

Interoffice

NATIONAL RADIO ASTRONOMY OBSERVATORY
TUCSON, ARIZONA

April 22, 1981

To: J. Payne

From: D. Ross

Subject: 12-Meter Antenna

12 METER MILLIMETER WAVE TELESCOPE
MEMO No. 22

We cannot mount a 12-meter diameter surface to the existing mount and observe at 0° elevation for all azimuth positions. It would be possible, however, to observe at approximately 6° elevation if we assume that the pedestal remains at its present height above the floor, and that the new back structure does not interfere with the pedestal. We presently are limited to observations above 14.5° elevation for all azimuth positions.

There are conditions where, with major modifications to the existing buildings, it would be possible to observe at 6° elevation for all azimuth positions. There are conditions where minor modifications to the existing buildings would allow observations at 6° elevation over a limited azimuth range. Observations at 0° elevation could be achieved if the new surface were 11.28 meters in diameter and minor modifications were made to the existing buildings.

I have outlined the various conditions below:

Proposal #1

ASSUME:

1. All existing buildings stay as are.
2. The new surface is 12 meters in diameter.
3. The distance from the surface to the pedestal mount is 4 feet 3 inches.

Under these conditions we could observe at an elevation of 6° from 126° to 264° in azimuth. Observation at approximately 56° elevation would be possible from 264° to 126° azimuth. See Figure 1B.

Proposal #2**ASSUME:**

1. The observers lounge were modified as shown in Fig. 2B.
2. The new surface is 12 meters in diameter.
3. The distance from the surface to the pedestal mount is 1 meter. (See Fig. 2A).

Under these conditions we could observe at an elevation of 6° from 86° to 264° in azimuth. Observations at approximately 56° elevation would be possible between 264° and 86° azimuth. The loss of space to the observers lounge would be approximately 90 square feet.

Proposal #3**ASSUME:**

1. All buildings are modified as shown in Fig. 3B.
2. The new surface is 12 meters in diameter.
3. The distance from the surface to the pedestal mount is 1 meter (see Fig. 3A).

Under these conditions it would be possible to observe at approximately 6° elevation for all positions of azimuth.

The loss of space would be approximately:

1. Observer's lounge - 64 square feet.
2. Analysis computer room - 20 square feet.
3. Control Room - 95 square feet.
4. Work Area - 15 square feet.

