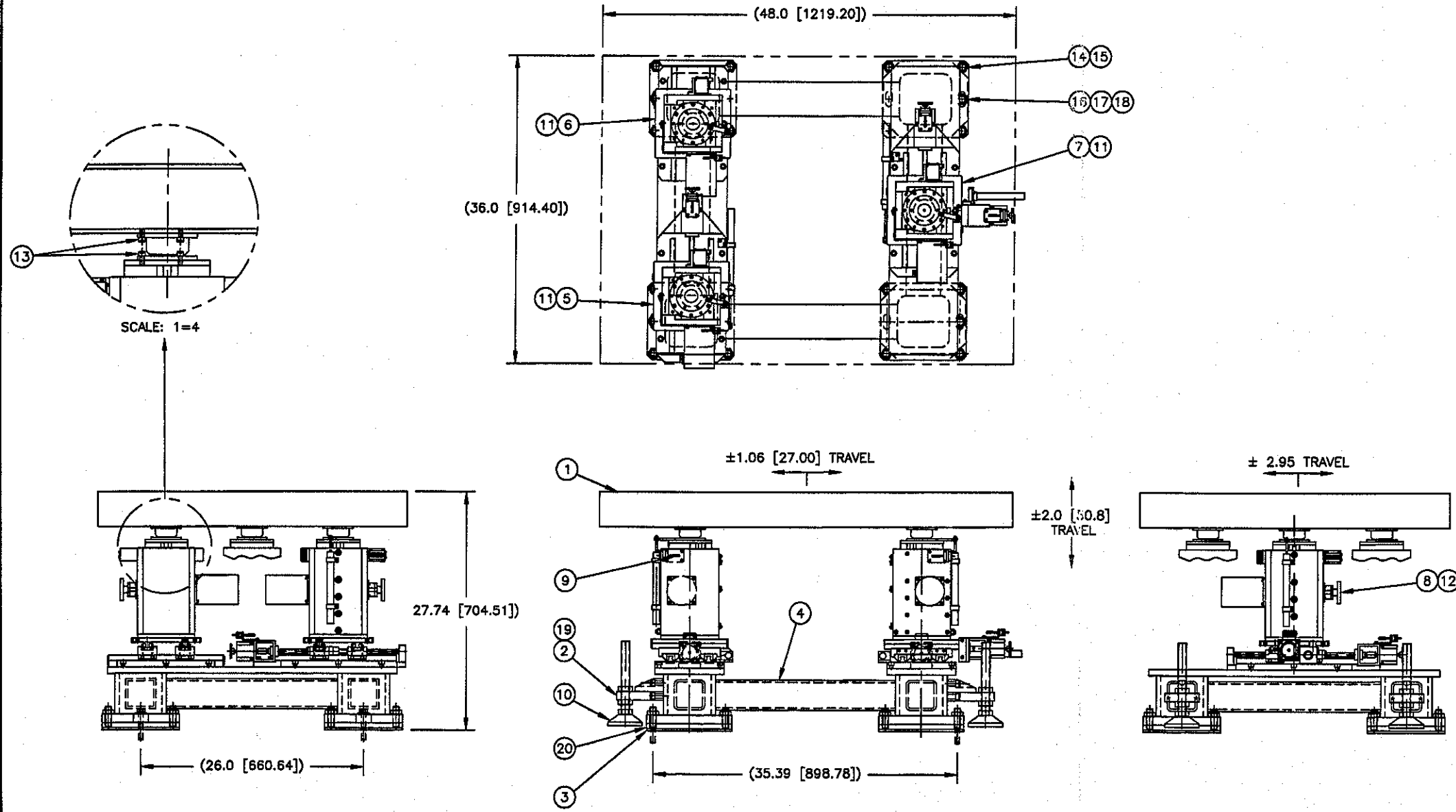


CONSTRUCTION PRINT  
 OCT 14 2009  
 ADVANCED PHOTON SOURCE

SPECIFICATIONS:  
 HORIZONTAL MOTION: ±27 mm x ±70 mm  
 VERTICAL MOTION: ±50 mm  
 LOAD CAPACITY: 454 kg  
 MOTION REPEATABILITY: 10 μm  
 MOTION RESOLUTION: .64 μm VERTICAL  
 (@ 400 STEPS/REV.) 3.18 μm HORIZONTAL  
 OPERATING MODE: STEPPER MOTOR

NOTES:  
 1) PART # FOR IT. #14 IS NOT LISTED IN COMPANY (McMASTER) CATALOG. PART IS AVAILABLE SPECIALLY ORDERED FROM VENDOR OR MAY BE MANUFACTURED FROM THIRD PARTY PER DESCRIPTION.



ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
20	4105090506-460004	VIBRATION INSULATION PANEL		4
19	92196A537	SHCS .500-13UNC x 1.75 LG	SST	12
18	92146A033	LOCK WASHER, Ø.5 NOM	SST	4
17	98019A509	FLAT WASHER, Ø.5 NOM	SST	4
16	92240A724	HHCS .500-13UNC x 3.0 LG	SST	4
15	91845A330	HEX NUT .75-10UNC	SST	16
14	92778A999	OVAL PT SOC SS .750-10UNC x 2.5 LG	SST, NOTE 1	16
13	92196A537	SHCS .250-20UNC x .50 LG	SST	18
12	92196A541	SHCS .250-20UNC x .88 LG	SST	12
11	92196A624	SHCS .375-16UNC x 1.0 LG	SST	18
10	TL-40	LEVEL PAD	SST	4
9	4105090501-820800	SPHERICAL COUPLING ASSEMBLY		3
8	4105090504-220000	VERTICAL STAGE ASSEMBLY, 100mm VERT		3
7	4105090504-840000	HORIZ. STAGE/SLIDE ASSEMBLY		1
6	4105090504-630000	HORIZONTAL SLIDE ASSEMBLY		1
5	4105090504-620000	HORIZ. STAGE/SLIDE ASSEMBLY		1
4	4105090506-460100	SUPPORT FRAME ASSEMBLY		1
3	4105090506-460003	FLOOR PAD SPACER		4
2	4105090506-460002	LEVEL PAD BRACKET		4
1	4105090506-460001	OPTICAL TABLE		1

1 REID TOOL SUPPLY CO.  
 2265 BLACK ROAD  
 MUSKEGON, MI 49444-2684  
 PHONE: (800) 438-0421  
 FAX: (800) 438-1145

2 McMASTER-CARR  
 600 N County Line Rd.  
 Elmhurst, IL 60126-2081  
 PHONE: (630) 600-3600  
 FAX: (630) 834-9427

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #T6-460000-00.

UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES

TOLERANCES: DECIMALS: .0005 ANGLES: .01

X ±.1 [2.5] ±.25  
 .XX ±.01 [0.25]  
 .XXX ±.005 [0.13]

SURFACE ROUGHNESS 125 ✓

REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.  
 SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST AMS 944.1  
 DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5

LOG NUMBER: A4525700

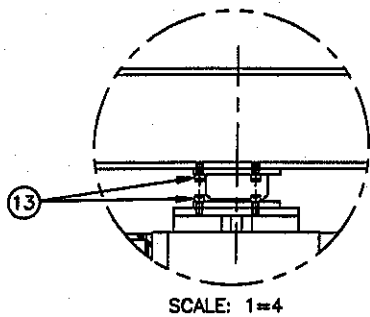
THIS DRAWING IS THE PROPERTY OF ARGONNE NATIONAL LABORATORY

TITLE: ADVANCED PHOTON SOURCE EXPERIMENTAL FACILITIES XOR/SRI-CAT BEAMLINES STANDARD COMPONENTS EXPERIMENTAL STATION TABLE OPTICAL TABLE (100mm STROKE)

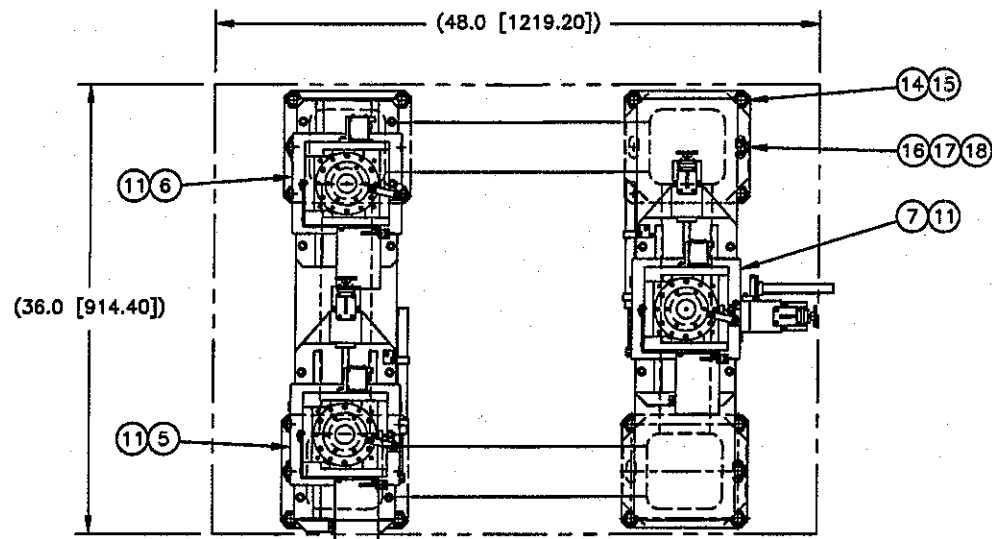
SCALE: 1:8 SHEET 1 of 1

4105090506-470000-00

DO NOT SCALE DRAWING



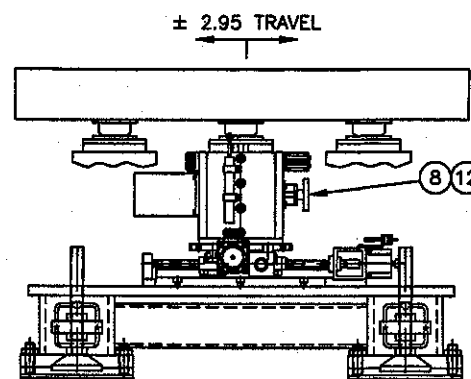
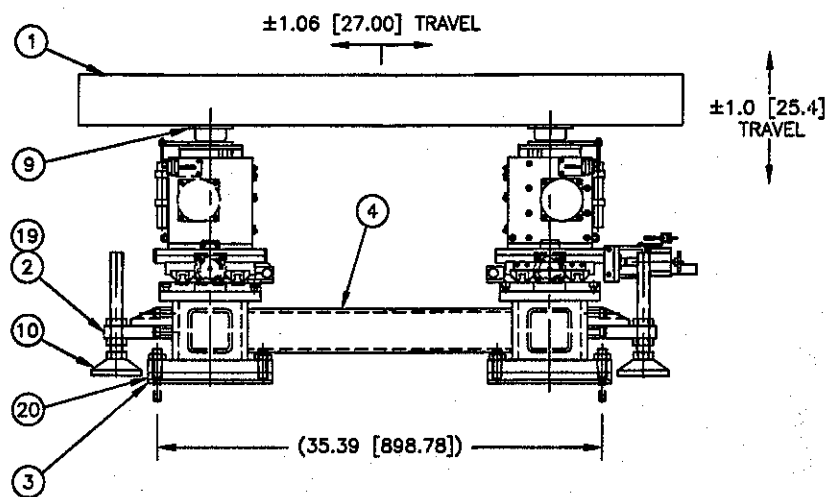
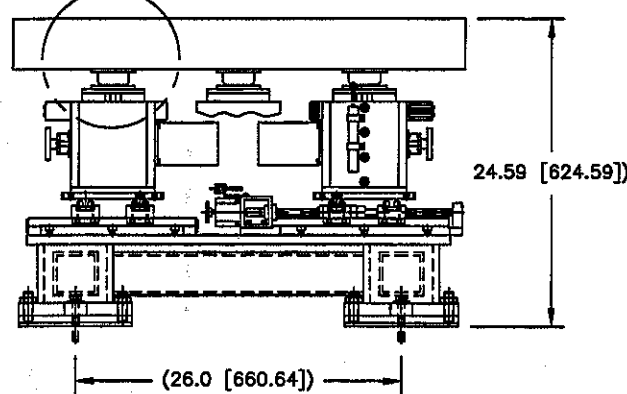
SCALE: 1=4



CONSTRUCTION PRINT  
OCT 14 2009  
ADVANCED PHOTON SOURCE

SPECIFICATIONS:  
HORIZONTAL MOTION:  $\pm 27 \text{ mm} \times \pm 70 \text{ mm}$   
VERTICAL MOTION:  $\pm 25 \text{ mm}$   
LOAD CAPACITY: 454 kg  
MOTION REPEATABILITY: 10  $\mu\text{m}$   
MOTION RESOLUTION: .84  $\mu\text{m}$  VERTICAL  
( $\odot$  400 STEPS/REV.) 3.18  $\mu\text{m}$  HORIZONTAL  
OPERATING MODE: STEPPER MOTOR

NOTES:  
1) PART # FOR IT. #14 IS NOT LISTED IN COMPANY (McMASTER) CATALOG. PART IS AVAILABLE SPECIALLY ORDERED FROM VENDOR OR MAY BE MANUFACTURED FROM THIRD PARTY PER DESCRIPTION.



ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
20	4105090506-460004	VIBRATION INSULATION PANEL		4
19	92196A537	SHCS .500-13UNC x 1.75 LG	SST	12
18	92146A033	LOCK WASHER, $\phi$ .5 NOM	SST	4
17	98019A509	FLAT WASHER, $\phi$ .5 NOM	SST	4
16	92240A724	HHCS .500-13UNC x 3.0 LG	SST	4
15	91845A330	HEX NUT .75-10UNC	SST	16
14	92778A999	OVAL PT SOC SS .750-10UNC x 2.5 LG	SST, NOTE 1	16
13	92196A537	SHCS .250-20UNC x .50 LG	SST	18
12	92196A623	SHCS .375-18UNC x .88 LG	SST	12
11	92196A624	SHCS .375-16UNC x 1.0 LG	SST	18
10	TL-40	LEVEL PAD	SST	4
9	4105090501-820800	SPHERICAL COUPLING ASSEMBLY		3
8	4105090501-920200	VERTICAL STAGE ASSEMBLY, 50mm STROKE		3
7	4105090504-640000	HORIZ. STAGE/SLIDE ASSEMBLY		1
6	4105090504-630000	HORIZONTAL SLIDE ASSEMBLY		1
5	4105090504-620000	HORIZ. STAGE/SLIDE ASSEMBLY		1
4	4105090506-460100	SUPPORT FRAME ASSEMBLY		1
3	4105090506-460003	FLOOR PAD SPACER		4
2	4105090506-460002	LEVEL PAD BRACKET		4
1	4105090506-460001	OPTICAL TABLE		1

1 REID TOOL SUPPLY CO.  
2265 BLACK ROAD  
MUSKEGON, MI 49444-2684  
PHONE: (800) 438-0421  
FAX: (800) 438-1145

2 McMASTER-CARR  
600 N County Line Rd.  
Elmhurst, IL 60126-2081  
PHONE: (630) 600-3600  
FAX: (630) 834-9427

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #T6-460000-00.

BY	CHANGE DESCRIPTION	BY	CHKD	DATE

UNLESS OTHERWISE SPECIFIED:  
ALL DIMENSIONS ARE IN INCHES  
TOLERANCES:  
DECIMALS .005  
ANGULAR  $\pm .25$   
X  $\pm .1 [2.5]$   
XX  $\pm .01 [0.25]$   
XXX  $\pm .005 [0.13]$   
SURFACE ROUGHNESS 125

REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.  
SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST AMS 9481.  
DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ASME Y14.5

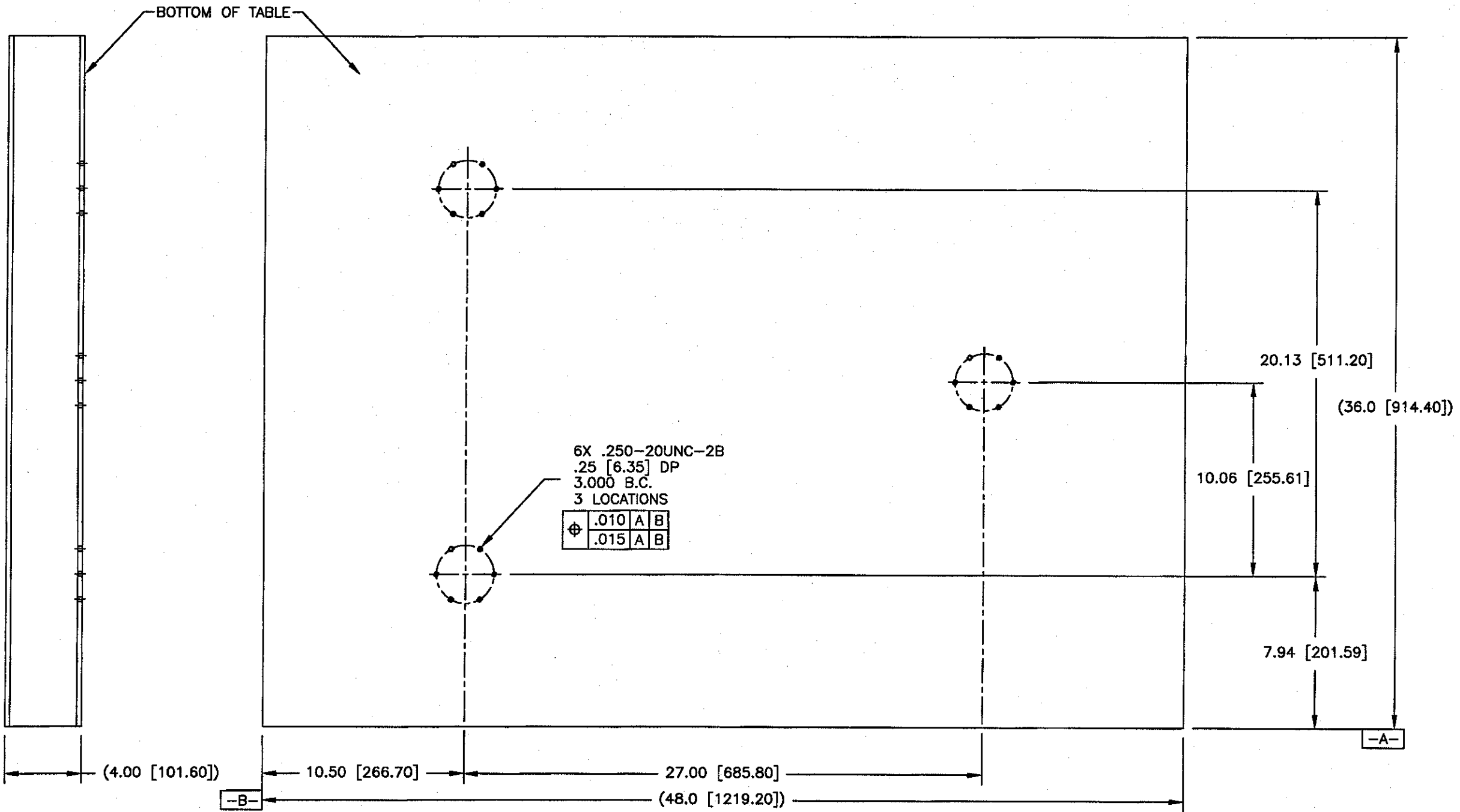
LOG NUMBER: A4507000  
DRAWN BY: RTK/MAR  
CHECKED BY: PWB  
DESIGNER: SH LEE  
DATE: 08/03/09  
DATE: 10/11/09  
DATE: 9/24/09

CHIEF DESIGN ENGINEER: P DENNERTOG  
DATE: 8/26/07  
PROJECT MGR. DATE: 10/17/09

RESPONSIBLE ENGINEER: SH LEE  
DATE: 9/24/09  
APPROVED/RELEASED: [Signature]DATE: 10/17/09

MATERIAL: [Blank]SCALE: 1:8  
SIZE: D  
SHEET: 1 of 1

ARGONNE NATIONAL LABORATORY  
ADVANCED PHOTON SOURCE  
EXPERIMENTAL FACILITIES  
XOR/SRI-CAT BEAMLINES  
STANDARD COMPONENTS  
EXPERIMENTAL STATION TABLE  
OPTICAL TABLE (50mm STROKE)  
DRAWING NUMBER: 4105090506-460000-00



6X .250-20UNC-2B  
 .25 [6.35] DP  
 3.000 B.C.  
 3 LOCATIONS

⌀	.010	A	B
⌀	.015	A	B

**NOTES:**

1. ALL DIMENSIONS SHOWN IN [ ] ARE MILLIMETERS AND ARE FOR REFERENCE USE ONLY.
2. MODIFY OPTICAL TABLE #78-235-02 AS PURCHASED FROM:

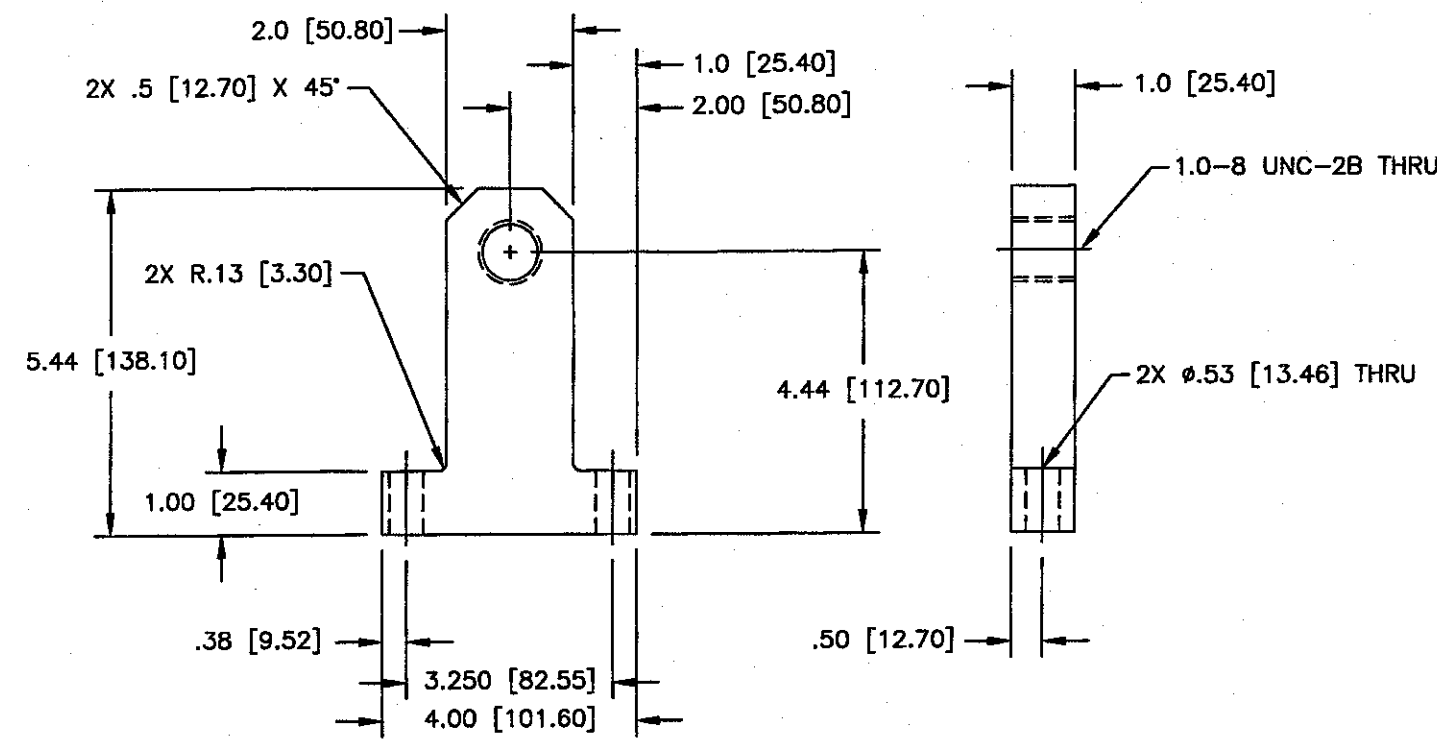
**1** TECHNICAL MANUFACTURING CORP.  
 15 CENTENNIAL DRIVE  
 PEABODY, MA.  
 PHONE: (508) 532-6330  
 FAX: (508) 531-8682

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #T6-460001-00.

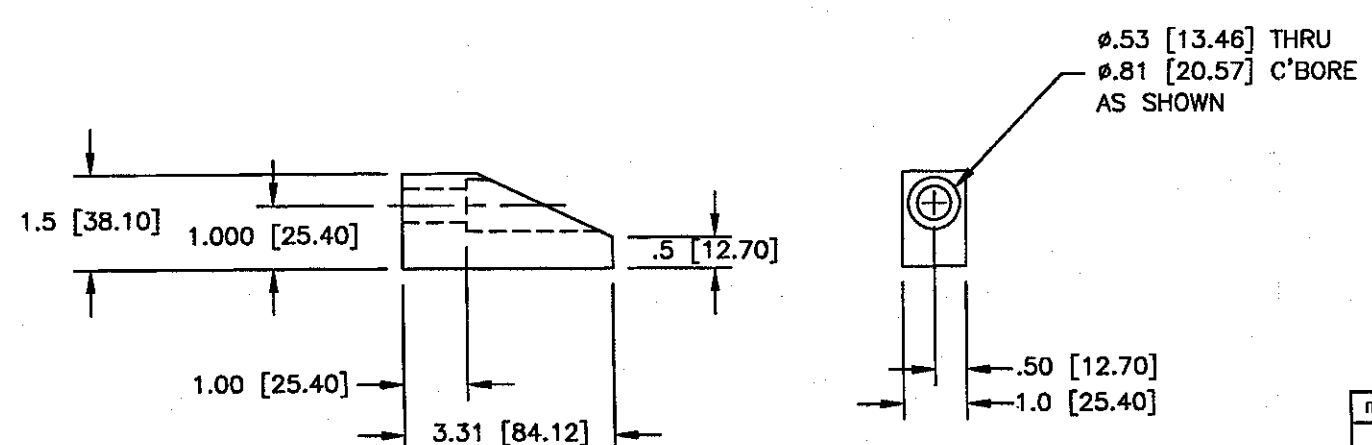
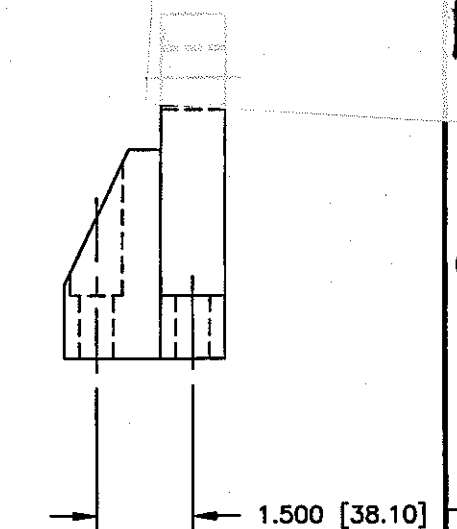
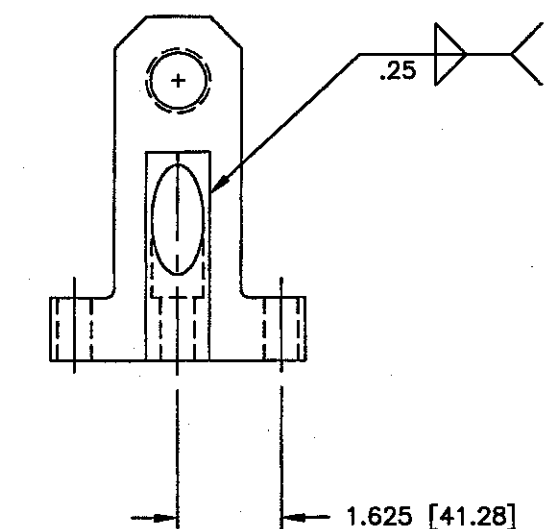
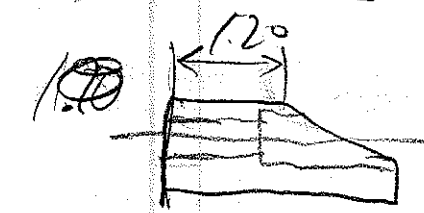
SYM	CHANGE DESCRIPTION	BY	CHKD	DATE
REVISIONS				

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
<b>PARTS LIST</b>				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES		LOG NUMBER <b>A4507100</b>	THIS DRAWING IS THE PROPERTY OF <b>ARGONNE NATIONAL LABORATORY</b>	
TOLERANCES DECIMALS .X ±.03 [ .76] ±.030' XX ±.01 [ 0.25] XXX ±.005 [ 0.13]		DATE 07/21/09	TITLE <b>ADVANCED PHOTON SOURCE</b>	
SURFACE ROUGHNESS 125		CHEF DESIGN ENGINEER DATE	EXPERIMENTAL FACILITIES	
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.		CHECKED BY DATE	XOR/SRI-CAT BEAMLINES	
SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1		DESIGNER DATE	STANDARD COMPONENTS	
DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5		RESPONSIBLE ENGINEER DATE	EXPERIMENTAL STATION TABLE	
DO NOT SCALE DRAWING		APPROVED/RELEASED DATE	OPTICAL TABLE	
MATERIAL SEE NOTE		SCALE 4X	DRAWING NUMBER	
		SHEET 1 of 1	<b>C 4105090506-460001-00</b>	

CONSTRUCTION PRINT  
 OCT 14 2009  
 ADVANCED PHOTON SOURCE



A36 STEEL



- NOTES:  
 1. ALL DIMENSIONS SHOWN IN [ ] ARE MILLIMETERS AND ARE FOR REFERENCE USE ONLY.  
 2. FINISH: BLACK OXIDE

CONSTRUCTION PRINT  
 OCT 14 2009  
 ADVANCED PHOTON SOURCE

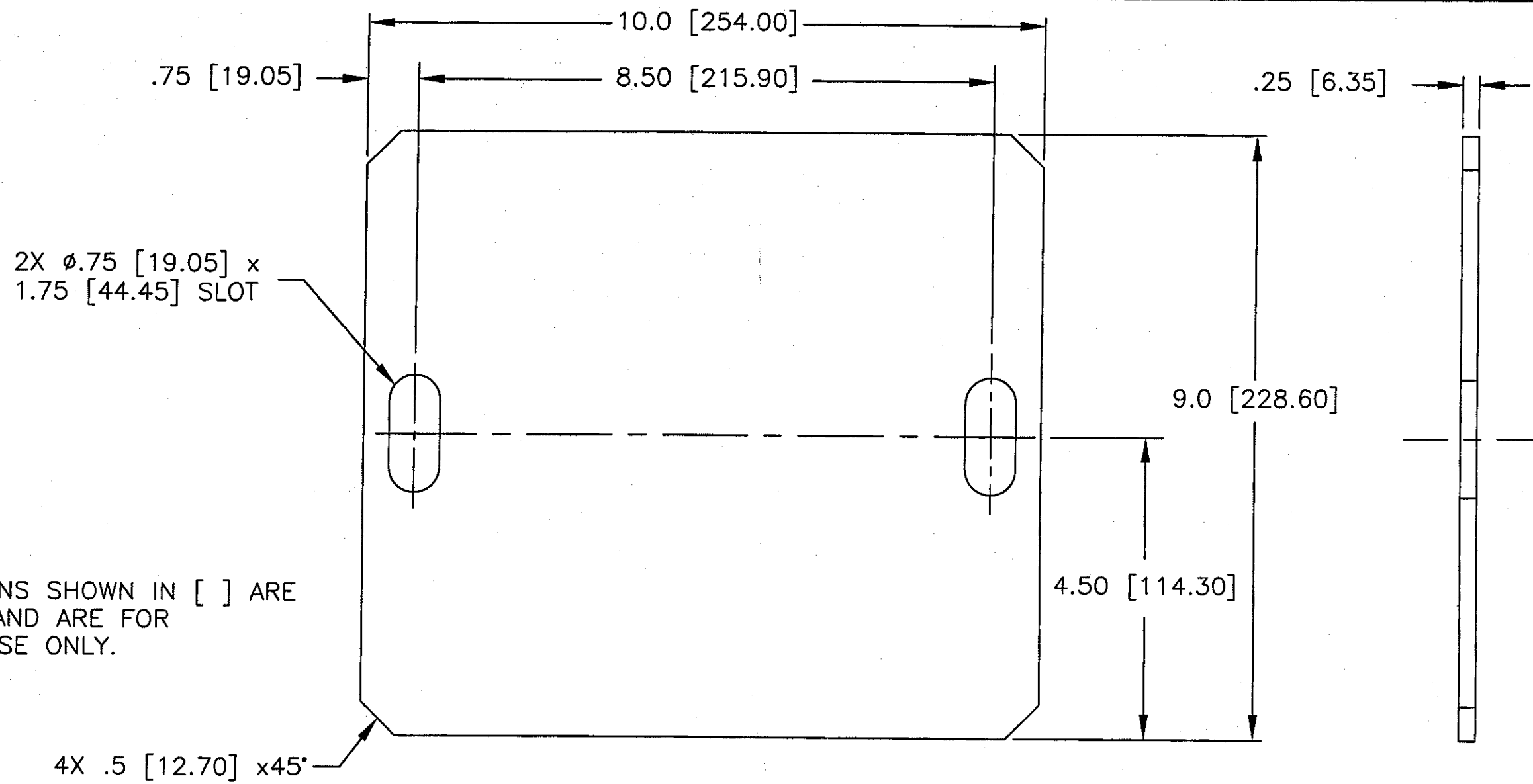
NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #T6-460002-00.

SYM	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		THIS DRAWING IS THE PROPERTY OF		
TOLERANCES:		<b>ARGONNE NATIONAL LABORATORY</b>		
DECIMALS	ANGULAR	TITLE		
.X ±.03 [.76]	±0°30'	ADVANCED PHOTON SOURCE		
.XX ±.01 [0.25]		EXPERIMENTAL FACILITIES		
.XXX ±.005 [0.13]		XOR/SRI-CAT BEAMLINES		
SURFACE ROUGHNESS 125		STANDARD COMPONENTS		
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.		EXPERIMENTAL STATION TABLE		
SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1		LEVEL PAD BRACKET		
DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5		DRAWING NUMBER		
DO NOT SCALE DRAWING		4105090506-460002-00		

LOG NUMBER A4507200	DATE 07/21/09	CHEF DESIGN ENGINEER [Signature]	DATE 08/07/09
DRAWN BY RTKMAK	DATE 10/11/09	DESIGNER [Signature]	DATE 10/16/09
CHECKED BY [Signature]	DATE 8/4/09	APPROVED/RELEASED [Signature]	DATE 10/16/09
RESPONSIBLE ENGINEER S H LEE shlee	DATE 8/4/09	MATERIAL SEE NOTE	

SCALE 2X  
 SHEET 1 of 1  
 SIZE C



NOTE:  
1. ALL DIMENSIONS SHOWN IN [ ] ARE MILLIMETERS AND ARE FOR REFERENCE USE ONLY.

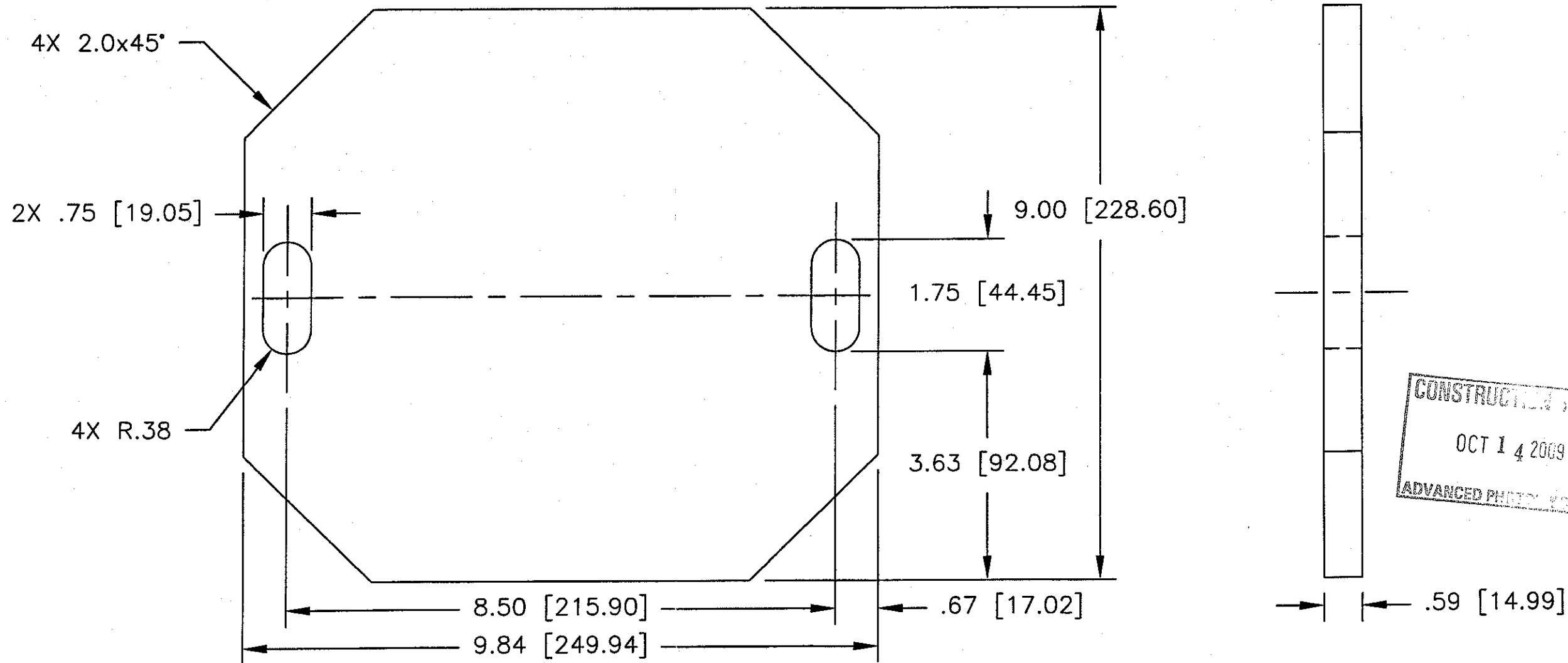
CONSTRUCTION PRINT  
OCT 14 2009  
ADVANCED PHOTON SOURCE

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #T6-460003-00.

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
<b>PARTS LIST</b>				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES <u>TOLERANCES</u> DECIMALS      ANGULAR .X      ±.1 [2.5]      ±0°30' .XX      ±.01 [0.25] .XXX      ±.005 [0.13]		LOG NUMBER <b>A4507300</b>	THIS DRAWING IS THE PROPERTY OF <b>ARGONNE NATIONAL LABORATORY</b>	
SURFACE ROUGHNESS 125/✓  REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.  SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1  DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5		DRAWN BY <i>RTKMAK</i> DATE <i>8/23/09</i> CHECKED BY <i>TRB</i> DATE <i>10/1/09</i> DESIGNER      DATE      GP LEADER <i>P. Kenworthy</i> DATE <i>8/19/09</i> PROJECT MGR.      DATE RESPONSIBLE ENGINEER <i>S H LEE</i> DATE <i>5/4/07</i> APPROVED/RELEASED <i>SR</i> DATE <i>10/7/09</i>	TITLE <b>ADVANCED PHOTON SOURCE            EXPERIMENTAL FACILITIES            XOR/SRI-CAT BEAMLINES            STANDARD COMPONENTS            EXPERIMENTAL STATION TABLE            FLOOR PAD SPACER</b>	
MATERIAL <b>6061-T6 ALUMINUM</b>		SCALE 1=1 SHEET 1 of 1	SIZE <b>B</b>	DRAWING NUMBER <b>4105090506-460003-00</b>

SYM	CHANGE DESCRIPTION	BY	CHKD	DATE
REVISIONS				

DO NOT SCALE DRAWING



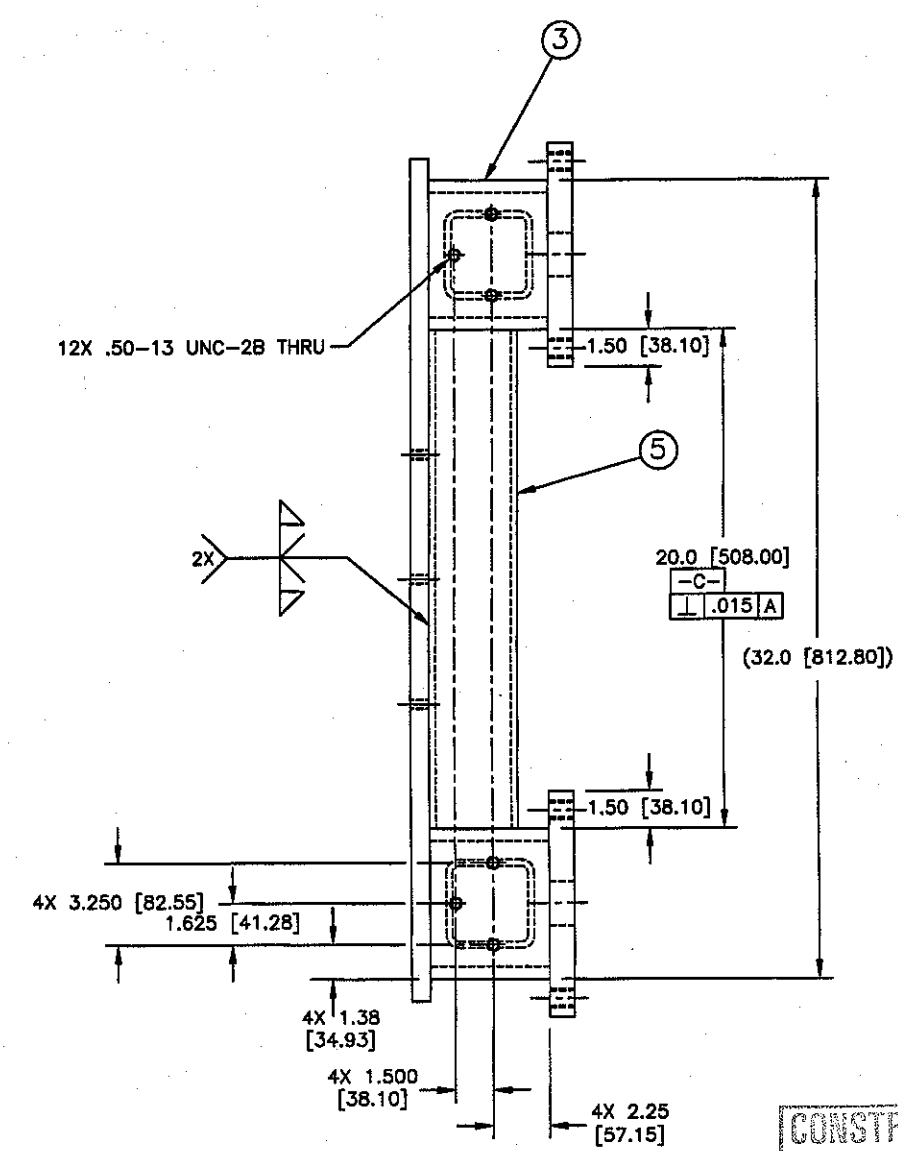
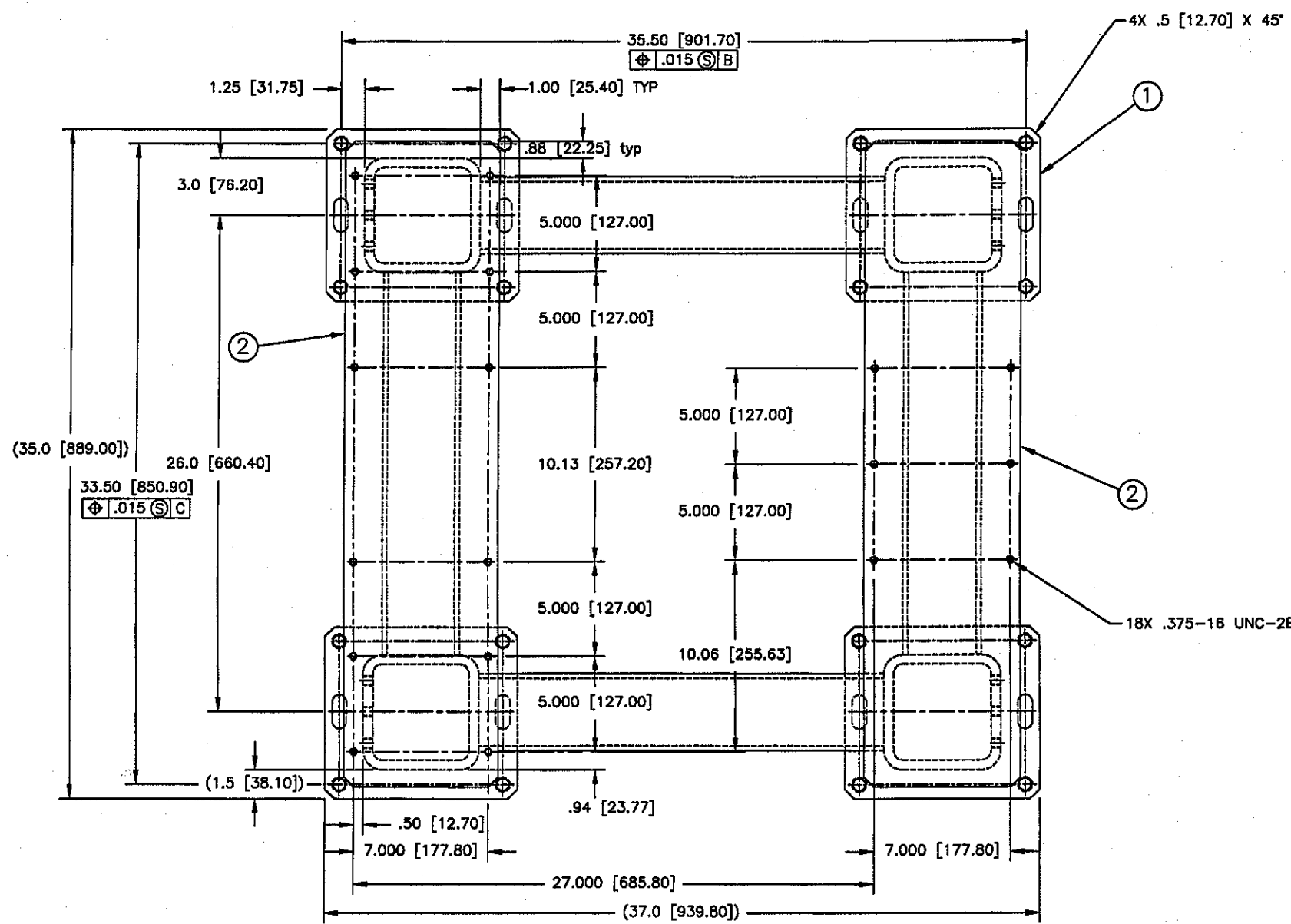
NOTE:

1. DIMENSIONS SHOWN IN [ ] ARE MILLIMETERS AND ARE FOR REFERENCE USE ONLY.
2. ISOLOC ARTICLE #IPL10, VIBRATION INSULATION PANEL

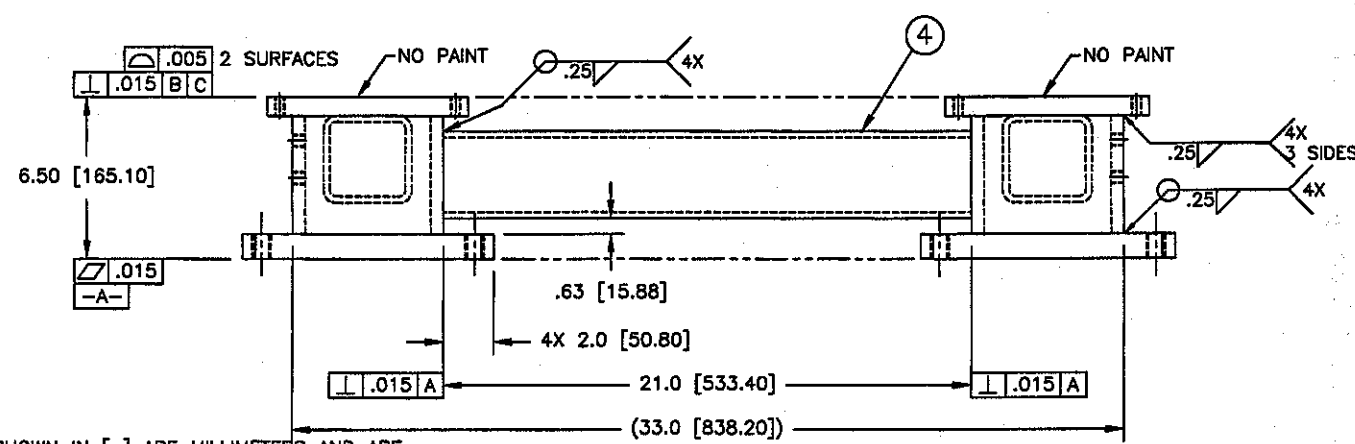
ISOLOC SCHWINGUNGSTECHNIK GMBH  
 MOTORSTR 64  
 D-70499 STUTTGART (WEILIMDORF), GERMANY  
 PHONE: +49-7 11/6 97 60-0  
 WWW.ISOLOC.DE

SYM	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 <b>TOLERANCES</b>		LOG NUMBER <b>A4525600</b>	THIS DRAWING IS THE PROPERTY OF <b>ARGONNE NATIONAL LABORATORY</b>	
DECIMALS      ANGULAR .X    ±.1 [2.5]      ±0°30' .XX   ±.01 [0.25] .XXX ±.005 [0.13]		DRAWN BY <i>RTKMAK</i> DATE <i>8/23/09</i> 081009 CHIEF DESIGN ENGINEER      DATE	TITLE <b>ADVANCED PHOTON SOURCE            EXPERIMENTAL FACILITIES            XOR/SRI-CAT BEAMLINES            STANDARD COMPONENTS            EXPERIMENTAL STATION TABLE            VIBRATION INSULATION PANEL</b>	
SURFACE ROUGHNESS 125 ✓		CHECKED BY <i>W3</i> DATE <i>10/1/09</i> OP LEADER PROJECT MGR.      DATE		
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.		DESIGNER      DATE		
SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1		RESPONSIBLE ENGINEER      DATE S H LEE <i>9/1/09</i> 9/4/09 APPROVED/RELEASED      DATE <i>BR</i> 10/1/09		
DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5		MATERIAL SEE NOTE	SCALE 2X	SIZE B
DO NOT SCALE DRAWING		DRAWING NUMBER		4105090506-460004-00
		SHEET 1 of 1		



CONSTRUCTION PRINT  
OCT 14 2009  
ADVANCED PHOTON SOURCE



NOTE:  
1. ALL DIMENSIONS SHOWN IN [ ] ARE MILLIMETERS AND ARE FOR REFERENCE USE ONLY.  
2. WELD PER AWS D1.1-92  
3. PAINT ENTIRE WELDMENT FEDERAL SAFETY BLUE, MATTE FINISH, EXCEPT FOR FINISHED SURFACES INDICATED. APPLY PER MFR'S SPECIFICATIONS.  
PRIMER: KEELER & LONG #3200  
FINISH COAT: KEELER & LONG #3200  
'J' SERIES KOLOR-POXY ENAMEL  
4. VIBRATORY STRESS RELIEF FOR DIMENSIONAL STABILITY.

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #T6-460100.

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
5		TUBE 3.5 X 3.5 X .25 WALL X 20.0 LG	A500 GRADE B	2
4		TUBE 3.5 X 3.5 X .25 WALL X 21.0 LG	A500 GRADE B	2
3		TUBE 6.0 X 6.0 X .5 WALL X 4.75 LG	A500 GRADE B	4
2		PLATE .75 X 8.0 X 33.75	A36 STEEL	2
1	4105090506-460100-00	FLOOR PAD		4

UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES

TOLERANCES:  
DECIMALS: .005  
ANGULAR: ±.25

LOG NUMBER: A4507400

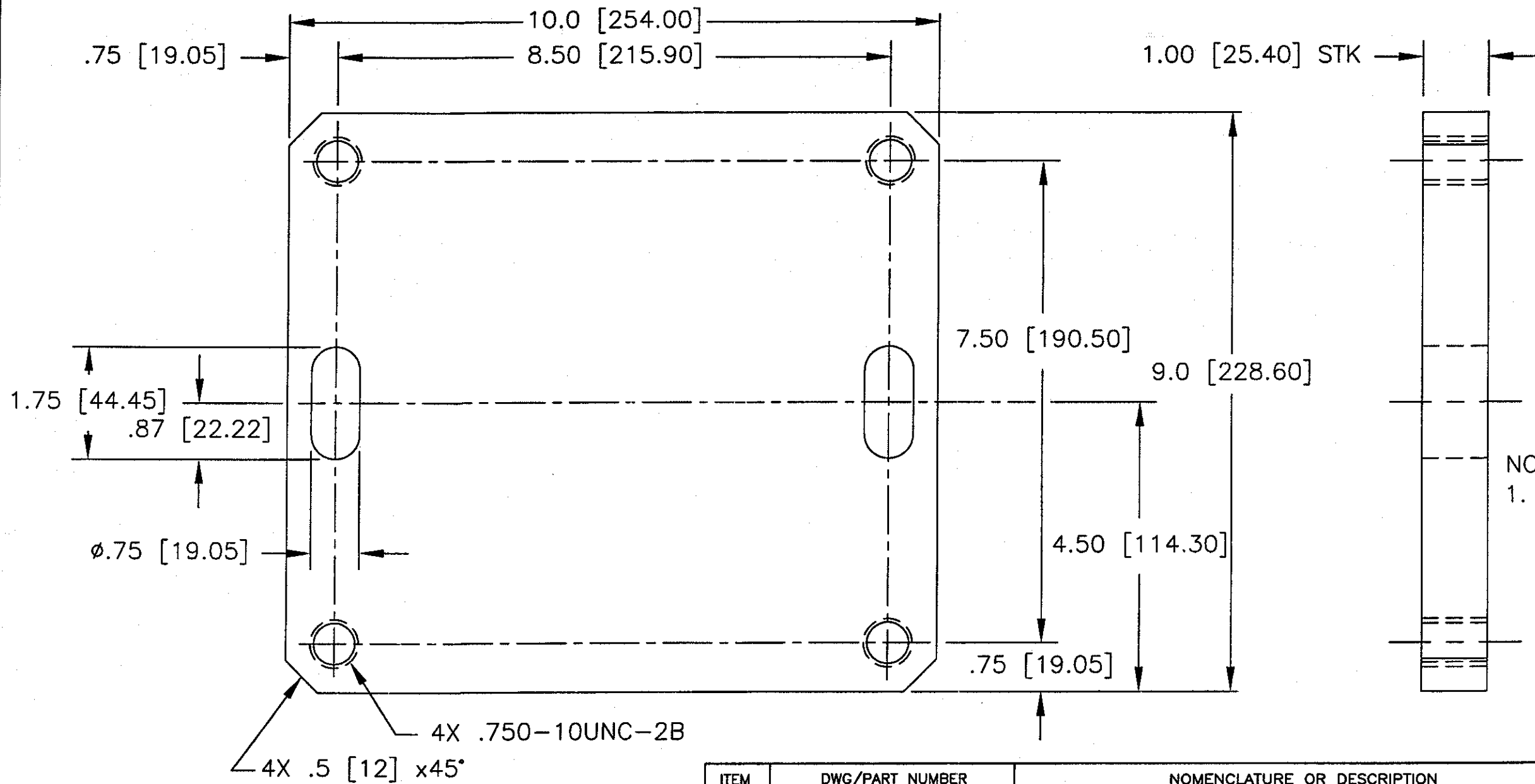
THIS DRAWING IS THE PROPERTY OF ARGONNE NATIONAL LABORATORY

ADVANCED PHOTON SOURCE  
EXPERIMENTAL FACILITIES  
XOR/SRI-CAT BEAMLINES  
STANDARD COMPONENTS  
EXPERIMENTAL STATION TABLE  
OPTICAL TABLE WELDMENT

DATE: 10/1/09  
DATE: 10/1/09  
DATE: 10/1/09

SCALE: 1:4  
SHEET: 1 of 1  
DRAWING NUMBER: 4105090506-460100-00

SYN	CHANGE DESCRIPTION	BY	CHKD	DATE
	REVISIONS			



NOTE:  
1. ALL DIMENSIONS SHOWN IN [ ]  
ARE MILLIMETERS AND ARE FOR  
REFERENCE USE ONLY.

