

MAR 8 1983

REF. NO.: CPO-1334
FILE NO.: HA-9/3/82-1515
180-Day Exp. Date: 3/2/83

Mr. Harold S. Masumoto
Vice President for Administration
University of Hawaii
2444 Dole Street, Room 201
Honolulu, Hawaii 96822

Dear Mr. Masumoto:

Conservation District Use Application for
Construction and Operation of the UK/NL Millimeter-Wave
Telescope and Temporary Use of an Existing Unpaved Parking
Area for a Concrete Batching Plant in the Mauna Kea Science
Reserve, at Hamakua, Hawaii, TMK: 4-4-15: 9

We are pleased to inform you that the Board of Land and Natural Resources, at its meeting of February 25, 1983, approved your application subject to the following conditions:

1. That the applicant comply with all applicable statutes, ordinances, rules and regulations of the Federal, State and City and County governments, and applicable parts of Section 13-2-21 of Title 13, Chapter 2, Administrative Rules, as amended;
2. Other terms and conditions as prescribed by the Chairman;
3. In that this approval is for use of conservation lands only, the applicant shall obtain appropriate authorization through the Division of Land Management, State Department of Land and Natural Resources for the occupancy of State lands;
4. In the event any unanticipated sites or remains such as shell, bone or charcoal deposits, human burials, rock or coral alignments, pavings, or walls are encountered during construction, the applicant shall stop work and contact the Historic Preservation Office at 548-7460 or 548-6408;
5. That the applicant comply with all applicable Public Health Regulations;

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6. A fire contingency plan, acceptable to the Division of Forestry and Wildlife shall be implemented during and after the construction of the structure;
7. That this approval is not to be considered as precedence for any future action the Board may desire to exercise through their discretionary conditional land use action.

Should you have any questions on any of these conditions, please contact Mr. Roger C. Evans of our Planning Office at 548-7837.

Very truly yours,

S/SUSUMUONO

SUSUMU ONO, Chairman
Board of Land and Natural Resources

cc: Hawaii Board Member
Hawaii Land Agent
Hawaii Planning Department
DOH/OEQC/EQC/DPED/OHA

bcc: Land Management
DOWALD
DAR
Historic Sites
DOFAW
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State Parks
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S/Sgt
DC



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
P. O. BOX 621
HONOLULU, HAWAII 96809

SUSUMU ONO, CHAIRMAN
BOARD OF LAND & NATURAL RESOURCES

EDGAR A. HAMASU
DEPUTY TO THE CHAIRMAN

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

FILE NO.: HA-9/3/82-1515
180-Day Exp. Date: 3/2/83

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Board of Land and
Natural Resources
State of Hawaii
Honolulu, Hawaii

Gentlemen:

Conservation District Use Application for
Construction and Operation of the UK/NL Millimeter-Wave
Telescope and Temporary Use of an Existing Unpaved Parking
Area for a Concrete Batching Plant in the Mauna Kea
Science Reserve, at Hamakua, Hawaii

APPLICANT: University of Hawaii
2444 Dole Street
Honolulu, Hawaii 96822

LANDOWNERSHIP: State of Hawaii, General Lease No. S-4191

LOCATION: TMK: 4-4-15: 9

AREA OF PARCEL/USE: 13,321.054 acres/2 acres for telescope and
20,000 square feet for batch plant

SUBZONE: Resource Subzone (Telescope Site);
Protective Subzone (Temporary Batch Plant)

DESCRIPTION OF AREA/CURRENT USE:

Telescope Site: The telescope site is located at an elevation of approximately 13,390 feet. The site is about 400 feet below the summit of Mauna Kea at the base of Puu Poliahu. The site is on a plateau between two cinder cones, and is relatively flat, currently vacant and undeveloped.

Temporary Batch Plant Site: This is a 30,000 square foot area located at the 12,700 foot elevation and is a site referred to as the "skier's parking lot". This area was originally used as a staging area for the construction of the University of Hawaii 2.2 meter (88-inch) optical telescope, and later for batching activities during the construction of the Canada-France-Hawaii (CFHT) and United Kingdom Infrared Telescope. On October 18, 1979 the Natural Area Reserves Commission allowed this area to be used for parking. This site contains no vegetation and is considered a "disturbed" area.

PROPOSED USE:

Proposed Telescope: The telescope will consist of a 15 meter dish-shaped reflector housed in a cylindrical enclosure (carousel) with a flat roof, about 92 feet in diameter and 88 feet high. The

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telescope will resemble a conventional radio telescope. The carousel will provide protection from the severe weather conditions at the summit. It will be mounted on a circular track and rotate with the telescope. The carousel and the telescope will be mounted on independent foundations.

The main front doors and the roof shutter of the carousel will open to enable the telescope to either view the sky directly or through a protective membrane transparent to millimeter-waves. When closed, the main doors and roof shutter will provide a seal against storm conditions.

Besides the telescope the interior of the carousel will also contain a computer/control room/office and workshop. A reinforced concrete footing will incorporate the telescope pad, the circular rail bed, toilet and washroom facility, 1,000-1,500 gallon watertank and batteries to provide standby power for the door, roof and carousel. Sewage disposal will be accomplished either by means of cesspool or septic tank with leaching field. All State and County requirements concerning individual waste disposal systems will be adhered to.

The facility will include a 66-foot by 38-foot parking area for 4-5 vehicles with truck access and turnaround. A 224-foot driveway will provide access to the telescope site from an existing spur from the main summit road.

The telescope will require an average of 70 KW of electrical power with a 150 KW peak demand. These power needs can be met by the existing 850 KW generator, located nearby at the 13,000 foot elevation. A 10-20 KW uninterruptable power supply (batteries) will be installed in the carousel for the computer. As previously mentioned, a standby power source will be housed below the carousel for the operation of the roof, door and carousel.

Construction: Although the +2-acre site selected for this telescope is essentially level, some grading and excavating will be necessary to prepare the site. Most of the excavated material will be used as fill or for balancing the site. Additional excavation will be done for installation of the telephone and power lines. A new trench, 224 feet long, from the proposed telescope site, following the alignment of the proposed driveway, to the nearest connection of the existing utility trench and 1,600 feet of the existing utility trench from that point to the proposed Caltech telescope will have to be excavated for telephone and power lines. Because of the porosity of the lava and the lack of rainfall, no drainage improvements will be required.

Construction equipment, vehicles, and materials, a temporary construction field office and an auxiliary generator will be stored on-site during construction and will be removed upon completion of the construction phase. Self-contained outdoor sanitary facilities will be used during the construction phase. Power will be provided by the on-site auxiliary generator.

Operations: In the period after commissioning, but prior to the transition to remote operations, an estimated two persons will usually be present at the site on night shift and four persons on

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day shift. The additional personnel are expected to generate 450-900 gallons per month of liquid sewage, use 600-1,200 gallons per month of water for heating, cooling and domestic consumption.

When the telescope is completed it will be turned over to UKIRT for operation out of Hilo. Remote monitoring and operating techniques and the joint operation with UKIRT will keep the number of people on the mountain from both facilities to no more than nine at any one time. For these reasons it is anticipated that there will be sufficient dormitory space allotted to UKIRT at the Hale Pohaku Mid-Level Facilities to accommodate the astronomers that will be associated with UK/NL MT project.

The proposed UK/NL telescope will operate in that part of the electromagnetic spectrum called the millimeter, which lies between the radio and infrared bands. Millimeter wavelength astronomy is a field which is emerging in the 1980's, promising to be a major contributor to both galactic and extragalactic science. It covers one of the few unexplored regions of the astronomical electromagnetic spectrum; unexplored because of the attenuating effects of the earth's atmosphere and the difficulties involved in constructing large telescopes to high accuracy and sensitive receivers at high frequencies.

The University of Hawaii believes that the proposed UK/NL telescope project, as described, is in accordance with the conditions imposed by the Mauna Kea Plan, the policy plan for the mountain which was adopted by the Board of Land and Natural Resources (BLNR) in 1977. The applicant has stated that the construction of the telescope will not commit the University or the Board of Land and Natural Resources to any further development on the mountain. The proposed project will utilize the infrastructure that is already in place.

Temporary Batch Plant Site

Nine-hundred fifty cubic yards of concrete will be used in the construction of the facility. While most of the concrete will be mixed in Hilo and trucked directly to the site, on the few occasions when three or four large continuous pours are required, a temporary concrete batching plant will be needed. During these large "pours", aggregate and sacks of cement will be hauled to the proposed batching plant site. The concrete will be mixed there and then transferred in ready mix trucks to the telescope site. Although the site to be used for batching should be available for approximately four and a half months, each usage should not exceed one day. Batching activities will not be undertaken during the winter months, when weather and ground conditions and recreational activities preclude such operations.

No permanent facilities will be constructed at this site. After this phase of the construction process is completed, all equipment will be removed and the site restored to its original condition. All equipment utilized in mixing will have self-contained power (gasoline and diesel).

As previously mentioned, the "skier's parking lot" was used as a temporary batch plant during the construction of the Canada-France-Hawaii Telescope (CFHT) and United Kingdom Infrared Telescope (UKIRT).

