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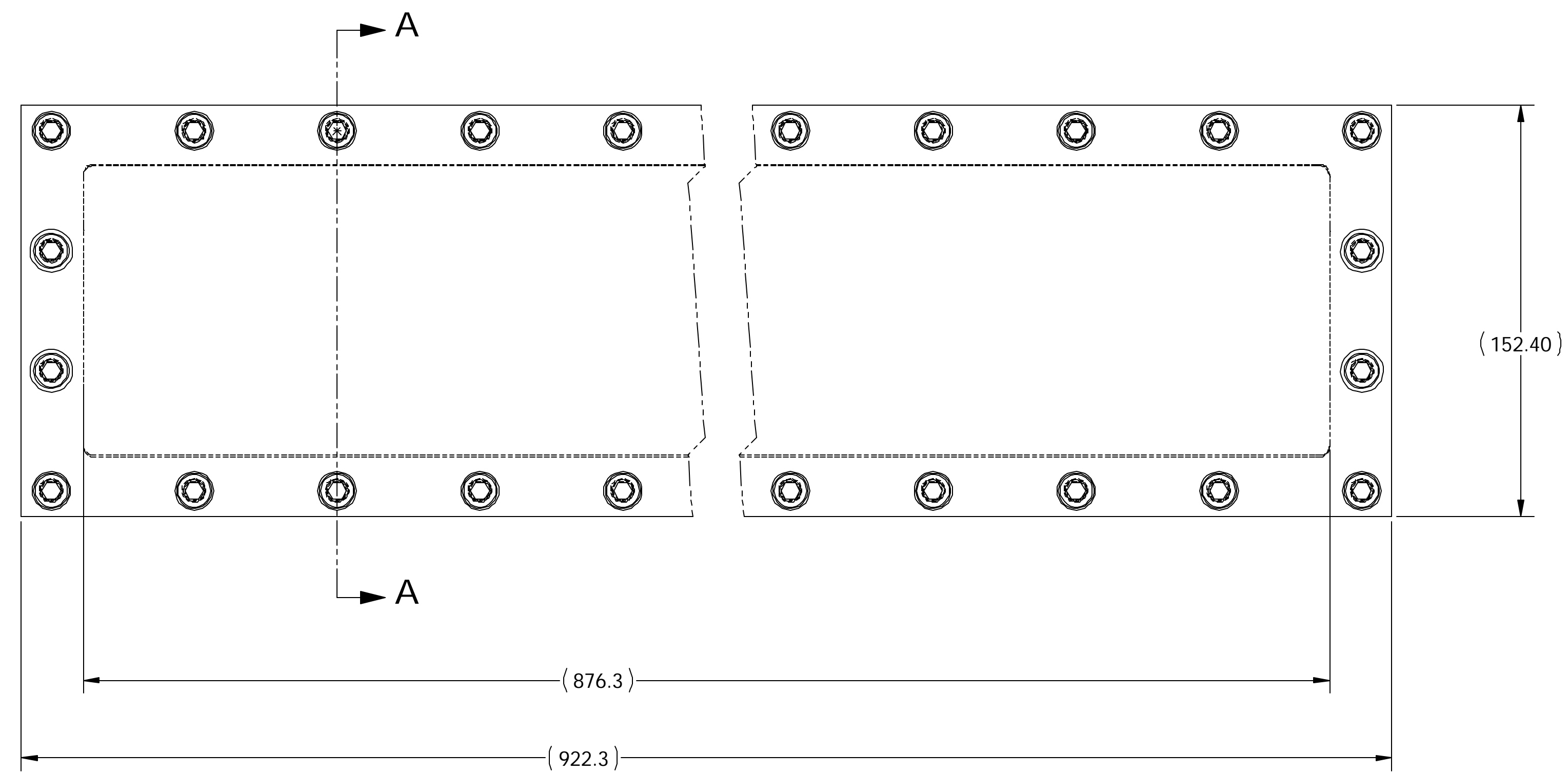
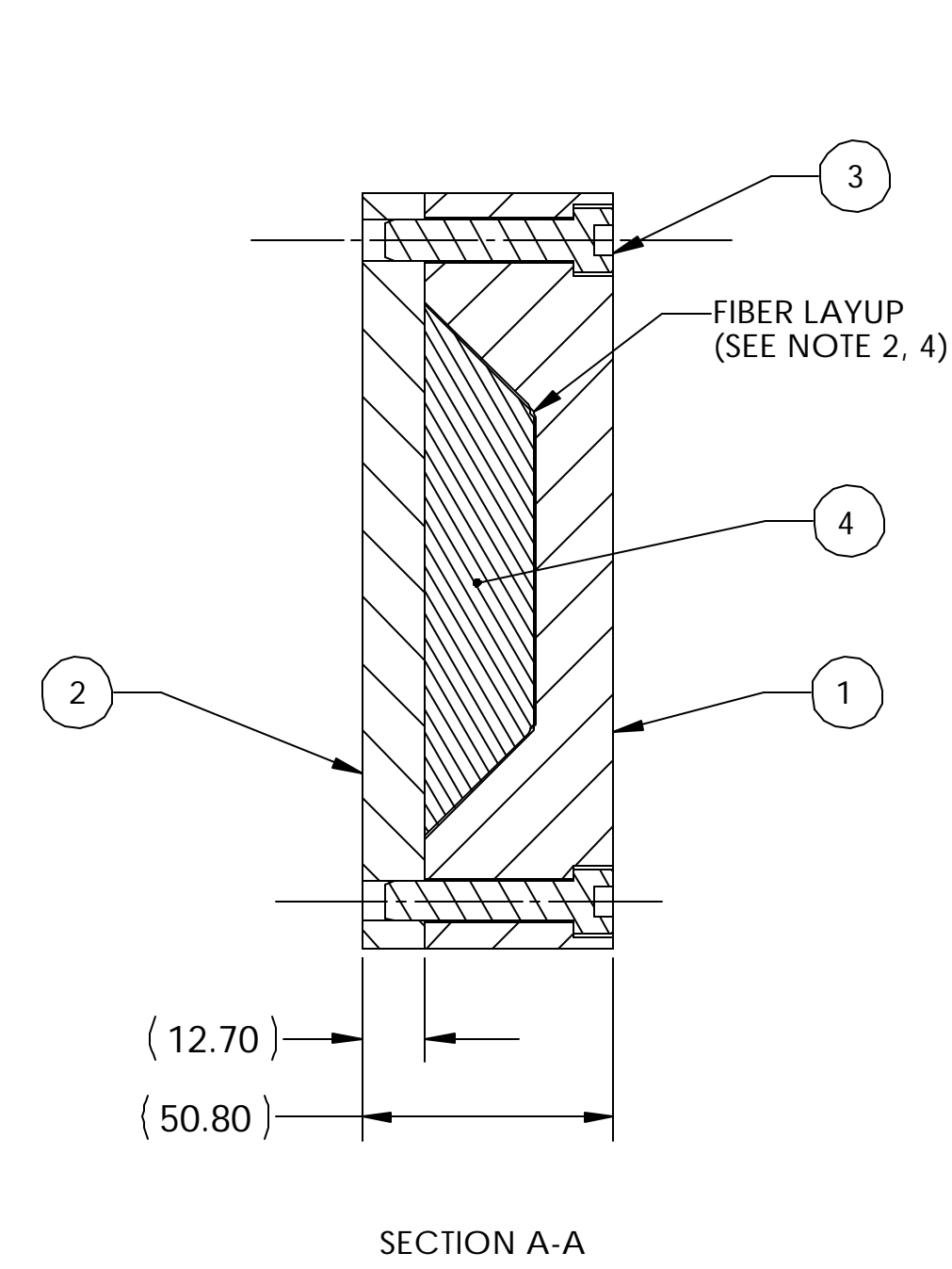
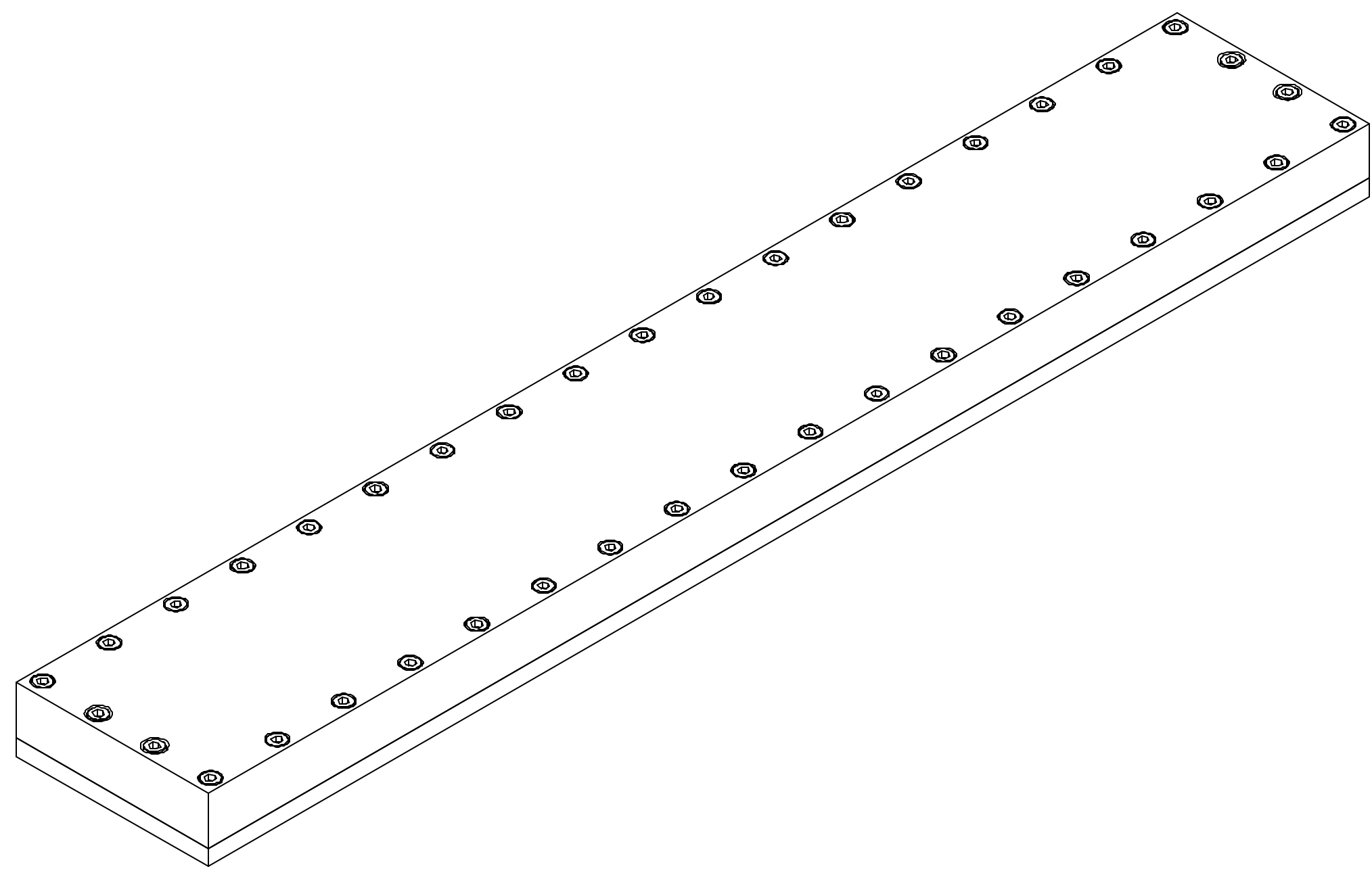
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ITEM	PART NO.	REQD	DESCRIPTION	MATERIAL
	21F705 4	= 1		
4		1	INNER VERTEX STIFFENER SILICONE MOLD INSERT	
3		40	M8.0 X 1.25 SOCKET HD CAP X 38.1	STEEL
2	21F707	1	MOLD COVERPLATE	
1	21F706	1	PANEL INNER CORNER MOLD CAVITY	



NOTES: UNLESS OTHERWISE SPECIFIED

1. DIMENSIONS IN MILLIMETERS
2. ASSEMBLY USED TO MOLD THE INNER CORNERS FOR SPACEFRAME CENTRAL AND END SECTION (PARTS 21F655 AND 21F671)
3. ASSEMBLY WEIGHS 100 Lbs.
4. SEE PART DRAWINGS FOR MATERIAL SPECIFICATIONS

REV	DWG	CHK	ZONE	DATE	CHANGES

UNLESS OTHERWISE SPECIFIED		SHOP ORDERS		SER. NO.	ERNEST ORLANDO LAWRENCE
TOLERANCES	X.X ± 0.5	FRAC. ± 1/64	ACCT. NO.	DATE ISSD	BERKELEY NATIONAL LABORATORY
	X.XX ± 0.25	ANGLES ± 30°	NO. REQD	DATE REQD	UNIVERSITY OF CALIFORNIA - BERKELEY #
	X.XXX ± 0.013	FINISH 1.6	SURFACE TREATMENT		
DO NOT SCALE PRINT		IDEN. METHOD TAG	ATLAS PIXEL DETECTOR		
THREADS ARE CLASS 2		PROJECT NUMBER	SPACEFRAME CENTRAL AND END SECTION		
CHAMFER ENDS OF ALL SCREW THREADS 30°		PROJECT NAME	PANEL INNER CORNER MOLD ASSEMBLY		
CUT ROUNDS: 1.5 THREAD RELIEF ON MACHINED THREADS		DWG. BY	DATE	MICROFILMED:	DWG. TYPE
BREAK EDGES: .016 MAX. ON MACHINED WORK		CHK BY	DATE	ASSEM	N/A
REMOVE BURS, WELD SPLATTER & LOOSE SCALE		APR BY	DATE	PATENT CLEAR:	DESIGN ACCT. NO.
IN ACCORDANCE WITH ASME Y14.5m & B46.1			DATE	P1AP-11	AP6250

SCALE: 1:1.5	DO NOT SCALE PRINTS
SHEET 1 OF 1	
DWG. NO. 21F705 4	SIZE REV.

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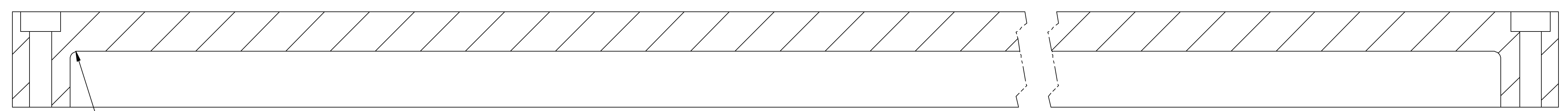
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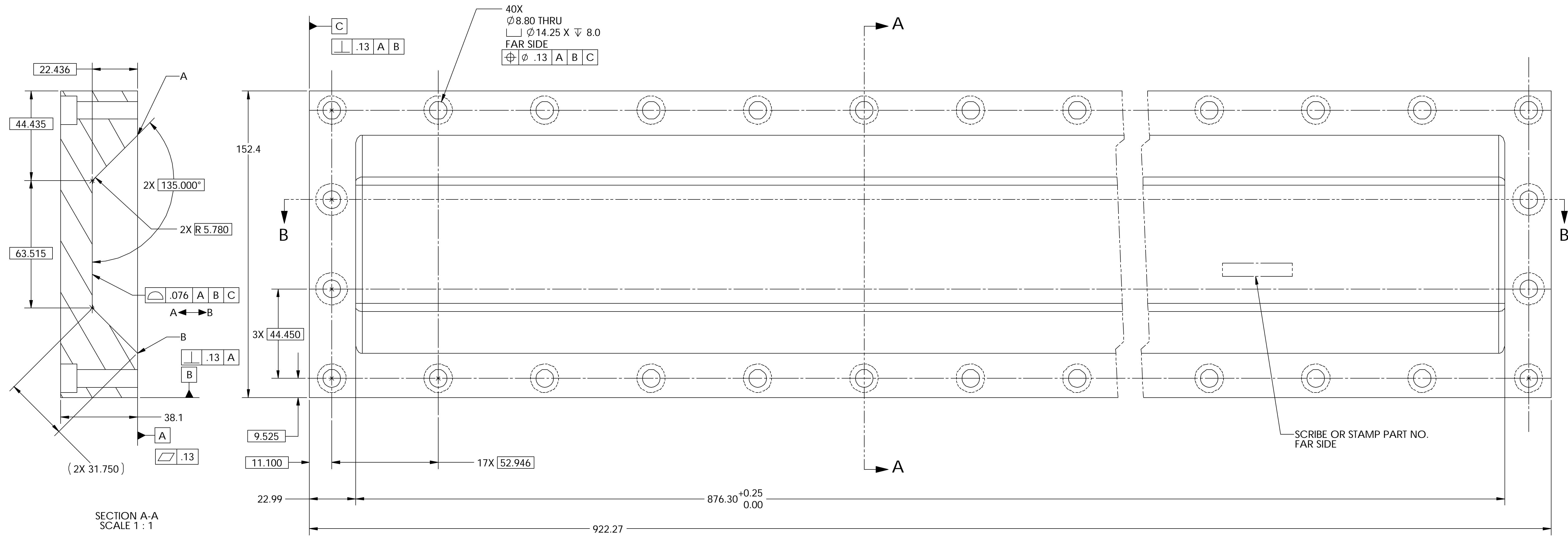
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DWG. NO.	SIZE	REV.	SHEET
21F706 4		1	1
DESCRIPTION		MATERIAL	MNT. LOCATION



R3.18
AROUND PROFILE
BOTH SIDES

SECTION B-B
SCALE 1:1



SECTION A-A
SCALE 1:1

MATL: STEEL GROUND FLATSTOCK

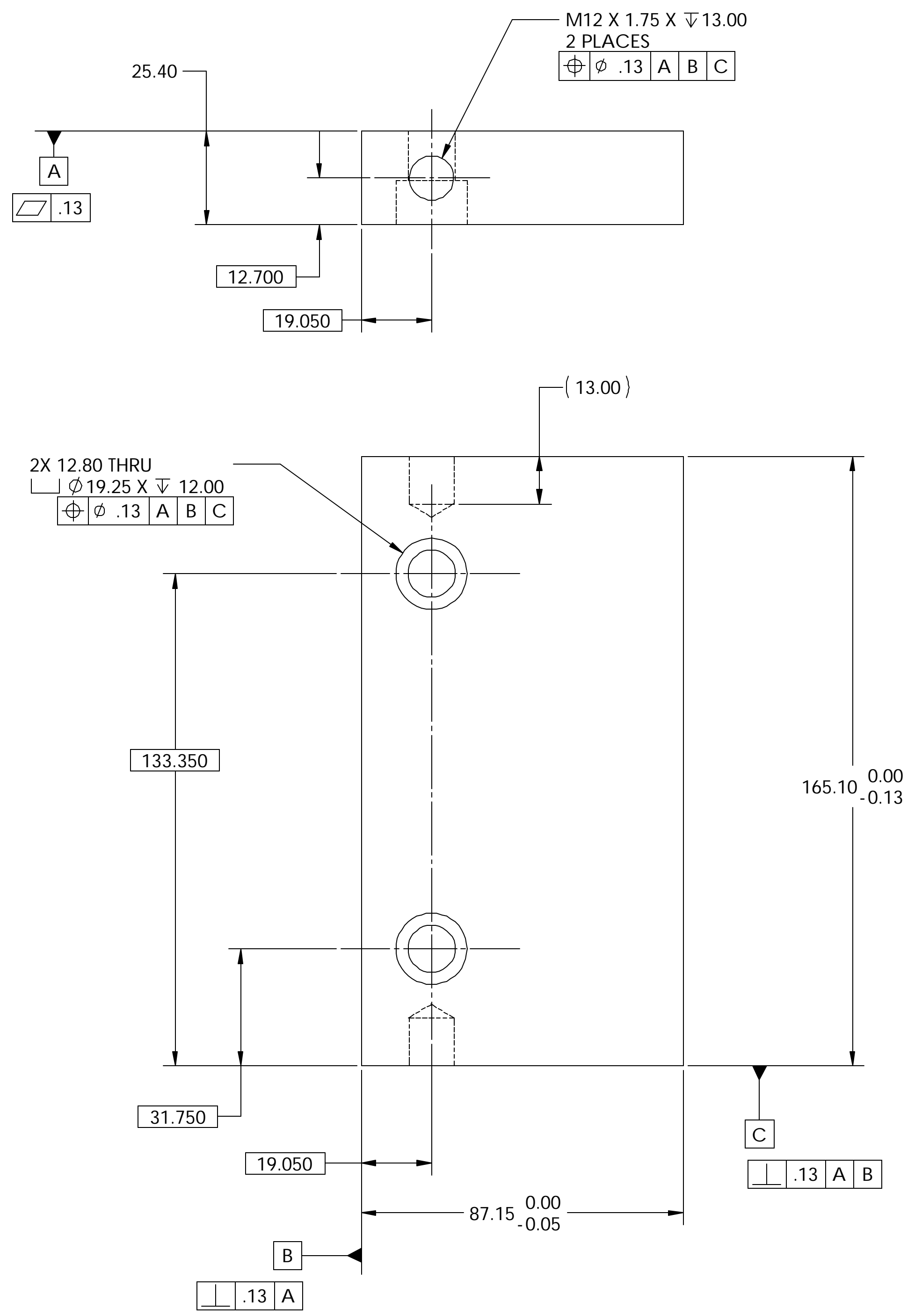
NOTES: UNLESS OTHERWISE SPECIFIED

- DIMENSIONS IN MILLIMETERS
- DIMENSIONS AND TOLERANCING PER ASME Y14.5M-1994
- SURFACE TEXTURE PER ANI/ASME B 46.1-1985
- REMOVE ALL BURRS AND BREAK SHARP EDGES TO A MAXIMUM OF .38
- ALL INSIDE CORNERS TO BE .38 RADIUS MAX
- COUNTERSINK 82 DEGREES ALL TAPPED HOLES TO MAJOR DIAMETER
- COUNTERSINK 82 DEGREES APPROXIMATELY .38 DEEP ALL DRILLED HOLES
- PARTS TO BE THOROUGHLY CLEANED TO REMOVE ALL OIL, GREASE, DIRT AND CHIPS

UNLESS OTHERWISE SPECIFIED		SHOP ORDERS		SER. NO.		ERNEST ORLANDO LAWRENCE	
TOLERANCES	X.X ± 0.5	FRAC.	± 1/64	NO. REQD.	DATE ISSD	BERKELEY NATIONAL LABORATORY	
	X.XX ± 0.25	ANGLES	± 30°	DATE REQD.		UNIVERSITY OF CALIFORNIA - BERKELEY #	
	X.XXX ± 0.013	FINISH	1.6			ATLAS PIXEL DETECTOR	
DO NOT SCALE PRINT				INDEX METHOD TAG		SPACEFRAME CENTRAL AND END SECTION	
THREADS ARE CLASS 2				PROJECT NAME		PANEL INNER CORNER MOLD CAVITY	
CHAMFER ENDS OF ALL SCREW THREADS 30°				PROJECT NUMBER		MICROFILMED:	
CUT ROUNDS, 1.5 THREAD RELIEF ON MACHINED THREADS				PROJECT US ATLAS SILICON SUBSYSTEM		DWG. TYPE	
BREAK EDGES, .016 MAX. ON MACHINED WORK				DWE W. K. MILLER		PART	
REMOVE BURRS, WELD SPLATTER & LOOSE SCALE				DATE 4/16/2002		21F705	
IN ACCORDANCE WITH ASME Y14.5m & B46.1				CHK BILL WILDS		SCALE: 1:1.25	
				APR E. ANDERSSSEN		SHEET 1 OF 1	
				DATE 4/16/2002		SIZE REV.	
						21F706 4	

REV	DWG	CHK	ZONE	DATE	CHANGES

DWG. NO. 21F7624	SIZE =	REV. 1	SHEET NO. 1
DESCRIPTION		MATERIAL	MNT. LOCATION



MATL: 4340 ALLOY STEEL (SEE NOTE 9)

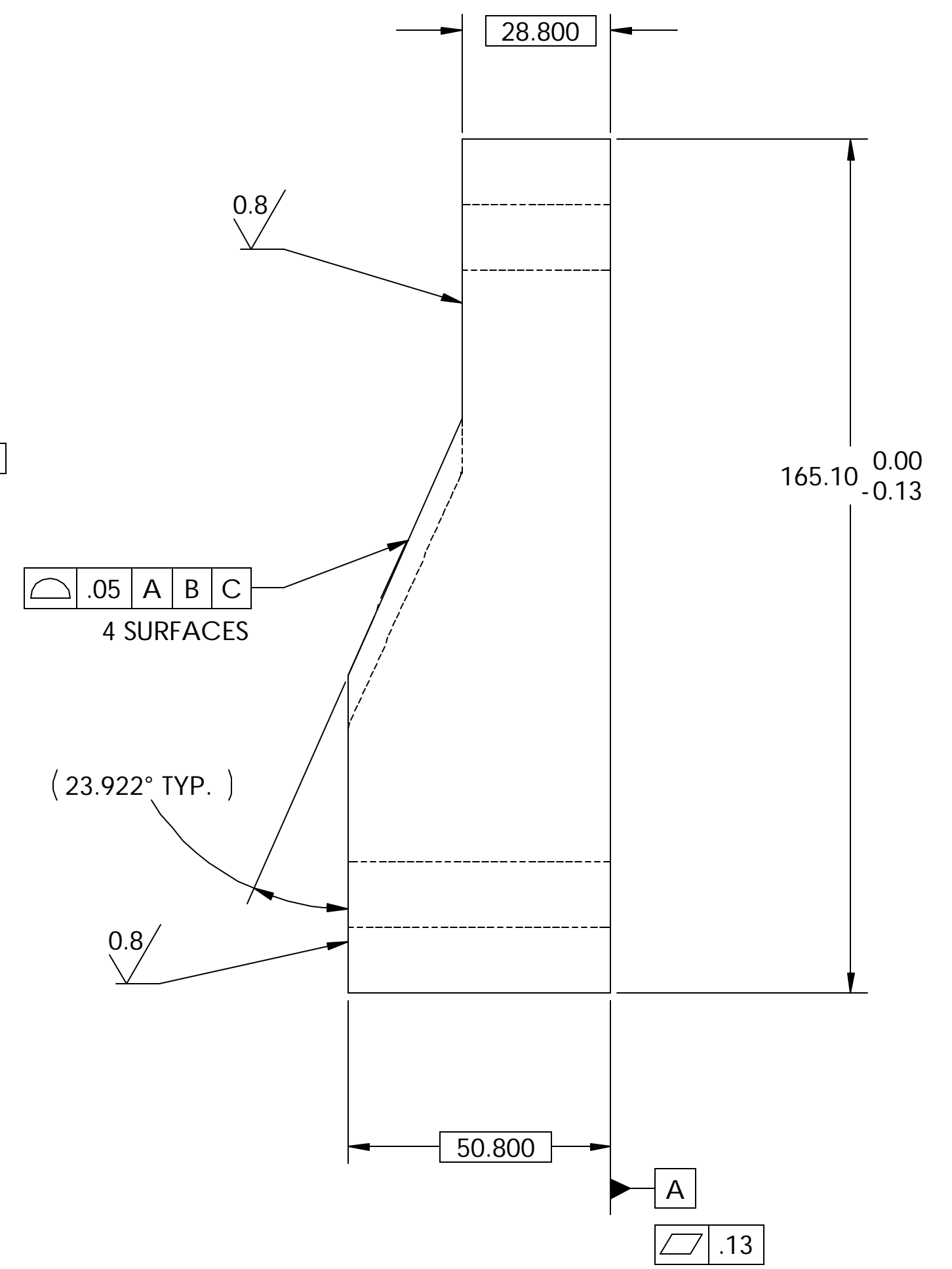
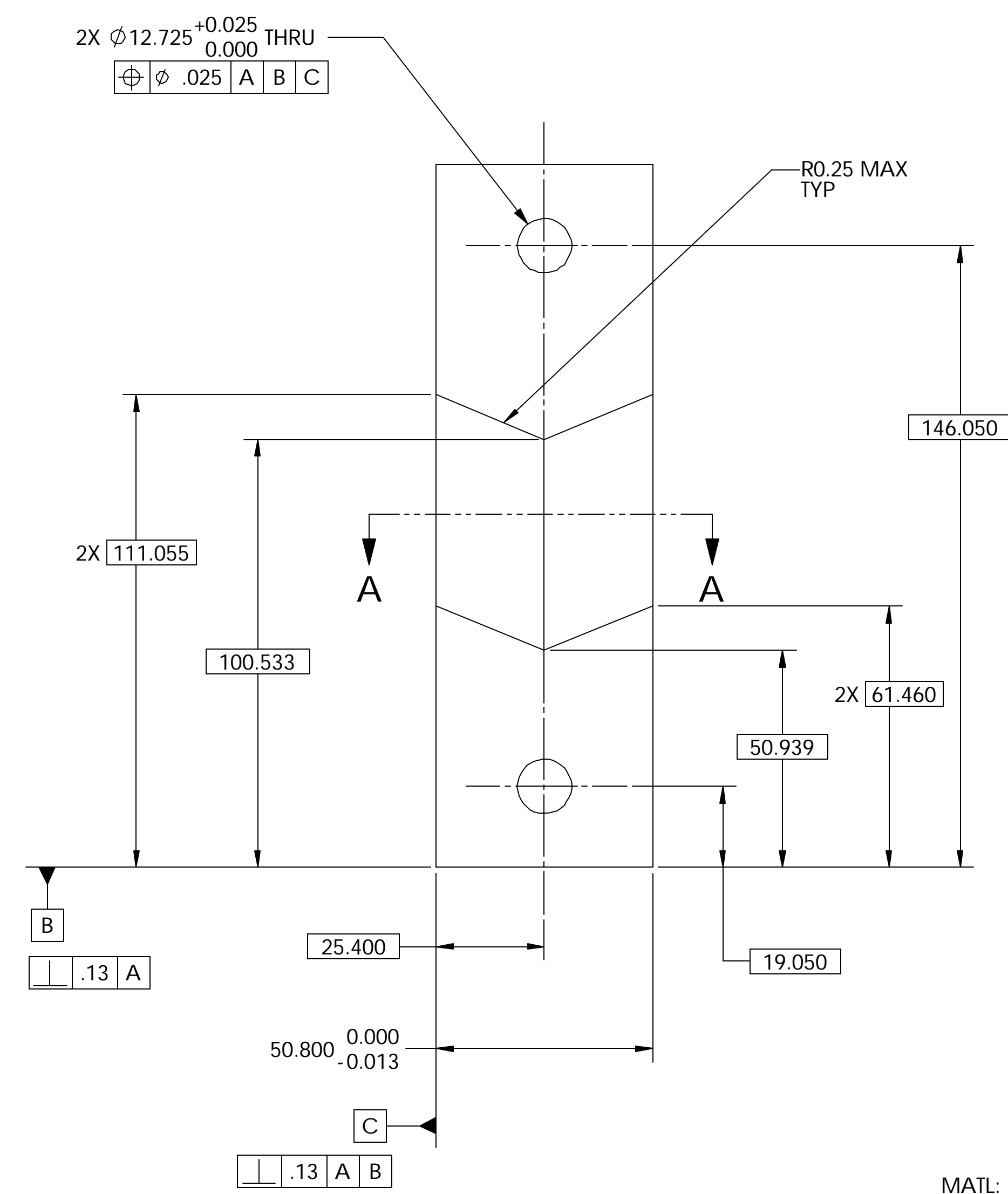
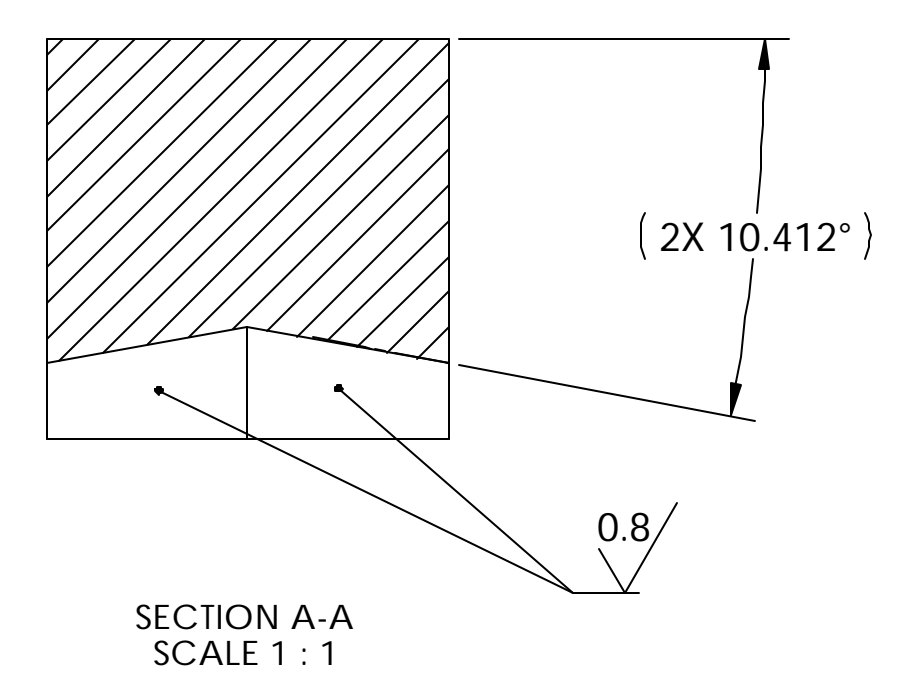
NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS IN MILLIMETERS
2. DIMENSIONS AND TOLERANCING PER ASME Y14.5M-1994
3. SURFACE TEXTURE PER ANI/ASME B 46.1-1985
4. REMOVE ALL BURRS AND BREAK SHARP EDGES TO A MAXIMUM OF .38
5. ALL INSIDE CORNERS TO BE .38 RADIUS MAX
6. COUNTERSINK 82 DEGREES ALL TAPPED HOLES TO MAJOR DIAMETER
7. COUNTERSINK 82 DEGREES APPROXIMATELY .38 DEEP ALL DRILLED HOLES
8. PARTS TO BE THOROUGHLY CLEANED TO REMOVE ALL OIL, GREASE, DIRT AND CHIPS
9. 4340 MATERIAL TO BE CARBORIZED AND OIL QUENCHED TO ACHIEVE Rc50 (HB 475) MINIMUM HARDNESS

