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GOVERNOR OF HAWAII

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P. O. BOX 621
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FILE: HA-4/17/90-2380
DOC.: 8117E

MEMORANDUM

TO: The Honorable Marvin T. Miura, Director
Office of Environmental Quality Control

FROM: William W. Paty, Chairperson
Board of Land and Natural Resources

SUBJECT: DOCUMENT FOR PUBLICATION IN THE OEQC BULLETIN - ENVIRONMENTAL ASSESSMENT FOR CONSERVATION DISTRICT USE APPLICATION HA-2380 for Modification Expansion of a Telecommunication Facility, Kaupulehu Crater, North Kona, Hawaii TMK: 7-2-01

The above mentioned Chapter 343 Document was reviewed and a negative declaration was declared based upon the environmental assessment provided with the CDUA.

Please feel free to call me or Ed Henry of our Office of Conservation and Environmental Affairs, at 8-7837, if you have any questions.

WILLIAM W. PATY

Enclosure

126

1990-06-08-HA-FEA

FILE COPY

CONSERVATION DISTRICT USE APPLICATION

For modification and expansion of an existing facility

KAUPULEHU CRATER, KAUPULEHU FOREST RESERVE, NORTH KONA, HAWAII

TMK 7-2-01:1

Presented by:

WEST HAWAII ELECTRONICS Inc.

P.O. BOX 2969
KAILUA-KONA, HAWAII 96745

CONTENTS

I. Description of Parcel

A. Existing Structures/Use

The parcel is located on mount Hualalai on the island of Hawaii, within Tax Map Key 7-2-01. The parcel in general is part of the Kaupulehu Forest Reserve, while the specific site is located in the designated P (protected) subzone. The site is located at the 6100 foot elevation. At present the use of the parcel is limited to unmanned communication facilities of which there are two. One consists of a 100' by 100' lot owned by Hawaii Electric Light Company on which sits a passive microwave reflector. (see exhibit C). The other is a 20' by 20' fenced area containing two antenna towers, a 8' by 10' building, propane gas tanks, and other related equipment operated by West Hawaii Electronics Inc. (applicant) (see exhibit C). There are two other facilities of a similar nature which have been approved by the BLNR, but have not been constructed at this time.

B. Existing Utilities

At this time there are no existing utilities of Any kind located within the parcel. The BLNR has approved the construction of electrical power lines to be implemented in the near future which will service the site.

C. Existing Access

The site is accessed by the existing Huehue - Hualalai trail, as well as a side road that was built to construct the passive microwave reflector used by Hawaii Electric Light Company.(see exhibit B). The road is basically a jeep trail requiring the use of a 4-wheel drive vehicle for access. The trail is accessed through a locked gate located at the top of Koloko Subdivision, which leads into a telephone maintenance road, then through another locked gate leading into the Kaupulehu Forest Reserve.

D. Vegetation

The general area is described as a high altitude Metrosideros forest. No rare or protected species of plants have been found during previous surveys. The site of proposed expansion activity is largely covered by scrub consisting of ohelo berry, pukiawe, na'ena'e, sedges, and a few alien species of weeds. There are several 'ohia lehua trees approximately 5 to 7 feet in height located within the proposed expansion area, however they will not be affected as they will merely be fenced in. The actual area of disruption will only be six feet by six feet. Appendix A lists-the various species of vegetation found within the general area (see Appendix A).

E. Topography

The general parcel is on a ridge running in a general east-west direction, and sloping off sharply in the north-west directions. The actual site is on a small ridge line running again in a general east-west direction, and is located within 30 feet of the rim of Kaupulehu Crater. The site area is relatively flat to within 1 foot plus or minus. No change in site topography will be made.

F. Shoreline Area

The site is not located within the Special Management Area (SMA) pertaining to shoreline setback. The site is located 10 miles from the shoreline, and is at a 6100 foot altitude.

G. Existing Covenants, Easements, Restrictions

There are no known easements over the site in question. The site area is designated as a Protected subzone, and as such is subject to the restrictions and covenants of a Conservation District.

H. Historic Sites Affected

An archaeological survey performed on September 18, 1988 within the site area concluded that although the access trail may have had ancient origins no historical sites were observed or expected. It was further concluded that no subsurface archaeological deposits were likely, and that further construction activities would have no effect on any historical or archaeological resources.

II. Description of Activity

West Hawaii Electronics Inc. was granted a conditional use permit by the department on Land and Natural Resources in 1979 (HA-5/8/79-1140) to erect and operate a unmanned radio communications facility within the Kaupulehu conservation district. The purpose for this facility was and still is to provide wide area 2-way and one-way radio communications for the business community of West Hawaii.

The facility consists of two antenna support towers, a building to house the equipment, propane gas tanks, power generating equipment, and a 20' by 20' surrounding fence.

The general type of equipment employed is referred to as radio repeaters. A radio repeater does,as its name implies,receive a radio transmission on one frequency and simultaneously retransmit the signal on another frequency. Under normal circumstances a radio transmission travels in a line of sight path. If the transmission path is blocked, the radio range will be short. At a high altitude the line of sight path distance is greatly increased.

The Kona area has generally been the hub of commercial activity in the West Hawaii region for some time. The expansion of activity has been in the Waimea, Kawaihae, and Waikoloa direction, especially in the area of resort development. As it is, a mobile radio user in the Kona area cannot communicate with an associate mobile in the Waikoloa area. This is due to the fact that the terrain (Hualalai Mountain) blocks the radio path. This presents a problem to the various businesses trying to service both areas. As an example a plumbing company may send out a service truck from Kona to do a job in Waikoloa. The service personnel upon completing the job would naturally return to Kona. If another job comes up while the service truck is in return route, the service person will not know about it until returning to the office in Kona. This necessitates a return call to the Waikoloa area. As this represents a 45 minute drive one way, there is an obvious lack of efficiency. The high cost of labor, fuel, and vehicle maintenance necessitates that a business must be run efficiently if it is to survive in a very competitive environment.

The repeater system with its advantage of wide area line of sight view allows a clear radio communications path from one side of the mountain (Kona) to the other (Waikoloa) which would not be possible otherwise. As it is there are extremely few sites that are available that have a clear view of both sides of the mountain. The Kaupulehu site is one of these.

The present facility services businesses in the fields of transportation, tourism, construction, security, cable TV, plumbing, towing, ranching, agriculture, surveying, and much more. The facility has allowed many businesses to utilize their resources much more efficiently with savings in labor, fuel, and equipment ware. The system has definitely had a positive economic effect overall. The radios within the system have been used on numerous occasions to report automobile accidents, fires, job site injuries, and other activities which have benefited the community in general. The facilities are

also used by the American Red Cross to notify volunteers for disaster relief purposes, and to conduct volunteer, readiness drills (see Appendix B for a list of users / activities conducted).

The purpose of this application is to allow an expansion of the existing facility, bring it up to specification with the department's conditional use limitations after the fact, and to consolidate the two present towers into one larger, single unit. It is further proposed to allow the deployment of microwave radio equipment, the purpose of which follows.

In recent years there has been an increased demand to provide telephone communications in conjunction with the regular 2-way dispatching service now provided. Under normal circumstances this is readily provided to the user through the use of a telephone interconnect integrated into the radio repeater. Although the Kaupulehu site provides excellent coverage by virtue of its prime location, there are no telephone lines servicing it. It is possible however to provide telephone service via a radio link which substitutes for the actual line itself. To provide a reasonable number of telephone lines a microwave radio system is the most economical means. The microwave system consists of a radio transmitter / receiver operating on a single frequency in such a manner as to provide a number of sub-channels. Each of these sub-channels is used to provide a wireless telephone "line". By this method a single microwave system can provide for 10, 20, or more telephone circuits.

