

JOHN WAIHEE
GOVERNOR OF HAWAII

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DEPT. OF LAND
& NATURAL RESOURCES
STATE OF HAWAII



STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

P.O. BOX 621
HONOLULU, HAWAII 96809

RECEIVED

APR 30 1992

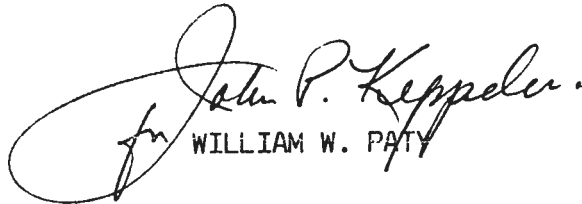
6. Any work or construction to be done on the land shall be initiated within one (1) year of the approval of such use, and all work and construction must be completed within five (5) years of the approval of such use;
7. That in issuing this permit, the Department and Board has relied on the information and data which the permittee has provided in connection with his permit application. If, subsequent to the issuance of this permit, such information and data prove to be false, incomplete or inaccurate, this permit may be modified, suspended or revoked, in whole or in part, and/or the Department may, in addition, institute appropriate legal proceedings;
8. That all representation relative to mitigation set forth in the accepted Environmental Impact Statement and the Mauna Kea Science Reserve Complex Development (Management) Plan for this proposed use are hereby incorporated as conditions of this approval;
9. The applicant shall establish a batching plant at the identified alternative site location as specified in Board approval of HA-2462 (JNLT.) The batching plant, when not utilized during construction activity, will be restored to a condition acceptable to the Department;
10. That the applicant obliterate the old skier's parking lot (within the NAR) and restore it to a natural state, as practicable (to be determined by the Department).
11. That the applicant maintain that the old skier's parking lot access be closed with a continuous barrier;
12. That the applicant continue to coordinate specific activities related to the old skier's parking lot with the Natural Area Reserve Commission.
13. That the applicant shall be held responsible for the removal of all litter from the project and surrounding areas generated from the construction and maintenance of the project;
14. That the applicant notify the Department in writing when construction activity is initiated and when it is completed;
15. That failure to comply with any of these conditions shall render this Conservation District Land Use application null and void;
16. Other terms and conditions as prescribed by the Chairperson; and

17. A portion of the abandoned generator site will be set aside for overflow public parking. This area will not be paved.

Please acknowledge receipt of this permit, with the above noted conditions, in the space provided below. Please sign two copies. Retain one and return the other to the department within thirty (30) days.

Should you have any questions on any of these conditions, please feel free to contact our Office of Conservation and Environmental Affairs staff at 587-0377.

very truly yours,


for WILLIAM W. PATY

Receipt acknowledged


Applicant's Signature

Date 5/8/92

cc: Hawaii Board Member
Hawaii Land Agent
Hawaii County Planning Department
DOH/OHA/OSP



DEPUTIES

John P. Keppeler, II
Dona L. Hanaike

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

P. O. BOX 821
HONOLULU, HAWAII 96809

AQUACULTURE DEVELOPMENT
PROGRAM
AQUATIC RESOURCES
CONSERVATION AND
ENVIRONMENTAL AFFAIRS
CONSERVATION AND
RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

submillimeter-wavelength telescopes; and the VLBA Antenna Facility below the summit area at the 12,200-foot elevation. Recently, the Board approved CDUA HA-2462 for construction and operation of the JNLT (Japan National Large Telescope within the summit area.

Elevations in the summit area of the Mauna Kea Science Reserve range from about 13,000 to 13,796 feet. The area includes a number of cinder cones of varying sizes and shapes along the rift zones that descend from the summit. Slopes in the area vary from flat plateaus to close to vertical slopes on the cinder cones. The proposed concrete batching plant site is essentially flat.

There are no officially designated endangered or threatened plant species in the summit area.

The Hawaii Dark-rumped Pet

computer room, electrical/mechanical room and a small lounge. The existing underground tunnel will be extended to allow the optical connection of the two telescopes. A basement area will also be added to house the interferometric instruments that will be installed to combine and analyze the light from the two telescopes.

Keck I is the largest optical/infrared telescope in the world. The addition of Keck II will double the collecting area of the W. M. Keck Observatory. Furthermore, it will be possible to combine the light beams from the two Keck telescopes so that they can be used in tandem. In this interferometric mode, they will provide the angular detail of a telescope nearly 100 meters in diameter. Observing time on both Keck I and Keck II will be allocated to astronomers from UH, Caltech, UC and possibly others throughout the U.S. national astronomical community.

