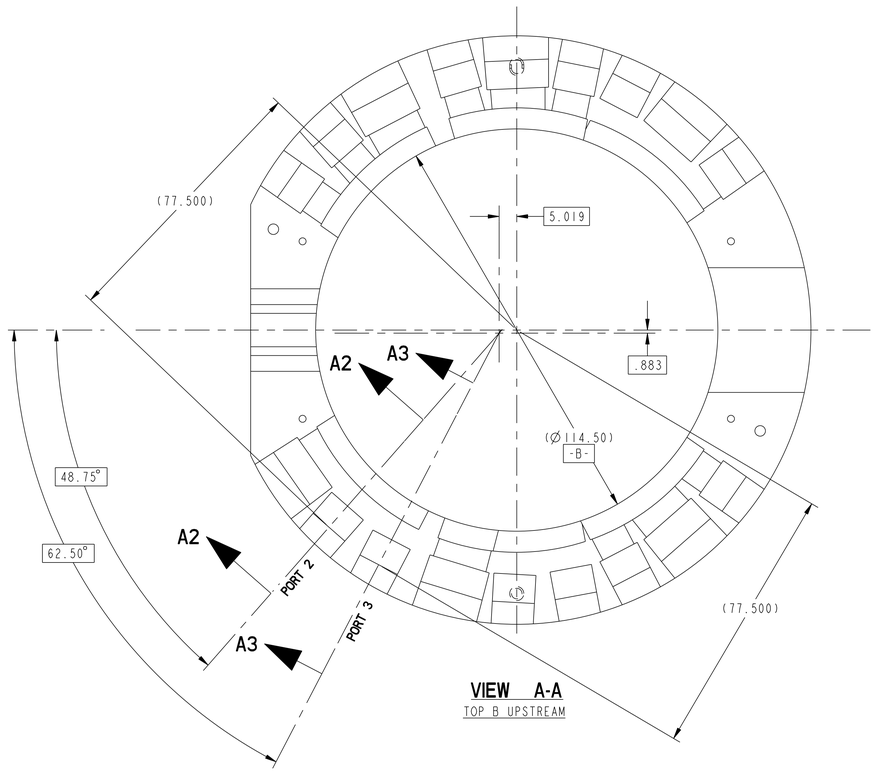
SCALE 0.03



SECTION A2-A2
SECTION SHOWN ROTATED 48.75°
SCALE 0.13



SECTION A3-A3
SECTION SHOWN ROTATED 62.50°
SCALE 0.13



VIEW A-A
TOP B UPSTREAM

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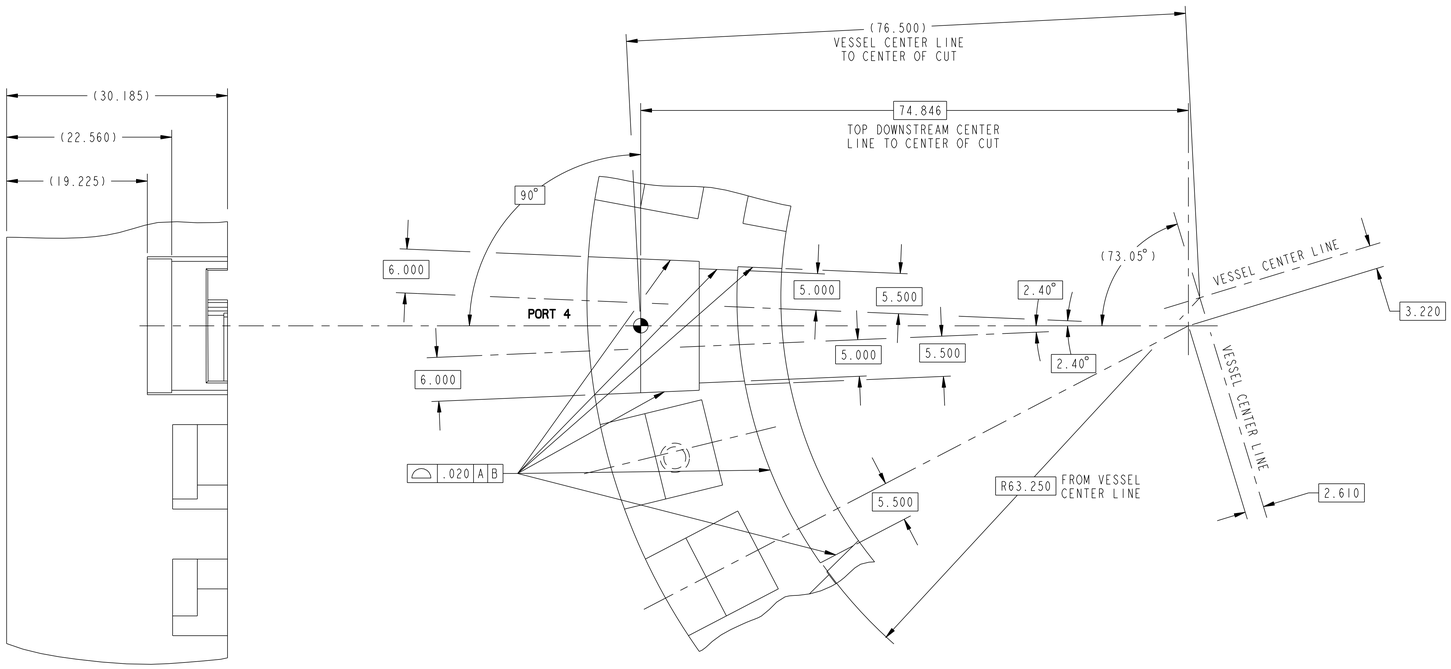
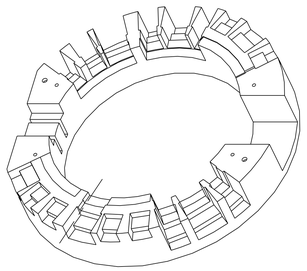
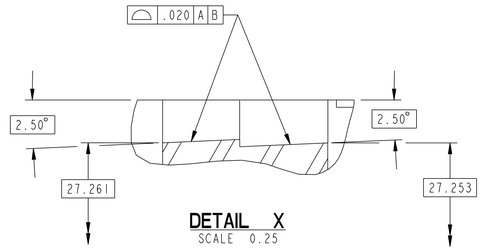
SCALE .06	ornl Oak Ridge National Laboratory
TOLERANCES UNLESS OTHERWISE SPECIFIED	operated for the DEPARTMENT OF ENERGY under U.S. GOVERNMENT contract DE-AC05-00OR22725 Oak Ridge, Tennessee
FRACTIONS :	SNS Spallation Neutron Source
XX DECIMALS ±.01	TARGET SYSTEMS
XXX DECIMALS ±.005	CORE VESSEL
ANGLES ±0°15'	OUTER VESSEL LOWER SHIELDING
BREAK SHARP EDGES .06 MAX	
FINISH 125 RMS UNLESS OTHERWISE SPECIFIED	BLDG 8700 · FL · SHT 3 OF 14 · CLASS U
	106040106M8E8700A001 REV 001

106040106M8E8700A001

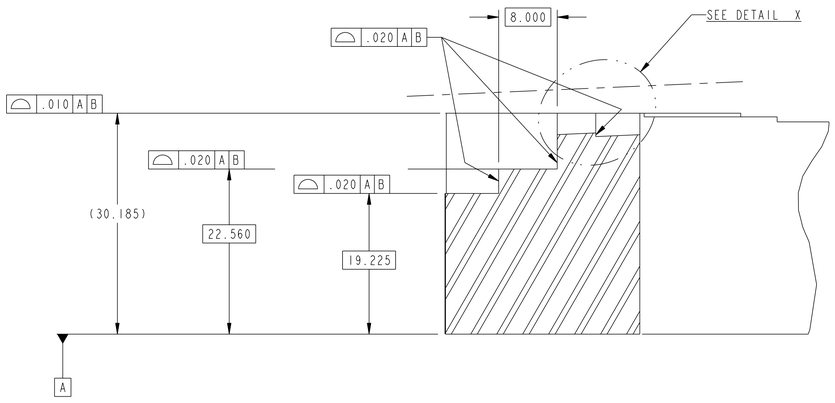




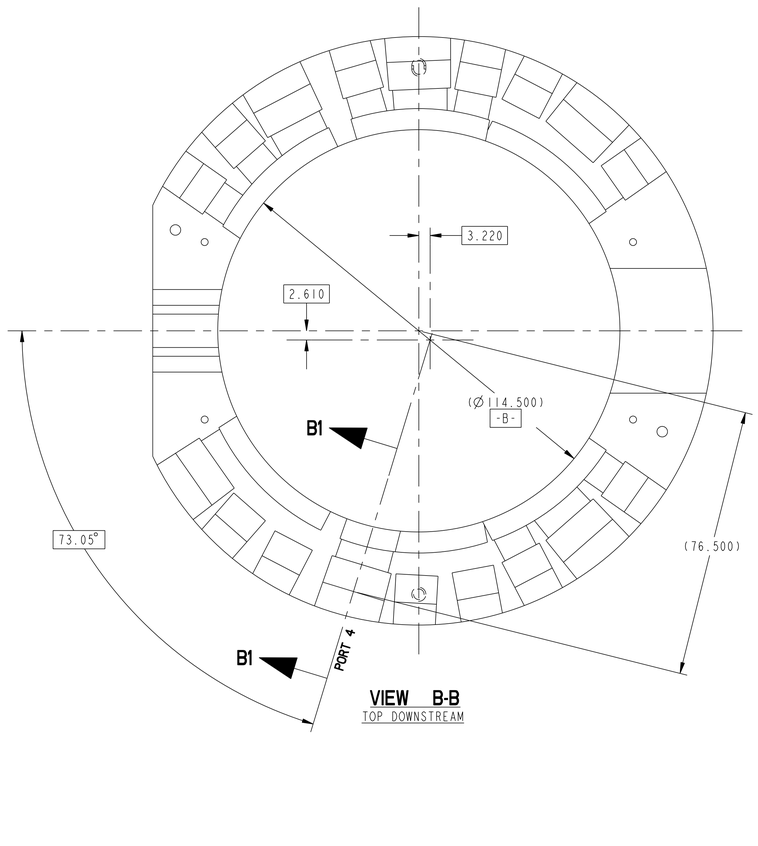
SCALE 0.03



DETAIL X
SCALE 0.25



SECTION B1-B1
SECTION SHOWN ROTATED 73.05° CLOCKWISE
SCALE 0.13



VIEW B-B
TOP DOWNSTREAM

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

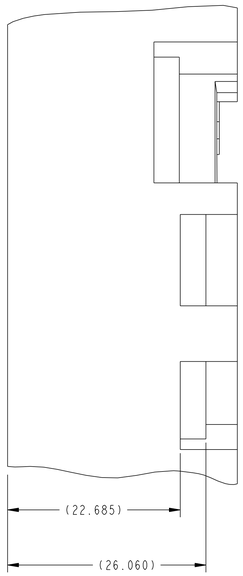
ornl Oak Ridge National Laboratory
operated for the DEPARTMENT OF ENERGY under U.S. GOVERNMENT contract DE-AC05-00OR22725
Oak Ridge, Tennessee
SNS Spallation Neutron Source

