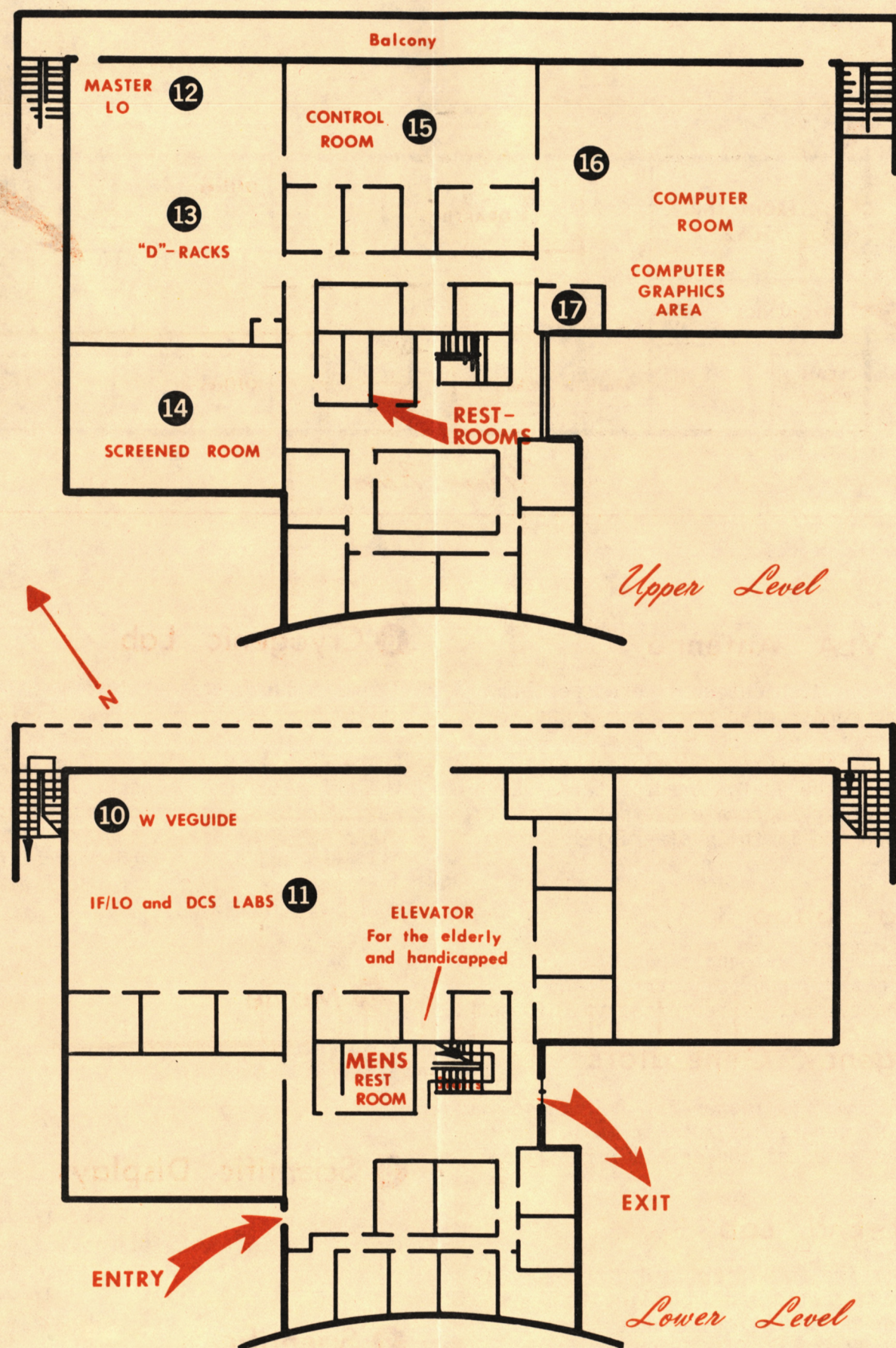


The CONTROL BUILDING



10 Waveguide

The three waveguide runs, one from each arm of the array, carries the received astronomical data from each antenna in addition to providing the communications required for controlling and monitoring each antenna.

11 IF/LO and DCS Labs

Most of the electronic module construction performed at the VLA was carried out in these labs. This area is now used for maintenance, testing and development work on these modules. Spare modules are kept ready to ensure maximum system operational time.

