Hi Gentlemen,

Here are some drawings for a design review.
Warren Davison and Mario Rascon have checked these drawings
to a limited point of view. So we are asking you to look at them.
David Dean D.C.

John Hill _____

Gary Schmidt _____

David Ouellette DSO 9/24/02 Notes on separate cover.

9/24/02 D.H.D.

Hi Gentlemen,

Here are some drawings for a design review.
Warren Davison and Mario Rascon have checked these drawings
to a limited point of view. So we are asking you to look at them.
David Dean D.C.

John Hill _____

Gary Schmidt ✓ See attached comments.

David Ouellette _____

9/24/02 D.H.D.

Memo: Comments on the 90Prime Guider Assembly

From: G. Schmidt

Date: 10/4/02

My general concerns focus on the pickoff mirror/lens/guide camera stage. I do not know what the tolerances for tip/tilt and placement of the lens are, but the adjustment provisions that have been included in the design seem inconsistent with what I would imagine are warranted.

1) There appears to be no tip/tilt adjustment of the lens (part 9) per se. The lens may be so weak that this is not an issue, but it should be checked.

2) I realize there is an overall focus adjustment (Z axis) for the guider stage, provided by a motor (apparently part 8). There must also be the ability for a one-time focus of the lens independently of the guider head, to account for the (non-reproducible) placement of the CCD surface inside the dewar. This seems to be provided by the vertical slots in part 30. Is the range of this motion sufficient? A crude adjustment via slots allows for tipping of the lens as well in one direction, which could be viewed either as an attempt to address (1) above or as a weakness in the design, since it will be difficult to set correctly, particularly if the tolerance for tip/tilt of the lens is tight. If it is intended for the lens tip to be set by rotating in these slots, I don't see any corresponding ability to adjust for tilt.

3) There is an ability to adjust the lens location in one transverse direction (say, X axis) provided by slots in part 22. However, I do not see any provision for adjustment in the orthogonal (say, Y axis) direction. Moreover, the X axis adjustment is equivalent to moving along a chord of the image, where the aberrations being corrected by the lens are nearly constant with position. The Y axis (the one that appears to have no adjustment provision) translates to a radial motion in the image, the direction in which I would think the aberrations show greatest variation with position.

4) Finally, I see a slot in part(s) 25 for adjustment of the tip angle of the pickoff mirror. Is there any ability to adjust for tilt (the orthogonal direction)? Might this adjustment be necessary?

REVISIONS				
LTR	DESCRIPTION	DATE	REVISED BY	APPROVED
A	INITIAL RELEASE	10/30/02	DAVID DEAN	W. DAVISON

-3	-2	-1	QTY PER ASSY	PART NUMBER	PART DESCRIPTION	MANUFACTURER or MAT'L SPEC	ITEM NO.
			3		4-40 X 3/8" SOCKET HEAD CAP SCREW	XX	44
			3		6-32 X 3/8" SOCKET HEAD CAP SCREW	XX	43
			4		6-32 X 1/2" SOCKET HEAD CAP SCREW	XX	42
			4		6-32 X 3/4" SOCKET HEAD CAP SCREW	XX	41
			6		8-32 X 5/8" SET SCREW	XX	40
			2		8-32 HEX SOCKET BUTTON HEAD .25 LONG	XX	39
			3		8-32 X 5/8" SOCKET HEAD CAP SCREW	XX	38
			8		10-32 X 3/8" SOCKET HEAD CAP SCREW	XX	37
			22		10-32 X 3/4" SOCKET HEAD CAP SCREW	XX	36
			5		1/4-20 X 1/2" SOCKET HEAD CAP SCREW	XX	35
			19		1/4-20 X 3/4" SOCKET HEAD CAP SCREW	XX	34
			8		1/4-20 X 1" SOCKET HEAD CAP SCREW	XX	33
			2	12754	PICK OFF MIRROR SIDE BLOCK	XX	32
			1	12538	STAGE MID ADAPTER PLATE	XX	31
			1	12529	MAIN CROSS BAR	XX	30
			1	12630	SIDE PLATE BAR (SHORT)	XX	29
			1	12525	PICK OFF MIRROR DIAGINAL BLOCK	XX	28
			1	12535	PICK OFF MIRROR SPACER BLOCK	XX	27
			1	12636	PICK OFF MIRROR	XX	26
			2	12530	PICK OFF MIRROR BLOCK SIDE PLATE	XX	25
			1	12527	FILTER WHEEL MOUNT PLATE	XX	24
			1	12533	PICK OFF MIRROR LENS BLOCK	XX	23
			1	12531	PICK OFF MIRROR CENTER BLOCK	XX	22
			1	12539	STAGE SMALL PERPENDICULAR PLATE	XX	21
			1	12537	STAGE INTERFACE PLATE	XX	20
			1	12536	STAGE BRIDGE PLATE	XX	19
			1	12528	MAIN MOUNT CAMERA PLATE	XX	18
			1	12526	STAGE LARGE PERPENDICULAR PLATE	XX	17
			~~1~~	~~74041 (EXISTING)~~	~~SIDE PLATE BAR #1~~	XX	16
			1	12541	TOP BOX SIDE PLATE NORTH LOCATION (MODIFIED)	XX	15
			1	12524	CABLE SHIELD PLATE	XX	14
			1	12540	STAGE TOP END OUTER PLATE	XX	13
			1	12543	STAGE LIGHT SHIELD PLATE	XX	12
			1	12542	TOP BOX SIDE PLATE N.W. LOCATION (MODIFIED)	XX	11
			1	9285	GUIDE CAMERA	XX	10
			1	KPX217	LENS	NEWPORT X	9
			1	MODEL 50SMB2-HM	X Y STAGE	AEROTECH .ING X	8
			1	~~74041 (EXISTING)~~	FILTER WHEEL	ORIEL INSTRUMENTS	7
			1	~~12426 (EXISTING)~~	TOP BOX MOUNTING FLANGE (MODIFIED)	XX	6
			1	~~XXXXX (EXISTING)~~	SHUTTER (200mmX200mm)	BOAN ELETRONICS MODULE	5
			1	~~12422 (EXISTING)~~	GASKET SHUTTER	XX	4
			1	~~12423 (EXISTING)~~	PLATE SHUTTER	XX	3
			1	12424 (EXISTING)	SEAL-SHUTTER PLATE	XX	2
			1	12427 (EXISTING)	TOP BOX FILTER WHEEL PLATE-SHUTTER MOUNT-MODIFIED	XX	1

LIST OF MATERIALS

? TOP BOX LISTS 12051

NOTES:

1. NOT ALL ATTACHING HARDWARE IS SHOWN PICTORIALLY.

DO NOT SCALE DRAWING

INTERPRET DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-94

TOLERANCES UNLESS OTHERWISE SPECIFIED

LINEAR: .X = ±N.A., .XX = ±N.A., .XXX = ±N.A.

ANGULAR: ± N.A.

DIAMETRICAL SEE SPEC S-002

DIMENSIONS ARE IN INCHES / DIMENSIONS IN [ ] ARE METRIC

MATERIAL

FINISH

THIS DRAWING CREATED IN: ACAD ☐ MECH ☐ IDEAS [X]

NEXT ASSY | USED ON

ASSEMBLY APPLICATION

Steward Observatory, University of Arizona
933 N. Cherry Avenue, Tucson, AZ 85721 (520)621-7659

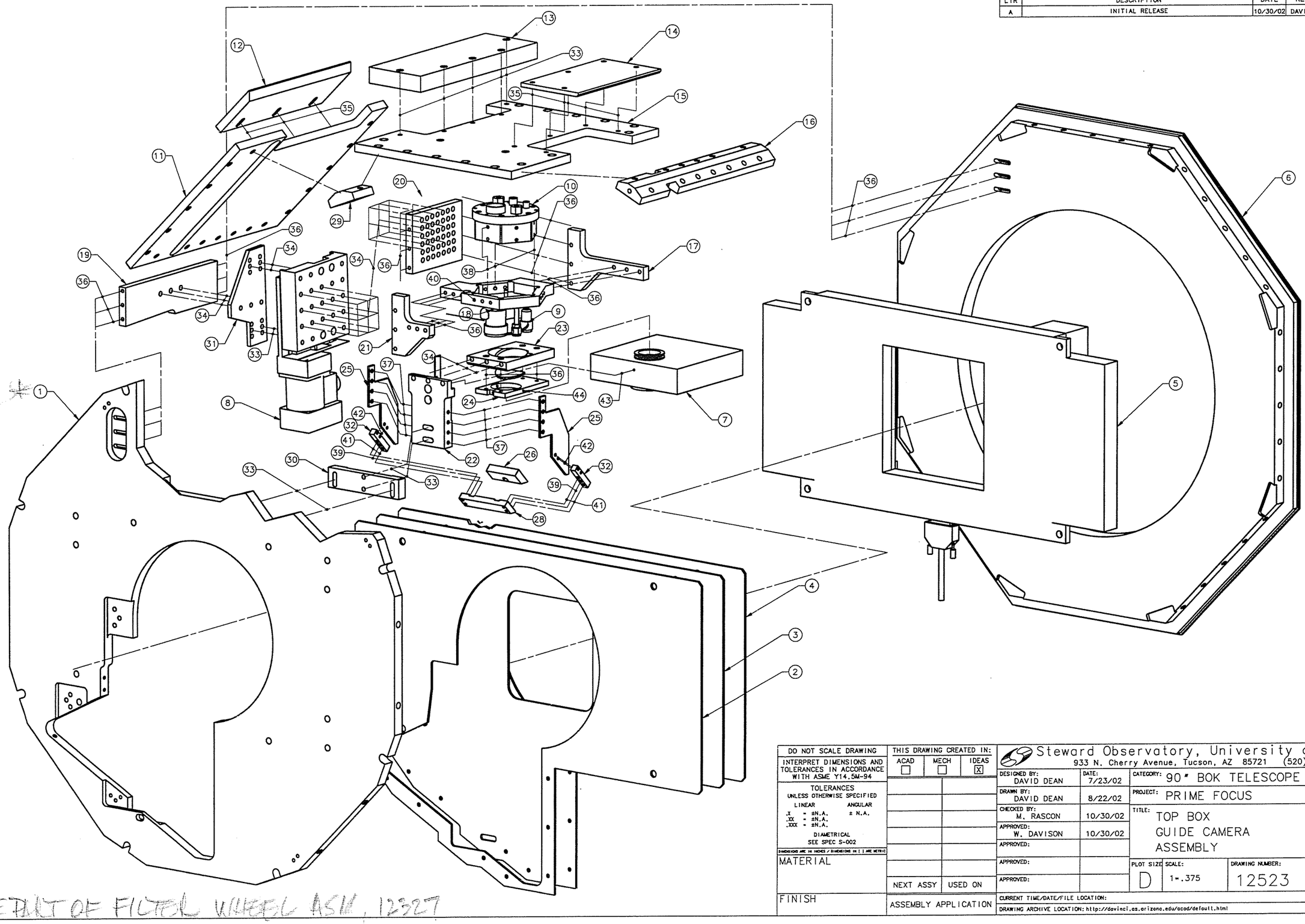
DESIGNED BY: DAVID DEAN	DATE: 7/23/02	CATEGORY: 90" BOK TELESCOPE	
DRAWN BY: DAVID DEAN	8/22/02	PROJECT: PRIME FOCUS	
CHECKED BY: M. RASCON	10/30/02	TITLE: TOP BOX GUIDE CAMERA ASSEMBLY	
APPROVED: W. DAVISON	10/30/02		
APPROVED:			
APPROVED:		PLOT SIZE: D	SCALE: 1=.375
APPROVED:		DRAWING NUMBER: 12523	REVISION: A

CURRENT TIME/DATE/FILE LOCATION:

DRAWING ARCHIVE LOCATION: http://davinci.as.arizona.edu/acad/default.html

SHEET 1 OF 2

REVISIONS				
LTR	DESCRIPTION	DATE	REVISED BY	APPROVED
A	INITIAL RELEASE	10/30/02	DAVID DEAN	W. DAVISON



* PART OF FILTER WHEEL ASM, 12527

DO NOT SCALE DRAWING	THIS DRAWING CREATED IN:		
INTERPRET DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-94	ACAD ☐	MECH ☐	IDEAS [X]
TOLERANCES UNLESS OTHERWISE SPECIFIED LINEAR: .X ± N.A., .XX ± N.A., .XXX ± N.A. ANGULAR: ± N.A. DIAMETRICAL SEE SPEC S-002			
DIMENSIONS ARE IN INCHES / DIMENSIONS IN [ ] ARE METRIC			
MATERIAL			
	NEXT ASSY	USED ON	
FINISH	ASSEMBLY APPLICATION		

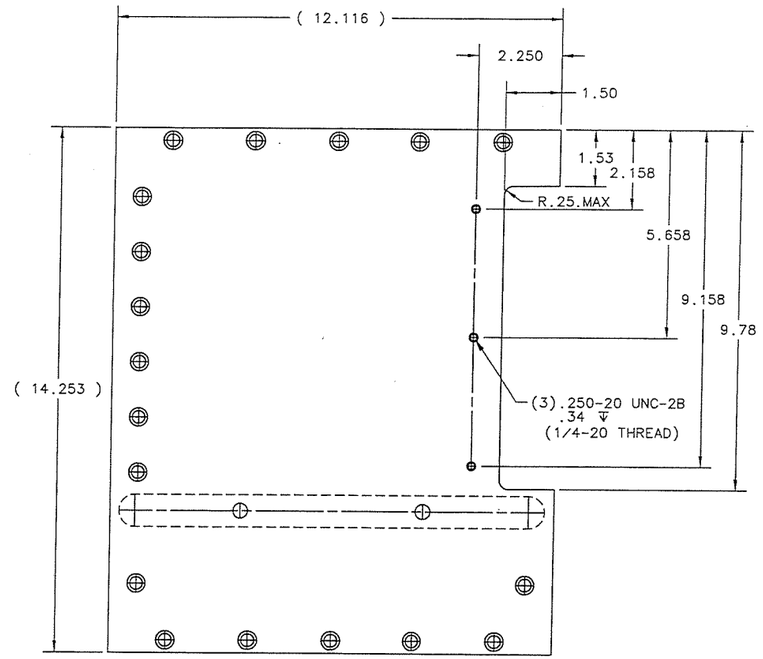
Steward Observatory, University of Arizona
933 N. Cherry Avenue, Tucson, AZ 85721 (520)621-7659

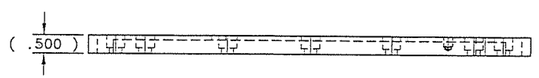
DESIGNED BY: DAVID DEAN	DATE: 7/23/02	CATEGORY: 90" BOK TELESCOPE	
DRAWN BY: DAVID DEAN	8/22/02	PROJECT: PRIME FOCUS	
CHECKED BY: M. RASCON	10/30/02	TITLE: TOP BOX GUIDE CAMERA ASSEMBLY	
APPROVED: W. DAVISON	10/30/02		
APPROVED:			
APPROVED:		PLOT SIZE: D / SCALE: 1=.375 / DRAWING NUMBER: 12523	REVISION: A
APPROVED:			

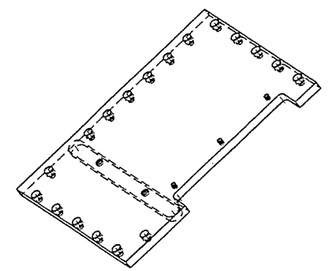
CURRENT TIME/DATE/FILE LOCATION:
DRAWING ARCHIVE LOCATION: http://davinci.as.arizona.edu/acad/default.html

SHEET 2 OF 2

REVISIONS				
LTR	DESCRIPTION	DATE	REVISED BY	APPROVED







ISO 1=.25

NOTES:

1. MODIFY EXISTING TOP BOX SIDE PLATE 12057 STAMPED S.E. PER THE DIMENSIONS ON THIS DRAWING.
2. THIS PLATE WILL BE MOVED TO THE N.E. SIDE OF THE TOP BOX.
3. ORIATATION OF TOP BOX IS TELESCOPE POINTING ZENITH.
4. BREAKE SHARPE EDGES & DEBURR.

