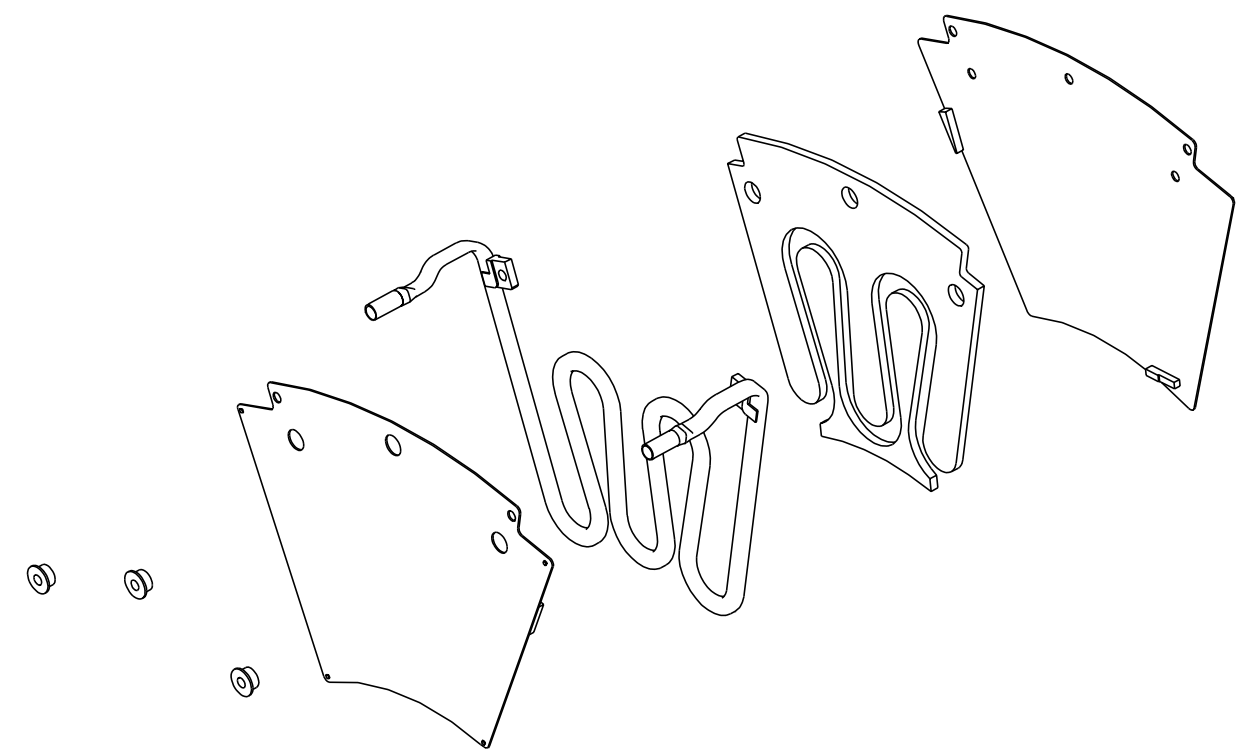


ITEM	PART NO	REQD	DESCRIPTION	MATERIAL
19	21F361		OPTICAL TARGET, SECTOR SURVEY	SILICON, MICROFAB
18	21F361		OPTICAL TARGET, SECTOR SURVEY	SILICON, MICROFAB
17	21F361		OPTICAL TARGET, SECTOR SURVEY	SILICON, MICROFAB
16	21F361		OPTICAL TARGET, SECTOR SURVEY	SILICON, MICROFAB
15	21F361		OPTICAL TARGET, SECTOR SURVEY	SILICON, MICROFAB
14	21F361		OPTICAL TARGET, SECTOR SURVEY	SILICON, MICROFAB
13	21F361		OPTICAL TARGET, SECTOR SURVEY	SILICON, MICROFAB
12	21F361		OPTICAL TARGET, SECTOR SURVEY	SILICON, MICROFAB
11	21F360		T-WASHER, SECTOR MOUNT	VICTREX PEEK
10	21F360		T-WASHER, SECTOR MOUNT	VICTREX PEEK
9	21F360		T-WASHER, SECTOR MOUNT	VICTREX PEEK
8	21F353		TUBE, SECTOR COOLING	ALUMINUM 3003
7	21F357		STRAIN-RELIEF, SECTOR COOLING TUBE	ALUMINUM 6061 T6
6	21F357		STRAIN-RELIEF, SECTOR COOLING TUBE	ALUMINUM 6061 T6
5	21F351		SECTOR MOUNTSIDE FACING SUB-ASSEMBLY	HYSOL EA9396
4	21F356		CORE, SECTOR FOAM	RVC FOAM (CARBON)
3	21F352		SECTOR NON-MOUNTSIDE FACING SUB-ASSEMBLY	BRYTE EX1515
2			MODULE ARRAY SKELETON FOR FACING LAYOUT	LAYOUT
1			MODULE ARRAY SKELETON FOR FACING LAYOUT	LAYOUT



REV	DWG	CHK	ZONE	DATE	CHANGES

UNLESS OTHERWISE SPECIFIED		SHOP ORDERS		SER NO. -
TOLERANCES	X.X ± 0.1	FRAC. ± 1/64	ACCT NO. SEE J.O.	NO. RECD 60
	X.XX ± 0.01	Angles ± 0.50°	DEL TO JS WIRTH	DATE ISSD -
	X.XXX ± 0.001	FINISH $\sqrt{25}$ (µin)	SURFACE TREATMT PARYLENE COAT	DATE RECD -
DO NOT SCALE PRINT		IDENT METHOD TAG	PROJECT NUMBER ATLPHLDXXXX	US ATLAS SILICON SUBSYSTEM (11992)
THREADS ARE CLASS 2		PROJECT NAME US ATLAS SILICON SUBSYSTEM	DWG BY D UKEN	DATE 18-Feb-01
CHAMFER ENDS OF ALL SCREW TREADS 30°		CHK BY J WIRTH	APR BY E ANDERSSSEN	DATE 18-FEB-01
CUT ROUND, 1.5 THREAD RELIEF ON MACHINED THREADS				
BREAK EDGES .016 MAX. ON MACHINED WORK				
REMOVE BURRS, WELD SPLATIER & LOOSE SCALE				
IN ACCORDANCE WITH ASME Y14.5M & B46.1				

ERNEST ORLANDO LAWRENCE
BERKELEY NATIONAL LABORATORY
 UNIVERSITY OF CALIFORNIA - BERKELEY

ATLAS PIXEL DETECTOR
 DISK SECTOR, MODULE LOCAL SUPPORT
 SECTOR ASSEMBLY

MICROFILMED: DWG. TYPE ASSEM SHOWN ON SCALE: 0.500 DO NOT SCALE PRINTS

PATENT CLEAR: DESIGN ACCT. NO. CATEGORY CODE DWG. NO. SIZE REV.