Because of its very high frequency and very low power output a large dish type of antenna is required. Typically these antennas range in size from 2 feet to 12 feet for most applications. We have specified two 6 foot antennas, although in actual use we would use a 4 foot antenna. The 6 foot antenna would be used if mandated by the Federal Communications Commission to solve certain cases of interference in congested areas.

With the deployment of a microwave system we would be able to provide radio telephone services to the site users. A user would be able to use one radio to provide regular dispatching communications between units, as well a to place and receive telephone calls. As it is now a user would have to carry two different radios — one to call among other units, and one to make and receive telephone calls.

This application also is to redesignate use of the facility from single user to that of a cohabitation facility. Because of the sensitive nature of the area, and the desire to impart as minimal an impact upon the area as possible, the trend in unmanned radio facilities has been to incorporate cohabitation. This would allow another user to share the facilities without having to construct an additional facility within the same area. The allowance of another user would involve the consent of the land owner, as well as a cost sharing arrangement with the present user / developer.

III. Plans

A. Area Plan (see exhibit A1, A2, A3)

The area is located in a forest reserve designated zone, and as such lies in a remote, undeveloped area. Further the immediate area is designated as a protected subzone. The present use of the area has been limited to unmanned radio communications facilities. The surrounding land owner is the same as the site owner: The Bernice Pauahi Bishop Estate. Future use is basically conservation, with possible activities including nature observation, hunting, and communication facilities. The existing facilities at this time include a passive microwave reflector contained within a 100' by 100' lot owned by Hawaii Electric Light Company, and a 20' by 20' fenced area containing two antenna towers, a 8' by 10' building, propane gas storage tanks, and other equipment related to an unmanned radio communications facility operated by the applicant, West Hawaii Electronics Inc. Future plans include a 100' antenna tower to support microwave antennas for the State of Hawaii, and a 130' antenna tower and related equipment for Motorola Communications International Inc. Under a Conditional Use Permit granted to the State of Hawaii it is planned to provide electrical utility service to the site.

B. Site Plan (see exhibit D)

The site is located on Bishop Estate land parcel TMK 7-2-01:1 and located near the rim of Kaupulehu Crater. Total area of the land parcel is 7000 acres.

The site will be an extension to an existing 20' by 20' fenced area which will increase its size to 20' by 40'. The additional area will surround a 80' antenna tower structure. The site land area within the proposed expansion area is relatively flat to within +/- one foot, and is vegetated mostly with scrub consisting of ohelo berry, pukiawe, na'ena'e, sedges, and a few alien species of weeds. There are a few small ohia lehua trees within the site, however these will not be affected as they are merely being fenced in to protect the site from feral animals and vandalism.

There are no known easements through the site. Access to the site is principally by means of the Huehue - Hualalai trail, an unimproved cinder based road requiring the use of a four wheel drive vehicle, and also a side trail of similar nature presumably made to construct the HELCO microwave reflector.

There are presently no utilities of any kind servicing the site although it is anticipated that the State will be bringing power utility lines to the site to service their microwave system.

C. Construction Plans (see exhibit E, F)

Construction plans are an extension, and expansion to an existing facility. This will include extending the existing 20' by 20' fenced area to 20' by 40'. The extended

enclosure will not require any grading as it is relatively flat to within +/- one foot. Surface vegetation will not be removed except for an area of 6' by 6' which will be excavated to a depth of 5' to provide a concrete footing for a new 80' antenna tower. The additional area enclosure is intended to keep out feral animals, and to limit vandalism or entry by unauthorized personnel. Fencing will consist of a 6' barbed wire or chain link configuration supported by appropriate fence poles.

The present building structure is planned to be enlarged from its present dimensions of 8' by 10' to 11' by 10'. This will be accomplished by extending the roof line approximately three feet to the south-west side of the structure. Building construction materials will be the same as that existing; wood framing with a painted sheet metal exterior, wood roof framing with a plywood roof. Additional solar panels will deployed on the roof top. Also a battery storage structure will be added to the north-eastern side of the building. Again this will be an extension of the existing building consisting of a wood frame / sheet metal construction of dimensions 2' by 8', 4' in height, with a flat roof.

The gas storage tanks and thermal electric generators will be relocated as shown on the site plan. These units are not enclosed but rather sit on portable concrete slabs.

With the deployment of a central 80' antenna tower, the existing two 40' tower structures will be removed from the site.

The new antenna tower will consist of an 80' steel structure of a free standing design. It will be implanted in an excavated hole of approximately 5' by 5' by 5' dimensions, and finished with a 6' by 6' concrete cap. Antennas will be deployed at various heights of the tower as shown in the construction plans. Antenna cables will be routed overhead to the equipment building.

D. Maintenance Plans

General facility maintenance will consist of the following:

1) Checking and servicing of storage batteries
2) Resupply of propane gas tanks
3) Inspection of building for weathering and general wear and tear.
4) Inspection of antenna tower, antennas and cables
5) Checking and adjusting as necessary transmitters and receivers for proper performance.
6) Checking antenna tuning
7) Touch-up painting
8) Fence repairs and maintenance
9) Inspection and testing of power generating equipment

General maintenance is normally done on 2 week intervals as average, and at 4 week intervals as a maximum. Other site visits will occur as necessary for emergency repairs such as equipment failure, power failure, antenna problems, etc.

Certain items such as antennas, batteries,and antenna cables have a limited life, and as such will be replaced as needed.

E. Management Plans

The facility does not utilize or exploit any animal, plant, or mineral resources.

F. Historic or Archaeological Site Plan

No historic or archaeological sites are known to exist in the general area.

IV. Subzone Objective

The applicant has operated an unmanned radio communications facility within the subzone under a conditional use permit from the DLNR for the past 10 years. I believe that we have demonstrated that the overall impact upon the subzone has been minimal. No significant impact upon the animal and plant life has been observed or reported. No historical or archaeological sites have been observed or recorded. It is not anticipated that the proposed expansion will change these conditions.

V. Environmental Requirements / Assessment

A. Identification of Applicant

The applicant is West Hawaii Electronics Inc., a corporation of the state of Hawaii. Its main office is located at 74-425 Kealakehe Parkway, No. 12, Kailua-Kona, Hawaii 96740. The applicant is involved in the sales and service of communications and navigation equipment servicing the Land Mobile as well as the Marine interests. The applicant has been operating an unmanned radio communications facility within the conservation subzone for the past 10 years under CDUA HA-5/8/79-1140.

B. Approving Agency

Pursuant to a conditional use of a protected subzone of a conservation district, the approving agency is the Department of Land and Natural Resources and its Board of Directors chaired by Mr. William W. Paty.

C. Agencies Consulted

The Department of Land and Natural Resources of the state of Hawaii.

D. General Description

1. Technical

The application is for expansion of an existing unmanned radio communications facility. The facility will increase its building size from 8' by 10' to 11' by 10'. It will add an additional 2' by 8' by 4' structure to house storage batteries. It will erect a new 80' antenna tower deploying a variety of communications antennas and two microwave dishes. An additional 20' by 20' area will be fenced in around the new tower structure. The two existing antenna towers (40') will be removed. The facility will cater to the interests of the business community in particular. It will provide wide area communications which would not be possible without the use of such a facility. Primary frequencies used will be in the 150 to 160 MHz, 460 to 470 Mhz, and 806 to 866 MHz bands. The microwave system will be operated in the 1.8 GHz band. Power for the facility has been provided by solar energy and through the use of propane fueled catalytic thermal energy generators. A propane fueled motor driven generator will provide back-up power. Power is stored in storage batteries.Propane was chosen as the most ecologically safe fuel, and the least potential contamination hazard.