Proposal #4**ASSUME:**

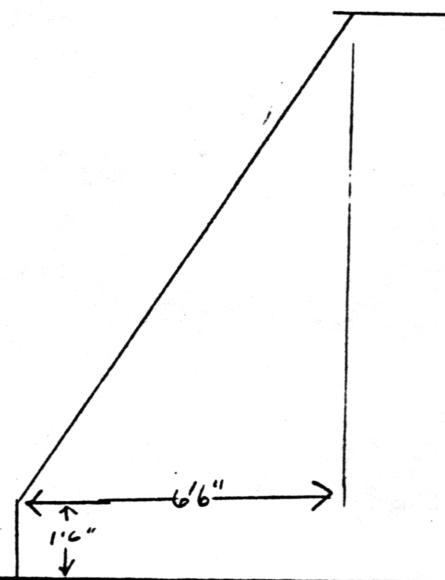
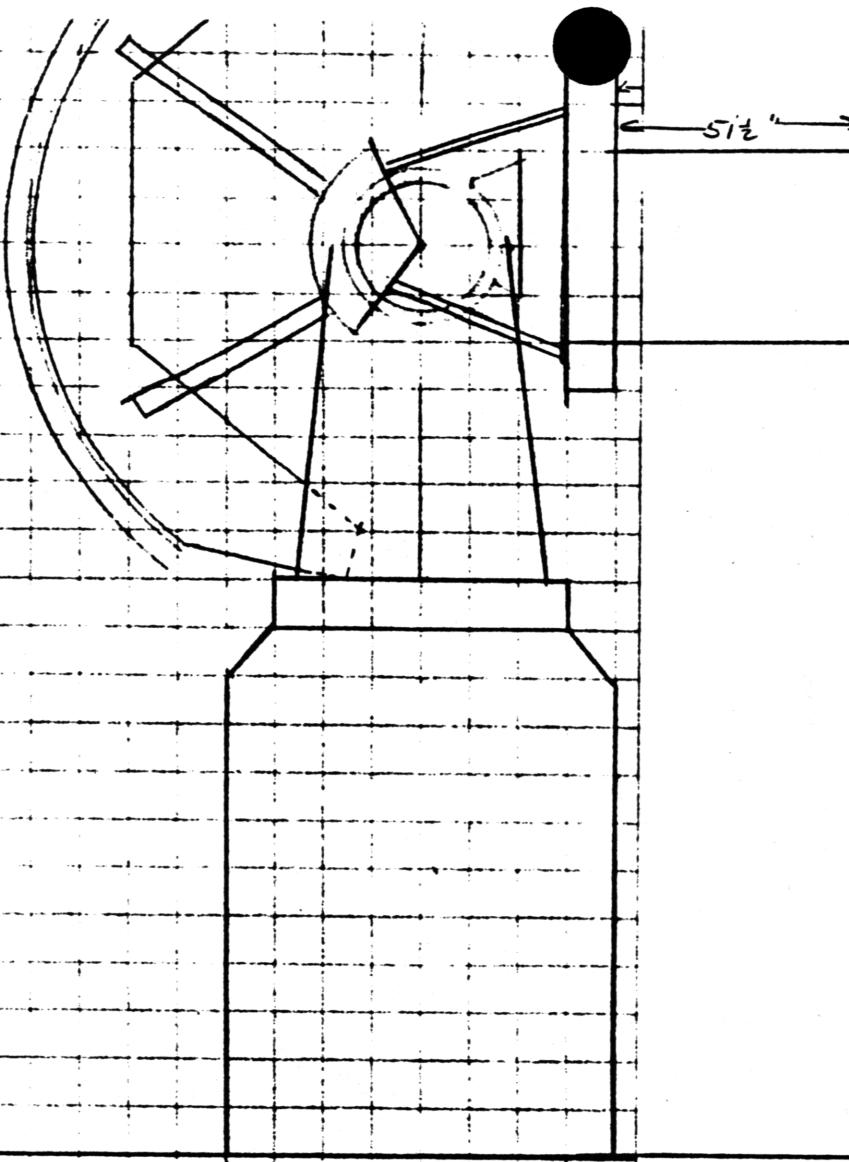
1. All buildings are modified as shown in Fig. 4B.

2. New surface diameter is 11.28 meters.
3. The distance from the surface to the pedestal mount is 1 meter.

Under these conditions we could observe at 0° elevation for all azimuth positions, with minimal loss of building space (see Figs. 4A & B).