UNLESS OTHERWISE SPECIFIED		SHOP ORDERS		SER. NO.		ERNEST ORLANDO LAWRENCE	
TOLERANCES		ACCT. NO.		DATE ISSD		BERKELEY NATIONAL LABORATORY	
X.X ± 0.5	FRAC. ± 1/64	NO. REQD.		DATE REQD.		UNIVERSITY OF CALIFORNIA - BERKELEY #	
X.XX ± 0.25	ANGLES ± 30°	DEL. TO		SURFACE TREATMENT		ATLAS PIXEL DETECTOR	
X.XXX ± 0.013	FINISH 1.6	INDEX METHOD TAG		PROJECT NUMBER		ENDCONE VERTEX PLATE	
DO NOT SCALE PRINT				PROJECT NAME		MOLD SIDE PLATE	
THREADS ARE CLASS 2				PROJECT US ATLAS SILICON SUBSYSTEM		MICROFILMED:	
CHAMFER ENDS OF ALL SCREW THREADS 30°				DWG. NAME		DWG. TYPE	
CUT ROUND. 1.5 THREAD RELIEF ON MACHINED THREADS				DWE W. K. MILLER		PART	
BREAK EDGES .016 MAX. ON MACHINED WORK				CHK BY		SHOWS ON	
REMOVE BURRS, WELD SPLATTER & LOOSE SCALE				BY BILL WILDS		21F759	
IN ACCORDANCE WITH ASME Y14.5m & B46.1				DATE 4/16/2002		SCALE: 1:1	
REV DWG		CHK ZONE		DATE		DO NOT SCALE PRINTS	
						SHEET 1 OF 1	
						SIZE REV.	
						21F7624	

REV	DWG	CHK	ZONE	DATE	CHANGES

DWG. NO.	SIZE	REV.	SHEET
21F7614		1	1
DESCRIPTION		MATERIAL	MNT. LOCATION



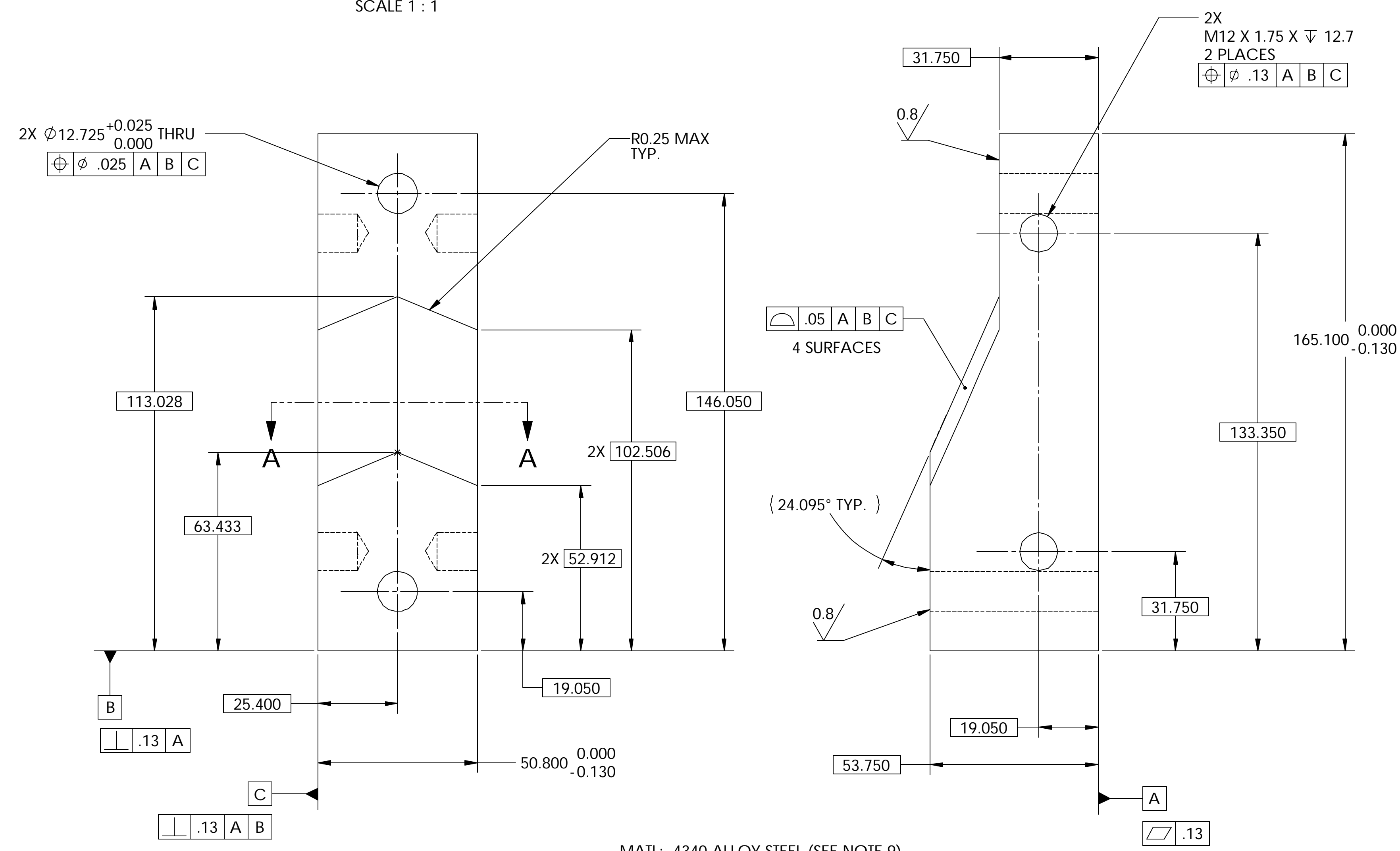
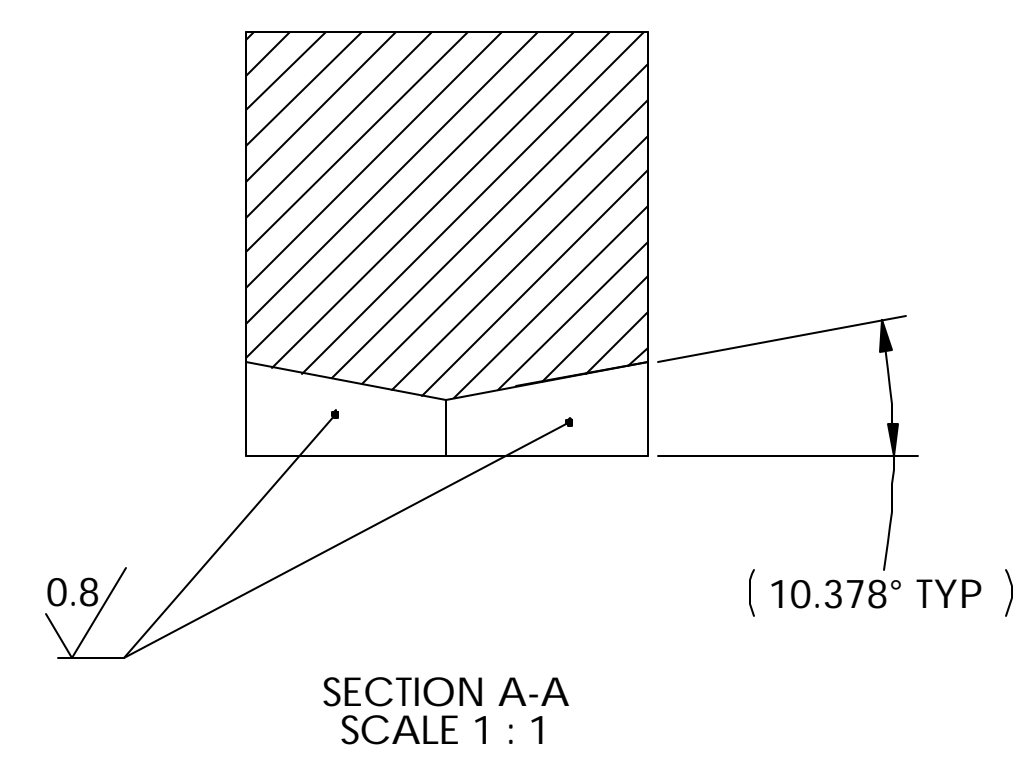
MATL: 4340 ALLOY STEEL (SEE NOTE 9)

NOTES: UNLESS OTHERWISE SPECIFIED

- ALL DIMENSIONS IN MILLIMETERS
- DIMENSIONS AND TOLERANCING PER ASME Y14.5M-1994
- SURFACE TEXTURE PER ANI/ASME B 46.1-1985
- REMOVE ALL BURRS AND BREAK SHARP EDGES TO A MAXIMUM OF .38
- ALL INSIDE CORNERS TO BE .38 RADIUS MAX
- COUNTERSINK 82 DEGREES ALL TAPPED HOLES TO MAJOR DIAMETER
- COUNTERSINK 82 DEGREES APPROXIMATELY .38 DEEP ALL DRILLED HOLES
- PARTS TO BE THOROUGHLY CLEANED TO REMOVE ALL OIL, GREASE, DIRT AND CHIPS
- 4340 MATERIAL TO BE CARBORIZED AND OIL QUENCHED TO ACHIEVE Rc50 (HB 475) MINIMUM HARDNESS

UNLESS OTHERWISE SPECIFIED		SHOP ORDERS		SER. NO.		ERNEST ORLANDO LAWRENCE	
TOLERANCES		ACCT. NO.		DATE ISSD		BERKELEY NATIONAL LABORATORY	
X.X ± 0.5	FRAC. ± 1/64	NO. REQD.		DATE REQD.		UNIVERSITY OF CALIFORNIA - BERKELEY #	
X.XX ± 0.25	ANGLES ± 30°	SURFACE TREATMENT		ATLAS PIXEL DETECTOR			
X.XXX ± 0.013	FINISH 1.6	INDEX METHOD TAG		ENDCONE VERTEX PLATE			
DO NOT SCALE PRINT				MOLD PRESS PLATE			
THREDS ARE CLASS 2				PROJECT NAME			
CHAMFER ENDS OF ALL SCREW THREADS 30°				PROJECT NO. ATL-IP-ED-XXXX			
CUT ROUND, 1.5 THREAD RELIEF ON MACHINED THREDS				PROJECT US ATLAS SILICON SUBSYSTEM			
BREAK EDGES .016 MAX. ON MACHINED WORK				MICROFILMED:			
REMOVE BURRS, WELD SPLATTER & LOOSE SCALE				DWG. TYPE			
IN ACCORDANCE WITH ASME Y14.5m & B46.1				PART			
REV DWG				DWG. W. K. MILLER		DATE 4/16/2002	
CHK ZONE DATE				CHK BILL WILDS		DATE 4/16/2002	
CHANGES				APR E ANDERSSSEN		DATE 4/16/2002	
				PATENT CLEAR:		DESIGN ACCT. NO.	
				P1AP-11		CATEGORY CIDE	
				SCALE: 1:1		DO NOT SCALE PRINTS	
				SHOWS ON		SHEET 1 OF 1	
				21F759		DWG. NO.	
				AP6250		SIZE	
				21F7614		REV.	

DWG. NO. 21F760 4	SIZE =	REV. 1	SHEET NO. 1
DESCRIPTION		MATERIAL	MNT. LOCATION



MATL: 4340 ALLOY STEEL (SEE NOTE 9)

NOTES: UNLESS OTHERWISE SPECIFIED

- ALL DIMENSIONS IN MILLIMETERS
- DIMENSIONS AND TOLERANCING PER ASME Y14.5M-1994
- SURFACE TEXTURE PER ANI/ASME B 46.1-1985
- REMOVE ALL BURRS AND BREAK SHARP EDGES TO A MAXIMUM OF .38
- ALL INSIDE CORNERS TO BE .38 RADIUS MAX
- COUNTERSINK 82 DEGREES ALL TAPPED HOLES TO MAJOR DIAMETER
- COUNTERSINK 82 DEGREES APPROXIMATELY .38 DEEP ALL DRILLED HOLES
- PARTS TO BE THOROUGHLY CLEANED TO REMOVE ALL OIL, GREASE, DIRT AND CHIPS
- 4340 MATERIAL TO BE CARBORIZED AND OIL QUENCHED TO ACHIEVE Rc50 (HB 475) MINIMUM HARDNESS

UNLESS OTHERWISE SPECIFIED		SHOP ORDERS		SER. NO.		ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY	
TOLERANCES	X.X ± 0.5	FRAC. ± 1/64	ACCT. NO.	NO. REQD.	DATE ISSD	UNIVERSITY OF CALIFORNIA - BERKELEY #	
	X.XX ± 0.25	ANGLES ± 30°	DEL. TO	DATE REQD.		ATLAS PIXEL DETECTOR ENDCONE VERTEX PLATE MOLD BASEPLATE	
	X.XXX ± 0.013	FINISH 1.6	SURFACE TREATMENT		MICROFILMED: DWG. TYPE PART		
DO NOT SCALE PRINT			INDEX METHOD TAG		SCALE: 1:1		
THREADS ARE CLASS 2			PROJECT NUMBER		SHEET 1 OF 1		
CHAMFER ENDS OF ALL SCREW THREADS 30°			PROJECT US ATLAS SILICON SUBSYSTEM		SIZE REV.		
CUT ROUND, 1.5 THREAD RELIEF ON MACHINED THREADS			DATE 4/16/2002		DWG. NO. 21F759		
BREAK EDGES .016 MAX. ON MACHINED WORK			DATE 4/16/2002		AP6250		
REMOVE BURRS, WELD SPLATTER & LOOSE SCALE			DATE 4/16/2002		21F760 4		
IN ACCORDANCE WITH ASME Y14.5m & B46.1			DATE 4/16/2002		REV.		
REV	DWG	CHK	ZONE	DATE	CHANGES		

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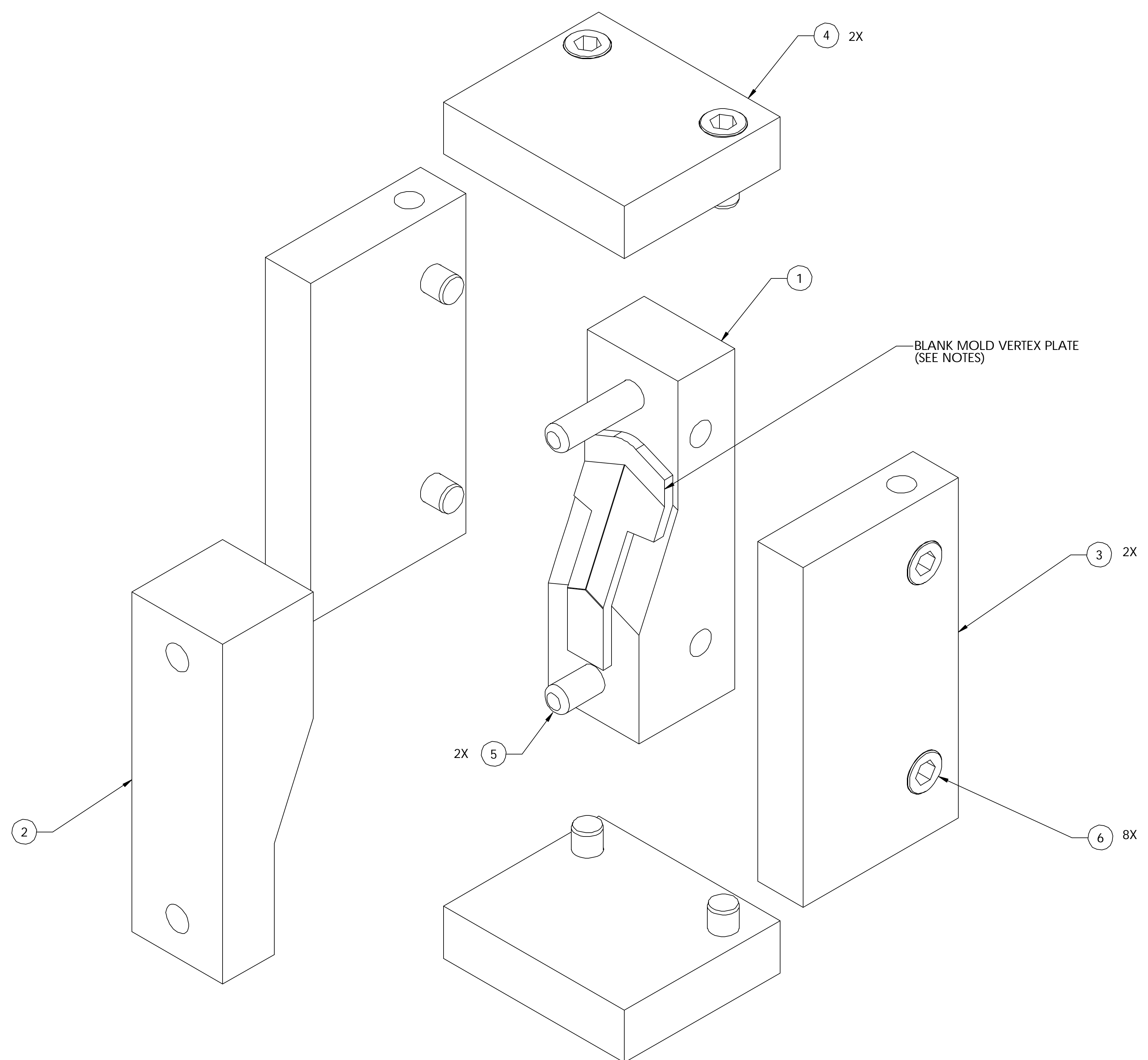
DWG. NO.				SIZE		REV.		SH.	
21F759 4				-		1			
ITEM	PART NO.	REQD	DESCRIPTION		MATERIAL				
6		8	M12 X 1.75 SOCKET HD CAP SCREW X 25.0		STEEL				
5		2	12.7 DIA. DOWEL PIN X 63.5 mm LONG		STEEL				
4	21F763	2	ENDCONE VERTEX PLATE - MOLD END PLATE						
3	21F762	2	ENDCONE VERTEX PLATE - MOLD SIDE PLATE						
2	21F761	1	ENDCONE VERTEX PLATE - MOLD PRESS PLATE						
1	21F760	1	ENDCONE VERTEX PLATE - MOLD BASEPLATE						

D

C

B

A



NOTES: UNLESS OTHERWISE SPECIFIED

- ALL DIMENSIONS IN MILLIMETERS
- MOLD USED TO FABRICATE "A" AND "C" SIDE ENDCONE VERTEX OUTER AND INNER PLATES
21F725, 21F727, 21F728, 21F729, 21F730, 21F736, 21F737
- MATERIAL IS CALLED OUT ON INDIVIDUAL PART DRAWINGS

UNLESS OTHERWISE SPECIFIED				SHOP ORDERS				SER. NO.			
TOLERANCES	X.X ± 0.5	FRAC. ± 1/64		ACCT. NO.	NO. REQD	DATE ISSD		ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY UNIVERSITY OF CALIFORNIA - BERKELEY #			
	X.XX ± 0.25	ANGLES ± 30'		REL. TO	DATE REQD			ATLAS PIXEL DETECTOR ENDCONE VERTEX PLATE MLD FIXTURE			
	X.XXX ± 0.013	FINISH 1.6		SURFACE TREATMENT				SCALE: 1:1			
DO NOT SCALE PRINT				PROJECT NAME				DO NOT SCALE PRINTS			
THREADS ARE CLASS 2				PROJECT NO. ATL-IP-ED-XXXX				ASSEM N/A			
CHAMFER ENDS OF ALL SCREW THREADS 30°				PROJECT IS ATLAS SILICON SUBSYSTEM				SHEET 1 OF 1			
CUT ROUND, 1.5 THREAD RELIEF ON MACHINED THREADS				DWG. W. K. MILLER				DATE 4/16/2002			
BREAK EDGES, 0.16 MAX. ON MACHINED WORK				CHK. BILL WILDS				DATE 4/16/2002			
REMOVE BUBBS, WELD SPLATTER & LOOSE SCALE				BY E. ANDERSSON				DATE 4/16/2002			
IN ACCORDANCE WITH ASME Y14.5m & B46.1				APR. E. ANDERSSON				DATE 4/16/2002			
REV	DWG	CHK	ZONE	DATE	CHANGES						

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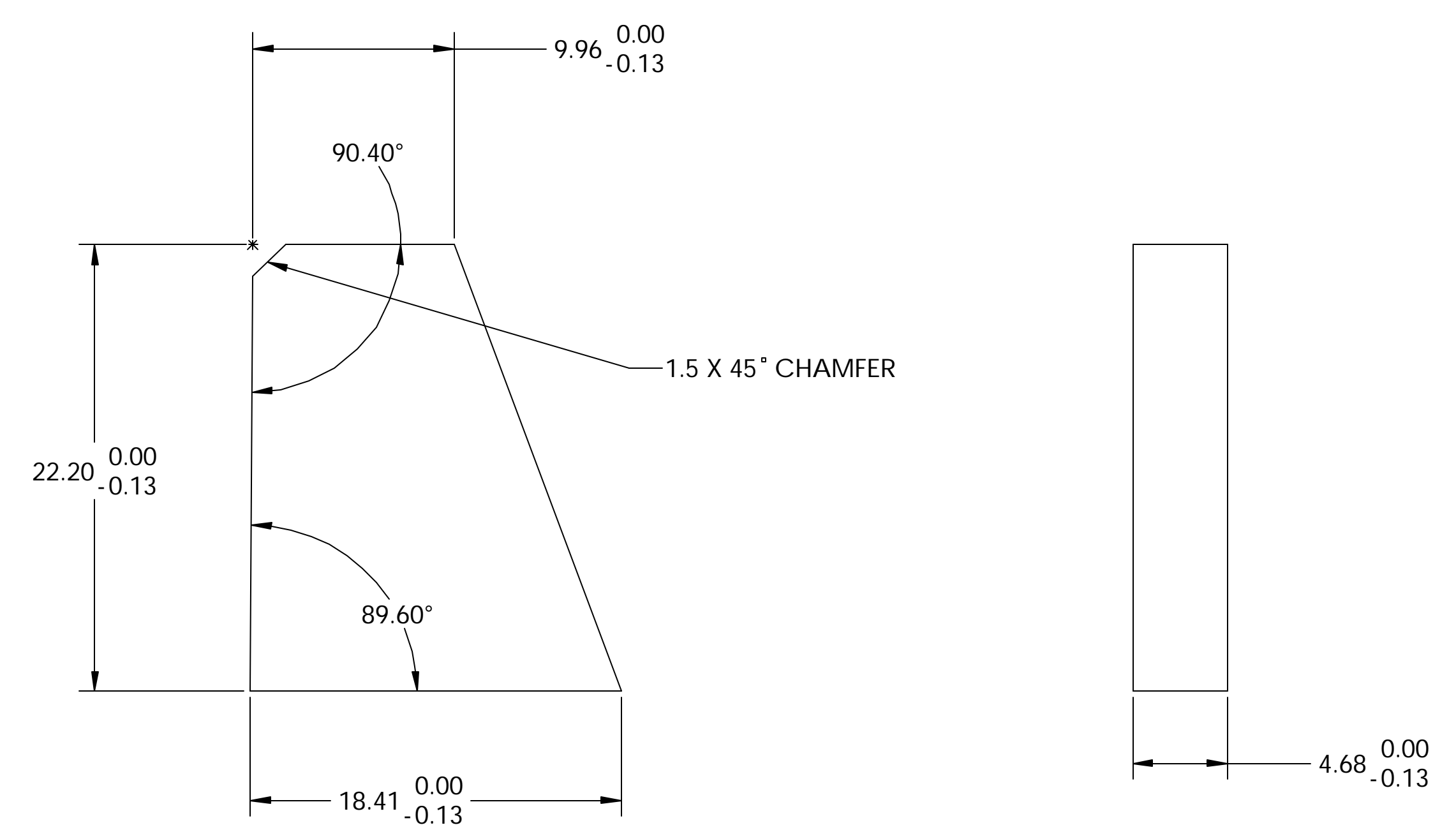
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2

1

DWG. NO.	SIZE	REV.	SHEET	1
21F7564				
DESCRIPTION		MATERIAL	MT. LOCATION	



TEMPORARY BOND INSERT #1
MATL: ALUMINUM

NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS IN MILLIMETERS
2. DIMENSIONS AND TOLERANCING PER ASME Y14.5M-1994
3. SURFACE TEXTURE PER ANI/ASME B 46.1-1985
4. REMOVE ALL BURRS AND BREAK SHARP EDGES TO A MAXIMUM OF .38
5. ALL INSIDE CORNERS TO BE .38 RADIUS MAX
6. COUNTERSINK 82 DEGREES ALL TAPPED HOLES TO MAJOR DIAMETER
7. COUNTERSINK 82 DEGREES APPROXIMATELY .38 DEEP ALL DRILLED HOLES
8. PARTS TO BE THOROUGHLY CLEANED TO REMOVE ALL OIL, GREASE, DIRT AND CHIPS

UNLESS OTHERWISE SPECIFIED		SHOP ORDERS		SER. NO.	ERNEST ORLANDO LAWRENCE	
TOLERANCES	X.X ± 0.5	FRAC. ± 1/64	ACCT. NO.	NO. REQD.	DATE ISSD	BERKELEY NATIONAL LABORATORY
	X.XX ± 0.25	ANGLES ± 30°	DEL. TO	DATE REQD.		UNIVERSITY OF CALIFORNIA - BERKELEY #
	X.XXX ± 0.013	FINISH 1.6	SURFACE TREATMENT			ATLAS PIXEL DETECTOR
DO NOT SCALE PRINT			IDEN. METHOD TAG	ENDCONE PANEL		
THREADS ARE CLASS 2			PROJECT NUMBER	BOND FIXTURE TEMPORARY INSERTS		
CHAMFER ENDS OF ALL SCREW THREADS 30°			PROJECT NAME	US ATLAS SILICON SUBSYSTEM		
CUT ROUNDS: 1.5 THREAD RELIEF ON MACHINED THREADS			DWG. BY	DATE	MICROFILMED:	
BREAK EDGES: .016 MAX. ON MACHINED WORK			W. K. MILLER	4/16/2002	DWG. TYPE	SHOWS ON
REMOVE BURRS, WELD SPLATTER & LOOSE SCALE			CHK BY	DATE	PART	SCALE: 4:1
IN ACCORDANCE WITH ASME Y14.5m & B46.1			BY	DATE	DESIGN ACCT. NO.	DO NOT SCALE PRINTS
			E. ANDERSSON	4/16/2002	P1AP-11	
REV DWG			CHK ZONE	DATE	CATEGORY CIDE	
					AP6250	
			CHANGES		DWG. NO.	
					21F7564	
					SHEET 1 OF 2	
					SIZE	
					REV.	

