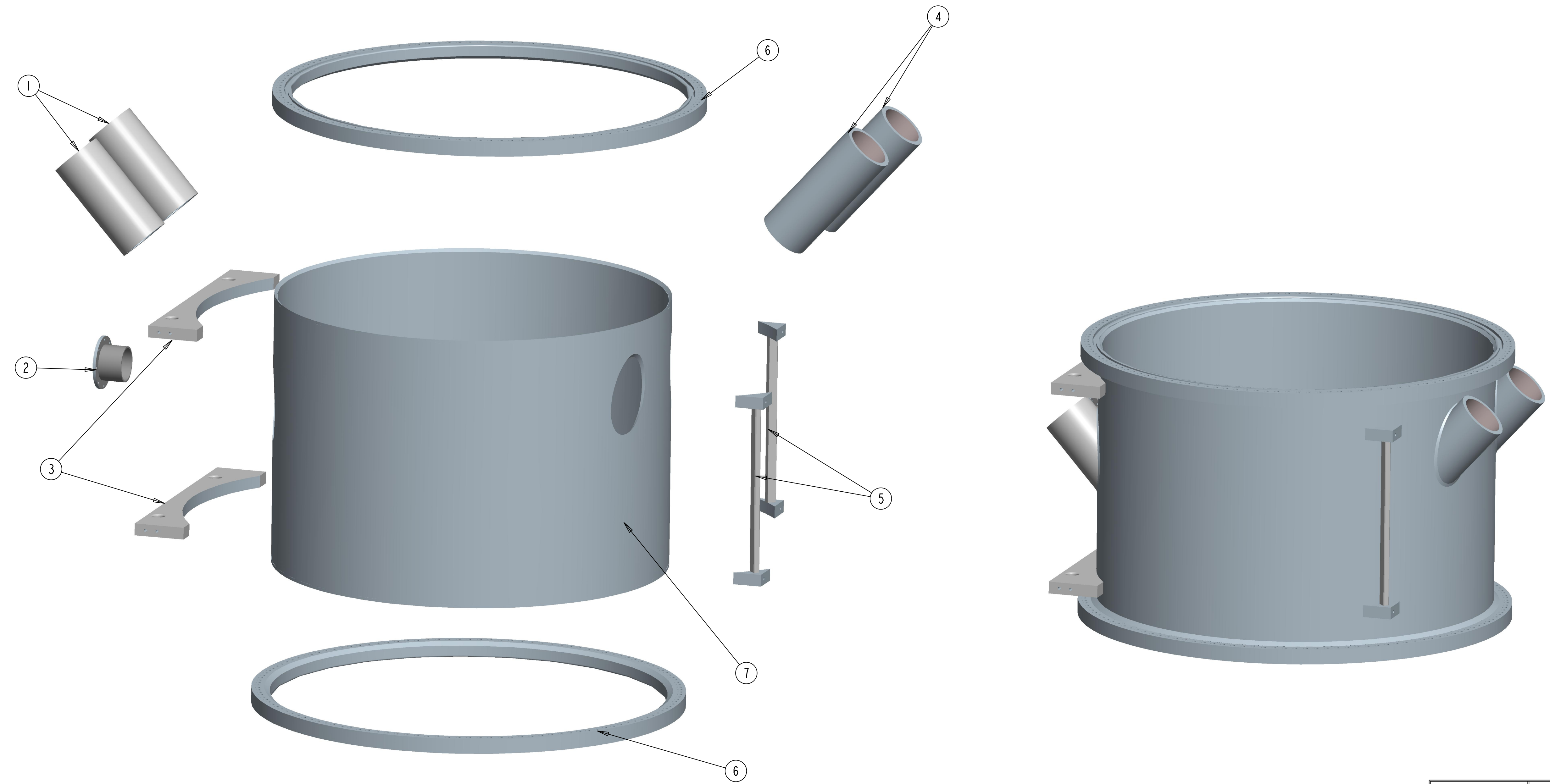


8 7 6 5 4 3 2 1

ITEM	DESCRIPTION	MATL	QUANTITY
1	Quartz Window Assembly	ALUM	2
2	Gas Port Flange	ALUM	1
3	Craddle Bracket	ALUM	2
4	Quartz Window Assembly (Long)	ALUM	2
5	Crane Lifting Assembly	ALUM	2
6	Main Vessel Flange	ALUM	2
7	Main Vessel Cylinder	ALUM	1

D
C
B
A

D
C
B
A



ALL DIMENSIONS IN mm UNLESS OTHERWISE SPECIFIED
 TOLERANCES UNLESS OTHERWISE SPECIFIED:
 FRACTIONAL DIMENSIONS
 DECIMAL DIMENSIONS XX ± 0.5
 ANGULAR DIMENSIONS ± 0.5°
 SURFACE FINISH MILL FINISH

UNIVERSITY OF ALBERTA
 EDMONTON ALBERTA CANADA
 DESIGNED CHRIS NG TELEPHONE (780) 492 5979
 DRAWN CHRIS NG FAX (780) 492 3408
 CHECKED E-MAIL: cjang@ualberta.ca
 APPROVED

REF. DWGS.	REV.	DATE	REVISION	BY

CENTER OF PARTICLE PHYSICS
 MAIN VESSEL ASSEMBLY EXPLODED
 SCALE 0.100 APPROVAL DWG. NO. REV.
 DATE MAR 1, 2012 CHIEF ENGR. A