Attachments

c: Cathy Burgess



NOT TO SCALE
4/21/81 DER

FIG 1A

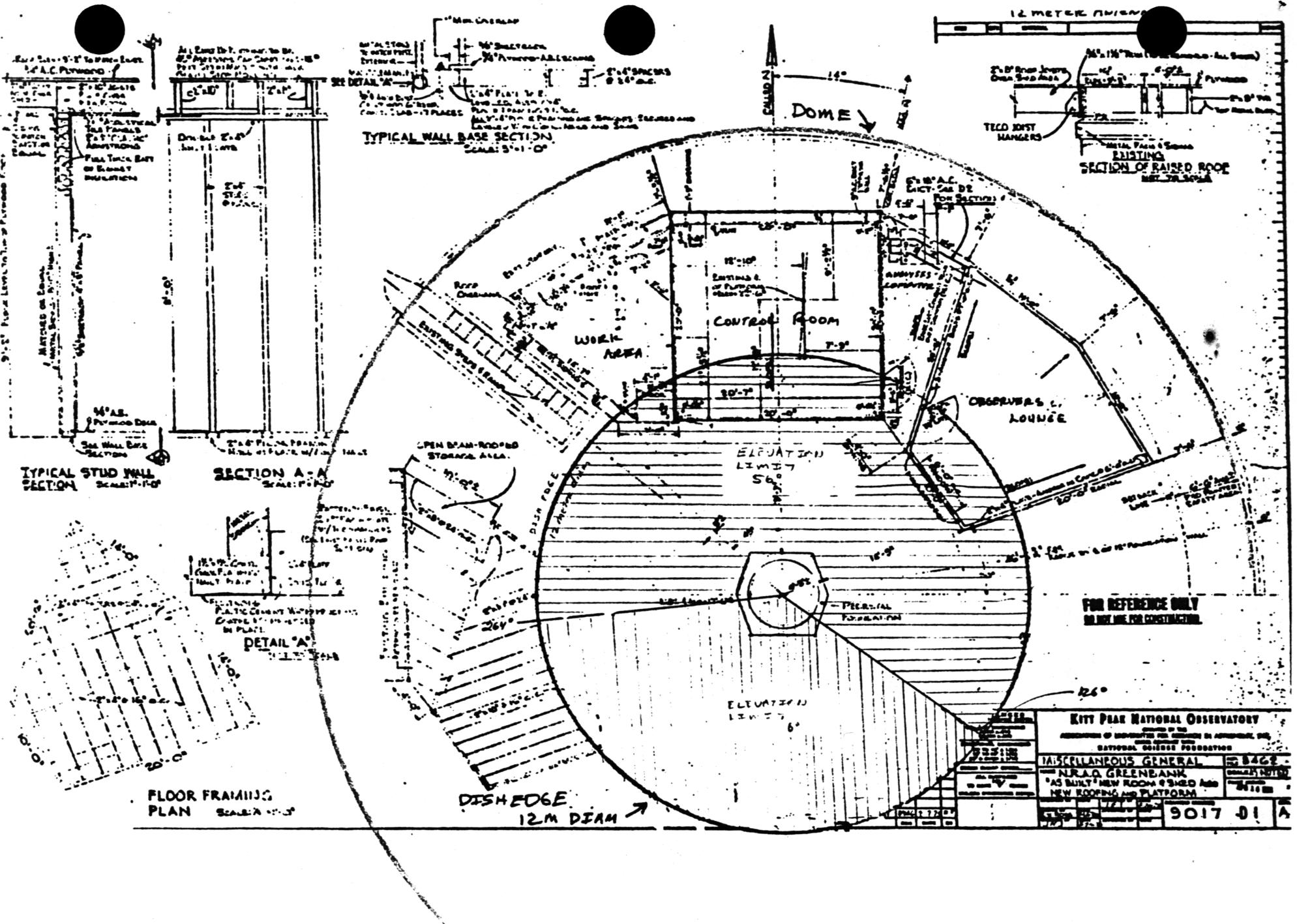
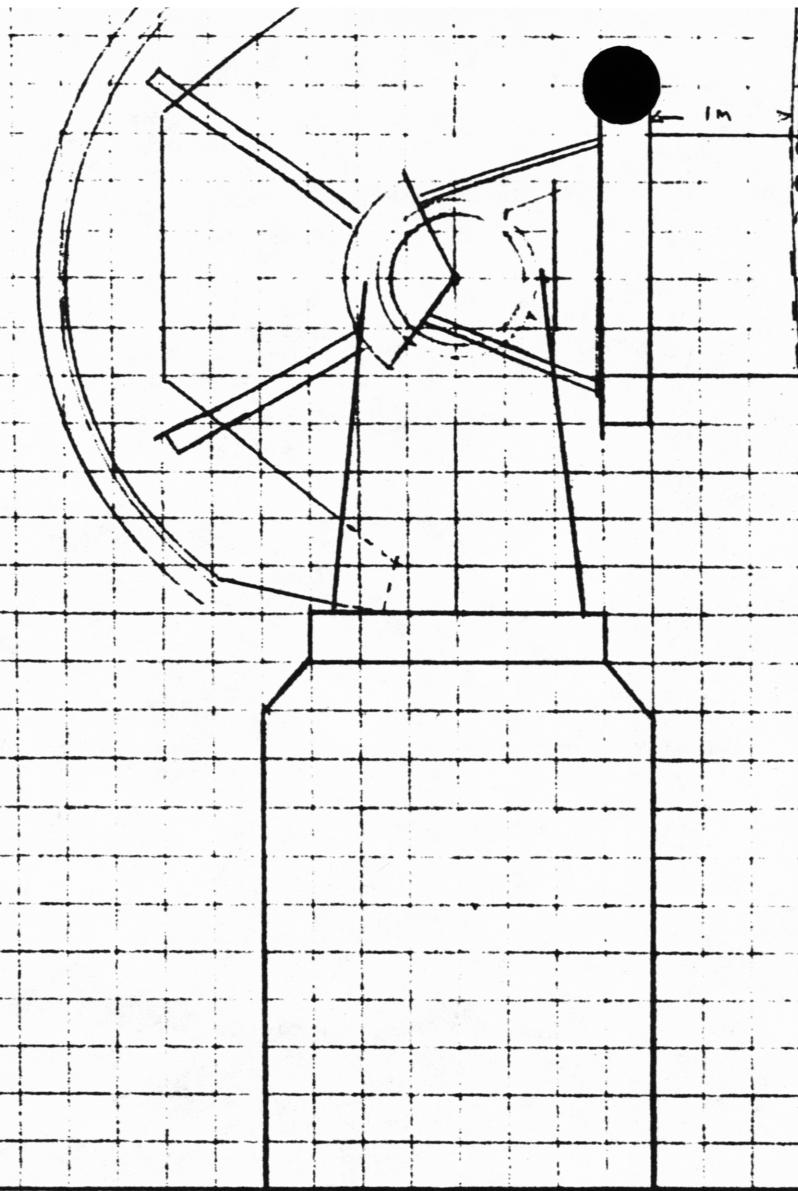


