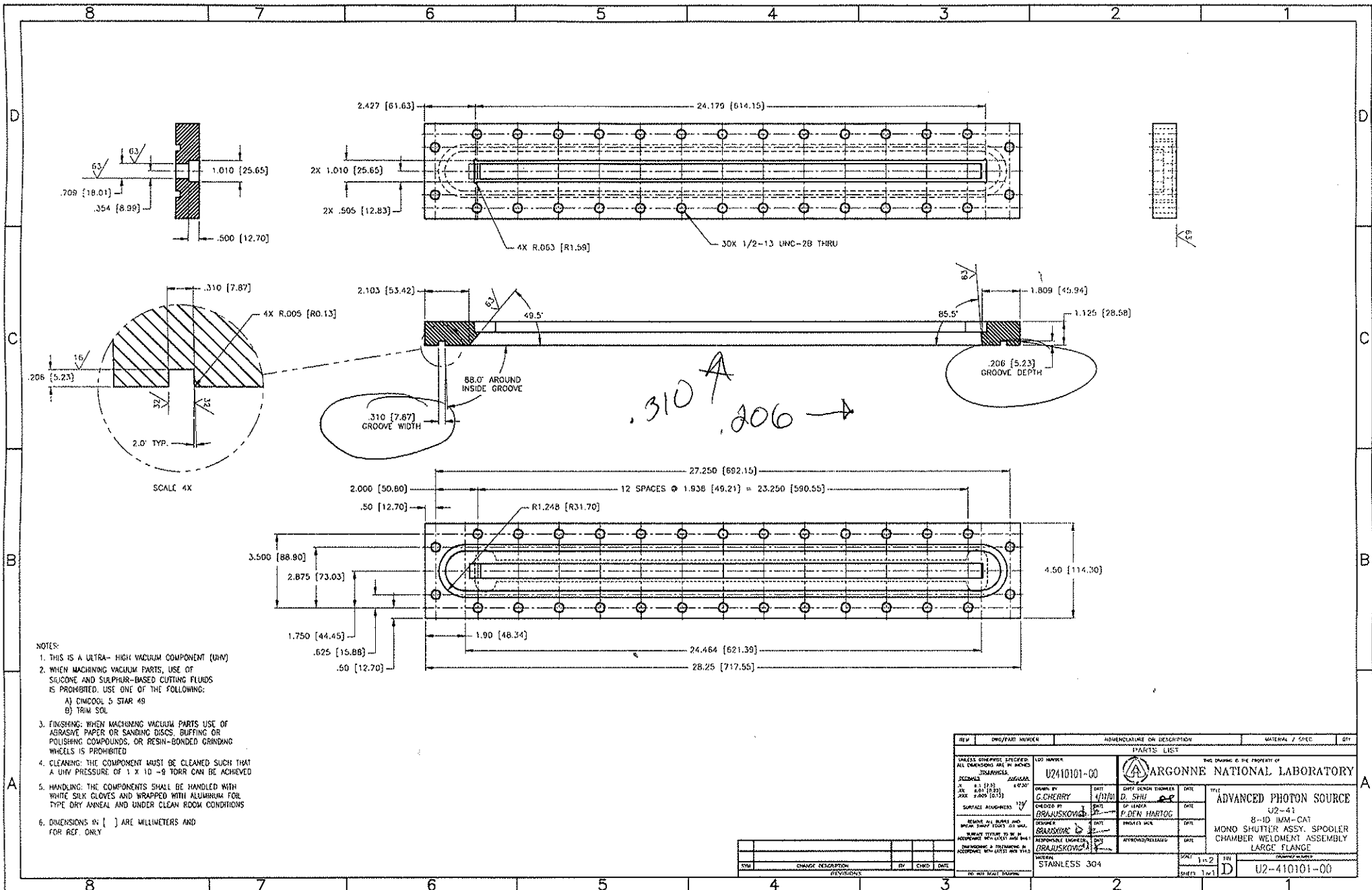




#70



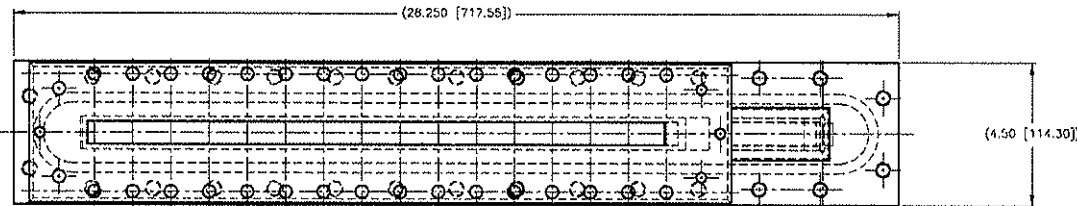
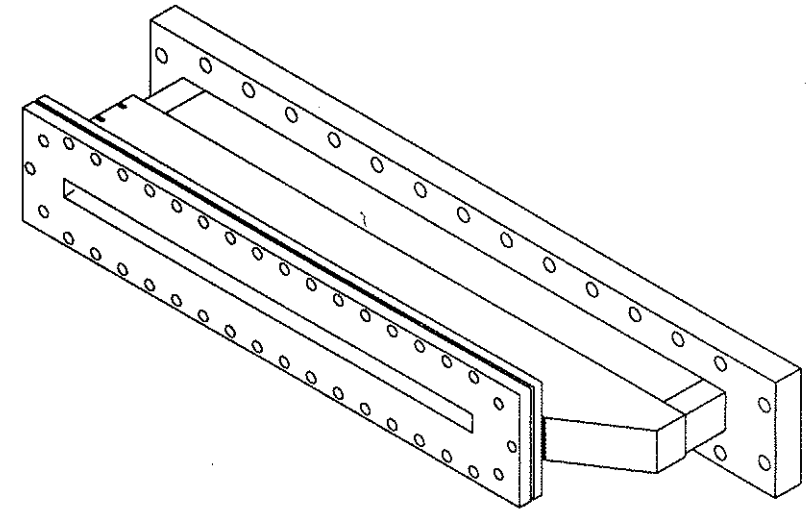
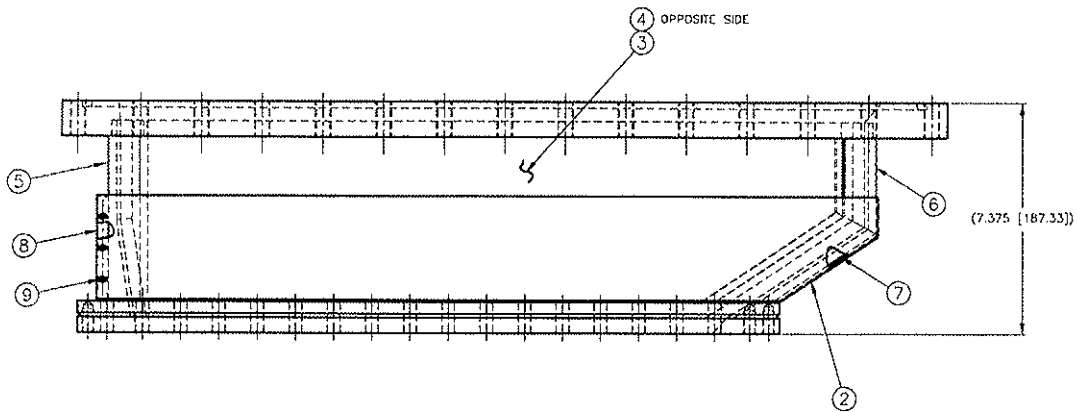