8 7 6 5 4 3 2 1

D

D

C

C

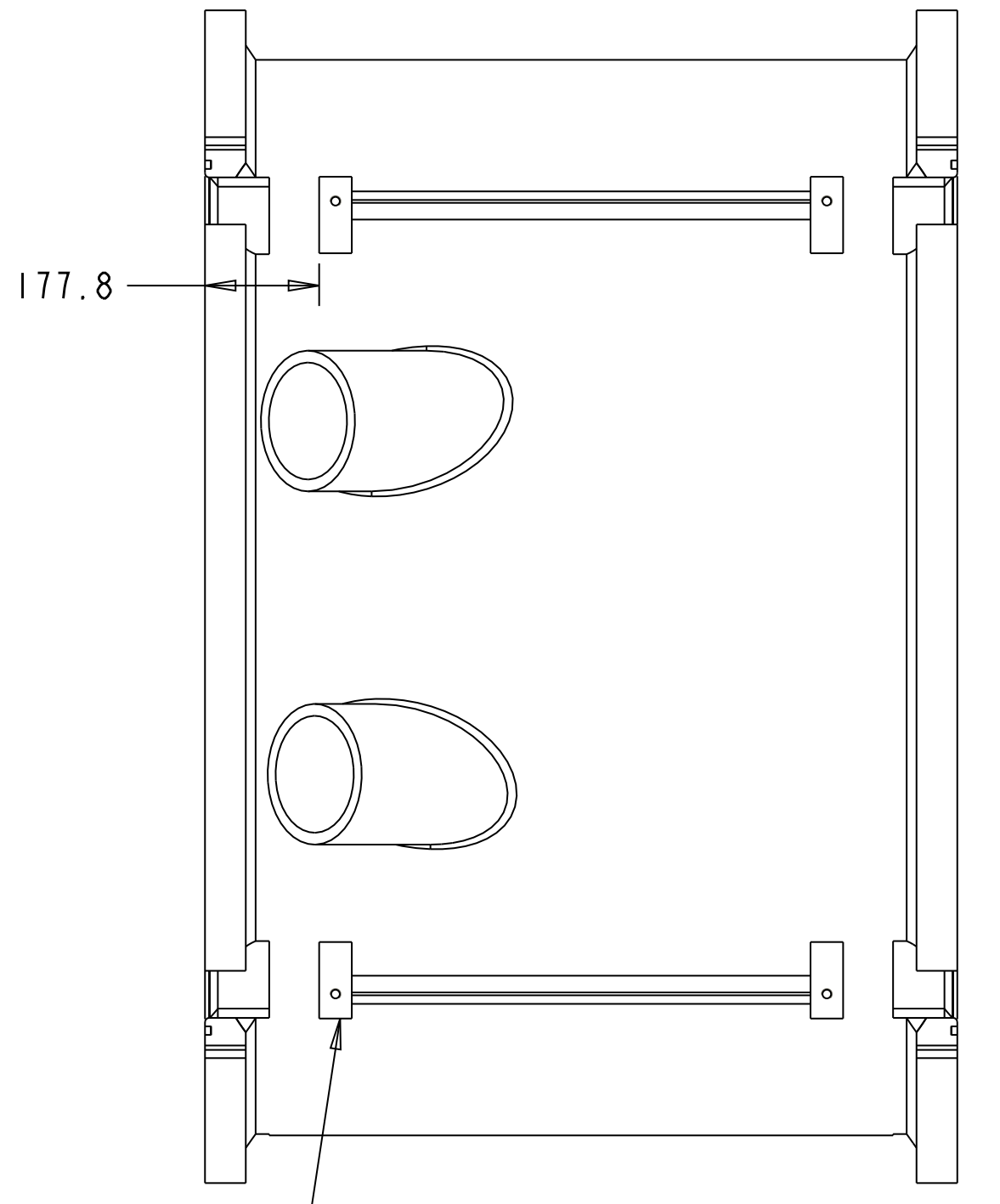
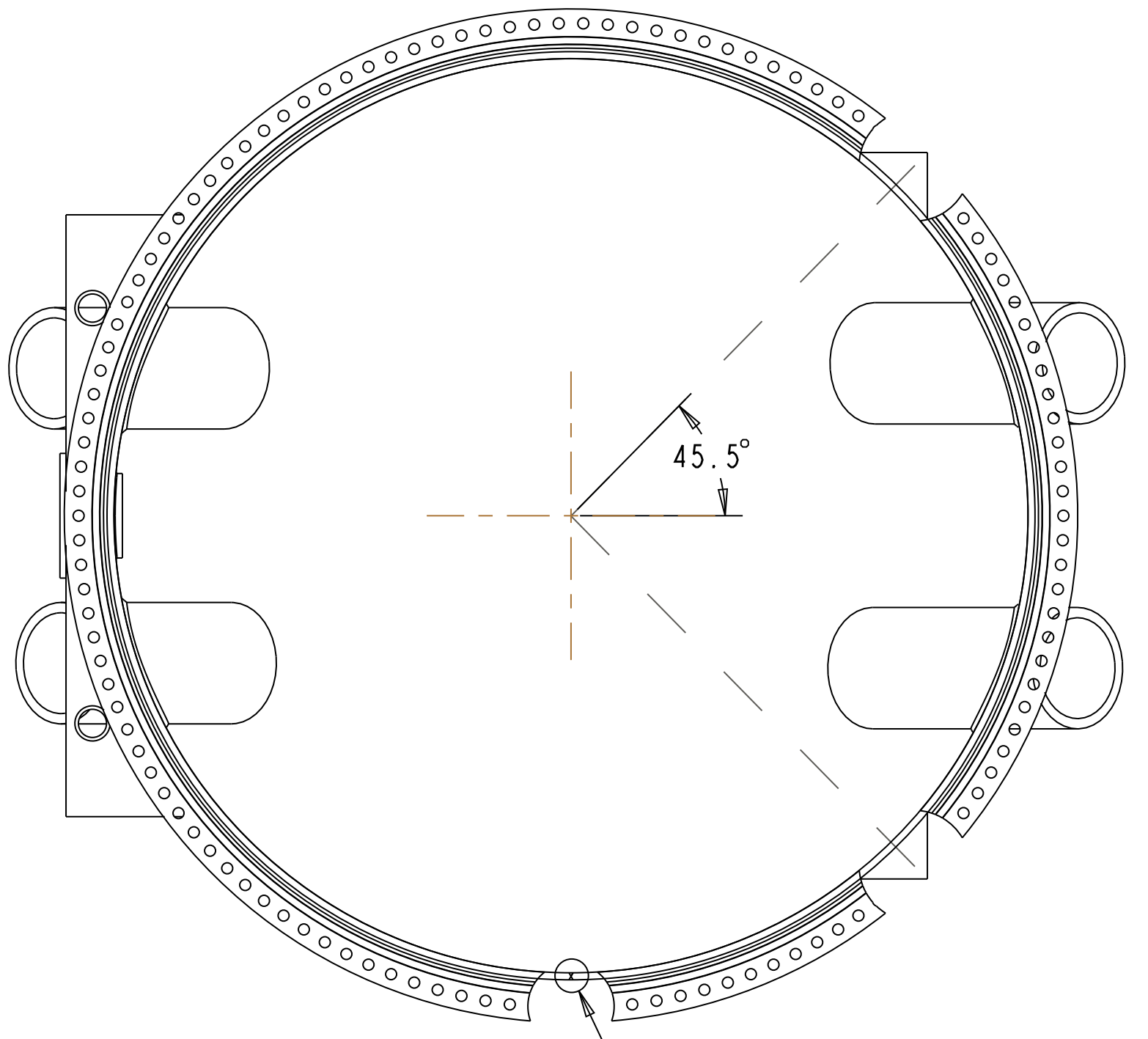
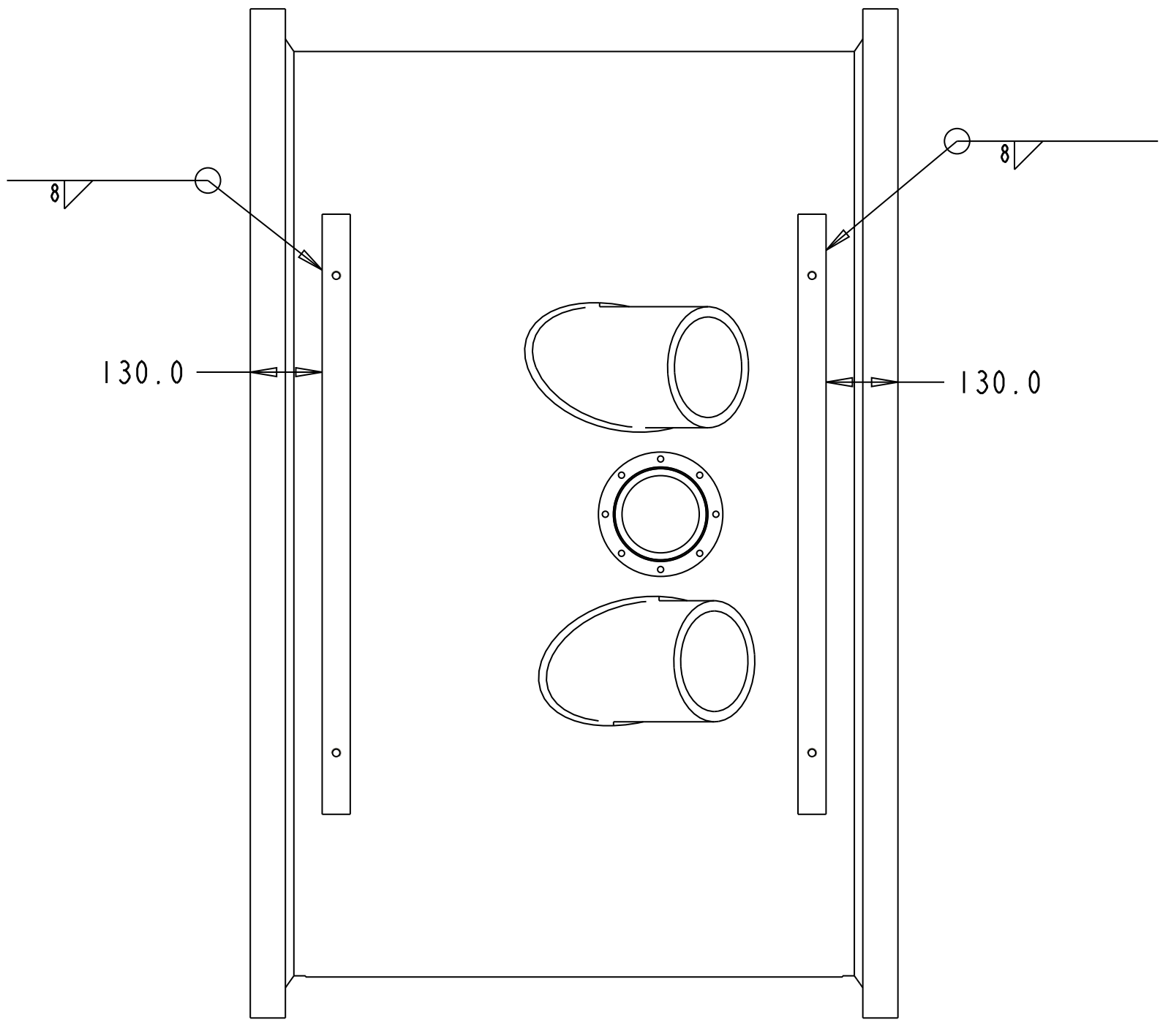
B

B

A

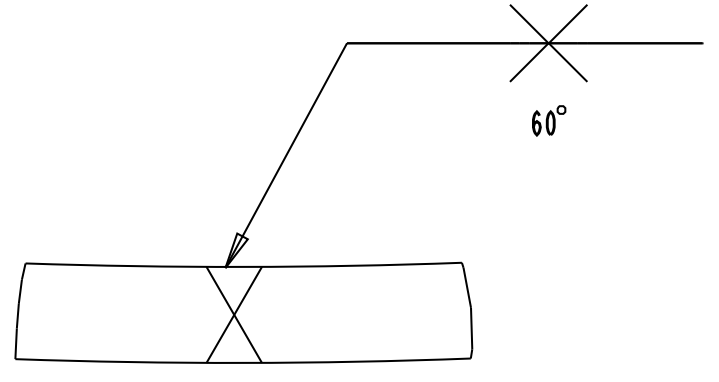
A

ITEM	DESCRIPTION	MATL	QUANTITY



Fillet Welds around crane lifting assemblies

NOTES:
 MAKE VESSEL OUT OF ONE 0.5" SHEET OF ALUMINUM 5052-H32
 BEND INTO CYLINDRICAL SHAPE WITH OD=1674.6mm AND H=1135.4mm AND DOUBLE-V BUTT WELD END TOGETHER