FIG 1B

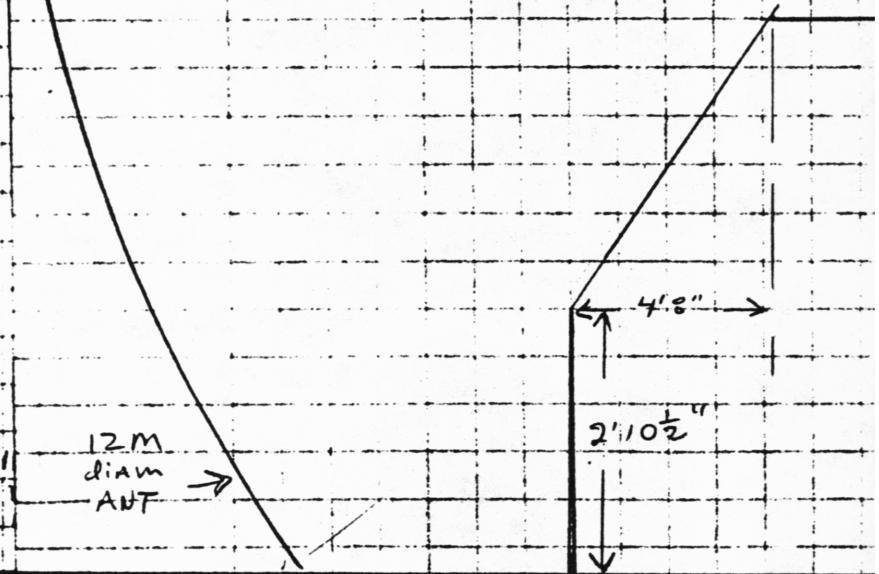


PROPL # 2

NOT TO SCALE

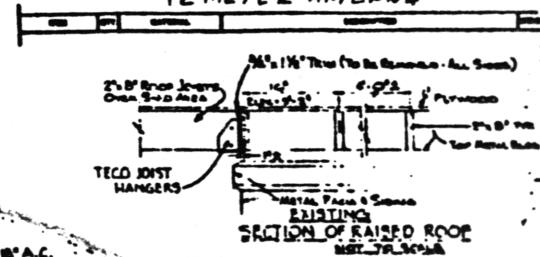
4/2/01
DEK.

