

NATIONAL RADIO ASTRONOMY OBSERVATORY  
TUCSON, ARIZONA

April 15, 1982

TO: 12 M File

FROM: J. M. Payne

SUBJECT: Receiver Mounting for 12 M Project

The final optical arrangement for the 12 M antenna will be close to that outlined in Memo #33 at the start of the project. We will have immediately available, mounting arrangements for both old style and new style receivers (Fig 1 and Fig 2) in positions 1 and 2 on the new antenna. Lee King has to do the final calculations on the effects of loading but it seems that the deformations resulting from mounting the receiver in the central area will be very small.

Questions that need to be decided fairly soon are:

- 1) What are the deformations resulting from loading the receivers in the manner suggested?
- 2) Do we need to add dummy loads to keep the loading symmetrical?

We have obtained bids on the subreflector - it is \$1200. I have talked with P. Napier and R. Fisher about the correcting optics for 3 mm and they seem to agree it will work. I haven 't gone into detail on the correcting optics in this memo as I don't think it's appropriate.

The jobs that remain to be done on the receiver mounting are as follows.

Design of mirror assembly	B. Peery
Design of old receiver mounting	D. Ross & L. King
Attachment of selection mirror and mirror assembly to telescope	B. Peery
Purchase new subreflector	D. Ross
Design of new RX mounting	D. Ross & L. King

MIRRORSPECIFICATIONSMIRROR A

CLEAR APERTURE 30.48cm (12.00")

ANGLE TO OPTICAL AXIS =  $45^{\circ}$

(ADJUSTABLE  $\pm 5^{\circ}$  IN BOTH AXES)

MIRROR SURFACE FLAT TO RMS OF  $15\mu\text{m}$

SURFACE FINISH  $16\mu$  INCHES

MIRROR SHOULD BE LOCKABLE AFTER  
ADJUSTMENT.

QUANTITY REQUIRED — 4

MIRROR C

CLEAR APERTURE 30.48 (12.00)

ANGLE TO OPTICAL AXIS =  $45^{\circ}$

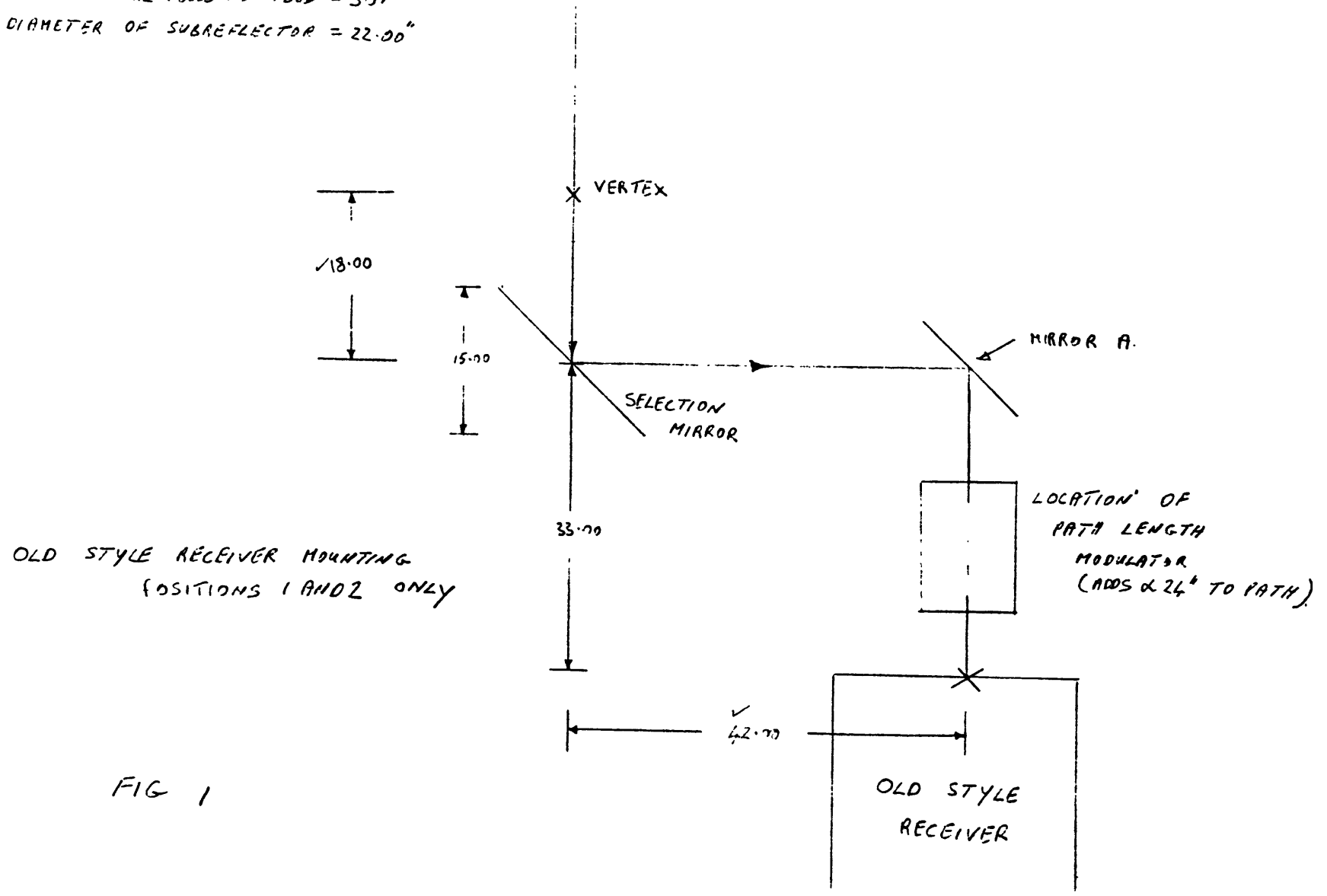
(ADJUSTABLE  $\pm 2^{\circ}$  IN BOTH AXES)