DETAIL A SCALE 1.000

ALL DIMENSIONS IN mm UNLESS OTHERWISE SPECIFIED
 TOLERANCES UNLESS OTHERWISE SPECIFIED:
 FRACTIONAL DIMENSIONS
 DECIMAL DIMENSIONS XX ± 0.5
 ANGULAR DIMENSIONS ± 0.5°
 SURFACE FINISH MILL FINISH

DESIGNED	CHRIS NG	TELEPHONE	(780) 492 5979
DRAWN	CHRIS NG	FAX	(780) 492 3408
CHECKED		E-MAIL	cjng@ualberta.ca
APPROVED			

	B	DECREASE DIAMETER	
	C	MATERIAL CHANGED	
REF. DWGS.	REV.	DATE	REVISION

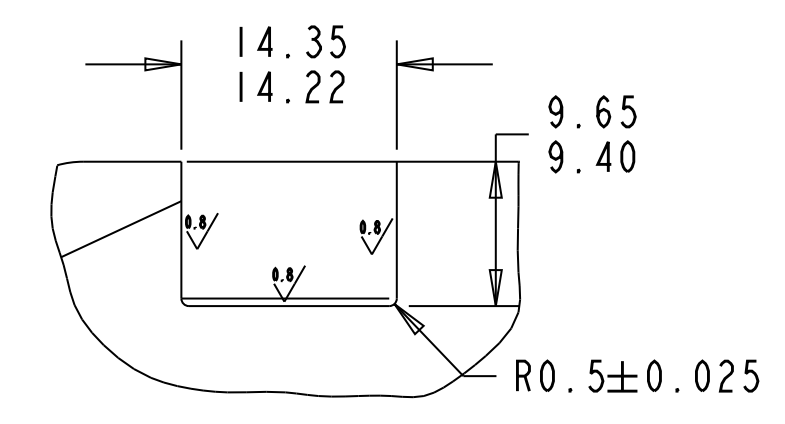
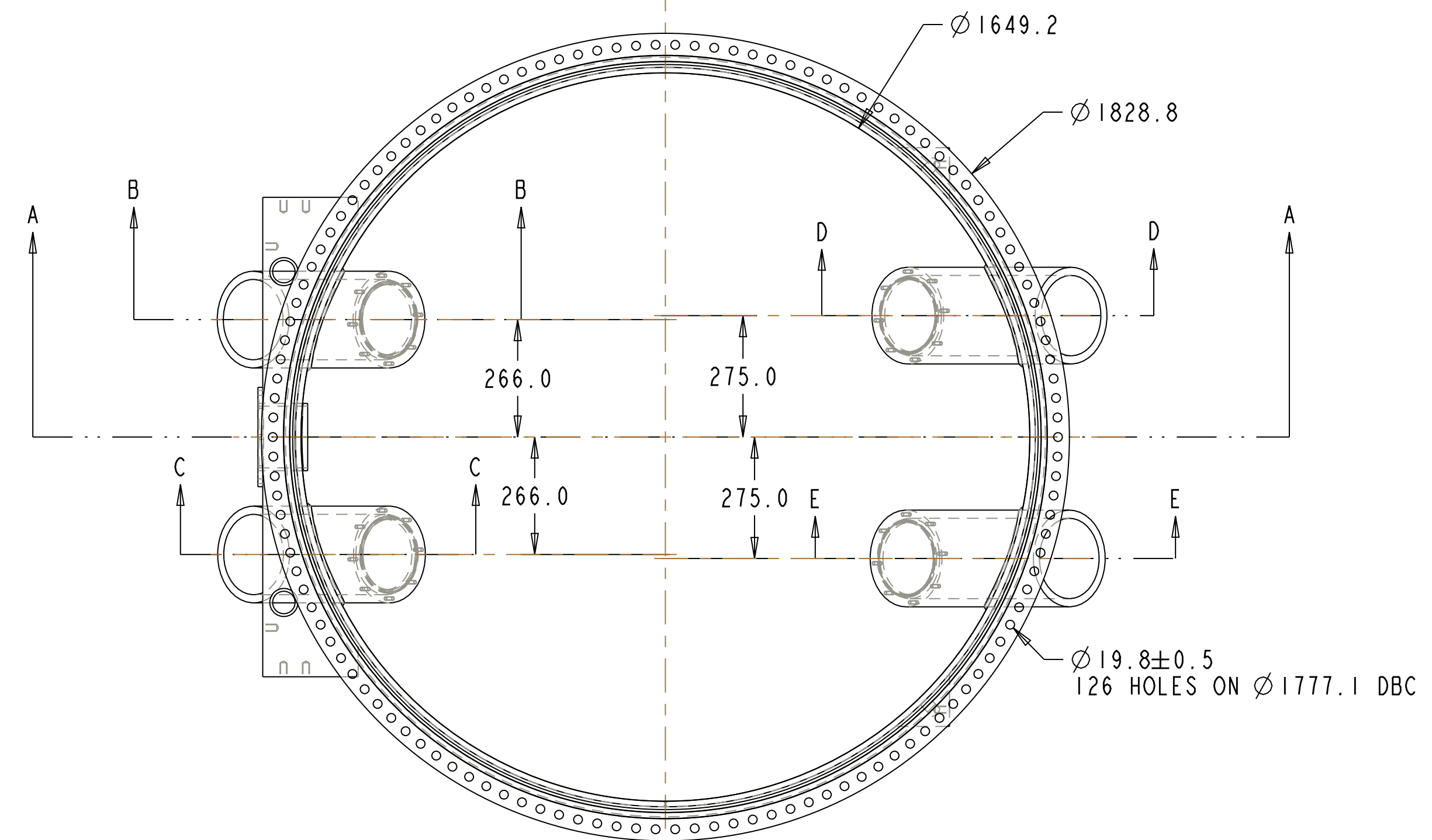
UNIVERSITY OF ALBERTA
 EDMONTON ALBERTA CANADA

CENTER OF PARTICLE PHYSICS

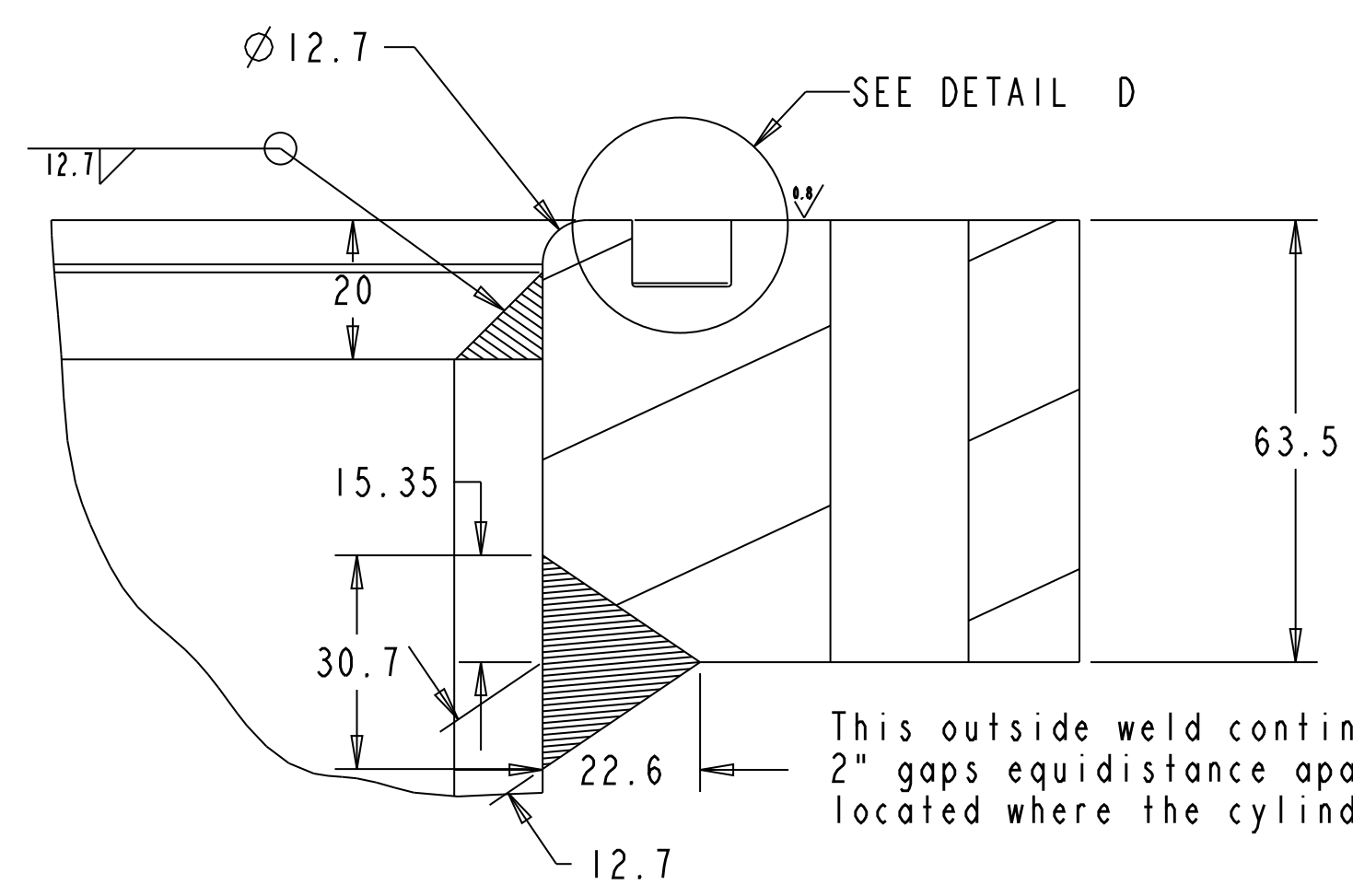
MAIN VESSEL ASSEMBLY
 OUTSIDE WELDS AND CYLINDRICAL WELD

