Interoffice

NATIONAL RADIO ASTRONOMY OBSERVATORY

TUCSON, ARIZONA

12 METER MILLIMETER WAVE TELESCOPE
MEMO No. 71

Tony Hamed

From: John Payne

Subject: 12 M Selection Mirror

We now have some specifications on the receiver selection mirror for the 12 M antenna. The selection mirror may be used down to frequencies of 30 GHZ but will require that our existing 9mm continuum receiver is modified to be a single feed system. At frequencies below 70 GHZ a 45 cm diameter clear aperature must exist above the selection mirror. This will be achieved by the removal of the quasi optical devices above the selection mirror. These devices will not work below 70 GHZ.

Mirror Specifications

Clear aperature	38.1cm dia. (15")
Elevation range	0-90° (nominal position 45°)
Positioning accuracy (both axes)	± 30 arc secs

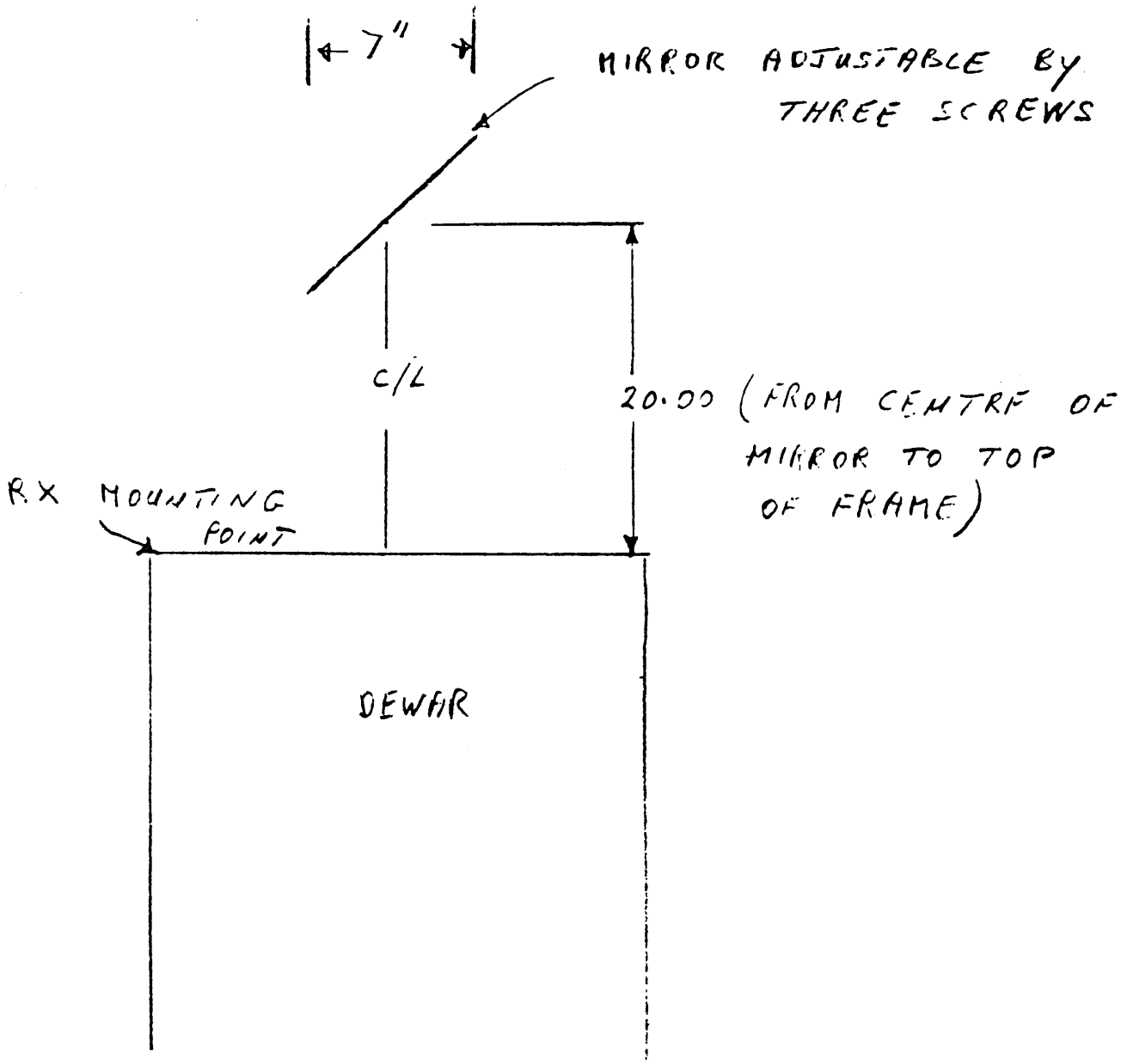
Minimum distance of mirror surface from axis of rotation ± 0.3mm