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The contractors for these projects needed a site close to the telescope sites because the foundation slab must be built in one or more continuous pours and therefore each truckload must be reasonably close together. Also, it is known that the utilization of the site for batch plant purposes has alleviated the complications previously encountered by batching at the summit such as high winds and the generation of dust.

As such, this site although located within the Protective Subzone, has been previously disturbed for recreation activities as well as the current proposed use in the past.

The University of Hawaii proposes to commence construction by April 1983, and complete construction by April 1986.

SUMMARY OF COMMENTS:

The application was sent to the following agencies for review and comment: United States Department of Transportation, Federal Aviation Administration, U.S. Department of Interior, Fish and Wildlife Service; County of Hawaii Planning Department, Department of Water Supply, Department of Parks and Recreation, Department of Public Works; State of Hawaii, Department of Health, Office of Environmental Quality Control, Environmental Quality Commission, Office of Hawaiian Affairs; and the following Department of Land and Natural Resources divisions: Aquatic Resources, Water and Land Development, Land Management, State Parks/Historic Sites, Forestry and Wildlife, Natural Area Reserves System and the Division of Conservation and Resources Enforcement.

Their comments follow:

Federal Aviation Administration:

Construction of the 88 foot above ground UK/NL Millimeter-wave telescope and appurtenances within the Mauna Kea Science Reserve, Hamakua, Hawaii, does not require notice to the Federal Aviation Administration and would not have any effect on air navigation.

This determination concerns the effect of the construction on the safe and efficient use of the navigable airspace by aircraft and does not relieve the sponsor of any compliance responsibilities relating to any law, ordinance, or regulations of any Federal, State, or local government body.

Fish and Wildlife Service:

We have reviewed the referenced Conservation District Use Application and Environmental Impact Statement Preparation Notice forwarded with your letter dated October 15, 1982, concerning construction of the UK/NL millimeter-wave telescope and temporary use of an existing unpaid parking area for a concrete batching plant in the Mauna Kea Science Reserve, Hamakua District, County of Hawaii.

We encourage the proposing agency to conduct a thorough biological survey of the project area to determine the distribution of specialized animals within aeolian ecosystems. Mitigation measures to protect these resources

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should be developed and implemented based upon a complete understanding of their range, life requirements, and ecological significance.

County of Hawaii, Planning Department:

We have reviewed the application to construct the subject telescope and establish the temporary batching plant site.

From a comprehensive standpoint, we would have preferred to review this request in conjunction with the Master Plan for the Mauna Kea Science Reserve. Inasmuch as that master plan will not be ready in time to coincide with the construction of this telescope, we have no further comments to offer on this application.

Department of Public Works:

We have reviewed the subject application and have no comments to offer.

Department of Parks and Recreation:

The subject application has been reviewed and this department has no objections to offer on the request.

Department of Water Supply:

We have no objections to the Conservation District Use Application to utilize the area as a temporary concrete batching plant.

There is no public water system in the area.

State of Hawaii, Department of Health:

Our staff has reviewed this request and does not foresee any major adverse environmental effects arising from this project.

Please be informed that we have no objections to granting the permit.

Office of Environmental Quality Control:

We have no objections to this Conservation District Use Application.

Astronomical research conducted on Mauna Kea is environmentally compatible and non-polluting; whatever environmental effects that there may be from this project will be small and will be more than off-set by the project's benefits. At this early stage in Mauna Kea Science Reserve's development, we perceive the cumulative effects of the development to be small. Others may disagree with us, however, and since the EIS for the Mauna Kea Science Reserve Master Plan has not yet been prepared nor accepted, we concur that an EIS be prepared for this project.

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As for the concrete batch plant, its small size and temporary nature makes any environmental effect from it minor.

Department of Land and Natural Resources, Division of Aquatic Resources:

No aquatic resources concerns.

Division of Water and Land Development:

Our understanding is that the proposed sewage disposal for this subject project is by a cesspool or septic tank with leaching field. The conditions are similar to the Caltech telescope project, and as such, we would like to refer to our earlier memo on the Cal-Tech project (HA-7/22/82-1492) addressing our concerns on the sewage disposal plan (memo attached).

Memorandum of October 28, 1982:

SUBJECT: Additional Review and Comments: Conservation District Use Application (CDUA) for Construction of California Institute of Technology, 10-Meter Telescope, Mauna Kea, Hawaii, HA-7/22/82-1492

We have reviewed the additional information concerning the impact of sewerage effluent on Lake Waiau and offer the following comments.

The additional information indicates that the septic tank effluent will not pollute Lake Waiau due to the low effluent flows and the great distances involved. It also states that the effluent in the subsurface will tend to percolate downward, and any lateral flow will tend to flow parallel to the surface drainage pattern and therefore will not approach Lake Waiau.

However, by the information provided, it appears the subsurface effluent may flow southerly towards the existing spring sources of the Pohakuloa water system. Although it appears remote that these spring sources would be contaminated from subsurface effluent because of the small flow and the great distance (approximately 2 + miles downslope of Lake Waiau), every effort should be made to protect these spring sources from contamination, as they are the primary sources of water supply for the Pohakuloa military training camp and the Pohakuloa state park facilities.

Hence, although the above determination suggests that the septic tank effluent would not reach Lake Waiau or the spring sources of the Pohakuloa water system, we recommend that the septic tank disposal system be monitored by the applicant on a continuing basis to identify and control any adverse environmental impact that could occur. Also, the Department of Health should be given an opportunity to review the subject project regarding the sewage disposal system.

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Division of Land Management:

Land Management Division has no objection.

Division of State Parks/Historic Sites:

Recreational Concerns:

There are no recreation concerns involving this particular project. The recreation concerns for the general summit area are being addressed in management plan which in turn is part of a Mauna Kea Science Reserve Master Plan.

Historic Sites Concerns:

We concur with the findings of no cultural resources on the proposed UK/NL telescope site by the consulting archaeologist (McCoy, Draft CDUA, August 27, 1982).

In the event that any unanticipated sites or remains such as artifacts, shell, bone or charcoal deposits; human burials; rock or coral alignments, pavings, or walls are encountered during construction, please inform the applicant to stop work and contact this office immediately.

Division of Forestry and Wildlife:

Our comments on the draft Conservation District Use Application dated August 24, 1982 (attached) is still applicable.

August 24, 1982 comments:

As with Caltech's application it is recommended that this Conservation District Use Application not be accepted and processed individually. The Department should wait for the University of Hawaii's single EIS and Conservation District Use Application which will include all summit development to the year 2000. The collective proposal will provide the Department and the public with an opportunity to review and evaluate the total impact of the developments proposed for the next twenty years.

Natural Area Reserves System:

From information provided by the applicant, installation of the UK/NL millimeter-wave telescope is not expected to have any adverse impact on the nearby Mauna Kea Ice Age Natural Area Reserve. Regarding use of the "skier's parking lot" located in the Natural Area Reserve as a batching site, considering its disturbed terrain and previous concrete batching use, the Natural Area Reserves System Commission has approved the issuance of a special-use permit in accordance with Section 13-209-5, Administrative Rules. The permit contains special conditions to confine disturbance to the subject site. The conditions must be adhered to to prevent further encroachment, which has occurred from past use.

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Division of Conservation and Resources Enforcement:

Comments with photos are provided as Appendix A.

SUMMARY OF PUBLIC HEARING:

The Board of Land and Natural Resources held a public hearing on this matter on January 27, 1983 at 6:30 p.m. at the Kona Surf Hotel, Mauna Loa Conference Room, Keauhou, Hawaii.

Concerns were expressed relating to the following items:

1. Conditions set in the approval of Conservation District Use Application File No. HA-1492 for the Caltech Telescope wherein no further commitments of land uses involving major improvements will be considered until the Development or Master Plan is completed.
2. Availability of Master Plan and timing of availability in light of 180 day requirement for the subject Conservation District Use Application, File No. HA-1515: Actual Master Plan is expected to be available for review by the end of February, 1983; the Board of Land and Natural Resources must take action on the UK/NL proposal before March 2, 1983, the 180 day expiration date. This means the last date available is the Board Meeting scheduled for February 25, 1983.
3. Representations made by the University to UK/NL representatives.
4. The presentation of an EIS for review and comment without the actual Master Plan having been completed: EIS in itself is not a Master Plan.
5. Single Conservation District Use Application vs. Master Plan or Complex Development Plan, (all present agreed that the goal here is to have one document in which both institutions, University of Hawaii and Department of Land and Natural Resources, can face up to all the issues at one time: The comment was made that we have neither a single Conservation District Use Application nor a Master Plan.
6. The following issues need to be addressed in the Mauna Kea Science Reserve Complex Development Report:
 - a. Access for all users who now utilize the mountain.
 - b. Liability for public safety - assignment of responsibility.
 - c. Access for research purposes.
 - d. Resource management.
 - e. Assignment of enforcement responsibilities.