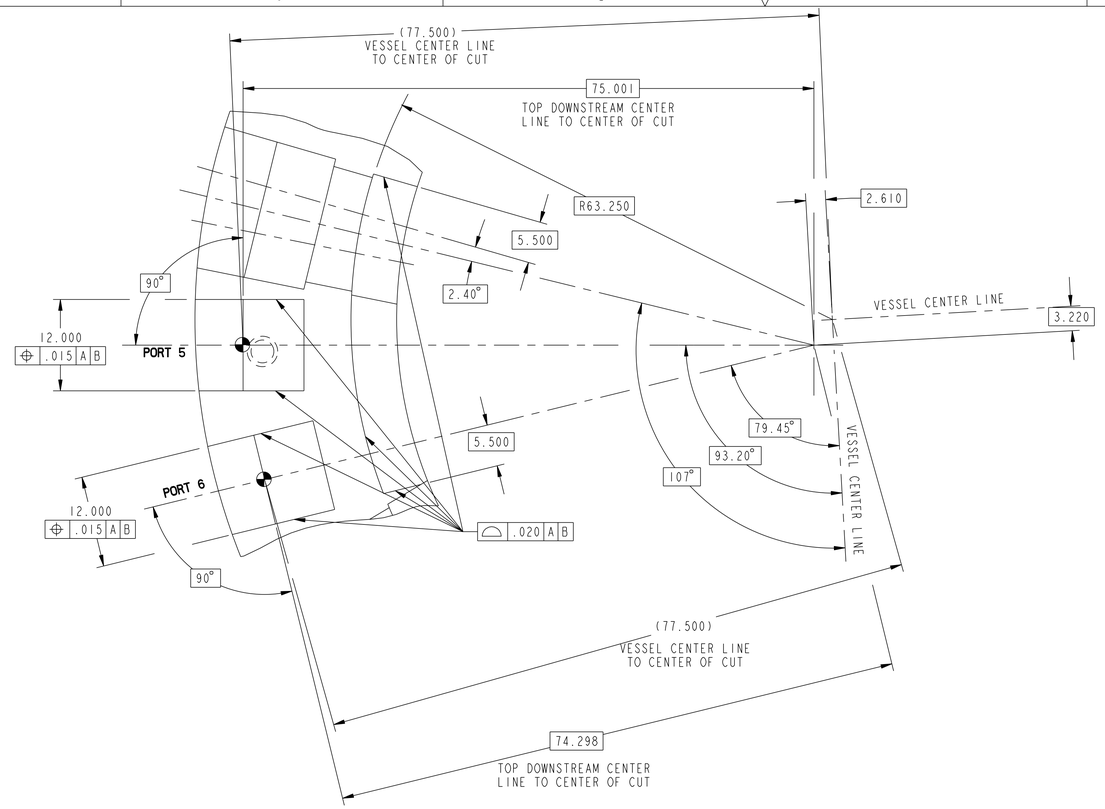
TARGET SYSTEMS
CORE VESSEL
OUTER VESSEL LOWER SHIELDING

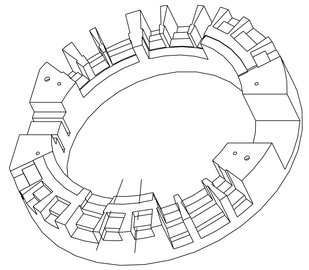
BLDG	FL	SHT	OF	CLASS
8700		4	14	U

I06040106M8E8700A001 REV 001

I06040106M8E8700A001







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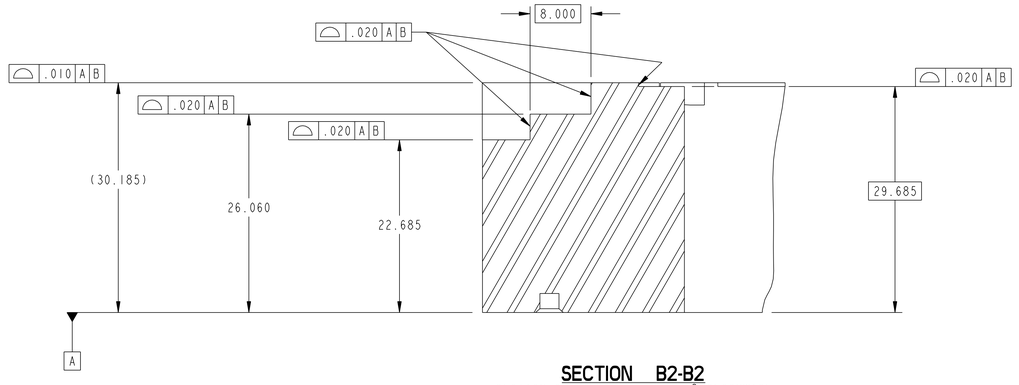
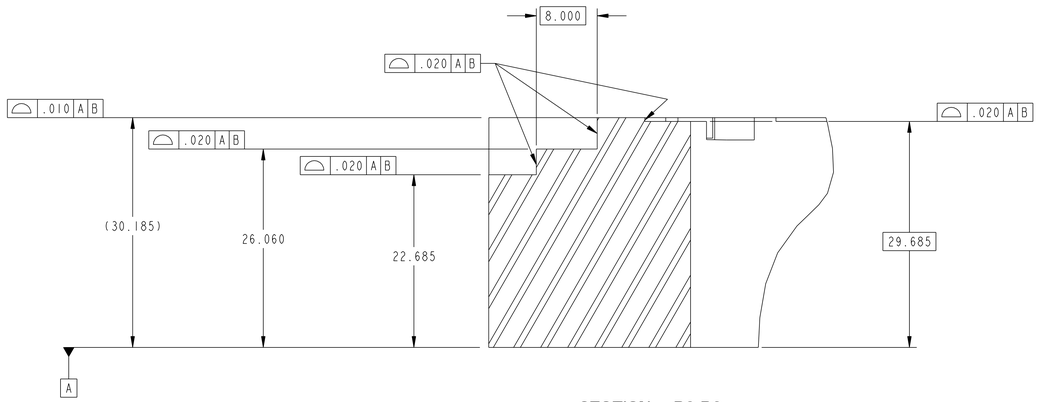
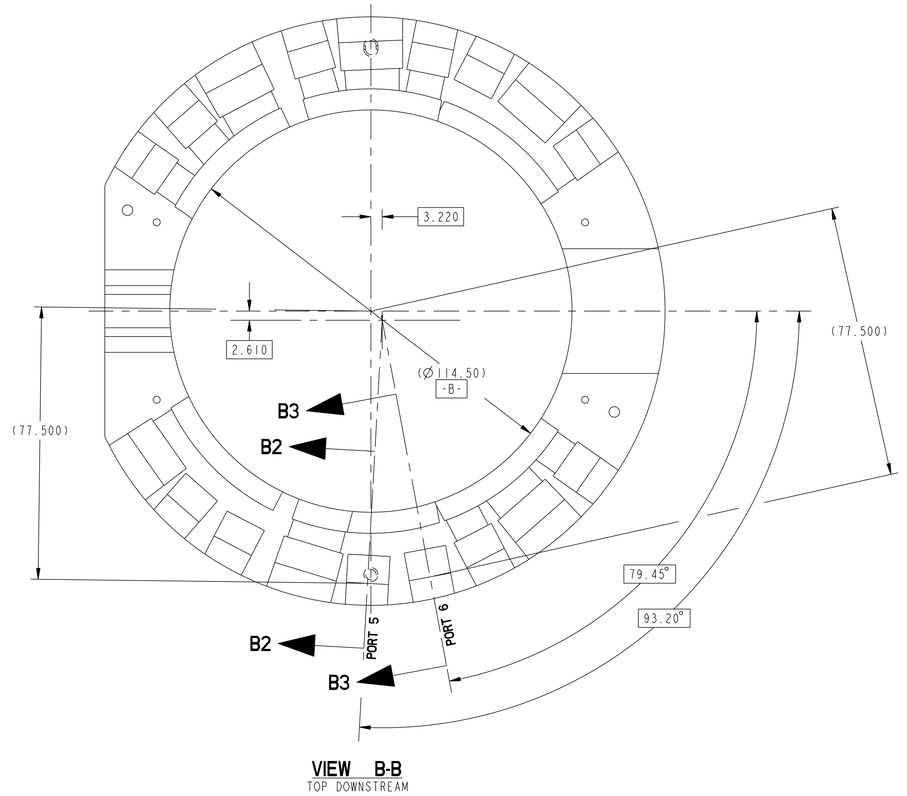


SECTION B2-B2
SECTION SHOWN ROTATED 86.80° CLOCKWISE
SCALE 0.13



SECTION B3-B3
SECTION SHOWN ROTATED 105.55° CLOCKWISE
SCALE 0.13



VIEW B-B
TOP DOWNSTREAM

SCALE .06	ornl Oak Ridge National Laboratory
TOLERANCES UNLESS OTHERWISE SPECIFIED	operated for the DEPARTMENT OF ENERGY under U.S. GOVERNMENT contract DE-AC05-00OR22725 Oak Ridge, Tennessee
FRACTIONS :	SNS Spallation Neutron Source
XX DECIMALS ±.01	TARGET SYSTEMS
XXX DECIMALS ±.005	CORE VESSEL
ANGLES ±0°15'	OUTER VESSEL LOWER SHIELDING
BREAK SHARP EDGES .06 MAX	BLDG 8700 · FL · SHT 5 OF 14 · CLASS U
FINISH 125 RMS UNLESS OTHERWISE SPECIFIED	106040106M8E8700A001 REV 001

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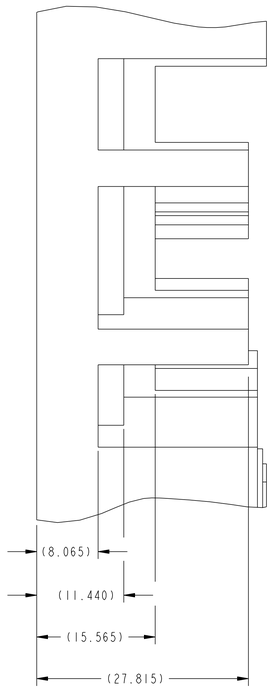
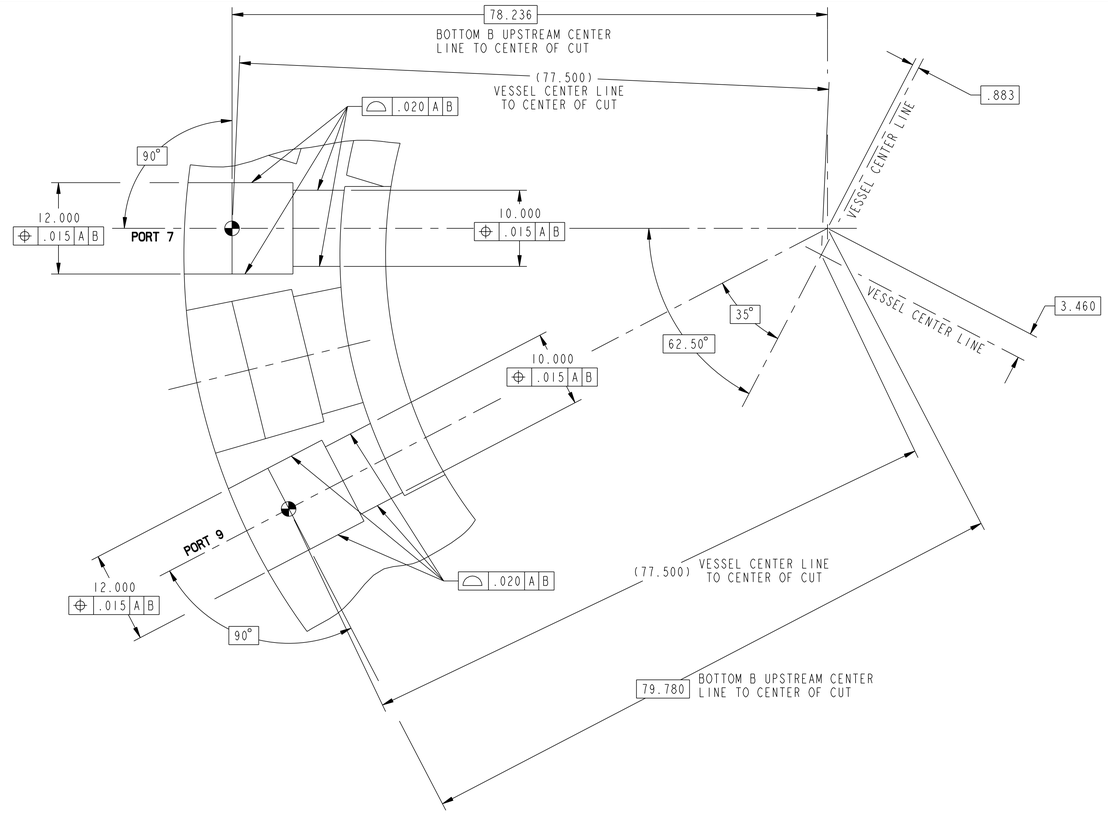
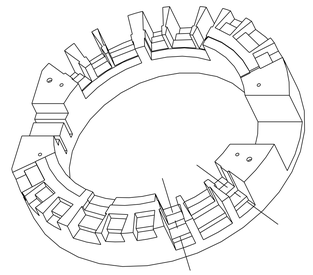
P THIS DRAWING PRODUCED ON PRO-ENGINEER