(11)

DO NOT SCALE DRAWING	THIS DRAWING CREATED IN: ACAD ☐ MECH ☐ IDEAS ☒	Steward Observatory, University of Arizona, 933 N. Cherry Avenue, Tucson, AZ 85721 (520)621-7659	
INTERPRET DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-94		DESIGNED BY: DAVID DEAN	DATE: 7/23/02
TOLERANCES UNLESS OTHERWISE SPECIFIED LINEAR: .X = ±.04, .XX = ±.02, .XXX = ±.010 ANGULAR: ± 0°30 DIAMETRICAL SEE SPEC S-002 DIMENSIONS ARE IN INCHES / DIMENSIONS IN [ ] ARE METRIC		DRAWN BY: DAVID DEAN	8/20/02
		CHECKED BY:	
		APPROVED:	
		APPROVED:	
	12040	APPROVED:	
MATERIAL SEE NOTE 1	12523	APPROVED:	
	NEXT ASSY / USED ON		
FINISH NONE	ASSEMBLY APPLICATION	CURRENT TIME/DATE/FILE LOCATION:	
		DRAWING ARCHIVE LOCATION: http://davinci.as.arizona.edu/ecad/default.html	

CATEGORY: 90" BOK TELESCOPE

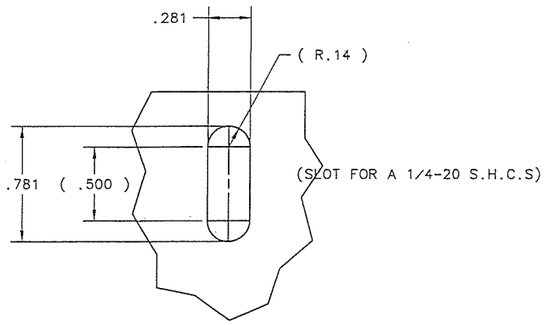
PROJECT: PRIME FOCUS

TITLE: TOP BOX GUIDE CAMERA SIDE PLATE (N.E.) MODIFIED

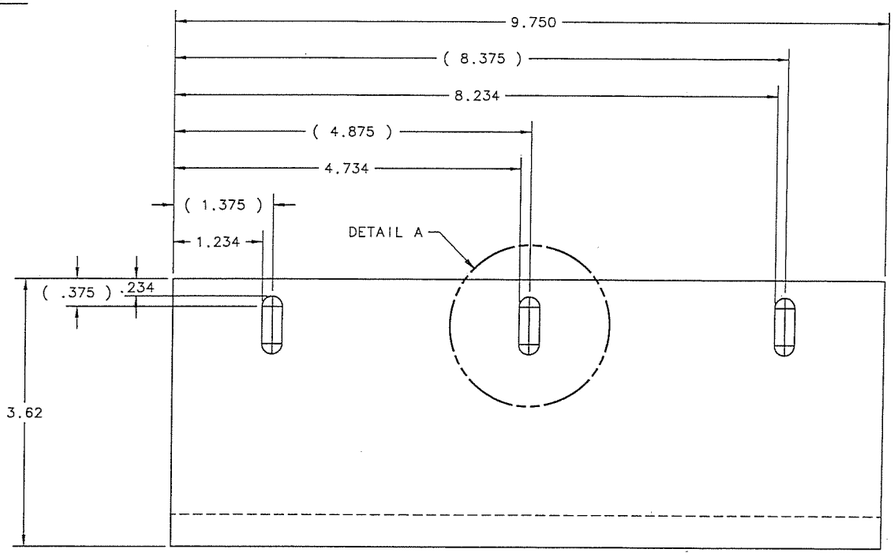
PLOT SIZE	SCALE:	DRAWING NUMBER:	REVISION:
D	1=.5	12542	1

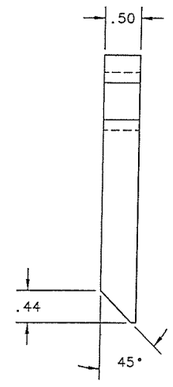
SHEET OF 1

REVISIONS				
LTR	DESCRIPTION	DATE	REVISED BY	APPROVED



DETAIL A
1-2





NOTES:
1. BREAK SHARPE EDGES & DEBUR.
2. MACHINED SUFACE FINISH TO BE 63 RMS.

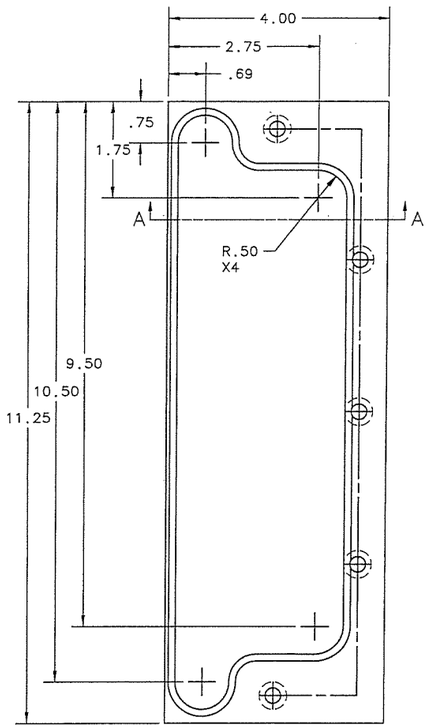
⑫

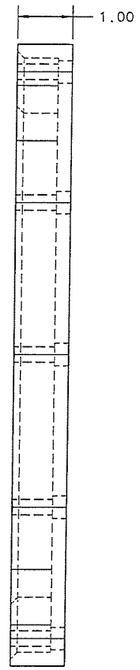
DO NOT SCALE DRAWING	THIS DRAWING CREATED IN:		
INTERPRET DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-94	ACAD ☐	MECH ☐	IDEAS ☒
TOLERANCES UNLESS OTHERWISE SPECIFIED LINEAR: .X = ±.04, .XX = ±.02, .XXX = ±.010 ANGULAR: ± 0°30 DIAMETRICAL SEE SPEC S-002			
DIMENSIONS ARE IN INCHES / DIMENSIONS IN [ ] ARE METRIC			
MATERIAL ALUMINUM		12523	
	NEXT ASSY	USED ON	
FINISH NONE	ASSEMBLY APPLICATION		

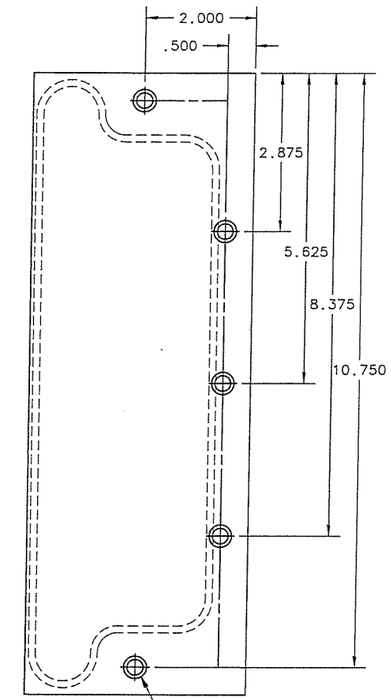
Steward Observatory, University of Arizona
933 N. Cherry Avenue, Tucson, AZ 85721 (520)621-7659

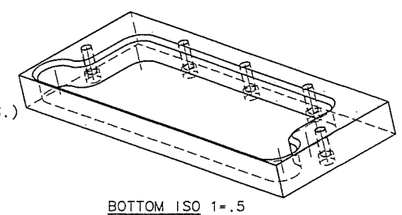
DESIGNED BY: DAVID DEAN	DATE: 7/23/02	CATEGORY: 90" BOK TELESCOPE	
DRAWN BY: DAVID DEAN	9/12/02	PROJECT: PRIME FOCUS	
CHECKED BY:		TITLE: TOP BOX GUIDE CAMERA STAGE LIGHT SHIELD PLATE	
APPROVED:			
APPROVED:			
APPROVED:		PLOT SIZE: D / SCALE: 1=1	DRAWING NUMBER: 12543 / REVISION: 1
APPROVED:			
CURRENT TIME/DATE/FILE LOCATION:			SHEET OF 1
DRAWING ARCHIVE LOCATION: http://davinci.as.arizona.edu/ocad/default.html			

REVISIONS				
LTR	DESCRIPTION	DATE	REVISED BY	APPROVED

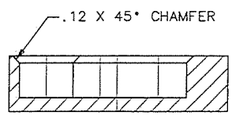








BOTTOM ISO 1=.5



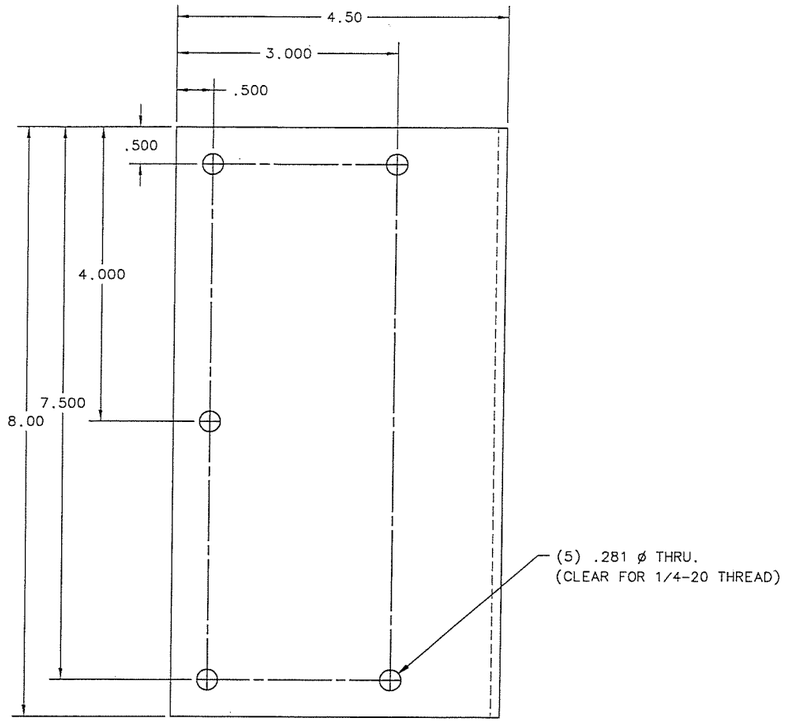
SECTION A-A

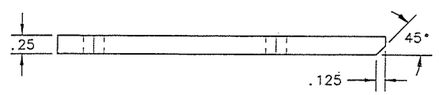
NOTES:
1. BREACK SHARPE EDGES & DEBUR.
2. MACHINED SURFACE FINISH TO BE 63 RMS.
3. MACHINED FILLETS TO BE .015 MAX. U.N.

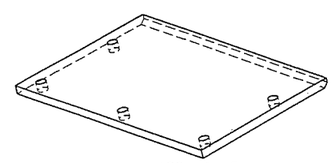
13

DO NOT SCALE DRAWING	THIS DRAWING CREATED IN: ACAD ☐ MECH ☐ IDEAS ☒	Steward Observatory, University of Arizona, 933 N. Cherry Avenue, Tucson, AZ 85721 (520)621-7659	
INTERPRET DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-94		DESIGNED BY: DAVID DEAN — DATE: 7/23/02	CATEGORY: 90" BOK TELESCOPE
TOLERANCES UNLESS OTHERWISE SPECIFIED: LINEAR .X = ±.04, .XX = ±.02, .XXX = ±.008; ANGULAR ± 0°30'; DIAMETRICAL SEE SPEC S-002		DRAWN BY: DAVID DEAN — 8/8/02	PROJECT: PRIME FOCUS
DIMENSIONS ARE IN INCHES / DIMENSIONS IN [ ] ARE METRIC		CHECKED BY:	TITLE: TOP BOX, GUIDE CAMERA, STAGE TOP END OUTER PLATE
MATERIAL ALUMINUM	12523	APPROVED: / APPROVED: / APPROVED: / APPROVED:	PLOT SIZE: D — SCALE: 1=.75 — DRAWING NUMBER: 12540 — REVISION: 1
FINISH NONE	NEXT ASSY / USED ON — ASSEMBLY APPLICATION	CURRENT TIME/DATE/FILE LOCATION:	SHEET OF 1
		DRAWING ARCHIVE LOCATION: http://davinci.as.arizona.edu/acad/default.html	

REVISIONS				
LTR	DESCRIPTION	DATE	REVISED BY	APPROVED





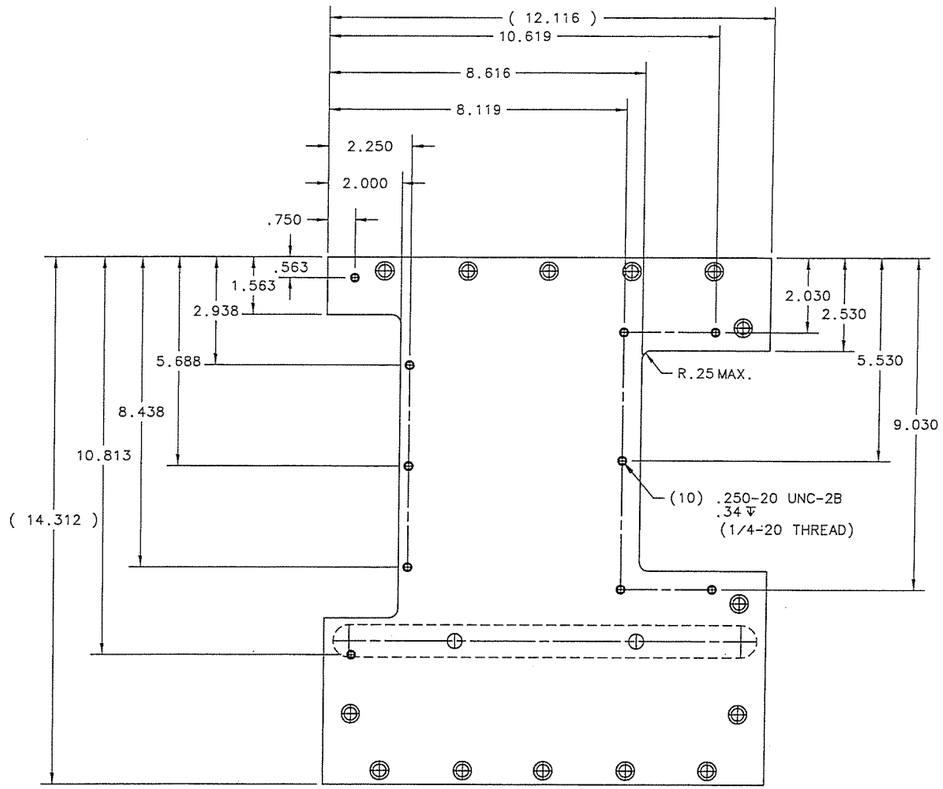


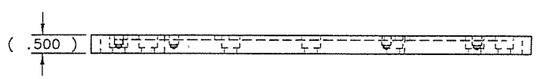
(14)

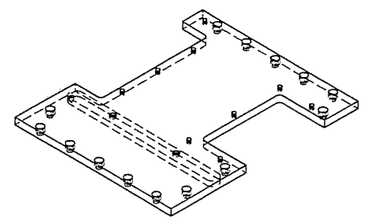
NOTES:
1. BREAK SHARPE EDGES & DEBURR.
2. MACHINED SURFACE INISH TO BE 63 RMS.

