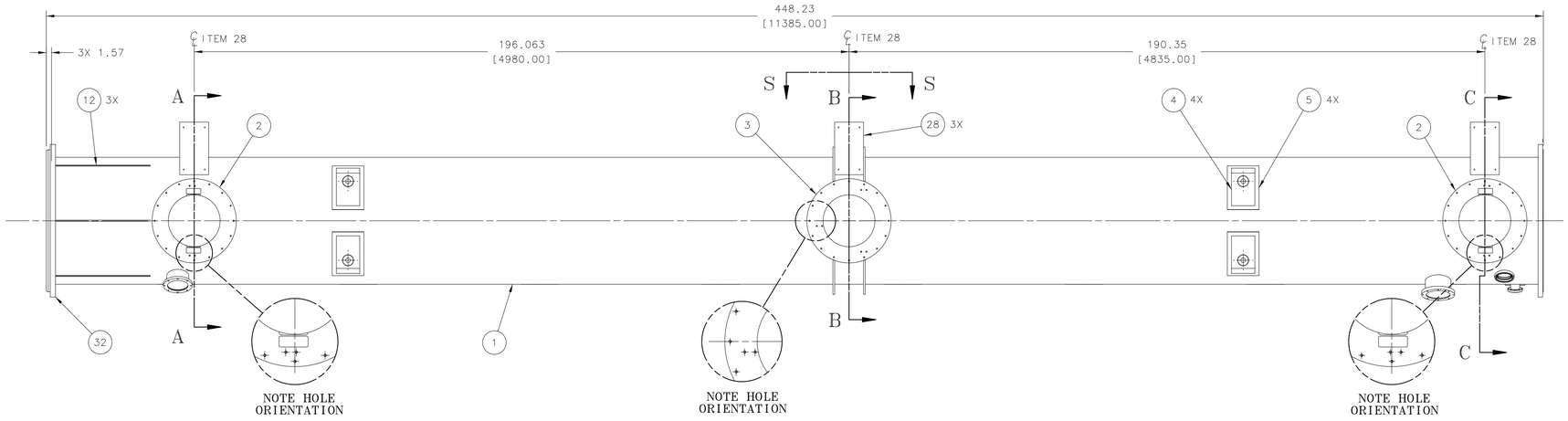
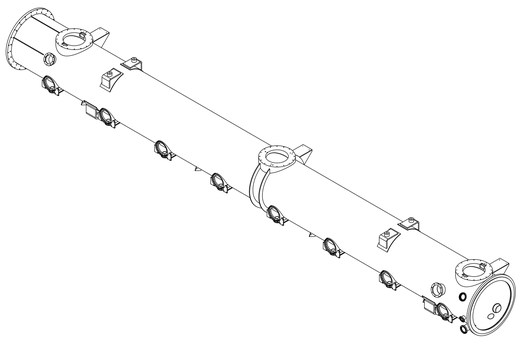
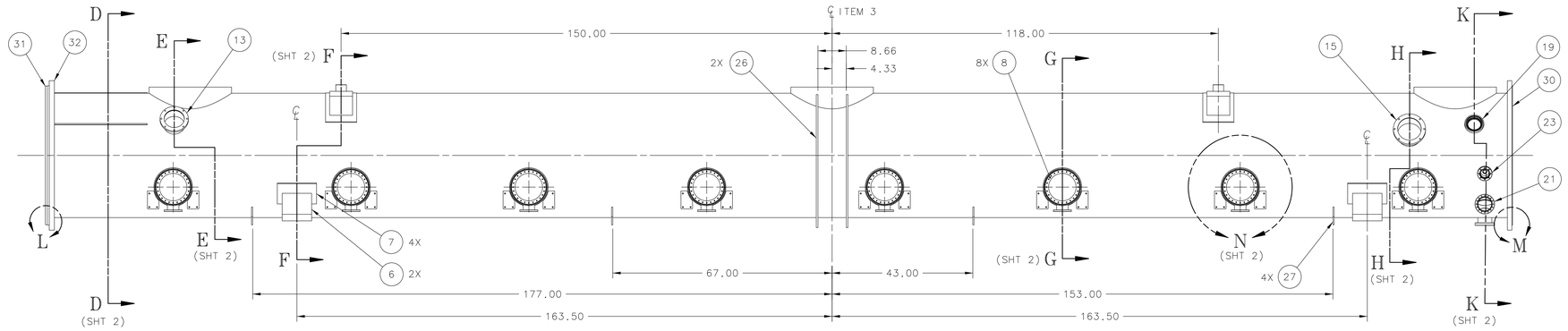
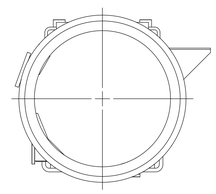
REV.	DESCRIPTION	DRAWN	DATE
		APPD.	DATE
---	NEW RELEASE - ER #9255	TLS	02/22/05



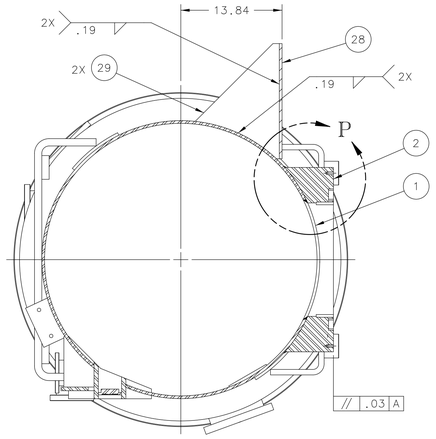




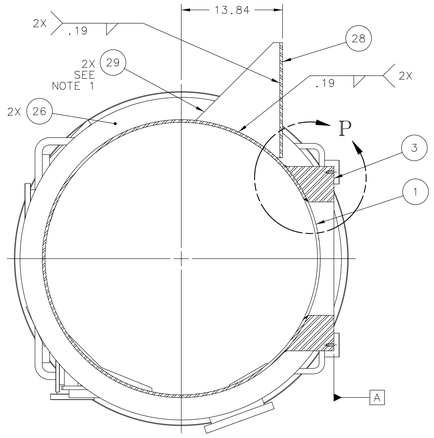


ITEM	PART NO.	DESCRIPTION OR SIZE	QTY.
33	MC-459331	FLANGE WELD RING	1
32	MD-459312	FLANGE SLIDING FOR BELLOWS	1
31	MC-459313	FLANGE TTF FIXED UPSTREAM	1
30	MC-459314	FLANGE TTF FIXED DOWNSTREAM	1
29	MC-459315	GUSSET WELDED OUTRIGGER	6
28	MC-459322	PLATE WELDED OUTRIGGER	3
27	MC-459321	PIPING SUPPORT PLAGE	4
26	MC-459326	STIFFENING RIB	2
25	MC-459327	RING FLANGE STOP	1
24	COML	TUBE 70MM X 3MM WALL 304L SS LENGTH AS REQD	1
23	MC-459308	FLANGE DN 63 CF	1
22	COML	TUBE 108.5MM OD X 104MM ID 304L SS LENGTH AS REQD	2
21	COML	DN100 CF FLANGE NR P/N 33040-CEFF - VAT VALVE	2
20		NOT USED	
19	MC-459070	FLANGE G 150 OD	1
18	MC-459330	MC BRACKET WELDMENT - RH	8
17	MC-459329	MC BRACKET WELDMENT - LH	8
16	COML	TUBE 300MM OD X 5MM WALL 304L SS LENGTH AS REQD	1
15	MC-459307	FLANGE D OD 350	1
14	COML	TUBE 6-5/8"OD .219" WALL 304L SS LENGTH AS REQD	2
13	MC-459310	FLANGE K1 K3	2
12	MB-459325	RIB FLANGE SIDE	3
11	MC-459309	FLANGE - INSTRUMENTATION	8
10	COML	TUBE 3.5"OD X .083" WALL 304L SS LENGTH AS REQD	8
9	COML	TUBE 288MM X 5MM WALL 304L SS LENGTH AS REQD	8
8	MC-459311	FLANGE MC PORT	8
7	MC-459316	PAD WELD LOWER	4
6	MC-459306	VESSEL SUPPORT WELDMENT	2
5	MC-459317	PAD WELD UPPER	4
4	MC-459305	PICK POINT WELDMENT	4
3	MD-459323	PORT MIDDLE COLDMASS	1
2	MD-459324	PORT END COLDMASS	2
1	MC-459328	VESSEL SHELL	1

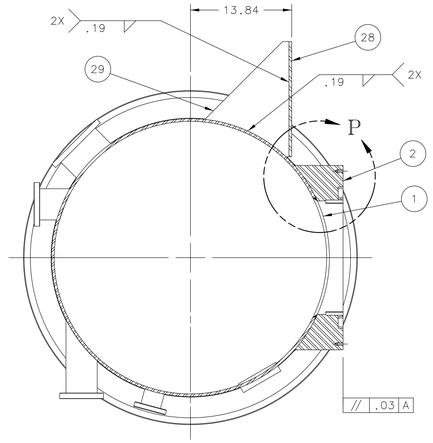
PARTS LIST



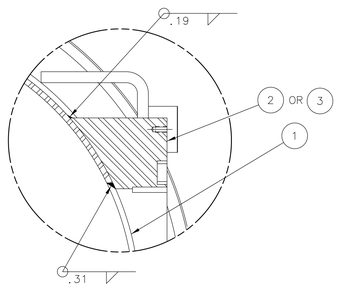
SECTION A-A
PORT N



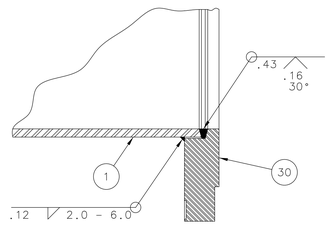
SECTION B-B
PORT O



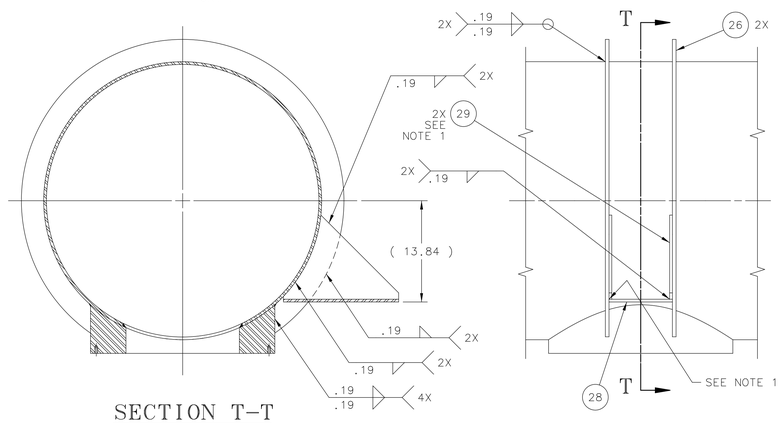
SECTION C-C
PORT P



DETAIL P
TYP 3 LOCATIONS FOR ITEM 2 (2X) AND ITEM 3
SCALE: 1/4

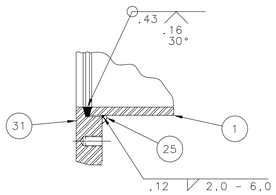


DETAIL M
SCALE: 3/8



SECTION T-T

VIEW S-S



DETAIL L
SCALE: 3/8

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NOTES:

1. WELD PREP ITEM 29 TO ALLOW FOR CONTINUOUS FILLET WELD OF ITEM 26 TO ITEM 1. WELD ITEM 26 PRIOR TO WELDING ITEM 29.
2. ALL WELDS AND MANUFACTURING TOLERANCES MUST BE IN ACCORDANCE WITH RELATED PRESSURE VESSEL CODES OF ASME V111.DIV.1.
3. ALL CONTINUOUS SEAL WELDS TO BE VACUUM TIGHT.
4. ALL CARBON STEEL INNNER SURFACES TO BE PAINTED WITH AEROGLAZE A276 WHITE POLYURETHANE PAINT MADE BY LORD CHEMICAL.
5. LEAK TEST: NO LEAK SHALL BE DETECTABLE ON THE MOST SENSITIVE SCALE OF A HELIUM LEAK DETECTOR WITH A MIN SENSITIVITY OF 10^{-8} ATM.ec/SEC.
6. BASED ON DESY MKS1 DRAWINGS: 0-06-8205-0-040 REV A
   0-06-8205-0-060

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UNLESS OTHERWISE SPECIFIED			ORIGINATOR	DESYTTF	01-JAN-2002
.XX	.XXX	ANGLES	DRAWN	T.SPERRY	28-APR-2005
± .02	± .005	± .5°	CHECKED	C.M.GRIMM	17-NOV-2008
1. BREAK ALL SHARP EDGES .02 MAX.			APPROVED	M.WONG	17-NOV-2008
2. DO NOT SCALE DRAWING.			USED ON		
3. DIMENSIONS BASED UPON ASME Y14.5M-1994					
4. MAX. ALL MACH. SURFACES 125			MATERIAL	SEE PARTS LIST	
5. DRAWING UNITS: U.S. INCH					

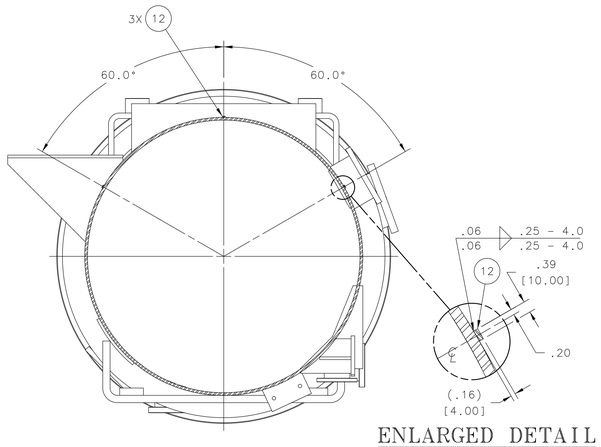
FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

ILC CRYOMODULE - BETA=1.000 - MK1
VACUUM VESSEL
VESSEL WELDMENT ASSY SHT 1

SCALE	DRAWING NUMBER	SHEET	REV
1/16 & AS NOTED	4904.280-ME-459303	1 OF 1	

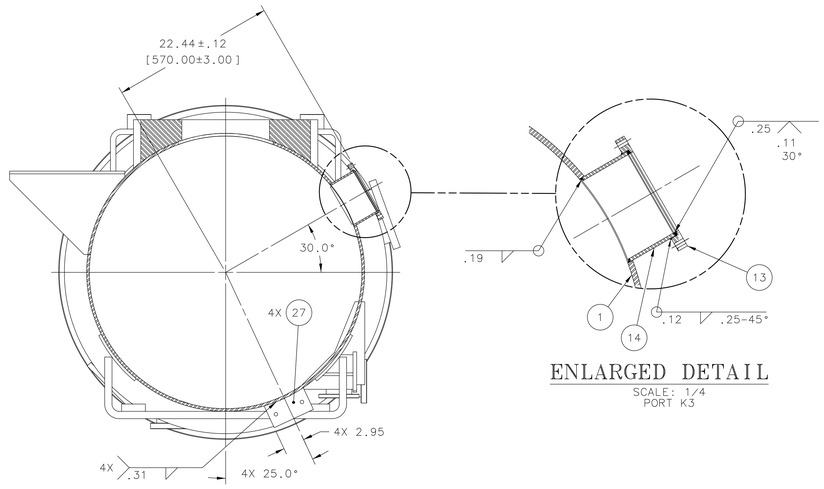
CREATED WITH : Ideas12NXSeries | GROUP: TD/TEST-INSTRUMENTATION

REV.	DESCRIPTION	DRAWN	DATE
		APPD.	DATE
---	NEW RELEASE - ER #9255	TLS	02/22/05



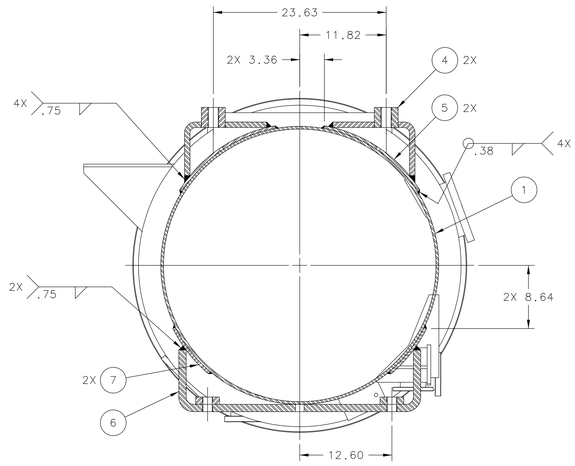
SECTION D–D
SCALE: 1/8

ENLARGED DETAIL
3 PLACES
SCALE: 1/2

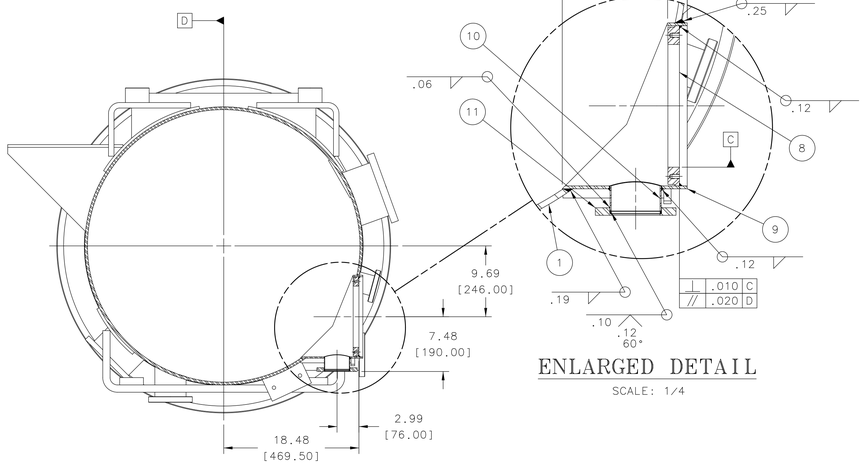


SECTION E–E
SCALE: 1/8

ENLARGED DETAIL
SCALE: 1/4
PORT K3

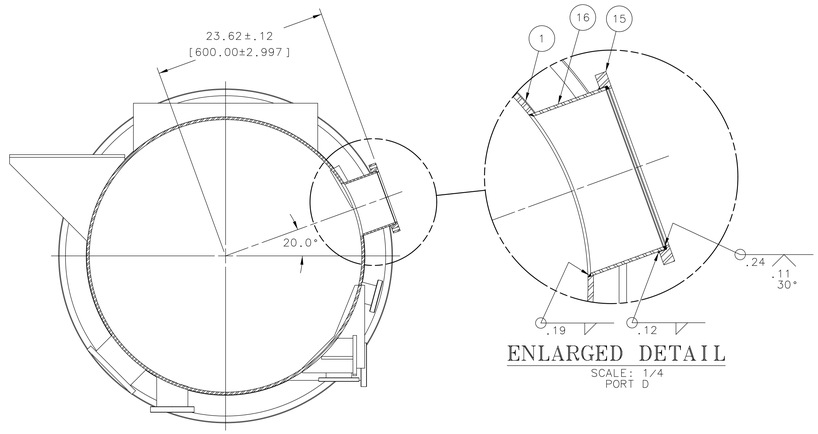


SECTION F–F
2 LOCATIONS
SCALE: 1/8



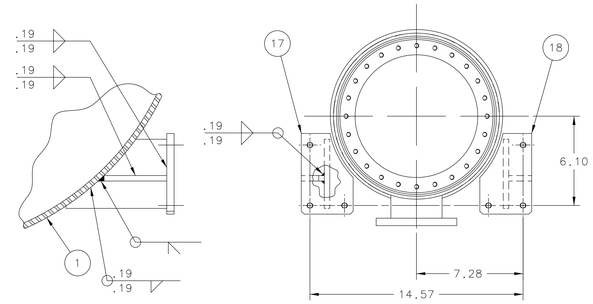
SECTION G–G
8 PLACES
SCALE: 1/8
PORT M

ENLARGED DETAIL
SCALE: 1/4

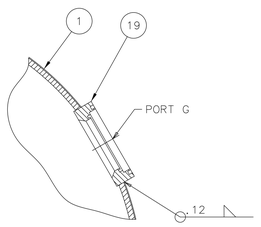


SECTION H–H
SCALE: 1/8

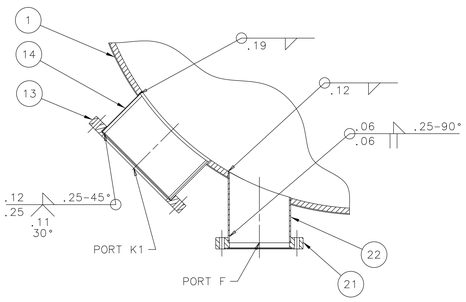
ENLARGED DETAIL
SCALE: 1/4
PORT D



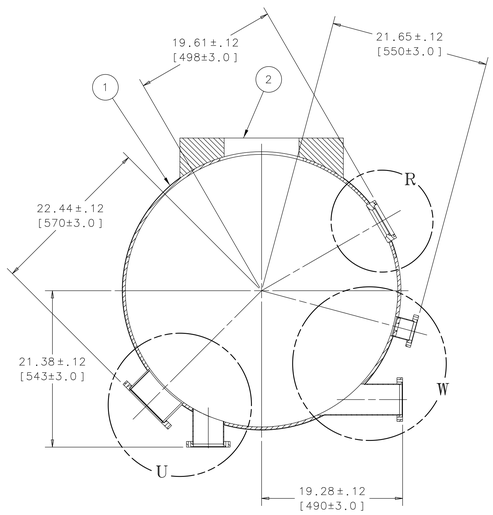
DETAIL N
2 LOCATIONS
SCALE: 1/4



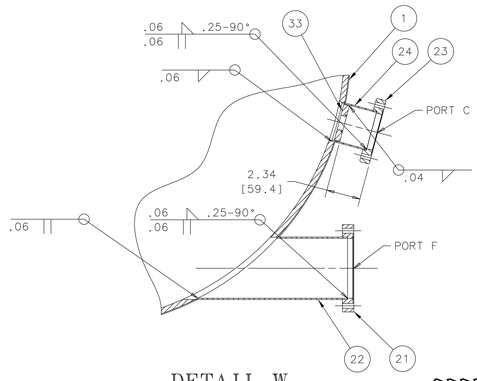
DETAIL R
SCALE = 1/4
SEE NOTE 5 - SHEET 1



DETAIL U
SCALE = 1/4
SEE NOTE 5 - SHEET 1



SECTION K–K
SCLAE = 1/8



DETAIL W
SCALE = 1/4
SEE NOTE 5 - SHEET 1

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UNLESS OTHERWISE SPECIFIED			ORIGINATOR	DESYTTF	01-JAN-2002
.XX	.XXX	ANGLES	DRAWN	T.SPERRY	28-APR-2005
± .02	± .005	± .5°	CHECKED	C.M.GRIMM	13-NOV-2008
1. BREAK ALL SHARP EDGES .02 MAX.			APPROVED	M.WONG	14-NOV-2008
2. DO NOT SCALE DRAWING.			USED ON		
3. DIMENSIONS BASED UPON ASME Y14.5M-1994					
4. MAX. ALL MACH. SURFACES 125			MATERIAL	SEE PARTS LIST ON ME-459303	
5. DRAWING UNITS: U.S. INCH					

FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

1.3 GHZ β=1 CRYOMODULE, MK1
VACUUM VESSEL
VESSEL WELDMENT ASSY SHT 2

SCALE	DRAWING NUMBER	SHEET	REV
AS NOTED	4904.280-ME-459304	1 OF 1	

CREATED WITH : Ideas12NXSeries | GROUP: TD/TEST-INSTRUMENTATION

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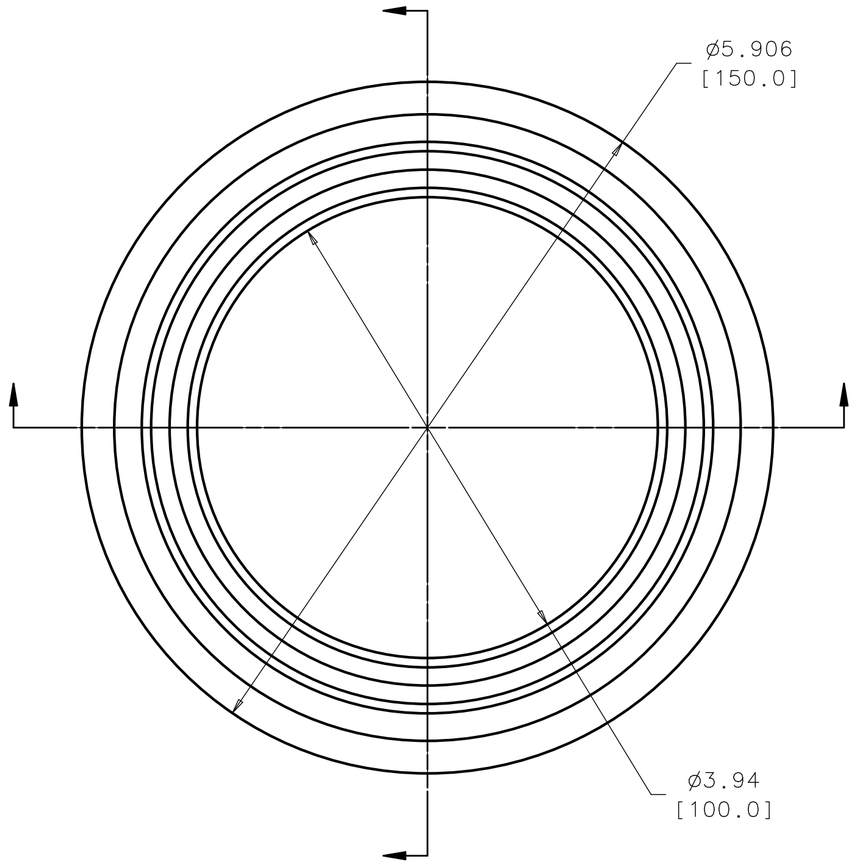
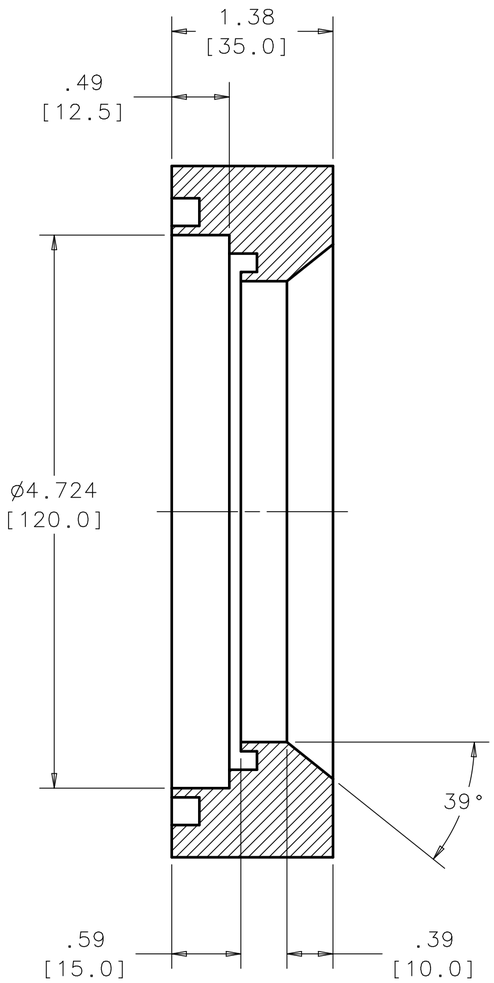
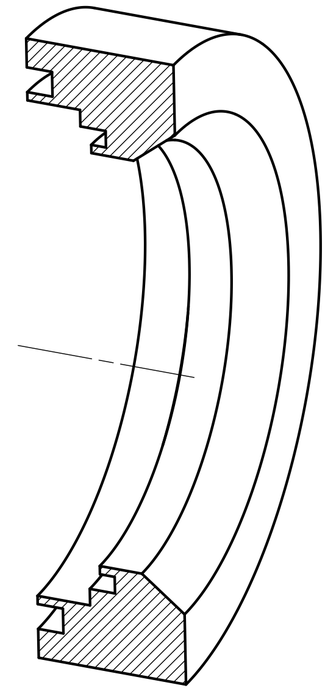
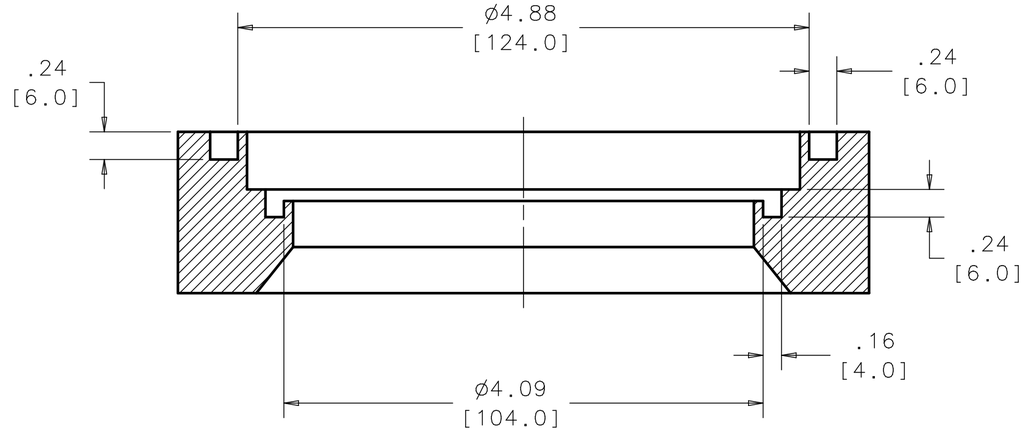
REV	DESCRIPTION	DRAWN	DATE
		APPROVED	DATE
--	NEW RELEASE E.R. #9255	CG	04-SEP-2008









NOTES: (UNLESS OTHERWISE SPECIFIED)

1) DIMENSIONS ARE IN INCHES.
DIMENSIONS IN [X.X] ARE IN MILLIMETERS.

UNLESS OTHERWISE SPECIFIED			ORIGINATOR	DESYTTF	04-SEP-2008
.XX	.XXX	ANGLES	DRAWN	C.GRIMM	04-SEP-2008
± .02	± .005	± 1°	CHECKED	C.M.GRIMM	14-NOV-2008
1. BREAK ALL SHARP EDGES *** MAX. 2. DO NOT SCALE DRAWING. 3. DIMENSIONS BASED UPON ASME Y14.5M-1994 4. MAX. ALL MACH. SURFACES 63 5. DRAWING UNITS: U.S. INCH			APPROVED	M.WONG	14-NOV-2008
			USED ON	ME-443027	
			MATERIAL	STAINLESS STEEL ASTM A182-F304L	

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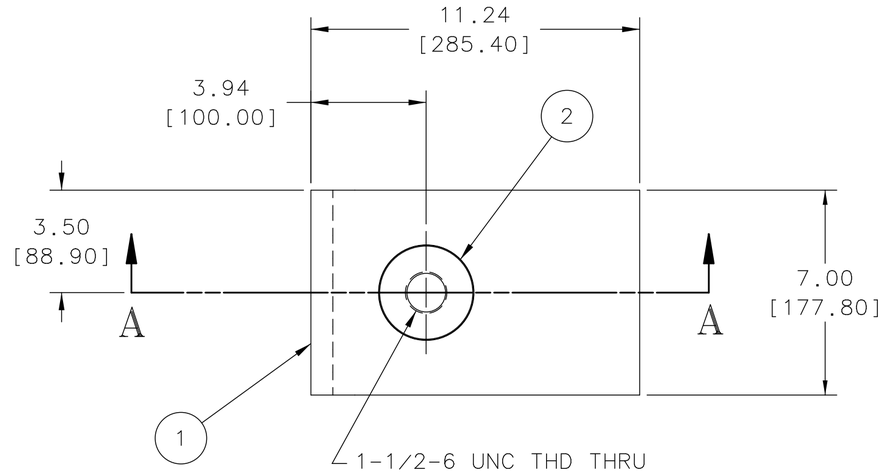
FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

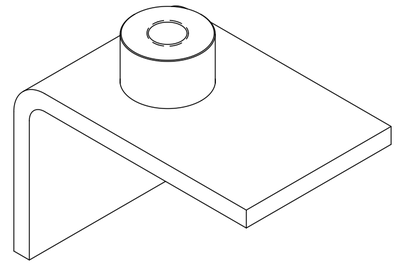
1.3 GHZ CRYOMODULE, MK1 VACUUM VESSEL FLANGE G OD 150

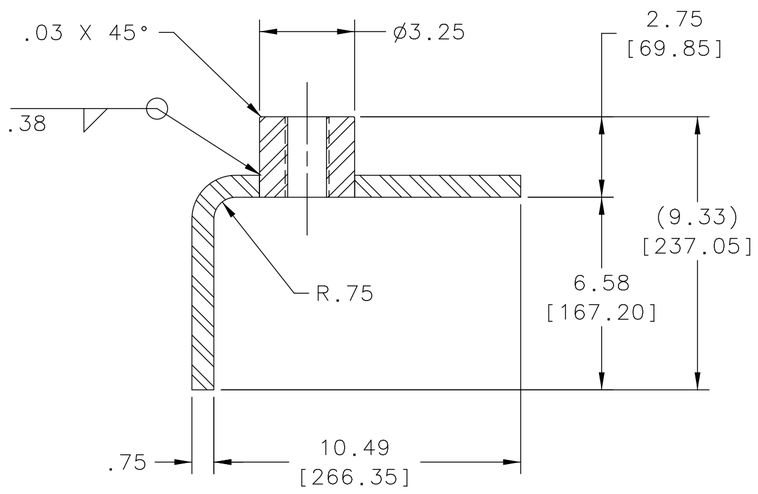
SCALE	DRAWING NUMBER	SHEET	REV
1:1	4904.280-MC-459070	1 OF 1	

CREATED WITH : Ideas12NXSeries | GROUP: TD/TEST-INSTRUMENTATION

REV.	DESCRIPTION	DRAWN	DATE
		APPD.	DATE
---	NEW RELEASE - ER #9255	TLS	02/22/05







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ITEM	PART NO.	DESCRIPTION OR SIZE	QTY.
2	COML	HOT ROLLED STEEL ROUND 3.15" DIA, ASTM A36	1
1	COML	STEEL PLATE 3/4" THK PRESSURE VESSEL QUALITY ASTM A516 GR 70	1

PARTS LIST

UNLESS OTHERWISE SPECIFIED			ORIGINATOR	DESYTTF	01-JAN-2002
.XX	.XXX	ANGLES	DRAWN	T.SPERRY	28-APR-2005
± .02	± --	± --	CHECKED	C.M.GRIMM	13-NOV-2008
			APPROVED	M.WONG	14-NOV-2008

1. BREAK ALL SHARP EDGES .02 MAX.
2. DO NOT SCALE DRAWING.
3. DIMENSIONS BASED UPON ASME Y14.5M-1994
4. MAX. ALL MACH. SURFACES 250
5. DRAWING UNITS: U.S. INCH

USED ON: ME-459303, ME-459304

MATERIAL: SEE PARTS LIST

FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

1.3 GHZ β=1 CRYOMODULE, MK1 VACUUM VESSEL PICK POINT WELDMENT

SCALE	DRAWING NUMBER	SHEET	REV
1:4	4904.280-MC-459305	1 OF 1	

CREATED WITH : Ideas12NXSeries | GROUP: TD/TEST-INSTRUMENTATION

NOTES:

1. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES. REFERENCE DIMESNSIONS IN BRACKETS, IF SHOWN, ARE IN MILLIMETERS.

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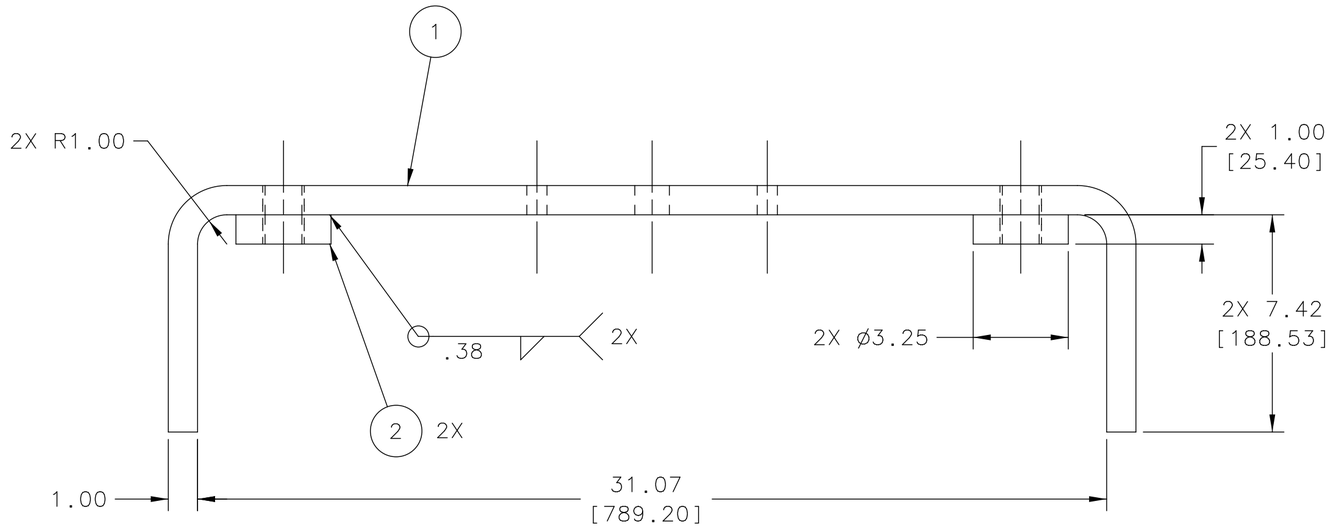
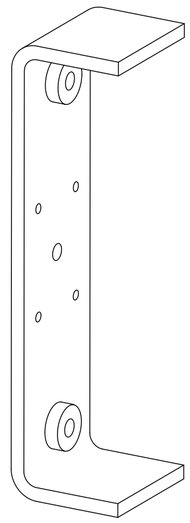
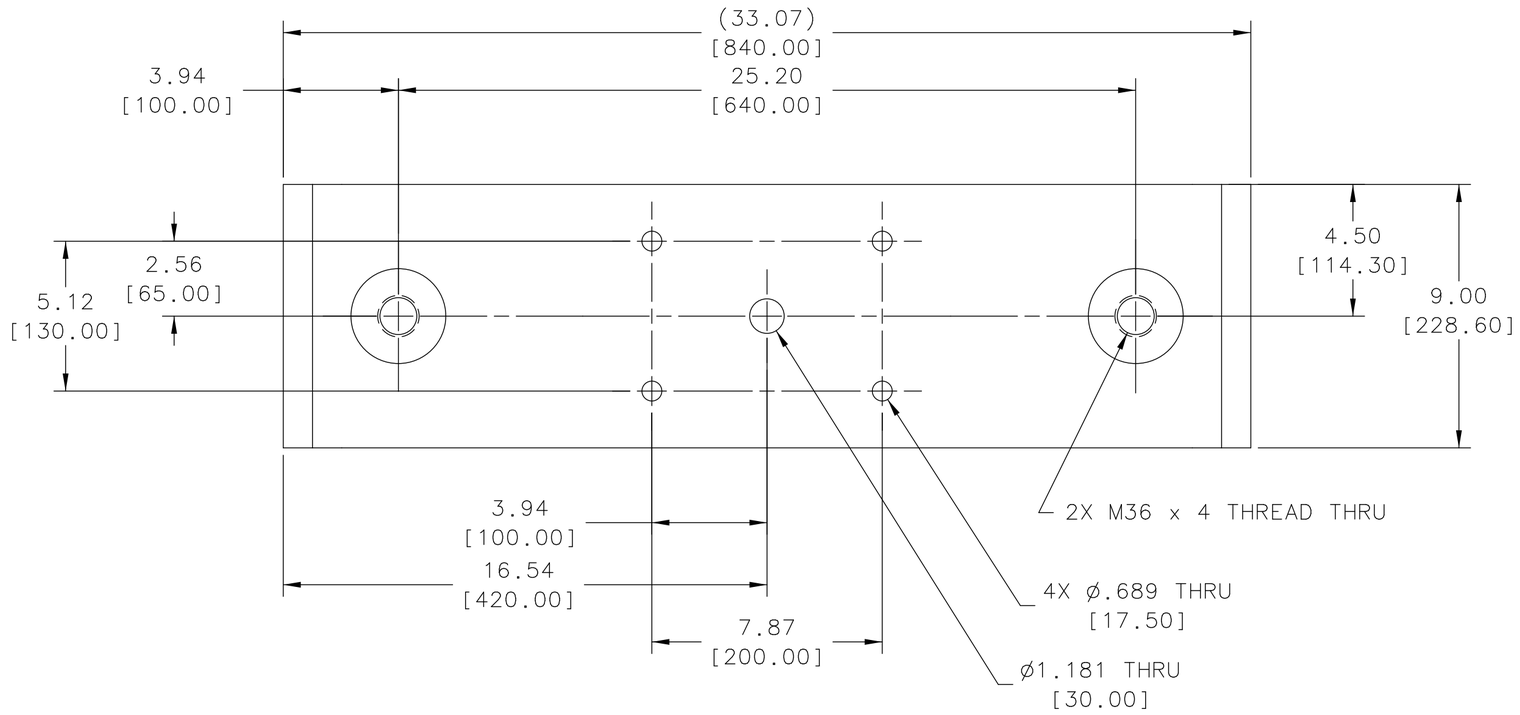
REV.	DESCRIPTION	DRAWN	DATE
		APPD.	DATE
---	NEW RELEASE - ER #9255	TLS	02/22/05







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ITEM	PART NO.	DESCRIPTION OR SIZE	QTY.
2	COML	HOT ROLLED STEEL ROUND, 3-1/4", LENGTH AS REQ'D, ASTM A36	1
1	COML	PLATE, 1" THK, PRESSURE VESSEL QUALITY, ASTM A516 GR 70	1

PARTS LIST

UNLESS OTHERWISE SPECIFIED			ORIGINATOR	DESYTTF	01-JAN-2002
.XX	.XXX	ANGLES	DRAWN	T.SPERRY	28-APR-2005
± .02	± .005	± 1°	CHECKED	C.M.GRIMM	13-NOV-2008
			APPROVED	M.WONG	14-NOV-2008

1. BREAK ALL SHARP EDGES .02 MAX.
2. DO NOT SCALE DRAWING.
3. DIMENSIONS BASED UPON ASME Y14.5M-1994
4. MAX. ALL MACH. SURFACES 250
5. DRAWING UNITS: U.S. INCH

USED ON: ME-459303, ME-459304

MATERIAL: SEE PARTS LIST

FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

1.3 GHZ β=1 CRYOMODULE, MK1
VACUUM VESSEL
VESSEL SUPPORT WELDMENT

SCALE	DRAWING NUMBER	SHEET	REV
1:4	4904.280-MC-459306	1 OF 1	
CREATED WITH : Ideas12NXSeries		GROUP: TD/TEST-INSTRUMENTATION	

NOTES:

1. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES. REFERENCE DIMENSIONS IN BRACKETS, IF SHOWN, ARE IN MILLIMETERS.

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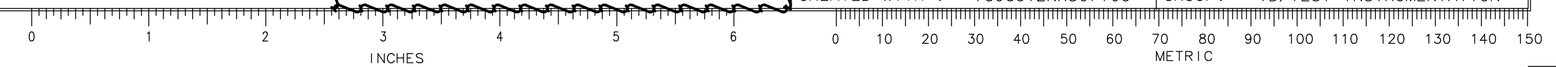
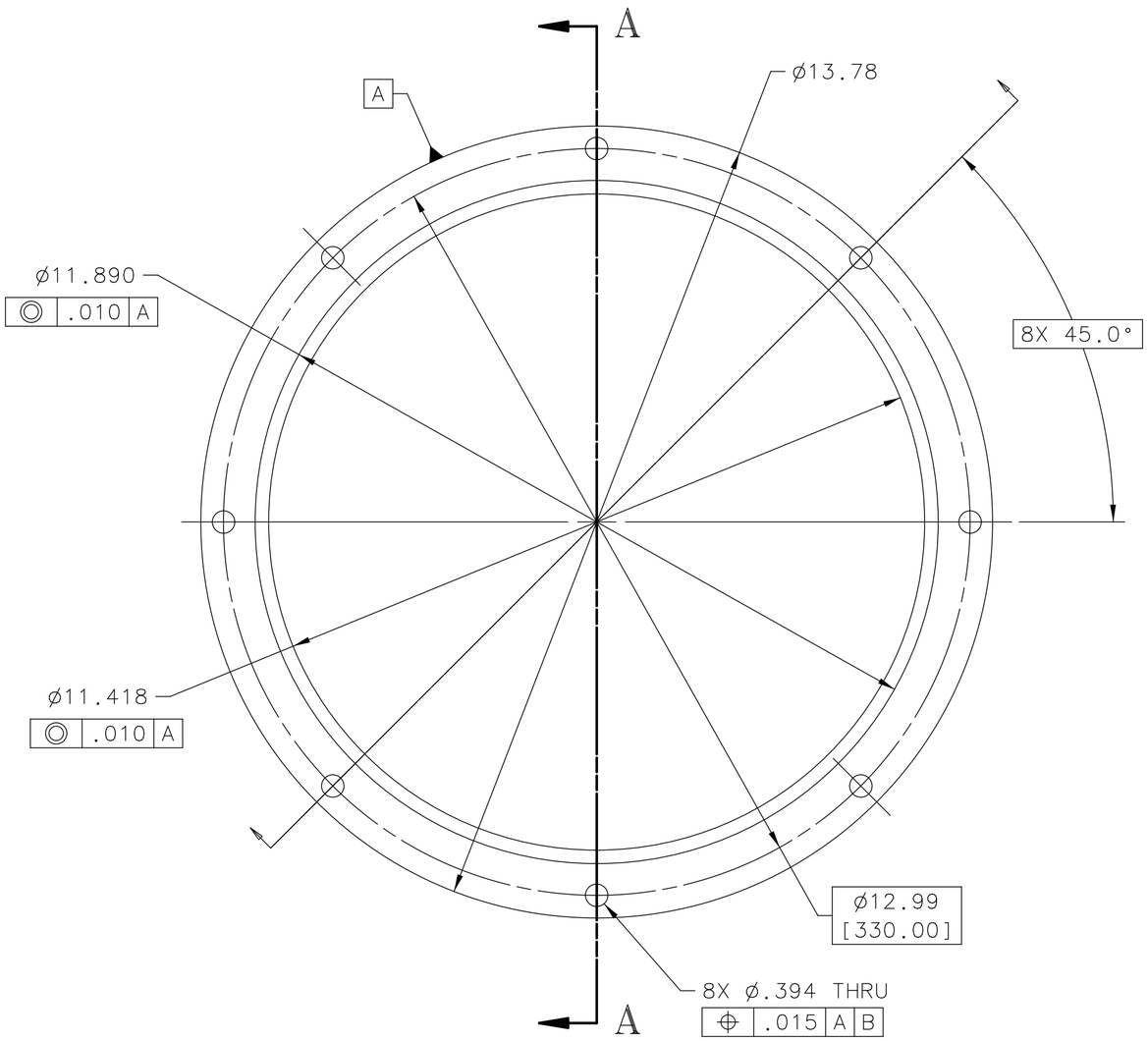
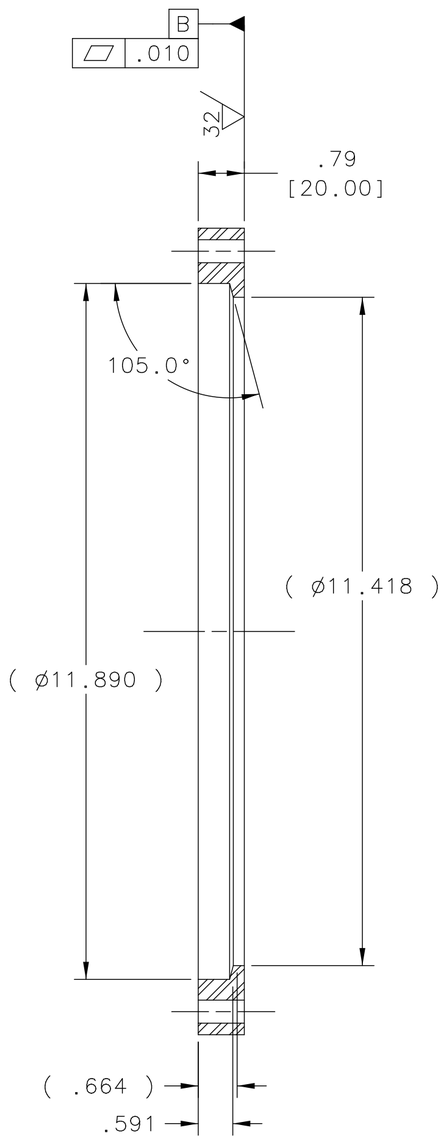
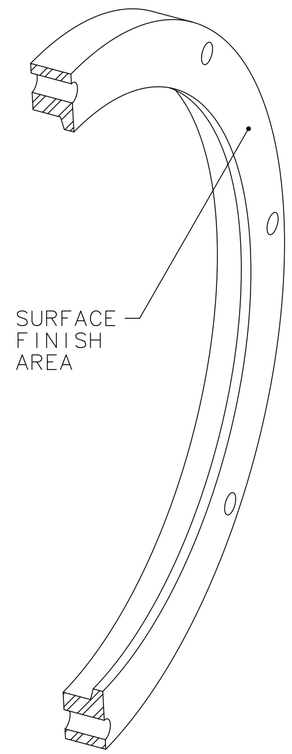


REV.	DESCRIPTION	DRAWN	DATE
		APPD.	DATE
---	NEW RELEASE - ER #9255	TLS	02/22/05





SECTION A–A



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NOTES:

1. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES. REFERENCE DIMENSIONS IN BRACKETS, IF SHOWN, ARE IN MILLIMETERS.