The Keck II project on Mauna Kea is scheduled to begin in mid 1992, if all permits can be obtained, and is expected to take about three years plus approximately a one-year adjustment period after the telescope

The base of the telescope is mounted about 12 feet (3.6 m) above ground level on a circular concrete pier and the upper section of the telescope rises over 90 feet (27 m) above ground level. The two major parts of the telescope structure are the tube and the yoke. The yoke is mounted on four leg hydrostatic bearings to allow smooth precise rotation in azimuth. The tube is supported by the yoke on two hydrostatic elevation bearings which allow the telescope to move from zenith to horizon. The primary mirror consists of 36 hexagonal segments mounted on a space frame structure supported by the telescope lower tube. The primary mirror is controlled by an active control system to precisely position each mirror segment to form a single surface accurate to a few millionths of an inch.

A single-story, 7,300-square-foot extension to the existing control building will be built connecting the two facilities. When completed, the combined building will look like a single building. The extended building will provide a new computer room, control room, lounge, and mechanical/electrical equipment room for the second telescope.

A basement under the new extension

STATE OF HAWAII:

Department of Health

Thank you for allowing us to review and comment on the subject request. We have the following comments to offer:

Wastewater

The subject area is located within a critical wastewater disposal area with a five (5) acre lot exception, as determined by the Hawaii County Wastewater Advisory Committee. Consequently, no new cesspools will be allowed in the area and the five (5) acre lot exception is not applicable as Department of Health Administrative Rules, Chapter 11-62, "Wastewater Systems", Section 11-62-31.1(d) does not allow public buildings to utilize cesspools.

- 3) A guard rail should be placed along the edge of the road fronting the old batching site and connect with the existing guard rail.
- 4) Public parking should be provided at the newly proposed cement batching site.
- 5) We highly recommend that the NARS Commission be notified before any actions are taken by the applicant.

Division of Conservation and Resources Enforcement

A field inspection was conducted on December 9, 1991. No site work was observed.

Division of Land Management

2. That the skier's lot be obliterated and roughened so that it blends in with the adjacent natural landscape. Use of this area for parking is no longer needed with the new paved lot across the road and the proposed greatly increased parking capacity at the former generator site.

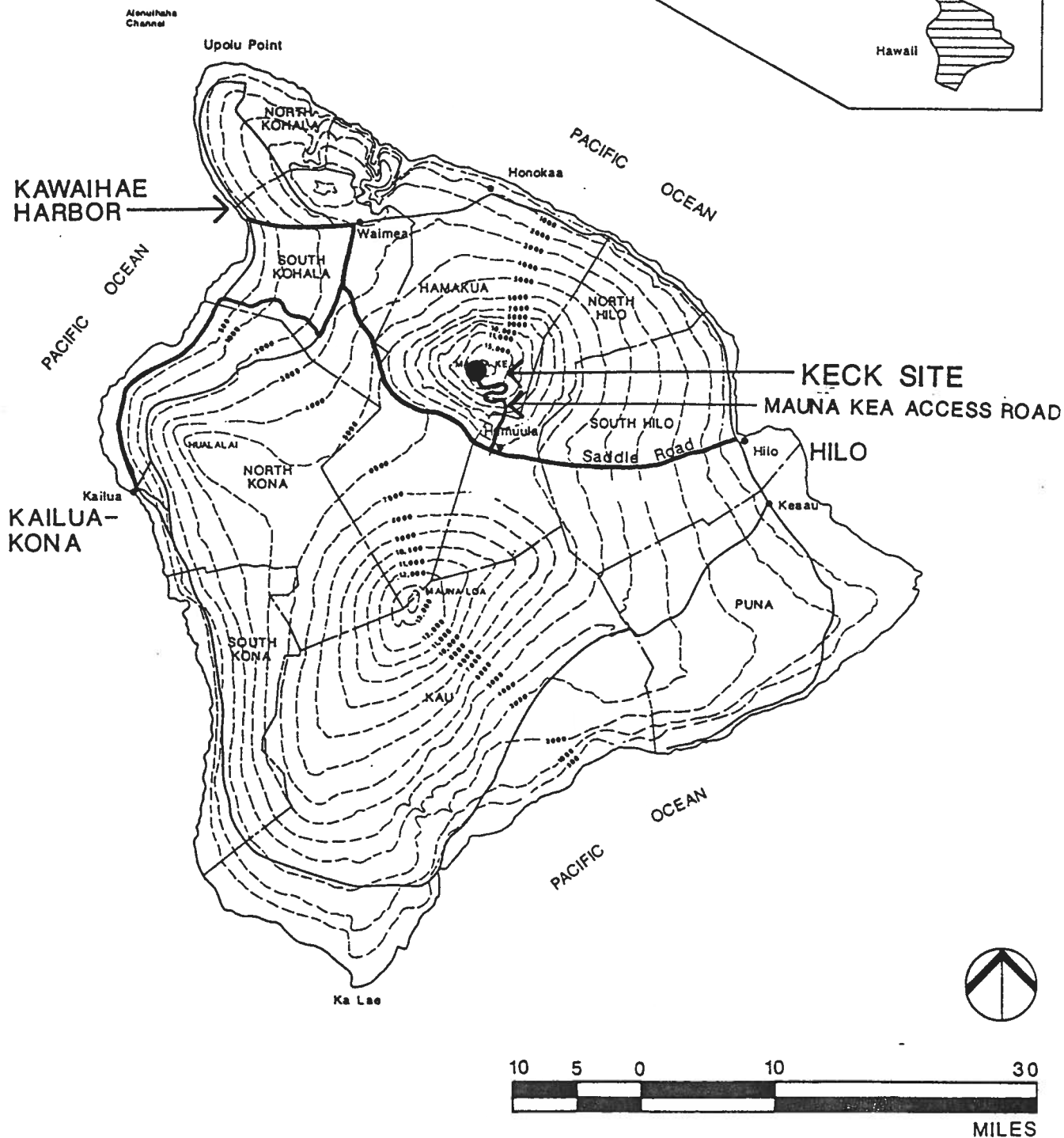
Removal of the skier's lot will effectively remove the ongoing problem of off-road vehicle violations that develop from it. The nature of the terrain is such that access to the skier's lot provides an easy opening for 4-wheel-drive vehicles to illegally traverse and scar the mountain side.