DO NOT SCALE DRAWING INTERPRET DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-94	THIS DRAWING CREATED IN: ACAD ☐ MECH ☐ IDEAS ☒	Steward Observatory, University of Arizona 933 N. Cherry Avenue, Tucson, AZ 85721 (520)621-7659	
TOLERANCES UNLESS OTHERWISE SPECIFIED LINEAR: .X ± .04, .XX ± .02, .XXX ± .008; ANGULAR: ± 0°30 DIAMETRICAL SEE SPEC S-002 DIMENSIONS ARE IN INCHES / DIMENSIONS IN [ ] ARE METRIC		DESIGNED BY: DAVID DEAN — DATE: 7/23/02 DRAWN BY: DAVID DEAN — 8/8/02 CHECKED BY: APPROVED: APPROVED: APPROVED: APPROVED:	CATEGORY: 90" BOK TELESCOPE PROJECT: PRIME FOCUS TITLE: TOP BOX GUIDE CAMERA CABLE SHIELD PLATE
MATERIAL AULMINUM	12523 NEXT ASSY — USED ON		PLOT SIZE: D — SCALE: 1=1 — DRAWING NUMBER: 12524 — REVISION: 1
FINISH NONE	ASSEMBLY APPLICATION	CURRENT TIME/DATE/FILE LOCATION: DRAWING ARCHIVE LOCATION: http://davinci.as.arizona.edu/ocod/default.html	SHEET OF 1

REVISIONS				
LTR	DESCRIPTION	DATE	REVISED BY	APPROVED







ISO 1=.25

NOTES:

1. MODIFY EXISTNG TOP BOX SIDE PLATE 12052 STAMPED N. PER THE DIMENSIONS ON THIS DRAWING.
2. ORIATATION OF TOP BOX IS TELESCOPE POINTING ZENITH.
3. BREAKE SHARPE EDGES & DEBURR.

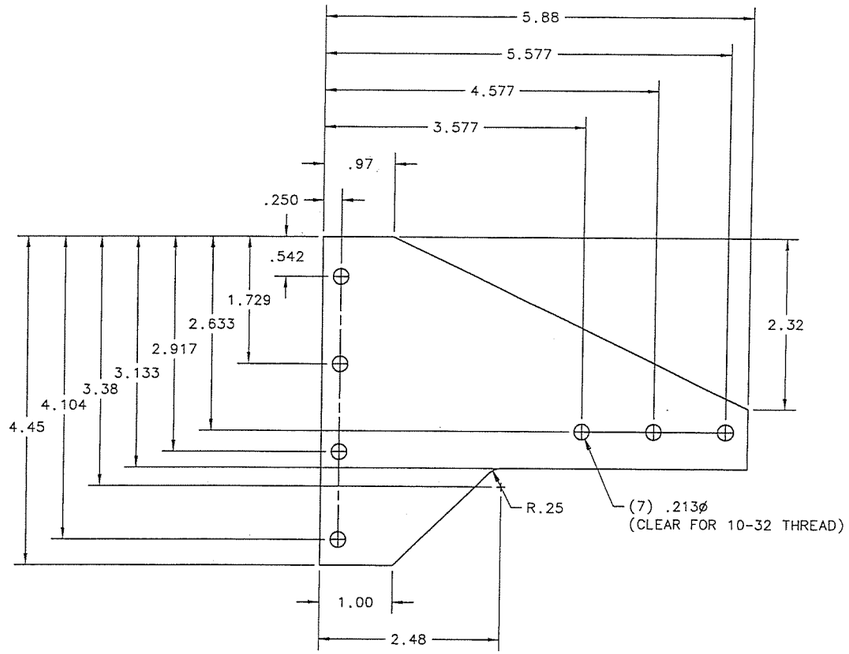
DO NOT SCALE DRAWING	THIS DRAWING CREATED IN:		
INTERPRET DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-94	ACAD ☐	MECH ☐	IDEAS ☒
TOLERANCES UNLESS OTHERWISE SPECIFIED LINEAR: .X = ±.04, .XX = ±.02, .XXX = ±.010 ANGULAR: ± 0°30 DIAMETRICAL SEE SPEC S-002			
DIMENSIONS ARE IN INCHES / DIMENSIONS IN [ ] ARE METRIC			
MATERIAL SEE NOTE 1		12040	
		12523	
	NEXT ASSY	USED ON	
FINISH NONE	ASSEMBLY APPLICATION		

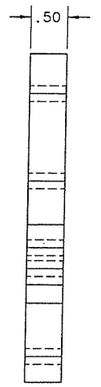
Steward Observatory, University of Arizona
933 N. Cherry Avenue, Tucson, AZ 85721 (520)621-7659

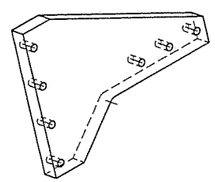
DESIGNED BY: DAVID DEAN	DATE: 7/23/02	CATEGORY: 90" BOK TELESCOPE	
DRAWN BY: DAVID DEAN	8/20/02	PROJECT: PRIME FOCUS	
CHECKED BY:		TITLE: TOP BOX GUIDE CAMERA SIDE PLATE (N) MODIFIED	
APPROVED:			
APPROVED:			
APPROVED:			
APPROVED:			
		PLOT SIZE: D	SCALE: 1=.50
		DRAWING NUMBER: 12541	REVISION: 1
CURRENT TIME/DATE/FILE LOCATION:			
DRAWING ARCHIVE LOCATION: http://davinci.as.arizona.edu/acad/default.html			SHEET OF 1

15

REVISIONS				
LTR	DESCRIPTION	DATE	REVISED BY	APPROVED







ISO 1=.50

NOTES:
1. BREAK SHARP EDGES & DEBURR.
2. MACHINED SURFACE FINISH TO BE 63 RMS.

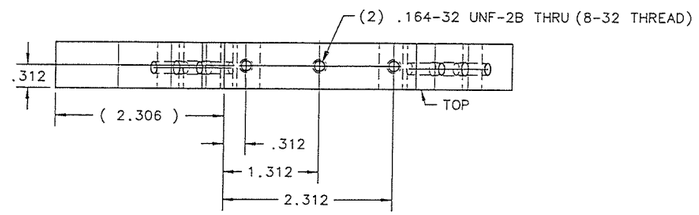
DO NOT SCALE DRAWING	THIS DRAWING CREATED IN:		
INTERPRET DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-94	ACAD ☐	MECH ☐	IDEAS ☒
TOLERANCES UNLESS OTHERWISE SPECIFIED LINEAR: .X = ±.04, .XX = ±.02, .XXX = ±.008 ANGULAR: ± 0°30 DIAMETRICAL SEE SPEC S-002			
DIMENSIONS ARE IN INCHES / DIMENSIONS IN [ ] ARE METRIC			
MATERIAL ALUMINUM		12523	
	NEXT ASSY	USED ON	
FINISH NONE	ASSEMBLY APPLICATION		

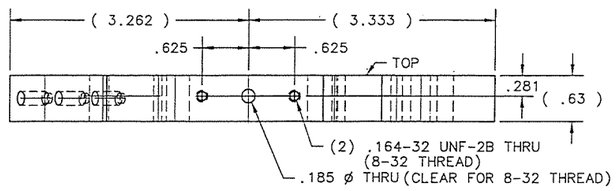
Steward Observatory, University of Arizona
933 N. Cherry Avenue, Tucson, AZ 85721 (520)621-7659

DESIGNED BY: DAVID DEAN	DATE: 7/23/02	CATEGORY: 90" BOK TELESCOPE	
DRAWN BY: DAVID DEAN	8/14/02	PROJECT: PRIME FOCUS	
CHECKED BY:		TITLE: TOP BOX GUIDE CAMERA STAGE L PERPENDICULAR PLATE	
APPROVED:			
APPROVED:			
APPROVED:		PLOT SIZE: D / SCALE: 1=1 / DRAWING NUMBER: 12526 / REVISION: 1	
APPROVED:		CURRENT TIME/DATE/FILE LOCATION:	SHEET OF 1
		DRAWING ARCHIVE LOCATION: http://davinci.as.arizona.edu/acad/default.html	

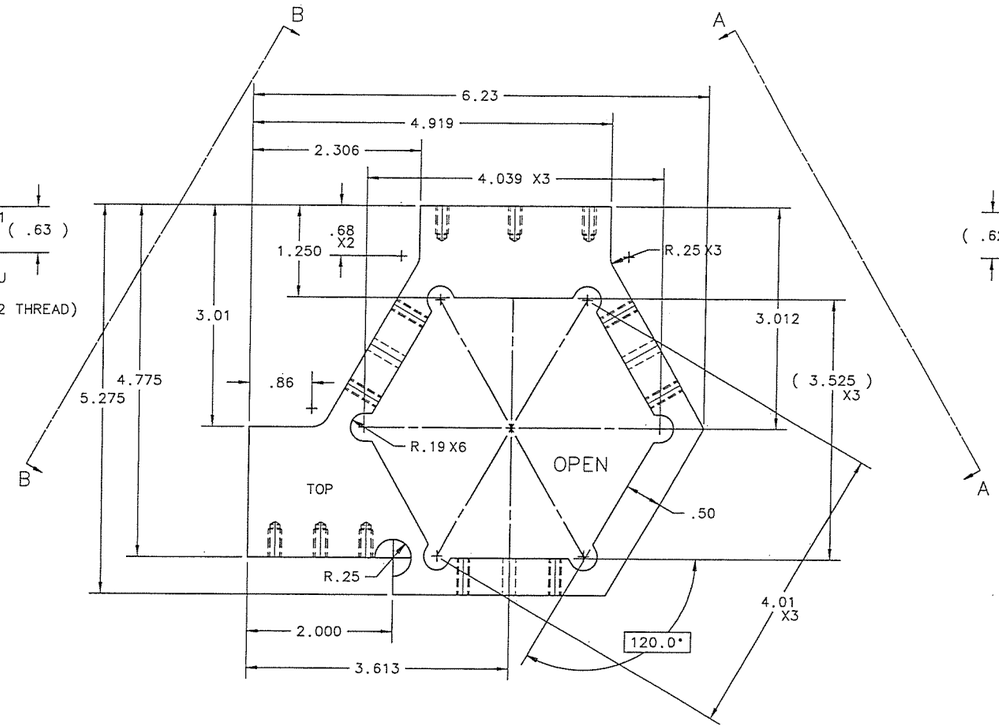
(17)

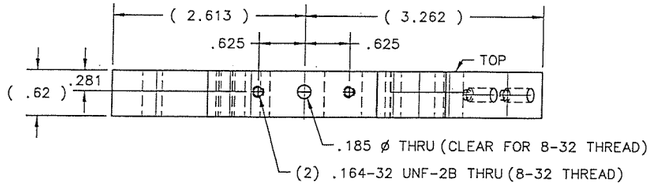
REVISIONS				
LTR	DESCRIPTION	DATE	REVISED BY	APPROVED



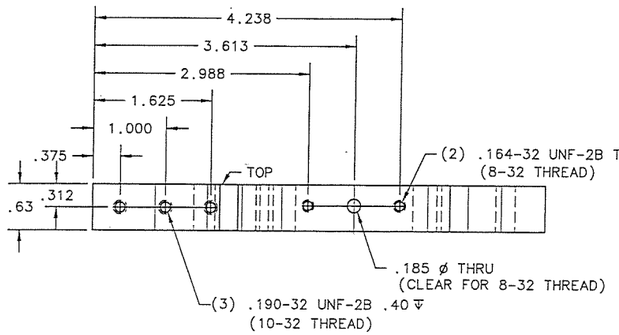


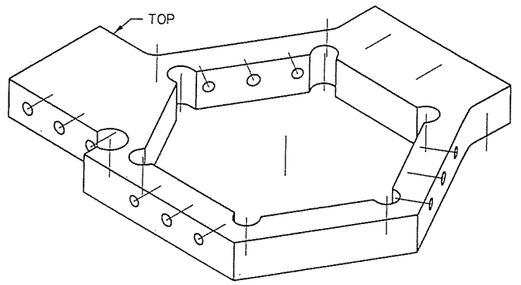
VIEW B-B
ROTATED 120°





VIEW A-A
ROTATED 120°





ISO 1=1

18

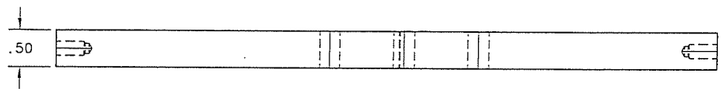
NOTES:
1. BREAK SHARPE EDGES & DEBURR.
2. MACHINED SURFACE FIISH TO BE 63 RMS.