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UNLESS OTHERWISE SPECIFIED			ORIGINATOR	DESYTTF	01-JAN-2002
.XX	.XXX	ANGLES	DRAWN	T.SPERRY	28-APR-2005
± .02	± .005	± .25°	CHECKED	C.M.GRIMM	13-NOV-2008
			APPROVED	M.WONG	14-NOV-2008

1. BREAK ALL SHARP EDGES .03 MAX.
2. DO NOT SCALE DRAWING.
3. DIMENSIONS BASED UPON ASME Y14.5M-1994
4. MAX. ALL MACH. SURFACES 125
5. DRAWING UNITS: U.S. INCH

USED ON: ME-459303, ME-459304

MATERIAL: STAINLESS STEEL, ASTM A182-F304L

FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

1.3 GHZ β=1 CRYOMODULE, MK1 VACUUM VESSEL FLANGE D OD 350

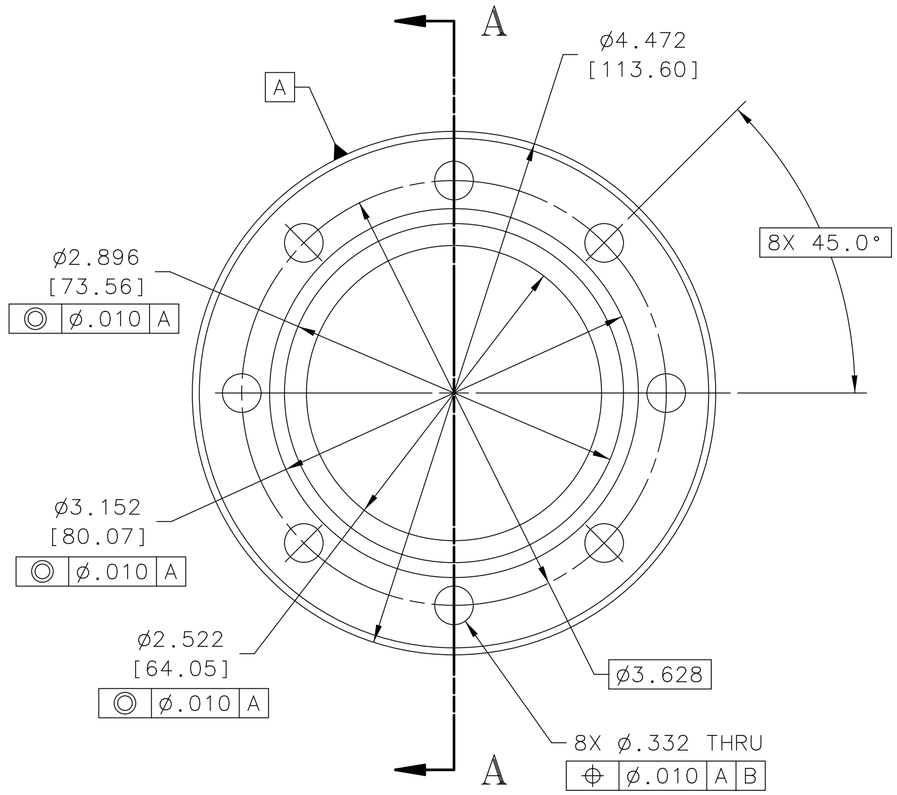
SCALE	DRAWING NUMBER	SHEET	REV
1:2	4904.280-MC-459307	1 OF 1	

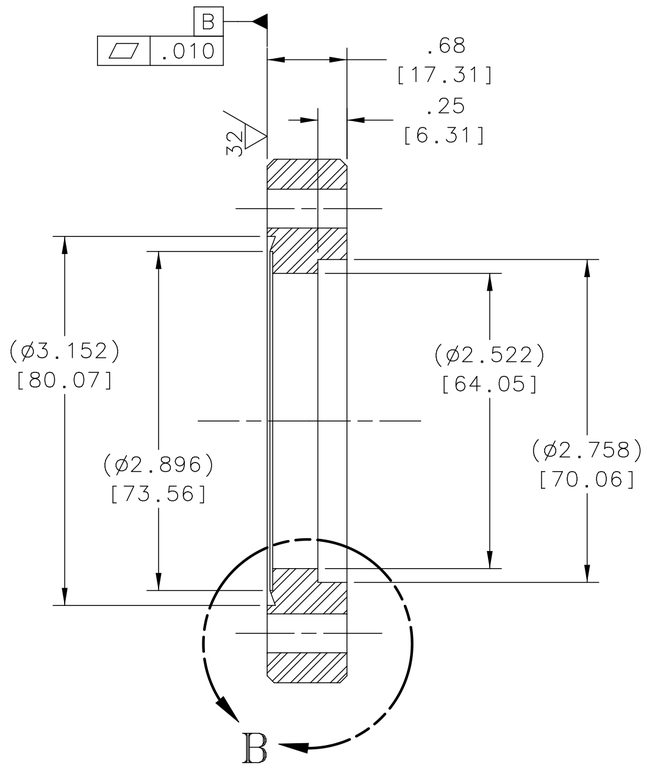
CREATED WITH : Ideas12NXSeries | GROUP: TD/TEST-INSTRUMENTATION

INCHES 0 1 2 3 4 5 6

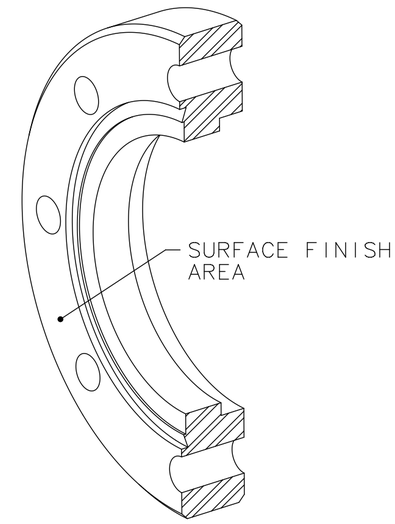
METRIC 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

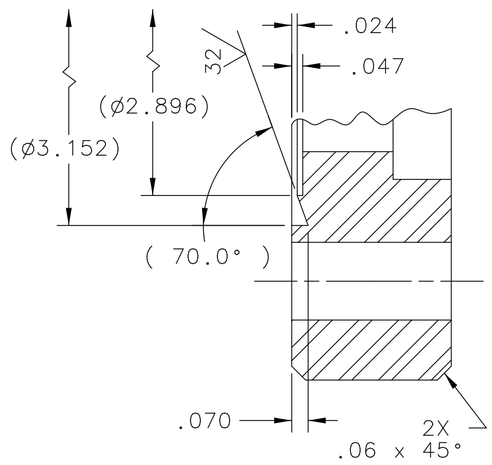
REV.	DESCRIPTION	DRAWN	DATE
		APPD.	DATE
---	NEW RELEASE - ER #9255	TLS	02/22/05





SECTION A–A





DETAIL B

SCALE: 2/1

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NOTES:

1. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES. REFERENCE DIMENSIONS IN BRACKETS, IF SHOWN, ARE IN MILLIMETERS.

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UNLESS OTHERWISE SPECIFIED			ORIGINATOR	DESYTTF	01-JAN-2002
.XX	.XXX	ANGLES	DRAWN	T.SPERRY	28-APR-2005
± .02	± .005	±.25°	CHECKED	C.M.GRIMM	13-NOV-2008
			APPROVED	M.WONG	14-NOV-2008

1. BREAK ALL SHARP EDGES .02 MAX.
2. DO NOT SCALE DRAWING.
3. DIMENSIONS BASED UPON ASME Y14.5M-1994
4. MAX. ALL MACH. SURFACES 125
5. DRAWING UNITS: U.S. INCH

USED ON: ME-459303, ME-459304

MATERIAL: STAINLESS STEEL, ASTM A182-F304L

FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

1.3 GHZ β=1 CRYOMODULE, MK1 VACUUM VESSEL FLANGE DN 63 DF

SCALE	DRAWING NUMBER	SHEET	REV
1:1	4904.280-MC-459308	1 OF 1	

CREATED WITH : Ideas12NXSeries | GROUP: TD/TEST-INSTRUMENTATION

0 1 2 3 4 5 6 INCHES

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 METRIC

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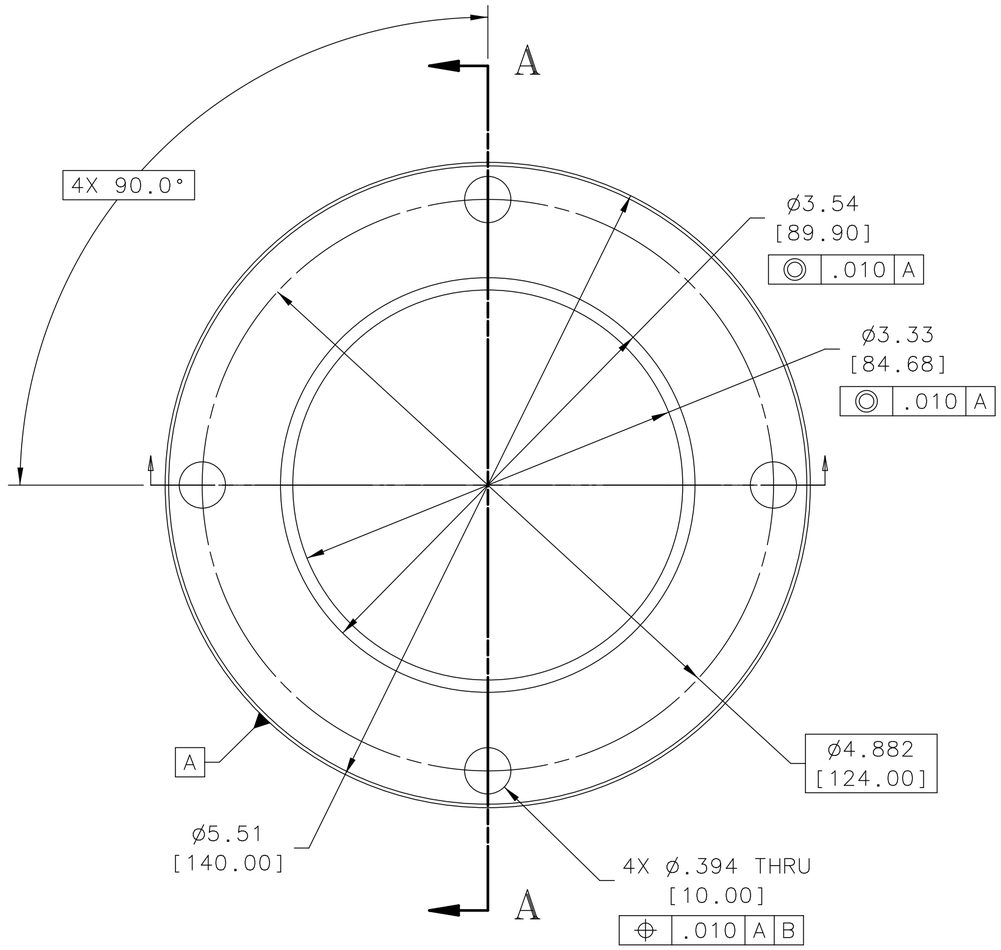
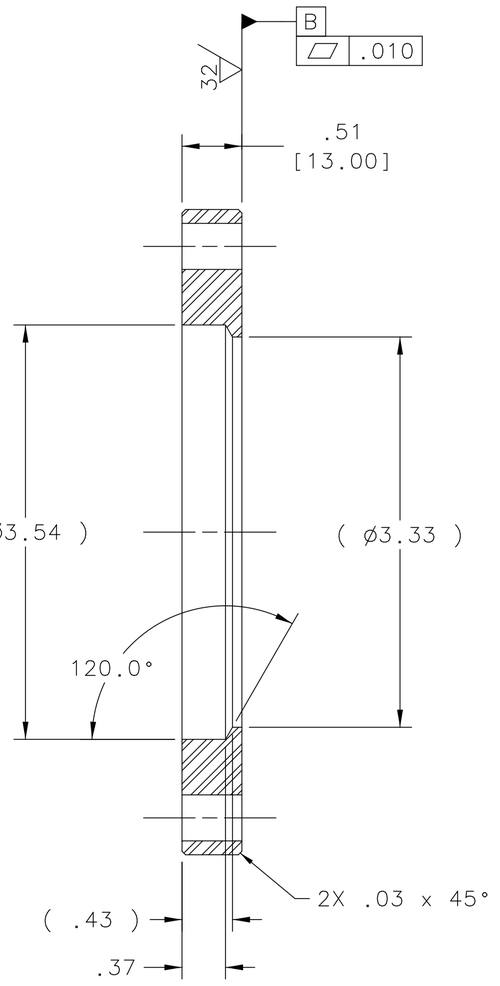
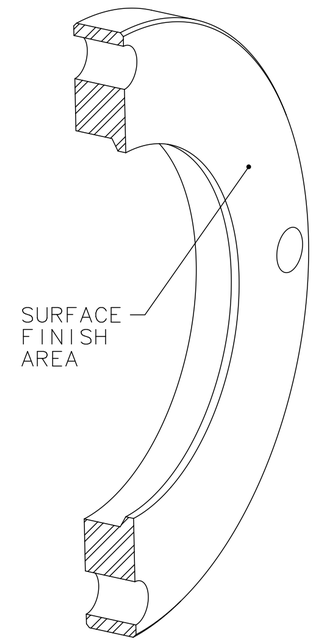
REV.	DESCRIPTION	DRAWN	DATE
		APPD.	DATE
---	NEW RELEASE - ER #9255	TLS	02/22/05





SECTION A–A



NOTES:

1. UNLESS OTHERWSIE SPECFIED, ALL UNITS ARE IN INCHES.
   REFERENCE DIMENSIONS IN BRACKETS, IF SHOWN, ARE IN MILLIMETERS.

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UNLESS OTHERWISE SPECIFIED			ORIGINATOR	DESYTTF	01-JAN-2002
.XX	.XXX	ANGLES	DRAWN	T.SPERRY	28-APR-2005
± .02	± .005	±.25°	CHECKED	C.M.GRIMM	13-NOV-2008
			APPROVED	M.WONG	14-NOV-2008

1. BREAK ALL SHARP EDGES .03 MAX.
2. DO NOT SCALE DRAWING.
3. DIMENSIONS BASED UPON ASME Y14.5M-1994
4. MAX. ALL MACH. SURFACES 125
5. DRAWING UNITS: U.S. INCH

USED ON: ME-459303, ME-459304

MATERIAL: STAINLESS STEEL, ASTM A182-F304L

FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

1.3 GHZ β=1 CRYOMODULE, MK1 VACUUM VESSEL FLANGE - INSTRUMENTATION

SCALE	DRAWING NUMBER	SHEET	REV
1:1	4904.280-MC-459309	1 OF 1	

CREATED WITH : Ideas12NXSeries | GROUP: TD/TEST-INSTRUMENTATION

INCHES 0 1 2 3 4 5 6

METRIC 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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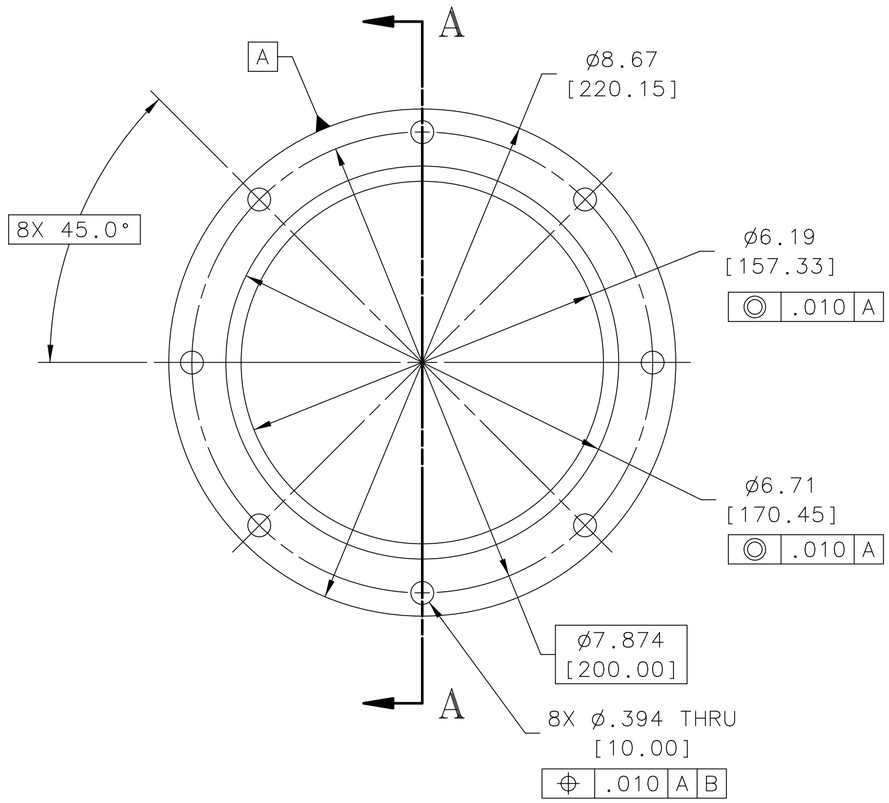
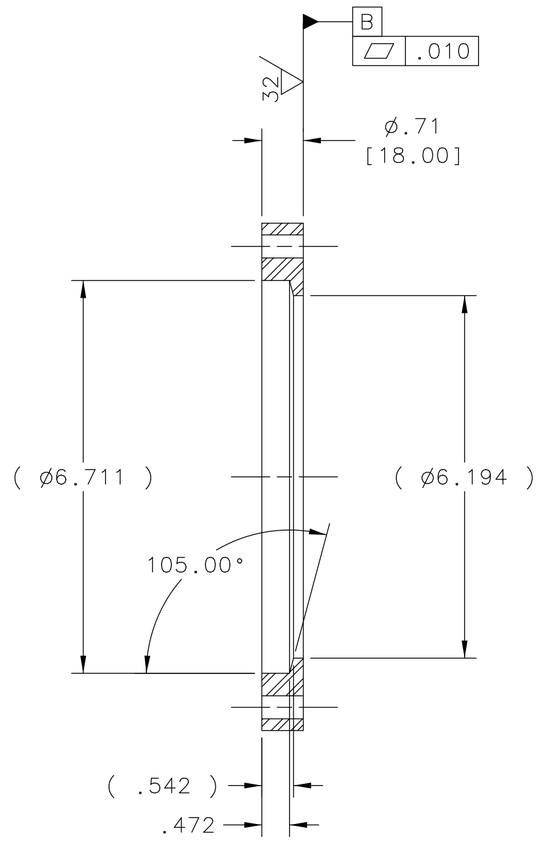
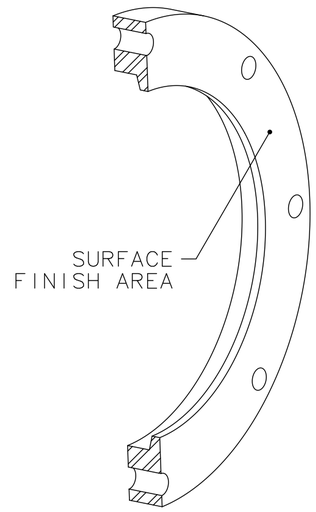
REV.	DESCRIPTION	DRAWN	DATE
		APPD.	DATE
---	NEW RELEASE - ER #9255	TLS	02/22/05





SECTION A–A



NOTES:

1. UNLESS OTHERWISE SPECIFIED,ALL DIMENSIONS ARE IN INCHES.
   REFERENCE DIMENSIONS IN BRACKETS, IF SHOWN, ARE IN MILLIMETERS.

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UNLESS OTHERWISE SPECIFIED			ORIGINATOR	DESYTTF	01-JAN-2002
.XX	.XXX	ANGLES	DRAWN	T.SPERRY	28-APR-2005
± .02	± .005	±.25°	CHECKED	C.M.GRIMM	13-NOV-2008
			APPROVED	M.WONG	14-NOV-2008

1. BREAK ALL SHARP EDGES .03 MAX.
2. DO NOT SCALE DRAWING.
3. DIMENSIONS BASED UPON ASME Y14.5M-1994
4. MAX. ALL MACH. SURFACES 125
5. DRAWING UNITS: U.S. INCH

USED ON: ME-459303, ME-459304

MATERIAL: STAINLESS STEEL, ASTM A182-F304L

FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

1.3 GHZ β=1 CRYOMODULE, MK1 VACUUM VESSEL FLANGE K1 K3

SCALE	DRAWING NUMBER	SHEET	REV
1:2	4904.280-MC-459310	1 OF 1	

CREATED WITH : Ideas12NXSeries | GROUP: TD/TEST-INSTRUMENTATION

INCHES 0 1 2 3 4 5 6

METRIC 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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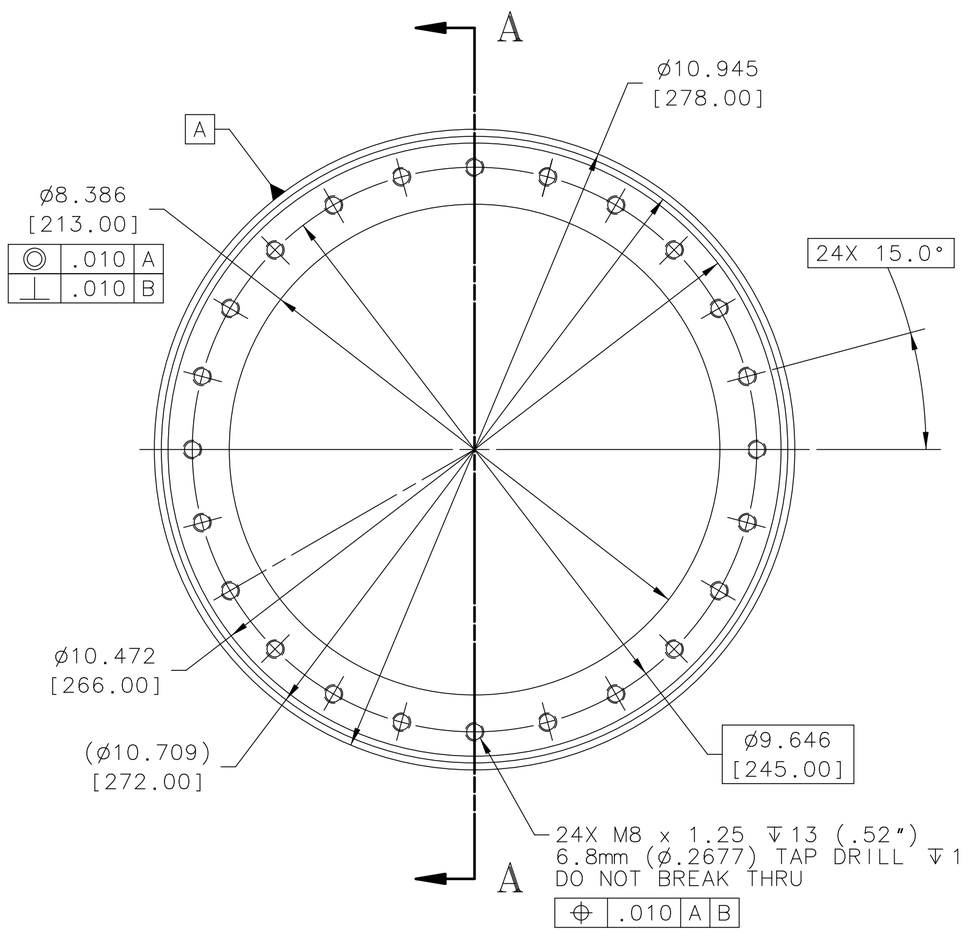
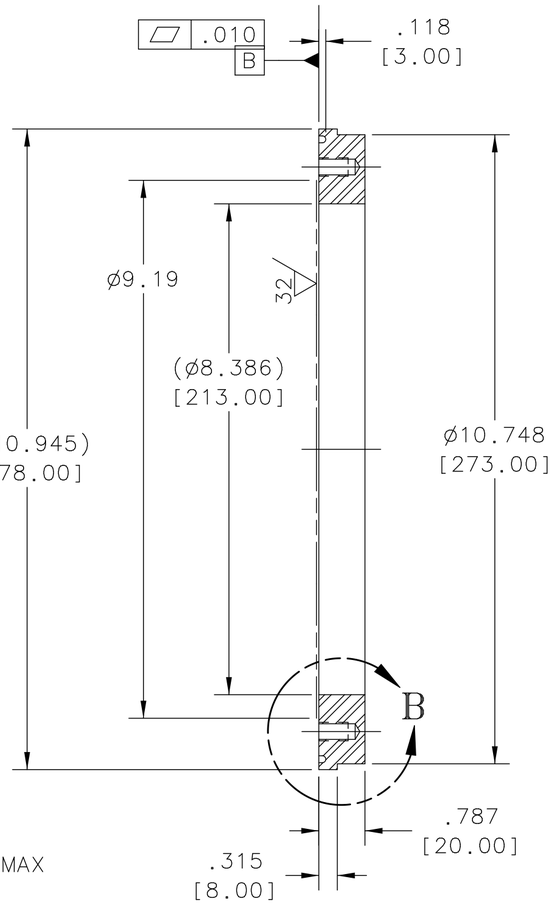
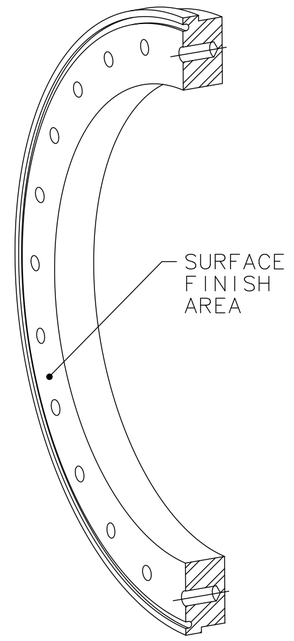
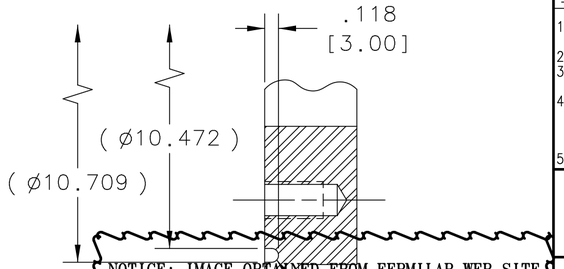
REV.	DESCRIPTION	DRAWN	DATE
		APPD.	DATE
---	NEW RELEASE - ER #9255	TLS	02/22/05







SECTION A–A



NOTES:

1. ALL UNITS EXCEPT FOR TAPPED HOLE CALLOUT ARE IN INCHES. REFERENCE DIMENSIONS IN BRACKETS, IF SHOWN, ARE IN MILLIMETERS.