CONSTRUCTION PRINT  
OCT 14 2009  
ADVANCED PHOTOL SOURCE

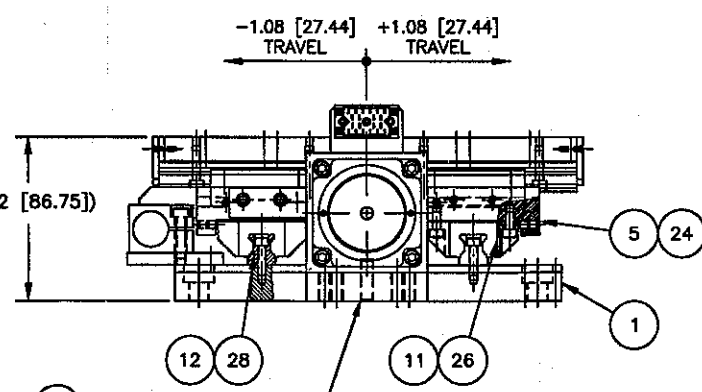
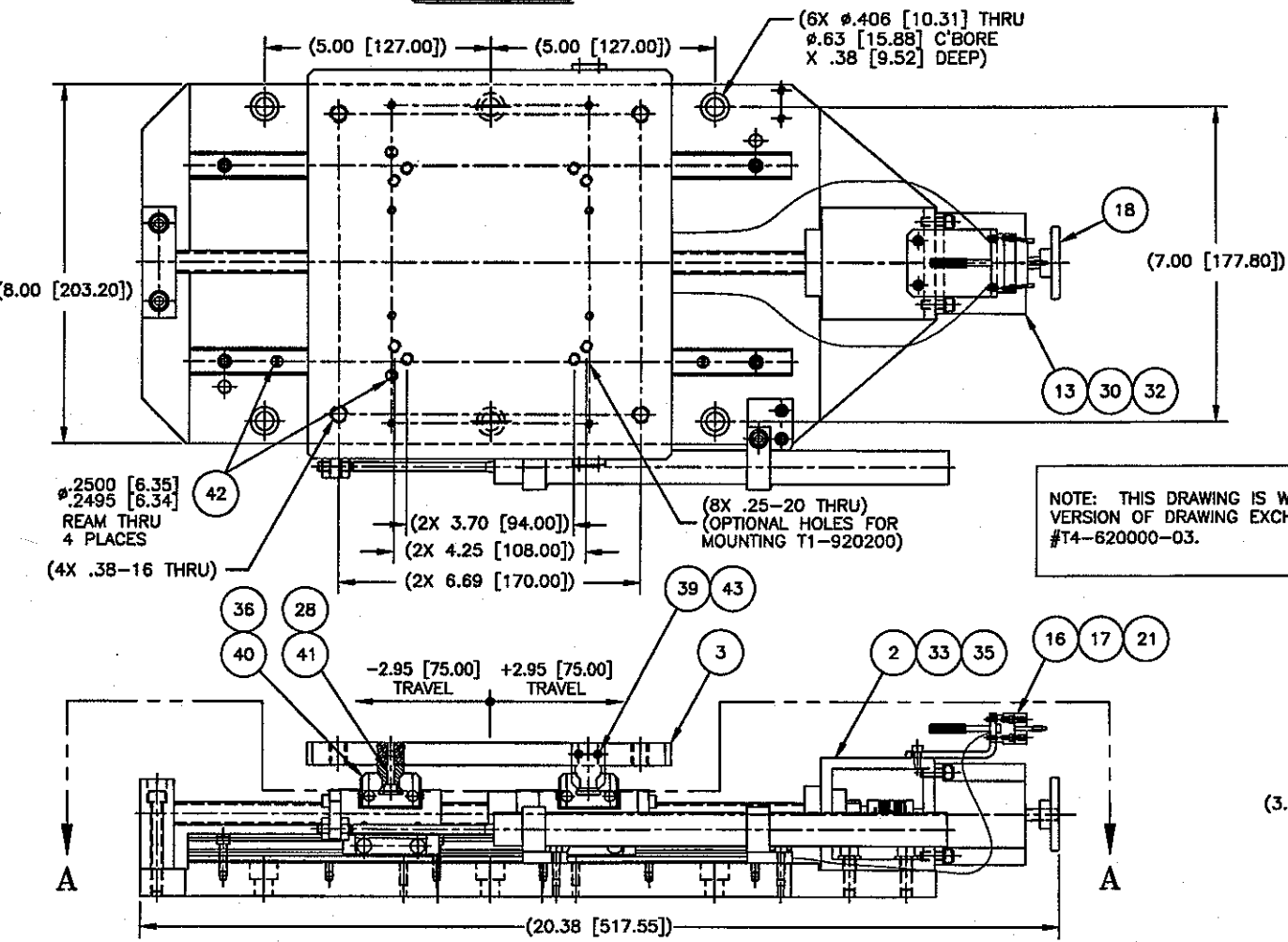
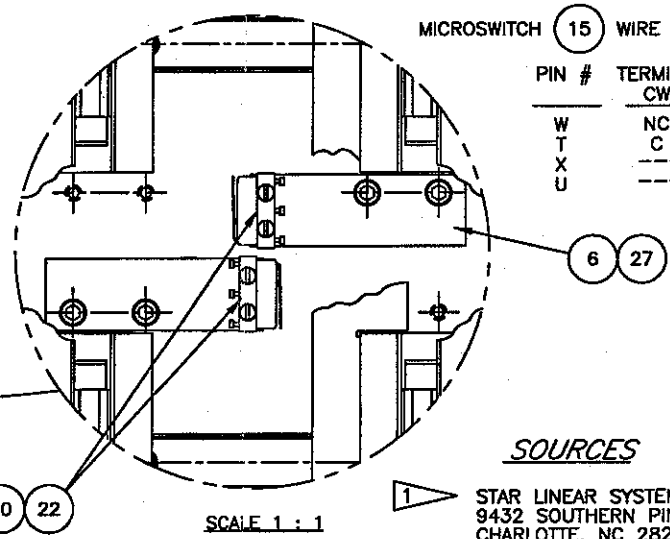
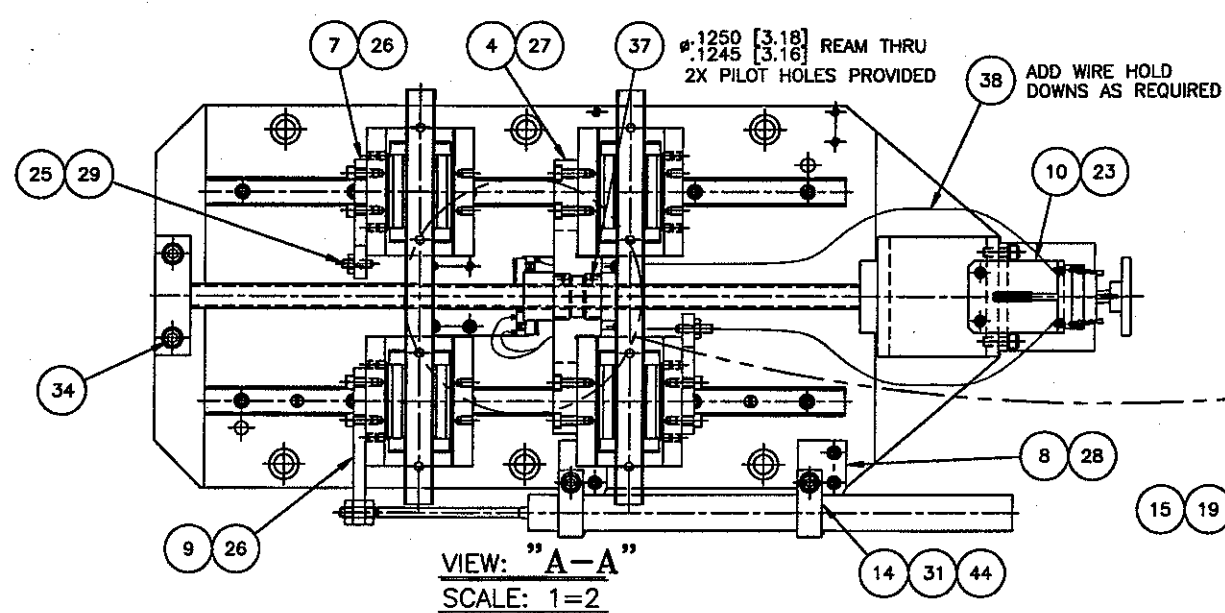
4X .750-10UNC-2B  
4X .5 [12] x45°

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED  
VERSION OF DRAWING EXCHANGE FILE DRAWING  
#T6-460101-00.

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
PARTS LIST				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES TOLERANCES		LOG NUMBER <b>A4507500</b>	THIS DRAWING IS THE PROPERTY OF <b>ARGONNE NATIONAL LABORATORY</b>	
DECIMALS      ANGULAR .X      ±.1 [2.5]      ±0'30" .XX      ±.01 [0.25] .XXX      ±.005 [0.13]		DRAWN BY <i>RTKMAK</i> DATE <i>07/22/09</i> CHECKED BY <i>TW3</i> DATE <i>10/1/09</i> DESIGNER	CHIEF DESIGN ENGINEER      DATE GP. LEADER <i>D. Lee</i> DATE <i>8/5/09</i> PROJECT MGR.	TITLE <b>ADVANCED PHOTON SOURCE EXPERIMENTAL FACILITIES XOR/SRI-CAT BEAMLINES STANDARD COMPONENTS EXPERIMENTAL STATION TABLE FOOT PAD</b>
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.  SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1  DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5		RESPONSIBLE ENGINEER      DATE <b>S H LEE</b> <i>6/1/09</i> <i>7/4/09</i> MATERIAL <b>A36 STEEL</b>	APPROVED/RELEASED      DATE <i>SR</i> <i>10/1/09</i> SCALE      2X SHEET      1 of 1	DRAWING NUMBER <b>4105090506-460101-00</b>
DO NOT SCALE DRAWING				

SYM	CHANGE DESCRIPTION	BY	CHKD	DATE
REVISIONS				





**NOTES:**  
 1. ALL DIMENSIONS IN [ ] ARE MILLIMETERS AND ARE FOR REFERENCE ONLY.  
 2. SOME HIDDEN LINES ARE OMITTED FOR CLARITY PURPOSES.  
 3. THE CALLOUTS FOR REAMING THE HOLES IN EXISTING PILOT HOLES ARE FOR DOWEL PINS TO BE PRESS FITTED.  
 4. ITEM 38 SHALL BE 80° C RATED, PVC INSULATED, 18 GAGE STRANDED COPPER WIRE. MUST NOT BE IRRADIATED PVC INSULATED WIRE. SOLDER WITH KESTER 60/40 SOLDER AT ASSEMBLY  
 5. TO INSTALL ITEM #14, REMOVE ROD END BEARING FROM THE END OF THE SHAFT AND USE ITEM #44 (BODY CLAMP KIT) TO MOUNT ITEM #14.

SLO-SYN MOTOR WIRE CONNECTIONS TO CONNECTOR 16

PIN #	WIRE COLOR
A	RED/WHITE
B	RED
C	GREEN
D	GREEN/WHITE
E	BLACK
F	BLACK
H	WHITE
J	WHITE

MICROSWITCH 15 WIRE CONNECTIONS TO CONNECTOR 16

PIN #	TERMINAL CW	TERMINAL CCW
W	NC	NC
T	C	C
X	---	---
U	---	---

**SOURCES**

- STAR LINEAR SYSTEMS  
9432 SOUTHERN PINE BLVD.  
CHARLOTTE, NC 28273  
PHONE: (800) 438-5983  
FAX: (704) 525-2808
- SUPERIOR ELECTRIC  
383 MIDDLE ST.  
BRISTOL, CT 06010  
PHONE: (203) 585-4500  
FAX: (203) 589-2136
- PENNY + GILES CONTROLS INC.  
163 PLEASANT ST.  
ATTLEBORO, MA 02703  
PHONE: (508) 226-3008  
FAX: (509) 226-5208
- NEWARK ELECTRONICS  
625 PLAINFIELD RD.  
WILLOWBROOK, IL 60521  
PHONE: (708) 654-8250  
FAX: (708) 654-8270
- ELCO CORPORATION  
HUNTINGDON INDUSTRIAL PARK  
HUNTINGDON, PA 16652  
PHONE: (800) 653-3526  
FAX: (814) 643-0426
- WINFRED M. BERG, INC  
499 OCEAN AVE.  
EAST ROCKWAY, NY 11518  
PHONE: (516) 599-5010  
FAX: (516) 599-3274
- MCMASTER-CARR  
P.O. BOX 4355  
CHICAGO, IL 60680-4355  
PHONE: (708) 833-0300  
FAX: (708) 834-9427

OCT 14 2009  
 ADVANCED PHOTON SOURCE  
 X-RAY FACILITY

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #T4-620000-03.

**SPECIFICATIONS:**

LOAD CAPACITY: 454 Kg  
 HORIZONTAL MOTION - STAGE: ±75mm  
 HORIZONTAL MOTION - SLIDE: ±27mm  
 MOTION RESOLUTION: 10 µm  
 MOTION REPEATABILITY: 50 µm

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
44	SA59019	BODY CLAMP KIT		1
43	91771A105	(#2) .086-56UNCx.38 FL HD PLPS SCR	SST	4
42	90145A541	DOWEL PIN, .025 x .88 LG	SST	6
41	1605-103-31-220mm	GUIDE RAIL MODEL 1605 220mm		2
40	1622-113-10	RUNNER BLOCK MODEL 1622	STEEL	4
39	4105090504-620003	SLIDE STOP		2
38		18 GAGE WIRE	SEE NOTE 4	A/R
37	90145A475	DOWEL PIN, .0125 x 1.00 LG	SST	2
36	91292A108	SHCS M4 x .7 x 8.0 LG	SST	16
35	92146A029	LOCK WASHER .025 STD	SST	4
34	92196A550	SHCS .250-20UNC x 2.0 LG	SST	2
33	92196A540	SHCS .250-20UNC x .75 LG	SST	4
32	92146A550	LOCK WASHER (#10) .0190 STD	SST	4
31	92196A246	SHCS (#10).190-24UNC x .88 LG	SST	2
30	92196A269	SHCS (#10).190-32UNF x .50 LG	SST	4
29	91841A009	(#8) .164-32UNC HEX NUT	SST	2
28	92196A196	SHCS (#8) .164-32UNC x .63 LG	SST	24
27	92196A194	SHCS (#8) .164-32UNC x .50 LG	SST	8
26	92196A192	SHCS (#8) .164-32UNC x .38 LG	SST	22
25	94355A198	SOC SET SCR, .164-32UNC x .63 FLAT PT	SST	2
24	94355A182	SOC SET SCR, .164-32UNC x .19 FLAT PT	SST	32
23	92196A146	SHCS (#6) .132-32UNC x .38 LG	SST	2
22	92146A520	LOCK WASHER, (#2) .0094 STD	SST	4
21	91794A081	FILSTR HD SCR (#2) .086-56UNCx.50 LG	SST	4
20	91772A079	PAN HD SCR (#2) .086-56UNCx.38 LG	SST	4
19	93493A228	.094 x .25 x .016 FLAT WASHER	FIBER GLASS	4
18	CN11-5	KNURLED HANDWHEEL	AL	1
17	60-8017-03-13-300-339	CONTACTS		12
16	00-8016-020-000-601	CONNECTOR BODY		1
15	23F4372	SWITCH, SM SERIES TYPE 111SM1-T		2
14	SLS190/150C/66/1/N	GENERAL PURPOSE SENSOR	SEE NOTE #5	1
13	KML061S04E	STEPPER MOTOR		1
12	1605-103-31-340mm	GUIDE RAIL MODEL 1605 340mm		2
11	1651-113-10	RUNNER BLOCK MODEL 1651	STEEL	4
10	4105090504-310001	CONNECTOR BRACKET		1
9	4105090504-610009	POTENTIOMETER SENS CONN ARM		1
8	4105090504-610008	POTENTIOMETER MOUNTING BRKT		2
7	4105090504-610007	LIMIT SWITCH TRIPPER PLATE		2
6	4105090504-610006	LIMIT SWITCH MOUNTING PLATE		2
5	4105090504-620002	RUNNER BLK SPACER DUAL RAIL		4
4	4105090504-610004	SCREW DRIVE FLANGE		1
3	4105090504-620001	CARRIAGE PLATE		1
2	4105090504-610002	SCREW DRIVE ASSEMBLY		1
1	4105090504-610001	BASE PLATE		1

UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES. DECIMAL TOLERANCES: ANGULAR ±.030° SURFACE ROUGHNESS 125

REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX. SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ASMT 58A1 (ENGR00000 & TELEPHONIC IN ACCORDANCE WITH LATEST ASMT 5145)

DO NOT SCALE DRAWING

LOG NUMBER: T4620000-04

THIS DRAWING IS THE PROPERTY OF ARGONNE NATIONAL LABORATORY

DESIGNED BY: KWC / J BARRAZA DATE: 3-28-96  
 CHECKED BY: J BARRAZA DATE: 3-28-96  
 SURFACE ROUGHNESS: 125

CHIEF DESIGN ENGINEER: D SHU DATE: 04/01/96  
 UP LEADER: T.M. KUZAY DATE: 4/2/96

DESIGNER: KWC / J BARRAZA DATE: 3-28-96  
 RESPONSIBLE ENGINEER: J BARRAZA DATE: 3-28-96

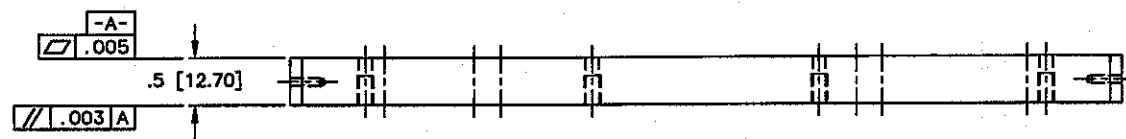
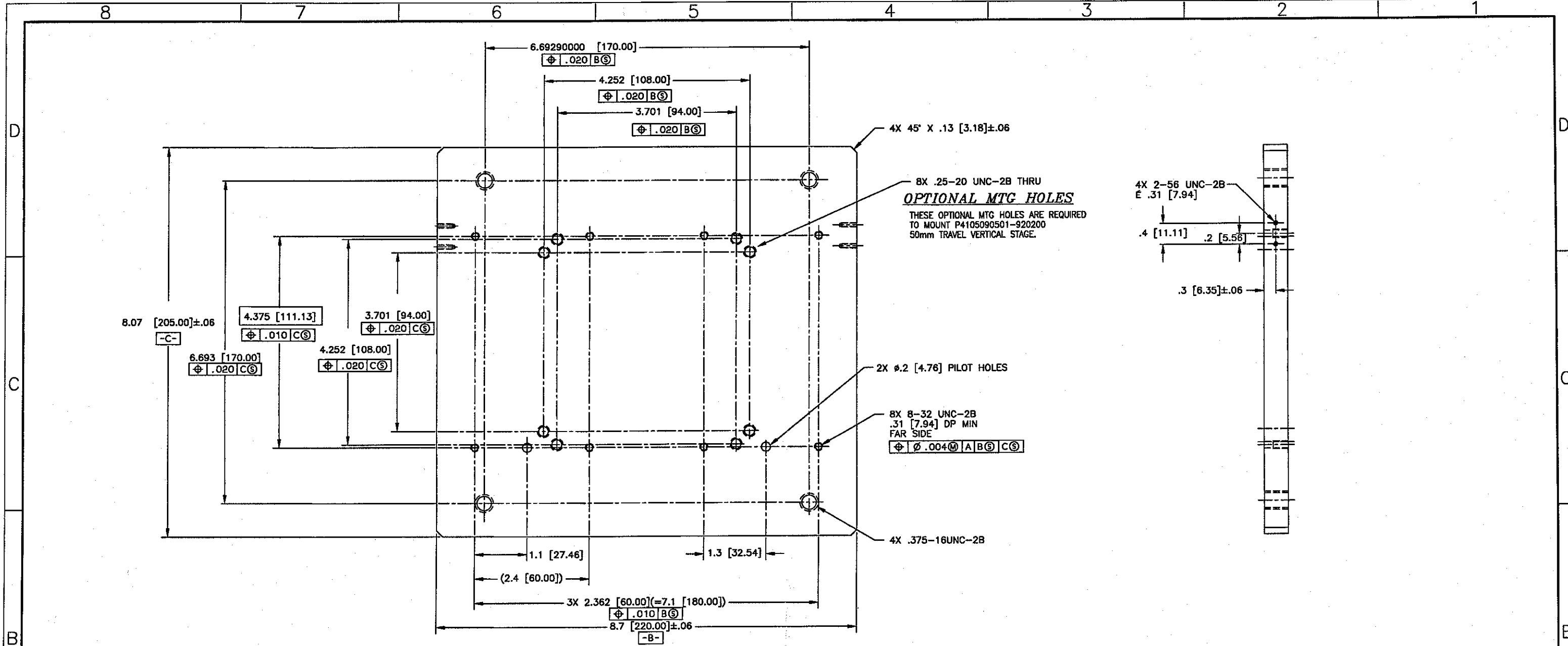
TITLE: ADVANCED PHOTON SOURCE  
 EXPERIMENTAL FACILITIES  
 XOR/SRI-CAT BEAMLINES  
 STANDARD COMPONENTS  
 T4 HEAVY LOAD TABLE  
 HORIZONTAL STAGE/SLIDE ASSY

SCALE: 1:1  
 SHEET 1 of 1

DWG NUMBER: 4105090504-620000-04

APPROX. WEIGHT: 50 LBS. (22.68 Kg)

REV	CHANGE DESCRIPTION	BY	CHKD	DATE
03	SEE DCN #090903-14	RTK	SHL	09/03/08



**NOTES:**  
 1. ALL DIMENSIONS SHOWN IN [ ] ARE MILLIMETERS AND ARE FOR REFERENCE USE ONLY.

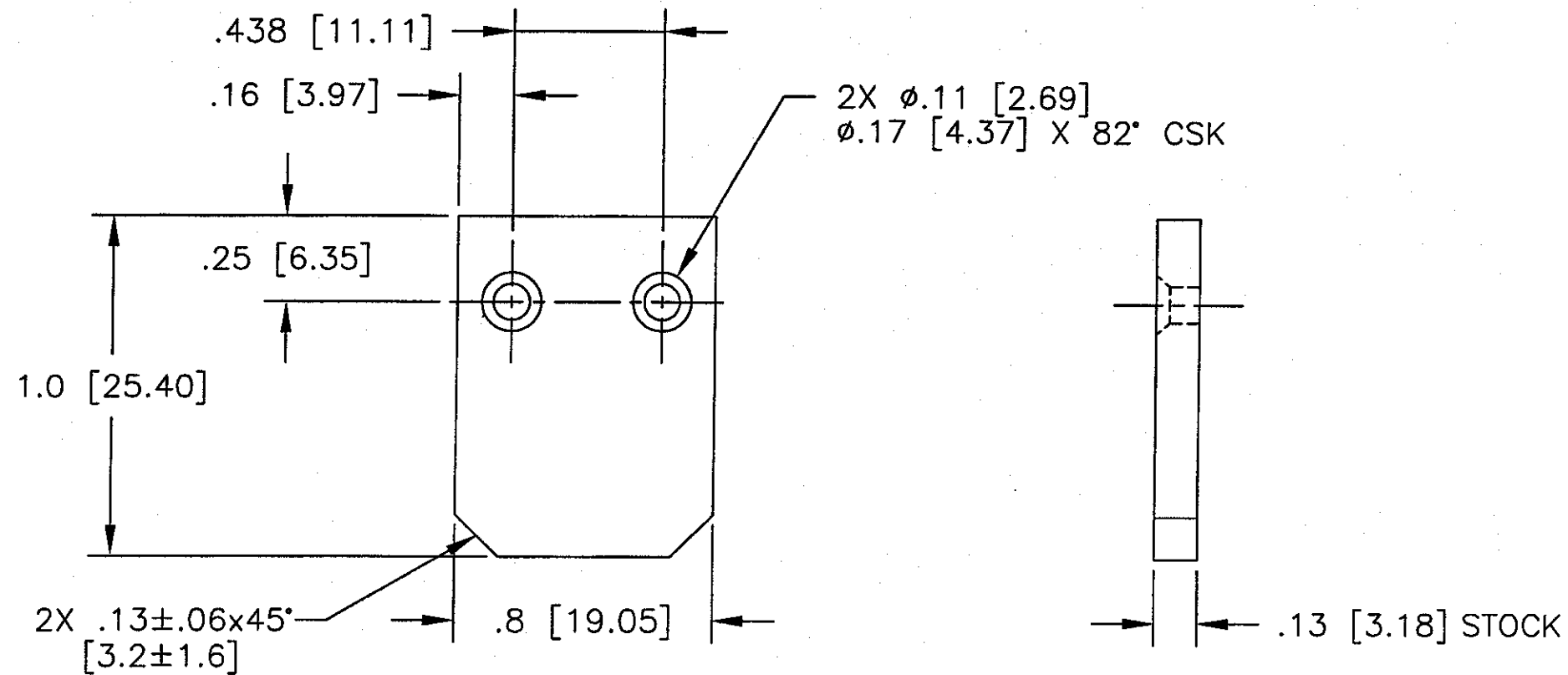
NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #4105090504-620001-02.

SYN	CHANGE DESCRIPTION	BY	CHKD	DATE
01	SEE DCN #090903-02	RTK	SHL	082604

CONSTRUCTION PRINT  
 OCT 14 2009  
 ADVANCED PHOTON SOURCE

ITEM	QTY	DCN/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC
PARTS LIST				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES		LOG NUMBER: T4620001-02 THIS DRAWING IS THE PROPERTY OF <b>ARGONNE NATIONAL LABORATORY</b>		
TOLERANCES:		DRAWN BY: KWC DATE: 3-28-96 CHIEF DESIGN ENGINEER: D SHU DATE: 04/01/96		
DECIMALS: .005		CHECKED BY: J BARRAZA DATE: 3-28-96 OP LEADER: T.M. KUZAY DATE: 4/2/96		
ANGULAR: ±0.30°		DESIGNER: KWC / J BARRAZA DATE: 3-28-96 PROJECT MOR. DATE:		
X ±.1 [2.5]		RESPONSIBLE ENGINEER: J BARRAZA DATE: 3-28-96 APPROVED/RELEASED: [Signature] DATE: 10/7/09		
Y ±.01 [0.25]		MATERIAL: 304 SST SCALE: 1:1 SIZE: D SHEET: 1 of 1		
Z ±.005 [0.13]		TITLE: ADVANCED PHOTON SOURCE EXPERIMENTAL FACILITIES XOR/SRI-CAT BEAMLINES STANDARD COMPONENTS T4 HEAVY LOAD TABLE CARRIAGE PLATE		
SURFACE ROUGHNESS: 125		DRAWING NUMBER: 4105090504-620001-02		
REMOVE ALL BURRS AND BREAK SHARP EDGES AS MAX.				
SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST AMS 8941				
DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5				
DO NOT SCALE DRAWING				





NOTE:  
 1. ALL DIMENSIONS SHOWN IN [ ] ARE MILLIMETERS AND ARE FOR REFERENCE USE ONLY.

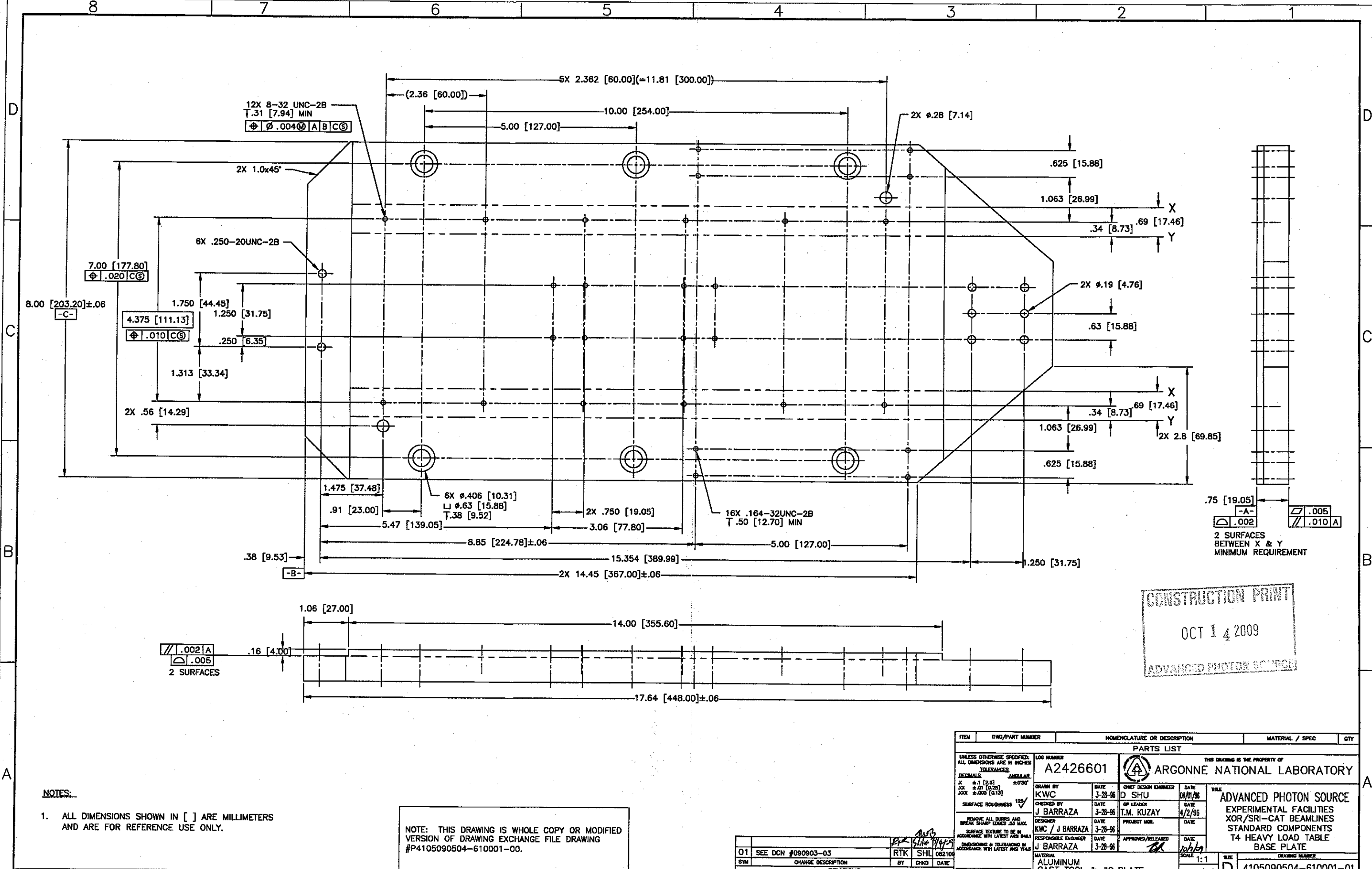
CONSTRUCTION PRINT  
 OCT 14 2009  
 ADVANCED PHOTON SOURCE

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #4105090504-620003-00.

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
PARTS LIST				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES		LOG NUMBER <b>A2427901</b>	THIS DRAWING IS THE PROPERTY OF <b>ARGONNE NATIONAL LABORATORY</b>	
TOLERANCES DECIMALS      ANGULAR .X    ±.1 [2.5]      ±0'30" .XX   ±.01 [0.25] .XXX ±-.28-96  SURFACE ROUGHNESS 125 ✓  REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX. SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1 DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5		DRAWN BY <b>KWC</b> CHECKED BY <b>J BARRAZA</b> DESIGNER <b>KWC / BARRAZA</b> RESPONSIBLE ENGINEER <b>J BARRAZA</b> MATERIAL <b>6061-T6 ALUMINUM</b>	CHIEF DESIGN ENGINEER <b>D SHU</b> GP LEADER <b>T.M. KUZAY</b> PROJECT MGR.  APPROVED/RELEASED <i>[Signature]</i>	DATE <b>04/01/96</b> DATE <b>4/2/96</b> DATE  DATE <b>10/7/99</b>
REVISIONS 01 SEE DCN #090903-02 BY <b>RTK</b> CHKD <b>SHL</b> DATE <b>082109</b>		SCALE <b>1:1</b> SHEET <b>1 of 1</b>	SIZE <b>B</b>	DRAWING NUMBER <b>4105090504-620003-01</b>

SYM	CHANGE DESCRIPTION	BY	CHKD	DATE
01	SEE DCN #090903-02	RTK	SHL	082109

DO NOT SCALE DRAWING



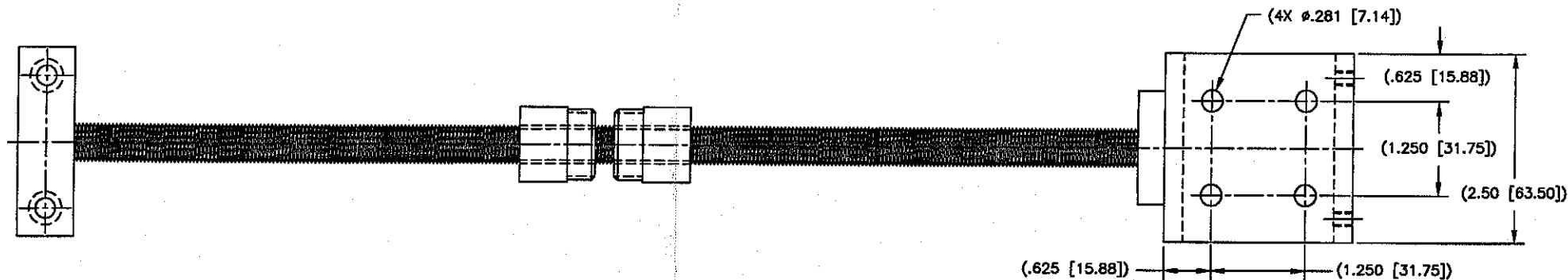
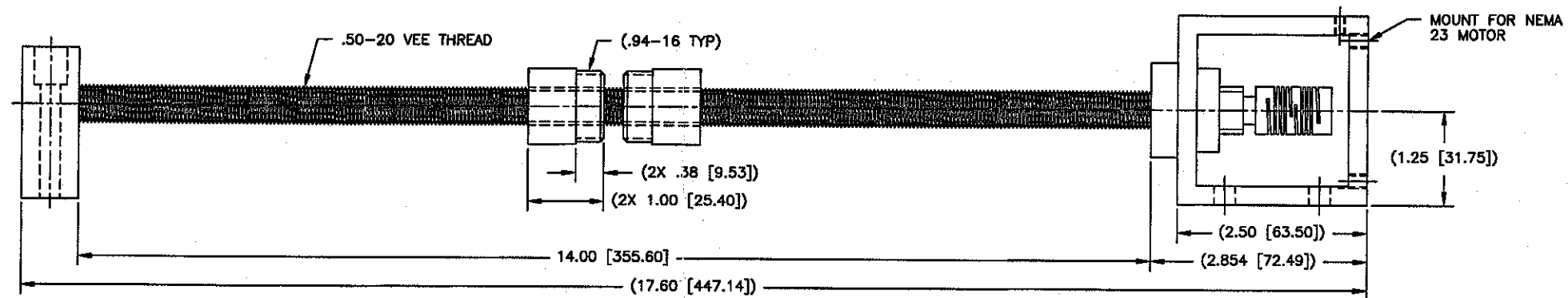
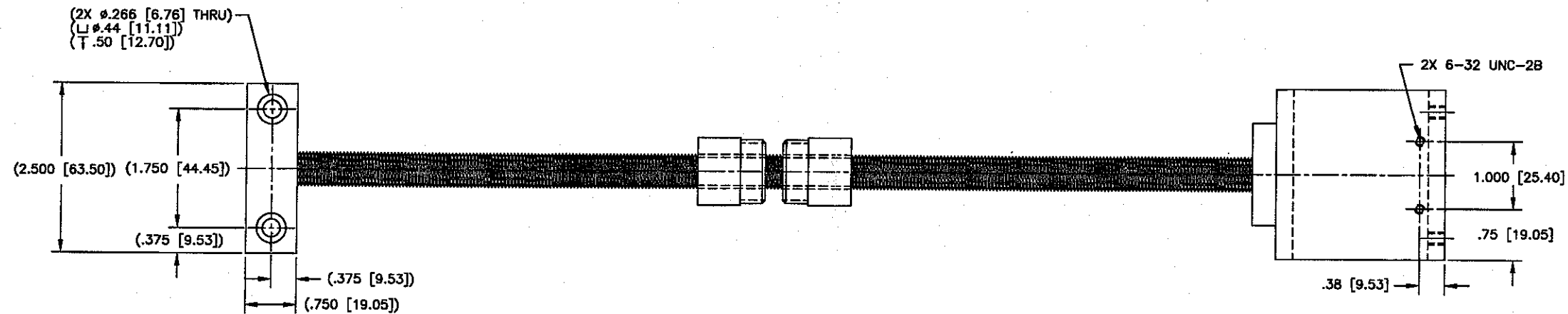
CONSTRUCTION PRINT  
 OCT 14 2009  
 ADVANCED PHOTON SOURCE

NOTES:  
 1. ALL DIMENSIONS SHOWN IN [ ] ARE MILLIMETERS AND ARE FOR REFERENCE USE ONLY.

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #P4105090504-610001-00.

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY	
PARTS LIST					
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES TOLERANCES: DECIMALS: ANGULAR: X ±.1 (2.5) ±.030° X.X ±.01 (0.25) X.XX ±.005 (0.13) SURFACE ROUGHNESS 125		LOG NUMBER <b>A2426601</b>	THIS DRAWING IS THE PROPERTY OF <b>ARGONNE NATIONAL LABORATORY</b>		
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX. SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST AMS 9131 DIMENSIONS & TOLERANCES IN ACCORDANCE WITH LATEST AMS 9131		DRAWN BY <b>KWC</b>	DATE <b>3-28-96</b>	CHIEF DESIGN ENGINEER <b>D SHU</b>	DATE <b>04/01/96</b>
		CHECKED BY <b>J BARRAZA</b>	DATE <b>3-28-96</b>	GP LEADER <b>T.M. KUZAY</b>	DATE <b>4/2/96</b>
		DESIGNER <b>KWC / J BARRAZA</b>	DATE <b>3-28-96</b>	PROJECT MGR.	DATE
		RESPONSIBLE ENGINEER <b>J BARRAZA</b>	DATE <b>3-28-96</b>	APPROVED/RELEASED <i>[Signature]</i>	DATE <i>[Signature]</i>
		MATERIAL <b>ALUMINUM CAST TOOL &amp; JIG PLATE</b>			SCALE <b>1:1</b>
		DO NOT SCALE DRAWING			SIZE <b>D</b>
		DRAWING NUMBER <b>4105090504-610001-01</b>			SHEET <b>1 of 1</b>

SYD	CHANGE DESCRIPTION	BY	CHKD	DATE
01	SEE DCN #090903-03	RTK	SHL	08/21/94



**NOTES:**

1. ALL DIMENSIONS SHOWN IN [ ] ARE MILLIMETERS AND ARE FOR REFERENCE USE ONLY.

**SOURCE**

1 BALL SCREWS & ACTUATORS CO. INC.  
 3616 SNELL AVENUE  
 SAN JOSE, CA. 95136-1305  
 PHONE: (800) 882-8857  
 FAX: (408) 629-2620

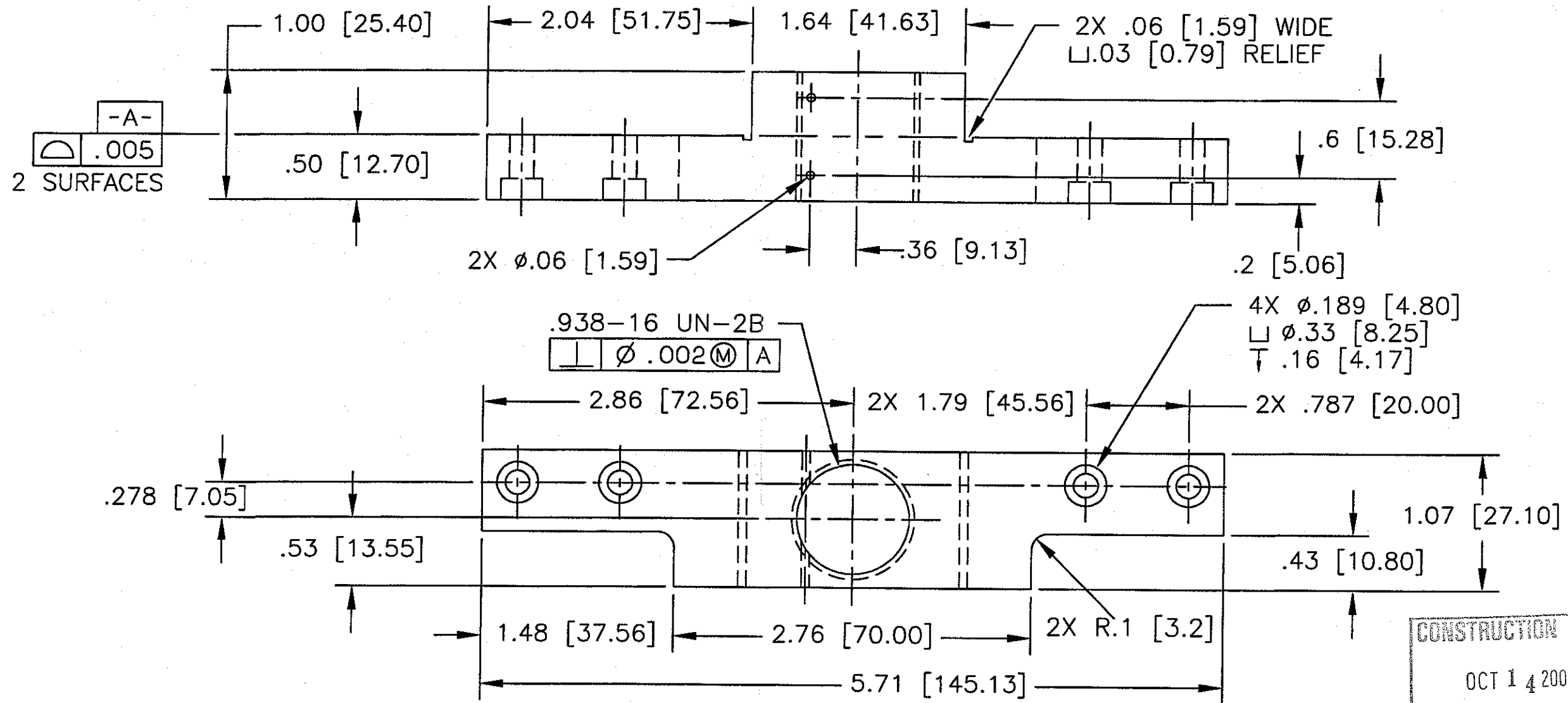
ORDERING INFORMATION:  
 PART NUMBER: M23S8-SV5020-14" THREAD-2BNS020V

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #P4105090504-610002-00.

SYM	CHANGE DESCRIPTION	BY	CHKD	DATE
01	SEE DCN #090903-03	RTK	SHL	08/21/04

CONSTRUCTION PRINT  
 OCT 14 2009  
 ADVANCED PHOTON SOURCE

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
PARTS LIST				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES TOLERANCES: DECIMALS ANGLE X ±.1 [2.5] ±.030° Y ±.01 [0.25] Z ±.005 [0.13] SURFACE ROUGHNESS 125		LOG NUMBER <b>A2426701</b>		
THIS DRAWING IS THE PROPERTY OF <b>ARGONNE NATIONAL LABORATORY</b>				
DESIGNED BY KWC	DATE 3-28-96	CHIEF DESIGN ENGINEER D SHU	DATE 04/21/96	TITLE <b>ADVANCED PHOTON SOURCE EXPERIMENTAL FACILITIES XOR/SRI-CAT BEAMLINES STANDARD COMPONENTS T4 HEAVY LOAD TABLE SCREW DRIVE ASSEMBLY</b>
CHECKED BY J BARRAZA	DATE 3-28-96	GP LEADER T.M. KUZAY	DATE 4/2/96	
DESIGNER KWC / J BARRAZA	DATE 3-28-96	PROJECT MGR.	DATE	
RESPONSIBLE ENGINEER J BARRAZA	DATE 3-28-96	APPROVED/RELEASED	DATE 10/1/04	
MATERIAL				
SCALE 1:1				DRAWING NUMBER
SHEET 1 of 1				<b>D 4105090504-610002-01</b>



**NOTES:**

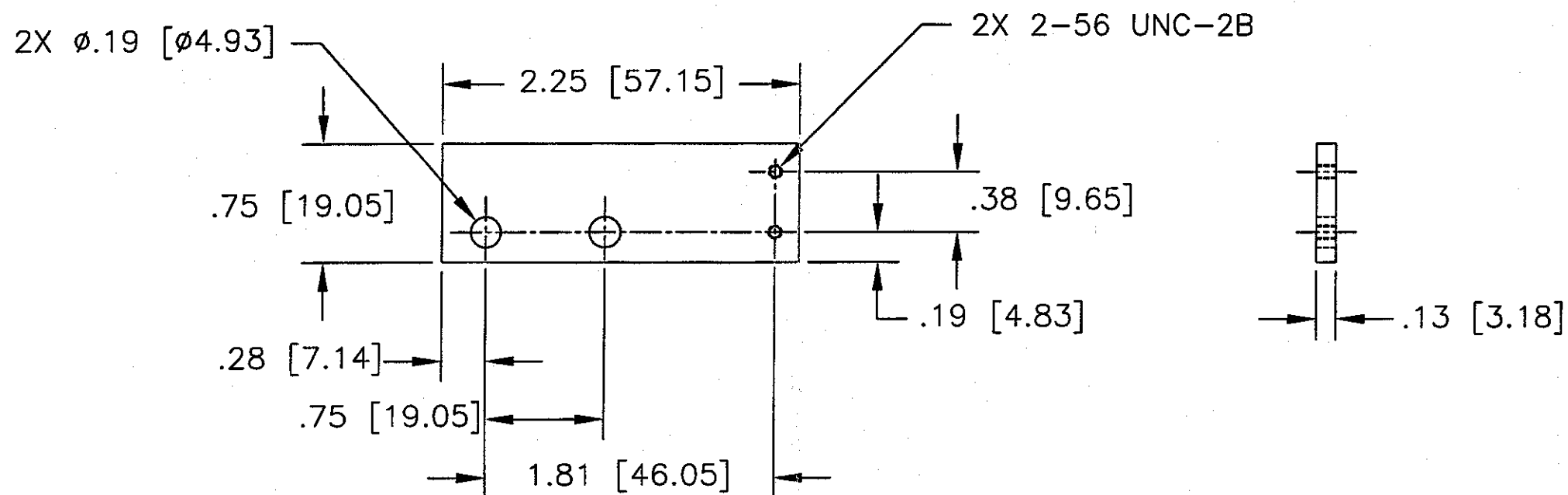
1. ALL DIMENSIONS SHOWN IN [ ] ARE MILLIMETERS AND ARE FOR REFERENCE USE ONLY.

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #P4105090504-610004-00.

CONSTRUCTION PRINT  
OCT 14 2009  
ADVANCED PHOTON SOURCE

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
<b>PARTS LIST</b>				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES <b>TOLERANCES</b>		LOG NUMBER <b>A2426901</b>	THIS DRAWING IS THE PROPERTY OF <b>ARGONNE NATIONAL LABORATORY</b>	
DECIMALS      ANGULAR .X    ±.1 [2.5]      ±0°30' .XX   ±.01 [0.25] .XXX ±-.28-96		DRAWN BY <b>KWC</b> CHECKED BY <b>J BARRAZA</b> DESIGNER <b>KWC / BARRAZA</b> RESPONSIBLE ENGINEER <b>J BARRAZA</b> MATERIAL <b>304 SST</b>	CHIEF DESIGN ENGINEER <b>D SHU</b> GP LEADER <b>T.M. KUZAY</b> PROJECT MGR.  APPROVED/RELEASED <i>[Signature]</i>	DATE <b>3-28-96</b> DATE <b>3-28-96</b> DATE <b>3-28-96</b> DATE <b>3-28-96</b> DATE <b>10/27/09</b>
SURFACE ROUGHNESS 125/✓		TITLE <b>ADVANCED PHOTON SOURCE EXPERIMENTAL FACILITIES XOR/SRI-CAT BEAMLINES STANDARD COMPONENTS T4 HEAVY LOAD TABLE SCREW DRIVE FLANGE</b>		
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.		SCALE <b>1:1</b>	SIZE <b>B</b>	DRAWING NUMBER <b>4105090504-610004-01</b>
SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1		SHEET 1 of 1		
DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5		DO NOT SCALE DRAWING		

REV	SYMBOL	DESCRIPTION	BY	CHKD	DATE
01		SEE DCN #090903-03	RTK	SHL	082109
REVISIONS					



**NOTES:**

1. ALL DIMENSIONS SHOWN IN [ ] ARE MILLIMETERS AND ARE FOR REFERENCE USE ONLY.

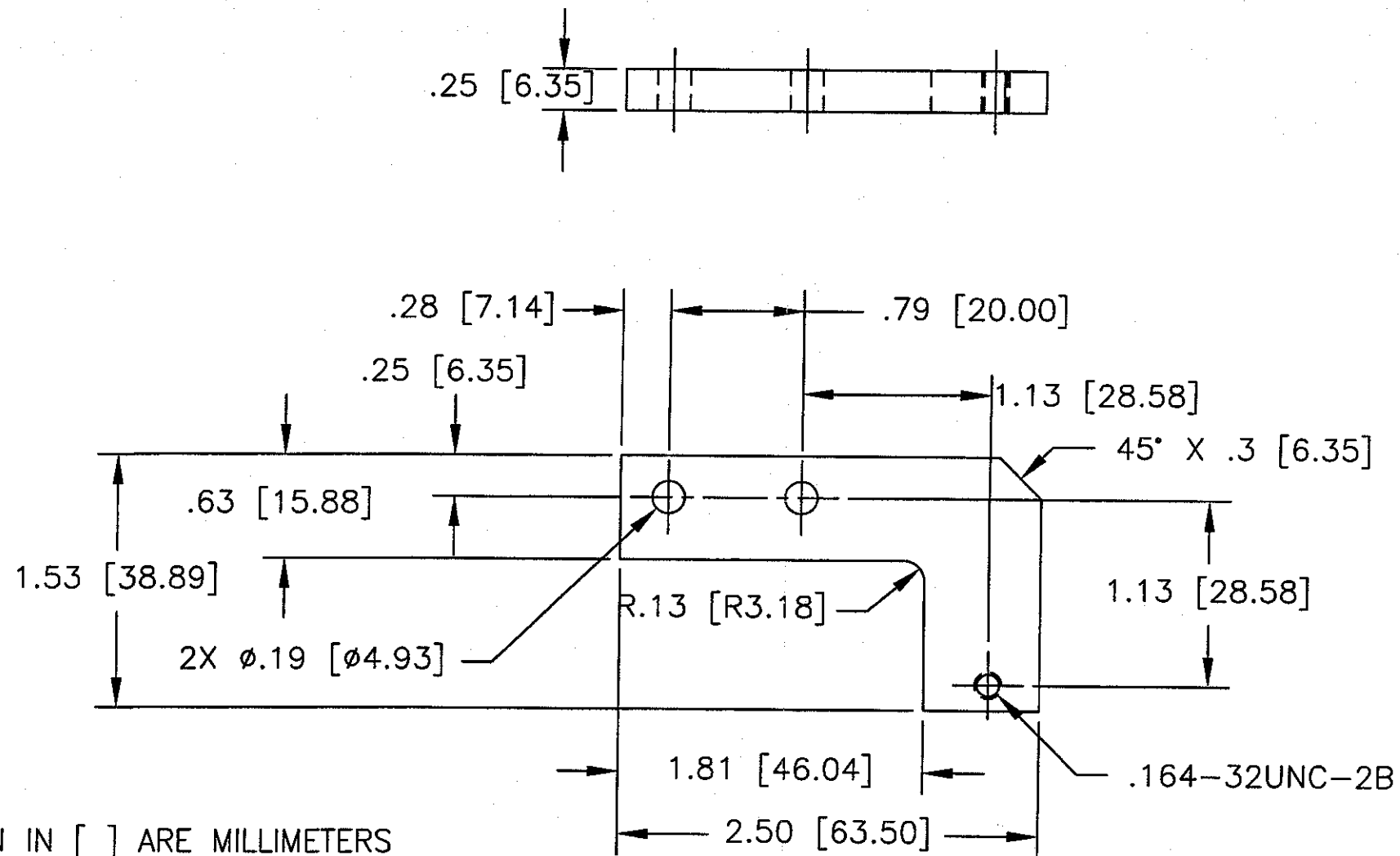
CONSTRUCTION PRINT  
 OCT 14 2009  
 ADVANCED PHOTON SOURCE

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #P4105090504-610006-00.

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY	
<b>PARTS LIST</b>					
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES <b>TOLERANCES</b> DECIMALS      ANGULAR .X      ±.1 [2.5]      ±0°30' .XX      ±.01 [0.25] .XXX      ±-.28-96  SURFACE ROUGHNESS 125/√		ARGONNE NATIONAL LABORATORY THIS DRAWING IS THE PROPERTY OF <b>ARGONNE NATIONAL LABORATORY</b>			
		<b>LOG NUMBER</b> A2427101			
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.  SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1  DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5		<b>DRAWN BY</b> KWC	<b>DATE</b> 3-28-96	<b>CHIEF DESIGN ENGINEER</b> D SHU	<b>DATE</b> 04/01/96
		<b>CHECKED BY</b> J BARRAZA	<b>DATE</b> 3-28-96	<b>GP LEADER</b> T.M. KUZAY	<b>DATE</b> 4/2/96
		<b>DESIGNER</b> KWC / BARRAZA	<b>DATE</b> 3-28-96	<b>PROJECT MGR.</b> DATE	
		<b>RESPONSIBLE ENGINEER</b> J BARRAZA	<b>DATE</b> 3-28-96	<b>APPROVED/RELEASED</b> <i>BA</i>	<b>DATE</b> 10/7/09
		<b>MATERIAL</b> 6061-T6 ALUMINUM		<b>SCALE</b> 1:1	<b>SIZE</b> B
		<b>DO NOT SCALE DRAWING</b>		<b>SHEET</b> 1 of 1	<b>DRAWING NUMBER</b> 4105090504-610006-01

SYM	CHANGE DESCRIPTION	BY	CHKD	DATE
01	SEE DCN #090903-03	RTK	SHL	082109
REVISIONS				





**NOTES:**

1. ALL DIMENSIONS SHOWN IN [ ] ARE MILLIMETERS AND ARE FOR REFERENCE USE ONLY.

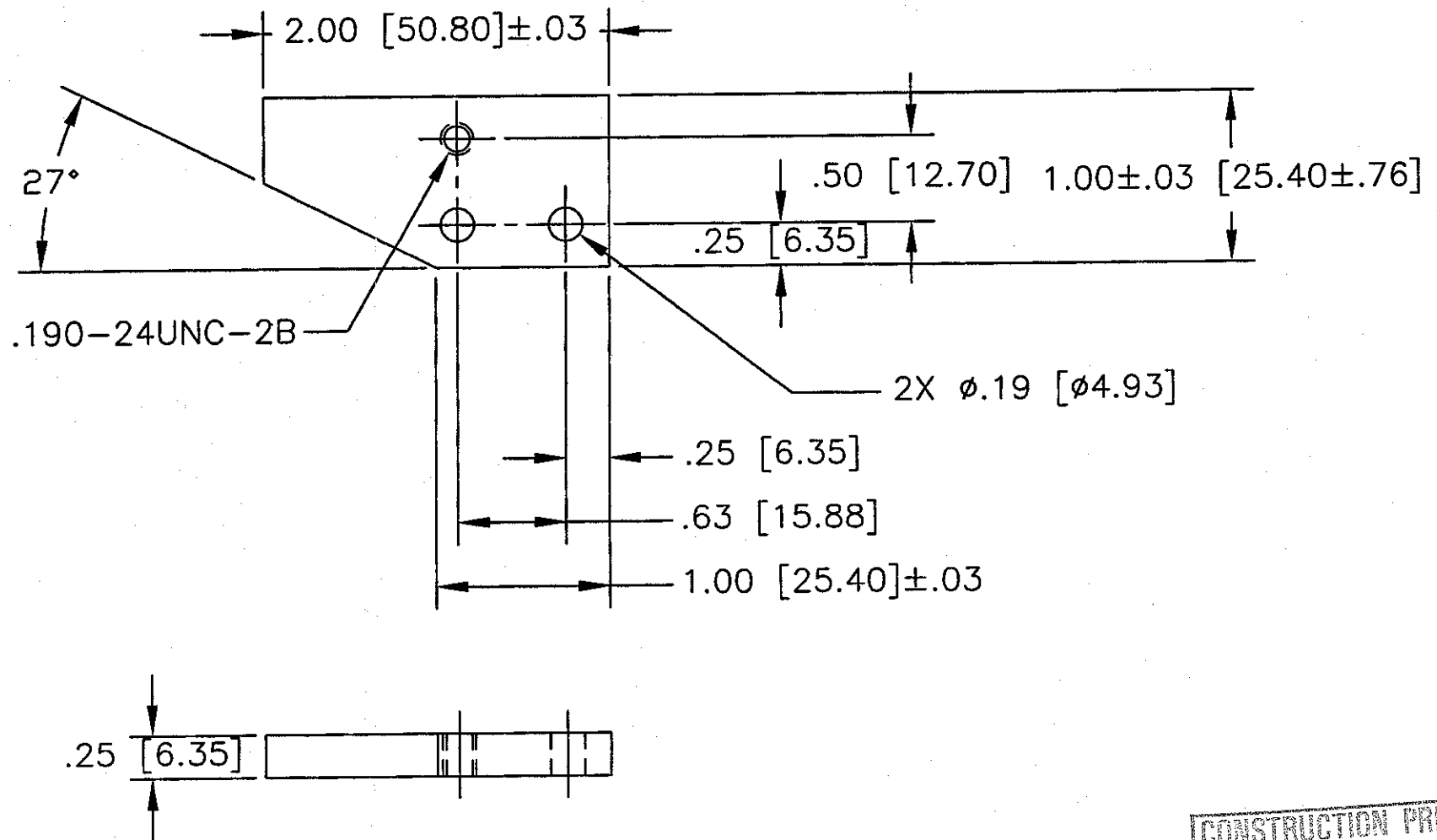
CONSTRUCTION PERMIT  
OCT 14 2009  
ADVANCED PHOTON SOURCE

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #P4105090504-610007-00.