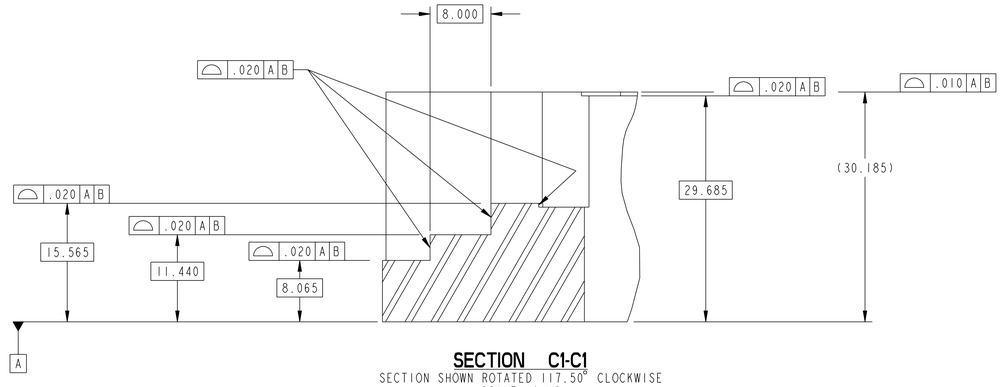
106040106M8E8700A001



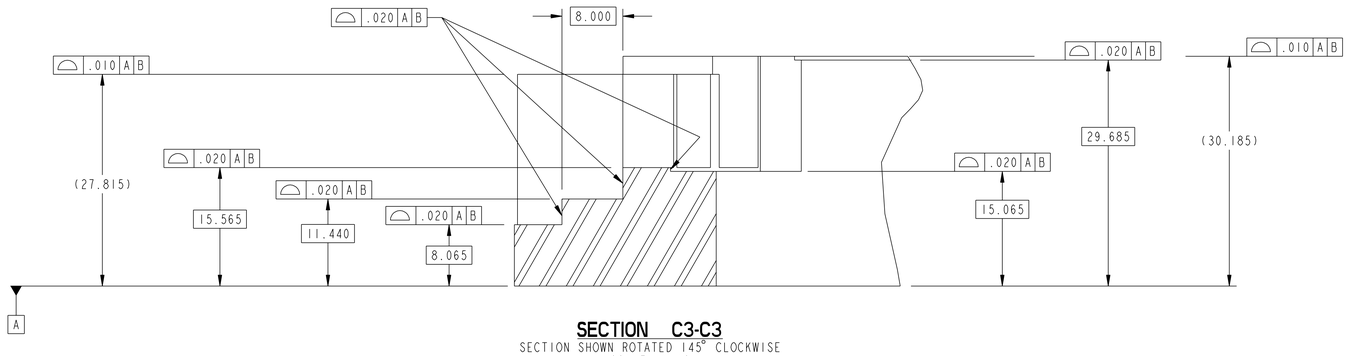




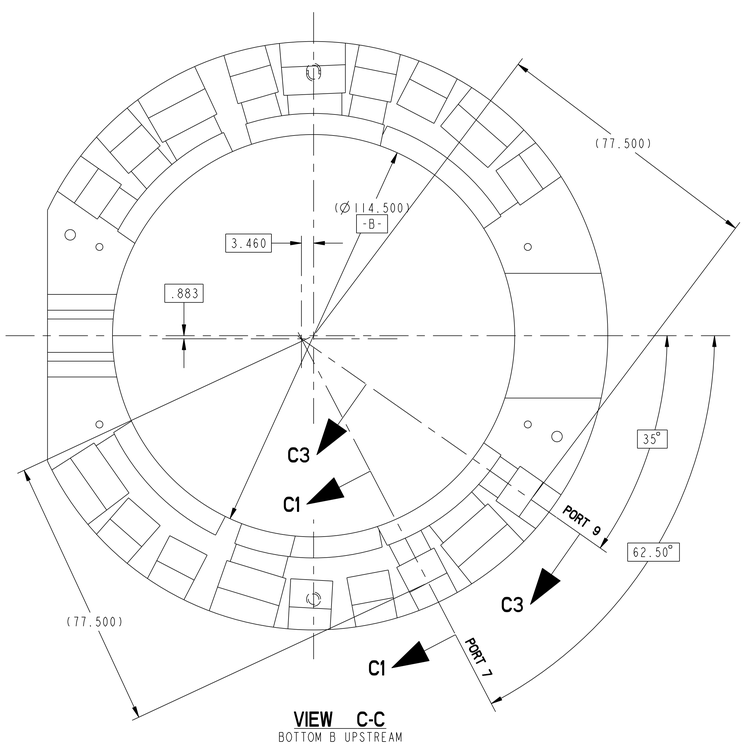
SCALE 0.03



SECTION C1-C1
SECTION SHOWN ROTATED 117.50° CLOCKWISE
SCALE 0.13



SECTION C3-C3
SECTION SHOWN ROTATED 145° CLOCKWISE
SCALE 0.13



VIEW C-C
BOTTOM B UPSTREAM

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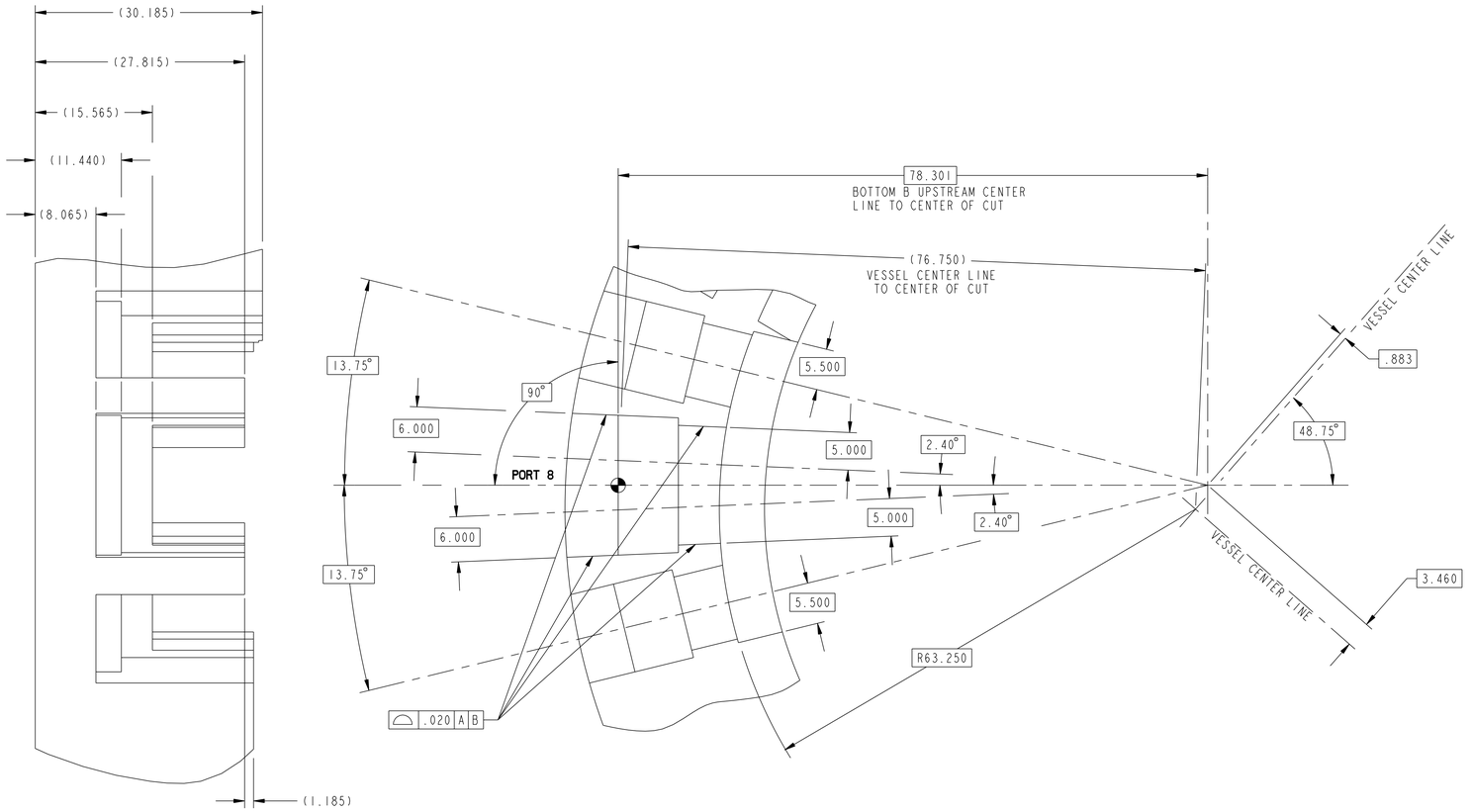
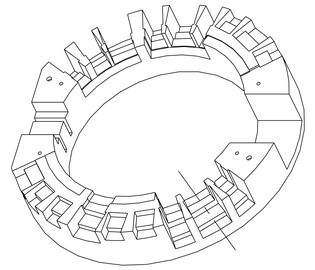
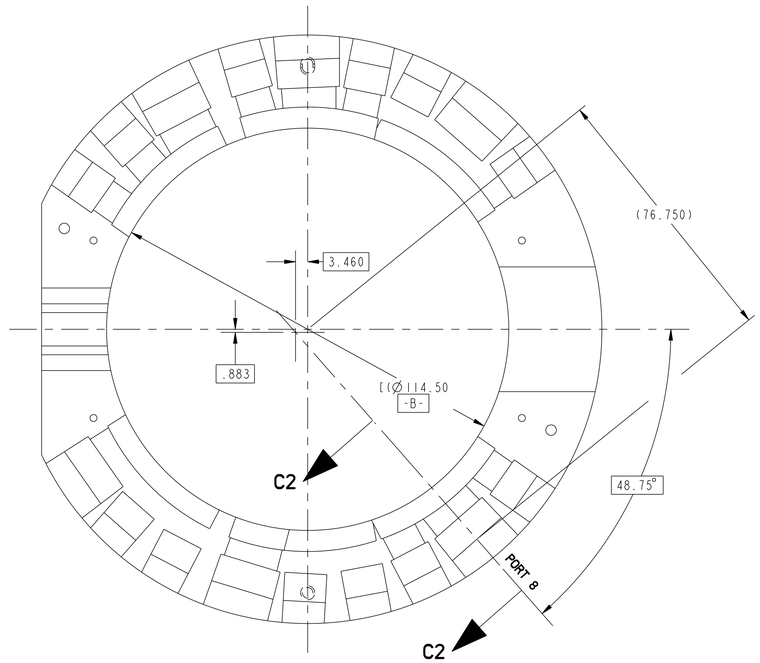
SCALE .06	ornl Oak Ridge National Laboratory
TOLERANCES UNLESS OTHERWISE SPECIFIED	operated for the DEPARTMENT OF ENERGY under U.S. GOVERNMENT contract DE-AC05-00OR22725 Oak Ridge, Tennessee
	SNS Spallation Neutron Source
FRACTIONS :	TARGET SYSTEMS
XX DECIMALS ±.01	CORE VESSEL
XXX DECIMALS ±.005	OUTER VESSEL LOWER SHIELDING
ANGLES ±0°15'	
BREAK SHARP EDGES .06 MAX	BLDG 8700 · FL · SHT 6 OF 14 · CLASS U
FINISH 125 RMS UNLESS OTHERWISE SPECIFIED	106040106M8E8700A001 REV 001