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UNLESS OTHERWISE SPECIFIED			ORIGINATOR	DESYTTF	01-JAN-2002
.XX	.XXX	ANGLES	DRAWN	T.SPERRY	28-APR-2005
± .02	± .005	±.25°	CHECKED	C.M.GRIMM	13-NOV-2008
			APPROVED	M.WONG	14-NOV-2008

1. BREAK ALL SHARP EDGES .03 MAX.
2. DO NOT SCALE DRAWING.
3. DIMENSIONS BASED UPON ASME Y14.5M-1994
4. MAX. ALL MACH. SURFACES 125
5. DRAWING UNITS: U.S. INCH

USED ON: ME-459303, ME-459304

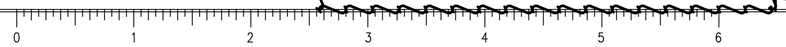
MATERIAL: STAINLESS STEEL, ASTM A182-F304L

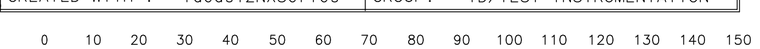
FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

1.3 GHZ β=1 CRYOMODULE, MK1 VACUUM VESSEL FLANGE MC PORT

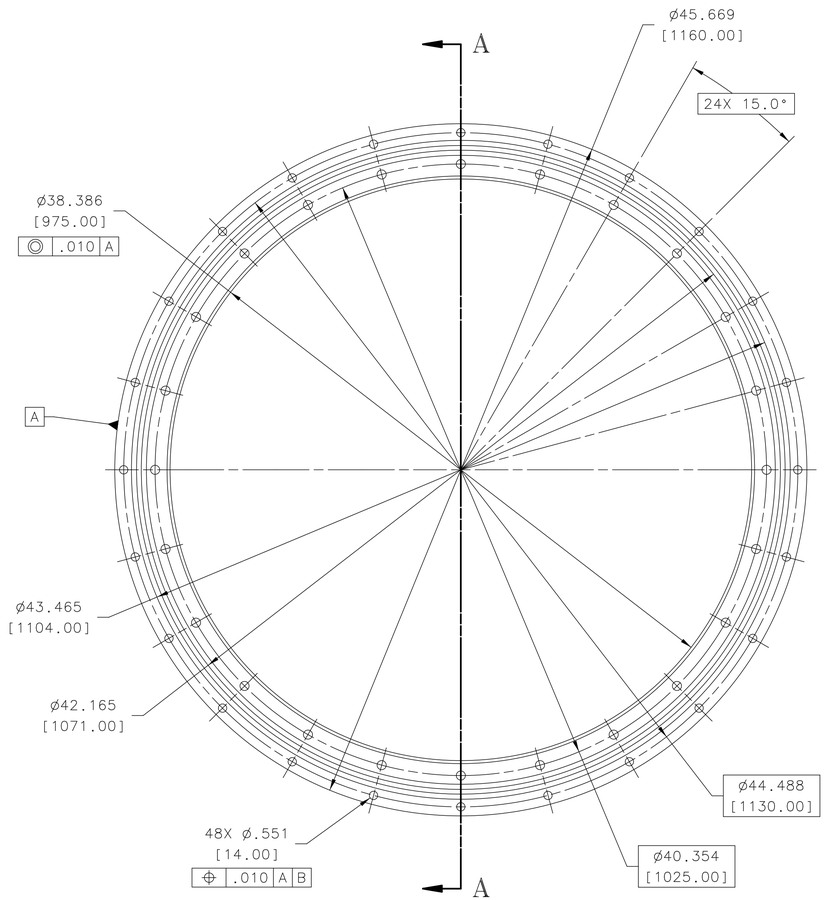
SCALE	DRAWING NUMBER	SHEET	REV
1:2	4904.280-MC-459311	1 OF 1	

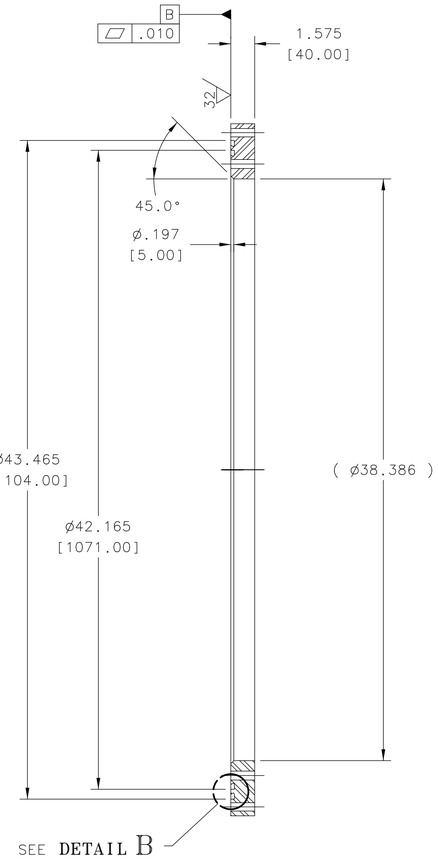
CREATED WITH : Ideas12NXSeries | GROUP: TD/TEST-INSTRUMENTATION



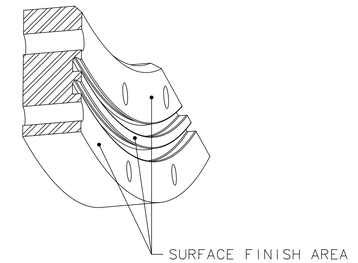


REV.	DESCRIPTION	DRAWN	DATE
		APPD.	DATE
---	NEW RELEASE - ER #9255	TLS	02/22/05

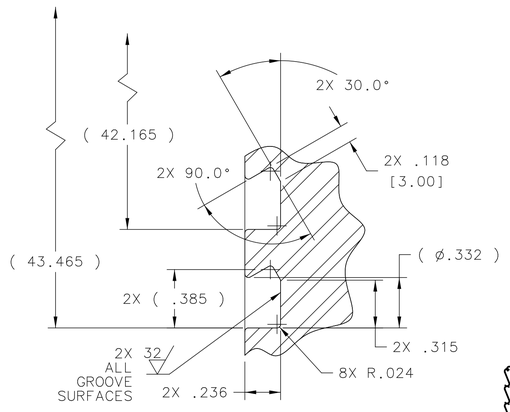




SECTION A–A



SCALE: 1/2



DETAIL B

SCALE: 2/1

NOTES:

1. UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES. REFERENCE DIMENSIONS BELOW, IF SHOWN, ARE IN MILLIMETERS.

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UNLESS OTHERWISE SPECIFIED			ORIGINATOR	DESYTTF	01-JAN-2002
.XX	.XXX	ANGLES	DRAWN	T.SPERRY	28-APR-2005
± .02	± .005	± 1°	CHECKED	C.M.GRIMM	17-NOV-2008
1. BREAK ALL SHARP EDGES .03 MAX.			APPROVED	M.WONG	17-NOV-2008
2. DO NOT SCALE DRAWING.			USED ON	ME-459303, ME-459304	
3. DIMENSIONS BASED UPON ASME Y14.5M-1994			MATERIAL	STAINLESS STEEL, ASTM A182-F304L	
4. MAX. ALL MACH. SURFACES 125					
5. DRAWING UNITS: U.S. INCH					

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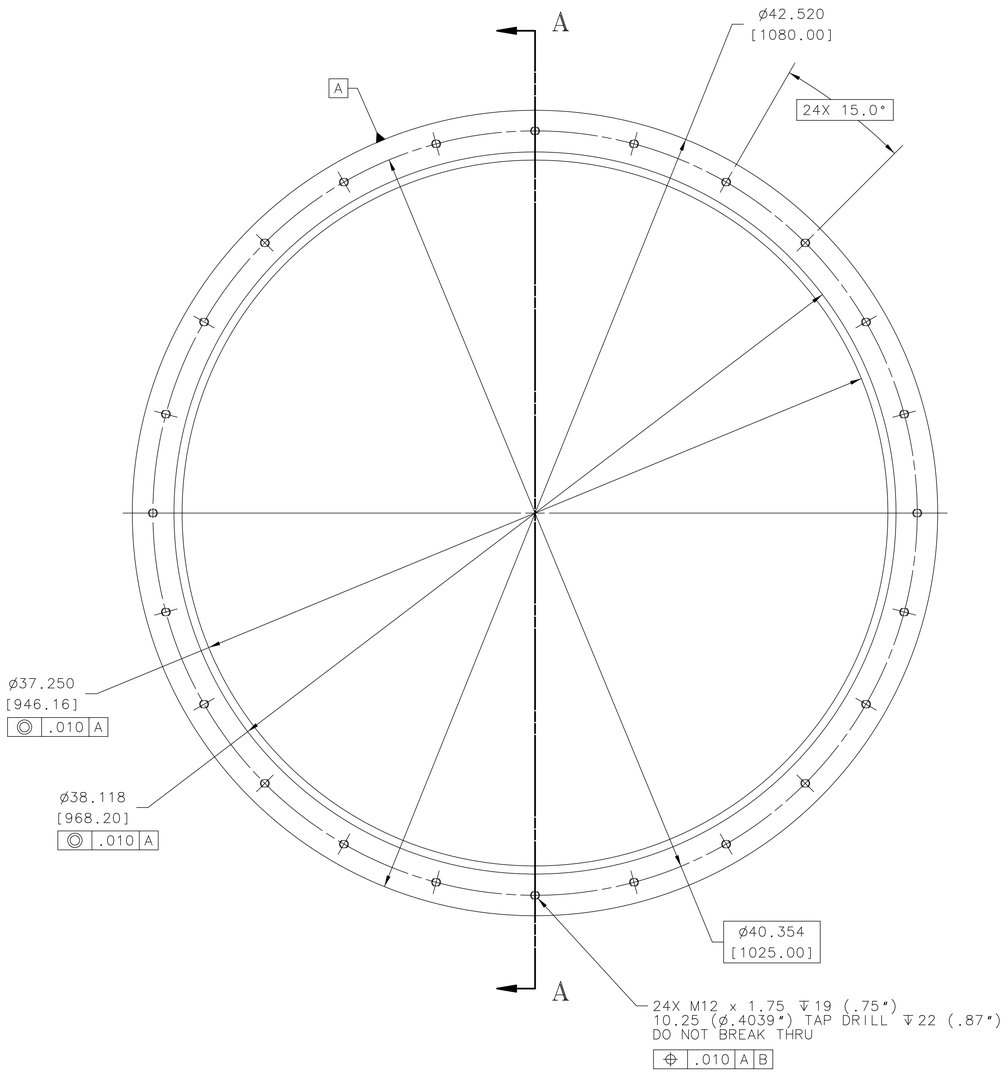
FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

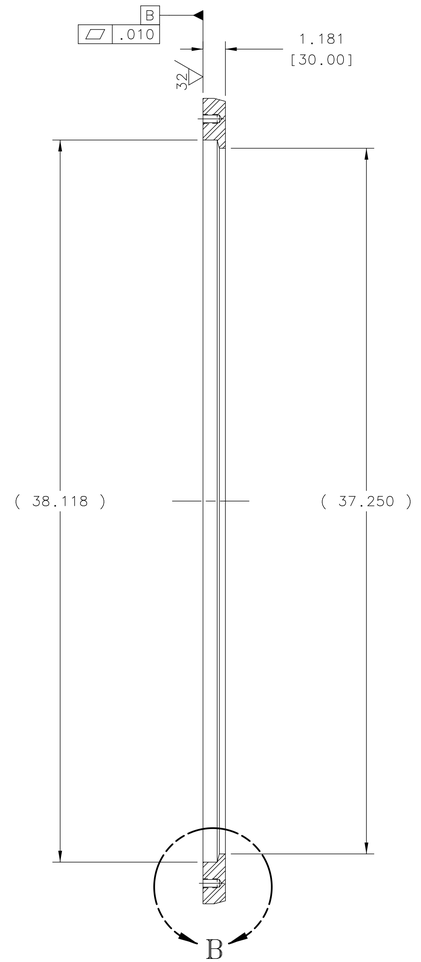
1.3 GHZ β=1 CRYOMODULE, MK1 VACUUM VESSEL FLANGE SLIDING FOR BELLOWS

SCALE	DRAWING NUMBER	SHEET	REV
1:2	4904.280-MD-459312	1 OF 1	

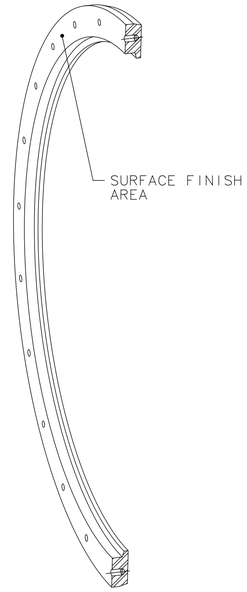
CREATED WITH : Ideas12NXSeries | GROUP: TD/TEST-INSTRUMENTATION

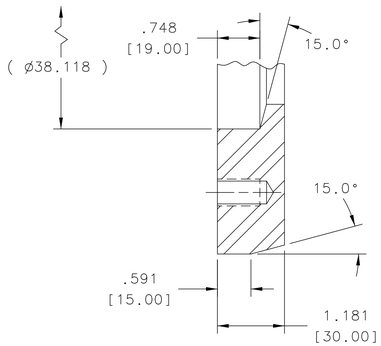
REV.	DESCRIPTION	DRAWN	DATE
		APPD.	DATE
---	NEW RELEASE - ER #9255	TLS	02/22/05





SECTION A–A





DETAIL B
SCALE: 1/2

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NOTES:

1. ALL UNITS EXCEPT FOR TAPPED HOLE CALLOUT ARE IN INCHES. REFERENCE DIMENSIONS IN BRACKETS IF SHOWN ARE IN MILLIMETERS.

UNLESS OTHERWISE SPECIFIED			ORIGINATOR	DESYTTF	01-JAN-2002
.XX	.XXX	ANGLES	DRAWN	T.SPERRY	28-APR-2005
± .02	± .005	± 1°	CHECKED	C.M.GRIMM	17-NOV-2008
1. BREAK ALL SHARP EDGES .02 MAX.			APPROVED	M.WONG	17-NOV-2008
2. DO NOT SCALE DRAWING.			USED ON	ME-459303, ME-459304	
3. DIMENSIONS BASED UPON ASME Y14.5M-1994					
4. MAX. ALL MACH. SURFACES 125			MATERIAL	STAINLESS STEEL, ASTM A182-F304L	
5. DRAWING UNITS: U.S. INCH					

FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

1.3 GHZ β=1 CRYOMODULE, MK1 VACUUM VESSEL FLANGE TTF FIXED UPSTREAM

SCALE	DRAWING NUMBER	SHEET	REV
1:4	4904.280-MD-459313	1 OF 1	
CREATED WITH : Ideas12NXSeries		GROUP: TD/TEST-INSTRUMENTATION	

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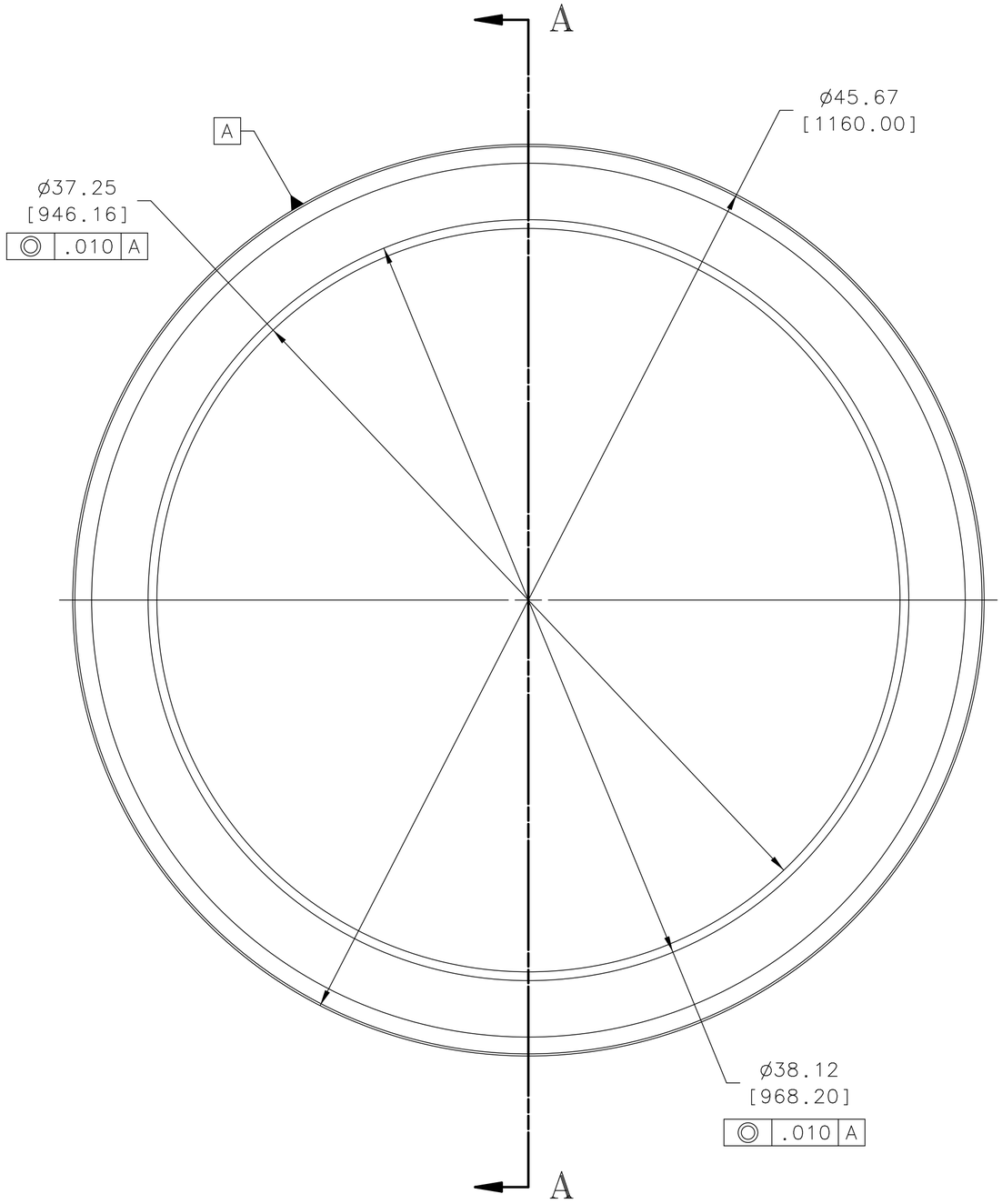
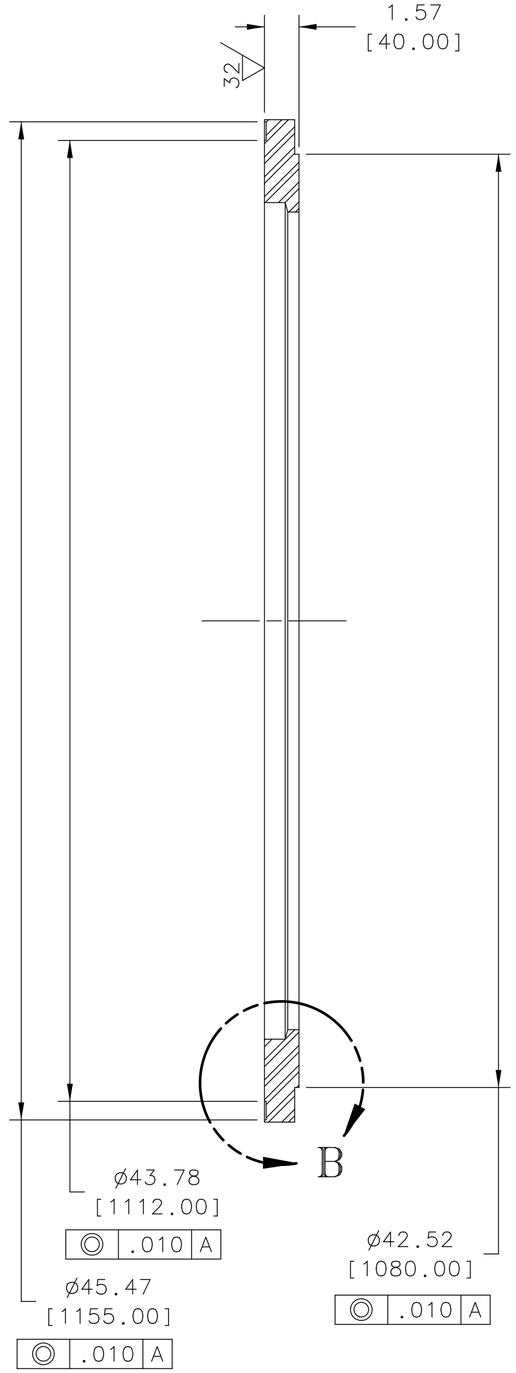
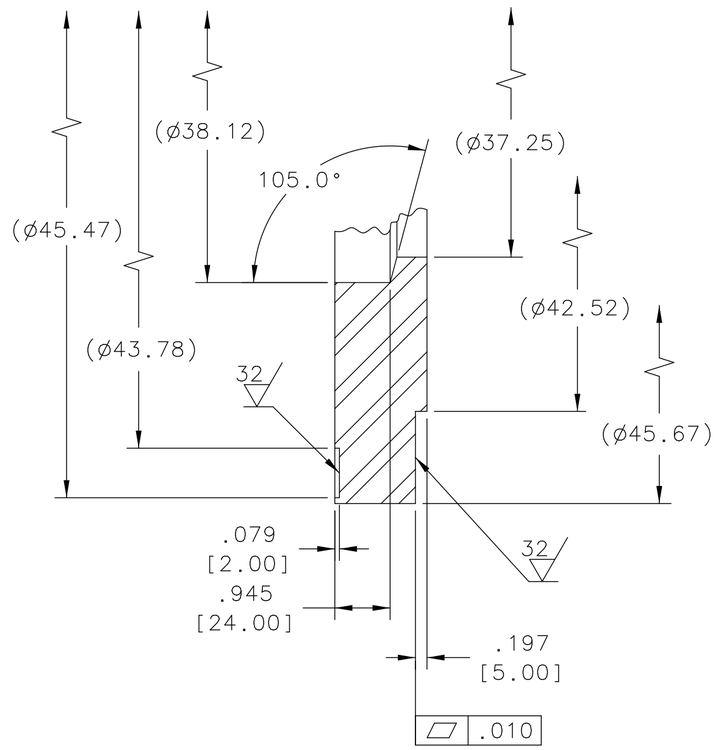
REV.	DESCRIPTION	DRAWN	DATE
		APPD.	DATE
---	NEW RELEASE - ER #9255	TLS	02/22/05





SECTION A–A



DETAIL B
SCALE: 1/2

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NOTES:

1. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES. REFERENCE DIMENSIONS IN BRACKETS, IF SHOWN, ARE IN MILLIMETERS.

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UNLESS OTHERWISE SPECIFIED			ORIGINATOR	DESYTTF	01-JAN-2002
.XX	.XXX	ANGLES	DRAWN	T.SPERRY	28-APR-2005
± .02	± .005	±.25°	CHECKED	C.M.GRIMM	13-NOV-2008
1. BREAK ALL SHARP EDGES .03 MAX. 2. DO NOT SCALE DRAWING. 3. DIMENSIONS BASED UPON ASME Y14.5M-1994 4. MAX. ALL MACH. SURFACES 125 5. DRAWING UNITS: U.S. INCH			APPROVED	M.WONG	14-NOV-2008
			USED ON	ME-459303, ME-459304	
			MATERIAL	STNLS STL ASTM A182-F304L	

FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

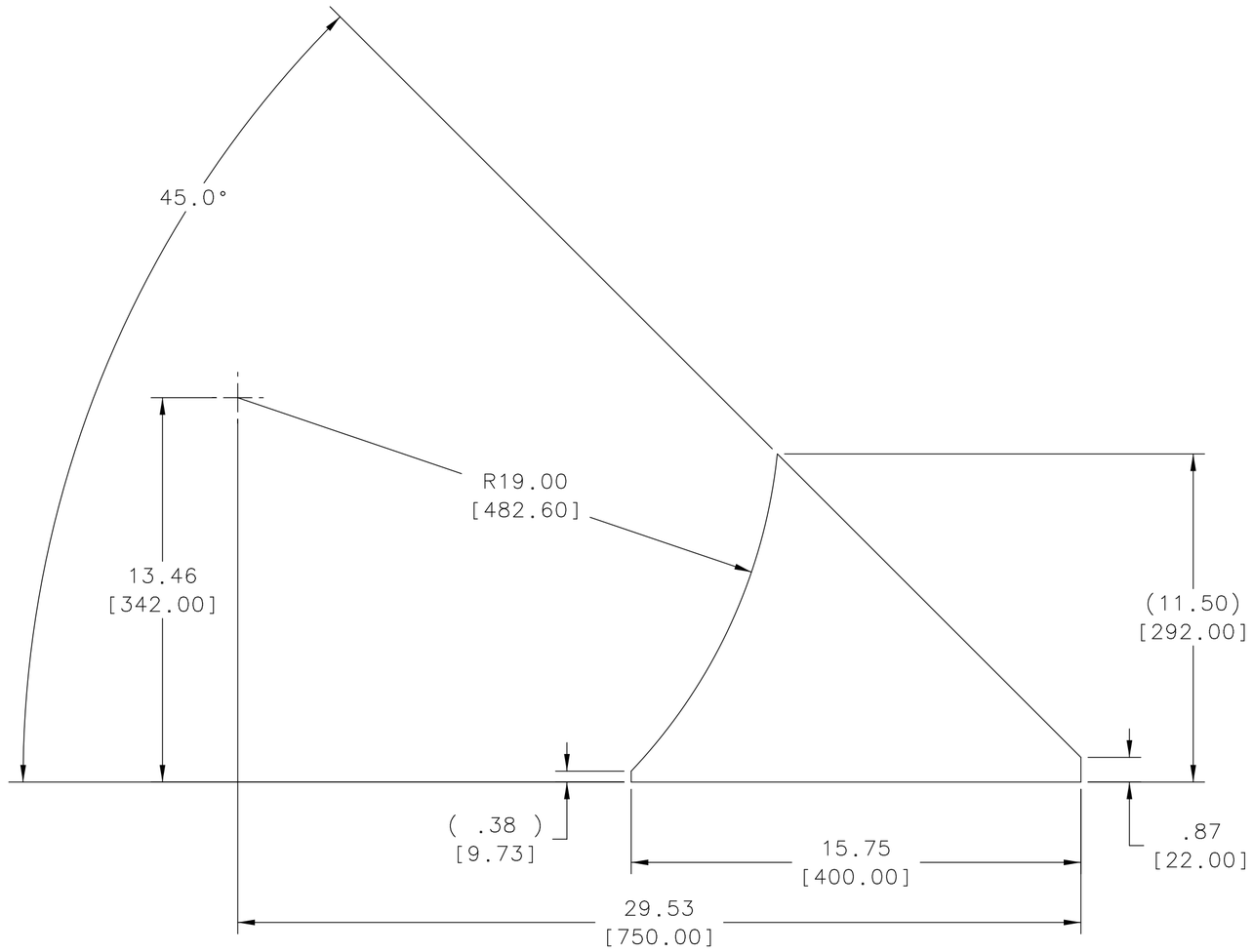
1.3 GHZ β=1 CRYOMODULE, MK1
VACUUM VESSEL
FLANGE TTF FIXED DOWNSTREAM

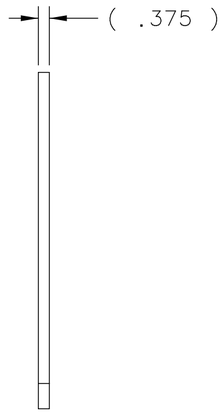
SCALE	DRAWING NUMBER	SHEET	REV
3/16	4904.280-MC-459314	1 OF 1	

CREATED WITH : Ideas12NXSeries | GROUP: TD/TEST-INSTRUMENTATION

0 1 2 3 4 5 6 INCHES
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 METRIC

REV.	DESCRIPTION	DRAWN	DATE
		APPD.	DATE
---	NEW RELEASE - ER #9255	TLS	02/22/05





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NOTES:

1. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES. REFERENCE DIMENSIONS IN BRACKETS, IF SHOWN, ARE IN MILLIMETERS.