Axes must be orthoganal to ± 0.25°

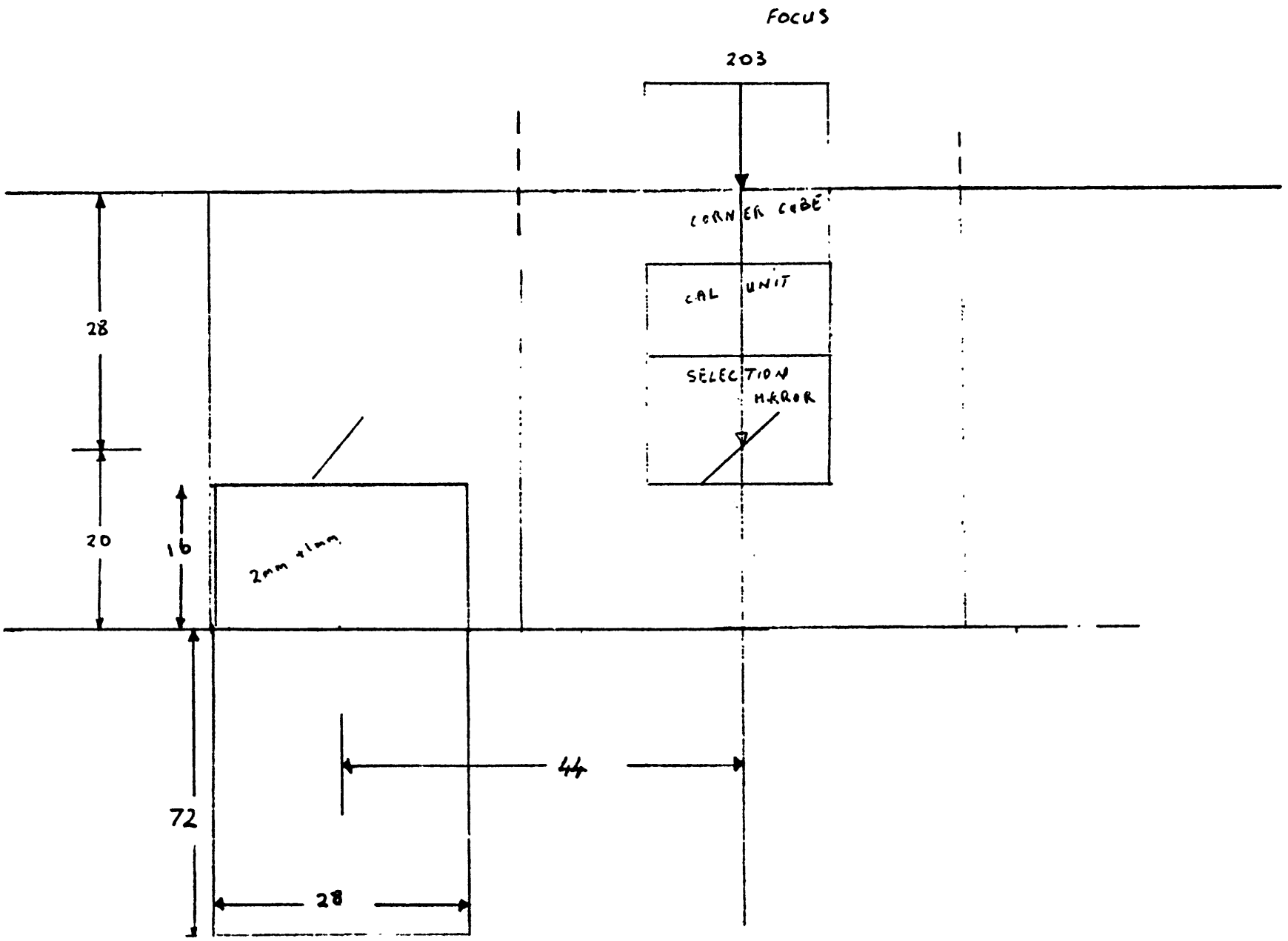
Mirror surface flat to an R.M.S. of 20μm

Surface finish 16μ inch (400 nm)

Slewing rate - not critical. Around 10° per sec.



12 +3 mm EXISTING RECEIVER MOUNTING ON 12 M.



DIMENSIONS
IN. INCHES.