106040106M8E8700A001

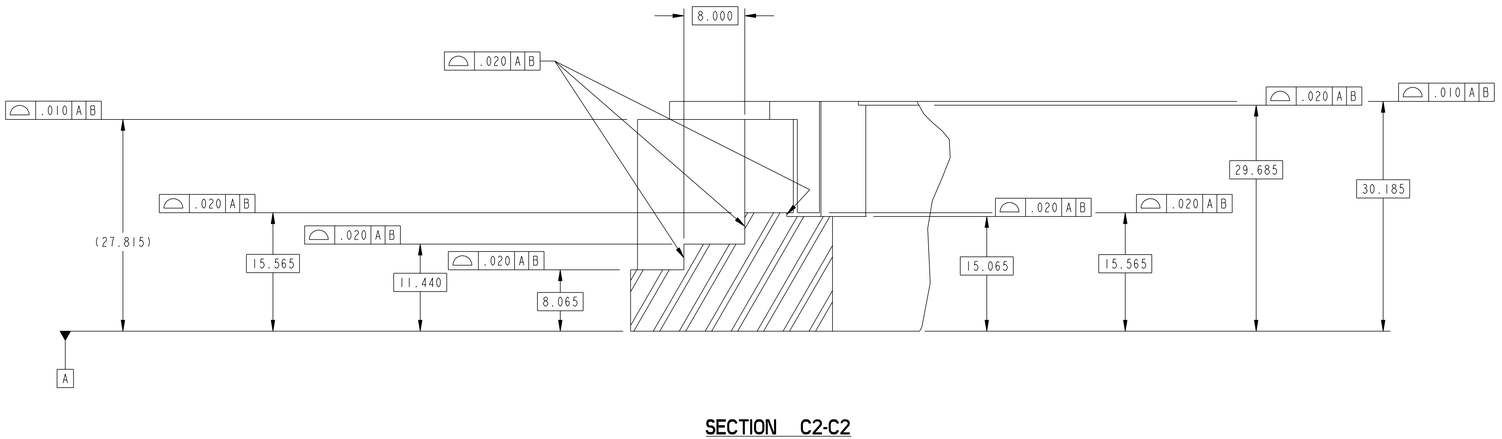




SCALE 0.03



VIEW C-C
BOTTOM B UPSTREAM



SECTION C2-C2
SCALE 0.13

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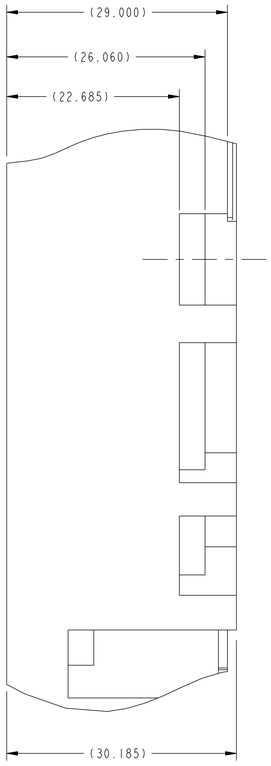
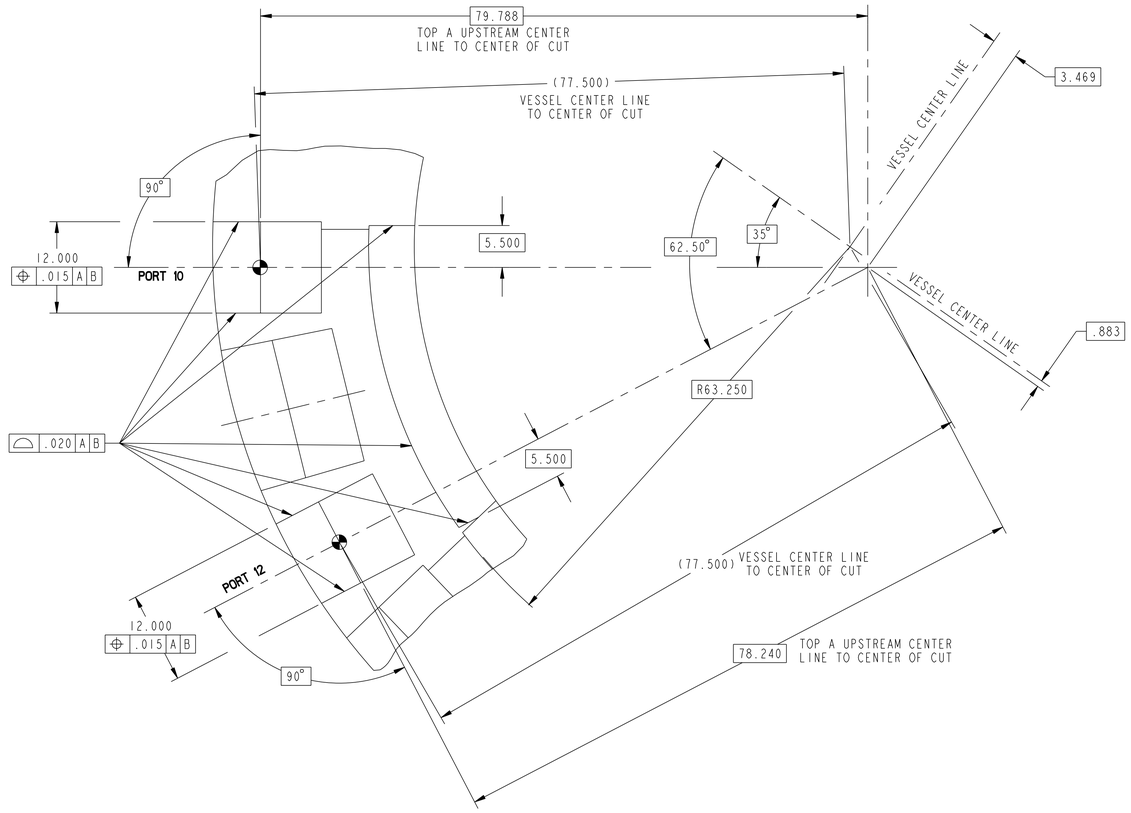
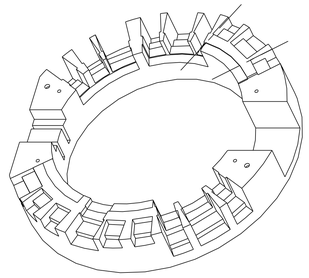
P THIS DRAWING PRODUCED ON PRO-ENGINEER

SCALE .06	ornl Oak Ridge National Laboratory
TOLERANCES UNLESS OTHERWISE SPECIFIED	operated for the DEPARTMENT OF ENERGY under U.S. GOVERNMENT contract DE-AC05-00OR22725 Oak Ridge, Tennessee
FRACTIONS :	SNS Spallation Neutron Source
XX DECIMALS ±.01	TARGET SYSTEMS
XXX DECIMALS ±.005	CORE VESSEL
ANGLES ±0°15'	OUTER VESSEL LOWER SHIELDING
BREAK SHARP EDGES .06 MAX	
FINISH 125 RMS UNLESS OTHERWISE SPECIFIED	BLDG 8700 · FL · SHT 7 OF 14 · CLASS U
	106040106M8E8700A001 · REV 001

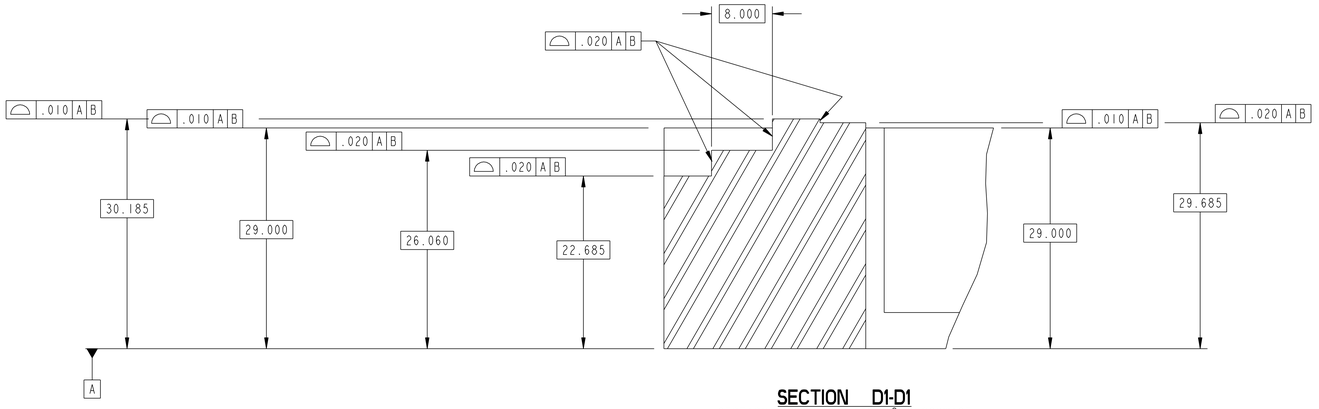
106040106M8E8700A001



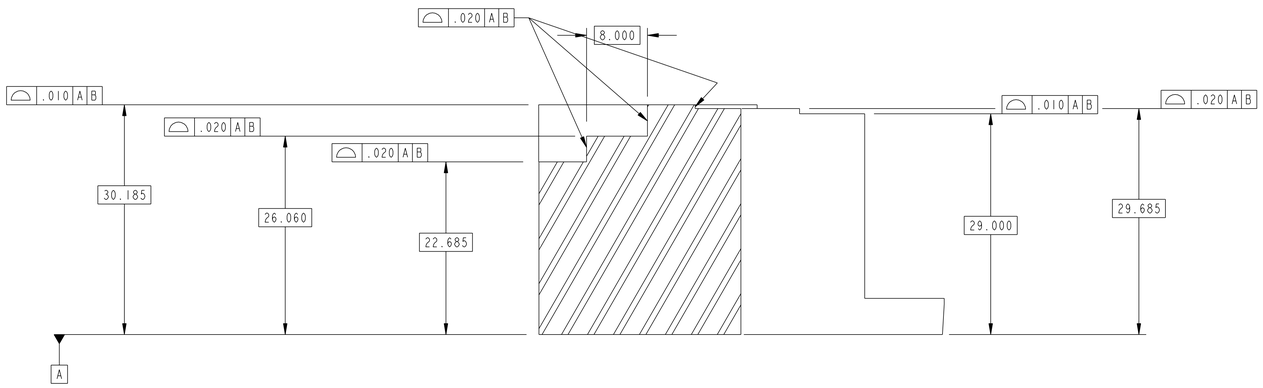




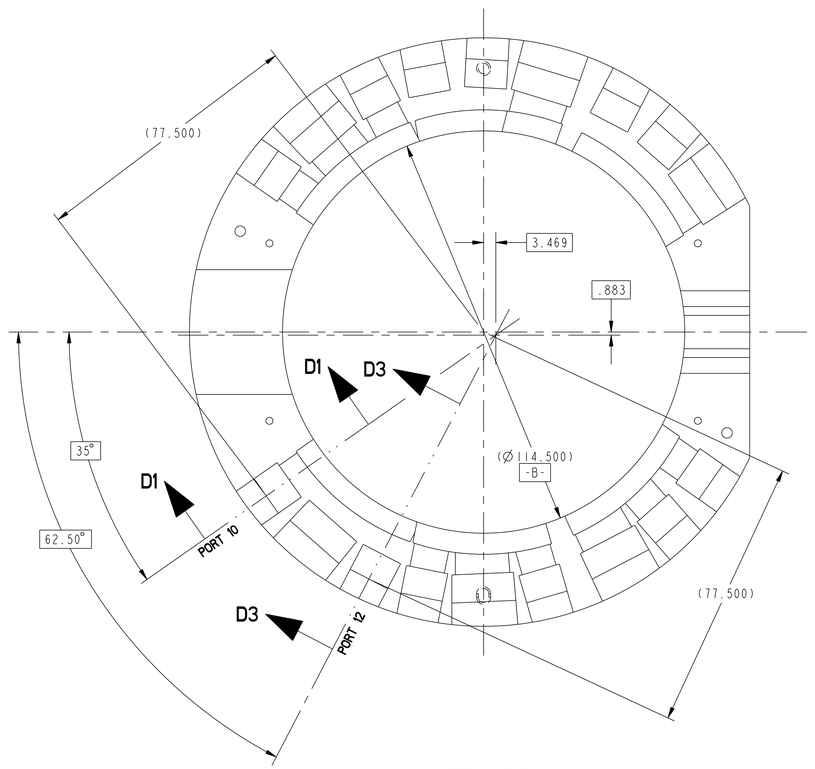
SCALE 0.03



SECTION D1-D1
SECTION SHOWN ROTATED 35° CLOCKWISE
SCALE 0.13



SECTION D3-D3
SECTION SHOWN ROTATED 62.50° CLOCKWISE
SCALE 0.13



VIEW D-D
TOP A UPSTREAM
VIEW ROTATED 180° CLOCKWISE

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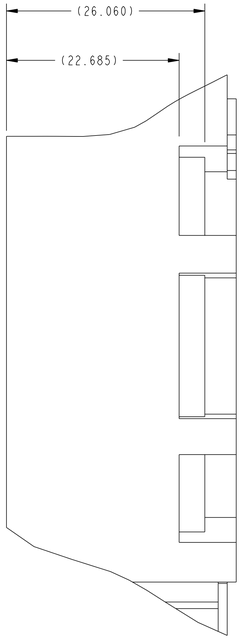
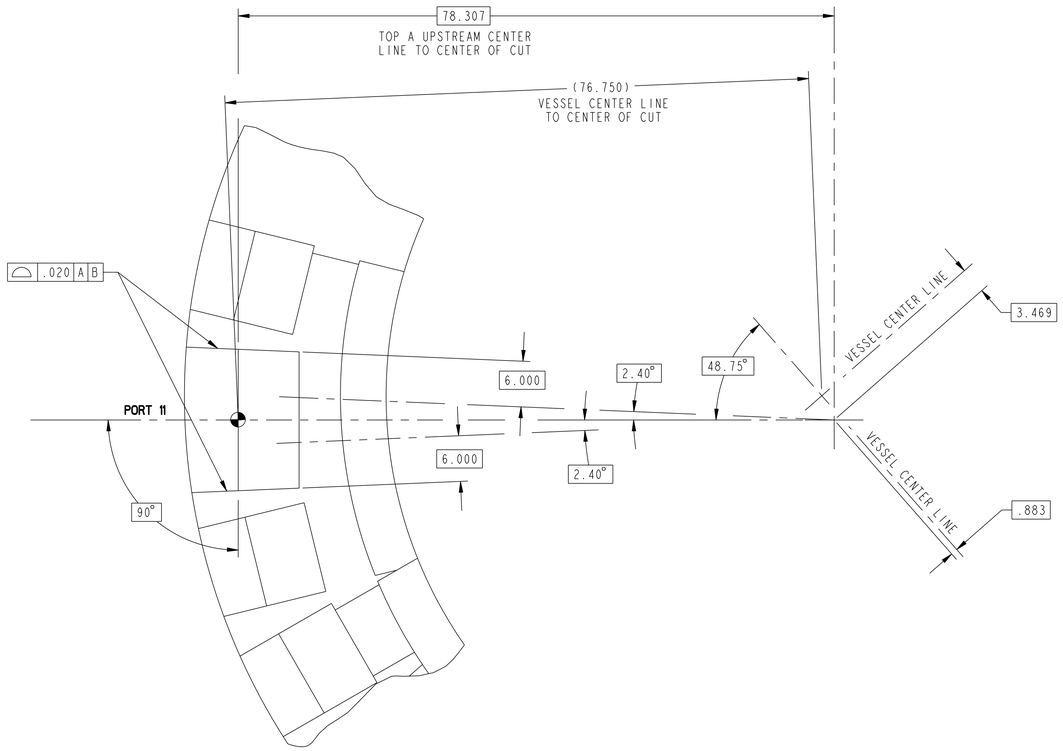
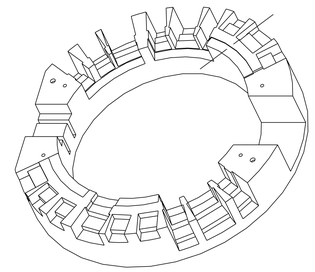
P THIS DRAWING PRODUCED ON PRO-ENGINEER