2. Economic

The existing facility has catered to the communications needs of the business community for the past 10 years. The radio facility is used to provide communications

over a wide area that would not be possible under normal circumstances. Normally a radio wave travels in a straight line of sight omnidirectional pattern. Any obstacles of a large size, such as a hill or mountain, will disrupt the radiation pattern making communications difficult or impossible. In the West Hawaii area normal radio to radio communications from a unit in Kona to a unit in Waikoloa or Waimea is not possible because the radio waves are blocked by the mountain. This can create a problem as demonstrated by the following scenario: ABC service company sends out a service truck from its office in Kona to a job site in Waikoloa to perform service on a piece of equipment. After completing the job the truck returns to Kona. While in transit the office gets another call for another service job in the same area. Unless the office can communicate with the service truck immediately the service truck will have to make a second trip back to the Waikoloa area. As this represents a 45 minute ride each way valuable labor resources, vehicle wear and tear, and fuel is wasted. This problem is solved through the use of radio communications repeaters. A repeater receives a radio signal on one frequency while simultaneously transmitting (repeating) the signal on another frequency. From its high vantage point at 6100 feet on Hualalai Mountain our repeater facility is able to provide clear communications to units on both sides of the mountain.

Communications is a valuable resource to the business community. At present we have 70 companies that utilize our communications services provided from the Kaupulehu site. These companies utilize over 300 2-way radios, 50 pagers, and 17 radio repeaters. This equipment represents an investment well in excess of a quarter of a million dollars. The users are business people who depend upon communications services that we provide them to efficiently carry out their business activities. Any disruptions could be financially damaging with great economic impact. Companies such as taxis cannot operate at all without radio communications. Expansion of the facility will allow us to continue to provide the needed communications service to present and future business users. Discontinuance of the service would put people out of work.

3. Social Characteristics

Over the last 10 years of service, the users of the existing facility have used their radios not only to run their business in an efficient manner, but as an indirect benefit to the community as a whole. The radios in the system have been used on numerous occasions to report automobile accidents and help dispatch fire rescue personnel and police. The radios have been used to report fires, and to coordinate fire fighting activities as well. The radios have been used to report job site accidents and to dispatch ambulance services. The radios have been used to coordinate rescue efforts in diving accidents. The Kaupulehu facility is utilized by the American Red Cross to dispatch its service volunteers in times of pending disasters, as well as used to facilitate readiness drills and exercises. The radio system has been used every year by the Iron Man Triathlon to coordinate its medical teams. In general the existance of the facility has had positive social impact upon the community. Continued use and expansion will further this impact.

4. Environmental Characteristics

The site is located in a high altitude Metrosideros forest and borders the Kaupulehu Crater rim. The general area is designated as the Kaupulehu Forest Reserve

Conservation District, and the specific site is a protected (P) subzone. The ground is comprised of loose cinder material and thin pahoehoe lava layers, with fine cinder material acting as "soil" for the area vegetation. Area vegetation consists largely of Ohia Lehua trees with underlaying shrub consisting of ohelo, pukiawe, kukae-nene, na'ena'e, sedges, and a few species of alien weeds. The actual site of expansion will be on a previously cleared 20' by 20' fenced area devoid of vegetation, and will include an additional 20' by 20' area to be fenced in but not otherwise disturbed except for a 6' by 6' area excavated to provide an antenna tower support base. The exact area to be disturbed consists of ohelo seedlings and sedges only. Impact on the area vegetation will be extremely minimal. In past botanical surveys no rare or endangered species of plants have been found in the immediate area of concern.

A recently conducted ornithological survey (09/18/88) found no endangered species of birds to be present at the site at that time. Nine species of birds were observed in the immediate area of which four species were endemic and five were introduced. The predominate species observed at the site included Apapane and Amakihi, both native species, and the White-eyes, a very common introduced species. In the 10 years of operating the present facility no birds were observed to have collided with the antenna support towers. It is generally believed by environmental authorities that the radio waves emitted from the communications equipment are harmless to plant and animal life.

Power generation is derived from solar panels and propane catalytic thermal generators. Propane was chosen as the fuel least likely to cause environmental damage due to its gaseous nature and ability to dissipate very quickly without imparting lasting effects upon the environment.

The building structures, antenna tower, gas storage tanks, and other related equipment will be painted in earth tones to blend into the surrounding environment in as much as possible.

5. Visual Impact (see exhibit C)

Visual impact from afar will be very minimal. At present it is extremely difficult to see the present facility at all without visual aid. The large passive microwave reflector owned by HELCO is visible to the naked eye, however it is over 400 square feet in size, and is not painted to blend into the environment. The deployment of the 80 foot tower will be visible from afar, but due to its open construction and painting will have minimal visual impact. The nearest highways are highway 19 and 190. From highway 190 the nearest point is about 10 miles, at which the height to distance ratio is less than 1 to 500. This makes visibility difficult. The nearest point from highway 19 is about 4 miles, however the slope of the mountain makes visual contact difficult. In the ten years of operation of the facility it has been observed that the elevation of 5000 feet and upward is cloud covered starting at 9:00 AM to 10:00 AM and lasting until 5:00 to 6:00 PM. This occurs at least 300 days out of the year. Clear unclouded days are rare until the late winter early spring season.

E. Summary Description Of The Affected Area

Exhibits A1, A2, A3 show the location of the facility. The area is a high altitude metrosederos forest located near the rim of a volcanic crater, and is within a conserva-

tion district P subzone. Animal and plant life species have been previously documented, and no endangered species were observed. No archaeological or historical sites were observed or expected. Area use has been limited to unmanned communications facilities. Future plans include other communications facilities, nature observation, and conservation.

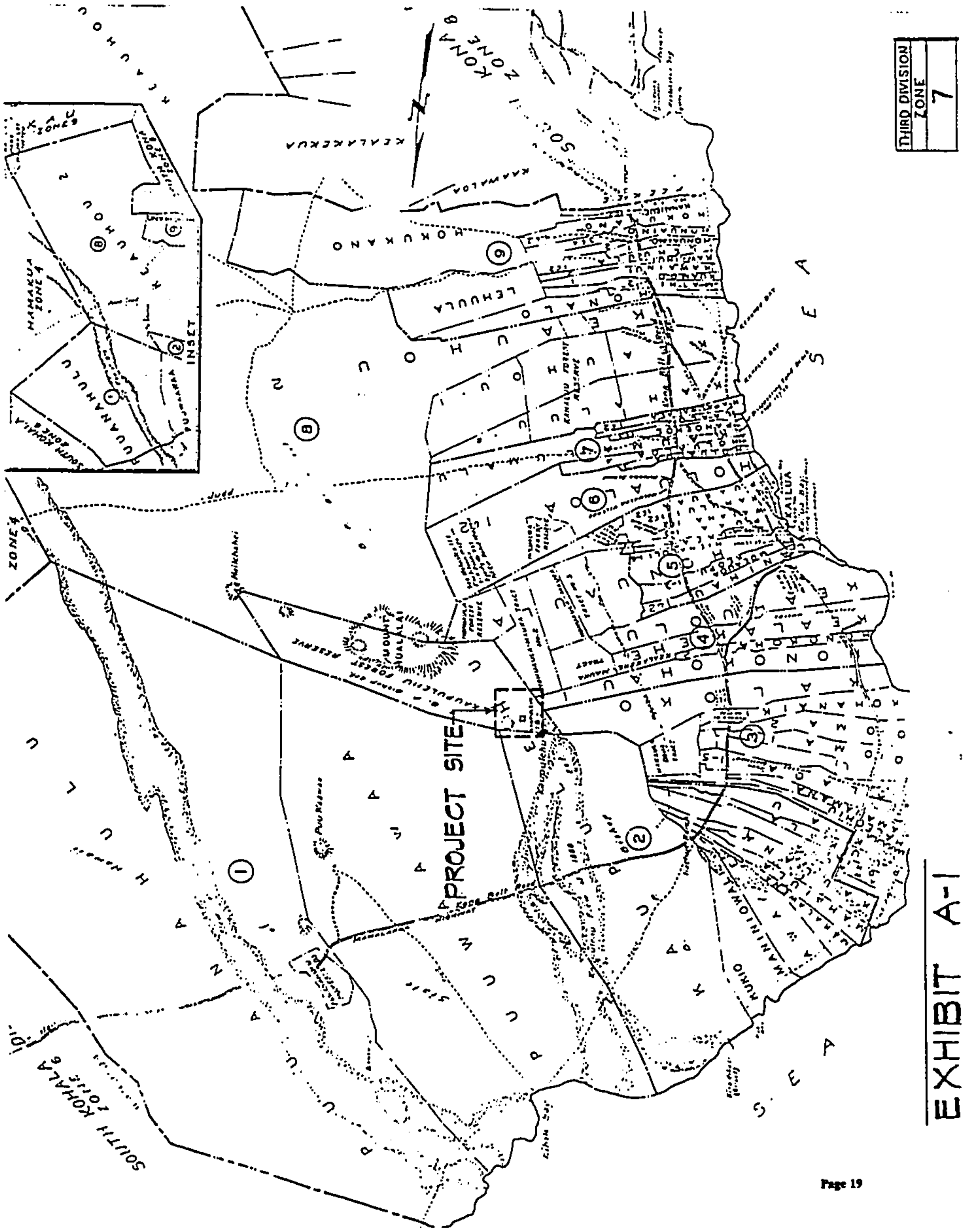
F. Identification And Summary Of Major Impacts And Alternatives