SCALE	0.100	APPROVAL	DWG. NO.	REV.
DATE	JULY 13, 2012	CHIEF ENGR		C

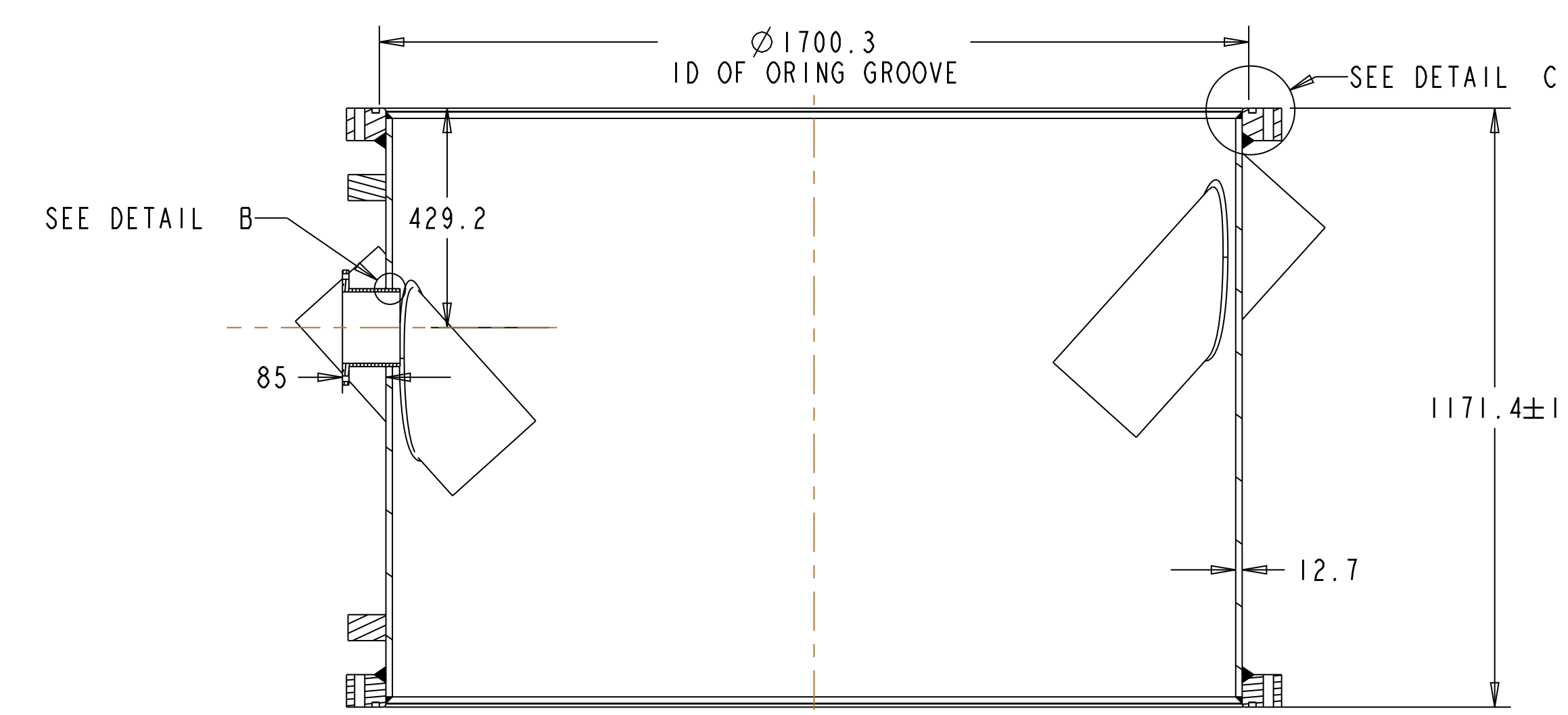
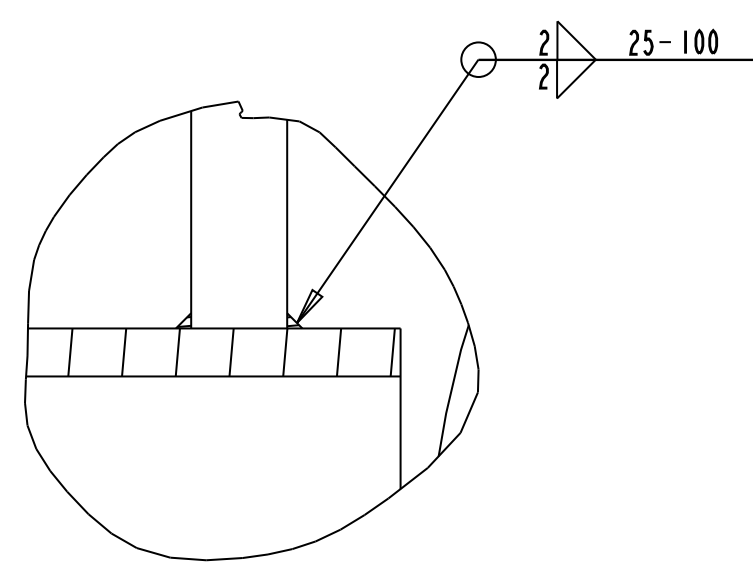
ITEM	DESCRIPTION	MATL	QUANTITY



NOTE: NEED CUSTOM VITON ORING WITH $\phi 1700.3\text{mm}$ ID AND CROSS SECTION OF $\phi 11\text{mm}$



This outside weld continuous all around except for 4 2" gaps equidistance apart. Want one of these gaps located where the cylindrical butt weld is



SECTION A-A

NOTE: FOR FLANGE MATERIALS USE ALUM 6061-T6

ALL DIMENSIONS IN mm UNLESS OTHERWISE SPECIFIED
 TOLERANCES UNLESS OTHERWISE SPECIFIED:
 FRACTIONAL DIMENSIONS
 DECIMAL DIMENSIONS XX ± 0.5
 ANGULAR DIMENSIONS ± 0.5°
 SURFACE FINISH MILL FINISH

UNIVERSITY OF ALBERTA		EDMONTON ALBERTA CANADA	
DESIGNED	CHRIS NG	TELEPHONE	(780) 492 5979
DRAWN	CHRIS NG	FAX	(780) 492 3408
CHECKED		E-MAIL	cjng@ualberta.ca
APPROVED			

REV	DATE	REVISION	BY
B		FIXED TOLERANCES	
C		DECREASE DIAMETER	
D		INCREASE HOLE TOLERANCE	
E		CHANGED WELD DETAIL C	
		CHANGED ORING SPEC	