SCALE .06	ornl Oak Ridge National Laboratory
TOLERANCES UNLESS OTHERWISE SPECIFIED	operated for the DEPARTMENT OF ENERGY under U.S. GOVERNMENT contract DE-AC05-00OR22725 Oak Ridge, Tennessee
FRACTIONS :	SNS Spallation Neutron Source
XX DECIMALS ±.01	TARGET SYSTEMS
XXX DECIMALS ±.005	CORE VESSEL
ANGLES ±0°15'	OUTER VESSEL LOWER SHIELDING
BREAK SHARP EDGES .06 MAX	
FINISH 125 RMS UNLESS OTHERWISE SPECIFIED	BLDG 8700 | FL | SHT 8 OF 14 | CLASS U
	106040106M8E8700A001 REV 001

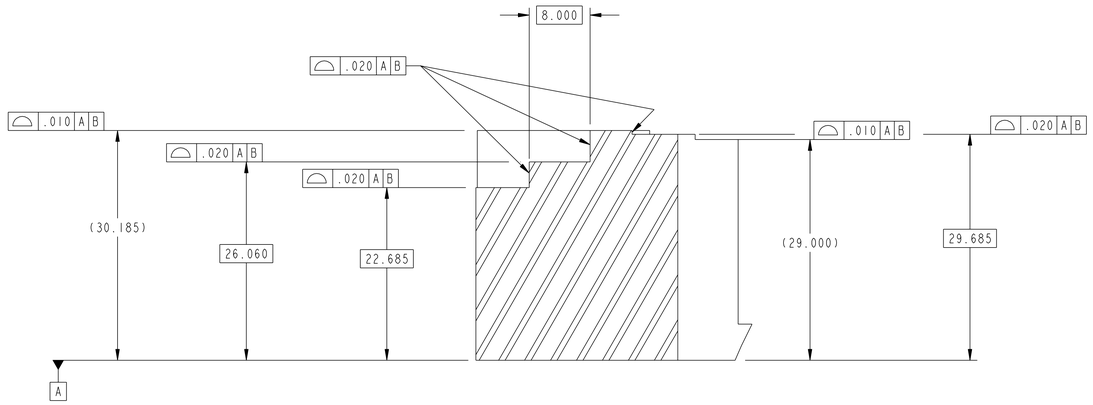
106040106M8E8700A001



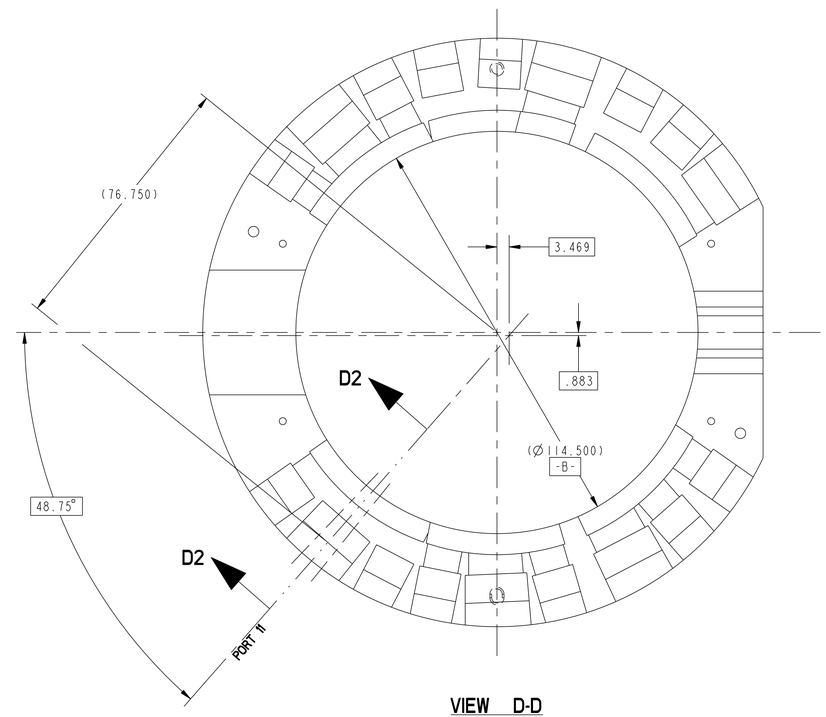




SCALE 0.03



SECTION D2-D2
SECTION SHOWN ROTATED 48.75° CLOCKWISE
SCALE 0.13



VIEW D-D
TOP A UPSTREAM
VIEW SHOWN ROTATED 180° CLOCKWISE

NO REPRESENTATION OR WARRANTY,EXPRESSED OR IMPLIED,IS MADE AS TO THE ACCURACY, COMPLETENESS OR USEFULNESS OF THE INFORMATION OR STATEMENTS CONTAINED IN THESE DRAWINGS, OR THAT THE USE OR DISCLOSURE OF ANY INFORMATION, APPARATUS, METHOD OR PROCESS DISCLOSED IN THESE DRAWINGS MAY NOT INFRINGE PRIVATE RIGHTS OF OTHERS. NO LIABILITY IS ASSUMED WITH RESPECT TO THE USE OF, OR FOR DAMAGES RESULTING FROM THE USE OF, ANY INFORMATION, APPARATUS, METHOD OR PROCESS DISCLOSED IN THESE DRAWINGS. DRAWINGS MADE AVAILABLE FOR INFORMATION TO BIDDER ARE NOT TO BE USED FOR OTHER PURPOSES, AND ARE TO BE RETURNED UPON REQUEST OF THE FORWARDING CONTRACTOR.

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

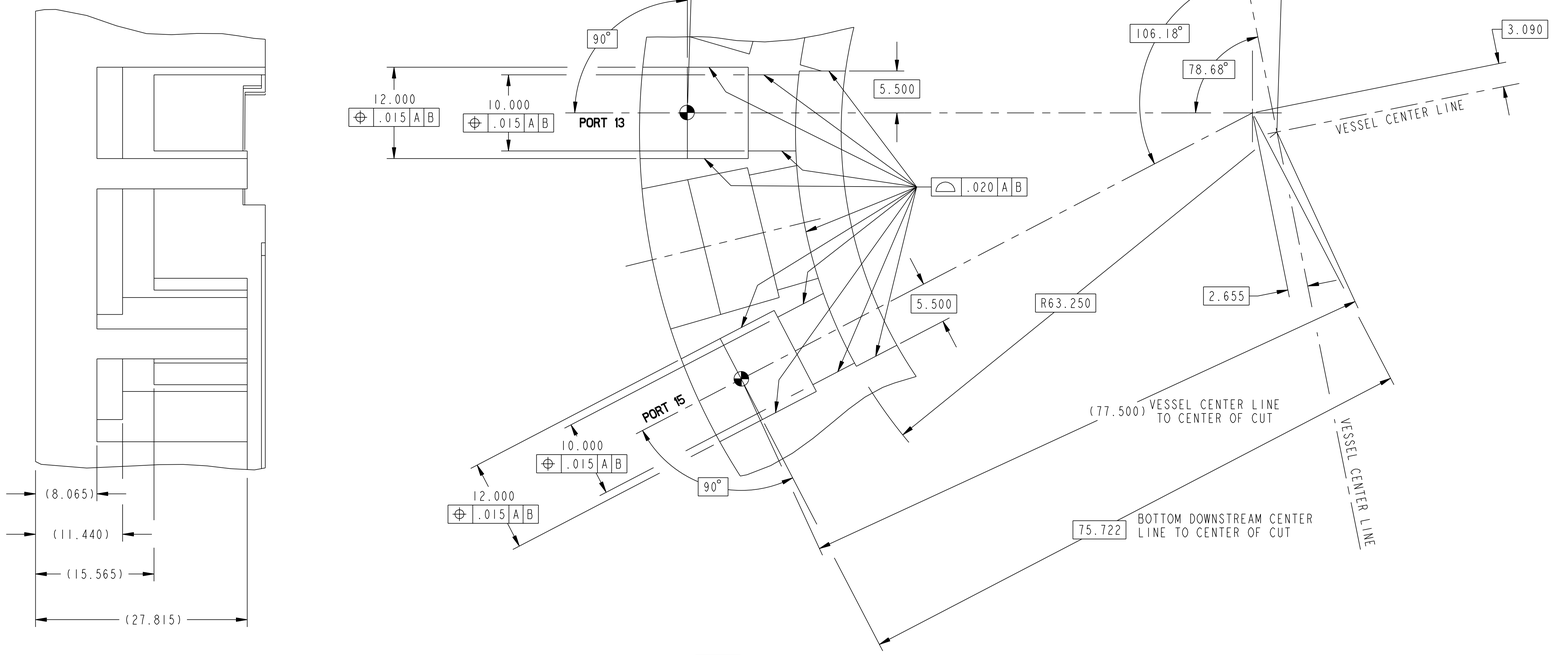
ornl Oak Ridge National Laboratory
operated for the DEPARTMENT OF ENERGY under U.S. GOVERNMENT contract DE-AC05-00OR22725
Oak Ridge, Tennessee
SNS Spallation Neutron Source