3. That upon removal of the skier's lot, its access from the paved summit road--provided by a

Staff has been in consultation with the State Department of Health and notes that the UH/IFA is cooperating with them on final design plans for wastewater treatment. The UH identifies that in regards to the Division of Land Management concerns, the proposed relocated concrete batching plant will be required to service various projects to the end of the decade. However, UH/IFA does agree to clean up and restore the area to the extent practicable, between the intervals when it is used for batching activities.

With regard to comments submitted by the Natural Area Reserves System, the abandoned generator site can be set aside for additional public parking. Attention will also be given to restore the old skier's parking lot to a natural state, as possible. Four-wheel drive vehicles will also be blocked to restrict illegal access.

7. That in issuing this permit, the Department and Board has relied on the information and data which the permittee has provided in connection with his permit application. If, subsequent to the issuance of this permit, such information and data prove to be false, incomplete or inaccurate, this permit may be modified, suspended or revoked, in whole or in part, and/or the Department may, in addition, institute appropriate legal proceedings;
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- 1



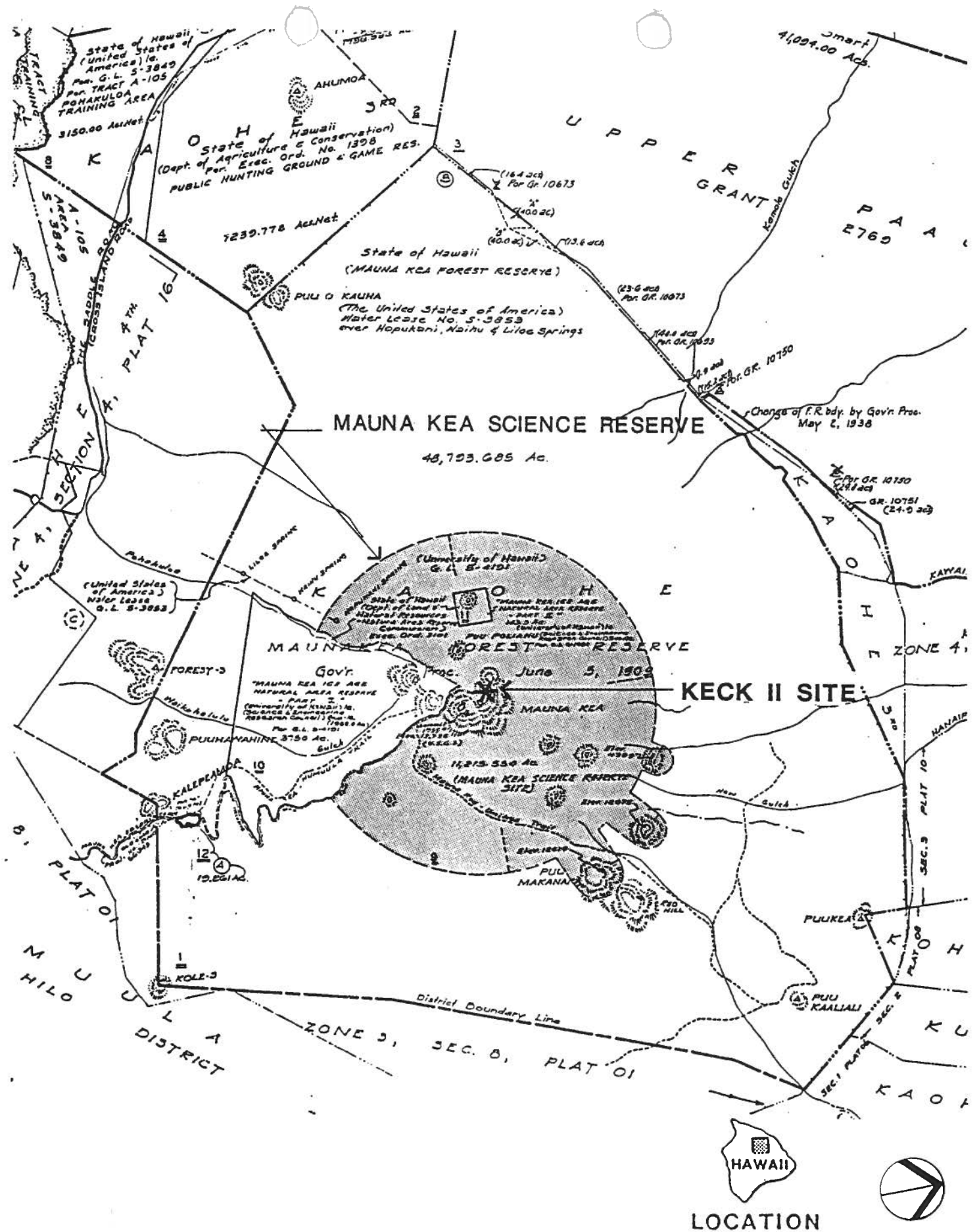
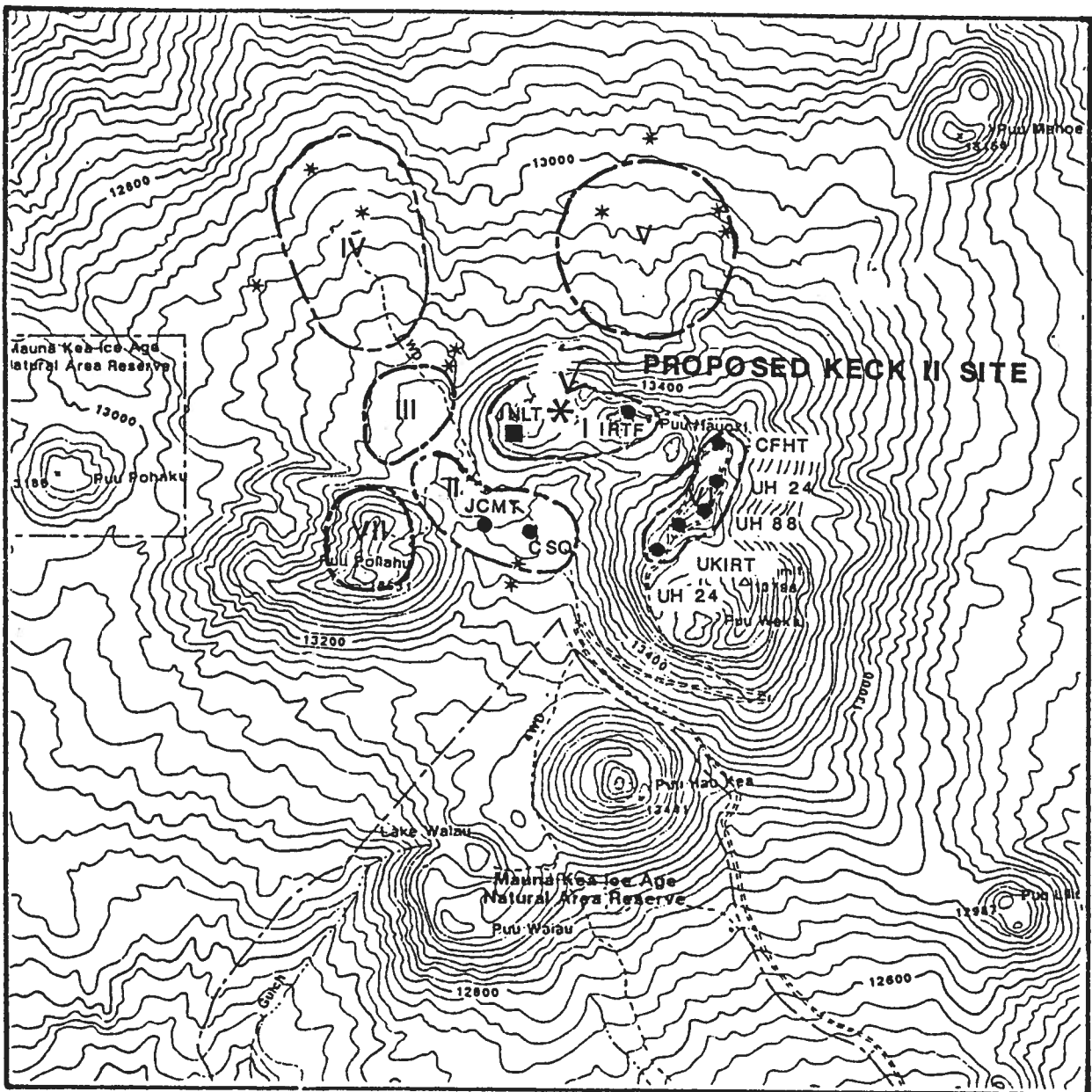
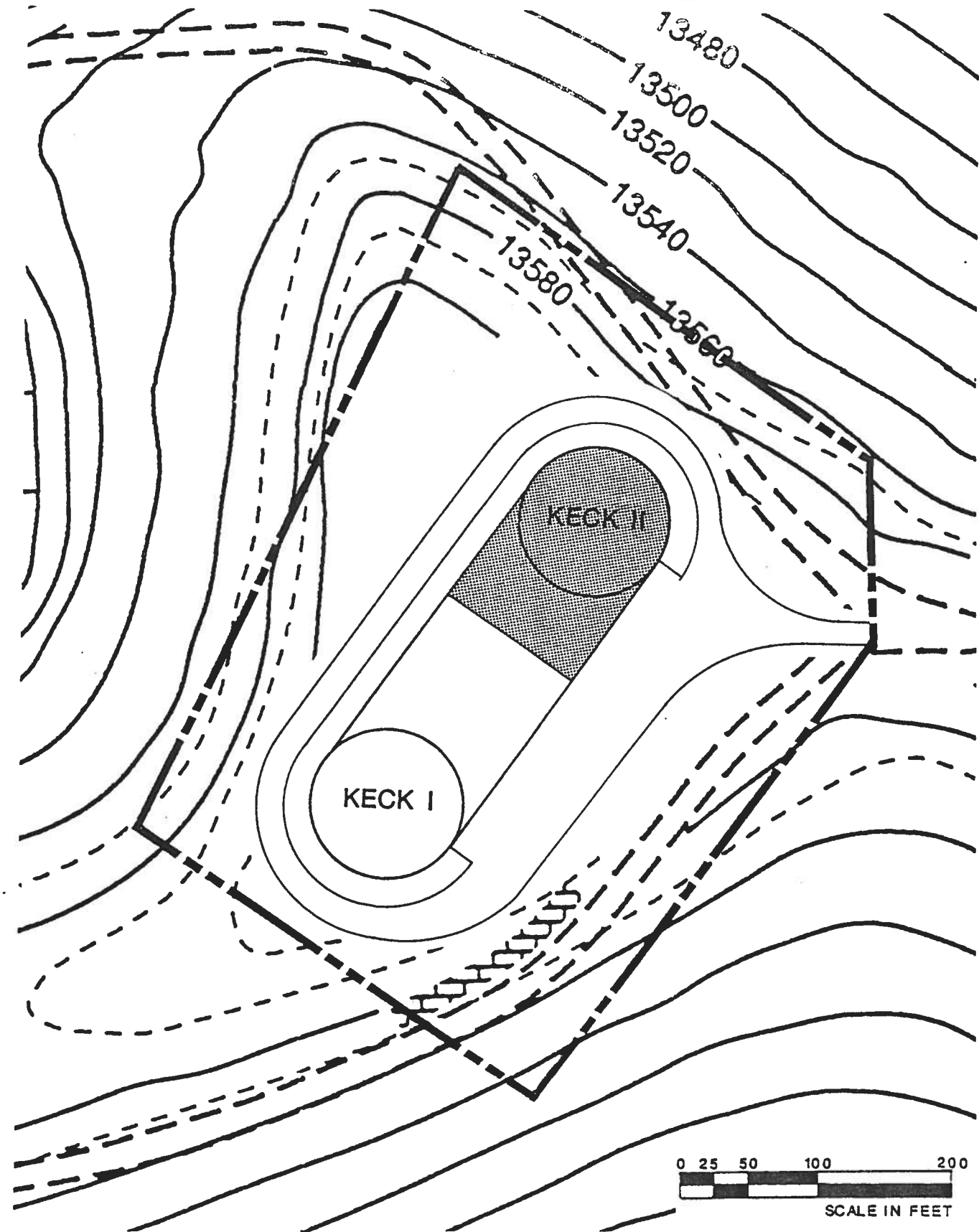