SEE J.O. API110 **21F3503**

SHEET 1 OF 1

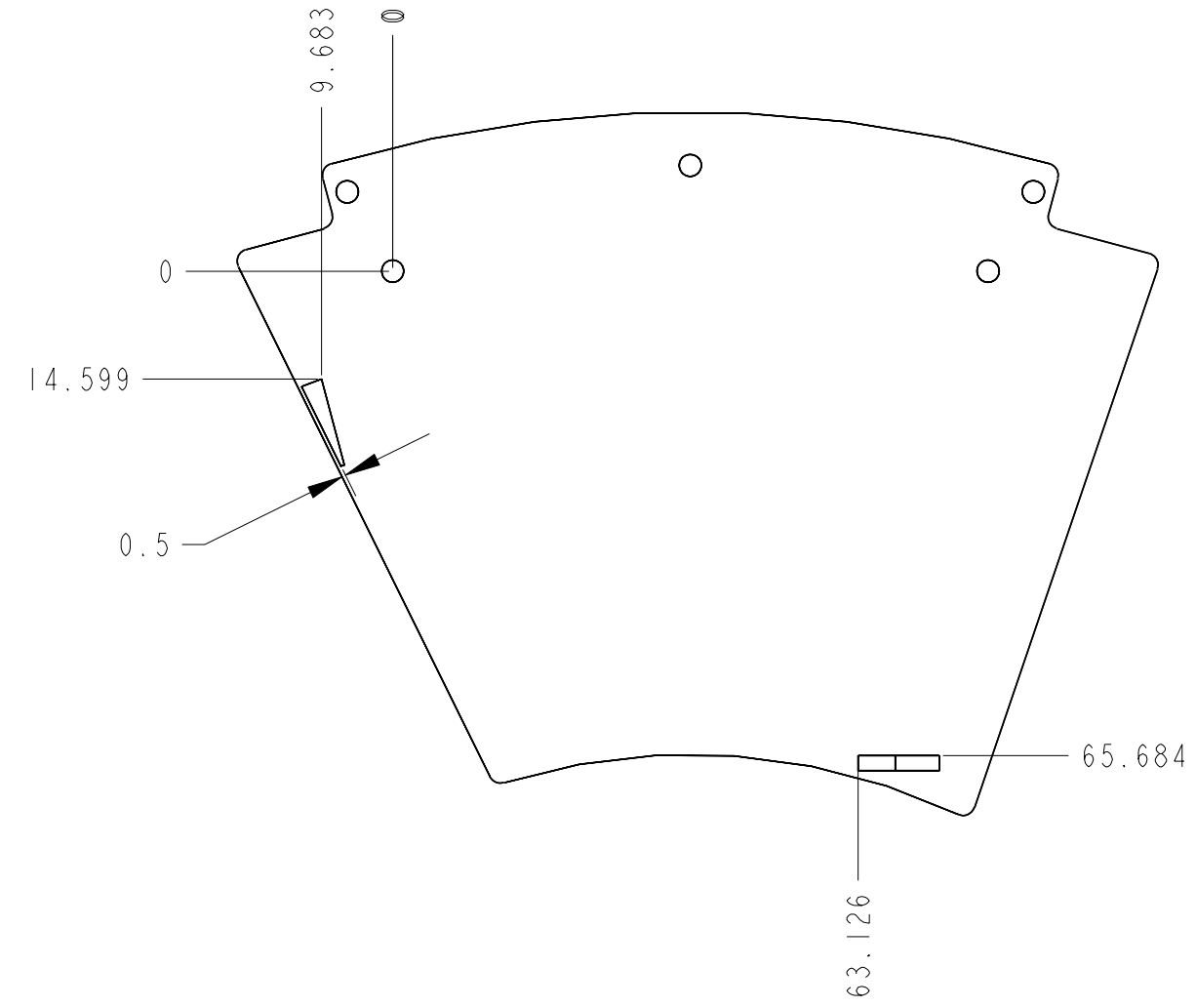
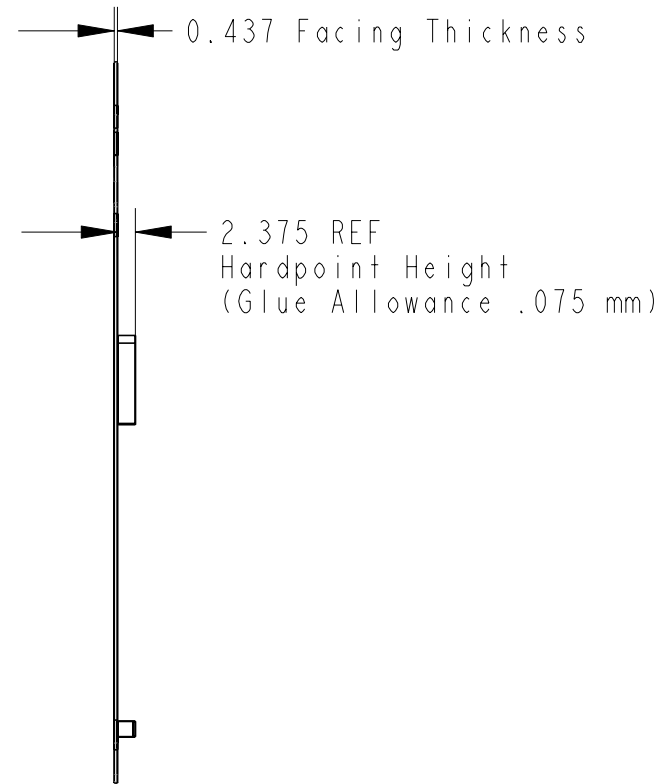
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DWG. NO. **21F3503** SH. 1

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ITEM	PART NO	REQD	DESCRIPTION	MATERIAL
3	21F359		WEDGE HARDPOINT, SECTOR FACING SUPPORT	M55J CARBON-CARBON
2	21F358		BEAM HARDPOINT, SECTOR FACING SUPPORT	M55J CARBON-CARBON
1	21F355		FACING, SECTOR NON-MOUNTSIDE	P30 CARBON-CARBON



					UNLESS OTHERWISE SPECIFIED	SHOP ORDERS		SER NO. -	ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY UNIVERSITY OF CALIFORNIA - BERKELEY				
					TOLERANCES	ACCT NO. SEE J.O.	NO. 60	DATE ISSD -					
					X.X ± 0.1	FRAC. ± 1/64	DEL TO JS WIRTH	DATE RECD -	ATLAS PIXEL DETECTOR DISK SECTOR, MODULE LOCAL SUPPORT SECTOR NON-MOUNTSIDE FACING SUB-ASSEMBLY				
					X.XX ± 0.01	Angles ± 0.50°	SURFACE TREATMT						
					X.XXX ± 0.001	FINISH $\sqrt{25}$	IDENT METHOD TAG		MICROFILMED: DWG. TYPE ASSEM SHOWN ON 21F350 SCALE: 1.000 DO NOT SCALE PRINTS SHEET 1 OF 1				
					DO NOT SCALE PRINT	PROJECT NUMBER ATLPHLDXXXX	PROJECT NAME US ATLAS SILICON SUBSYSTEM						
					THREADS ARE CLASS 2	DWG BY D UKEN	DATE 18-Feb-01	PATENT CLEAR:	DESIGN ACCT. NO. SEE J.O.	CATEGORY CODE API110	DWG. NO. 21F3523	SIZE	REV.
					CHAMFER ENDS OF ALL SCREW TREADS 30°	CHK BY J WIRTH	DATE 18-FEB-01						
					CUT ROUND, 1.5 THREAD RELIEF ON MACHINED THREADS	APR BY E ANDERSSEN	DATE						
					BREAK EDGES .016 MAX. ON MACHINED WORK								
					REMOVE BURRS, WELD SPLATIER & LOOSE SCALE								
					IN ACCORDANCE WITH ASME Y14.5M & B46.1								
REV	DWG	CHK	ZONE	DATE	CHANGES								