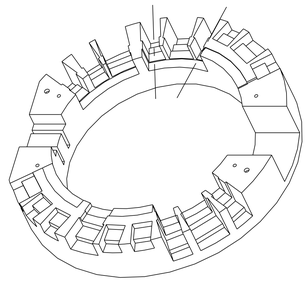
TARGET SYSTEMS
CORE VESSEL
OUTER VESSEL LOWER SHIELDING

BLDG	FL	SHT	OF	CLASS
8700		9	14	U

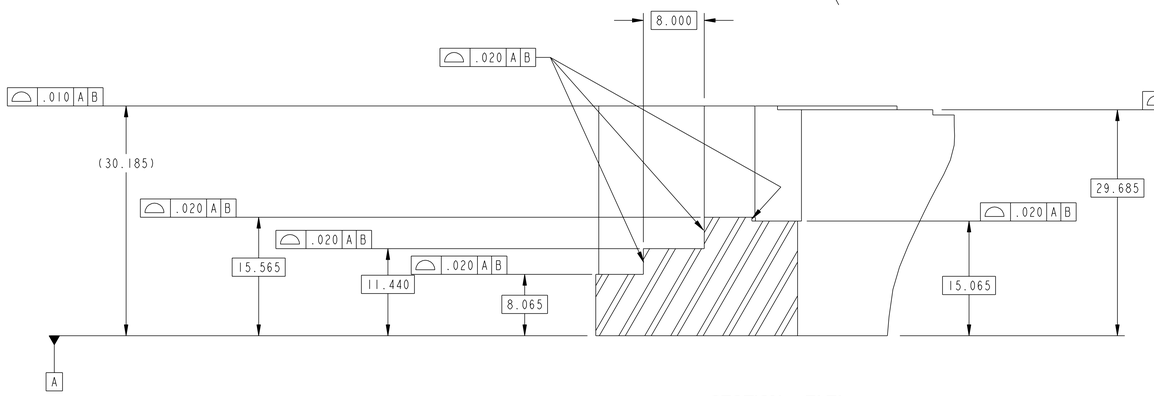
106040106M8E8700A001 REV 001

106040106M8E8700A001

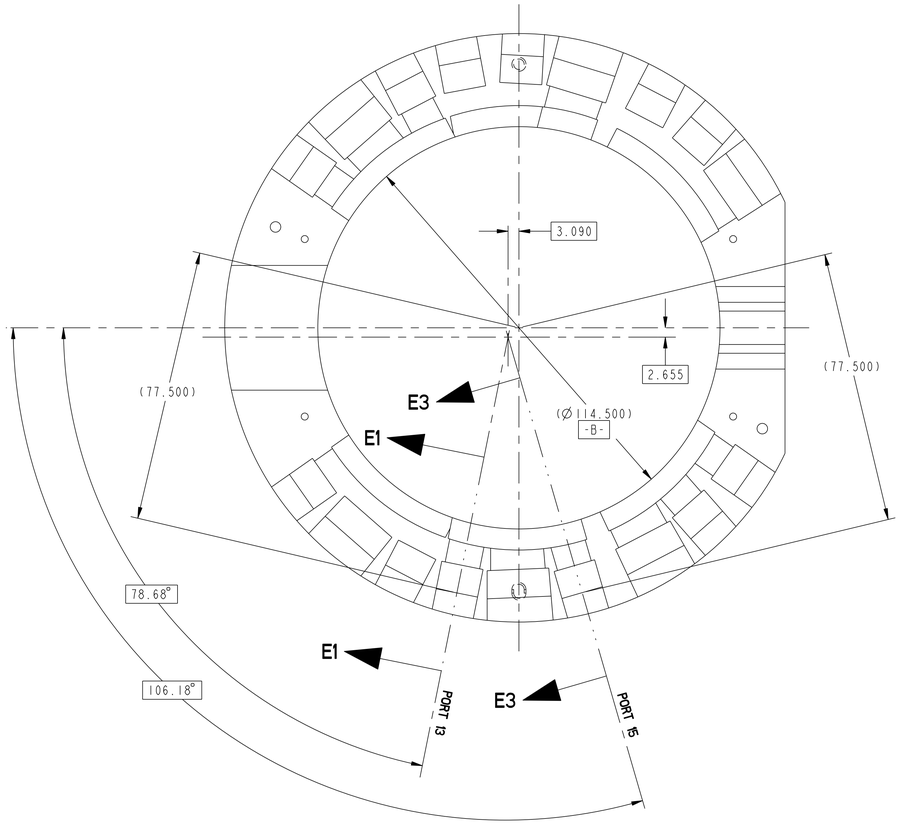




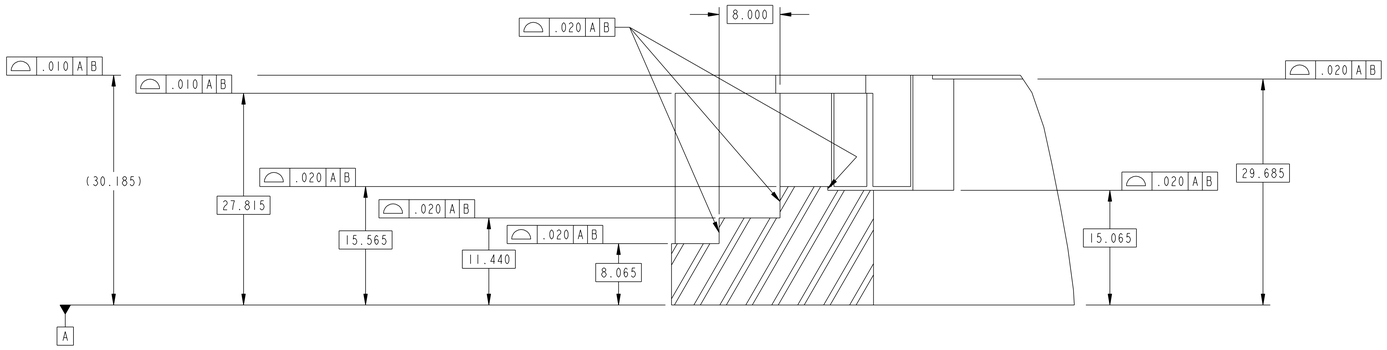
SCALE 0.03



SECTION E1-E1
SECTION SHOWN ROTATED 78.68° CLOCKWISE
SCALE 0.13



VIEW E-E
BOTTOM DOWNSTREAM
VIEW SHOWN ROTATED 180° CLOCKWISE



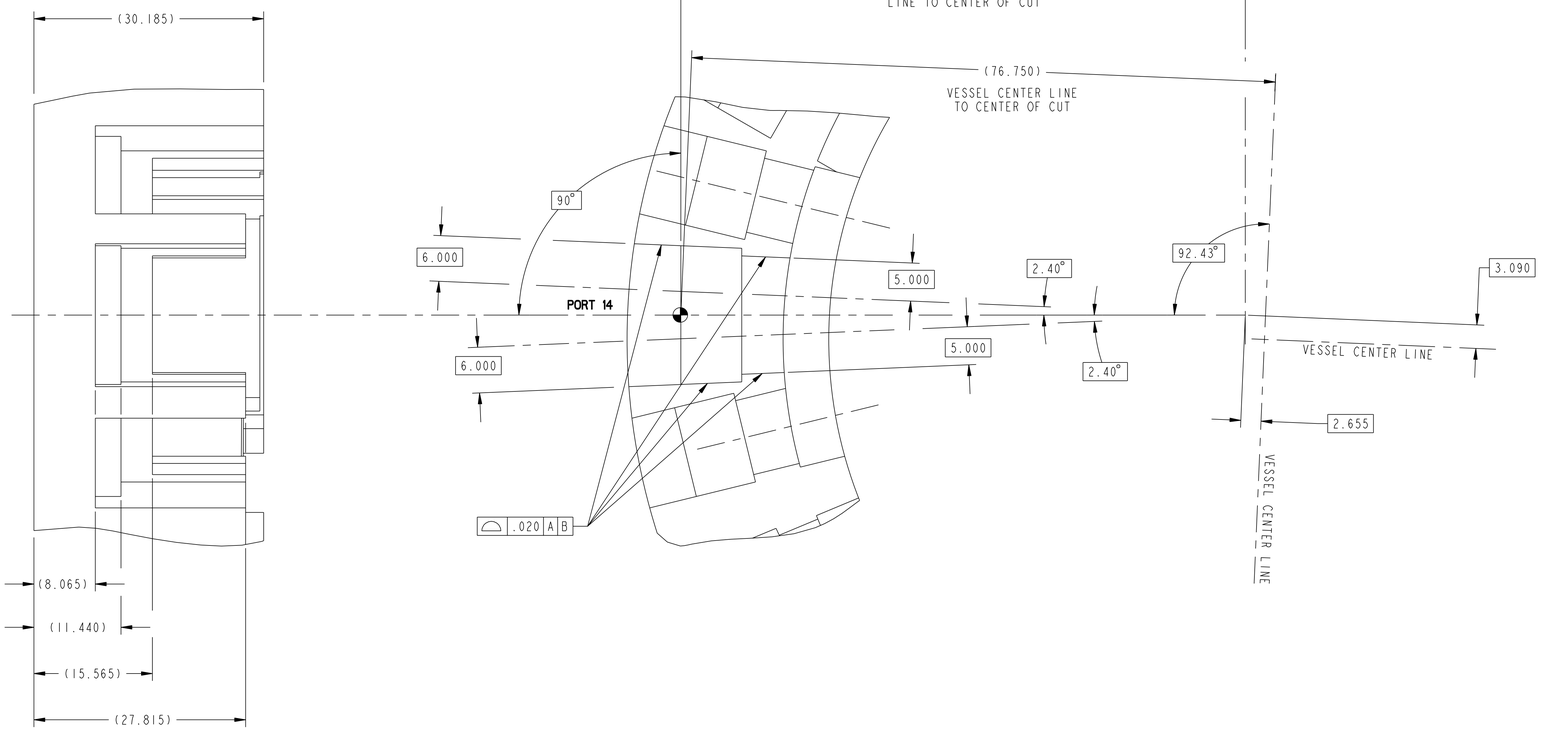
SECTION E3-E3
SECTION SHOWN ROTATED 108.18° CLOCKWISE
SCALE 0.13

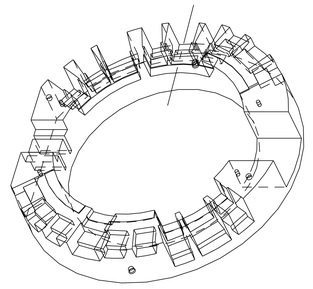
NO REPRESENTATION OR WARRANTY,EXPRESSED OR IMPLIED,IS MADE AS TO THE ACCURACY, COMPLETENESS OR USEFULNESS OF THE INFORMATION OR STATEMENTS CONTAINED IN THESE DRAWINGS, OR THAT THE USE OR DISCLOSURE OF ANY INFORMATION, APPARATUS, METHOD OR PROCESS DISCLOSED IN THESE DRAWINGS MAY NOT INFRINGE PRIVATE RIGHTS OF OTHERS. NO LIABILITY IS ASSUMED WITH RESPECT TO THE USE OF, OR FOR DAMAGES RESULTING FROM THE USE OF, ANY INFORMATION, APPARATUS, METHOD OR PROCESS DISCLOSED IN THESE DRAWINGS. DRAWINGS MADE AVAILABLE FOR INFORMATION TO BIDDER ARE NOT TO BE USED FOR OTHER PURPOSES, AND ARE TO BE RETURNED UPON REQUEST OF THE FORWARDING CONTRACTOR.

P THIS DRAWING PRODUCED ON PRO-ENGINEER

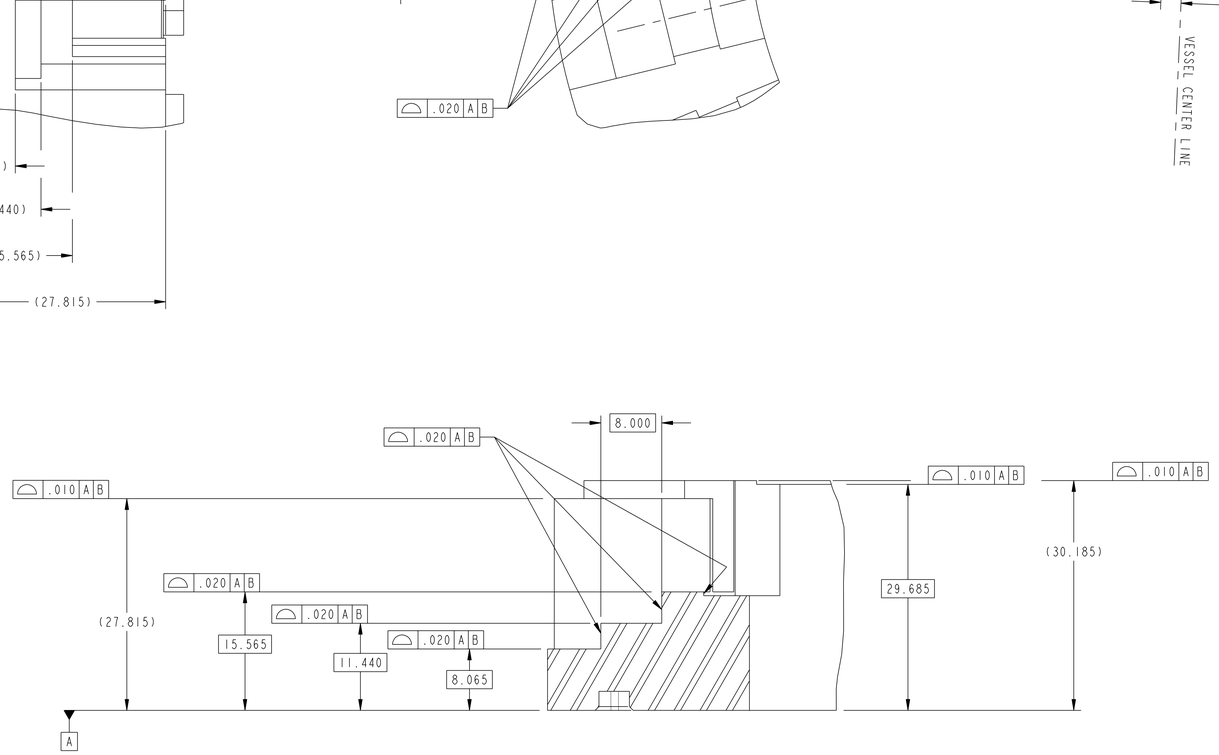
SCALE .06	ornl Oak Ridge National Laboratory
TOLERANCES UNLESS OTHERWISE SPECIFIED	operated for the DEPARTMENT OF ENERGY under U.S. GOVERNMENT contract DE-AC05-00OR22725 Oak Ridge, Tennessee
	SNS Spallation Neutron Source
FRACTIONS :	TARGET SYSTEMS
XX DECIMALS ±.01	CORE VESSEL
XXX DECIMALS ±.005	OUTER VESSEL LOWER SHIELDING
ANGLES ±0°15'	
BREAK SHARP EDGES .06 MAX	
FINISH 125 RMS UNLESS OTHERWISE SPECIFIED	BLDG 8700 · FL · SHT OF 10 14 · CLASS U
	106040106M8E8700A001 REV 001