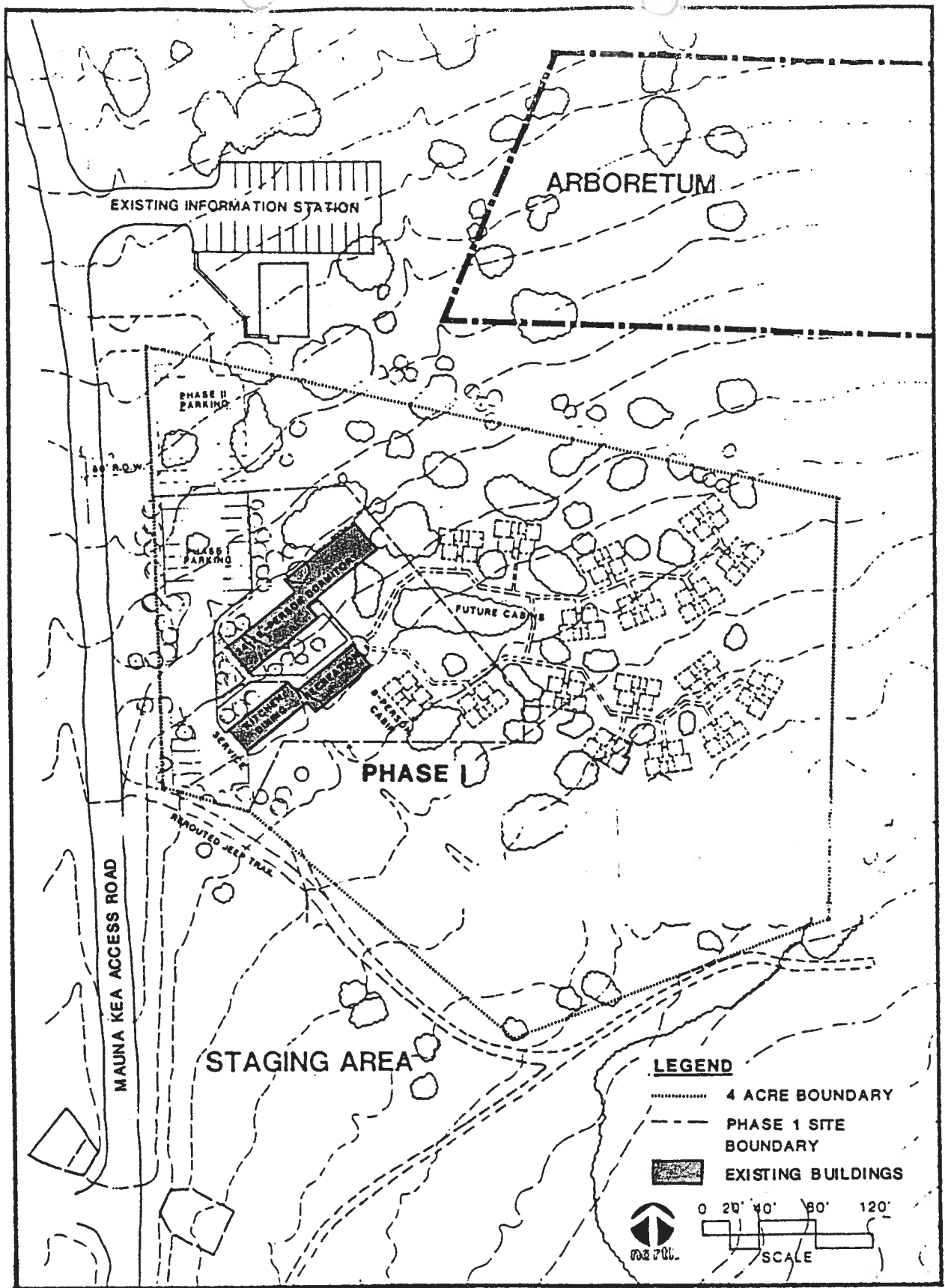
Table I: TELESCOPES ON MAUNA KEA
BY YEAR OPERATIONAL

