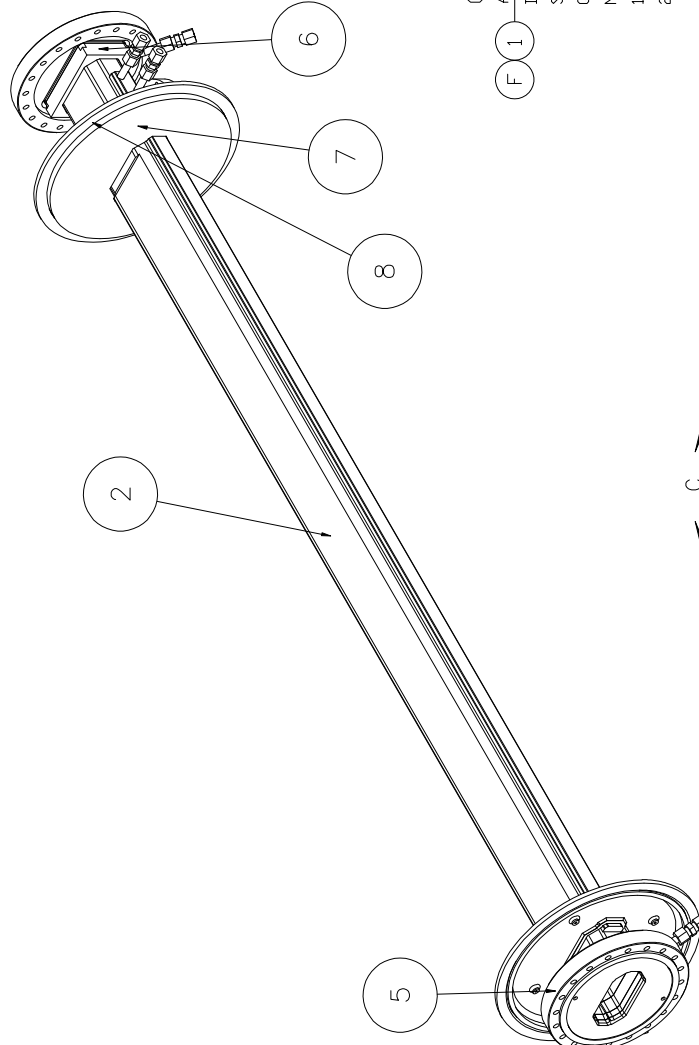


REVISIONS		DATE	APP.
SWK	ENK		
A		7/29/02	KWS
B		9/19/03	TH

Significant revs for production versions
Revs to part #2 reflected in asm view



CESR-c 7-40 WIGGLER CRYOSTAT BEAM PIPE ASSEMBLY

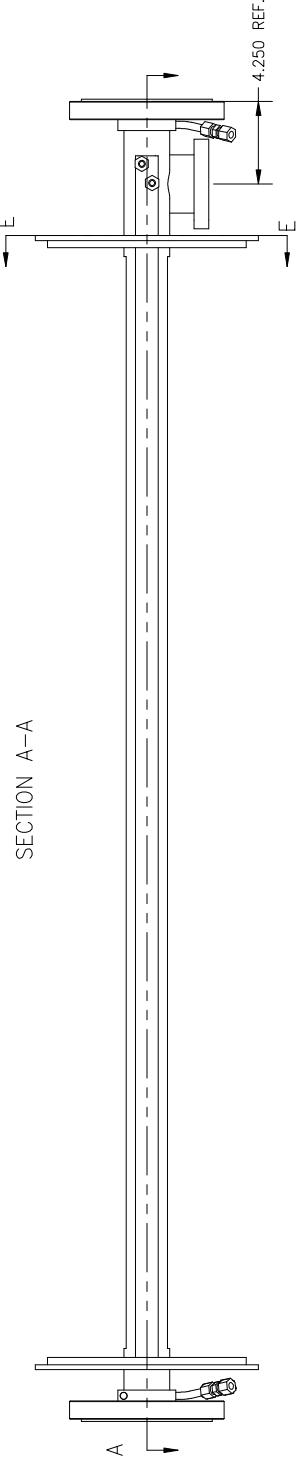
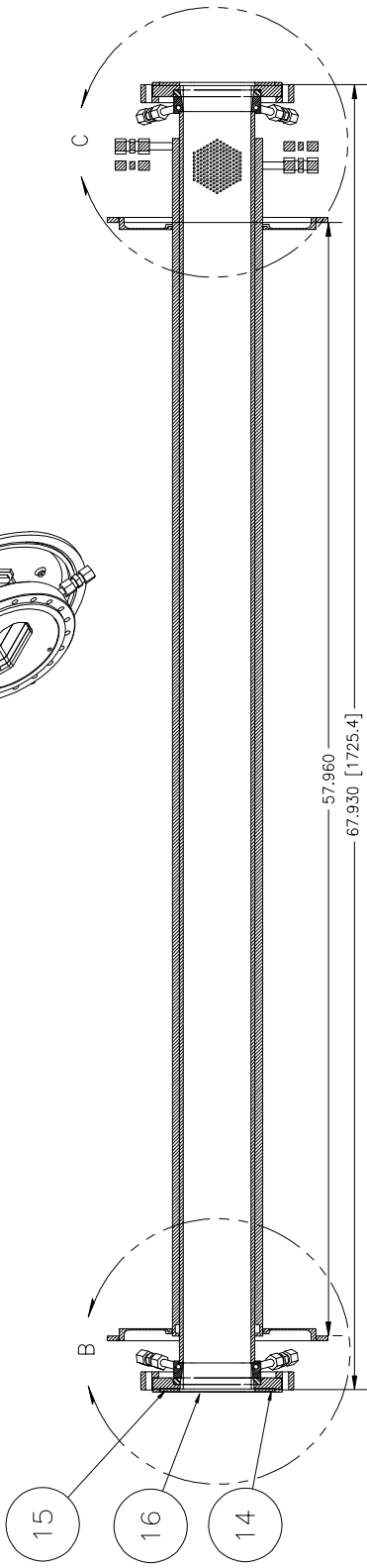
D-6070-005-01 & D-6070-005-02

SCALE: 1:4

QTY: 1 REQ'D.

NOTE:

1. SEE SHEET D-6070-005-02 FOR MORE DETAILS
2. FLEXIBLE DISKS (#7) WILL BE WELDED BEFORE
Cu-SS TRANSITIONS (#6) ARE WELDED
3. ALL 3/8" TUBES (#11 & #13) WILL BE WELDED LAST
4. END ADAPTER RINGS (#8) WILL BE WELDED IN SITU AFTER THE BEAM PIPE IS INSTALLED IN CRYOSTAT
5. ALL FITTINGS (#12) WILL BE INSTALLED AFTER THE BEAM PIPE IS INSTALLED IN CRYOSTAT
6. ATTACH RF INSERT BY SCREWS (#17) WITH VENTING HOLE



SECTION A-A

ITEM	QTY	DESCR	REV.
18	6070-005-10	WATER LINE PLUG	2
17	SST FLAT SCREW #4-40x3/16	4	WITH VENTING HOLE PURCHASED INSTRU. SPECIALTIES INC.
16	RF FINGER STOCK	4	
15	6070-005-10	THICK GASKET	2
14	6070-005-10	RF INSERT	2
13	6070-005-10	TUBE 3/8"	4
12	FITTING 3/8"	8	PURCHASED
11	6070-005-10	TUBE ELBOW 3/8"	4
10	4 5/8" FLANGE	1	PURCHASED
9	6070-005-10	PUMP PORT TUBE 3" OD	1
8	6070-005-10	END ADAPTER RING	2
7	6070-005-09	FLEXIBLE DISK	2
6	6070-005-06	SS-Cu TRANSITION	2
5	6070-005-07	8" ROTATABLE FLANGE W OVAL	2
4	6070-005-08	COOLING CHANNEL - 02	1
3	6070-005-04	COOLING CHANNEL - 01	1
2	6070-005-03	SLAC Cu PIPE	1
1	6070-005-02	BEAM PIPE ASSEMBLY	X
	6070-005-01		

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN
TOLERANCES ON:
.001-1.000 .0015 / M
1.001-1.500 .002 / M
1.501-3.000 .003 / M
ALL SURFACES
R/16

PRINT DATE MAY 19, 2003
PLOT FILE NAME z:\new\cvs\cvs\6070-005-01 CESR-c 7-40 Wiggler Cryostat Beam Pipe Asm.dwg
DISTR. CR-1
6070-005