106040106M8E8700A001

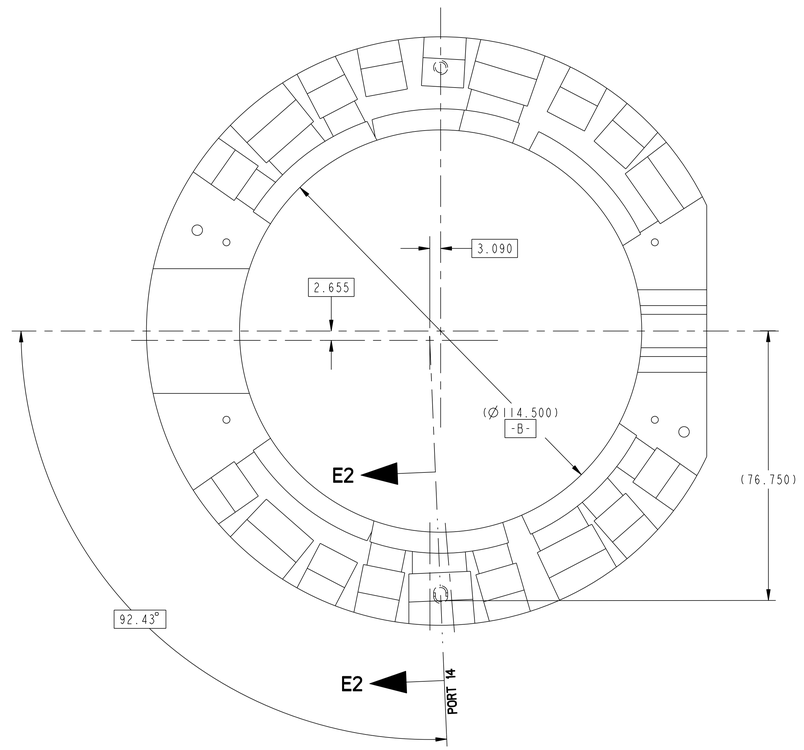




SCALE 0.03



SECTION E2-E2
SECTION SHOWN ROTATED 92.43° CLOCKWISE
SCALE 0.13



VIEW E-E
BOTTOM DOWNSTREAM
VIEW SHOWN ROTATED 180 CLOCKWISE

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P THIS DRAWING PRODUCED ON PRO-ENGINEER

SCALE .06

TOLERANCES UNLESS OTHERWISE SPECIFIED

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

ornl Oak Ridge National Laboratory
operated for the DEPARTMENT OF ENERGY under U.S. GOVERNMENT contract DE-AC05-00OR22725
Oak Ridge, Tennessee

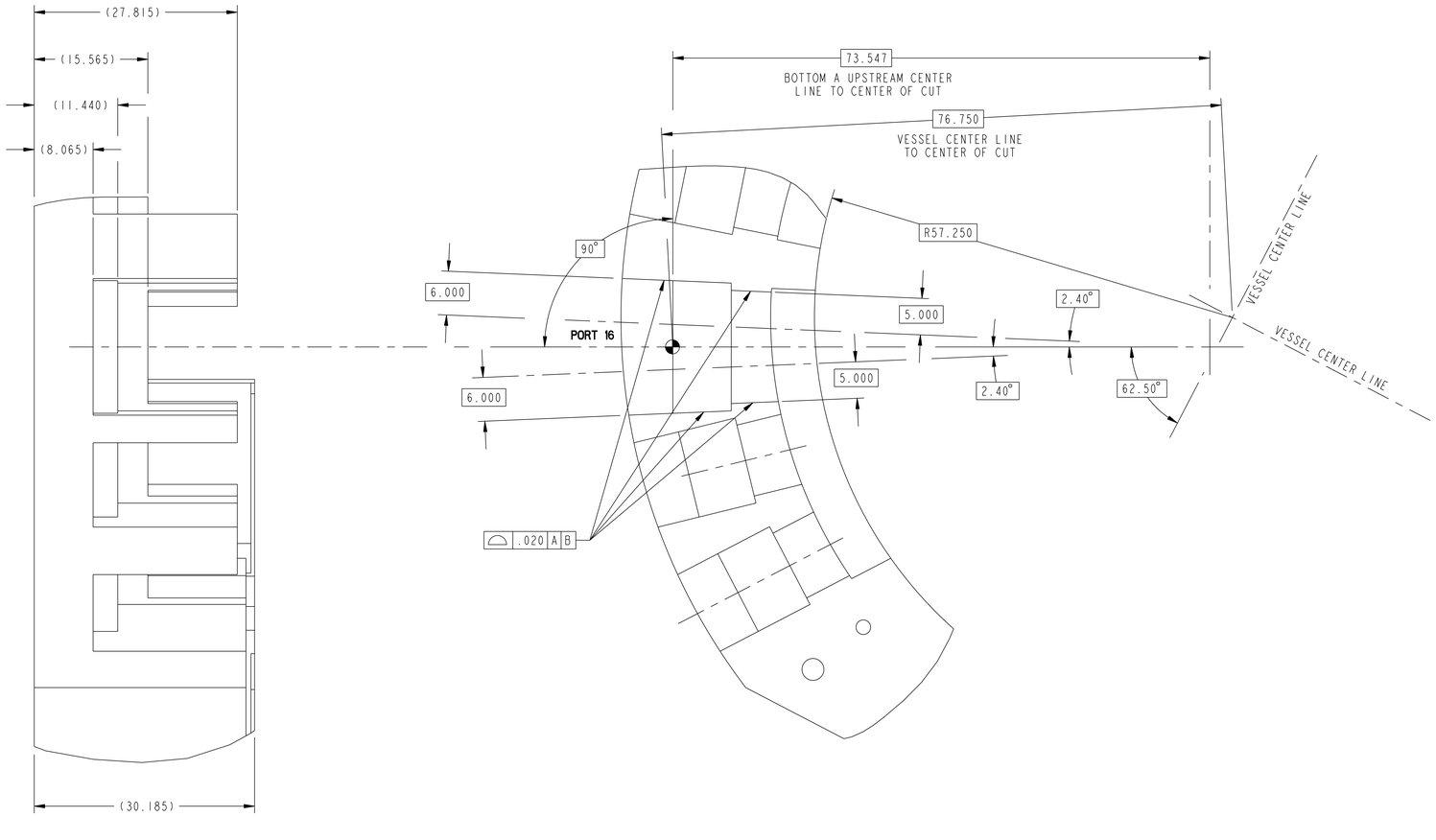
SNS Spallation Neutron Source

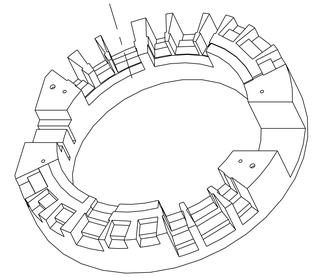
TARGET SYSTEMS
CORE VESSEL
OUTER VESSEL LOWER SHIELDING

BLDG	FL	SHT	OF	CLASS
8700		11	14	U

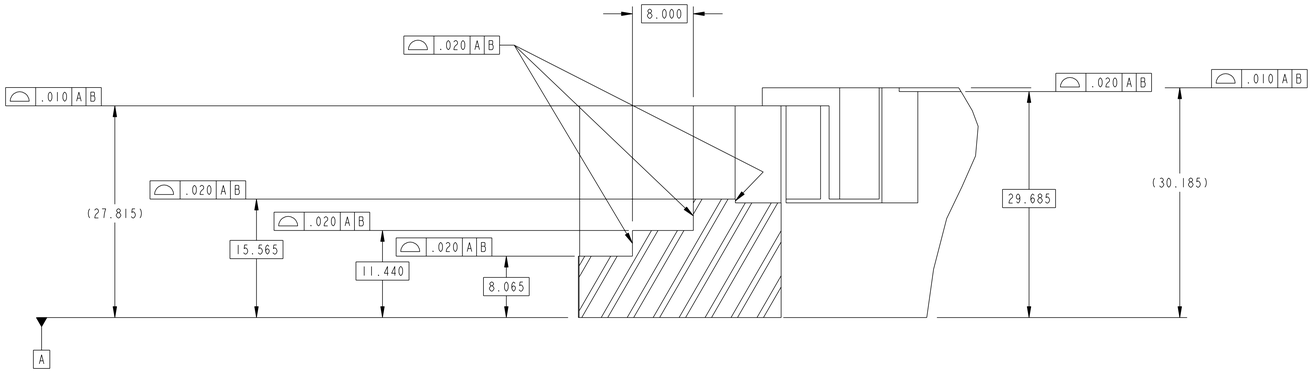
106040106M8E8700A001 REV 001

106040106M8E8700A001

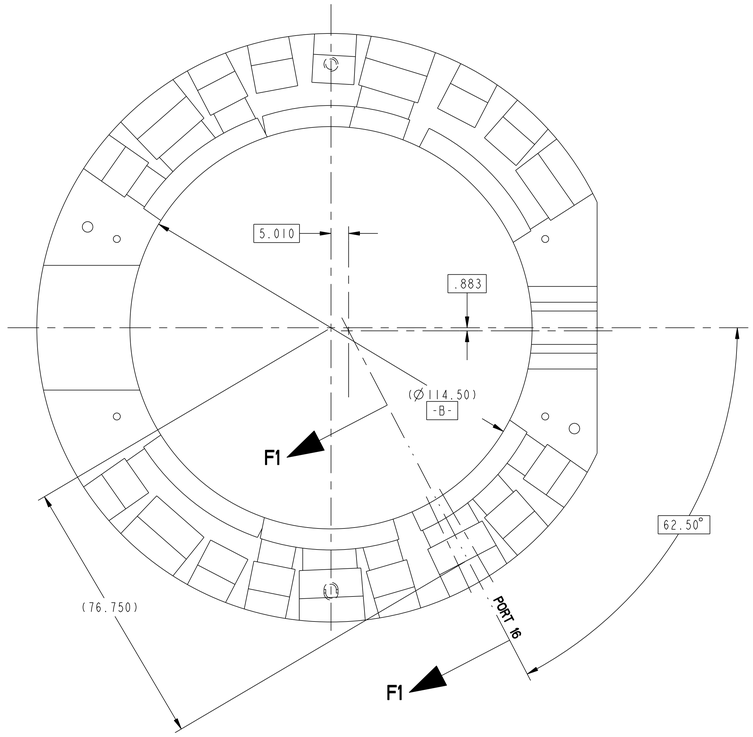




SCALE 0.03



SECTION F1-F1
SECTION SHOWN ROTATED 117.50° CLOCKWISE
SCALE 0.13



VIEW F-F
BOTTOM A UPSTREAM
VIEW ROTATED 180° CLOCKWISE

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P THIS DRAWING PRODUCED ON PRO-ENGINEER

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

ornl Oak Ridge National Laboratory
operated for the DEPARTMENT OF ENERGY under U.S. GOVERNMENT contract DE-AC05-00OR22725
Oak Ridge, Tennessee

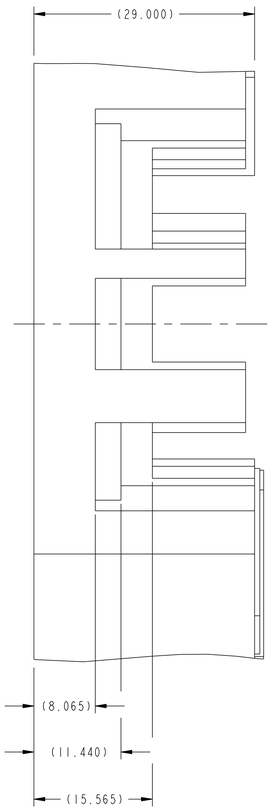
SNS Spallation Neutron Source

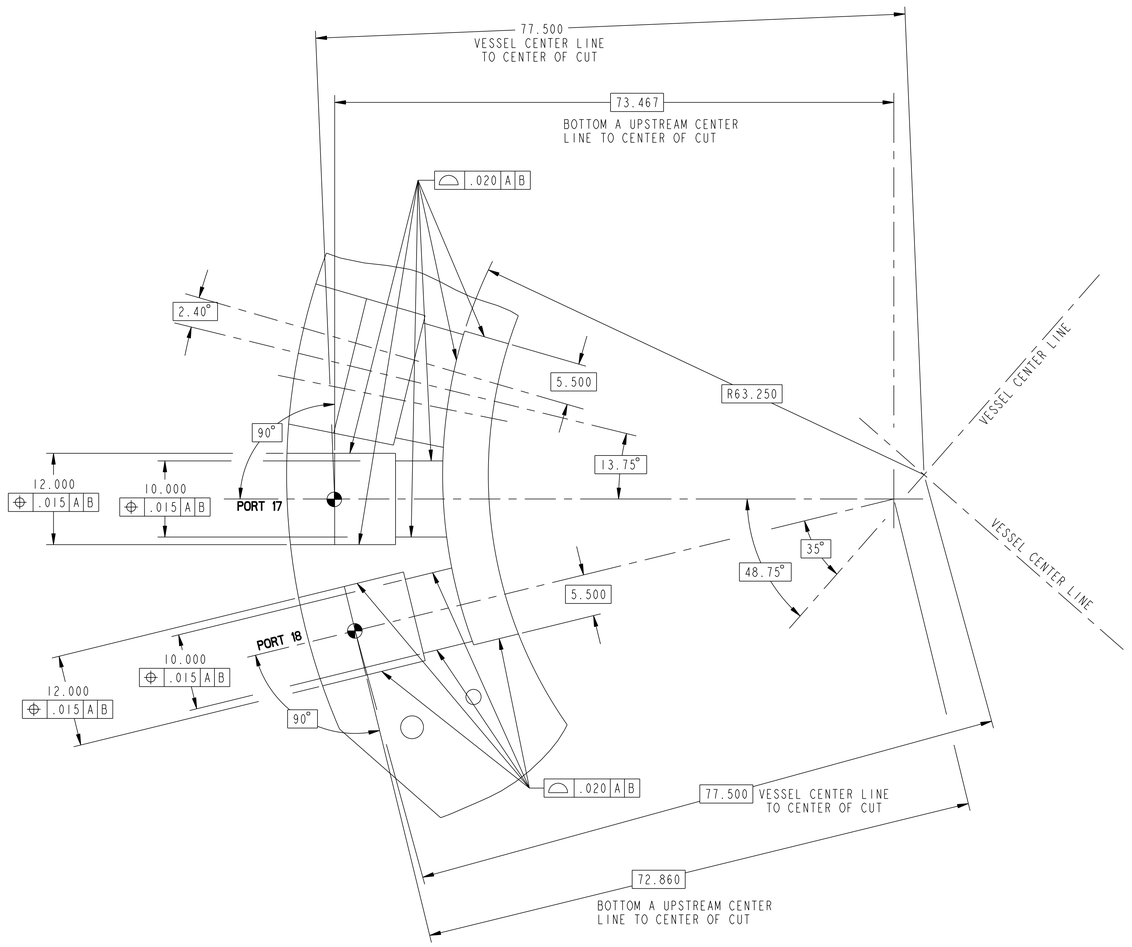
TARGET SYSTEMS
CORE VESSEL
OUTER VESSEL LOWER SHIELDING