The application is an expansion of an existing unmanned communications facility. Construction activities will disturb a very small area with virtually no change in the topography. No archaeological or historic sites were observed or expected within the immediate area. No endangered species of plant or animal life were observed or found. No use or exploitation of plant,animal,or mineral resources are planned. The project will not change the surrounding conservation land use. The project is far removed from the shore line and is not a part of the Special Management Area. Visual impact will be minimal due to painting and usual cloud cover. If allowed to continue and expand the facility will continue to have a positive social and economic impact as demonstrated over the last 10 years of its operation. As the availability of comparable sites is extremely limited or not available, there is little choice as to the location of the facility without a much greater environmental impact possibility.

G. Proposed Mitigation Measures

The construction plans show a 80' tower supporting 31 various antennas. It should be noted that this represents the design integrity of the tower. It is unlikely that all of the antennas will be immediately deployed upon construction. Under normal circumstances a number of radio transmitters can be combined to share a single antenna through the use of special filters and isolators. However, this combining technique often results in a power loss of 50% or better. In a remote site such as this where there exists no electrical utilities all power must be generated at great expense. The amount of actual power available to the site will be the key determining factor in just how many radio transmitters can be accommodated. By utilizing individual antennas for each transmitter a greater number of transmitters can be accommodated with limited power resources. This is the method employed in the present existing facility. It is hoped that when the state brings electrical utility power to its approved but not yet constructed facility that we will have the opportunity to share the power. Given this it is possible to reduce the number of antennas deployed, if it is considered a problem. The availability of power will also affect the cohabitation possibilities as we are rapidly approaching the maximum number of transmitters that we can accommodate.

VI. Exhibits


THIRD DIVISION
ZONE
7
EXHIBIT A-1
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HOKUKANO
LEHUULA
KAILUA
ZONE 4
SOUTH KOHALA ZONE 6
SEA

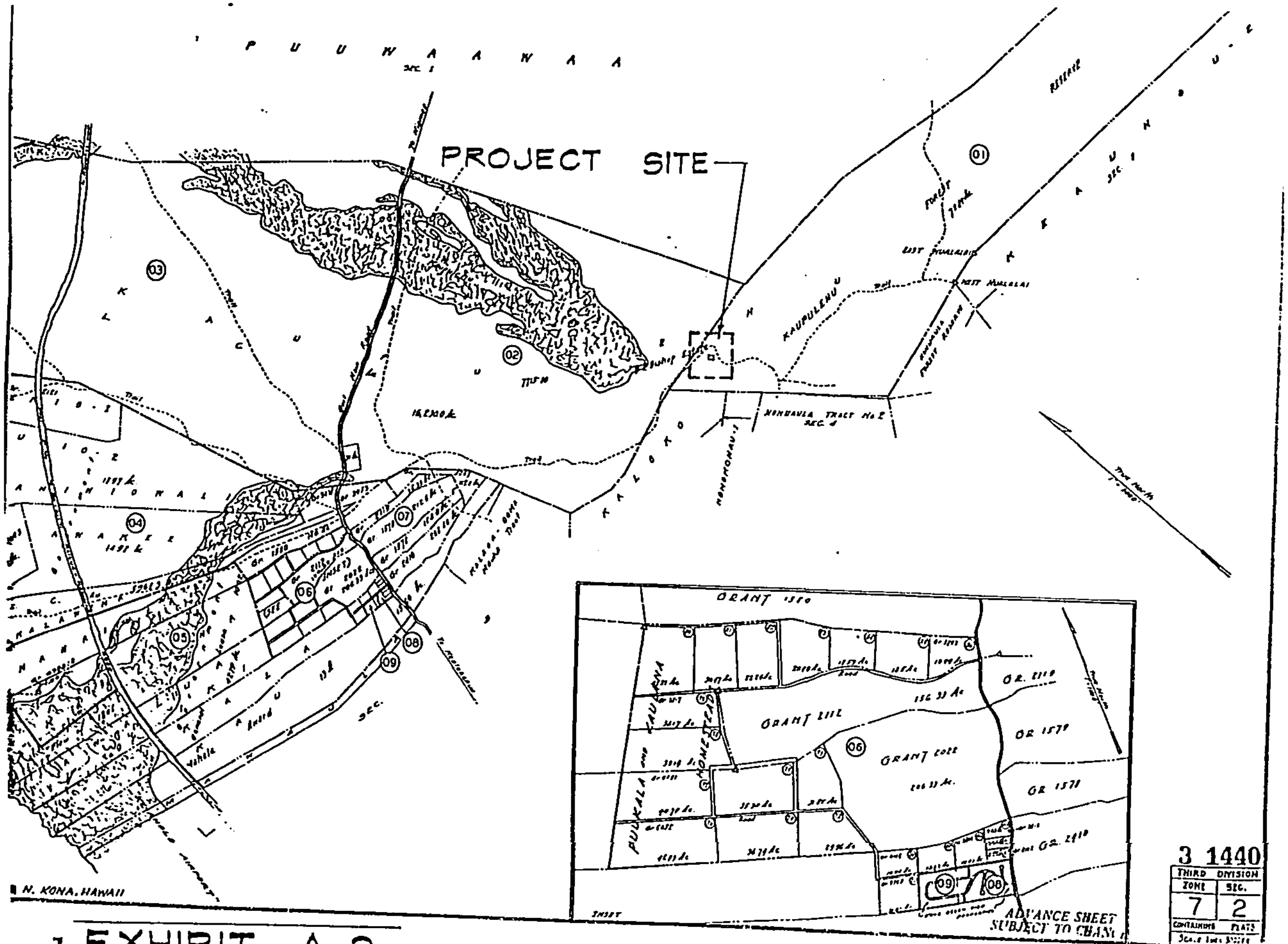
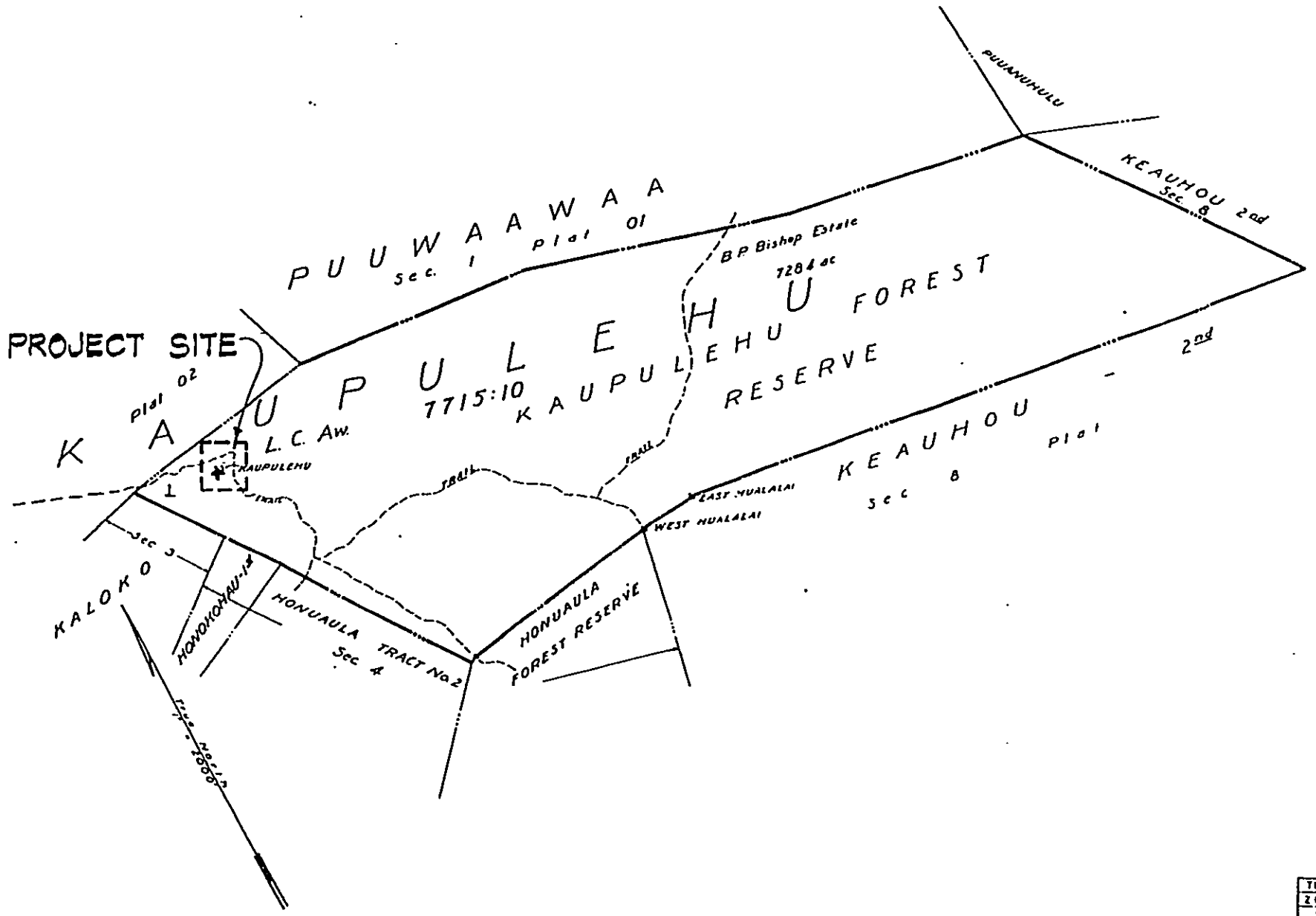