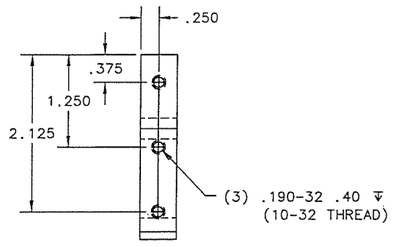
DO NOT SCALE DRAWING	THIS DRAWING CREATED IN:		
INTERPRET DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-94	ACAD ☐	MECH ☐	IDEAS [X]
TOLERANCES UNLESS OTHERWISE SPECIFIED LINEAR: .X = ±.04, .XX = ±.02, .XXX = ±.010 ANGULAR: ±0 °30 DIAMETRICAL SEE SPEC S-002			
DIMENSIONS ARE IN INCHES / DIMENSIONS IN [ ] ARE METRIC			
MATERIAL ALUMINUM		12523	
	NEXT ASSY	USED ON	
FINISH NONE	ASSEMBLY APPLICATION		

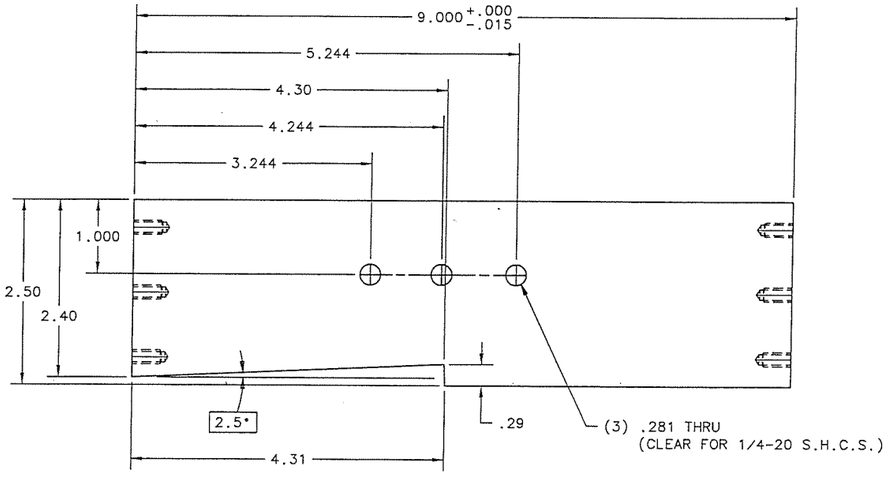
Steward Observatory, University of Arizona
933 N. Cherry Avenue, Tucson, AZ 85721 (520)621-7659

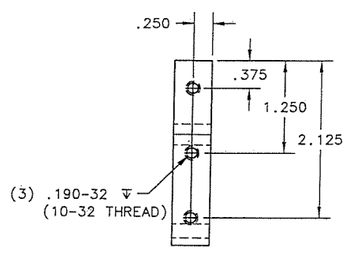
DESIGNED BY: DAVID DEAN	DATE: 7/23/02	CATEGORY: 90" BOK TELESCOPE	
DRAWN BY: DAVID DEAN	8/13/02	PROJECT: PRIME FOCUS	
CHECKED BY:		TITLE: TOP BOX GUIDE CAMERA MAIN MOUNT CAMERA PLATE	
APPROVED:			
APPROVED:			
APPROVED:		PLOT SIZE: D / SCALE: 1=1 / DRAWING NUMBER: 12528 / REVISION: 1.	
APPROVED:			
CURRENT TIME/DATE/FILE LOCATION:			
DRAWING ARCHIVE LOCATION: http://davinci.as.arizona.edu/acad/default.html		SHEET OF 1	

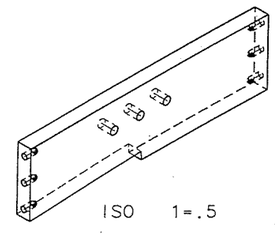
REVISIONS				
LTR	DESCRIPTION	DATE	REVISED BY	APPROVED









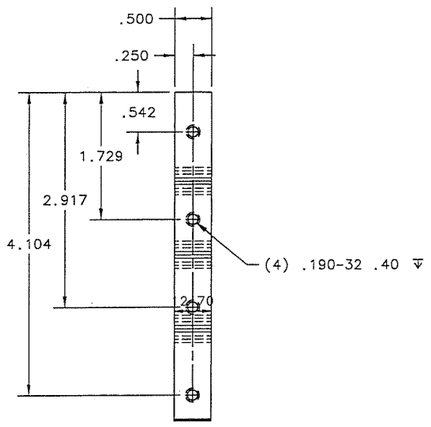


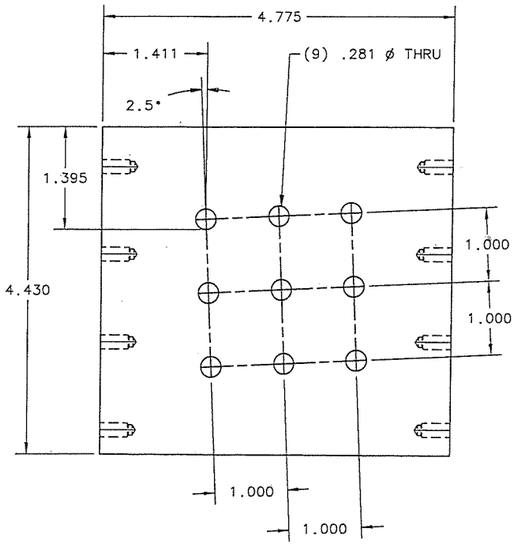
NOTES:
1. BREAKE SHARPE EDGES & DEBURR.
2. MACHINED SURFACE FINISH TO BE 63 RMS.

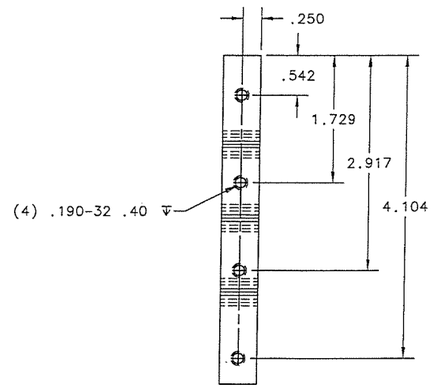
(19)

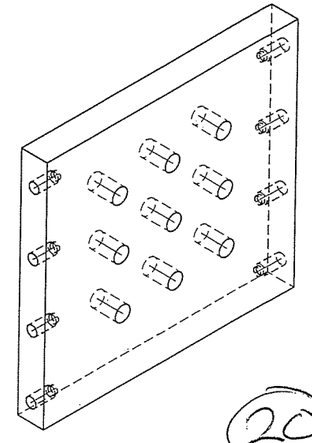
DO NOT SCALE DRAWING	THIS DRAWING CREATED IN: ACAD ☐ MECH ☐ IDEAS ☒	Steward Observatory, University of Arizona, 933 N. Cherry Avenue, Tucson, AZ 85721 (520)621-7659	
INTERPRET DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-94		DESIGNED BY: DAVID DEAN — DATE: 7/23/02	CATEGORY: 90" BOK TELESCOPE
TOLERANCES UNLESS OTHERWISE SPECIFIED: LINEAR .X = ±.04, .XX = ±.02, .XXX = ±.008; ANGULAR ± 0°30; DIAMETRICAL SEE SPEC S-002		DRAWN BY: DAVID DEAN — 8/12/02	PROJECT: PRIME FOCUS
DIMENSIONS ARE IN INCHES / DIMENSIONS IN [ ] ARE METRIC		CHECKED BY:	TITLE: TOP BOX, GUIDE CAMERA, STAGE BRIDGE PLATE
MATERIAL ALUMINUM	12523	APPROVED: / APPROVED: / APPROVED: / APPROVED:	PLOT SIZE: D — SCALE: 1=1 — DRAWING NUMBER: 12536 — REVISION: 1
FINISH NONE	NEXT ASSY — USED ON: ASSEMBLY APPLICATION	CURRENT TIME/DATE/FILE LOCATION: DRAWING ARCHIVE LOCATION: http://davinci.as.arizona.edu/acad/default.html	SHEET OF 1

REVISIONS				
LTR	DESCRIPTION	DATE	REVISED BY	APPROVED









NOTES:
1. BREAK SHARPE EDGES & DEBURR.
2. MACHINED SURFACE FINISH TO BE 63 RMS.

DO NOT SCALE DRAWING	THIS DRAWING CREATED IN:			Steward Observatory, University of Arizona	
INTERPRET DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-94	ACAD ☐	MECH ☐	IDEAS ☒	933 N. Cherry Avenue, Tucson, AZ 85721 (520)621-7659	
TOLERANCES UNLESS OTHERWISE SPECIFIED LINEAR: .X ± .04, .XX ± .02, .XXX ± .10 ANGULAR: ± 0°30 DIAMETRICAL SEE SPEC S-002				DESIGNED BY: DAVID DEAN	DATE: 7/23/02
DIMENSIONS ARE IN INCHES / DIMENSIONS IN [ ] ARE METRIC				DRAWN BY: DAVID DEAN	8/14/02
MATERIAL				CHECKED BY:	
				APPROVED:	
				APPROVED:	
				APPROVED:	
	NEXT ASSY	USED ON		APPROVED:	
FINISH	ASSEMBLY APPLICATION			CURRENT TIME/DATE/FILE LOCATION:	
				DRAWING ARCHIVE LOCATION: http://davinci.as.arizona.edu/acad/default.html	

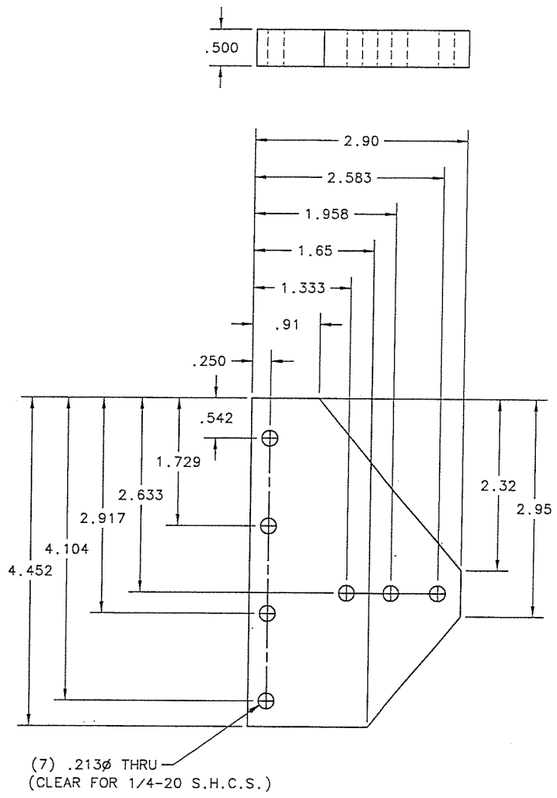
CATEGORY: 90" BOK TELESCOPE
PROJECT: PRIME FOCUS
TITLE: TOP BOX
GUIDE CAMERA
STAGE INTERFACE PLATE

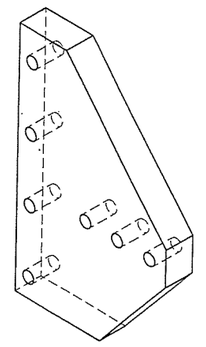
PLOT SIZE	SCALE:	DRAWING NUMBER:	REVISION:
D	??	12537	

SHEET OF 1

20

REVISIONS				
LTR	DESCRIPTION	DATE	REVISED BY	APPROVED





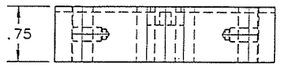
ISO 1=1

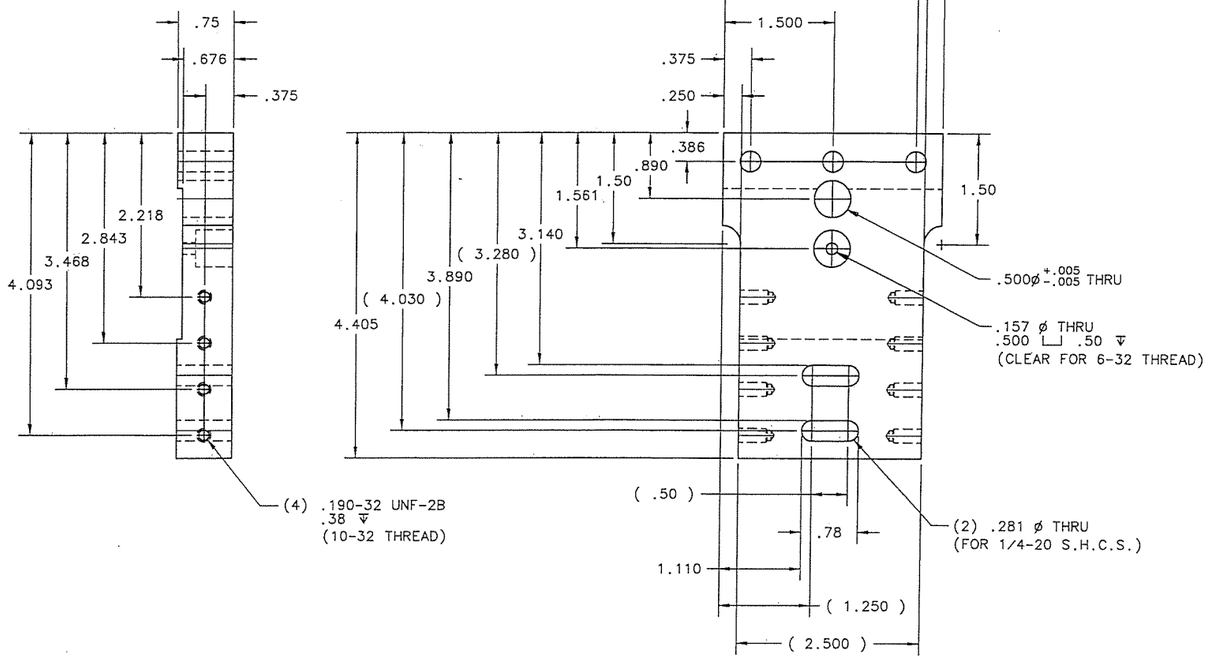
NOTES:
1. BREAK SHARP EDGES & DEBURR.
2. MACHINED SURFACE FINISH TO BE 63 RMS.