NOTES:

- THIS IS A ULTRA-HIGH VACUUM COMPONENT (UHV)
- WHEN MACHINING VACUUM PARTS, USE OF SILICONE AND SULPHUR-BASED CUTTING FLUIDS IS PROHIBITED. USE ONE OF THE FOLLOWING:
  - A) DIMCOOL 5 STAR 49
  - B) TRIM SOL
- FINISHING: WHEN MACHINING VACUUM PARTS USE OF ABRASIVE PAPER OR SANDING DISCS, BUFFING OR POLISHING COMPOUNDS, OR RESIN-BONDED GRINDING WHEELS IS PROHIBITED
- CLEANING: THE COMPONENT MUST BE CLEANED SUCH THAT A UHV PRESSURE OF  $1 \times 10^{-8}$  TORR CAN BE ACHIEVED
- HANDLING: THE COMPONENTS SHALL BE HANDLED WITH WHITE SILK GLOVES AND WRAPPED WITH ALUMINUM FOR TYPE DRY ANNEAL AND UNDER CLEAN ROOM CONDITIONS
- DIMENSIONS IN [ ] ARE MILLIMETERS AND FOR REF. ONLY

REV	CHG/PRG NUMBER	DESCRIPTION	MATERIAL / SPEC	QTY
PARTS LIST				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES TOLERANCES:		THIS DRAWING IS THE PROPERTY OF		
DIMENSIONS		<b>ARGONNE NATIONAL LABORATORY</b>		
SURFACE FINISHES		TITLE		
3X 7.00 (0.15)		ADVANCED PHOTON SOURCE		
12X 1.00 (0.02)		U2-41		
12X 0.50 (0.01)		8-ID IMM-CAT		
12X 0.25 (0.005)		MONO SHUTTER ASSY. SPOOLER		
12X 0.125 (0.0025)		CHAMBER WELDMENT ASSEMBLY		
12X 0.0625 (0.00125)		LARGE FLANGE		
12X 0.03125 (0.000625)		CHAMBER WELDMENT ASSEMBLY		
12X 0.015625 (0.0003125)		LARGE FLANGE		
12X 0.0078125 (0.00015625)		CHAMBER WELDMENT ASSEMBLY		
12X 0.00390625 (0.000078125)		LARGE FLANGE		
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12X 0.000244140625 (0.0000048828125)		LARGE FLANGE		
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12X 0.				





NOTES:

1.) THIS IS A ULTRA - HIGH VACUUM COMPONENT (UHV) THE COMPONENTS SHALL BE HANDLED WITH WHITE SILK GLOVES AND WRAPPED WITH ALUMINUM FOIL TYPE DRY ANNEAL AND UNDER CLEAN ROOM CONDITIONS

2.) VACUUM CHAMBER SHALL BE LEAK TESTED USING A MASS SPECTROMETER WITH MINIMUM SENSITIVITY FOR HELIUM OF  $2 \times 10^{-10}$  STANDARD CC/SEC PER LEAK METER DIVISION, SUCH AS:

- ALCATEL ASM-110TCL
- VARIAN NCR 925 OR 936
- VEECO MS-9, MS-90 OR MS-18
- DUPONT CEC 24-120B

CALIBRATION OF THE LEAK DETECTOR SENSITIVITY SHALL BE PERFORMED JUST PRIOR TO TESTING. FINAL TEST WILL CONSIST OF SURROUNDING THE CHAMBER (BAGGING) WITH HELIUM, THE CHAMBER WILL BE REJECTED IF A 2% DEFLECTION IN THE MOST SENSITIVE RANGE OF THE LEAK DETECTOR IS SENSED WITHIN 1 MIN.