8

7

6

5

4

3

1

D

C

B

A

8

7

6

5

4

3

2

1

D

C

B

A

8

7

6

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4

3

DWG. NO. SIZE REV. SR.
Sheet2 = 2

1

DESCRIPTION	MATERIAL	MNT. LOCATION

D

D

C

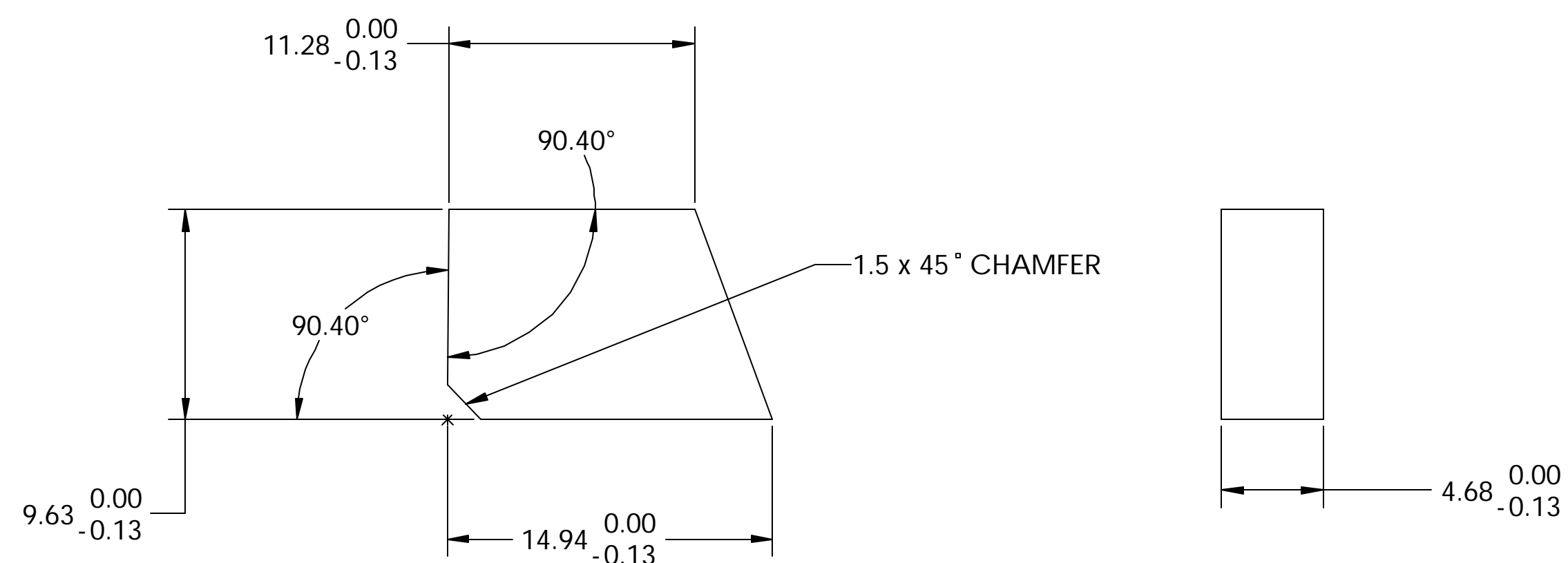
C

B

B

A


A



TEMPORARY BOND INSERT #2
MATL: ALUMINUM

NOTES: UNLESS OTHERWISE SPECIFIED

- ALL DIMENSIONS IN MILLIMETERS
- DIMENSIONS AND TOLERANCING PER ASME Y14.5M-1994
- SURFACE TEXTURE PER ANI/ASME B 46.1-1985
- REMOVE ALL BURRS AND BREAK SHARP EDGES TO A MAXIMUM OF .38
- ALL INSIDE CORNERS TO BE .38 RADIUS MAX
- COUNTERSINK 82 DEGREES ALL TAPPED HOLES TO MAJOR DIAMETER
- COUNTERSINK 82 DEGREES APPROXIMATELY .38 DEEP ALL DRILLED HOLES
- PARTS TO BE THOROUGHLY CLEANED TO REMOVE ALL OIL, GREASE, DIRT AND CHIPS

UNLESS OTHERWISE SPECIFIED		SHOP ORDERS		SER. NO.		ERNEST ORLANDO LAWRENCE	
TOLERANCES	X.X ± 0.5	FRAC. ± 1/64	ACCT. NO.	NO. REQD.	DATE ISSD.	BERKELEY NATIONAL LABORATORY	
	X.XX ± 0.25	ANGLES ± 30°	DEL. TO	DATE REQD.	UNIVERSITY OF CALIFORNIA - BERKELEY # 		
	X.XXX ± 0.013	FINISH 1.6	SURFACE TREATMENT		ATLAS PIXEL DETECTOR		
DO NOT SCALE PRINT				IDEN. METHOD TAG	ENDCONE PANEL		
THREADS ARE CLASS 2				PROJECT NUMBER	BOND FIXTURE TEMPORARY INSERTS		
CHAMFER ENDS OF ALL SCREW THREADS 30°				PROJECT NAME	US ATLAS SILICONE SUBSYSTEM		
CUT ROUND. 1.5 THREAD RELIEF ON MACHINED THREADS				DWG. BY	DATE	MICROFILMED:	DWG. TYPE
BREAK EDGES .016 MAX. ON MACHINED WORK				CHK BY	DATE	PART	SHOWS ON
REMOVE BURRS, WELD SPLATTER & LOOSE SCALE				APR BY	DATE	P1AP-11	SCALE: 4:1
IN ACCORDANCE WITH ASME Y14.5m & B46.1						AP6250	DO NOT SCALE PRINTS
REV	DWG	CHK	ZONE	DATE	CHANGES		SCALE PRINTS
							21F750
							4:1
							SHEET 2 OF 2
							21F756 4 1

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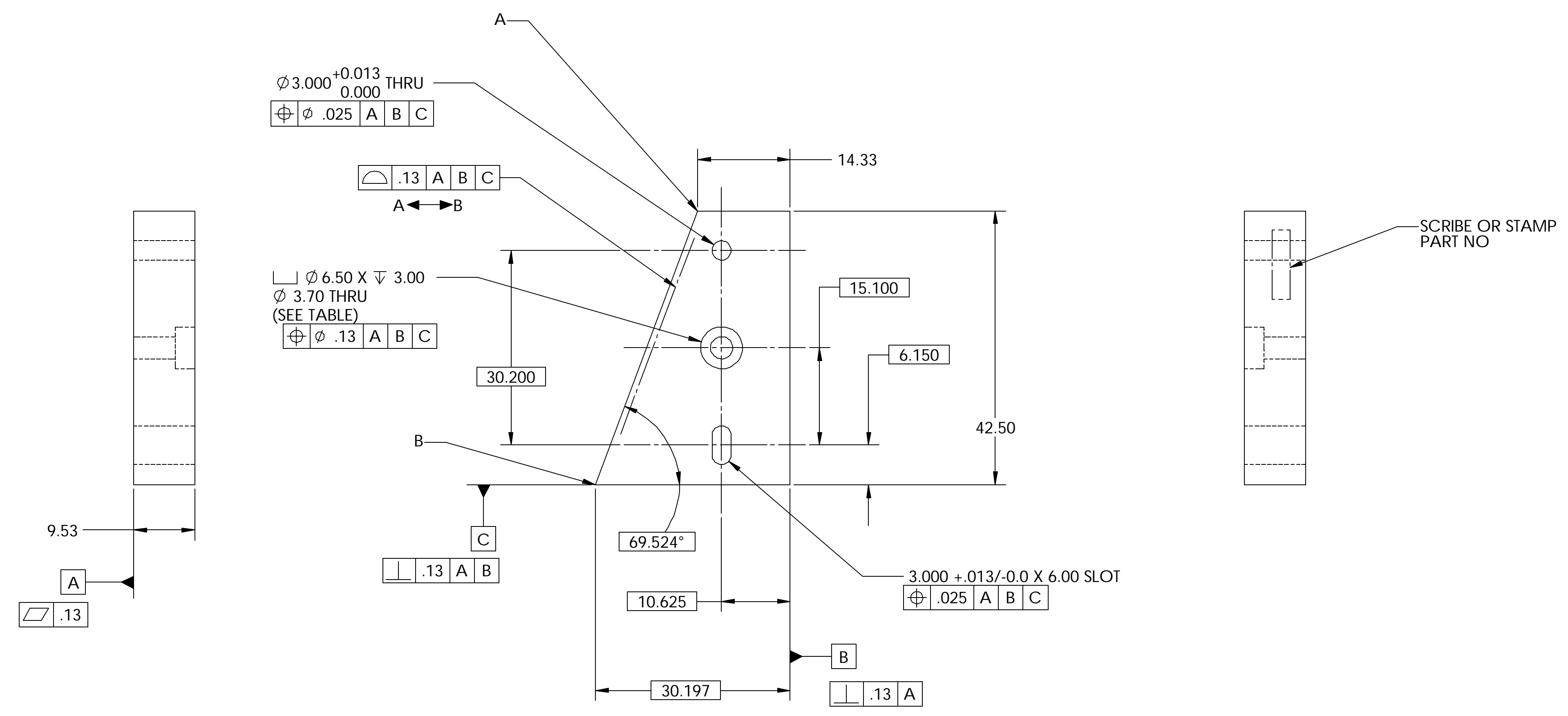
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2

DWG. NO.	SIZE	REV.	SHEET
21F7554		1	1
DESCRIPTION		MATERIAL	MNT. LOCATION



MATL: 6061-T6 ALUM

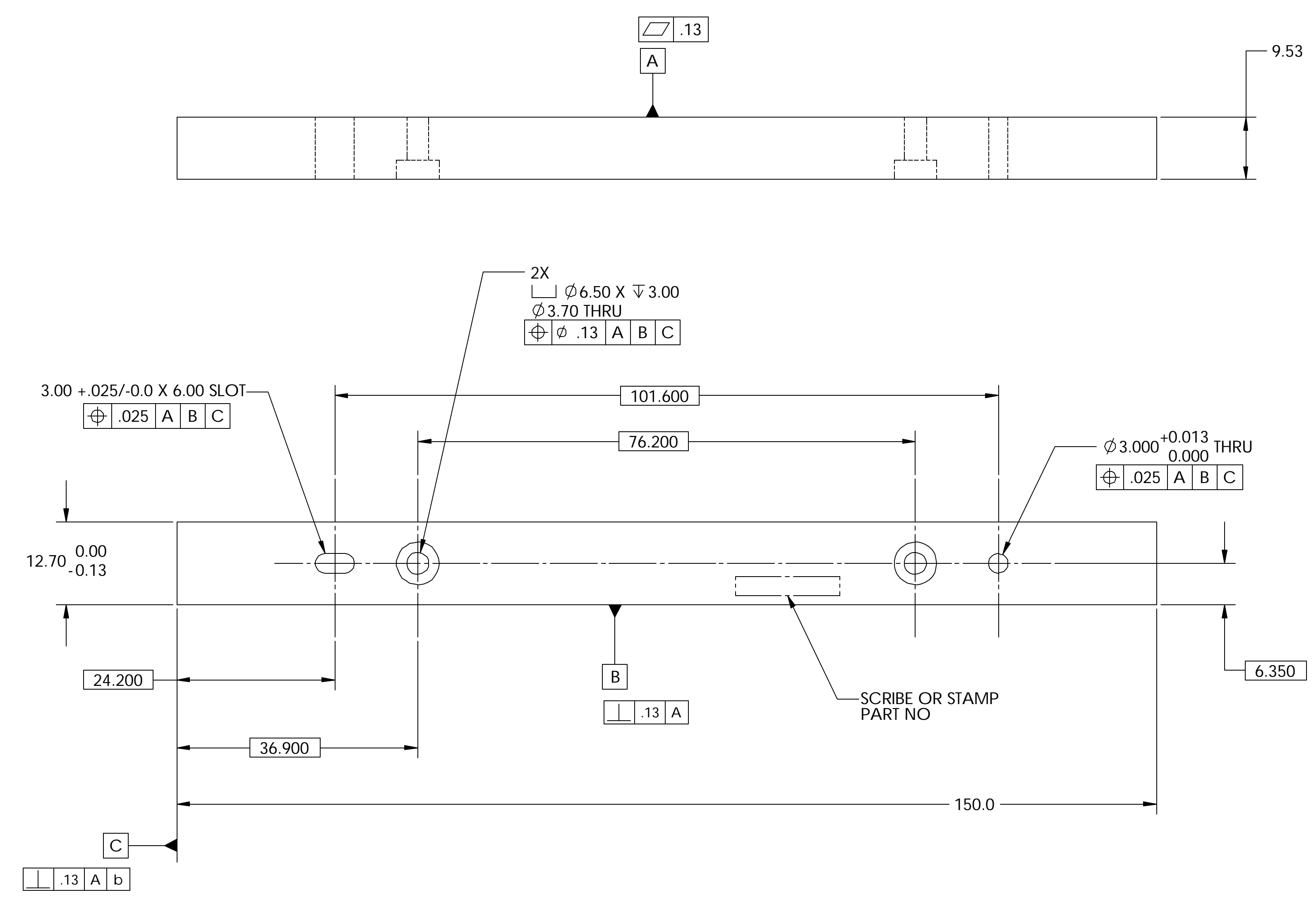
NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS IN MILLIMETERS
2. DIMENSIONS AND TOLERANCING PER ASME Y14.5M-1994
3. SURFACE TEXTURE PER ANI/ASME B 46.1-1985
4. REMOVE ALL BURRS AND BREAK SHARP EDGES TO A MAXIMUM OF .38
5. ALL INSIDE CORNERS TO BE .38 RADIUS MAX
6. COUNTERSINK 82 DEGREES ALL TAPPED HOLES TO MAJOR DIAMETER
7. COUNTERSINK 82 DEGREES APPROXIMATELY .38 DEEP ALL DRILLED HOLES
8. PARTS TO BE THOROUGHLY CLEANED TO REMOVE ALL OIL, GREASE, DIRT AND CHIPS

PART NO.	DESCRIPTION
-1	NEAR SIDE
-2	FAR SIDE

REV	DWG	CHK	ZONE	DATE	CHANGES				UNLESS OTHERWISE SPECIFIED		SHOP ORDERS		SER NO.	ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY	
														UNIVERSITY OF CALIFORNIA - BERKELEY #	
														ATLAS PIXEL DETECTOR ENDCONE PANEL BOND FIXTURE CAVITY BAR	
														SCALE: 2:1	
														DO NOT SCALE PRINTS	
														SHEET 1 OF 1	
														SIZE REV.	
														21F7554	
														P1AP-11 AP6250	
														DATE 4/16/2002	
														DATE 4/16/2002	

DWG. NO.	SIZE	REV.	SHEET
21F7544		1	1
DESCRIPTION		MATERIAL	MAT. LOCATION



MATL: 6061-T6 ALUM

NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS IN MILLIMETERS
2. DIMENSIONS AND TOLERANCING PER ASME Y14.5M-1994
3. SURFACE TEXTURE PER ANI/ASME B 46.1-1985
4. REMOVE ALL BURRS AND BREAK SHARP EDGES TO A MAXIMUM OF .38
5. ALL INSIDE CORNERS TO BE .38 RADIUS MAX
6. COUNTERSINK 82 DEGREES ALL TAPPED HOLES TO MAJOR DIAMETER
7. COUNTERSINK 82 DEGREES APPROXIMATELY .38 DEEP ALL DRILLED HOLES
8. PARTS TO BE THOROUGHLY CLEANED TO REMOVE ALL OIL, GREASE, DIRT AND CHIPS

UNLESS OTHERWISE SPECIFIED		SHOP ORDERS		SER. NO.		ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY	
TOLERANCES	X.X ± 0.5	FRAC. ± 1/64	ACCT. NO.	NO. REQD.	DATE ISSD	UNIVERSITY OF CALIFORNIA - BERKELEY #	
	X.XX ± 0.25	ANGLES ± 30°	DEL. TO	DATE REQD.		ATLAS PIXEL DETECTOR ENDCONE PANEL BONDING FIXTURE CAVITY PLATE	
	X.XXX ± 0.013	FINISH 1.6	SURFACE TREATMENT		SCALE: 2:1		
DO NOT SCALE PRINT			INDEX METHOD TAG		DO NOT SCALE PRINTS		
THREADS ARE CLASS 2			PROJECT NAME		SCALE: 2:1		
CHAMFER ENDS OF ALL SCREW THREADS 30°			PROJECT NO. ATL-IP-ED-XXXX		SHEET 1 OF 1		
CUT ROUND, 1.5 THREAD RELIEF ON MACHINED THREADS			PROJECT US ATLAS SILICON SUBSYSTEM		SIZE REV.		
BREAK EDGES .016 MAX. ON MACHINED WORK			DWE W. K. MILLER		DATE 4/16/2002		
REMOVE BURRS, WELD SPLATTER & LOOSE SCALE			CHK BILL WILDS		DATE 4/16/2002		
IN ACCORDANCE WITH ASME Y14.5m & B46.1			APR E ANDERSSSEN		DATE 4/16/2002		
REV	DWG	CHK	ZONE	DATE	CHANGES		

8 7 6 5 4 3 2 1

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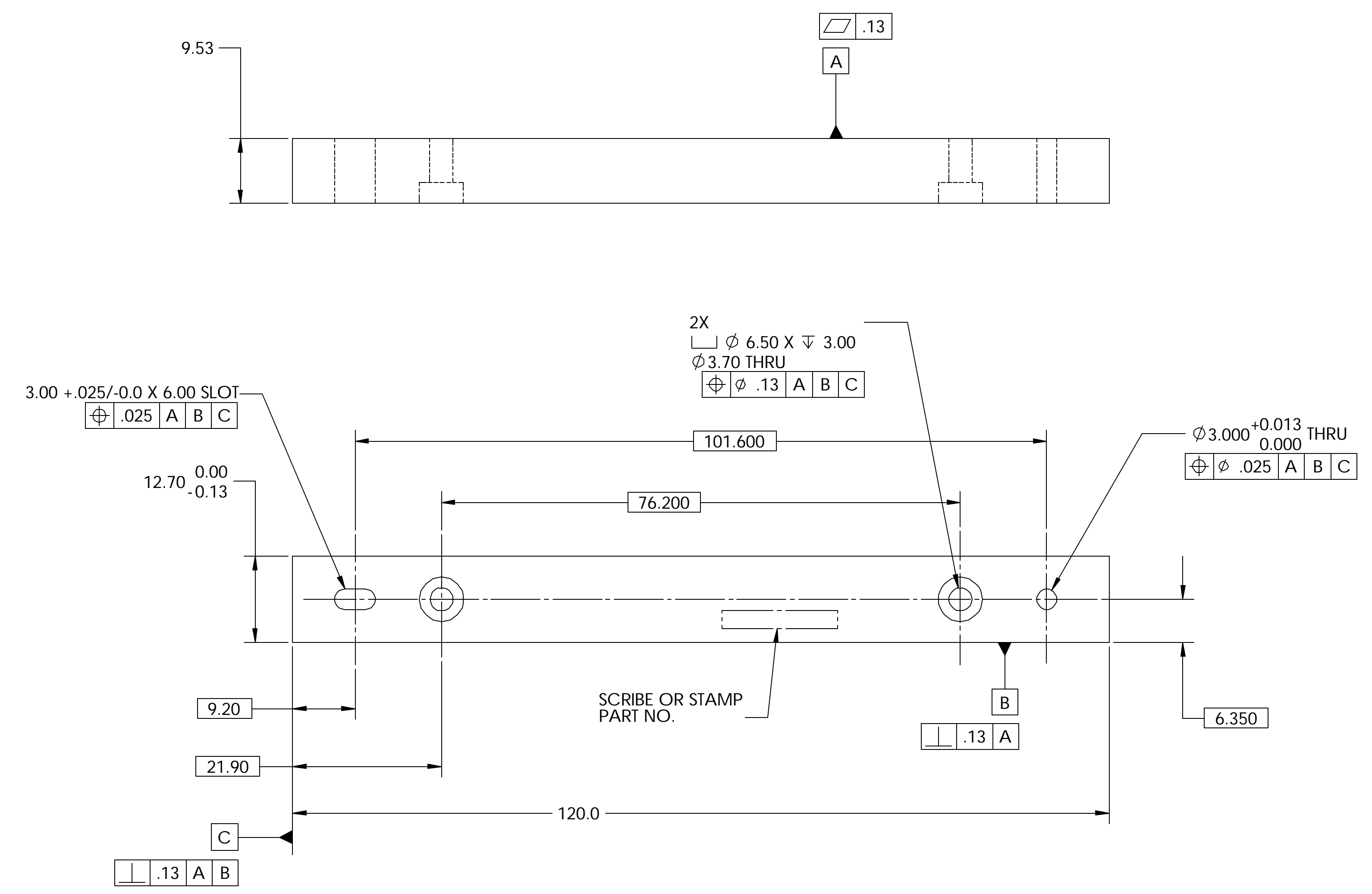
B

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8 7 6 5 4 3 2 1

DWG. NO.	SIZE	REV.	SHEET
21F7534		1	1
DESCRIPTION		MATERIAL	MNT. LOCATION



MATL: 6061-T6 ALUM

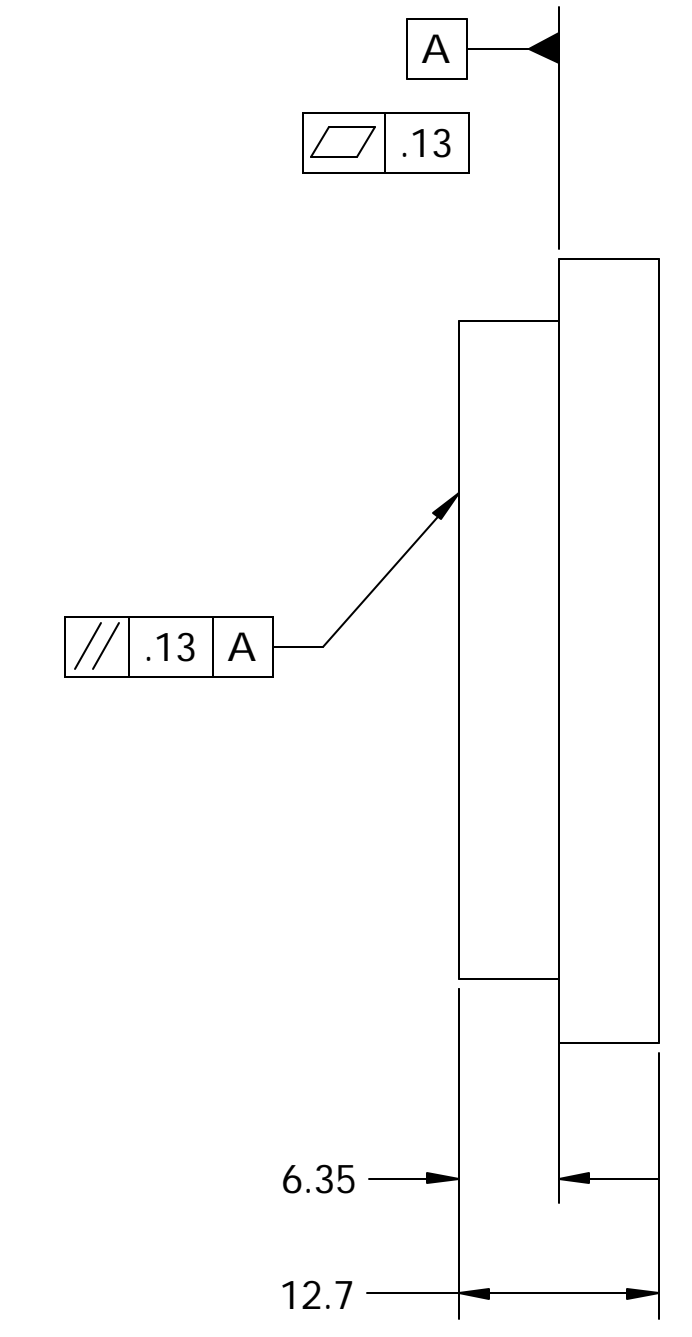
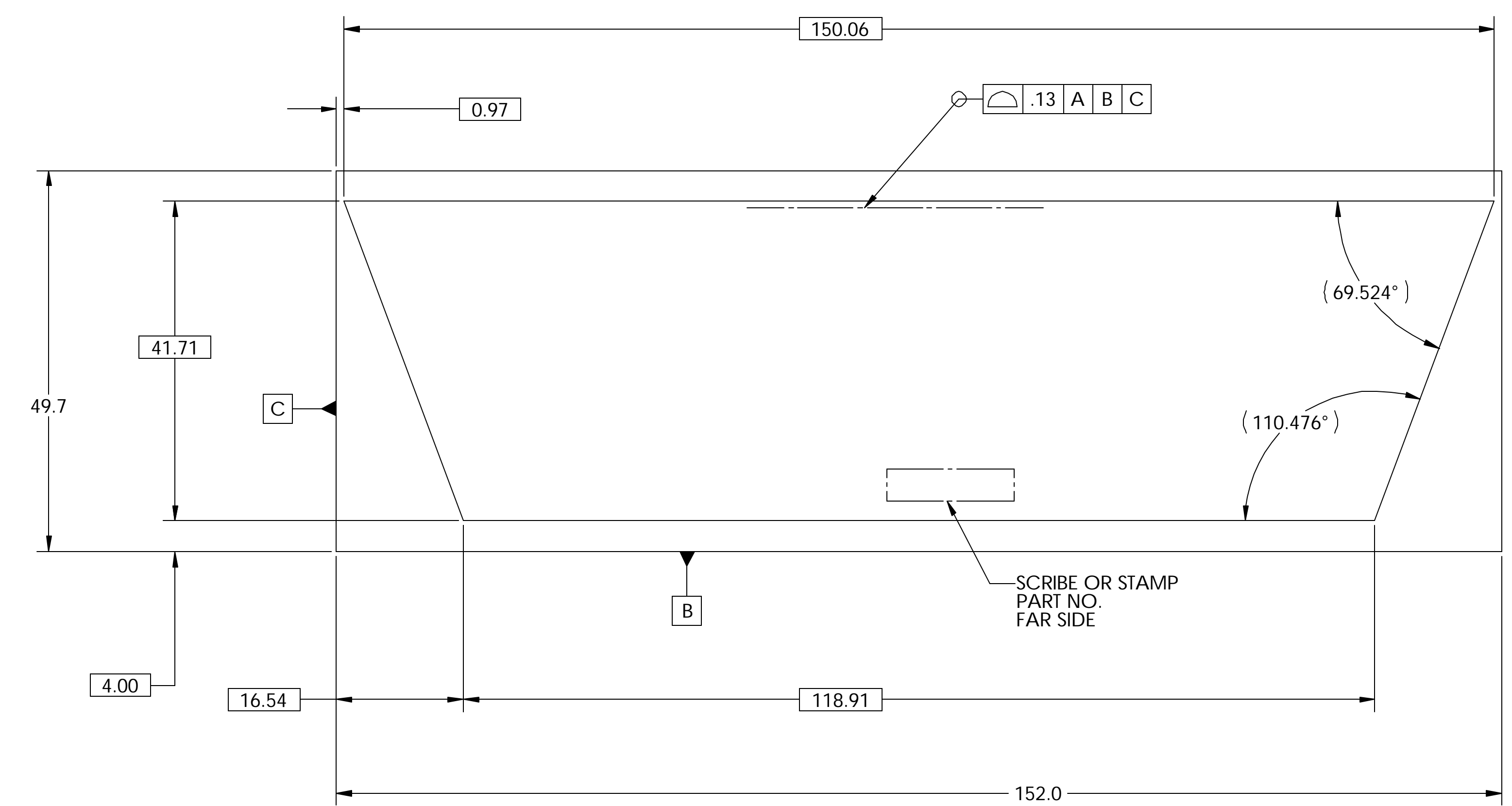
NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS IN MILLIMETERS
2. DIMENSIONS AND TOLERANCING PER ASME Y14.5M-1994
3. SURFACE TEXTURE PER ANI/ASME B 46.1-1985
4. REMOVE ALL BURRS AND BREAK SHARP EDGES TO A MAXIMUM OF .38
5. ALL INSIDE CORNERS TO BE .38 RADIUS MAX
6. COUNTERSINK 82 DEGREES ALL TAPPED HOLES TO MAJOR DIAMETER
7. COUNTERSINK 82 DEGREES APPROXIMATELY .38 DEEP ALL DRILLED HOLES
8. PARTS TO BE THOROUGHLY CLEANED TO REMOVE ALL OIL, GREASE, DIRT AND CHIPS

UNLESS OTHERWISE SPECIFIED		SHOP ORDERS		SER. NO.		ERNEST ORLANDO LAWRENCE	
TOLERANCES		NO. REQD		DATE ISSD		BERKELEY NATIONAL LABORATORY	
X.X ± 0.5	FRAC. ± 1/64	DATE REQD		DATE REQD		UNIVERSITY OF CALIFORNIA - BERKELEY #	
X.XX ± 0.25	ANGLES ± 30°	SURFACE TREATMENT		PROJECT NAME		ATLAS PIXEL DETECTOR	
X.XXX ± 0.013	FINISH 1.6	INDEX METHOD TAG		PROJECT NUMBER		BONDING FIXTURE CAVITY PLATE	
DO NOT SCALE PRINT				PROJECT NAME		MICROFILMED:	
THREADS ARE CLASS 2				PROJECT US ATLAS SILICON SUBSYSTEM		DWG. TYPE	
CHAMFER ENDS OF ALL SCREW THREADS 30°				DWG BY W. K. MILLER		PART	
CUT ROUND, 1.5 THREAD RELIEF ON MACHINED THREADS				DATE 4/16/2002		SHOWS ON	
BREAK EDGES .016 MAX. ON MACHINED WORK				CHK BY BILL WILDS		SCALE: 2:1	
REMOVE BURRS, WELD SPLATTER & LOOSE SCALE				DATE 4/16/2002		SCALE PRINTS	
IN ACCORDANCE WITH ASME Y14.5m & B46.1				APR BY E. ANDERSSON		DATE 4/16/2002	
REV DWG		CHK ZONE		DATE		P1AP-11	
						AP6250	
						21F7534	
						SHEET 1 OF 1	

CHANGES

DWG. NO. 21F7524	SIZE =	REV. 1	SHEET NO. 1
DESCRIPTION		MATERIAL	MAT. LOCATION



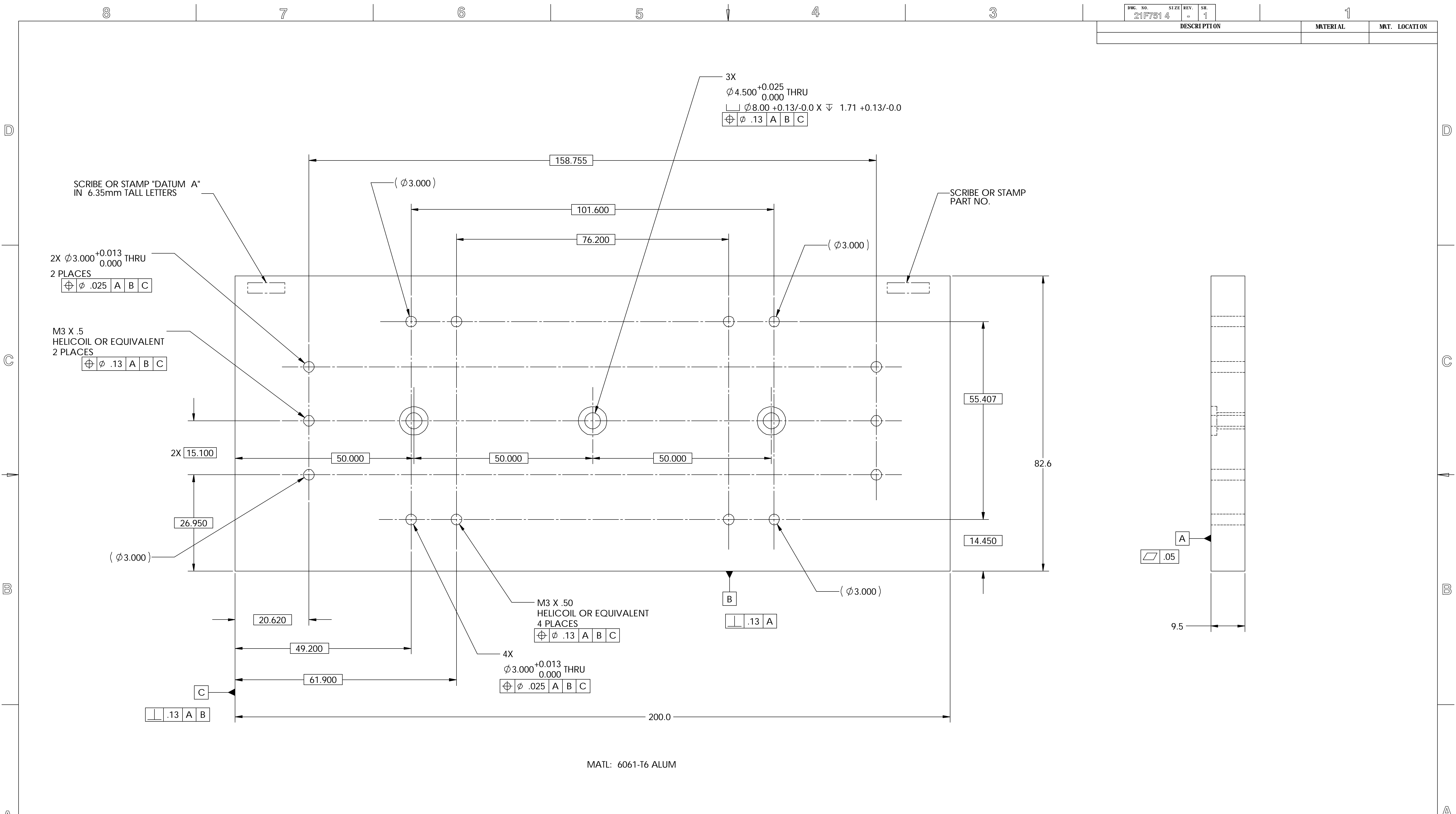
MATL: 6061-T6 ALUM

NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS IN MILLIMETERS
2. DIMENSIONS AND TOLERANCING PER ASME Y14.5M-1994
3. SURFACE TEXTURE PER ANI/ASME B 46.1-1985
4. REMOVE ALL BURRS AND BREAK SHARP EDGES TO A MAXIMUM OF .38
5. ALL INSIDE CORNERS TO BE .38 RADIUS MAX
6. COUNTERSINK 82 DEGREES ALL TAPPED HOLES TO MAJOR DIAMETER
7. COUNTERSINK 82 DEGREES APPROXIMATELY .38 DEEP ALL DRILLED HOLES
8. PARTS TO BE THOROUGHLY CLEANED TO REMOVE ALL OIL, GREASE, DIRT AND CHIPS

UNLESS OTHERWISE SPECIFIED		SHOP ORDERS		SER. NO.		ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY	
TOLERANCES	X.X ± 0.5	FRAC. ± 1/64	ACCT. NO.	NO. REQD.	DATE ISSD	UNIVERSITY OF CALIFORNIA - BERKELEY #	
	X.XX ± 0.25	ANGLES ± 30°	DEL. TO	DATE REQD.		ATLAS PIXEL DETECTOR ENDCONE PANEL	
	X.XXX ± 0.013	FINISH 1.6	SURFACE TREATMENT			BOND FIXTURE PRESSURE PLATE	
DO NOT SCALE PRINT			IDEN. METHOD TAG	MICROFILMED:			
THREADS ARE CLASS 2			PROJECT NUMBER	DWG. TYPE			
CHAMFER ENDS OF ALL SCREW THREADS 30°			PROJECT NAME	PART			
CUT ROUNDS, 1.5 THREAD RELIEF ON MACHINED THREADS			DWG. BY	DATE	SCALE: 2:1		
BREAK EDGES .016 MAX. ON MACHINED WORK			CHK BY	DATE	SHOWS ON		
REMOVE BURRS, WELD SPLATTER & LOOSE SCALE			BY	DATE	PART		
IN ACCORDANCE WITH ASME Y14.5m & B46.1			APR BY	DATE	CATEGORY CIDE		
REV DWG		CHK ZONE	DATE	CHANGES		DWG. NO.	
						21F750	
						AP6250	
						SHEET 1 OF 1	
						21F7524	
						SIZE REV.	