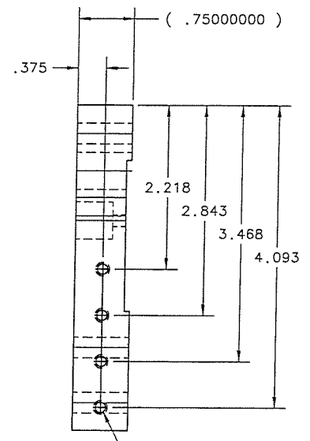
(21)

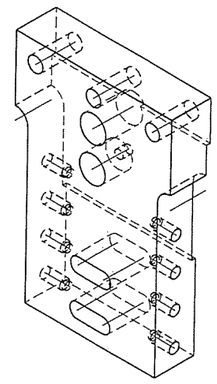
DO NOT SCALE DRAWING	THIS DRAWING CREATED IN:	Steward Observatory, University of Arizona	
INTERPRET DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-94	ACAD ☐ MECH ☐ IDEAS ☒	933 N. Cherry Avenue, Tucson, AZ 85721 (520)621-7659	
TOLERANCES UNLESS OTHERWISE SPECIFIED LINEAR: .X = ±.04, .XX = ±.02, .XXX = ±.008 ANGULAR: ± 0°30 DIAMETRICAL SEE SPEC S-002 DIMENSIONS ARE IN INCHES / DIMENSIONS IN [ ] ARE METRIC		DESIGNED BY: DAVID DEAN — DATE: 7/23/02	CATEGORY: 90" BOK TELESCOPE
		DRAWN BY: DAVID DEAN — DATE: 8/14/02	PROJECT: PRIME FOCUS
		CHECKED BY:	TITLE: TOP BOX GUIDE CAMERA STAGE S PERPENDICULAR PLATE
		APPROVED:	
		APPROVED:	
		APPROVED:	
MATERIAL ALUMINUM	12523	APPROVED:	PLOT SIZE: D — SCALE: 1=1 — DRAWING NUMBER: 12539 — REVISION: 1
	NEXT ASSY — USED ON		
FINISH NONE	ASSEMBLY APPLICATION	CURRENT TIME/DATE/FILE LOCATION:	SHEET OF 1
		DRAWING ARCHIVE LOCATION: http://davinci.as.arizona.edu/ecad/default.html	

REVISIONS				
LTR	DESCRIPTION	DATE	REVISED BY	APPROVED









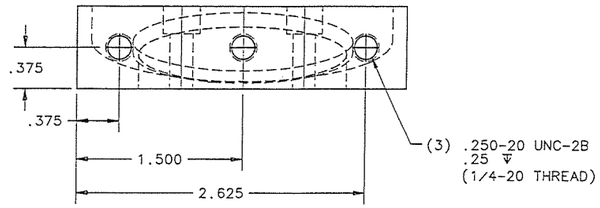
ISO 1=1

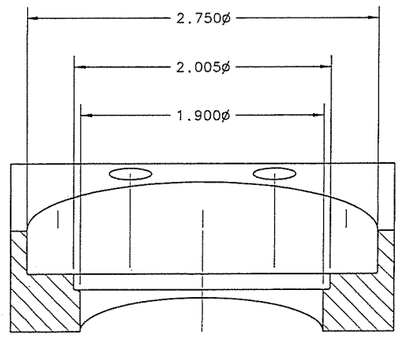
(22)

NOTES:
1. BREAK SHARPE EDGES & DEBURR.
2. MACHINED SUEFACE FINISH TO BE 63 RMS.

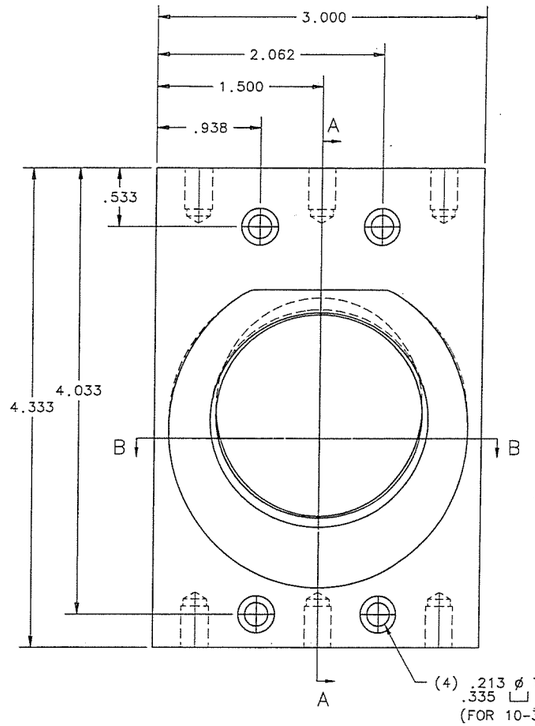
DO NOT SCALE DRAWING	THIS DRAWING CREATED IN:		Steward Observatory, University of Arizona
INTERPRET DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-94	ACAD ☐ MECH ☐ IDEAS ☒		933 N. Cherry Avenue, Tucson, AZ 85721 (520)621-7659
TOLERANCES UNLESS OTHERWISE SPECIFIED LINEAR: .X = ±.04, .XX = ±.02, .XXX = ±.008 ANGULAR: ± 0°30 DIAMETRICAL SEE SPEC S-002		DESIGNED BY: DAVID DEAN — DATE: 7/23/02	CATEGORY: 90" BOK TELESCOPE
DIMENSIONS ARE IN INCHES / DIMENSIONS IN [ ] ARE METRIC		DRAWN BY: DAVID DEAN — 8/12/02	PROJECT: PRIME FOCUS
MATERIAL: ALUMINUM		CHECKED BY:	TITLE: TOP BOX GUIDE CAMERA PICK OFF MIRROR CENTER BLOCK
		APPROVED:	
		APPROVED:	
	12523	APPROVED:	PLOT SIZE: D — SCALE: 1=1 — DRAWING NUMBER: 12531 — REVISION: 1
FINISH: NONE	NEXT ASSY / USED ON	APPROVED:	
	ASSEMBLY APPLICATION	CURRENT TIME/DATE/FILE LOCATION: DRAWING ARCHIVE LOCATION: http://davinci.as.arizona.edu/acad/default.html	SHEET OF 1

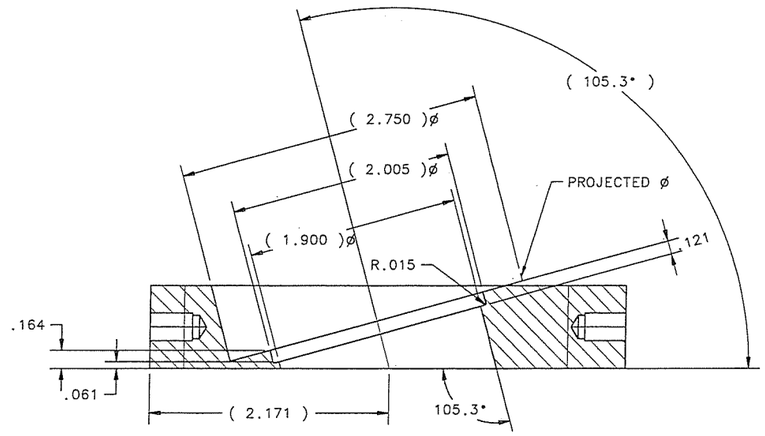
REVISIONS				
LTR	DESCRIPTION	DATE	REVISED BY	APPROVED



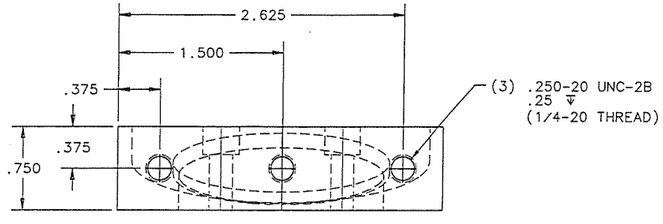


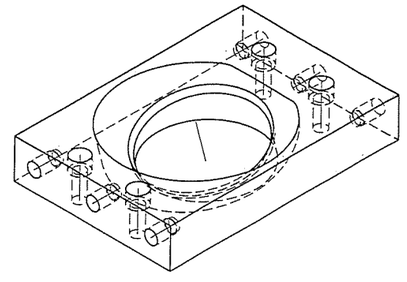
SECTION B-B
ROTATED 180°





SECTION A-A
ROTATED 90°





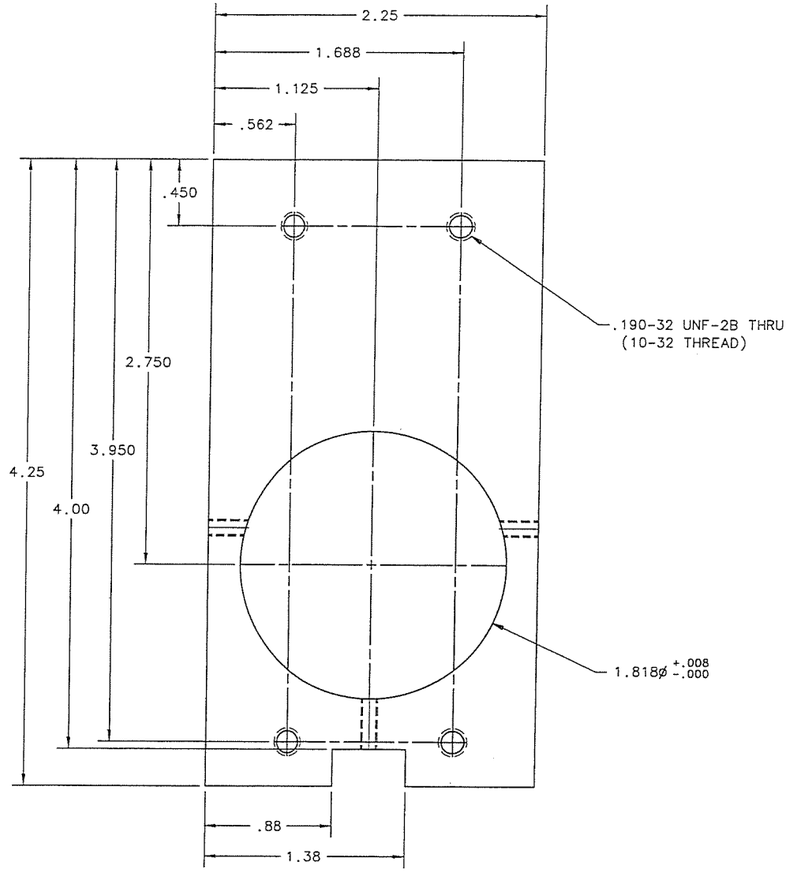
ISO 1=1

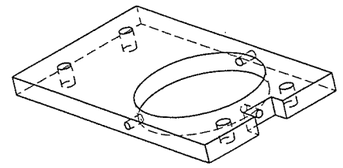
(23)

NOTES:
1. BREAK SHARPE EDGES & DEBURR.
2. MACHINED SUEFACE FINISH TO BE 63 RMS.
3. MACHINED FILLERT TO BE .015 MAX.

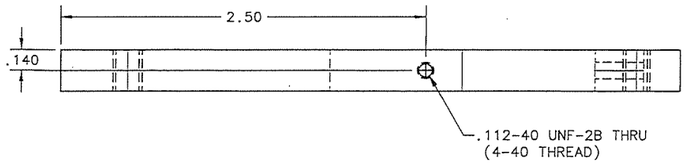
DO NOT SCALE DRAWING	THIS DRAWING CREATED IN: ACAD ☐ MECH ☐ IDEAS ☒	Steward Observatory, University of Arizona, 933 N. Cherry Avenue, Tucson, AZ 85721 (520)621-7659	
INTERPRET DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-94		DESIGNED BY: DAVID DEAN — DATE: 7/23/02	CATEGORY: 90" BOK TELESCOPE
TOLERANCES UNLESS OTHERWISE SPECIFIED LINEAR: .X = ±.04, .XX = ±.02, .XXX = ±.008 ANGULAR: ± 0°30 DIAMETRICAL SEE SPEC S-002 DIMENSIONS ARE IN INCHES / DIMENSIONS IN [ ] ARE METRIC		DRAWN BY: DAVID DEAN — 8/12/02	PROJECT: PRIME FOCUS
		CHECKED BY: -	TITLE: TOP BOX GUIDE CAMERA PICK OFF MIRROR LENS BLOCK
		APPROVED:	
		APPROVED:	
		APPROVED:	PLOT SIZE: D — SCALE: 1=1.5 — DRAWING NUMBER: 12533 — REVISION: 1
MATERIAL: ALUMINUM	12523	APPROVED:	
	NEXT ASSY — USED ON		
FINISH: NONE	ASSEMBLY APPLICATION	CURRENT TIME/DATE/FILE LOCATION:	SHEET OF 1
		DRAWING ARCHIVE LOCATION: http://davinci.as.arizona.edu/acad/default.html	

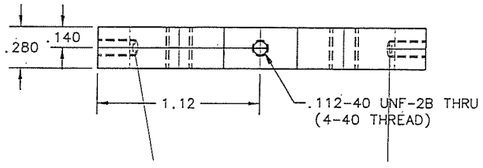
REVISIONS				
LTR	DESCRIPTION	DATE	REVISED BY	APPROVED

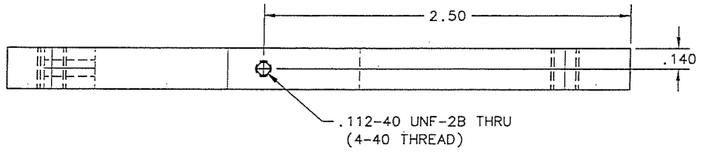




ISO 1=2







NOTES:
1. BREAK SHARPE EDGES & DEBURR.
2. MACHINED SURFACE FIISH TO BE 63 RMS.