- 3.) ITEMS 10, 11, & 12 ARE TO APPLIED TO CHAMBER ASSEMBLY TO PROTECT FLANGE EDGES DURING SHIPPING AND ARE NOT SHOWN ON DRAWING.
- 4.) DIMENSIONS IN [ ] ARE MILLIMETERS AND FOR REF. ONLY

ITEM	QTY	DESCRIPTION	MATERIAL	QTY
12		1/2 -13 x .75 SOC HD CPSC	STAINLESS STEEL	7
11	U2-410009	FLANGE COVER PLATE	SEE DETAIL	1
10	U2-410008	FLANGE COVER PLATE	SEE DETAIL	1
9		#4-40 x .25 SOC HD CPSC	STAINLESS STEEL	6
8	U2-410007	BLOCK	SEE DETAIL	1
7	U2-410006	CHANNEL	SEE DETAIL	1
6	U2-410005	CHANNEL	SEE DETAIL	1
5	U2-410004	CHANNEL	SEE DETAIL	1
4	U2-410003	LEAD PLATE	SEE DETAIL	1
3	U2-410002	LEAD PLATE	SEE DETAIL	1
2	U2-410001	COVER PLATE	SEE DETAIL	1
1	U2-410100	CHAMBER WELDMENT ASSY.	SEE DETAIL	1
REV	DATE	DESCRIPTION	MATERIAL / SPEC	QTY

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES

U2410000-00

ARGONNE NATIONAL LABORATORY

ADVANCED PHOTON SOURCE

U2-41

8-ID IMM-CAT

MONO SHUTTER ASSY. SPOOLER

CHAMBER ASSEMBLY

STAINLESS 304

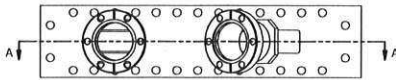
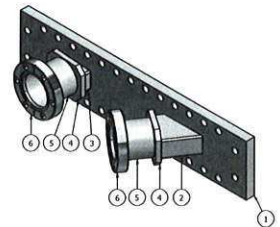
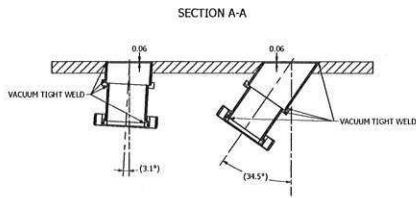
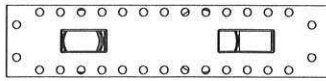
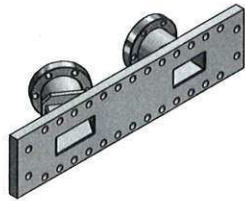
DATE: 1-2-78

SHEET: 1 of 1

U2-410000-00

NO.	CHANGE DESCRIPTION	BY	CHKD	DATE





**NOTES**

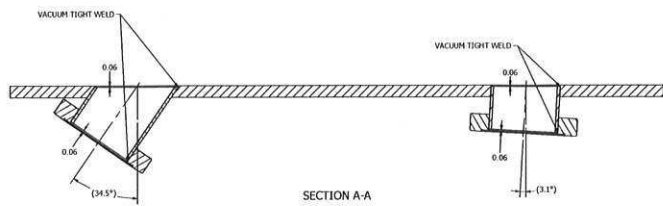
1. COMPONENTS #1 THRU #5 MUST BE WELDED TO FORM A HV LEAK TIGHT ASSEMBLY. ALL WELDS MUST BE MADE AT AN INSIDE JOINT WHERE POSSIBLE. AN EXTERNAL WELD IS ACCEPTABLE AT THE INTERFACES BETWEEN ITEMS #2 AND #4 AND BETWEEN #4 AND #5. VENDOR IS RESPONSIBLE FOR DETERMINING WELD SEQUENCE.
2. VENDOR IS RESPONSIBLE FOR LEAK CHECKING TO VERIFY LEAK RATE IS  $< 1.0 \times 10^{-9}$  STANDARD CC/SEC.
3. ALL COMPONENTS MUST BE CLEANED AND PREPARED FOR HV PRIOR TO WELDING.
4. ASSEMBLY MUST BE PROPERLY PACKAGED TO MAINTAIN CLEANLINESS DURING SHIPPING.

ITEM	DRAWING PART NUMBER	REV	DESCRIPTION	MATERIAL SPEC.	QTY
6	275-175R CFF		275-175R CFF	304 STAINLESS STEEL	2
5	430B02-120011	00	1.25 DIA. X 0.065 WALL X 1.635 LONG TUBE	304 STAINLESS STEEL	2
4	430B02-120010	00	2 X 1 TO 1.25 DIA. ADAPTOR	304 STAINLESS STEEL	2
3	430B02-120009	00	2 X 1 X 3.1 DEGREE TUBE	304 STAINLESS STEEL	1
2	430B02-120008	00	2 X 1 X 3.1 DEGREE TUBE	304 STAINLESS STEEL	1
1	430B02-120007	01	SHARPER FLANGE MACHINING DETAIL	304 STAINLESS STEEL	1

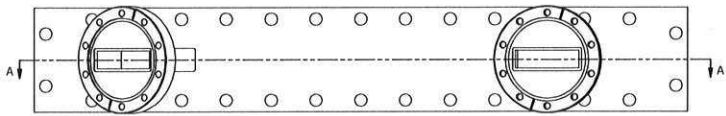
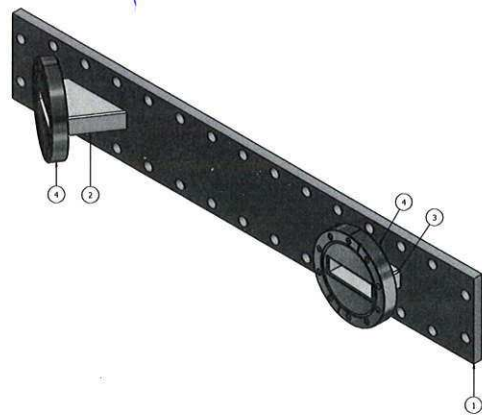


ZONE	REV	DESCRIPTION	DATE	APPROVED
A1	01	ITEM # 1 WAS REVISED	10/13/2015	FINNISH

APPROVED FOR RELEASE AUTHORITY: 100-441301 DATE: 10/13/2015 BY: FINNISH	DATE: 10/13/2015 BY: FINNISH	RELEASE:	ADVANCED PHOTON SOURCE EXPERIMENTAL FACILITIES FLAMINGO HALL 80000A THROMBOLIN RD - PHILADELPHIA, PENNSYLVANIA PHILADELPHIA, PENNSYLVANIA	430B02-120006 01
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SECTION A-A



- NOTES
- COMPONENTS # 1 THRU # 4 MUST BE WELDED TO FORM A UHV LEAK TIGHT ASSEMBLY. ALL WELDS MUST BE MADE AT AN INSIDE JOINT WHERE POSSIBLE. VENDOR IS RESPONSIBLE FOR DETERMINING WELD SEQUENCE.
  - VENDOR IS RESPONSIBLE FOR LEAK CHECKING TO VERIFY LEAK RATE IS  $< 1 \times 10^{-9}$  STANDARD CC/SEC.
  - ALL COMPONENTS MUST BE CLEANED AND PREPARED FOR UHV PRIOR TO WELDING.
  - ASSEMBLY MUST BE PROPERLY PACKAGED TO MAINTAIN CLEANLINESS DURING SHIPPING.