CORNELL UNIVERSITY
LEPP
LABORATORY FOR ELEMENTARY PARTICLE PHYSICS
P.O. BOX 1485
ITHACA, NY 14853

CESR-c 7-40 Wiggler Cryostat Beam Pipe Assembly - Sheet 1

DRAWN BY Yur He
CHECKED BY Yur He
APPROVED BY Yur He

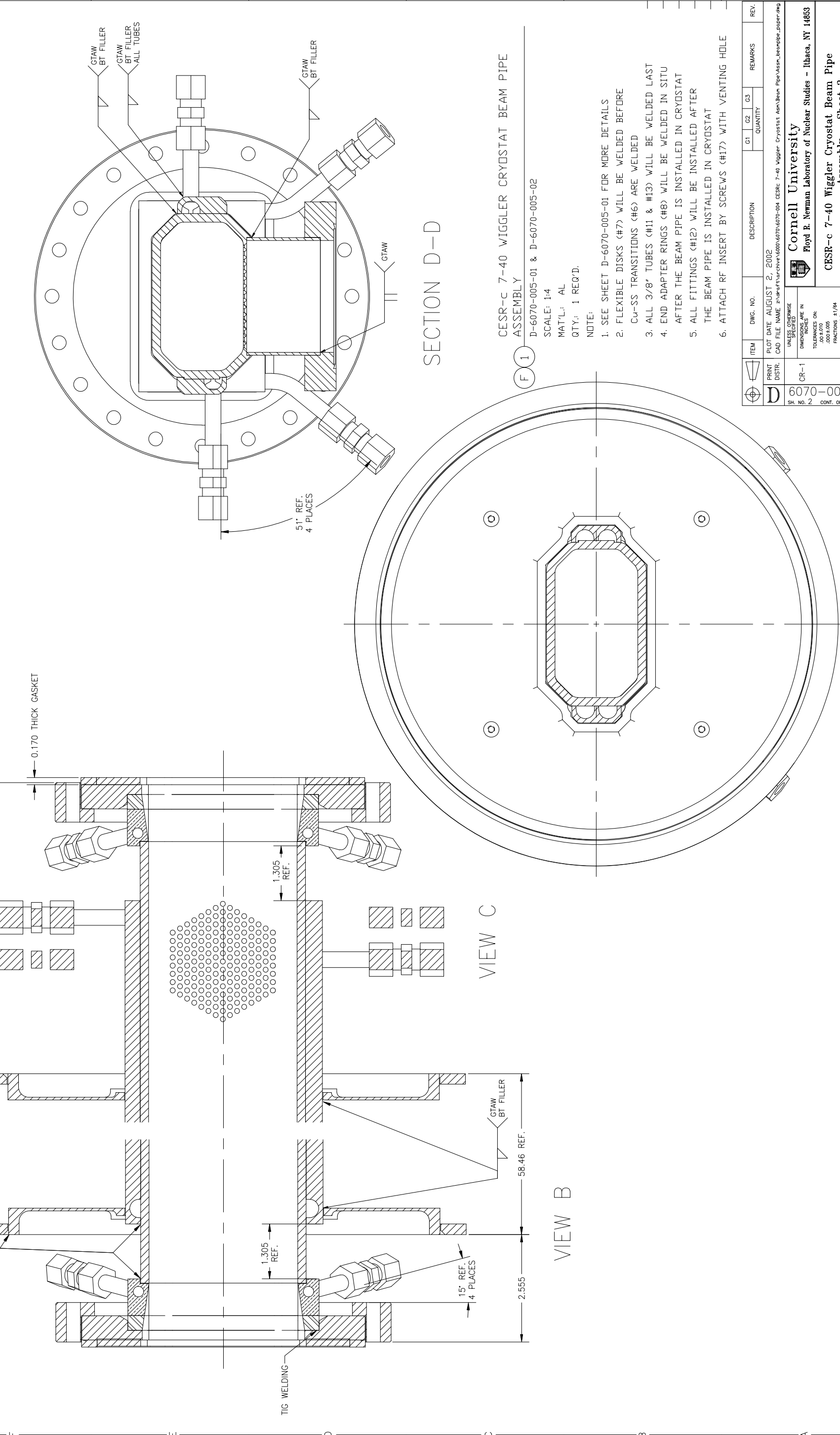
DRAWN FOR DATE
SCALE
SCALE 1:4

6070-005
CONT. ON 2

FOR MACHINING LUBRICANT USE ONLY
ALKALINE DETERGENT LUBRICANT CIMSTAR 40
OR EQUIVALENT APPROVED BY CORNELL LEPP.

REVISIONS		DATE	APP.
SYN.	ZONE		
A		3/21/02	NBM
B		7/29/02	KWS

Added ref scribes and ref dims. KWS
 Significant revs for production versions



SECTION D-D

CESR-c 7-40 WIGGLER CRYOSTAT BEAM PIPE ASSEMBLY

D-6070-005-01 & D-6070-005-02

SCALE: 1:4

MAT'L: AL

QTY: 1 REQ'D.

NOTE:

1. SEE SHEET D-6070-005-01 FOR MORE DETAILS
2. FLEXIBLE DISKS (#7) WILL BE WELDED BEFORE CU-SS TRANSITIONS (#6) ARE WELDED
3. ALL 3/8" TUBES (#11 & #13) WILL BE WELDED LAST
4. END ADAPTER RINGS (#8) WILL BE WELDED IN SITU AFTER THE BEAM PIPE IS INSTALLED IN CRYOSTAT
5. ALL FITTINGS (#12) WILL BE INSTALLED AFTER THE BEAM PIPE IS INSTALLED IN CRYOSTAT
6. ATTACH RF INSERT BY SCREWS (#17) WITH VENTING HOLE

F 1

ITEM	DWG. NO.	DESCRIPTION	QTY	G1	G2	G3	REMARKS	REV.
PRINT		PLOT DATE: AUGUST 2, 2002						
DISTR.		CAD FILE NAME: z:\soft\cvs\beam\6070\6070-004_CESR-c_7-40_Wiggler_Cryostat_Asm\Beam_Pipe_Visss_000000.dwg						
6070-005		UNLESS OTHERWISE SPECIFIED						
2		DIMENSIONS ARE IN INCHES						
2		TOLERANCES ON FRACTIONS: 1/64						
3		000±0.005						
		ANGLES: ±0.5						
		ALL SURFACES						
		BY						
		CHECKED BY: Yun He						
		DRAWN BY: Yun He						
		DATE: 02/11/02						
		SCALE: 1:1						
		APPROVED BY: Yun He						

Cornell University
 Floyd B. Newman Laboratory of Nuclear Studies - Ithaca, NY 14853

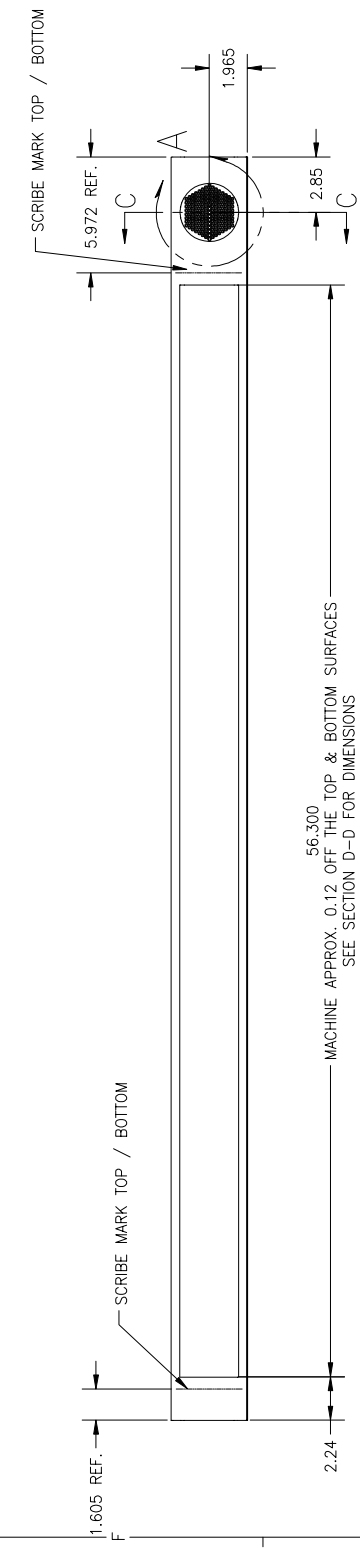
CESR-c 7-40 Wiggler Cryostat Beam Pipe Assembly - Sheet 2

FOR MACHINING LUBRICANT USE ONLY
 ALKALINE DETERGENT LUBRICANT CIMSTAR 40
 OR EQUIVALENT APPROVED BY CORNELL LNS.