PUUWAAWAA
PROJECT SITE
KAUPULEHU
KALOKO
GRANT 1360
GRANT 2112
GRANT 2022
GR. 1579
GR. 1578
ADVANCE SHEET
SUBJECT TO CHANGE
N. KONA, HAWAII
3 1440
THIRD DIVISION
ZONE 7
SEC. 2

EXHIBIT A-2



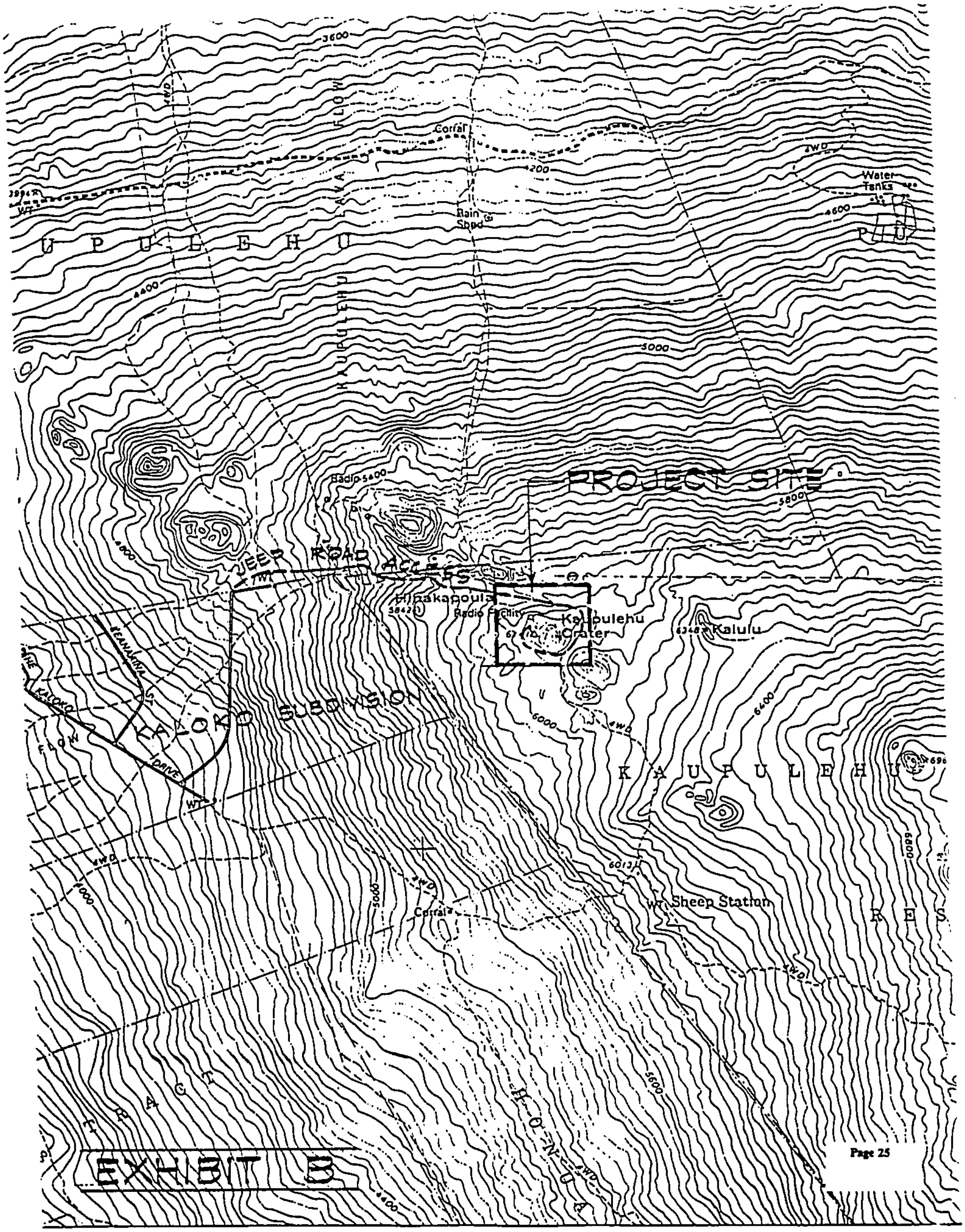
FOREST RESERVE, NORTH KONA, HAWAII

THIRD		DIVISION
ZONE	SEC.	PLAT
7	2	01

CONTAINING PARCELS

SCALE 1in = 2000ft.