(24)

DO NOT SCALE DRAWING	THIS DRAWING CREATED IN:		
INTERPRET DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-94	ACAD ☐	MECH ☐	IDEAS ☒
TOLERANCES UNLESS OTHERWISE SPECIFIED LINEAR: .X = ±.04, .XX = ±.02, .XXX = ±.010 ANGULAR: ± 0°30 DIAMETRICAL SEE SPEC S-002			
DIMENSIONS ARE IN INCHES / DIMENSIONS ARE [ ] ARE METRIC			
MATERIAL ALUMINUM		12523	
	NEXT ASSY	USED ON	
FINISH NONE	ASSEMBLY APPLICATION		

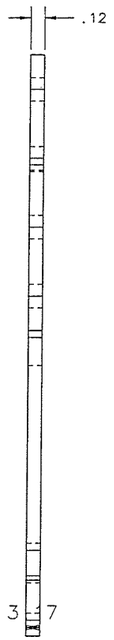
Steward Observatory, University of Arizona
933 N. Cherry Avenue, Tucson, AZ 85721 (520)621-7659

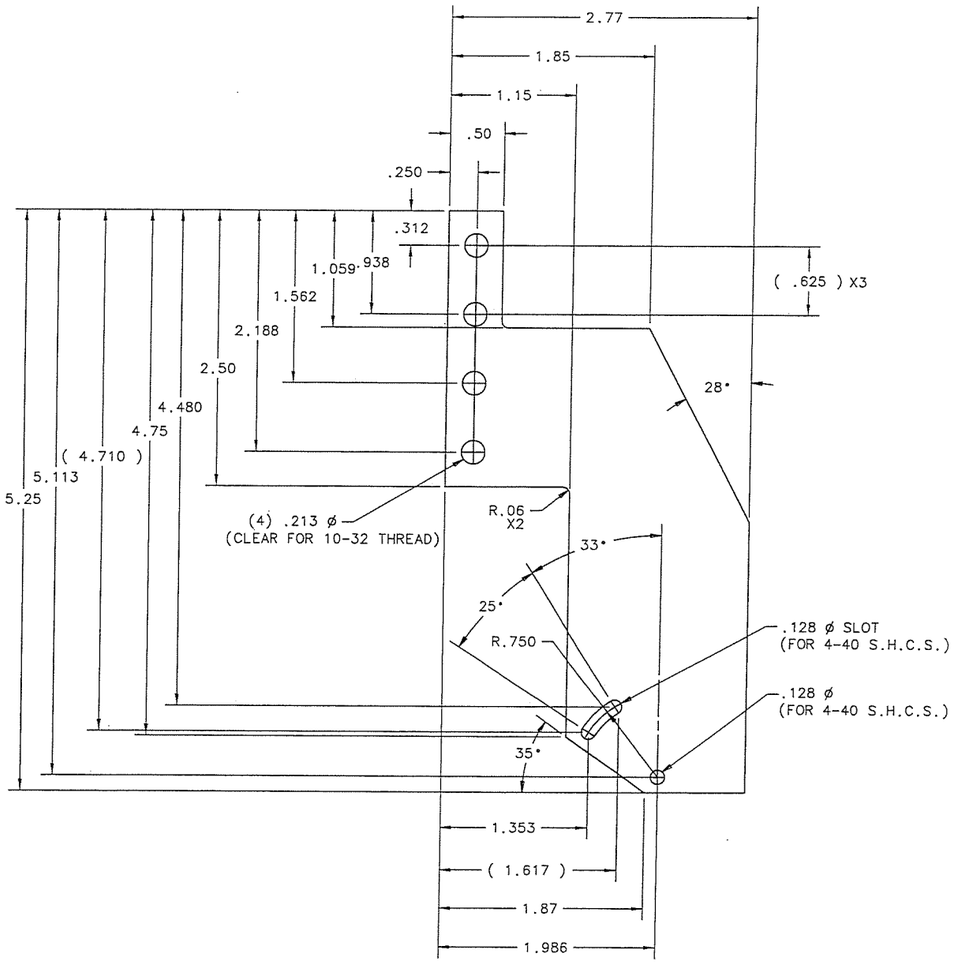
DESIGNED BY: DAVID DEAN	DATE: 7/23/02	CATEGORY:	90" BOK TELESCOPE
DRAWN BY: DAVID DEAN	8/8/02	PROJECT:	PRIME FOCUS
CHECKED BY:		TITLE:	TOP BOX GUIDE CAMERA FILTER WHEEL MOUNT PLATE
APPROVED:			
APPROVED:			
APPROVED:		PLOT SIZE: D	SCALE: 1=2
APPROVED:		DRAWING NUMBER:	12527
		REVISION:	1

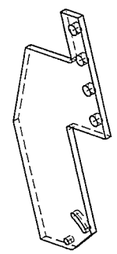
CURRENT TIME/DATE/FILE LOCATION:
DRAWING ARCHIVE LOCATION: http://davinci.as.arizona.edu/ocad/default.html

SHEET OF 1

REVISIONS				
LTR	DESCRIPTION	DATE	REVISED BY	APPROVED







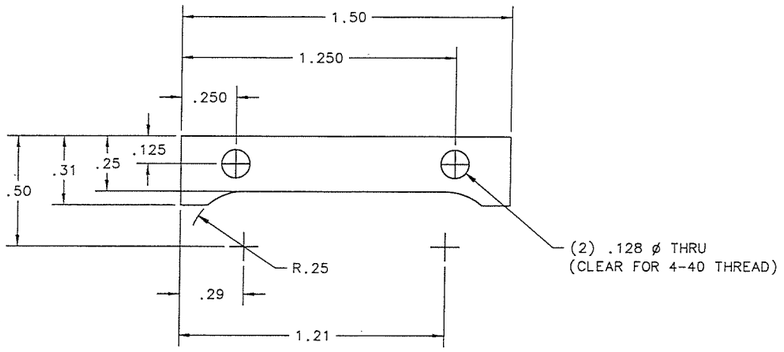
ISO 1=.75

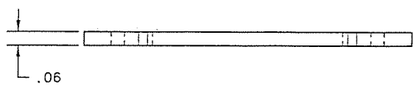
NOTES:
1. BREAKE SHARRPE EDGES & DEBURR.
2. MACHINED SURFACE FINISH TO BE 63 RMS.

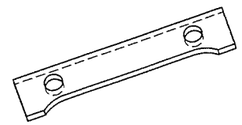
(25)

DO NOT SCALE DRAWING INTERPRET DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-94 TOLERANCES UNLESS OTHERWISE SPECIFIED LINEAR: .X ± .04, .XX ± .02, .XXX ± .008; ANGULAR: ± 0°30 DIAMETRICAL SEE SPEC S-002 DIMENSIONS ARE IN INCHES / DIMENSIONS IN [ ] ARE METRIC	THIS DRAWING CREATED IN: ACAD ☐ MECH ☐ IDEAS ☒	Steward Observatory, University of Arizona 933 N. Cherry Avenue, Tucson, AZ 85721 (520)621-7659	
MATERIAL ALUMINUM	12523 NEXT ASSY / USED ON	DESIGNED BY: DAVID DEAN — DATE: 7/23/02 DRAWN BY: DAVID DEAN — 8/13/02 CHECKED BY: APPROVED: APPROVED: APPROVED: APPROVED:	CATEGORY: 90" BOK TELESCOPE PROJECT: TOP BOX TITLE: PRIME FOCUS GUIDE CAMERA PICK OFF MIRROR SIDE PLATE
FINISH NONE	ASSEMBLY APPLICATION	CURRENT TIME/DATE/FILE LOCATION: DRAWING ARCHIVE LOCATION: http://davinci.as.arizona.edu/acad/default.html	PLOT SIZE: D — SCALE: 1=1.5 — DRAWING NUMBER: 12530 — REVISION: 1 SHEET OF 1

REVISIONS				
LTR	DESCRIPTION	DATE	REVISED BY	APPROVED





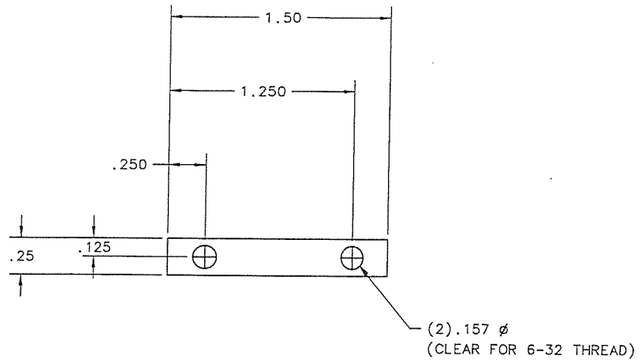


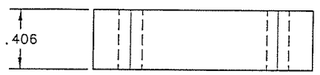
ISO 1=2

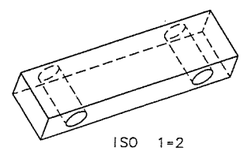
NOTES:
1. BREAK SHARPE EDGES & DEBURR.
2. MACHINED SURFACE FINISH TO BE 63 RMS.

DO NOT SCALE DRAWING	THIS DRAWING CREATED IN: ACAD ☐ MECH ☐ IDEAS ☒	Steward Observatory, University of Arizona, 933 N. Cherry Avenue, Tucson, AZ 85721 (520)621-7659	
INTERPRET DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-94		DESIGNED BY: DAVID DEAN	DATE: 7/23/02
TOLERANCES UNLESS OTHERWISE SPECIFIED LINEAR: .X = ±.04, .XX = ±.02, .XXX = ±.008 ANGULAR: ±0 °30 DIAMETRICAL SEE SPEC S-002		DRAWN BY: DAVID DEAN	8/12/02
DIMENSIONS ARE IN INCHES / DIMENSIONS IN [ ] ARE METRIC		CHECKED BY:	
		APPROVED:	
		APPROVED:	
		APPROVED:	
	12523	APPROVED:	
	NEXT ASSY / USED ON		
MATERIAL: ALUMINUM		CATEGORY: 90" BOK TELESCOPE	
FINISH: NONE	ASSEMBLY APPLICATION	PROJECT: PRIME FOCUS	
		TITLE: TOP BOX, GUIDE CAMERA, PICK OFF MIRROR CLAMP BAR	
		PLOT SIZE: D / SCALE: 1-3 / DRAWING NUMBER: 12532 / REVISION: 1	
		CURRENT TIME/DATE/FILE LOCATION:	SHEET OF 1
		DRAWING ARCHIVE LOCATION: http://davinci.as.arizona.edu/acad/default.html	

REVISIONS				
LTR	DESCRIPTION	DATE	REVISED BY	APPROVED







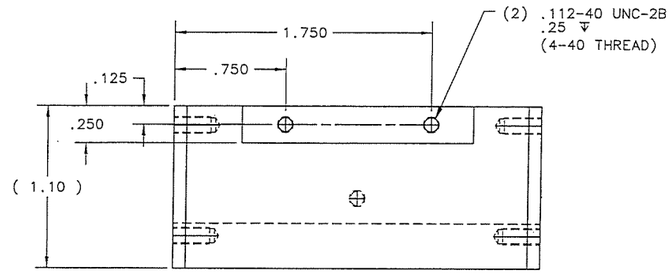
ISO 1=2

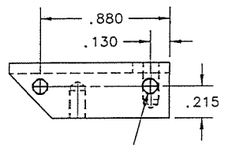
NOTES:
1. BREAK SHARPE EDGES & DEBURR.
2. MACHINED SURFACE FINISH TO BE 63 RMS.

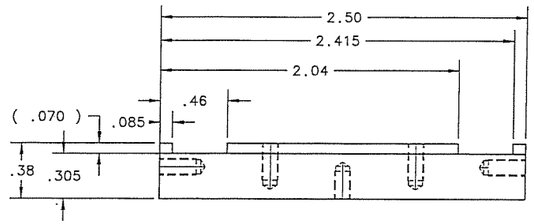
(27)

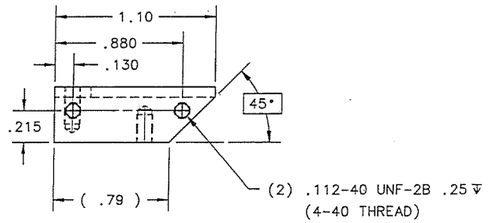
DO NOT SCALE DRAWING	THIS DRAWING CREATED IN: ACAD ☐ MECH ☐ IDEAS ☒	Steward Observatory, University of Arizona 933 N. Cherry Avenue, Tucson, AZ 85721 (520)621-7659	
INTERPRET DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-94		DESIGNED BY: DAVID DEAN — DATE: 7/23/02	CATEGORY: 90" BOK TELESCOPE
TOLERANCES UNLESS OTHERWISE SPECIFIED LINEAR: .X = ±.04, .XX = ±.02, .XXX = ±.010 ANGULAR: ± 0°30 DIAMETRICAL SEE SPEC S-002		DRAWN BY: DAVID DEAN — 8/26/02	PROJECT: PRIME FOCUS
DIMENSIONS ARE IN INCHES / DIMENSIONS IN [ ] ARE METRIC		CHECKED BY:	TITLE: TOP BOX GUIDE CAMERA PICK OFF MIRROR SPACER BLOCK
MATERIAL ALUMINUM	12523	APPROVED:	
	NEXT ASSY — USED ON	APPROVED:	PLOT SIZE: D — SCALE: 1-2 — DRAWING NUMBER: 12535 — REVISION: 1
FINISH NONE	ASSEMBLY APPLICATION	APPROVED: — CURRENT TIME/DATE/FILE LOCATION:	SHEET OF 1
		APPROVED: — DRAWING ARCHIVE LOCATION: http://davinci.as.arizona.edu/acad/default.html	

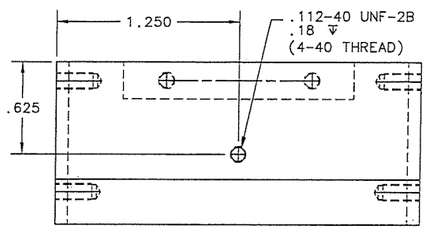
REVISIONS				
LTR	DESCRIPTION	DATE	REVISED BY	APPROVED

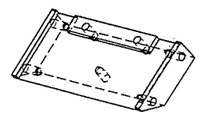












ISO 1=1

NOTES:
1. BREAK SHARPE EDGES & DEBURR.
2. MACHINED SURFACE FINISH TO BE 63 RMS.
3. MACHINED FILLETS TO BE .015 MAX.