SECTION E-E

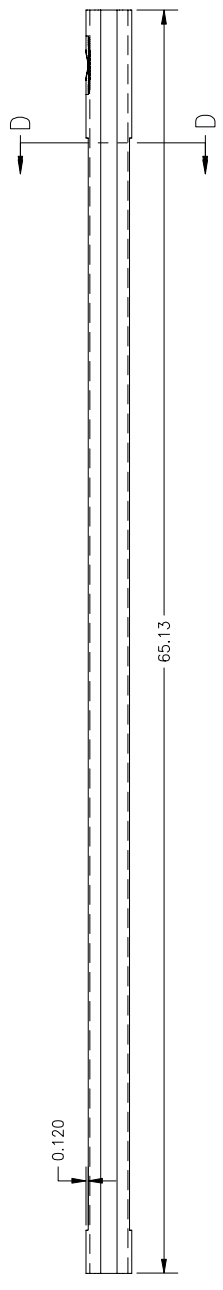
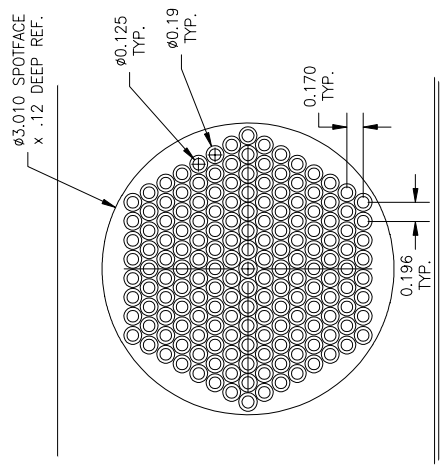
REV	DATE	BY	SCALE	SH. NO.	CONT. ON
1	02/11/02	N. Mistry	1:1	D	2
2					3

REVISIONS		DATE	APP.
SW	ENGR		
A		3/28/02	NBM
B		7/29/02	KWS
C	E7	5/19/03	YH

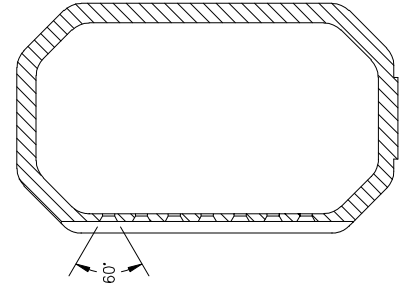


MACHINE APPROX. 0.12 OFF THE TOP & BOTTOM SURFACES
SEE SECTION D-D FOR DIMENSIONS

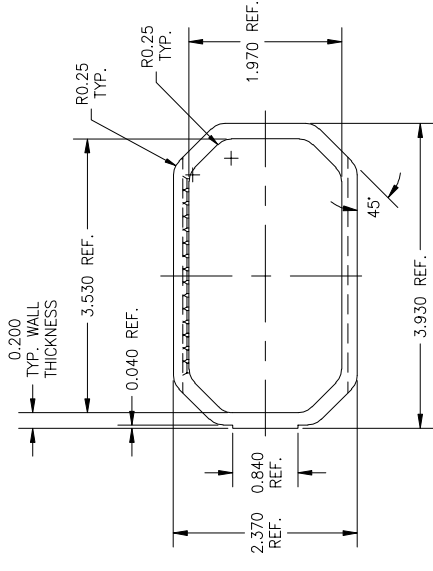
Row	Holes
H	8
G	9
F	10
E	11
D	12
C	13
B	14
A	15



DETAIL A
5X SCALE

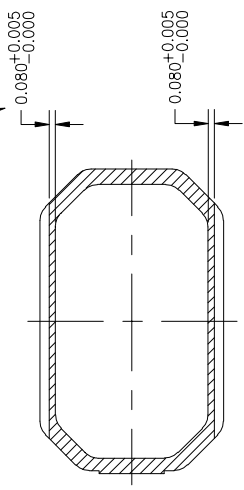


SECTION C-C
5X SCALE



VIEW B - REFERENCE DIMENSIONS
4X SCALE

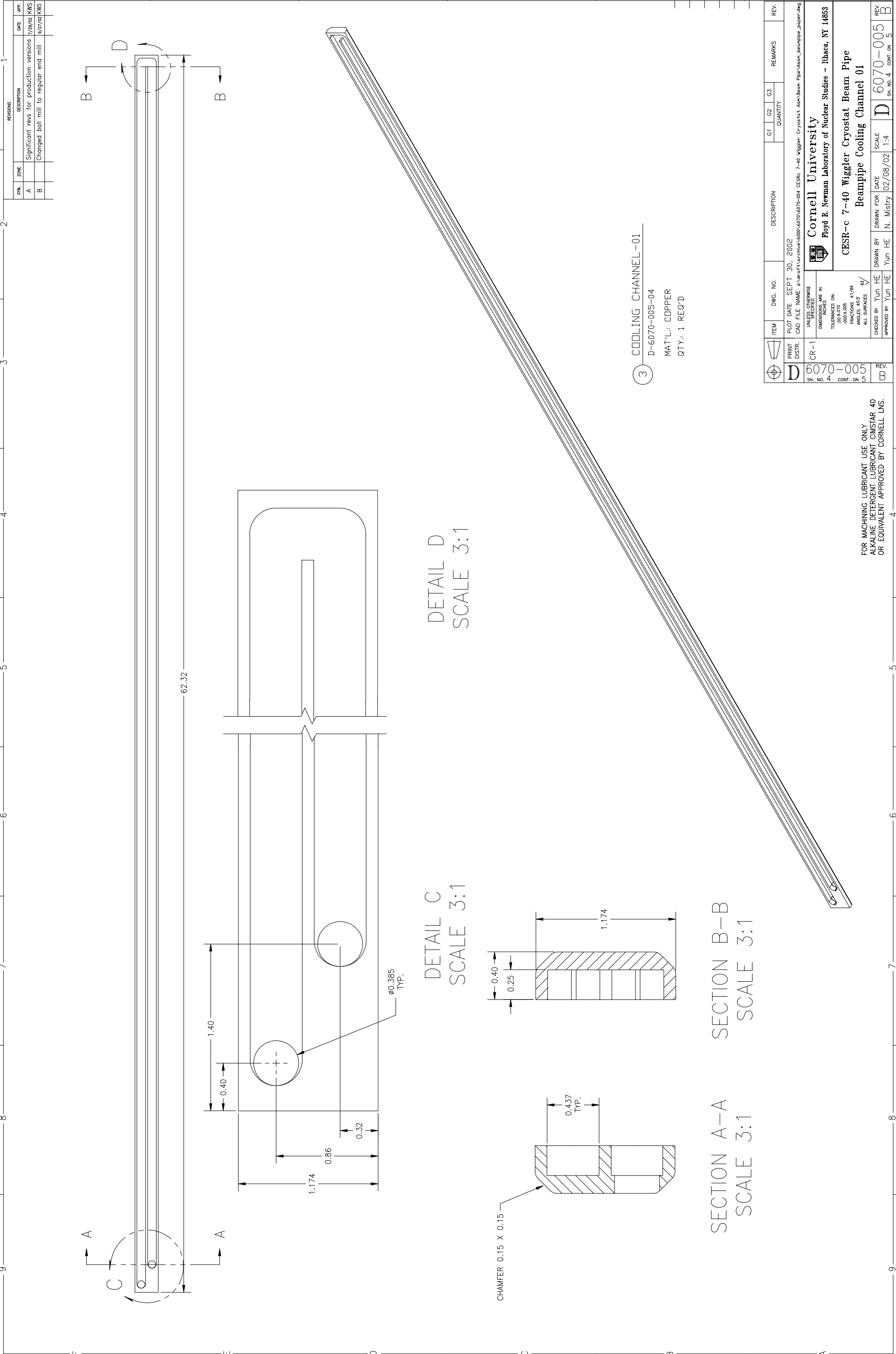
NOTE: MEASURE WALL THICKNESS FIRST
DO NOT REDUCE BELOW 0.080



SECTION D-D
4X SCALE

② SLAC BEAM PIPE
D-6070-005-03
MAT'L: COPPER
QTY: 1, MODIFIED FROM SLAC CU PIPE

ITEM	DWG. NO.	DESCRIPTION	Q1	Q2	Q3	REMARKS	REV.
D	6070-005-03	SLAC BEAM PIPE					
PRINT DATE: MAY 19, 2003 CAD FILE NAME: Z:\work\csm\6070-005-03.dwg UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES ON: .000-0.006 ANGLES 15°/30°/45° .000-0.006 ALL SURFACES .000-0.006 ALL SURFACES .000-0.006 ALL SURFACES							
DRAWN BY: YUN HE CHECKED BY: YUN HE APPROVED BY: YUN HE							
DRAWN FOR: DATE: 02/11/02 SCALE: 1/4 DRAWING NO.: 6070-005-03 SHEET NO.: 3 OF 4							
CORNELL UNIVERSITY LABORATORY FOR ELEMENTARY PARTICLE PHYSICS LEPP CESR-c 7-40 Wiggler Cryostat Beam Pipe SLAC Beam Pipe							
FOR MACHINING LUBRICANT USE ONLY ALKALINE DETERGENT LUBRICANT CIMSTAR 40 OR EQUIVALENT APPROVED BY CORNELL LEPP.							