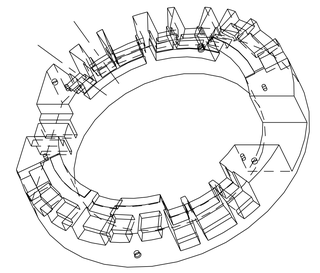
BLDG	FL	SHT	OF	CLASS
8700		12	14	U

I06040106M8E8700A001 REV 001

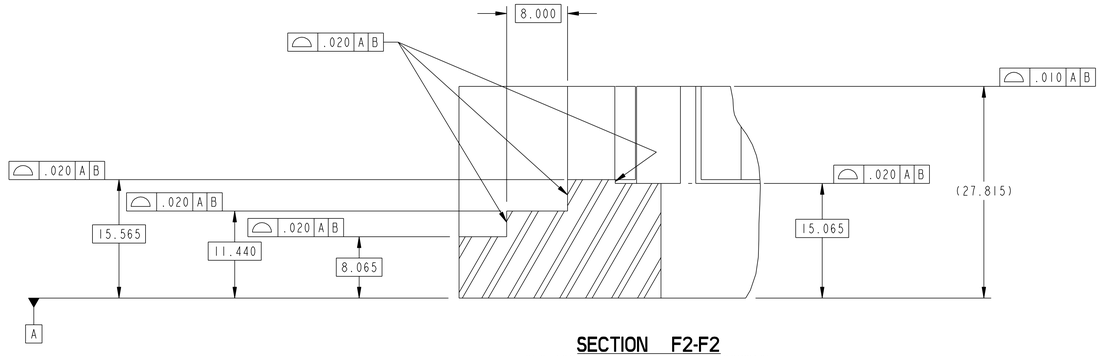
I06040106M8E8700A001



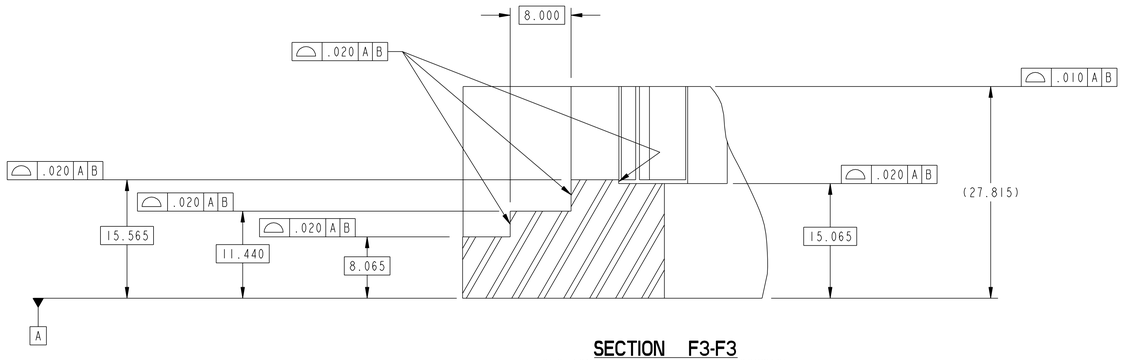




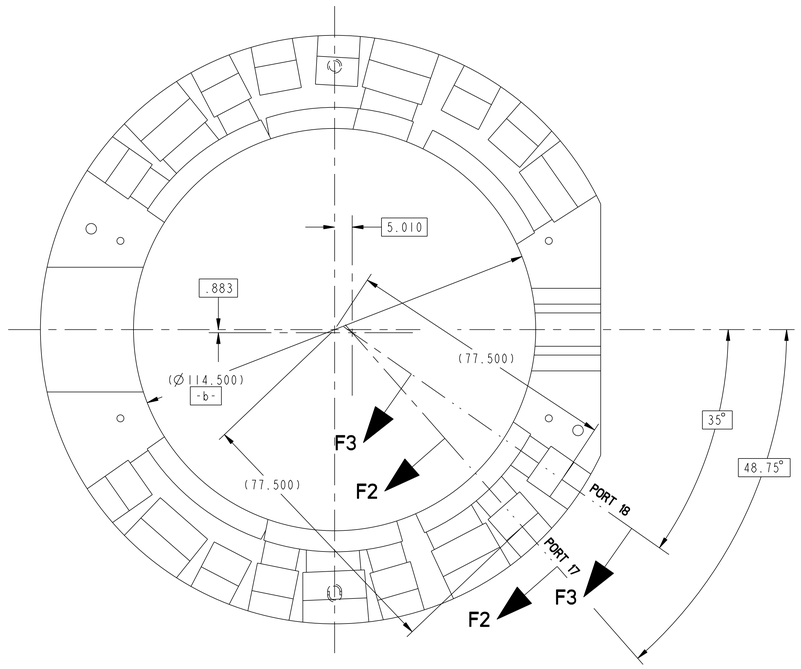
SCALE 0.03



SECTION F2-F2
SECTION SHOWN ROTATED XX CLOCKWISE
SCALE 0.13



SECTION F3-F3
SECTION SHOWN ROTATED XX CLOCKWISE
SCALE 0.13



VIEW F-F
BOTTOM A UPSTREAM
VIEW SHOWN ROTATED 180° CLOCKWISE

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P THIS DRAWING PRODUCED ON PRO-ENGINEER

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

ornl Oak Ridge National Laboratory
operated for the DEPARTMENT OF ENERGY under U.S. GOVERNMENT contract DE-AC05-00OR22725
Oak Ridge, Tennessee

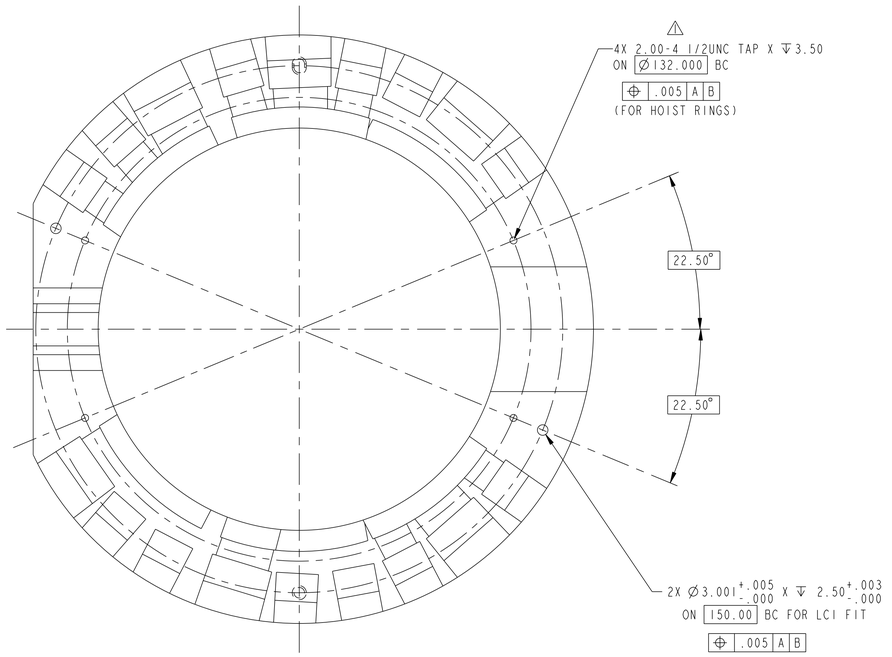
SNS Spallation Neutron Source

TARGET SYSTEMS
CORE VESSEL
OUTER VESSEL LOWER SHIELDING

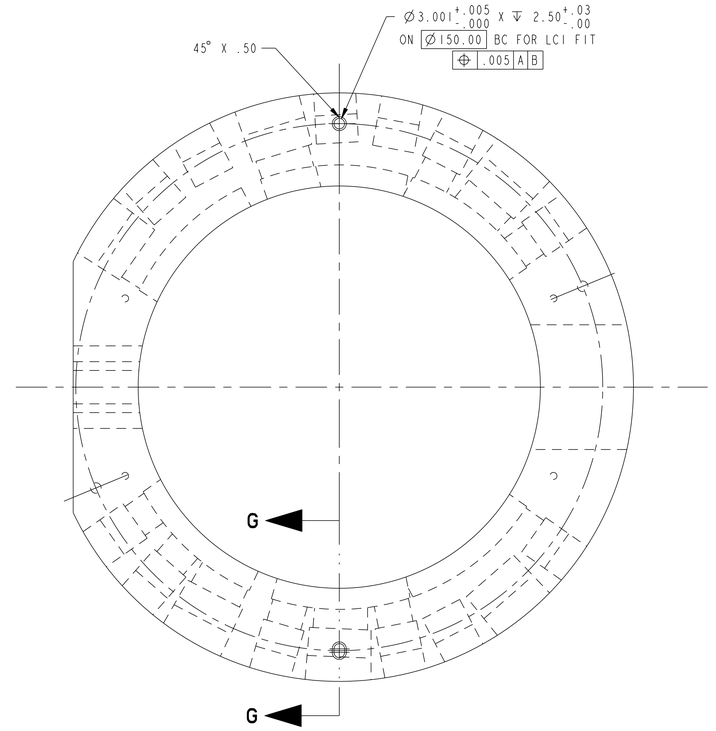
BLDG	FL	SHT	OF	CLASS
8700		13	14	U

106040106M8E8700A001 REV 001

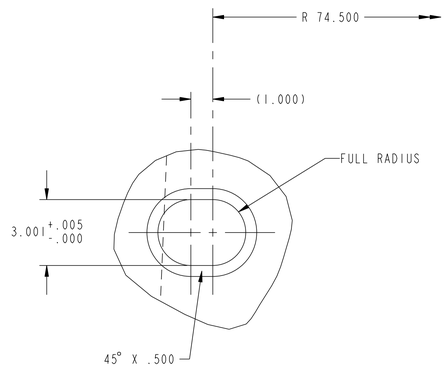
106040106M8E8700A001

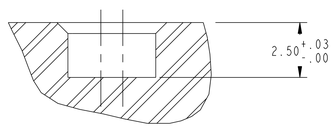


TOP VIEW
SCALE 0.06



BOTTOM VIEW
SCALE 0.06





SECTION G-G
SECTION SHOWN ROTATED 90° CW
SCALE 0.38

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P THIS DRAWING PRODUCED ON PRO-ENGINEER

SCALE .06	ornl Oak Ridge National Laboratory
TOLERANCES UNLESS OTHERWISE SPECIFIED	operated for the DEPARTMENT OF ENERGY under U.S. GOVERNMENT contract DE-AC05-00OR22725 Oak Ridge, Tennessee
	SNS Spallation Neutron Source
FRACTIONS :	TARGET SYSTEMS
XX DECIMALS ±.01	CORE VESSEL
XXX DECIMALS ±.005	OUTER VESSEL LOWER SHIELDING
ANGLES ±0°15'	
BREAK SHARP EDGES .06 MAX	
FINISH 125 RMS UNLESS OTHERWISE SPECIFIED	BLDG 8700 · FL · SHT 14 OF 14 · CLASS U
	106040106M8E8700A001 · REV 001

106040106M8E8700A001