DWG. NO.	SIZE	REV.	SHEET
21F7514	A	1	1
DESCRIPTION		MATERIAL	MNT. LOCATION



MATL: 6061-T6 ALUM

NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS IN MILLIMETERS
2. DIMENSIONS AND TOLERANCING PER ASME Y14.5M-1994
3. SURFACE TEXTURE PER ANI/ASME B 46.1-1985
4. REMOVE ALL BURRS AND BREAK SHARP EDGES TO A MAXIMUM OF .38
5. ALL INSIDE CORNERS TO BE .38 RADIUS MAX
6. COUNTERSINK 82 DEGREES ALL TAPPED HOLES TO MAJOR DIAMETER
7. COUNTERSINK 82 DEGREES APPROXIMATELY .38 DEEP ALL DRILLED HOLES
8. PARTS TO BE THOROUGHLY CLEANED TO REMOVE ALL OIL, GREASE, DIRT AND CHIPS

REV	DWG	CHK	ZONE	DATE	CHANGES	UNLESS OTHERWISE SPECIFIED	SHOP ORDERS	SER. NO.	ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY UNIVERSITY OF CALIFORNIA - BERKELEY #
						TOLERANCES	ACCT. NO.	NO. REQD.	ATLAS PIXEL DETECTOR ENDCONE PANEL BOND FIXTURE BASEPLATE
						X.X ± 0.5	FRAC. ± 1/64	DATE ISSD	SCALE: 2:1
						X.XX ± 0.25	ANGLES ± 30°	DATE REQD.	DO NOT SCALE PRINTS
						X.XXX ± 0.013	FINISH 1.6		
						DO NOT SCALE PRINT	SURFACE TREATMENT		
						THREADS ARE CLASS 2	INDEX METHOD TAG		
						CHAMFER ENDS OF ALL SCREW THREADS 30°	PROJECT NAME		
						CUT ROUND, 1.5 THREAD RELIEF ON MACHINED THREADS	ATL-IP-ED-XXXX		
						BREAK EDGES .016 MAX. ON MACHINED WORK	PROJECT NO.		
						REMOVE BURRS, WELD SPLATTER & LOOSE SCALE	US ATLAS SILICON SUBSYSTEM		
						IN ACCORDANCE WITH ASME Y14.5m & B46.1	DWG. BY	DATE	
							W. K. MILLER	4/16/2002	
							CHK BY	DATE	
							BILL WILDS	4/16/2002	
							APR BY	DATE	
							E. ANDERSSON	4/16/2002	
							PATENT CLEAR:	DESIGN ACCT. NO.	
								PIAP-11	
								CATEGORY CIDE	
								AP6250	
								DWG. NO.	
								21F7514	
								SIZE	
								REV.	

SHEET 1 OF 1

21F7514

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ITEM	PART NO.	REQD	DESCRIPTION	MATERIAL
10		6	M3 X .50 SOCKET HD CAP SCREW X 12.0	STEEL
9		8	3.18 mm DIA. GAGE PIN	STEEL
8	21F756-3	2	BOND FIXTURE TEMPORARY INSERT #2	ALUM
7	21F756-1	2	BOND FIXTURE TEMPORARY INSERT #1	ALUM
6	21F755-3	1	BOND FIXTURE CAVITY PLATE	ALUM
5	21F755-1	1	BOND FIXTURE CAVITY PLATE	ALUM
4	21F754	1	BOND FIXTURE CAVITY PLATE	ALUM
3	21F753	1	BOND FIXTURE CAVITY PLATE	ALUM
2	21F752	1	BOND FIXTURE PRESSURE PLATE	ALUM
1	21F751	1	BOND FIXTURE BASEPLATE	ALUM

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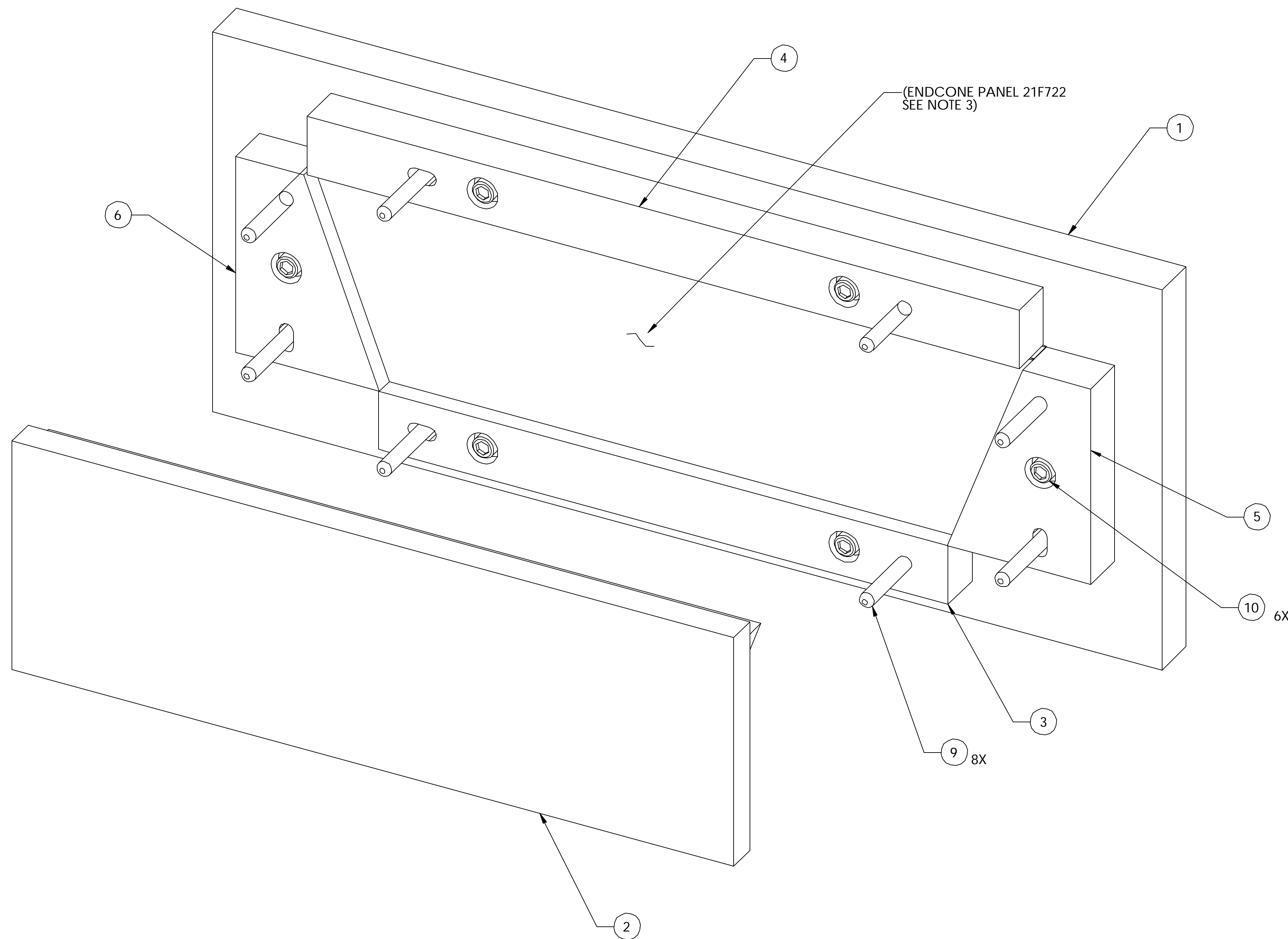
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NOTES: UNLESS OTHERWISE SPECIFIED

1. SEE PART FOR ADHESIVE SPECIFICATIONS
2. DIMENSIONS REPRESENT FINAL DIMENSION FOR ENDCONE PANEL PART NO. 21F722
3. PANEL SHOWN IN PRE-MACHINED STATE, WITHOUT THREADED BUSHINGS
4. 4.50 DIA. HOLE AND COUNTERBORE USED TO BOND THREADED INSERT INTO PANEL

REV	DWG	CHK	ZONE	DATE	CHANGES

UNLESS OTHERWISE SPECIFIED		SHOP ORDERS		SER NO.
TOLERANCES	X, X ± 0.5	FRAC.	± 1/64	NO. REQD
	X, XX ± 0.25	ANGLES	± 30°	DATE ISSD
	X, XXX ± 0.013	FINISH	1, 6	DATE REQD
		SURFACE TREATMENT		
DO NOT SCALE PRINT		IDEN METHOD TAG		
THREADS ARE CLASS 2	CHAMFER ENDS OF ALL SCREW THREADS 30°	PROJECT NAME	ATL-IP-ED-XXXX	
CUT ROUNDS, 1.5 THREAD RELIEF ON MACHINED THREADS	BREAK EDGES, .016 MAX. ON MACHINED WORK	PROJECT NO.	US ATLAS SILICON SUBSYSTEM	
REMOVE BURS, WELD SPLATTER & LOOSE SCALE	IN ACCORDANCE WITH ASME Y14.5m & B46.1	DWG BY	W. K. MILLER	DATE 4/16/2002
		CHK BY	BILL WILDS	DATE 4/16/2002
		APR BY	E. ANDERSSON	DATE 4/16/2002

ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY			
UNIVERSITY OF CALIFORNIA - BERKELEY #			
ATLAS PIXEL DETECTOR ENDCONE PANEL BOND FIXTURE ASSEMBLY			
MICROFILMED:	DWG. TYPE	SHOWS ON	SCALE: 2:1
	ASSEM	N/A	DO NOT SCALE PRINTS
PATENT CLEAR:	DESIGN ACCT. NO.	CATEGORY CODE	DWG. NO.
	P1AP-11	AP6250	21F7504
			SIZE
			REV.

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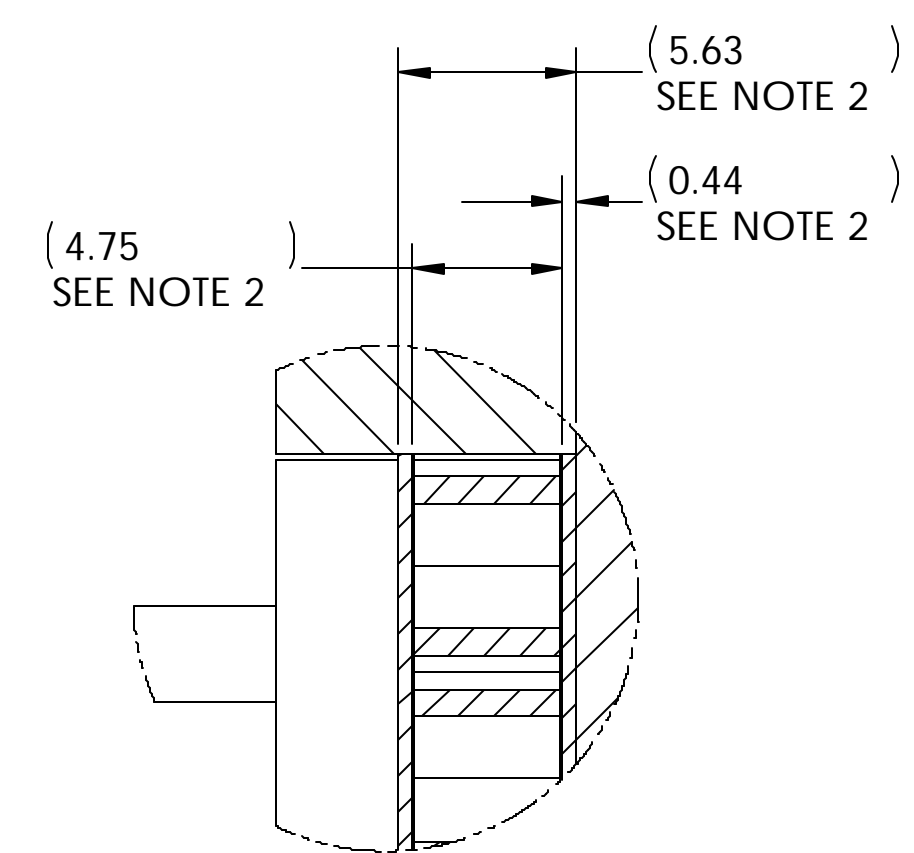
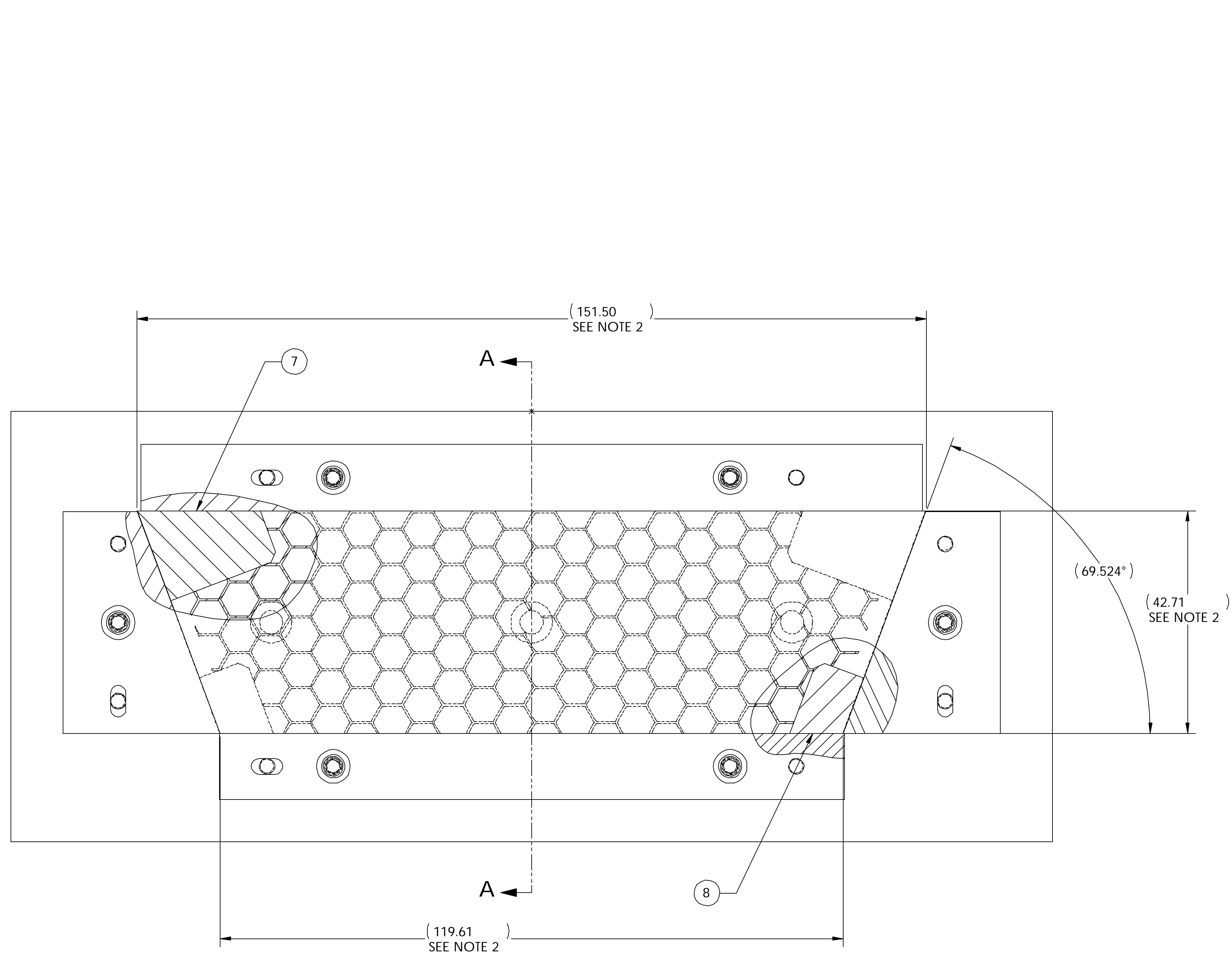
DWG. NO.	SIZE	REV.	SER.
21F750 4	=	2	
ITEM	PART NO.	REQD	DESCRIPTION
			MATERIAL

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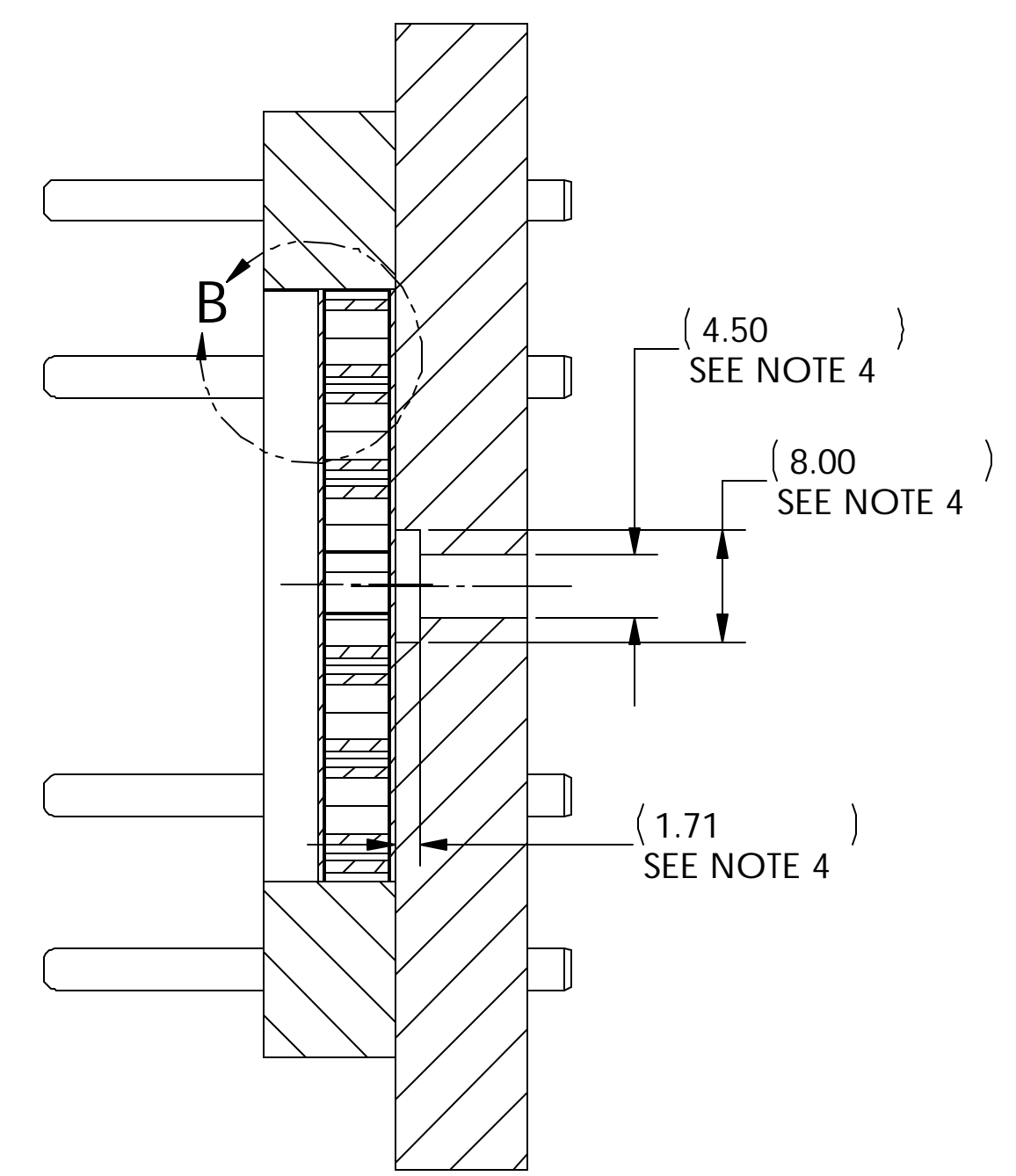
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DETAIL B
SCALE 4 : 1



SECTION A-A
SCALE 2 : 1

ITEM 2 NOT SHOWN

- NOTES: UNLESS OTHERWISE SPECIFIED
- SEE PART FOR ADHESIVE SPECIFICATIONS
 - DIMENSIONS REPRESENT FINAL DIMENSION FOR ENDCONE PANEL
PART NO. 21F722
 - PANEL SHOWN IN PRE-MACHINED STATE, WITHOUT THREADED BUSHINGS
 - 4.50 DIA. HOLE AND COUNTERBORE USED TO BOND THREADED INSERT INTO PANEL

UNLESS OTHERWISE SPECIFIED		SHOP ORDERS		SER. NO.		ERNEST ORLANDO LAWRENCE	
TOLERANCES	X .X ± 0.5	FRAC. ± 1/64	NO. REQD	DATE ISSD	BERKELEY NATIONAL LABORATORY		UNIVERSITY OF CALIFORNIA - BERKELEY #
	X .XX ± 0.25	ANGLES ± 30°	DATE REQD		ATLAS PIXEL DETECTOR		
	X .XXX ± 0.013	FINISH 1.6			ENDCONE PANEL		
					BOND FIXTURE ASSEMBLY		
DO NOT SCALE PRINT				INDEX METHOD TAG		MICROFILMED:	
THERADS ARE CLASS 2				PROJECT NAME		DWG. TYPE	
CHAMFER ENDS OF ALL SCREW THREADS 30°				PROJECT NO. ATL-IP-ED-XXXX		ASSEM	
CUT ROUNDS, 1.5 THREAD RELIEF ON MACHINED THREADS				PROJECT US ATLAS SILICON SUBSYSTEM		N/A	
BREAK EDGES .016 MAX. ON MACHINED WORK				DWE W. K. MILLER		SCALE: 2:1	
REMOVE BURS, WELD SPLATTER & LOOSE SCALE				DATE 4/16/2002		SHEET 2 OF 2	
IN ACCORDANCE WITH ASME Y14.5m & B46.1				CHK BILL WILDS		PATENT CLEAR:	
				DATE 4/16/2002		DESIGN ACCT. NO.	
				APR BY E. ANDERSSSEN		CATEGORY CIDE	
				DATE 4/16/2002		DWG. NO.	
						SIZE	
						REV.	
						P1AP-11	
						AP6250	
						21F750 4	

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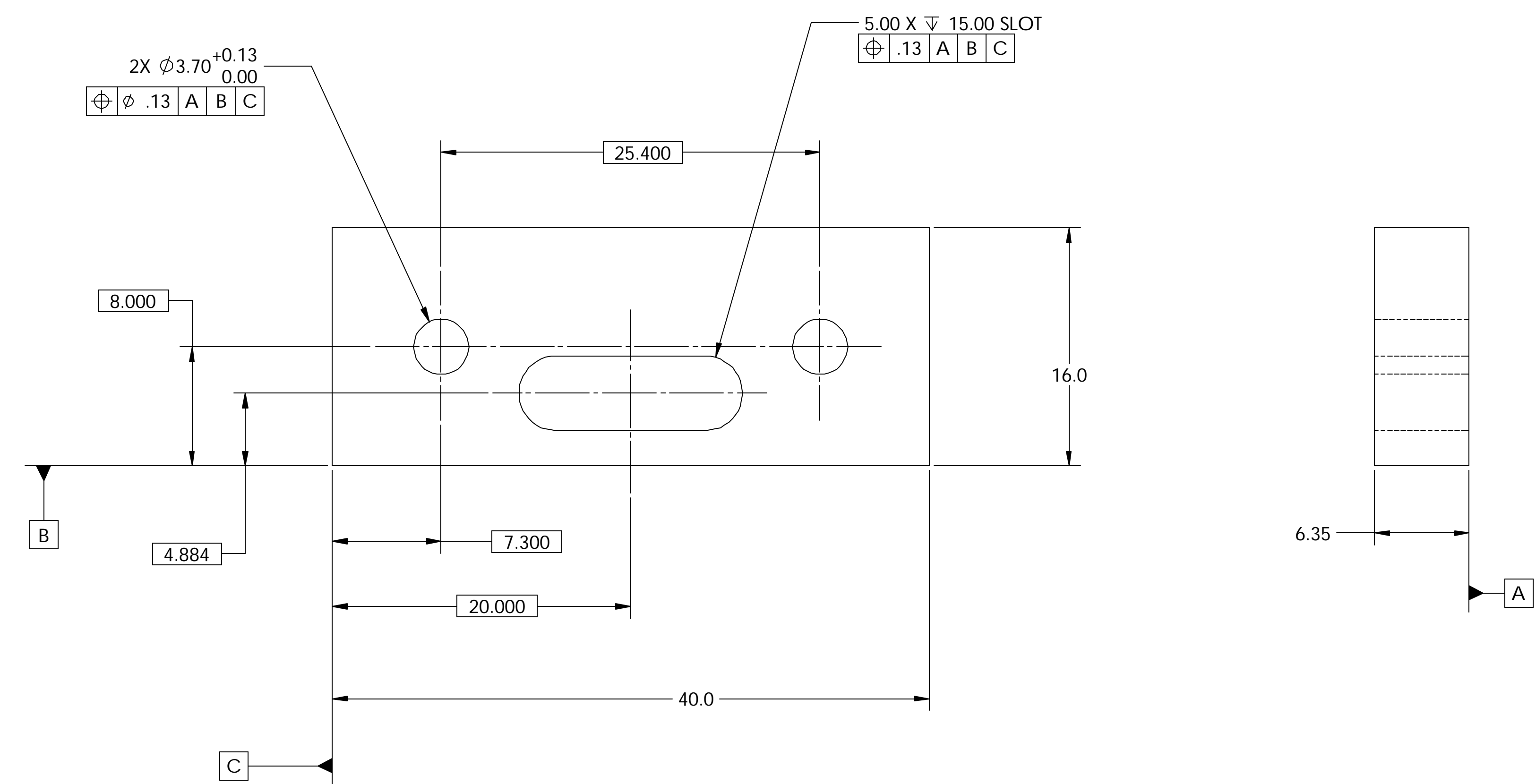
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DWG. NO.	SIZE	REV.	SHEET	
21F749 4	=	1	1	
DESCRIPTION		MATERIAL	MT. LOCATION	



