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POLICE DEPARTMENT

COUNTY OF MAUI

55 MAHALANI STREET
WAILUKU, HAWAII 96793
AREA CODE (808) 244-6400
FAX NO. (808) 244-6411

April 24, 1996

HOWARD H. TAGOMORI
CHIEF OF POLICE

LANNY TIHADA
DEPUTY CHIEF OF POLICE

Mr. Gary Gill, Director
Office of Environmental Quality Control
220 South King Street, 4th Floor
Honolulu, Hawaii 96813

Dear Mr. Gill:

Subject: Final Environmental Assessment and Negative Declaration
County of Maui Police Department 800 MHz Trunked Radio System
TMK: 1-1-02:10; 1-3-03:22; 1-4-03:09; 2-3-05:04;
5-1-02:13; 5-8-15:1; 4-9-02:por.1
Islands of Maui, Molokai and Lanai, County of Maui, Hawaii

The County of Maui Police Department has reviewed all comments received during the 30-day public comment period which began on March 8, 1996 and has determined that this project will not have significant environmental effects.

We are filing a negative declaration for this project. Please publish this notice in the May 8, 1996 Environmental Notice.

We have enclosed a completed Environmental Notice Publication Form and four copies of the Final Environmental Assessment.

Should there be any questions, please contact Assistant Chief Charles Hall at (808) 244-6415.

Very truly yours,

HOWARD H. TAGOMORI
Chief of Police

Enclosures

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1996-05-08-MA-FEA-County of Maui Police Dept 800 MHz Trunked Radio System

FINAL ENVIRONMENTAL ASSESSMENT

COUNTY OF MAUI POLICE DEPARTMENT 800 MHz TRUNKED RADIO SYSTEM

Islands of Maui, Molokai, and Lanai, State of Hawaii

Prepared in Partial Fulfillment of the Requirements
of Chapter 343, Hawaii Revised Statutes and
Chapter 200, Title 11, Administrative Rules,
Department of Health, State of Hawaii

Prepared for:

Police Department
County of Maui
55 Mahalani Street
Wailuku, Maui 96793

Prepared By:

Schema Systems Inc.
P.O. Box 5307
Whittier, California

and

Gerald Park Urban Planner
1400 Rycroft Street, Suite 876
Honolulu, Hawaii 96814-3021

April, 1996

SUMMARY

PROPOSED ACTION: COUNTY OF MAUI POLICE DEPARTMENT 800MHz TRUNKED RADIO SYSTEM

PROPOSING AGENCY: POLICE DEPARTMENT
COUNTY OF MAUI

COMMUNICATION SITES:
*1. Puu Nianiau
2. Keanae DOT Baseyard
3. Hana Airport
4. Hana GTE Mobilnet
*5. Puu Nana
6. Puu O Hoku Ranch
7. Waiakeakua
*8. Kahua Ranch

CONTACT PERSON: Charles H.P. Hall
Assistant Chief of Police
Police Department
County of Maui
55 Mahalani Street
Wailuku, Maui 96793

Telephone: (808) 244-6415

* Existing Police Department Communication Facility

***Note:** Revisions to the text of the Draft Environmental Assessment appear in **bold italic** type*

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SECTION 1 PROJECT DESCRIPTION

A. Introduction

The Police Department, County of Maui, proposes to upgrade its existing radio communication system through implementation of a modern 800 MHz trunked radio system. The system is an intra and inter-island voice radio system interconnected by a microwave radio network that will improve voice and data transmissions and provide all system users with voice communication capability. The 800 MHz trunked radio system will be used primarily by the Police Department with access to the system made available to certain local, state and federal government personnel from time to time. The system is designed to support future enhancement to accommodate all existing and future government radio users on the island which will result in a reduction in the total number of independent radio systems throughout the county.

B. Background

The existing Police Department communication network is a voice radio system that uses voice channels only in the VHF band. The system serves the Maui Police Department on 6 VHF channels, the Maui Fire Department on 2 VHF channels, and Local Government services on 1 VHF channel. Maui Civil Defense Agency operations including civil defense sirens are supported on the system.

Of the six conventional channels used by the Police Department, one channel is assigned to a specialized unit in the department, one channel provides Countywide coverage, and one channel apiece are allocated to Central (Maui) Hana, Lanai, and Molokai.