EXHIBIT A-3


PROJECT SITE
JEEP ROAD ACCESS
EXHIBIT B
Corral
Water Tanks
Rain Shed
U P U L E H U
Radio
Hinakapoula
Radio Facility
Kaupulehu Crater
Kalulu
LALOKO SUBDIVISION
K A U P U L E H U
Sheep Station
Corral
R E S
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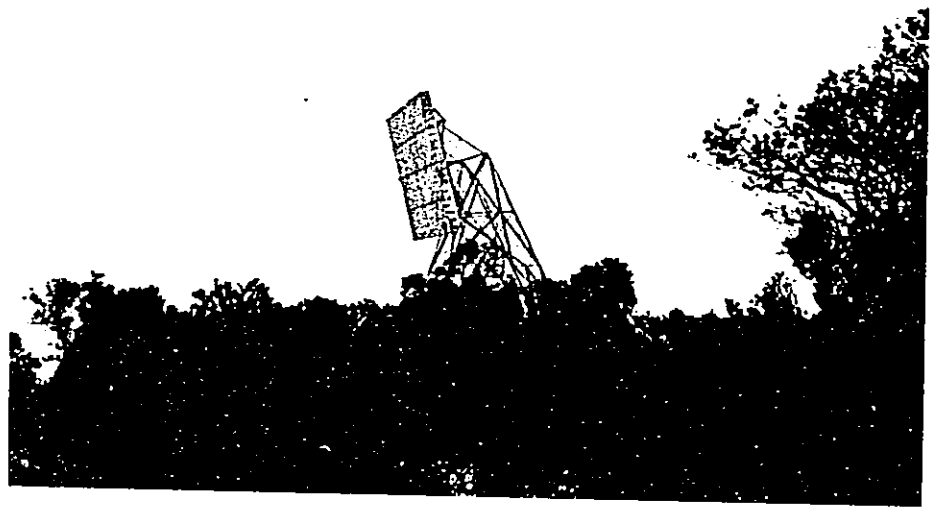
FLOW
DRIVE
WT