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY																												
PARTS LIST																																
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES		LOG NUMBER <b>A2427201</b>	THIS DRAWING IS THE PROPERTY OF <b>ARGONNE NATIONAL LABORATORY</b>																													
TOLERANCES		<table border="1"> <tr> <td>CHIEF DESIGN ENGINEER</td> <td>DATE</td> <td colspan="2">TITLE</td> </tr> <tr> <td>D SHU</td> <td>04/01/96</td> <td colspan="2">ADVANCED PHOTON SOURCE</td> </tr> <tr> <td>GP LEADER</td> <td>DATE</td> <td colspan="2">EXPERIMENTAL FACILITIES</td> </tr> <tr> <td>T.M. KUZAY</td> <td>4/2/96</td> <td colspan="2">XOR/SRI-CAT BEAMLINES</td> </tr> <tr> <td>PROJECT MGR.</td> <td>DATE</td> <td colspan="2">STANDARD COMPONENTS</td> </tr> <tr> <td></td> <td></td> <td colspan="2">T4 HEAVY LOAD TABLE</td> </tr> <tr> <td></td> <td></td> <td colspan="2">TRIPPER PLATE</td> </tr> </table>			CHIEF DESIGN ENGINEER	DATE	TITLE		D SHU	04/01/96	ADVANCED PHOTON SOURCE		GP LEADER	DATE	EXPERIMENTAL FACILITIES		T.M. KUZAY	4/2/96	XOR/SRI-CAT BEAMLINES		PROJECT MGR.	DATE	STANDARD COMPONENTS				T4 HEAVY LOAD TABLE				TRIPPER PLATE	
CHIEF DESIGN ENGINEER	DATE				TITLE																											
D SHU	04/01/96				ADVANCED PHOTON SOURCE																											
GP LEADER	DATE				EXPERIMENTAL FACILITIES																											
T.M. KUZAY	4/2/96	XOR/SRI-CAT BEAMLINES																														
PROJECT MGR.	DATE	STANDARD COMPONENTS																														
		T4 HEAVY LOAD TABLE																														
		TRIPPER PLATE																														
DECIMALS	ANGULAR	DRAWN BY	DATE																													
.X ±.1 [2.5]	±0°30'	KWC	3-28-96																													
.XX ±.01 [0.25]		CHECKED BY	DATE																													
.XXX ±-.28-96		J BARRAZA	3-28-96																													
SURFACE ROUGHNESS 125 ✓		DESIGNER	DATE																													
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.		KWC / BARRAZA	3-28-96																													
SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1		RESPONSIBLE ENGINEER	DATE																													
DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5		J BARRAZA	3-28-96																													
		MATERIAL	APPROVED/RELEASED	DATE																												
		6061-T6 ALUMINUM	<i>BA</i>	10/7/09																												
		SCALE	SIZE	DRAWING NUMBER																												
		1:1	B	4105090504-610007-01																												
		SHEET 1 of 1																														

SYM	CHANGE DESCRIPTION	BY	CHKD	DATE
01	SEE DCN #090903-03	RTK	SHL	082109
REVISIONS				

DO NOT SCALE DRAWING



**NOTES:**

1. ALL DIMENSIONS SHOWN IN [ ] ARE MILLIMETERS AND ARE FOR REFERENCE USE ONLY.

CONSTRUCTION PRINT  
OCT 1 4 2009

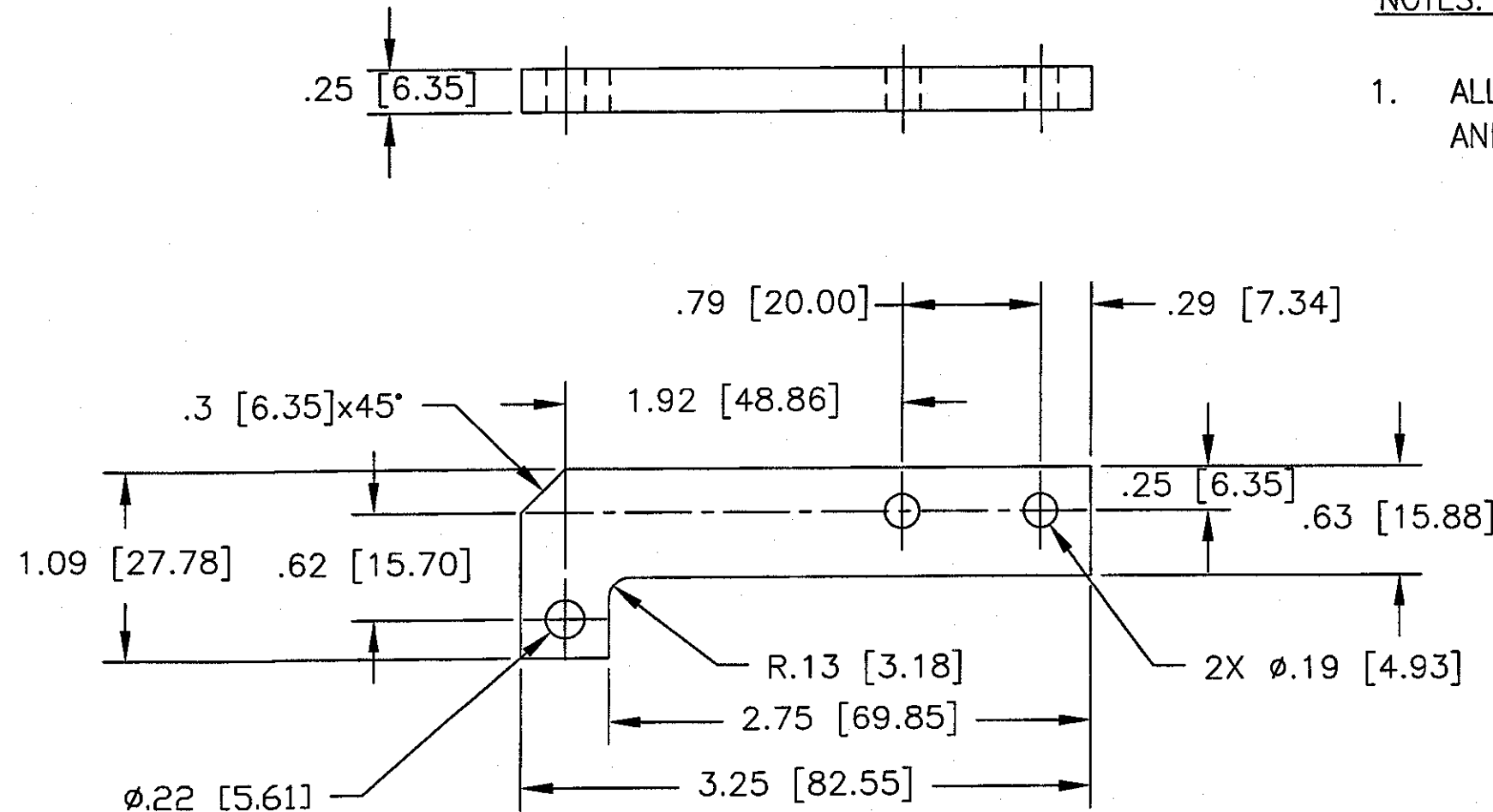
NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #P4105090504-610008-00.

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
<b>PARTS LIST</b>				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES <b>TOLERANCES</b>		LOG NUMBER <b>A2427301</b>	THIS DRAWING IS THE PROPERTY OF <b>ARGONNE NATIONAL LABORATORY</b>	
DECIMALS      ANGULAR .X    ±.1 [2.5]      ±0°30' .XX   ±.01 [0.25] .XXX ±-.28-96		DRAWN BY <b>KWC</b> CHECKED BY <b>J BARRAZA</b> DESIGNER <b>KWC / BARRAZA</b> RESPONSIBLE ENGINEER <b>J BARRAZA</b>	CHIEF DESIGN ENGINEER <b>D SHU</b> GP LEADER <b>T.M. KUZAY</b> PROJECT MGR.  APPROVED/RELEASED <i>DK</i>	DATE <b>3-28-96</b> DATE <b>3-28-96</b> DATE <b>3-28-96</b> DATE <b>3-28-96</b> DATE <b>10/7/09</b>
SURFACE ROUGHNESS $125/\sqrt{\quad}$		TITLE <b>ADVANCED PHOTON SOURCE EXPERIMENTAL FACILITIES XOR/SRI-CAT BEAMLINES STANDARD COMPONENTS T4 HEAVY LOAD TABLE MOUNTING BRACKET</b>		
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX. SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1 DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5		MATERIAL <b>6061-T6 ALUMINUM</b>	SCALE <b>1:1</b>	SIZE <b>B</b>
DO NOT SCALE DRAWING		DRAWING NUMBER <b>4105090504-610008-01</b>		

REV	SYMBOL	DESCRIPTION	BY	CHKD	DATE
01	SEE DCN #090903-03		RTK	SHL	082109
	CHANGE DESCRIPTION		BY	CHKD	DATE
REVISIONS					

NOTES:

- ALL DIMENSIONS SHOWN IN [ ] ARE MILLIMETERS AND ARE FOR REFERENCE USE ONLY.



CONSTRUCTION PRINT  
OCT 1 4 2009  
ADVANCED PHOTON SOURCE

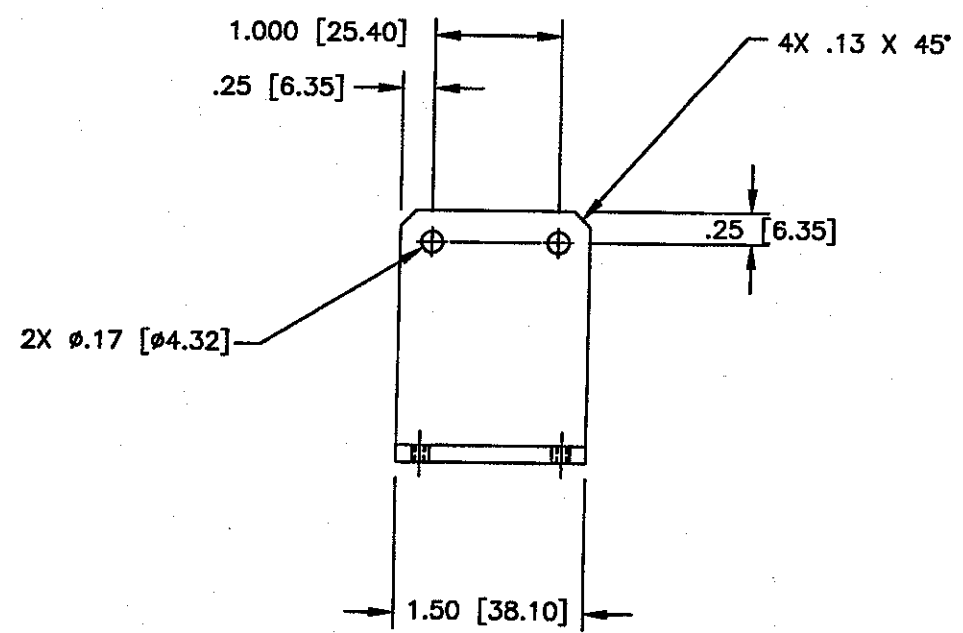
NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #P4105090504-610009-00.

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
PARTS LIST				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES TOLERANCES DECIMALS      ANGULAR .X      ±.1 [2.5]      ±0°30' .XX      ±.01 [0.25] .XXX      ±.005 [0.13] SURFACE ROUGHNESS      125/✓ REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX. SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1 DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5		LOG NUMBER <b>A2427401</b>	THIS DRAWING IS THE PROPERTY OF <b>ARGONNE NATIONAL LABORATORY</b>	
DRAWN BY KWC	DATE 032896	CHIEF DESIGN ENGINEER D SHU	DATE	TITLE ADVANCED PHOTON SOURCE EXPERIMENTAL FACILITIES XOR/SRI-CAT BEAMLINES STANDARD COMPONENTS T4 HEAVY LOAD TABLE CONNECTING ARM
CHECKED BY J BARRAZA	DATE 3/28/96	GP LEADER T.M. KUZAY	DATE 4/2/96	
DESIGNER KWC/BARRAZA	DATE 3/28/96	PROJECT MGR.	DATE	
RESPONSIBLE ENGINEER J BARRAZA	DATE 4/1/96	APPROVED/RELEASED <i>BR</i>	DATE 10/1/07	
MATERIAL 6061-T6 ALUMINUM	SCALE 1:1	SIZE B	DRAWING NUMBER 4105090504-610009-01	
		SHEET 1 of 1		

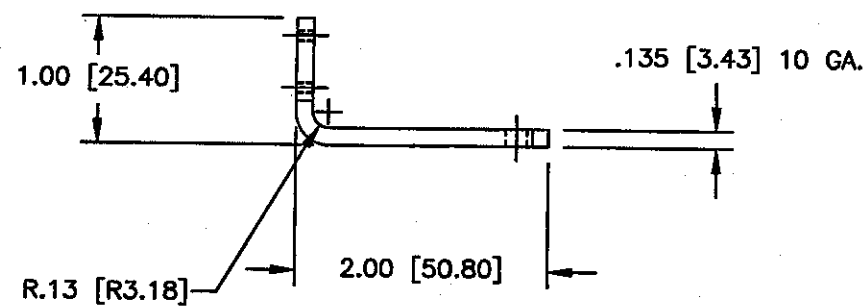
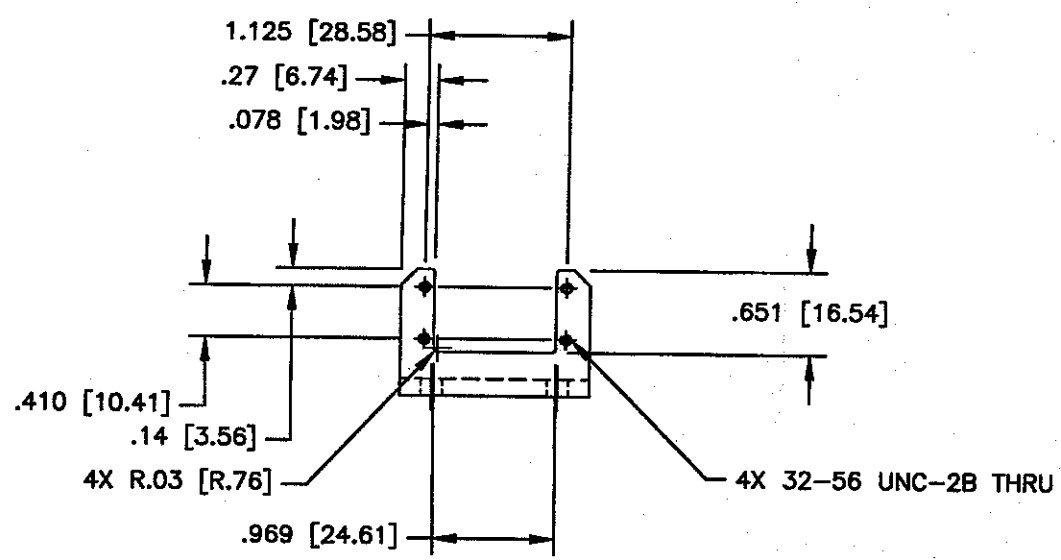
REV	DESCRIPTION	BY	CHKD	DATE
01	SEE DCN #090903-03	RTK	SHL	082109
	CHANGE DESCRIPTION	BY	CHKD	DATE
REVISIONS				

DO NOT SCALE DRAWING

REVISIONS				
ZONE	REV	DESCRIPTION	BY	APPROVED DATE
	1	REVISED, REDRAWN	KWC	2/11/95
	2	SEE DCN NO. 040521-08	AEN	



CONSTRUCTION PRINT  
OCT 14 2009  
ADVANCED PHOTON SOURCE



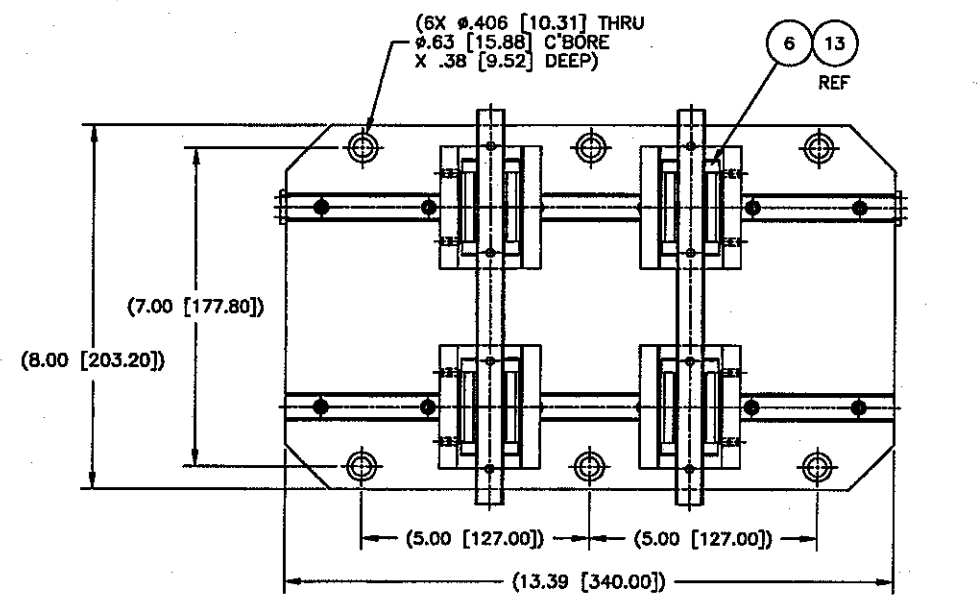
**NOTE**  
DIMENSIONS IN BRACKETS [ ] ARE FOR REFERENCE ONLY.

THIS DRAWING IS A WHOLE COPY OR A MODIFIED VERSION OF DXCHANGE FILE DRAWING NUMBER T4310001-01 DWG. CONSULT WITH THE HIGH RESOLUTION X-RAY SCATTERING GROUP IN XFD REGARDING ENGINEERING CONTENT.

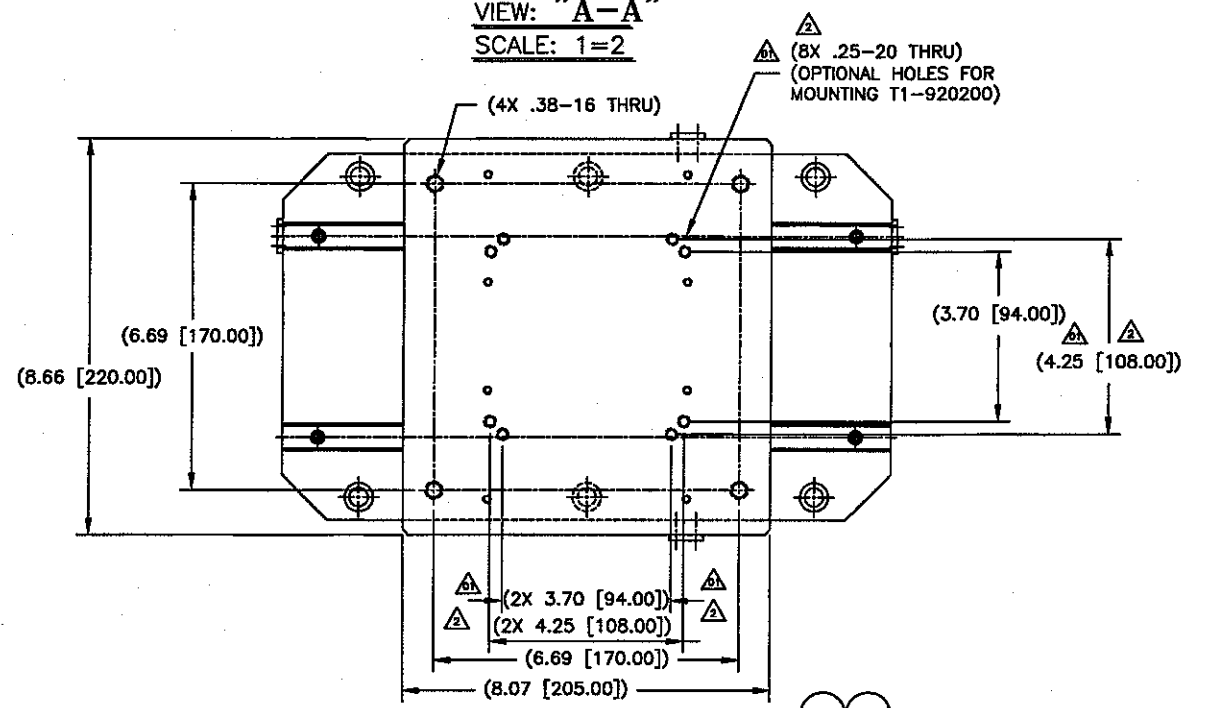
ITEM	DRAWING / PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
PARTS LIST / BILL OF MATERIALS				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES		THIS DRAWING IS THE PROPERTY OF		
TOLERANCES:		<b>ARGONNE NATIONAL LABORATORY</b> <b>ADVANCED PHOTON SOURCE</b>		
DECIMALS	ANGULAR			
X ±.03 [.76]	±.25°	T4-31 I.D. FRONT END LEAD SCREW DRIVE ASSEMBLY CONNECTOR BRACKET		
.XX ±.01 [.25]		DRAWN BY: K. POTTER DATE: 4/22/94		
.XXX ±.005 [.13]		CHECKED BY: J. BARRAZA DATE: 5/4/94		
SURFACE ROUGHNESS: $\sqrt{125}$		DESIGNED BY: POTTER/BARRAZA DATE: 4/22/94		
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX. SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1 DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5		RESPONSIBLE ENGINEER: D. SHU DATE: 5/4/94		
ELECTRONIC FILE NAME: A1834402		GROUP LEADER: T.M. KUZAY DATE: 5/4/94		
		APPROVED BY: <i>Paul Clute</i> DATE: 11/6/04		
		RELEASE LEVEL: ENG-RELEASE		
		MATERIAL: 304 STAINLESS STEEL		
		SIZE: C	PART NO: OHRH5	DRAWING NUMBER: 4105090504-310001
		SCALE: 1:1	DO NOT SCALE DRAWING	SHEET 1 OF 1

8 7 6 5 4 3 2 1

**SPECIFICATIONS:**  
 LOAD CAPACITY: 454 Kg  
 HORIZONTAL MOTION: ±87.7mm X ±27.4mm



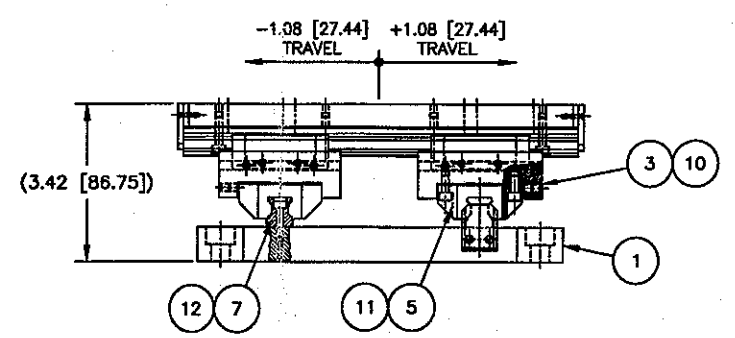
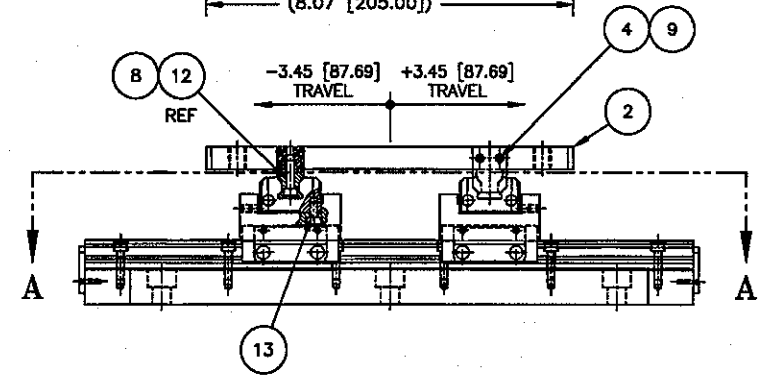
VIEW: "A-A"  
 SCALE: 1=2



CONSTRUCTION PRINT  
 OCT 14 2009  
 ADVANCED PHOTON SOURCE

SOURCE

- 1 STAR LINEAR SYSTEMS  
 9432 SOUTHERN PINE BLVD.  
 CHARLOTTE, NC 28273  
 PHONE: (800) 438-5983  
 FAX: (704) 525-2808
- 2 MCMASTER-CARR  
 600 N County Line Rd.  
 Elmhurst, IL 60126-2081  
 PHONE: (630) 800-3600  
 FAX: (630) 834-9427



ITEM	QTY	DRG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
13	16	91292A108	M4 X 0.7 X 8.0 SOCKET HEAD CAP SCR	SST	16
12	20	92196A196	8-32 X .63 SOCKET HEAD CAP SCREW	SST	20
11	16	92196A192	8-32 X .38 SOCKET HEAD CAP SCREW	SST	16
10	32	92196A189	8-32 X .19 SOC SET SCR FLAT PT	SST	32
9	8	91771A105	2-56 X .38 FL HD PHILLIPS MACH SCR	SST	8
8	2	1605-103-31-220mm	GUIDE RAIL MODEL 1605 220mm		2
7	2	1605-103-31-340mm	GUIDE RAIL MODEL 1605 340mm		2
6	4	1622-113-10	RUNNER BLOCK MODEL 1622	STEEL	4
5	4	1651-113-10	RUNNER BLOCK MODEL 1651	STEEL	4
4	4	4105090504-620003	T4-62 SLIDE STOP	SEE DETAIL	4
3	4	4105090504-620002	T4-62 RUNNER BLK SPACER DUAL RAIL	SEE DETAIL	4
2	1	4105090504-620001	T4-62 CARRIAGE PLATE	SEE DETAIL	1
1	1	4105090504-630001	T4-63 BASE PLATE	SEE DETAIL	1

NOTES:  
 1. ALL DIMENSIONS IN [ ] ARE MILLIMETERS AND ARE FOR REFERENCE ONLY.  
 2. SOME HIDDEN LINES ARE OMITTED FOR CLARITY PURPOSES.

NOTE: THIS DRAWING IS SINGLE COPY OR HIDDEN  
 VERSION OF DRAWING DOWNLOADED FROM  
 #4105090504-630000-01.

REV	SYN	CHANGE DESCRIPTION	BY	CHKD	DATE
03		SEE DCN #090903-18	RTK	SHL	09/04/09

UNLESS OTHERWISE SPECIFIED:  
 ALL DIMENSIONS ARE IN INCHES  
 TOLERANCES:

DECIMALS	ANGULAR
X ±.1 [2.5]	±0.30°
.XX ±.01 [0.25]	
.XXX ±.005 [0.13]	

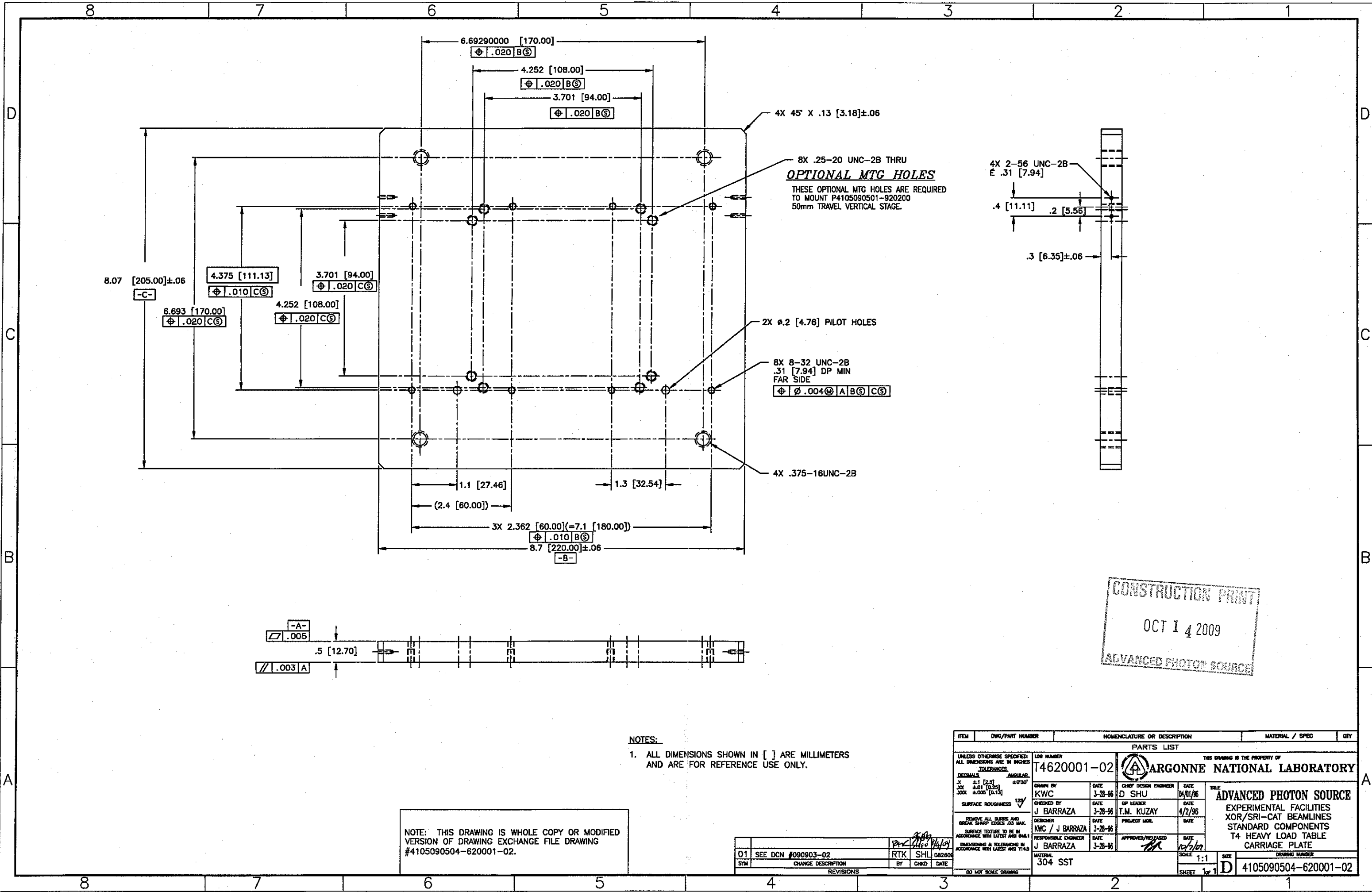
DESIGNED BY: K. COSTELLO DATE: 3-28-96  
 CHECKED BY: J. BARRAZA DATE: 1-28-96  
 DESIGNER: COSTELLO/BARRAZA DATE: 3-28-96  
 RESPONSIBLE ENGINEER: J. BARRAZA DATE: 3-28-96

LOG NUMBER: T4630000-03  
 THIS DRAWING IS THE PROPERTY OF  
**ARGONNE NATIONAL LABORATORY**  
 ADVANCED PHOTON SOURCE  
 EXPERIMENTAL FACILITIES  
 XOR/SRI-CAT BEAMLINES  
 STANDARD COMPONENTS  
 T4 HEAVY LOAD TABLE  
 HORIZONTAL SLIDE ASSEMBLY

SCALE: 1:1  
 SHEET: 1 of 1  
 DRAWING NUMBER: D 4105090504-630000-03

8 7 6 5 4 3 2 1





8.07 [205.00]±.06  
-C-

4.375 [111.13]  
Φ .010 [C]

3.701 [94.00]  
Φ .020 [C]

6.693 [170.00]  
Φ .020 [C]

4.252 [108.00]  
Φ .020 [C]

6.69290000 [170.00]  
Φ .020 [B]

4.252 [108.00]  
Φ .020 [B]

3.701 [94.00]  
Φ .020 [B]

4X 45° X .13 [3.18]±.06

8X .25-20 UNC-2B THRU  
**OPTIONAL MTG HOLES**

THESE OPTIONAL MTG HOLES ARE REQUIRED TO MOUNT P4105090501-920200 50mm TRAVEL VERTICAL STAGE.

4X 2-56 UNC-2B  
E .31 [7.94]

.4 [11.11] .2 [5.56]

.3 [6.35]±.06

2X Ø.2 [4.76] PILOT HOLES

8X 8-32 UNC-2B  
.31 [7.94] DP MIN  
FAR SIDE

Φ Ø.004 [A] [B] [C]

4X .375-16UNC-2B

1.1 [27.46]

1.3 [32.54]

(2.4 [60.00])

3X 2.362 [60.00] (=7.1 [180.00])

Φ .010 [B]

8.7 [220.00]±.06

-B-

-A-  
∥ .005

.5 [12.70]

∥ .003 [A]

CONSTRUCTION PRINT  
OCT 14 2009  
ADVANCED PHOTON SOURCE

**NOTES:**

1. ALL DIMENSIONS SHOWN IN [ ] ARE MILLIMETERS AND ARE FOR REFERENCE USE ONLY.

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01	SEE DCN #090903-02	RTK	SHL	082808
SYM	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		THIS DRAWING IS THE PROPERTY OF		
TOLERANCES:		<b>ARGONNE NATIONAL LABORATORY</b>		
DECIMALS	ANGULAR	TITLE		
X ±.1 [2.5]	±0°30'	ADVANCED PHOTON SOURCE		
XX ±.01 [0.25]		EXPERIMENTAL FACILITIES		
XXX ±.005 [0.13]		XOR/SRI-CAT BEAMLINES		
SURFACE ROUGHNESS 125		STANDARD COMPONENTS		
REMOVE ALL BURRS AND BREAK SHARP EDGES AS MAX.		T4 HEAVY LOAD TABLE		
SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST AMS 8441		CARRIAGE PLATE		
DIMENSIONS & TOLERANCES IN ACCORDANCE WITH LATEST AMS Y14.2		DRAWING NUMBER		
DO NOT SCALE DRAWING		4105090504-620001-02		

4

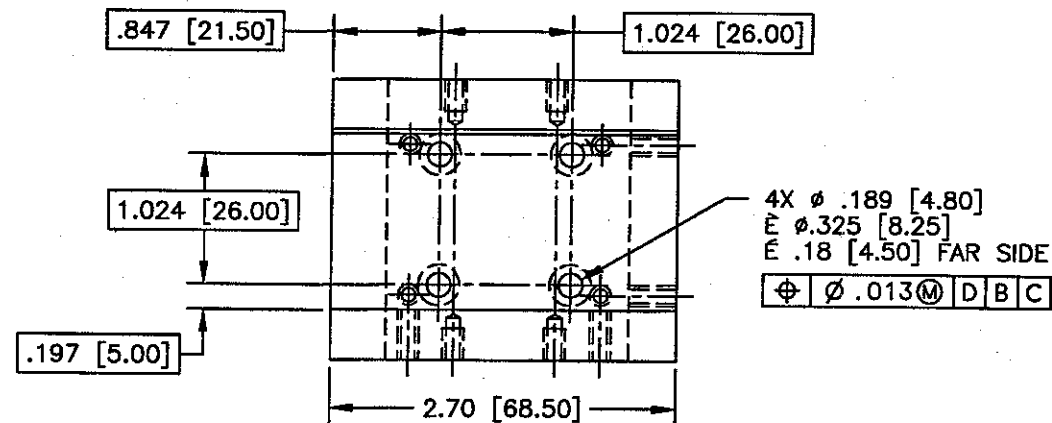
3

2

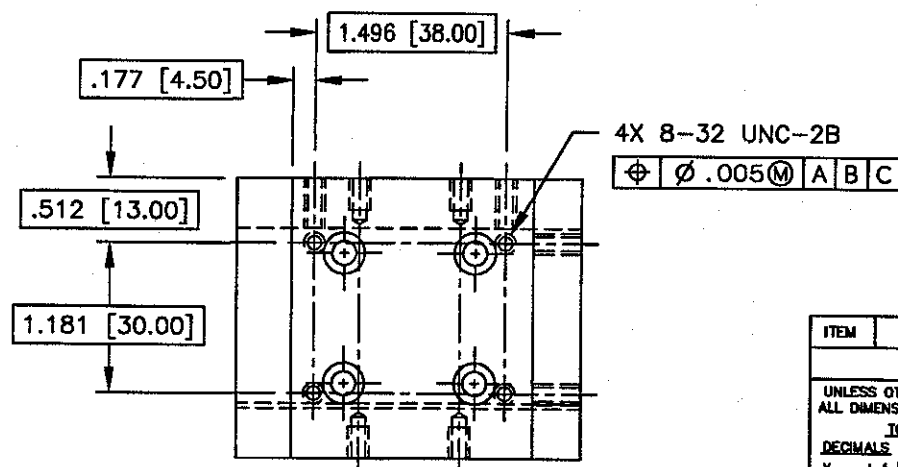
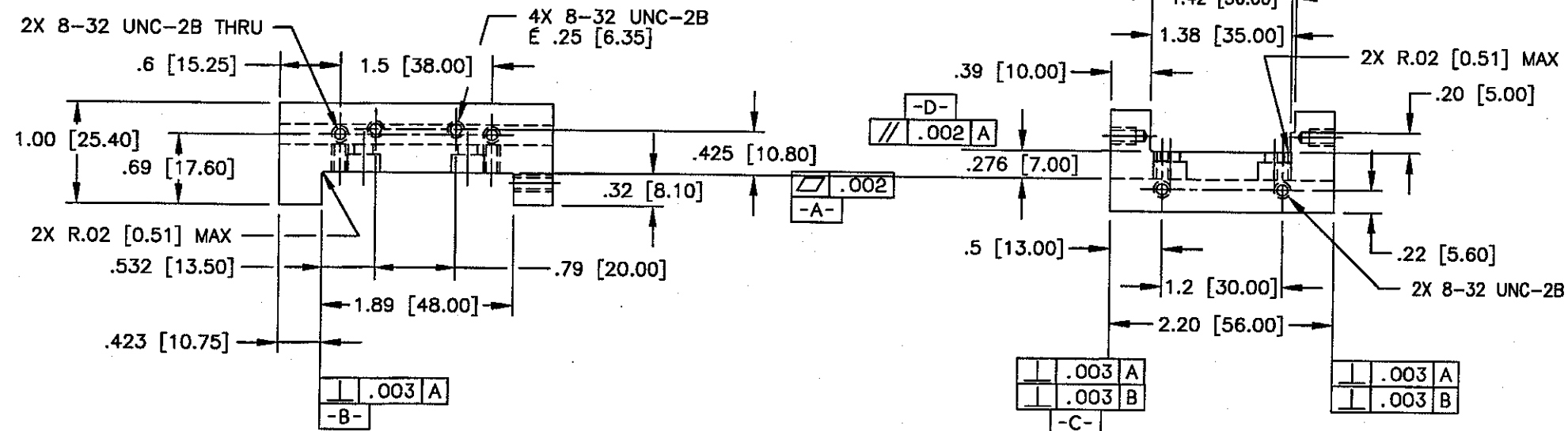
1

D

D



CONSTRUCTION PRINT  
OCT 14 2009  
ADVANCED PHOTON SOURCE



NOTES:

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SYMBOL	CHANGE DESCRIPTION	BY	CHKD	DATE
01	SEE DCN #090903-02	RTK	SHL	09/09/03
REVISIONS				

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
PARTS LIST				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES		THIS DRAWING IS THE PROPERTY OF		
TOLERANCES		ARGONNE NATIONAL LABORATORY		
DECIMALS	ANGULAR			
.X ±.1 [2.5]	±0°30'			
.XX ±.01 [0.25]				
.XXX ±.005 [0.13]				
SURFACE ROUGHNESS 125 ✓				
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.				
SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1				
DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5				
DO NOT SCALE DRAWING				
LOG NUMBER A2427801		DRAWN BY K COSTELLO DATE 3-28-96		
DESIGNER COSTELLO/BARRAZA DATE 3-28-96		RESPONSIBLE ENGINEER J BARRAZA DATE 3-28-96		
MATERIAL 304 STAINLESS STEEL		CHIEF DESIGN ENGINEER D. SHU DATE 3/31/96		
		GP LEADER T.M. KUZAY DATE 4/2/96		
		PROJECT MGR. DATE		
		APPROVED/RELEASED BR DATE 10/7/09		
		SCALE 1:1		
		SHEET 1 of 1		
		TITLE ADVANCED PHOTON SOURCE EXPERIMENTAL FACILITIES XOR/SRI-CAT BEAMLINES STANDARD COMPONENTS T4 HEAVY LOAD TABLE DUAL RAIL		
		DRAWING NUMBER 4105090504-620002-01		

4

3

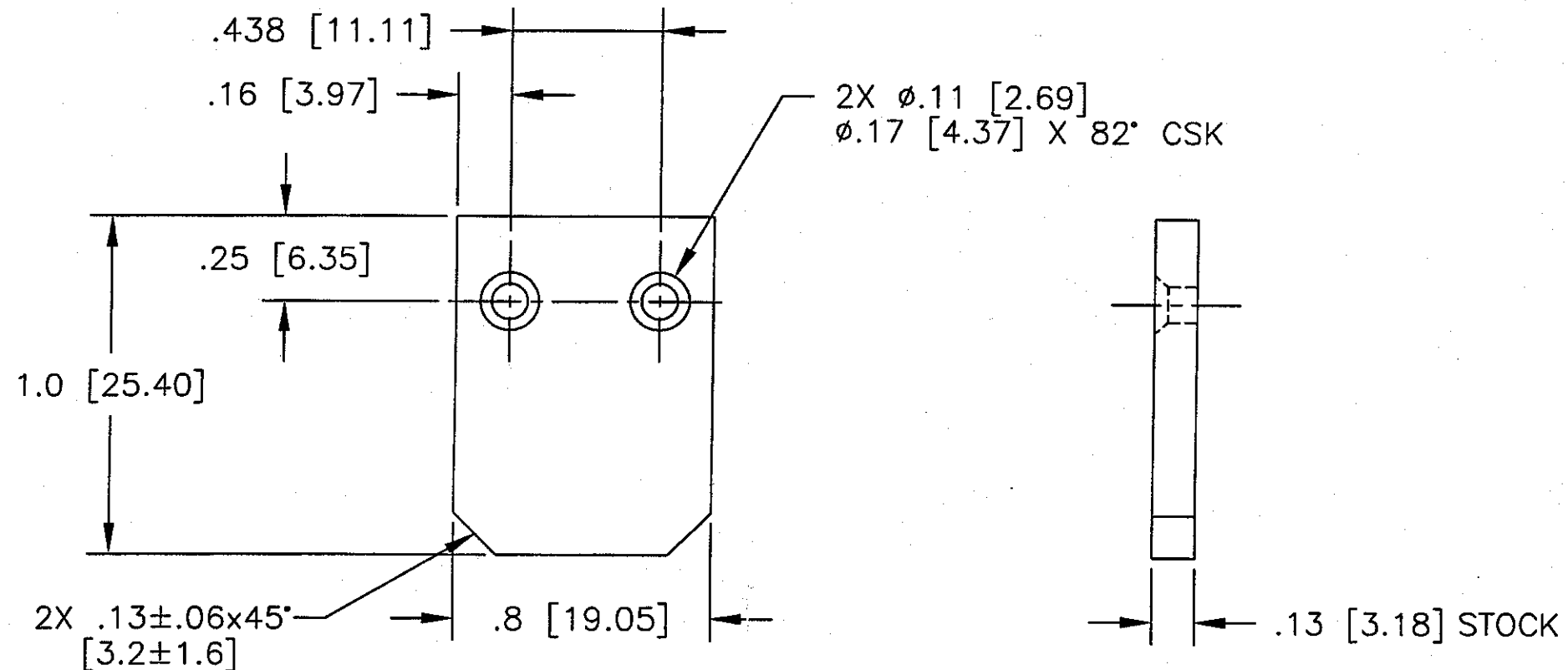
2

1

A

A





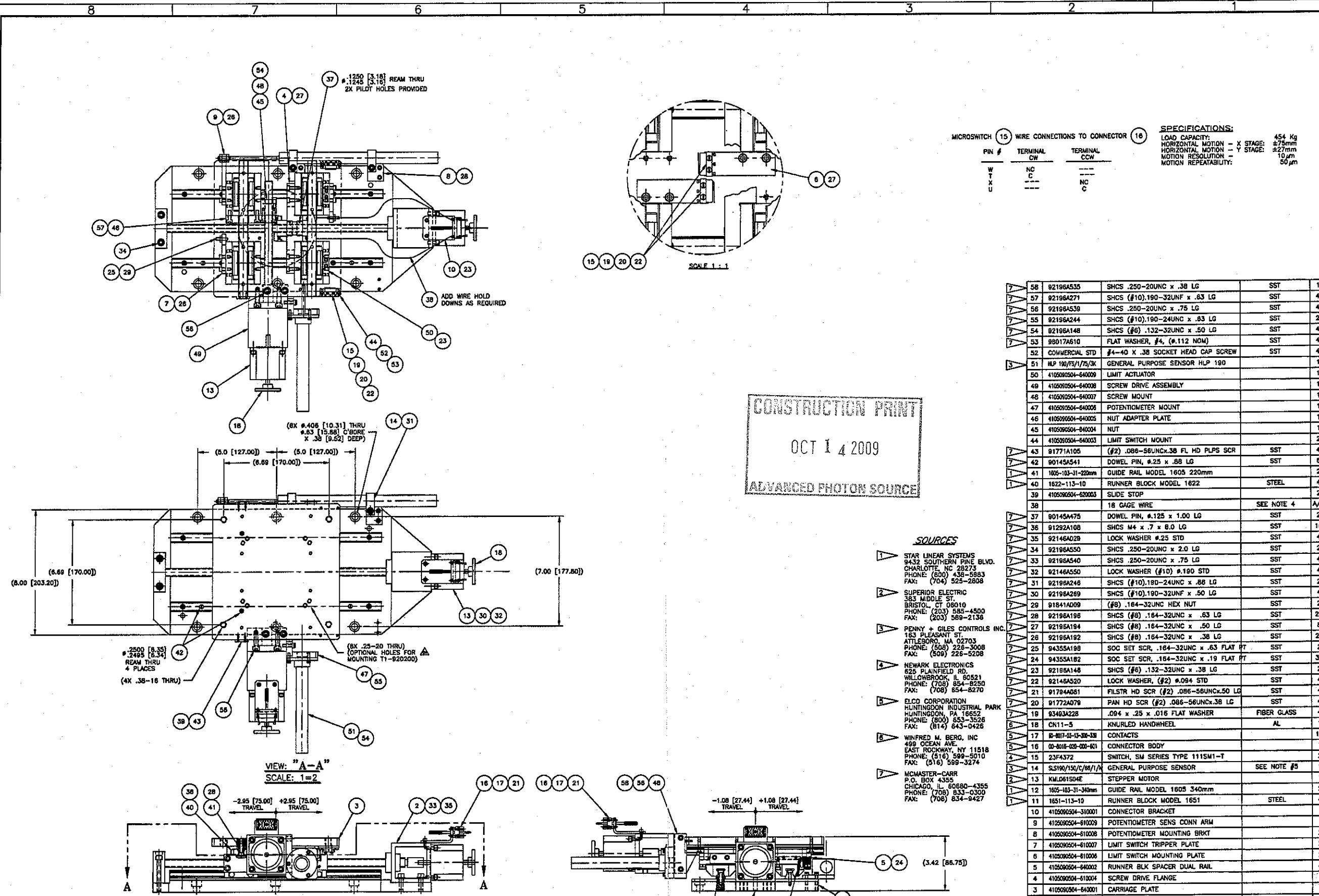
CONSTRUCTION PRINT  
OCT 14 2009  
ADVANCED PHOTON SOURCE

NOTE:  
1. ALL DIMENSIONS SHOWN IN [ ] ARE MILLIMETERS AND ARE FOR REFERENCE USE ONLY.

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #4105090504-620003-00.

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
PARTS LIST				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES <u>TOLERANCES</u> DECIMALS      ANGULAR .X    ±.1 [2.5]      ±0'30" .XX   ±.01 [0.25] .XXX ±-.28-96		LOG NUMBER <b>A2427901</b>	THIS DRAWING IS THE PROPERTY OF <b>ARGONNE NATIONAL LABORATORY</b>	
SURFACE ROUGHNESS 125/✓		DRAWN BY <b>KWC</b>	DATE <b>3-28-96</b>	CHIEF DESIGN ENGINEER <b>D SHU</b>
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.		CHECKED BY <b>J BARRAZA</b>	DATE <b>3-28-96</b>	GP LEADER <b>T.M. KUZAY</b>
SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1		DESIGNER <b>KWC / BARRAZA</b>	DATE <b>3-28-96</b>	PROJECT MGR.
DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5		RESPONSIBLE ENGINEER <b>J BARRAZA</b>	DATE <b>3-28-96</b>	APPROVED/RELEASED <i>[Signature]</i>
DO NOT SCALE DRAWING		MATERIAL <b>6061-T6 ALUMINUM</b>	SCALE <b>1:1</b>	DATE <b>10/7/09</b>
REVISIONS		SIZE <b>B</b>		DRAWING NUMBER <b>4105090504-620003-01</b>

SYM	CHANGE DESCRIPTION	BY	CHKD	DATE
01	SEE DCN #090903-02	RTK	SHL	082109



MICROSWITCH (15) WIRE CONNECTIONS TO CONNECTOR (16)

PIN #	TERMINAL CW	TERMINAL CCW
W	NC	---
T	C	---
X	---	NC
U	---	C

**SPECIFICATIONS:**  
 LOAD CAPACITY: 454 Kg  
 HORIZONTAL MOTION - X STAGE: ±75mm  
 HORIZONTAL MOTION - Y STAGE: ±27mm  
 MOTION RESOLUTION: 10µm  
 MOTION REPEATABILITY: 50µm

ITEM	QTY/PART NUMBER	DESCRIPTION	MATERIAL / SPEC	QTY
58	92196A535	SHCS .250-20UNC x .38 LG	SST	1
57	92196A271	SHCS (#10).190-32UNF x .63 LG	SST	4
56	92196A539	SHCS .250-20UNC x .75 LG	SST	4
55	92196A244	SHCS (#10).190-24UNC x .63 LG	SST	2
54	92196A148	SHCS (#6) .132-32UNC x .50 LG	SST	4
53	99017A610	FLAT WASHER, #4, (#.112 NOM)	SST	4
52	COMMERCIAL STD	#4-40 X .38 SOCKET HEAD CAP SCREW	SST	4
51	HLP 190/15/175/3K	GENERAL PURPOSE SENSOR HLP 190		1
50	4105090504-640009	LIMIT ACTUATOR		1
49	4105090504-640008	SCREW DRIVE ASSEMBLY		1
48	4105090504-640007	SCREW MOUNT		1
47	4105090504-640006	POTENTIOMETER MOUNT		1
46	4105090504-640005	NUT ADAPTER PLATE		1
45	4105090504-640004	NUT		1
44	4105090504-640003	LIMIT SWITCH MOUNT		2
43	91771A105	(#2) .086-56UNCx.38 FL HD PLPS SCR	SST	4
42	90145A541	DOWEL PIN, #25 x .88 LG	SST	6
41	1605-103-31-220mm	GUIDE RAIL MODEL 1605 220mm		2
40	1622-113-10	RUNNER BLOCK MODEL 1622	STEEL	4
39	4105090504-620003	SLIDE STOP		2
38		18 GAGE WIRE	SEE NOTE 4	A/R
37	90145A475	DOWEL PIN, #125 x 1.00 LG	SST	2
36	91292A108	SHCS M4 x .7 x 8.0 LG	SST	16
35	92146A028	LOCK WASHER #25 STD	SST	4
34	92196A550	SHCS .250-20UNC x 2.0 LG	SST	2
33	92196A540	SHCS .250-20UNC x .75 LG	SST	4
32	92146A550	LOCK WASHER (#10) .190 STD	SST	4
31	92196A246	SHCS (#10).190-24UNC x .88 LG	SST	2
30	92196A269	SHCS (#10).190-32UNF x .50 LG	SST	4
29	91841A009	(#8) .164-32UNC HEX NUT	SST	2
28	92196A196	SHCS (#8) .164-32UNC x .63 LG	SST	24
27	92196A194	SHCS (#8) .164-32UNC x .50 LG	SST	8
26	92196A192	SHCS (#8) .164-32UNC x .38 LG	SST	22
25	94355A198	SOC SET SCR, .184-32UNC x .63 FLAT FT	SST	2
24	94355A182	SOC SET SCR, .184-32UNC x .19 FLAT FT	SST	32
23	92196A148	SHCS (#6) .132-32UNC x .38 LG	SST	2
22	92146A520	LOCK WASHER, (#2) #.094 STD	SST	4
21	91784A081	FILSTR HD SCR (#2) .086-56UNCx.50 LG	SST	4
20	91772A078	PAN HD SCR (#2) .086-56UNCx.38 LG	SST	4
19	93493A228	.094 x .25 x .016 FLAT WASHER	FIBER GLASS	4
18	CN11-5	KNURLED HANDWHEEL	AL	1
17	8-807-02-15-38-38	CONTACTS		12
16	00-8016-02-000-61	CONNECTOR BODY		1
15	23F4372	SWITCH, SM SERIES TYPE 111SM1-T		2
14	SS190/150/C/16/1/A	GENERAL PURPOSE SENSOR	SEE NOTE #5	1
13	KMLD61504E	STEPPER MOTOR		1
12	1605-103-31-340mm	GUIDE RAIL MODEL 1605 340mm		2
11	1651-113-10	RUNNER BLOCK MODEL 1651	STEEL	4
10	4105090504-310001	CONNECTOR BRACKET		1
9	4105090504-610009	POTENTIOMETER SENS CONN ARM		1
8	4105090504-610008	POTENTIOMETER MOUNTING BRKT		2
7	4105090504-610007	LIMIT SWITCH TRIPPER PLATE		2
6	4105090504-610006	LIMIT SWITCH MOUNTING PLATE		2
5	4105090504-640002	RUNNER BLK SPACER DUAL RAIL		4
4	4105090504-610004	SCREW DRIVE FLANGE		1
3	4105090504-640001	CARRIAGE PLATE		1
2	4105090504-610002	SCREW DRIVE ASSEMBLY		1
1	4105090504-610001	BASE PLATE		1

- SOURCES**
- 1 STAR LINEAR SYSTEMS  
9432 SOUTHERN PINE BLVD.  
CHARLOTTE, NC 28273  
PHONE: (800) 438-5883  
FAX: (704) 525-2808
  - 2 SUPERIOR ELECTRIC  
383 MIDDLE ST.  
BRISTOL, CT 06010  
PHONE: (203) 585-4500  
FAX: (203) 589-2136
  - 3 PENNY & GILES CONTROLS INC.  
183 PLEASANT ST.  
ATTLEBORO, MA 02703  
PHONE: (508) 226-3008  
FAX: (508) 226-5208
  - 4 NEWARK ELECTRONICS  
625 PLAINFIELD RD.  
WILLOWBROOK, IL 60521  
PHONE: (708) 854-8250  
FAX: (708) 854-8270
  - 5 ELCO CORPORATION  
HUNTINGDON INDUSTRIAL PARK  
HUNTINGDON, PA 16652  
PHONE: (800) 653-3526  
FAX: (814) 643-0426
  - 6 WINFRED M. BERG, INC  
498 OCEAN AVE.  
EAST ROCKAWAY, NY 11518  
PHONE: (516) 599-5010  
FAX: (516) 599-3274
  - 7 MCMMASTER-CARR  
P.O. BOX 4355  
CHICAGO, IL 60680-4355  
PHONE: (708) 833-0300  
FAX: (708) 834-9427

**NOTES:**  
 1. ALL DIMENSIONS IN [ ] ARE MILLIMETERS AND ARE FOR REFERENCE ONLY.  
 2. SOME HIDDEN LINES ARE OMITTED FOR CLARITY PURPOSES.  
 3. THE CALLOUTS FOR REAMING THE HOLES IN EXISTING PILOT HOLES ARE FOR DOWEL PINS TO BE PRESS FITTED.  
 4. ITEM 38 SHALL BE 80° C RATED, PVC INSULATED, 18 GAGE STRANDED COPPER WIRE. MUST NOT BE IRRADIATED PVC INSULATED WIRE. SOLDER WITH KESTER 60/40 SOLDER AT ASSEMBLY.  
 5. TO INSTALL ITEM #14, REMOVE ROD END BEARING FROM THE END OF THE SHAFT AND USE ITEM #44 (BODY CLAMP KIT) TO MOUNT ITEM #14.

SLO-SYN MOTOR WIRE CONNECTIONS TO CONNECTOR (16)

PIN #	WIRE COLOR
A	RED/WHITE
B	RED
C	GREEN
D	GREEN/WHITE
E	BLACK
F	BLACK
H	WHITE
J	WHITE

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #14-94000-01.