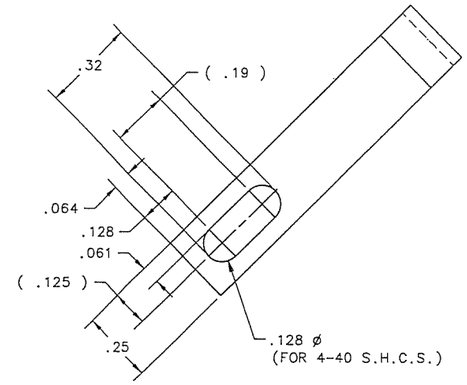
28

DO NOT SCALE DRAWING	THIS DRAWING CREATED IN:		
INTERPRET DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-94	ACAD ☐	MECH ☐	IDEAS ☒
TOLERANCES UNLESS OTHERWISE SPECIFIED LINEAR: .X = ±.04; .XX = ±.02; .XXX = ±.005 ANGULAR: ± 0°30 DIAMETRICAL SEE SPEC S-002 DIMENSIONS ARE IN INCHES / DIMENSIONS IN [ ] ARE METRIC			
MATERIAL ALUMINUM		12523	
	NEXT ASSY	USED ON	
FINISH NONE	ASSEMBLY APPLICATION		

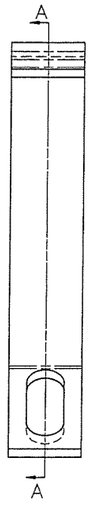
Steward Observatory, University of Arizona
933 N. Cherry Avenue, Tucson, AZ 85721 (520)621-7659

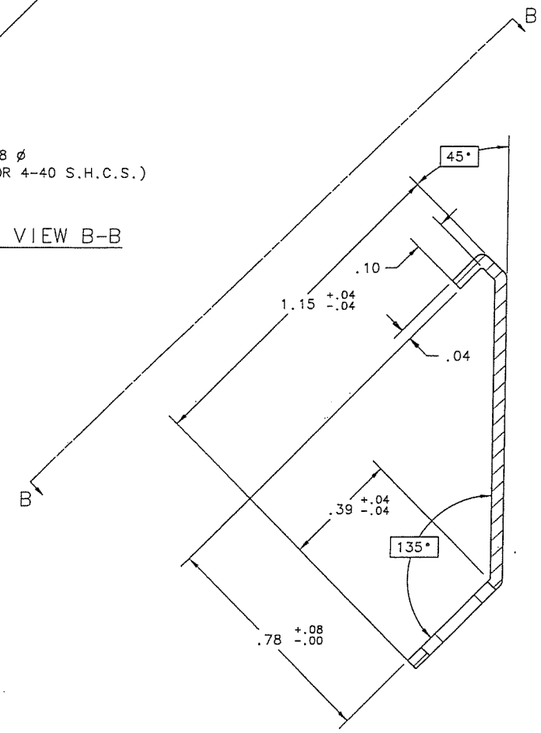
DESIGNED BY: DAVID DEAN	DATE: 7/23/02	CATEGORY:	90" BOK TELESCOPE
DRAWN BY: DAVID DEAN	8/8/02	PROJECT:	PRIME FOCUS
CHECKED BY:		TITLE:	TOP BOX GUIDE CAMERA PICK OFF MIRROR DIAGINOL BLOCK
APPROVED:			
APPROVED:			
APPROVED:		PLOT SIZE: D	SCALE: 1-2
APPROVED:		DRAWING NUMBER:	12525
CURRENT TIME/DATE/FILE LOCATION:		REVISION:	1
DRAWING ARCHIVE LOCATION: http://davinci.as.arizona.edu/ecad/default.html		SHEET	OF 1

REVISIONS				
LTR	DESCRIPTION	DATE	REVISED BY	APPROVED

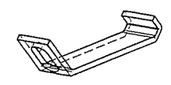


FULL AUXILIARY VIEW B-B





SECTION A-A



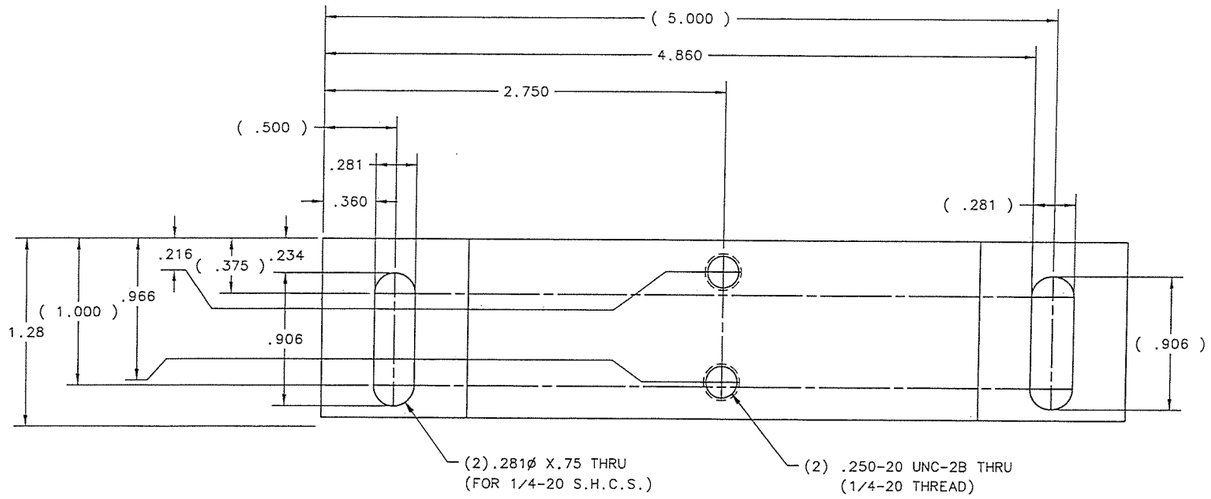
ISO 1=2

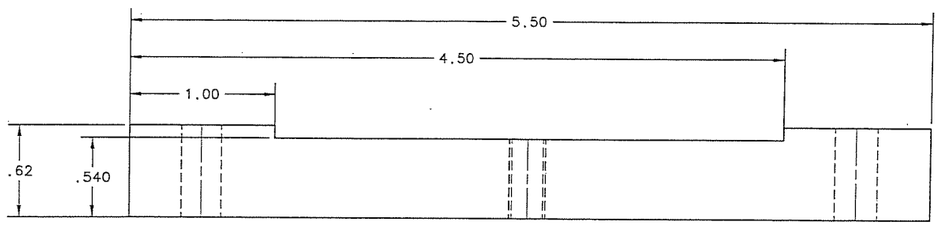
29

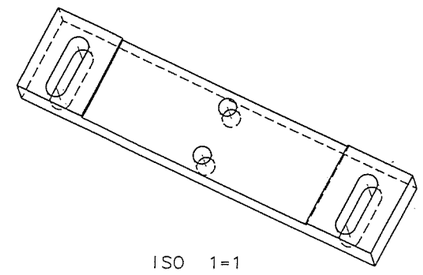
NOTES:
1. BREAK SHARPE EDGES & DEBURR.
2.
3.

DO NOT SCALE DRAWING	THIS DRAWING CREATED IN: ACAD ☐ MECH ☐ IDEAS ☒	Steward Observatory, University of Arizona, 933 N. Cherry Avenue, Tucson, AZ 85721 (520)621-7659	
INTERPRET DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-94		DESIGNED BY: DAVID DEAN — DATE: 7/23/02	CATEGORY: 90" BOK TELESCOPE
TOLERANCES UNLESS OTHERWISE SPECIFIED LINEAR: .X = ±.06, .XX = ±.03, .XXX = ±.010 ANGULAR: ± 2°30 DIAMETRICAL SEE SPEC S-002		DRAWN BY: DAVID DEAN — 8/13/02	PROJECT: PRIME FOCUS
		CHECKED BY:	TITLE: TOP BOX GUIDE CAMERA PICK OFF MIRROR STRAP
		APPROVED:	
		APPROVED:	
DIMENSIONS ARE IN INCHES / DIMENSIONS IN [ ] ARE METRIC		APPROVED:	
MATERIAL: BRASS	12523	APPROVED:	PLOT SIZE: D — SCALE: 1-4 — DRAWING NUMBER: 12534 — REVISION: 1
FINISH: NONE	NEXT ASSY — USED ON	CURRENT TIME/DATE/FILE LOCATION:	SHEET OF 1
	ASSEMBLY APPLICATION	DRAWING ARCHIVE LOCATION: http://davinci.as.arizona.edu/acad/default.html	

REVISIONS				
LTR	DESCRIPTION	DATE	REVISED BY	APPROVED







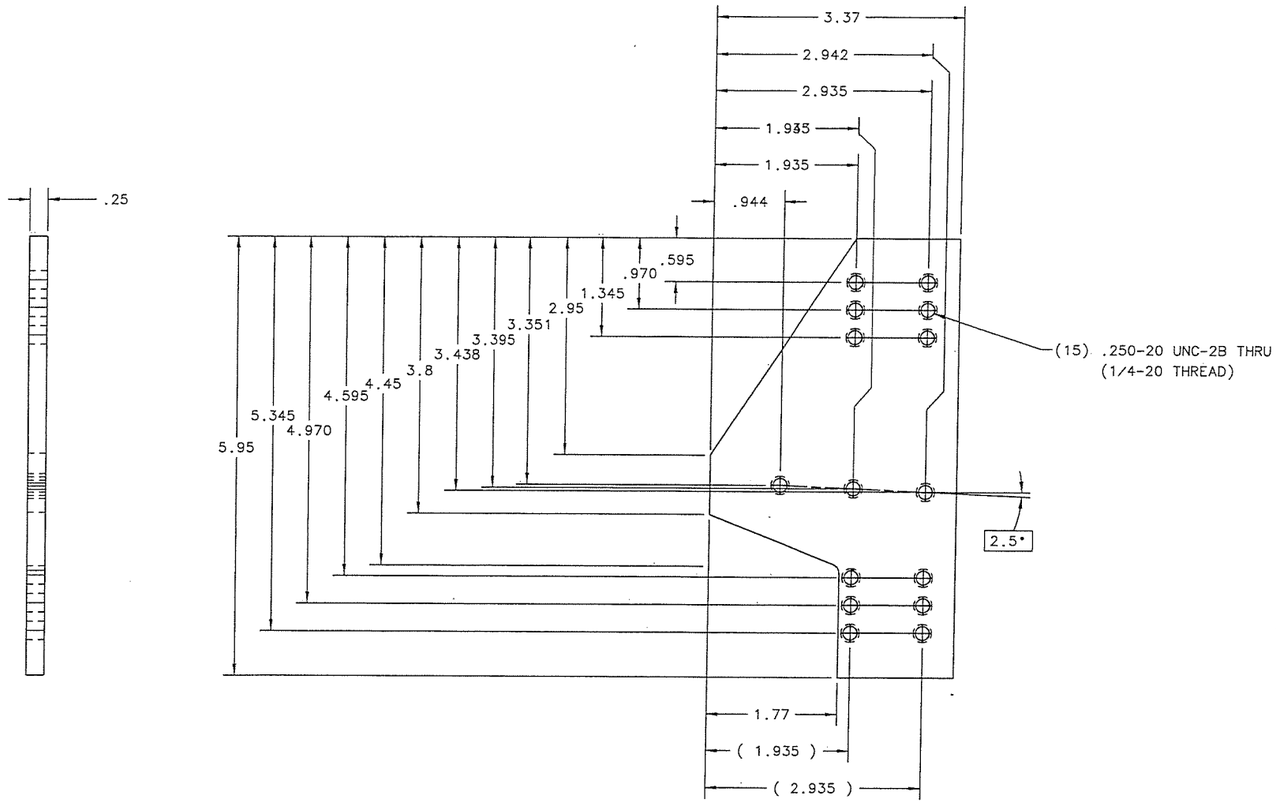
ISO 1=1

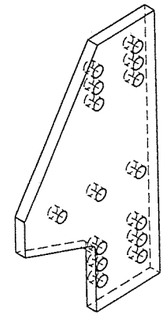
NOTES:
1. BREAK SHARPE EDGES & DEBURR.
2. MACHINED SURFACE FINISH TO BE 63 RMS.

(30)

DO NOT SCALE DRAWING	THIS DRAWING CREATED IN: ACAD ☐ MECH ☐ IDEAS ☒	Steward Observatory, University of Arizona 933 N. Cherry Avenue, Tucson, AZ 85721 (520)621-7659	
INTERPRET DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-94		DESIGNED BY: DAVID DEAN — DATE: 7/23/02	CATEGORY: 90" BOK TELESCOPE
TOLERANCES UNLESS OTHERWISE SPECIFIED LINEAR: .X ± .04, .XX ± .02, .XXX ± .010 — ANGULAR: ± 0°30 DIAMETRICAL SEE SPEC S-002 DIMENSIONS ARE IN INCHES / DIMENSIONS IN [ ] ARE METRIC		DRAWN BY: DAVID DEAN — 8/8/02	PROJECT: PRIME FOCUS
		CHECKED BY:	TITLE: TOP BOX GUIDE CAMERA MAIN CROSS BAR
		APPROVED:	
		APPROVED:	
		APPROVED:	PLOT SIZE: D — SCALE: 1=2 — DRAWING NUMBER: 12529 — REVISION: 1
MATERIAL ALUMINUM	12523	APPROVED:	
	NEXT ASSY — USED ON		
FINISH NONE	ASSEMBLY APPLICATION	CURRENT TIME/DATE/FILE LOCATION:	SHEET OF 1
		DRAWING ARCHIVE LOCATION: http://davinci.as.arizona.edu/acad/default.html	

REVISIONS				
LTR	DESCRIPTION	DATE	REVISED BY	APPROVED





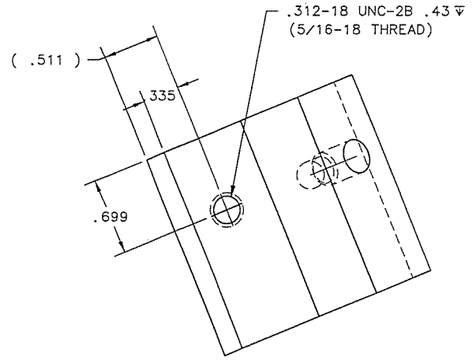
NOTES:
1. BREAKE SHARPE EDGES & DEBURR.
2. MACHINED SURFACE FIISH TO BE 63 RMS.

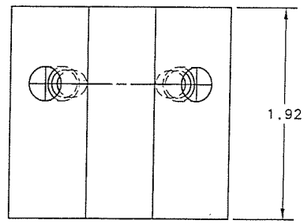
DO NOT SCALE DRAWING	THIS DRAWING CREATED IN:		
INTERPRET DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-94	ACAD ☐	MECH ☐	IDEAS ☒
TOLERANCES UNLESS OTHERWISE SPECIFIED LINEAR: .X = ±.04, .XX = ±.02, .XXX = ±.008 ANGULAR: ± 0°30 DIAMETRICAL SEE SPEC S-002			
DIMENSIONS ARE IN INCHES / DIMENSIONS IN [ ] ARE METRIC			
MATERIAL ALUMINUM		12523	
	NEXT ASSY	USED ON	
FINISH NONE	ASSEMBLY APPLICATION		

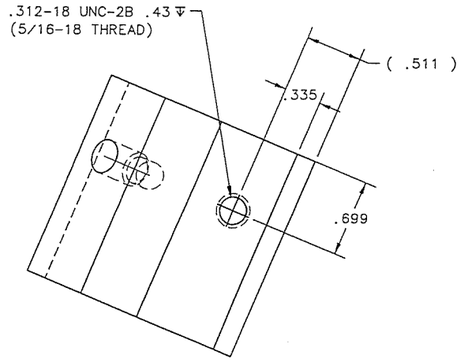
Steward Observatory, University of Arizona
933 N. Cherry Avenue, Tucson, AZ 85721 (520)621-7659

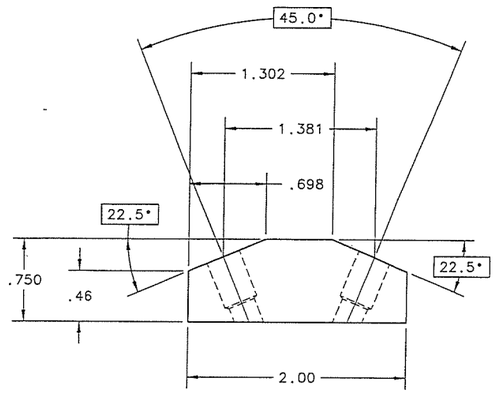
DESIGNED BY: DAVID DEAN	DATE: 7/23/02	CATEGORY: 90" BOK TELESCOPE	
DRAWN BY: DAVID DEAN	8/12/02	PROJECT: PRIME FOCUS	
CHECKED BY:		TITLE: TOP BOX GUIDE CAMERA STAGE MID ADAPTER PLATE	
APPROVED:			
APPROVED:			
APPROVED:		PLOT SIZE: D / SCALE: 1=1	DRAWING NUMBER: 12538 / REVISION: 1
APPROVED:			
CURRENT TIME/DATE/FILE LOCATION:			SHEET OF 1
DRAWING ARCHIVE LOCATION: http://davinci.as.arizona.edu/ecad/default.html			

REVISIONS				
LTR	DESCRIPTION	DATE	REVISED BY	APPROVED









NOTES:
1. BREAKE SHARPE EDGES & DEBURR.
2. THIS PART REPLACE EXISTING PART 12051.