DWG. NO. 21F3523 SH. 1

REV. 1

Dwg. File: SECTOR_FACING.SUBASSEMBLY Model File: SECTOR_NONMOUNT_FACING.SUB

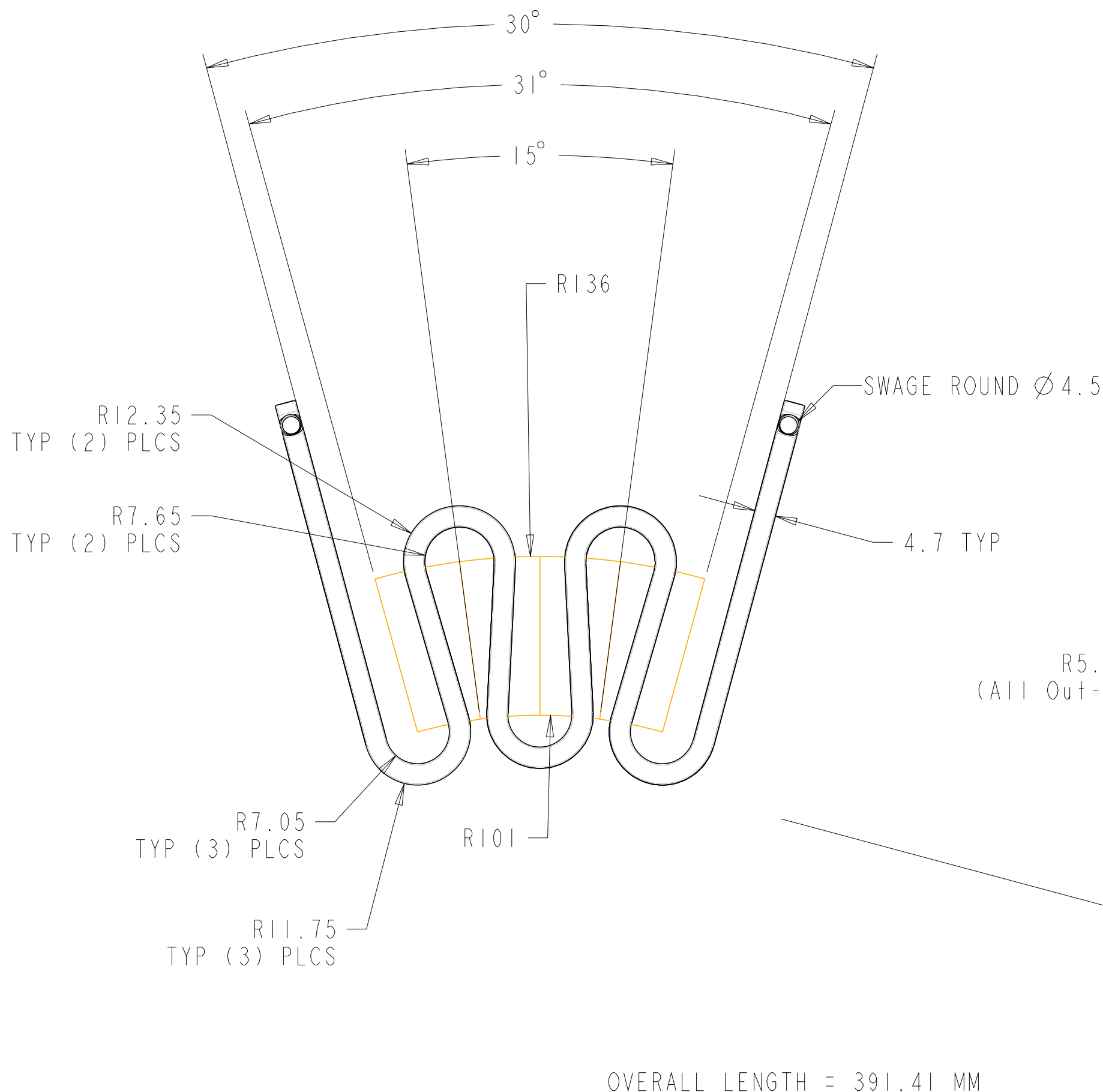
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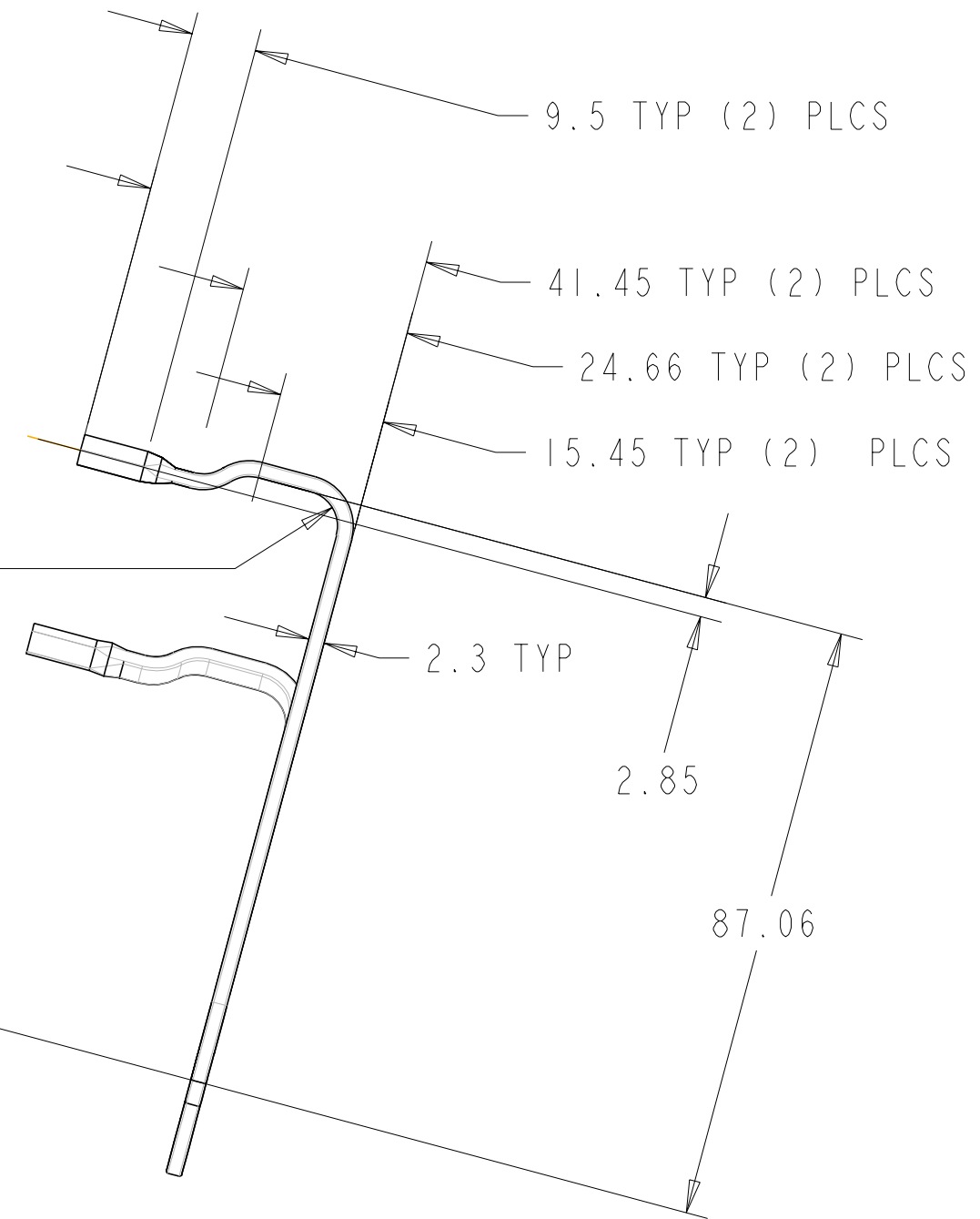
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DESCRIPTION	MATERIAL	MAT. LOCATION
	ALUMINUM 3003	-



R5.15 TYP (6) PLCS
(All Out-of-Plane Bends)



REV	DWG	CHK	ZONE	DATE	CHANGES

UNLESS OTHERWISE SPECIFIED
 TOLERANCES
 X.X ± 0.1 FRAC. ± 1/64
 X.XX ± 0.03 Angles ± 1.00°
 X.XXX ± 0.010 FINISH $\sqrt[25]{\mu\text{in}}$
 DO NOT SCALE PRINT
 THREADS ARE CLASS 2
 CHAMFER ENDS OF ALL SCREW TREADS 30°
 CUT ROUND, 1.5 THREAD RELIEF ON MACHINED THREADS
 BREAK EDGES .016 MAX. ON MACHINED WORK
 REMOVE BURRS, WELD SPLATTER & LOOSE SCALE
 IN ACCORDANCE WITH ASME Y14.5M & B46.1

SHOP ORDERS
 ACCT NO. SEE J.O. NO. RECD 60
 DEL TO JS WIRTH
 SURFACE TREATMT PARYLENE COAT
 IDENT METHOD TAG
 PROJECT NUMBER ATLPHLDXXXX
 PROJECT NAME US ATLAS SILICON SUBSYSTEM
 DWG BY D UKEN DATE 18-Feb-01
 CHK BY J WIRTH DATE 18-FEB-01
 APR BY E ANDERSSEN DATE

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

ATLAS PIXEL DETECTOR
 DISK SECTOR, MODULE LOCAL SUPPORT
 TUBE, SECTOR COOLING

MICROFILMED: DWG. TYPE PART SHOWN ON 21F350
 SCALE: 1.000 DO NOT SCALE PRINTS
SHEET 1 OF 1
 DWG. NO. 21F3533 SIZE REV.