UNLESS OTHERWISE SPECIFIED			ORIGINATOR	DESYTTF	01-JAN-2002
.XX	.XXX	ANGLES	DRAWN	T.SPERRY	28-APR-2005
± .02	± --	± 1°	CHECKED	C.M.GRIMM	13-NOV-2008
			APPROVED	M.WONG	14-NOV-2008

1. BREAK ALL SHARP EDGES .02 MAX.
2. DO NOT SCALE DRAWING.
3. DIMENSIONS BASED UPON ASME Y14.5M-1994
4. MAX. ALL MACH. SURFACES 250
5. DRAWING UNITS: U.S. INCH

USED ON: ME-459303, ME-459304

MATERIAL: STEEL PLATE, 3/8 THK, PRESSURE VESSEL QUALITY, ASTM A516 GR 70

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UNITED STATES DEPARTMENT OF ENERGY

1.3 GHZ β=1 CRYOMODULE, MK1 VACUUM VESSEL GUSSET WELDED OUTRIGGER

SCALE	DRAWING NUMBER	SHEET	REV
1:4	4904.280-MC-459315	1 OF 1	

CREATED WITH : Ideas12NXSeries | GROUP: TD/TEST-INSTRUMENTATION

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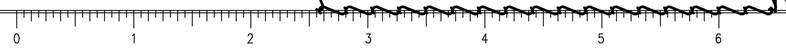
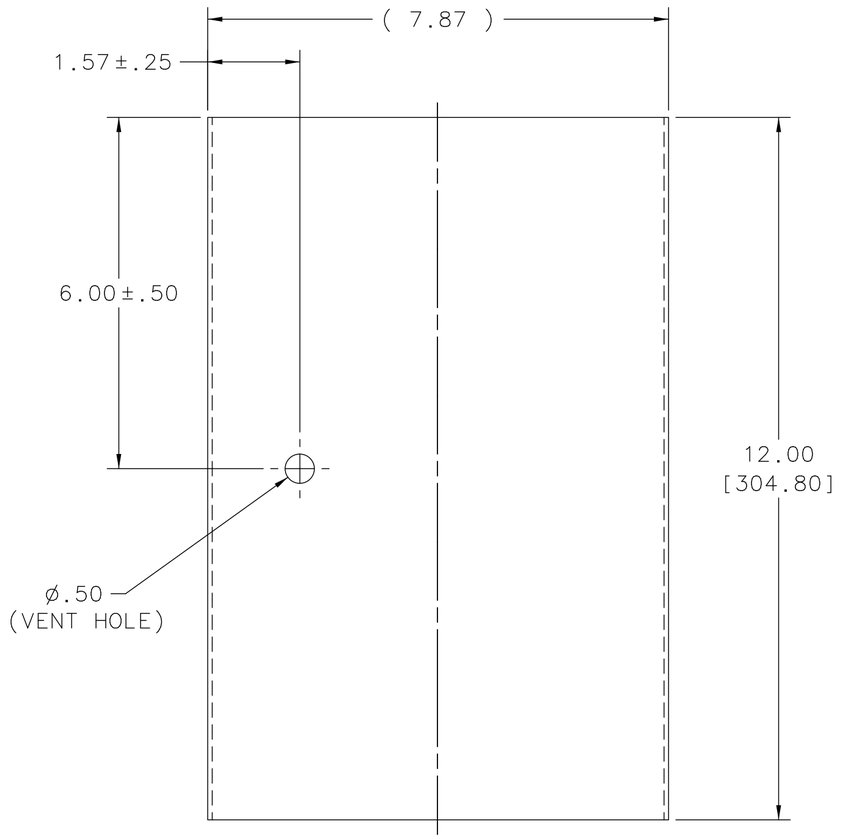
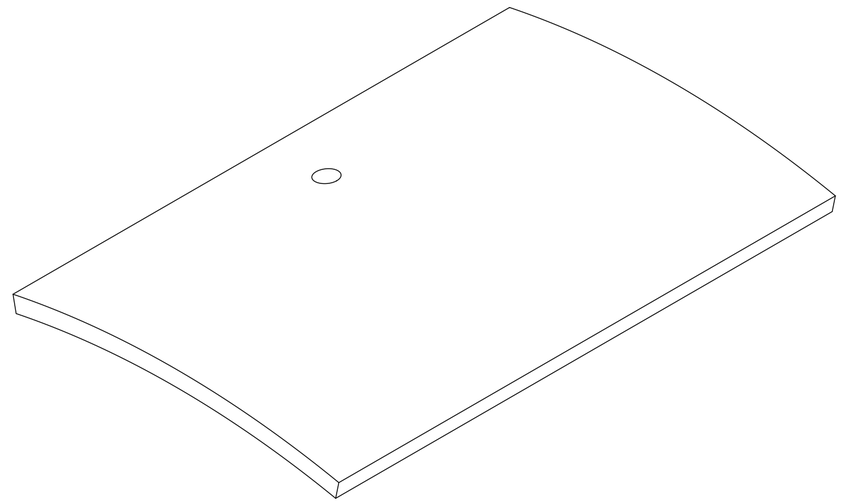
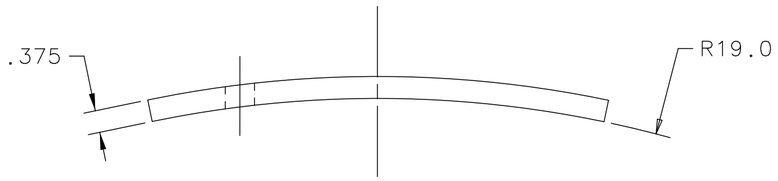


REV.	DESCRIPTION	DRAWN	DATE
		APPD.	DATE
---	NEW RELEASE - ER #9255	TLS	02/22/05







NOTES:

1. PLATE SIZE BEFORE FORMING IS 12.00 x 7.93. BEND TO RADIUS SHOWN.
2. ALL DIMENSIONS ARE IN INCHES.

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UNLESS OTHERWISE SPECIFIED			ORIGINATOR	DESYTTF	01-JAN-2002
.XX	.XXX	ANGLES	DRAWN	T.SPERRY	28-APR-2005
± .02	± ---	± 1°	CHECKED	C.M.GRIMM	13-NOV-2008
			APPROVED	M.WONG	14-NOV-2008

1. BREAK ALL SHARP EDGES .02 MAX.
2. DO NOT SCALE DRAWING.
3. DIMENSIONS BASED UPON ASME Y14.5M-1994
4. MAX. ALL MACH. SURFACES 250
5. DRAWING UNITS: U.S. INCH

USED ON: ME-459303, ME-459304

MATERIAL: STEEL PLATE, 3/8 THK, PRESSURE VESSEL QUALITY, ASTM A516 GR 70

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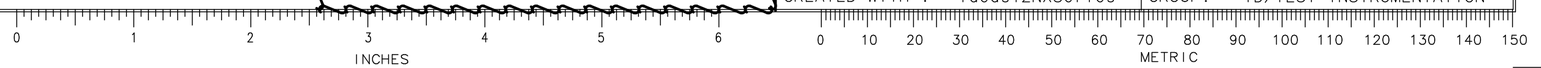
UNITED STATES DEPARTMENT OF ENERGY

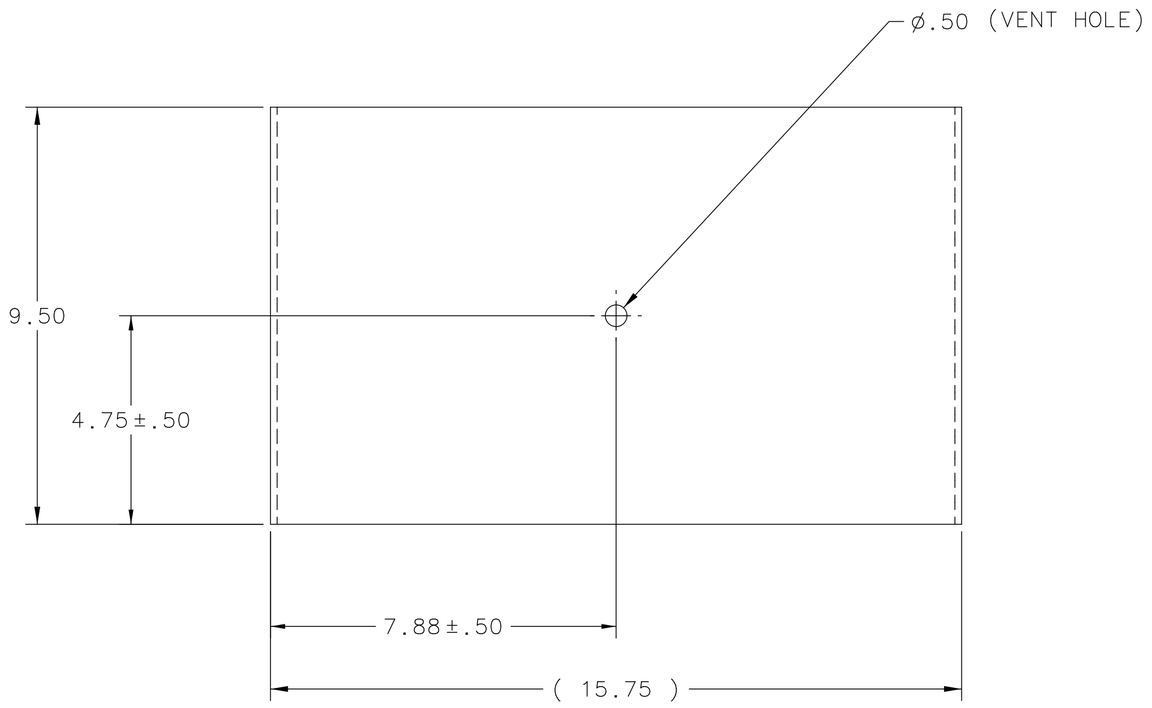
1.3 GHZ β=1 CRYOMODULE, MK1 VACUUM VESSEL PAD WELD LOWER

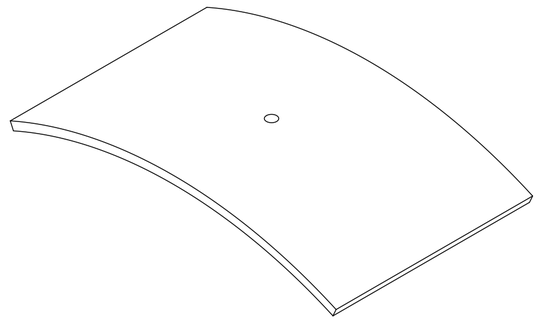
SCALE	DRAWING NUMBER	SHEET	REV
1:2	4904.280-MC-459316	1 OF 1	

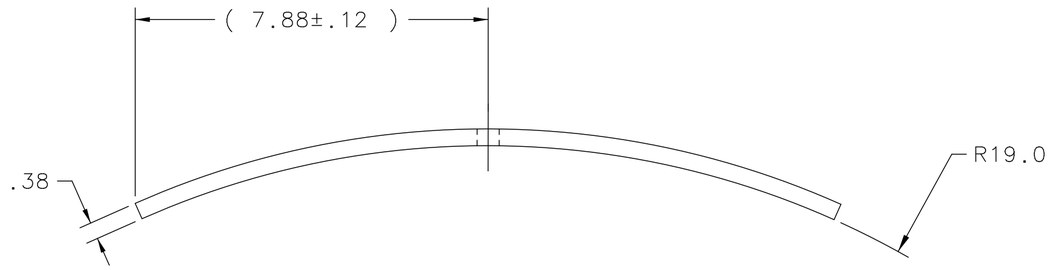
CREATED WITH : Ideas12NXSeries | GROUP: TD/TEST-INSTRUMENTATION



REV.	DESCRIPTION	DRAWN	DATE
		APPD.	DATE
---	NEW RELEASE - ER #9255	TLS	2/22/05







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NOTES:

1. PLATE SIZE BEFORE FORMING IS 16.00 x 9.50. BEND TO RADIUS SHOWN.
2. ALL DIMENSIONS ARE IN INCHES.

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UNLESS OTHERWISE SPECIFIED			ORIGINATOR	DESYTTF	01-JAN-2002
.XX	.XXX	ANGLES	DRAWN	T.SPERRY	28-APR-2005
± .02	± ---	± ---	CHECKED	C.M.GRIMM	13-NOV-2008
			APPROVED	M.WONG	14-NOV-2008

1. BREAK ALL SHARP EDGES .02 MAX.
2. DO NOT SCALE DRAWING.
3. DIMENSIONS BASED UPON ASME Y14.5M-1994
4. MAX. ALL MACH. SURFACES 250
5. DRAWING UNITS: U.S. INCH

USED ON: ME-459303, ME-459304

MATERIAL: STEEL PLATE, 3/8 THK, PRESSURE VESSEL QUALITY, ASTM A516 GR 70

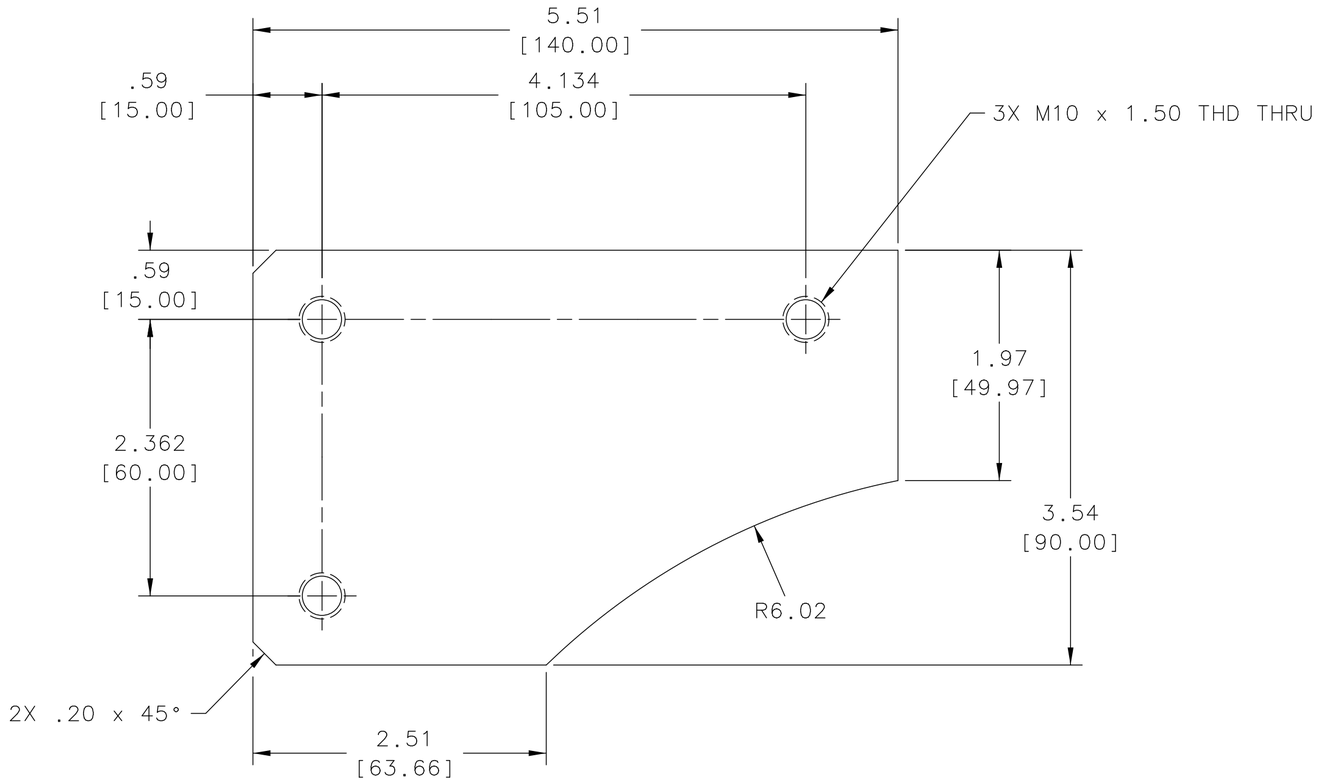
FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

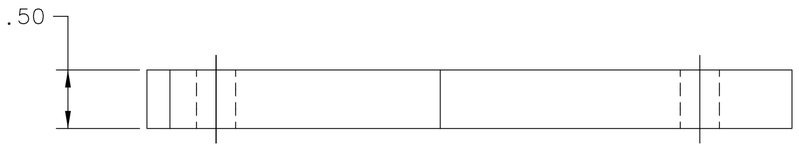
1.3 GHZ β=1 CRYOMODULE, MK1 VACUUM VESSEL PAD WELD UPPER

SCALE	DRAWING NUMBER	SHEET	REV
3/8	4904.280-MC-459317	1 OF 1	

CREATED WITH : Ideas12NXSeries | GROUP: TD/TEST-INSTRUMENTATION

REV.	DESCRIPTION	DRAWN	DATE
		APPD.	DATE
---	NEW RELEASE - ER #9255	TLS	02/22/05





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NOTES:

1. ALL DIMENSIONS ARE IN INCHES. REFERENCE DIMENSIONS IF SHOWN IN BRACKETS ARE IN MILLIMETERS.

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UNLESS OTHERWISE SPECIFIED			ORIGINATOR	DESYTTF	01-JAN-2002
.XX	.XXX	ANGLES	DRAWN	T.SPERRY	28-APR-2005
± .02	± .005	± ---	CHECKED	C.M.GRIMM	13-NOV-2008
			APPROVED	M.WONG	14-NOV-2008

1. BREAK ALL SHARP EDGES .02 MAX.
2. DO NOT SCALE DRAWING.
3. DIMENSIONS BASED UPON ASME Y14.5M-1994
4. MAX. ALL MACH. SURFACES 250
5. DRAWING UNITS: U.S. INCH

USED ON: MC-459329, MC-459330

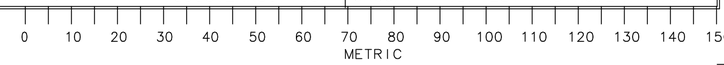
MATERIAL: STEEL PLATE, 1/2 THK, PRESSURE VESSEL QUALITY, ASTM A516 GR 70

FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

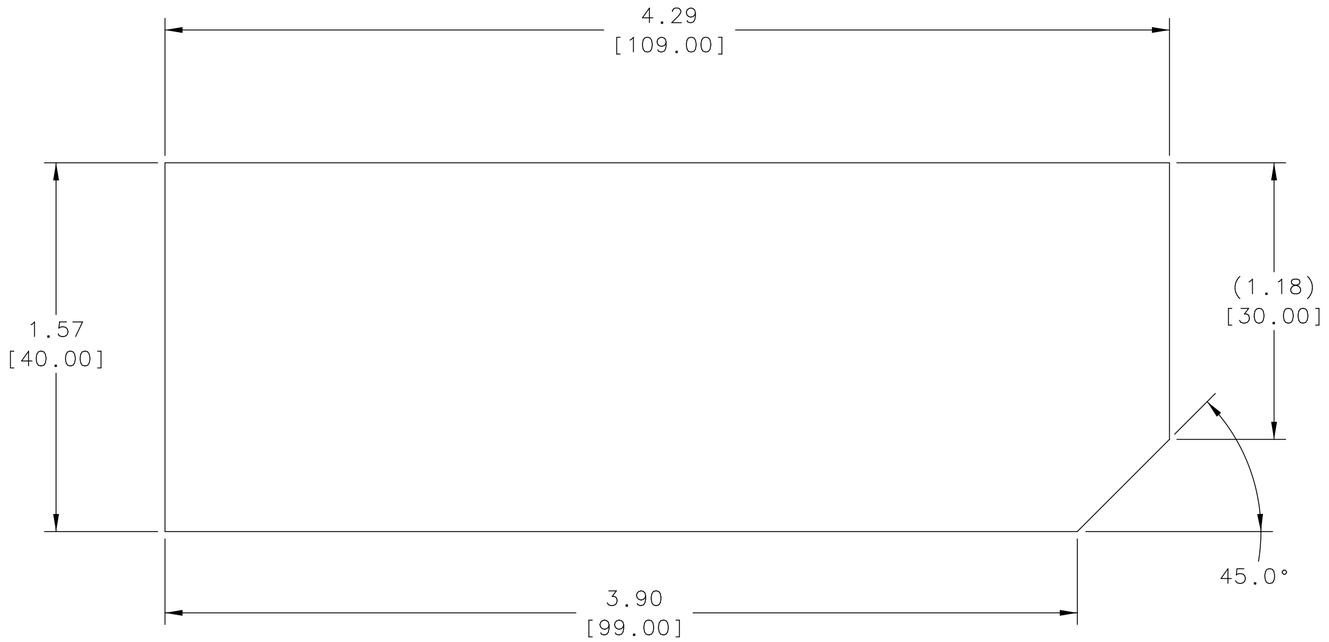
1.3 GHZ β=1 CRYOMODULE, MK1 VACUUM VESSEL PLATE MC MOUNT

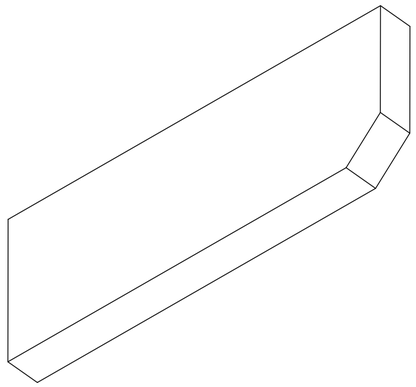
SCALE	DRAWING NUMBER	SHEET	REV
1:1	4904.280-MC-459318	1 OF 1	

CREATED WITH : Ideas12NXSeries | GROUP: TD/TEST-INSTRUMENTATION



REV.	DESCRIPTION	DRAWN	DATE
		APPD.	DATE
---	NEW RELEASE - ER #9255	TLS	02/22/05





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NOTES:

1. UNLESS OTHERWSIE SPECIFIED, ALL DIMENSIONS ARE IN INCHES. REFERENCE DIMESNIONS IN BRACKETS, IF SHOWN, ARE IN MILLIMETERS.