APPROX. WEIGHT: 60 LBS. (27.22 Kg)

UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

DATE: 7/16/97  
 DRAWN BY: S.H. LEE  
 CHECKED BY: S.H. LEE  
 APPROVED BY: S.H. LEE

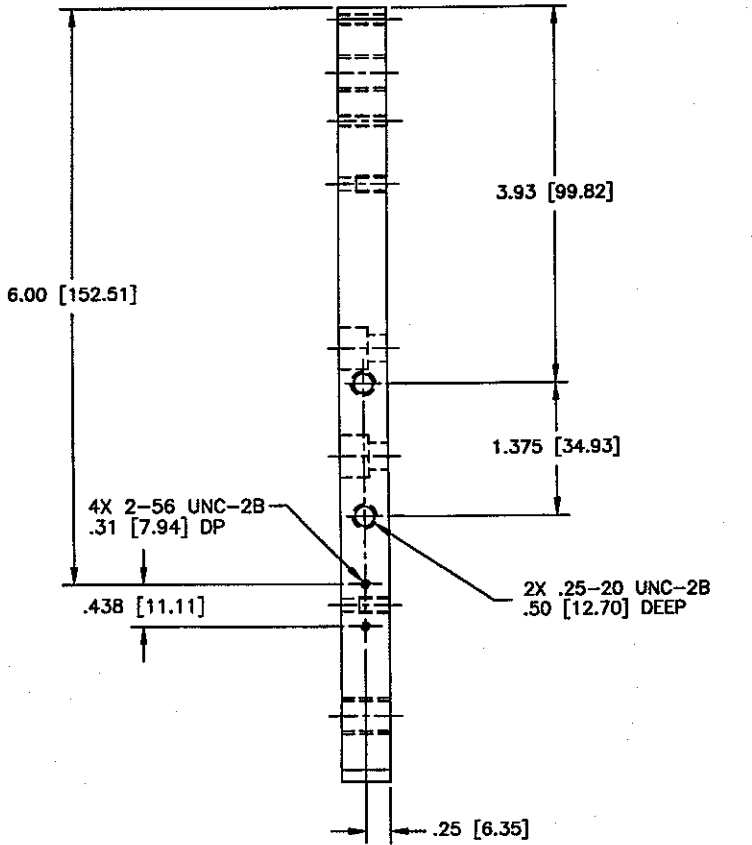
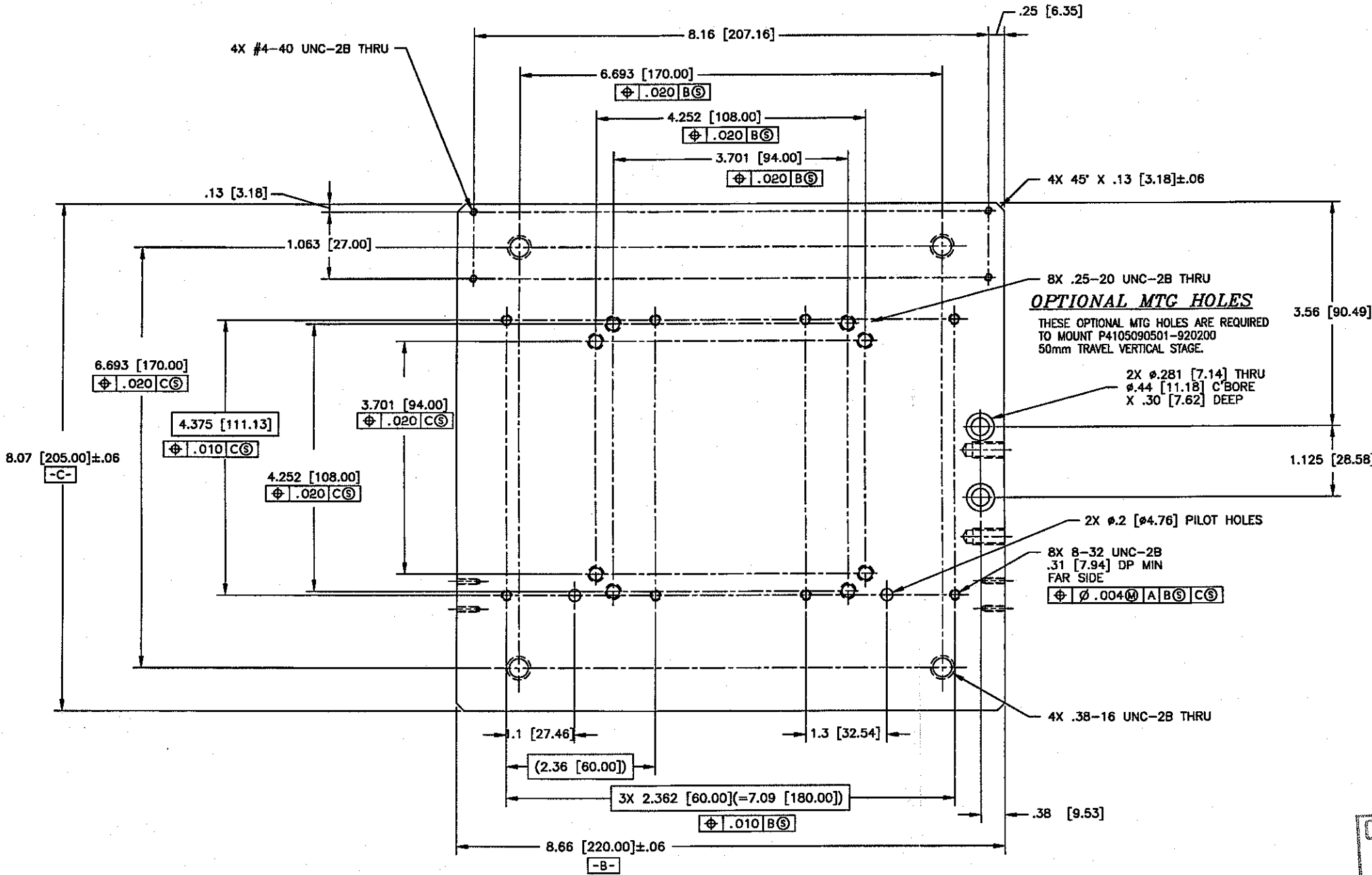
ARGONNE NATIONAL LABORATORY  
 ADVANCED PHOTON SOURCE  
 EXPERIMENTAL FACILITIES  
 X-RAY/SR-CAT BEAMLINES  
 STANDARD COMPONENTS  
 HEAVY LOAD TABLE  
 HORIZONTAL STAGE/SLIDE ASSY

SCALE: 1:2  
 SHEET: 1 of 1  
 E 4105090504-640000-02

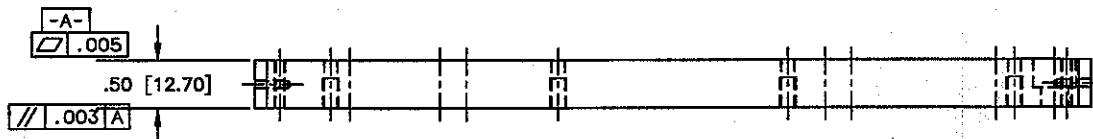
8 7 6 5 4 3 2 1

D  
C  
B  
A

D  
C  
B  
A



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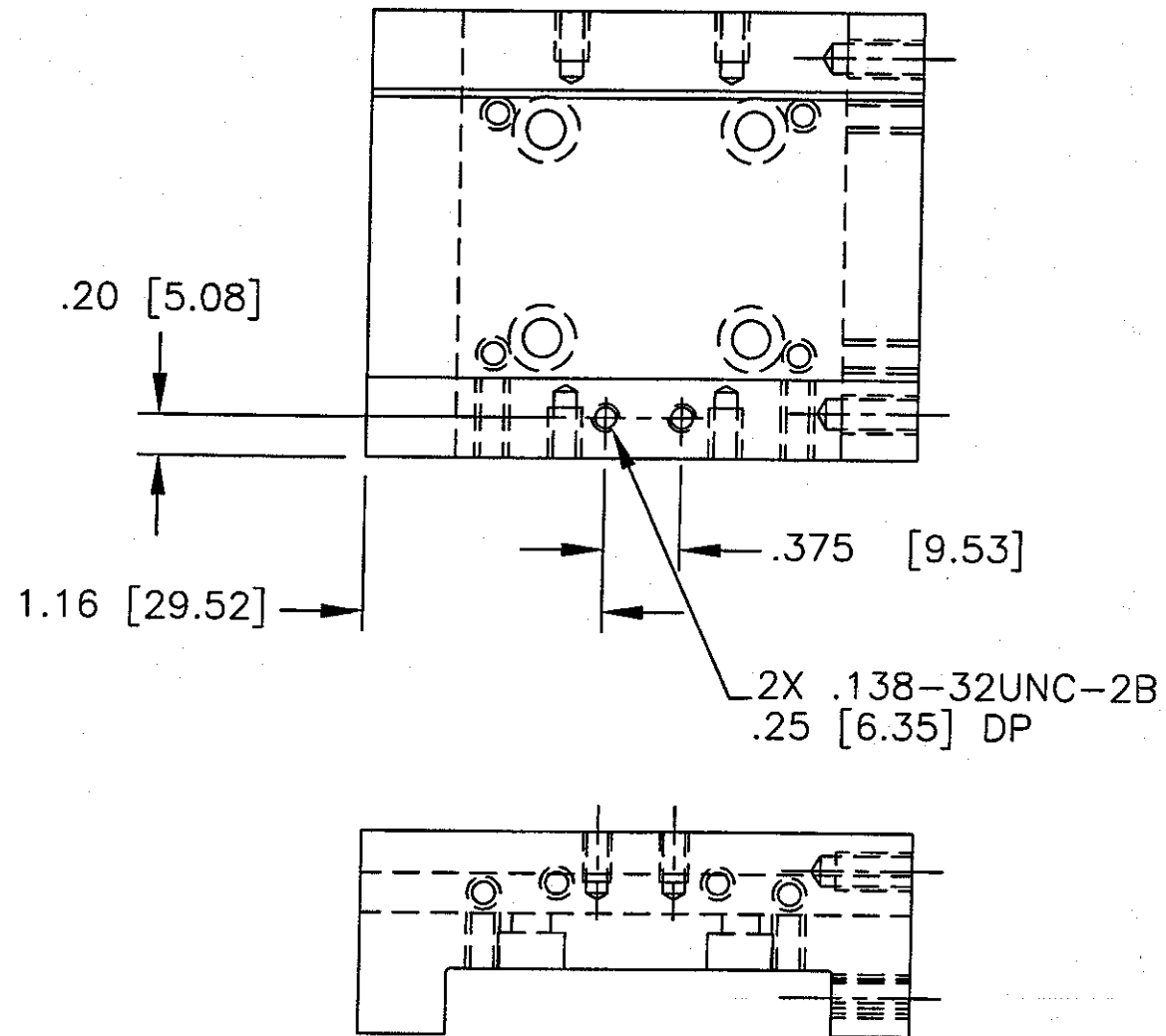
NOTES:  
1. ALL DIMENSIONS SHOWN IN [ ] ARE MILLIMETERS AND ARE FOR REFERENCE USE ONLY.

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #T4-640001-01.

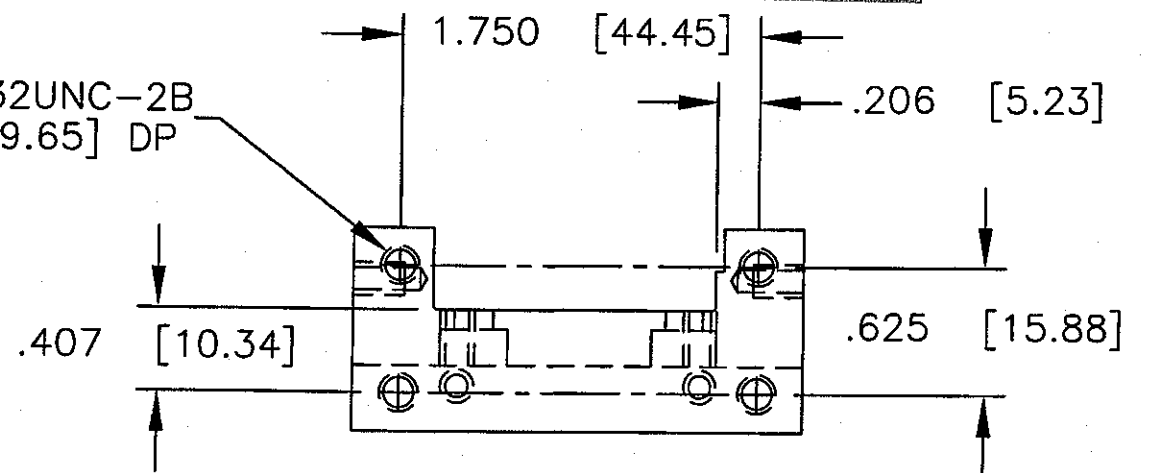
SYN	CHANGE DESCRIPTION	BY	CHGD	DATE

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
<b>PARTS LIST</b>				
UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES		THIS DRAWING IS THE PROPERTY OF		
TOLERANCES:		<b>ARGONNE NATIONAL LABORATORY</b>		
DECIMALS: ±.01 [0.25]		DRAWN BY: <i>RTKMAK</i> DATE: 09/08/09		
ANGULAR: ±0.30°		CHECKED BY: <i>RTKMAK</i> DATE: 10/11/09		
X: ±.1 [2.5]		DESIGNER: <i>S H LEE</i> DATE: 9/8/09		
Y: ±.01 [0.25]		PROJECT MGR: <i>P. Lee</i> DATE: 9/8/09		
Z: ±.005 [0.13]		APPROVED/RELEASED: <i>SR</i> DATE: 10/7/09		
SURFACE ROUGHNESS: 125		RESPONSIBLE ENGINEER: <i>S H LEE</i> DATE: 9/8/09		
REMOVE ALL BURRS AND BREAK SHARP EDGES AS MAX.		MATERIAL: 304 STAINLESS STEEL		
SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST AND 8445		SCALE: 1:1		
DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ASME Y14.5		SHEET 1 of 1		
DO NOT SCALE DRAWING		DRAWING NUMBER: D 4105090504-640001-02		

8 7 6 5 4 3 2 1



4X .190-32UNC-2B .38 [9.65] DP



NOTES:

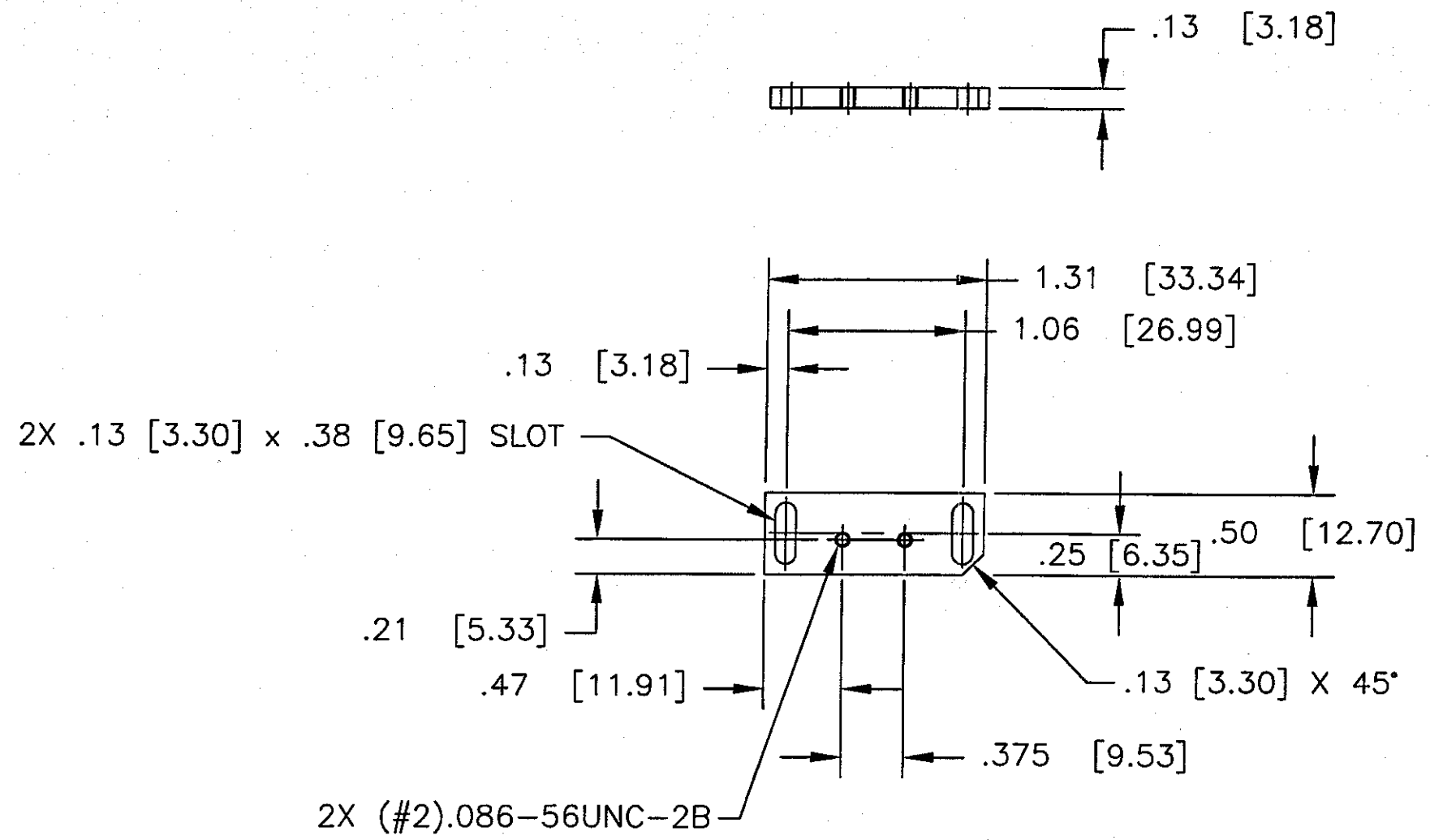
1. ALL DIMENSIONS SHOWN IN [ ] ARE MILLIMETERS AND ARE FOR REFERENCE USE ONLY.

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NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #T6-640002-00.

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
PARTS LIST				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES <b>TOLERANCES</b> DECIMALS      ANGULAR .X      ±.1 [2.5]      ±0°30' .XX      ±.01 [0.25] .XXX      ±.005 [0.13]  SURFACE ROUGHNESS 125 ✓  REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.  SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1  DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5		LOG NUMBER <b>A4512400</b>	THIS DRAWING IS THE PROPERTY OF <b>ARGONNE NATIONAL LABORATORY</b>	
DRAWN BY <b>RTKMAK</b>	DATE <b>8/20/09</b>	CHIEF DESIGN ENGINEER	DATE	TITLE
CHECKED BY <b>RTWB</b>	DATE <b>10/1/09</b>	GP LEADER <b>P-Den Hartog</b>	DATE <b>9/18/09</b>	<b>ADVANCED PHOTON SOURCE EXPERIMENTAL FACILITIES XOR/SRI-CAT BEAMLINES STANDARD COMPONENTS HEAVY LOAD TABLE DUAL RAIL SPACER</b>
DESIGNER	DATE	PROJECT MGR.	DATE	
RESPONSIBLE ENGINEER <b>S H LEE Sh/ee</b>	DATE <b>9/13/09</b>	APPROVED/RELEASED <b>SL</b>	DATE <b>10/7/09</b>	
MATERIAL <b>MAKE FROM 4105090504-620002</b>	SCALE <b>1=1</b>	SIZE <b>B</b>	DRAWING NUMBER <b>4105090504-640002-00</b>	
DO NOT SCALE DRAWING				

SYM	CHANGE DESCRIPTION	BY	CHKD	DATE
REVISIONS				

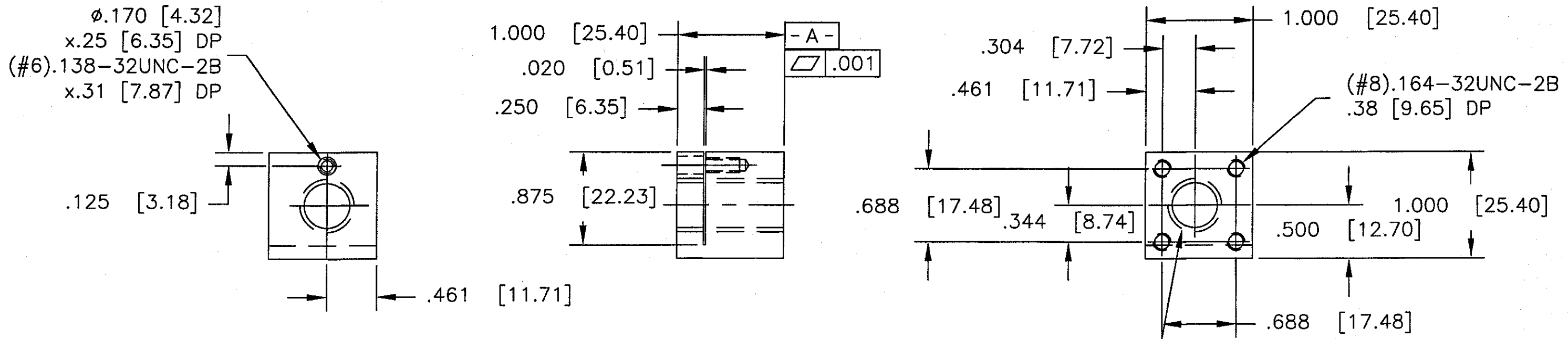


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 ADVANCED PHOTON SOURCE

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #T4-640003-00.

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
PARTS LIST				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES TOLERANCES		LOG NUMBER <b>A4512500</b>	THIS DRAWING IS THE PROPERTY OF <b>ARGONNE NATIONAL LABORATORY</b>	
DECIMALS      ANGULAR .X    ±.1 [2.5]      ±0°30' .XX   ±.01 [0.25] .XXX ±.005 [0.13]		DRAWN BY <i>RTKMAK</i> DATE <i>8/28/09</i> 090809 CHIEF DESIGN ENGINEER      DATE	<b>ADVANCED PHOTON SOURCE</b> EXPERIMENTAL FACILITIES XOR/SRI-CAT BEAMLINES STANDARD COMPONENTS HEAVY LOAD TABLE LIMIT SWITCH MOUNT	
SURFACE ROUGHNESS 125/✓		CHECKED BY <i>gwb</i> DATE <i>10/1/09</i> 10/1/09 GP LEADER      DATE <i>P. Deen Hartog</i> PROJECT MGR.      DATE		
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.		DESIGNER      DATE		
SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1		RESPONSIBLE ENGINEER      DATE <i>S H LEES/lee</i> <i>9/3/09</i>		
DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5		MATERIAL <b>6061-T6 ALUMINUM</b>	APPROVED/RELEASED <i>BR</i> DATE <i>10/7/09</i>	SCALE 1:1      SIZE <b>B</b>
DO NOT SCALE DRAWING		DRAWING NUMBER <b>4105090504-640003-00</b>		

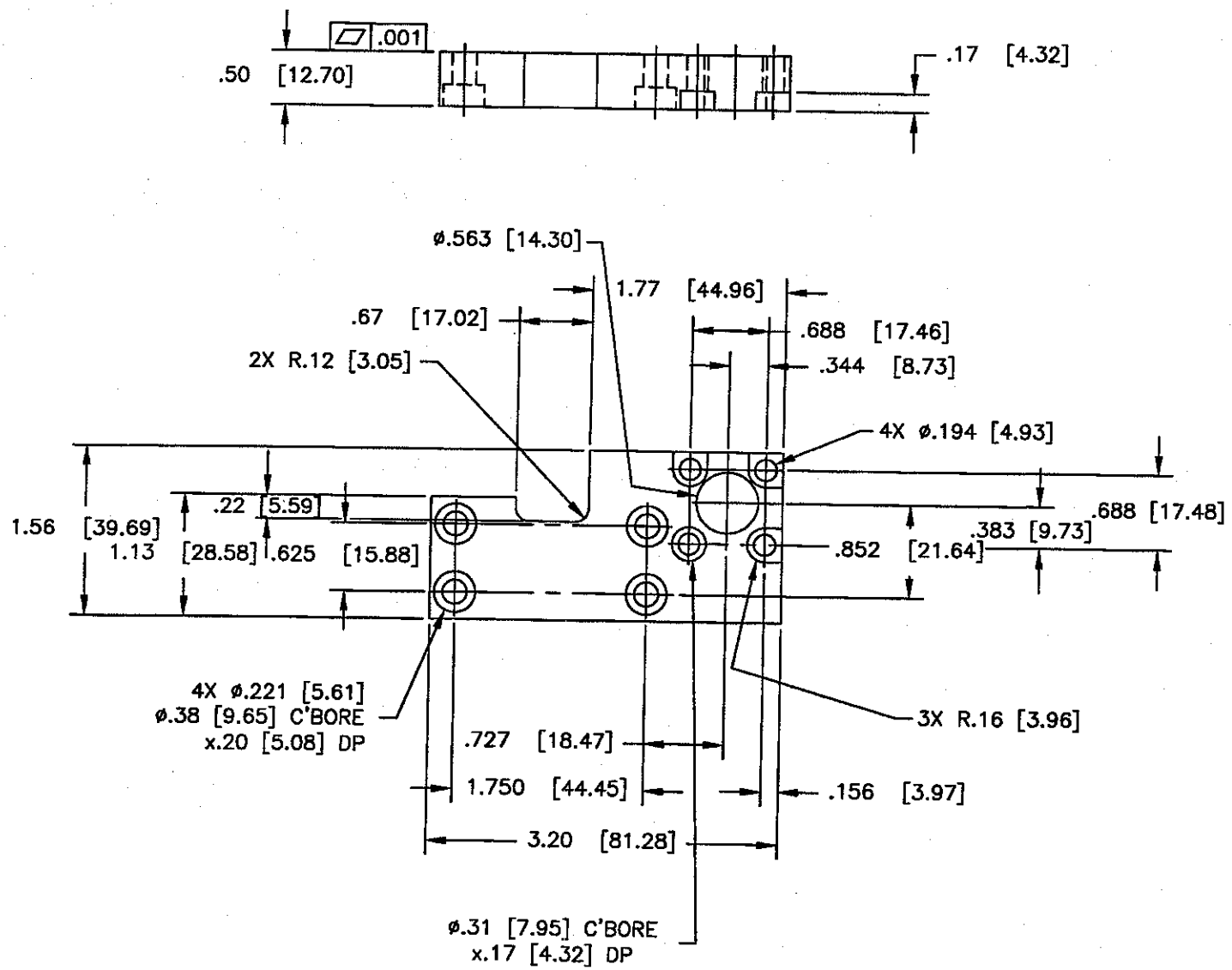
SYM	CHANGE DESCRIPTION	BY	CHKD	DATE
REVISIONS				



NOTE:  
 1. ALL DIMENSIONS SHOWN IN [ ] ARE MILLIMETERS AND ARE FOR REFERENCE USE ONLY.

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #T4-640004-00.

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
<b>PARTS LIST</b>				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES		LOG NUMBER <b>A4512600</b>	THIS DRAWING IS THE PROPERTY OF <b>ARGONNE NATIONAL LABORATORY</b>	
<b>TOLERANCES</b> DECIMALS      ANGULAR .X    ±.1 [2.5]      ±0°30' .XX   ±.01 [0.25] .XXX ±.005 [0.13]		DRAWN BY <i>RTKMAK</i> DATE <i>09/08/09</i> CHECKED BY <i>JWB</i> DATE <i>10/1/09</i> DESIGNER      DATE      GP/LEADER <i>P. Van Hartog</i> DATE <i>7/8/09</i> RESPONSIBLE ENGINEER <i>S H LEE</i> DATE <i>9/3/09</i> PROJECT MGR.      DATE APPROVED/RELEASED <i>BR</i> DATE <i>10/6/09</i>	<b>TITLE</b> <b>ADVANCED PHOTON SOURCE</b> <b>EXPERIMENTAL FACILITIES</b> <b>XOR/SRI-CAT BEAMLINES</b> <b>STANDARD COMPONENTS</b> <b>HEAVY LOAD TABLE</b> <b>NUT</b>	
SURFACE ROUGHNESS $125/\sqrt{\quad}$		MATERIAL <b>OIL IMPREGNATED SINTERED BRONZE</b>	SCALE <b>1=1</b>	SIZE <b>B</b>
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.		DRAWING NUMBER <b>4105090504-640004-00</b>		
SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1		SHEET <b>1 of 1</b>		
DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5		DO NOT SCALE DRAWING		
SYM	CHANGE DESCRIPTION	BY	CHKD	DATE
REVISIONS				



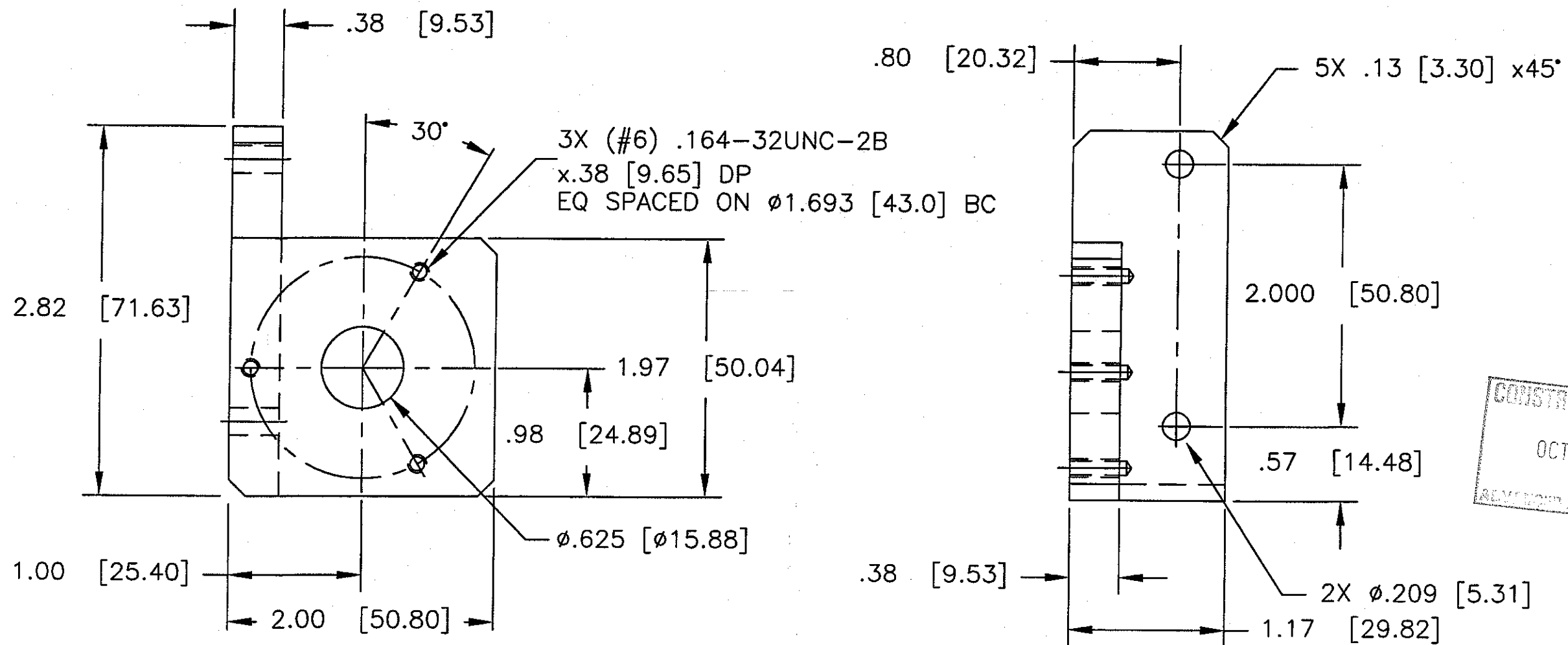
NOTE:  
 1. ALL DIMENSIONS SHOWN IN [ ] ARE MILLIMETERS  
 AND ARE FOR REFERENCE USE ONLY.

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 ADVANCED PHOTON SOURCE

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED  
 VERSION OF DRAWING EXCHANGE FILE DRAWING  
 #T4-640005-00.

SYM	CHANGE DESCRIPTION	BY	CHKD	DATE

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY																
PARTS LIST																				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES		LOG NUMBER <b>A4512700</b>																		
TOLERANCES		THIS DRAWING IS THE PROPERTY OF <b>ARGONNE NATIONAL LABORATORY</b>																		
DECIMALS	ANGULAR	<table border="1"> <tr> <td>DRAWN BY <i>RTKMARK</i></td> <td>DATE 09/08/09</td> <td>CHIEF DESIGN ENGINEER</td> <td>DATE</td> </tr> <tr> <td>CHECKED BY <i>RWB</i></td> <td>DATE 10/1/09</td> <td>GP LEADER</td> <td>DATE 9/15/09</td> </tr> <tr> <td>DESIGNER</td> <td>DATE</td> <td>PROJECT MGR.</td> <td>DATE</td> </tr> <tr> <td>RESPONSIBLE ENGINEER <i>S H LEE</i></td> <td>DATE 9/15/09</td> <td>APPROVED/RELEASED</td> <td>DATE 10/1/09</td> </tr> </table>			DRAWN BY <i>RTKMARK</i>	DATE 09/08/09	CHIEF DESIGN ENGINEER	DATE	CHECKED BY <i>RWB</i>	DATE 10/1/09	GP LEADER	DATE 9/15/09	DESIGNER	DATE	PROJECT MGR.	DATE	RESPONSIBLE ENGINEER <i>S H LEE</i>	DATE 9/15/09	APPROVED/RELEASED	DATE 10/1/09
DRAWN BY <i>RTKMARK</i>	DATE 09/08/09				CHIEF DESIGN ENGINEER	DATE														
CHECKED BY <i>RWB</i>	DATE 10/1/09				GP LEADER	DATE 9/15/09														
DESIGNER	DATE				PROJECT MGR.	DATE														
RESPONSIBLE ENGINEER <i>S H LEE</i>	DATE 9/15/09	APPROVED/RELEASED	DATE 10/1/09																	
.X ±.1 [2.5]	±0°30'	<b>ADVANCED PHOTON SOURCE</b> EXPERIMENTAL FACILITIES XOR/SRI-CAT BEAMLINES STANDARD COMPONENTS HEAVY LOAD TABLE NUT ADAPTER PLATE																		
.XX ±.01 [0.25]																				
.XXX ±.005 [0.13]																				
SURFACE ROUGHNESS 125		MATERIAL <b>STAINLESS STEEL</b>																		
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.		SCALE 1:1																		
SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1		SIZE C																		
DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5		SHEET 1 of 1																		
DO NOT SCALE DRAWING		DRAWING NUMBER <b>4105090504-640005-00</b>																		



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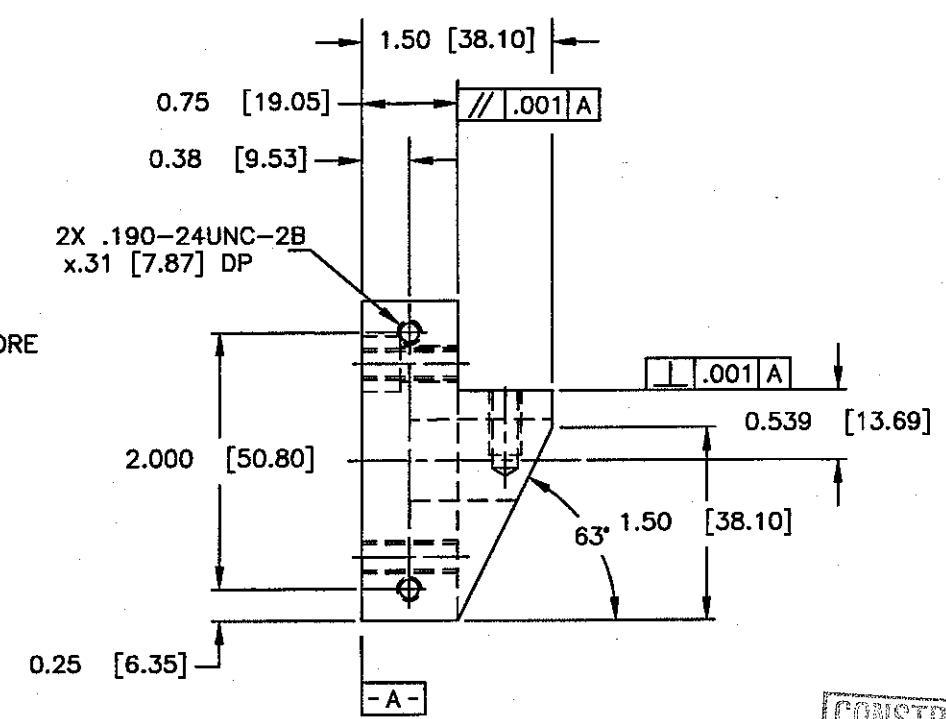
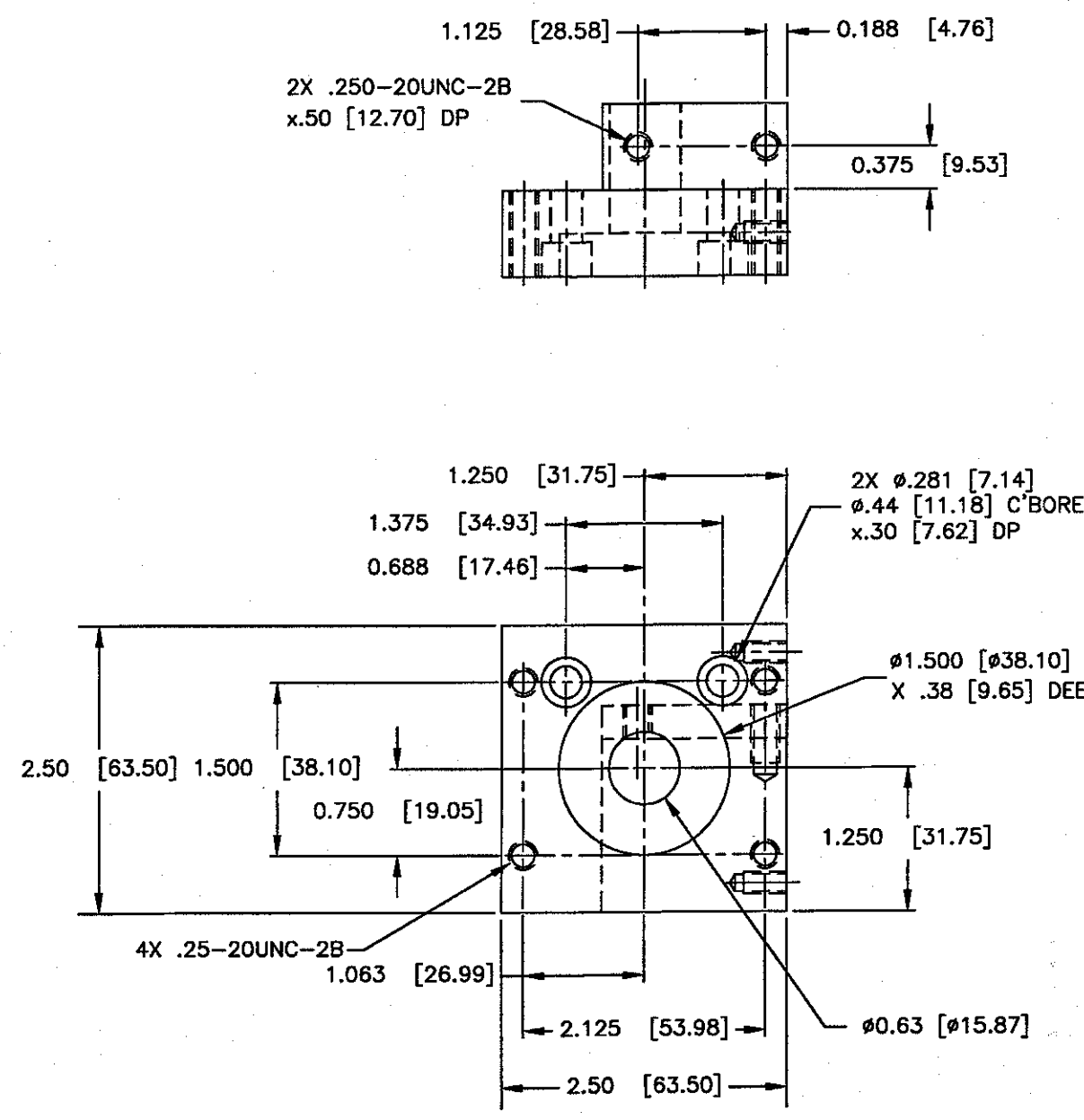
NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #T4-640006-00.

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
PARTS LIST				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES		LOG NUMBER	THIS DRAWING IS THE PROPERTY OF	
TOLERANCES		A4512800	ARGONNE NATIONAL LABORATORY	
DECIMALS	ANGULAR			
.X $\pm$ .1 [2.5]	$\pm$ 0°30'	DRAWN BY <i>RTKMAK</i>	CHIEF DESIGN ENGINEER	DATE
.XX $\pm$ .01 [0.25]		DATE <i>09/08/09</i>		
.XXX $\pm$ .005 [0.13]		CHECKED BY <i>RTK</i>	DATE <i>10/1/09</i>	
SURFACE ROUGHNESS 125/✓		DESIGNER	DATE	
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.		RESPONSIBLE ENGINEER	DATE	
SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1		S H LEE <i>shlee</i>	DATE <i>9/13/09</i>	
DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5		MATERIAL	APPROVED/RELEASED	DATE
		6061-T6 ALUMINUM	<i>BR</i>	DATE <i>10/7/09</i>
		SCALE 1:1	SIZE	DRAWING NUMBER
		SHEET 1 of 1	B	4105090504-640006-00

SYM	CHANGE DESCRIPTION	BY	CHKD	DATE
REVISIONS				

DO NOT SCALE DRAWING





CONSTRUCTION PRINT  
OCT 14 2009

NOTE:  
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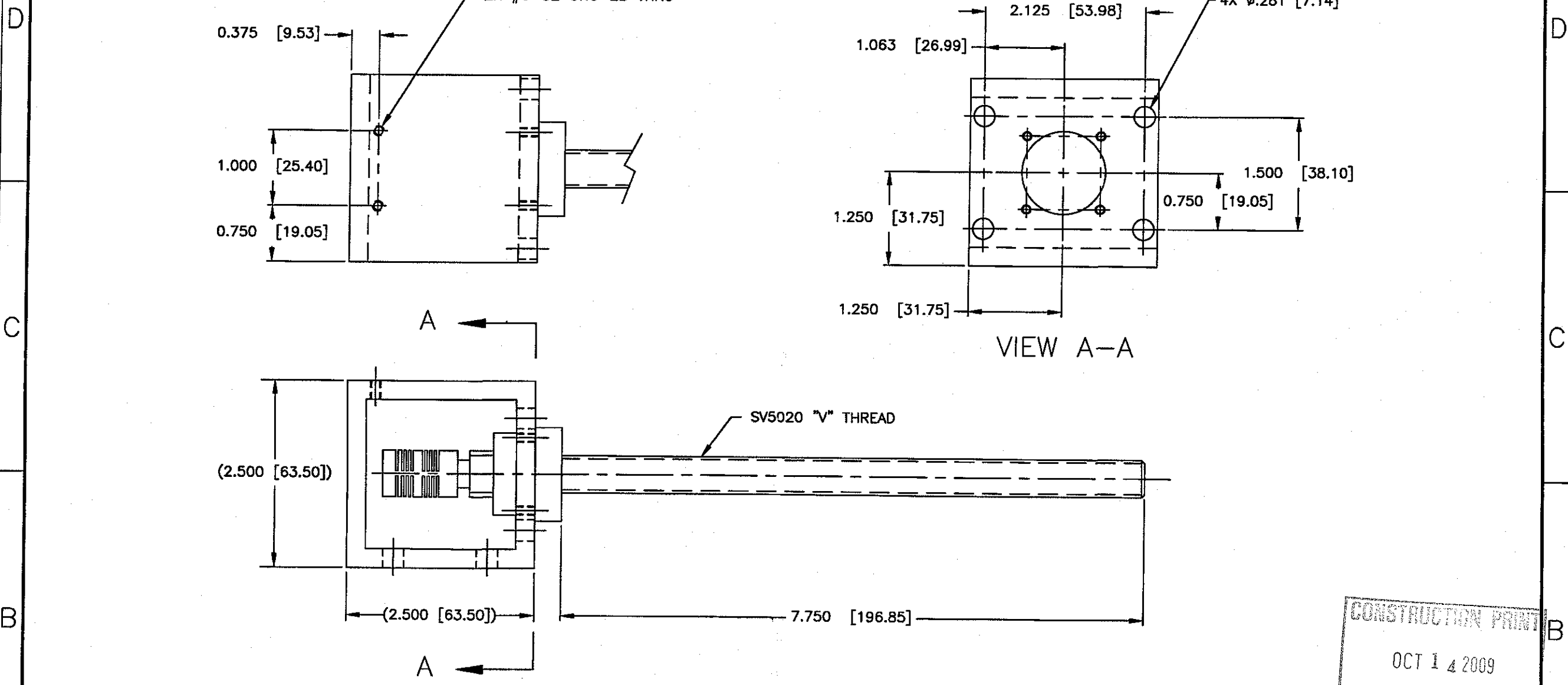
NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #T4-640007-00.

SYM	CHANGE DESCRIPTION	BY	CHKD	DATE

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / -SPEC	QTY
PARTS LIST				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES TOLERANCES: DECIMALS .X ±.1 [2.5] XX ±.01 [0.25] XXX ±.005 [0.13]		LOG NUMBER <b>A4512900</b>	THIS DRAWING IS THE PROPERTY OF <b>ARGONNE NATIONAL LABORATORY</b>	
SURFACE ROUGHNESS 125 ✓		DRAWN BY <i>RTKMAK</i>	DATE 09/08/09	CHIEF DESIGN ENGINEER
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.		CHECKED BY <i>gwb</i>	DATE 10/16/09	DATE 11/16/09
SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1		DESIGNER	DATE	PROJECT MGR.
DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5		RESPONSIBLE ENGINEER <i>S H LEE</i>	DATE 9/18/09	APPROVED/RELEASED <i>PK</i>
DO NOT SCALE DRAWING		MATERIAL <b>6061-T6 ALUMINUM</b>	SCALE 1:1	SIZE C
			DRAWING NUMBER <b>4105090504-640007-00</b>	
			SHEET 1 of 1	

TITLE  
**ADVANCED PHOTON SOURCE**  
EXPERIMENTAL FACILITIES  
XOR/SRI-CAT BEAMLINES  
STANDARD COMPONENTS  
HEAVY LOAD TABLE  
SCREW MOUNT

4 3 2 1



CONSTRUCTION PRINT  
OCT 14 2009  
ADVANCED PHOTON SOURCE

NOTE:  
1. ALL DIMENSIONS SHOWN IN [ ] ARE MILLIMETERS AND ARE FOR REFERENCE USE ONLY.

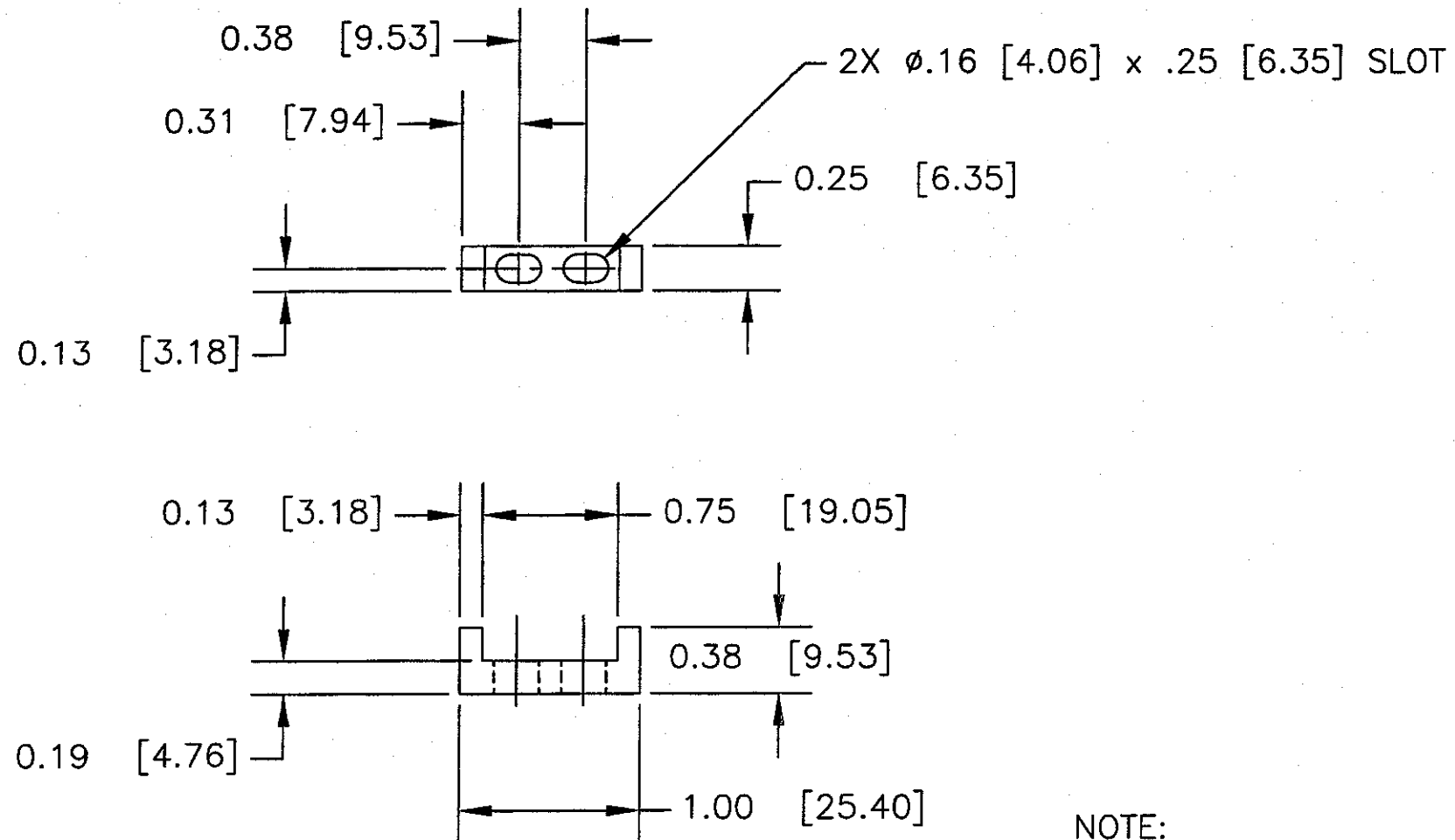
▷▷ BALL SCREWS AND ACTUATORS  
3616 SNELL AVENUE  
SAN JOSE, CA 95136-1305  
1-800-882-8857  
PART#: M23S8-SV5020

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SYM	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		LOG NUMBER A4513000	THIS DRAWING IS THE PROPERTY OF <b>ARGONNE NATIONAL LABORATORY</b>	
TOLERANCES		TITLE ADVANCED PHOTON SOURCE		
DECIMALS	ANGULAR	DRAWN BY RTKMAK	DATE 09/08/09	CHEF DESIGN ENGINEER
.X ±.1 [2.5]	±0°30'	CHECKED BY TWB	DATE 10/1/09	DATE 9/8/09
.XX ±.01 [0.25]		DESIGNER	DATE	DATE
.XXX ±.005 [0.13]				
SURFACE ROUGHNESS 125 ✓		RESPONSIBLE ENGINEER S H LEESHLEE	DATE 9/18/09	APPROVED/RELEASED BR
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.				DATE 10/7/09
SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1				
DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5				
MATERIAL SEE NOTE				
DO NOT SCALE DRAWING				
SCALE 1:1			SIZE	DRAWING NUMBER
SHEET 1 of 1			C	4105090504-640008-00

4 3 2 1



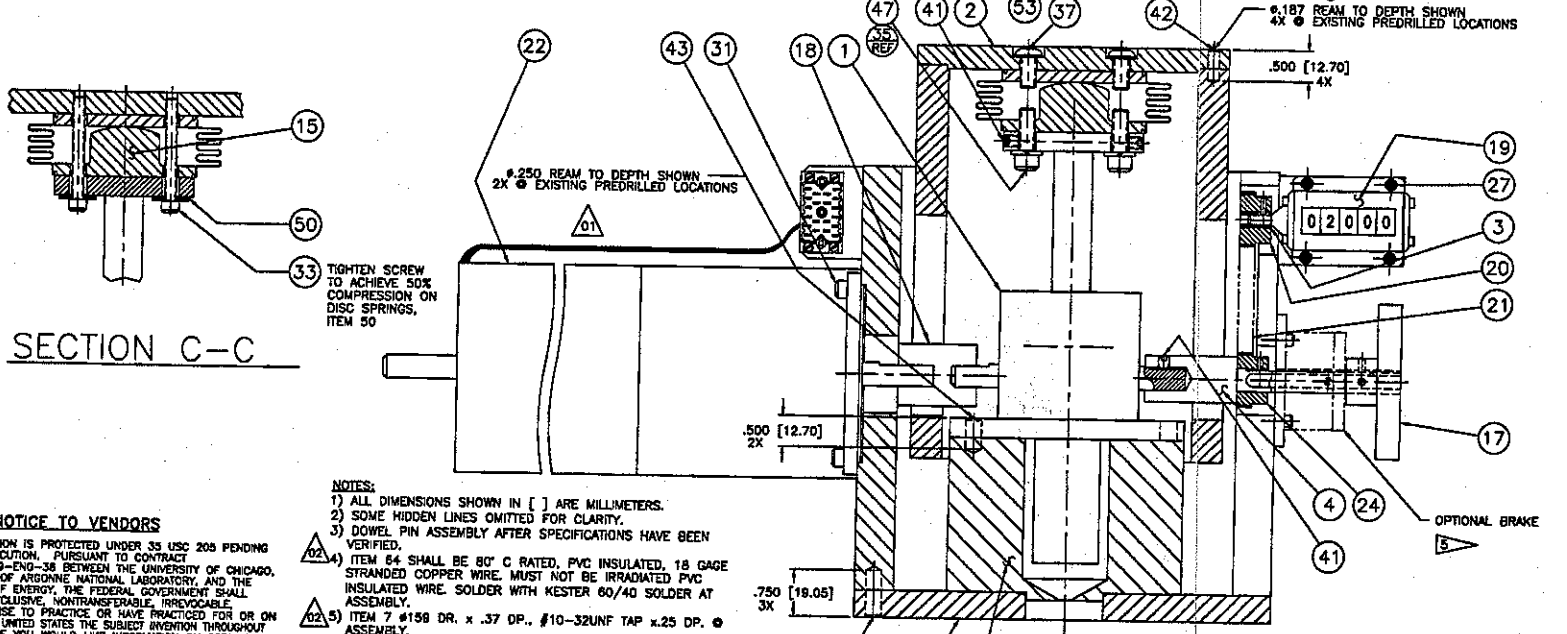
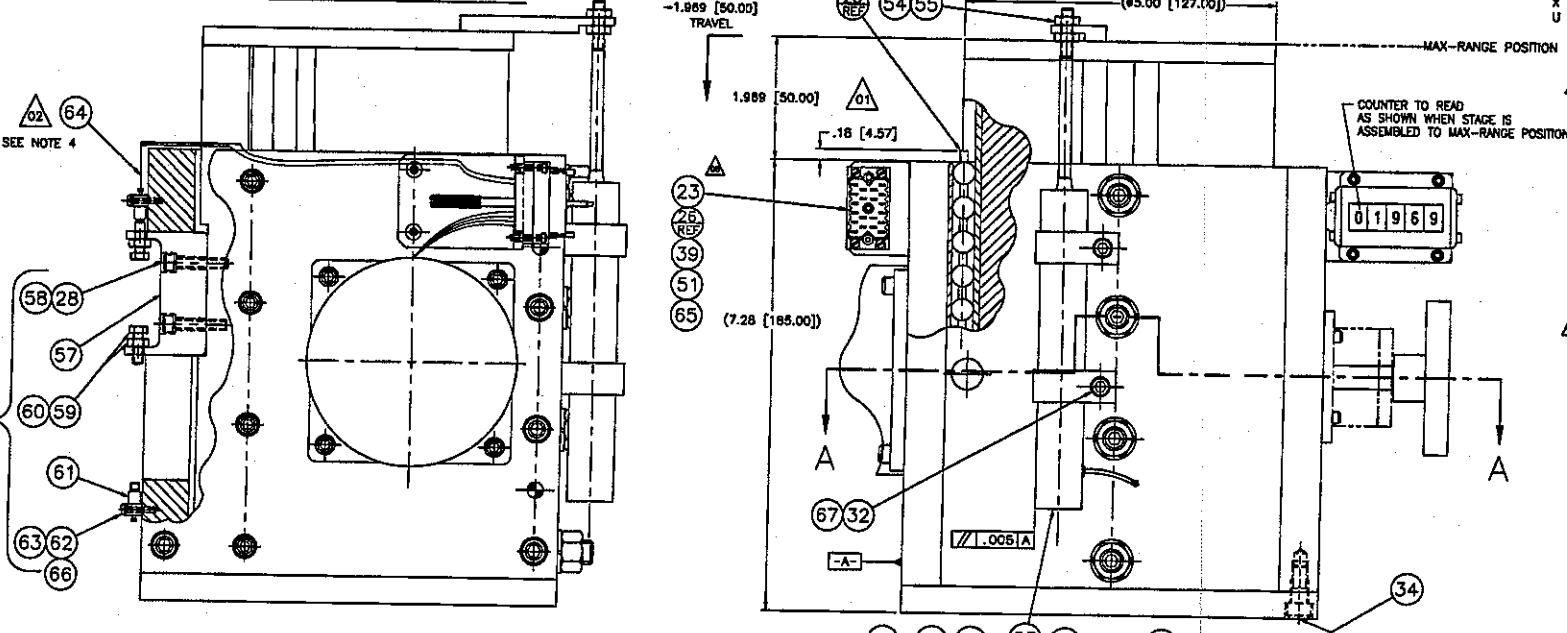
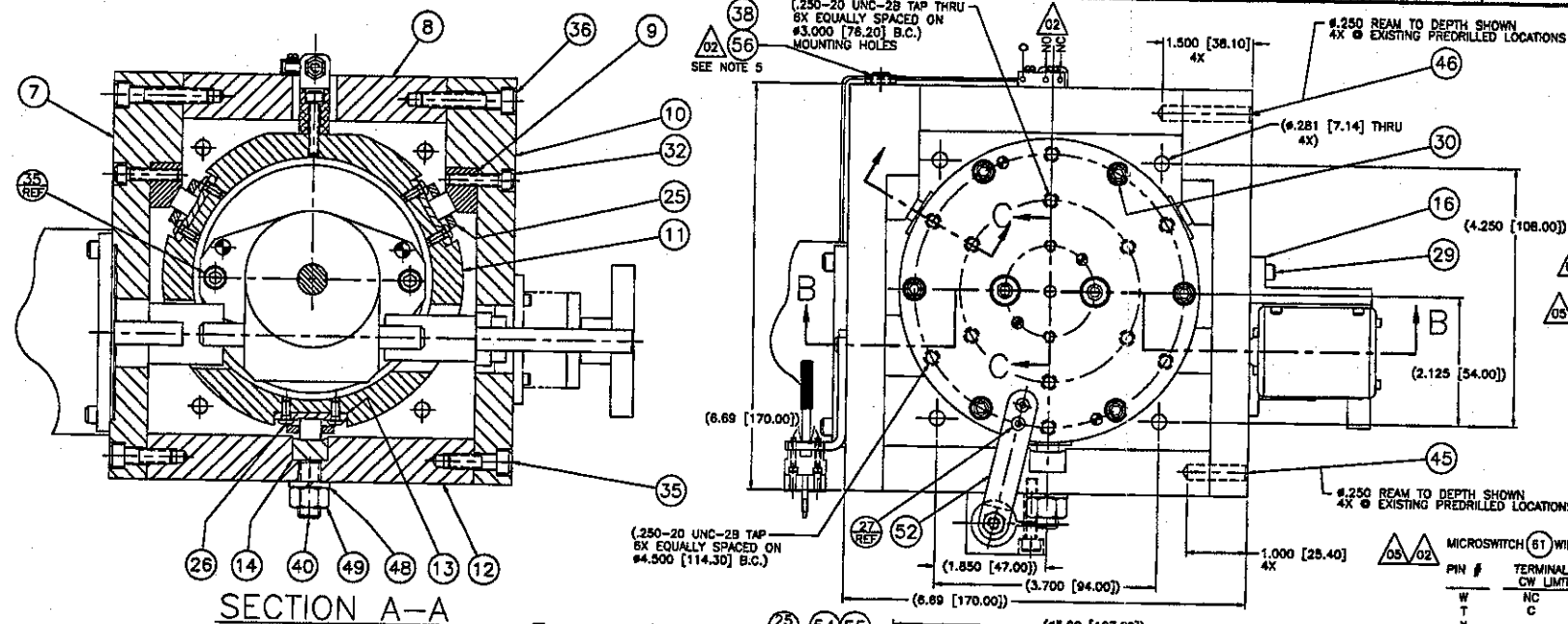
CONSTRUCTION PRINT  
OCT 1 2009  
ADVANCED PHOTON SOURCE

NOTE:  
1. ALL DIMENSIONS SHOWN IN [ ] ARE MILLIMETERS AND ARE FOR REFERENCE USE ONLY.

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #T4-640009-00.

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
PARTS LIST				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES		LOG NUMBER	THIS DRAWING IS THE PROPERTY OF	
TOLERANCES		A4513100	ARGONNE NATIONAL LABORATORY	
DECIMALS      ANGULAR		DRAWN BY <i>RTKMAK</i>	CHIEF DESIGN ENGINEER	DATE
.X      ±.1 [2.5]	±0°30'	DATE <i>8/26/09</i>		
.XX     ±.01 [0.25]		CHECKED BY <i>RTK</i>	GP LEADER	DATE <i>7/8/09</i>
.XXX   ±.005 [0.13]		DESIGNER	PROJECT MGR.	DATE
SURFACE ROUGHNESS 125 ✓		RESPONSIBLE ENGINEER <i>S H LEE</i>	APPROVED/RELEASED <i>BL</i>	DATE <i>10/1/09</i>
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.		MATERIAL	SCALE 1:1	SIZE
SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1		6061-T6 ALUMINUM		B
DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5			SHEET 1 of 1	DRAWING NUMBER
DO NOT SCALE DRAWING				4105090504-640009-00

SYM	CHANGE DESCRIPTION	BY	CHKD	DATE
REVISIONS				



- SPECIFICATIONS:**
- LOAD CAPACITY: 500 LBS. [227 kg].
  - TRAVEL RANGE: ± .984 [25.00].
  - RESOLUTION: 10 μm.
  - REPEATABILITY: 50 μm.
  - STRAIGHTNESS OF TRAJECTORY: 2 x 10<sup>-4</sup> rad PER 25mm.
  - 1 MECHANICAL COUNTER COUNT = 0.001 [0.0254] TRAVEL.