ITEM	DRAWING PART NUMBER	REV	DESCRIPTION	MATERIAL SPEC.	QTY
4	430802-120024	00	CUSTOM 4.5/8 TAPPED CONE/FLAT FLANGE	304 STAINLESS STEEL	2
3	430802-120023	01	3 X 1 X 3.1 DEGREE TUBE	304 STAINLESS STEEL	1
2	430802-120022	01	3 X 1 X 34.5 DEGREE TUBE	304 STAINLESS STEEL	1
1	430802-120021	02	EXIT FLANGE MACHINING DETAIL	304 STAINLESS STEEL	1

ZONE (REV)	DESCRIPTION	DATE	APPROVED
AS - 01	ITEMS 1 AND 2 REVISION	10/1/2015	RF FISHER
AS - 02	ITEMS #1, 2, 3 WERE REVISED	01/1/2016	RF FISHER

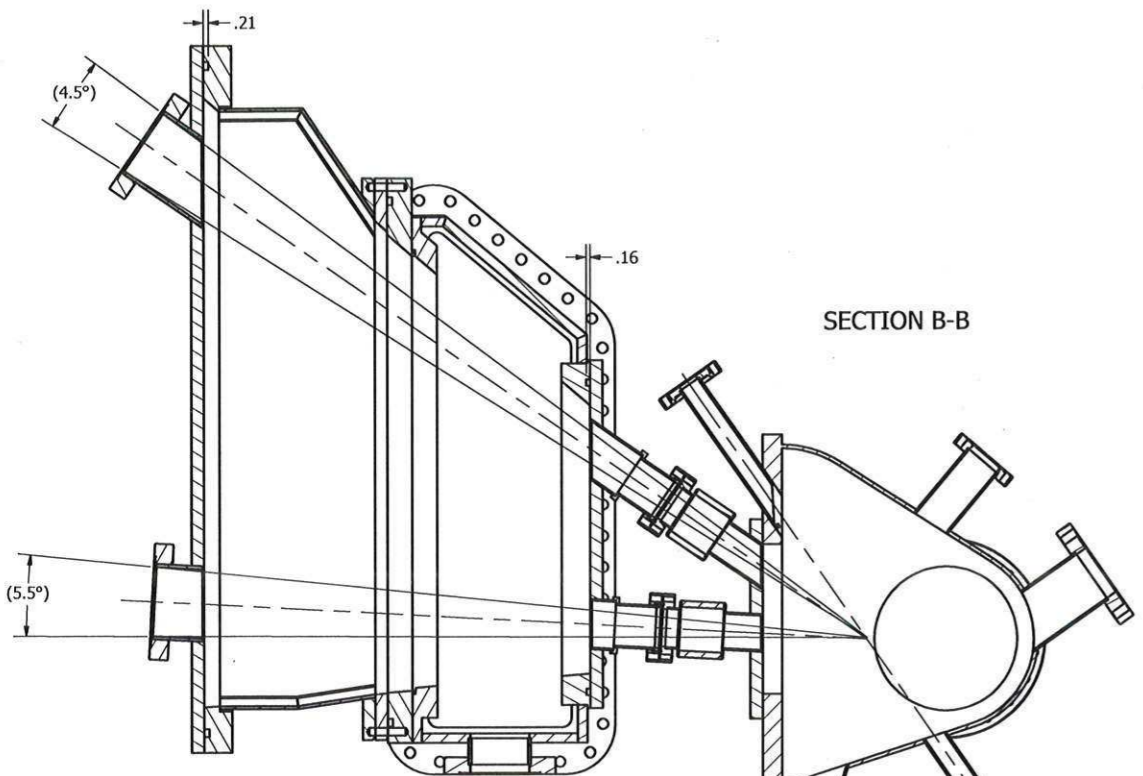
  

DATE	BY	DESCRIPTION
07/15/2015		RELEASED
		RELEASED

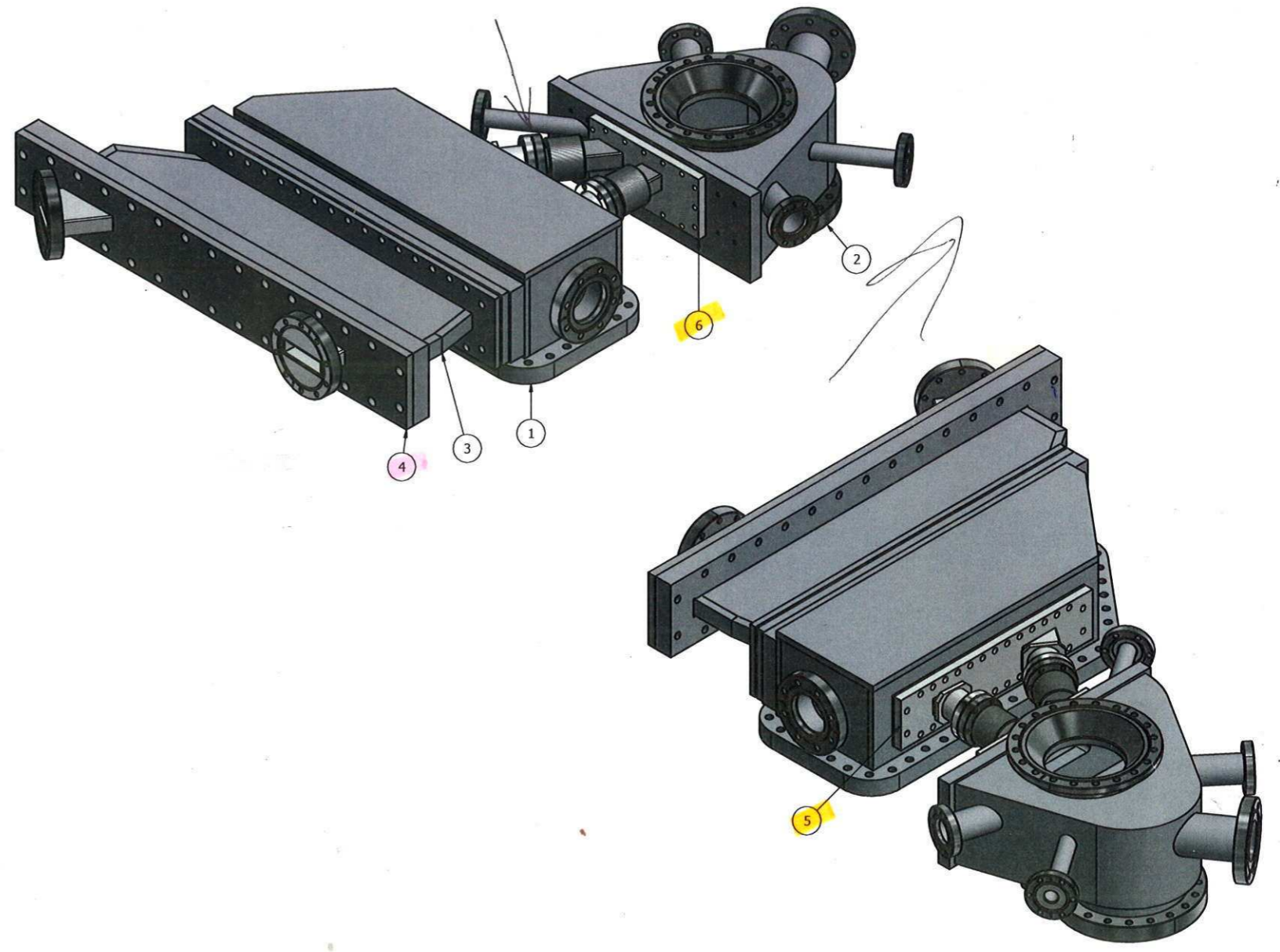
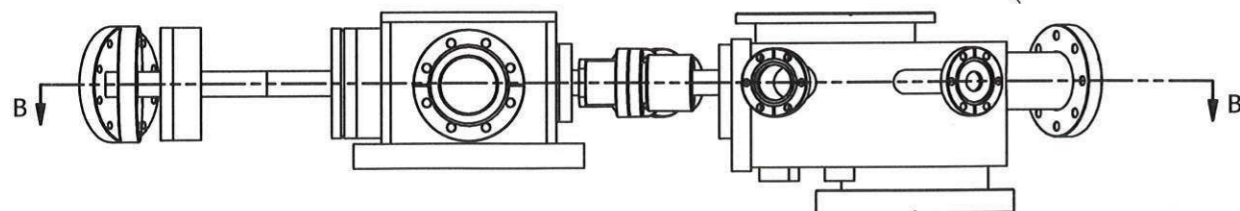
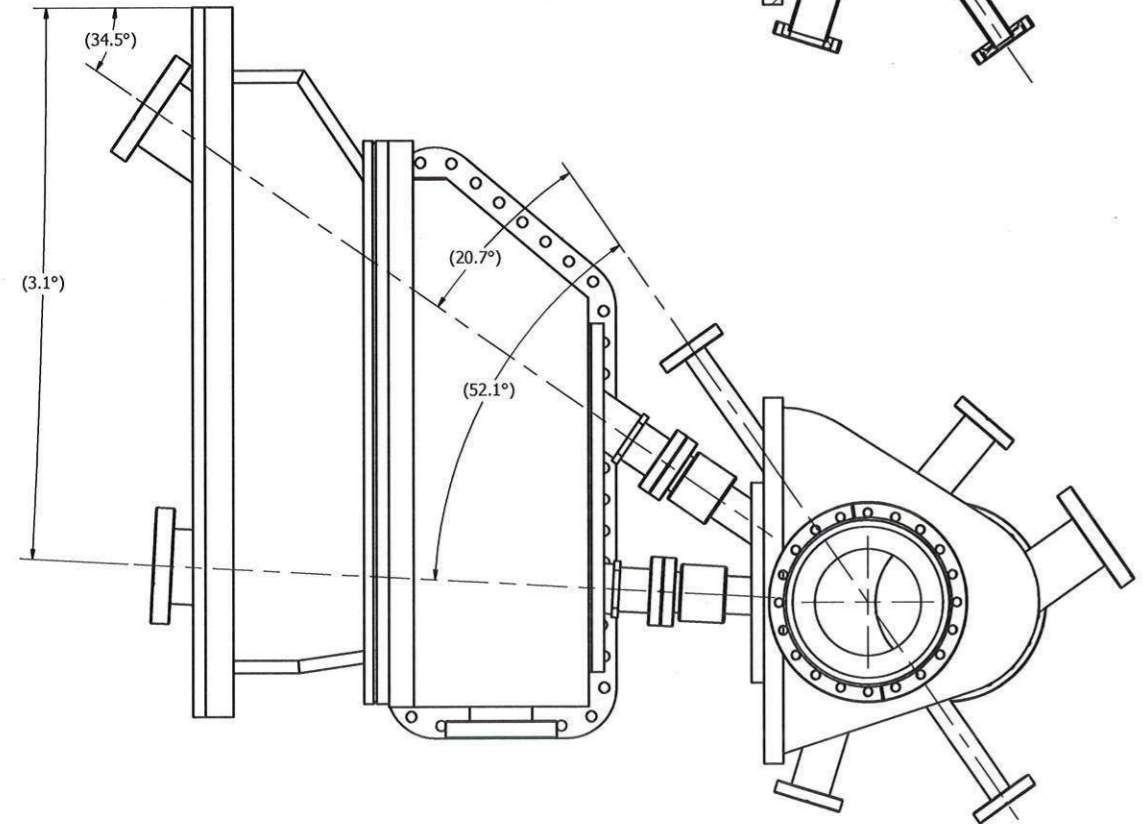
  

Argonne	ADVANCED PHOTON SOURCE
EXPERIMENTAL FACILITY 2	
BLAMEND 01	
CELL END OF BE LINE IN MONOLITHIC MACHINING SECTION	
1311 FLANGE WILLIAM NI	
430802-120020	02





SECTION B-B



THIS DRAWING IS FOR INFORMATION ONLY.