MATL: ALUM

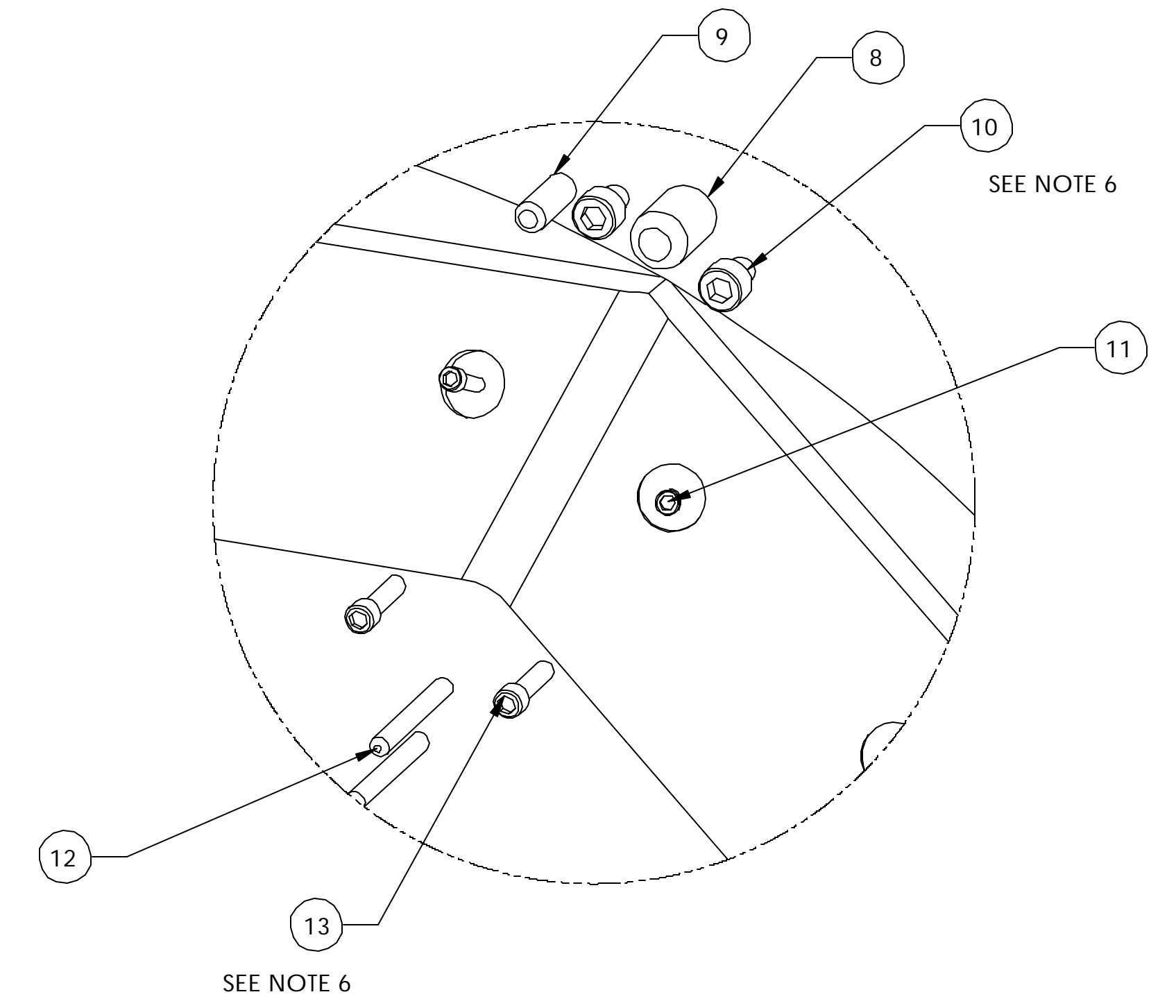
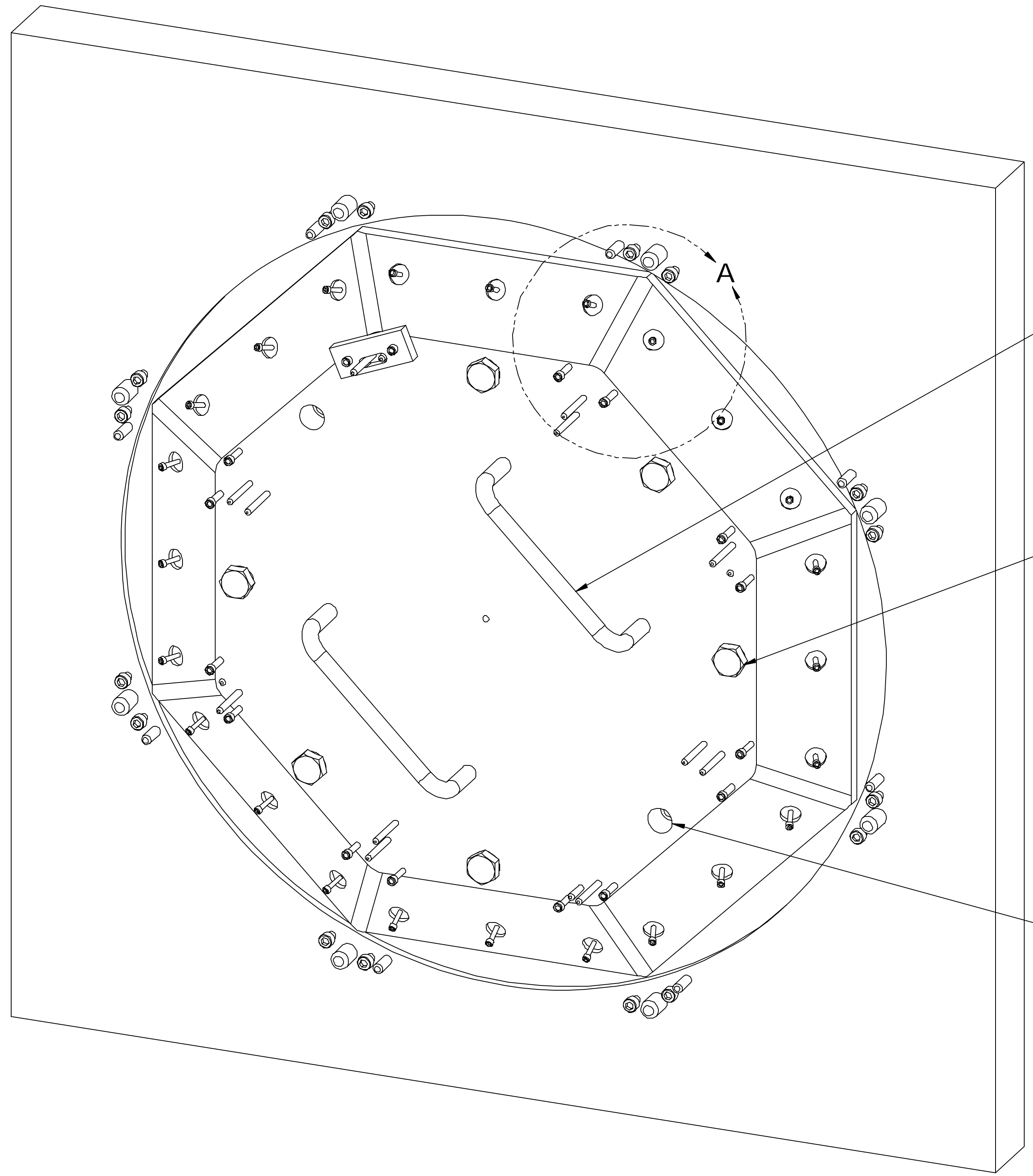
NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS IN MILLIMETERS
2. DIMENSIONS AND TOLERANCING PER ASME Y14.5M-1994
3. SURFACE TEXTURE PER ANI/ASME B 46.1-1985
4. REMOVE ALL BURRS AND BREAK SHARP EDGES TO A MAXIMUM OF .38
5. ALL INSIDE CORNERS TO BE .38 RADIUS MAX
6. COUNTERSINK 82 DEGREES ALL TAPPED HOLES TO MAJOR DIAMETER
7. COUNTERSINK 82 DEGREES APPROXIMATELY .38 DEEP ALL DRILLED HOLES
8. PARTS TO BE THOROUGHLY CLEANED TO REMOVE ALL OIL, GREASE, DIRT AND CHIPS

UNLESS OTHERWISE SPECIFIED		SHOP ORDERS		SER. NO.	ERNEST ORLANDO LAWRENCE	
TOLERANCES	X.X ± 0.5	FRAC. ± 1/64	ACCT. NO.	NO. REQD.	DATE ISSD	BERKELEY NATIONAL LABORATORY
	X.XX ± 0.25	ANGLES ± 30°	DEL. TO	DATE REQD.		UNIVERSITY OF CALIFORNIA - BERKELEY #
	X.XXX ± 0.013	FINISH 3.2	SURFACE TREATMENT			ATLAS PIXEL DETECTOR
DO NOT SCALE PRINT			IDEN. METHOD	TAG	ENDCONE BOND FIXTURE	
THREADS ARE CLASS 2			PROJECT NUMBER	ATL-IP-ED-XXXX	INNER VERTEX PLATE CLAMP	
CHAMFER ENDS OF ALL SCREW THREADS 30°			PROJECT NAME	US ATLAS SILICON SUBSYSTEM	MICROFILMED:	DWG. TYPE
CUT ROUND. 1.5 THREAD RELIEF ON MACHINED THREADS			DWG. BY	W. K. MILLER	DATE	4/16/2002
BREAK EDGES .016 MAX. ON MACHINED WORK			CHK BY	BILL WILDS	DATE	4/16/2002
REMOVE BURRS, WELD SPLATTER & LOOSE SCALE			APR BY	E. ANDERSSSEN	DATE	4/16/2002
IN ACCORDANCE WITH ASME Y14.5m & B46.1					PATENT CLEAR:	DESIGN ACCT. NO.
REV	DWG	CHK	ZONE	DATE	CHANGES	

SCALE:	4:1	DO NOT SCALE PRINTS
DWG. NO.	21F746	SHEET 1 OF 1
PART	P1AP-11	AP6250
SCALE	21F749 4	

ITEM	PART NO.	REQD	DESCRIPTION	MATERIAL
14		4	3.00 DIA. GAGE PIN X 25.4 LONG	STEEL
13		16	M3 X .50 SOCKET HEAD CAP SCREW X 25.4 LONG	STEEL
12		12	3.30 DIA. GAGE PIN X 25.4 LONG	STEEL
11		24	M3 X .5 SOCKET HEAD CAP X 9.0 LONG	STEEL
10		16	M4 X .7 SOCKET HEAD CAP SCREW X 8.0 LONG	STEEL
9		8	4.80 DIA. GAGE PIN X 25.4 LONG	STEEL
8		8	8.91 DIA. GAGE PIN X 25.4 LONG	STEEL
7		4	#8-32 UNC-2A SOCKET HEAD CAP SCREW	STEEL
6		2	4" HANDLE, BLACK ANODIZE ALUM	ALUM
5		6	M8 X 38.1 HEX HEAD BOLT	STEEL
4		2	1/2" DIA. DOWEL PIN	STEEL
3	21F749	8	ENDCONE BOND FIXTURE- INNER VERTEX CLAMP	ALUM
2	21F748	1	ENDCONE BOND FIXTURE - TOP PLATE	GRAPHITE
1	21F747	1	ENDCONE BOND FIXTURE - BOTTOM PLATE	GRAPHITE

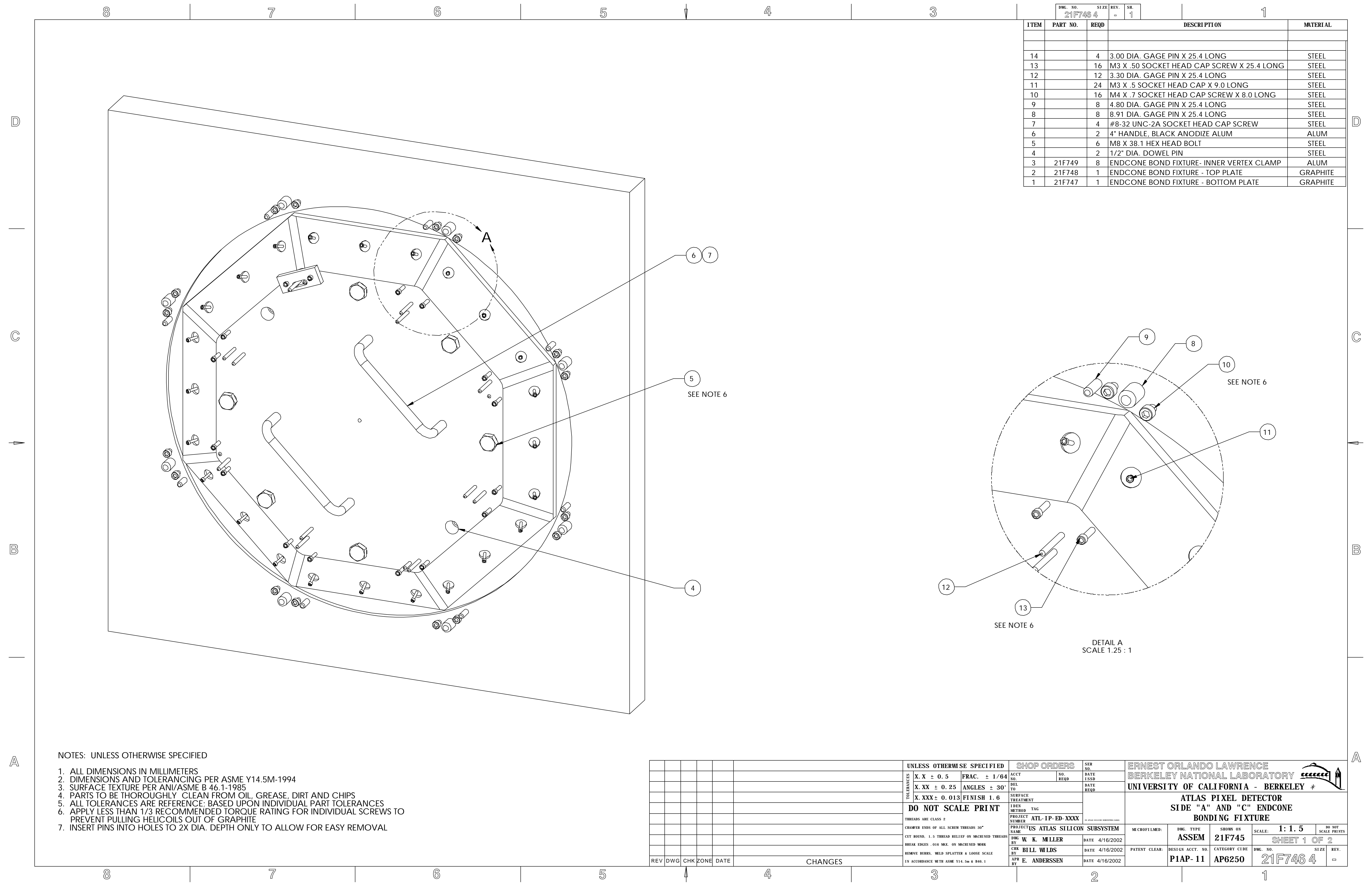


DETAIL A
SCALE 1.25 : 1

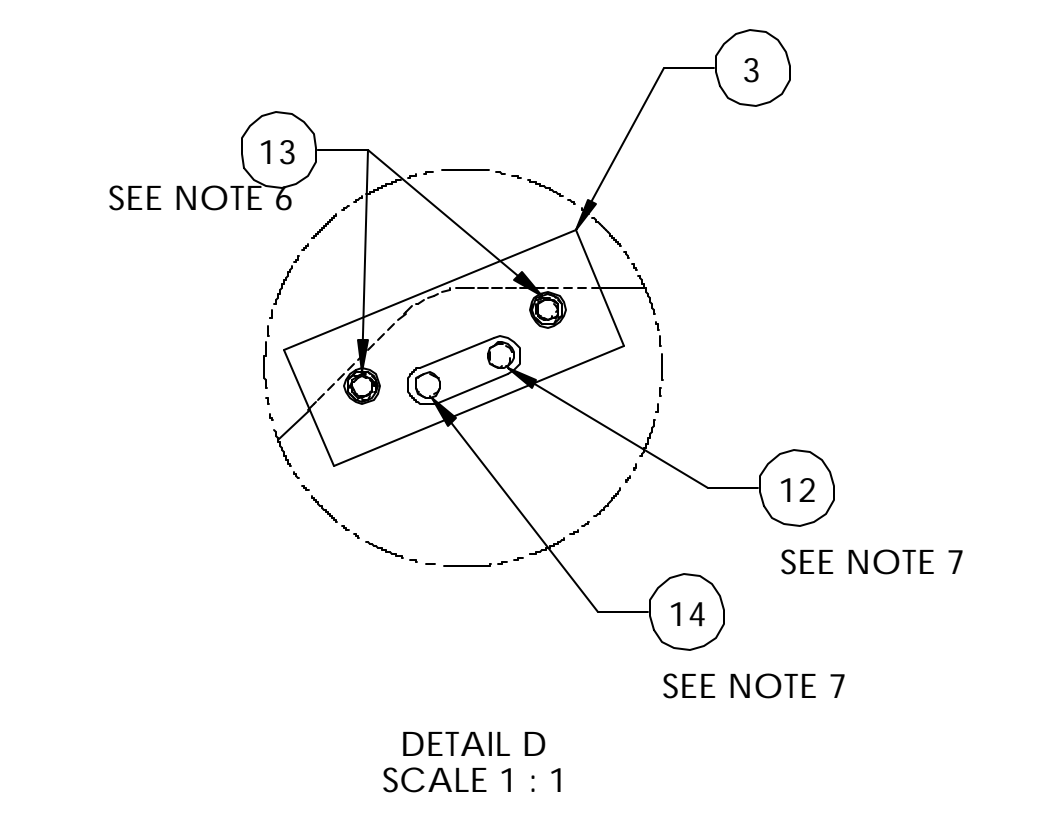
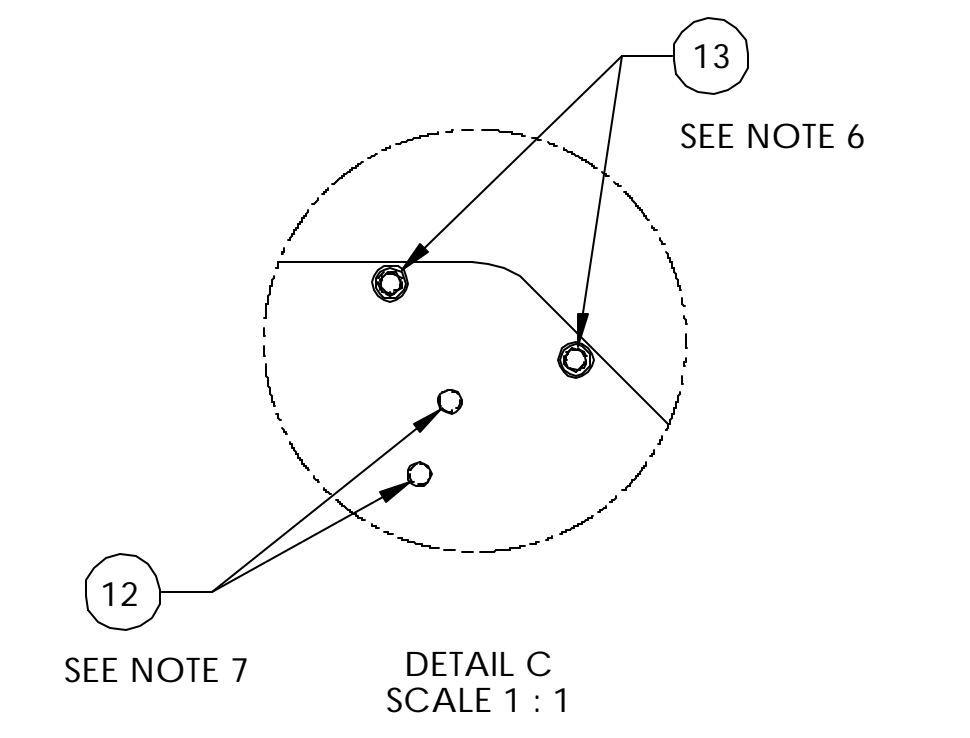
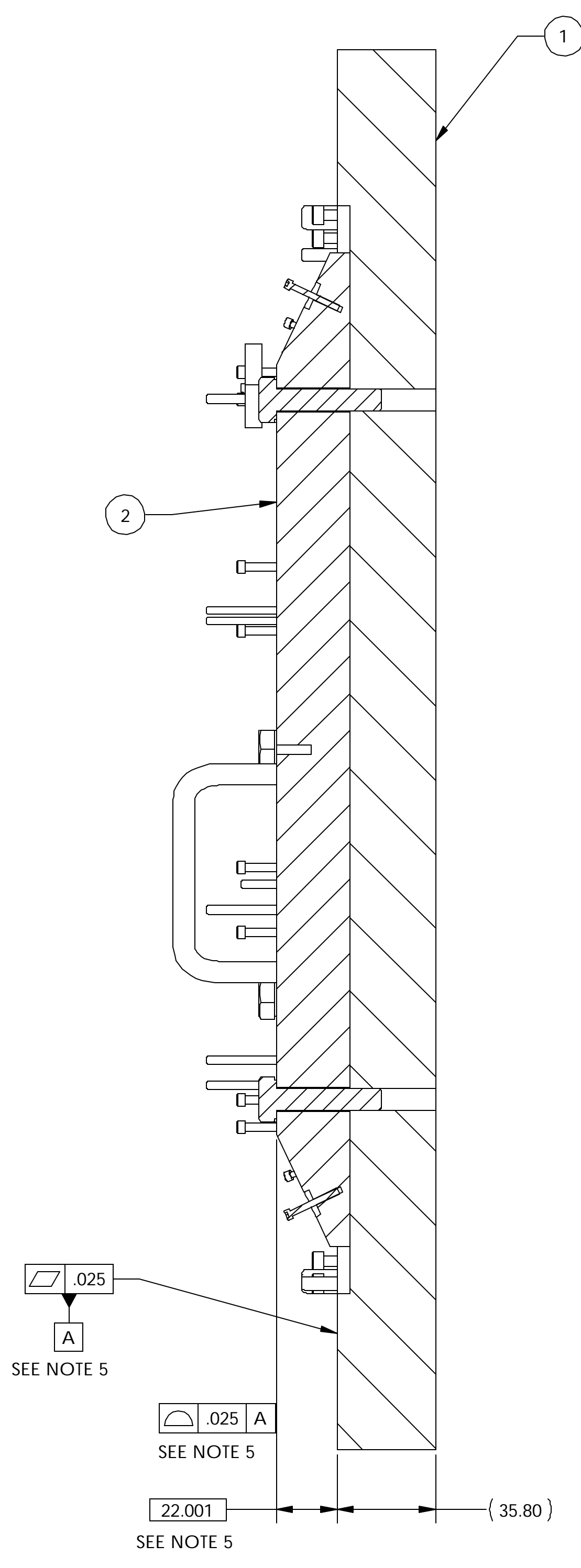
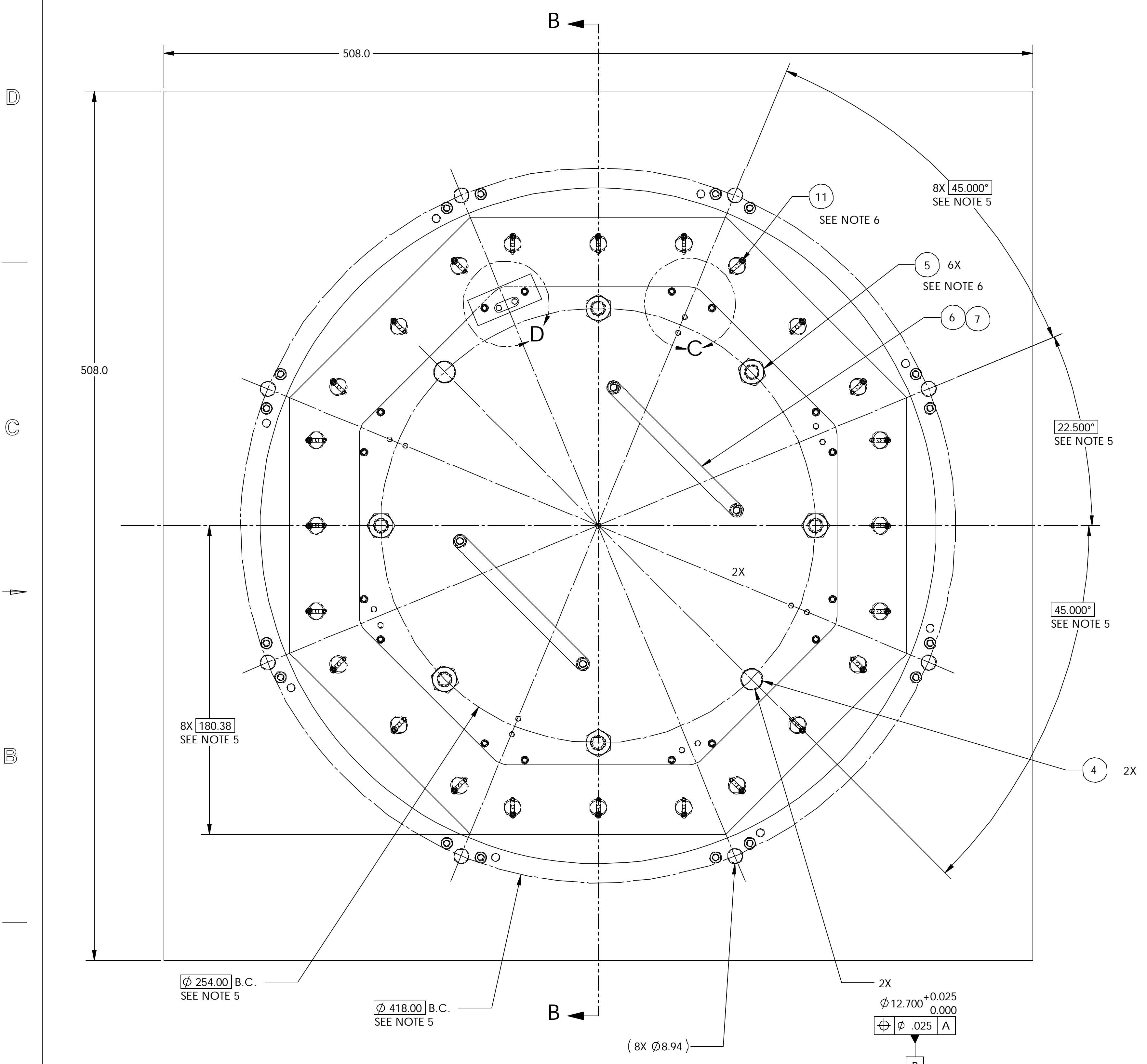
NOTES: UNLESS OTHERWISE SPECIFIED

- ALL DIMENSIONS IN MILLIMETERS
- DIMENSIONS AND TOLERANCING PER ASME Y14.5M-1994
- SURFACE TEXTURE PER ANI/ASME B 46.1-1985
- PARTS TO BE THOROUGHLY CLEAN FROM OIL, GREASE, DIRT AND CHIPS
- ALL TOLERANCES ARE REFERENCE; BASED UPON INDIVIDUAL PART TOLERANCES
- APPLY LESS THAN 1/3 RECOMMENDED TORQUE RATING FOR INDIVIDUAL SCREWS TO PREVENT PULLING HELICOILS OUT OF GRAPHITE
- INSERT PINS INTO HOLES TO 2X DIA. DEPTH ONLY TO ALLOW FOR EASY REMOVAL

UNLESS OTHERWISE SPECIFIED		SHOP ORDERS		SER. NO.		ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY	
TOLERANCES	X.X ± 0.5	FRAC. ± 1/64	NO. REQD	DATE ISSD	UNIVERSITY OF CALIFORNIA - BERKELEY #		
	X.XX ± 0.25	ANGLES ± 30°	DEL TO	DATE REQD	ATLAS PIXEL DETECTOR SIDE "A" AND "C" ENDCONE BONDING FIXTURE		
	X.XXX ± 0.013	FINISH 1.6	SURFACE TREATMENT		MICROFILMED: DWG. TYPE ASSEM		
DO NOT SCALE PRINT		INDEX METHOD TAG		SCALE: 1:1.5		DO NOT SCALE PRINTS	
THREADS ARE CLASS 2		PROJECT NAME		CATEGORY CIDE		SHEET 1 OF 2	
CHAMFER ENDS OF ALL SCREW THREADS 30°		PROJECT US ATLAS SILICON SUBSYSTEM		DWG. NO. 21F745		SIZE	
CUT ROUNDS, 1.5 THREAD RELIEF ON MACHINED THREADS		DWG. W. K. MILLER		DATE 4/16/2002		REV.	
BREAK EDGES, .016 MAX. ON MACHINED WORK		CHK BILL WILDS		DATE 4/16/2002		DWG. NO. 21F746 4	
REMOVE BURS, WELD SPLATTER & LOOSE SCALE		BY E. ANDERSSSEN		DATE 4/16/2002		REV.	
IN ACCORDANCE WITH ASME Y14.5m & B46.1		APR		DATE		REV.	
REV	DWG	CHK	ZONE	DATE	CHANGES		



DWG. NO.		SIZE	REV.	SER.	1	
21F746 4		=	2			
ITEM	PART NO.	REQD.	DESCRIPTION		MATERIAL	



- NOTES: UNLESS OTHERWISE SPECIFIED
- ALL DIMENSIONS IN MILLIMETERS
 - DIMENSIONS AND TOLERANCING PER ASME Y14.5M-1994
 - SURFACE TEXTURE PER ANI/ASME B 46.1-1985
 - PARTS TO BE THOROUGHLY CLEAN FROM OIL, GREASE, DIRT AND CHIPS
 - ALL TOLERANCES ARE REFERENCE; BASED UPON INDIVIDUAL PART TOLERANCES
 - APPLY LESS THAN 1/3 RECOMMENDED TORQUE RATING FOR INDIVIDUAL SCREWS TO PREVENT PULLING HELICOILS OUT OF GRAPHITE
 - INSERT PINS INTO HOLES TO 2X DIA. DEPTH ONLY TO ALLOW FOR EASY REMOVAL

REV	DWG	CHK	ZONE	DATE	CHANGES

UNLESS OTHERWISE SPECIFIED		SHOP ORDERS	
TOLERANCES	X.X ± 0.5	FRAC. ± 1/64	ACCT. NO.
	X.XX ± 0.25	ANGLES ± 30°	DATE ISSD
	X.XXX ± 0.013	FINISH 1.6	DATE REQD.
DO NOT SCALE PRINT		IDEN. METHOD	TAG
THREADS ARE CLASS 2		PROJECT	ATL-IP-ED-XXXX
CHAMFER ENDS OF ALL SCREW THREADS 30°		PROJECT NAME	US ATLAS SILICON SUBSYSTEM
CUT ROUNDS, 1.5 THREAD RELIEF ON MACHINED THREADS		DWG. BY	W. K. MILLER
BREAK EDGES, 0.16 MAX. ON MACHINED WORK		DATE	4/16/2002
REMOVE BURS, WELD SPLATTER & LOOSE SCALE		CHK. BY	BILL WILDS
IN ACCORDANCE WITH ASME Y14.5m & B46.1		DATE	4/16/2002
		APR BY	E. ANDERSSSEN

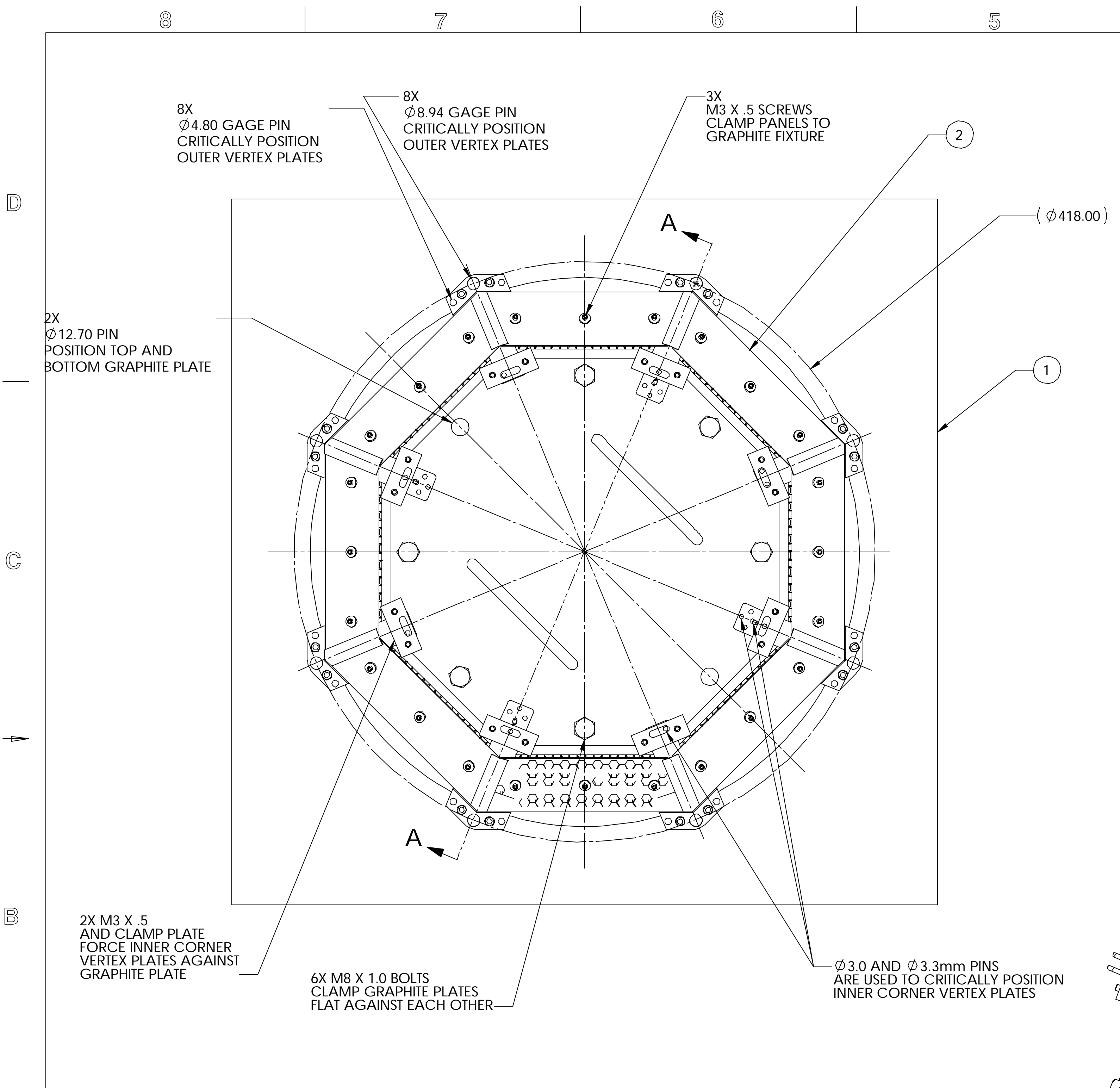
ERNEST ORLANDO LAWRENCE
BERKELEY NATIONAL LABORATORY
UNIVERSITY OF CALIFORNIA - BERKELEY #

ATLAS PIXEL DETECTOR
SIDE "A" AND "C" ENDCONE
BONDING FIXTURE

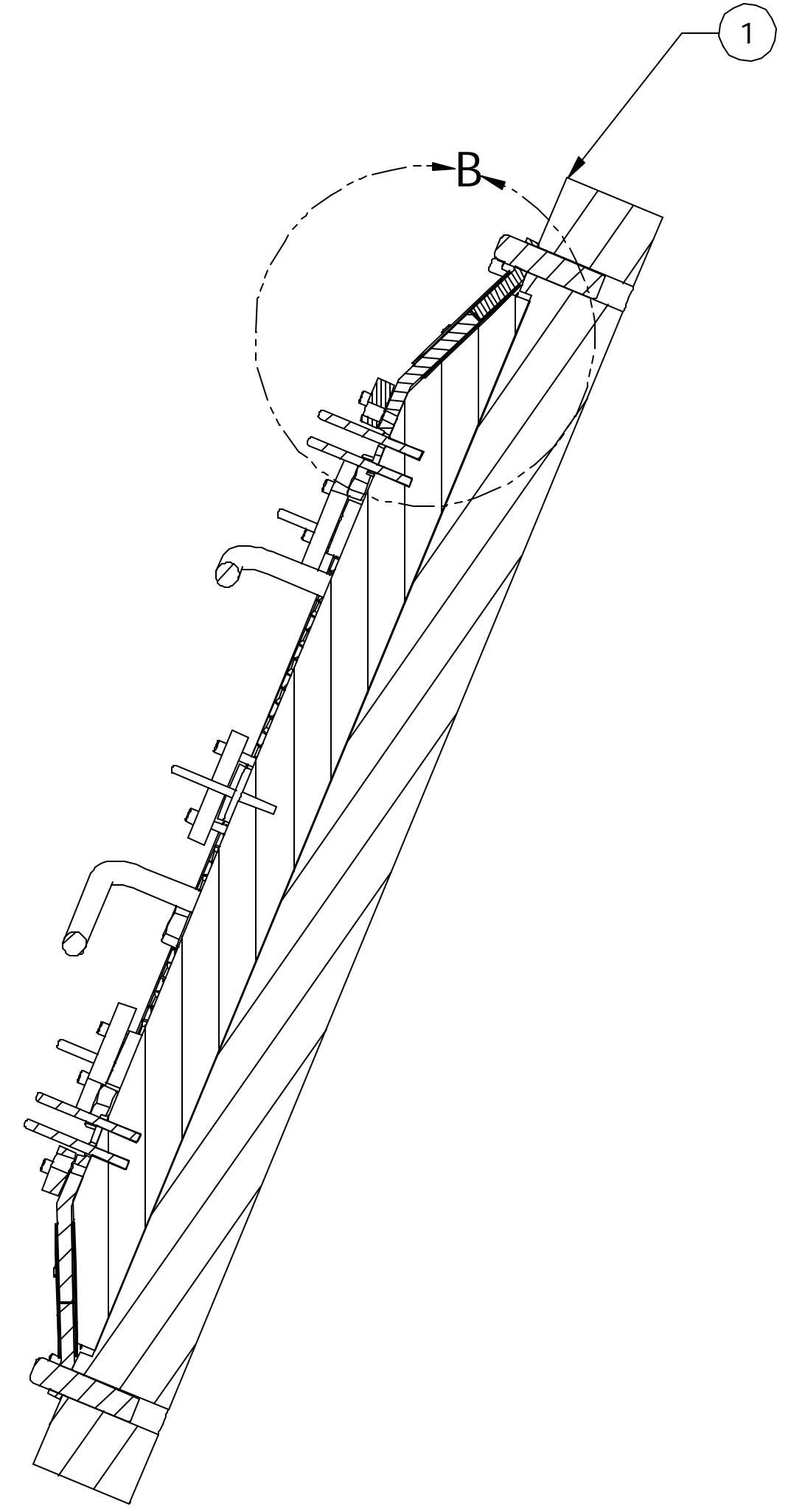
MICROFILMED:	DWG. TYPE	SHOWS ON	SCALE:	DO NOT SCALE PRINTS
	ASSEM	21F745	1:1.5	
PATENT CLEAR:	DESIGN ACCT. NO.	CATEGORY CODE	DWG. NO.	SIZE
	P1AP-11	AP6250	21F746 4	REV.