SLQ-SYN MOTOR WIRE CONNECTIONS TO CONNECTOR (51)

PIN #	WIRE COLOR	TERMINAL ON LIMIT	TERMINAL LOWER LIMIT
A	RED	NC	---
B	RED/WHITE	---	---
C	GREEN	---	---
D	GREEN/WHITE	---	---
E	BLACK	---	---
F	BLACK	---	---
G	WHITE	---	---
H	---	---	---
J	---	---	---

- BEARING ASSEMBLY PROCEDURES:**
- PRIOR TO ASSEMBLY, ALL MACHINED PARTS MUST BE FREE OF GREASE, OIL, DUST, LINT AND ALL FOREIGN MATTER. SPECIAL ATTENTION SHOULD BE PAID TO THE BEARING SURFACES.
  - PRIOR TO FITTING, ALL LINEAR BEARINGS MUST BE WASHED WITH A CLEANING AGENT THEN OILED LIGHTLY WITH A LIGHT MACHINE LUBRICANT.
  - FIT BEARING RAILS (9) UNTO THEIR BASE AND SECURE LIGHTLY WITH SCREWS.
  - INSERT ROLLER CAGES (25) AND POSITION ALONG BEARING RAILS (9) AS SHOWN.
  - ADJUST PRELOAD BAR (14) USING SET SCREWS UNTIL BEARINGS ARE PLAY FREE, THEN PRELOAD EACH SET SCREW TO APPROX. 1 lb.-in. ENSURE THAT SMOOTH, FREE ROLLING MOTION IS OBTAINED.
  - SECURE SCREWS ON BEARING RAILS TIGHTLY USING A TORQUE WRENCH.
  - CHECK THAT ROLLER BEARINGS WILL NOT FALL OUT OF THEIR ROLLER CAGE WHEN STAGE IS FULLY EXTENDED TO THE MECHANICAL STOP.

QTY	PART NUMBER	DESCRIPTION	MATERIAL
1	67 SA59019	BODY CLAMP KIT	
1	68 93493A22B	.122 X .218 X .016 FLAT WASHER	FIBER GLASS
1	65 4105090504-310001	CONNECTOR BRACKET	SEE DETAIL 4
1	64	WIRE 1B CAGE	SEE NOTE 4
1	63 92148A520	LOCK WASHER, (#2) #.094 STD	SS
1	62 91772A081	PAN HD SCR (#2).086-56UNC-3A x.54 LG.	SS
1	61 1115M1-T	SWITCH SUBMINIATURE BASIC	---
1	60 91841A009	HEX NUT (#8) .164-32UNC	SS
1	59 92314A198	HHCS (#8).164-32UNC-3A x .98 LG.	SS
1	58 92148A545	LOCK WASHER, (#8).164 NOMINAL	SS
1	57 4105090504-220018	MECHANICAL STOP	6061-T6 ALUMINUM
1	56 32N1269	CABLE CLAMP	SEE NOTE 5
1	55 92148A550	LOCK WASHER (#10) #.190 STD	SS
1	54 91828A241	NUT, HEX M5x0.8	SS
1	53 SLS190/50/C/66/1/H	GENERAL PURPOSE SENSOR	SEE NOTE #6
1	52 4105090504-220017	POTENTIOMETER ACTUATOR ARM	6061 ALUM
1	51 00-8016-020-000-501	CONNECTOR BODY	
1	50 003-300	DISC SPRING	STEEL
1	49 91848A628	NUT, HEX .375-24UNF-28	SS
1	48 91475A031	LOCK WASHER #.38 NOM	SS
1	47 92148A229	LOCK WASHER #.25 STD	SS
1	46 90145A548	DOWEL PIN #.250 X 1.50 LG.	SS
1	45 90145A542	DOWEL PIN #.250 X 1.00 LG.	SS
1	44 97395A485	DOWEL PIN #.250 X .75 LG.	SS
1	43 97395A475	DOWEL PIN #.250 X .50 LG.	SS
1	42 97395A461	DOWEL PIN #.187 X .50 LG.	SS
1	41 92845A238	SET SCR (DGS PT) #10-24UNC-3A x.25 LG.	SST
1	40 92311A639	SET SCR .375-24UNF-3A x 1.0 LG.	SS
1	39 91784A081	FLSTR HD SCR (#2) .086-56UNCx.50 LG	SST
1	38 92196A267	SHCS (#10).190-24UNC-3A x.38	SST
1	37 92949A537	BHSCS .250-20UNC-3A x.50 LG	SS
1	36 92196A544	SHCS .250-20UNC-3A x 1.25 LG	SS
1	35 92196A540	SHCS .250-20UNC-3A x .75 LG	SS
1	34 92196A537	SHCS .250-20UNC-3A x .50 LG	SS
1	33 92196A252	SHCS (#10).190-24UNC-3A x1.75 LG	SS
1	32 92196A247	SHCS (#10).190-24UNC-3A x1.00 LG	SS
1	31 92196A245	SHCS (#10).190-24UNC-3A x.75 LG	SS
1	30 92196A242	SHCS (#10).190-24UNC-3A x.50 LG	SS
1	29 92196A194	SHCS (#8) .164-32UNC-3A x.50 LG	SS
1	28 92196A198	SHCS (#8) .164-32UNC-3A x.88 LG	SS
1	27 92196A108	SHCS (#4) .112-40UNC-3A x.38 LG	SS
1	26 92949A146	BHSCS (#8) .138-32UNC-3A x.38 LG	SS
1	25 LL9 X 7	ROLLER CAGE	
1	24 20TP6-14	TIMING BELT PULLEY	
1	23 60-8017-03-13-300-339	CONTACTS	20
1	22 M093-FD07E	STEPPER MOTOR WITH STANDARD FLAT SHAFTS	
1	21 20TP4-40	TIMING BELT	
1	20 20TP4-14	TIMING BELT PULLEY	
1	19 728815-001	MECHANICAL COUNTER	
1	18 HR 100-12-12	ROTATING SHAFT FLEXIBLE COUPLING	
1	17 4105090501-920217	KNURLED HANDWHEEL	SEE DRAWING
1	16 4105090501-920216	COUNTER BRACKET	6061 ALUM
1	15 4105090501-920215	COUPLING	SEE DRAWING
1	14 4105090501-920214	PRELOAD BAR	440 A SS
1	13 4105090501-920213	BEARING SURFACE PLATE	440 A SS
1	12 4105090501-920212	FRONT PLATE	6061 ALUM
1	11 4105090501-920211	CYLINDER	6061 ALUM
1	10 4105090501-920210	RIGHT PLATE	6061 ALUM
1	9 4105090501-920209	BEARING RAIL	440 A SS
1	8 4105090501-920208	BACK PLATE	6061 ALUM
1	7 4105090501-920207	LEFT PLATE	6061 ALUM
1	6 4105090501-920206	SPACER	6061 ALUM
1	5 4105090501-920205	BASE PLATE	6061 ALUM
1	4 4105090501-920204	SHAFT	6061 ALUM
1	3 4105090501-920203	BUSHING	6061 ALUM
1	2 4105090501-920202	TOP PLATE	6061 ALUM
1	1 4105090501-920201	MACHINE SCREW ACTUATOR ALTERED	SEE DRAWING

- McMASTER-CARR  
P.O. BOX 4355  
CHICAGO, IL 60680-4355  
PHONE: (708) 833-0300  
FAX: (708) 834-9427
- NEWARK ELECTRONICS  
625 PLAINFIELD RD.  
WILDLAND, NJ 08051  
PHONE: (708) 654-8250  
FAX: (708) 654-8270
- PENNY & GILES  
163 PLEASANT ST.  
ATLEBORO, MA 02703  
PHONE: (508) 226-3008  
FAX: (508) 226-9208
- ELCO CORPORATION  
HUNTINGDON INDUST. PARK  
HUNTINGDON, PA 16852  
PHONE: (800) 653-3528  
FAX: (814) 843-0426
- SCHNORR CORPORATION  
P.O. BOX 428  
56-02 ROOSEVELT AVE.  
WOODSIDE, N.Y. 11377  
PHONE: 718/426-2683  
FAX: 718/435-9408
- SCHNEEBERGER INC.  
11 DE ANGELO DRIVE  
BEDFORD, MA 01730  
PHONE: 800/854-6333  
FAX: 617/275-4749
- KEBEC  
14700 MARTIN DRIVE  
EDEN PRAIRIE, MINNESOTA 55344  
PHONE: 800-899-3228  
PART#: 0315.130 9.525mm BORE
- SUPERIOR ELECTRIC  
BRISTOL, CONNECTICUT 06010  
TEL: (203) 582-9581  
FAX: (203) 589-2136
- WINFRED M. BERG INC.  
49 OCEAN AVE.  
EAST ROCKAWAY, NY 11518  
PHONE: 516/598-1700  
FAX: 516/599-3274
- DANAHER CONTROLS  
1675 DELAWARE RD  
GURNEE, IL 60031-1232  
PHONE: 708/652-2666  
FAX: 708/662-8833
- HELICAL PRODUCT COMPANY INC.  
PHONE 805/928-3851  
FAX 805/928-2389

**NOTICE TO VENDORS**

THIS INFORMATION IS PROTECTED UNDER 35 USC 205 PENDING PATENT PROSECUTION, PURSUANT TO CONTRACT NO. W-31-109-ENG-38 BETWEEN THE UNIVERSITY OF CHICAGO, AS OPERATOR OF ARGONNE NATIONAL LABORATORY, AND THE DEPARTMENT OF ENERGY, THE FEDERAL GOVERNMENT SHALL HAVE A NONEXCLUSIVE, NONTRANSFERABLE, IRREVOCABLE, PAID-UP LICENSE TO PRACTICE OR HAVE PRACTICED FOR OR ON BEHALF OF THE UNITED STATES THE SUBJECT INVENTION THROUGHOUT THE WORLD. IF YOU WOULD LIKE INFORMATION ON OBTAINING A LICENSE TO MANUFACTURE THIS DEVICE FOR ANY OTHER PURPOSE CONTACT THE MANAGER, INTELLECTUAL PROPERTY TRANSFER, ARGONNE NATIONAL LABORATORY, ITO/BLDG. 500, 9700 S. CASS AVENUE, ARGONNE, IL 60439; PHONE (708) 292-6035. REFER TO DISCLOSURE NO. ANL-91-054.

- NOTES:**
- ALL DIMENSIONS SHOWN IN [ ] ARE MILLIMETERS.
  - SOME HIDDEN LINES OMITTED FOR CLARITY.
  - DOWEL PIN ASSEMBLY AFTER SPECIFICATIONS HAVE BEEN VERIFIED.
  - ITEM 64 SHALL BE 80° C RATED, PVC INSULATED, 18 GAGE STRANDED COPPER WIRE. MUST NOT BE IRRADIATED PVC INSULATED WIRE. SOLDER WITH KESTER 60/40 SOLDER AT ASSEMBLY.
  - ITEM 7 #198 DR. x .37 DP., #10-32UNF TAP x.25 DP.
  - TO INSTALL ITEM #53, REMOVE ROD END BEARING FROM THE END OF THE SHAFT AND USE ITEM #67 (BODY CLAMP KIT) TO MOUNT ITEM #53.

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #71-64000-01.

07 SEE DCN #090903-04

06 REVISED PARTS LIST AND DETAIL DRAWING

05 CHANGE WIRE CONNECTIONS TO WHICH NEW MOTOR IS ATTACHED

04 REVISED PARTS LIST AND DETAIL DRAWING

03 REVISED PART NUMBER TO ITEM 91

02 REVISED PARTS LIST AND DETAIL DRAWING

01 REPLACE LINEAR MOTOR WITH STEPPER MOTOR

**PARTS LIST**

ARGONNE NATIONAL LABORATORY

ADVANCED PHOTON SOURCE EXPERIMENTAL FACILITIES XOR/SRI-CAT BEAMLINES STANDARD COMPONENTS FRONT-END SUPPORT TABLES VERTICAL STAGE ASSEMBLY

DATE: 9/93

BY: J. BARRAZA

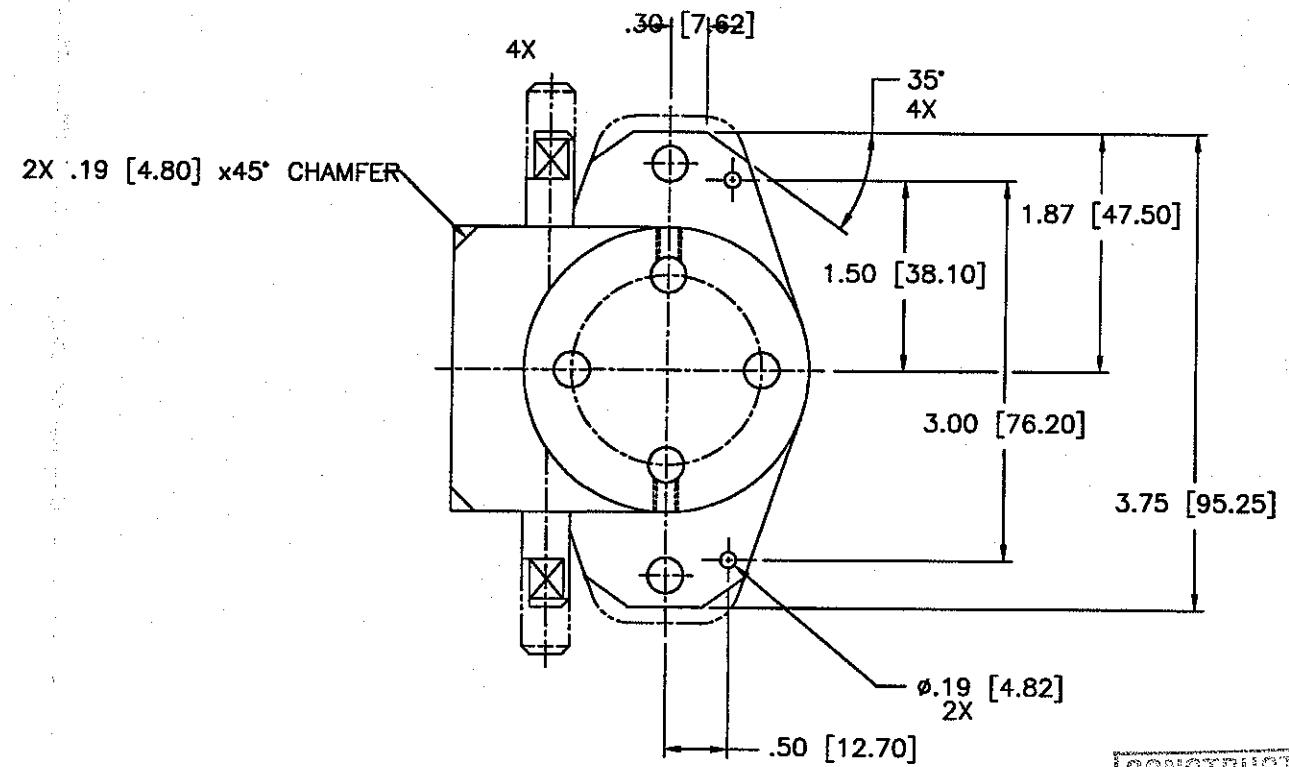
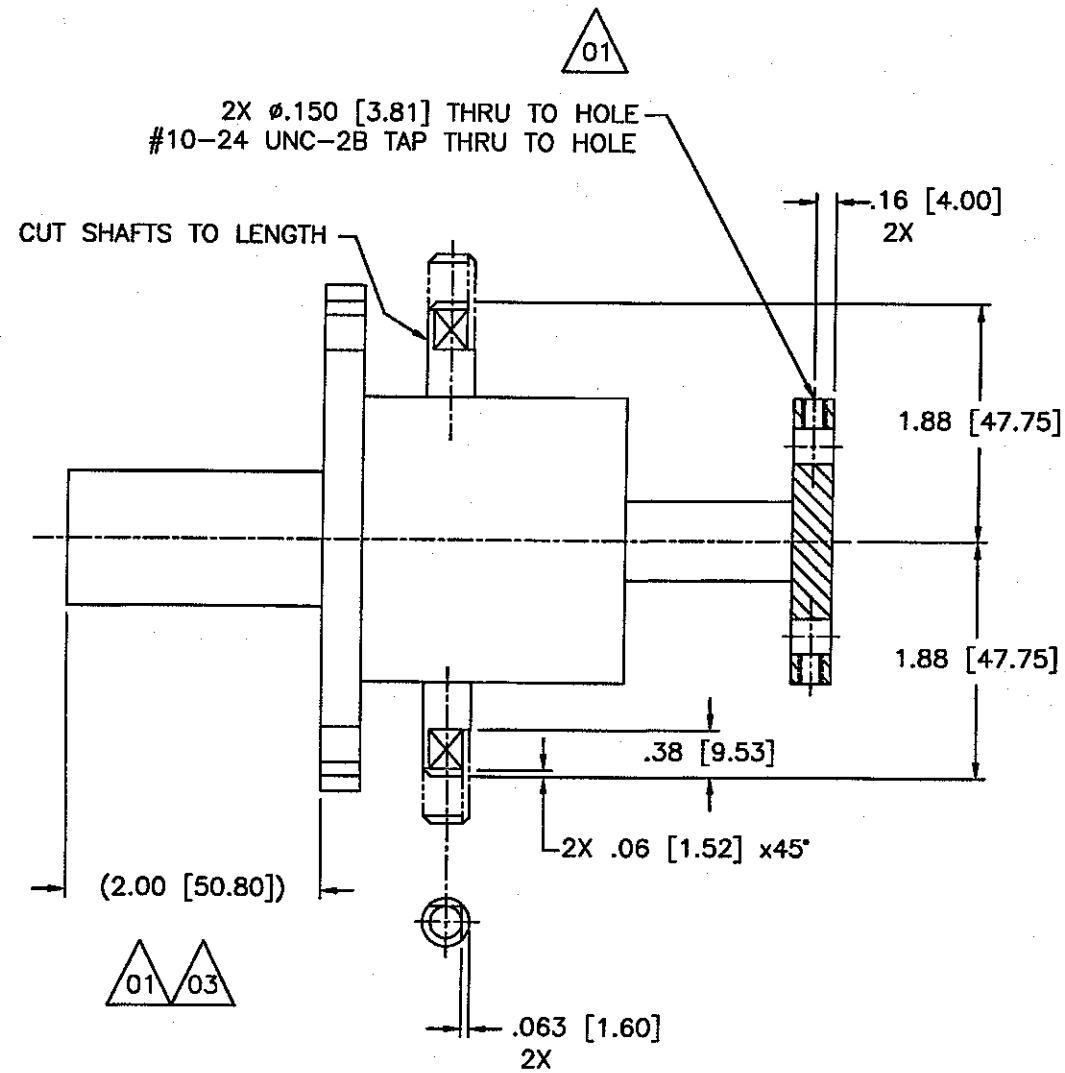
CHKD: T.M. KUZAY

APP'D: J. BARRAZA

CONSTRUCTION TIME  
OCT 4 2009

CONSTRUCTION TIME  
OCT 14 2009

ADVANCED PHOTON SOURCE



CONSTRUCTION PRINT  
OCT 14 2009  
ADVANCED PHOTON SOURCE

NOTE:

1. MODIFY FROM PURCHASED PART.  
ORDERING INFORMATION: PART #MJ-100-U-2"-20:1-TOP PLATE, MODIFIED FOR 3" CLOSED HEIGHT .
2. ALL DIMENSIONS IN [ ] ARE MILLIMETERS AND ARE REFERENCE ONLY.

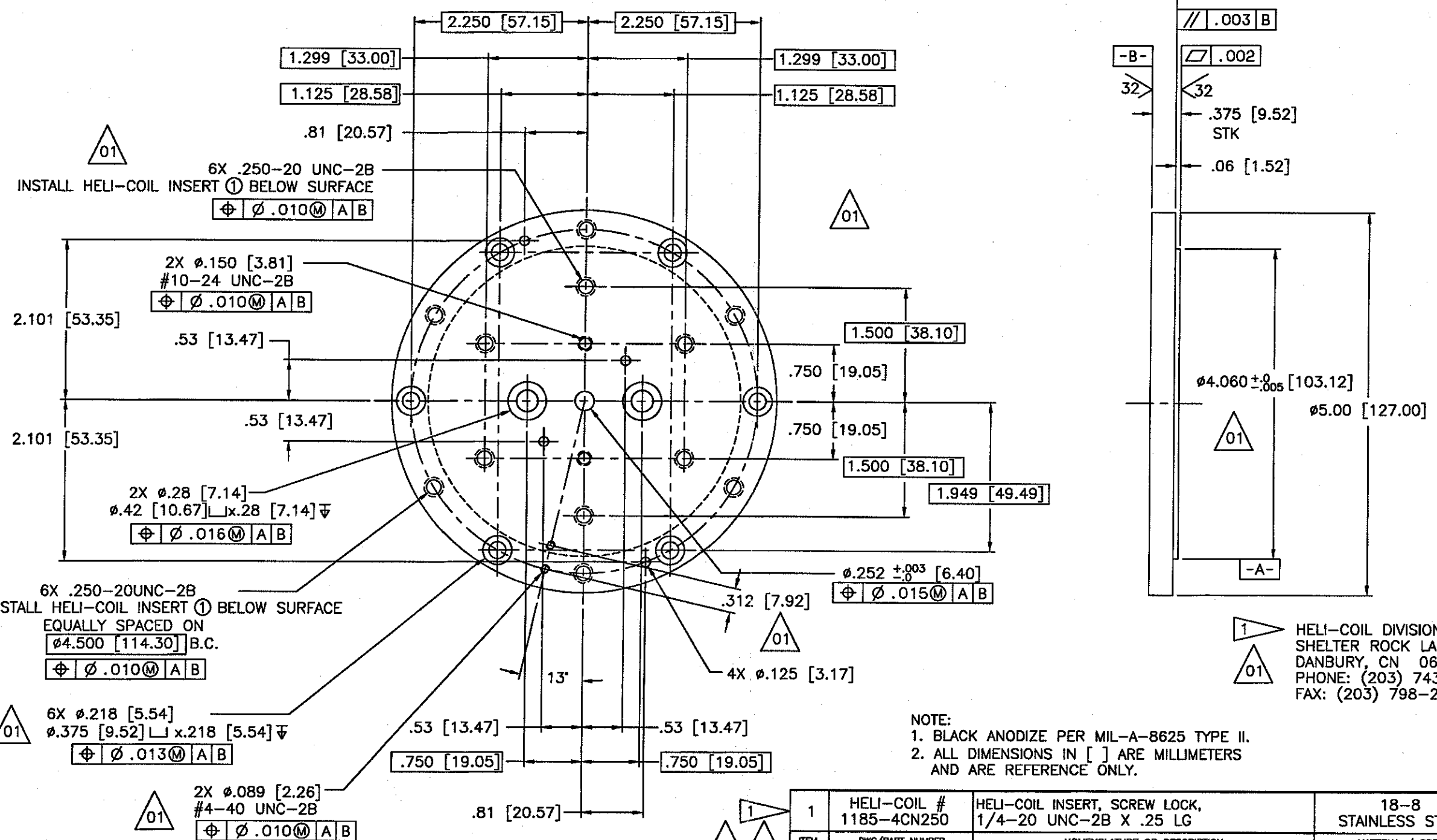
NOOK INDUSTRIES, INC.  
23200 COMMERCE PARK ROAD  
CLEVELAND, OH 44122-5869  
PHONE: 1-800-321-7800  
FAX: (216) 464-4669

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #P4105090501-920201-03.

REV	DATE	BY	CHKD	DATE	DESCRIPTION
05	9/95	RTK	SHL	082109	SEE DCN #0908XXXX
03	9/95	KWC	JB	9/95	2.00 WAS 2.88 MAX
02	4/95	KWC	JB	4/95	SOURCE WAS DUFF-NORTON
01	4/94	CS	JB	4/94	DIMENSION 2.88 MAX ADDED
					#10-32 WAS ø.09 X .62 DRILL
SYM					CHANGE DESCRIPTION
					REVISIONS

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
PARTS LIST				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES		LOG NUMBER A1809205	THIS DRAWING IS THE PROPERTY OF ARGONNE NATIONAL LABORATORY	
TOLERANCES DECIMALS .XX ±.01 [254] XXX ±.005 [127]		ANGULAR ±.25°		
SURFACE ROUGHNESS 125/		REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.		
SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1				
DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5				
DO NOT SCALE DRAWING				
DRAWN BY E.G.		DATE 9/93	CHIEF DESIGN ENGINEER D. SHU	DATE 10/13/93
CHECKED BY J. BARRAZA		DATE 10/1/93	GP LEADER T.M. KUZAY	DATE 10/13/93
DESIGNER E. GALINOVSKAYA J. BARRAZA		DATE 10/18/93	PROJECT MGR	
RESPONSIBLE ENGINEER J. BARRAZA		DATE 10/1/93	APPROVED/RELEASED <i>[Signature]</i>	DATE 10/1/93
MATERIAL SEE NOTE 1		SCALE 1:1	DRAWING NUMBER 4105090501-920201-05	
		SHEET 1 of 1		

ADVANCED PHOTON SOURCE  
EXPERIMENTAL FACILITIES  
XOR/SRI-CAT BEAMLINES  
STANDARD COMPONENTS  
FRONT-END SUPPORT TABLES  
JACK ASSEMBLY (ALTERED)



CONSTRUCTION PRINT  
OCT 1 2009  
ADVANCED PHOTON SOURCE

HELI-COIL DIVISION  
SHELTER ROCK LANE  
DANBURY, CN 06810  
PHONE: (203) 743-7651  
FAX: (203) 798-2540

NOTE:  
1. BLACK ANODIZE PER MIL-A-8625 TYPE II.  
2. ALL DIMENSIONS IN [ ] ARE MILLIMETERS AND ARE REFERENCE ONLY.

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
1	HELI-COIL # 1185-4CN250	HELI-COIL INSERT, SCREW LOCK, 1/4-20 UNC-2B X .25 LG	18-8 STAINLESS STEEL	12

SYMBOL	CHANGE DESCRIPTION	BY	CHKD	DATE
03	SEE DCN #090903-04	RTK	SHL	9/95
02	REMOVED SILVER FINISH	KWC	JB	9/95
01	SOURCE NOTE ADDED	CS	JB	4/94
	HELI-COIL INSERTS ADDED			
	ALUMINUM TEMPER-T6 ADDED			
	DIMENSION $\phi 4.060$ WAS $\phi 4.020$			
	(2) #4-40 TAPPED HOLES RELOCATED			

UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES. TOLERANCES: DECIMALS .01 [0.254] ANGULAR .25°. SURFACE FINISH: XX ±.01 [0.254] XXX ±.005 [0.127]. SURFACE ROUGHNESS: 125. REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX. SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST AMS 948.1. DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST AMS Y14.5.

LOG NUMBER: A1809303

THIS DRAWING IS THE PROPERTY OF ARGONNE NATIONAL LABORATORY

DRAWN BY: E.G. DATE: 9/93. CHIEF DESIGN ENGINEER: D. SHU DATE: 10/10/93.

CHECKED BY: J. BARRAZA DATE: 10/12/93. GP LEADER: T.M. KUZAY DATE: 10/12/93.

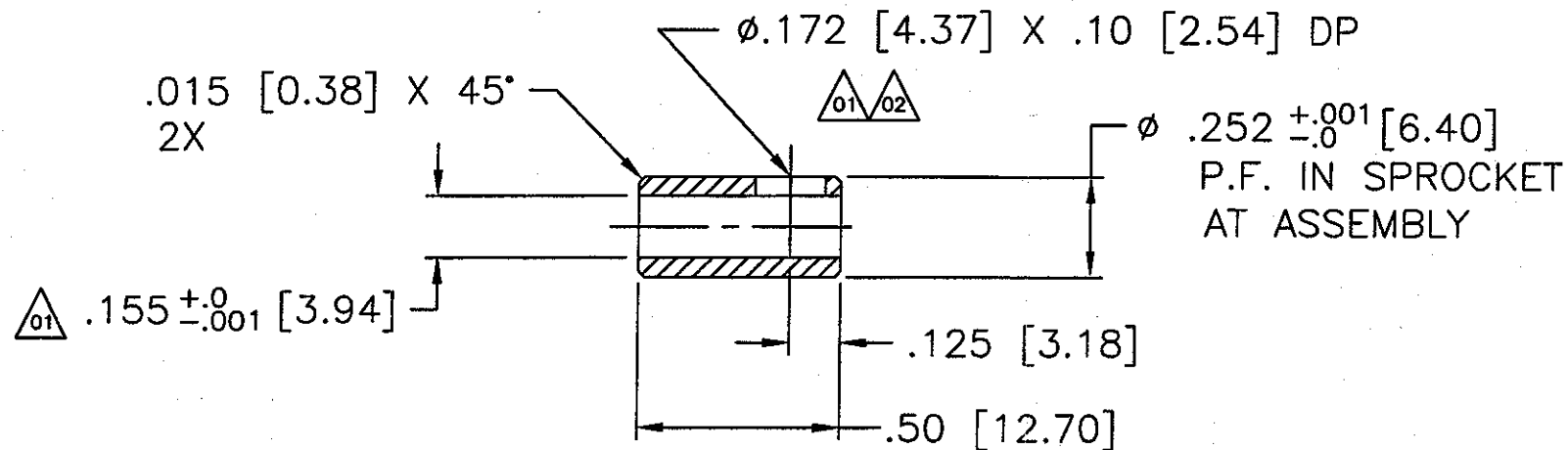
DESIGNER: E. GALINOVSKAYA DATE: 10/18/93. PROJECT MGR: J. BARRAZA.

RESPONSIBLE ENGINEER: J. BARRAZA DATE: 10/12/93. APPROVED/RELEASED: [Signature]

MATERIAL: 6061-T6 ALUMINUM. SCALE: 1:1. SIZE: C. SHEET: 1 of 1.

TITLE: ADVANCED PHOTON SOURCE T1 50 mm TRAVEL PRECISION VERTICAL STAGE. TOP PLATE. DRAWING NUMBER: 4105090501-920202-03.

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #P4105090501-920202-02.




NOTE:  
1. ALL DIMENSIONS IN [ ] ARE MILLIMETERS AND ARE REFERENCE ONLY.

CONSTRUCTION PRINT  
OCT 14 2009  
ADVANCED PHOTON SOURCE

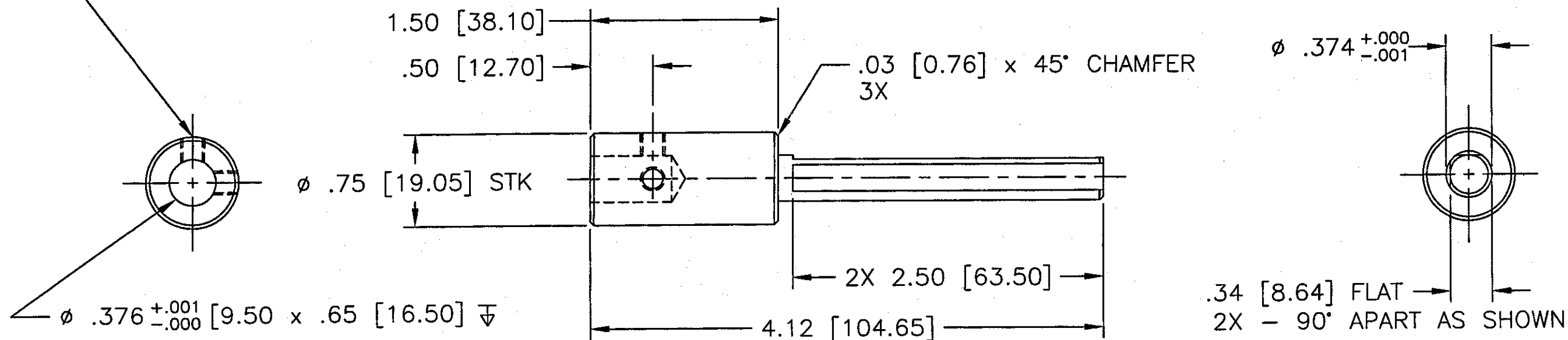
NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #P4105090501-920203-02.

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
PARTS LIST				

UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES <u>TOLERANCES</u> DECIMALS      ANGULAR .XX    ±.01 [.254]    ±.25° .XXX   ±.005 [.127]		LOG NUMBER <b>A1809403</b>	 THIS DRAWING IS THE PROPERTY OF <b>ARGONNE NATIONAL LABORATORY</b>	
SURFACE ROUGHNESS 125/✓		DRAWN BY E.G.	DATE 9/93	CHIEF DESIGN ENGINEER D. SHU
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.		CHECKED BY J. BARRAZA	DATE 10/1/93	GP LEADER T.M. KUZAY
SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1		DESIGNER E. GALINOVSKAYA J. BARRAZA	DATE 10/18/93	PROJECT MGR
DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5		RESPONSIBLE ENGINEER J. BARRAZA	DATE 10/1/93	APPROVED/RELEASED <i>BR</i> 10/7/93
DO NOT SCALE DRAWING		MATERIAL $\triangle_{01}$ 6061-T6 ALUMINUM	SCALE 2:1	SIZE B
REVISIONS		DRAWING NUMBER 4105090501-920203-03		

SYM	CHANGE DESCRIPTION	BY	CHKD	DATE
03	SEE DCN #090903-04	RTK	SHL	090903
02	$\phi .172$ HOLE WAS 2 PLACES	KWC	JB	9/95
01	DIM $\phi .172$ WAS $\phi .125$	CS	JB	4/94
	ALUMINUM TEMPER-T6 ADDED			
	DIM $\phi .155$ WAS $\phi .157$			

2X  $\phi$ #21 (.159 [4.04]) THRU FIRST WALL ONLY  
 #10-32 UNF-2B TAP THRU FIRST WALL ONLY  
 90° APART AS SHOWN



NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED  
 VERSION OF DRAWING EXCHANGE FILE DRAWING  
 #P4105090501-920204-00.

NOTE:  
 1. ALL DIMENSIONS IN [ ] ARE MILLIMETERS  
 AND ARE REFERENCE ONLY.

CONSTRUCTION PRINT  
 OCT 14 2009  
 ADVANCED PHOTON SOURCE

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
PARTS LIST				

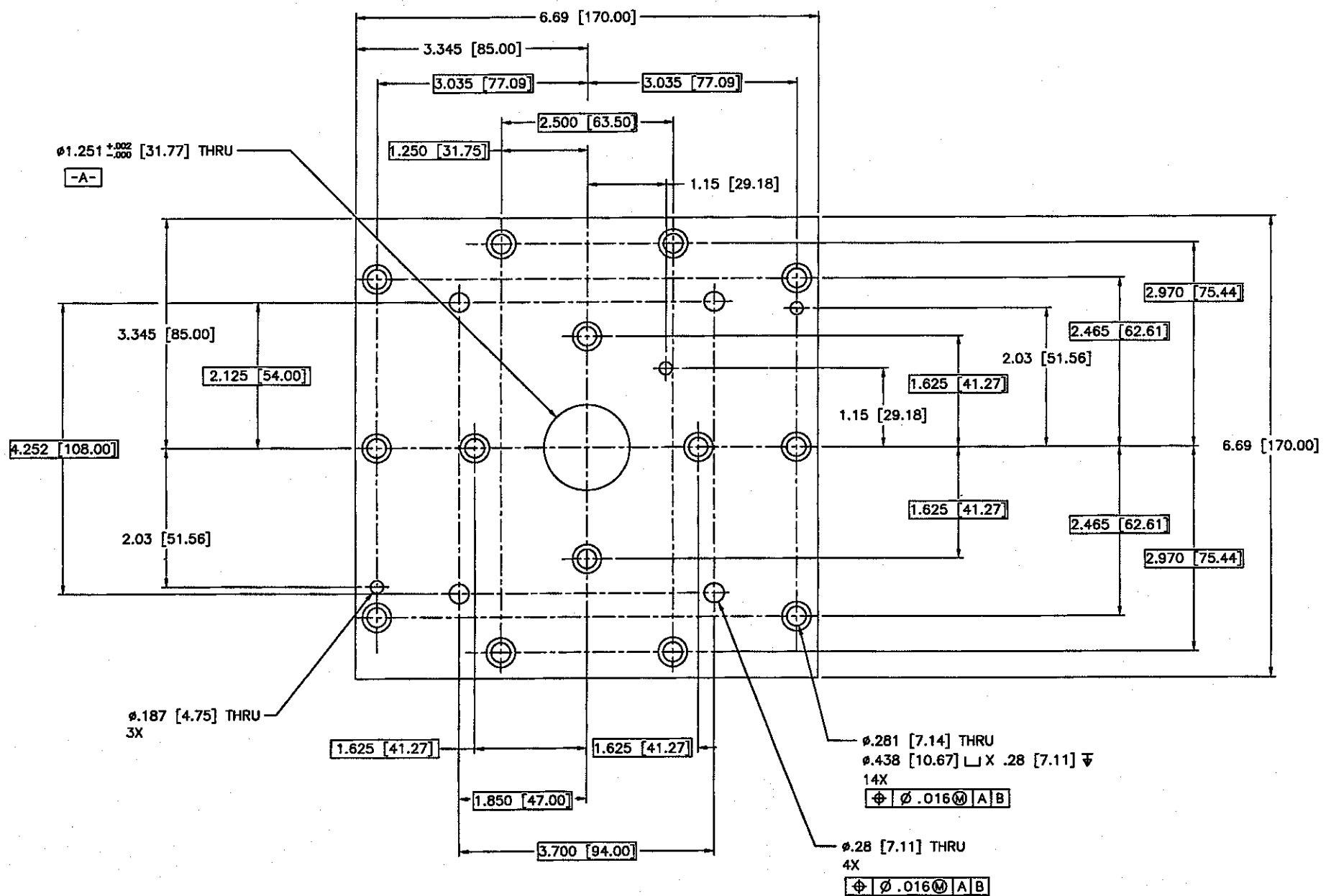
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES TOLERANCES		LOG NUMBER A1336301	THIS DRAWING IS THE PROPERTY OF ARGONNE NATIONAL LABORATORY	
DECIMALS	ANGULAR	DRAWN BY EG	CHIEF DESIGN ENGINEER D SHU	TITLE ADVANCED PHOTON SOURCE
.XX ±.01 [.254]	±.25°	DATE 9/93	DATE 10/93	EXPERIMENTAL FACILITIES
.XXX ±.005 [.127]		CHECKED BY J BARRAZA	GP LEADER T.M. KUZAY	XOR/SRI-CAT BEAMLINES
SURFACE ROUGHNESS 125/		DESIGNER E. GALINOVSKAYA J. BARRAZA	PROJECT MGR	STANDARD COMPONENTS
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.		RESPONSIBLE ENGINEER J BARRAZA	APPROVED/RELEASED <i>[Signature]</i>	FRONT-END SUPPORT TABLES
SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1		MATERIAL 305 SST	SCALE 1:1	SHAFT
DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5			SIZE B	DRAWING NUMBER
			SHEET 1 of 1	4105090501-920204-01

SYMBOL	CHANGE DESCRIPTION	BY	CHKD	DATE
01	SEE DCN #090903-04	RTK	SHL	090903

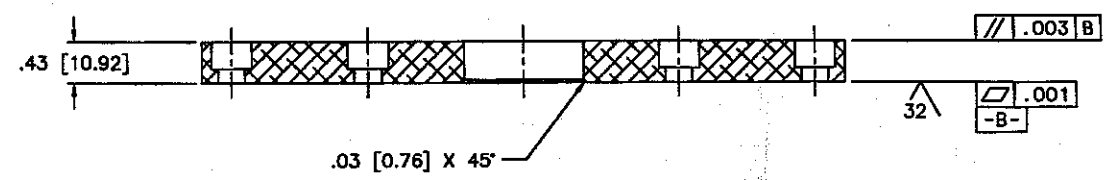
REVISIONS

DO NOT SCALE DRAWING





CONSTRUCTION PRINT  
 OCT 14 2009  
 ADVANCED PHOTON SOURCE

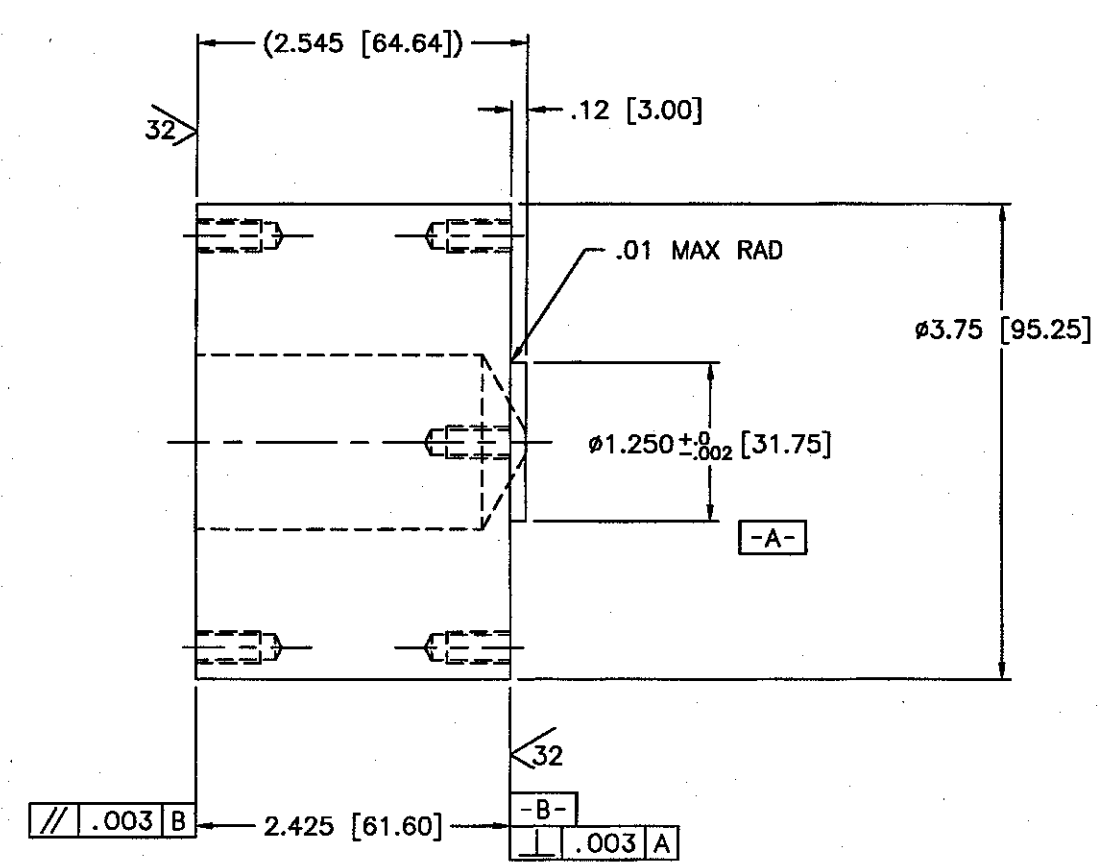
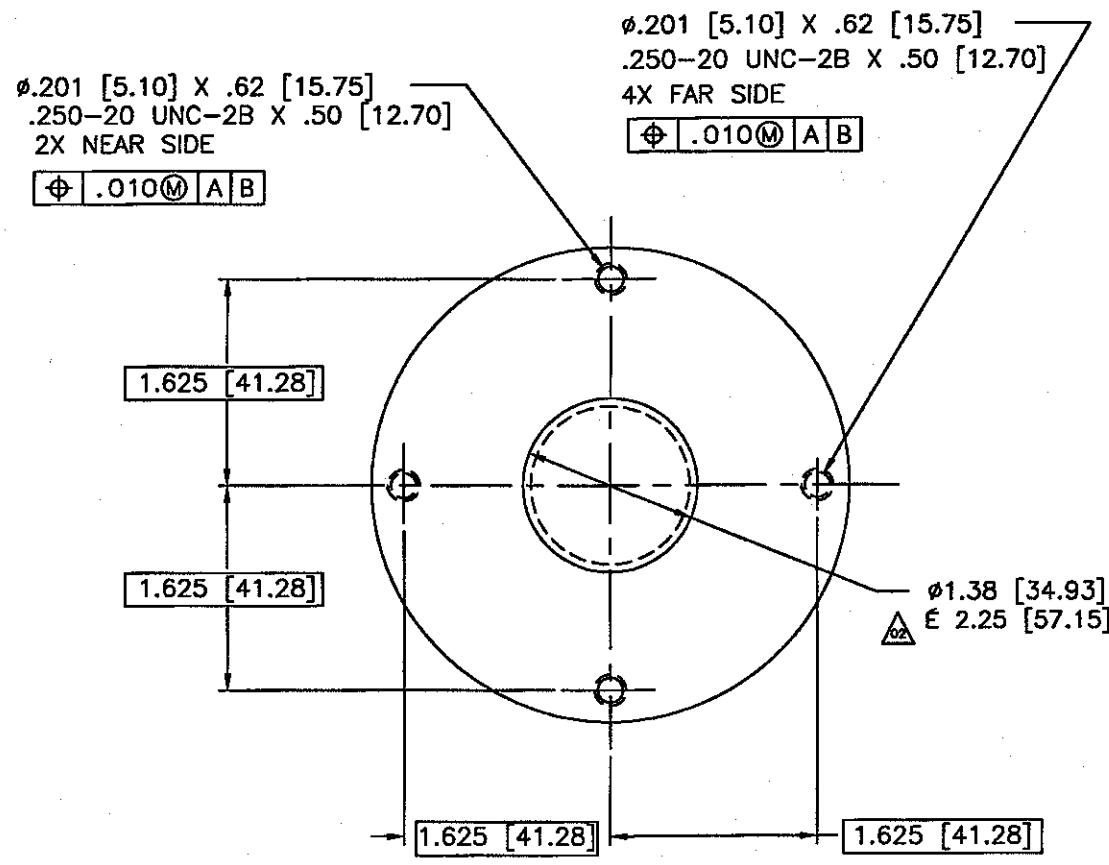


- NOTE:
1. FINISH - BLACK ANODIZING PER MIL-A-8625 TYPE II.
  2. ALL DIMENSIONS IN [ ] ARE MILLIMETERS AND ARE REFERENCE ONLY.

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #P4105090501-920205-02.

REV	DESCRIPTION	BY	CHKD	DATE
03	SEE DCN #090903-04	RTK	SHL	09/30/98
02	MATL WAS 6061-T6	KWC	JB	9/95
01	ALUMINUM TEMPER-T6 ADDED	CS	JB	4/94
SYM	CHANGE DESCRIPTION	BY	CHKD	DATE

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
PARTS LIST				
LOG NUMBER A1809503		THIS DRAWING IS THE PROPERTY OF ARGONNE NATIONAL LABORATORY		
DRAWN BY E.G.	DATE 9/93	CHIEF DESIGN ENGINEER D. SHU	DATE 10/13/93	TITLE ADVANCED PHOTON SOURCE EXPERIMENTAL FACILITIES XOR/SRI-CAT BEAMLINES STANDARD COMPONENTS FRONT-END SUPPORT TABLES BASE PLATE
CHECKED BY J. BARRAZA	DATE 10/1/93	OP LEADER T.M. KUZAY	DATE 10/13/93	PROJECT MGR
DESIGNER E. GALINSKAYA	DATE 10/16/93	RESPONSIBLE ENGINEER J. BARRAZA	DATE 10/1/93	APPROVED/RELEASED
MATERIAL ALUMINUM CAST TOOL & JIG PLATE		SCALE 1:1	SIZE D	DRAWING NUMBER 4105090501-920205-03
DO NOT SCALE DRAWING		SHEET 1 of 1		



- NOTE:**
1. FINISH - BLACK ANODIZING PER MIL-A-8625 TYPE II.
  2. ALL DIMENSIONS IN [ ] ARE MILLIMETERS AND ARE REFERENCE ONLY.

CONSTRUCTION PRINT  
OCT 14 2009  
ADVANCED PHOTON SOURCE

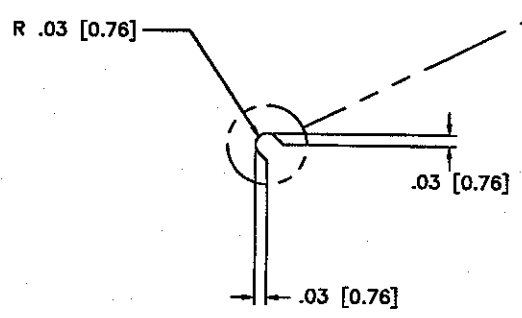
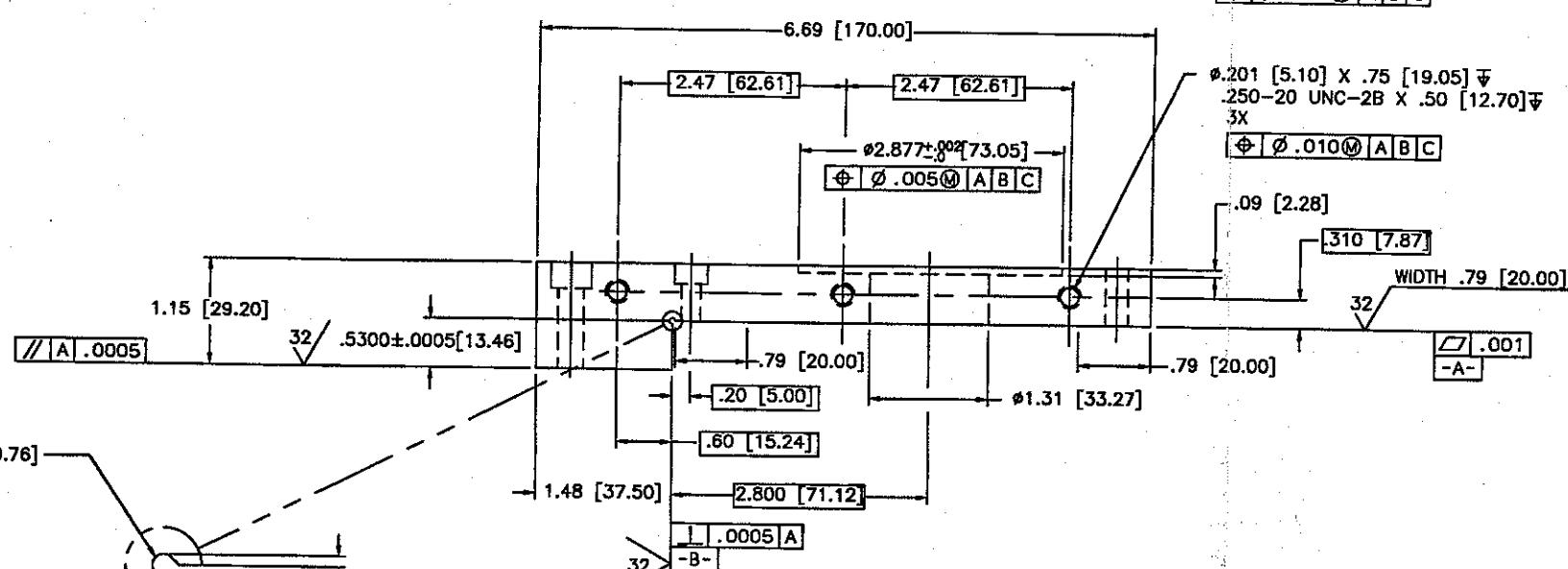
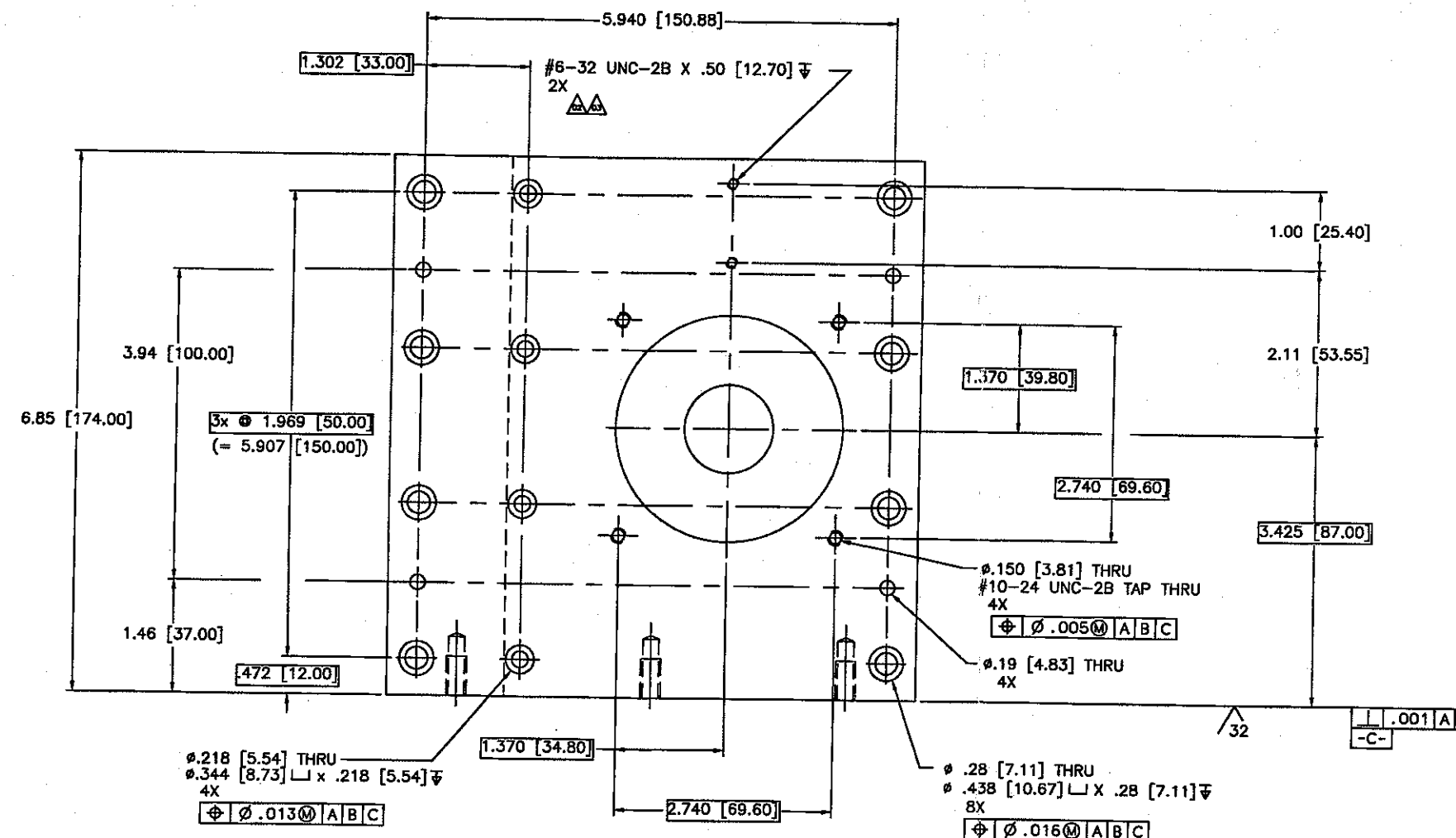
NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #P4105090501-920206-02.

SYM	CHANGE DESCRIPTION	BY	CHKD	DATE
03	SEE DCN #090903-04	RTK	SHL	08/30/99
02	$\phi 1.38$ HOLE WAS $\phi 1.00$ THRU	KWC	JB	9/95
01	ALUMINUM TEMPER-T6 ADDED	CS	JB	4/94

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
PARTS LIST				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES TOLERANCES DECIMALS ANGULAR XX $\pm .01 [ .254 ]$ XXX $\pm .005 [ .127 ]$ SURFACE ROUGHNESS $125 \checkmark$ REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX. SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1 DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5 DO NOT SCALE DRAWING		LOG NUMBER <b>A1809603</b>	THIS DRAWING IS THE PROPERTY OF <b>ARGONNE NATIONAL LABORATORY</b>	
DRAWN BY E.G.		DATE 9/93	CHIEF DESIGN ENGINEER D. SHU	DATE 10/13/93
CHECKED BY J. BARRAZA		DATE 10/1/93	GP LEADER T.M. KUZAY	DATE 10/13/93
DESIGNER E. GALINOVSKAYA J. BARRAZA		DATE 10/18/93	PROJECT MGR	
RESPONSIBLE ENGINEER J. BARRAZA		DATE 10/1/93	APPROVED/RELEASED <i>[Signature]</i>	
MATERIAL <b>01 6061-T6 ALUMINUM</b>		SCALE 1:1	SIZE C	DRAWING NUMBER 4105090501-920206-03

8 7 6 5 4 3 2 1

D  
C  
B  
A



SCALE 4:1

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #P4105090501-920207-03.

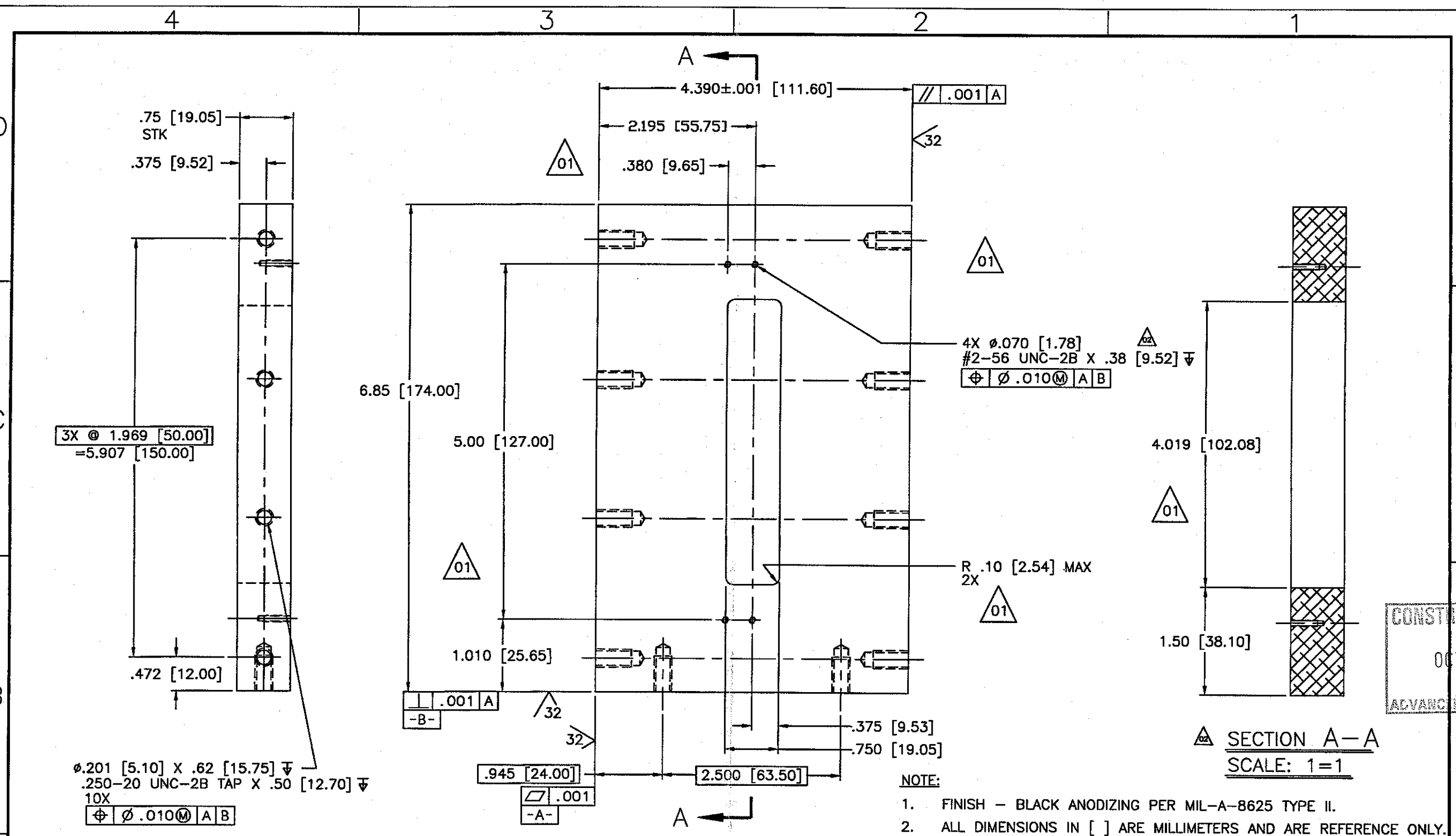
CONSTRUCTION PRINT  
OCT 1 4 2009  
ADVANCED PHOTON SOURCE

- NOTE:
1. FINISH - BLACK ANODIZING PER MIL-A-8625 TYPE II.
  2. ALL DIMENSIONS IN [ ] ARE MILLIMETERS AND ARE REFERENCE ONLY.