ITEM	DRAWING/ PART NUMBER	REV	NOMENCLATURE/ DESCRIPTION	MATERIAL/SPEC.	QTY
6	430802-120012	01	MONOCHROMATOR FLANGE WELDMENT		1
5	430802-120006	01	SHUTTER FLANGE WELDMENT		1
4	430802-120020	02	EXIT FLANGE WELDMENT		1
3	U2-410100	-	SPOOLER CHAMBER WELDMENT		1
2	ESRF # 20.21.1010	-	MONO CHAMBER WELDMENT		1
1	P8-700100	-	SHUTTER CHAMBER WELDMENT		1

REVISION HISTORY		PARTS LIST / BILL OF MATERIALS		
ZONE	REV	DESCRIPTION	DATE	APPROVED
A1	1	ITEMS # 4,5 + 6 WERE REVISED.	10/13/2015	M.FISHER

DESIGNED BY	M.FISHER	DATE	10/5/2015
DESIGNED BY	M.FISHER	DATE	10/5/2015
DESIGNED BY	M.FISHER	DATE	
DESIGNED BY	M.FISHER	DATE	
RELEASED			

<p>ADVANCED PHOTON SOURCE</p> <p>EXPERIMENTAL FACILITIES</p> <p>STATION # 10-D-1000-11</p> <p>MONO-TRANSFORMER-SHUTTER-EXIT FLANGE</p> <p>OVERALL ASSEMBLY</p>	<p>430802-120000</p>	<p>01</p>
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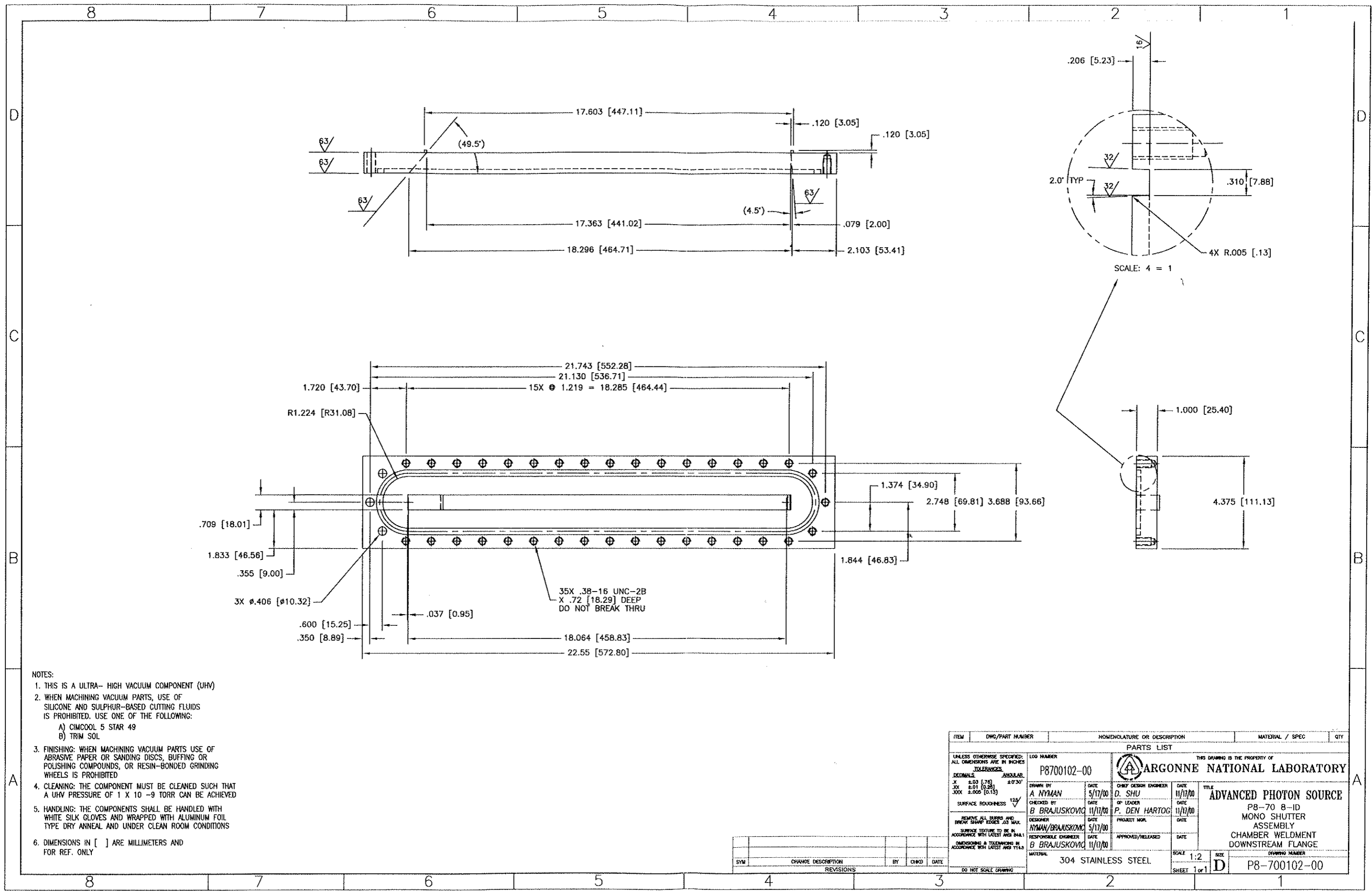
REVISION HISTORY