The Department operates a network of VHF base and repeater sites located at Puu Nianiau (Maui), Haleakala (Maui) Puu Nana (Molokai), Mt. Koele (Lanai), and Kahua Ranch (Hawaii) and Police Station bases at Wailuku, Hana, Kaunakakai, and Lanai City. The radio system on Maui and Lanai is controlled from the Wailuku Dispatch Center located in the Police Department Headquarters in Wailuku. A second dispatch center is located in the Kaunakakai Police Station on Molokai.

C. Need for the Project

The purpose of the project is to replace an old, increasingly unreliable, and failure-prone VHF radio network that has served the Police Department for over 20 years. At one time the system represented the state of the art in voice communications, however, it has not kept up with advances in telecommunications technology. Shortcomings in the existing voice radio system are becoming increasingly evident as the need for expanded communication capabilities grow in proportion to population growth and development in the county. Some of these shortcomings are described below.

There is unreliable two-way mobile radio coverage in the rural areas of the County. Part of this stems from geographic features which can temporarily obstruct communication with a station and a patrol unit. In addition, the number of radio units operating on one conventional channel often creates a congestion problem. Conventional VHF channels restrict communication to one user at a

time. If there is more than one user keying a transmitter, the second user must wait until the first user has completed transmission/reception.

The new system will expand island-wide radio coverage, increase transmission/reception capacity improve network reliability, permit greater usage of hand-held portable radios instead of relying on vehicle mounted radios, provide greater operational flexibility, and allow for expansion by adding modular equipment such as mobile data units and additional channels as needed.

D. Network Description

The system consists of 1) a land mobile two-way voice radio system which provides coverage between mobile or portable radios and fixed stations, and 2) a microwave system which relays signals between each radio site and the central dispatch. The combination of the mobile radio sites and equipment contained therein, and the microwave radio system is also refered to as the "backbone system".

Both voice radio and microwave systems will share common equipment shelters and towers at the selected radio sites.

1. Voice Radio Communication System

The proposed 800 MHz Trunked Radio System combines a microwave radio system and a two-way trunked mobile voice radio system Mobile voice radio communication systems are designed to transmit and receive signals from fixed stations to mobile or portable radios. The voice mobile radio system is designed to provide islandwide radio coverage via sites dispersed throughout the County. Antennas are usually the vertical "whips" mounted on towers at heights which are adequate to provide reliable coverage within identified geographic areas.

The proposed voice mobile radio system will operate on an advanced design 5 channel trunked radio system which are dynamically shared (trunking) among all users. Trunking allows the automatic sharing of channels in a multiple repeater system. The trunked radio system will support up to several hundred users per channel of the public safety short message type without unacceptable delay. On those rare peak traffic occasions when momentary traffic saturation occurs, certain users such as Police and Fire will have priority over other users by pre-programming. Delays that do occur should not last for more than a few seconds.

Five channel, 800 MHz trunked stations for two-way voice radio communication are planned for Puu Nianiau and Waiakeakua, a four channel trunked station at Puu Nana; and three channel trunked stations at Keanae, Hana Airport, Hana GTE Mobilnet, Puu O Hoku Ranch, and Kahua Ranch (Hawaii).

The system will operate in an independent site mode which means that the three major sites at Puu Nianiau, Puu Nana, and Waiakeakua will all operate on three different sets of frequencies but can operate singly or simultaneously to serve a talk group whose members may be located over the breadth of the island. Seven fill-in sites (Puu O Hoku Ranch, Hana Airport, GTE Hana Mobilnet, Keanae, and Kahua Ranch) will also be used to connect talk group members when they are in areas other than those covered by one of the three principal sites. For example, a patrol unit in Lahaina now cannot communicate directly with a patrol unit in Hana; with the new system, direct voice communication will be possible.

If additional network capacity is required by traffic growth or addition of more users, the trunked radio system can be modularly expanded. One or more channels can be added to a maximum of twenty channels. Several thousand users can be accommodated on twenty channels.

The new 800 MHz system will be licensed and operate in the 821 MHz to 866 MHz portion of the 800 MHz band allocated by the FCC for public safety. The specific frequencies are being identified in the Region 11 (State of Hawaii) National Public Safety Planning Advisory Committee (NPSPAC) Plan, which makes specific assignments for the region.

2. Microwave System

Microwave relay stations transmit and receive microwave signals across relatively short distances using round, parabolic dish shaped antennas usually mounted at or near the top of a supporting tower or occasionally on top of a building. The antenna heights above ground level vary with the radio site but will range from a low of about 20 feet to a high of 60 feet. Microwave signals travel in a line-of-site path within a highly directional beam, similar to a spotlight, from one antenna to the next.