FIG. 2 A



PROPOSAL # 2
12 METER ANTENNA

12 METER ANTENNA

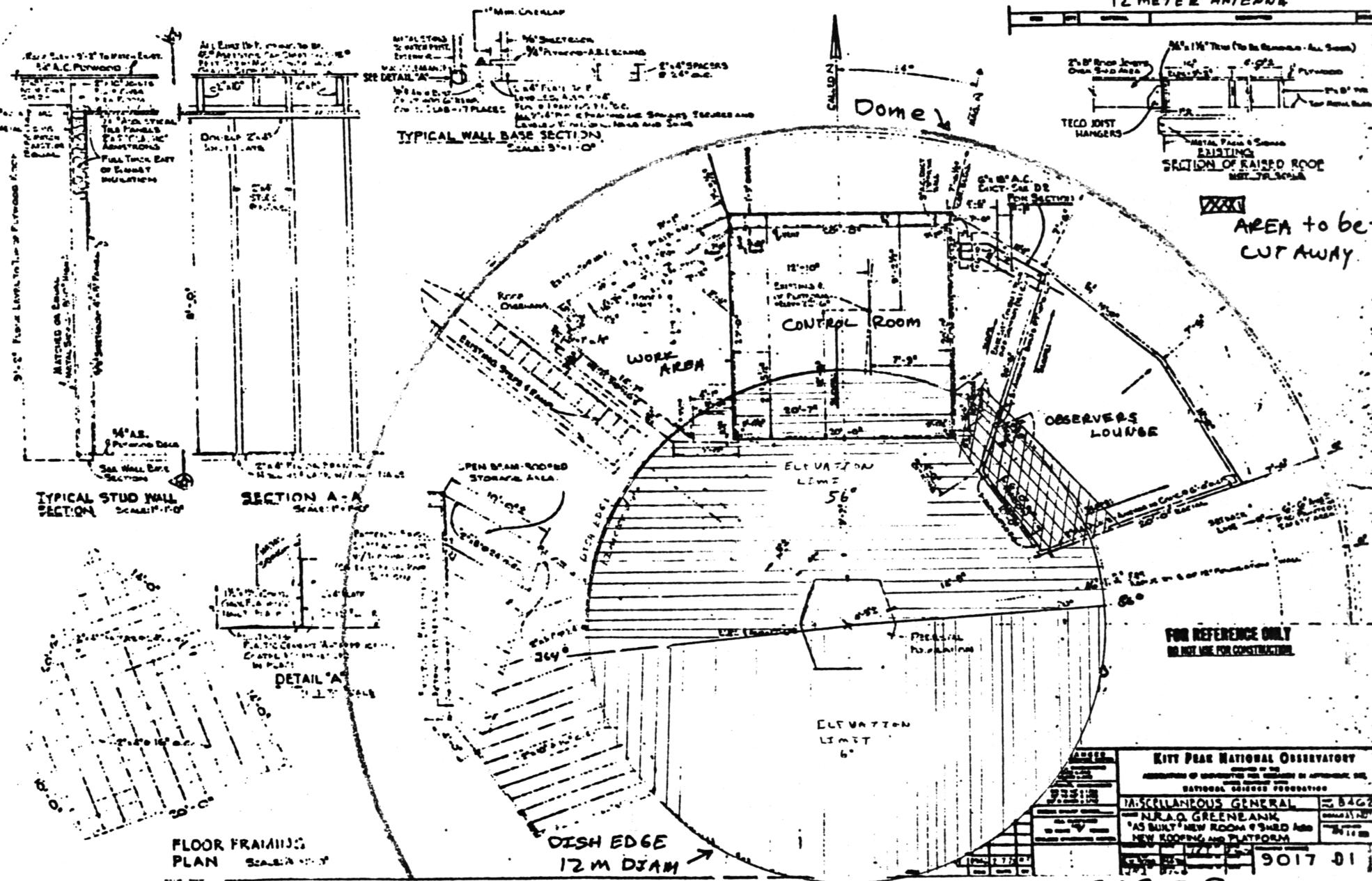


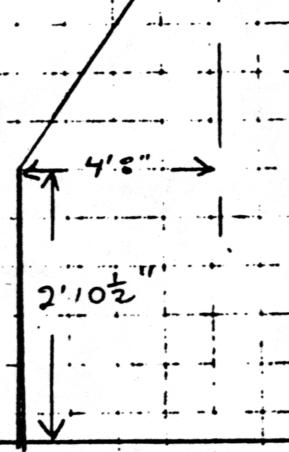
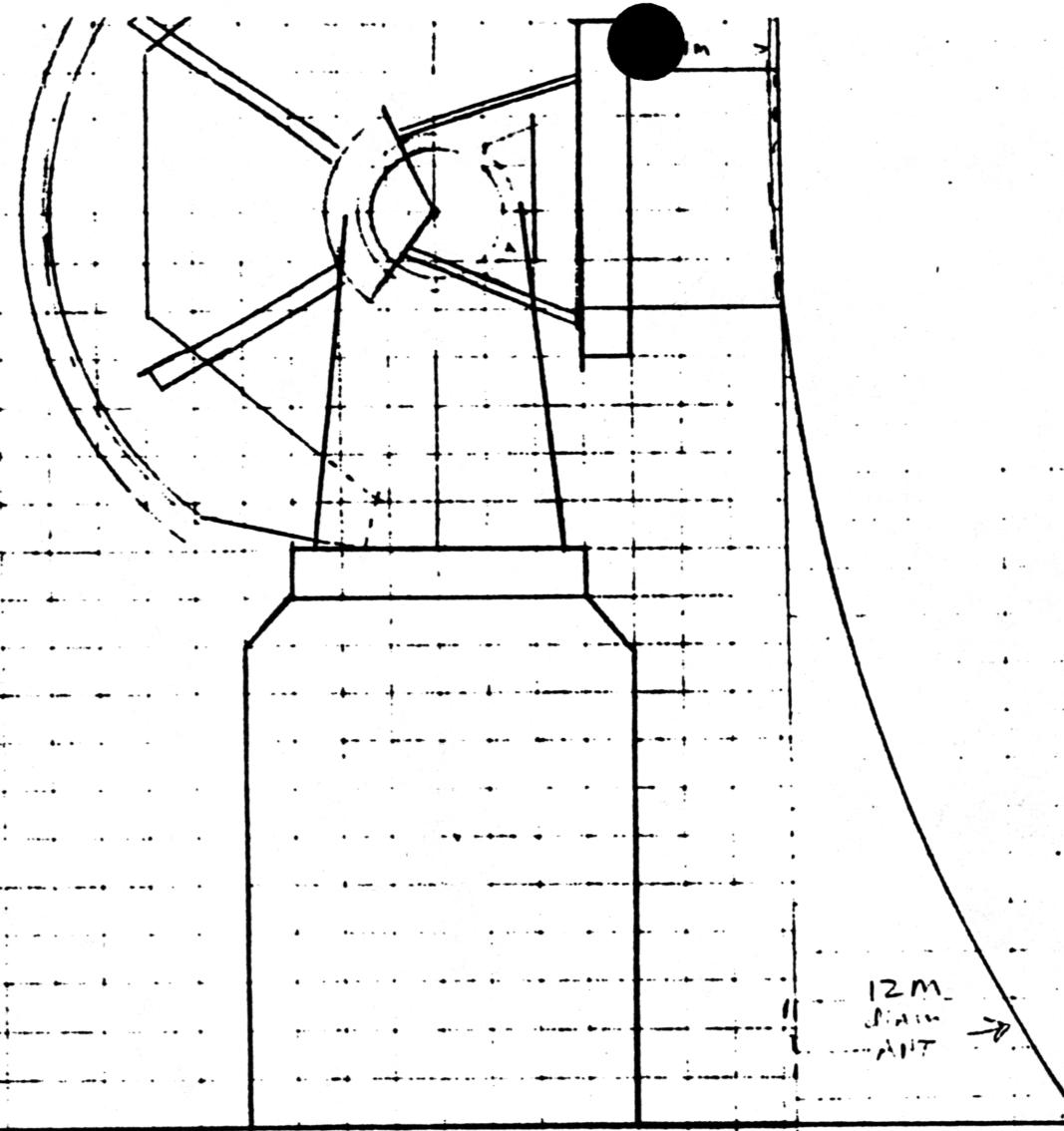
~~AREA to be
CUT AWAY~~

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DO NOT USE FOR CONSTRUCTION**

KITT PEAK NATIONAL OBSERVATORY	
OPERATED BY THE	
UNIVERSITY OF ARIZONA DEPARTMENT OF ASTROPHYSICS, ON BEHALF OF THE	
NATIONAL SCIENCE FOUNDATION	
<u>RESCILLANOUS GENERAL</u>	
NRAO GREENBANK	
AS BUILT NEW ROOM # SHED ADD	
NEW ROOFING AND PLATFORM	
2017 01	

DISH EDGE
12 M DIAM





NOT TO SCALE

4/2/81
DEK.