REV	CHANGE DESCRIPTION	BY	CHKD	DATE
04	SEE DCN #090903-04	RTK	SHL	09/03/93
03	6-32 TAP WAS TAP THRU; MIL WAS 6061-T6	KWC	JB	9/18/93
02	REMOVED (2) 6-32 HOLES	KWC	JB	2/95
	REMOVED .250 SLOT			
	REMOVED Ø1.030 HOLE			
01	ALUMINUM TEMPER-T6 ADDED	CS	JB	4/94
	HOLE CHANGED TO .250 SLOT			

ITEM	QTY	DESCN / PART NUMBER	MATERIAL / SPEC
PARTS LIST			
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES TOLERANCES: DECIMALS: .01 [254] .005 [127] ANGULAR: ±.25°			
LOG NUMBER: A1809704		THIS DRAWING IS THE PROPERTY OF ARGONNE NATIONAL LABORATORY	
DRAWN BY: E.G.	DATE: 9/93	CHIEF DESIGN ENGINEER: D. SHU	DATE: 10/13/93
CHECKED BY: J. BARRAZA	DATE: 10/12/93	PROJECT LEADER: T.M. KUZAY	DATE: 10/13/93
DESIGNER: E. GALLINOVSKAYA	DATE: 10/18/93	PROJECT MGR:	
RESPONSIBLE ENGINEER: J. BARRAZA	DATE: 10/12/93	APPROVED/RELEASED:	10/16/93
MATERIAL: ALUMINUM CAST TOOL & JIG PLATE		SCALE: 1:1	SIZE: D
DRAWING NUMBER: 4105090501-920207-04		SHEET 1 of 1	

8 7 6 5 4 3 2 1



CONSTRUCTION PRINT  
OCT 14 2009  
ADVANCED PHOTON SOURCE

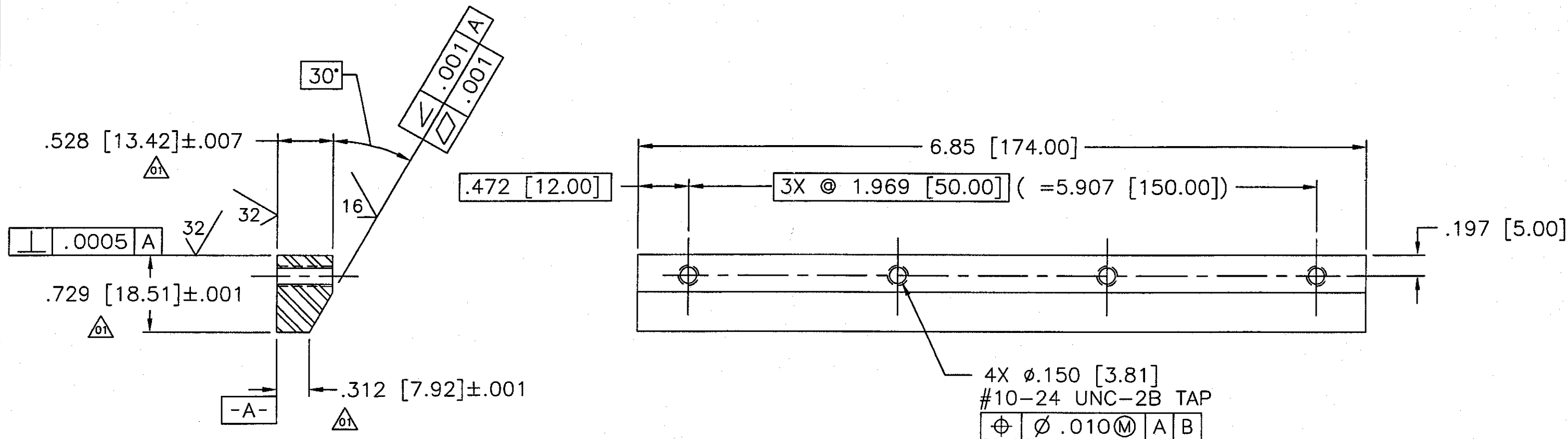
SECTION A-A  
SCALE: 1=1

- NOTE:
1. FINISH - BLACK ANODIZING PER MIL-A-8625 TYPE II.
  2. ALL DIMENSIONS IN [ ] ARE MILLIMETERS AND ARE REFERENCE ONLY.

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #P4105090501-920208-02.

SYM	CHANGE DESCRIPTION	BY	CHKD	DATE
03	SEE DCN #090903-04	RTK	SHL	09/03/93
02	.38 DP WAS THRU; MTL WAS 6061-T6	KWC	JB	9/19/96
01	(3) #10-32 HOLES DELETED (4) #2-56 TAPPED HOLES ADDED CLEARANCE SLOT ADDED ALUMINUM TEMPER-T6 ADDED	CS	JB	4/94

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
PARTS LIST				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES		LOG NUMBER A1809803	THIS DRAWING IS THE PROPERTY OF ARGONNE NATIONAL LABORATORY	
TOLERANCES: DECIMALS .01 [ .254 ] ANGULAR .25°		DRAWN BY E.G.	DATE 9/93	CHIEF DESIGN ENGINEER T.M. KUZAY
SURFACE FINISHES: XX ±.01 [ .254 ] XXX ±.005 [ .127 ]		CHECKED BY J. BARRAZA	DATE 10/18/93	GP LEADER
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.		DESIGNER E. GALINOVSKAYA J. BARRAZA	DATE 10/18/93	PROJECT MGR
SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1		RESPONSIBLE ENGINEER D. SHU	DATE 10/13/93	APPROVED/RELEASED 10/7/93
DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5		MATERIAL ALUMINUM CAST TOOL & JIG PLATE	SCALE 1:1	SIZE C
DO NOT SCALE DRAWING		DRAWING NUMBER 4105090501-920208-03		



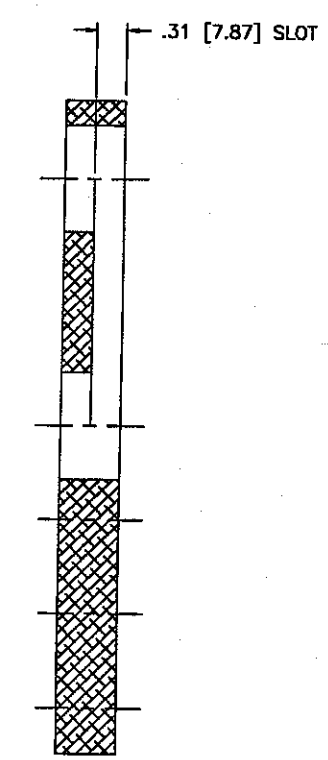
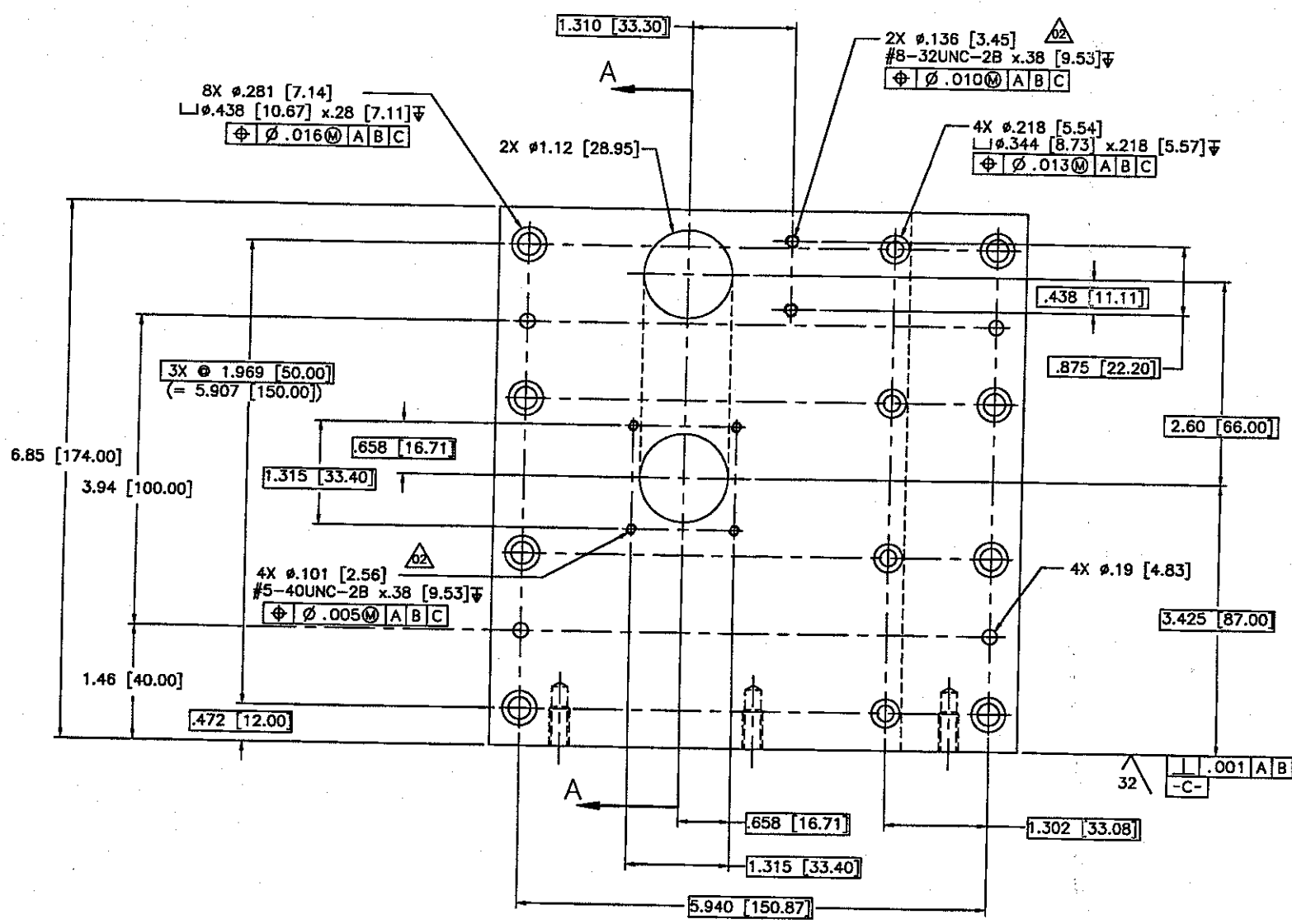
CONSTRUCTION PRINT  
OCT 14 2009  
ADVANCED PHOTON SOURCE

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #P4105090501-920209-01.

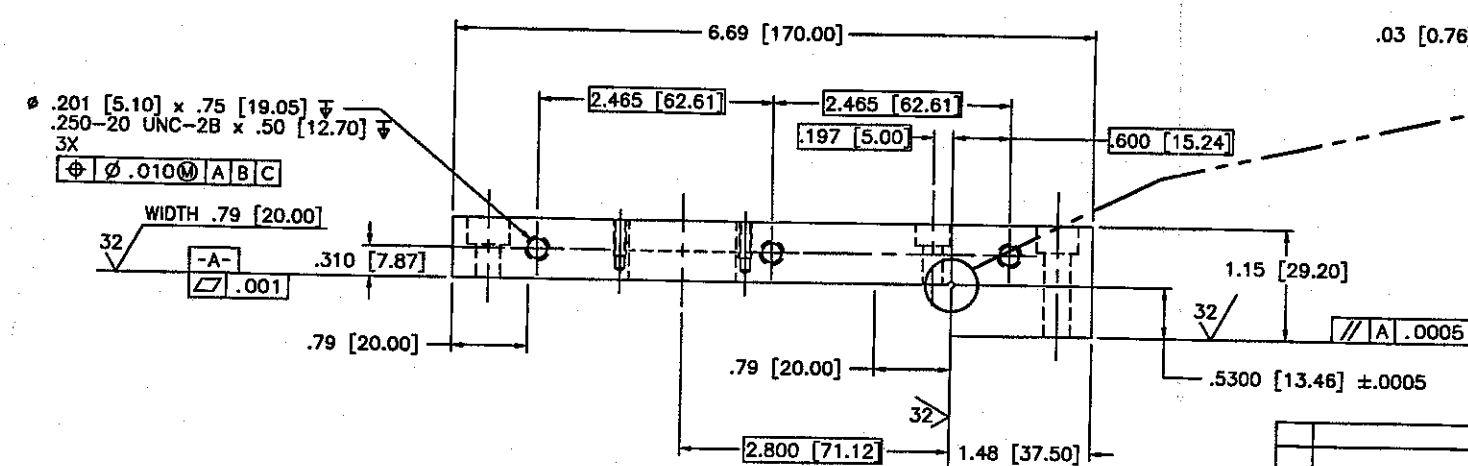
NOTE:  
1. Rc 58-60.  
2. ALL DIMENSIONS IN [ ] ARE MILLIMETERS AND ARE REFERENCE ONLY.

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
PARTS LIST				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES		LOG NUMBER <b>A1336802</b>	THIS DRAWING IS THE PROPERTY OF <b>ARGONNE NATIONAL LABORATORY</b>	
TOLERANCES		TITLE <b>ADVANCED PHOTON SOURCE EXPERIMENTAL FACILITIES XOR/SRI-CAT BEAMLINES STANDARD COMPONENTS FRONT-END SUPPORT TABLES BEARING RAIL</b>		
DECIMALS	ANGULAR	DRAWN BY E.G.	DATE 9/93	CHIEF DESIGN ENGINEER D. SHU
.XX ±.01 [.254]	±.25°	CHECKED BY J. BARRAZA	10/1/93	GP LEADER T.M. KUZAY
.XXX ±.005 [.127]		DESIGNER E. GALIUOVSKAYO	10/18/93	PROJECT MGR
SURFACE ROUGHNESS 125/		RESPONSIBLE ENGINEER J. BARRAZA	10/1/93	APPROVED/RELEASED <i>[Signature]</i>
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.		MATERIAL 440 A SS	SCALE 1:1	SIZE B
SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1		DRAWING NUMBER 4105090501-920209-02		
DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5		SHEET 1 of 1		
DO NOT SCALE DRAWING				

SYM	CHANGE DESCRIPTION	BY	CHKD	DATE
02	SEE DCN #090903-04	RTK	SHL	090903
01	CHANGED TO 3 PL DECIMAL; ADDED TOLERANCES	KWC	JB	9/19/95
REVISIONS				



SECTION A-A



SCALE: 4:1

- NOTE:
1. FINISH - BLACK ANODIZE PER MIL-A-8625 TYPE II.
  2. ALL DIMENSIONS IN [ ] ARE MILLIMETERS AND ARE REFERENCE ONLY.

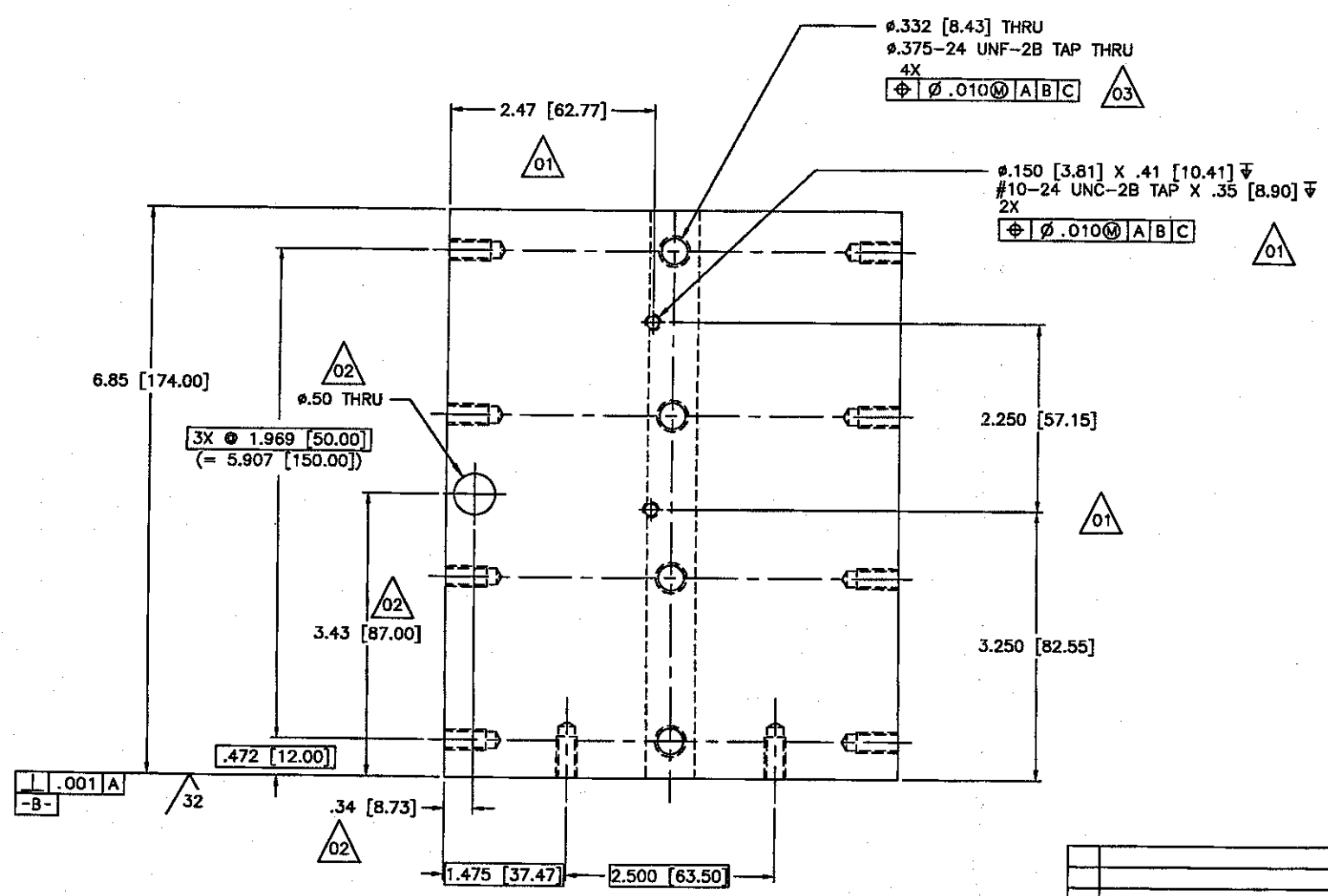
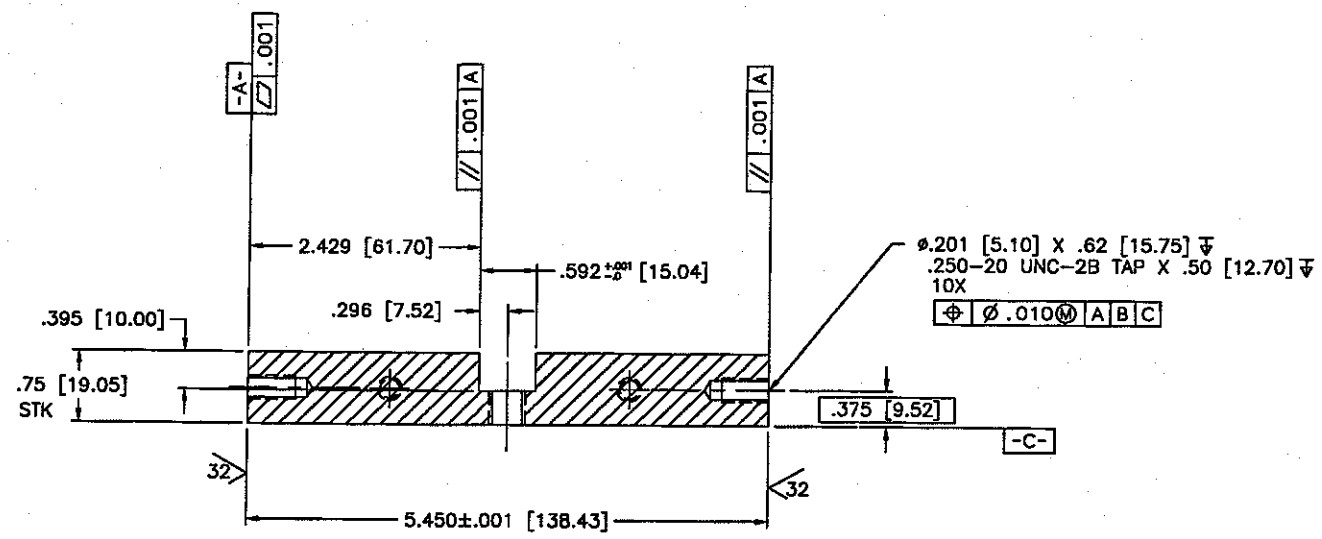
CONSTRUCTION PRINT  
OCT 14 2009  
ADVANCED PHOTON SOURCE

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #P4105090501-920210-02.

REV	DESCRIPTION	BY	CHKD	DATE
03	SEE DCN #090803-04	RTK	SHL	09/03/93
02	MAIL WAS 6061-T6; .38 DP WAS THRU	KWC	JB	9/19/93
01	ALUMINUM TEMPER-T6 ADDED	CS	JB	4/9/94

ITEM	QTY	OWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
PARTS LIST					
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES. TOLERANCES: DECIMALS: .005; ANGULAR: ±.25°.					
LOG NUMBER: A1809903					
THIS DRAWING IS THE PROPERTY OF ARGONNE NATIONAL LABORATORY					
DRAWN BY: E.G.		DATE: 9/93		CHIEF DESIGN ENGINEER: D. SHU	
CHECKED BY: J. BARRAZA		DATE: 10/1/93		DATE: 10/13/93	
DESIGNER: E. GALINOVSKAYA		DATE: 10/1/93		PROJECT MGR: T.M. KUZAY	
RESPONSIBLE ENGINEER: J. BARRAZA		DATE: 10/1/93		APPROVED/RELEASED: [Signature]	
MATERIAL: ALUMINUM		CAST TOOL & JIG PLATE		SCALE: 1:1	
DRAWING NUMBER: 4105090501-920210-03		SHEET: 1 of 1		SIZE: D	





CONSTRUCTION PRINT  
 OCT 14 2009  
 ADVANCED PHOTON SOURCE

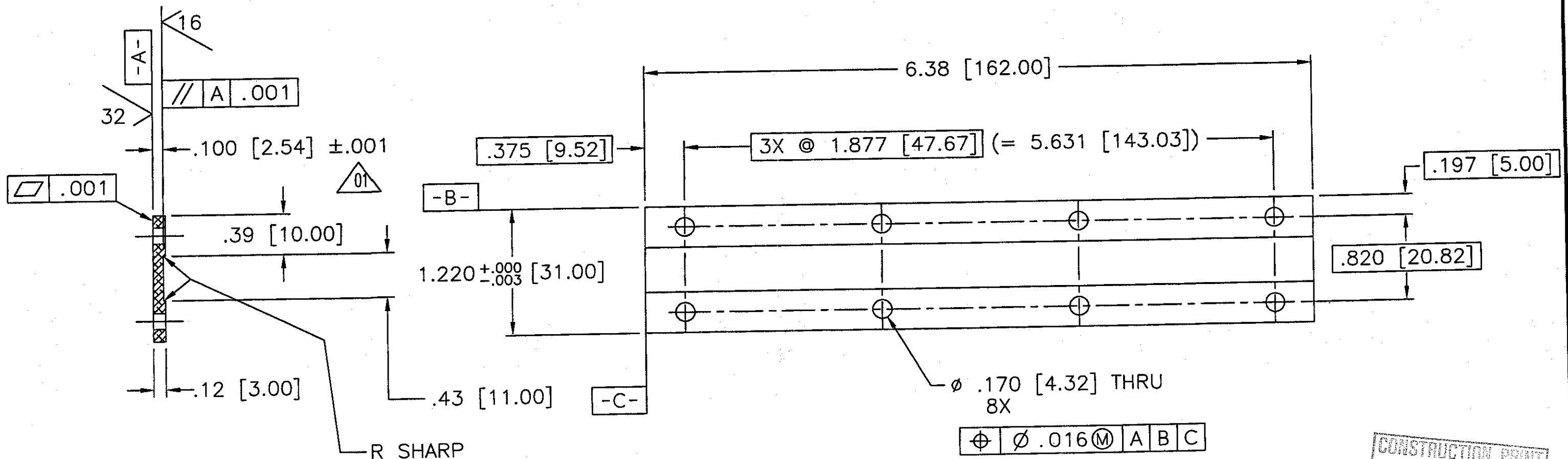
- NOTE:**
1. FINISH - BLACK ANODIZING PER MIL-A-8625 TYPE II.
  2. ALL DIMENSIONS IN [ ] ARE MILLIMETERS AND ARE REFERENCE ONLY.

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED  
 VERSION OF DRAWING EXCHANGE FILE DRAWING  
 #P4105090501-920212-03.

REV	DATE	BY	CHKD	DATE	DESCRIPTION
04	10/1/93	RTK	SHL	09/30/93	SEE DCN #090903-04
03	9/9/95	KWC	JB	9/9/95	MATL WAS 6061-T6; .332 WAS .312
01	4/94	CS	JB	4/94	ADDED .50 HOLE
					DIMENSIONS ADDED
					ALUMINUM TEMPER-T6 ADDED
					(2) #10-24 UNC-2B TAPPED HOLES ADDED

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
PARTS LIST				
LOG NUMBER A1810104		THIS DRAWING IS THE PROPERTY OF <b>ARGONNE NATIONAL LABORATORY</b>		
DRAWN BY E.G.	DATE 9/93	CHIEF DESIGN ENGINEER D. SHU	DATE 10/13/93	TITLE ADVANCED PHOTON SOURCE
CHECKED BY J. BARRAZA	DATE 10/1/93	PROJECT LEADER T.M. KUZAY	DATE 10/13/93	EXPERIMENTAL FACILITIES XOR/SRI-CAT BEAMLINES STANDARD COMPONENTS FRONT-END SUPPORT TABLES FRONT PLATE
DESIGNER E. CALJINOVSKAYA J. BARRAZA	DATE 10/12/93	PROJECT MOR		
RESPONSIBLE ENGINEER J. BARRAZA	DATE 10/10/93	APPROVED/RELEASED		
MATERIAL ALUMINUM CAST TOOL & JIG PLATE		SCALE 1:1	SIZE D	DRAWING NUMBER 4105090501-920212-04





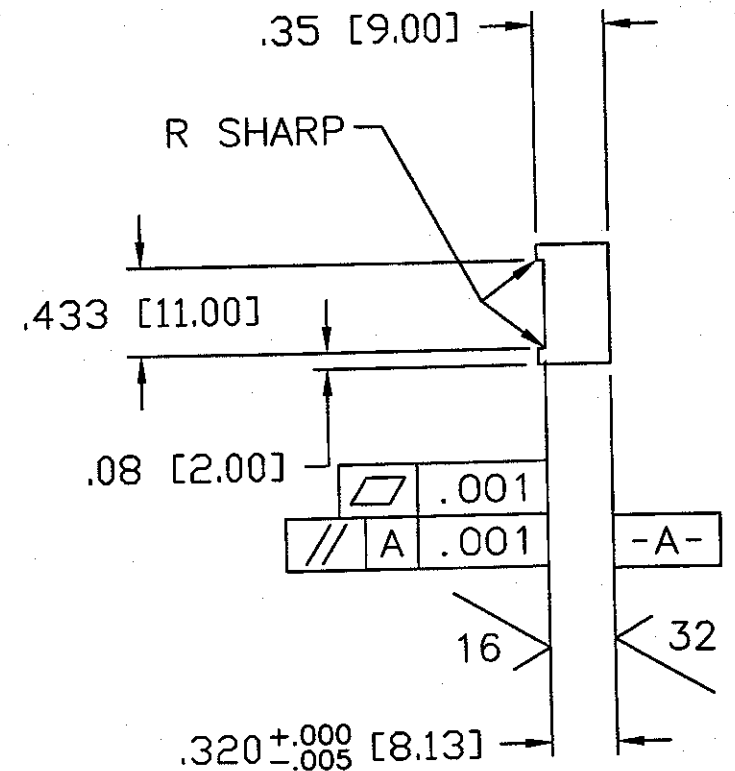
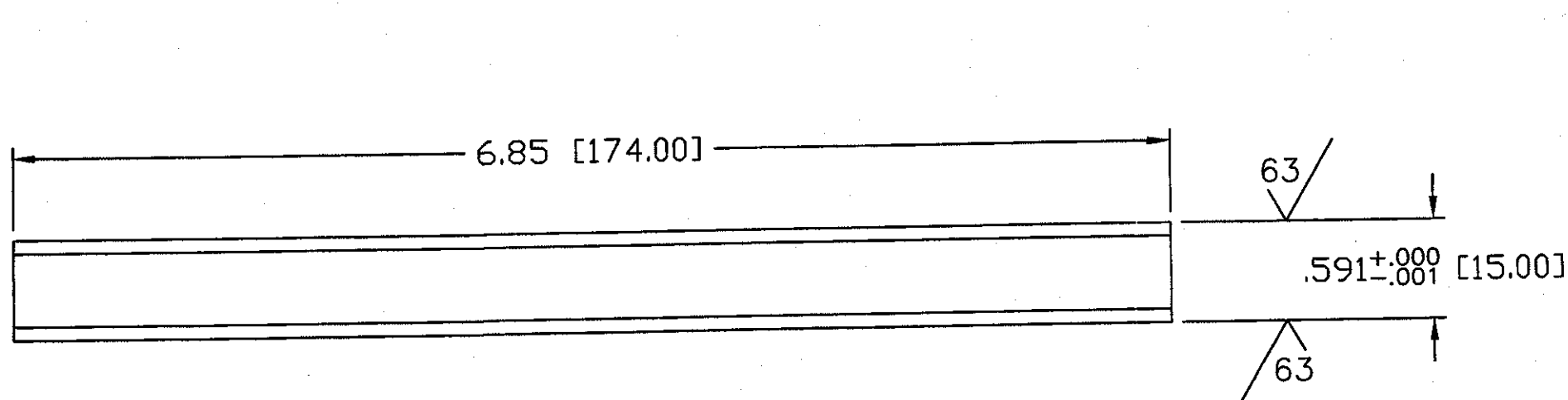
NOTE:  
 1. Rc 58-60.  
 2. ALL DIMENSIONS IN [ ] ARE MILLIMETERS AND ARE REFERENCE ONLY.

CONSTRUCTION PRINT  
 OCT 14 2009  
 ADVANCED PHOTON SOURCE

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #P4105090501-920213-01.

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
PARTS LIST				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES TOLERANCES		LOG NUMBER A1337202	THIS DRAWING IS THE PROPERTY OF ARGONNE NATIONAL LABORATORY	
DECIMALS	ANGULAR	DRAWN BY E.G.	CHIEF DESIGN ENGINEER D. SHU	DATE 10/13/93
.XX ±.01 [.254]	±.25°	CHECKED BY J. BARRAZA	GP LEADER T. KUZAY	DATE 10/13/93
.XXX ±.005 [.127]		DESIGNER E. GALINOUGHAYES	PROJECT MGR	
SURFACE ROUGHNESS 125 ✓		RESPONSIBLE ENGINEER J. BARRAZA	APPROVED/RELEASED BA	DATE 10/1/93
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.		MATERIAL 440 A SS	SCALE 1:1	SIZE B
SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1			SHEET 1 of 1	DRAWING NUMBER 4105090501-920213-02
DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5				
DO NOT SCALE DRAWING				


SYM	CHANGE DESCRIPTION	BY	CHKD	DATE
02	SEE DCN #090903-04	RTK	SHL	090903
01	TOL. WAS ±.002 CHG. TO ±.001	RS	JB	5-2-96
REVISIONS				



NOTE:  
 1. Rc 58-60.  
 2. ALL DIMENSIONS IN [ ] ARE MILLIMETERS AND ARE REFERENCE ONLY.

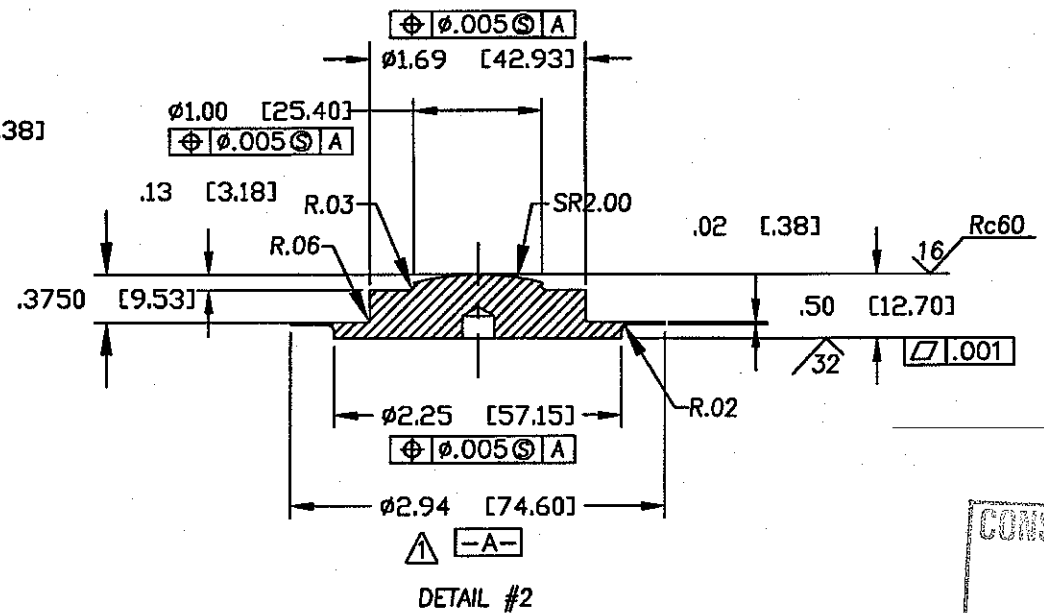
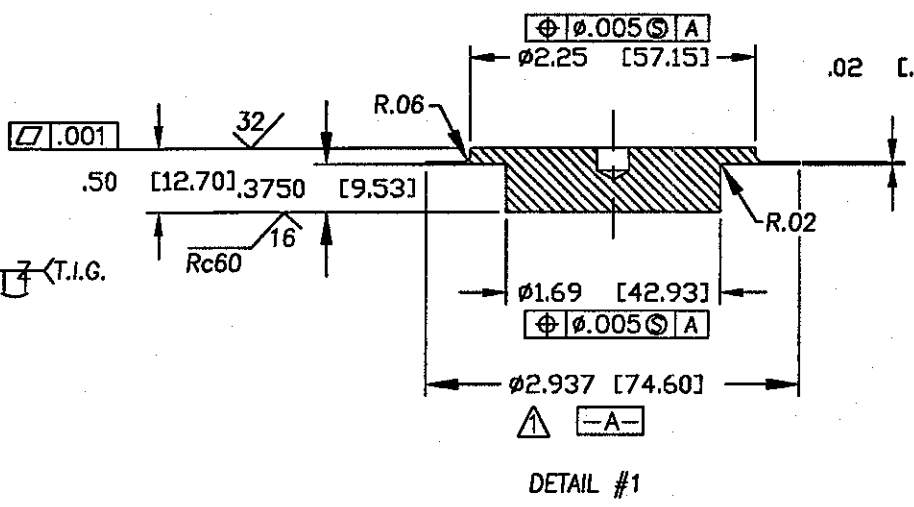
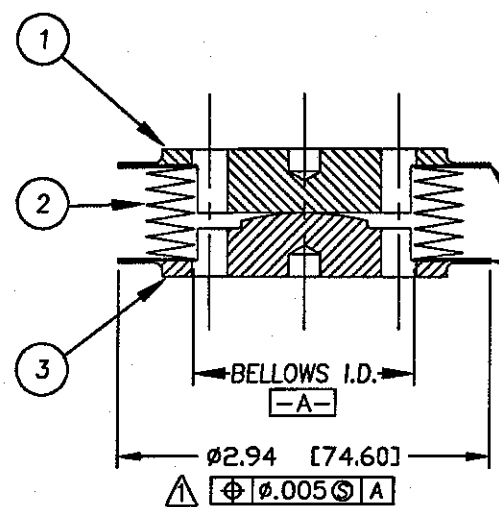
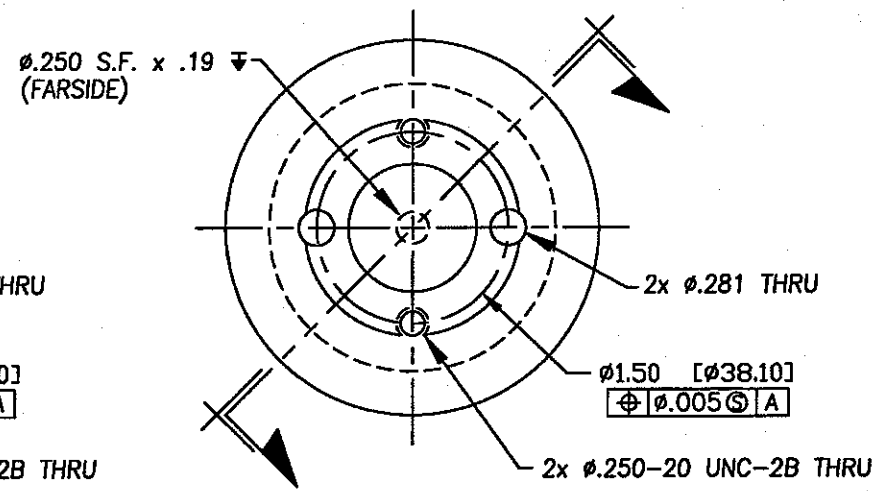
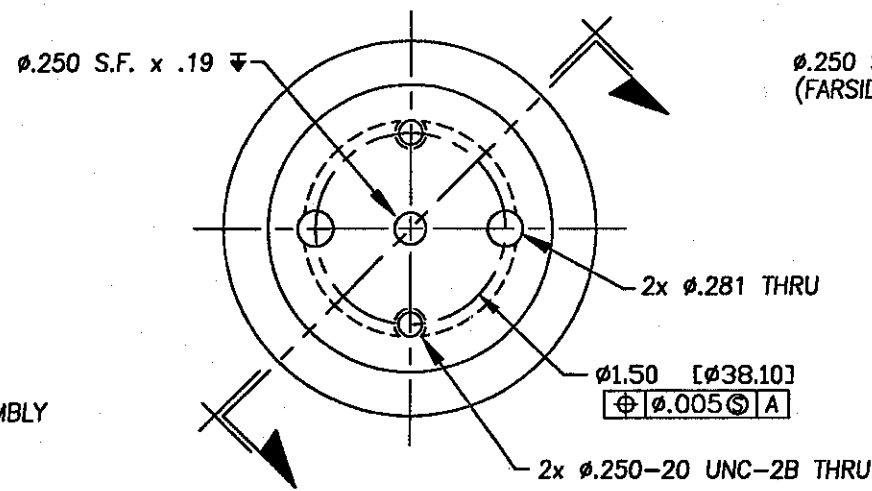
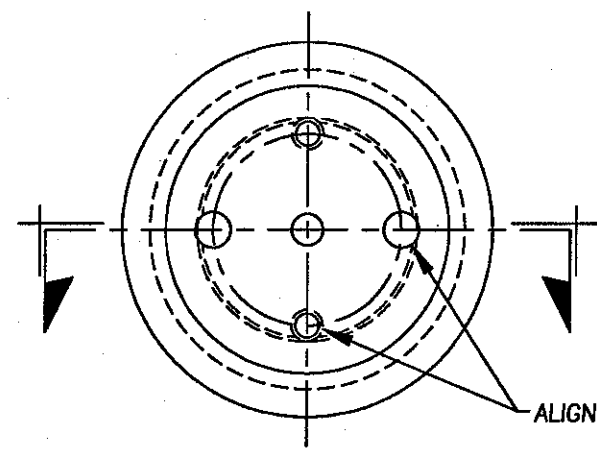
CONSTRUCTION PRINT  
 OCT 14 2009  
 ADVANCED PHOTON SOURCE

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #P4105090501-920214-00.

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY														
PARTS LIST																		
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES		LOG NUMBER <b>A1337301</b>	THIS DRAWING IS THE PROPERTY OF <b>ARGONNE NATIONAL LABORATORY</b>															
TOLERANCES			TITLE <b>ADVANCED PHOTON SOURCE</b> EXPERIMENTAL FACILITIES XOR/SRI-CAT BEAMLINES STANDARD COMPONENTS FRONT-END SUPPORT TABLES PRELOAD BAR															
DECIMALS	ANGULAR																	
.XX ±.01 [.254]	±.25°																	
.XXX ±.005 [.127]																		
SURFACE ROUGHNESS 125/✓		<table border="1"> <tr> <td>DRAWN BY E.G.</td> <td>DATE 9/93</td> <td>CHIEF DESIGN ENGINEER D SHU</td> <td>DATE 10/13/93</td> </tr> <tr> <td>CHECKED BY J. BARRAZA</td> <td>10/1/93</td> <td>GP LEADER T KUZAY</td> <td>10/13/93</td> </tr> <tr> <td>DESIGNER GALINOU/HAYES</td> <td>10/18/93</td> <td>PROJECT MGR</td> <td></td> </tr> <tr> <td>RESPONSIBLE ENGINEER J. BARRAZA</td> <td>10/1/93</td> <td>APPROVED/RELEASED <i>BR</i></td> <td>10/1/93</td> </tr> </table>			DRAWN BY E.G.	DATE 9/93	CHIEF DESIGN ENGINEER D SHU	DATE 10/13/93	CHECKED BY J. BARRAZA	10/1/93	GP LEADER T KUZAY	10/13/93	DESIGNER GALINOU/HAYES	10/18/93	PROJECT MGR		RESPONSIBLE ENGINEER J. BARRAZA	10/1/93
DRAWN BY E.G.	DATE 9/93	CHIEF DESIGN ENGINEER D SHU	DATE 10/13/93															
CHECKED BY J. BARRAZA	10/1/93	GP LEADER T KUZAY	10/13/93															
DESIGNER GALINOU/HAYES	10/18/93	PROJECT MGR																
RESPONSIBLE ENGINEER J. BARRAZA	10/1/93	APPROVED/RELEASED <i>BR</i>	10/1/93															
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.		MATERIAL 440 A SS	SCALE 1:1	SIZE B														
SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1			SHEET 1 of 1	DRAWING NUMBER 4105090501-920214-01														
DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5																		
DO NOT SCALE DRAWING																		

SYM	CHANGE DESCRIPTION	BY	CHKD	DATE
01	SEE DCN #090903-04	RTK	SHL	090903

REVISIONS



REF. SOURCE

STANDARD BELLOWS CO.  
375 ELLA T. GRASSO TURNPIKE  
WINDSOR LOCKS, CT 060906  
TEL: 1-203-623-2307  
FAX: 1-203-623-0398

NOTE:  
ALL DIMENSIONS IN BRACKETS [ ] ARE FOR REF. ONLY

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED  
VERSION OF DRAWING EXCHANGE FILE DRAWING  
#4105090501-920215-03

SYM	CHANGE DESCRIPTION	BY	CHKD	DATE
04	SEE DCN #090903-16	RTK	SHL	09/04/93
3	3X $\phi 2.937$ [74.60] WAS 3.000 [76.20]	M.J.M.	J.B.	2/11/97
	275-175-1-BB WAS MOD-247-13			
02	REDRAWN & REDESIGNED	K.POTTER		9/21/95

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
3	-	440C STAINLESS STEEL BAR	-	1
2	275-175-1-BB	BELLOWS	-	1
1	-	440C STAINLESS STEEL BAR	-	1

UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES

TOLERANCES:  
DECIMALS: X ±.1 [2.5], .XX ±.01 [0.25], .XXX ±.005 [0.127]  
ANGULAR: ±0°30'

SURFACE ROUGHNESS 125 ✓  
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.  
SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1  
DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5

LOG NUMBER: T1920215-04

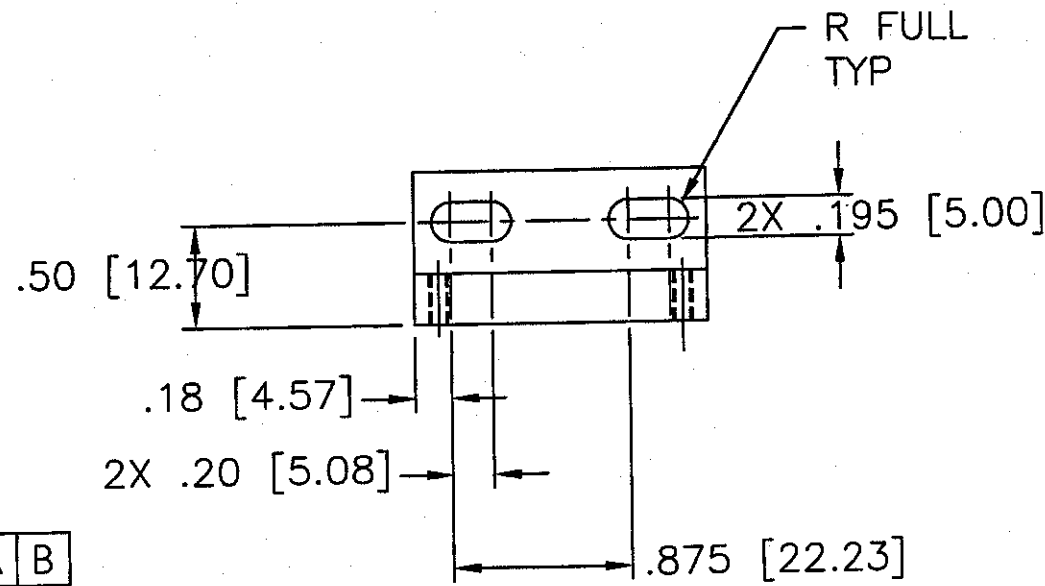
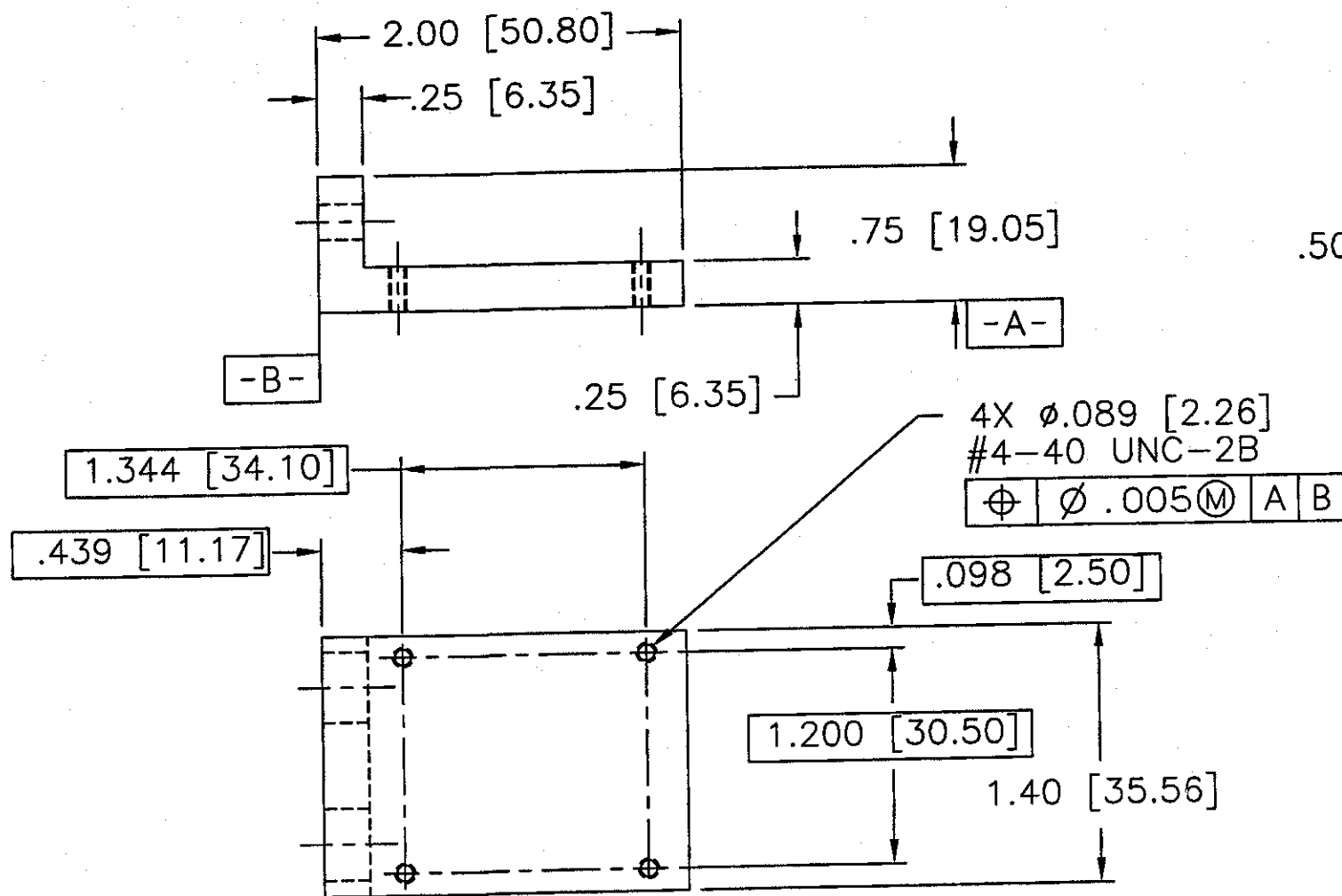
THIS DRAWING IS THE PROPERTY OF ARGONNE NATIONAL LABORATORY

DRAWN BY: E.G.	DATE: 9/9/93	CHIEF DESIGN ENGINEER: D.SHU	DATE: 10/13/93
CHECKED BY: J.BARRAZA	DATE: 10/1/93	GP LEADER: T.M.KUZAY	DATE: 10/13/93
DESIGNER: GALINOVSKAYA/BARRAZA	DATE: 10/18/93	PROJECT MGR.	
RESPONSIBLE ENGINEER: J.BARRAZA	DATE: 10/13/93	APPROVED/RELEASED: [Signature]	DATE: 10/16/93

TITLE: ADVANCED PHOTON SOURCE EXPERIMENTAL FACILITIES XOR/SRI-CAT BEAMLINES STANDARD COMPONENTS FRONT-END SUPPORT TABLES COUPLING

SCALE: 1:1  
SHEET: 1 of 1  
DRAWING NUMBER: 4105090501-920215-04

CONSTRUCTION PRINT  
OCT 14 2009  
ADVANCED PHOTON SOURCE



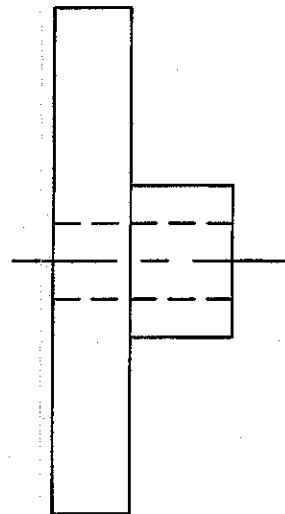
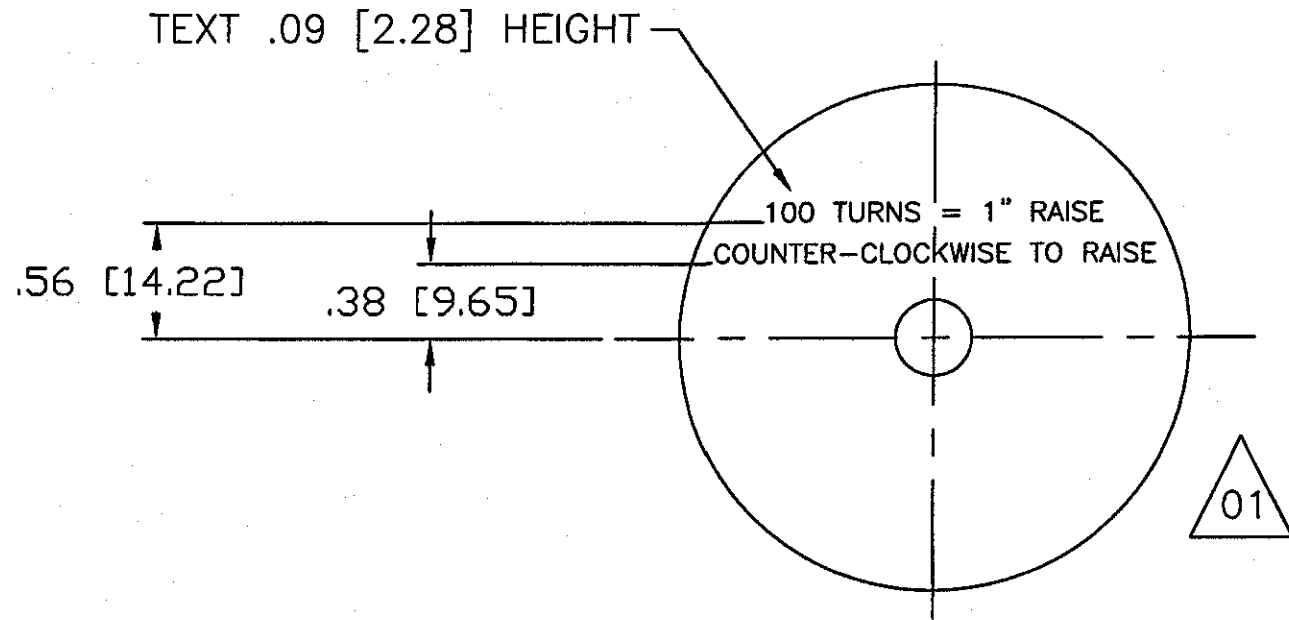
CONSTRUCTION PRINT  
OCT 14 2009  
ADVANCED PHOTON SOURCE

NOTE:  
1. FINISH - BLACK ANODIZING PER MIL-A-8625 TYPE II.  
2. ALL DIMENSIONS IN [ ] ARE MILLIMETERS AND ARE REFERENCE ONLY.

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #P4105090501-920216-01.

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
PARTS LIST				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES TOLERANCES DECIMALS      ANGULAR .XX      ±.01 [.254] .XXX     ±.005 [.127] SURFACE ROUGHNESS      125 ✓ REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX. SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1 DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5 DO NOT SCALE DRAWING		LOG NUMBER A1810302	THIS DRAWING IS THE PROPERTY OF ARGONNE NATIONAL LABORATORY	
DRAWN BY E.G.		DATE 9/93	CHIEF DESIGN ENGINEER D. SHU	DATE 10/1/93
CHECKED BY J. BARRAZA		DATE 10/1/93	GP LEADER T.M. KUZAY	DATE 10/13/92
DESIGNER E. GALINOVSKAYA J. BARRAZA		DATE 10/18/93	PROJECT MGR	
RESPONSIBLE ENGINEER J. BARRAZA		DATE 10/1/93	APPROVED/RELEASED <i>BR</i>	DATE 10/1/93
MATERIAL 01 6061-T6 ALUMINUM		SCALE 1:1	SIZE B	DRAWING NUMBER 4105090501-920216-02
		SHEET 1 of 1		

SYM	CHANGE DESCRIPTION	BY	CHKD	DATE
02	SEE DCN #090903-04	RTK	SHL	090903
01	ALUMINUM TEMPER-T6 ADDED	CS		4/94
REVISIONS				




CONSTRUCTION PRINT  
OCT 14 2009  
ADVANCED PHOTON SOURCE

**NOTES:**

- MADE FROM CN1-14 KNURLED HANDWHEEL  
WINFRED M. BERG INC.  
499 OCEAN AVE.  
EAST ROCKAWAY, NY 11518  
PHONE: 516/ 596-1700  
FAX: 516/ 599-3274

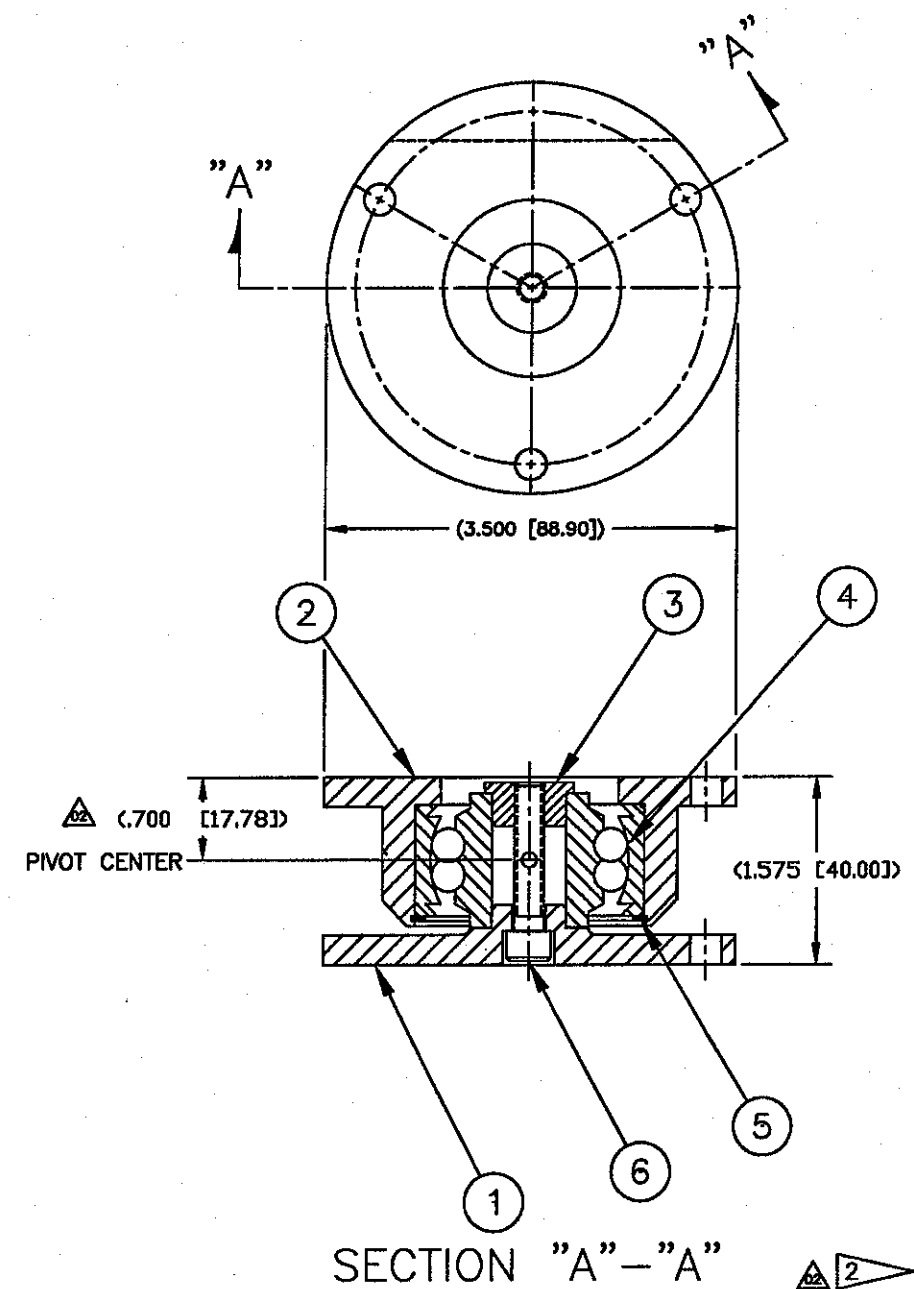
- ALL DIMENSIONS IN [ ] ARE MILLIMETERS AND ARE REFERENCE ONLY.