3 COOLING CHANNEL -01
 D-6070-005-04
 MAT'L: COPPER
 QTY: 1 REQ'D

DETAIL D
 SCALE 3:1

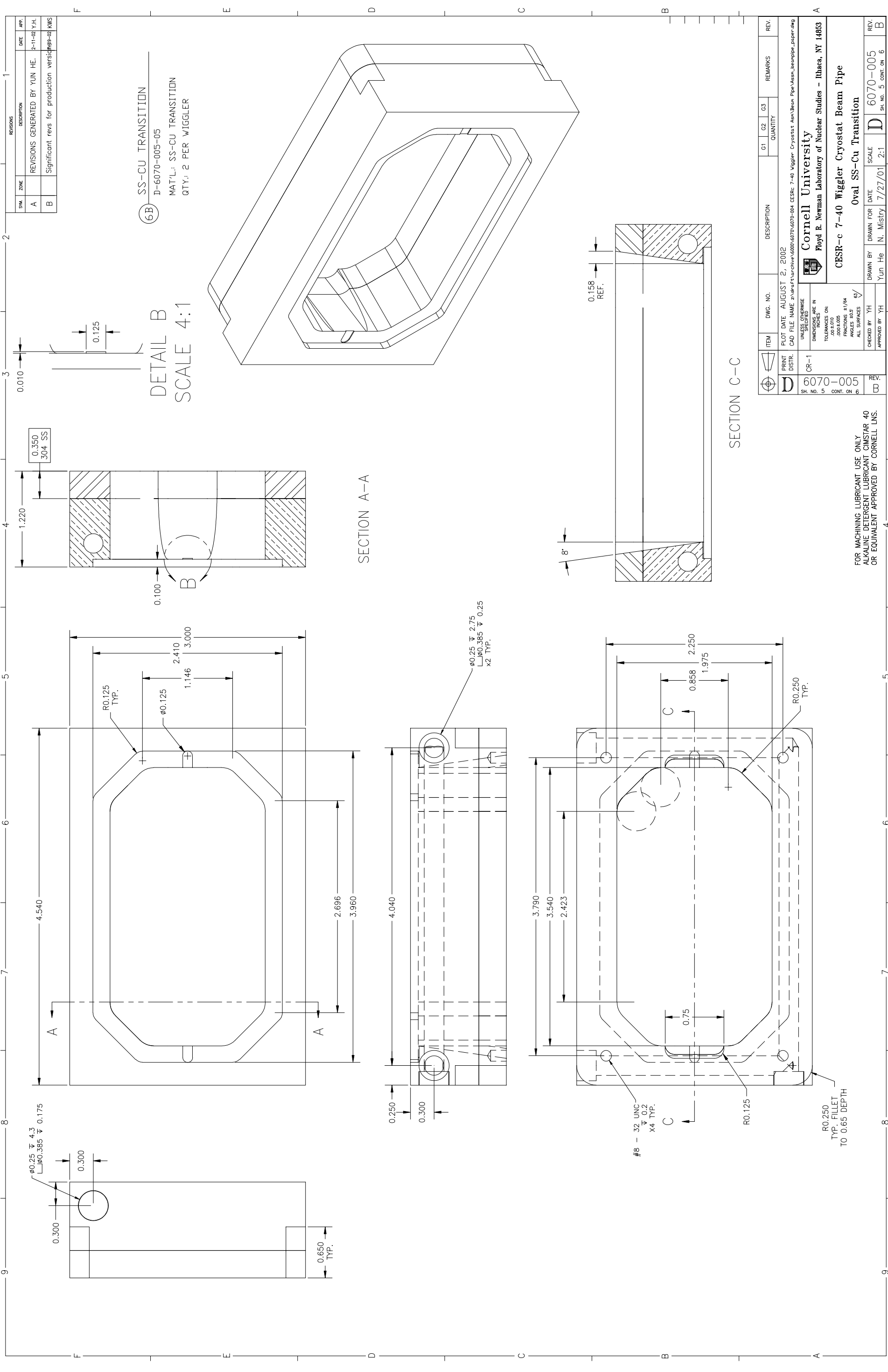
DETAIL C
 SCALE 3:1

SECTION A-A SECTION B-B
 SCALE 3:1 SCALE 3:1

FOR MACHINING LUBRICANT USE ONLY
 ALKALINE DETERGENT LUBRICANT CIMSTAR 40
 OR EQUIVALENT APPROVED BY CORNELL LNS.

REVISIONS		SYN.	ZONE	DESCRIPTION	DATE	APP.
A				Significant revs for production versions	7/29/02	KMS
B				Changed ball mill to regular end mill	9/27/02	KMS

ITEM	DWG. NO.	DESCRIPTION	QUANTITY	REMARKS	REV.
D	6070-005	CR-1			
PRINT DATE: SEPT. 30, 2002 PLOT FILE NAME: s:\net\archibee\6000\6070\6070-004 CESRc 7-40 Wiggler Cryostat Beam Pipe\Visa_BeamPipe_piper.dwg UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES ON: 0.001±0.005 FRACTIONS ±1/64 ANGLES ±0.5° ALL SURFACES ✓ CHECKED BY: Yun HE DRAWN BY: Yun HE APPROVED BY: Yun HE DRAWN FOR DATE: 10/2/02 SCALE: 1:4 SH. NO. 4 CONT. ON 5 D 6070-005 REV. B					
Cornell University Floyd B. Newman Laboratory of Nuclear Studies - Ithaca, NY 14853 CBSR-c 7-40 Wiggler Cryostat Beam Pipe Beampipe Cooling Channel 01					



REVISIONS		DATE	APP.
SYN.	ZONE		
A		2-11-02	Y.H.
B		7/27/01	KWS

(6B) SS-CU TRANSITION
 D-6070-005-05
 MAT'L: SS-CU TRANSITION
 QTY: 2 PER WIGGLER

DETAIL B
 SCALE 4:1

SECTION A-A

SECTION C-C

ITEM	DWG. NO.	DESCRIPTION	Q1	Q2	Q3	REMARKS	REV.
PRINT							
DISTR.							
CR-1							

PLOT DATE AUGUST 2, 2002
 CAD FILE NAME z:\ref\archive\6070\6070-04 CESRc 7-40 Wiggler Cryostat Asm\Beam Pipe\sscu_transition.dwg
 UNLESS OTHERWISE SPECIFIED:
 DIMENSIONS ARE IN INCHES
 TOLERANCES ON:
 FRACTIONS ±1/64
 DECIMALS ±0.005
 ALL SURFACES 63/

CHECKED BY YH
 APPROVED BY YH

DRAWN BY YUN HE
 DATE 7/27/01
 SCALE 2:1

D 6070-005
 5 5 CONT. ON 6

Cornell University
 Floyd R. Newman Laboratory of Nuclear Studies - Ithaca, NY 14853

CESR-c 7-40 Wiggler Cryostat Beam Pipe
 Oval SS-Cu Transition



D 6070-005
 5 5 CONT. ON 6

FOR MACHINING LUBRICANT USE ONLY
 ALKALINE DETERGENT LUBRICANT CIMSTAR 40
 OR EQUIVALENT APPROVED BY CORNELL LNS.