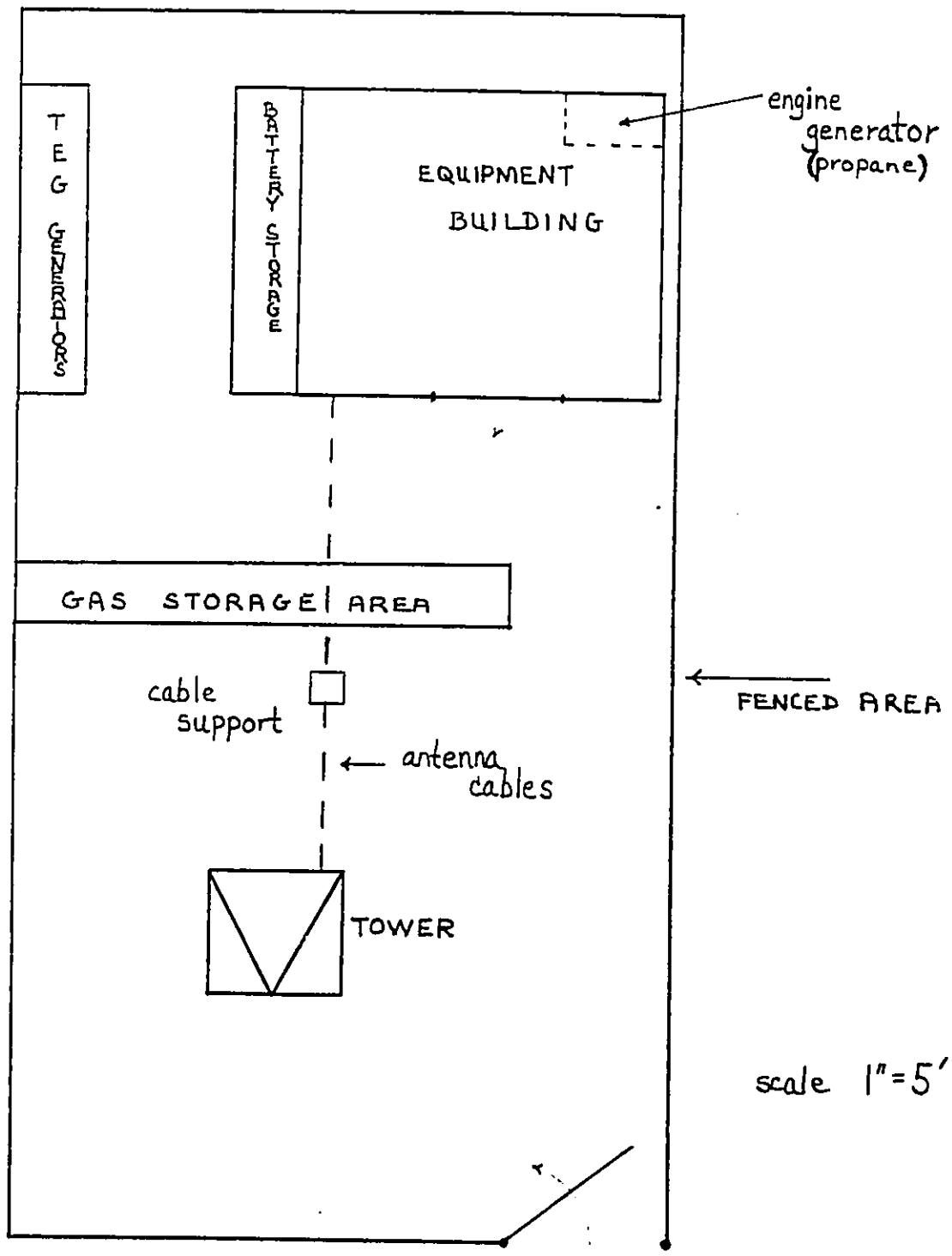


HELCO Existing Facility

West Hawaii Electronics Facility

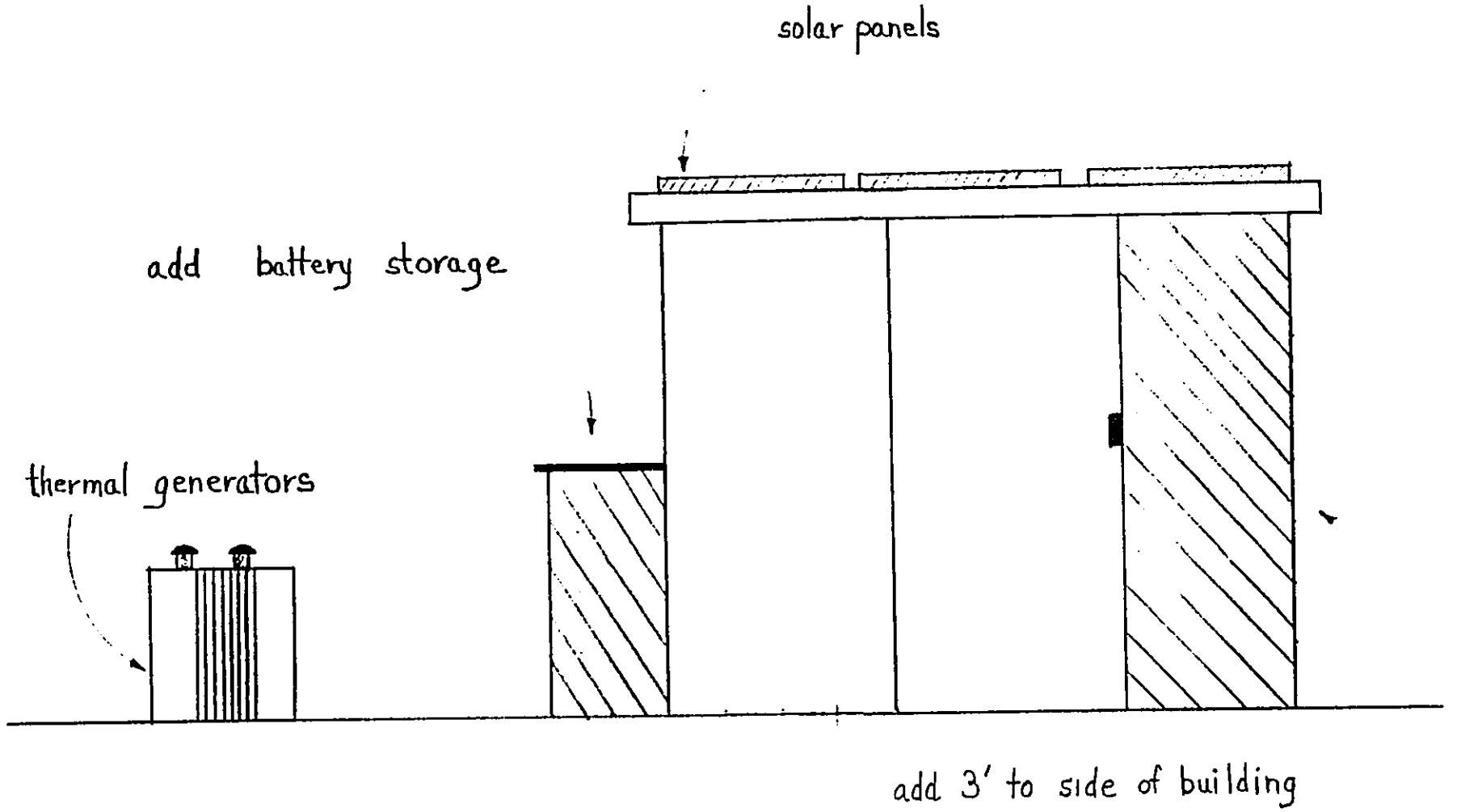
← Hualalai from afar

SITE PLAN



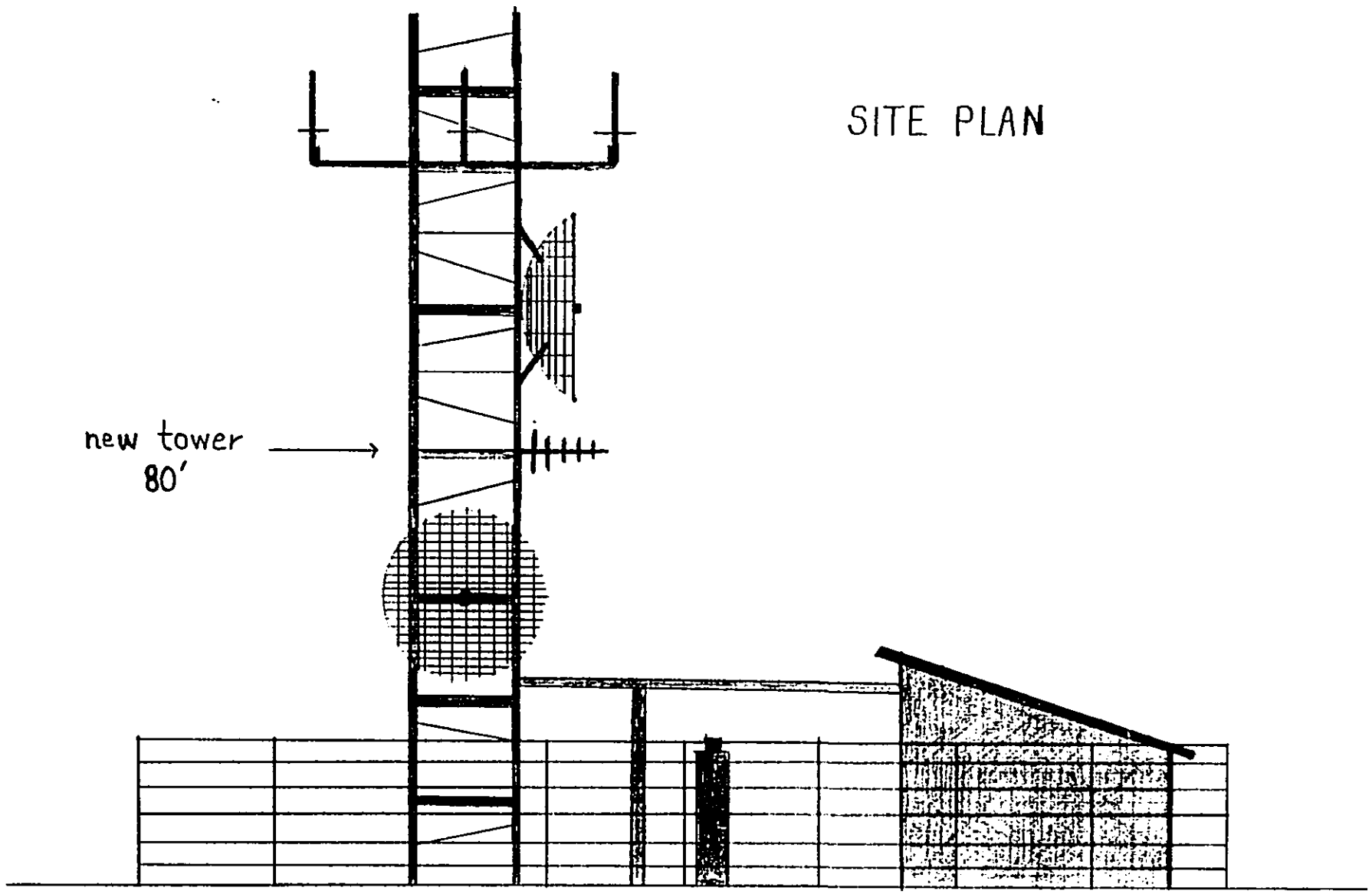
EXIBIT D FACILITY LAY OUT PLAN

SITE PLAN

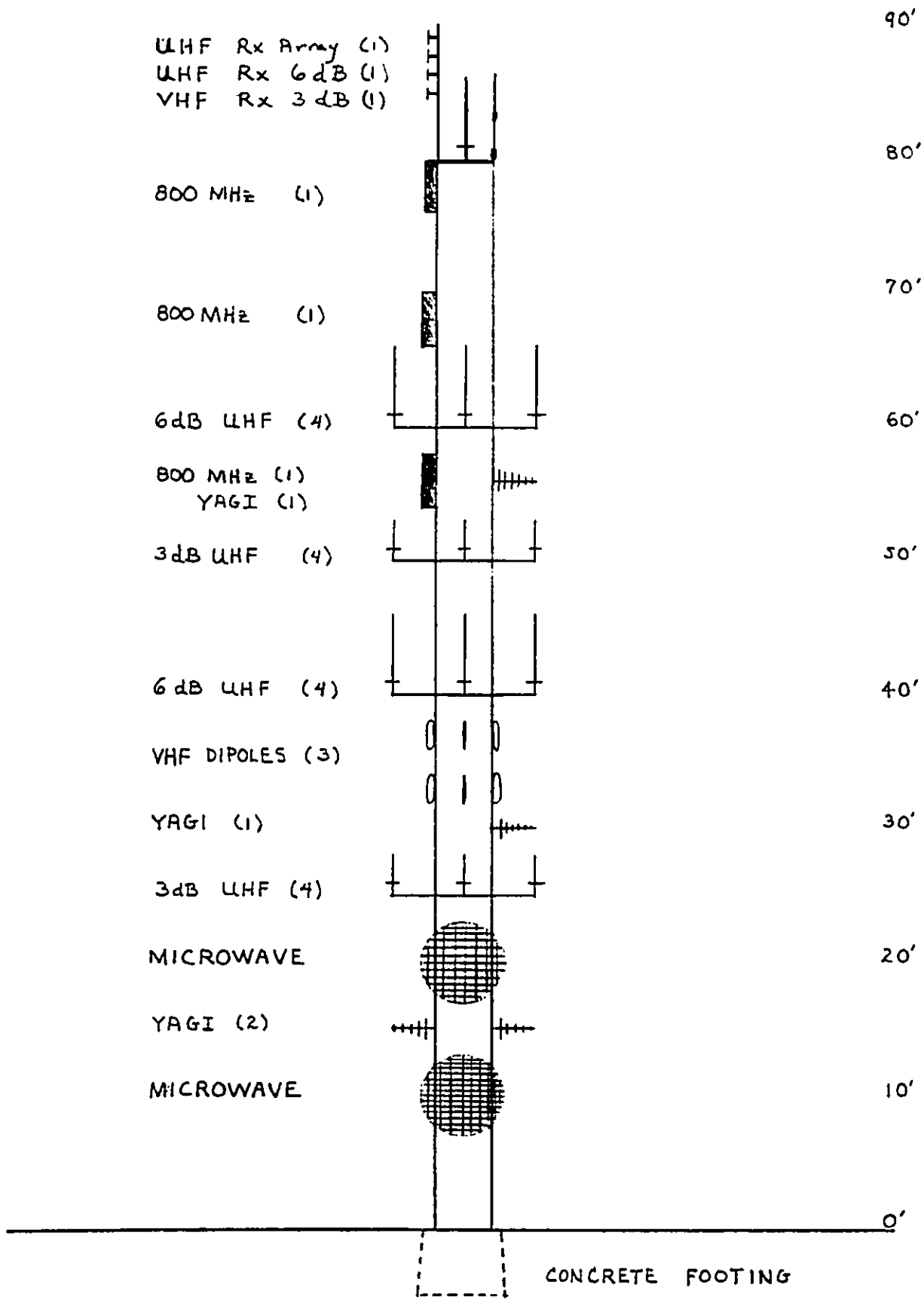


front - WEST VIEW

SITE PLAN

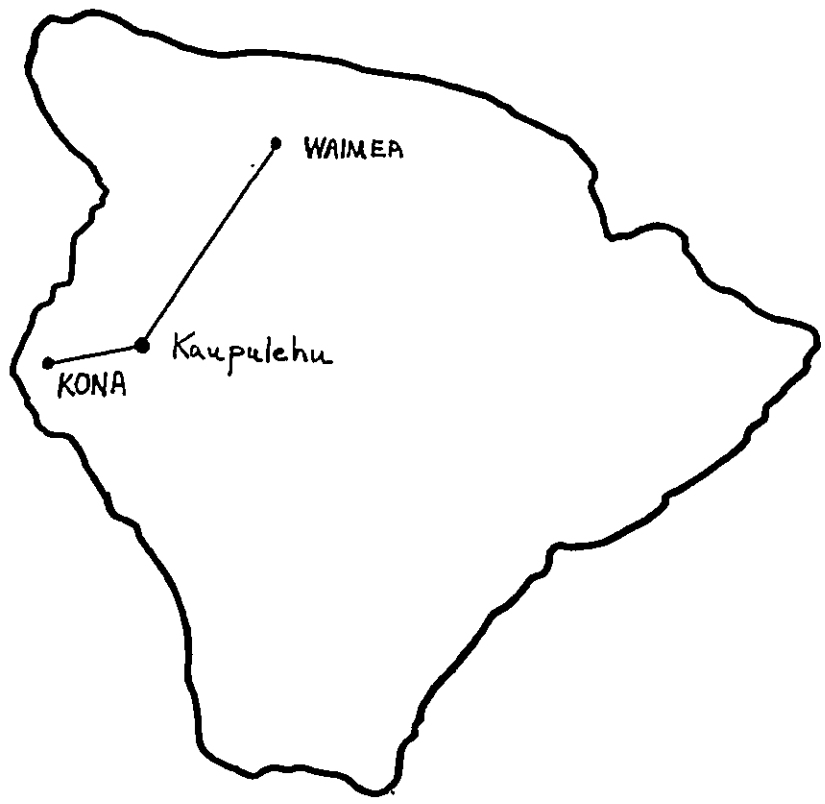


SIDE VIEW - south west



EXIBIT E ANTENNA TOWER

SCALE: 1" = 10'



MICROWAVE PATHS

VII. Appendices

Appendix A

Species List Of Plants

'Akia
Common Mullien
Kukae-nene
Banana Poka
'Ohia Lehua
Tarweed
Clover
Hawaii Stenogyne
Bitter Herb
Pukiawe
'Ohelo
Gosmore
Hamakua pamakani
'Uki
Indian Dropseed
mountaingrass
Velvetgrass
'Ae
Shuttlecock Fern

Appendix B

List of business users presently utilizing the radio communication facilities of West Hawaii Electronics, Inc. at Kaupulehu Crater, Kailua-Kona, Hawaii.

NAME	ACTIVITY
Sun Cablevision of Hawaii	Cable TV
King Kamehameha Divers	Dive Charters
Kona Coast Refuse	Refuse Collection
Richardson Well Drilling	Well Drilling
Kaiawe Trucking	Trucking
Plumbing Systems Hawaii	Plumbing
Wes Thomas and Associates	Survey
Tyson's Construction	Construction
Dive Makai	Dive Charter
Teruo Matsumoto Bulldozing	Heavy Construction
Alex Taxi	Taxi Cab
Joe's Towing	Towing
Kimo's Enterprises	Yard Maintenance
D M Towing	Towing
Red Sails Sports	Tourist Sport Activities
Papillion Helicopters	Helicopter Tours
Waimea Taxi	Taxi Cab
Kamuela Taxi	Taxi Cab
Gary's Automotive Inc.	Towing, Taxi Cab
Honsador Inc.	Lumber Supply
Bertelmann Inc.	Heavy Construction
Hawaii Humane Society	Animal Protection
West Hawaii Express	Freight Delivery
Bradley Properties	Property Management
The Villages at Waikoloa	Property Management
Cal-Kona Produce	Produce Sales
