

## 1 Scope of Project

This polarizing beamsplitter is to be used in the Prime Focus Imaging Spectrograph on the Southern African Large Telescope (SALT).

## 2 Physical specifications

The polarizing beamsplitter shall be a mosaic of 9 identical calcite Wollaston beamsplitters, mounted in a customer-supplied holder. (see drawings)

### Physical:

Total clear aperture: 183 mm (direction of splitting) \_\_\_\_\_  
214 mm (perpendicular to splitting) \_\_\_\_\_

### Mosaic element:

dimensions: 62 x 73  $\pm$  0.1 mm \_\_\_\_\_  
prism angle: 14.3  $\pm$  0.1°; elements matched to < 1 arcmin (0.5 arcmin goal) \_\_\_\_\_  
splitting axis Aligned to edges within  $\pm$  0.1°; elements matched to < 2 arcmin \_\_\_\_\_  
Surfaces: 1/4  $\lambda$  at 630 nm, \_\_\_\_\_  
wedge < 30 arcsec \_\_\_\_\_  
< 1 mm 45° bevel \_\_\_\_\_  
60/40 scratch/dig \_\_\_\_\_

### Optical:

Crystal axis:  $\pm$  0.1° to prism axis \_\_\_\_\_  
Prism coupling customer-supplied Dow Corning Q2-2037 coupling grease \_\_\_\_\_  
Internal Transmission: > 65% (320 nm), > 75% (628 nm) (mean over each element) \_\_\_\_\_  
Coating: All external surfaces shall have reflectivity < 1% for 320 - 900 nm and < 0.5% 360 - 700 \_\_\_\_\_

## 3 Documentation Summary

Document Calcite material internal transmission at 320 and 628 nm \_\_\_\_\_  
Document prism angle of each mosaic element to 0.25 arcmin \_\_\_\_\_  
Document alignment of mosaic element optic axes after assembly \_\_\_\_\_

## 4 Delivery

Delivery is desired on or before 30 weeks ARO. Please state in itemized Bid List when delivery will be made. Timeliness of delivery may be used in evaluation for bid award. Order will be made between 1 and 15 April, 2003.

4

3

2

1

A

B

C

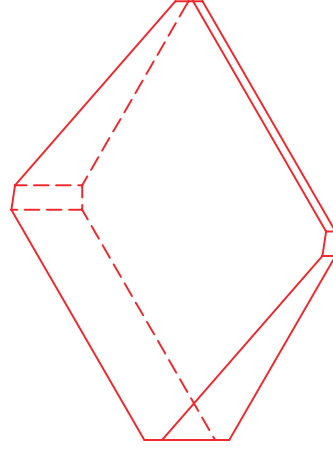
D

A

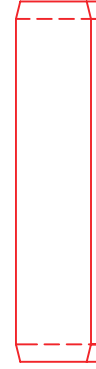
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C

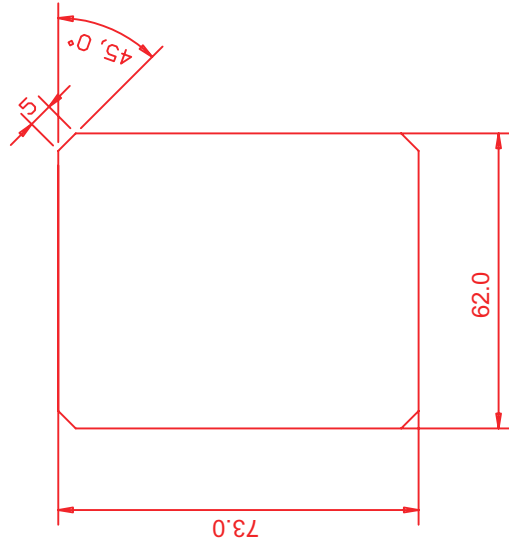
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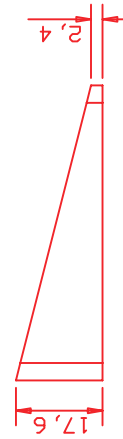
ISOMETRIC