12 Master LO & "D"-Racks

The Master Local Oscillator (MLO) generates the precision reference and timing signals used throughout the array.

The 27 "D"-Racks, each talking to its own antenna through the waveguide, distributes the astronomical data to the Screened Room and accomplishes the control and monitoring of the antennas.

14 Screened Room

Enclosed in a radio-interference "screen," from which the name is derived, it is here that the astronomical data is digitalized, sampled, compensated for antenna delays and all antenna signals multiplied together. These numerous multiplier products are integrated to form the basis of the VLA map-making procedures.

15 Control Room

The VLA is operated from the Control Room by the Array Operators who ensure the astronomer's instructions and observations are properly carried out. Both the astronomer and operator monitor the quality of the data and progress of the current observing program.

16 Computer Room

The computing equipment is composed of two integrated systems called the ON-LINE and DATA REDUCTION computers.

The ON-LINE computers collect and arrange the massive amounts of data (roughly a billion numbers a day). Data from the DATA REDUCTION computers is transferred to another computer in the graphics area for further processing by the image system.

17 Computer Graphics Area

This room contains black-and-white and color TV monitors. The astronomer, through the image system, produces high quality radio "pictures" comparable in detail to photographs made with large optical instruments. Thus, this graphics area is the "eyepiece" of the VLA telescope.

The National Radio Astronomy Observatory

VLA PROJECT

VISITORS

MAP and

INFORMATION

The VLA Visitors Program allows you to visit these facilities at your leisure.....take your time, and by using the maps and information provided, you should have no difficulty finding your way around.

The VLA PRESENTATION AREAS comprise a self-guided tour. These areas contain displays and demonstrations with VLA employees to explain the areas and answer questions.

The other AUXILIARY AREAS are shown for your general interest. These areas are essential in the operation of the VLA but do not contain any special presentations.

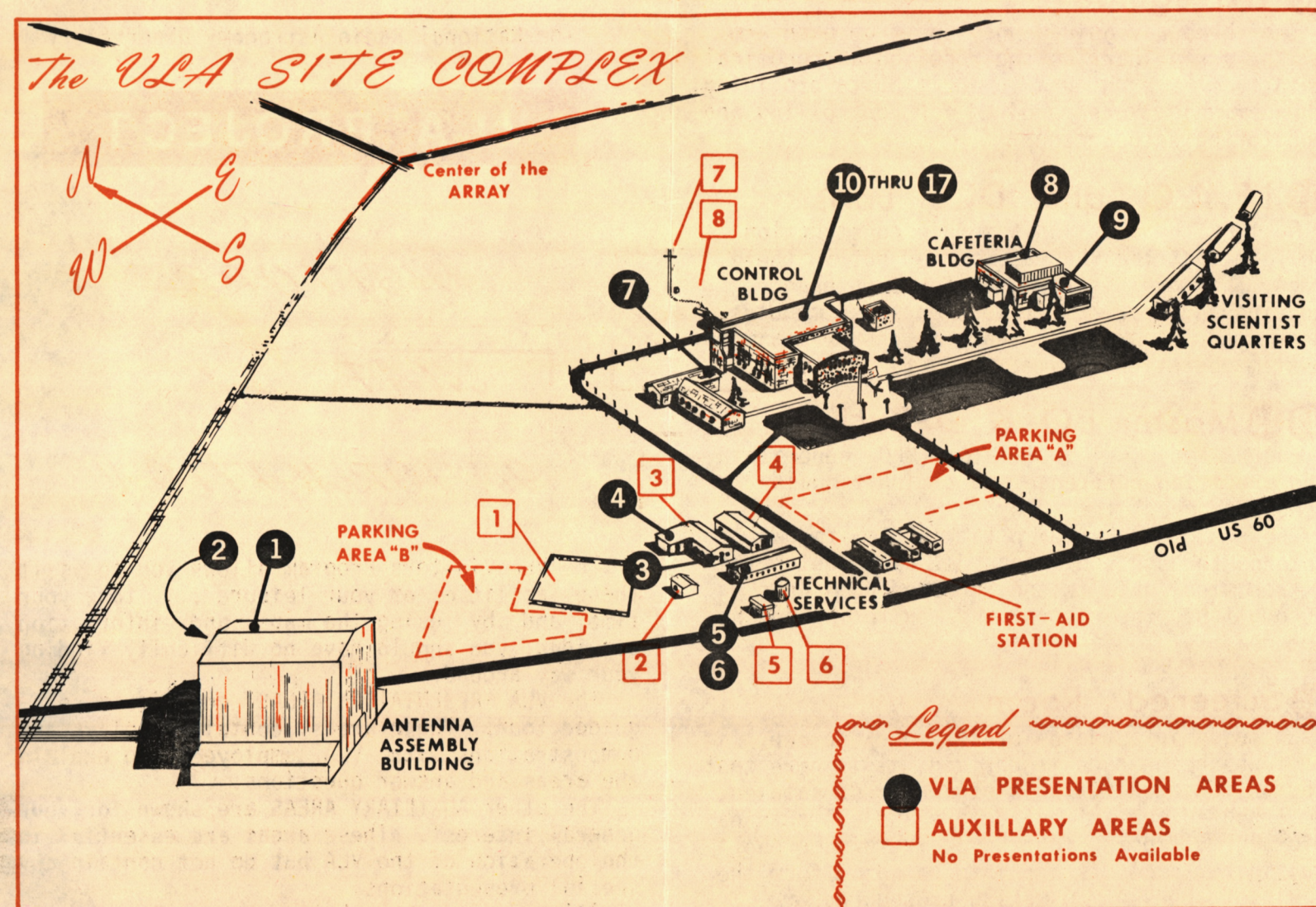
All areas may be photographed. Remember in taking pictures, that the antennas are often at a distance farther away than they appear. Also the light reflected from the white paint may be bright.