CENTER OF PARTICLE PHYSICS

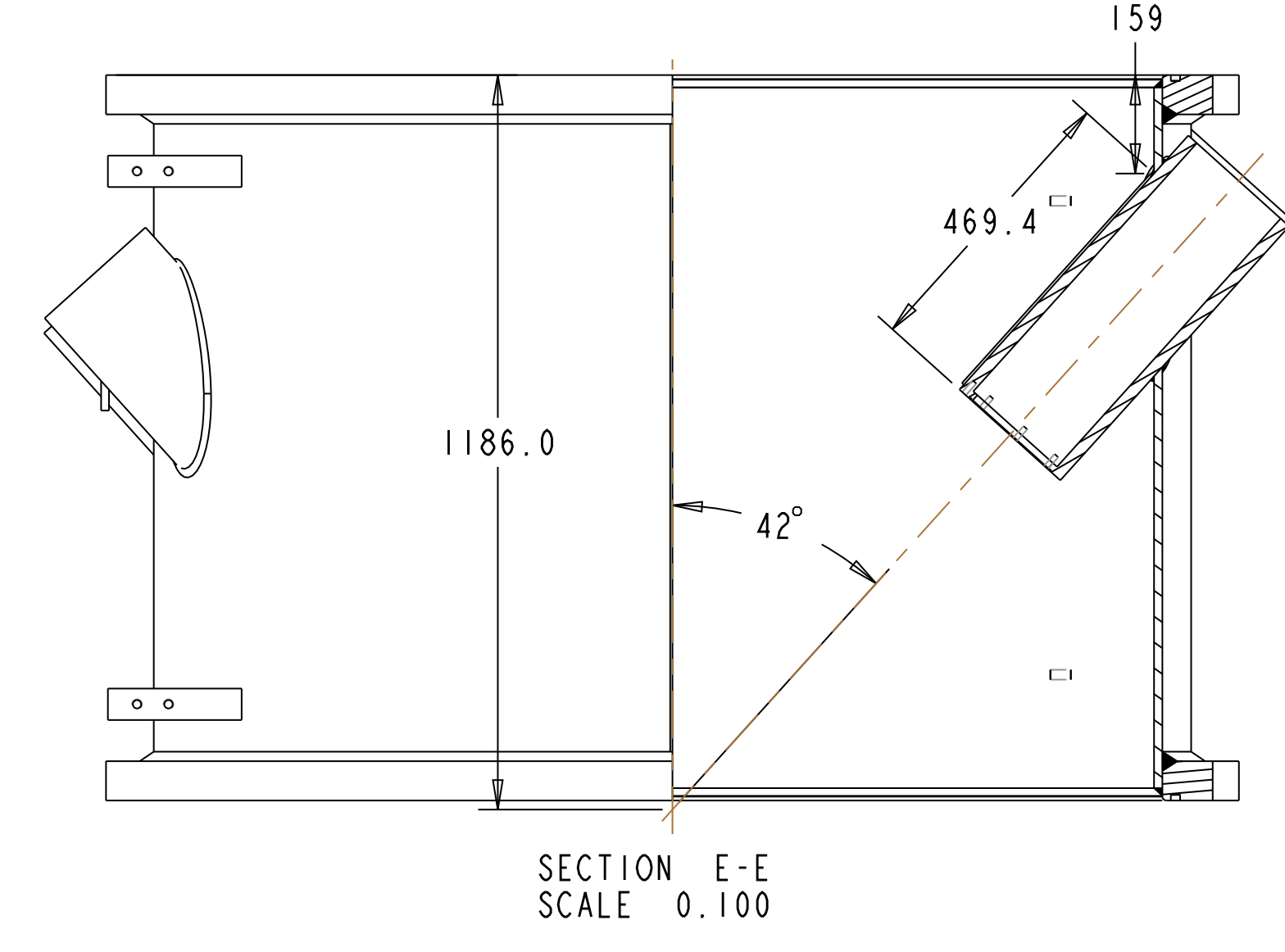
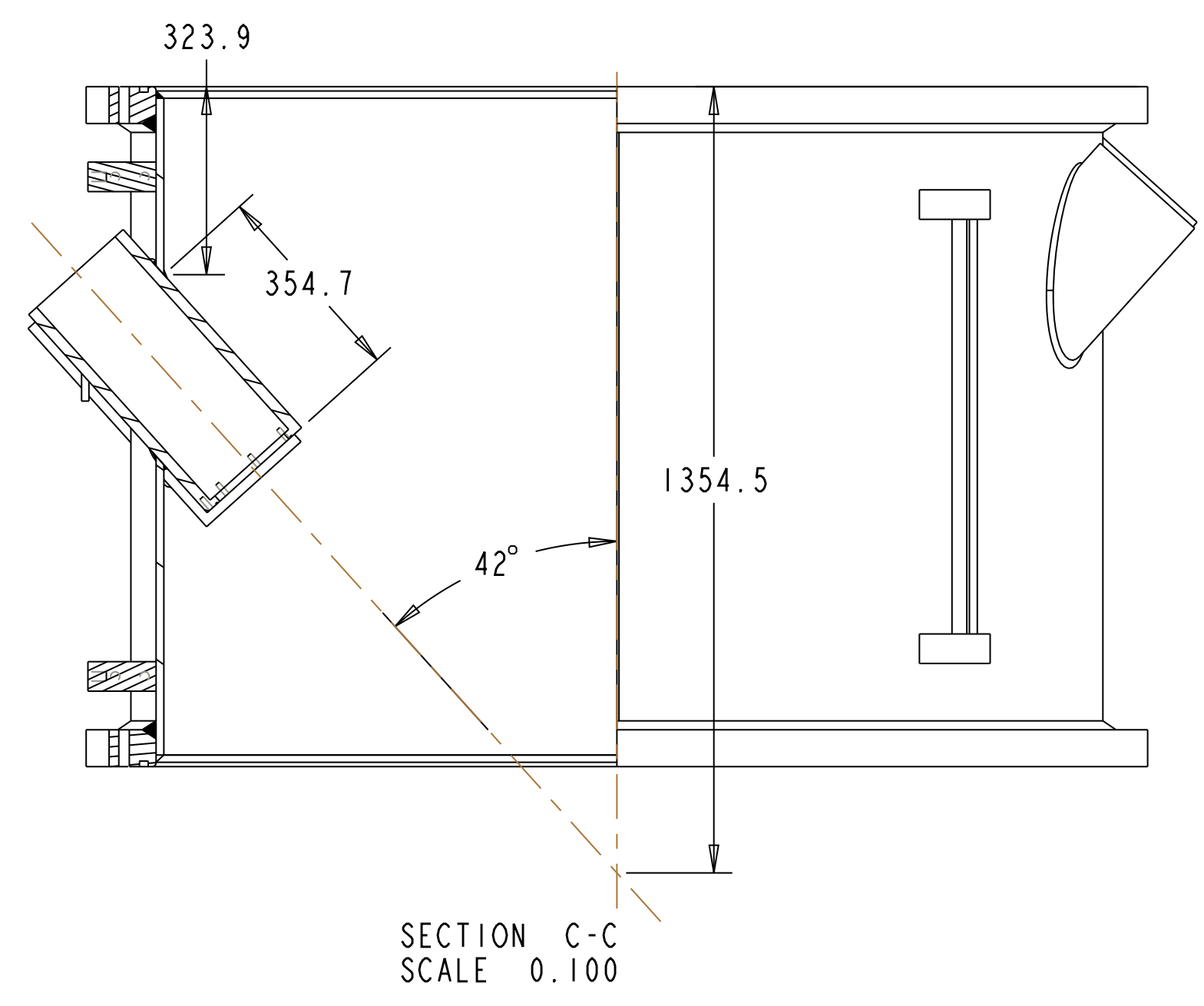
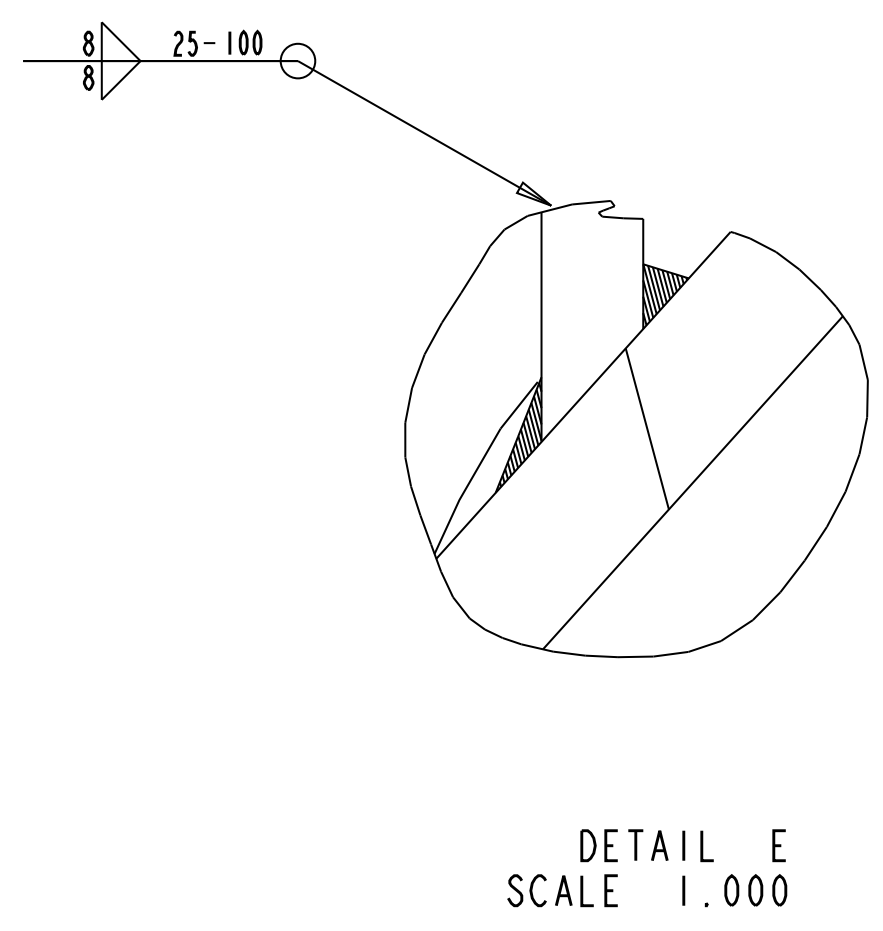
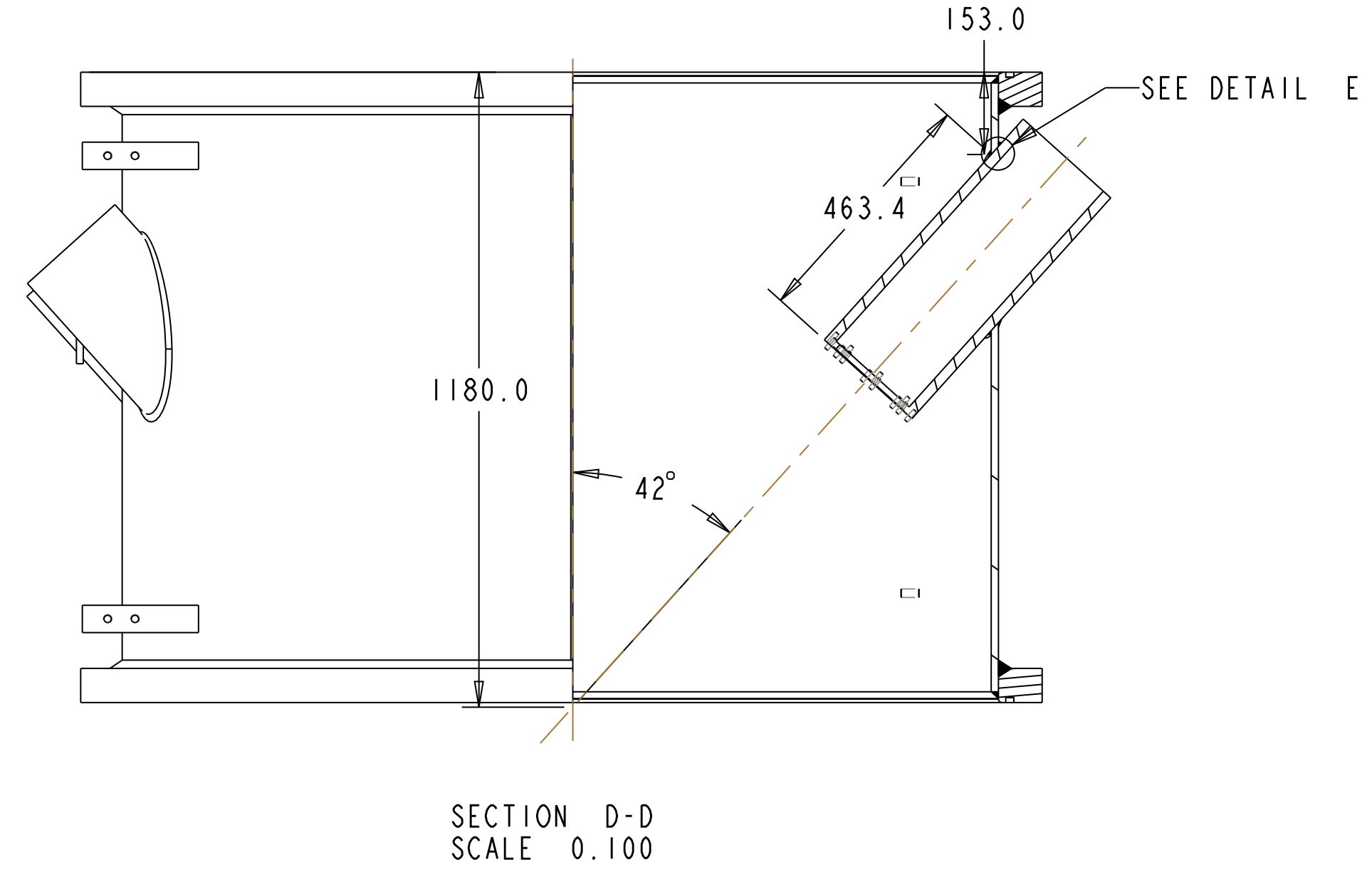
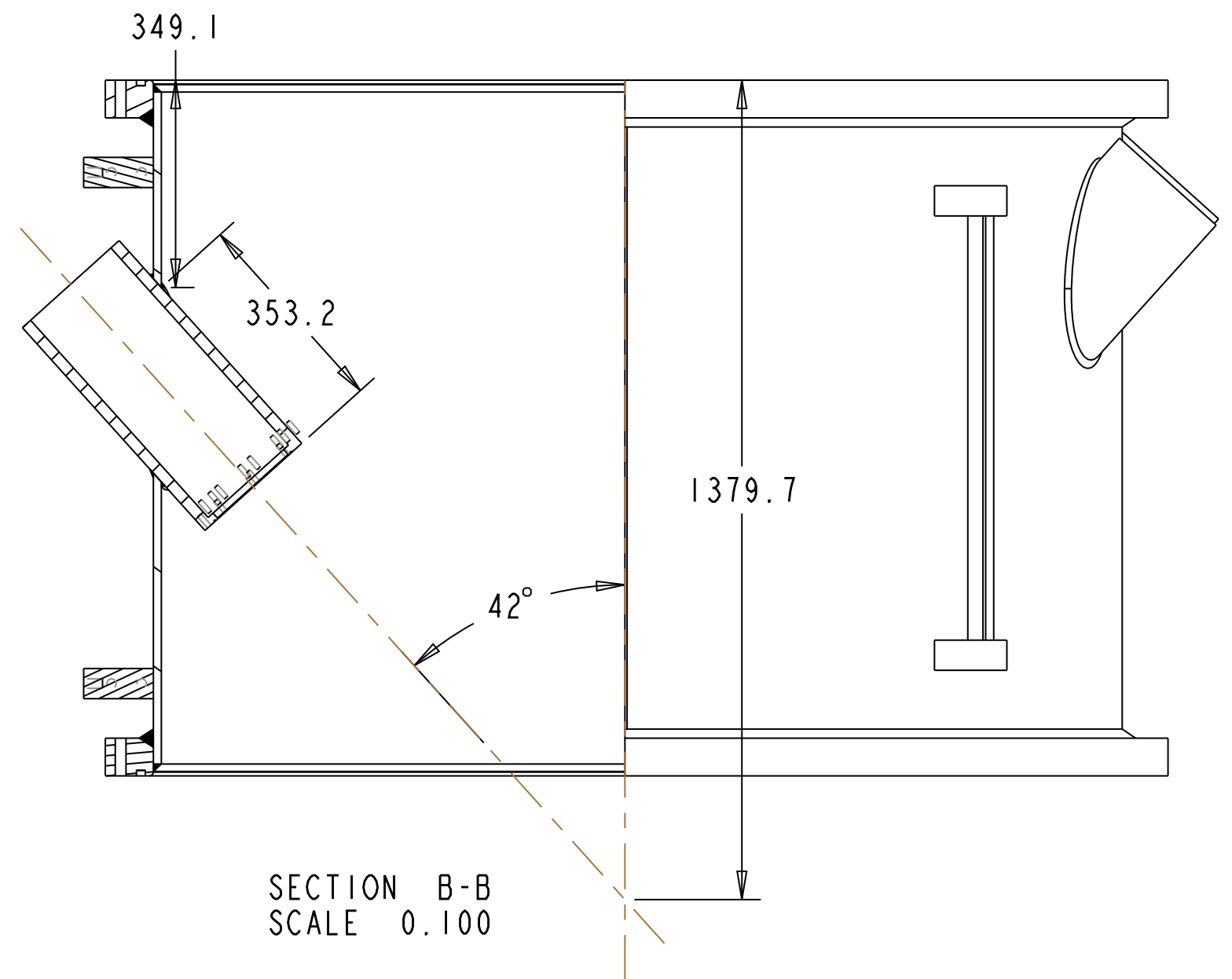
MAIN VESSEL ASSEMBLY