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- f. Control of off-road traffic.
- g. Power sources other than by the provision of a power line from HELCO.
- h. Preservation of Lake Waiiau by monitoring cesspool leaching from telescope facilities nearby.
- i. Added impact of additional telescopes.
- j. Review of present telescope use, astronomy programs, and full disclosure of UK/NL mission.
- k. Storage of construction equipment (should be limited to the construction site).
- l. Dust control during construction.
- m. Monitoring and enforcement of approval conditions during construction (it was suggested that someone be present at all times during construction to monitor activities and that this person have the power to stop a project should it clearly go beyond the stated physical area or the stated activities).
- n. Parties who requested to be consulted during the EIS process have not received responses to their concerns expressed in the draft EIS. example: Conservation Council of Hawaii.
- o. The need to begin construction by April 1983; loss of funding from the United Kingdom Science and Engineering Research Council. (Proposal is 80 percent from UK and 20 percent from Dutch government)
- p. UK/NL groups' understanding of procedures required prior to beginning construction; and the need to complete the Mauna Kea Master Plan.
- q. Number of persons presently employed by UK - 28. Future? - 50 total.

ANALYSIS:

Following review and acceptance of the application, for processing, the applicant, by letter dated October 15, 1982, was notified that:

- 1. The proposed use is a conditional use of the Protective and Resource Subzones of the Conservation District according to Title 13, Chapter 2, Administrative Rules, as amended;
- 2. A public hearing pursuant to Chapter 183-41, Hawaii Revised Statutes, as amended will be required; and
- 3. An Environmental Impact Statement in accordance with Section 1:31 of the EIS Regulations has been required for the proposed use and written clearance from the

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County of Hawaii regarding SMA requirements has not been obtained.

The objective of the Protective Subzone is to protect valuable resources in such designated areas as restricted watersheds; marine, plant and wildlife sanctuaries, significant historic archaeological, geological and volcanological features and sites; and other designated unique areas.

The objective of the Resource Subzone is to develop, with proper management, areas to ensure sustained use of the natural resources of those areas.

Section 13-2-21(b)(1) relating to standards requires all applications be reviewed in such a manner that the objective of the subzone is given primary consideration.

This analysis, as with other Mauna Kea related issues, will consist of a review of I) a chronology of past events; II) past approval conditions; III) other related concerns; IV) public hearing input; V) the Environmental Impact Statement prepared for the project; VI) comments on the UK/NL telescope; VII) the University of Hawaii Master Plan for Mauna Kea; and VIII) a proposal for a plan of action.

I. Mauna Kea Chronology (Updated)

- | | |
|------------|---|
| 1930 | Hale Pohaku, "House of Stone" cabins constructed at 9,200 feet elevation. These cabins replaced a complex of buildings located at 7,800 foot elevation which had been used by Forestry personnel and road construction workers. Hale Pohaku was placed under the jurisdiction of State Parks division of Department of Land and Natural Resources in 1962, but has never been designated as a State park. |
| 1963 | Dr. Gerald P. Kuper of University of Arizona and University of Hawaii carries out first observatory site tests with State and Federal support. |
| 6/18/68 | Board of Land and Natural Resources leases all lands above the 12,000 foot elevation to the University of Hawaii for a period of 65 years. (General Lease No. S-4191. Area is designated "The Mauna Kea Science Reserve". Area is 13,321 acres) |
| 7/68 | UH/USAF 61 cm (24 inches) Optical telescope becomes operational. |
| Fall, 1968 | UH/NASA 61 cm (24 inches) Optical telescope becomes operational. |
| 1/70 | UH/NASA 2.24 cm (88 inches) Optical/Infrared Telescope becomes operational. |

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- 6/8/73 Board approves CDUA No. HA-4/27/73-442 for construction of underground electric distribution line from 12,950 feet to observatory at summit - a five foot wide easement running over a distance of 5,200 feet. (12.47 kv line)
- 5/10/74 Board approves CDUA HA-1/29/74-528 by Canada-France-Hawaii Telescope Corporation for observatory use. Hawaii Corporation for temporary buildings and utilities for construction workers.
- 5/24/74 Board approves CDUA HA-1/29/74-527 by DLNR - Land Management Division for Canada-France-Hawaii Telescope Corporation for observatory use.
- 6/14/74 Board approves CDUA No. HA-2/28/74-537 by the State of Hawaii, Department of Transportation, Highways Division for Mauna Kea Observatory Access Road.
- 6/13/75 Board approves CDUA No. HA-2/27/75-640 by Downs Laboratory of Physics for temporary portable Infrared Telescope use.
- 8/4/75 Governor accepts EIS for IRTF and UKIRT facilities. (see CDUA HA-653)
- 8/29/75 Board approves CDUA No. HA-3/25/75-653 for construction Infrared Telescope Facility (IRF) and United Kingdom Infrared Telescope (UKIRT) with access road.
- 3/12/76 Board denies CDUA No. HA-1/2/76-746 by Science Research Council for temporary buildings.
- 5/14/76 Board approves CDUA No. HA-3/30/76-781 for construction of temporary living quarters for UKIRT workers at Hale Pohaku.
- 5/14/76 Board approves CDUA No. HA-4/26/79-789 for Temporary Access Use - a Batch Plant for construction of the UKIRT facilities.
- 7/23/76
8/26/76 -
amended Board approves CDUA No. HA-5/13/76-804 for improvements to existing buildings at Hale Pohaku; renovations - fire detection and alarm systems; replacement of stairs, walks, railings to mess hall and Dormitory Number Two.
- 5/13/77 Board approves CDUA No. HA-1/6/77-895 for interim mid-level facilities, replacement of buildings.
- 5/27/77 Board issues revocable permit for 4.0 acres at Hale Pohaku, a portion of which is occupied by the existing dormitory/mess hall constructed for UKIRT workers.

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- 5/27/77 Revocable Permit No. S-5537 for four acres of Hale Pohaku issued. This permit replaced earlier Revocable Permit No. S-4440 for 12,000 square feet. A larger area - six acres was subdivided under CDUA No. HA-1430 replacing revocable permits.
- 9/9/77 Board approves CDUA No. HA-5/26/77-954 - an after-the-fact CDUA for three (3) telescopes: 88-inch telescope, 24-inch Air Force Telescope, and the 24-inch Planetary Control Telescope plus ancillary facilities (housekeeping CDUA).
- 9/9/77 Board approves CDUA No. HA-5/26/77-995 for interim power plant expansion. (Four generator building)
- 1/13/78 Board approves CDUA No. HA-11/9/77-1009 by the National Weather Service, U. S. Department of Commerce for Telemetry Improvements which are part of the Hawaii Regional Tsunami Warning System.
- 11/9/78 Mauna Kea Ice Age Natural Area Reserve approved by the BLNR.
- 11/9/78 Agreement of transfer between the Science Research Council (agents for United Kingdom Infrared Observatory) and the University of Hawaii approved. University accepts responsibility for facilities located at Hale Pohaku.
- 1979 NASA 3.0 cm (120 inches) Infrared Telescope becomes operational.
- 1979 Canada/France/Hawaii Telescope (CFHT) 3.6 cm (144 inches) Optical/Infrared Telescope becomes operational.
- 1979 United Kingdom 3.8 cm (150 inches) Infrared Telescope becomes operational.
- 7/27/79 Board approves CDUA No. HA-2/14/79-1131 by the University of Hawaii for electric power use including interim and permanent improvements.
- 5/9/80 Board approves amendment to CDUA No. HA-2/14/79-1131 for temporary electrical power use.
- 5/16/80 Board approves CDUA No. HA-1210 for physiological research use involving hormone research for a period of six (6) days.
- 7/25/80 Board denies CDUA No. HA-3/17/80-1221 by Ski Shop Hawaii, Inc. for commercial snow skiing activities.
- 9/12/80 Board approves amendment to CDUA No. HA-527 for temporary research facility (Emilie Experiment); an experiment with a wide field photometer in the millimeter band.

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- 3/2/81 Plans approved for replacement of Air Force 24 inch telescope with Vienna University Doppler 7-meter telescope. Amendment to CDUA: HA-5/25/77-524.
- 5/8/81
Withdrawn CDUA No. HA-4/16/81-1284 for limited research and educational use by the University of Hawaii facility involving collection of data and specimens, biological, geological and atmospheric.
- 5/29/81 Board approves CDUA No. HA-4/6/81-1314 for Data Collection and Observation for evaluation of remaining observatory sites on Mauna Kea; data to be correlated with mainland data for site selection purposes. Data collection also found to include soil borings (per 6/16/82 DLNR letter to University of Hawaii).
- 6/2/81 Doppler 7-Meter Plans revised, reviewed and approved.
- 8/26/81 Board approves CDUA No. HA-7/23/81-1357 for boring work at Hale Pohaku, for Mid Level Facilities planning and design.
- 11/16/81 Governor, State of Hawaii, signed Executive Order establishing the Mauna Kea Ice Age Natural Area Reserve.
- 1/22/82 University of Hawaii Board of Regents approves Program Summary and Research Development Plan for Mauna Kea Science Reserve and Related Facilities.
- 3/24/82 University of Hawaii presents Program Summary and Research Development Plan for Mauna Kea Science Reserve and Related Facilities to Department of Land and Natural Resources for review.
- 4/23/82 Board approves CDUA No. HA-3/14/82-1430 for subdivision and construction of Hale Pohaku Mid-Level Facilities with Right-of-Entry for construction purposes.
- 6/29/82 University of Hawaii/Department of Land and Natural Resources meet to discuss and review Master Planning for Mauna Kea Science Reserve (First meeting).
- 7/82 Mauna Kea Science Reserve Master Plan, Environmental Impact Statement Notice of Preparation filed.
- 7/22/82 CDUA No. HA-7/22/82-1492 filed for construction of Caltech 10-Meter Telescope for Millimeter and Sub-millimeter Astronomy.