RIGHT



TOP



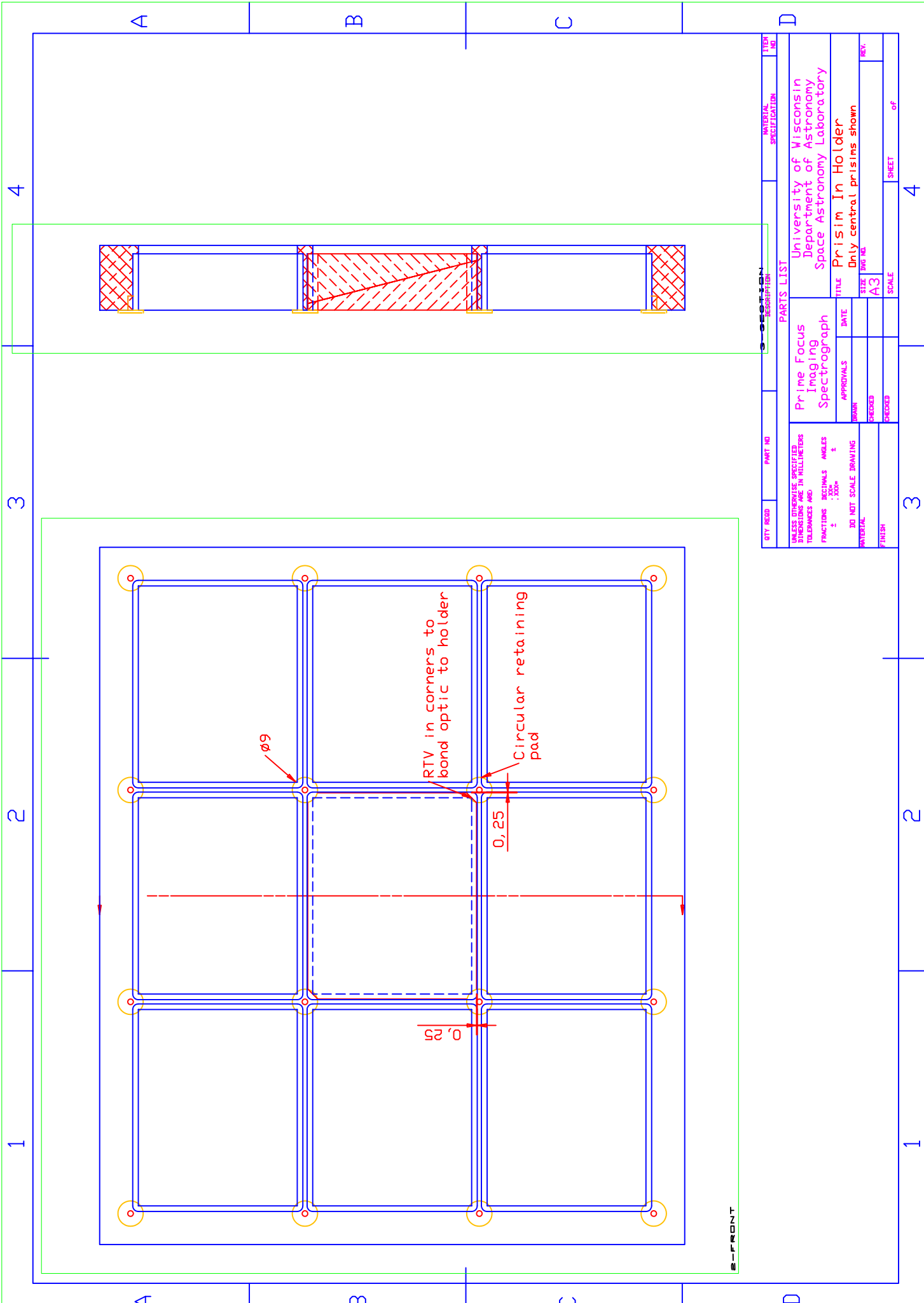
FRONT

CITY RESID	PART NO	DESCRIPTION	MATERIAL SPECIFICATION	SHEET NO
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS TOLERANCES ARE:		Prime Focus Imaging Spectrograph APPROVALS: <b>khn</b> DATE: 02/05/2003 DRAWN: <b>khn</b> CHECKED:	University of Wisconsin Department of Astronomy Space Astronomy Laboratory	
FRACTIONS	DECIMALS		TITLE	REV.
±	.XXX	DO NOT SCALE DRAWING	Beam Splitter Prism	
MATERIAL		SIZE	DWG NO	
FINISH		A3		
			SCALE	SHEET
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			of	