Bob's Handyman	Handyman Services
Star Specialties Inc.	Taxi Cab, Video Store
Nolan's Electrical / Maintenance	Electrician
Freeman Guards	Security
Alvin Baptiste	Livestock
Marina Taxi	Taxi Cab

InCOM Inc. ..... Sewage Treatment
Schilling Construction ..... Construction
Mauna Lani Resort ..... Security, Resort
Jack's Tours ..... Tourism
Parker Ranch ..... Ranching
Tropical Landscaping ..... Landscaping
Lapahoehoe Transportation ..... Transportation
DHA Enterprises ..... Business Supply
Hawaii Resort Transportation ..... Transportation
E. M. Rivera and Sons Inc. ..... Heavy Construction
Aloha Taxi Dispatching Service ..... Taxi Cab
Kona Airport Taxi Inc. ..... Taxi Cab
Tamashiro Trucking ..... Freight
Akamai Development ..... Construction
Jeff Cypriano ..... Livestock
B.J. Pools ..... Pool Service
Bob Wilson ..... Pool Service
Hawaii Protective Association ..... Security
Colony Resorts ..... Hotel
Kona Bali Kai ..... Hotel
Hawaii Agtech ..... Agriculture
Guy Fryar ..... Sheriff
Big Island Fish Connection ..... Fish Marketin
American Red Cross, Hawaii Service Center ..... Disaster Relief
Chang's Plumbing ..... Plumbing
Isemoto Contracting ..... Heavy Construction
Richard Sato & Associates ..... Heavy Construction
Kona Service ..... Appliance Service
Big Island Food Distributors ..... Distribution
Pacifiscapes ..... Landscaping
Marshall Painting ..... Painting
Ohana Taxi ..... Taxi / Tours
Tel-Net ..... Communications
Kawamata Farms ..... Agriculture
Dyansen Corp. ..... Art Sales
Classic Resorts ..... Property Management
Diamond Parking ..... Parking Services
West Hawaii Electronics ..... Communications
The Computer Doctor ..... Computer Service
Iron Man Triathlon ..... Sports
Lucy Henriques Medical Center ..... Medical Services