SHEET 2 OF 2

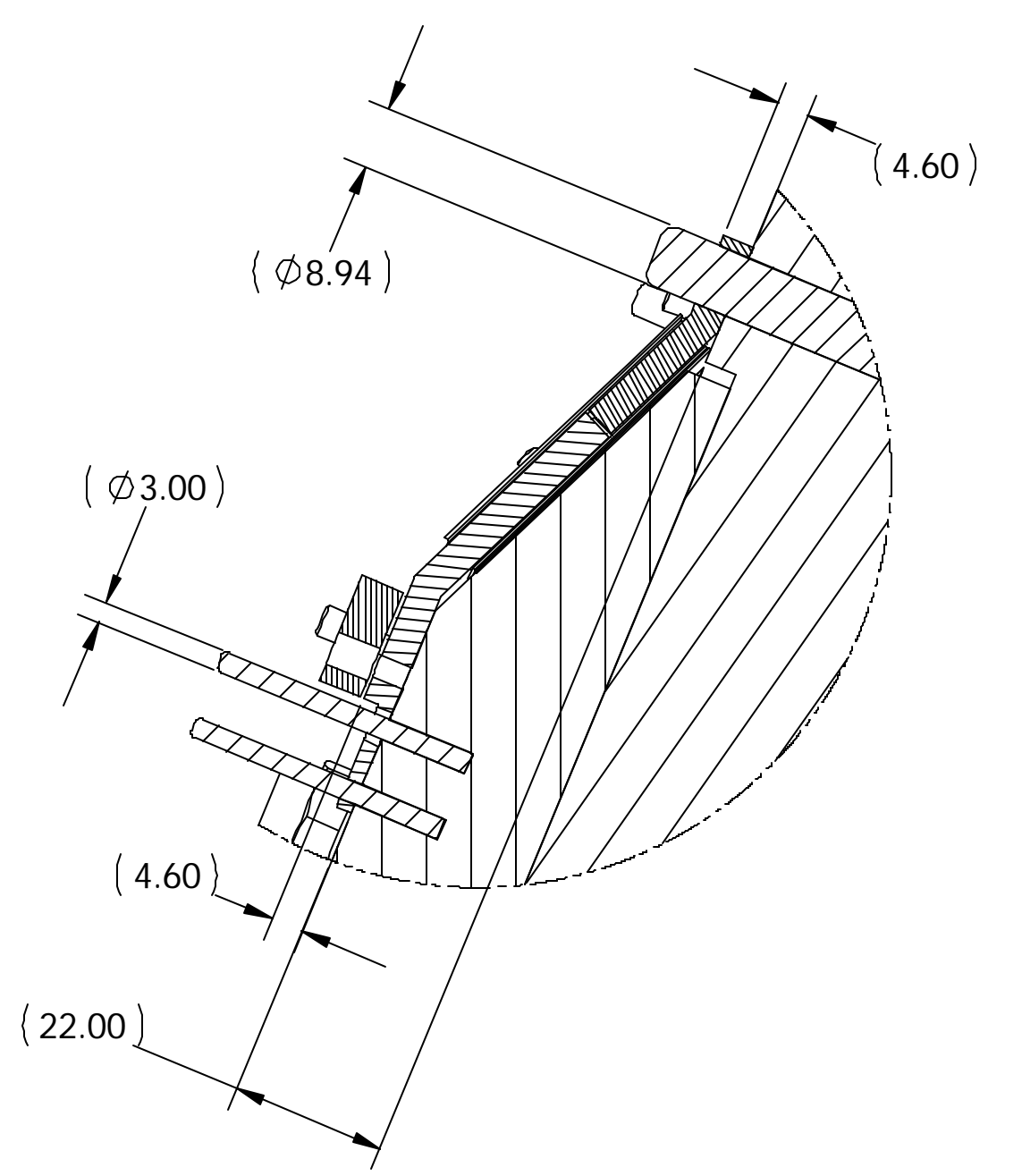
ITEM	PART NO.	REQD	DESCRIPTION	MATERIAL
2	21F720	1	"A" SIDE ENDCONE ASSEMBLY	
1	21F745	1	"A" AND "C" SIDE ENDCONE BOND FIXTURE	



"A" SIDE BOND FABRICATION SHOWN



SECTION A-A SCALE 1 : 2



DETAIL B SCALE 1 : 1

NOTES: UNLESS OTHERWISE SPECIFIED

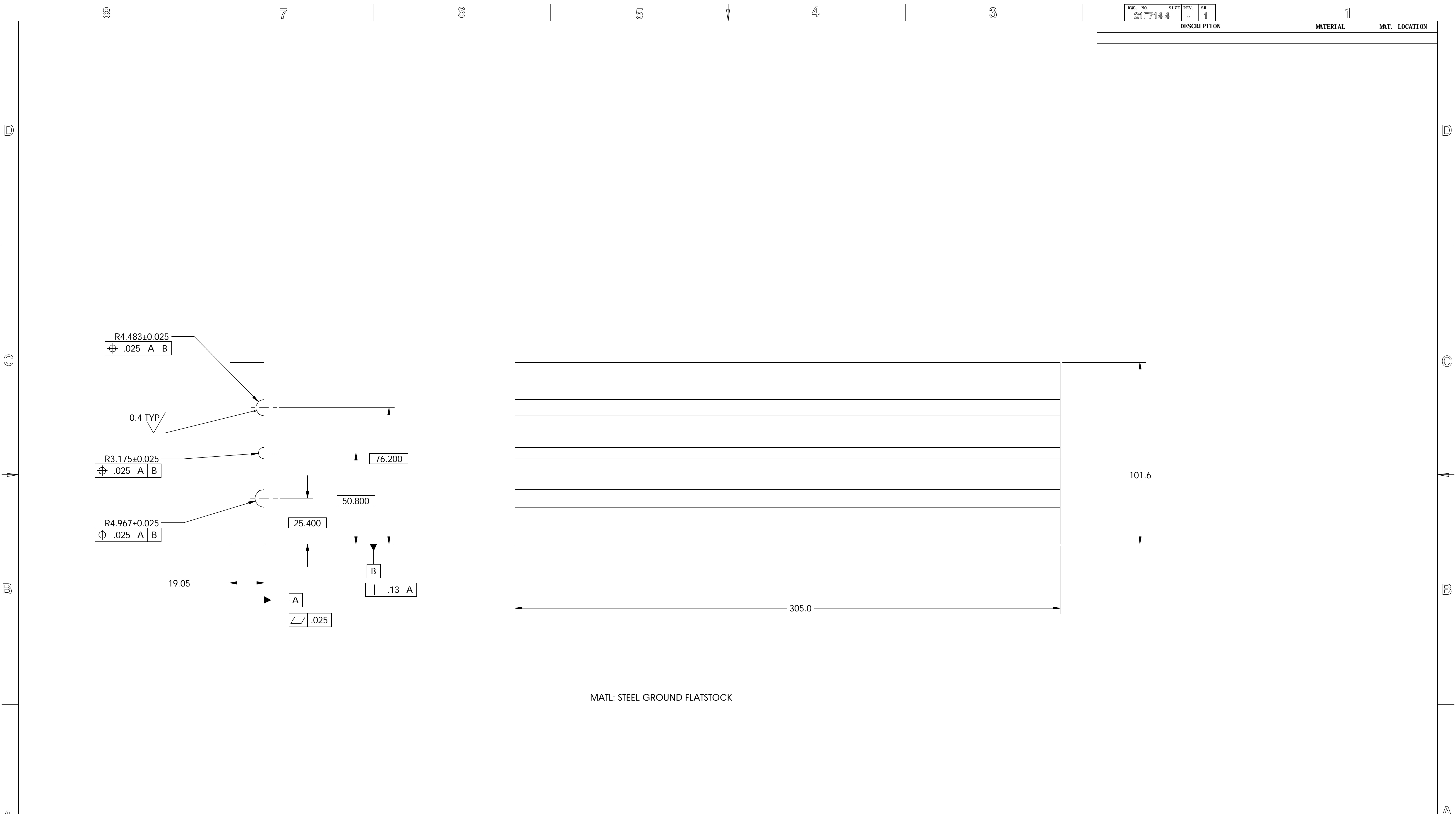
- ALL DIMENSIONS IN MILLIMETERS
- DIMENSIONS AND TOLERANCING PER ASME Y14.5M-1994
- SURFACE TEXTURE PER ANI/ASME B 46.1-1985
- PARTS TO BE THOROUGHLY CLEAN FROM OIL, GREASE, DIRT AND CHIPS
- ALL TOLERANCES ARE REFERENCE BASED UPON INDIVIDUAL PART TOLERANCES
- APPLY LESS THAN 1/3 RECOMMENDED TORQUE RATING FOR INDIVIDUAL SCREWS TO PREVENT PULLING HELICOILS OUT OF GRAPHITE
- INSERT PINS INTO HOLES TO 2X DIA. DEPTH ONLY TO ALLOW FOR EASY REMOVAL
- SPRAY MOLD RELEASE ON GRAPHITE PLATE IS ACCEPTABLE, TAPE IS PROHIBITED
- HYSOL 9396 ADHESIVE WITH 3 MIL GLASS BEADS TYP FOR BOND JOINTS, SEE FABRICATION PROCEDURE DOCUMENT FOR EXACT SPECIFICATIONS

REV	DWG	CHK	ZONE	DATE	CHANGES

UNLESS OTHERWISE SPECIFIED		SHOP ORDERS		SER NO.
TOLERANCES	X.X ± 0.5	FRAC. ± 1/64	ACCT NO.	NO. REQD
	X.XX ± 0.25	ANGLES ± 30°	DATE ISSD	DATE REQD
	X.XXX ± 0.013	FINISH 1.6	SURFACE TREATMENT	

ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY		UNIVERSITY OF CALIFORNIA - BERKELEY #	
ATLAS PIXEL DETECTOR "A" SIDE ENDCONE ON BONDING FIXTURE			
MICROFILMED:	DWG. TYPE	SHOWS ON	SCALE: 1:2
	ASSEM	N/A	DO NOT SCALE PRINTS
PATENT CLEAR:	DESIGN ACCT. NO.	CATEGORY CIDE	DWG. NO.
	P1AP-11	AP6250	21F745 4
DWG. BY	DATE	DATE	DATE
W. K. MILLER	4/16/2002	4/16/2002	4/16/2002
CHK	DATE	DATE	DATE
BILL WILDS	4/16/2002		
APR BY	DATE	DATE	DATE
E. ANDERSSSEN	4/16/2002		

DWG. NO.	SIZE	REV.	SHEET
21F7144		1	1
DESCRIPTION		MATERIAL	MNT. LOCATION



MATL: STEEL GROUND FLATSTOCK

NOTES: UNLESS OTHERWISE SPECIFIED

- DIMENSIONS IN MILLIMETERS
- DIMENSIONS AND TOLERANCING PER ASME Y14.5M-1994
- SURFACE TEXTURE PER ANI/ASME B 46.1-1985
- REMOVE ALL BURRS AND BREAK SHARP EDGES TO A MAXIMUM OF .38
- ALL INSIDE CORNERS TO BE .38 RADIUS MAX
- COUNTERSINK 82 DEGREES ALL TAPPED HOLES TO MAJOR DIAMETER
- COUNTERSINK 82 DEGREES APPROXIMATELY .38 DEEP ALL DRILLED HOLES
- PARTS TO BE THOROUGHLY CLEANED TO REMOVE ALL OIL, GREASE, DIRT AND CHIPS

UNLESS OTHERWISE SPECIFIED		SHOP ORDERS		SER. NO.		ERNEST ORLANDO LAWRENCE		
TOLERANCES	X.X ± 0.5	FRAC. ± 1/64	ACCT. NO.	NO. REQD.	DATE ISSD	BERKELEY NATIONAL LABORATORY		
	X.XX ± 0.25	ANGLES ± 30°	DEL. TO	DATE REQD.	UNIVERSITY OF CALIFORNIA - BERKELEY #			
	X.XXX ± 0.013	FINISH 1.6	SURFACE TREATMENT	ATLAS PIXEL DETECTOR				
DO NOT SCALE PRINT			INDEX METHOD TAG	SPACEFRAME				
THREADS ARE CLASS 2			PROJECT NUMBER	VERTEX TUBE MOLD CAVITY				
CHAMFER ENDS OF ALL SCREW THREADS 30°			PROJECT NAME	ATL-IP-ED-XXXX				
CUT ROUND. 1.5 THREAD RELIEF ON MACHINED THREADS			DWG. BY	DATE	MICROFILMED:			
BREAK EDGES .016 MAX. ON MACHINED WORK			W. K. MILLER	4/16/2002	DWG. TYPE	SHOWS ON	SCALE: 1:1	
REMOVE BURRS, WELD SPLATTER & LOOSE SCALE			CHK BY	DATE	PART	21F713	DO NOT SCALE PRINTS	
IN ACCORDANCE WITH ASME Y14.5m & B46.1			BILL WILDS	4/16/2002	P1AP-11	AP6250	SHEET 1 OF 1	
			APR BY	DATE	PATENT CLEAR:	DESIGN ACCT. NO.	DWG. NO.	
			E ANDERSSSEN	4/16/2002			21F7144	
REV	DWG	CHK	ZONE	DATE	CHANGES			SIZE
								REV.

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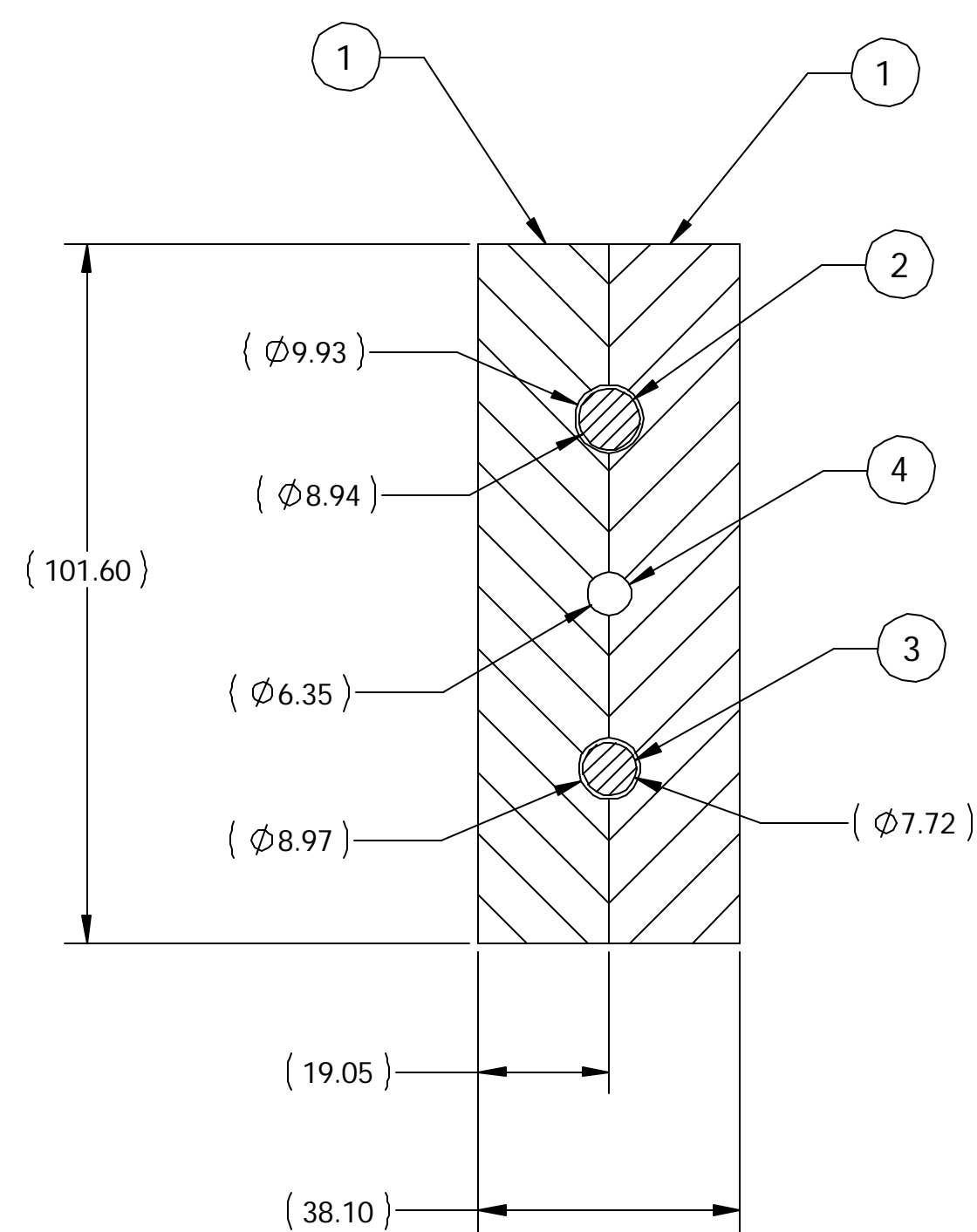
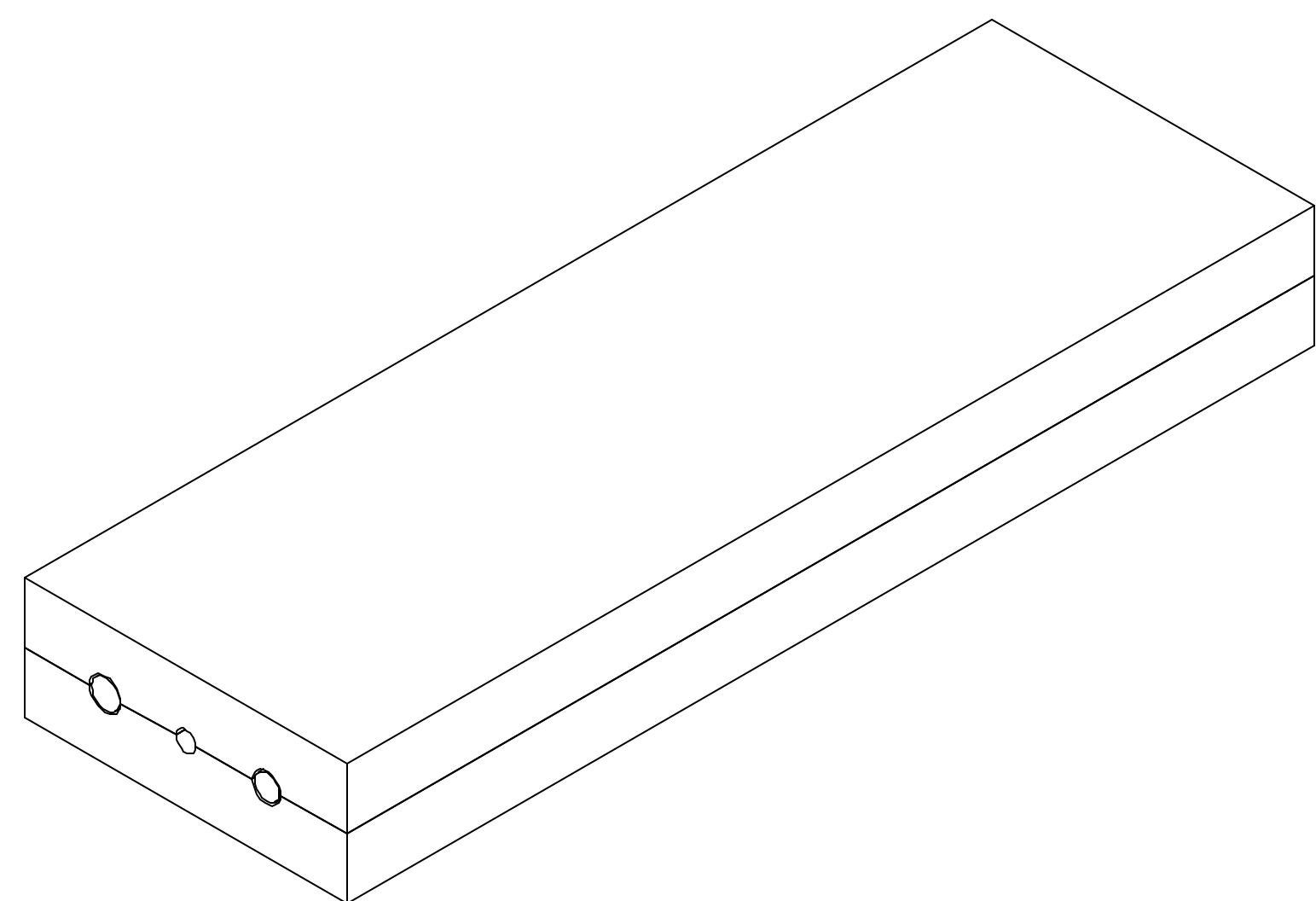
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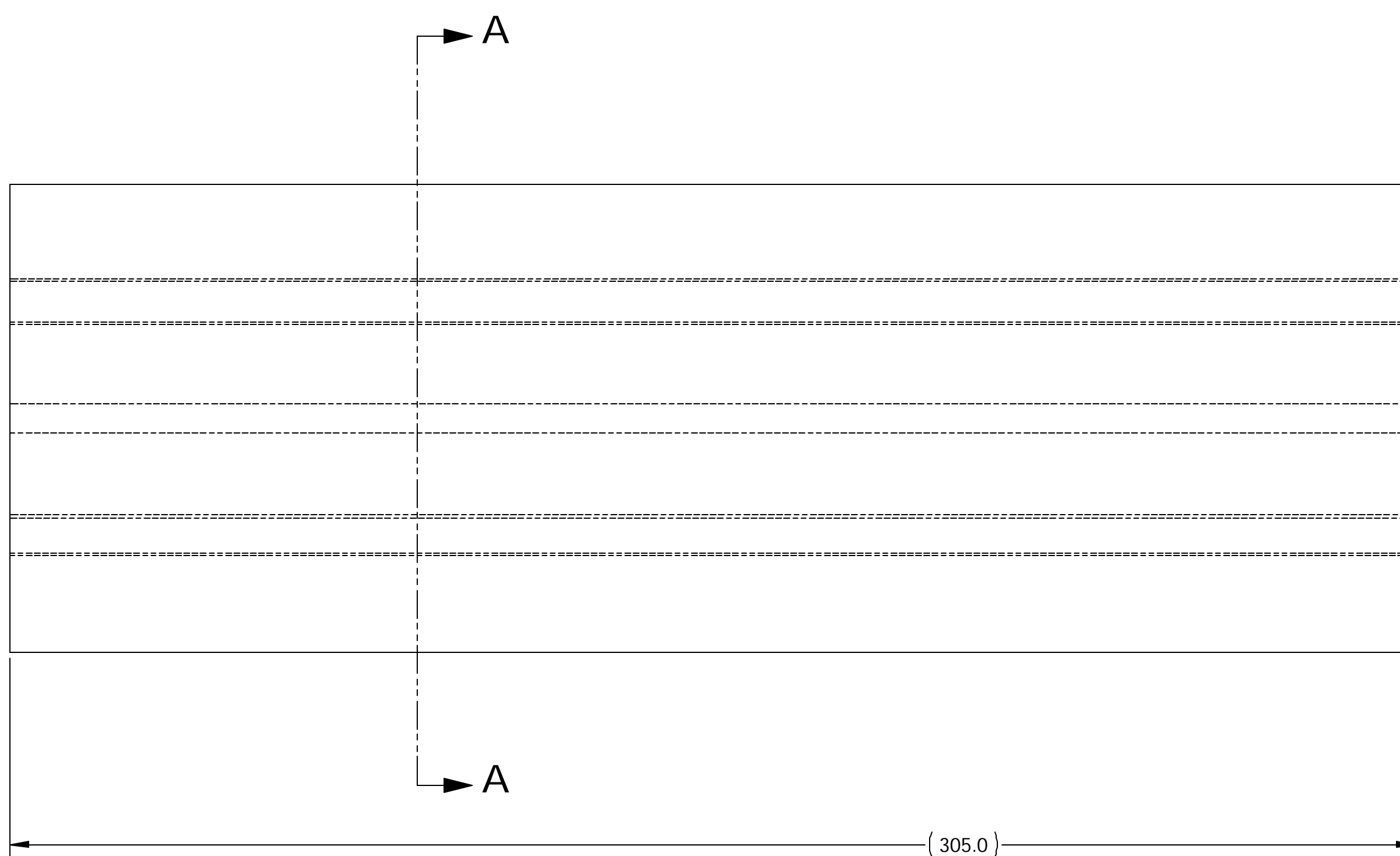
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ITEM	PART NO.	REQD	DESCRIPTION	MATERIAL
4	21F713-3	1	MOLD ALIGNMENT ROD	STEEL
3	21F713-5	1	VERTEX JOINING PIN MANDREL	STEEL
2	21715-1	1	VERTEX JOINT INSERT MANDREL	STEEL
1	21F713	2	VERTEX TUBE INSERT MOLD CAVITY	STEEL



SECTION A-A
SCALE 1 : 1



NOTES: UNLESS OTHERWISE SPECIFIED

- DIMENSIONS IN MILLIMETERS
- MOLD USED TO FORM VERTEX JOINT INSERT AND VERTEX JOINING PIN (PARTS 21F677 AND 21F658)
- SEE PART DRAWINGS FOR MATERIAL SPECIFICATIONS

REV	DWG	CHK	ZONE	DATE	CHANGES

UNLESS OTHERWISE SPECIFIED		SHOP ORDERS		SER. NO.	ERNEST ORLANDO LAWRENCE
TOLERANCES	X.X ± 0.5	FRAC. ± 1/64	ACCT. NO.	DATE ISSD	BERKELEY NATIONAL LABORATORY
	X.XX ± 0.25	ANGLES ± 30°	DEL. TO	DATE REQD	UNIVERSITY OF CALIFORNIA - BERKELEY #
	X.XXX ± 0.013	FINISH 1.6	SURFACE TREATMENT		
DO NOT SCALE PRINT		IDEN METHOD TAG	ATLAS PIXEL DETECTOR SPACEFRAME VERTEX TUBE MOLD ASSEMBLY		
THREADS ARE CLASS 2		PROJECT NUMBER	MICROFILMED: DWG. TYPE ASSEM N/A SCALE: 1:1 DO NOT SCALE PRINTS		
CHAMFER ENDS OF ALL SCREW THREADS 30°		PROJECT NAME	SHEET 1 OF 1		
CUT ROUNDS: 1.5 THREAD RELIEF ON MACHINED THREADS		PROJECT US ATLAS SILICON SUBSYSTEM	CATEGORY CIDE DWG. NO. 21F7134		
BREAK EDGES: .016 MAX. ON MACHINED WORK		DWG. BY W. K. MILLER DATE 4/16/2002	SIZE REV.		
REMOVE BURS, WELD SPLATTER & LOOSE SCALE		CHK BY BILL WILDS DATE 4/16/2002	PATENT CLEAR: DESIGN ACCT. NO. P1AP-11 CATEGORY CIDE AP6250		
IN ACCORDANCE WITH ASME Y14.5m & B46.1		APR BY E. ANDERSSSEN DATE 4/16/2002	REV.		

