

National Radio Astronomy Observatory

Charlottesville, Virginia

4/12/82

To: 12<sup>M</sup> FILE

From: L. J. KING

12 METER MILLIMETER WAVE TELESCOPE

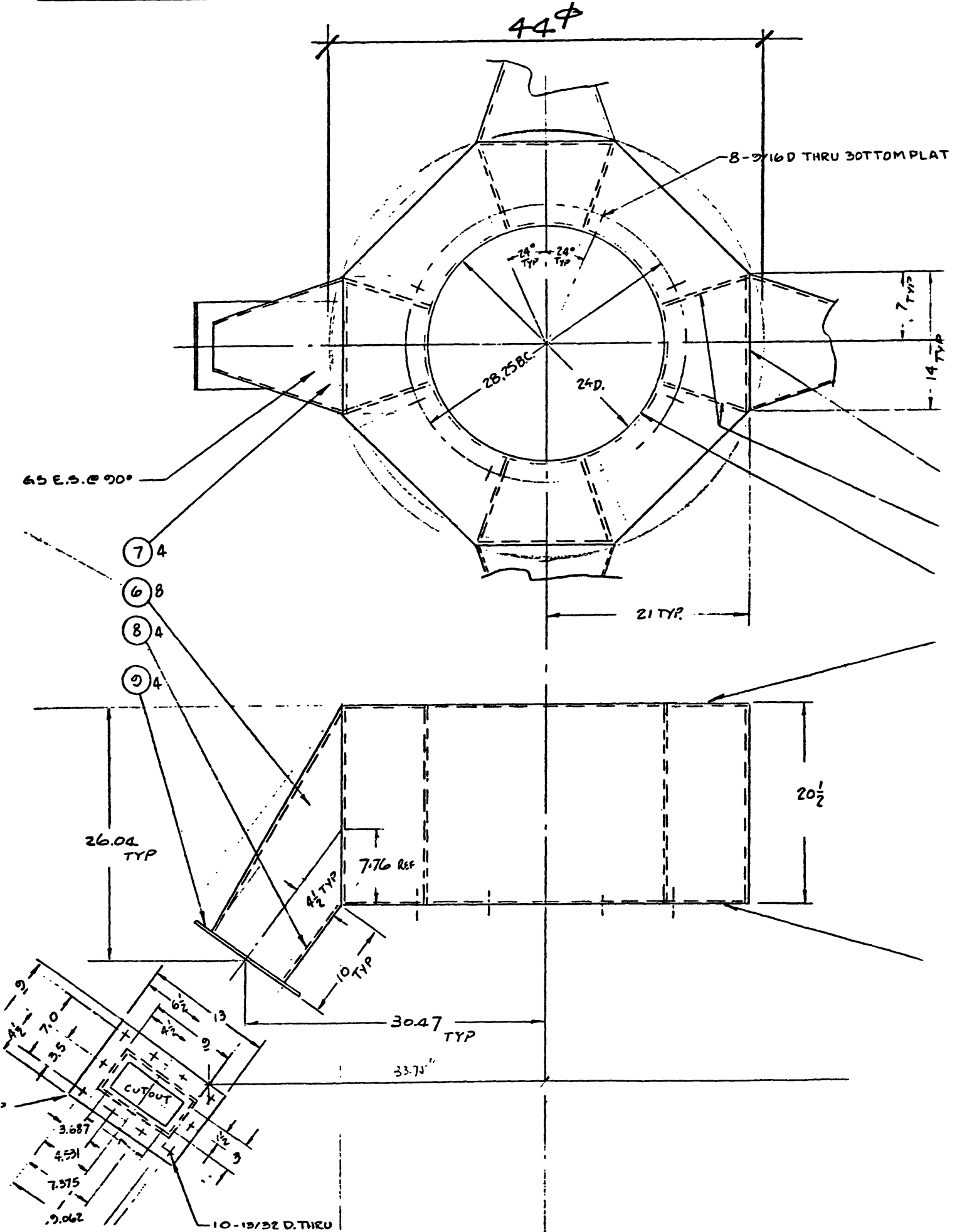
MEMO No. 149Subject: APERTURE GEOMETRY BLOCKAGE

THE BLOCKAGE OF THE PRESENT FEED SUPPORT STR. IS CALCULATED BASED ON:

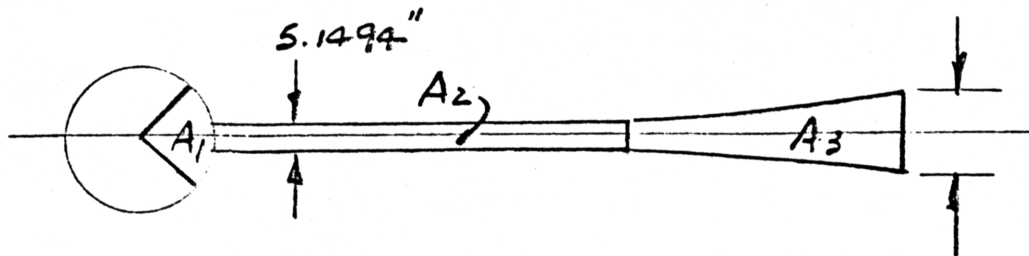
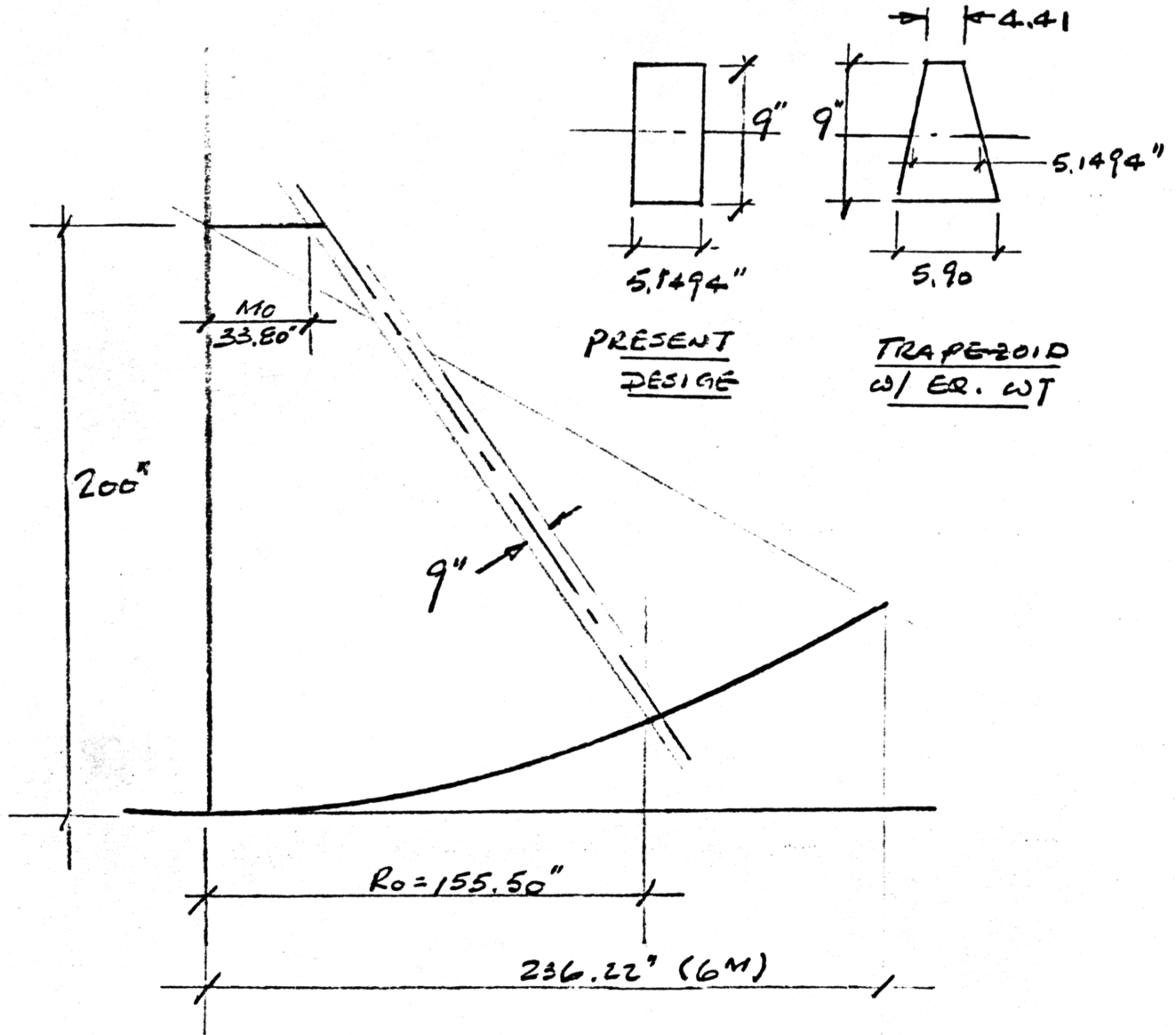
- (1) RUBE'S METHOD & 11 dB TAPER AS RECOMMENDED by M. GORDON, MEMO # 73.
- (2) A 44" DIAMETER CIRCULAR SHADOW AT THE CENTER, REF. P. 2.
- (3) DIMENSIONS GIVEN ON P. 3.

A TRAPEZOID SECTION OF EQUAL WT IS INCLUDED FOR COMPARISON. THE RESULTS ARE TABULATED AS FOLLOWS:

	PRESENT DESIGN	EQUAL - WT. TRAPEZOID SECT.
4 A <sub>1</sub>	1.31 (25%)	1.31 (25%)
4 A <sub>2</sub>	2.15 (41%)	2.47 (47%)
4 A <sub>3</sub>	1.75 (34%)	1.50 (28%)
TOTAL	5.21	5.28



GEOMETRY FOR 12M FEED STR.



BLOCKAGE =  $4A_1 + 4A_2 + 4A_3$