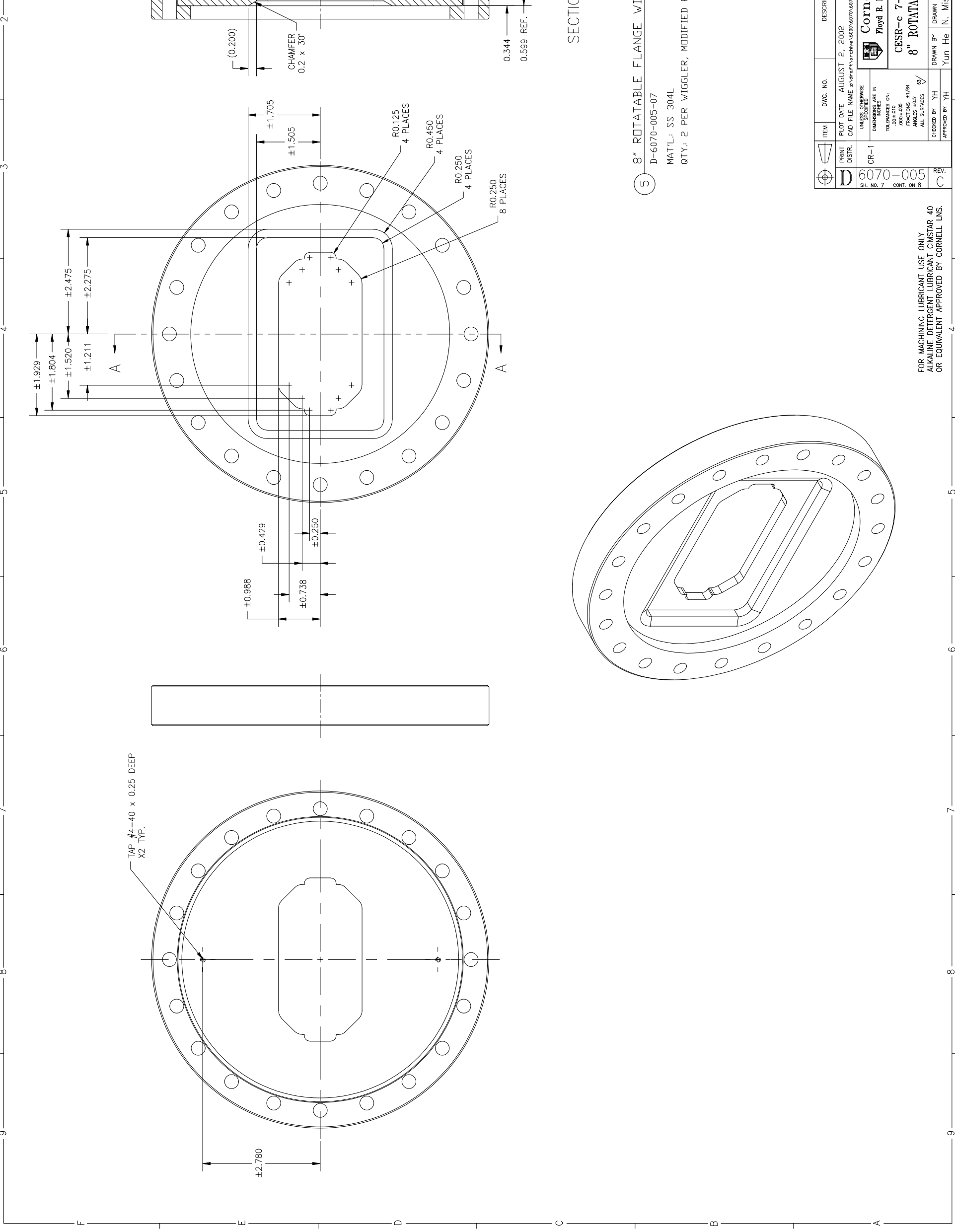
REVISIONS			
SYN.	ZONE	DESCRIPTION	DATE
A		REVISIONS GENERATED BY YUN HE.	2-11-02 Y.H.
B		PRELIM VIEWS DELETED, SEE SH. 5 (TOP)	7-29-02 MWS

THIS SHEET INTENTIONALLY LEFT BLANK.
(WAS PRELIMINARY MACHINING FOR SS-Cu TRANSITION
NOW DEFINED ENTIRELY ON SH. 5)

FOR MACHINING LUBRICANT USE ONLY
ALKALINE DETERGENT LUBRICANT CIMSTAR 40
OR EQUIVALENT APPROVED BY CORNELL LNS.

ITEM	DWG. NO.	DESCRIPTION	Q1	Q2	Q3	REMARKS	REV.
 D SH 6 NO 6 CONT. ON 7	6070-005	PRINT DATE: JULY 29, 2002 PLOT FILE NAME: Z:\net\archive\6070\6070\6070\Wiggle_Cryostat_Arm\Beam_pipe\Cont_Cu_ss.dwg UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2000 ±.005 FRACTIONS ±1/64 ANGLES ±0.5 ALL SURFACES					
 D SH 6 NO 6 CONT. ON 7	6070-005	CHECKED BY: YH APPROVED BY: YH				DRAWN FOR DATE: N. Mistry 7/27/01 DRAWN BY: Yun HE	SCALE: 1:1 REV. D 6070-005 SH. NO. 6 CONT. ON 7
Cornell University Floyd B. Newman Laboratory of Nuclear Studies - Ithaca, NY 14853		CESR-c 7-Pole 40cm Wiggler Cryostat Beam Pipe					

REVISIONS		DATE	APP.
A	REVISIONS GENERATED BY YUN HE.	2-11-02	Y.H.
B	ADDED NOTE FOR WELD RELIEF (TOC)	4-19-02	KWS
C	Significant revs for production versions	7-30-02	KWS



5 8" ROTATABLE FLANGE WITH SLAC APERTURE
 D-6070-005-07
 MAT'L: SS 304L
 QTY: 2 PER WIGGLER, MODIFIED FROM PURCHASED FLANGE

ITEM	DWG. NO.	DESCRIPTION	Q1	Q2	Q3	REMARKS	REV.
D	6070-005	8" ROTATABLE FLANGE WITH SLAC APERTURE					C

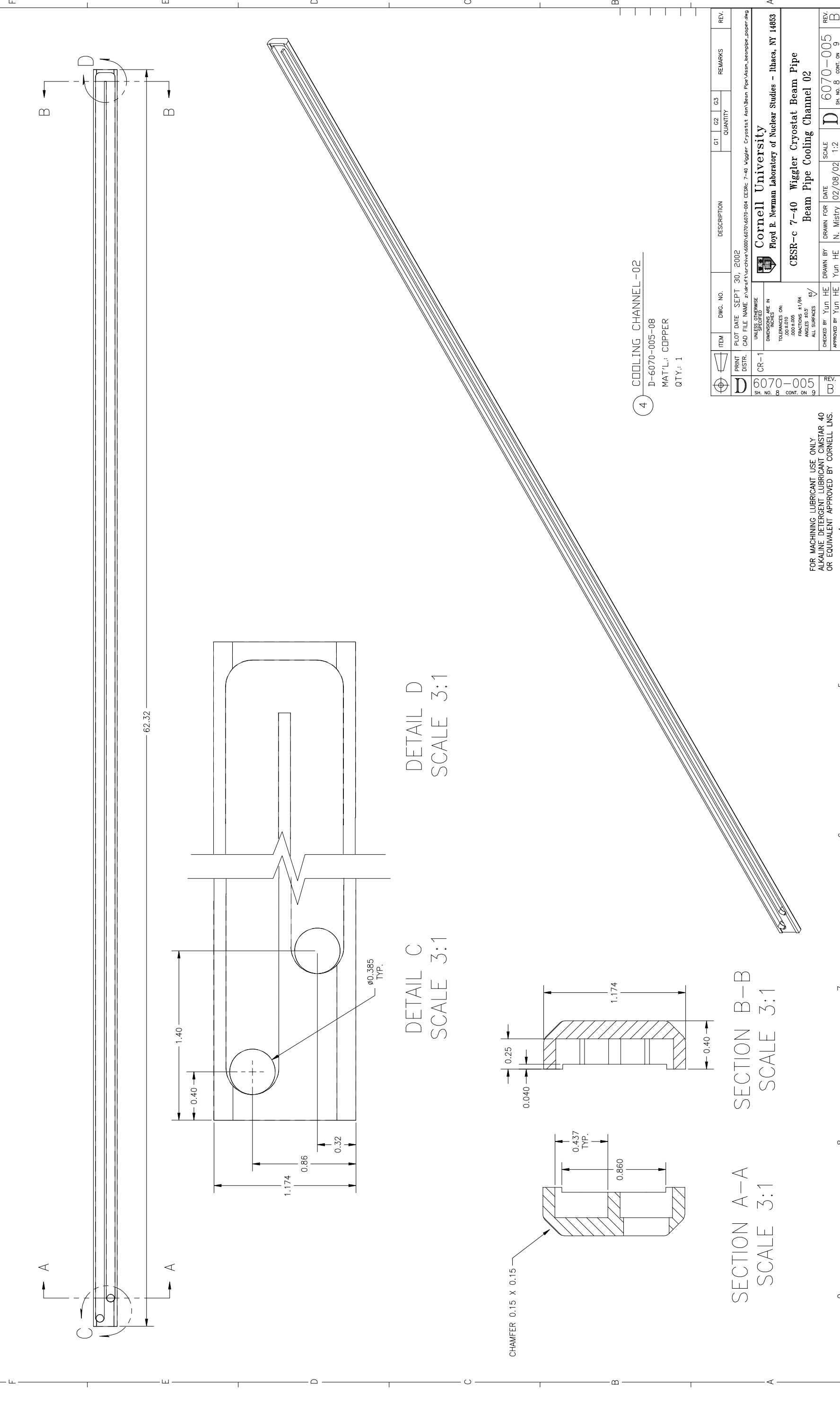
PRINT DISTR.	CR-1	PLOT DATE	AUGUST 2, 2002
CAD FILE NAME	z:\aer\cvs\hvac\6008\6070\6070-004 CESRc 7-40 Wiggler Cryostat Asm\Beam Pipe\Asm_beampipe_piper.dwg		
UNLESS OTHERWISE SPECIFIED	DIMENSIONS ARE IN INCHES		
TOLERANCES ARE:	FRACTIONS ±1/64		
	DECIMALS ±0.005		
	ANGLES ±0.5		
	ALL SURFACES		
CHECKED BY	YH	DATE	7/11/01
APPROVED BY	YH	SCALE	1:1
DRAWN BY	Yun He	DATE	7/11/01
REV.	D	6070-005	CONT. ON 8

FOR MACHINING LUBRICANT USE ONLY
 ALKALINE DETERGENT LUBRICANT CIMSTAR 40
 OR EQUIVALENT APPROVED BY CORNELL LNS.