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UNLESS OTHERWISE SPECIFIED			ORIGINATOR	DESYTTF	01-JAN-2002
.XX	.XXX	ANGLES	DRAWN	T.SPERRY	28-APR-2005
± .02	± ---	± 1°	CHECKED	C.M.GRIMM	13-NOV-2008
			APPROVED	M.WONG	14-NOV-2008

1. BREAK ALL SHARP EDGES .02 MAX.
2. DO NOT SCALE DRAWING.
3. DIMENSIONS BASED UPON ASME Y14.5M-1994
4. MAX. ALL MACH. SURFACES 250
5. DRAWING UNITS: U.S. INCH

USED ON: MC-459329, MC-459330

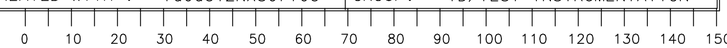
MATERIAL: STEEL PLATE, 3/8 THK, PRESSURE VESSEL QUALITY, ASTM A516 GR70

FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

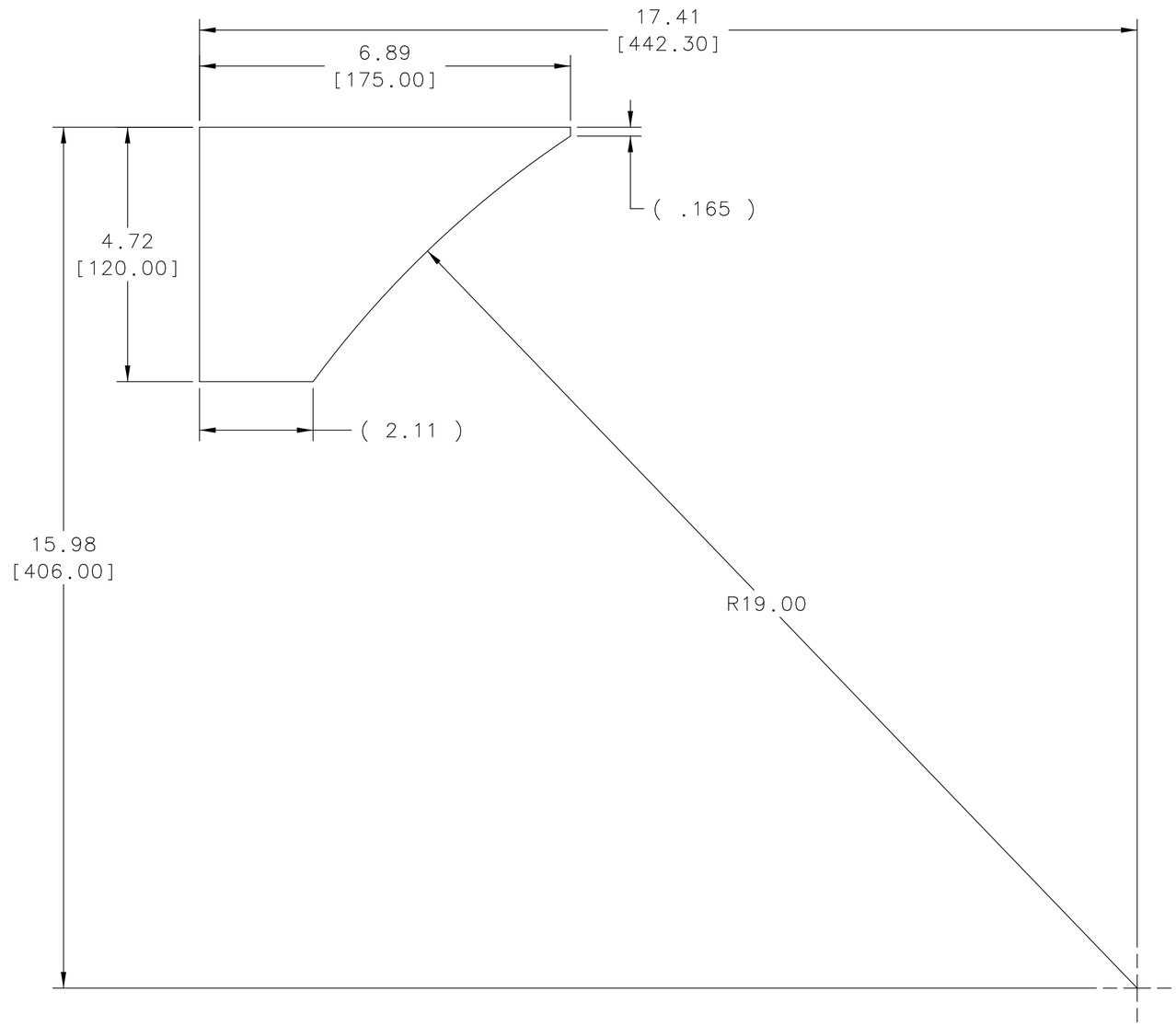
1.3 GHZ β=1 CRYOMODULE, MK1 VACUUM VESSEL PLATE MOUNT GUSSET

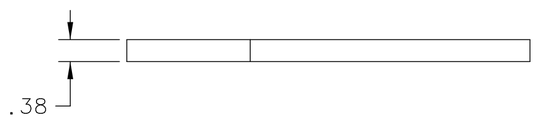
SCALE	DRAWING NUMBER	SHEET	REV
2/1	4904.280-MC-459319	1 OF 1	

CREATED WITH : Ideas12NXSeries | GROUP: TD/TEST-INSTRUMENTATION



REV.	DESCRIPTION	DRAWN	DATE
		APPD.	DATE
---	NEW RELEASE - ER #9255	TLS	02/22/05





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NOTES:

1. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES. REFERENCE DIMENSIONS IN BRACKETS IF SHOWN ARE IN MILLIMETERS.

UNLESS OTHERWISE SPECIFIED			ORIGINATOR	DESYTTF	01-JAN-2002
.XX	.XXX	ANGLES	DRAWN	T.SPERRY	28-APR-2005
± .02	± ---	± ---	CHECKED	C.M.GRIMM	13-NOV-2008
			APPROVED	M.WONG	14-NOV-2008

1. BREAK ALL SHARP EDGES .02 MAX.
2. DO NOT SCALE DRAWING.
3. DIMENSIONS BASED UPON ASME Y14.5M-1994
4. MAX. ALL MACH. SURFACES 250
5. DRAWING UNITS: U.S. INCH

USED ON: MC-459329, MC-459330

MATERIAL: STEEL PLATE, 3/8 THK, PRESSURE VESSEL QUALITY, ASTM A516 GR 70

FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

1.3 GHZ β=1 CRYOMODULE, MK1 VACUUM VESSEL PLATE MOUNT SUPPORT

SCALE	DRAWING NUMBER	SHEET	REV
1:2	4904.280-MC-459320	1 OF 1	

CREATED WITH : Ideas12NXSeries | GROUP: TD/TEST-INSTRUMENTATION

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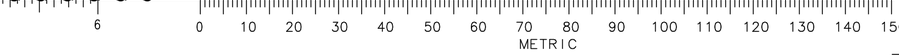

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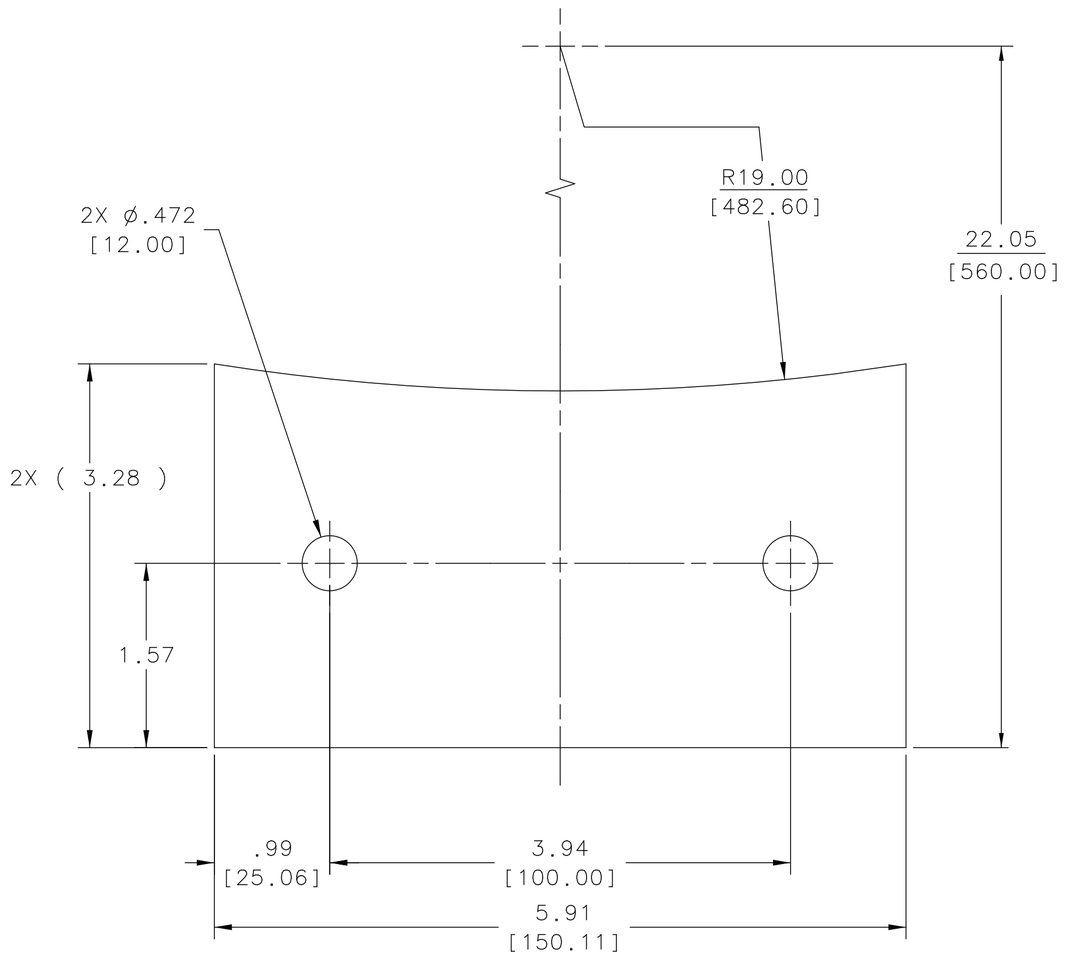
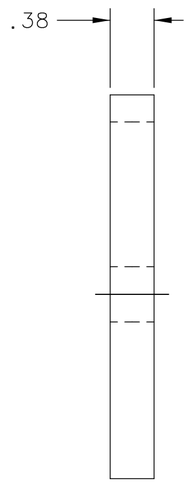
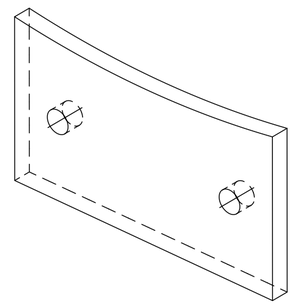
REV.	DESCRIPTION	DRAWN	DATE
		APPD.	DATE
---	NEW RELEASE - ER #9255	TLS	02/22/05







NOTES:

1. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES. REFERENCE DIMENSIONS, IF SHOWN, ARE IN MILLIMETERS.

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UNLESS OTHERWISE SPECIFIED			ORIGINATOR	DESYTTF	01-JAN-2002
.XX	.XXX	ANGLES	DRAWN	T.SPERRY	28-APR-2005
± .02	± ---	± 1°	CHECKED	C.M.GRIMM	13-NOV-2008
			APPROVED	M.WONG	14-NOV-2008

1. BREAK ALL SHARP EDGES .02 MAX.
2. DO NOT SCALE DRAWING.
3. DIMENSIONS BASED UPON ASME Y14.5M-1994
4. MAX. ALL MACH. SURFACES 250
5. DRAWING UNITS: U.S. INCH

USED ON: ME-459303, ME-459304

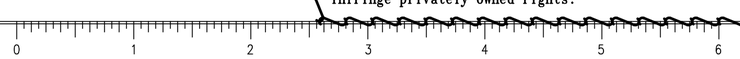
MATERIAL: STEEL PLATE, 3/8 THK, PRESSURE VESSEL QUALITY, ASTM A516 GR 70

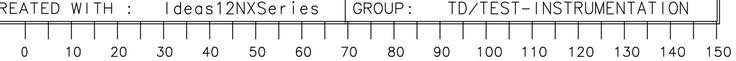
FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

1.3 GHZ β=1 CRYOMODULE, MK1 VACUUM VESSEL PLATE PIPING SUPPORT

SCALE	DRAWING NUMBER	SHEET	REV
1:1	4904.280-MC-459321	1 OF 1	

CREATED WITH : Ideas12NXSeries | GROUP: TD/TEST-INSTRUMENTATION





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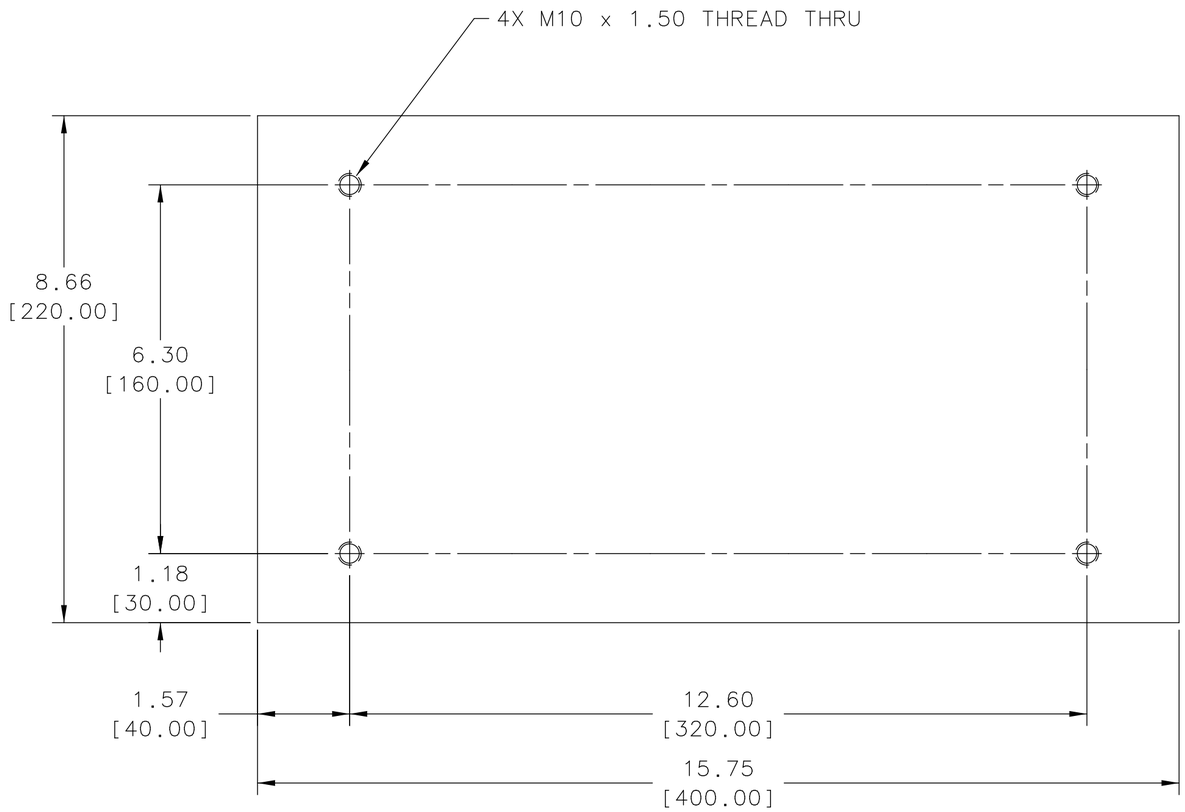
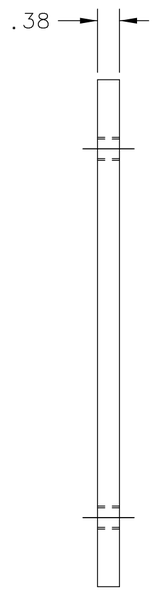
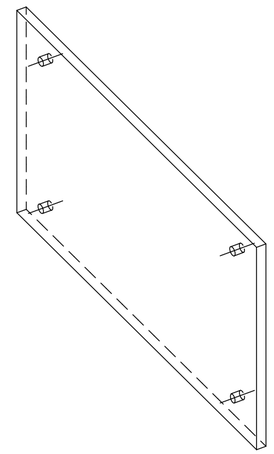
REV.	DESCRIPTION	DRAWN	DATE
		APPD.	DATE
---	NEW RELEASE - ER #9255	TLS	02/22/05







UNLESS OTHERWISE SPECIFIED			ORIGINATOR	DESYTTF	01-JAN-2002
.XX	.XXX	ANGLES	DRAWN	T.SPERRY	28-APR-2005
± .02	± ---	± ---	CHECKED	C.M.GRIMM	13-NOV-2008
			APPROVED	M.WONG	14-NOV-2008

1. BREAK ALL SHARP EDGES .02 MAX.
2. DO NOT SCALE DRAWING.
3. DIMENSIONS BASED UPON ASME Y14.5M-1994
4. MAX. ALL MACH. SURFACES 250
5. DRAWING UNITS: U.S.INCH

USED ON: ME-459303, ME-459304

MATERIAL: STEEL PLATE, 3/8 THK, PRESSURE VESSEL QUALITY, ASTM A516 GR 70

FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

1.3 GHZ β=1 CRYOMODULE, MK1
VACUUM VESSEL
PLATE WELDED OUTRIGGER

SCALE	DRAWING NUMBER	SHEET	REV
1:2	4904.280-MC-459322	1 OF 1	

CREATED WITH : Ideas12NXSeries | GROUP: TD/TEST-INSTRUMENTATION

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NOTES:

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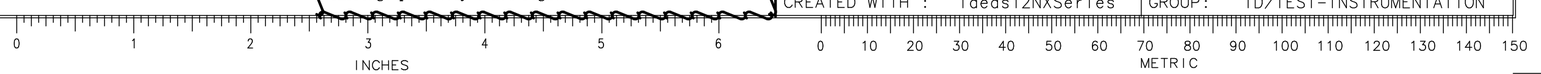
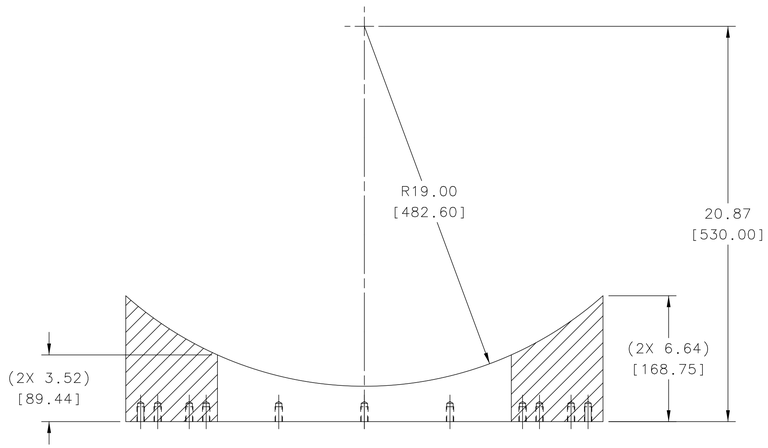
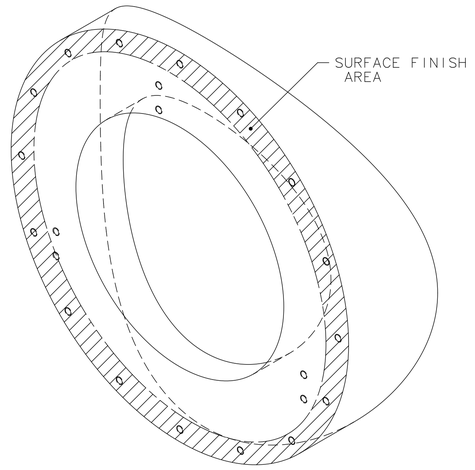
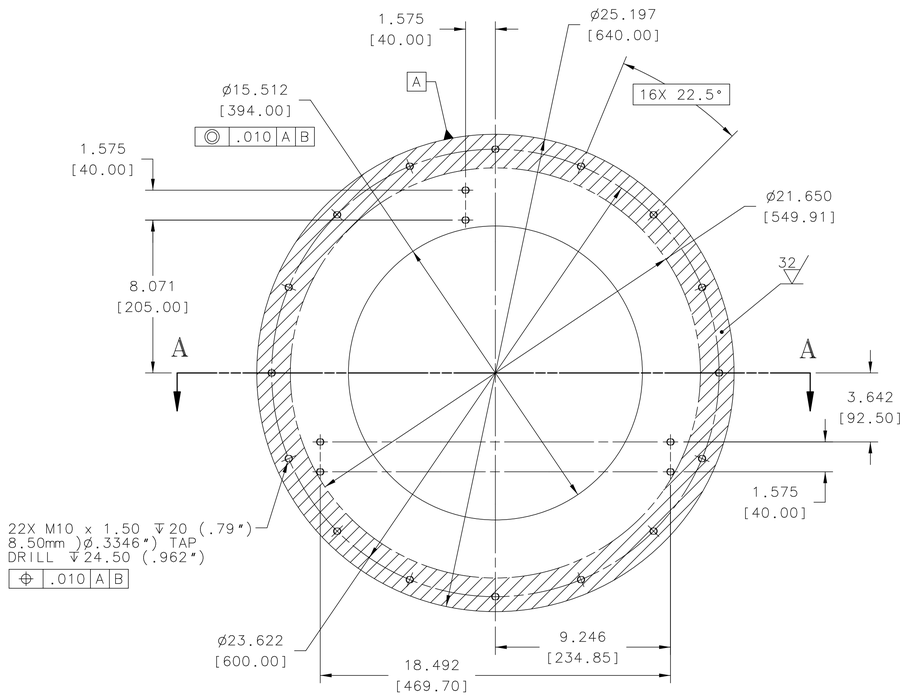


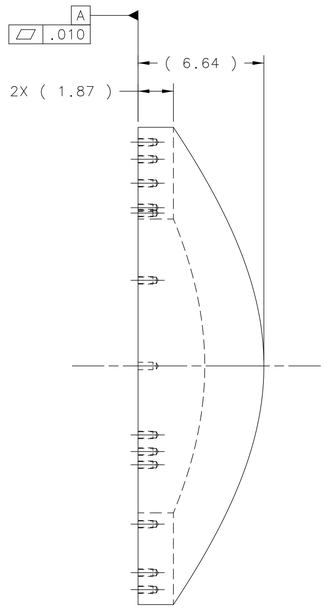
REV.	DESCRIPTION	DRAWN	DATE
		APPD.	DATE
---	NEW RELEASE - ER #9255	TLS	02/22/05



SECTION A–A







NOTES:

1. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES. REFERENCE DIMENSIONS IN BRACKETS, IF SHOWN, ARE IN MILLIMETERS.

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UNLESS OTHERWISE SPECIFIED			ORIGINATOR	DESYTTF	01-JAN-2002
.XX	.XXX	ANGLES	DRAWN	T.SPERRY	28-APR-2005
± .02	± .005	± .25°	CHECKED	C.M.GRIMM	13-NOV-2008
			APPROVED	M.WONG	14-NOV-2008

1. BREAK ALL SHARP EDGES .02 MAX.
2. DO NOT SCALE DRAWING.
3. DIMENSIONS BASED UPON ASME Y14.5M-1994
4. MAX. ALL MACH. SURFACES 125
5. DRAWING UNITS: U.S. INCH

USED ON: ME-459303, ME-459304

MATERIAL: STAINLESS STEEL, ASTM A182-F304L

FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

1.3 GHZ β=1 CRYOMODULE, MK1 VACUUM VESSEL PORT MIDDLE COLDMASS

SCALE	DRAWING NUMBER	SHEET	REV
1:2	4904.280-MD-459323	1 OF 1	

CREATED WITH : Ideas12NXSeries | GROUP: TD/TEST-INSTRUMENTATION

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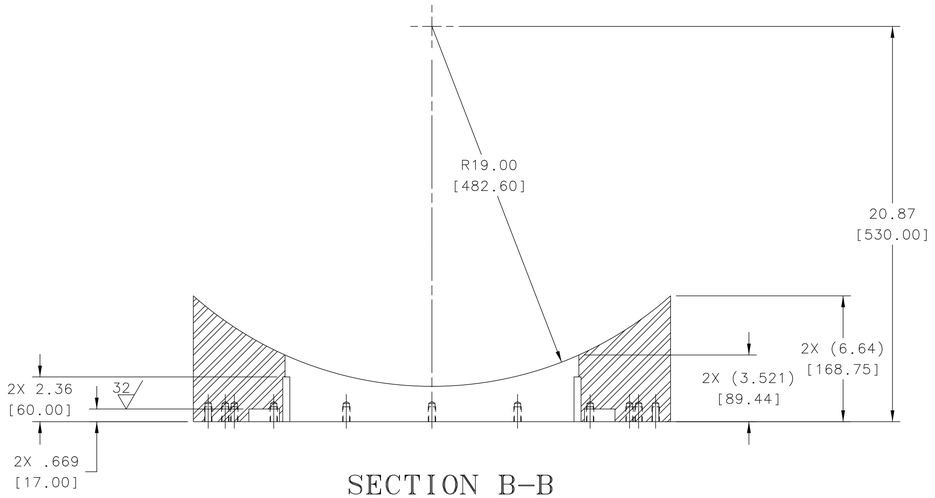
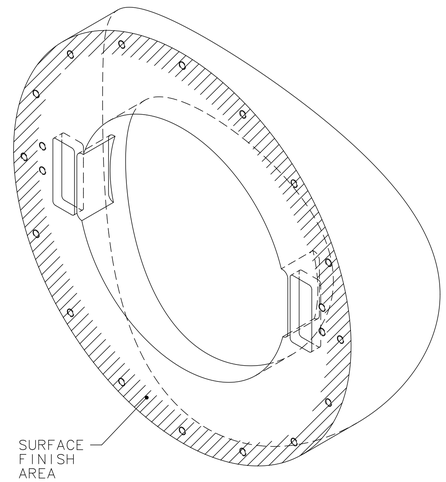
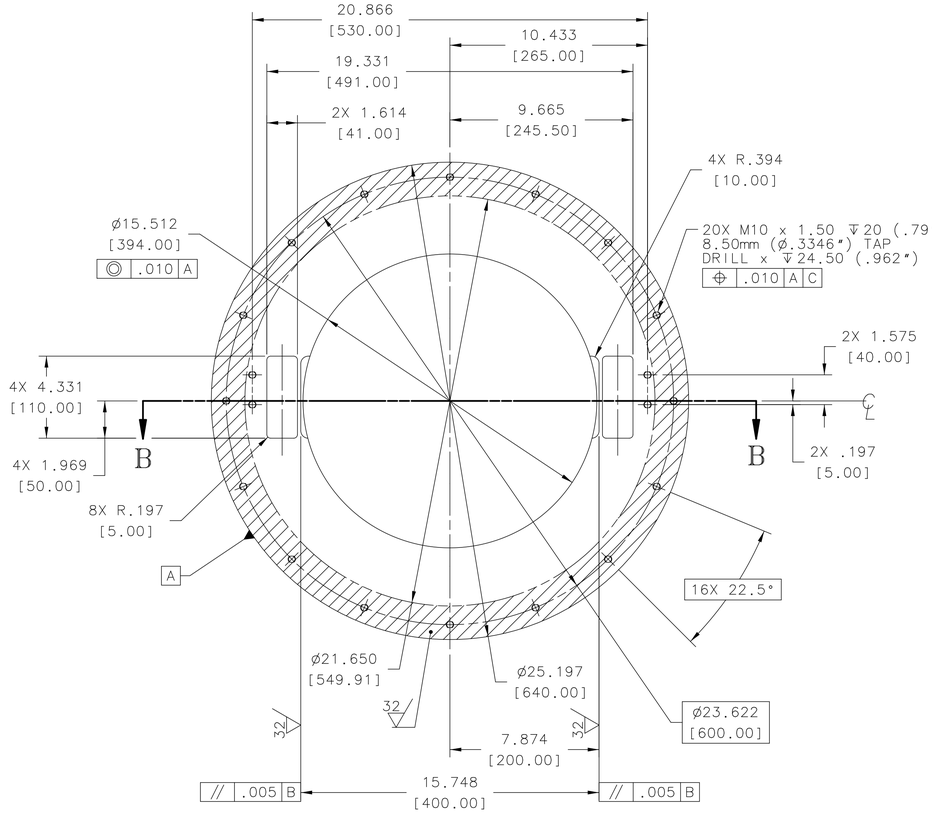
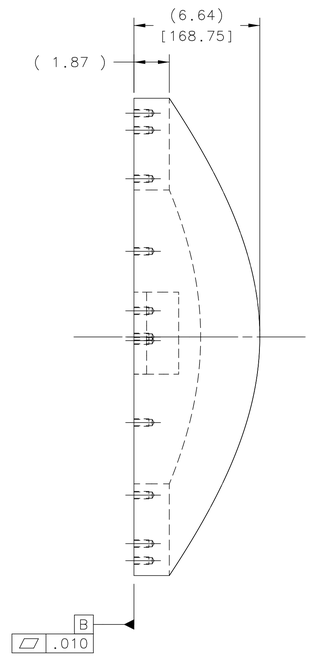
REV.	DESCRIPTION	DRAWN	DATE
		APPD.	DATE
---	NEW RELEASE - ER #9255	TLS	02/22/05



SECTION B–B







NOTES:

1. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES.
   REFERENCE DIMENSIONS IN BRACKETS, IF SHOWN, ARE IN MILLIMETERS.