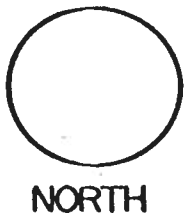
Telescope	Year Operational
<u>Summit Ridge</u>	
UH 24-inch Telescope #1	1968
UH 24-inch Telescope #2	1969
UH 88-inch Telescope	1970
NASA Infrared Telescope (IRTF)	1979
Canada-France-Hawaii Telescope (CFHT)	1979
United Kingdom Infrared Telescope (UKIRT)	1979
W. M. Keck Observatory (Keck I)	1991*
Japan National Large Telescope (JNLTL)	





SUBLEASED AREA

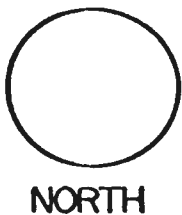




CDUA NO. HA-11/8/91-2509
APPLICANT UH-Institute of Astronomy
AGENT Dr. Donald Hall
TMK 4-4-15:09

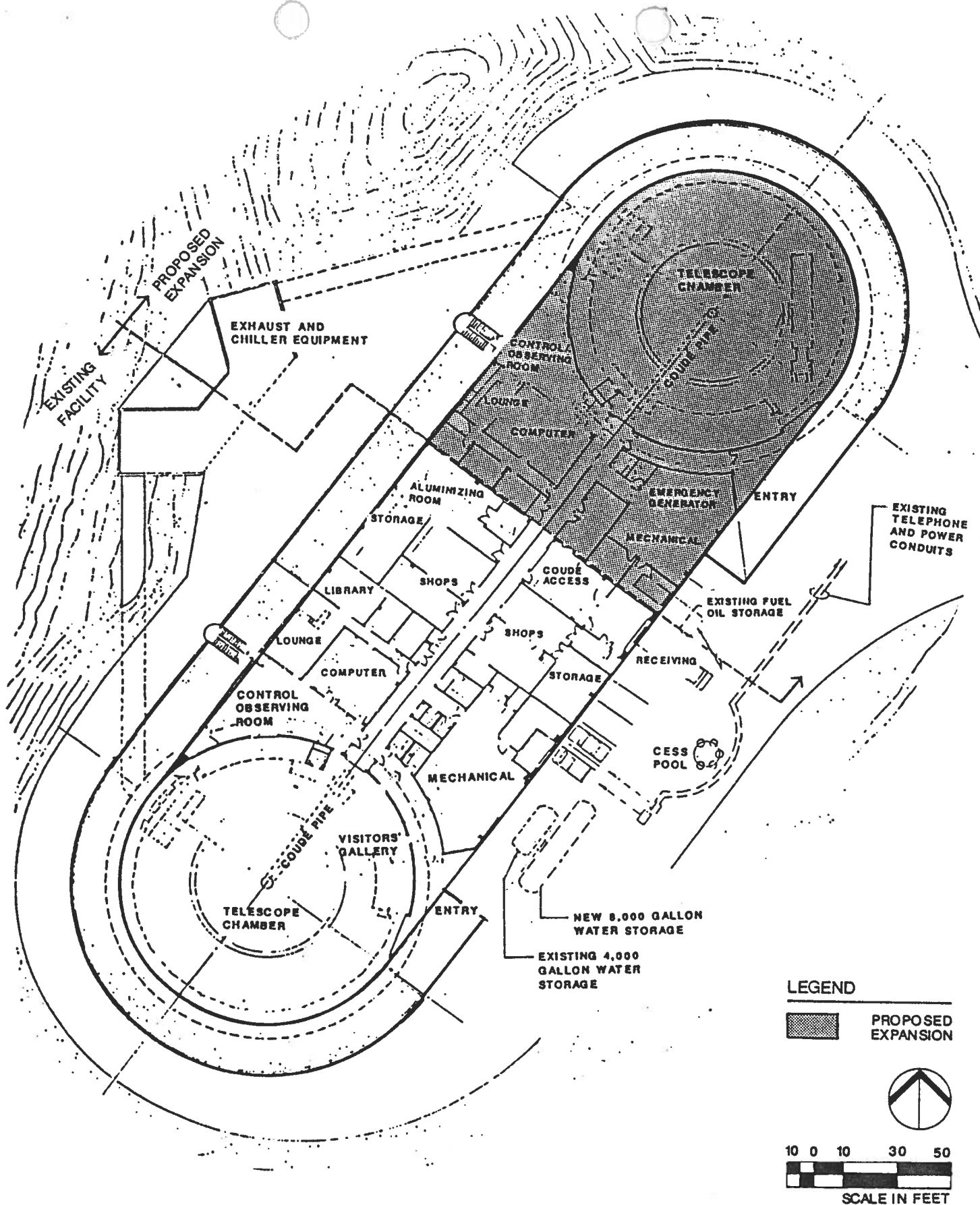
KECK II

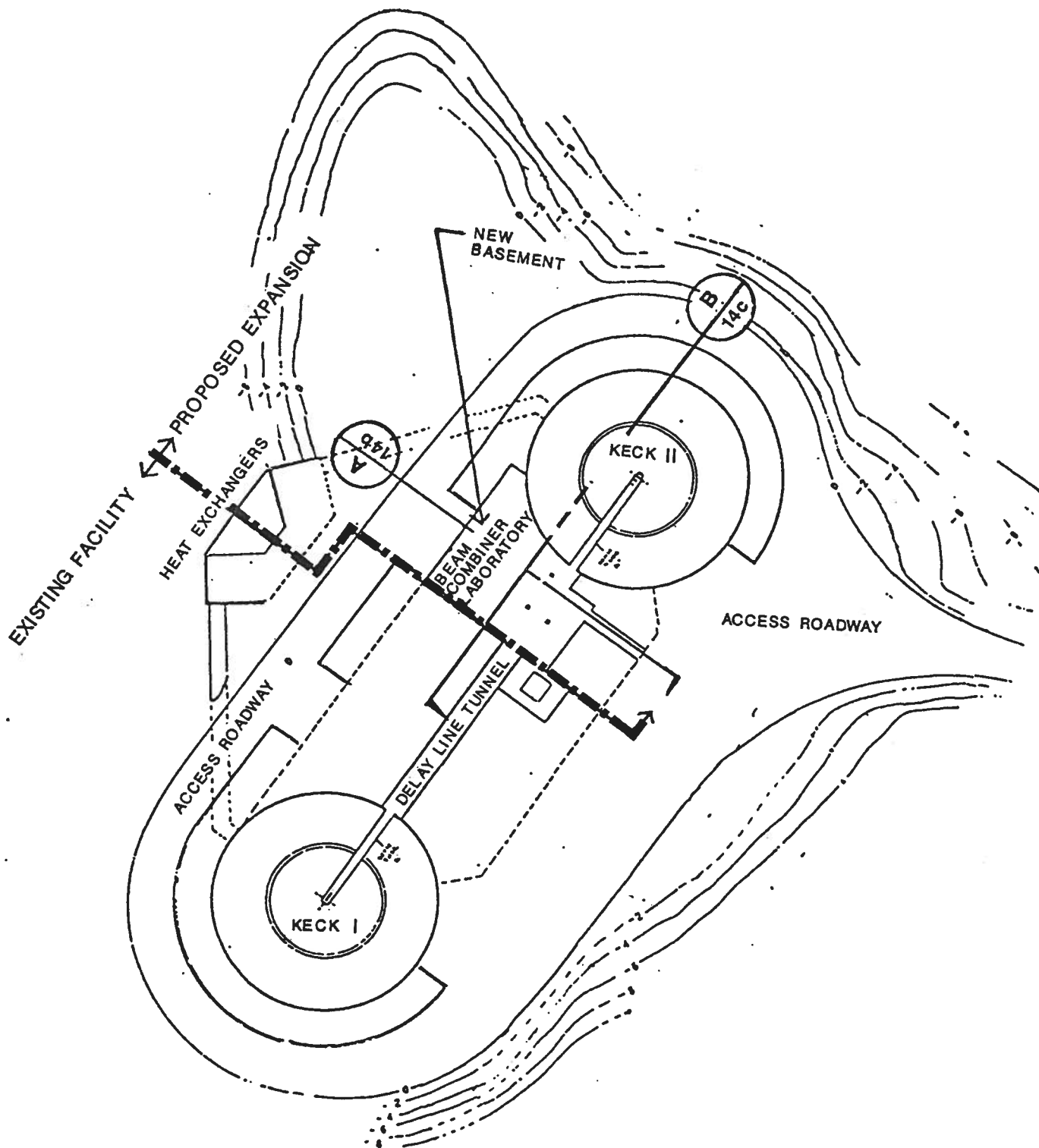
KECK I



CDUA NO. HA-11/8/91-2509
APPLICANT UH-Institute of Astronomy
AGENT Dr. Donald Hall
TMK 4-4-15:09

EXHIBIT H
Page 2 of 2
SUBZONE ☐ PROTECTIVE
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Mr. William W. Pary, Chairperson (March 20, 1992) Page 2

2) Disposition of Skiers' Parking Lot

Subject to Board approval, we are ready to work with NARS to restore the "skiers' parking lot" to its natural state, as recommended