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- 8/26/82 Governor accepts Environmental Impact Statement for California Institute of Technology 10-Meter Telescope for Millimeter and Sub-millimeter astronomy.
- 8/27/82 University of Hawaii/Department of Land and Natural Resources meet to discuss status of Mauna Kea Master Plan (Second meeting).
- 9/3/82 CDUA No. HA-1515 filed for construction of UK/NL Millimeter-Wave Telescope and Temporary Use of an Existing Unpaved Parking Area for a concrete batching plant in the Mauna Kea Science Reserve.
- 9/13/82 University of Hawaii/Consultants, Group 70 submit Preliminary Findings of Mauna Kea Science Reserve Master Plan; Schedule of Work Flow and Milestone Chart provided for department review and comment.
- 9/15/82 University of Hawaii, Institute of Astronomy, consultants and Department of Land and Natural Resources meet on Mauna Kea Science Reserve Master Plan. (Third meeting)
- 9/16/82 Consultant, Group 70, submits map of Mauna Kea Science Reserve Master Plan, Alternative Power-line Alignments for department review and comment.
- 9/21/82 Consultant submits Mauna Kea Science Reserve Master Plan, Outline for Management, Monitoring and Enforcement for review and comment.
- 9/82 Road to Lake Waiiau closed to prevent unauthorized vehicle use. This was done by the Natural Area Mauna Kea Plan, which states that access to Lake Waiiau shall be only by trail. Visitors wishing to see Lake Waiiau must now walk from the parking area located at the Olde Batch Plant site.
- 10/8/82 Board approves amendment to CDUA No. 653A filed for expansion of UKIRT facility by constructing a 1600 square feet building for computer, laboratory and storage space plus paving 3000 square feet of unpaved area, adjacent to facility and planned 1600 foot expansion.
- 11/7/82 University of Hawaii Research Corporation submits Mauna Kea Science Reserve Complex Development Plan Draft Environmental Impact Statement, Volume 1 and Volume 2, Technical Appendices to Department of Land and Natural Resources and to the Office of Environmental Quality Control.
- 11/7/82 -
12/7/82 Draft EIS under review by Department of Land and Natural Resources staff.

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- 12/17/82 Board approves Conservation District Use Application No. HA-1492 for construction and use of the California Institute of Technology 10-Meter Telescope for millimeter and submillimeter astronomy at Mauna Kea with right-of-entry.
- 1/8/83 Final EIS for Mauna Kea Master Plan submitted to the Office of Environmental Quality Control and published in OEQC Bulletin on January 8, 1983.
- 1/20/83 Final EIS accepted by the Governor, State of Hawaii.
- 2/10/83 Copies of "draft" Mauna Kea Science Reserve Complex Development Plan issued to DLNR for review and comment. (DLNR staff considers the plan a "draft" inasmuch as the plan has not received approval of the University Board of Regents).
- 2/11/83 Public Hearing, University of Hawaii BOR at Hilo on "draft" Mauna Kea Science Reserve Complex Development Plan.

II. PAST CONSERVATION DISTRICT USE APPLICATION APPROVAL CONDITIONS AFFECTING THIS PROPOSAL:

On December 17, 1982, the Board of Land and Natural Resources approved Conservation District Use Application File No. HA-1492, for construction and operation of the California Institute of Technology 10-Meter Telescope. Approval was subject to two general conditions and six specific conditions. Condition C specifically addressed major land use commitments within the Mauna Kea Science Reserve. This condition, as amended at the December 17, 1982 Board Meeting reads as follows:

- C. That no further commitment of land use involving major improvements within the Mauna Kea Science Reserve be considered until such time as the University's Mauna Kea Science Reserve Development Plan is completed.

Construction and operation of the UK/NL Millimeter-Wave Telescope is considered by staff to be a proposal for use of land involving major improvements.

It is Staff's understanding that the Complex Development Report referred to in Condition C is under preparation as of this writing. Staff has reviewed over the past six months various input from the University relating to plan development and an Environmental Impact Statement for the plan has been completed and accepted by the Governor. Although the EIS contains a description of the physical plans and a draft management plan as an element of the EIS, to date, Staff has not had in hand a completed draft Complex Development Plan Report. (This situation is more fully discussed under Section VII of this analysis)

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Therefore, using the Board's directive as mandated under Condition C, Staff has difficulty in recommending approval at this time.

III. OTHER RELATED CONCERNS:

This situation notwithstanding, there are other concerns relating to previous agency reviews, public input, the environmental impact statement prepared for this telescope, and the complex development report to date.

It is Staff's opinion that many of the concerns expressed in agency reviews of the California Institute of Technology (C.I.T.) Telescope Final EIS remain applicable and serve to emphasize the need to complete a complex development plan before proceeding with any additional major improvements, such as the subject UK/NL Telescope.

For example, the Environmental Impact Statement (EIS) for the C.I.T. Telescope accepted on August 28, 1982, causes Staff some concern.

Several reviewers, as a part of the public review process of both the Notice of Preparation and the draft C.I.T. document have indicated their concern not with the program per-se, expressed by the University but by the manner in which the University is proceeding to implement their Program.

The University's response follows each comment.

University of Hawaii, Environmental Center:

"It is our understanding that the University has now adopted the "proposed" Research Development Plan and that under this plan, all future potential telescope sites and any necessary support facilities have been identified. The need now is for an overall EIS to address the impacts of the entire Research Development Plan (RDP). It appears from the Preparation Notice that such an approach is the recommended approach of the plan. What is unclear is the rationale in this EIS Preparation Notice that, because this (CALTECH) "application is preceding the adoption of the RDP, it is proceeding with its own EIS and CDUA." It would seem appropriate to delay assessment of this specific project until the State/University prepares the EIS for the total complex. Furthermore, if the RD plan has been adopted it would appear that consideration of the separate EIS would be contrary to the terms of that plan and therefore subject to legal question. A few specific points of concern are noted." (Emphasis added) (page 104)

University's response to the Environmental Center:

We agree with you that the ideal situation would be to hold back the Caltech EIS and incorporate it into a comprehensive EIS for the proposed development plan. Unfortunately, the ideal is not always achievable, particularly in economic

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times such as these when Federal funding is at a premium and delays in any part of the approval process could mean loss of funding forever. Caltech has an excellent opportunity to obtain funding for its project if certain requirements, including an acceptable EIS, can be completed during this fiscal year. (Emphasis added) (page 106)

U.S. Department of Interior:

The U.S. Department of Interior has commented that "by current standards, it is possible for proposals, like the C.I.T. telescope developments, to claim a tolerable increment in environmental impact in the summit, when realistically the development is boosting the tolerance level of impact and setting the stage for another increment. Six telescopes at the summit have made it possible to accept a seventh, with its "insignificant" increases in road traffic, sewage disposal, solid waste disposal, fuel consumption, etc. A Master Plan is needed which recognizes limits to development and impact. We believe this is needed before the C.I.T. proposal is approved." (Emphasis added) (page 94)

University's response to the U.S. Department of Interior:

The forthcoming draft EIS will describe, in detail, the relationship of the proposed project to State and County plans, the Department of Land and Natural Resources Mauna Kea Plan, and to the Research Development Plan for the Mauna Kea Science Reserve. It should be noted, however, that Caltech is not setting the stage for another increment. Although the Research Development Plan indicates a possible 13 total telescopes on the summit by the year 2000, the presence or absence of Caltech will in no way affect the plans of other observatories. (Emphasis added) (page 95)

Hawaii Audubon Society:

The Hawaii Audubon Society has suggested "that local newspapers have reported recently that the University of Hawaii has approved a Mauna Kea Research Development Plan that envisions 13 identified telescopes on the summit by the year 2000. Now is the opportunity for the long-needed comprehensive EIS to cover all proposed development at the summit and downslope. The extensive biological survey that is essential for and adequate description of the environment would be part of the EIS for the whole development plan." (Emphasis added)

"Instead of proceeding on a piecemeal basis, which is unsatisfactory for exposing and mitigating long-term environmental impacts, the Society recommends that the California Institute of Technology project be held in abeyance until the comprehensive EIS for all projected development at the summit and downslope has been completed. Hawaii EIS Regulations require that "a group of proposed actions shall be treated as a single action when: (1) the component actions are phases or increments of a larger total undertaking..." (Emphasis added) (page 136)

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"Instead of scurrying ahead with the CIT project and leaving undone the necessary biological data gathering and evaluation, it would seem a more judicious course -- consonant with the careful planning and high goals of the University's Development Plan for Mauna Kea -- to proceed with the comprehensive EIS and its integral data acquisition". (page A-92)

University's response to the Hawaii Audubon Society:

We do not perceive the proposed submillimeter telescope as being a phase or increment of a larger total undertaking. The research objectives of this action could be accomplished without any future telescopes being constructed on the mountain. In addition, construction and operation of the Caltech 10.4 meter telescope will not commit the University or the Board of Land and Natural Resources to any further development at the summit. The project will utilize the existing capacity of the infrastructure that is already in place. (For example, it will not be necessary to pave the road or develop a new power source in order to accommodate Caltech's requirements). In other words, this telescope will not be the catalyst which will result in commitments to future development in order to offset heavy infrastructure investments. (Emphasis added) (page 139)

Department of Land and Natural Resources:

The EIS should describe the extent to which the mountain top can accommodate additional scopes. Our concern is that the carrying capacity of the top not be overlooked.