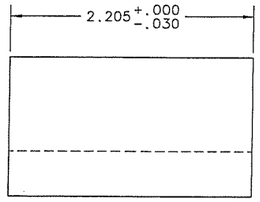
(32)

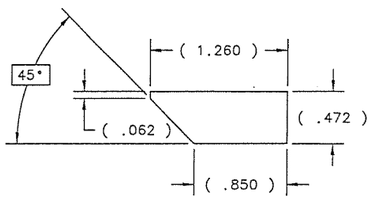
DO NOT SCALE DRAWING	THIS DRAWING CREATED IN:		
INTERPRET DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-94	ACAD ☐	MECH ☐	IDEAS ☒
TOLERANCES UNLESS OTHERWISE SPECIFIED LINEAR: .X = ±.04, .XX = ±.02, .XXX = ±.015 ANGULAR: ±1 °0 DIAMETRICAL SEE SPEC S-002			
DIMENSIONS ARE IN INCHES / DIMENSIONS IN [ ] ARE METRIC			
MATERIAL ALUMINUM		12523	
	NEXT ASSY	USED ON	
FINISH NONE	ASSEMBLY APPLICATION		

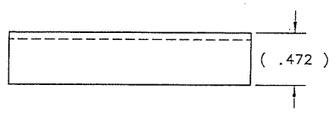
Steward Observatory, University of Arizona
933 N. Cherry Avenue, Tucson, AZ 85721 (520)621-7659

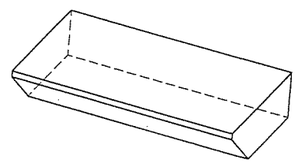
DESIGNED BY: DAVID DEAN	DATE: 7/23/02	CATEGORY: 90" BOK TELESCOPE	
DRAWN BY: DAVID DEAN	8/27/02	PROJECT: PRIME FOCUS	
CHECKED BY:		TITLE: TOP BOX GUIDE CAMERA SIDE PLATE BAR (SHORT)	
APPROVED:			
APPROVED:			
APPROVED:		PLOT SIZE: D / SCALE: 1-1.5 / DRAWING NUMBER: 12630	REVISION: 1
APPROVED:			
CURRENT TIME/DATE/FILE LOCATION:			
DRAWING ARCHIVE LOCATION: http://davinci.as.arizona.edu/acad/default.html			SHEET OF 1

REVISIONS				
LTR	DESCRIPTION	DATE	REVISED BY	APPROVED









ISO 1=1.5

NOTES:
1. JIM OR WARREN NEED TO SPEC OUT THIS PICK OF MIRROR.
2.

(48)

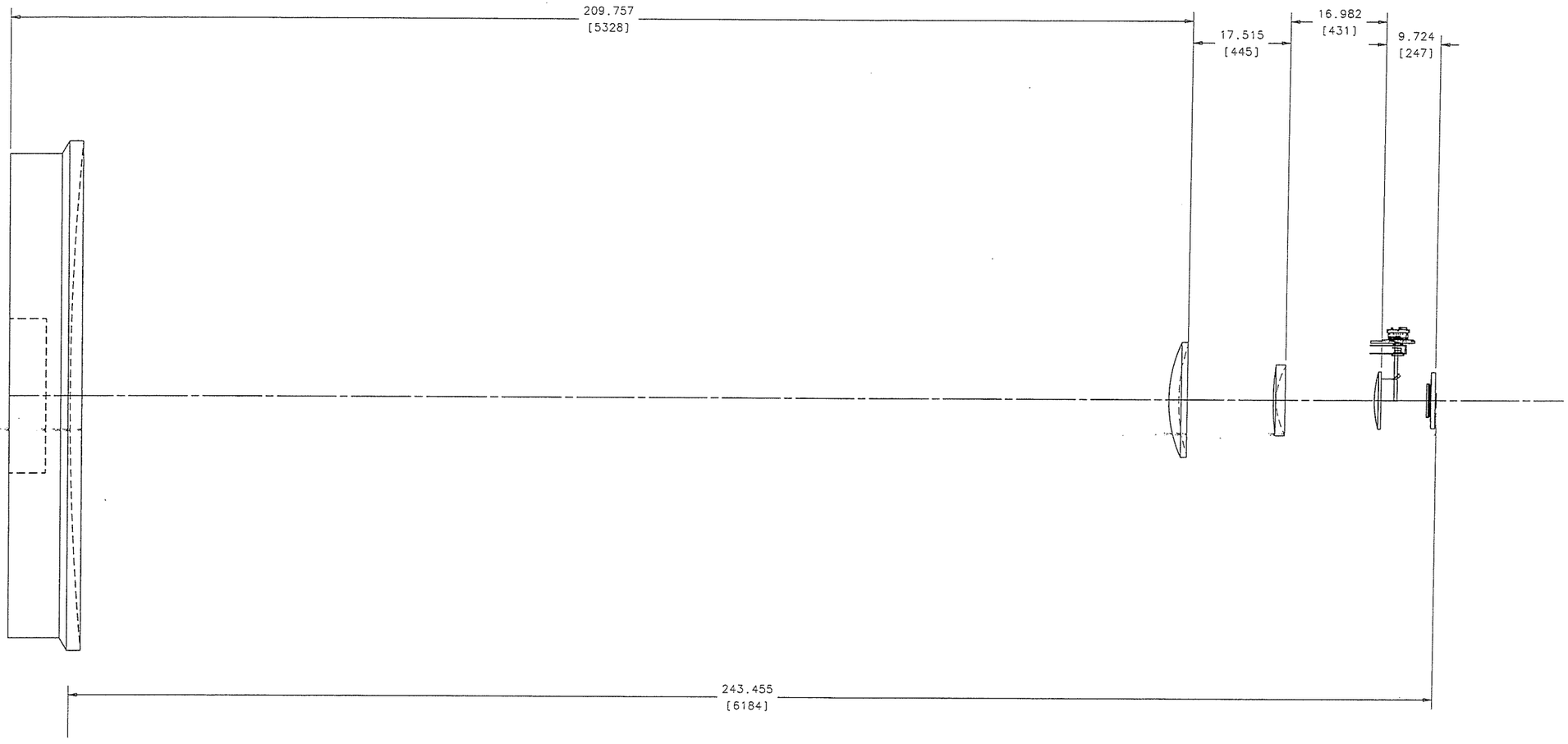
DO NOT SCALE DRAWING	THIS DRAWING CREATED IN:		
INTERPRET DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-94	ACAD ☐	MECH ☐	IDEAS ☒
TOLERANCES UNLESS OTHERWISE SPECIFIED LINEAR: .X = ±N.A., .XX = ±N.A., .XXX = ±N.A. ANGULAR: ± °N.A. DIAMETRICAL SEE SPEC S-002			
DIMENSIONS ARE IN INCHES / DIMENSIONS IN [ ] ARE METRIC			
MATERIAL ? ?		12523	
	NEXT ASSY	USED ON	
FINISH ?	ASSEMBLY APPLICATION		

Steward Observatory, University of Arizona
933 N. Cherry Avenue, Tucson, AZ 85721 (520)621-7659

DESIGNED BY: DAVID DEAN	DATE: 7/23/02	CATEGORY: 90" BOK TELESCOPE	
DRAWN BY: DAVID DEAN	8/28/02	PROJECT: PRIME FOCUS	
CHECKED BY:		TITLE: TOP BOX GUIDE CAMERA PICK OFF MIRROR	
APPROVED:			
APPROVED:			
APPROVED:		PLOT SIZE: D / SCALE: 1=1.5 / DRAWING NUMBER: 12636	REVISION: 1
APPROVED:			
CURRENT TIME/DATE/FILE LOCATION:			SHEET OF 1
DRAWING ARCHIVE LOCATION: http://davinci.as.arizona.edu/acad/default.html			

DWG. NO.	SH	REV.

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



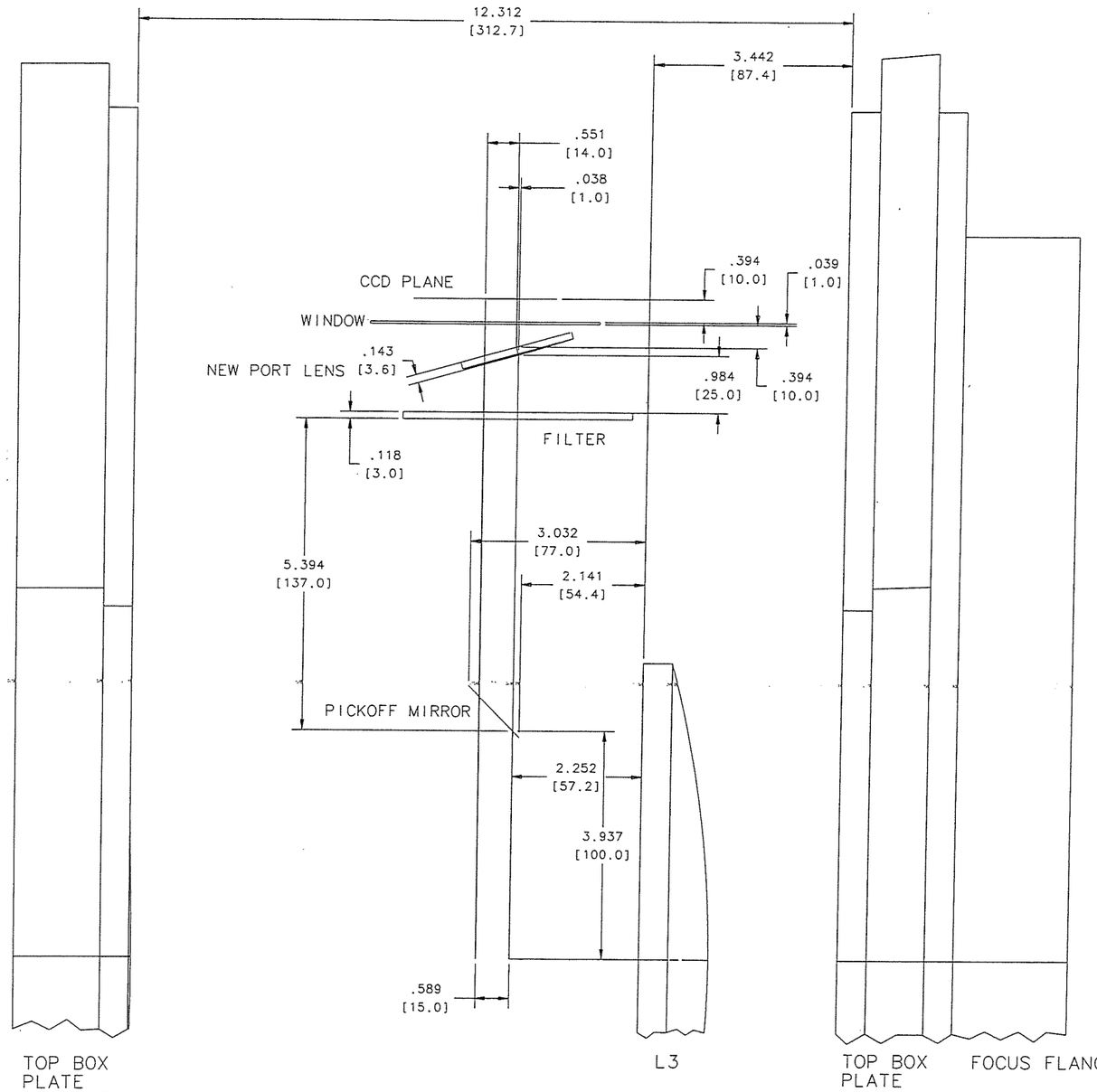
REF DWG

QTY REQD	FSCM NO	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	MATERIAL SPCIFICATION	ZONE	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS ± DECIMALS .XX- .XXX- ANGLES ± DO NOT SCALE DRAWING	CONTRACT NO.	
	APPROVALS / DATE	TITLE
TREATMENT	DRAWN	
	CHECKED	
FINISH	ISSUED	SIZE D / FSCM NO.
SIMILAR TO / ACT. WT / CALC WT		SCALE / SHEET

REVISIONS				
LTR	DESCRIPTION	DATE	REVISED BY	APPROVED



JIM BURGE TO CONFIRM THIS INFO

REF DWG

DO NOT SCALE DRAWING INTERPRET DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-94 TOLERANCES UNLESS OTHERWISE SPECIFIED LINEAR: .X ± ; .XX ± ; .XXX ± ANGULAR: ± ° DIAMETRICAL SEE SPEC S-002 DIMENSIONS ARE IN INCHES / DIMENSIONS IN [ ] ARE METRIC	THIS DRAWING CREATED IN: ACAD ☐ MECH ☐ IDEAS ☐	Steward Observatory, University of Arizona 933 N. Cherry Avenue, Tucson, AZ 85721 (520)621-7659	
MATERIAL	NEXT ASSY | USED ON	DESIGNED BY: | DATE:	CATEGORY:
		DRAWN BY:	PROJECT:
		CHECKED BY:	TITLE:
		APPROVED:	
		APPROVED:	
		APPROVED:	PLOT SIZE: D | SCALE: | DRAWING NUMBER: | REVISION:
FINISH	ASSEMBLY APPLICATION	APPROVED:	
		CURRENT TIME/DATE/FILE LOCATION:	SHEET OF
		DRAWING ARCHIVE LOCATION: http://davinci.as.arizona.edu/ocad/default.html	