Cornell University
 Floyd B. Newman Laboratory of Nuclear Studies - Ithaca, NY 14853

CESR-c 7-40 Wiggler Cryostat Beam Pipe
 8" ROTATABLE FLANGE WITH SLAC APERTURE

SYN. ZONE		DESCRIPTION	DATE	APP.
A		Significant revs for production versions	7/29/02	KWS
B		Changed ball mill to regular end mill	8/27/02	KWS



4 COOLING CHANNEL-02
 D-6070-005-08
 MAT'L: COPPER
 QTY.: 1

DETAIL D
 SCALE 3:1

DETAIL C
 SCALE 3:1

SECTION A-A
 SCALE 3:1

SECTION B-B
 SCALE 3:1

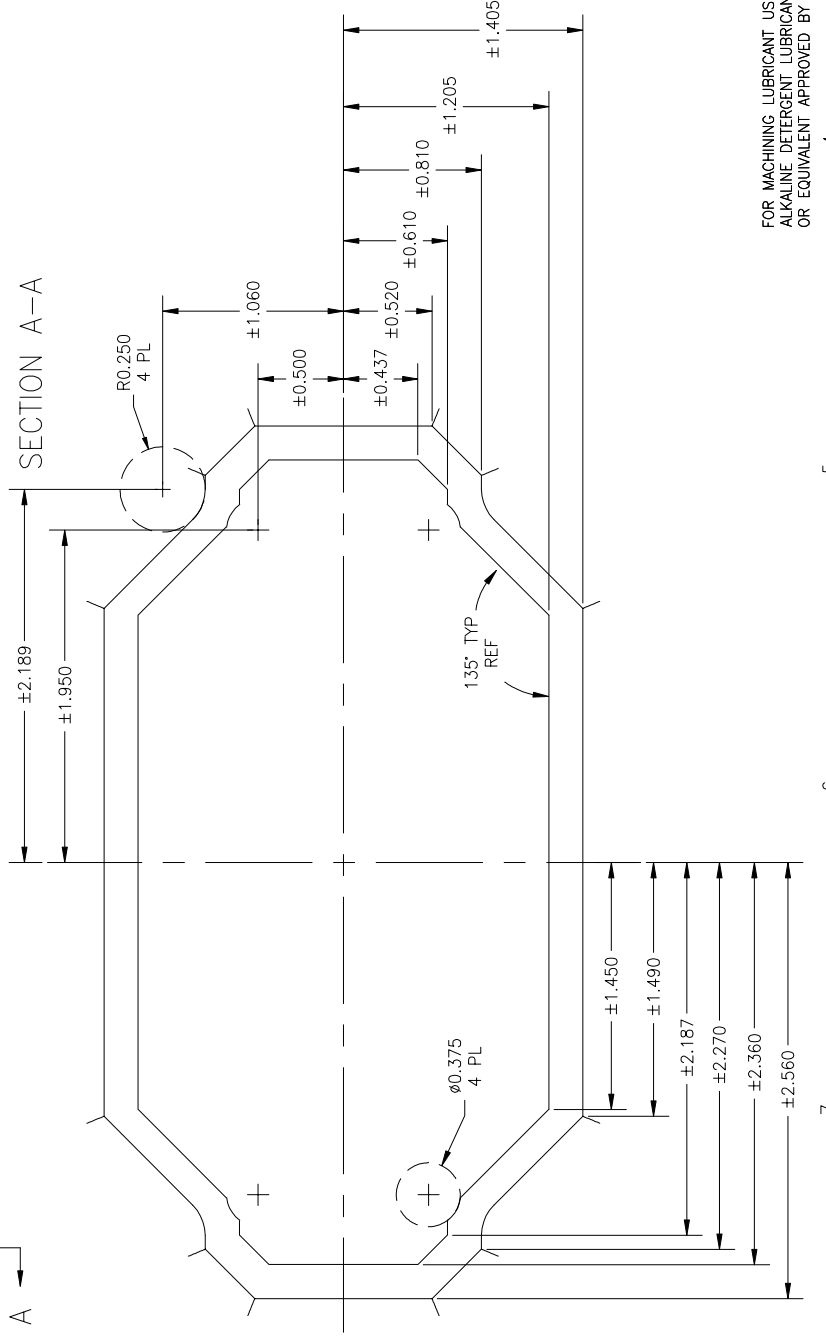
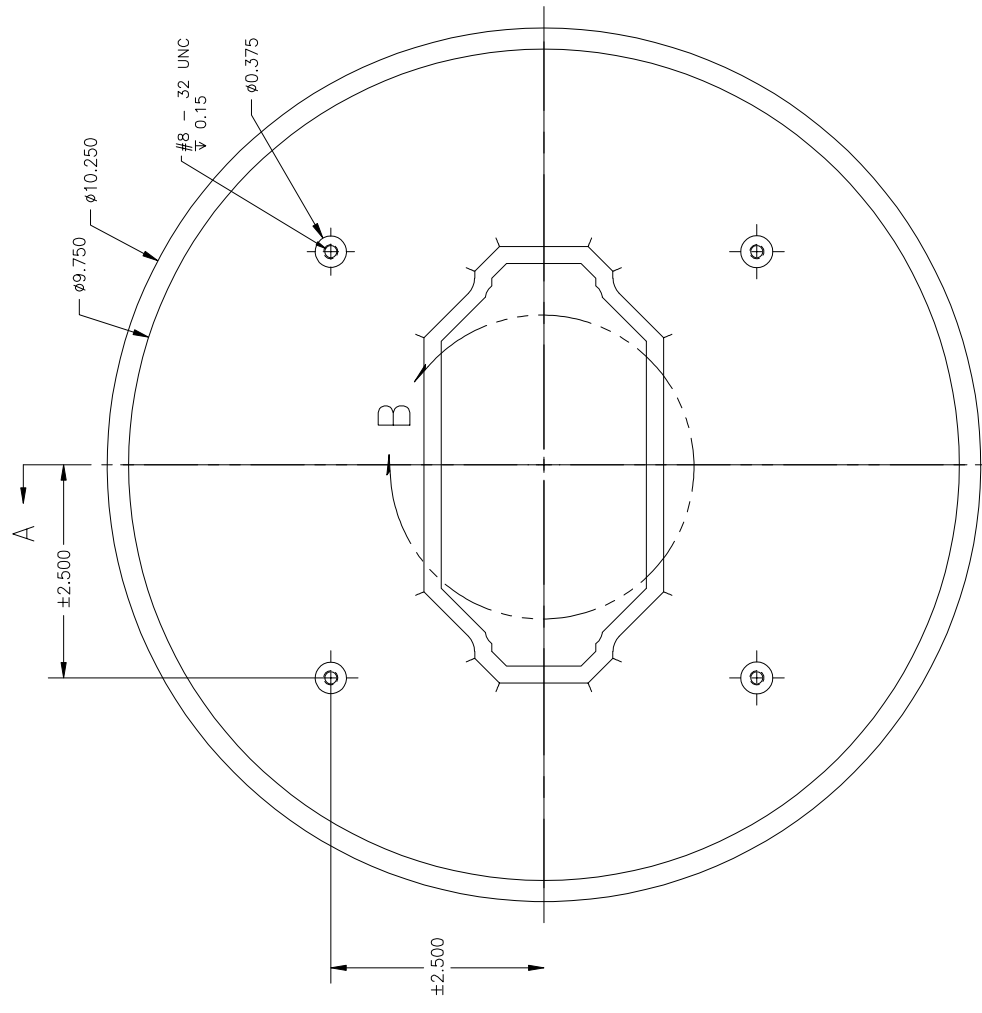
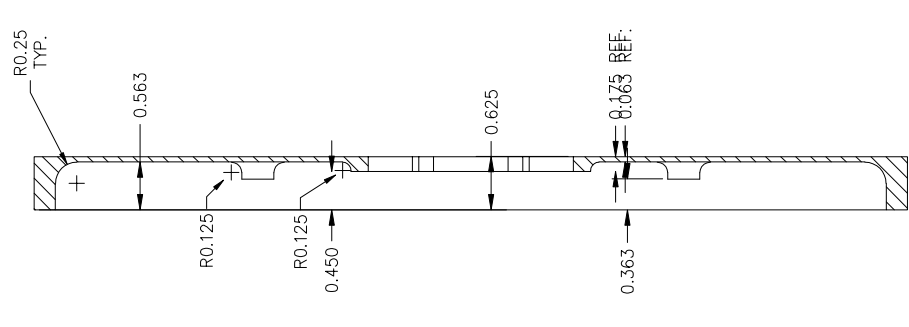
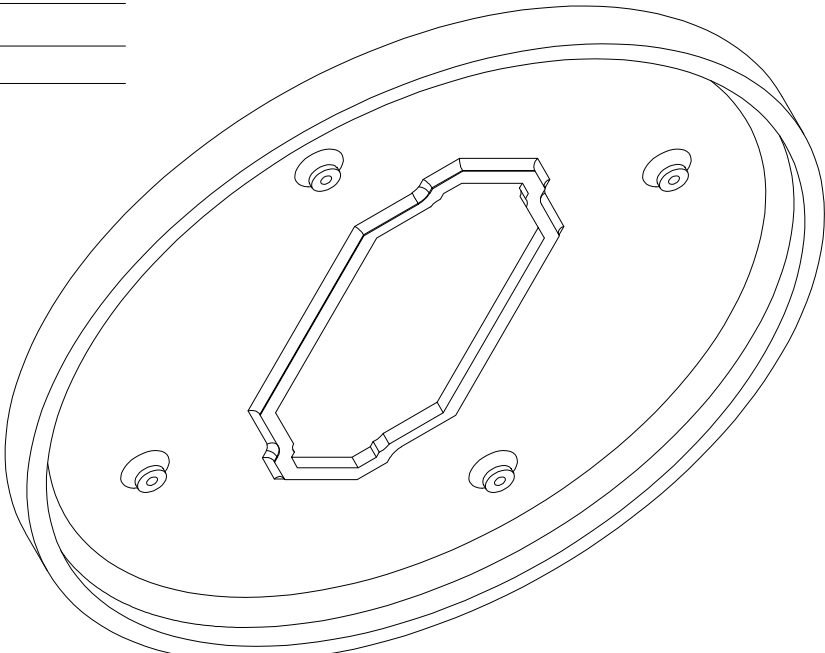
FOR MACHINING LUBRICANT USE ONLY
 ALKALINE DETERGENT LUBRICANT CIMSTAR 40
 OR EQUIVALENT APPROVED BY CORNELL LNS.