University's response to DLNR:

"The construction and operation of the Caltech 10.4 meter telescope will not commit the University or the Board of Land and Natural Resources to any further development at the summit. The project will utilize the existing capacity of the infrastructure that is already in place. This telescope will not be the catalyst which will result in commitments to future development in order to offset heavy infrastructure investments. Your concerns about carrying capacity should be addressed in an EIS for the Research Development Plan which will be prepared sometime in the future." (Emphasis added) (page 113)

Hawaii County, Office of the Mayor:

We would like, however, to note that while the proposed telescope is included within the University's Research Development Plan, if it is to ultimately serve as the State's Master Plan for the science reserve, an approval of this plan by the Board of Land and Natural Resources would also seem appropriate. (Emphasis added) (page 123) (see Appendix B)

University's response:

The University has a joint mission with other State constituencies to preserve and protect the unique attributes of the mountain. Accordingly, the University currently has plans to develop and

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seek approval of a single Conservation District Use Application (CDUA) for the Science Reserve. This CDUA will be subject to approval by the Board of Land and Natural Resources (BLNR). Thus, in effect, the Plan cannot be implemented without the approval of the BLNR. (Emphasis added) (page 124) (Staff notes that this letter is dated 2/25/82) (see Appendix C)

Also, responses to EIS reviews appear to clearly place the Board of Land and Natural Resources as the decision-making authority as the following indicates:

Hawaii County, Office of the Mayor:

We would like, however, to note that while the proposed telescope is included within the University's Research Development Plan, if it is to ultimately serve as the State's Master Plan for the science reserve, an approval of this plan by the Board of Land and Natural Resources would also seem appropriate. (Emphasis added) (page 123)

IV. PUBLIC INPUT

We raise the issue of public input here because Staff considers it to be essential to the planning process.

It has become apparent to Staff that a full spectrum of public input on University proposals to the University for Mauna Kea is lacking.

This became evident at a Public Hearing held by our Division of Forestry and Wildlife on December 13, 1982 for the purpose of receiving testimony on the proposed withdrawal of portions of the Mauna Kea Forest Reserve, specifically, the Mauna Kea Science Reserve and 7.0 acres at Hale Pohaku, site of new University of Hawaii Mid-Level Facilities.

The following concerns were expressed:

- a. Limiting public access to leased State lands;
- b. A desire to have more facts available including the terms of the University's General Lease;
- c. Knowledge of the University's "final plans" for the mountain;
- d. Limiting multiple use of Mauna Kea; and
- e. Achieving a balanced approach to use, rather than one user dominating the mountain.

A summary of the December 13, 1982 public hearing is provided with this submittal as Appendix D.

V. THE ENVIRONMENTAL IMPACT STATEMENT PREPARED FOR THE UK/NL TELESCOPE PROPOSAL:

On January 20, 1983, the Governor accepted the Final Impact Statement for the Mauna Kea Science Reserve Complex Development Plan (see Appendix E for acceptance letter and Appendix F, Summary appearing in Final EIS for Complex Development Plan).

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This document, as the title states is an EIS for the Complex Development Plan yet actually supercedes the formal plan. Included in this EIS are two facilities the University anticipates being constructed before 1990 - the UK/NL telescope and the UC TMT facility. Telescopes anticipated between 1990 and 2000 are not covered by this EIS.

In outline:

Existing telescopes	6
To be constructed 1980-1990 (C.I.T., UK/NL and U.C. TMT)	3
To be constructed 1990-2000 (sponsors unknown)	<u>4</u>
TOTAL BY YEAR 2000	13

This EIS is therefore intended by the University to fulfill EIS requirements for the Complex Development Report, the UK/NL telescope facility and the University of California TMT facility. Once accepted by the Governor, in staff view, it legally satisfies environmental requirements under Chapter 343 of the Hawaii Revised Statutes.

The Department of Land and Natural Resources has responded to the EIS Notice of Preparation, and various segments of the CDP. Additionally, numerous meetings between the University Program Managers, the consultant and our Department occurred.

We nevertheless continue to have concerns regarding the Final EIS for the "draft" Mauna Kea Science Reserve Complex Development Plan.

Our concerns encompasses many different areas and are summarized as follows. (Comments in full can be found in Appendix G)

A. ROAD IMPROVEMENTS:

1. Some questions regarding summit roads remain unanswered.
 - a. Is recreational use of roads to UK/NL, CALTECH telescope sites and to the proposed UC TMT facility expected?
 - b. Will these roads be paved?
2. Paving of the road is expected to increase traffic. This action will generate other diverse impacts. If paving is permitted, improvements should include:
 - a. safety features, such as guard rails.
 - b. run-off dispersion and erosion control measures.
 - c. a means of controlling off-road driving.
 - d. increased parking capacities.

- e. a winter maintenance program (a UH responsibility).
- f. covering up and/or removal of abandoned road sections.
- g. 2 lanes.
- h. run-away vehicle ramps.
- i. posted speed limits.
- j. an off-ramp for the existing Kilohana Picnic area.

B. POWERLINE ALIGNMENT:

1. Corridor "C1" (underground from Forest Reserve boundary to Hale Pohaku) is considered an acceptable powerline alignment. It is suggested that this alignment closely follow the old dirt road which runs along the East side of the new road. By doing so, disturbance is confined to areas previously disturbed; terrain is less rugged and from the Division of Forestry and Wildlife view, easier to dig. In addition, it is thought, that a corridor adjacent to currently used roadways will affect the Palila the least.
2. At the summit, powerlines to observatories should follow roadways rather than a direct line site-to-site.
3. We note Corridor A is and Corridor B can be avenues of illegal entry for the purposes of poaching and planting marijuana.
4. Historic Sites section should be notified of the final powerline alignment and be given sufficient time for review and comment prior to construction activity within the alignment.

C. PUBLIC ACCESS

1. Considerable concern has been expressed by the public as well as department staff. U.H. proposals are generally viewed as actions that will severely restrict public use or ultimately close Mauna Kea to the public.
2. In general, it is thought that emphasis should be placed on accommodating and facilitating public recreational use and enjoyment. Emphasis appears to be on tightening controls, and restrictions. The need for aggressive monitoring and controlled ticketing, and registration as well as the location of the proposed gate should be further discussed.
3. The statement in the Draft Management Plan Introduction, "Although available for all to enjoy, it is important that the qualities that make Mauna Kea an important scientific resource not be compromised by activities which may damage its environment," may be a fair statement from the astronomy point of view. However, it enforces the public's concern that their use and enjoyment of the mountain is being given only secondary consideration and that they may eventually be locked out or unduly restricted in their activities. This public concern was evidenced by the unanimous opposition

to the proposed withdrawal of the summit and Hale Pohaku lease areas from forest reserve status during a recent hearing conducted in Hilo. Further, it is common knowledge that the astronomical developments and related activities are almost totally responsible for the environmental impact in the area.

D. RESOURCE MANAGEMENT:

1. Comments indicate that impact on certain resources is not fully acknowledged and some impacts over emphasized. For example, impact on botanical resources as the result of telescope development is stated as minimal yet concern is expressed that casual hiking will adversely impact vegetation. Impacts on fauna related to public usage are to be controlled by implementation of the Management Plan. Division of Forestry and Wildlife staff indicates, "it is inconceivable that casual hiking and other public uses would have an appreciable impact."
2. Often reviewers take exception to the statements made:
 - a. The statement that ". . . since the species (Palila) is so rare, very few nest have ever been found anywhere within its habitat" is exaggerated and untrue. Only few nests have been found because very few people have actually looked for them. A scientist working in the Puu Laau area located and studied a fair number of active Palila nests.
 - b. "Construction will not be initiated during the palila breeding season." This is a poor concession, unrealistic and an accommodation invented to create awareness of this bird at the expense of expeditiously pursuing construction activities. This is inconsistent elsewhere when activities continue in other parts of the palila's critical habitat. (Military training, hunting, etc.) Nesting season is what counts.
 - c. Other comments address incorrect or incomplete information or outright omissions. Avian fauna can be more completely described than "some game birds . . ." Under resources to be managed, feral animals and mouflon are omitted; Rio Grande turkey and Erckles francolin should also be included.
 - d. Several comments address present mis-management, in that pets, especially at construction housing sites should be only temporary, and cats should be prohibited. It is noted that UH desires to prevent the introduction of undesirable plants. This comment is followed by a request that poppies planted at Hale Pohaku be removed before they spread beyond control.