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #P4105090501-920217-01.

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
PARTS LIST				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES		LOG NUMBER <b>A1810402</b>	THIS DRAWING IS THE PROPERTY OF <b>ARGONNE NATIONAL LABORATORY</b>	
TOLERANCES			<b>ADVANCED PHOTON SOURCE</b> EXPERIMENTAL FACILITIES XOR/SRI-CAT BEAMLINES STANDARD COMPONENTS FRONT-END SUPPORT TABLES KNURLED HANDWHEEL	
DECIMALS	ANGULAR			
.XX ±.01 [ .254 ]	±.25°	DRAWN BY E.G. <small>SEALING</small>	DATE 9/93	CHIEF DESIGN ENGINEER D. SHU
.XXX ±.005 [ .127 ]		CHECKED BY J. BARRAZA	10/1/93	GP LEADER T.M. KUZAY
SURFACE ROUGHNESS 125/√		DESIGNER E. GALINOVSKAYA J. BARRAZA	10/1/93	PROJECT MGR
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.		RESPONSIBLE ENGINEER J. BARRAZA	10/1/93	APPROVED/RELEASED <i>BR</i>
SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1		MATERIAL		
DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5		SCALE 1:1		SIZE <b>B</b>
DO NOT SCALE DRAWING		SHEET 1 of 1		DRAWING NUMBER <b>4105090501-920217-02</b>

SYM	CHANGE DESCRIPTION	BY	CHKD	DATE
02	SEE DCN #090903-04	RTK	SHL	090903
01	NOTE & DIMENSION REMOVE	CS		4/94
REVISIONS				

REVISIONS					
ZONE	REV	DESCRIPTION	BY	APPROVED	DATE
	1	SEE DCN NO. 950424-02	MJM	JB	4/24/95
	2	SEE DCN NO. 960729-01	KWC	JB	7/29/96
	3	SEE DCN NO. 040413-01	AEN		



CONSTRUCTION PRINT  
OCT 14 2009  
ADVANCED PHOTON SOURCE

THIS DRAWING IS A WHOLE COPY OR A MODIFIED VERSION OF  
DXCHANGE FILE DRAWING NUMBER T1-820800-02 DWG.  
CONSULT WITH THE HIGH RESOLUTION X-RAY SCATTERING  
GROUP IN XFD REGARDING ENGINEERING CONTENT.

SECTION "A"-"A"

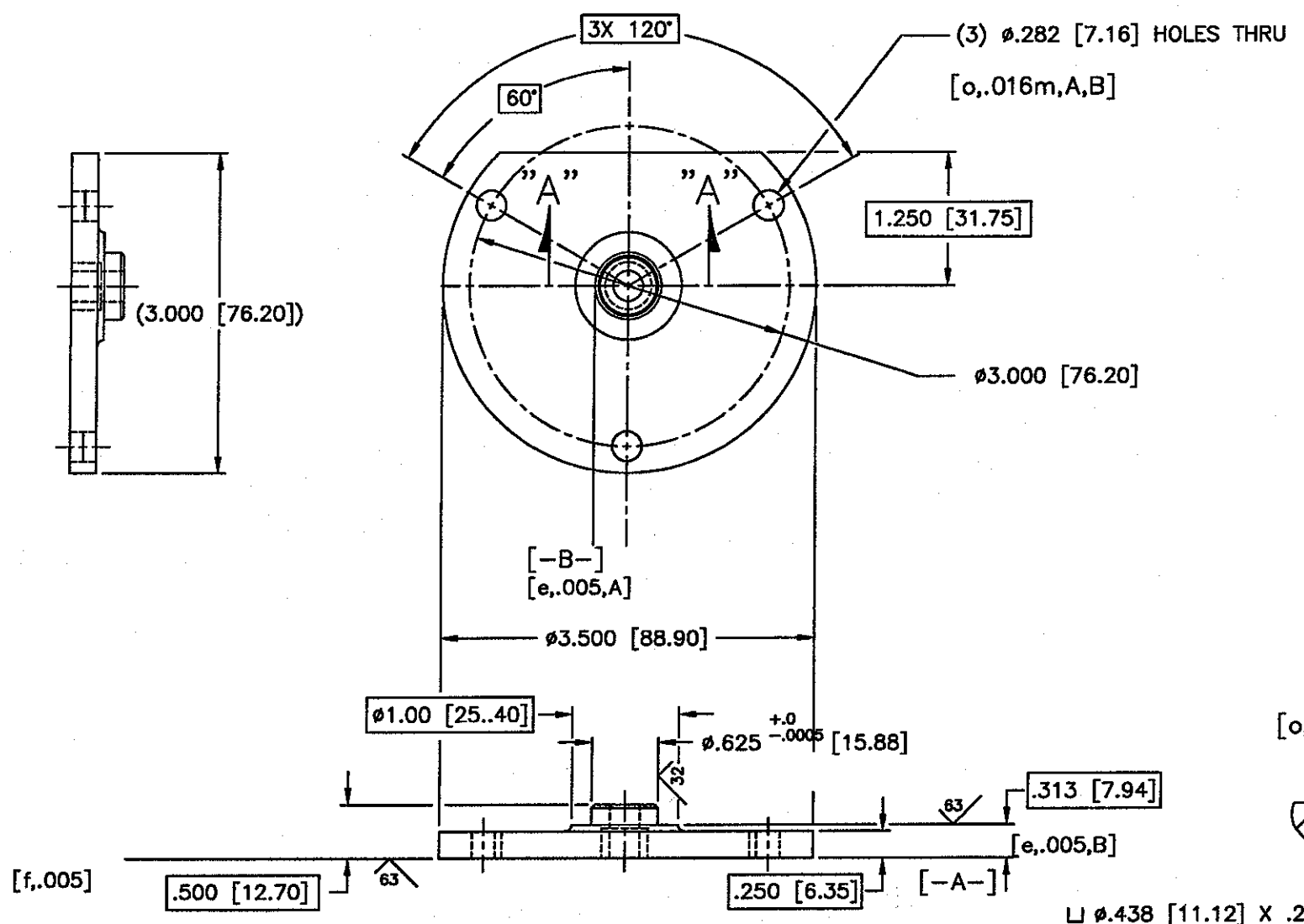
ITEM	DRAWING / PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
6		.25-20 X 1.25 LG CAPSCREW	STAINLESS STEEL	1
5	CI 193	RETAINING RING		1
4	DSP-10,BS-10	BEARING, SELF ALIGNING		1
3	4105090501-820803	FASTENER	SEE DETAIL	1
2	4105090501-820802	BEARING HOUSING	SEE DETAIL	1
1	4105090501-820801	BASE	SEE DETAIL	1

- 1 AST BEARINGS  
115 MAIN RD  
MONTVILLE, N.J. 07045-9299  
PHONE: (201) 335-2230  
FAX: (201) 335-6987
- 2 ASSOCIATED SPRING RAYMOND  
P.O. BOX 51062  
NEW BERLIN, WI. 53151  
PHONE: (414) 796-2200

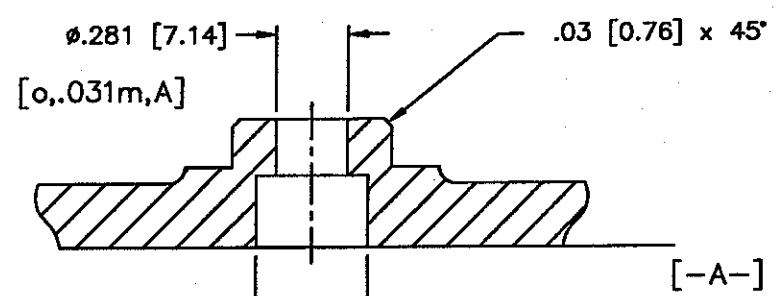
NOTE:  
1. ALL DIMENSIONS SHOWN IN [ ] ARE MILLIMETERS.

UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES TOLERANCES: DECIMALS .01 ANGULAR .25° X ±.03 [.76] XX ±.01 [.25] XXX ±.005 [.13] SURFACE ROUGHNESS: 125		DRAWN BY: CZERWINSKI CHECKED BY: J. BARRAZA DESIGNED BY: J. BARRAZA RESPONSIBLY ENGINEER: D. SHU GROUP LEADER: T.M. KUZAY APPROVED BY: <i>Paul Choi</i> RELEASE LEVEL: ENG-RELEASE MATERIAL: SEE PARTS LIST	DATE: 4/20/92 DATE: 10/15/92 DATE: 4/20/92 DATE: 10/15/92 DATE: 10/15/92 DATE: 6/23/04	THIS DRAWING IS THE PROPERTY OF <b>ARGONNE NATIONAL LABORATORY</b> <b>ADVANCED PHOTON SOURCE</b> T1-82 FRONT END SPHERICAL COUPLING ASSEMBLY
REMOVE ALL BURRS AND BREAK SHARP EDGES AS MAX. SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST AMS B91. DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5		DRAWING FILE NAME: A0750403	SHEET NO: C PART NO: OHRH5 DRAWING NUMBER: 4105090501-820800 SCALE: 1:1 DO NOT SCALE DRAWING	SHEET: 03 OF: 1

REVISIONS				
ZONE	REV	DESCRIPTION	BY	APPROVED DATE
	1	SEE DCN NO. 950424-02	MJM	J.B. 4/24/95
	2	SEE DCN NO. 040413-02	AEN	



CONSTRUCTION PRINT  
OCT 14 2009  
ADVANCED PHOTON SOURCE



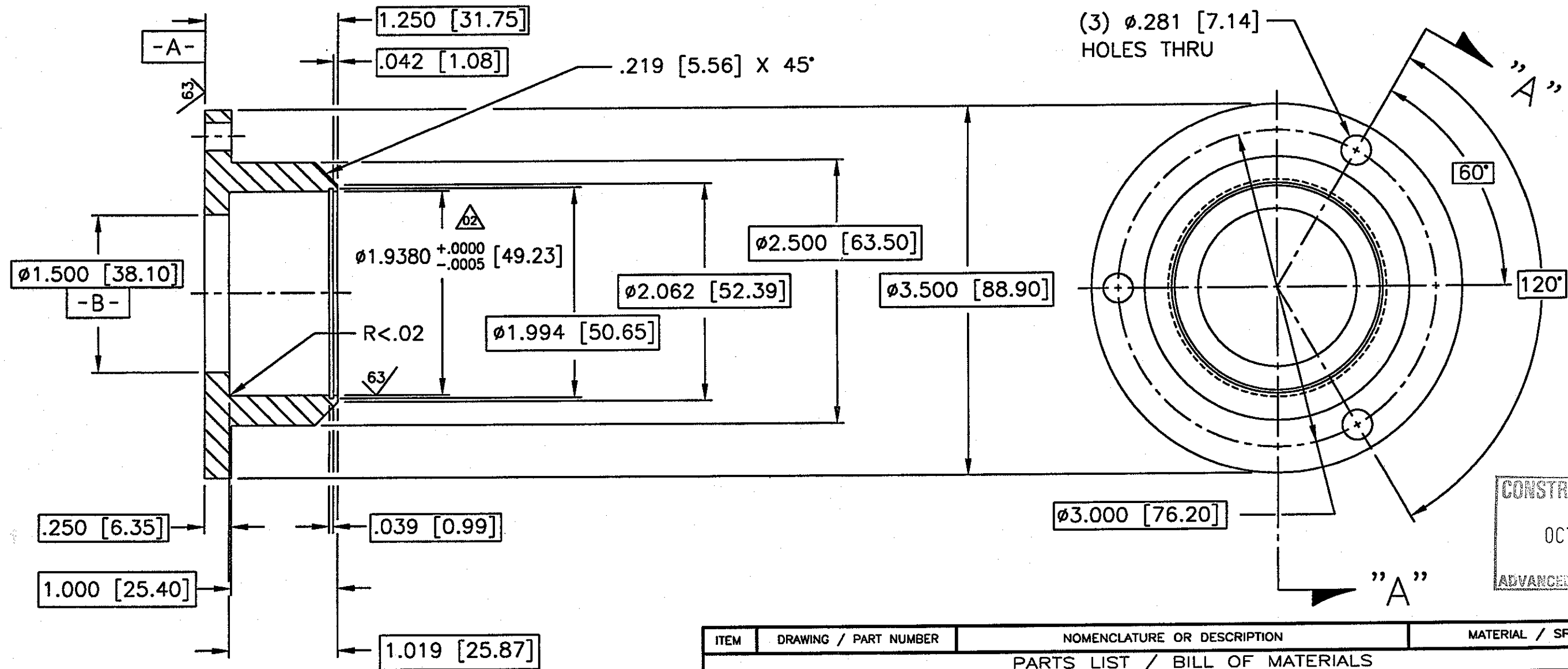
$\sqcup$   $\phi$ .438 [11.12] X .281 [7.14] T  
[o,.031m,A]  
**VIEW "A" - "A"**  
SCALE 2=1

THIS DRAWING IS A WHOLE COPY OR A MODIFIED VERSION OF DXCHANGE FILE DRAWING NUMBER T1-820801-01 DWG. CONSULT WITH THE HIGH RESOLUTION X-RAY SCATTERING GROUP IN XFD REGARDING ENGINEERING CONTENT.

**NOTE:**  
1. ALL DIMENSIONS SHOWN IN  $\square$  ARE MILLIMETERS.

ITEM	DRAWING / PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
<b>PARTS LIST / BILL OF MATERIALS</b>				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES TOLERANCES: DECIMALS .03 [0.76] ANGULAR $\pm$ .25° X $\pm$ .03 [0.76] XX $\pm$ .01 [0.25] XXX $\pm$ .005 [0.13] SURFACE ROUGHNESS: 125		DRAWN BY: CZERWINSKI CHECKED BY: J. BARRAZA DESIGNED BY: J. BARRAZA RESPONSIBLE ENGINEER: D. SHU GROUP LEADER: T.M. KUZAY APPROVED BY: <i>Paul Choi</i> RELEASE LEVEL: ENG-RELEASE	DATE: 4/20/92 DATE: 10/15/92 DATE: 4/20/92 DATE: 10/15/92 DATE: 10/15/92 DATE: 6/24/00	THIS DRAWING IS THE PROPERTY OF <b>ARGONNE NATIONAL LABORATORY</b> <b>ADVANCED PHOTON SOURCE</b> TITLE: T1-82 FRONT END SPHERICAL COUPLING BASE
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX. SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1 DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5	ELECTRONIC FILE NAME: A0750502	MATERIAL: 304 STAINLESS STEEL	SCALE: 1:1	DO NOT SCALE DRAWING SHEET 1 OF 1
		DRAWING NUMBER: C OHRHS 4105090501-820801 02 SHEET 1 OF 1		

REVISIONS					
ZONE	REV	DESCRIPTION	BY	APPROVED	DATE
	1	SEE DCN NO. 950424-02	MJM	JB	4/24/95
	2	SEE DCN NO. 960729-01	KWC		7/29/96
	3	SEE DCN NO. 040413-03	AEN		



CONSTRUCTION UNIT  
OCT 14 2009  
ADVANCED PHOTON SOURCE

THIS DRAWING IS A WHOLE COPY OR A MODIFIED VERSION OF DXCHANGE FILE DRAWING NUMBER T1-820802-02 DWG. CONSULT WITH THE HIGH RESOLUTION X-RAY SCATTERING GROUP IN XFD REGARDING ENGINEERING CONTENT.

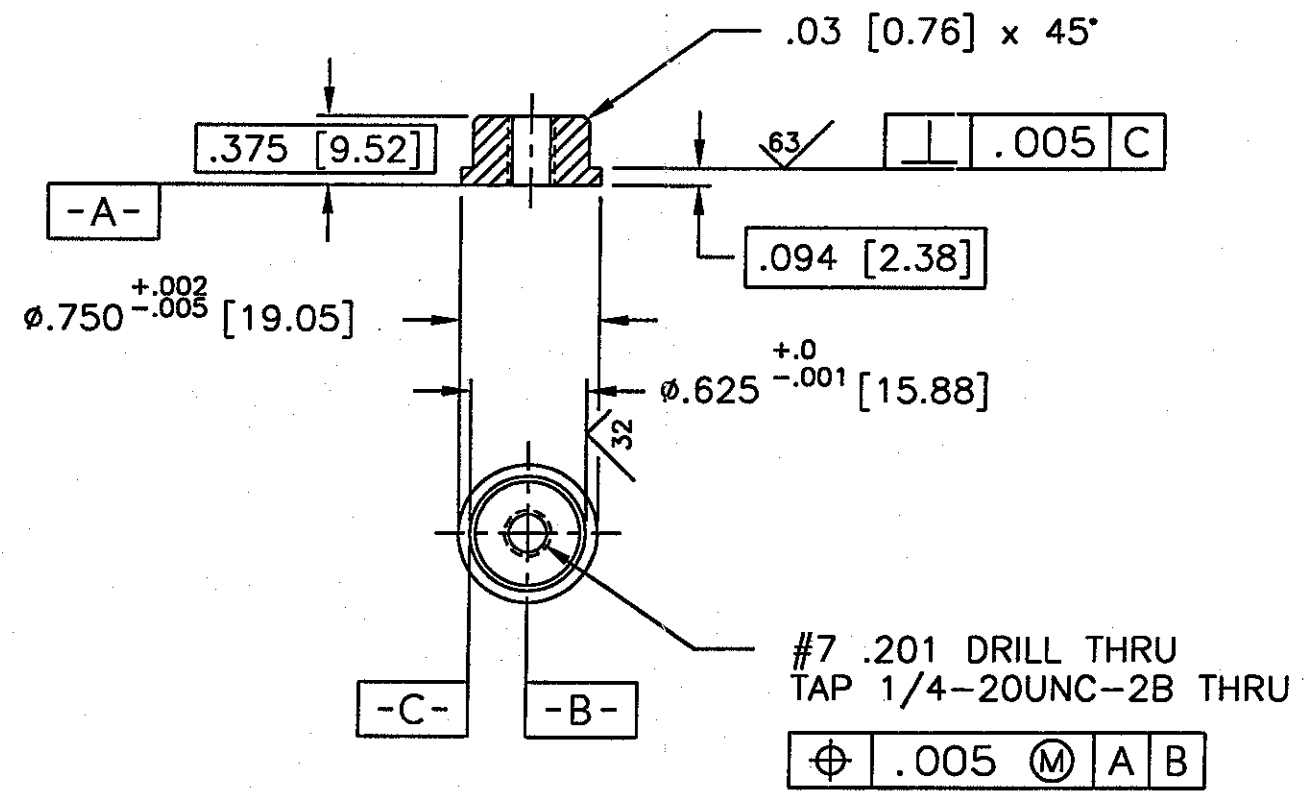
**NOTE:**

- ALL DIMENSIONS SHOWN IN [ ] ARE MILLIMETERS.

ITEM	DRAWING / PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
<b>PARTS LIST / BILL OF MATERIALS</b>				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES		THIS DRAWING IS THE PROPERTY OF		
TOLERANCES:		<b>ARGONNE NATIONAL LABORATORY</b>		
DECIMALS		<b>ADVANCED PHOTON SOURCE</b>		
ANGULAR		TITLE:		
.X ±.03 [.76]	±.25°	T1-82 FRONT END		
.XX ±.01 [.25]		SPHERICAL COUPLING		
.XXX ±.005 [.13]		BEARING HOUSING		
SURFACE ROUGHNESS: 125/✓		DRAWING NUMBER:		
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX. SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1 DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5		4105090501-820802		
ELECTRONIC FILE NAME:		REV.		
A0750603		03		
MATERIAL:		SCALE: 1:1		
304 STAINLESS STEEL		DO NOT SCALE DRAWING SHEET 1 OF 1		



REVISIONS					
ZONE	REV	DESCRIPTION	BY	APPROVED	DATE
	1	SEE DCN NO. 950424-02	MJM		4/24/95
	2	SEE DCN NO. 040413-04	AEN		



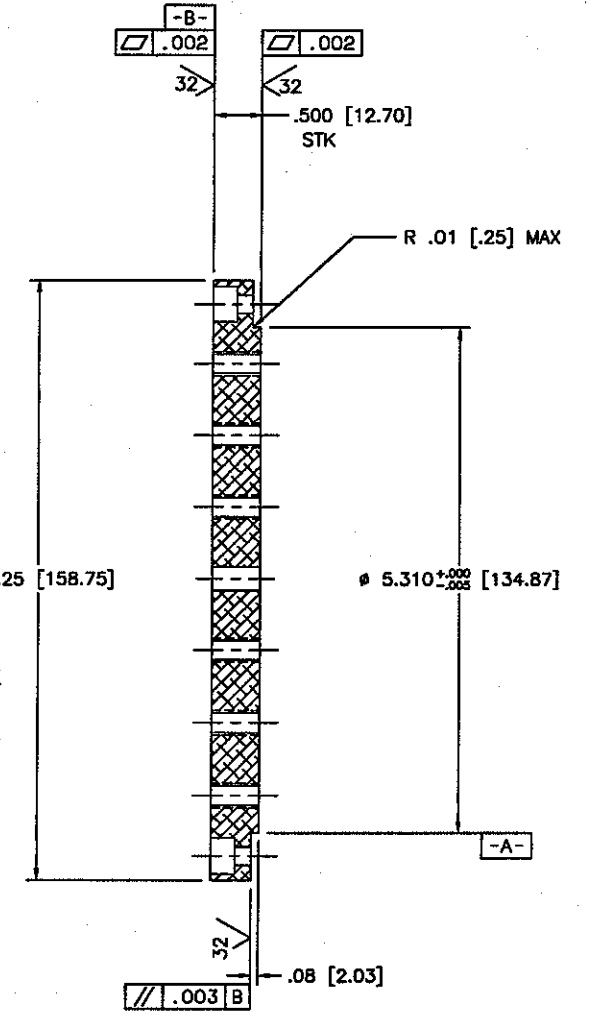
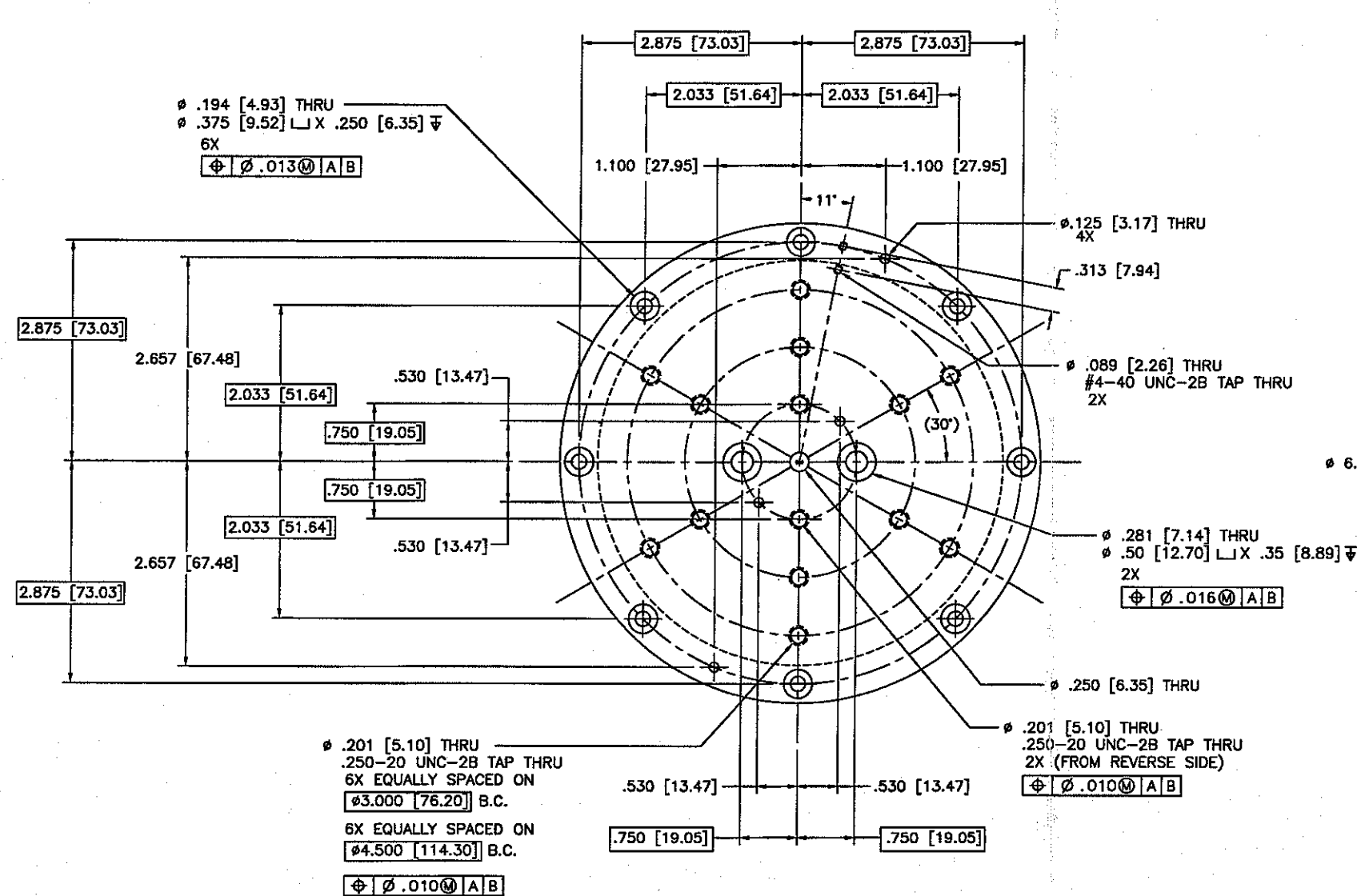
CONSTRUCTION PRINT  
OCT 14 2009  
ADVANCED PHOTON SOURCE

THIS DRAWING IS A WHOLE COPY OR A MODIFIED VERSION OF DXCHANGE FILE DRAWING NUMBER T1-820803-01 DWG. CONSULT WITH THE HIGH RESOLUTION X-RAY SCATTERING GROUP IN XFD REGARDING ENGINEERING CONTENT.

NOTE:  
1. ALL DIMENSIONS SHOWN IN [ ] ARE MILLIMETERS.

ITEM	DRAWING / PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY	
PARTS LIST / BILL OF MATERIALS					
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES		DRAWN BY: CZERWINSKI CHECKED BY: J. BARRAZA DESIGNED BY: J. BARRAZA RESPONSIBLE ENGINEER: D. SHU GROUP LEADER: T.M. KUZAY APPROVED BY: <i>Paul Chui</i> RELEASE LEVEL: ENG-RELEASE	DATE: 4/20/92 DATE: 10/15/92 DATE: 4/20/92 DATE: 10/15/92 DATE: 10/15/92 DATE: 6/22/04	THIS DRAWING IS THE PROPERTY OF <b>ARGONNE NATIONAL LABORATORY</b> <b>ADVANCED PHOTON SOURCE</b> TITLE: T1-82 FRONT END SPHERICAL COUPLING FASTENER	
TOLERANCES: DECIMALS .X ±.03 [.76] .XX ±.01 [.25] .XXX ±.005 [.13] ANGULAR ±.25° SURFACE ROUGHNESS: 125/√		REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX. SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1 DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5 ELECTRONIC FILE NAME: A0750702	MATERIAL: 304 STAINLESS STEEL	SIZE: B FSCM No: OHRH5 SCALE: 1:1	DRAWING NUMBER: 4105090501-820803 DO NOT SCALE DRAWING SHEET 1 OF 1
				REV. 02	





CONSTRUCTION PRINT

OCT 14 2009

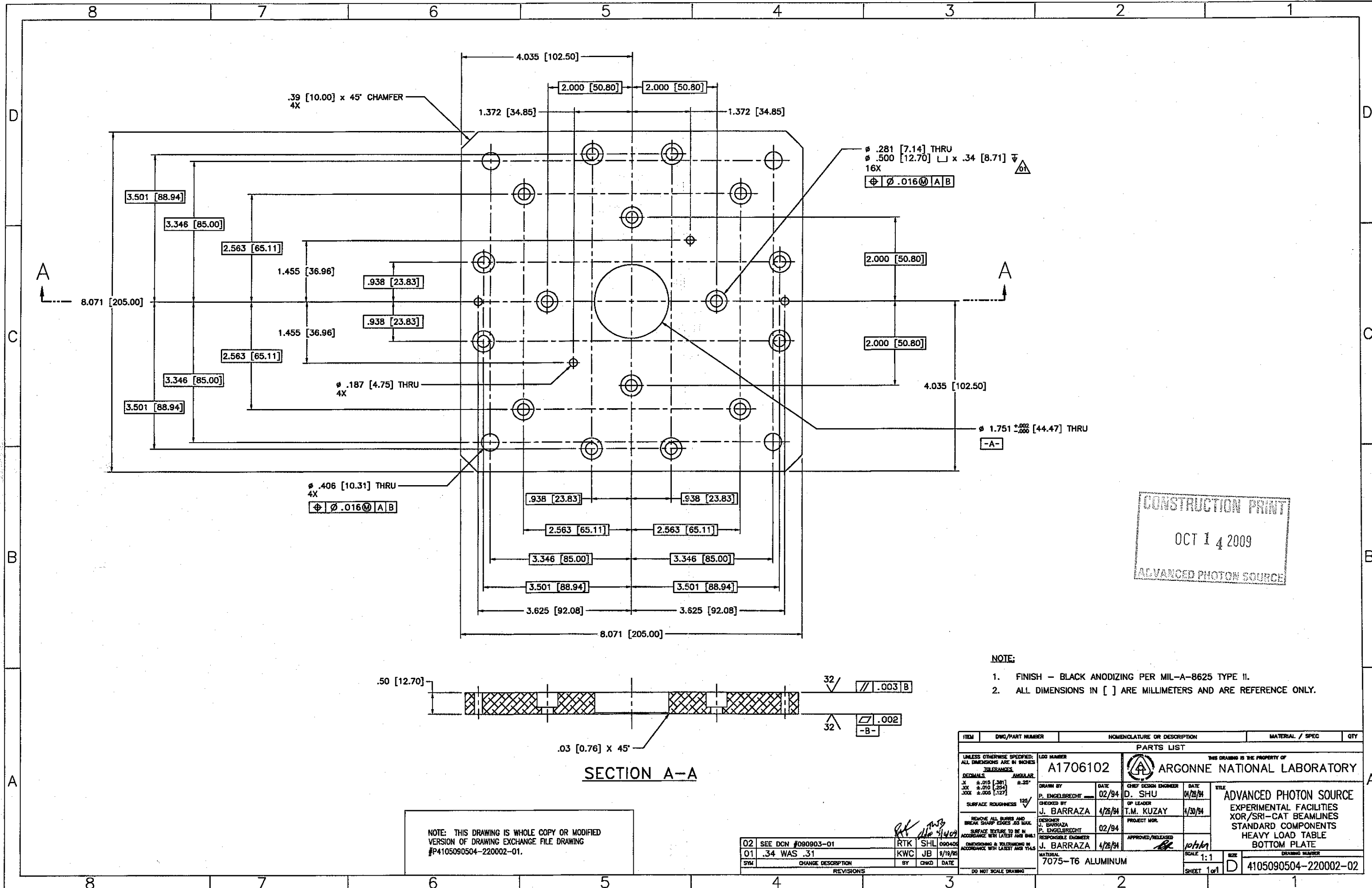
ADVANCED PHOTON SOURCE

- NOTE:
1. FINISH -- BLACK ANODIZING PER MIL-A-8625 TYPE II.
  2. ALL DIMENSIONS IN [ ] ARE MILLIMETERS AND ARE REFERENCE ONLY.

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #P4105090504-220001-00.

REV	SYN	CHANGE DESCRIPTION	BY	CHKD	DATE
01		SEE DCN #090903-01	RTK	SHL	09/04/08

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
PARTS LIST				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES TOLERANCES:		LOG NUMBER <b>A1706001</b>	THIS DRAWING IS THE PROPERTY OF <b>ARGONNE NATIONAL LABORATORY</b>	
DECIMALS .015 [.381] .010 [.254] .005 [.127]		DRAWN BY P. ENGELBRECHT CHECKED BY SURFACE ROUGHNESS 125	DATE 02/94 10/1/09	CHIEF DESIGN ENGINEER PROJECT MGR. APPROVED/RELEASED
REMOIVE ALL BURRS AND BREAK SHARP EDGES .03 MAX. SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST AMS 5611. DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST AMS Y14.5		DESIGNER J. SARRAZA RESPONSIBLE ENGINEER P. ENGELBRECHT	DATE 02/94	TITLE <b>ADVANCED PHOTON SOURCE            EXPERIMENTAL FACILITIES            XOR/SRI-CAT BEAMLINES            STANDARD COMPONENTS            HEAVY LOAD TABLE            TOP PLATE</b>
DO NOT SCALE DRAWING		MATERIAL <b>7075-T6 ALUMINUM</b>	SCALE 1:1	DRAWING NUMBER <b>4105090504-220001-01</b>



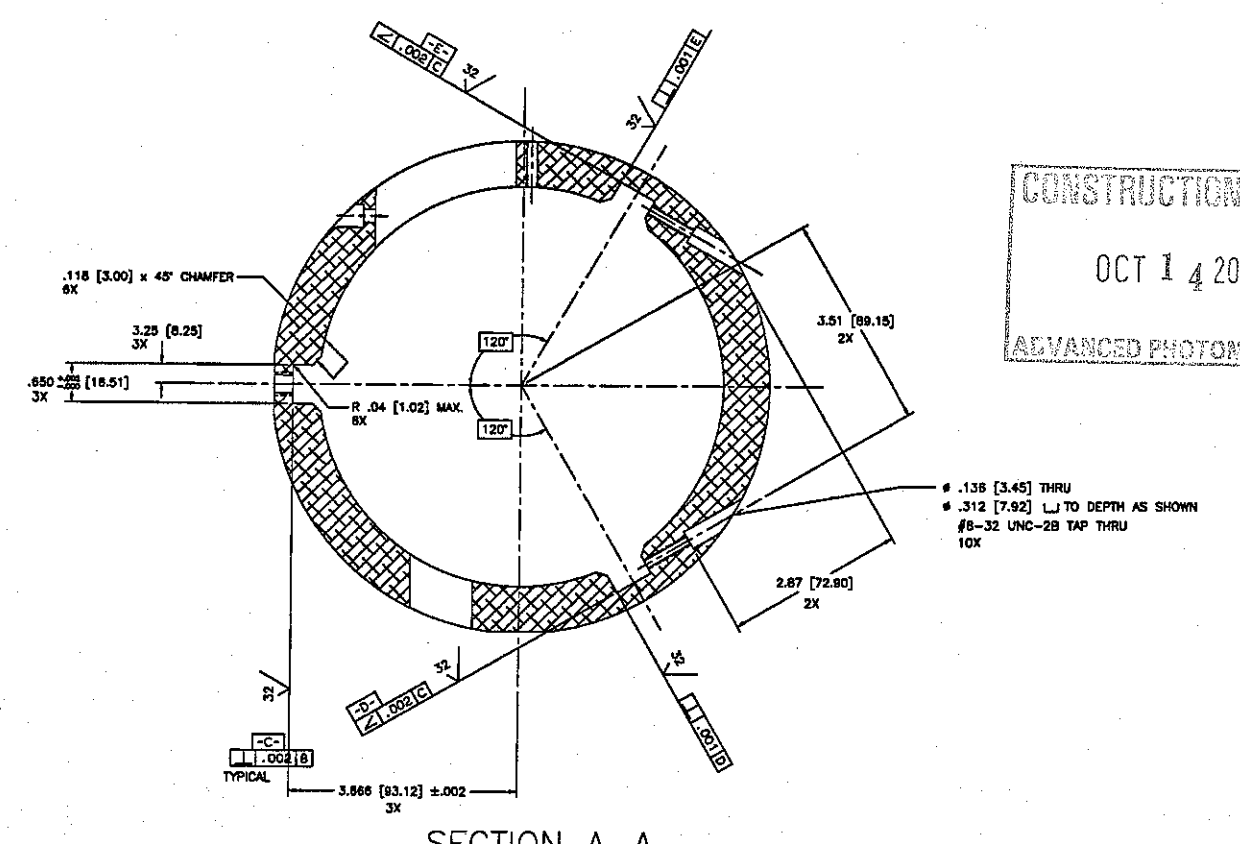
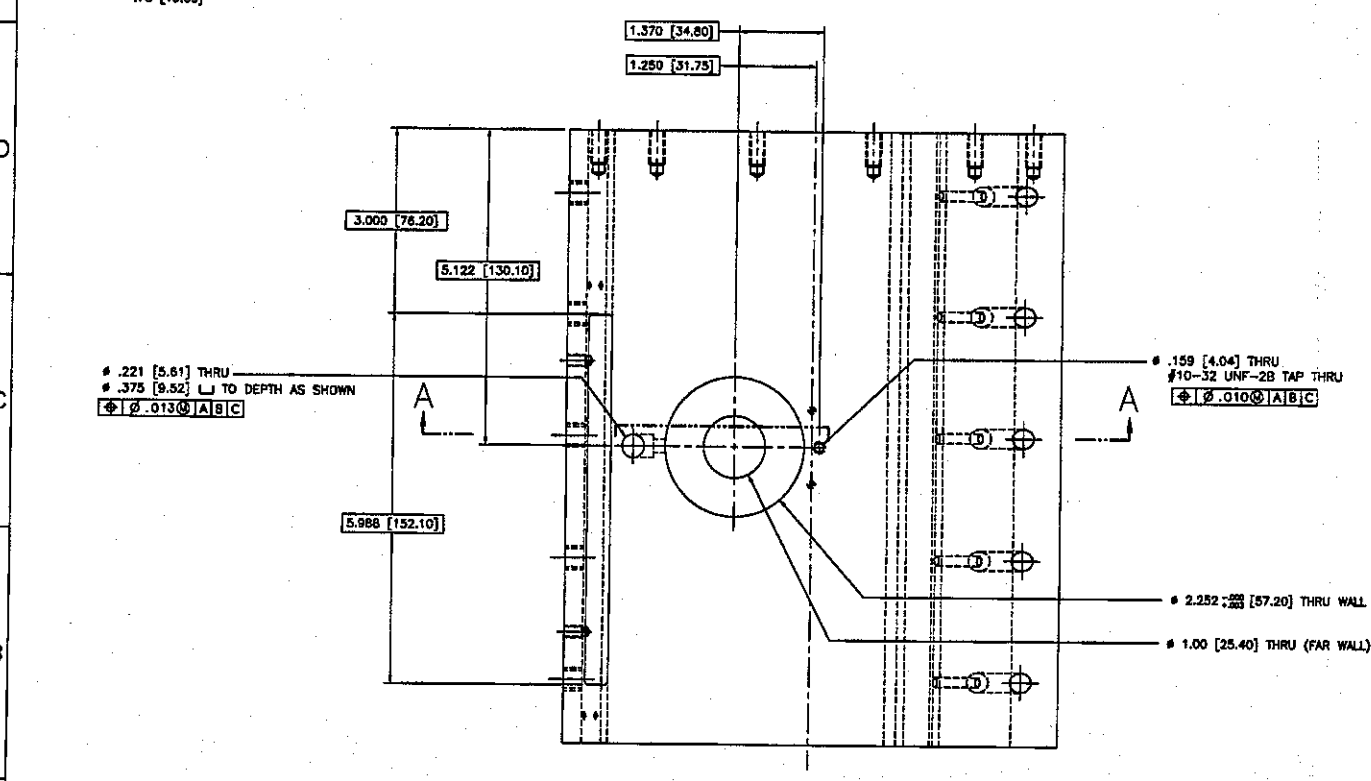
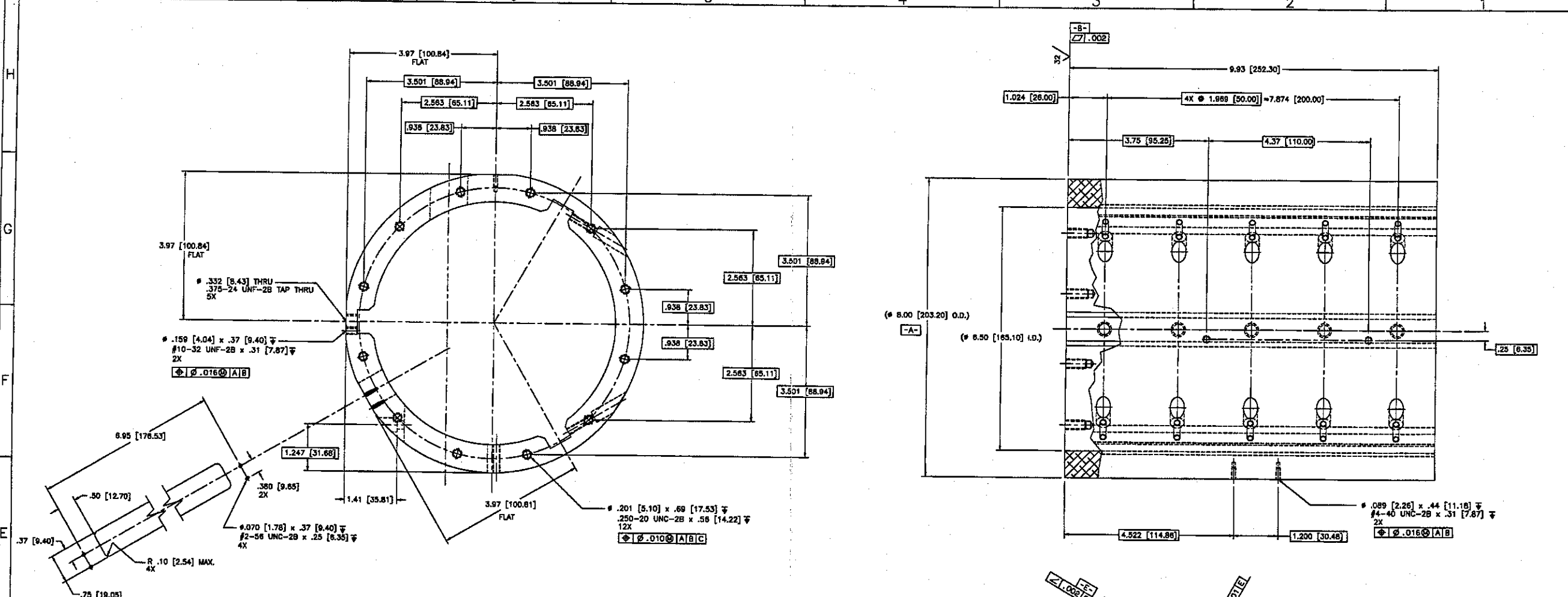
CONSTRUCTION PRINT  
 OCT 14 2009  
 ADVANCED PHOTON SOURCE

- NOTE:
1. FINISH - BLACK ANODIZING PER MIL-A-8625 TYPE II.
  2. ALL DIMENSIONS IN [ ] ARE MILLIMETERS AND ARE REFERENCE ONLY.

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #P4105090504-220002-01.

REV	CHANGE DESCRIPTION	BY	CHKD	DATE
02	SEE DCN #090903-01	RTK	SHL	09/04/02
01	.34 WAS .31	KWC	JB	9/19/95

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
PARTS LIST				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES		THIS DRAWING IS THE PROPERTY OF		
TOLERANCES		ARGONNE NATIONAL LABORATORY		
DECIMALS	ANGULAR			
.X ±.015 [.381]	±.25°			
.XX ±.010 [.254]				
.XXX ±.005 [.127]				
SURFACE ROUGHNESS 125				
REMOVE ALL BURRS AND BREAK SHARP EDGES AS MAX.				
SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST AMS D61.				
DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST AMS Y14.5				
DO NOT SCALE DRAWING				
LOG NUMBER	A1706102	DRAWN BY: P. ENGELBRECHT, DATE: 02/94, CHECKED BY: J. BARRAZA, DATE: 4/26/94, DESIGNER: J. BARRAZA, DATE: 02/94, RESPONSIBLE ENGINEER: J. BARRAZA, DATE: 4/26/94, MATERIAL: 7075-T6 ALUMINUM		
CHIEF DESIGN ENGINEER: D. SHU, DATE: 04/28/94		TITLE: ADVANCED PHOTON SOURCE EXPERIMENTAL FACILITIES XOR/SRI-CAT BEAMLINES STANDARD COMPONENTS HEAVY LOAD TABLE BOTTOM PLATE		
OF LEADER: T.M. KUZAY, DATE: 4/30/94		SCALE: 1:1, SHEET 1 of 1, DRAWING NUMBER: 4105090504-220002-02		



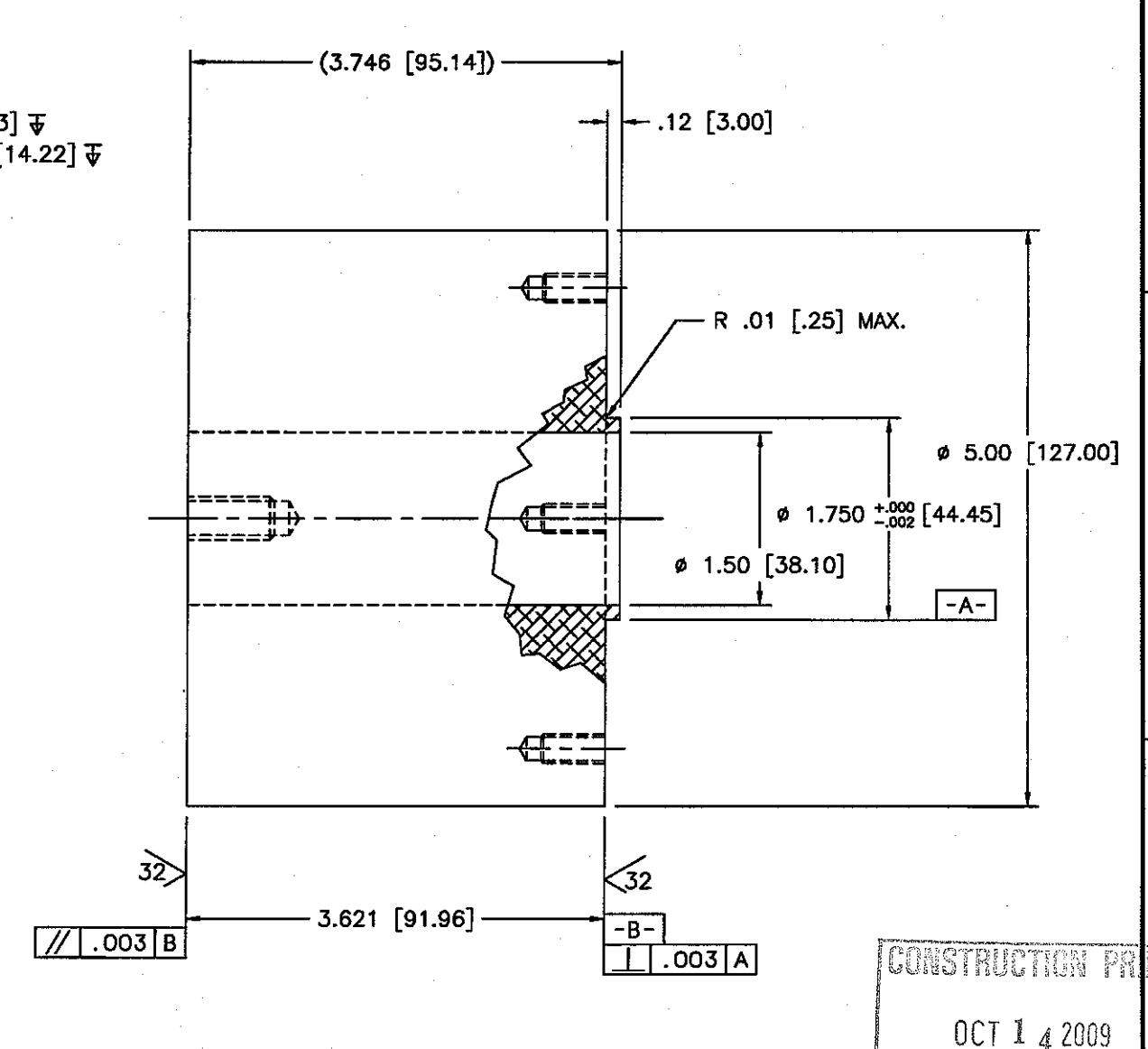
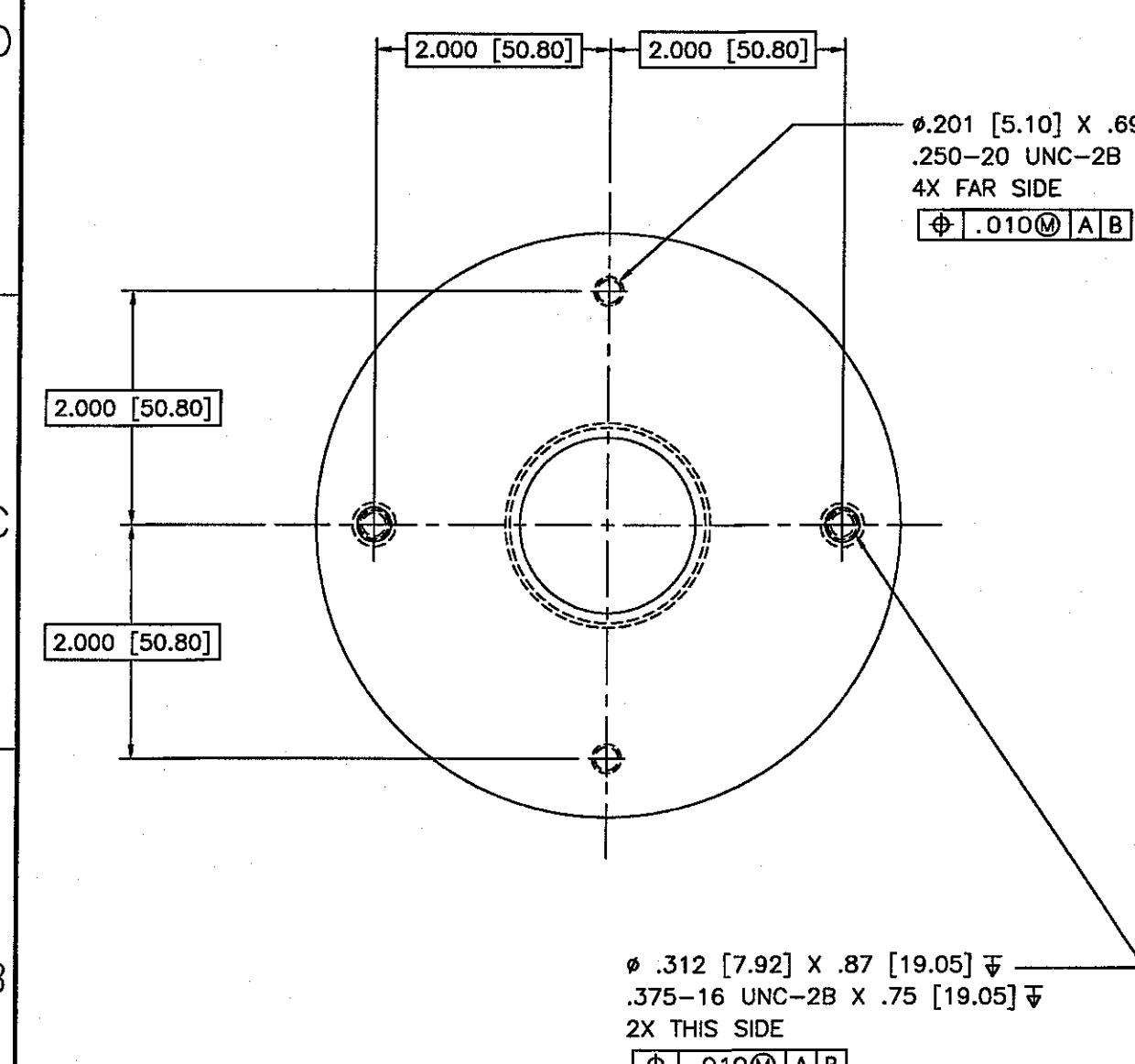
CONSTRUCTION PRINT  
OCT 14 2009  
ADVANCED PHOTON SOURCE

- NOTE:  
1. FINISH - BLACK ANODIZING PER MIL-A-8625 TYPE II.  
2. ALL DIMENSIONS IN [ ] ARE MILLIMETERS AND ARE REFERENCE ONLY.

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #P4105090504-220003-00.

ITEM	QTY	DESCRIPTION	MATERIAL / SPEC	DATE
PARTS LIST				
ARGONNE NATIONAL LABORATORY				
ADVANCED PHOTON SOURCE EXPERIMENTAL FACILITIES XOR/SRI-CAT BEAMLINES STANDARD COMPONENTS HEAVY LOAD TABLE 8.00 IN. CYLINDER				
02	REV	DCM	02/03-01	RTX
01	REV	DCM	02/03-00	RTX
7075-T6 ALUMINUM				
4105090504-220003-02				





- NOTE:**
1. FINISH - BLACK ANODIZING PER MIL-A-8625 TYPE II.
  2. ALL DIMENSIONS IN [ ] ARE MILLIMETERS AND ARE REFERENCE ONLY.

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #P4105090504-220005-00.

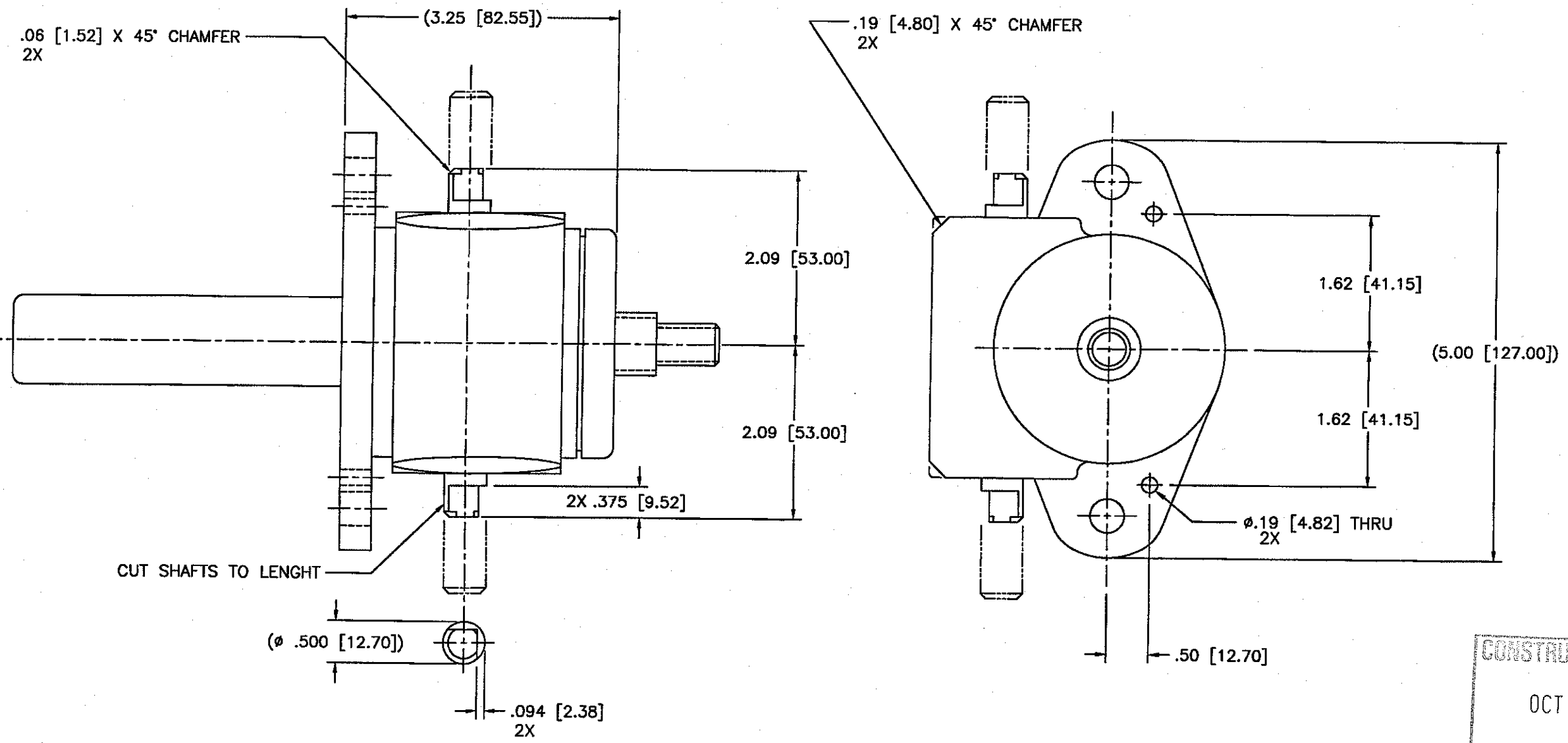
REV	DESCRIPTION	BY	CHKD	DATE
01	SEE DCN #090903-01	RTK	SHL	09/04/09
REVISIONS				

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
<b>PARTS LIST</b>				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES		THIS DRAWING IS THE PROPERTY OF		
<b>TOLERANCES</b> DECIMALS      ANGULAR .X    ±.015 [.381]    ±.25° .XX   ±.010 [.254] .XXX ±.005 [.127]		<b>ARGONNE NATIONAL LABORATORY</b>		
SURFACE ROUGHNESS 125 ✓ REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX. SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1 DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5		LOG NUMBER <b>A1706401</b>		
DRAWN BY P. ENGELBRECHT		DATE 02/94		CHIEF DESIGN ENGINEER
CHECKED BY <i>PNB</i>		DATE 10/1/09		GP LEADER
DESIGNER J. BARRAZA P. ENGELBRECHT		DATE 02/94		PROJECT MGR.
RESPONSIBLE ENGINEER		APPROVED/RELEASED <i>PNB</i>		
MATERIAL 7075-T6 ALUMINUM		SCALE 1:1		SIZE C
DO NOT SCALE DRAWING		SHEET 1 of 1		DRAWING NUMBER 4105090504-220005-01

**CONSTRUCTION PRINT**  
 OCT 14 2009  
 ADVANCED PHOTON SOURCE

.06 [1.52] X 45° CHAMFER  
2X

.19 [4.80] X 45° CHAMFER  
2X



CUT SHAFTS TO LENGHT

CONSTRUCTION PRINT  
OCT 14 2009  
ADVANCED PHOTON SOURCE

01  
1

NOTE:

1. MODIFY FROM PURCHASED PART.  
ORDERING INFORMATION: PART # 1 MSJ-U-4.00 TRAVEL-20:1 RATIO
2. ALL DIMENSIONS IN [ ] ARE MILLIMETERS AND ARE REFERENCE ONLY.