SCALE: 0.100
 DATE: NOV 9, 2012

APPROVAL: CHIEF ENGR
 DWG. NO: [blank]
 REV: E

8 7 6 5 4 3 2 1

ITEM	DESCRIPTION	MATL	QUANTITY



ALL DIMENSIONS IN mm UNLESS OTHERWISE SPECIFIED
 TOLERANCES UNLESS OTHERWISE SPECIFIED:
 FRACTIONAL DIMENSIONS
 DECIMAL DIMENSIONS XX ± 0.5
 ANGULAR DIMENSIONS ± 0.5°
 SURFACE FINISH MILL FINISH

UNIVERSITY OF ALBERTA
 EDMONTON ALBERTA CANADA
 DESIGNED CHRIS NG TELEPHONE (780) 492 5979
 DRAWN CHRIS NG FAX (780) 492 3408
 CHECKED E-MAIL: cjng@ualberta.ca
 APPROVED

REF. DWGS.	REV.	DATE	REVISION	BY

CENTER OF PARTICLE PHYSICS
 MAIN VESSEL ASSEMBLY
 QUARTZ WINDOW SLEEVE WELDS
 SCALE DATE MAY 10, 2012 APPROVAL CHIEF ENGR DWG. NO. REV. B

8 7 6 5 4 3 2 1

ITEM	DESCRIPTION	MATL	QUANTITY

NOTES:

1. CYLINDRICAL BODY SHALL BE MADE WITH CLEAN ROLLERS TO ELIMINATE ANY POSSIBILITY OF ANY INCLUSIONS BEING INTRODUCED INTO THE MATERIAL
2. WELDING SHALL CONFORM TO THE REQUIREMENTS OF CSA W59.2 OR AWS D1.2.
3. ALL WELDING TO BE DONE BY CONTRACTORS CERTIFIED UNDER A DIVISION 1 OR 2 FABRICATION SHOP IN ACCORDANCE WITH CSA W47.2. OR AWS D1.2.
4. ALL WELDS INSPECTED BY A LEVEL 3 INSPECTOR CERTIFIED IN ACCORDANCE WITH CSA W178.2-01 OR AWS CWI
5. ALL SEALING SURFACES MUST BE FREE OF NICKS/DENTS/SCRATCHES
6. DEGREASE ALL PARTS PRIOR TO WELDING
7. CYLINDRICAL BODY WELD SHOULD BE LOCATED APPROX 90 DEGREES FROM GAS PORT WELD
8. ALL INSIDE WELDS TO BE VACUUM TIGHT
9. FINISHED VESSEL TO BE VACUUM TIGHT.
10. FINISHED VESSEL TO BE DEGREASED & CLEANED FOLLOWED WITH ETHANOL OR METHANOL RINSE
11. PROVIDE BLANK-OFF FLANGES TO MATCH EACH FLANGE
12. EACH FLANGE TO BE CLAMPED WITH 126 3/4"-10 UNC 316 SS BOLTS WITH 316 SS WASHERS AND SILICON BRONZE NUTS. INSTALLATION TORQUE SHOULD BE 26 lbf-ft USING NUCLEAR NON-METALLIC HIGH TEMPERATURE ANTI-SEIZE COMPOUND
13. BOLTS/NUTS MUST HAVE MATERIAL TEST REPORTS OR A CERTIFICATE OF CONFORMANCE TO THE ASTM SPECIFICATIONS
14. SUPPLY O-RINGS FOR FLANGES AS INDICATED
15. VACUUM TEST PERFORMED AT THE VENDOR FACILITY WILL BE IN ACCORDANCE WITH ASME-V, ASNT-TC1A NON DESTRUCTIVE EXAMINATION CODE. LEAK TIGHTNESS SHOULD BE DEMONSTRATED BY RECORDING THE HELIUM MASS SPECTROMETER LEAK DETECTOR OUTPUT ON A CHART RECORD FOR A MINIMUM OF ONE HOUR. THE MAX LEAK RATE SHOULD NOT EXCEED 1×10^{-8} mbar liter/sec

	B	CORRECT NOTE 12		
REF. DWGS.	REV.	DATE	REVISION	BY

ALL DIMENSIONS IN mm UNLESS OTHERWISE SPECIFIED
 TOLERANCES UNLESS OTHERWISE SPECIFIED:
 FRACTIONAL DIMENSIONS XX ± 0.5
 DECIMAL DIMENSIONS XX ± 0.5
 ANGULAR DIMENSIONS ± 0.5°
 SURFACE FINISH MILL FINISH

DESIGNED CHRIS NG TELEPHONE (780) 492 5979
 DRAWN CHRIS NG FAX (780) 492 3408
 CHECKED E-MAIL: cjang@ualberta.ca

APPROVED

UNIVERSITY OF ALBERTA
 EDMONTON ALBERTA CANADA

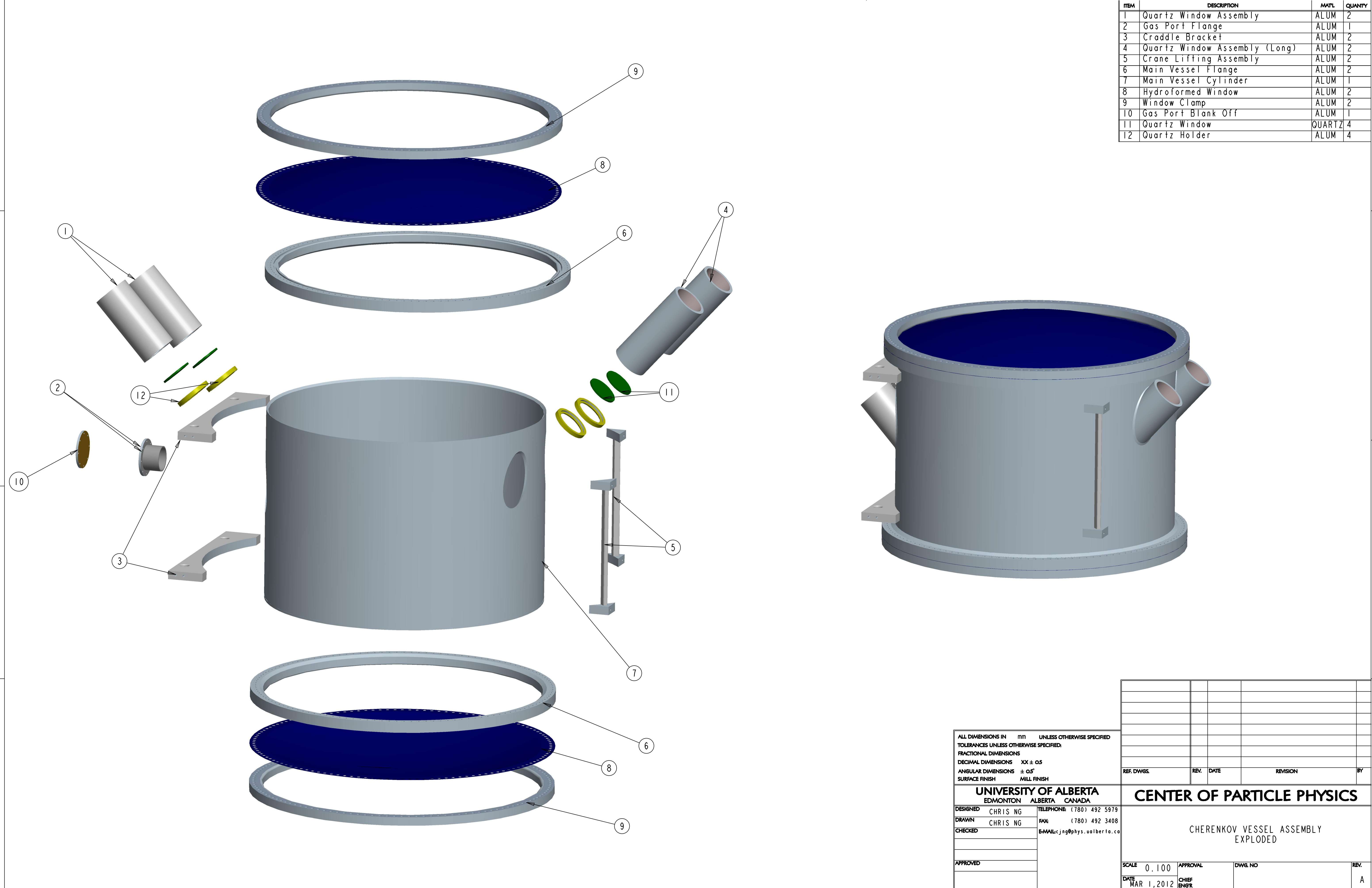
CENTER OF PARTICLE PHYSICS

MAIN VESSEL ASSEMBLY NOTES

SCALE APPROVAL DWG. NO. REV.

DATE MAY 10, 2012 CHIEF ENGR B

ITEM	DESCRIPTION	MATL	QUANTITY
1	Quartz Window Assembly	ALUM	2
2	Gas Port Flange	ALUM	1
3	Craddle Bracket	ALUM	2
4	Quartz Window Assembly (Long)	ALUM	2
5	Crane Lifting Assembly	ALUM	2
6	Main Vessel Flange	ALUM	2
7	Main Vessel Cylinder	ALUM	1
8	Hydroformed Window	ALUM	2
9	Window Clamp	ALUM	2
10	Gas Port Blank Off	ALUM	1
11	Quartz Window	QUARTZ	4
12	Quartz Holder	ALUM	4