E. EROSION CONTROL:

1. Statements on erosion control may be considered biased and misleading to some. Washouts and gullying on sand and under cones has resulted from runoff concentrated by the roadway and directed away from natural drainages.
2. Paving will eliminate present erosion of the road bed, however if the runoff problem is not corrected, erosion on the slopes will continue. The reviewer notes pavement being more impermeable than the unpaved road surface, runoff will increase.
3. The reviewer further notes, the seriousness of erosion problems due to surface runoff by roads and mitigating measures may not be fully considered (in the EIS).

F. POSSIBLE POLLUTION OF LAKE WAIU AND POHAKULOA SPRINGS:

1. Several divisions have expressed concern regarding downslope movement of sewage effluent from telescope facilities. It is recommended that baseline studies be provided and followed by regular scheduled monitoring of both Lake Waiu and Pohakuloa Springs.

G. CONSTRUCTION ACTIVITIES:

1. Concrete Batching Plant: With future construction activities projected at least until the year 2000, the batching plant would hardly be a temporary affair. Batching should be done at Hale Pohaku.
2. Description of the Construction Phase: Pavement on the summit road from Hale Pohaku on up would be destroyed by the "walking up" of any heavy equipment needed in the construction of the 7 new observatories planned by the year 2000. What accommodations are there for getting heavy equipment up there?
3. Clarification should be given to statement "birds are discouraged". How? Harassment would be illegal.

H. HALE POHAKU FACILITIES:

1. The elaborate and large mid-level facilities under construction at Hale Pohaku reportedly accommodates 59 people and it is estimated that by the year 2000 it will have to accommodate 120 to 136 people. A limit seems appropriate.
 - a. Questions and Concerns Relating to the Information Station

Who will man the station? This is not elaborated on. Someone knowledgeable in the field of astronomy and natural history would be the correct way to staff a facility like this. Water should also be available to the public here.

I. FIRE CONTINGENCY PLAN:

1. It is stated that a fire plan for the summit and Hale Pohaku is being developed in cooperation with Hawaii County Fire Department and Department of Land and Natural Resources. We have no knowledge as to who in Department of Land and Natural Resources are they working with?

J. HISTORIC SITES:

1. The Historic Sites section conditionally concurs with the developer's proposed actions which state:

"The construction of new telescopes have the potential of adversely affecting the integrity of any unknown archaeological features. In order to protect these features, the following mitigating measures may be taken:

- a. An intensive archaeological survey may be undertaken if it appears that one of the sites might be affected by telescope construction;
- b. Wherever possible, construction and related activities on or in proximity to known archaeological sites will be avoided; and
- c. Consultation with the State Historic Preservation Office will be undertaken prior to any telescope construction in areas of known sites." (EIS, 1983:174)

We note that these proposed actions (a, b, and c) refer only to known sites of the area, whereas the preface statement refers to the "potential of adversely affecting the integrity of any unknown archaeological features (EIS, 1983:174).

Thus, we recommend that the following statements be included as proposed actions (d and e):

- d. Prior to any construction activity, an archaeological reconnaissance survey be undertaken in areas of proposed development which had not been previously surveyed.
- e. In the event that any unanticipated sites or remains such as artifacts, shell, bone or charcoal deposits; human burials; rock or coral alignments, pavings, or walls are encountered during construction, the applicant will stop work and contact the Historic Sites Section of the State Historic Preservation Office (548-7460) immediately.

K. THE NATURAL AREA RESERVE:

1. Comments on statements and assumptions regarding the Natural Area Reserve are specific:

- a. Final EIS, p. 8 Natural Area Reserve Commission
The 1977 Department of Land and Natural Resources Mauna Kea Plan does not designate the Natural Area Reserve System (NARS) Commission as the agency responsible for the management of the Mauna Kea Ice Age Natural Area Reserve. (See also comment on p. 63 below.)
- p. 59 C. Assumptions
The NAR is already regulated by Department of Land and Natural Resources through Department Rule 209. Whether or not the Science Reserve lease is removed is of no consequence.
- p. 63 4. Historic/Cultural/Natural History
Management of the Adze Quarry or any other feature of the NAR, including Lake Waiau, is not the responsibility of the NARS Commission. According to HRS Chapter 195, the "department" has that responsibility. Jurisdiction responsibilities also have been allocated to the "department" be statute.
- p. 70 6.0 Mauna Kea Ice Age Natural Area Reserve
(See comment above to p. 8 regarding management.)
- p. 178 The NARS Commission approved of the issuing of a Special-Use Permit, with special conditions, for batching activities at the "skiers parking lot" on November 4, 1982. It is the Land Board that actually issues the permit (in this case probably with the Conservation District Use Application approval.)

2. The NARS Commission function and its relationship to the Department need to be clarified, as the above would indicate. Chapter 195, Hawaii Revised Statutes, clearly

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defines the functions and responsibilities of both the Department and the Commission. With the exception of permitting uses, in which the Commission has final authority, the Commission has only an advisory function. The setting aside of the reserves; formulation, implementation and enforcement of the regulation; and control and management of the reserves are functions delegated by statute to the Department.

3. Also requiring clarification are statements referring to the removal of the spur road to Lake Waiiau contained in responses to reviewers' comments (pages 201, 252, and 280 in Part XVI of the EIS). Closing of the lake road is stated to be NARS Commission decision. In fact, the removal of the road and replacing it with a trail are to comply with the 1977 Department of Land and Natural Resources Mauna Kea Plan (pages 8 and 6, respectively).

L. DEPARTMENT OF LAND AND NATURAL RESOURCES/UNIVERSITY OF HAWAII JURISDICTIONS:

1. Jurisdictions should be clearly defined, especially as they relate to areas outside the Science Reserve Boundary and the Hale Pohaku area assigned to UH.
2. It is suggested that the summit access road remain under the jurisdiction of Department of Land and Natural Resources to protect hunting interests, access to the Natural Area Reserve, and other activities beyond the scope of UH.
3. All Department of Land and Natural Resources rules should continue to apply.
 - a. Of particular interest is the comment provided by our Division of State Parks.

We note this final EIS is based on the Mauna Kea Science Reserve Complex Development Plan and the "Draft" Management Plan. The EIS clearly indicates both these plans are in the draft stage and the final plan will require agreements among various State agencies, the University of Hawaii Board of Regents and the BLNR. A summary of unresolved issues is given in Part XV, page 179.

While we have no objections to the subject submittal as a draft EIS and we feel a lot of good effort has gone into this document, we strongly recommend disapproval of any EIS based on draft plans with unresolved issues.

- VI. COMMENTS ON UK/NL TELESCOPE: Staff notes that both general and specific comments on this telescope remain the same as in the previously approved Caltech telescope. Reviews of the subject Conservation District Use Application generally indicate a need for a complex development plan and an assessment total facility

impact on Mauna Kea. Some comments indicate "no objection" yet on the other hand, a specific request for detailed wildlife range, life requirement and ecological significance studies is suggested in order to formulate mitigating measures for anticipated impacts. This is an assignment best undertaken as an element of the Complex Development Plan.

VII. UNIVERSITY OF HAWAII MAUNA KEA SCIENCE RESERVE COMPLEX DEVELOPMENT REPORT.

It is apparent that the Master Plan, titled, a Mauna Kea Science Reserve Complex Development Plan is under preparation as of this writing. Elements of this plan are found in the now accepted EIS for the plan.

As noted in the Chronology, a series of meetings between the University and Department of Land and Natural Resources staff has provided the opportunity for "first hand" exchange of information and expression of concerns relating to the management of the science reserve and the preparation of the Master Plan document. In these meetings, department staff have expressed verbally the same concerns now expressed in writing.

As stated at the public hearing on the subject application, the goal has been to have one document in which all the issues will be addressed at one time.

To date, in addition to the meetings held during the past six months, the Department has received for review and discussion, the following items relating to the complex development plan:

<u>Received on</u>	<u>Item</u>
3-24-82	University of Hawaii Program Summary and Research Development Plan for Mauna Kea Science Reserve and Related Facilities (provided for review with Conservation District Use Application HA-1430, Hale Pohaku Mid-Level Facilities)
7/82	Mauna Kea Science Reserve Master Plan Environmental Impact Statement Notice of Preparation
9/13/82	University of Hawaii, Preliminary Findings of Mauna Kea Science Reserve Master Plan, Schedule of Work Flow and Milestone Chart
9/21/82	Mauna Kea Science Reserve Master Plan Alternative Powerline Alignment maps
9/21/82	Mauna Kea Science Reserve Master Plan Outline for Management, Monitoring and Enforcement
11/7/82	Mauna Kea Science Reserve Complex Development Report <u>Draft</u> Environmental Impact Statement

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Mauna Kea Science Reserve Complex Development
Report Final Environmental Impact Statement

Although, an environmental impact statement is an information and disclosure document, it may also serve another function as a planning or fact finding document used to select alternatives or refine a proposal. This may be the case in this instance and the additional function may be appropriate and acceptable. However, an EIS, in and of itself, is not a Complex Development Plan.

Nonetheless the fact remains that the objective has been to develop a single Conservation District Use Application or master plan acceptable to the BLNR. To date, this has not been accomplished.