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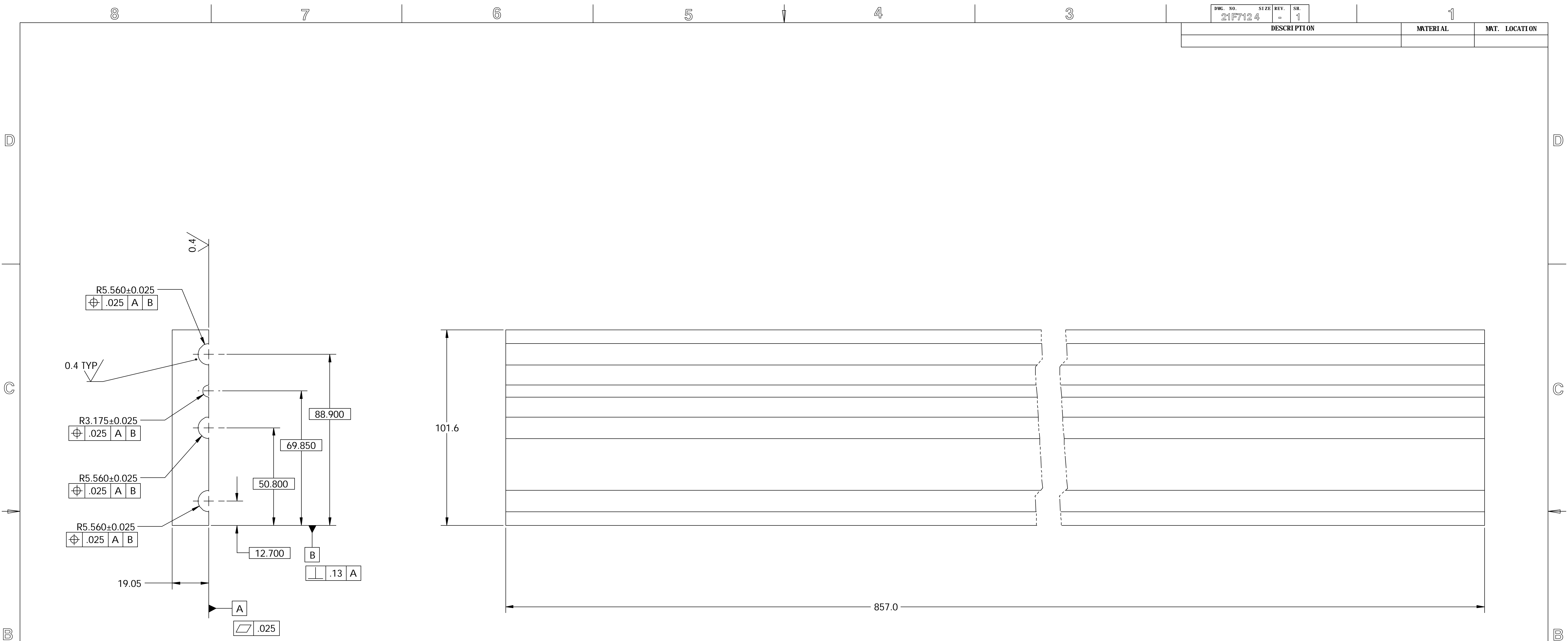
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DWG. NO.	SIZE	REV.	SHEET
21F7124		1	1
DESCRIPTION		MATERIAL	MNT. LOCATION



MATL: STEEL GROUND FLATSTOCK

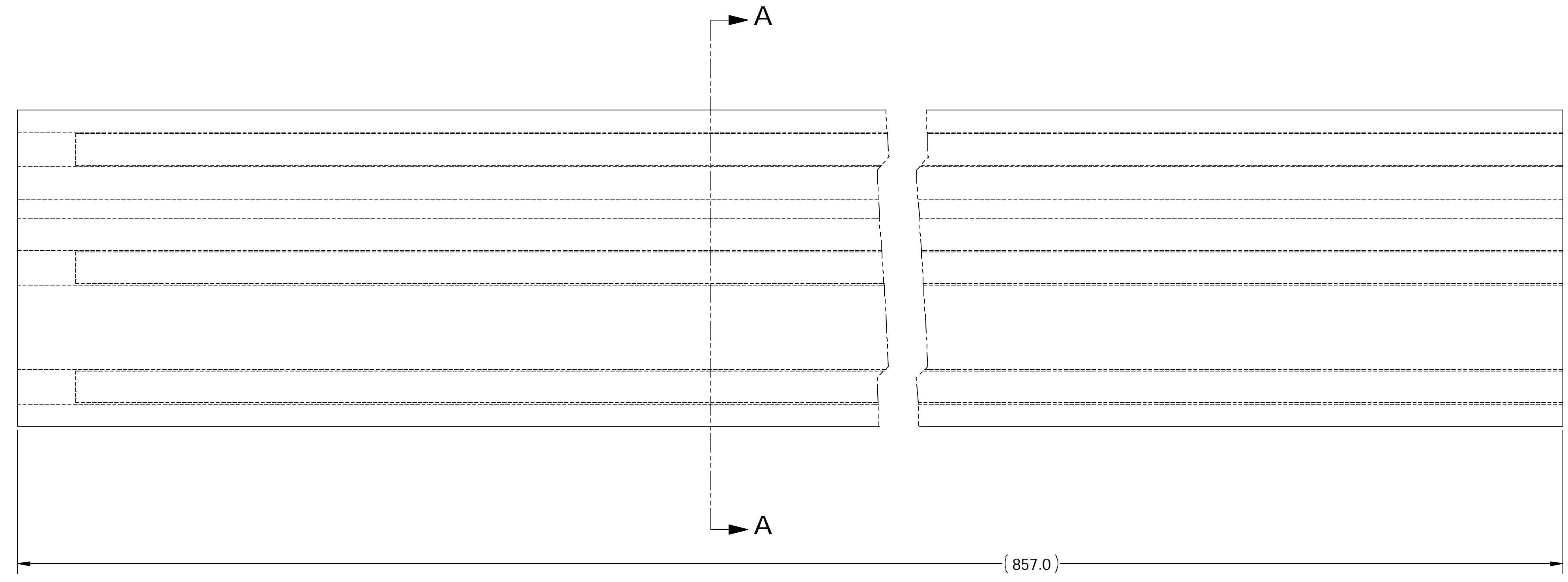
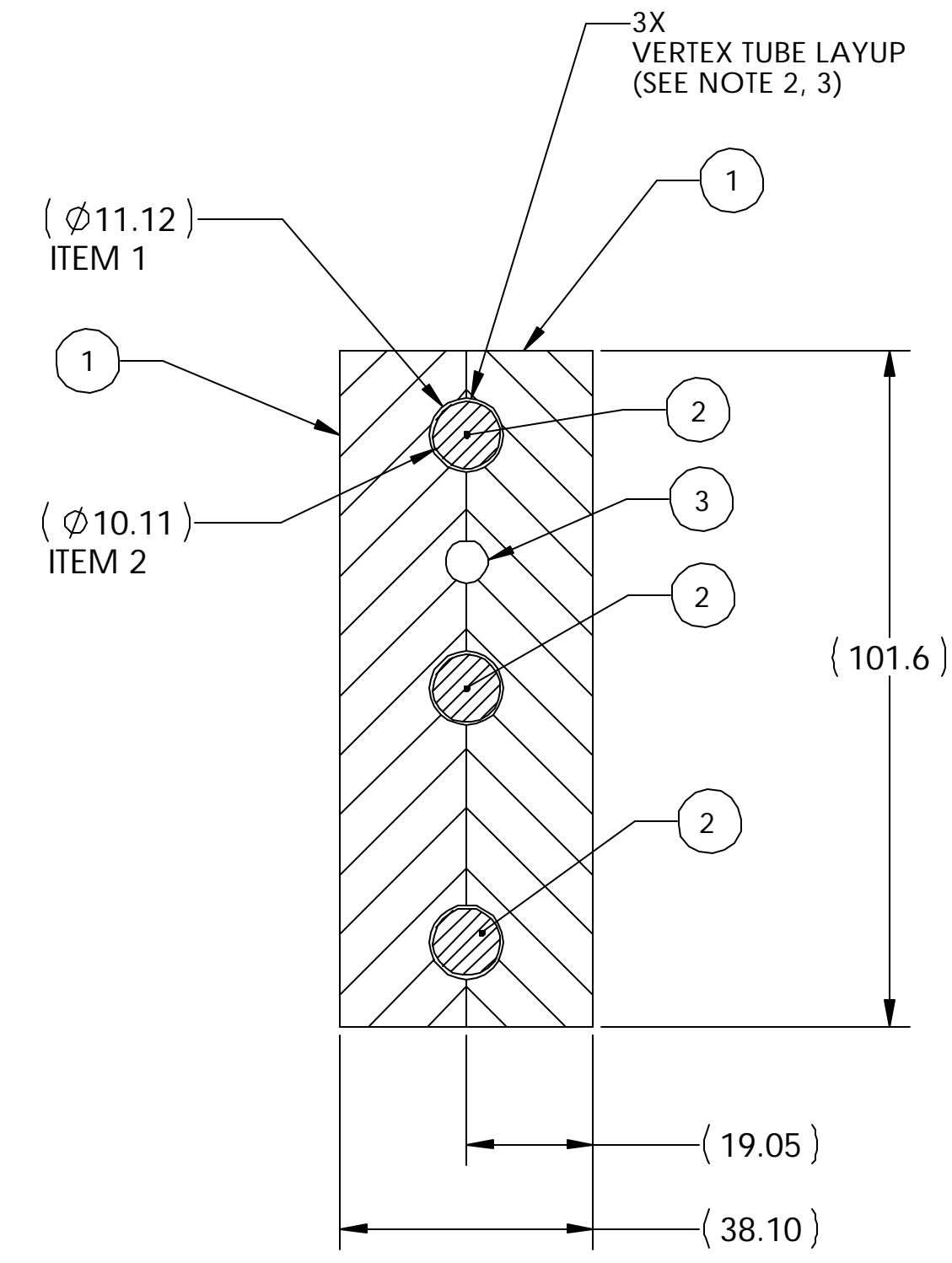
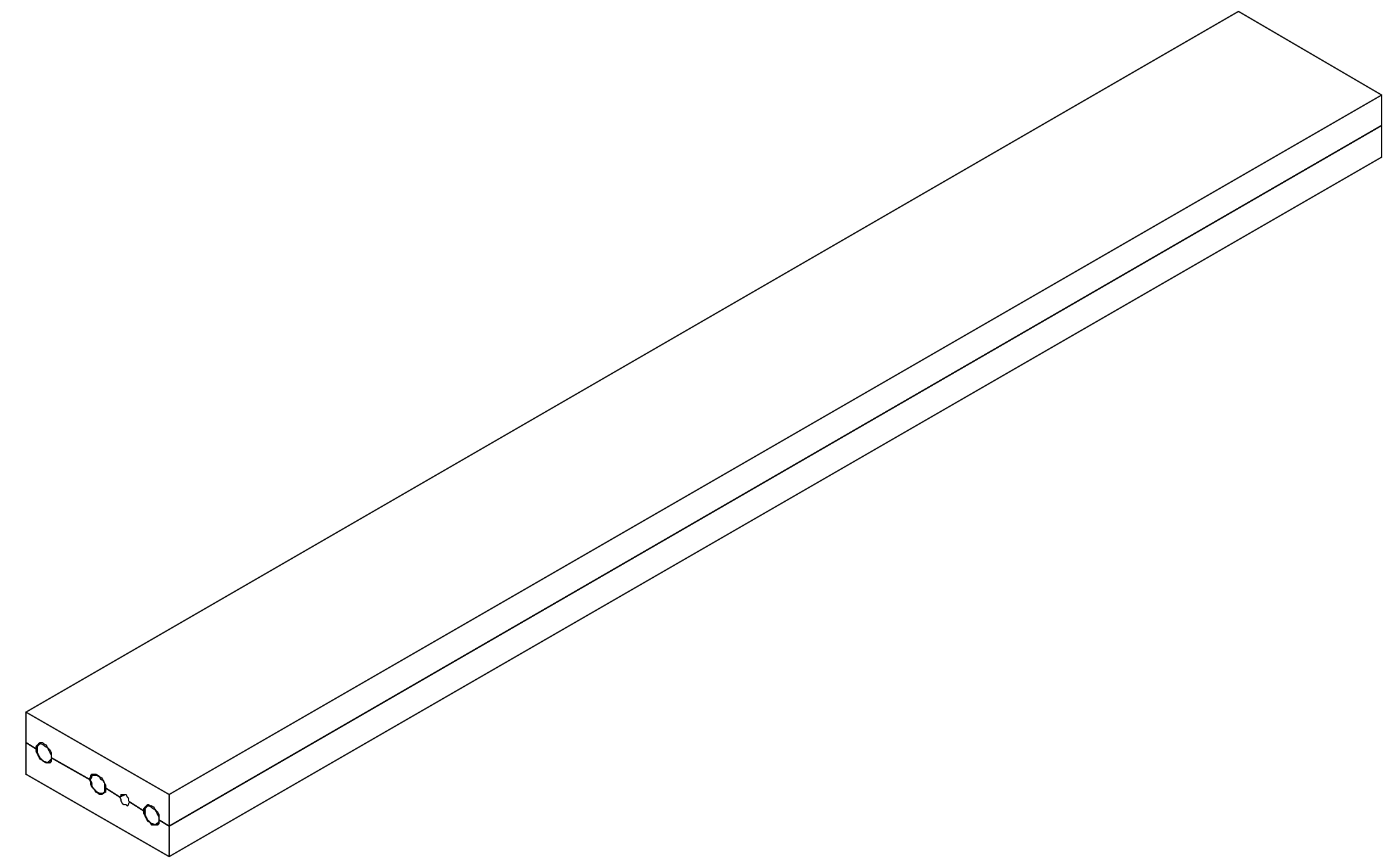
NOTES: UNLESS OTHERWISE SPECIFIED

1. DIMENSIONS IN MILLIMETERS
2. DIMENSIONS AND TOLERANCING PER ASME Y14.5M-1994
3. SURFACE TEXTURE PER ANI/ASME B 46.1-1985
4. REMOVE ALL BURRS AND BREAK SHARP EDGES TO A MAXIMUM OF .38
5. ALL INSIDE CORNERS TO BE .38 RADIUS MAX
6. COUNTERSINK 82 DEGREES ALL TAPPED HOLES TO MAJOR DIAMETER
7. COUNTERSINK 82 DEGREES APPROXIMATELY .38 DEEP ALL DRILLED HOLES
8. PARTS TO BE THOROUGHLY CLEANED TO REMOVE ALL OIL, GREASE, DIRT AND CHIPS

UNLESS OTHERWISE SPECIFIED		SHOP ORDERS		SER. NO.		ERNEST ORLANDO LAWRENCE	
TOLERANCES	X.X ± 0.5	FRAC. ± 1/64	ACCT. NO.	NO. REQD.	DATE ISSD	BERKELEY NATIONAL LABORATORY	
	X.XX ± 0.25	ANGLES ± 30°	DEL. TO	DATE REQD.		UNIVERSITY OF CALIFORNIA - BERKELEY #	
	X.XXX ± 0.013	FINISH 1.6	SURFACE TREATMENT			ATLAS PIXEL DETECTOR	
DO NOT SCALE PRINT			INDEX METHOD TAG	VERTEX STIFFENER TUBE MOLD CAVITY			
THREADS ARE CLASS 2			PROJECT NAME	ATL-IP-ED-XXXX			
CHAMFER ENDS OF ALL SCREW THREADS 30°			PROJECT NO.	US ATLAS SILICON SUBSYSTEM			
CUT ROUND, 1.5 THREAD RELIEF ON MACHINED THREADS			DWG. BY	DATE	MICROFILMED:		
BREAK EDGES .016 MAX. ON MACHINED WORK			W. K. MILLER	4/16/2002	DWG. TYPE	SHOWS ON	SCALE: 1:1
REMOVE BURRS, WELD SPLATTER & LOOSE SCALE			CHK BY	DATE	PART	21F711	DO NOT SCALE PRINTS
IN ACCORDANCE WITH ASME Y14.5m & B46.1			BILL WILDS	4/16/2002	P1AP-11	AP6250	
			APR BY	DATE	PATENT CLEAR:	DESIGN ACCT. NO.	CATEGORY CIDE
			E ANDERSSSEN	4/16/2002			DWG. NO.
							21F7124
							SHEET 1 OF 1
							SIZE
							REV.

REV	DWG	CHK	ZONE	DATE	CHANGES

ITEM	PART NO.	REQD	DESCRIPTION	MATERIAL
3	21F715-9	1	6.35 DIA. MOLD ALIGNMENT ROD	STEEL
2	21F715-7	3	VERTEX STIFFENING TUBE MANDREL	STEEL
1	21F712	2	VERTEX STIFFENING TUBE MOLD CAVITY	STEEL



SECTION A-A
SCALE 1:1

- NOTES: UNLESS OTHERWISE SPECIFIED
1. DIMENSIONS IN MILLIMETERS
 2. MOLD USED TO FORM CENTRAL AND END SECTION VERTEX STIFFENER TUBES (PART 21F653 AND 21F673)
 3. SEE PART DRAWINGS FOR MATERIAL SPECIFICATION

REV	DWG	CHK	ZONE	DATE	CHANGES	UNLESS OTHERWISE SPECIFIED	SHOP ORDERS	SER NO.	ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY UNIVERSITY OF CALIFORNIA - BERKELEY #
						TOLERANCES	ACCT NO.	DATE ISSD	
						X.X ± 0.5	FRAC. ± 1/64	NO. REQD	
						X.XX ± 0.25	ANGLES ± 30°	DATE REQD	
						X.XXX ± 0.013	FINISH 1.6	DATE REQD	
						DO NOT SCALE PRINT	SURFACE TREATMENT		ATLAS PIXEL DETECTOR SPACEFRAME STIFFENING TUBE MOLD ASSEMBLY
						THREADS ARE CLASS 2	IDEN METHOD TAG		ASSEMBLY
						CHAMFER ENDS OF ALL SCREW THREADS 30°	PROJECT NAME		SCALE: 1:1
						CUT ROUNDS, 1.5 THREAD RELIEF ON MACHINED THREADS	PROJECT NO.		DO NOT SCALE PRINTS
						BREAK EDGES .016 MAX. ON MACHINED WORK	PROJECT US ATLAS SILICON SUBSYSTEM		SHEET 1 OF 1
						REMOVE BURS, WELD SPLATTER & LOOSE SCALE	DWG BY W. K. MILLER	DATE 5/8/2001	SIZE
						IN ACCORDANCE WITH ASME Y14.5m & B46.1	CHK BY BILL WILDS	DATE 5/31/2001	REV.
							APR BY E. ANDERSSSEN	DATE ????	21F7114

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B

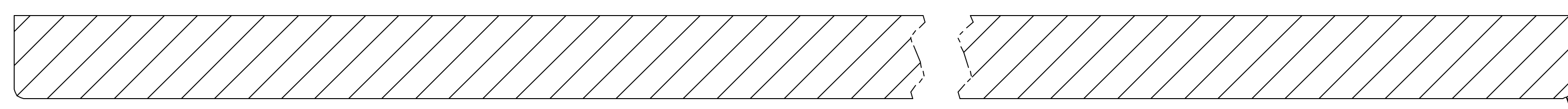
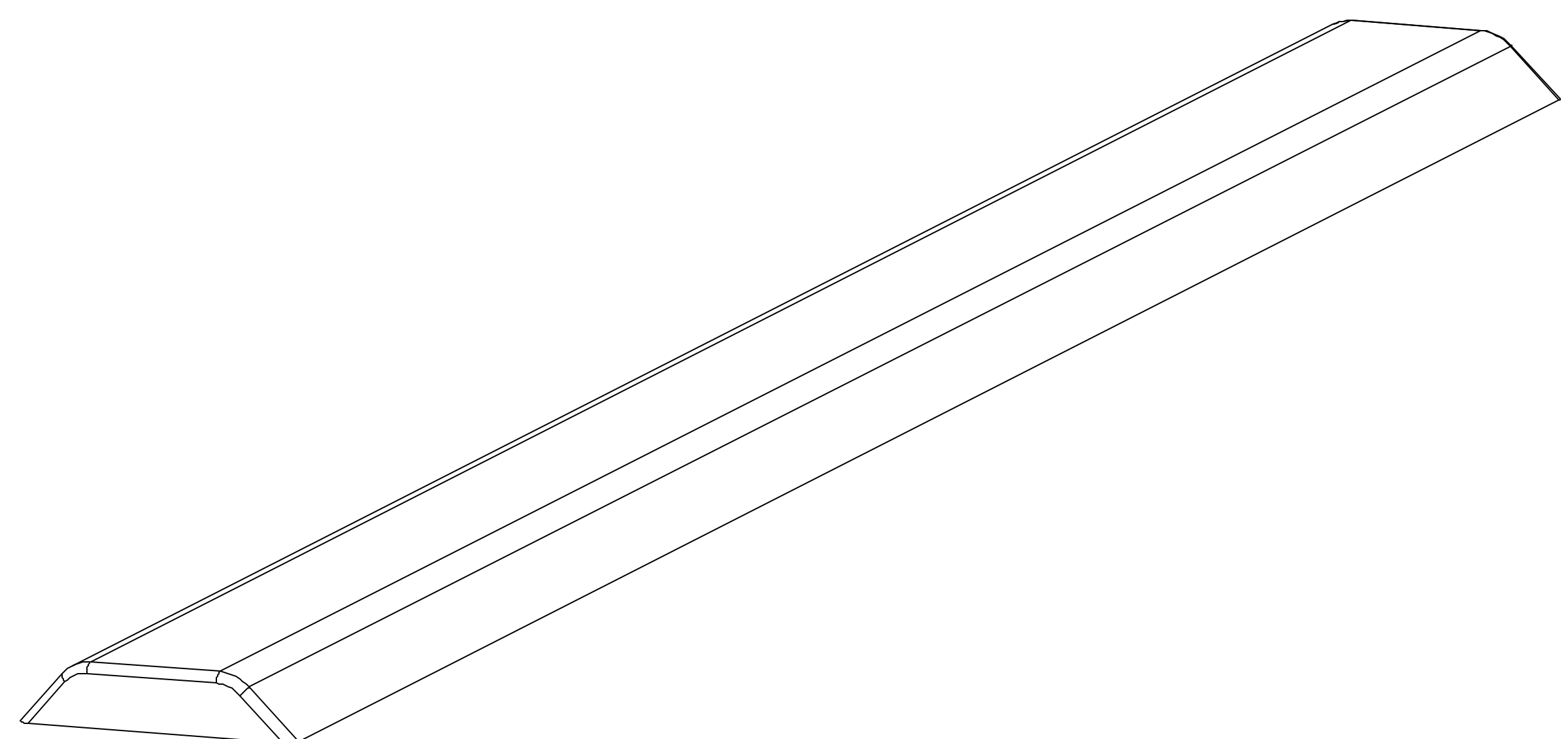
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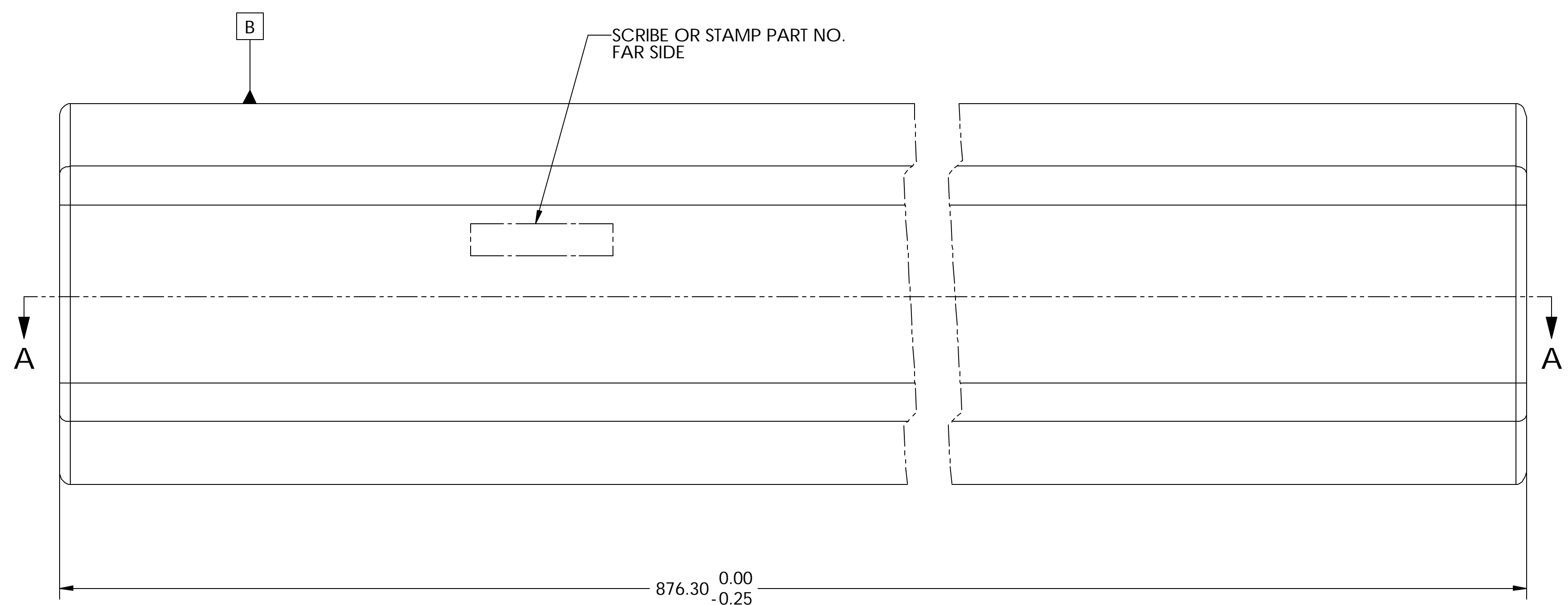
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DWG. NO.	SIZE	REV.	SER.	
21F7104		1		
DESCRIPTION		MATERIAL	MT. LOCATION	

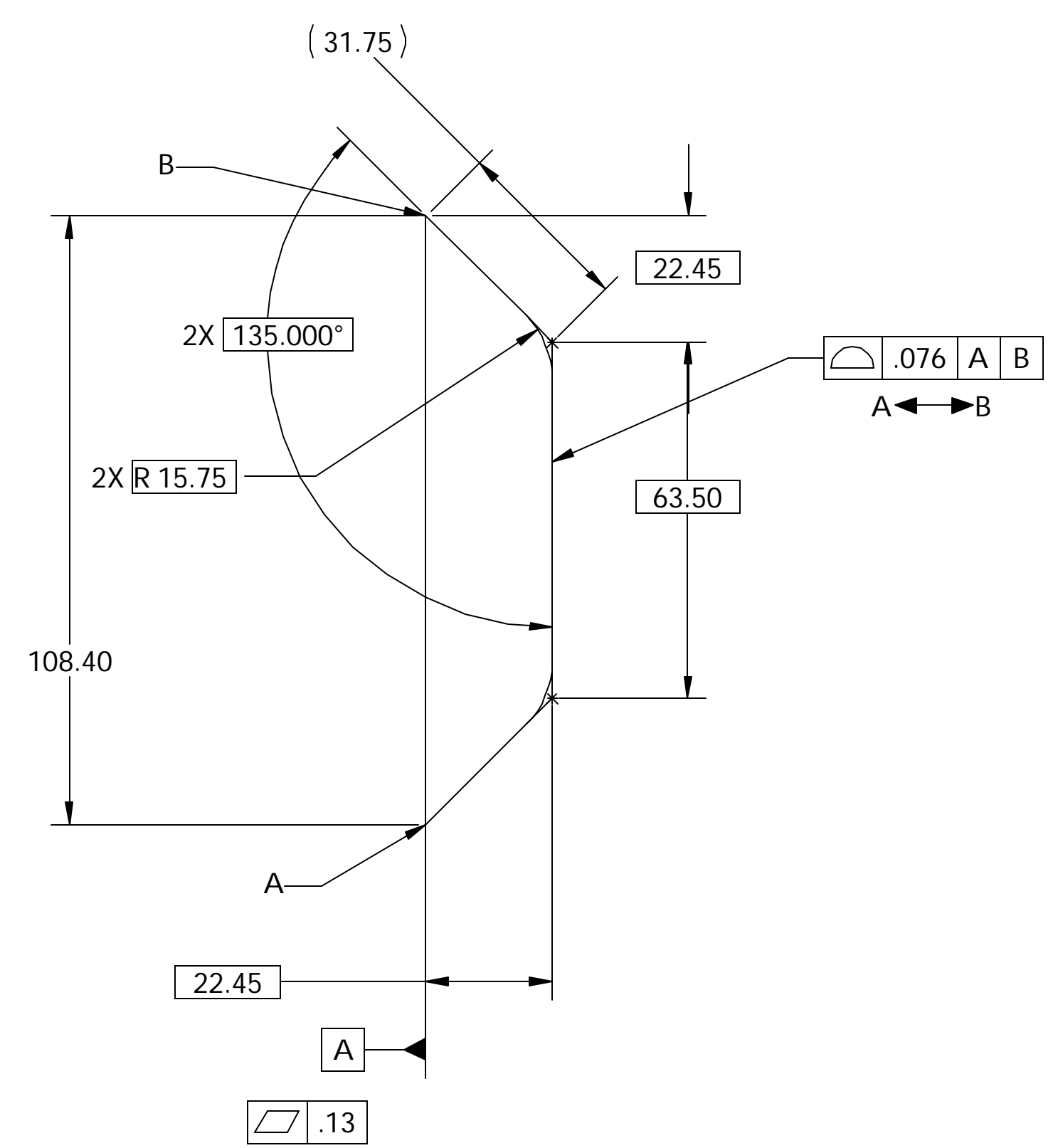


SECTION A-A
SCALE 1:1

R3.18
ALL AROUND
BOTH SIDES



MATL: STEEL GROUND FLATSTOCK



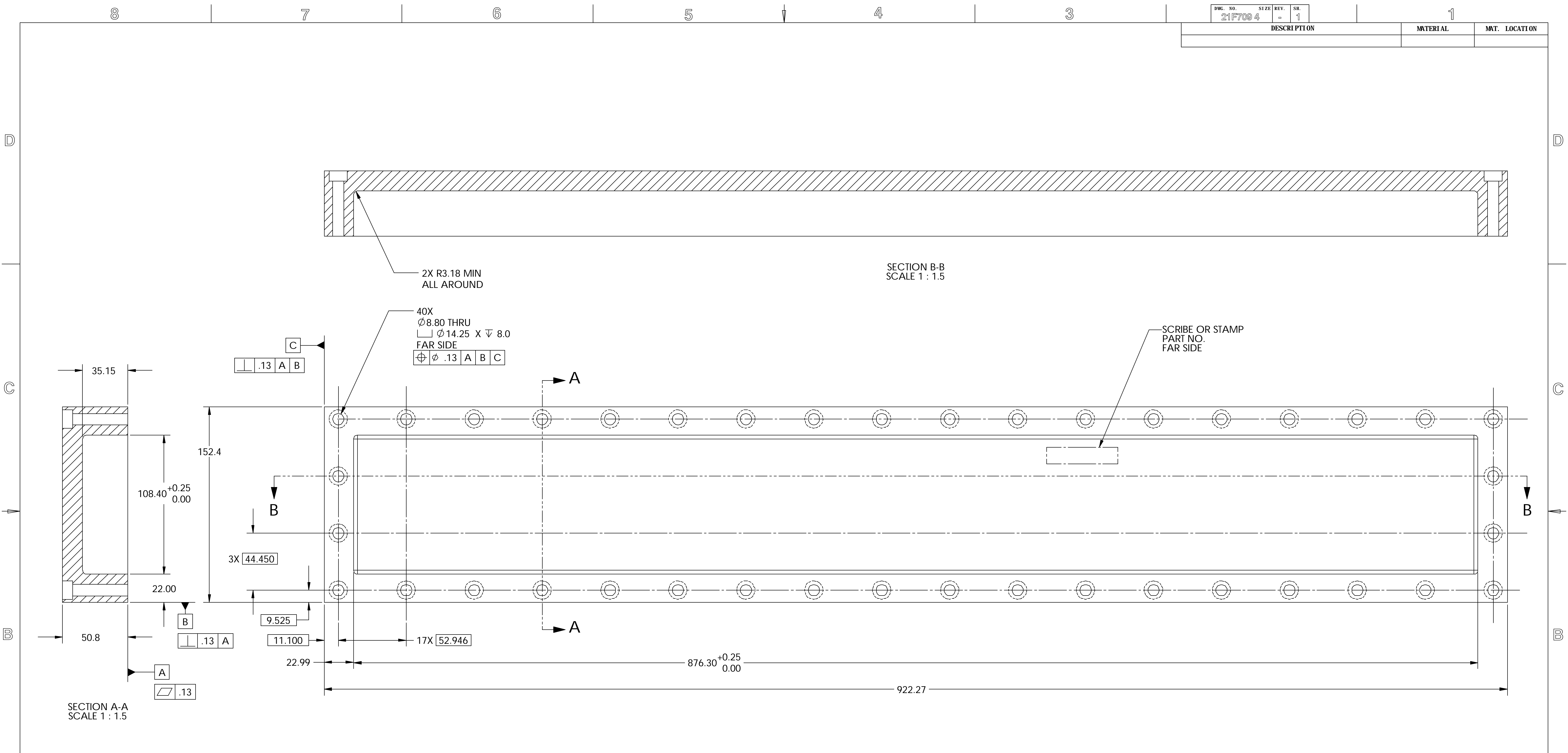
NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS IN MILLIMETERS
2. DIMENSIONS AND TOLERANCING PER ASME Y14.5M-1994
3. SURFACE TEXTURE PER ANI/ASME B 46.1-1985
4. REMOVE ALL BURRS AND BREAK SHARP EDGES TO A MAXIMUM OF .38
5. ALL INSIDE CORNERS TO BE .38 RADIUS MAX
6. COUNTERSINK 82 DEGREES ALL TAPPED HOLES TO MAJOR DIAMETER
7. COUNTERSINK 82 DEGREES APPROXIMATELY .38 DEEP ALL DRILLED HOLES
8. PARTS TO BE THOROUGHLY CLEANED TO REMOVE ALL OIL, GREASE, DIRT AND CHIPS

UNLESS OTHERWISE SPECIFIED		SHOP ORDERS		SER. NO.		ERNEST ORLANDO LAWRENCE	
TOLERANCES	X.X ± 0.5	FRAC.	± 1/64	NO.	DATE	BERKELEY NATIONAL LABORATORY	
	X.XX ± 0.25	ANGLES	± 30°	REQD.	ISSD	UNIVERSITY OF CALIFORNIA - BERKELEY #	
	X.XXX ± 0.013	FINISH	1.6	DATE	REQD.	ATLAS PIXEL DETECTOR	
						SPACEFRAME CENTRAL AND END SECTION	
						PANEL OUTER CORNER MOLD INSERT	
DO NOT SCALE PRINT	PROJECT NAME		PROJECT NUMBER		MICROFILMED:		
THREADS ARE CLASS 2	PROJECT US ATLAS SILICON SUBSYSTEM		ATL-IP-ED-XXXX		DWG. TYPE		
CHAMFER ENDS OF ALL SCREW THREADS 30°	DWG. BY W. K. MILLER		DATE 4/16/2002		PART		
CUT ROUN. 1.5 THREAD RELIEF ON MACHINED THREADS	CHK BY BILL WILDS		DATE 4/16/2002		21F708		
BREAK EDGES .016 MAX. ON MACHINED WORK	APR BY E. ANDERSSSEN		DATE 4/16/2002		SHOWS ON		
REMOVE BURRS, WELD SPLATTER & LOOSE SCALE					P1AP-11		
IN ACCORDANCE WITH ASME Y14.5m & B46.1					AP6250		
					SCALE: 1:1		
					SHEET 1 OF 1		
					DWG. NO. 21F7104		
					SIZE		
					REV.		