We hope you find your visit to the VLA to be enjoyable and memorable. Please follow these guidelines to keep your visit safe:

1. Do not approach the antennas; this is an operational observatory and the antennas are fully automated and may move at any time!
2. Please stay on the designated roadways and walkways.

IN CASE OF EMERGENCY....the VLA maintains a Fire Brigade, Ambulance, and Rescue Team for the safety of VLA employees and guests. Should you require medical assistance, the VLA FIRST AID STATION (shown on the map) is staffed with trained EMT's, OR, PICK-UP ANY VLA TELEPHONE AND

DIAL 230

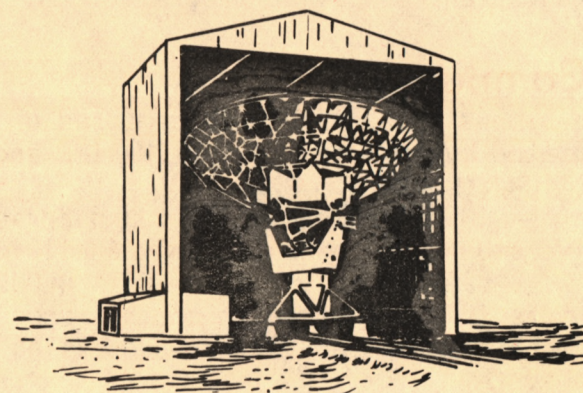


Auxillary Areas

(No presentations available at these areas)

- 1 **STORAGE AREA**
... Please do not enter Storage Areas.
- 2 **EMERGENCY SERVICES GARAGE**
- 3 **VEHICLE MAINTENANCE and ELECTRICAL/PLUMBING SHOPS**
- 4 **WAREHOUSE**
- 5 **PUMP HOUSE**
Site water and Firefighting Hydrants
- 6 **WATER TANK**
- 7 **WEATHER STATIONS**
Computer controlled measurements are used by the observer and for official Weather Service records.
- 8 **WAVEGUIDE PRESSURIZATION STATION**