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DWG. NO. 21F3533
 SIZE REV. 1

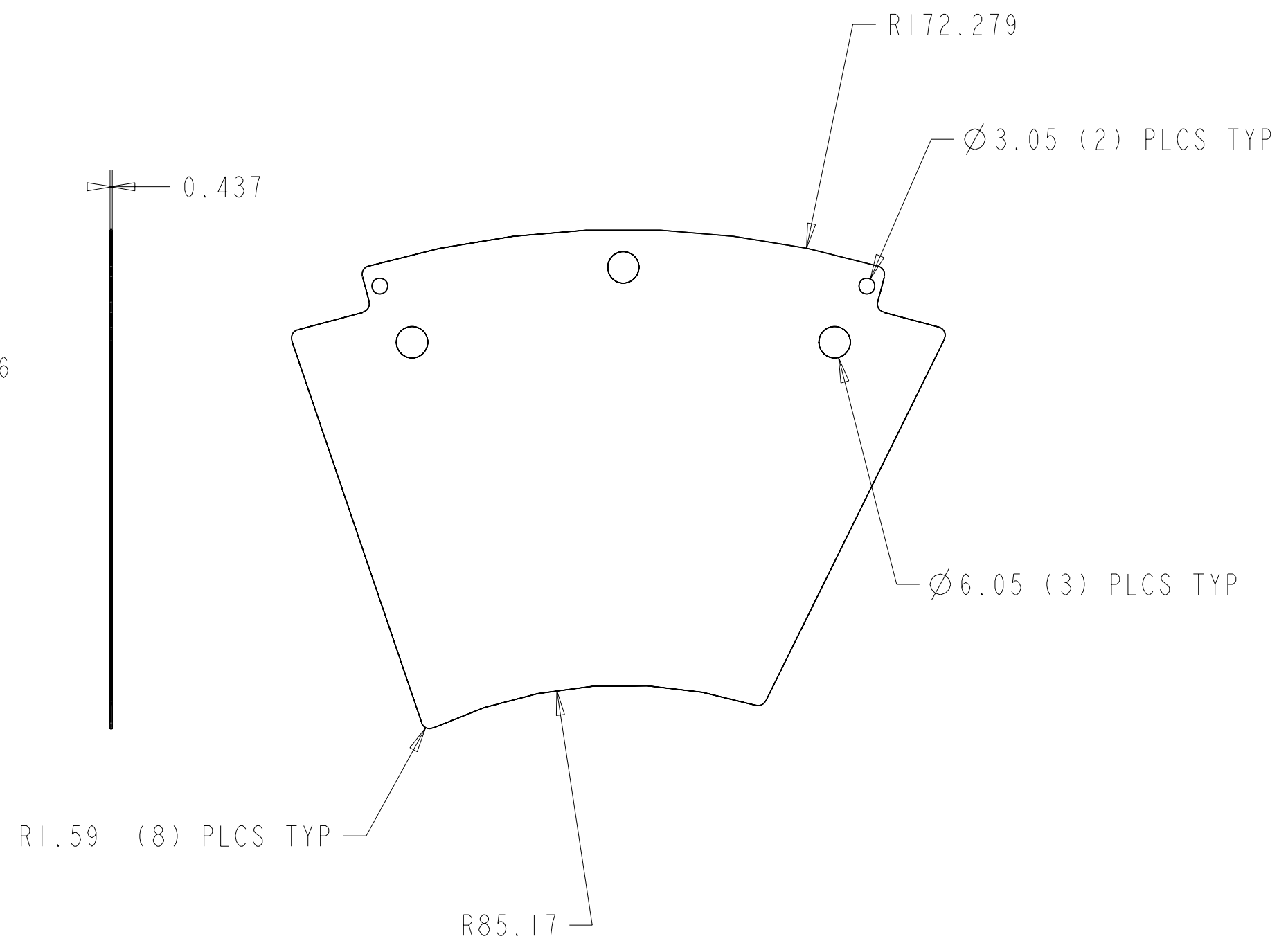
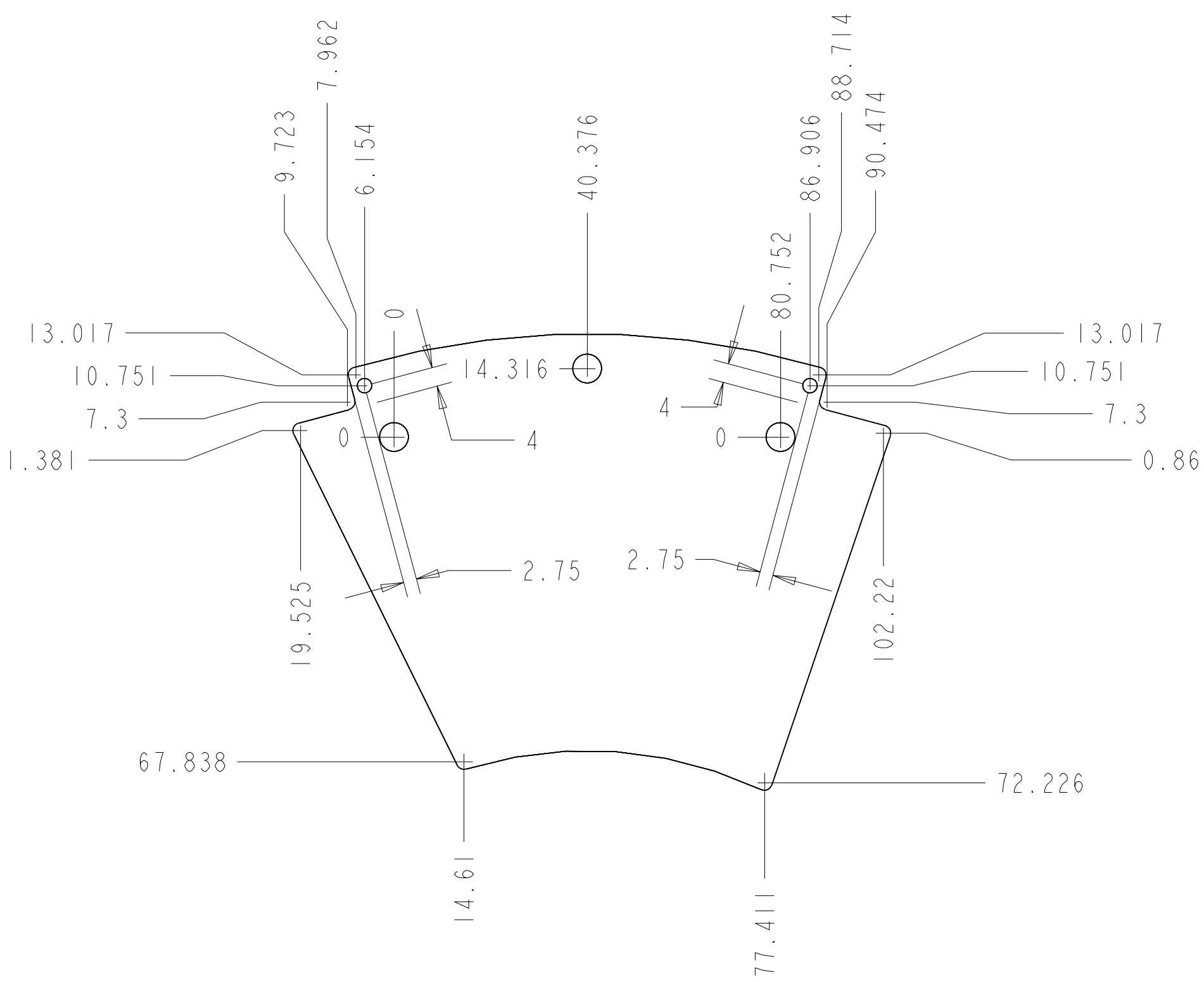
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DESCRIPTION	MATERIAL	MAT. LOCATION
	P30 CARBON-CARBON	-



REV	DWG	CHK	ZONE	DATE	CHANGES

TOLERANCES		SHOP ORDERS		SER NO.
X.X ± 0.1	FRAC. ± 1/64	ACCT NO. SEE J.O.	NO. RECD 60	-
X.XX ± 0.01	Angles ± 0.50°	DEL TO JS WIRTH		DATE ISSD -
X.XXX ± 0.001	FINISH $\sqrt{25 \mu\text{in}}$	SURFACE TREATMT		DATE RECD -
DO NOT SCALE PRINT		IDENT METHOD TAG		
THREADS ARE CLASS 2		PROJECT NUMBER ATLPHLDXXXX		
CHAMFER ENDS OF ALL SCREW TREADS 30°		PROJECT NAME US ATLAS SILICON SUBSYSTEM		
CUT ROUND, 1.5 THREAD RELIEF ON MACHINED THREADS		DWG BY D UKEN	DATE 18-Feb-01	
BREAK EDGES .016 MAX. ON MACHINED WORK		CHK BY J WIRTH	DATE 18-FEB-01	
REMOVE BURRS, WELD SPLATTER & LOOSE SCALE		APR BY E ANDERSSSEN	DATE	
IN ACCORDANCE WITH ASME Y14.5M & B46.1				

ERNEST ORLANDO LAWRENCE
BERKELEY NATIONAL LABORATORY
 UNIVERSITY OF CALIFORNIA - BERKELEY

ATLAS PIXEL DETECTOR
 DISK SECTOR, MODULE LOCAL SUPPORT
 FACING, SECTOR MOUNTSIDE

MICROFILMED:	DWG. TYPE PART	SHOWN ON 21F350	SCALE: 1.000	DO NOT SCALE PRINTS
PATENT CLEAR:	DESIGN ACCT. NO. SEE J.O.	CATEGORY CODE API110	SHEET 1 OF 1	
			DWG. NO. 21F3543	REV.