ZONE	REV	DESCRIPTION	DATE	APPROVED
A1	1	ITEMS # 4,5 + 6 WERE REVISED.	10/13/2015	M.FISHER

PARTS LIST / BILL OF MATERIALS

ITEM	DRAWING/ PART NUMBER	REV	NOMENCLATURE/ DESCRIPTION	MATERIAL/SPEC.	QTY
6	430802-120012	01	MONOCHROMATOR FLANGE WELDMENT		1
5	430802-120006	01	SHUTTER FLANGE WELDMENT		1
4	430802-120020	02	EXIT FLANGE WELDMENT		1
3	U2-410100	-	SPOOLER CHAMBER WELDMENT		1
2	ESRF # 20.21.1010	-	MONO CHAMBER WELDMENT		1
1	P8-700100	-	SHUTTER CHAMBER WELDMENT		1





NOTES:

1. THIS IS A ULTRA- HIGH VACUUM COMPONENT (UHV)
2. WHEN MACHINING VACUUM PARTS, USE OF SILICONE AND SULPHUR-BASED CUTTING FLUIDS IS PROHIBITED. USE ONE OF THE FOLLOWING:
  - A) CIMCOOL 5 STAR 49
  - B) TRIM SOL
3. FINISHING: WHEN MACHINING VACUUM PARTS USE OF ABRASIVE PAPER OR SANDING DISCS, BUFFING OR POLISHING COMPOUNDS, OR RESIN-BONDED GRINDING WHEELS IS PROHIBITED
4. CLEANING: THE COMPONENT MUST BE CLEANED SUCH THAT A UHV PRESSURE OF  $1 \times 10^{-9}$  TORR CAN BE ACHIEVED
5. HANDLING: THE COMPONENTS SHALL BE HANDLED WITH WHITE SILK GLOVES AND WRAPPED WITH ALUMINUM FOIL TYPE DRY ANNEAL AND UNDER CLEAN ROOM CONDITIONS
6. DIMENSIONS IN [ ] ARE MILLIMETERS AND FOR REF. ONLY

SYN	CHANGE DESCRIPTION	BY	CHKD	DATE
REVISIONS				

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
PARTS LIST				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES TOLERANCES:		THIS DRAWING IS THE PROPERTY OF		
DECIMALS .001 [0.025]		ARGONNE NATIONAL LABORATORY		
FRACTIONS 1/100 [0.01]		DRAWN BY: A NYMAN		
ANGULARS ±0°30'		DATE: 5/17/00		
SURFACE ROUGHNESS 125		CHECKED BY: B BRAJUSKOVIC		
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.		DATE: 11/17/00		
SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST AMS 9411		DESIGNER: NYMAN/BRAJUSKOVIC		
DIMENSIONS & TOLERANCES IN ACCORDANCE WITH LATEST AMS 9411		DATE: 5/17/00		
DO NOT SCALE DRAWING		RESPONSIBLE ENGINEER: B BRAJUSKOVIC		
		DATE: 11/17/00		
		MATERIAL: 304 STAINLESS STEEL		
		SCALE: 1:2		
		SIZE: D		
		SHEET: 1 of 1		
		DRAWING NUMBER: P8-700102-00		





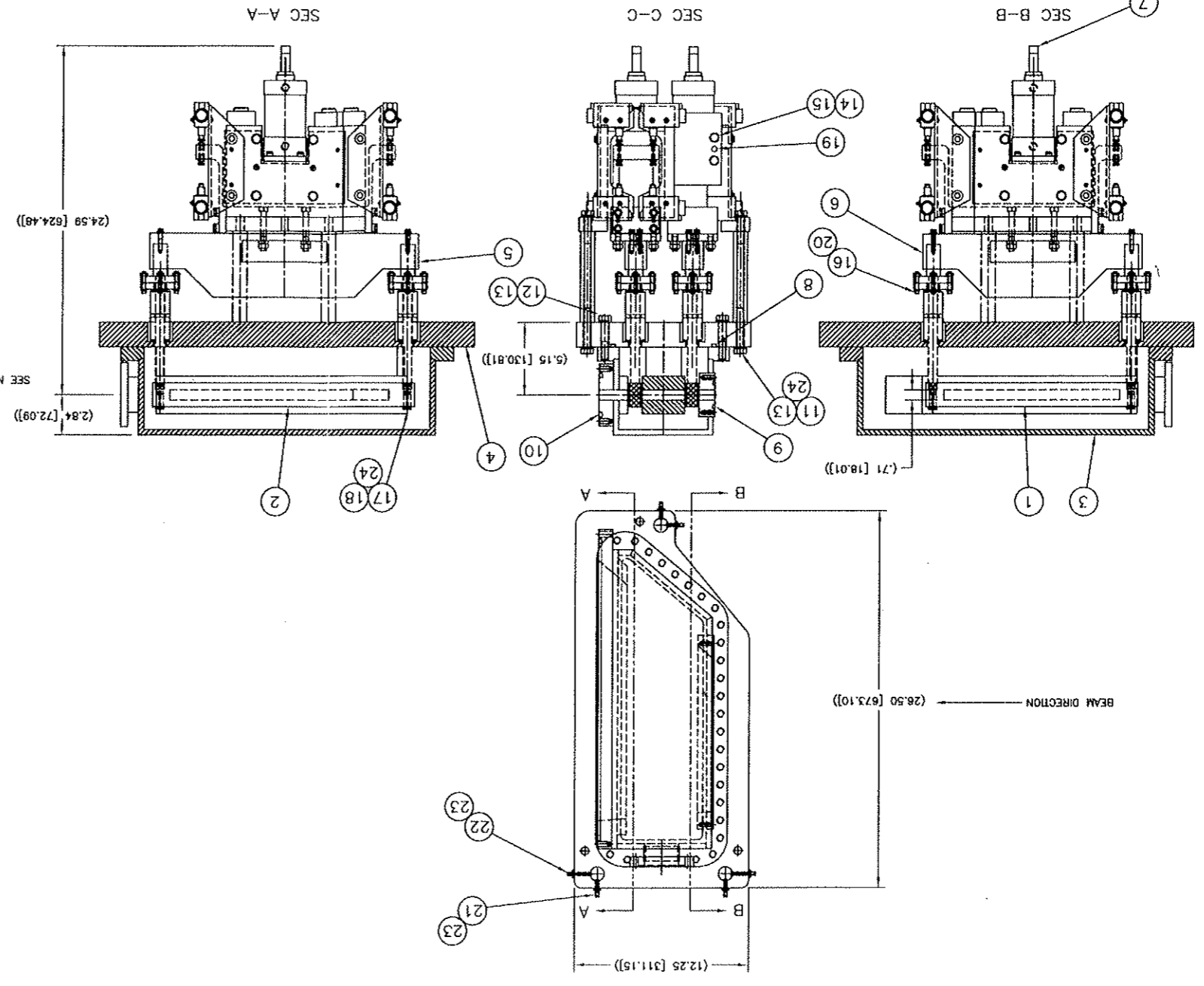
ARGONNE NATIONAL LABORATORY  
 P8-70000-01-1  
 ADVANCED PHOTON SOURCE  
 MONO SHUTTER ASSEMBLY