VIII.A PROPOSAL FOR A PLAN OF ACTION:

At this point, Staff is obliged to propose a plan of action for the near future.

Several alternatives were discussed during meetings between the University and Department staff.

As such, we take the liberty of suggesting a brief outline of events which, from a staff perspective, should occur.

- a. The University should provide to Department of Land and Natural Resources and the Board of Land and Natural Resources a BOR approved Mauna Kea Science Reserve Complex Development Plan.
- b. Should inconsistency occur with the BLNR 1977 Mauna Kea Plan, public hearings on the Island of Hawaii should follow. The University of Hawaii should be responsible for establishing these hearings in conjunction with the BLNR.
- c. A joint meeting of the Board of Land and Natural Resources and the University of Hawaii Board of Regents should occur following the public hearing thus providing the opportunity to fully discuss all alternatives. The primary objective should be to achieve consistency between the BLNR 1977 Mauna Kea Plan and the BOR Mauna Kea Science Reserve Complex Development Report.
- d. Should consistency prove to be a problem, options remain such as: 1) modification of the University's BOR approved plan, 2) an amendment to the Board of Land and Natural Resources 1977 Mauna Kea Plan, or 3) Land Department staff action consistent with the BLNR 1977 Mauna Kea Plan.
- e. To implement these options, staff feels the following should be considered:
 1. Option A. University presents a modified plan to the Board of Land and Natural Resources;

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2. Option B. University proposes an amendment to the Board of Land and Natural Resources 1977 Mauna Kea Plan.
- f. Board of Land and Natural Resources takes action on either Option A or Option B.
 1. If Option B is proposed and then rejected by the Board of Land and Natural Resources, Option A will be necessary, or staff will proceed to use the 1977 BLNR Mauna Kea Plan as guidance.
- g. Implement the Mauna Kea Science Reserve Complex Development Plan, in one of two ways:
 1. Submit one Conservation District Use Application (CDUA) for the Mauna Kea Science Reserve Complex Development Plan. If approval is given, submit construction plans separately for each facility proposed; or
 2. Submit one Conservation District Use Application for each new facility proposed. If approved, submit construction plans for review and approval.

To summarize, we maintain that approval of the subject Conservation District Use Application for the proposed UK/NL facility is inappropriate at this time for the following reasons:

1. The Board in its approval of Conservation District Use Application File No. HA-1492 has set a condition that states no further commitment of land use involving major improvements within the Mauna Kea Science Reserve shall be considered until such time as the University's Mauna Kea Science Reserve Complex Development Plan is complete.

The current proposal is a commitment of land use involving a major improvement. To date, a completed Complex Development Plan has not been provided to the DLNR. As such, in staff's perspective, this fact precludes a recommendation for approval at this time.
2. The written position by the Chief Executive of Hawaii County (Appendix B) whereby the University Plan should be subject to BLNR approval.
3. The University provide justification to deviate from their written response to the Chief Executive of Hawaii County that a single Conservation District Use Application for the Science Reserve be accomplished (Appendix C).
4. Concerns expressed in review of Public Input (Section IV) and the Final Environmental Impact Statement (Section V) remain unanswered.

As such, Staff recommends as follows:

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RECOMMENDATION:

- A. That this application for construction and operation of the UK/NL Millimeter Wave Telescope and temporary use of an existing unpaved parking area for a concrete batching plant in the Protective and Resource Subzones of the Conservation District in the Mauna Kea Science Reserve, TMK: 4-4-15: 9, Hamakua, Hawaii be denied for the following reasons:
1. No further commitment of land use within the Mauna Kea Science Reserve is to be considered until such time as the University's Mauna Kea Science Reserve Complex Development Plan is completed.
 2. The written position by the Chief Executive of Hawaii County (Appendix B) whereby the University Plan should be subject to BLNR approval.
 3. The University provide written justification to deviate from their written response to the Chief Executive of Hawaii County that a single Conservation District Use Application for the Science Reserve be accomplished (Appendix C).
 4. Concerns expressed in review of Public Input (Section IV) and the Final Environmental Impact Statement (Section V) remain unanswered.
- B. To ensure success in achieving the desired goal of completing an acceptable Complex Development Plan it is recommended the course of action, spelled out in detail under item VIII, a proposal for a plan of action, of the analysis, be followed.
- C. This recommendation, if upheld by the BLNR, does not prejudice the University from immediate re-application to the Department for this or any other telescope.

Respectfully submitted,



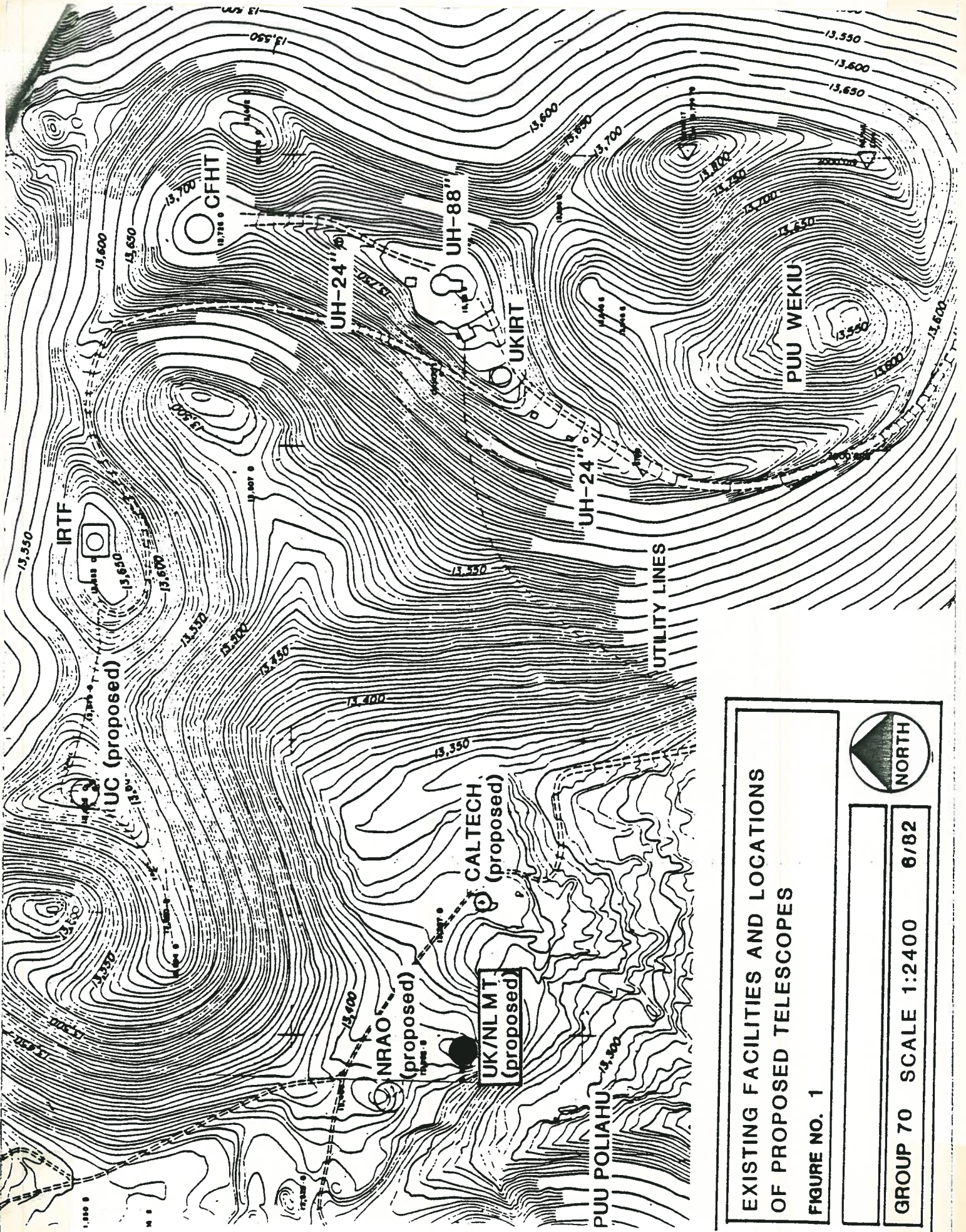
ROGER C. EVANS
Staff Planner

Attachments

APPROVAL FOR SUBMITTAL:



SUSUMU ONO, Chairman
Board of Land and Natural Resources

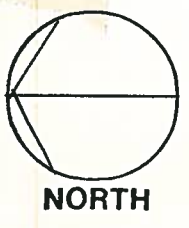


EXISTING FACILITIES AND LOCATIONS
OF PROPOSED TELESCOPES

FIGURE NO. 1

GROUP 70 SCALE 1:2400 6/82

NORTH



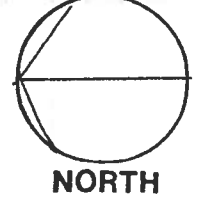
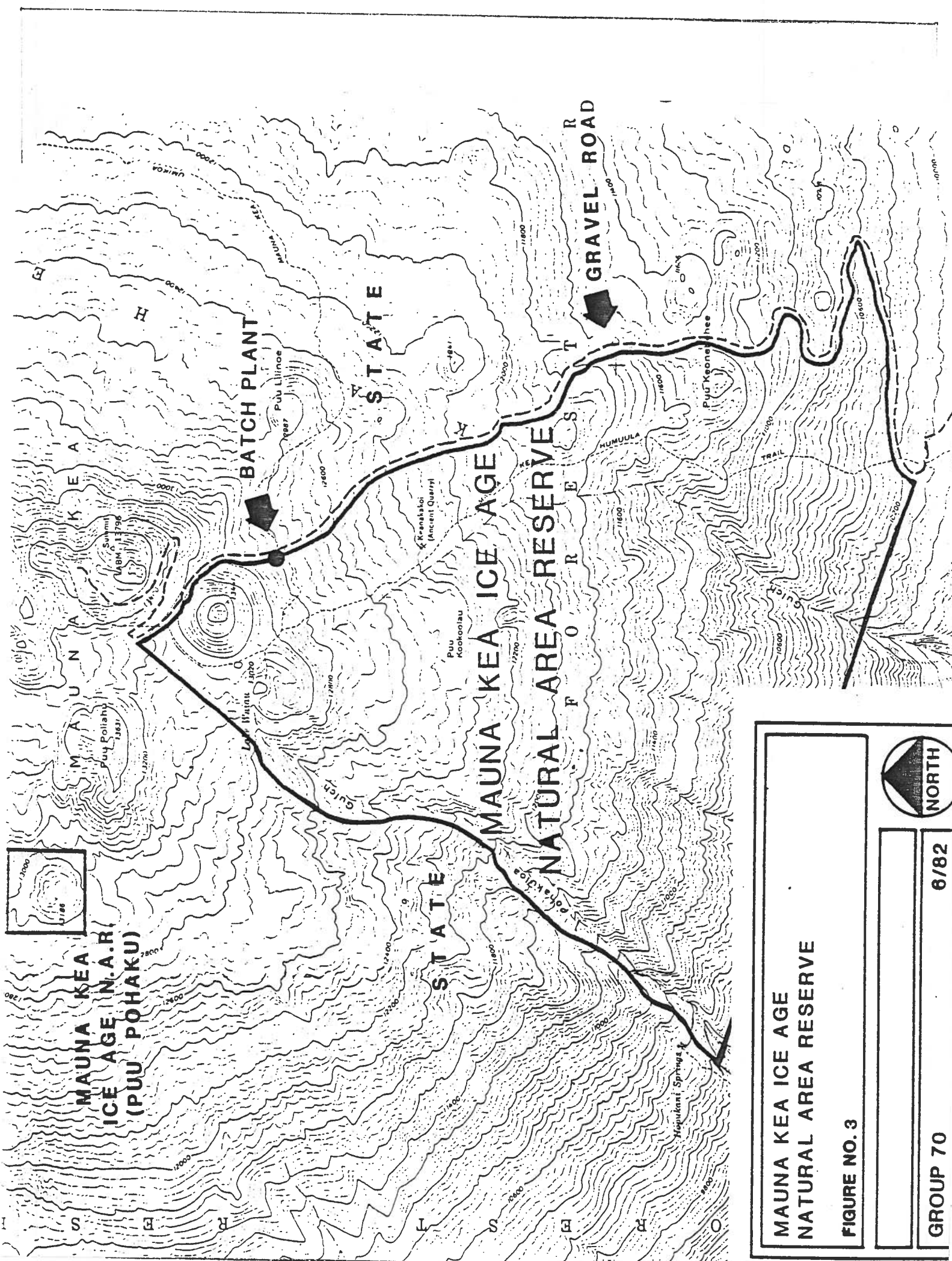
CDUA no. HA-1515 Exhibit C
 APPLICANT University of Hawaii
 AGENT none
 TMK 4-4-15:9
 SCALE _____

SUBZONE



- PROTECTIVE
- RESOURCE
- LIMITED
- GENERAL

PROJECT AREA

EXHIBIT C



CDUA no. HA-1515 Exhibit E
 APPLICANT University of Hawaii
 AGENT none
 TMK 4-4-15:9
 SCALE -


SUBZONE  PROTECTIVE RESOURCE LIMITED
 GENERAL PROJECT AREA
 EXHIBIT E

**MAUNA KEA ICE AGE
NATURAL AREA RESERVE**

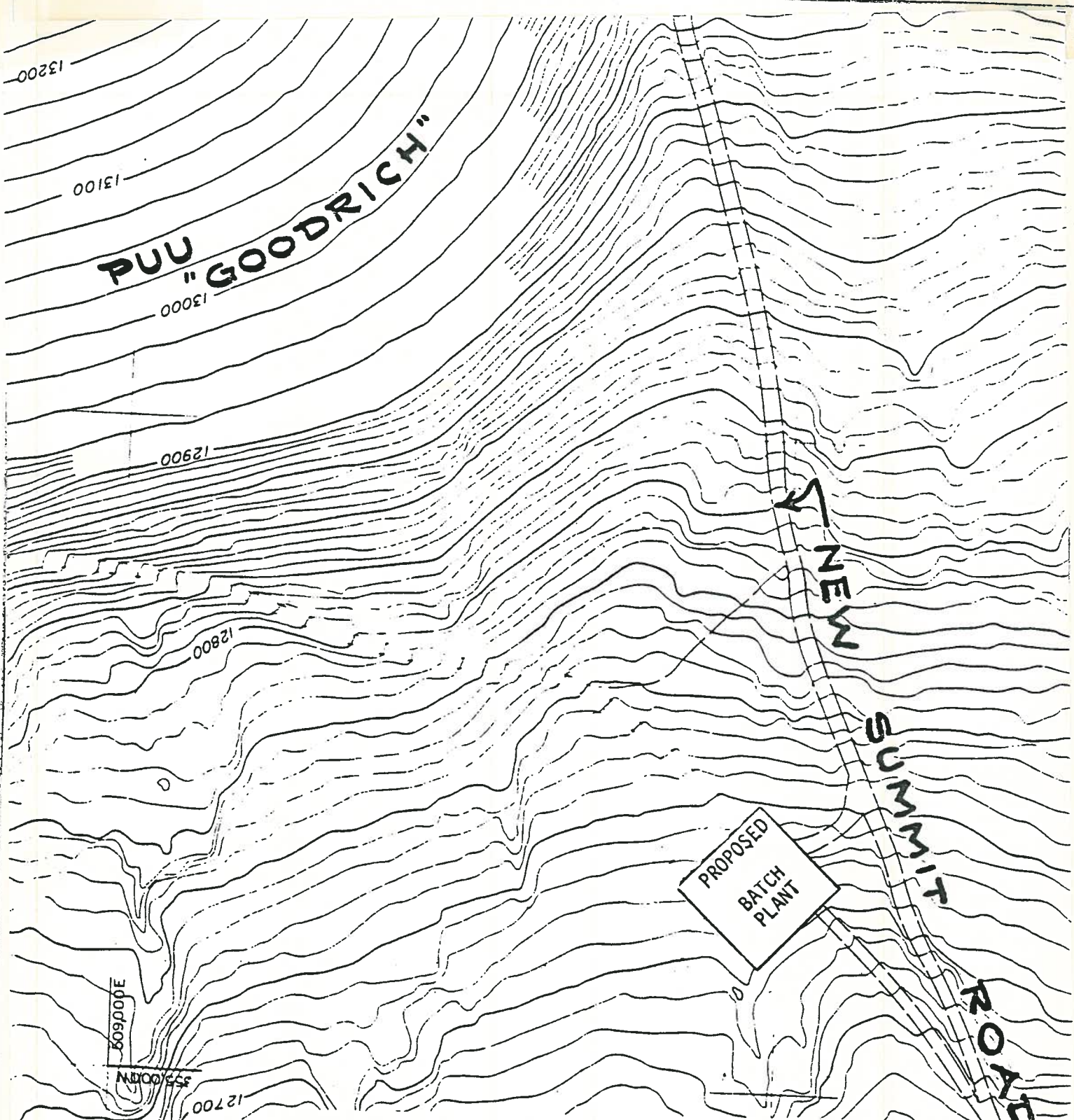
FIGURE NO. 3

GROUP 70

6/82



NORTH




PROPOSED CONCRETE
BATCH PLANT

FIGURE NO. 2

GROUP 70

6/82




CDUA no. HA-1515 Exhibit F.

APPLICANT University of Hawaii

AGENT none

TMK H-4-15:9 1202

SCALE -

SUBZONE




-  PROTECTIVE RESOURCE
-  LIMITED
-  GENERAL PROJECT AREA

EXHIBIT F

UK/NL

CIT

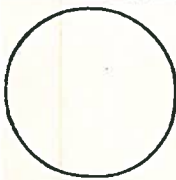


CDUA no. HA-1515, Exhibit G
 APPLICANT University of Hawaii
 AGENT none
 TMK 4-4-15: par. 9
 SCALE —

SUBZONE



PROTECTIVE
 RESOURCE
 LIMITED
 GENERAL
 PROJECT AREA



NORTH

EXHIBIT G