REV	DWG	CHK	ZONE	DATE	CHANGES

DWG. NO.	SIZE	REV.	SHEET	
21F7094		1	1	
DESCRIPTION		MATERIAL	MT. LOCATION	



MATL: STEEL GROUND FLATSTOCK

- NOTES: UNLESS OTHERWISE SPECIFIED
1. DIMENSIONS IN MILLIMETERS
 2. DIMENSIONS AND TOLERANCING PER ASME Y14.5M-1994
 3. SURFACE TEXTURE PER ANI/ASME B 46.1-1985
 4. REMOVE ALL BURRS AND BREAK SHARP EDGES TO A MAXIMUM OF .38
 5. ALL INSIDE CORNERS TO BE .38 RADIUS MAX
 6. COUNTERSINK 82 DEGREES ALL TAPPED HOLES TO MAJOR DIAMETER
 7. COUNTERSINK 82 DEGREES APPROXIMATELY .38 DEEP ALL DRILLED HOLES
 8. PARTS TO BE THOROUGHLY CLEANED TO REMOVE ALL OIL, GREASE, DIRT AND CHIPS

UNLESS OTHERWISE SPECIFIED		SHOP ORDERS		SER. NO.		ERNEST ORLANDO LAWRENCE	
TOLERANCES	X, X ± 0.5	FRAC.	± 1/64	ACCT. NO.	NO. REQD.	DATE ISSD	BERKELEY NATIONAL LABORATORY
	X, XX ± 0.25	ANGLES	± 30°	DEL. TO	DATE REQD.		UNIVERSITY OF CALIFORNIA - BERKELEY #
	X, XXX ± 0.013	FINISH	1.6	SURFACE TREATMENT			ATLAS PIXEL DETECTOR
DO NOT SCALE PRINT				IDEN. METHOD TAG	SPACEFRAME CENTRAL AND END SECTION		
THREADS ARE CLASS 2				PROJECT NO.	PANEL OUTER CORNER MOLD CAVITY		
CHAMFER ENDS OF ALL SCREW THREADS 30°				PROJECT NAME	UNIVERSITY OF CALIFORNIA - BERKELEY #		
CUT ROUND, 1.5 THREAD RELIEF ON MACHINED THREADS				PROJECT US ATLAS SILICON SUBSYSTEM	MICROFILMED:	DWG. TYPE	SHOWS ON
BREAK EDGES .016 MAX. ON MACHINED WORK				DWG. BY W. K. MILLER	DATE 4/16/2002	PART	21F708
REMOVE BURRS, WELD SPLATTER & LOOSE SCALE				CHK BY BILL WILDS	DATE 4/16/2002	PATENT CLEAR:	DESIGN ACCT. NO.
IN ACCORDANCE WITH ASME Y14.5m & B46.1				APR BY E. ANDERSSON	DATE 4/16/2002	P1AP-11	AP6250
REV	DWG	CHK	ZONE	DATE	CHANGES		SCALE: 1:1.5
							DO NOT SCALE PRINTS
							SHEET 1 OF 1
							SIZE REV.
							21F7094

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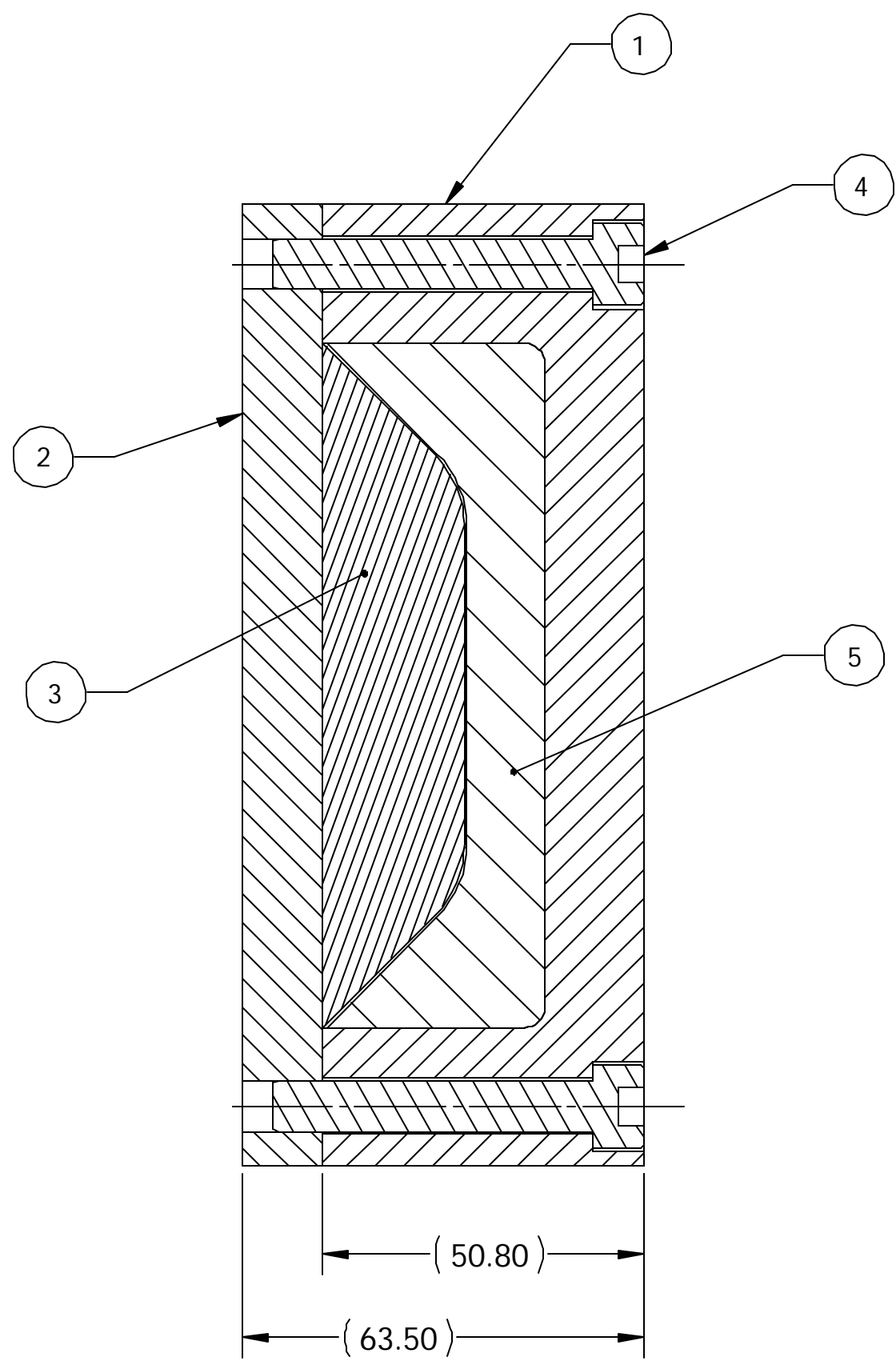
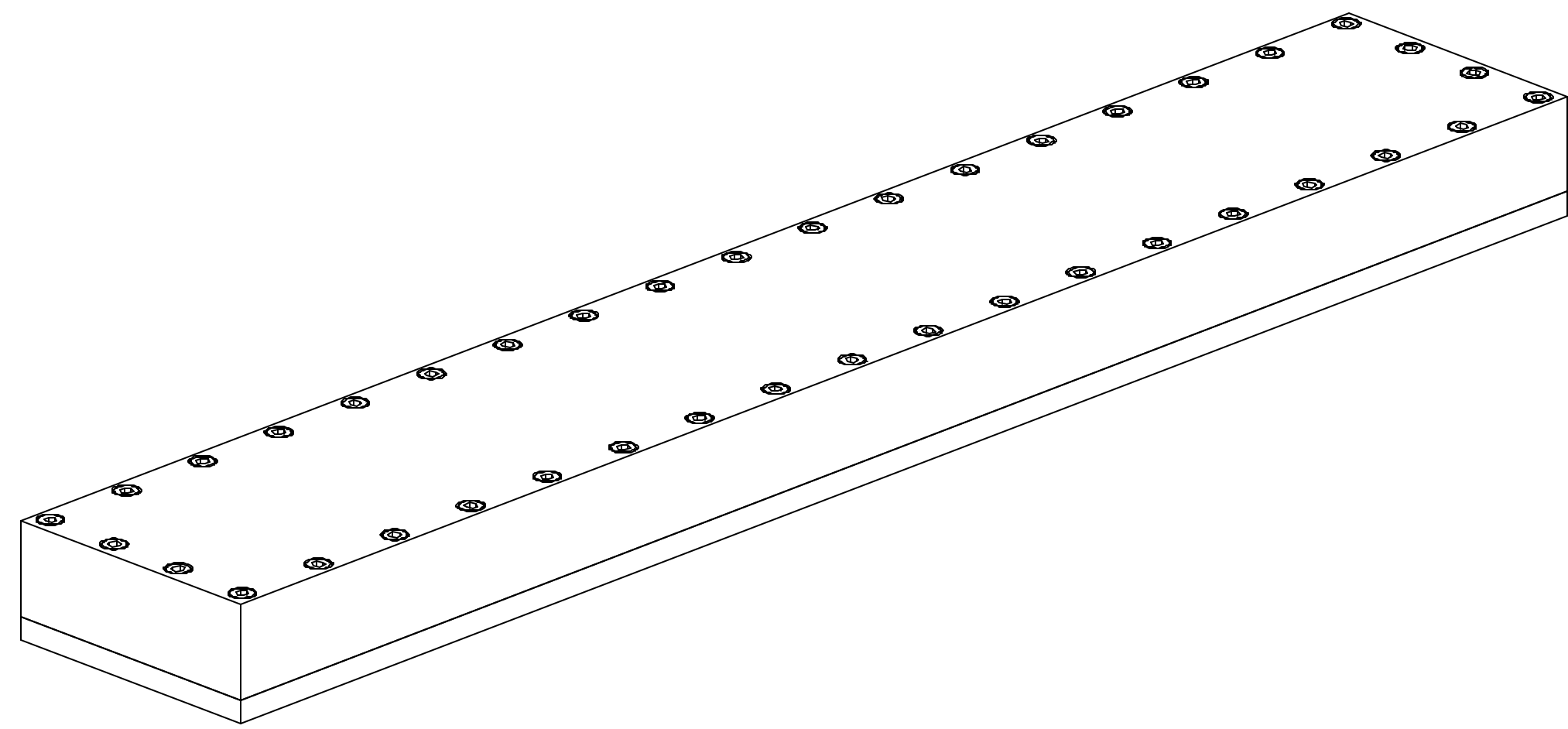
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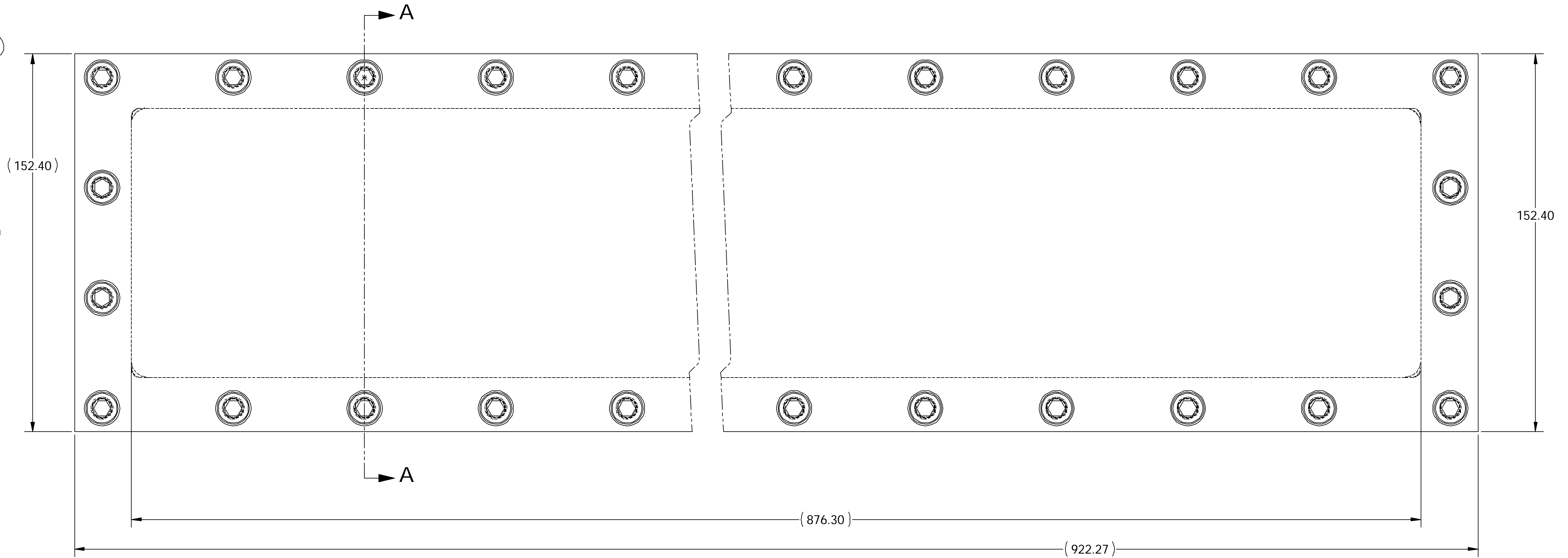
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ITEM	PART NO.	REQD	DESCRIPTION	MATERIAL
	21F708 4	1		
5		1	OUTER VERTEX STIFFENER SILICONE MOLD INSERT	
4		40	M8 X 1.25 SOCKET HD CAP X 50.8 LONG	STEEL
3	21F710	1	PANEL OUTER CORNER MOLD INSERT	
2	21F707	1	MOLD COVERPLATE	
1	21F709	1	PANEL OUTER CORNER MOLD CAVITY	



SECTION A-A
SCALE 1 : 1



NOTES: UNLESS OTHERWISE SPECIFIED

1. DIMENSIONS IN MILLIMETERS
2. ASSEMBLY USED TO MOLD THE OUTER CORNERS FOR SPACEFRAME THE CENTRAL AND END SECTION (PART 21F658 AND 21F675)
3. ASSEMBLY WEIGHS 130 Lbs.

REV		DWG	CHK	ZONE	DATE	CHANGES		UNLESS OTHERWISE SPECIFIED		SHOP ORDERS		SER NO.		ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY	
								TOLERANCES	X.X ± 0.5	FRAC. ± 1/64	ACCT NO.	NO. REQD	DATE ISSD	DATE REQD	UNIVERSITY OF CALIFORNIA - BERKELEY #
									X.XX ± 0.25	ANGLES ± 30°	SURFACE TREATMENT		ATLAS PIXEL DETECTOR SPACEFRAME CENTRAL AND END SECTION PANEL OUTER CORNER MOLD ASSEMBLY		
									X.XXX ± 0.013	FINISH 1.6	DO NOT SCALE PRINT		SCALE: 1:1		
								THREADS ARE CLASS 2	PROJECT NAME		METHOD TAG		SHOWS ON		
								CHAMFER ENDS OF ALL SCREW THREADS 30°	PROJECT NUMBER		ATL-IP-ED-XXXX		N/A		
								CUT ROUNDS, 1.5 THREAD RELIEF ON MACHINED THREADS	PROJECT SUBSYSTEM		US ATLAS SILICON SUBSYSTEM		SCALE PRINTS		
								BREAK EDGES .016 MAX. ON MACHINED WORK	DWG BY		W. K. MILLER		DATE		
								REMOVE BURS, WELD SPLATTER & LOOSE SCALE	CHK BY		BILL WILDS		DATE		
								IN ACCORDANCE WITH ASME Y14.5m & B46.1	APR BY		E. ANDERSSSEN		DATE		
									PATENT CLEAR:		DESIGN ACCT. NO.		CATEGORY CIDE		
									P1AP-11		AP6250		DWG. NO.		
									21F708 4		SIZE		REV.		

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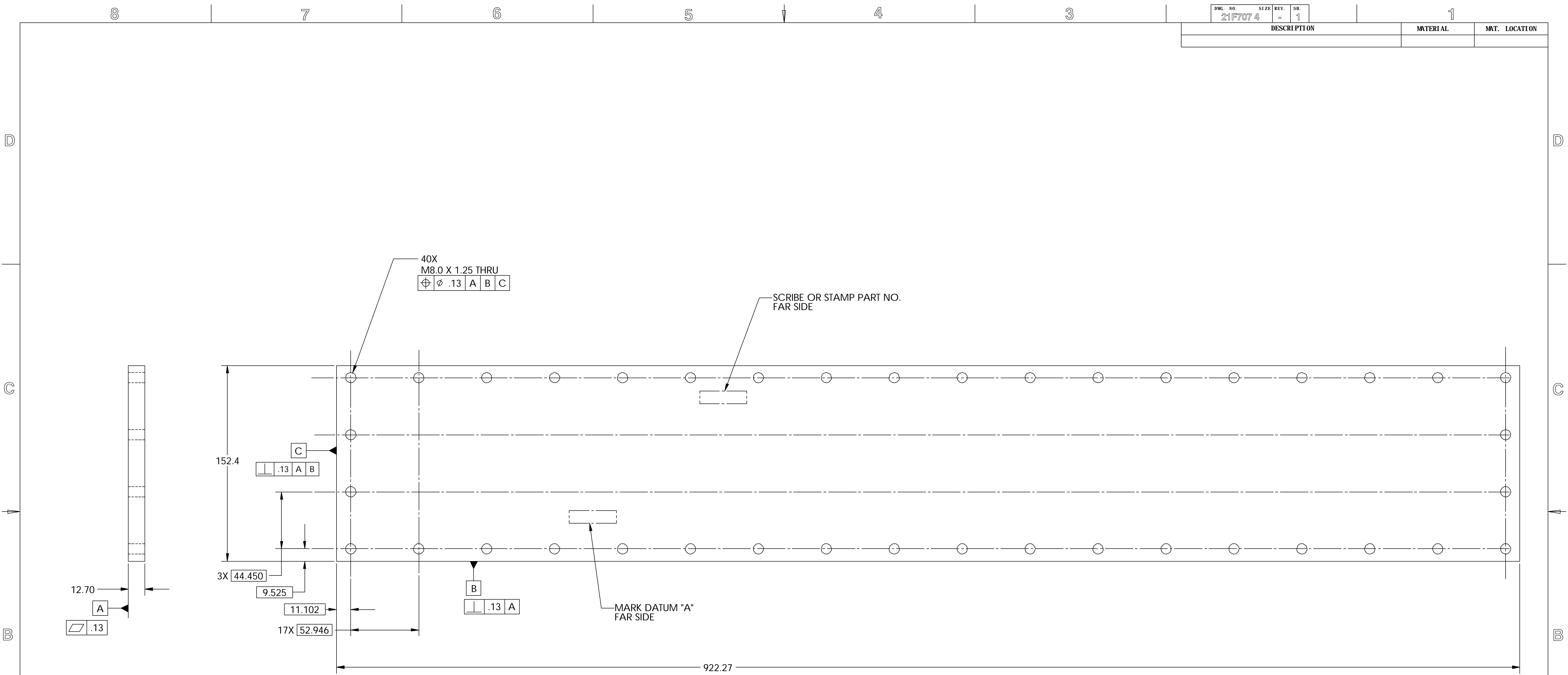
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DWG. NO.	SIZE	REV.	SHEET
21F707 4		1	1
DESCRIPTION		MATERIAL	MNT. LOCATION



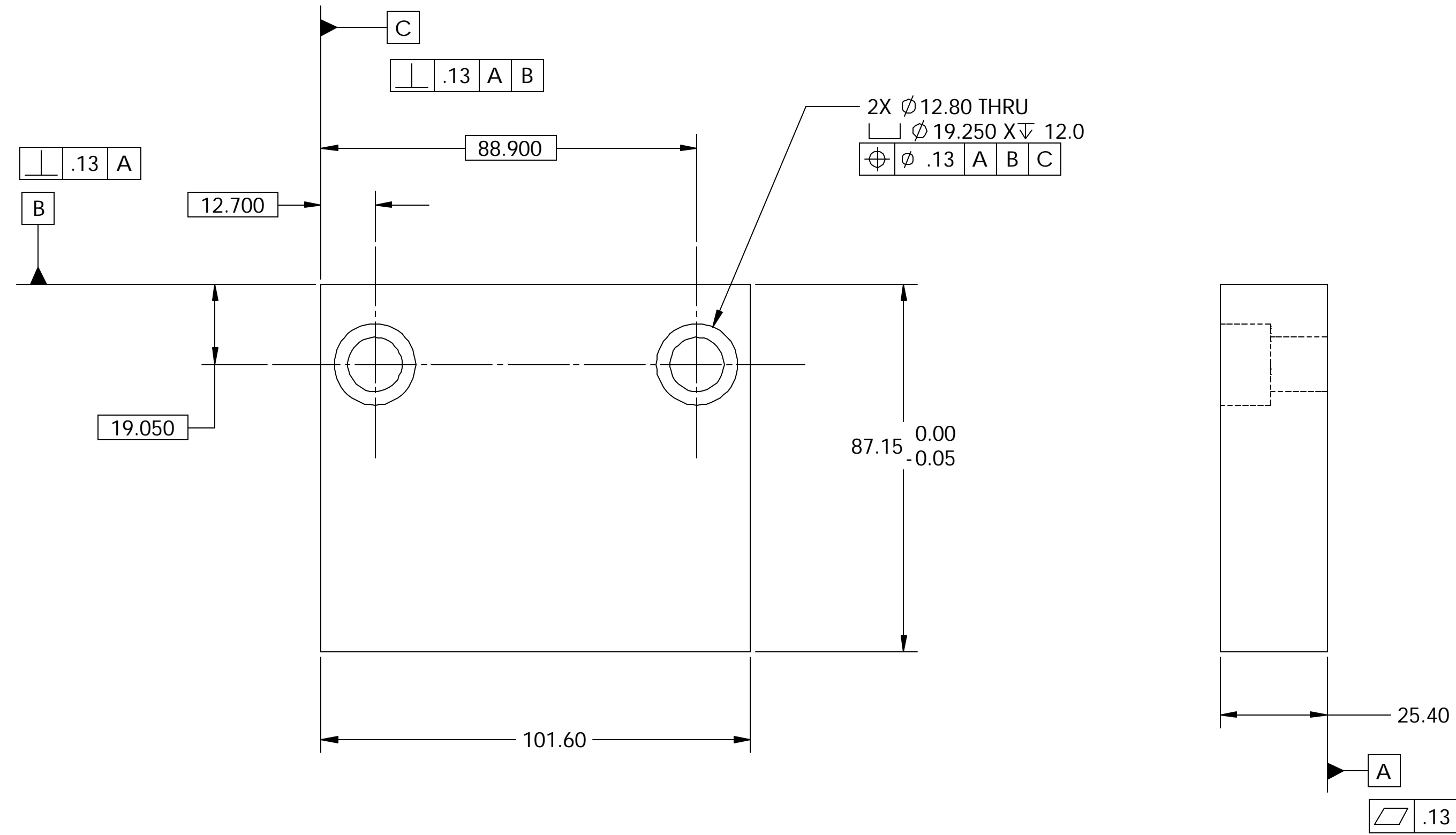
MATL: STEEL GROUND FLATSTOCK

NOTES: UNLESS OTHERWISE SPECIFIED

1. DIMENSIONS IN MILLIMETERS
2. DIMENSIONS AND TOLERANCING PER ASME Y14.5M-1994
3. SURFACE TEXTURE PER ANI/ASME B 46.1-1985
4. REMOVE ALL BURRS AND BREAK SHARP EDGES TO A MAXIMUM OF .38
5. ALL INSIDE CORNERS TO BE .38 RADIUS MAX
6. COUNTERSINK 82 DEGREES ALL TAPPED HOLES TO MAJOR DIAMETER
7. COUNTERSINK 82 DEGREES APPROXIMATELY .38 DEEP ALL DRILLED HOLES
8. PARTS TO BE THOROUGHLY CLEANED TO REMOVE ALL OIL, GREASE, DIRT AND CHIPS

UNLESS OTHERWISE SPECIFIED		SHOP ORDERS		SER. NO.		ERNEST ORLANDO LAWRENCE	
TOLERANCES	X.X ± 0.5	FRAC.	± 1/64	NO.	DATE	BERKELEY NATIONAL LABORATORY	
	X.XX ± 0.25	ANGLES	± 30'	REQD.	ISSD	UNIVERSITY OF CALIFORNIA - BERKELEY #	
	X.XXX ± 0.013	FINISH	1.6	DATE	REQD.	ATLAS PIXEL DETECTOR	
						SPACEFRAME CENTRAL AND END SECTION	
						MOLD COVERPLATE	
DO NOT SCALE PRINT	PROJECT NAME		PROJECT NUMBER		MICROFILMED:		
THREADS ARE CLASS 2	US ATLAS SILICON SUBSYSTEM		ATL-IP-ED-XXXX		DWG. TYPE		
CHAMFER ENDS OF ALL SCREW THREADS 30°	DWG. BY		DATE		PART		
CUT ROUND. 1.5 THREAD RELIEF ON MACHINED THREADS	W. K. MILLER		4/16/2002		21F705		
BREAK EDGES .016 MAX. ON MACHINED WORK	CHK BY		DATE		SCALE: 1:1.5		
REMOVE BURRS, WELD SPLATTER & LOOSE SCALE	BILL WILDS		4/16/2002		DO NOT SCALE PRINTS		
IN ACCORDANCE WITH ASME Y14.5m & B46.1	APR BY		DATE		SHEET 1 OF 1		
	E. ANDERSSSEN		4/16/2002		SIZE REV.		
REV	DWG	CHK	ZONE	DATE	P1AP-11		AP6250
				CHANGES		21F707 4	

DWG. NO.	SIZE	REV.	SHEET
21F763 4	-	1	1
DESCRIPTION		MATERIAL	MNT. LOCATION



MATL: 4340 ALLOY STEEL (SEE NOTE 9)

NOTES: UNLESS OTHERWISE SPECIFIED

- ALL DIMENSIONS IN MILLIMETERS
- DIMENSIONS AND TOLERANCING PER ASME Y14.5M-1994
- SURFACE TEXTURE PER ANI/ASME B 46.1-1985
- REMOVE ALL BURRS AND BREAK SHARP EDGES TO A MAXIMUM OF .38
- ALL INSIDE CORNERS TO BE .38 RADIUS MAX
- COUNTERSINK 82 DEGREES ALL TAPPED HOLES TO MAJOR DIAMETER
- COUNTERSINK 82 DEGREES APPROXIMATELY .38 DEEP ALL DRILLED HOLES
- PARTS TO BE THOROUGHLY CLEANED TO REMOVE ALL OIL, GREASE, DIRT AND CHIPS
- 4340 MATERIAL TO BE CARBORIZED AND OIL QUENCHED TO ACHIEVE Rc50 (HB 475) MINIMUM HARDNESS

REV	DWG	CHK	ZONE	DATE	CHANGES	UNLESS OTHERWISE SPECIFIED		SHOP ORDERS		SER. NO.		ERNEST ORLANDO LAWRENCE				
						TOLERANCES	FRAC.	NO. REQD	DATE ISSD	BERKELEY NATIONAL LABORATORY						
						X.X ± 0.5	± 1/64					UNIVERSITY OF CALIFORNIA - BERKELEY #				
						X.XX ± 0.25	ANGLES ± 30°					ATLAS PIXEL DETECTOR				
						X.XXX ± 0.013	FINISH 1.6					ENDCONE VERTEX PLATE				
												MOLD END PLATE				
						PROJECT NAME	PROJECT NUMBER	IDEN METHOD TAG	MICROFILMED:		DWG. TYPE	SHOWS ON	SCALE: 1:1	DO NOT SCALE PRINTS		
						PROJECT US ATLAS SILICON SUBSYSTEM	ATL-IP-ED-XXXX				PART	21F759	SHEET 1 OF 1			
						DWG BY W. K. MILLER	DATE 4/16/2002				PATENT CLEAR:	DESIGN ACCT. NO.	CATEGORY CIDE	DWG. NO.	SIZE	REV.
						CHK BY BILL WILDS	DATE 4/16/2002				P1AP-11	AP6250	21F763 4			
						APR BY E. ANDERSSSEN	DATE 4/16/2002									