3

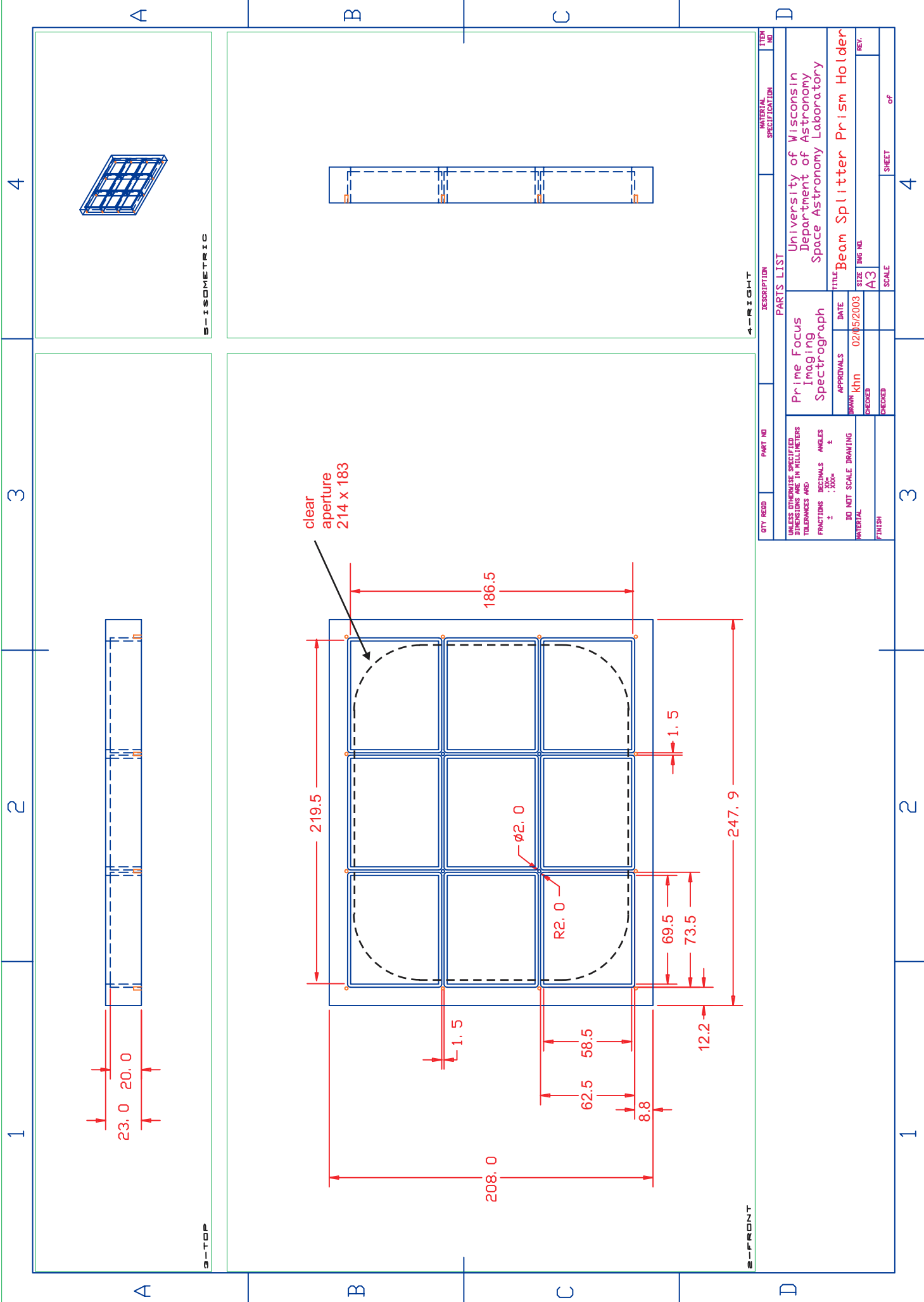
2

1



QTY	REQD	PART NO	DESCRIPTION	MATERIAL	SPECIFICATION	ITEM NO
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS TOLERANCES ARE: FRACTIONS DECIMALS ANGLES .XXX° .XXX' .XXX"						
DO NOT SCALE DRAWING MATERIAL FINISH						
PARTS LIST						
Prime Focus Imaging Spectrograph						
University of Wisconsin in Space Astronomy Laboratory						
Prism In Holder						
Only central prisms shown						
APPROVALS			DATE	TITLE	SIZE	REV.
DRAWN					A3	
CHECKED						
CHECKED						
				SCALE	SHEET	of
					4	4

B-FRONT



QTY REQD	PART NO	DESCRIPTION	MATERIAL SPECIFICATION	TYP. NO
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS TOLERANCES ARE:		University of Wisconsin in Department of Astronomy Space Astronomy Laboratory		
FRACTIONS	DECIMALS	ANGLES	TITLE	
±	.000	±	Beam Splitter Prism Holder	
DO NOT SCALE DRAWING		APPROVALS	DATE	SIZE
		kh	02/05/2003	A3
		DRAWN	CHKD	REV.
		CHECKED	SCALE	SHEET
				4
		FINISH		of