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DWG. NO. 21F3543

SH. 1

REV. 1

Emp. File: SECTOR_MOUNTSIDE_FACING Mod1 File: SECTOR_MOUNTSIDE_FACING

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DESCRIPTION	MATERIAL	MAT. LOCATION
	P30 CARBON-CARBON	-

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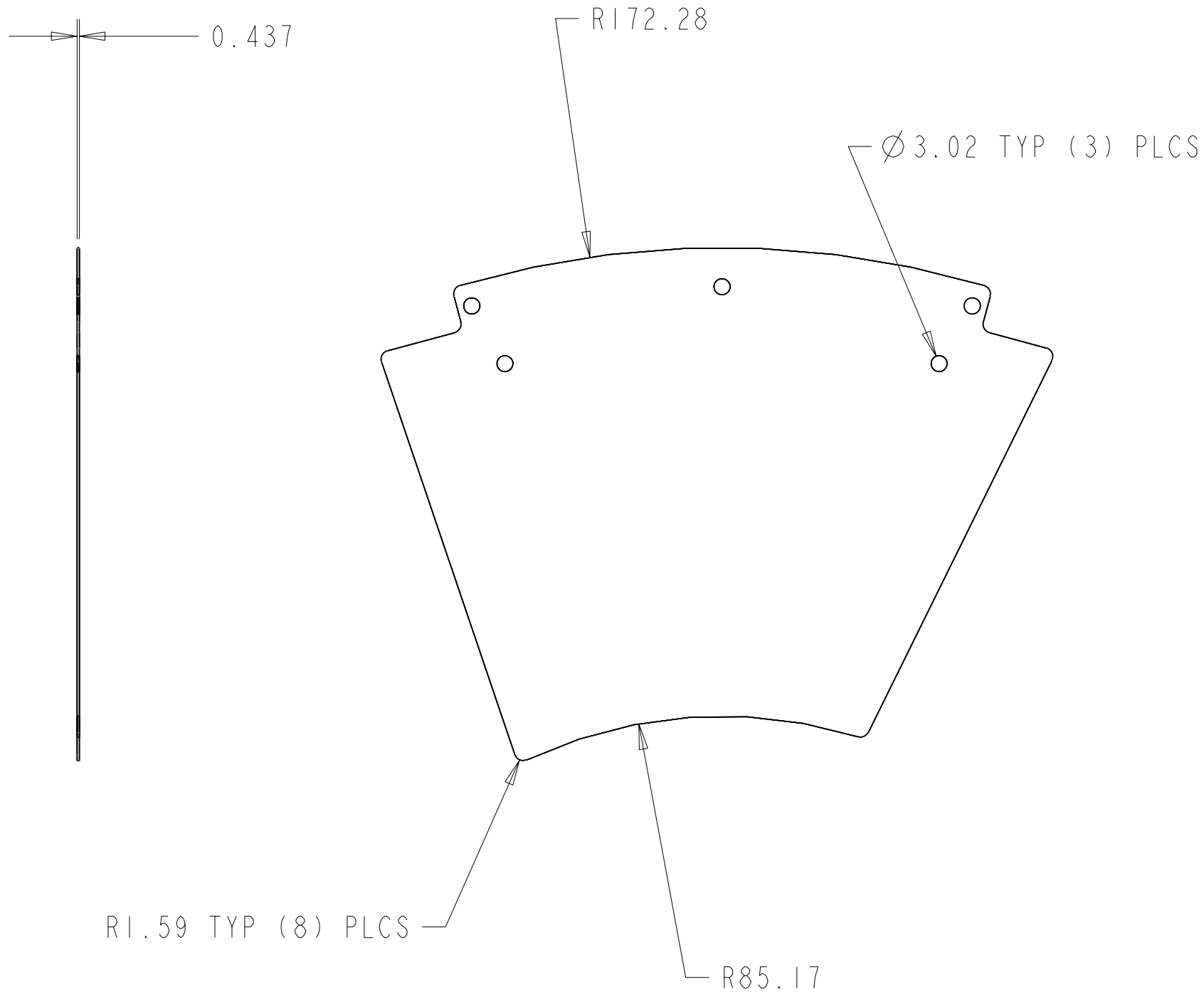
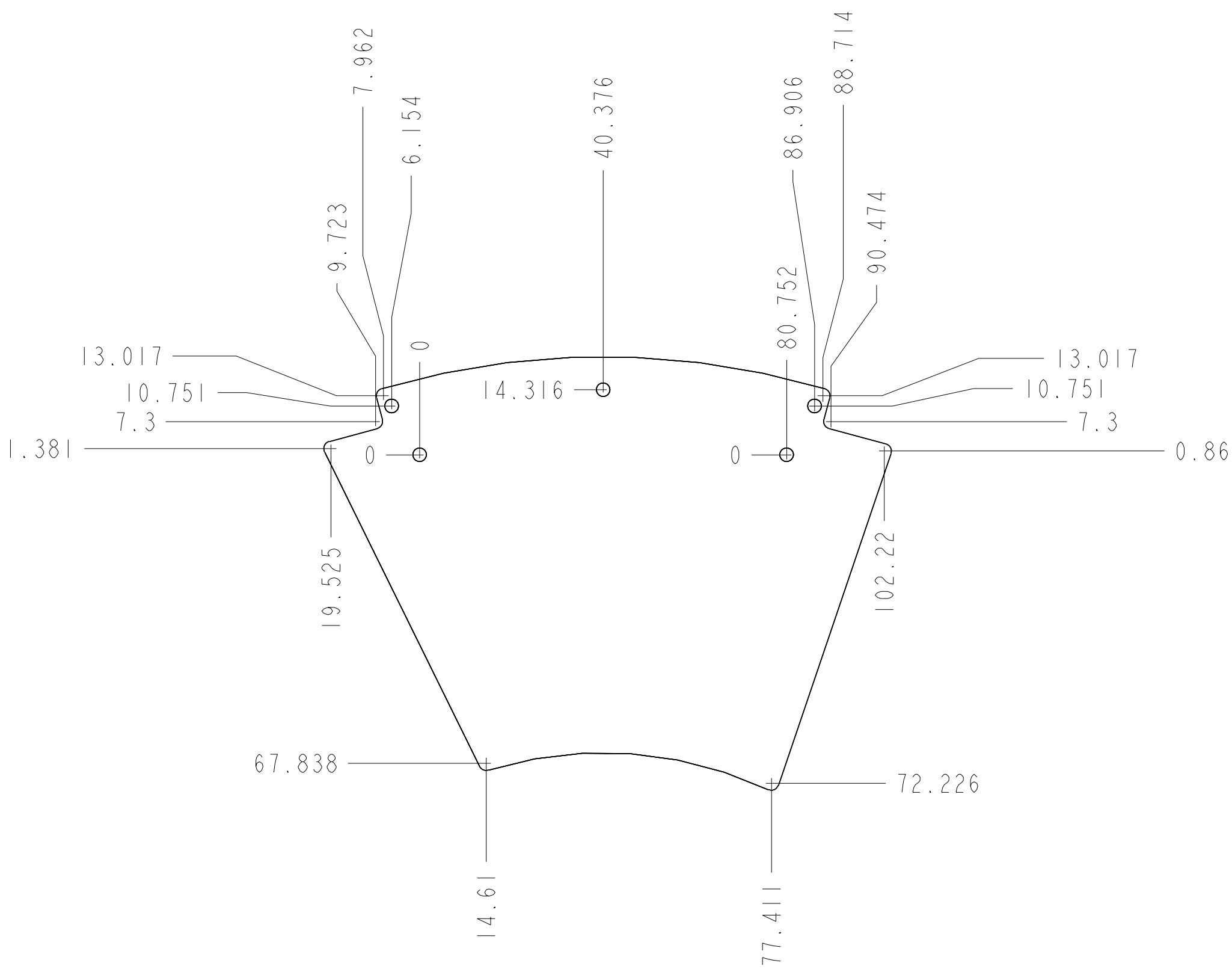
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REV	DWG	CHK	ZONE	DATE	CHANGES