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UNLESS OTHERWISE SPECIFIED			ORIGINATOR	DESYTTF	01-JAN-2002
.XX	.XXX	ANGLES	DRAWN	T.SPERRY	28-APR-2005
± .02	± .005	±.25°	CHECKED	C.M.GRIMM	13-NOV-2008
			APPROVED	M.WONG	14-NOV-2008

1. BREAK ALL SHARP EDGES .02 MAX.
2. DO NOT SCALE DRAWING.
3. DIMENSIONS BASED UPON ASME Y14.5M-1994
4. MAX. ALL MACH. SURFACES 125
5. DRAWING UNITS: U.S. INCH

USED ON: ME-459303, ME-459304

MATERIAL: STAINLESS STEEL, ASTM A182-F304L

FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

1.3 GHZ β=1 CRYOMODULE, MK1 VACUUM VESSEL PORT END COLDMASS

SCALE	DRAWING NUMBER	SHEET	REV
1:4	4904.280-MD-459324	1 OF 1	

CREATED WITH : Ideas12NXSeries | GROUP: TD/TEST-INSTRUMENTATION

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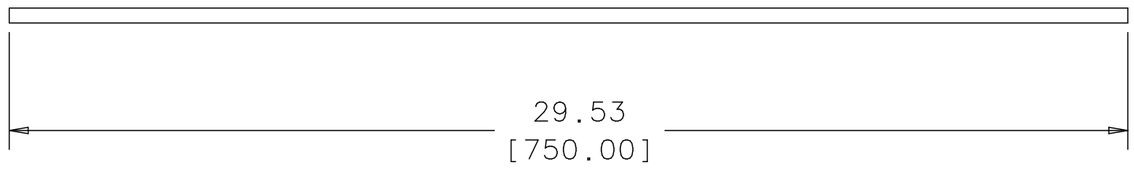
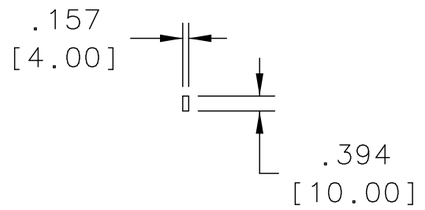
REV.	DESCRIPTION	DRAWN	DATE
		APPD.	DATE
---	NEW RELEASE - ER #9255	TLS	02/22/05





NOTES:

1. ALL DIMENSIONS ARE IN INCHES. REFERENCE DIMENSIONS IN BRACKETS ARE IN MILLIMETERS.

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UNLESS OTHERWISE SPECIFIED		
.XX	.XXX	ANGLES
± .02	± .005	± ---

1. BREAK ALL SHARP EDGES .02 MAX.
2. DO NOT SCALE DRAWING.
3. DIMENSIONS BASED UPON ASME Y14.5M-1994
4. MAX. ALL MACH. SURFACES 125
5. DRAWING UNITS: U.S. INCH

ORIGINATOR	DESYTTF	01-JAN-2002
DRAWN	T.SPERRY	28-APR-2005
CHECKED	C.M.GRIMM	13-NOV-2008
APPROVED	M.WONG	14-NOV-2008

USED ON: ME-459303, ME-459304

MATERIAL: STNLS STL 304

FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

1.3 GHZ β=1 CRYOMODULE, MK1 VACUUM VESSEL RIB FLANGE SLIDE

SCALE	DRAWING NUMBER	SHEET	REV
1:2	4904.280-MB-459325	1 OF 1	

CREATED WITH : Ideas12NXSeries | GROUP: TD/TEST-INSTRUMENTATION

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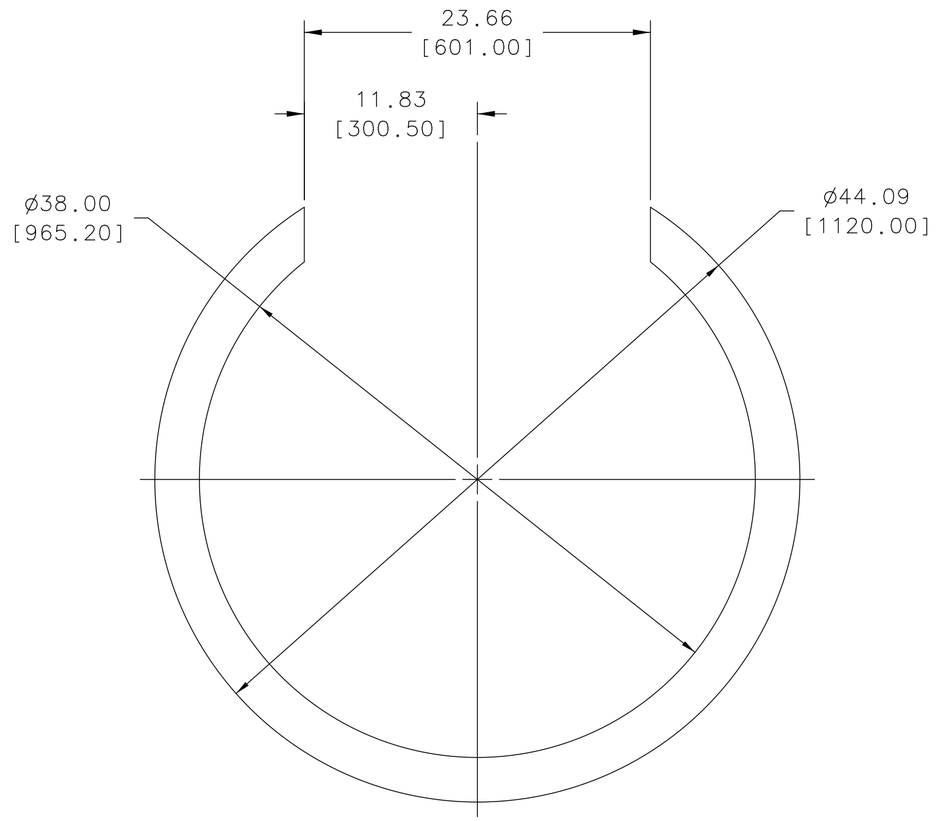
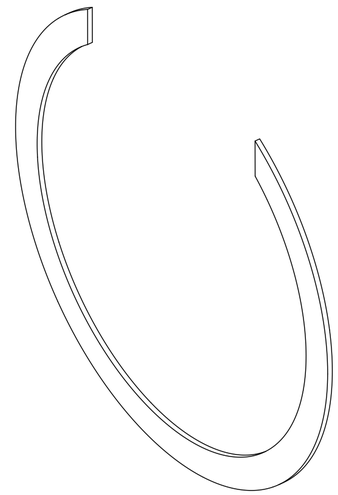
REV.	DESCRIPTION	DRAWN	DATE
		APPD.	DATE
---	NEW RELEASE - ER #9255	TLS	02/22/05





NOTES:

1. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES. REFERENCE DIMENSIONS IN BRACKETS, IF SHOWN, ARE IN MILLIMETERS.

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UNLESS OTHERWISE SPECIFIED			ORIGINATOR	DESYTTF	01-JAN-2002
.XX	.XXX	ANGLES	DRAWN	T.SPERRY	28-APR-2005
± .02	± ---	± ---	CHECKED	C.M.GRIMM	13-NOV-2008
			APPROVED	M.WONG	14-NOV-2008

1. BREAK ALL SHARP EDGES .02 MAX.
2. DO NOT SCALE DRAWING.
3. DIMENSIONS BASED UPON ASME Y14.5M-1994
4. MAX. ALL MACH. SURFACES 250
5. DRAWING UNITS: U.S. INCH

USED ON: ME-459303, ME-459304

MATERIAL: STEEL PLATE, 1/2 THK, PRESSURE VESSEL QUALITY, ASTM A516 GR 70

FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

1.3 GHZ β=1 CRYOMODULE, MK1 VACUUM VESSEL STIFFENING RIB

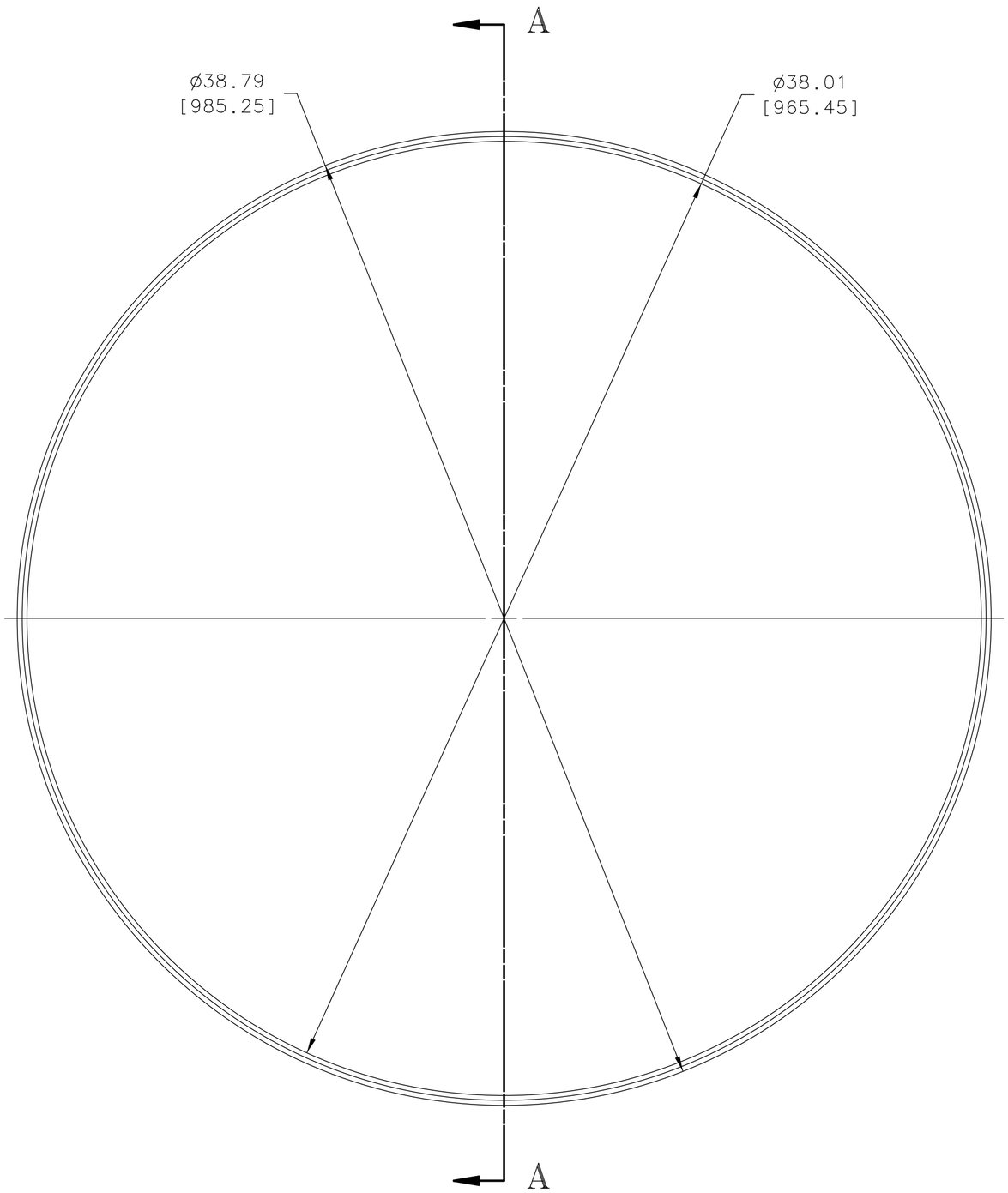
SCALE	DRAWING NUMBER	SHEET	REV
1:8	4904.280-MC-459326	1 OF 1	

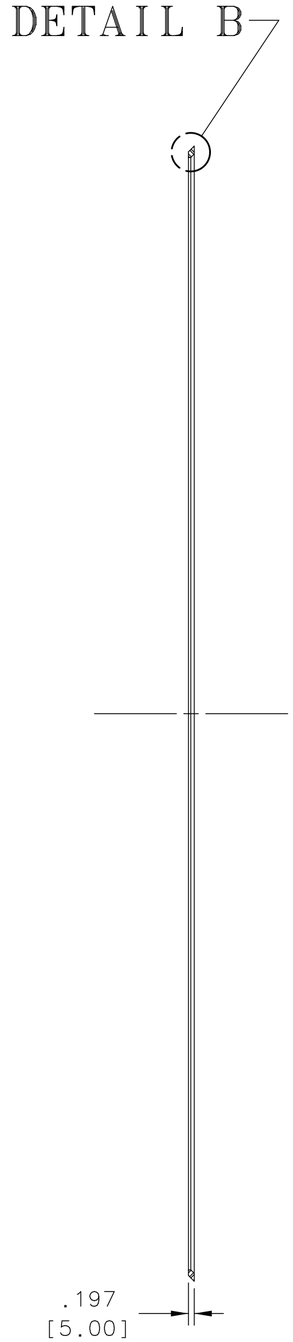
CREATED WITH : Ideas12NXSeries | GROUP: TD/TEST-INSTRUMENTATION

0 1 2 3 4 5 6 INCHES

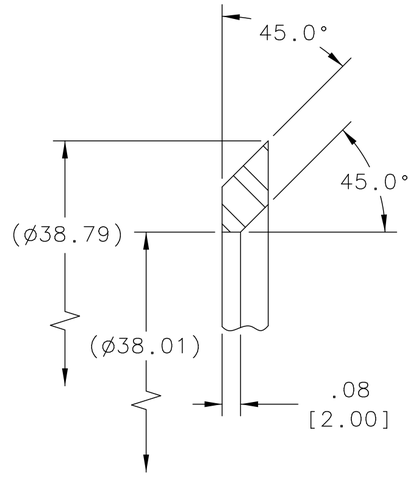
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 METRIC

REV.	DESCRIPTION	DRAWN	DATE
		APPD.	DATE
---	NEW RELEASE - ER #9255	TLS	02/22/05





SECTION A-A



DETAIL B

SCALE: 2/1

NOTES:

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   REFERENCE DIMENSIONS IN BRACKETS, IF SHOWN, ARE IN MILLIMETERS.

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UNLESS OTHERWISE SPECIFIED			ORIGINATOR	DESYTTF	01-JAN-2002
.XX	.XXX	ANGLES	DRAWN	T.SPERRY	28-APR-2005
± .02	± .005	± .5°	CHECKED	C.M.GRIMM	13-NOV-2008
			APPROVED	M.WONG	14-NOV-2008

1. BREAK ALL SHARP EDGES .02 MAX.
2. DO NOT SCALE DRAWING.
3. DIMENSIONS BASED UPON ASME Y14.5M-1994
4. MAX. ALL MACH. SURFACES 125
5. DRAWING UNITS: U.S. INCH

USED ON: ME-459303, ME-459304

MATERIAL: STAINLESS STEEL, ASTM A182-F304L

FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

1.3 GHZ β=1 CRYOMODULE, MK1 VACUUM VESSEL RING FLANGE STOP

SCALE	DRAWING NUMBER	SHEET	REV
1/4 & AS NOTED	4904.280-MC-459327	1 OF 1	

CREATED WITH : Ideas12NXSeries | GROUP: TD/TEST-INSTRUMENTATION

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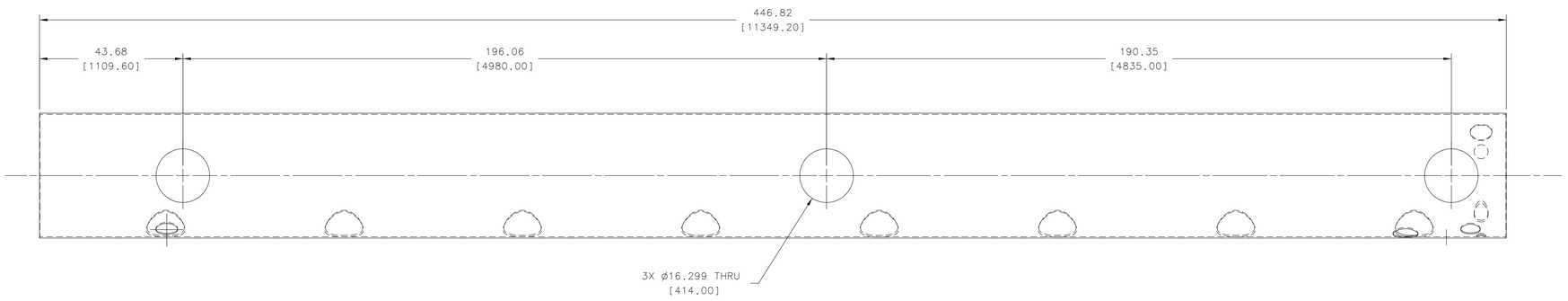
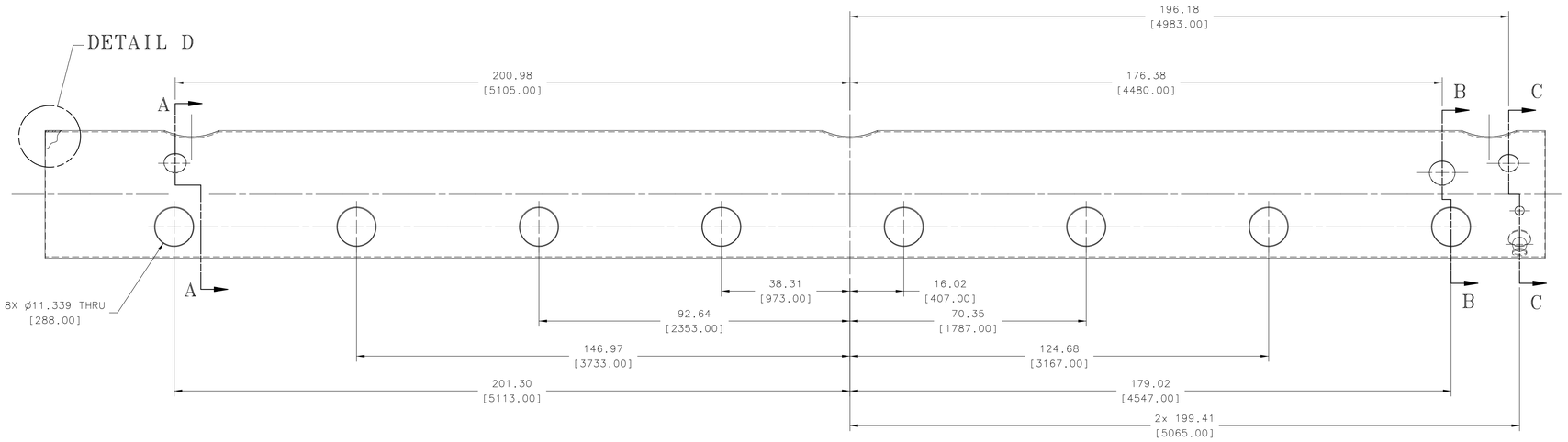
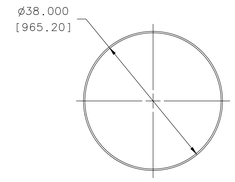
0 1 2 3 4 5 6 INCHES

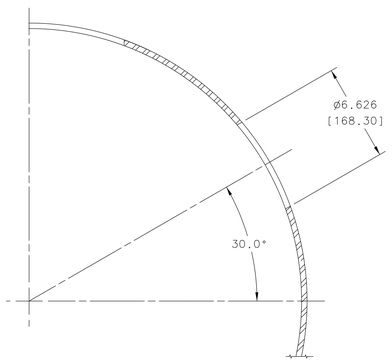
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 METRIC

REV.	DESCRIPTION	DRAWN	DATE
		APPD.	DATE
---	NEW RELEASE - ER #9255	TLS	02/22/05



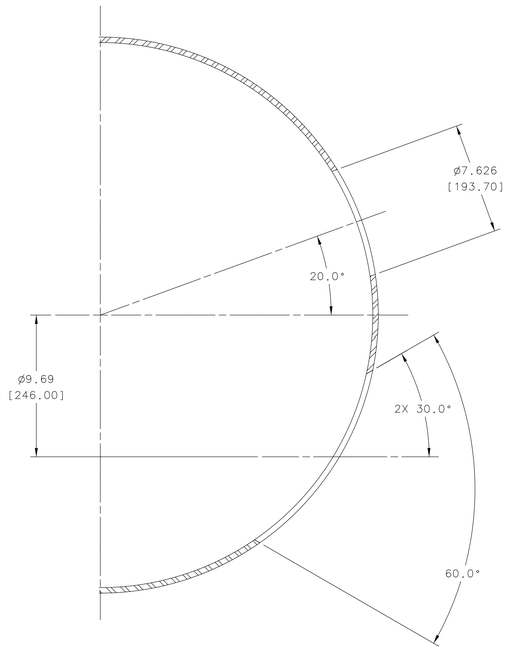






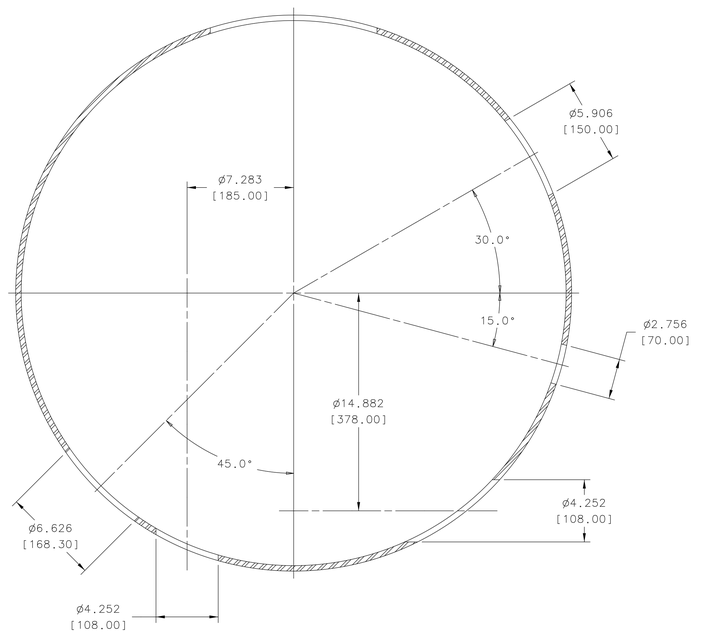
SECTION A–A

SCALE: 1/4



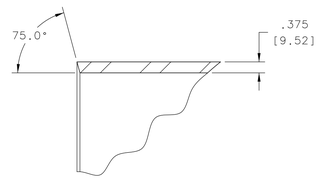
SECTION B–B

SCALE: 1/4



SECTION C–C

SCALE: 1/4



DETAIL D

BOTH ENDS
SCALE: 1/4

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NOTES:

1. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES. REFERNECE DIMENSIONS, IF SHOWN, ARE IN MILLIMETERS.