ITEM	DWG. NO.	DESCRIPTION	QTY	REMARKS	REV.
1	D-6070-005-08	COOLING CHANNEL-02			

PRINT	PLOT DATE	SEPT. 30, 2002
DISTR.	CAD FILE NAME	d:\net\archive\6070\6070-004_CESRc_7-40_Wiggler_Cryostat_Ann\Beam_Pipe_Vass_kneppipe_paper.dwg
CR-1	UNLESS OTHERWISE SPECIFIED	
	DIMENSIONS ARE IN INCHES	
	TOLERANCES ARE:	
	0.001 ± 0.005	
	FRACTIONS ± 1/64	
	ANGLES ± 0.5	
	ALL SURFACES	✓
	CHECKED BY	Yun HE
	DRAWN BY	Yun HE
	DATE	02/08/02
	SCALE	1:2
	APPROVED BY	N. Mistry

Cornell University	
Floyd B. Newman Laboratory of Nuclear Studies - Ithaca, NY 14853	
CBSR-c 7-40 Wiggler Cryostat Beam Pipe	
Beam Pipe Cooling Channel 02	
6070-005	REV. B
CONT. ON 8	SH. NO. 8 CONT. ON 9

REVISIONS			
SYN.	ZONE	DESCRIPTION	DATE
A		ADDED HUB HEIGHT DIM. TMK	3/12/02 YH
B		Significant revs for production versions	7/29/02 KWS
C		REMOVED Ø30 MATL FROM 135° SIDES (4 PLACES) & ±1.450 WAS ±1.407 JGL	7/6/03 YH



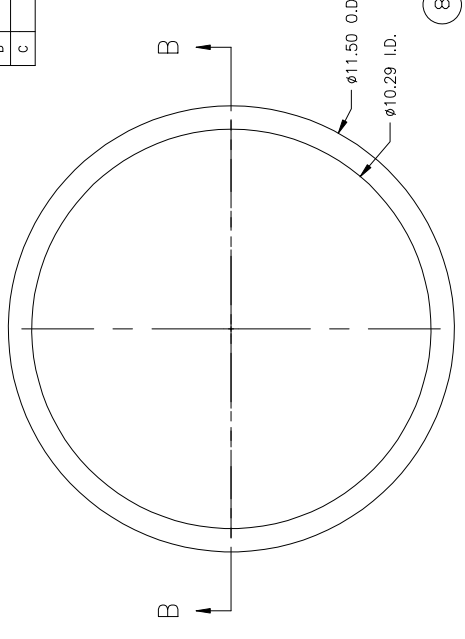
DETAIL B
SCALE 2:1

7 FLEXIBLE DISK
D-6070-005-09
SCALE 1:1
MAT'L: SS 304L
QTY: 2

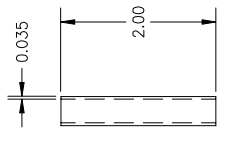
ITEM	DWG. NO.	DESCRIPTION	QUANTITY	REMARKS	REV.
D	6070-005	FLEXIBLE DISK			C
PRINT DATE: FEBRUARY 6, 2003 PLOT FILE NAME: \\afs01\work\6070-004\6070-004_CESRC_7-40_Wiggler_Cryostat_Asn\Bran_Pipe_Vasm_leanpipe_paper.dwg UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES ±0.005 TOLERANCES ON FRACTIONS ±1/64 ANGLES ±0.5° ALL SURFACES BY ✓					
Cornell University Floyd B. Newman Laboratory of Nuclear Studies - Ithaca, NY 14853 CBSR-c 7-40 Wiggler Cryostat Beam Pipe FLEXIBLE DISK					
APPROVED BY	Yun HE	DRAWN BY	N. Mistry	DATE	02/11/02
CHECKED BY	Yun HE	SCALE	1:1	REV.	6070-005
				SH. NO. 9	CONT. ON 10

FOR MACHINING LUBRICANT USE ONLY
ALKALINE DETERGENT LUBRICANT CIMSTAR 40
OR EQUIVALENT APPROVED BY CORNELL LNS.

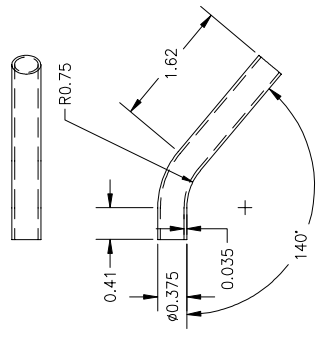
REV. NO.		DATE	DESCRIPTION
1	ADDED SH. 11	4/7/02	KWS
2	Significant revs for production versions	7/29/02	KWS
3	Minor revs to aperture of Pnt #14	7/29/02	YL



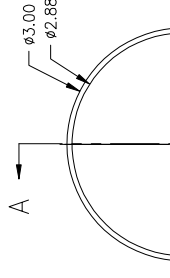
8 END ADAPTER RING
D-6070-005-10
SCALE 1:2
MAT'L: SS 304L
QTY: 2



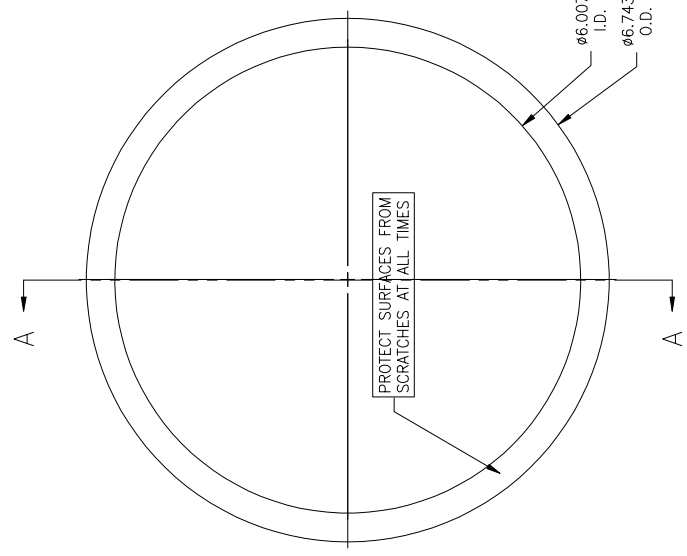
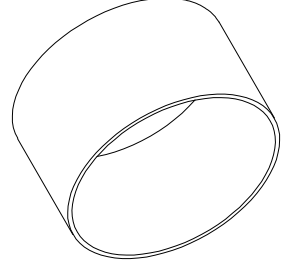
13 TUBE 3/8"
D-6070-005-10
MAT'L: SS 304L
QTY: 4