UNLESS OTHERWISE SPECIFIED		SHOP ORDERS		SER NO. -
TOLERANCES	X.X ± 0.1	FRAC. ± 1/64	ACCT NO. SEE J.O.	NO. RECD 60
	X.XX ± 0.01	Angles ± 0.50°	DEL TO JS WIRTH	DATE ISSD -
	X.XXX ± 0.001	FINISH 125 $\sqrt{\text{RIN}}$	SURFACE TREATMT	DATE RECD -
DO NOT SCALE PRINT		IDENT METHOD TAG	PROJECT NUMBER ATLPHLDXXX	US ATLAS SILICON SUBSYSTEM (11992)
THREADS ARE CLASS 2		DWG BY D UKEN	DATE 18-Feb-01	
CHAMFER ENDS OF ALL SCREW TREADS 30°		CHK BY J WIRTH	DATE 18-FEB-01	
CUT ROUND, 1.5 THREAD RELIEF ON MACHINED THREADS		APR BY E ANDERSSSEN	DATE	
BREAK EDGES .016 MAX. ON MACHINED WORK				
REMOVE BURRS, WELD SPLATIER & LOOSE SCALE				
IN ACCORDANCE WITH ASME Y14.5M & B46.1				

ERNEST ORLANDO LAWRENCE
BERKELEY NATIONAL LABORATORY
 UNIVERSITY OF CALIFORNIA - BERKELEY

ATLAS PIXEL DETECTOR
 DISK SECTOR, MODULE LOCAL SUPPORT
 FACING, SECTOR NON-MOUNTSIDE

MICROFILMED:	DWG. TYPE PART	SHOWN ON 21F352	SCALE: 1.000	DO NOT SCALE PRINTS
PATENT CLEAR:	DESIGN ACCT. NO. SEE J.O.	CATEGORY CODE API110	DWG. NO. 21F3553	SIZE
			SHEET 1 OF 1	REV.

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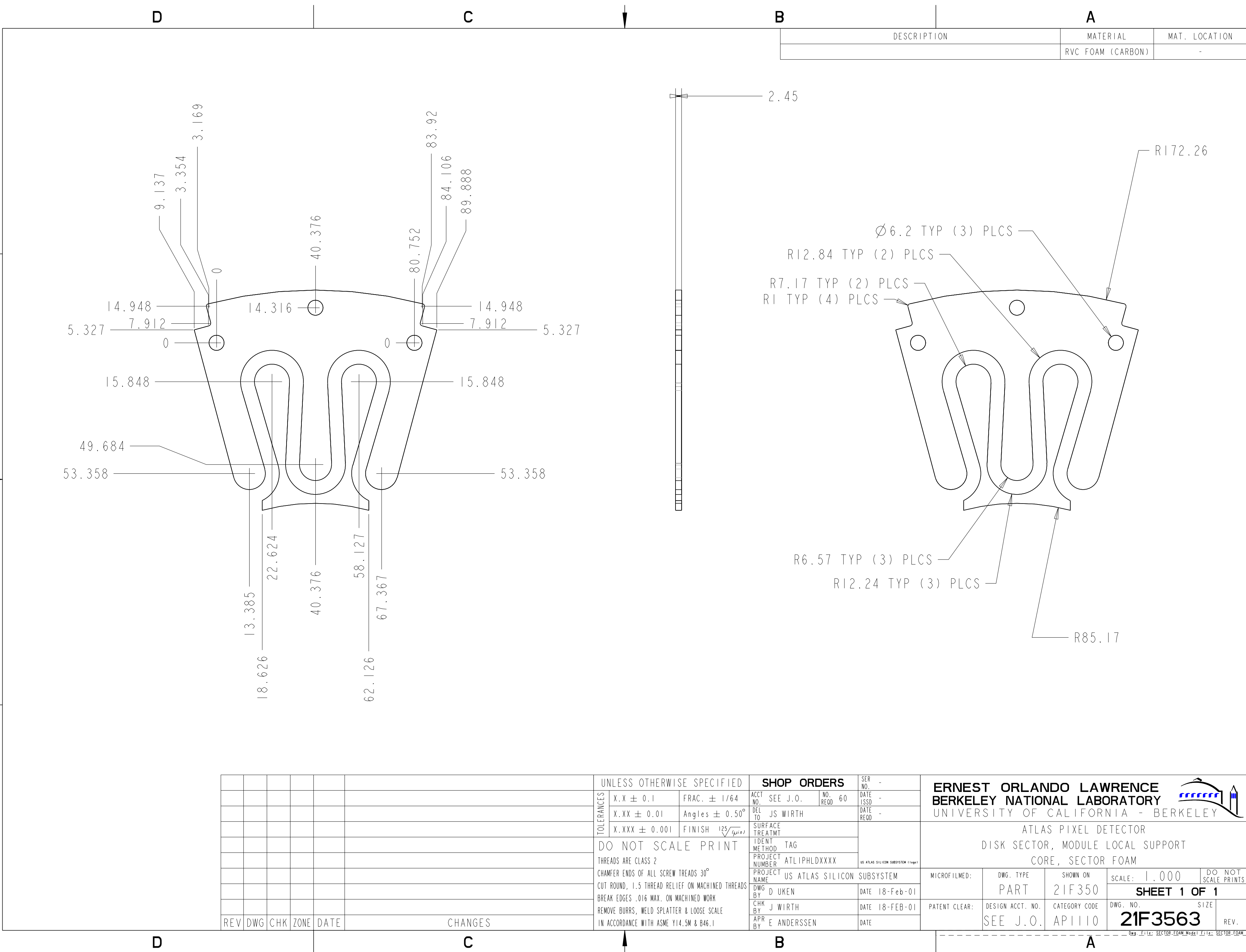
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DWG. NO. 21F3553
 SIZE REV. 1

Dwg. File: SECTOR_NONMOUNT_FACING.Med1 File: SECTOR_NONMOUNT_FACING



DESCRIPTION	MATERIAL	MAT. LOCATION
	RVC FOAM (CARBON)	-

REV	DWG	CHK	ZONE	DATE	CHANGES

UNLESS OTHERWISE SPECIFIED	
TOLERANCES	X.X ± 0.1 FRAC. ± 1/64
	X.XX ± 0.01 Angles ± 0.50°
	X.XXX ± 0.001 FINISH 125 \sqrt{Ra}
DO NOT SCALE PRINT	
THREADS ARE CLASS 2	
CHAMFER ENDS OF ALL SCREW TREADS 30°	
CUT ROUND, 1.5 THREAD RELIEF ON MACHINED THREADS	
BREAK EDGES .016 MAX. ON MACHINED WORK	
REMOVE BURRS, WELD SPLATTER & LOOSE SCALE	
IN ACCORDANCE WITH ASME Y14.5M & B46.1	

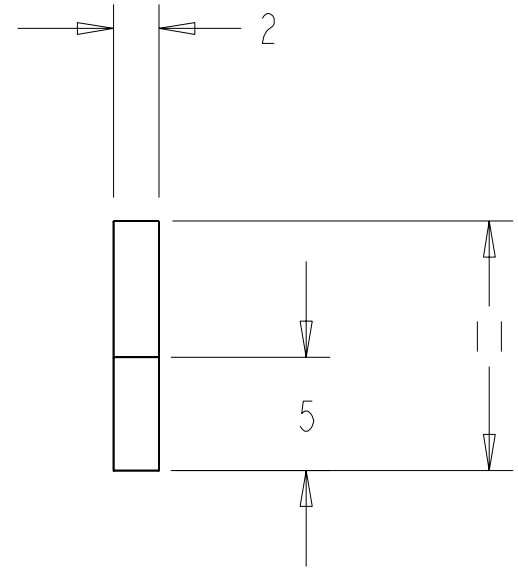
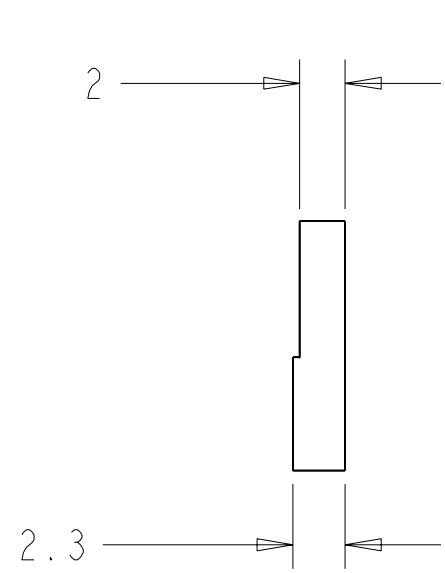
SHOP ORDERS		SER. NO. -
ACCT. NO. SEE J.O.	NO. RECD 60	DATE ISSD -
DEL TO JS WIRTH		DATE RECD -
SURFACE TREATMT		
IDENT METHOD TAG		
PROJECT NUMBER ATLPHLDXXXX		
PROJECT NAME US ATLAS SILICON SUBSYSTEM		
DWG BY D UKEN	DATE 18-Feb-01	
CHK BY J WIRTH	DATE 18-FEB-01	
APR BY E ANDERSSSEN	DATE	


ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY UNIVERSITY OF CALIFORNIA - BERKELEY			
ATLAS PIXEL DETECTOR DISK SECTOR, MODULE LOCAL SUPPORT CORE, SECTOR FOAM			
MICROFILMED:	DWG. TYPE PART	SHOWN ON 21F350	SCALE: 1.000
PATENT CLEAR:	DESIGN ACCT. NO. SEE J.O.	CATEGORY CODE API110	DO NOT SCALE PRINTS
SHEET 1 OF 1 21F3563			REV.