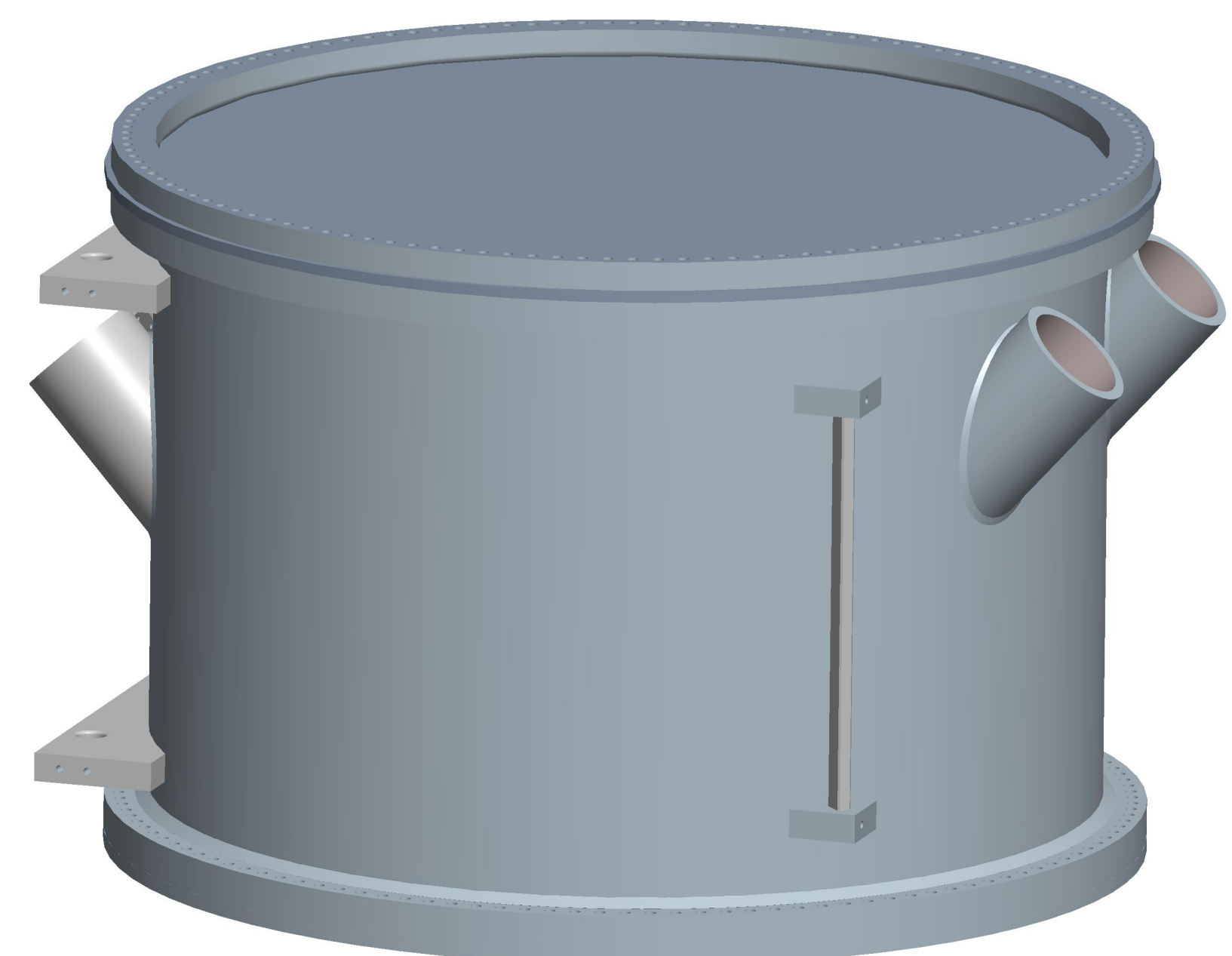
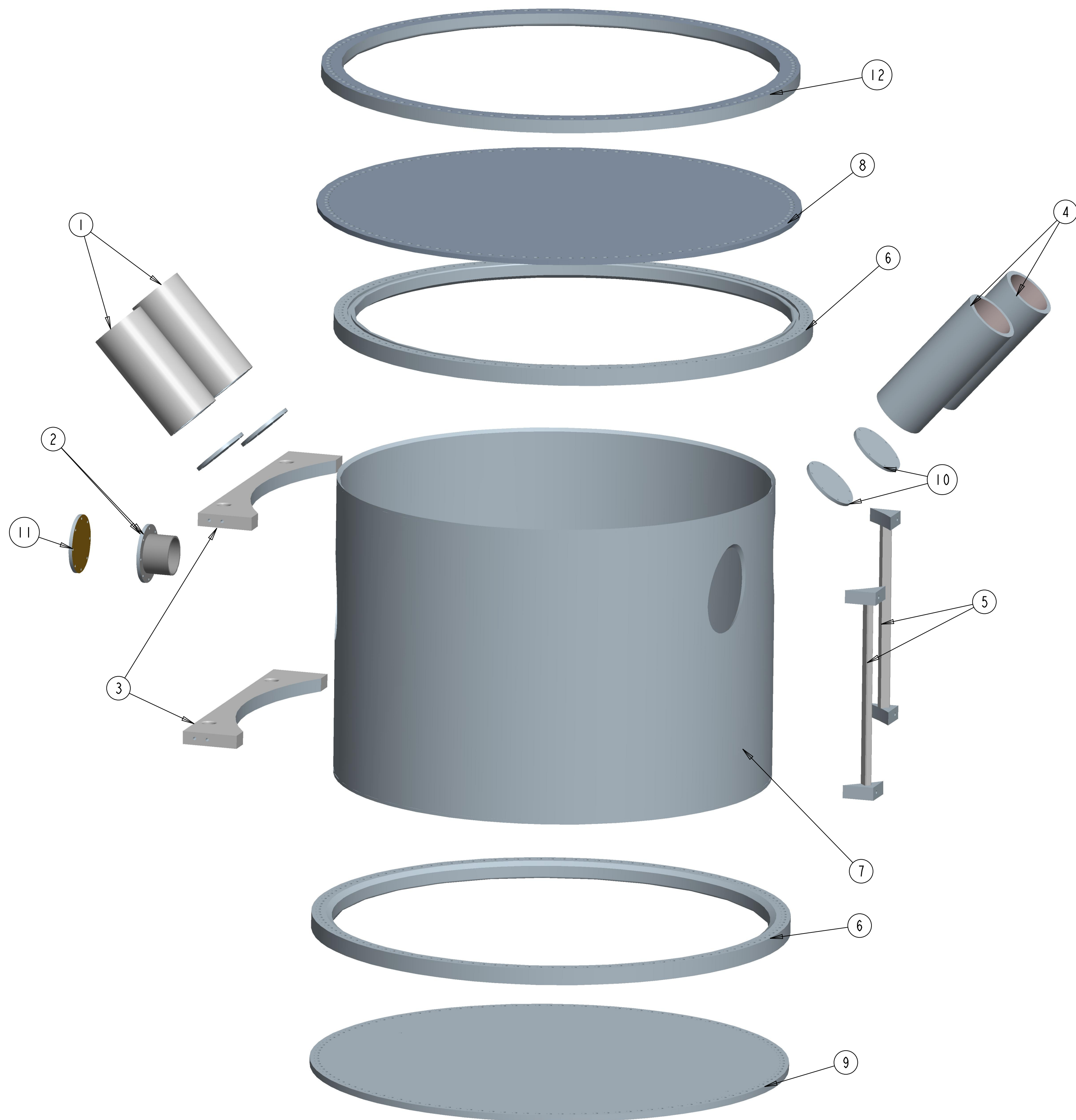
ALL DIMENSIONS IN mm UNLESS OTHERWISE SPECIFIED
 TOLERANCES UNLESS OTHERWISE SPECIFIED:
 FRACTIONAL DIMENSIONS
 DECIMAL DIMENSIONS XX ± 0.5
 ANGULAR DIMENSIONS ± 0.5°
 SURFACE FINISH MILL FINISH

UNIVERSITY OF ALBERTA
 EDMONTON ALBERTA CANADA
 DESIGNED CHRIS NG TELEPHONE (780) 492 5979
 DRAWN CHRIS NG FAX (780) 492 3408
 CHECKED E-MAIL: c.jng@phys.ualberta.ca
 APPROVED

REF. DWGS.	REV.	DATE	REVISION	BY

CENTER OF PARTICLE PHYSICS
 CHERENKOV VESSEL ASSEMBLY
 EXPLODED
 SCALE 0.100 APPROVAL DWG. NO. REV.
 DATE MAR 1, 2012 CHIEF ENGR A

ITEM	DESCRIPTION	MATL	QUANTITY
1	Quartz Window Assembly	ALUM	2
2	Gas Port Flange	ALUM	1
3	Craddle Bracket	ALUM	2
4	Quartz Window Assembly (Long)	ALUM	2
5	Crane Lifting Assembly	ALUM	2
6	Main Vessel Flange	ALUM	2
7	Main Vessel Cylinder	ALUM	1
8	Window Blank Off	STEEL	1
9	Hydroforming Plate	STEEL	1
10	Quartz Window Blank Off	STEEL	4
11	Gas Port Plate	ALUM	1
12	Window Clamp	ALUM	1



ALL DIMENSIONS IN mm UNLESS OTHERWISE SPECIFIED
 TOLERANCES UNLESS OTHERWISE SPECIFIED:
 FRACTIONAL DIMENSIONS
 DECIMAL DIMENSIONS XX ± 0.5
 ANGULAR DIMENSIONS ± 0.5°
 SURFACE FINISH MILL FINISH

UNIVERSITY OF ALBERTA
 EDMONTON ALBERTA CANADA
 DESIGNED CHRIS NG TELEPHONE (780) 492 5979
 DRAWN CHRIS NG FAX (780) 492 3408
 CHECKED E-MAIL: cjang@phys.ualberta.ca
 APPROVED

REF. DWGS.	REV.	DATE	REVISION	BY

CENTER OF PARTICLE PHYSICS
 CHERENKOV VESSEL ASSEMBLY VACUUM TEST
 EXPLODED
 SCALE 0.100 APPROVAL DWG. NO. REV.
 DATE MAR 5, 2012 CHIEF ENGR A