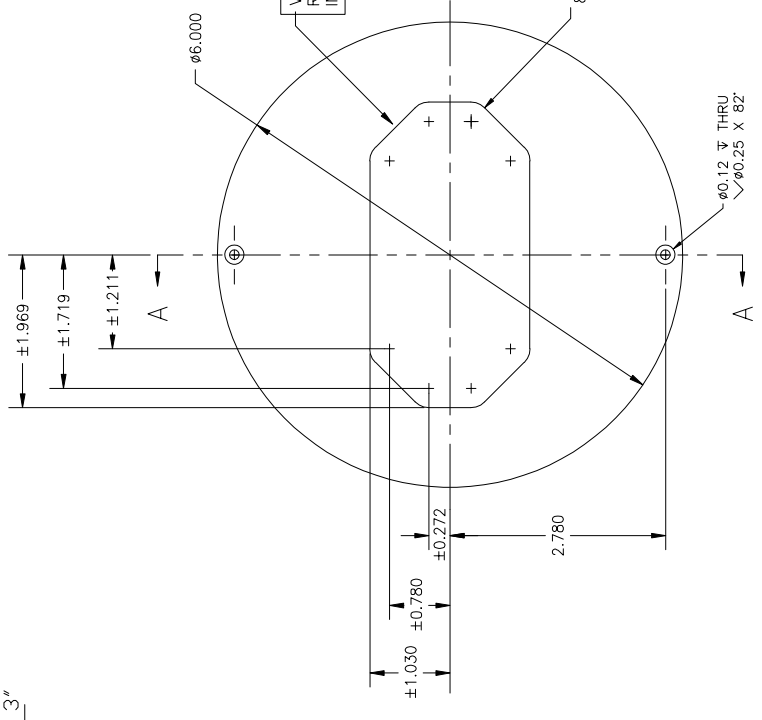
11 TUBE ELBOW 3/8"
D-6070-005-10
MAT'L: SS 304L
QTY: 4



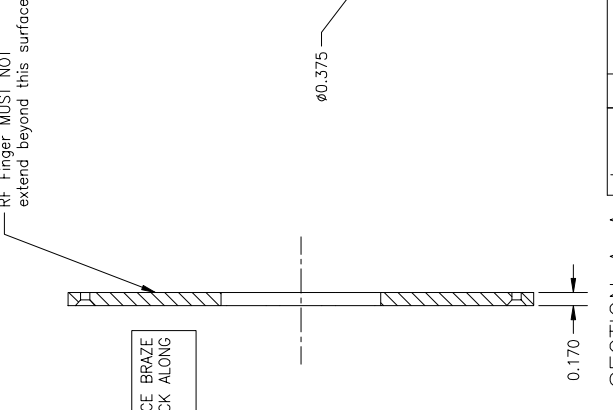
9 PUMP PORT TUBE OD 3"
D-6070-005-10
MAT'L: SS 304L
QTY: 1



15 THICK GASKET
D-6070-005-10
SCALE 1:1
MAT'L: CD10100 Cu
QTY: 2



14 RF INSERT
D-6070-005-10
SCALE 1:1
MAT'L: CD10100 Cu
QTY: 2

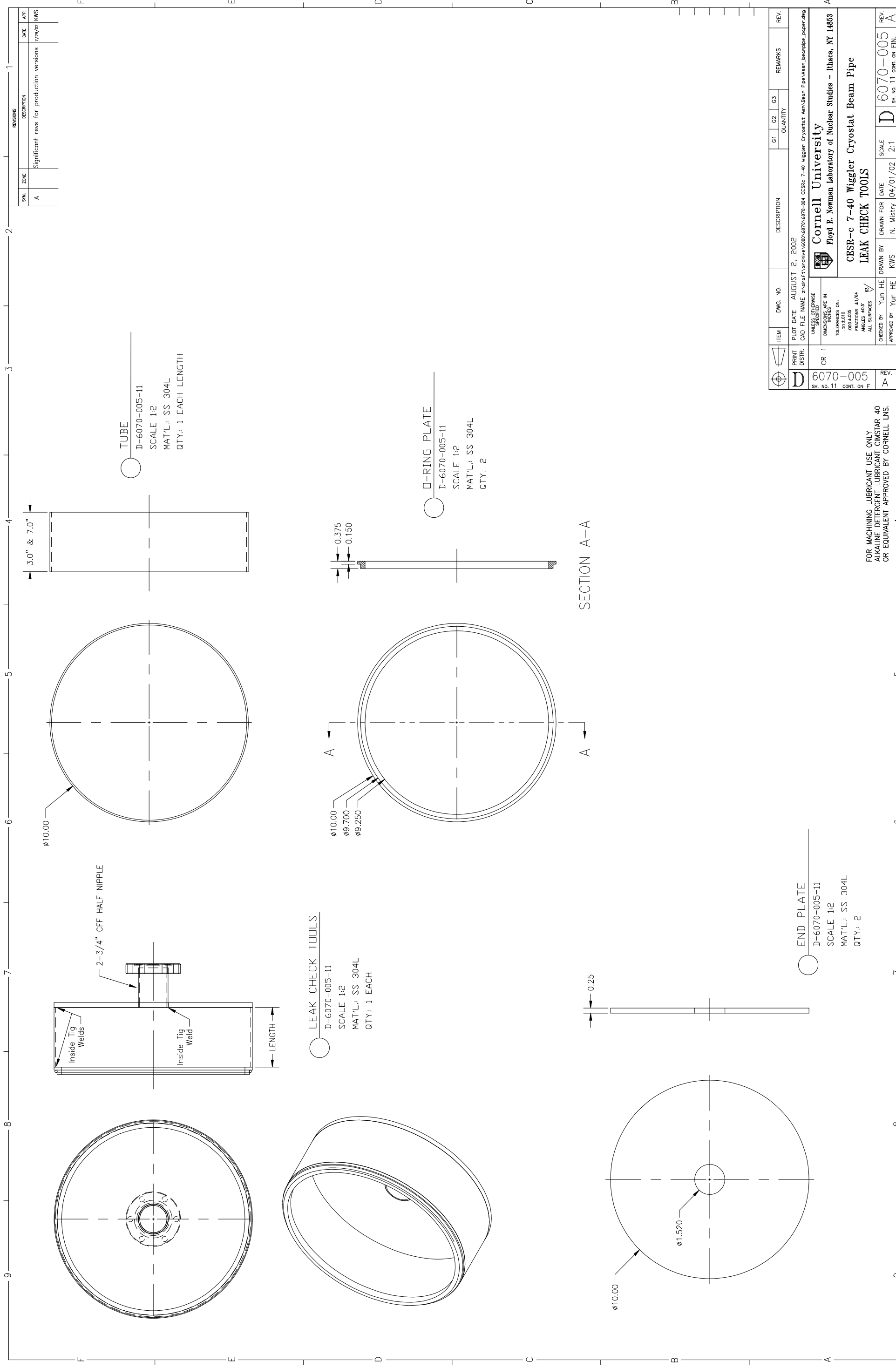


18 WATER LINE PLUG
D-6070-005-10
SCALE 1:2
MAT'L: COPPER
QTY: 2

SECTION B-B

SECTION A-A

ITEM	DWG. NO.	DESCRIPTION	Q1	Q2	Q3	REMARKS	REV.
CR-1							
PRINT PLOT DATE: DECEMBER 12, 2002 CAD FILE NAME: Z:\work\cvs\6070-005-10\6070-005-10.dwg UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN: MILLIMETERS TOLERANCES ON: ANGLES: DECIMAL PLACES ALL SURFACES: UNLESS NOTED OTHERWISE: FINISH ALL SURFACES CHECKED BY: YUN HE APPROVED BY: YUN HE							
Cornell University Floyd R. Newman Laboratory of Nuclear Studies - Ithaca, NY 14853 CESR-c 7-40 Wiggler Cryostat Beam Pipe PARTS							
FOR MACHINING LUBRICANT USE ONLY ALKALINE DETERGENT LUBRICANT CIMSTAR 40 OR EQUIVALENT APPROVED BY CORNELL LNS.							
DRAWN BY: YUN HE DATE: 02/11/02 SCALE: 1:1 D 6070-005							REV. C SH. NO. 10 CONT. ON 11



SYN.	ZONE	DESCRIPTION	DATE	APP.
A		Significant revs for production versions	7/29/02	KWS

ITEM	DWG. NO.	DESCRIPTION	QTY	G1	G2	G3	REMARKS	REV.
D	6070-005	CR-1						A
PRINT DISTR.		PLOT DATE		AUGUST 2, 2002				
CAD FILE NAME		z:\wef\archive\6070\6070-004_CESRC_7-40_Wiggler_Cryostat_Asn\Beam_Pipe_Vass_beeppipe_papar.dwg						
UNLESS OTHERWISE SPECIFIED		DIMENSIONS ARE IN INCHES						
TOLERANCES ARE		ON FRACTIONS ±1/64						
		ON DECIMALS ±0.005						
		ON ANGLES ±0.5						
		ON ALL SURFACES						
CHECKED BY		Yun HE	DRAWN BY		KWS	DRAWN FOR DATE		04/01/02
APPROVED BY		Yun HE	SCALE		2:1	SH. NO. 11		CONT. ON FIN. A

Cornell University
Floyd B. Newman Laboratory of Nuclear Studies - Ithaca, NY 14853

CBSR-c 7-40 Wiggler Cryostat Beam Pipe
LEAK CHECK TOOLS

FOR MACHINING LUBRICANT USE ONLY
ALKALINE DETERGENT LUBRICANT CIMSTAR 40
OR EQUIVALENT APPROVED BY CORNELL LNS.