SEE PARTS LIST

01 ADDED ITEMS 25-30, SHIT 2

DATE: 5/19/70  
 BY: J. W. HEN  
 CHECKED: J. W. HEN

QTY	MATERIAL / SPEC	DESCRIPTION
1	SEE DETAIL	UPSTREAM BEAM STOP
1	SEE DETAIL	DOWNSTREAM BEAM STOP
1	SEE DETAIL	CHAMBER WELDMENT
1	SEE DETAIL	CHAMBER ASSEMBLY
1	SEE DETAIL	DOWNSTREAM ACTUATOR BASE ASSEMBLY
1	SEE DETAIL	UPSTREAM ACTUATOR BASE ASSEMBLY
2	SEE DETAIL	ACTUATOR ASSEMBLY--33 mm TRAVEL
1	0-RING .210 WIDE X 8.25 I.D.	
1	0-RING .275 WIDE X 14.0 I.D.	
1	0-RING .275 WIDE X 18.5 I.D.	
4	5-13 X 2.0 LG CAPSCREW	DRILLED HEAD
45	5-13 X 2.75 LG CAPSCREW	STAINLESS STEEL
49	5 LOCKWASHER	STAINLESS STEEL
4	38-18 X 1.25 LG CAPSCREW	STAINLESS STEEL
42	38 LOCKWASHER	STAINLESS STEEL
24	25-20 X 1.25 12 POINT CAPSCREW	STAINLESS STEEL
8	8 LOCKWASHER	STAINLESS STEEL
8	#8 LOCKWASHER	STAINLESS STEEL
18	C-824-A 1.5 LG SOC HD CPSC VENTED	SILVER PLATED
8	5.75 X 1.0 LG DOWEL PIN	STAINLESS STEEL
24	25-20 NUT	STAINLESS STEEL
4	25-20 X 1.25 LG CONE PT SETSCREW	STAINLESS STEEL
2	25-20 X 1.75 LG CONE PT SETSCREW	STAINLESS STEEL
6	25-20 JAM NUT	STAINLESS STEEL
-	SAFETY LOCK WIRE	STAINLESS STEEL
35	38-18 X 1.75 LG CAPSCREW	STAINLESS STEEL
3	38-18 X 2.0 LG CAPSCREW	STAINLESS STEEL
30	31 LOCKWASHER	STAINLESS STEEL
30	31-18 X 2.0 LG CAPSCREW	STAINLESS STEEL
1	SEE DETAIL	UPSTREAM COVER
1	SEE DETAIL	DOWNSTREAM COVER



ARGONNE NATIONAL LABORATORY  
 P8-70000-01-1  
 ADVANCED PHOTON SOURCE  
 MONO SHUTTER ASSEMBLY

SEE PARTS LIST

01 ADDED ITEMS 25-30, SHIT 2

DATE: 5/19/70  
 BY: J. W. HEN  
 CHECKED: J. W. HEN

SECTION A-A  
 SECTION C-C  
 SECTION B-B

BEAM DIRECTION → (26.50 [673.10])

(24.58 [624.48])  
 (2.84 [72.09])  
 (5.15 [130.81])  
 (.71 [18.01])  
 (12.25 [311.15])

# AES Support

Support Request Tracking System

Welcome back, **hoytman** | [Admin Panel](#) | [My Preference](#) | [Log Out](#)

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- [Directory](#)
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- [Open \(27\)](#)
- [Answered \(3\)](#)
- [Closed Tickets](#)
- [New Ticket](#)

Ticket #975867 \_

[Edit Ticket](#)

<b>Status:</b>	open	<b>Name:</b>	Alec Sandy
<b>Priority:</b>	High	<b>Location:</b>	432 D007
<b>Department:</b>	Vacuum Support	<b>Email:</b>	asandy@anl.gov <a href="#">(4)</a>
<b>Create Date:</b>	03/01/2016 3:00 pm	<b>Phone:</b>	2-0281
<b>Cost Code:</b>	60337-02-132	<b>Source:</b>	Web

Subject: Remove and replace mono/shutter transition pieces

<b>Assigned Staff:</b>	- unassigned -	<b>Help Topic:</b>	Vacuum
<b>Last Response:</b>		<b>IP Address:</b>	164.54.116.64
<b>Due Date:</b>		<b>Last Message:</b>	03/01/2016 3:00 pm

Action:  Priority:

## [Ticket Thread](#)

**Tue, Mar 1 2016 3:00pm**

Remove existing transition vacuum pieces coupling 8-ID-E mono to 8-ID-E shutter and 8-ID-E shutter chamber to 8-ID-E beamline. Replace with new pieces of similar but different design. Work to commence during the last week of 2016-1 (April 19, 2016) with the goal of pumping the chamber down and open gate valves before the cycle ends. Working space for half the work is small (8-ID-D).

[Post Reply](#)

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[Dept. Transfer](#)

[Assign to Staff](#)

Canned Response:   Append