MIRROR SURFACE FLAT TO RMS OF  $15\mu\text{m}$

SURFACE FINISH  $16\mu$  INCHES

MIRROR SHOULD BE LOCKABLE AFTER  
ADJUSTMENT.

DISTANCE FROM PRIME FOCUS TO FEED = 307"  
 DIAMETER OF SUBREFLECTOR = 22.00"



OLD STYLE RECEIVER MOUNTING  
 POSITIONS 1 AND 2 ONLY

FIG 1

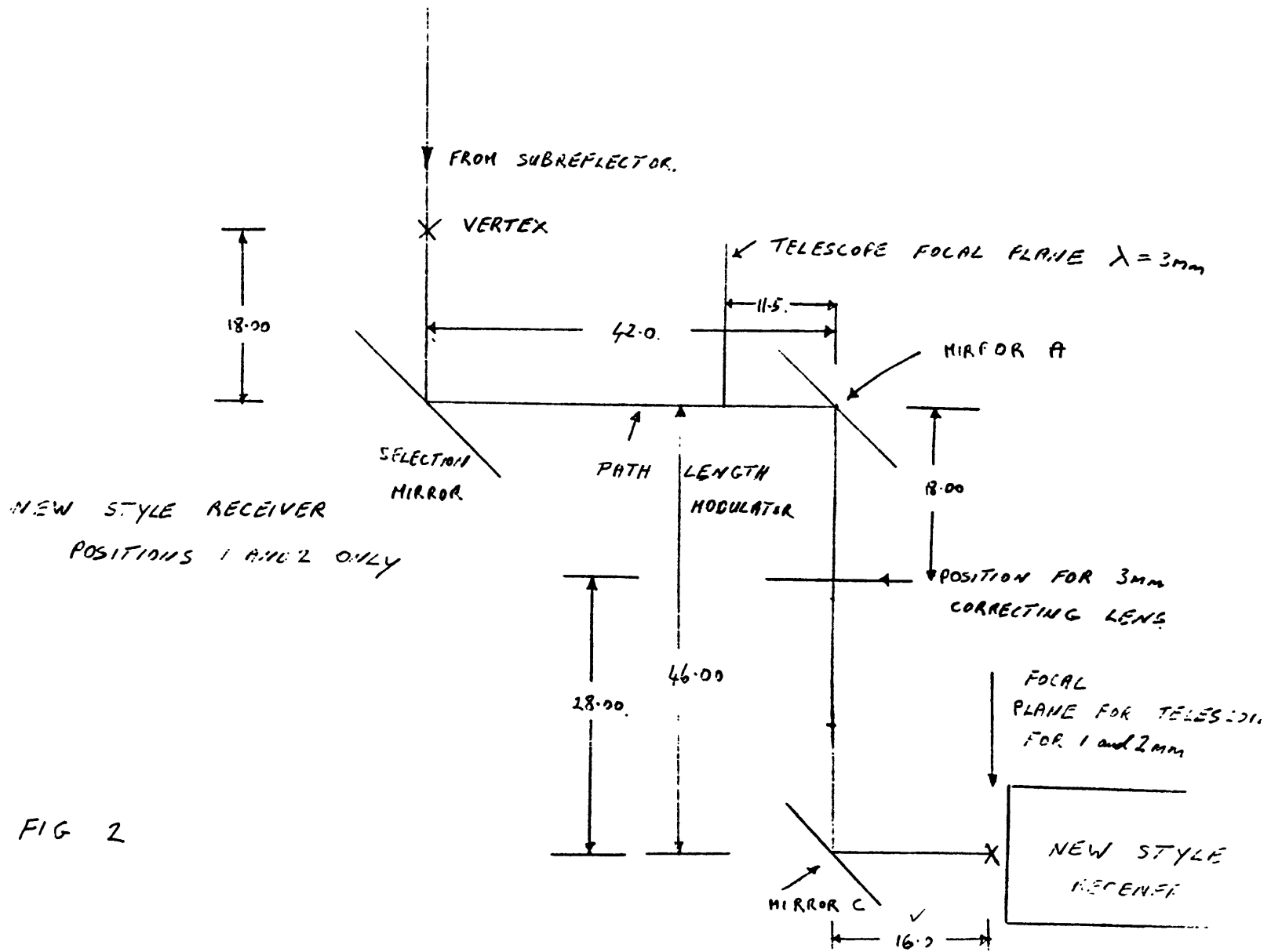


FIG 2