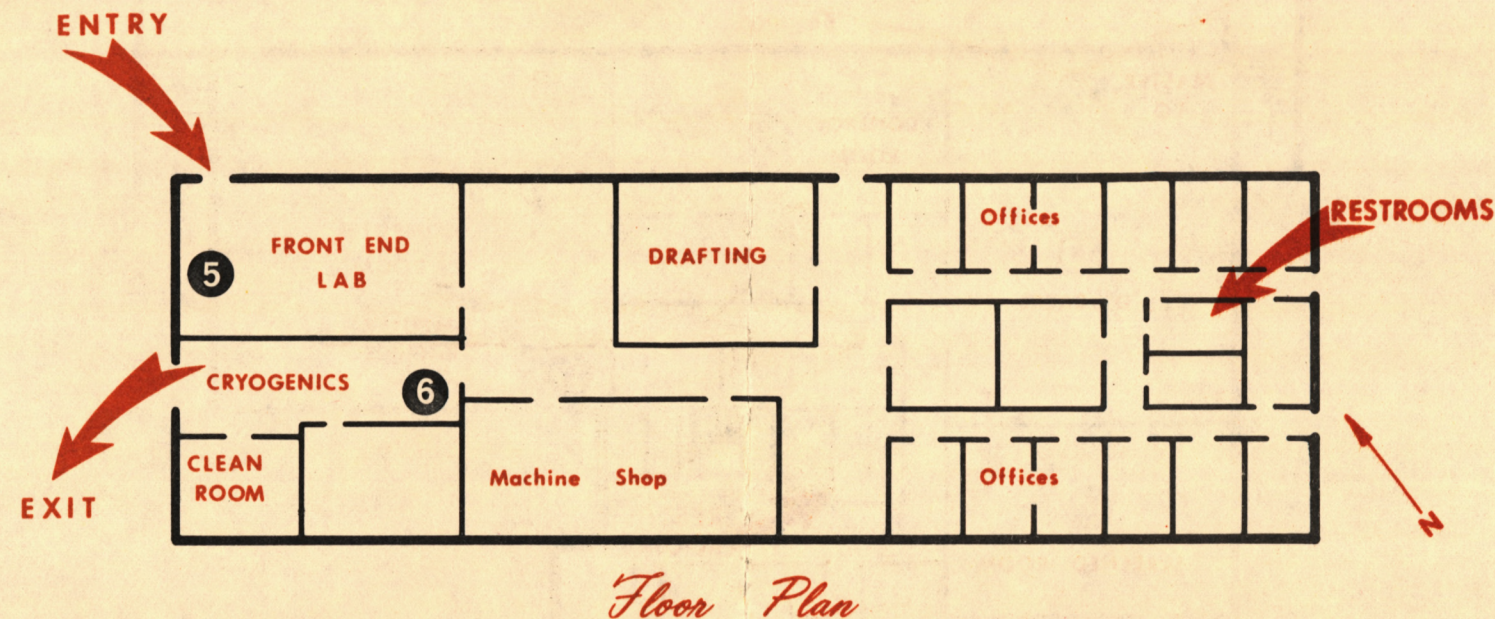
VLA Presentation Areas



1 Antenna Assembly Building

This building is approximately ten stories tall and is where the antennas were originally assembled. It is now used for the periodic overhaul and calibration of the antennas.

The TECHNICAL SERVICES BUILDING



2 The VLA Antenna

These 210-ton dish antennas were specially designed and constructed for VLA use and are fully transportable. They are complex and yet rugged enough to withstand the piggy-back shuttling atop the 90-ton transporters. Each antenna has a very accurate 82-foot (25 meter) aluminum dish and is fully steerable.

3 Servo Shop

Servicing of the antenna's position encoders, servo system and support electrical and air-conditioning systems is performed in this shop.

4 Emergency Generators

During a commercial power failure, these two 500 kW diesel generators automatically provide power to the antennas and critical facilities.

5 Front-End Lab

Very low noise amplifiers and other special components are tested and installed in the Front End Racks (so called because this part of the receiver is the first part to process the extremely faint signals gathered by the dish antennas). Maximum sensitivity of the Front End is achieved by cooling the amplifier units cryogenically.

6 Cryogenic Lab

Specialized refrigerators using compressed helium to reach very low temperatures are serviced in this area. These low temperatures (-429 F or 17 K) allow maximum sensitivity of the VLA receivers. Even colder temperature refrigerators are being developed. In the Clean Room the air is continually being filtered and pressurized so that no specks of dust can contaminate the precise and delicate mechanisms employed.

7 Movie

An interesting movie regarding radio astronomy is shown here throughout the day.

8 Scientific Displays

Some recent scientific results are displayed on posters in the Cafeteria Building.

9 Scientific Orientation Talks

A brief orientation talk will be presented in the Cafeteria Building Conference Room throughout the day.