FIG 3A

PROPOSAL # 3
12 METER ANTENNA

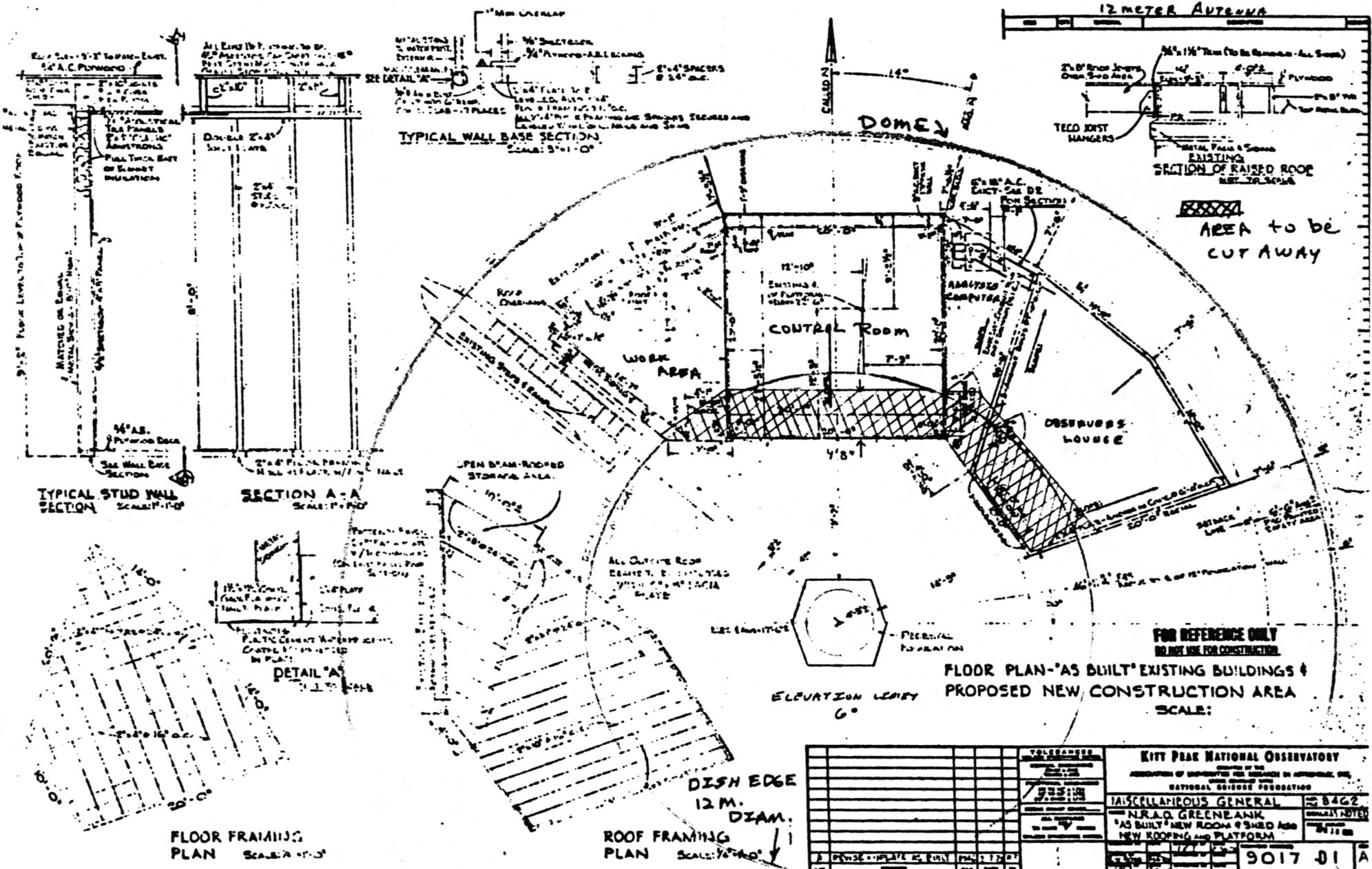


FIG 3B

PRAC # 4

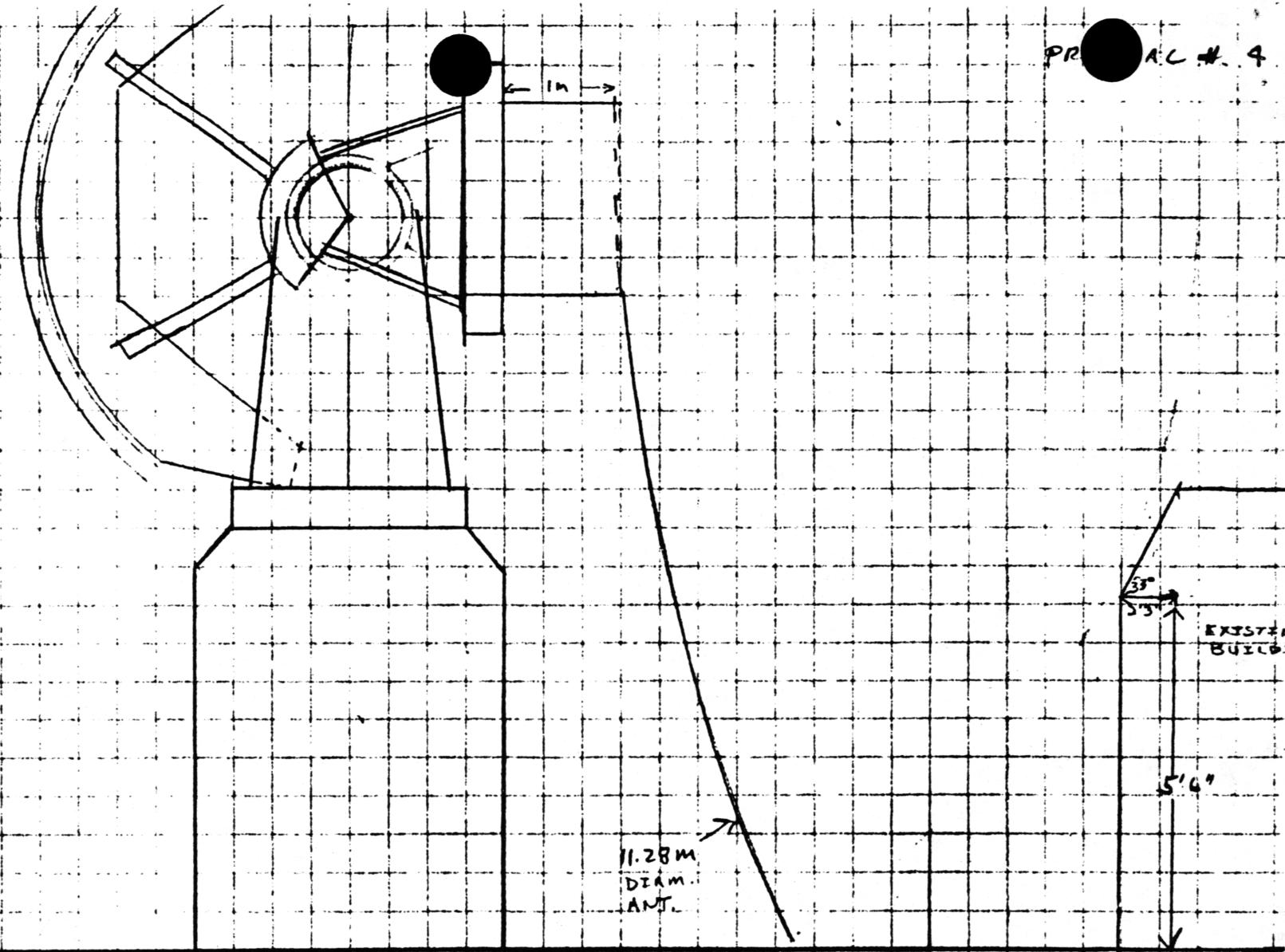


FIG 4A

PROPOSAL # 4
11.28 METER ANTENNA

10'-0"

6'-9 1/2"

10'-0"

TECO JOIST HANGERS

METAL FASCIA & SOFFIT

EXISTING SECTION OF RAISED ROOF

NOT TO SCALE

**AREA to be
CUTAWAY**

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DISH EDGE
11.28M
DIAM

KITT PEAK NATIONAL OBSERVATORY

1415 CLAMPED GENERAL
- ALRAG GREENANK
"AS BUILT" NEW ROOM #3862 AND
NEW ROOFING AND PLATFORM

9017-01-A

**ROOF FRAMING
PLAN** Scale: $\frac{1}{4}$ " - 1'-0"

**FLOOR FRAMING
PLAN** SCALE: 1/4" = 1'

The drawing illustrates a cross-section of a wall base. At the top, a horizontal line is labeled "11 MM. OVERLAP". Below this, a vertical line is labeled "METAL STOOLS". A bracketed area is labeled "1/2" METAL PLATE" and "INTERVAL". To the right, a vertical line is labeled "1/2" SPACERS" and "8 1/4" SEC.". A horizontal line at the bottom is labeled "TYPICAL WALL BASE SECTION." and "SCALE 3'-0\"/>0"

This technical drawing illustrates a cross-section of a stud wall. The wall consists of two vertical studs separated by a central cavity. The left side of the wall is labeled 'TYPICAL STUD WALL SECTION'. The right side is labeled 'SECTION A-A'. The top of the wall is marked with dimensions of 8'-0" and 10'-0". The bottom of the wall is marked with a dimension of 10'-0". The cavity between the studs is filled with insulation, which is described as 'Full thickness batt of mineral wool insulation'. The studs are identified as '16" O.C. F.A.C. NO. 10' and '16" O.C. F.A.C. NO. 10'. The entire wall assembly is labeled 'Double 2x6 I-Joist floor'. On the far left, there is a note: 'Material on back of sheet'.

SECTION A-N
Scanning Hop

**Typical Stud Wall
Section** Scale: 1'-0"