DWG. NO. 21F3563
 SIZE REV. 1

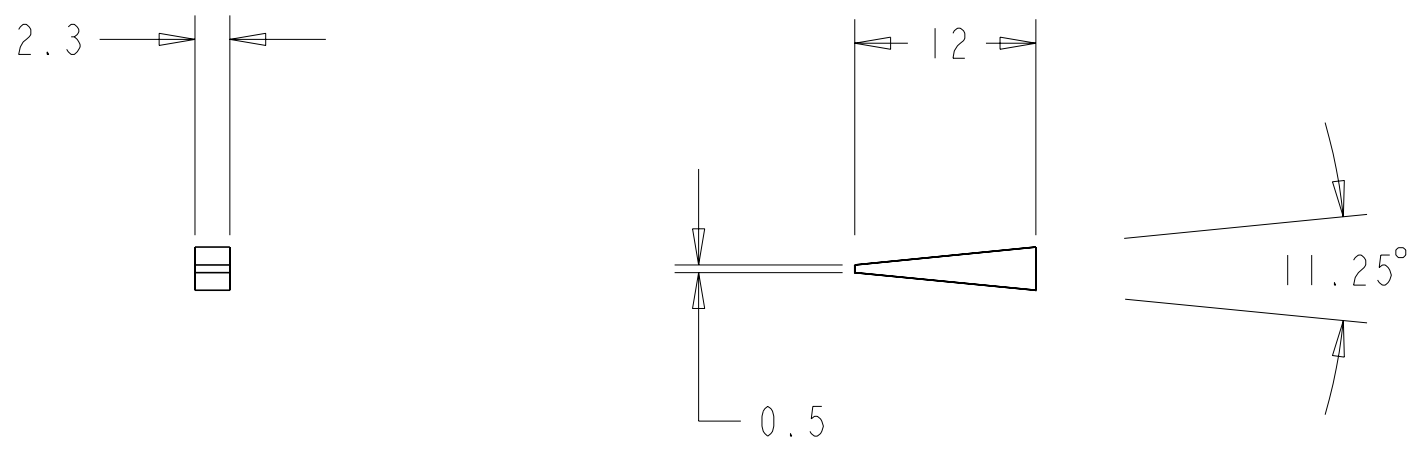
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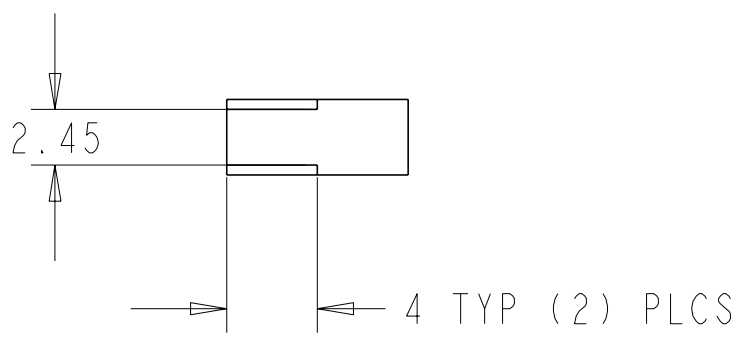
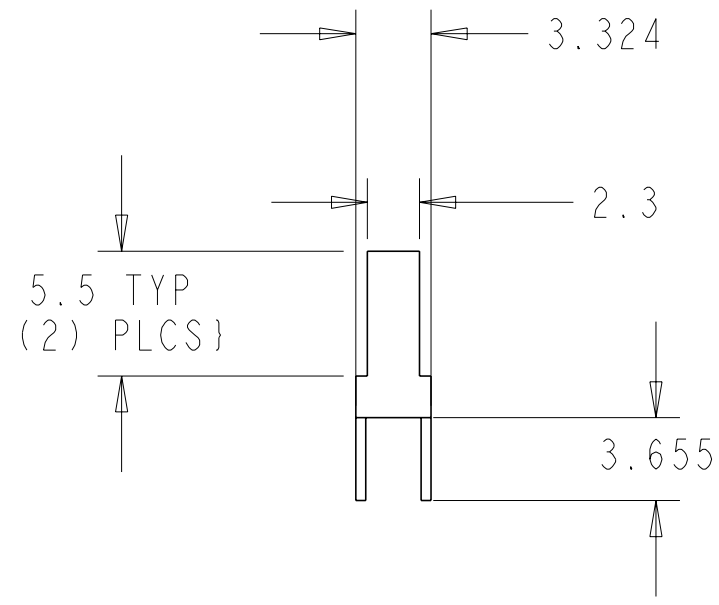
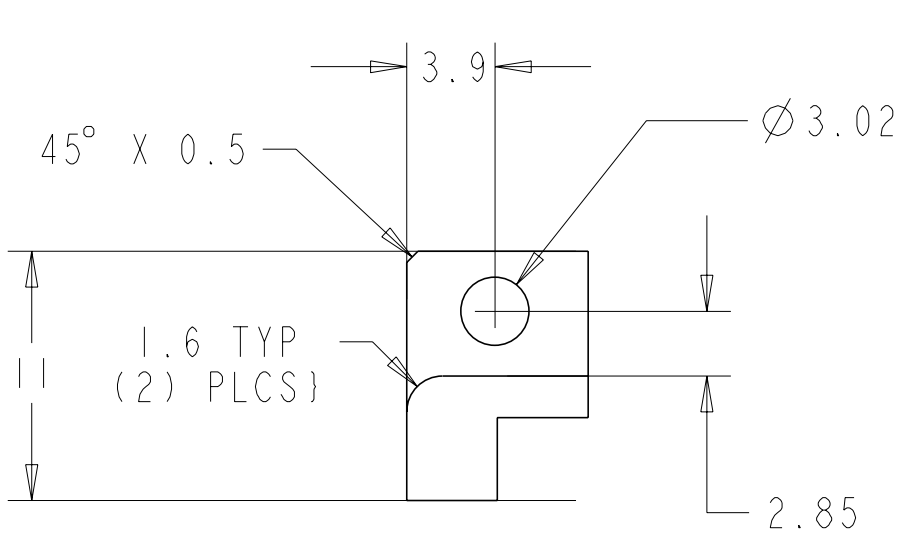
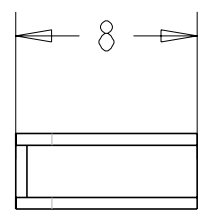
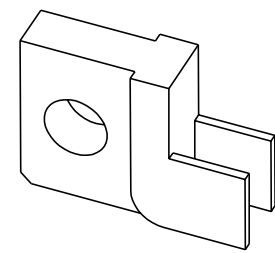
REV	DWG	CHK	DATE	CHANGES	DESCRIPTION	MATERIAL
UNLESS OTHERWISE SPECIFIED				SHOP ORDERS		M55J CARBON-CARBON
TOLERANCES	X.X ± 0.1	FRAC. ± 1/64	ACCT NO.	SEE J.O.	ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY  UNIVERSITY OF CALIFORNIA - BERKELEY	ATLAS PIXEL DETECTOR DISK SECTOR, MODULE LOCAL SUPPORT BEAM HARDPOINT, SECTOR FACING SUPPORT
	X.XX ± 0.01	Angles ± 0.50°	DEL TO	NO. RECD 120		
	X.XXX ± 0.001	FINISH \sqrt{Ra}	DATE ISSD	DATE RECD		
DO NOT SCALE PRINT				IDENT TAG		
CHAMFER ENDS OF ALL SCREW THREADS 30°				METHOD		
CUT ROUND, 1.5 THREAD RELIEF ON MACHINED THREADS				PROJECT NUMBER	ATLPHLDXXXX	
BREAK EDGES .016 MAX. ON MACHINED WORK				PROJECT NAME	US ATLAS SILICON SUBSYSTEM	
REMOVE BURRS, WELD SPLATTER & LOOSE SCALE				DWG BY	D UKEN	DATE 18-Feb-01
IN ACCORDANCE WITH ASME Y14.5M & B46.1				CHK BY	J WIRTH	DATE 18-FEB-01
				APR BY	E ANDERSSEN	DATE
		MICROFILMED:		DWG. TYPE	SHOWN ON	SCALE: 3.000
				PART	21F352	DO NOT SCALE PRINTS
		PATENT CLEAR:		DESIGN ACCT. NO.	CATEGORY CODE	SHEET 1 OF 1
				ON J.O.	AP1110	DWG. NO. 21F3581
						SIZE
						REV.