UNLESS OTHERWISE SPECIFIED			ORIGINATOR	DESYTTF	01-JAN-2002
.XX	.XXX	ANGLES	DRAWN	T.SPERRY	28-APR-2005
± .02	± .005	± .5°	CHECKED	C.M.GRIMM	13-NOV-2008
1. BREAK ALL SHARP EDGES .02 MAX.			APPROVED	M.WONG	14-NOV-2008
2. DO NOT SCALE DRAWING.			USED ON	ME-459303, ME-459304	
3. DIMENSIONS BASED UPON ASME Y14.5M-1994					
4. MAX. ALL MACH. SURFACES 250			MATERIAL	PRESSURE VESSEL QUALITY STEEL, 3/8" WALL, ASTM A516 GR60	
5. DRAWING UNITS: U.S.INCH					

FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

1.3 GHZ β=1 CRYOMODULE, MK1
VACUUM VESSEL
VESSEL SHELL

SCALE	DRAWING NUMBER	SHEET	REV
1/16	4904.280-ME-459328	1 OF 1	

CREATED WITH : Ideas12NXSeries | GROUP: TD/TEST-INSTRUMENTATION

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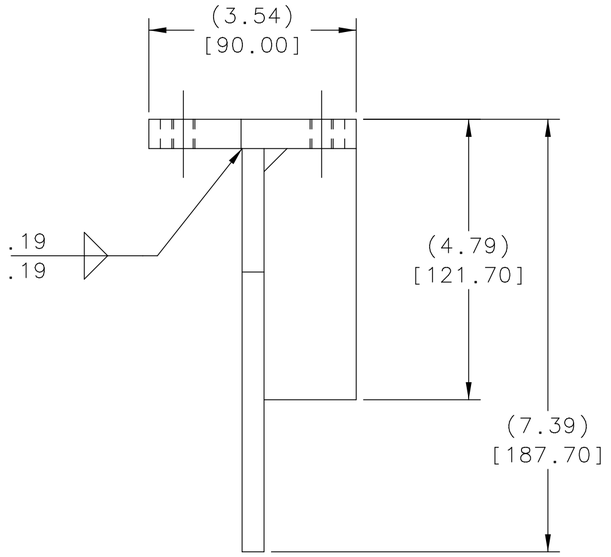
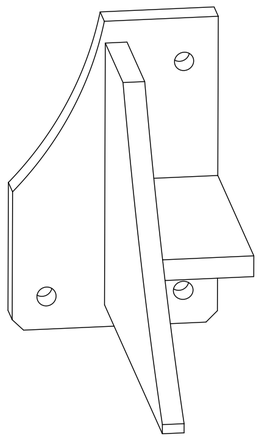
REV.	DESCRIPTION	DRAWN	DATE
		APPD.	DATE
---	NEW RELEASE - ER #9255	TLS	02/22/05





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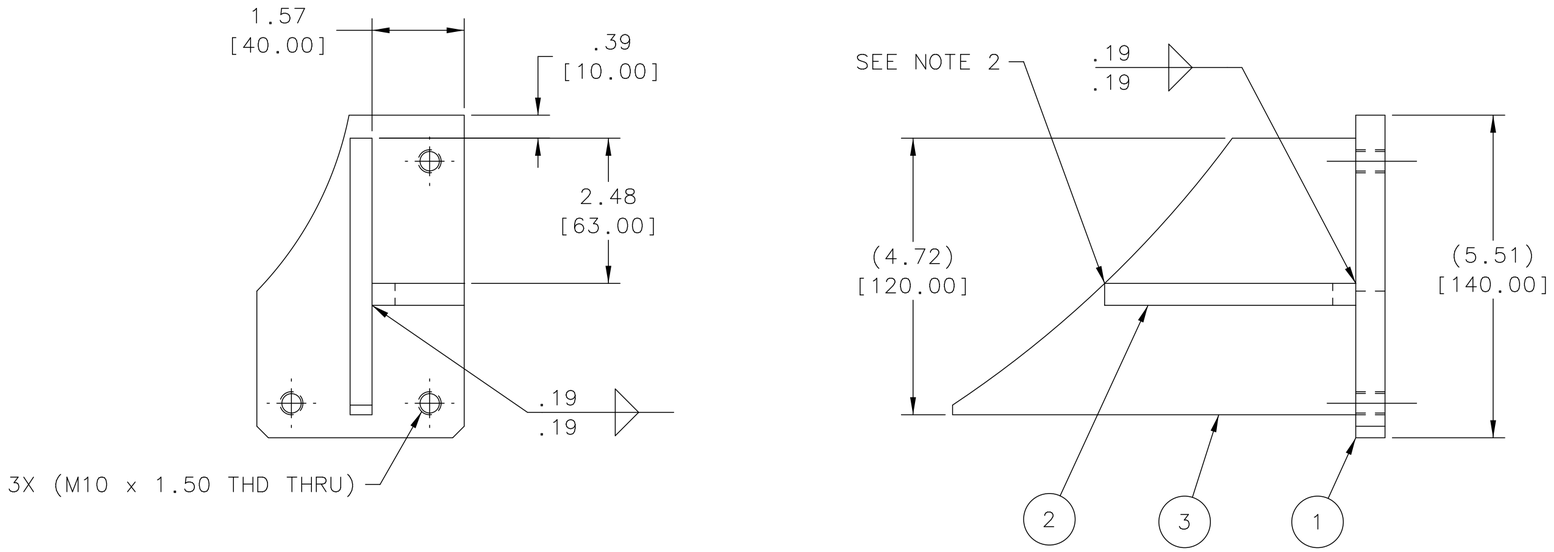

ITEM	PART NO.	DESCRIPTION OR SIZE	QTY.
3	MC-459320	PLATE MOUNT SUPPORT	1
2	MC-459319	PLATE MOUNT GUSSET	1
1	MC-459318	PLATE MC MOUNT	1

PARTS LIST

UNLESS OTHERWISE SPECIFIED			ORIGINATOR	DESYTTF	01-JAN-2002
.XX	.XXX	ANGLES	DRAWN	T.SPERRY	28-APR-2005
± .02	± ---	± ---	CHECKED	C.M.GRIMM	17-NOV-2008
			APPROVED	M.WONG	17-NOV-2008

1. BREAK ALL SHARP EDGES .02 MAX.
2. DO NOT SCALE DRAWING.
3. DIMENSIONS BASED UPON ASME Y14.5M-1994
4. MAX. ALL MACH. SURFACES 250
5. DRAWING UNITS: U.S. INCH

USED ON: ME-459303, ME-459304

MATERIAL: SEE PARTS LIST

FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

1.3 GHZ β=1 CRYOMODULE, MK1
VACUUM VESSEL
MC BRACKET WELDMENT - LH

SCALE	DRAWING NUMBER	SHEET	REV
1:2	4904.280-MC-459329	1 OF 1	

CREATED WITH : Ideas12NXSeries | GROUP: TD/TEST-INSTRUMENTATION

NOTES:

1. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES. REFERENCE DIMENSIONS IN BRACKETS, IF SHOWN, ARE IN MILLIMETERS.
2. END OF ITEM 2 NOT TO PROTRUDE BEYOND THE CONTOUR OF ITEM 3.

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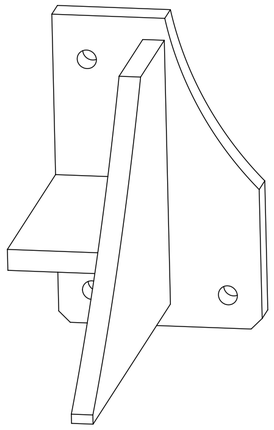
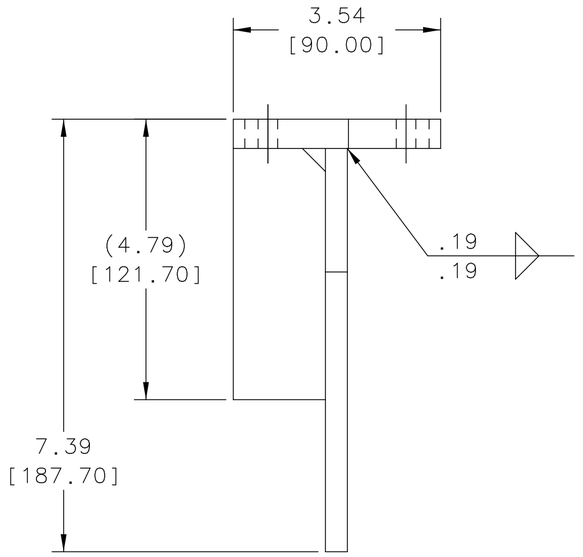
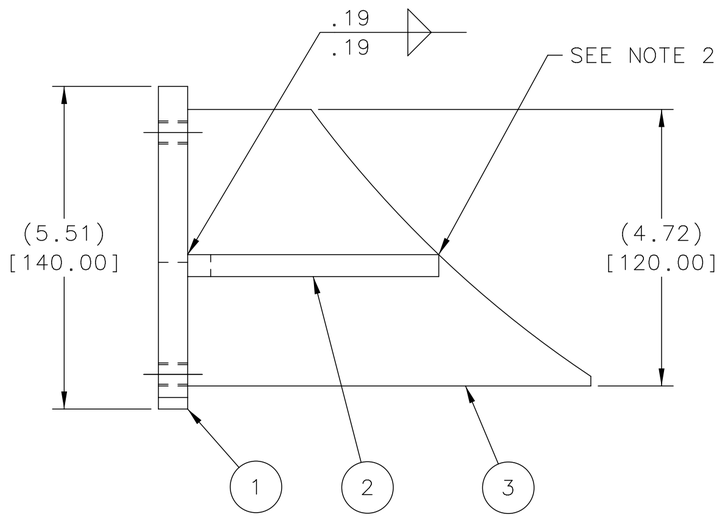
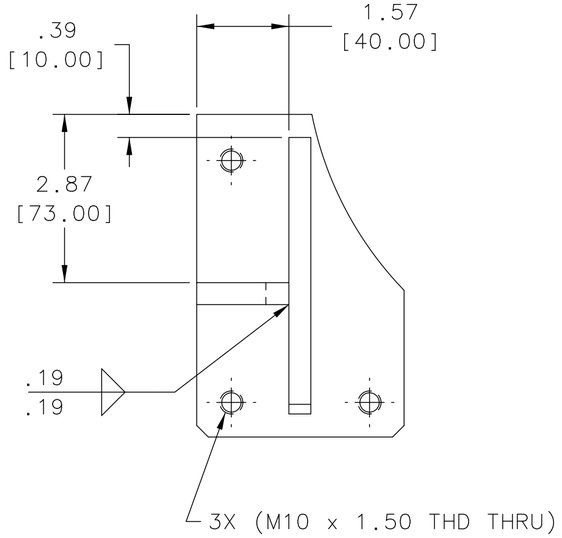
REV.	DESCRIPTION	DRAWN	DATE
		APPD.	DATE
---	NEW RELEASE - ER #9255	TLS	02/22/05









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NOTES:

1. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES. REFERENCE DIMENSIONS IN BRACKETS, IF SHOWN, ARE IN MILLIMETERS.
2. EDGE OF ITEM 2 NOT TO PROTRUDE BEYOND CONTOUR OF ITEM 3.

ITEM	PART NO.	DESCRIPTION OR SIZE	QTY.
3	MC-459320	PLATE MOUNT SUPPORT	3
2	MC-459319	PLATE MOUNT GUSSET	1
1	MC-459318	PLATE MC MOUNT	1

PARTS LIST

UNLESS OTHERWISE SPECIFIED			ORIGINATOR	DESYTTF	01-JAN-2002
.XX	.XXX	ANGLES	DRAWN	T.SPERRY	28-APR-2005
± .02	± ---	± ---	CHECKED	C.M.GRIMM	13-NOV-2008
			APPROVED	M.WONG	14-NOV-2008

1. BREAK ALL SHARP EDGES .02 MAX.
2. DO NOT SCALE DRAWING.
3. DIMENSIONS BASED UPON ASME Y14.5M-1994
4. MAX. ALL MACH. SURFACES 250
5. DRAWING UNITS: U.S. INCH

USED ON: ME-459303, ME-459304

MATERIAL: SEE PARTS LIST

FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

1.3 GHZ β=1 CRYOMODULE, MK1 VACUUM VESSEL MC BRACKET WELDMENT - RH

SCALE	DRAWING NUMBER	SHEET	REV
1:2	4904.280-MC-459330	1 OF 1	

CREATED WITH : Ideas12NXSeries | GROUP: TD/TEST-INSTRUMENTATION

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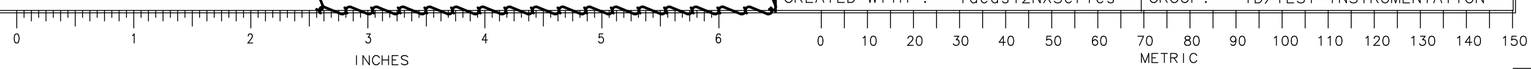

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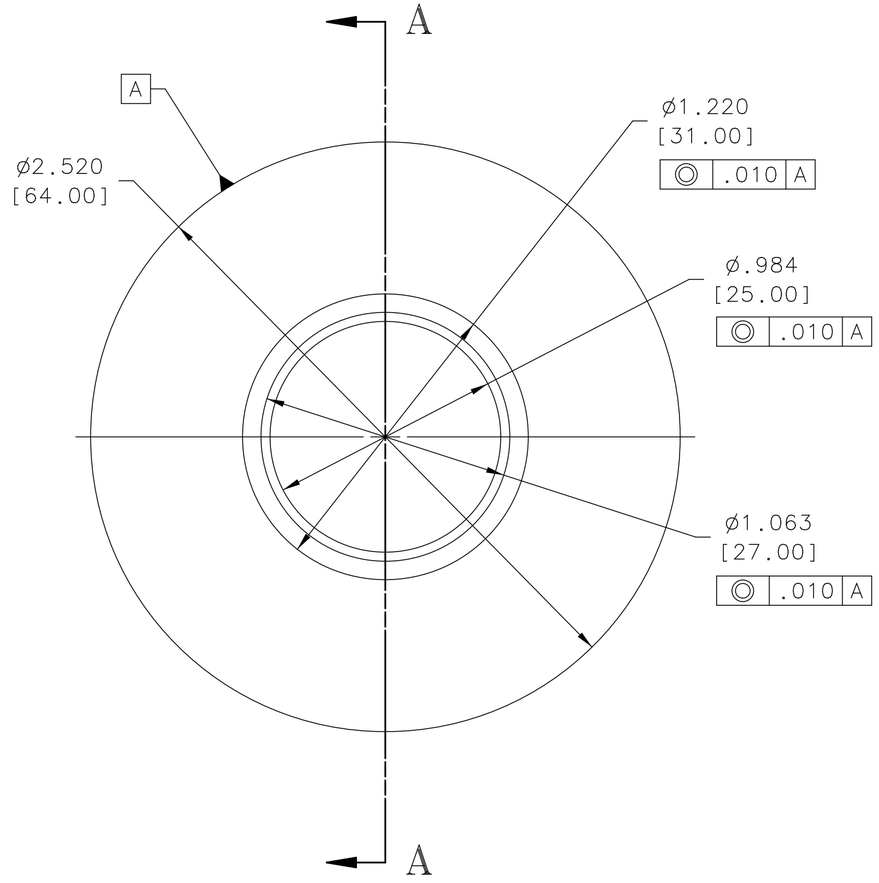
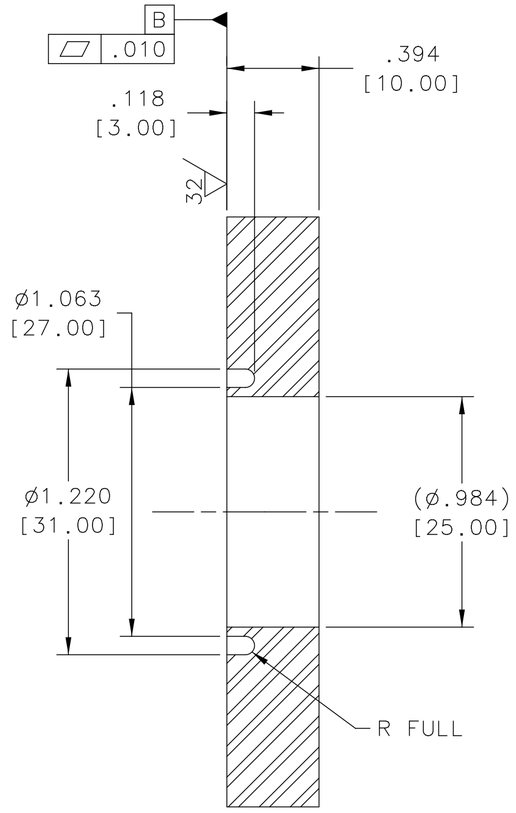
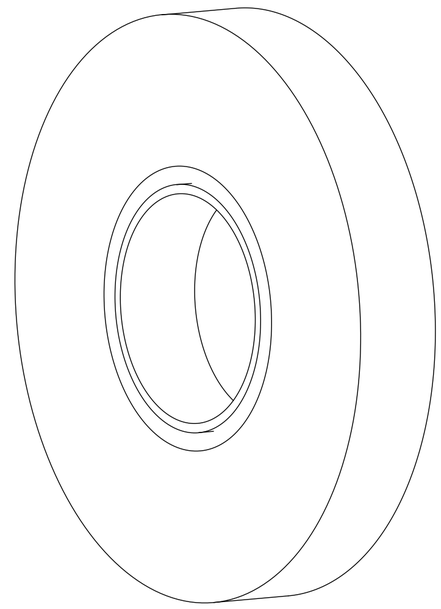
REV	DESCRIPTION	DRAWN	DATE
		APPROVED	DATE
--	NEW RELEASE ER #9255	TLS	02-22-05





SECTION A-A



NOTES:

1. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES. REFERENCE DIMESNIONS IN BRACKETS, IF SHOWN, ARE IN MILLIMETERS.

UNLESS OTHERWISE SPECIFIED			ORIGINATOR	DESYTTF	01-JAN-2002
.XX	.XXX	ANGLES	DRAWN	T.SPERRY	28-APR-2005
± ---	± .005	± ---	CHECKED	C.M.GRIMM	13-NOV-2008
1. BREAK ALL SHARP EDGES .03 MAX. 2. DO NOT SCALE DRAWING. 3. DIMENSIONS BASED UPON ASME Y14.5M-1994 4. MAX. ALL MACH. SURFACES 125 5. DRAWING UNITS: U.S. INCH			APPROVED	M.WONG	14-NOV-2008
			USED ON	ME-459303, ME-459304	
			MATERIAL	STAINLESS STEEL, ASTM A182-F304L	

FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

1.3 GHZ β=1 CRYOMODULE, MK1 VACUUM VESSEL FLANGE WELD RING

SCALE	DRAWING NUMBER	SHEET	REV
2/1	4904.280-MC-459331	1 OF 1	
CREATED WITH : Ideas12NXSeries		GROUP: TD/TEST-INSTRUMENTATION	

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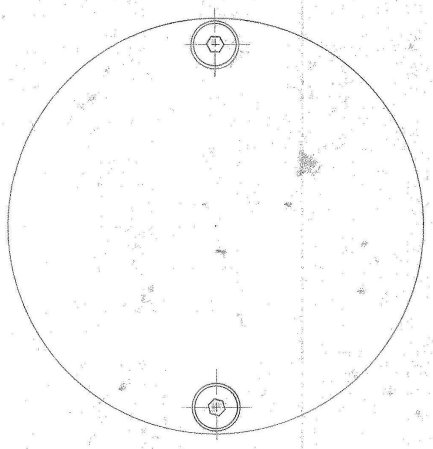
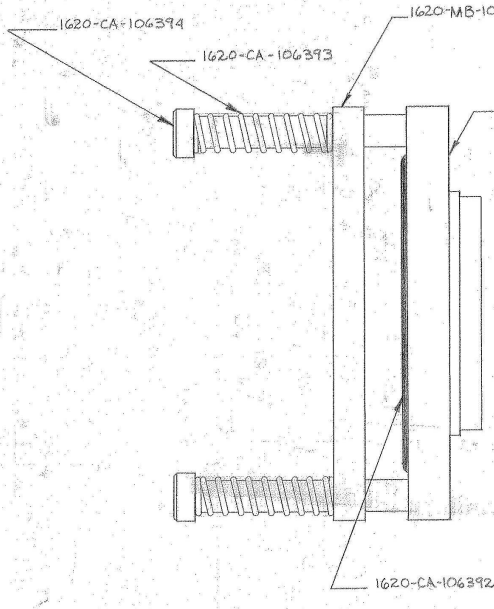




REV.	DESCRIPTION	DRAWN / APPD.	DATE / DATE

USED ON LIST:
MD-124071
MD-125383
MD-125518

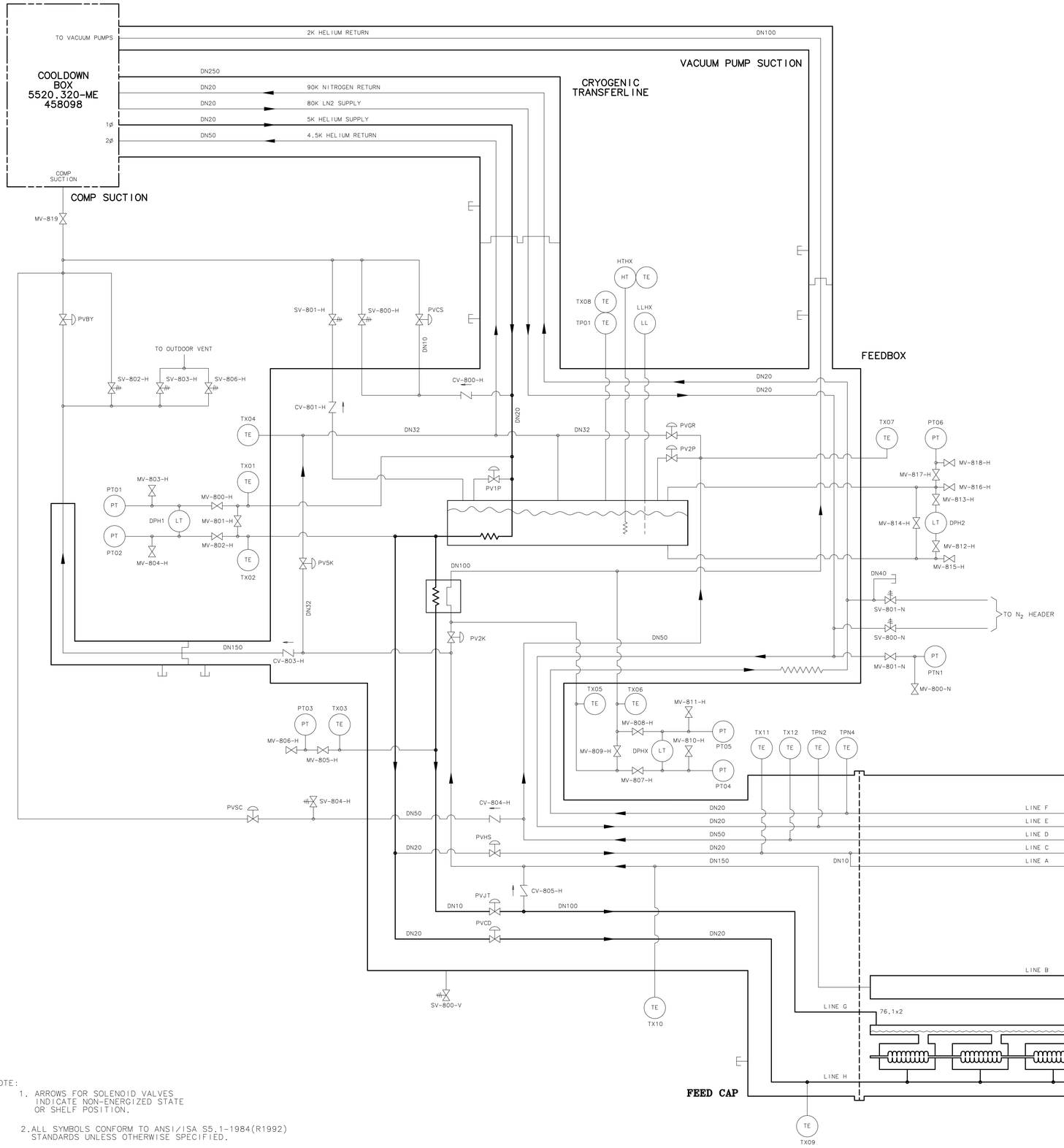
UNLESS OTHERWISE SPECIFIED			ORIGINATOR		
FRACTIONS	DECIMALS	ANGLES	DRAWN	[illegible]	8-9-95
±	±	±	CHECKED		
1. BREAK ALL SHARP EDGES 1/64 MAX.			APPROVED	[illegible]	8-10-95
2. DO NOT SCALE DWG.			USED ON	SEE USED ON LIST	
3. DIMENSIONING IN ACCORD WITH ANSI Y14.5 STD'S.			MATERIAL		
✓ MAX. ALL MACHINED SURFACES					

FERMI NATIONAL ACCELERATOR LABORATORY
U.S. DEPARTMENT OF ENERGY

ENERGY DOUBLER
QB QUAD VACUUM RELIEF VALVE
COMPLETE SUB-ASS'Y

SCALE	FILMED	DRAWING NUMBER	REV.
NONE		1620-MB-106391	

REV	DESCRIPTION	DRAWN	DATE
		APPROVED	DATE



NOTE:

1. ARROWS FOR SOLENOID VALVES INDICATE NON-ENERGIZED STATE OR SHELF POSITION.
2. ALL SYMBOLS CONFORM TO ANSI/ISA S5.1-1984(R1992) STANDARDS UNLESS OTHERWISE SPECIFIED.
3. LINE DEFINITIONS

———— HIGH PRESSURE GHe LINES
———— LOW PRESSURE GHe LINES
———— VACUUM LINES
———— LHe lines
———— GN2 LINES
———— LN2 LINES
———— WATER LINES
———— OIL LINES
———— BOUNDRY LINES

UNLESS OTHERWISE SPECIFIED	ORIGINATOR	B.DEGRAFF	08-NOV-2007
	DRAWN	J.CATALANELLO	15-NOV-2007
± ± ±	CHECKED	R.SCHMITT	09-JUN-2008
1. BREAK ALL SHARP EDGES MAX	APPROVED	R.SCHMITT	09-JUN-2008
2. DO NOT SCALE DRAWING. 3. DIMENSIONS BASED UPON ASME Y14.5M-1994 4. MAX. ALL MACH. SURFACES	USED ON		
5. DRAWING UNITS: U.S. INCH	MATERIAL		

FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

ILCTA LAB B PIPING AND INSTRUMENT DIAGRAM ILCTA CRYOMODULE ONE AND FEEDBOX

SCALE	DRAWING NUMBER	SHEET	REV
	5520.320-ME-458097	1 OF 1	
CREATED WITH : Ideas12NXSeries	GROUP: PPD/MECHANICAL DEPARTMENT		

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