1 NOOK INDUSTRIES, INC.  
P.O. BOX 7010  
23200 COMMERCE PARK ROAD  
CLEVELAND, OH 44122-5869  
PHONE: 1-800-477-5002

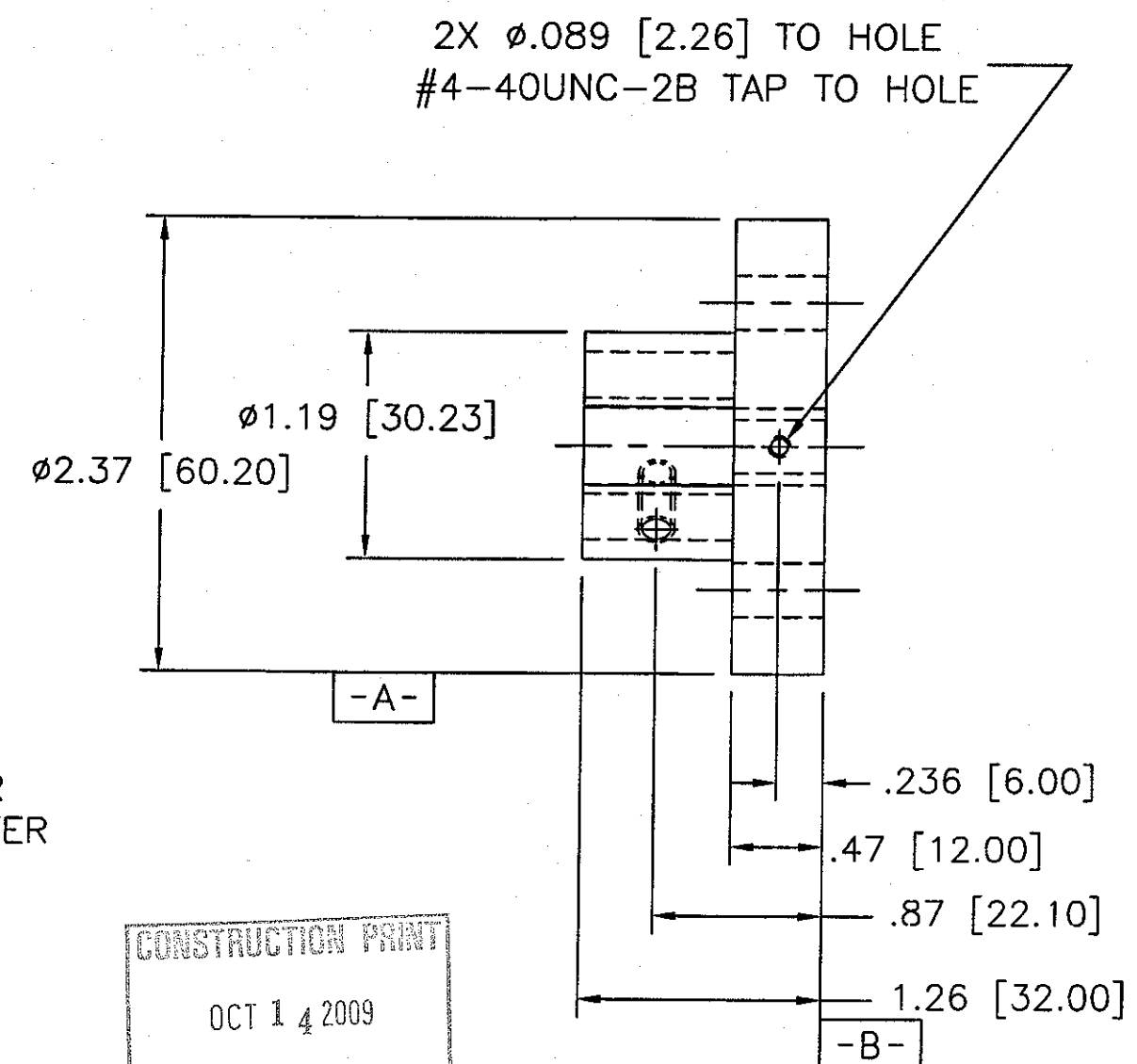
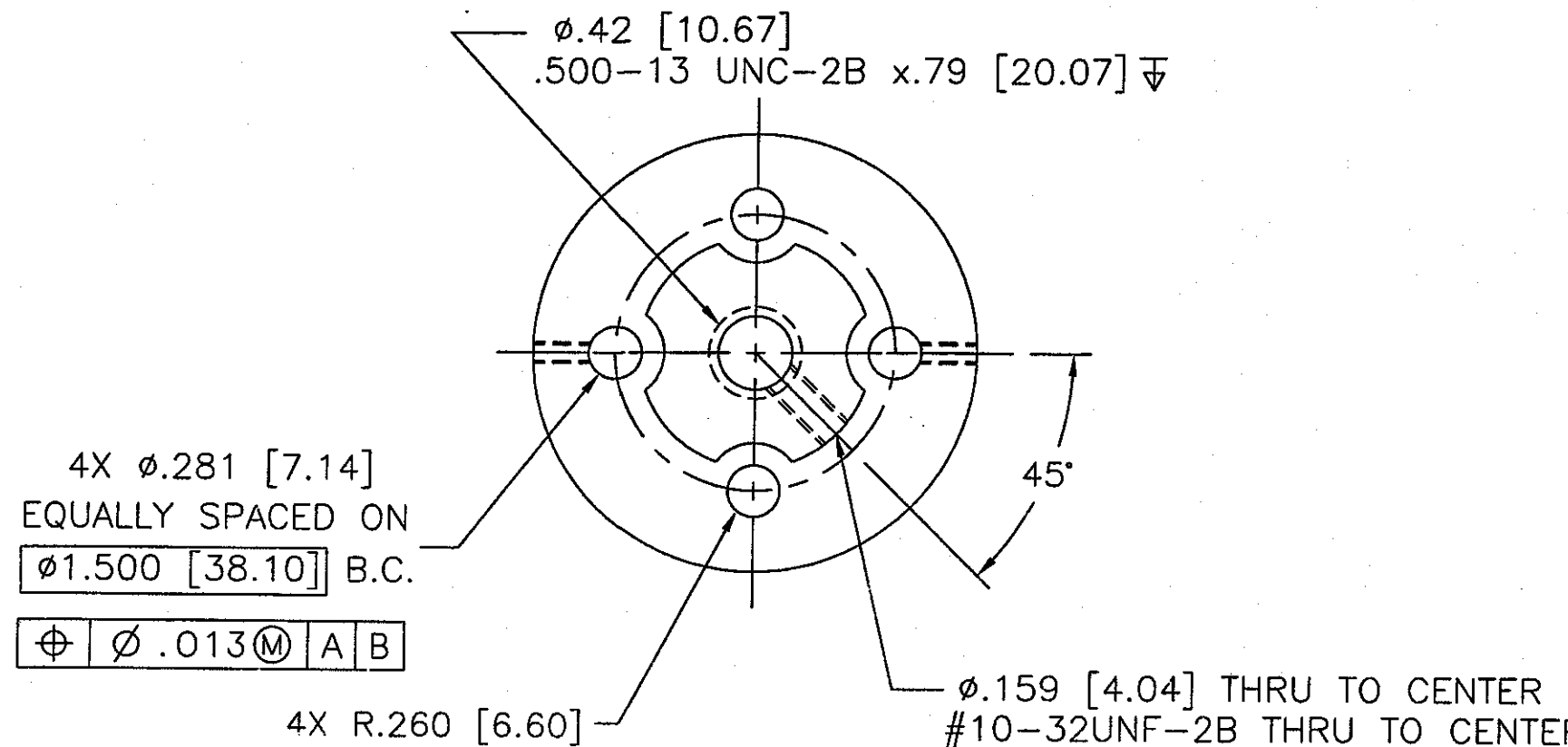
NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED  
VERSION OF DRAWING EXCHANGE FILE DRAWING  
#P4105090504-220006-01.

03	SEE DCN #090903-01	RTK	SHL	090409
01	PART # WAS 1 MSJ-U 4.00 [101.60mm] TRAVEL	PR		
SYM	CHANGE DESCRIPTION	BY	CHKD	DATE
REVISIONS				

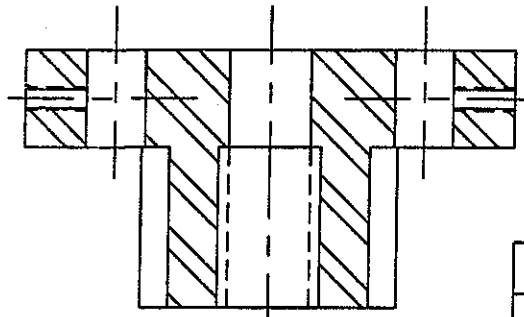
ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
PARTS LIST				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES		LOG NUMBER A1706503	THIS DRAWING IS THE PROPERTY OF ARGONNE NATIONAL LABORATORY	
TOLERANCES				
DECIMALS	ANGULAR			
.X ±.015 [.381]	±.25°			
.XX ±.010 [.254]				
.XXX ±.005 [.127]				
SURFACE ROUGHNESS 125/✓				
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.				
SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1				
DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5				
DO NOT SCALE DRAWING				
DRAWN BY P. ENGELBRECHT		DATE 02/94	CHIEF DESIGN ENGINEER D. SHU	DATE 4/28/94
CHECKED BY J. BARRAZA		DATE 4/26/94	GP LEADER T. KUZAY	DATE 4/30/94
DESIGNER J. BARRAZA		DATE 02/94	PROJECT MGR.	
RESPONSIBLE ENGINEER J. BARRAZA		DATE 4/26/94	APPROVED/RELEASED <i>BR</i>	DATE 10/2/09
MATERIAL SEE NOTE 1		SCALE 1:1	SIZE C	DRAWING NUMBER 4105090504-220006-03
		SHEET 1 of 1		

A





CONSTRUCTION PRINT  
 OCT 14 2009  
 ADVANCED PHOTON SOURCE



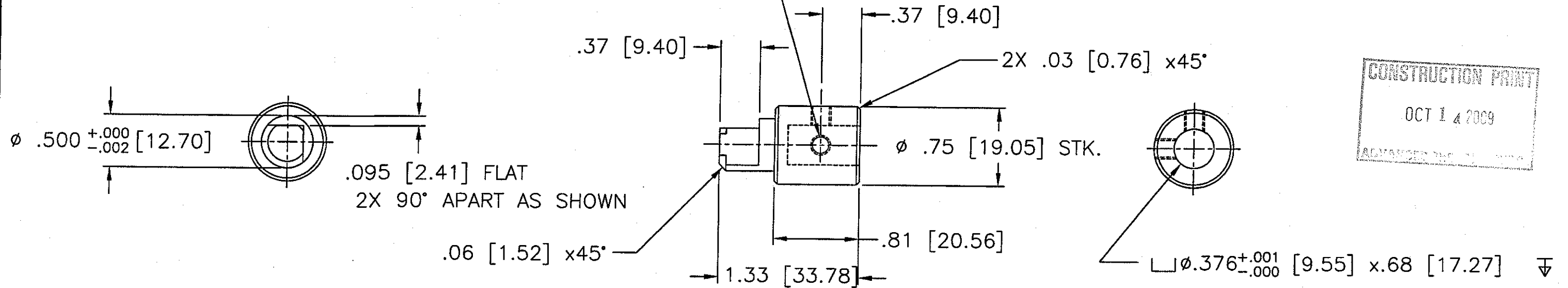
NOTE:  
 1. ALL DIMENSIONS IN [ ] ARE MILLIMETERS AND ARE REFERENCE ONLY.

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #4105090504-220007-00.

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
PARTS LIST				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES		LOG NUMBER	THIS DRAWING IS THE PROPERTY OF	
TOLERANCES		A1706601	ARGONNE NATIONAL LABORATORY	
DECIMALS	ANGULAR			
.X ±.1 [2.5]	±0°30'			
.XX ±.01 [0.25]		DRAWN BY		
.XXX ±.005 [0.13]		P. ENGELBRECHT		
SURFACE ROUGHNESS 125/✓		DATE	CHIEF DESIGN ENGINEER	DATE
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.			D SHU	4/30/94
SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1		CHECKED BY	GP LEADER	DATE
DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5		J BARRAZA	T M KUZAY	
		DESIGNER	PROJECT MGR.	DATE
		J. BARRAZA		
		P. ENGELBRECHT		
		RESPONSIBLE ENGINEER	APPROVED/RELEASED	DATE
		J. BARRAZA	<i>[Signature]</i>	10/1/99
		MATERIAL	SCALE 1=1	SIZE
		316 SST		B
		DO NOT SCALE DRAWING	SHEET 1 of 1	DRAWING NUMBER
				4105090504-220007-01

SYM	CHANGE DESCRIPTION	BY	CHKD	DATE
01	SEE DCN #090903-01	RTK	SHL	090409
REVISIONS				

#21 (.159 [4.04]) THRU TO HOLE  
 #10-32 UNF-2B TAP THRU TO HOLE  
 2X 90° APART AS SHOWN



CONSTRUCTION PRINT  
 OCT 14 2009  
 ADVANCED PHOTON SOURCE

NOTE:

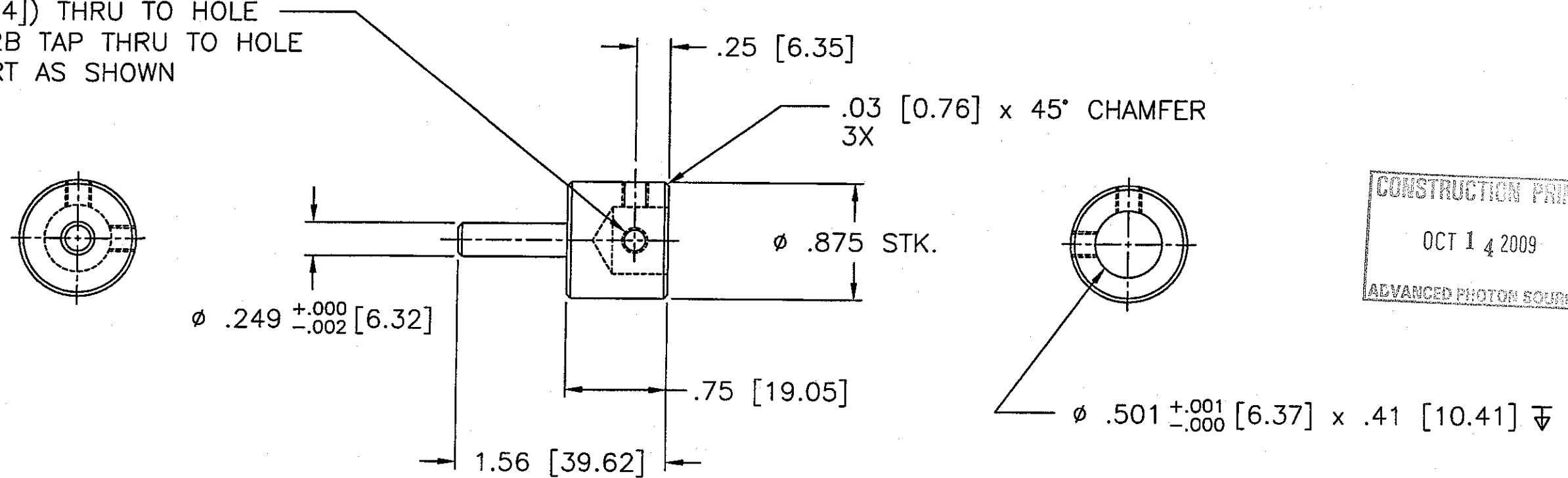
ALL DIMENSIONS IN [ ] ARE MILLIMETERS AND ARE REFERENCE ONLY.

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #P4105090504-220008-00.

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
PARTS LIST				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES		LOG NUMBER <b>A1706701</b>	THIS DRAWING IS THE PROPERTY OF <b>ARGONNE NATIONAL LABORATORY</b>	
<b>TOLERANCES</b> DECIMALS      ANGULAR .X    ±.015 [ .381]    ±.25° .XX   ±.010 [ .254] .XXX ±.005 [ .127]		DRAWN BY P. ENGELBRECHT CHECKED BY <i>PNB</i> DESIGNER J. BARRAZA P. ENGELBRECHT RESPONSIBLE ENGINEER	DATE 02/94 10/1/09 02/94	CHIEF DESIGN ENGINEER GP LEADER PROJECT MGR. APPROVED/RELEASED <i>EA</i> 10/1/09
SURFACE ROUGHNESS 125/✓		TITLE <b>ADVANCED PHOTON SOURCE EXPERIMENTAL FACILITIES XOR/SRI-CAT BEAMLINES STANDARD COMPONENTS HEAVY LOAD TABLE 0.75 IN. SHAFT</b>		
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.		MATERIAL <b>316 SST</b>		
SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1		SCALE 1:1		
DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5		SIZE <b>B</b>		
DO NOT SCALE DRAWING		DRAWING NUMBER <b>4105090504-220008-01</b>		
REVISIONS		SHEET 1 of 1		

SYM	CHANGE DESCRIPTION	BY	CHKD	DATE
01	SEE DCN #090903-01	RTK	SHL	090409

∅ #21 (.159 [4.04]) THRU TO HOLE  
 #10-32 UNF-2B TAP THRU TO HOLE  
 2X - 90° APART AS SHOWN



CONSTRUCTION PRINT  
 OCT 14 2009  
 ADVANCED PHOTON SOURCE

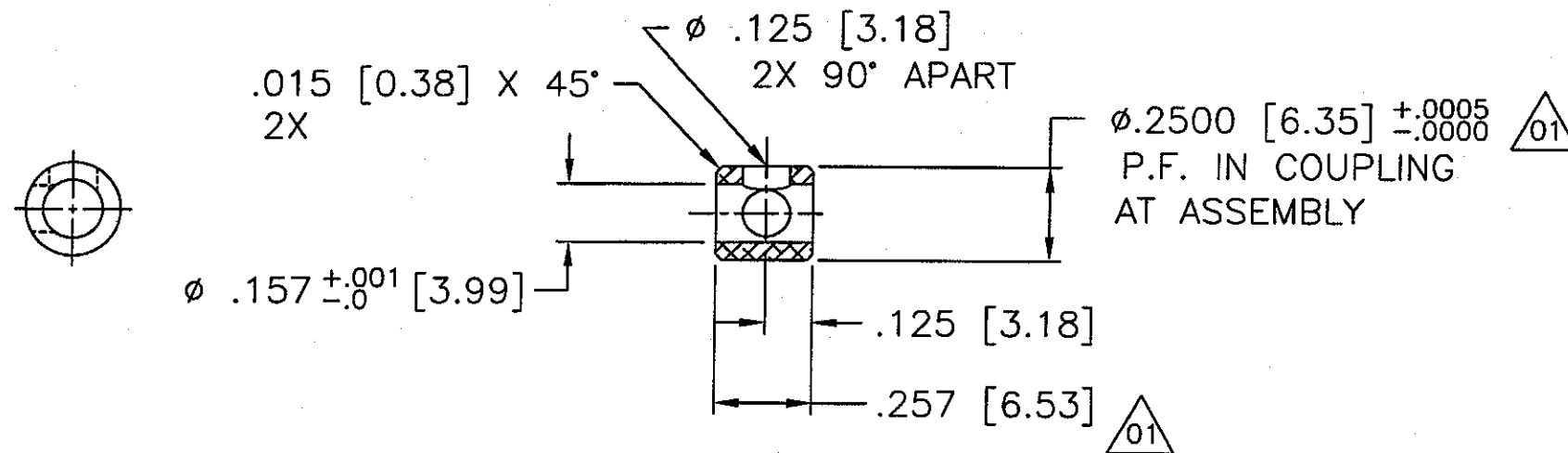
NOTE:

ALL DIMENSIONS IN [ ] ARE MILLIMETERS AND ARE REFERENCE ONLY.

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #P4105090504-220009-00.

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
PARTS LIST				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES TOLERANCES DECIMALS      ANGULAR .X      ±.015 [.381]      ±.25° .XX     ±.010 [.254] .XXX   ±.005 [.127] SURFACE ROUGHNESS 125/✓ REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX. SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1 DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5		LOG NUMBER <b>A1706801</b>	THIS DRAWING IS THE PROPERTY OF <b>ARGONNE NATIONAL LABORATORY</b>	
DESIGNER P. ENGELBRECHT	DATE 02/94	CHIEF DESIGN ENGINEER	DATE	TITLE <b>ADVANCED PHOTON SOURCE EXPERIMENTAL FACILITIES XOR/SRI-CAT BEAMLINES STANDARD COMPONENTS HEAVY LOAD TABLE ∅.875 IN. SHAFT</b>
CHECKED BY <i>MEB</i>	DATE 10/1/09	GP LEADER		
RESPONSIBLE ENGINEER	DATE 02/94	PROJECT MGR.		
		APPROVED/RELEASED <i>BR</i>	DATE 10/7/09	
MATERIAL 316 SST		SCALE 1:1	SIZE B	DRAWING NUMBER 4105090504-220009-01
DO NOT SCALE DRAWING		SHEET 1 of 1		

SYM	CHANGE DESCRIPTION	BY	CHKD	DATE
01	SEE DCN #090903-01	RTK	SHL	090409
REVISIONS				



**NOTE:**  
ALL DIMENSIONS IN [ ] ARE MILLIMETERS  
AND ARE REFERENCE ONLY.

CONSTRUCTION PRINT  
OCT 14 2009  
ADVANCED PHOTON SOURCE

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED  
VERSION OF DRAWING EXCHANGE FILE DRAWING  
#4105090504-220010-01.

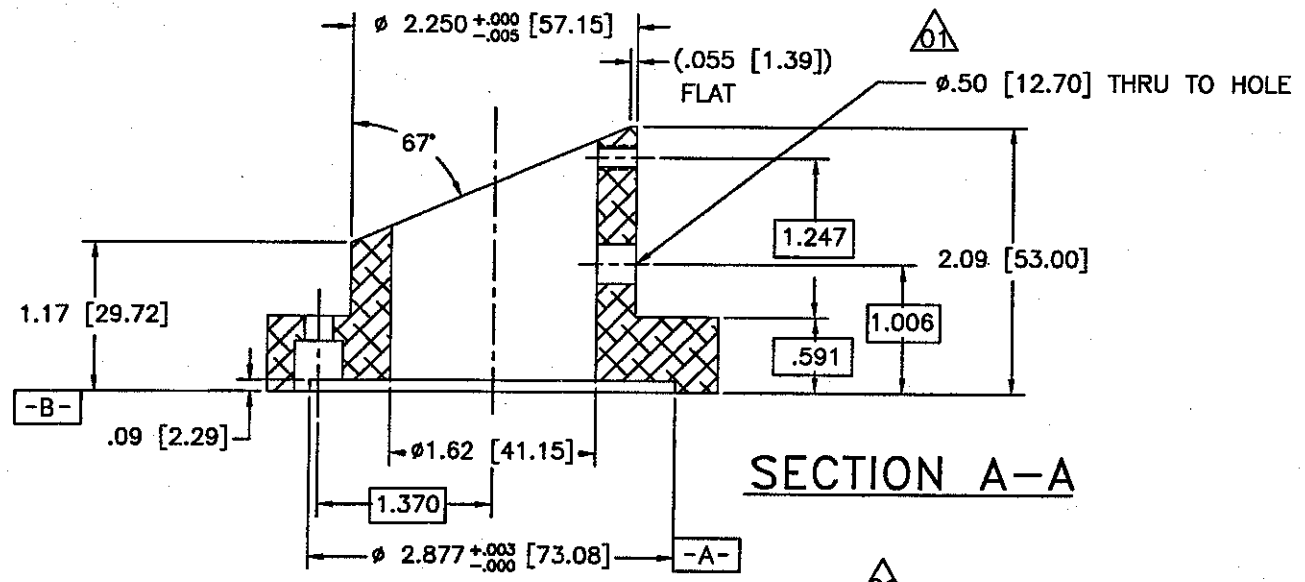
ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY																																
<b>PARTS LIST</b>																																				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES <b>TOLERANCES</b>		LOG NUMBER <b>A1706902</b>	THIS DRAWING IS THE PROPERTY OF <b>ARGONNE NATIONAL LABORATORY</b>																																	
<table border="1"> <tr> <th>DECIMALS</th> <th>ANGULAR</th> </tr> <tr> <td>.X ±.015 [.381]</td> <td>±.25°</td> </tr> <tr> <td>.XX ±.010 [.254]</td> <td></td> </tr> <tr> <td>.XXX ±.005 [.127]</td> <td></td> </tr> </table>		DECIMALS	ANGULAR	.X ±.015 [.381]	±.25°	.XX ±.010 [.254]		.XXX ±.005 [.127]		ARGONNE NATIONAL LABORATORY UNIVERSITY OF CHICAGO	TITLE <b>ADVANCED PHOTON SOURCE EXPERIMENTAL FACILITIES XOR/SRI-CAT BEAMLINES STANDARD COMPONENTS HEAVY LOAD TABLE BUSHING</b>																									
DECIMALS	ANGULAR																																			
.X ±.015 [.381]	±.25°																																			
.XX ±.010 [.254]																																				
.XXX ±.005 [.127]																																				
SURFACE ROUGHNESS 125/✓		<table border="1"> <tr> <th>DRAWN BY</th> <th>DATE</th> <th>CHIEF DESIGN ENGINEER</th> <th>DATE</th> </tr> <tr> <td>P. ENGELBRECHT</td> <td>02/94</td> <td>D. SHU</td> <td>04/28/94</td> </tr> <tr> <th>CHECKED BY</th> <th>DATE</th> <th>GP LEADER</th> <th>DATE</th> </tr> <tr> <td>J. BARRAZA</td> <td>4/26/94</td> <td>T.M. KUZAY</td> <td>4/30/94</td> </tr> <tr> <th>DESIGNER</th> <th>DATE</th> <th>PROJECT MGR.</th> <th></th> </tr> <tr> <td>J. BARRAZA P. ENGELBRECHT</td> <td>02/94</td> <td></td> <td></td> </tr> <tr> <th>RESPONSIBLE ENGINEER</th> <th>DATE</th> <th>APPROVED/RELEASED</th> <th></th> </tr> <tr> <td>J. BARRAZA</td> <td>4/26/94</td> <td><i>[Signature]</i></td> <td>10/7/09</td> </tr> </table>	DRAWN BY	DATE	CHIEF DESIGN ENGINEER	DATE	P. ENGELBRECHT	02/94	D. SHU	04/28/94	CHECKED BY	DATE	GP LEADER	DATE	J. BARRAZA	4/26/94	T.M. KUZAY	4/30/94	DESIGNER	DATE	PROJECT MGR.		J. BARRAZA P. ENGELBRECHT	02/94			RESPONSIBLE ENGINEER	DATE	APPROVED/RELEASED		J. BARRAZA	4/26/94	<i>[Signature]</i>	10/7/09		
DRAWN BY	DATE	CHIEF DESIGN ENGINEER	DATE																																	
P. ENGELBRECHT	02/94	D. SHU	04/28/94																																	
CHECKED BY	DATE	GP LEADER	DATE																																	
J. BARRAZA	4/26/94	T.M. KUZAY	4/30/94																																	
DESIGNER	DATE	PROJECT MGR.																																		
J. BARRAZA P. ENGELBRECHT	02/94																																			
RESPONSIBLE ENGINEER	DATE	APPROVED/RELEASED																																		
J. BARRAZA	4/26/94	<i>[Signature]</i>	10/7/09																																	
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.		MATERIAL <b>6061-T6 ALUMINUM</b>	SCALE <b>2:1</b>	SIZE <b>B</b>																																
SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1			SHEET <b>1 of 1</b>	DRAWING NUMBER <b>4105090504-220010-02</b>																																
DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5																																				
DO NOT SCALE DRAWING																																				

SYM	CHANGE DESCRIPTION	BY	CHKD	DATE
02	SEE DCN #090903-01	RTK	SHL	090409
01	.257 WAS .38; .250 WAS .252	KWC	JB	9/19/95
REVISIONS				

*PK* *9/19/95*

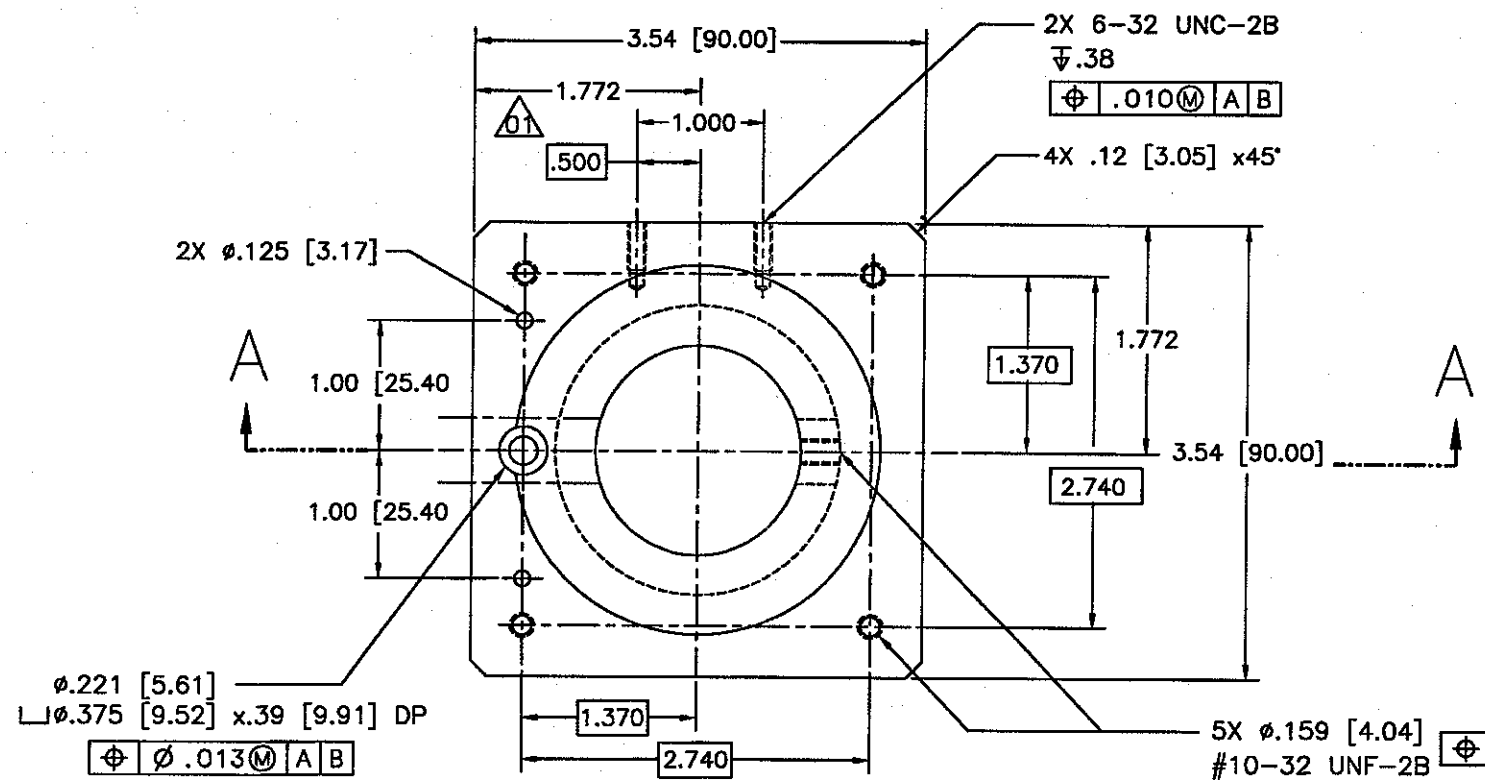
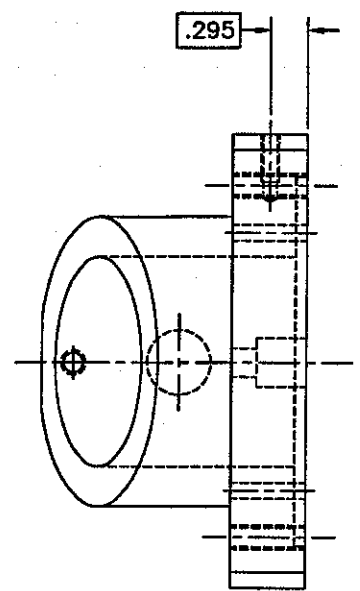
4 3 2 1

D



SECTION A-A

C



CONSTRUCTION PRINT  
OCT 1 2009  
ADVANCED PHOTON SOURCE

NOTE:

1. FINISH - BLACK ANODIZING PER MIL-A-8625 TYPE II.
2. ALL DIMENSIONS IN [ ] ARE MILLIMETERS AND ARE REFERENCE ONLY.

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #P4105090504-220011-01.

REV	CHANGE DESCRIPTION	BY	CHKD	DATE
02	SEE DCN #090903-01	RTK	SHL	090409
01	1.000 [25.40] WAS 2.000 [50.80]; .500 [12.70] WAS 1.000 [25.40]	KWC		2/10/95
	6-32 TAP WAS 10-32 TAP; Ø.50 [12.70] WAS .250 [6.35]			

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
PARTS LIST				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES		LOG NUMBER A1707002	THIS DRAWING IS THE PROPERTY OF <b>ARGONNE NATIONAL LABORATORY</b>	
TOLERANCES		SURFACE FINISH		
DECIMALS	ANGULAR	125		
.X ±.03 [ .76]	±0°30'	REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.		
.XX ±.01 [ 0.25]		SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1		
.XXX ±.005 [ 0.13]		DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5		
SURFACE ROUGHNESS		DESIGNER J. BARRAZA	DATE 4/26/94	CHIEF DESIGN ENGINEER D SHU
		CHECKED BY J. BARRAZA	DATE 4/26/94	GP LEADER T.M. KUZAY
		DESIGNER J. BARRAZA	DATE 4/26/94	PROJECT MGR.
		RESPONSIBLE ENGINEER J. BARRAZA	DATE 4/26/94	APPROVED/RELEASED [Signature]
		MATERIAL 7075-T6 ALUMINUM		
		SCALE 1=1	SIZE C	DRAWING NUMBER 4105090504-220011-02
		SHEET 1 of 1		

A

4 3 2 1

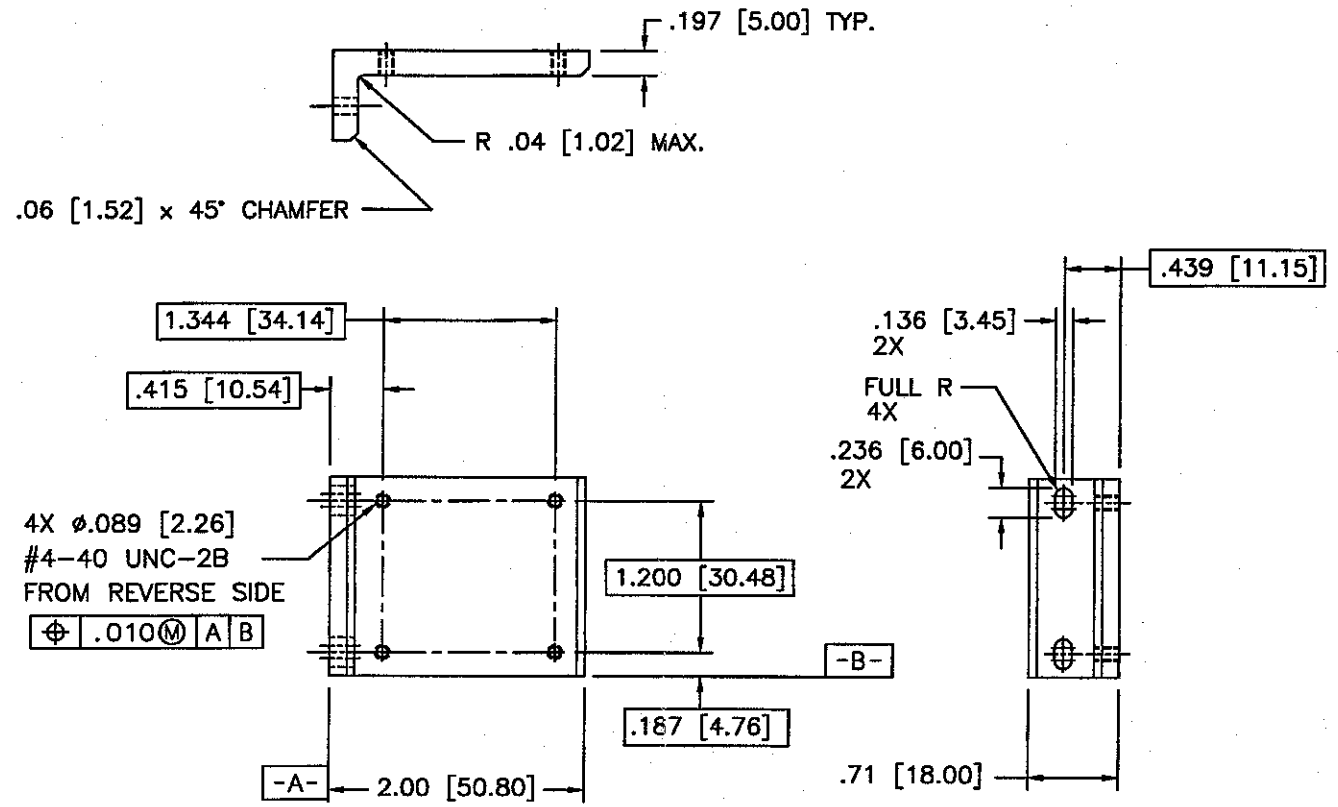
4 3 2 1

D D

C C

B B

A A



CONSTRUCTION PRINT  
OCT 14 2009  
ADVANCED PHOTON SOURCE

NOTES:

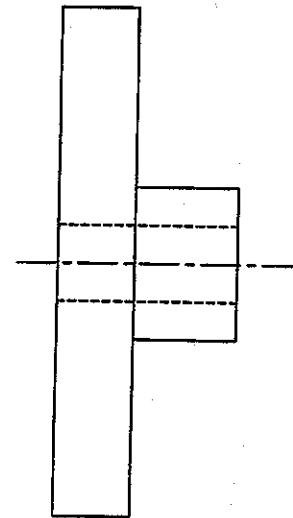
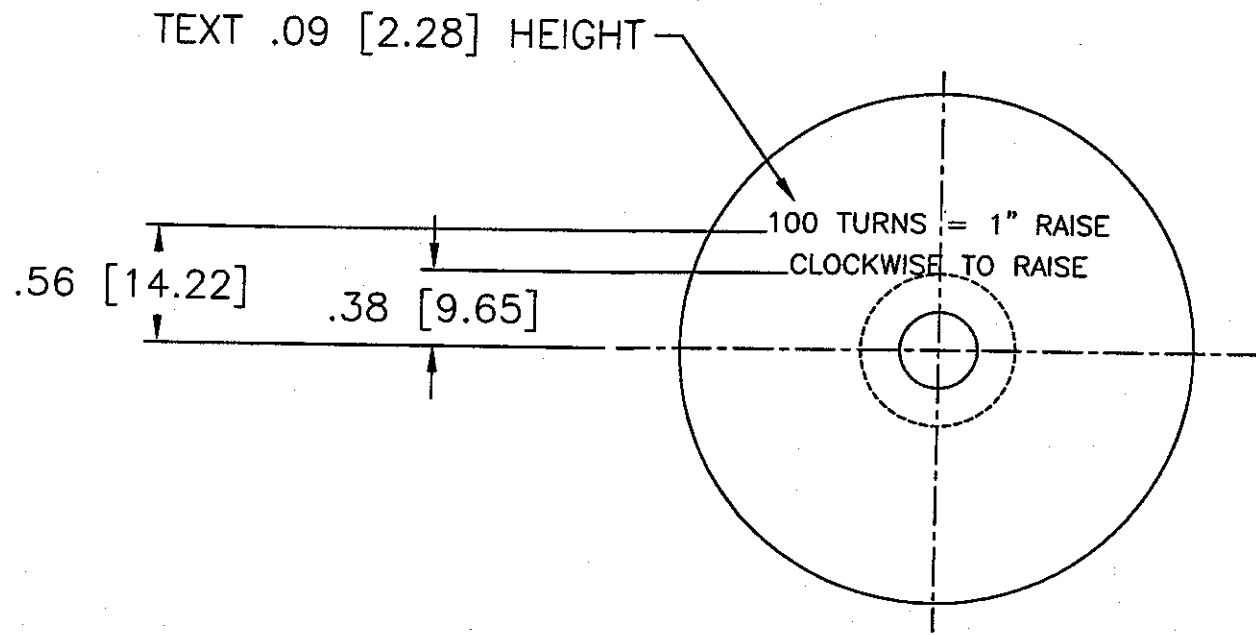
1. FINISH - BLACK ANODIZING PER MIL-A-8625, TYPE II.
2. DIMENSIONS IN BRACKETS [ ] ARE MILLIMETERS.

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #P4105090504-220012-00.

REV	DESCRIPTION	BY	CHKD	DATE
01	SEE DCN #090903-01	RTK	SHL	09/04/09
REVISIONS				

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
PARTS LIST				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES		LOG NUMBER A1707101	THIS DRAWING IS THE PROPERTY OF ARGONNE NATIONAL LABORATORY	
TOLERANCES DECIMALS .X ±.015 [ .381] ±.25° .XX ±.010 [ .254] .XXX ±.005 [ .127]		DRAWN BY P. ENGELBRECHT	DATE 02/94	CHIEF DESIGN ENGINEER
SURFACE ROUGHNESS 125/		CHECKED BY PWB	DATE 10/1/09	GP LEADER
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX. SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1		DESIGNER J. BARRAZA	DATE 02/94	PROJECT MGR.
DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5		RESPONSIBLE ENGINEER	APPROVED/RELEASED BR	DATE 10/1/09
DO NOT SCALE DRAWING		MATERIAL 6061-T6 ALUMINUM	SCALE 1:1	SIZE C
			SHEET 1 of 1	DRAWING NUMBER 4105090504-220012-01

4 3 2 1



CONSTRUCTION PRINT  
 OCT 14 2009  
 ADVANCED PHOTON SOURCE

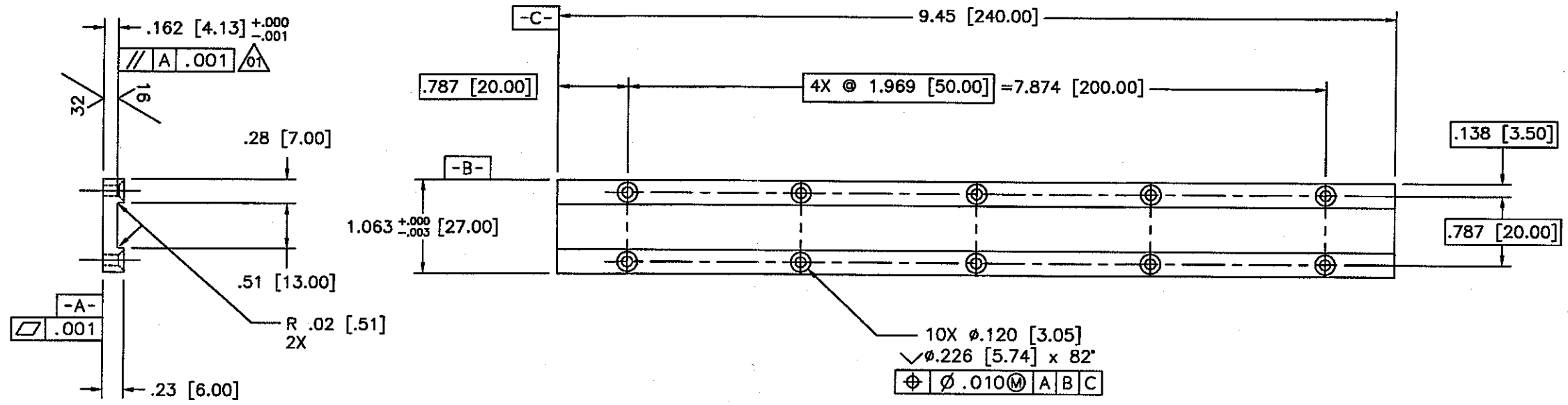
NOTES:

- MADE FROM CN1-14 KNURLED HANDWHEEL  
 WINFRED M.BERG INC.  
 499 OCEAN AVE.  
 EAST ROCKAWAY, NY 11518  
 PHONE: 516/ 596-1700  
 FAX: 516/ 599-3274
- ALL DIMENSIONS IN [ ] ARE MILLIMETERS  
 AND ARE FOR REFERENCE ONLY.

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED  
 VERSION OF DRAWING EXCHANGE FILE DRAWING  
 #P4105090504-220013-00.

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
PARTS LIST				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES		LOG NUMBER <b>A1707201</b>	THIS DRAWING IS THE PROPERTY OF <b>ARGONNE NATIONAL LABORATORY</b>	
TOLERANCES DECIMALS      ANGULAR .X    ±.015 [ .381 ]    ±.25° .XX   ±.010 [ .254 ] .XXX ±.005 [ .127 ]  SURFACE ROUGHNESS 125 ✓		DRAWN BY P. ENGELBRECHT  CHECKED BY <i>TWB</i>  DESIGNER J. BARRAZA P. ENGELBRECHT  RESPONSIBLE ENGINEER	DATE 02/94  DATE 10/1/09  DATE 02/94  APPROVED/RELEASED <i>BR</i>	CHIEF DESIGN ENGINEER  GP LEADER  PROJECT MGR.  TITLE <b>ADVANCED PHOTON SOURCE EXPERIMENTAL FACILITIES XOR/SRI-CAT BEAMLINES STANDARD COMPONENTS HEAVY LOAD TABLE KNURLED HANDWHEEL</b>
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.  SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1  DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5		MATERIAL <b>303 SST</b>	SCALE 1:1	SIZE <b>B</b>
DO NOT SCALE DRAWING		SHEET 1 of 1		DRAWING NUMBER <b>4105090504-220013-01</b>

SYMBOL	CHANGE DESCRIPTION	BY	CHKD	DATE
01	SEE DCN #090903-01	RTK	SHL	082109
REVISIONS				



CONSTRUCTION PRINT  
 OCT 14 2009  
 ADVANCED PHOTON SOURCE

- NOTE:**
- HARDEN RC-60.
  - ALL DIMENSIONS IN [ ] ARE MILLIMETERS AND ARE REFERENCE ONLY.

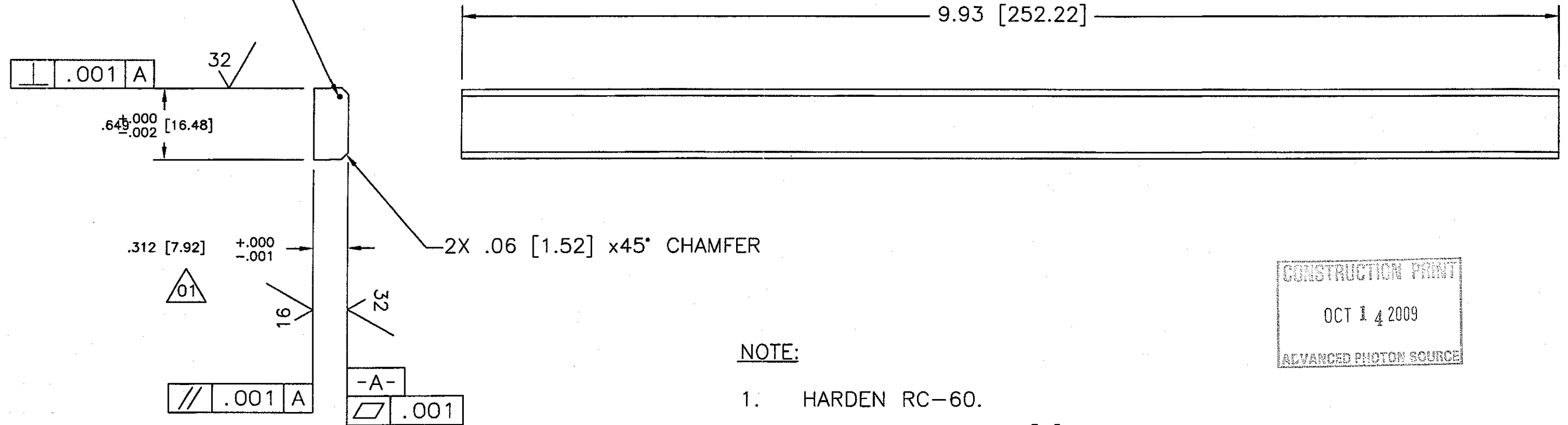
NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #P4105090504-220014-01

REV	CHANGE DESCRIPTION	BY	CHKD	DATE
02	SEE DCN #090903-01	RTK	SHL	09/04/09
01	+0.000/-0.001 WAS ±.002	KWC	JB	9/18/95

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
<b>PARTS LIST</b>				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES		LOG NUMBER <b>A1707302</b>	THIS DRAWING IS THE PROPERTY OF <b>ARGONNE NATIONAL LABORATORY</b>	
TOLERANCES		TITLE <b>ADVANCED PHOTON SOURCE T4 100 mm TRAVEL PRECISION VERTICAL STAGE BEARING SURFACE RAIL-INSIDE</b>		
DECIMALS		DRAWN BY P. ENGELBRECHT	DATE 02/94	CHIEF DESIGN ENGINEER D. SHU
ANGULAR		CHECKED BY J. BARRAZA	DATE 4/26/94	GP LEADER T.M. KUZAY
.X ±.015 [.381] ±.25°		DESIGNER J. BARRAZA	DATE 02/94	PROJECT MGR.
.XX ±.010 [.254]		RESPONSIBLE ENGINEER J. BARRAZA	DATE 4/26/94	APPROVED/RELEASED <i>[Signature]</i>
.XXX ±.005 [.127]		MATERIAL <b>440 C STAINLESS STEEL</b>		
SURFACE ROUGHNESS 125 ✓		SCALE 1:1	SIZE C	DRAWING NUMBER 4105090504-220014-02
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.		SHEET 1 of 1		
SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1		DO NOT SCALE DRAWING		
DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5				



MARK THIS CHAMFER  
WITH CENTERPUNCH  
AT BOTH ENDS



**NOTE:**

1. HARDEN RC-60.
2. ALL DIMENSIONS IN [ ] ARE MILLIMETERS AND ARE REFERENCE ONLY.

NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED  
VERSION OF DRAWING EXCHANGE FILE DRAWING  
#P4105090504-220015-01

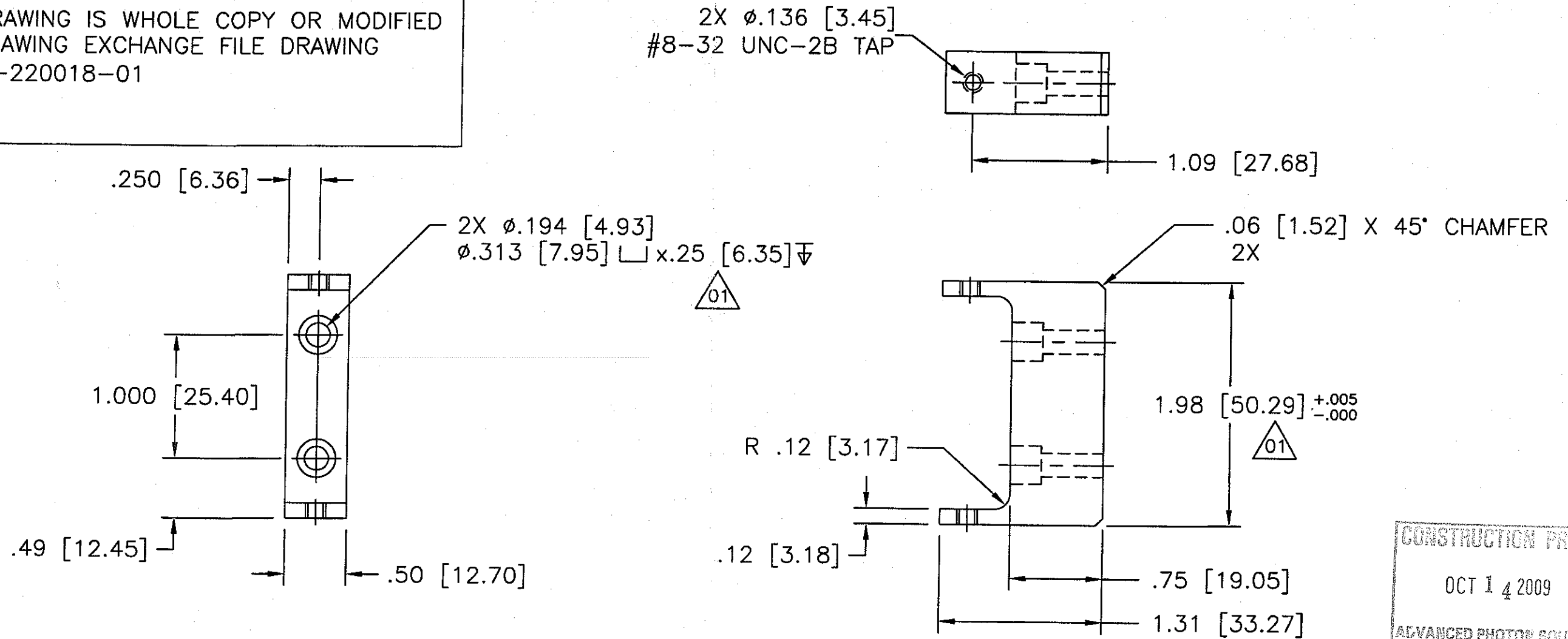
ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
<b>PARTS LIST</b>				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES <b>TOLERANCES</b> DECIMALS      ANGULAR .X    ±.1 [2.5]      ±0°30' .XX   ±.01 [0.25] .XXX ±.005 [0.13]		LOG NUMBER <b>A1707402</b>	THIS DRAWING IS THE PROPERTY OF <b>ARGONNE NATIONAL LABORATORY</b>	
SURFACE ROUGHNESS 125/✓		DRAWN BY P. ENGELBRECHT	DATE 02/94	CHIEF DESIGN ENGINEER D. SHU
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.		CHECKED BY J. BARRAZA	DATE 4/26/94	GP LEADER T.M.KUZAY
SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1		DESIGNER J. BARRAZA	DATE 4/26/94	PROJECT MGR.
DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5		RESPONSIBLE ENGINEER J. BARRAZA	DATE 04/28/94	APPROVED/RELEASED <i>[Signature]</i>
DO NOT SCALE DRAWING		MATERIAL 440 C SST	SCALE 1=1	TITLE <b>ADVANCED PHOTON SOURCE EXPERIMENTAL FACILITIES XOR/SRI-CAT BEAMLINES STANDARD COMPONENTS HEAVY LOAD TABLE BEARING SURFACE RAIL-OUTSIDE</b>
REVISIONS		SHEET 1 of 1		DRAWING NUMBER <b>B 4105090504-220015-02</b>

SYM	CHANGE DESCRIPTION	BY	CHKD	DATE
02	SEE DCN #090903-01	RTK	SHL	090409
01	.312 WAS .320	KWC	JB	9/19/95

*RTK SHL 9/14/95*



NOTE: THIS DRAWING IS WHOLE COPY OR MODIFIED VERSION OF DRAWING EXCHANGE FILE DRAWING #P4105090504-220018-01



NOTES:

1. FINISH-BLACK ANODIZE PER MIL-A-8625 TYPE II.
2. ALL DIMENSIONS IN [ ] ARE MILLIMETERS & FOR REFERENCE ONLY.

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
PARTS LIST				
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES TOLERANCES		LOG NUMBER <b>A1824802</b>	THIS DRAWING IS THE PROPERTY OF <b>ARGONNE NATIONAL LABORATORY</b>	
DECIMALS      ANGULAR .X    ±.015 [.381]    ±.25° .XX   ±.010 [.254] .XXX ±.005 [.127]		DRAWN BY <b>C. SMITH</b>	DATE <b>4/94</b>	GP LEADER <b>T.M. KUZAY</b>
SURFACE ROUGHNESS 125/✓		CHECKED BY <b>J. BARRAZA</b>	DATE <b>4/26/94</b>	PROJECT MGR
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.		DESIGNER <b>P. ENGELBRECHT</b>	DATE <b>4/94</b>	APPROVED/RELEASED
SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1		RESPONSIBLE ENGINEER <b>J. BARRAZA</b>	DATE <b>4/26/94</b>	<b>BA 10/1/94</b>
DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5		MATERIAL <b>6061-T6 ALUMINUM</b>		SCALE <b>1:1</b>
DO NOT SCALE DRAWING		SHEET <b>1 of 1</b>		SIZE <b>B</b>
				DRAWING NUMBER <b>4105090504-220018-02</b>

SYM	CHANGE DESCRIPTION	BY	CHKD	DATE
02	SEE DCN #090903-01	RTK	SHL	090409
01	.25 WAS .875; 1.980 WAS 2.00	KWC	JB	9/19/95
REVISIONS				