Rev. 1/8/2001 ATLAS

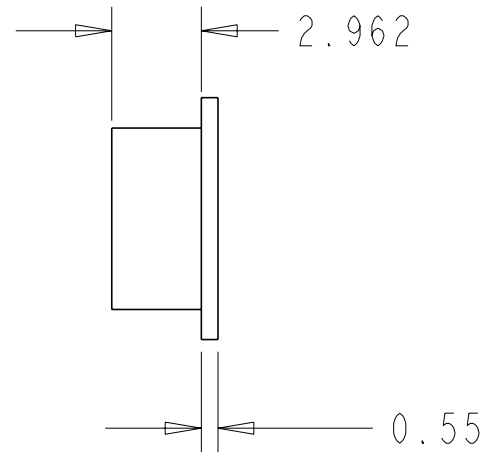
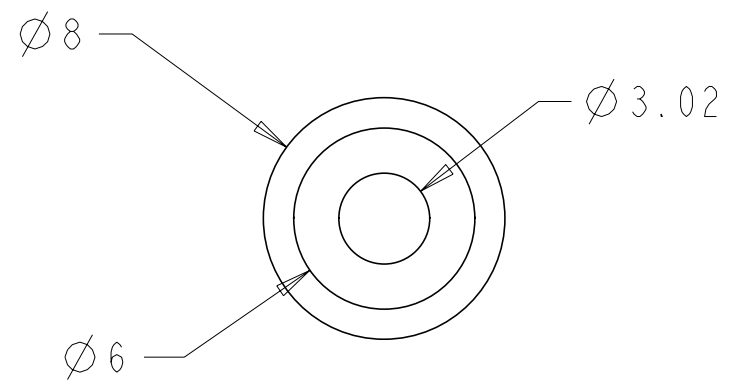


REV	DWG	CHK	DATE	CHANGES	DESCRIPTION	MATERIAL
UNLESS OTHERWISE SPECIFIED				SHOP ORDERS	SER. NO. -	M55J CARBON-CARBON
TOLERANCES	X.X ± 0.1	FRAC. ± 1/64	ACCT. NO. SEE J.O.	NO. RECD. 120	DATE ISSD -	ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY UNIVERSITY OF CALIFORNIA - BERKELEY
	X.XX ± 0.01	Angles ± 0.50°	DEL. TO	JS WIRTH	DATE RECD. -	
	X.XXX ± 0.001	FINISH 125 μm	SURFACE TREATMT			
DO NOT SCALE PRINT				IDENT. TAG	ATLAS PIXEL DETECTOR	
THREADS ARE CLASS 2				PROJECT NUMBER	DISK SECTOR, MODULE LOCAL SUPPORT	
CHAMFER ENDS OF ALL SCREW THREADS 30°				PROJECT NAME	WEDGE HARDPOINT, SECTOR FACING SUPPORT	
CUT ROUND, 1.5 THREAD RELIEF ON MACHINED THREADS				PROJECT NAME	MICROFILMED:	DWG. TYPE
BREAK EDGES .016 MAX. ON MACHINED WORK				DWG. BY D UKEN	DATE 18-Feb-01	SHOWN ON
REMOVE BURRS, WELD SPLATTER & LOOSE SCALE				CHK. BY J WIRTH	DATE 18-FEB-01	PART 21F352
IN ACCORDANCE WITH ASME Y14.5M & B46.1				APR. BY E ANDERSSSEN	DATE	SCALE: 2.000
				PATENT CLEAR:	DESIGN ACCT. NO.	DO NOT SCALE PRINTS
				ON J.O. AP1110	CATEGORY CODE	SHEET 1 OF 1
					DWG. NO.	SIZE
					21F3591	REV.

Rev. 1/8/2001 ATLAS



REV	DWG	CHK	DATE	CHANGES	DESCRIPTION	MATERIAL
UNLESS OTHERWISE SPECIFIED				SHOP ORDERS	SER NO. -	ALUMINUM 6061 T6
X.X ± 0.1	FRAC. ± 1/64	ACCT NO.	SEE J.O.	NO. RECD 120	DATE ISSD -	ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY UNIVERSITY OF CALIFORNIA - BERKELEY
X.XX ± 0.01	Angles ± 0.50°	DEL TO	JS WIRTH	DATE RECD -	DATE RECD -	
X.XXX ± 0.001	FINISH 125 μin	SURFACE TREATMENT	CHROMIC ETCH			
DO NOT SCALE PRINT				IDENT TAG	ATLAS PIXEL DETECTOR	
THREADS ARE CLASS 2				PROJECT NUMBER	DISK SECTOR, MODULE LOCAL SUPPORT	
CHAMFER ENDS OF ALL SCREW THREADS 30°				PROJECT NAME	STRAIN-RELIEF, SECTOR COOLING TUBE	
CUT ROUND, 1.5 THREAD RELIEF ON MACHINED THREADS				PROJECT US ATLAS SILICON SUBSYSTEM	MICROFILMED:	DWG. TYPE
BREAK EDGES .016 MAX. ON MACHINED THREADS				DWG BY D UKEN	DATE 18-Feb-01	SHOWN ON
REMOVE BURRS, WELD SPLATTER & LOOSE SCALE				CHK BY J WIRTH	DATE 18-FEB-01	PART 21F350
IN ACCORDANCE WITH ASME Y14.5M & B46.1				APR BY E ANDERSSON	DATE	SCALE: 3.000
				PATENT CLEAR:	DESIGN ACCT. NO.	DO NOT SCALE PRINTS
				ON J.O. AP1110	CATEGORY CODE	SHEET 1 OF 1
						DWG. NO. 21F3571
						SIZE
						REV.



REV	DWG	CHK	DATE	CHANGES	DESCRIPTION	VICTREX PEEK	MATERIAL	
UNLESS OTHERWISE SPECIFIED				SHOP ORDERS		SER. NO.	-	
TOLERANCES	X.X ± 0.1	FRAC. ± 1/64	ACCT. NO.	SEE J.O.	NO. RECD.	180	DATE ISSD	-
	X.XX ± 0.03	Angles ± 1.00°	DEL. TO	JS WIRTH	DATE RECD.	-	DATE RECD.	-
	X.XXX ± 0.010	FINISH $125 \mu\text{in.}$	SURFACE TREATMENT	CHROMIC ETCH				
DO NOT SCALE PRINT				IDENT. METHOD	TAG	ATLAS PIXEL DETECTOR		
THREADS ARE CLASS 2				PROJECT NUMBER	ATLPHLDXXXX	DISK SECTOR, MODULE LOCAL SUPPORT		
CHAMFER ENDS OF ALL SCREW THREADS 30°				PROJECT NAME	US ATLAS SILICON SUBSYSTEM	MICROFILMED:		
CUT ROUND, 1.5 THREAD RELIEF ON MACHINED THREADS				DWG. BY	D UKEN	DATE	18-Feb-01	
BREAK EDGES .016 MAX. ON MACHINED WORK				CHK. BY	J WIRTH	DATE	18-FEB-01	
REMOVE BURRS, WELD SPLATTER & LOOSE SCALE				APR. BY	E ANDERSSSEN	DATE		
IN ACCORDANCE WITH ASME Y14.5M & B46.1								
					DESIGN ACCT. NO.	ON J.O.	AP1110	
					PART	21F350	SCALE: 4.000	
							DO NOT SCALE PRINTS	
							SHEET 1 OF 1	
					DWG. NO.	21F3601	SIZE	
					REV.			

Rev. 12/2001 ATLAS