The existing microwave system was installed in 1978. It is an analog system operating in the 2 GHz microwave band.

A new microwave system will replace the older analog system. The primary purpose of the microwave system is to support the two-way voice radio system. Other circuits such as electronic data transmission can later be added to the system. Efficient functioning of the 800 MHz trunked radio system requires a reliable common interconnection/control link between all trunked stations. A combination of a 2 GHz (one link) and 960 MHz (8 links) microwave system will provide the control links for the entire system. Specific microwave frequencies within their respective bands will be determined at a later date upon completion of the microwave frequency coordination process.

The new microwave system will be installed at the Police Department Headquarters in Wailuku, Keanae (Maui), Hana Airport (Maui), Hana GTE (Maui) Puu Nianiau (Maui), Puu Nana (Molokai), Puu O Hoku Ranch (Molokai), Waiakeakua (Lanai), and Kahua Ranch (Hawaii). In addition, the radio equipment located at the remote sites will be controlled via the microwave system.

The proposed Maui County Police Department 800 MHz trunked radio and microwave backbone system is shown in Figure 1.

E. Radio Coverage

The system will expand and improve radio coverage throughout all populated and accessible areas of the County. Field coverage surveys indicate that the nine radio sites will provide satisfactory radio coverage to 95% of the geographic area comprising Maui County.

The Wailuku Dispatch Center, located at Police Department headquarters, is the center of and the control point for the entire network. The central trunking controllers and all network operations originate from the Dispatch Center. The Wailuku Dispatch Center will be the only manned site in the system.

F. Facilities

New radio facilities will be constructed at four sites and the Police Department will share the use of privately owned facilities at three locations. The microwave and voice radio systems will share radio sites, equipment shelters, and towers or monopoles. A summary of improvements at each site is shown in Table 1.

New equipment shelters and towers will be constructed at:

Keanae (Maui)
Hana Airport (Maui)
Puu Nianiau (Maui)
Puu O Hoku Ranch (Molokai)
Waiakeakua (Lanai)

In the short-term, equipment cabinets rather than equipment shelters will be installed at Keanae, Hana Airport, and Puu O Hoku Ranch. Permanent equipment shelters will be installed at a later time when funds are available.

Privately owned equipment shelters and towers will be shared at:

Hana GTE Mobilnet (Maui)
Puu Nana (Molokai)

No improvements are proposed for existing communication facilities at:

Haleakala (Maui)
Kahua Ranch (Hawaii)

Existing Police Department communication facilities at Puu Nianiau, Puu Nana, and Mt. Koele (Lanai) will be dismantled once the new system is operational.

Site improvements vary for each site. In general, the following improvements apply to all new sites:

- All sites will be graded for proper drainage.
- Equipment shelters will be secured on 4" thick concrete slab foundations.
- Equipment shelters are constructed of pre-fabricated fiber glass. The size of each shelter depends on individual station requirements.
- New equipment shelters will be air conditioned and equipped with a fire suppression system.
- All shelters will be dustproof, air tight, and water tight.
- Radio towers and equipment shelters will be designed to withstand a wind speed of 155 mph.

- *o* Antenna structures will either be three-legged self-supporting steel towers or monopoles.
- *o* Antenna structures will be properly grounded with lightning rods.
- *o* 15KW emergency generators with bottled LPG will provide emergency operating power during commercial power outages at some shelters.
- *o* Self-contained battery/charger power sources will operate each station for a minimum of 8 hours in the event of commercial power outage and emergency generator failure.

The Police Department will consider sharing radio tower space with other radio users. However, the towers to be erected have been specified to withstand [150] 155 mph winds based on tower loadings for Police Department antennas only. Therefore, future users will have to conduct wind loading analyses and the results must clearly demonstrate that their antenna will not affect the structural integrity of the tower and will not adversely affect police communication facilities before they are allowed to use the tower (OEQC, 1996).

G. Funding and Implementation

The cost of the project is estimated at $3.7 million and will be funded by the County of Maui.

Construction will proceed on a site by site basis but construction will not commence on any site until all necessary government approvals are received. The radio contractor estimates that it will take between 3-6 weeks to construct each site. Overall, the contractor has eighteen months in which to complete construction of each site and to install, test, and activate all system components.

The Wailuku Dispatch Center located at Police Headquarters in Wailuku is the only site owned by the County of Maui. Lease arrangements and license agreements are being negotiated with land owners to site the proposed communication facilities on their lands.

County of Maui
800 MHz System Configuration

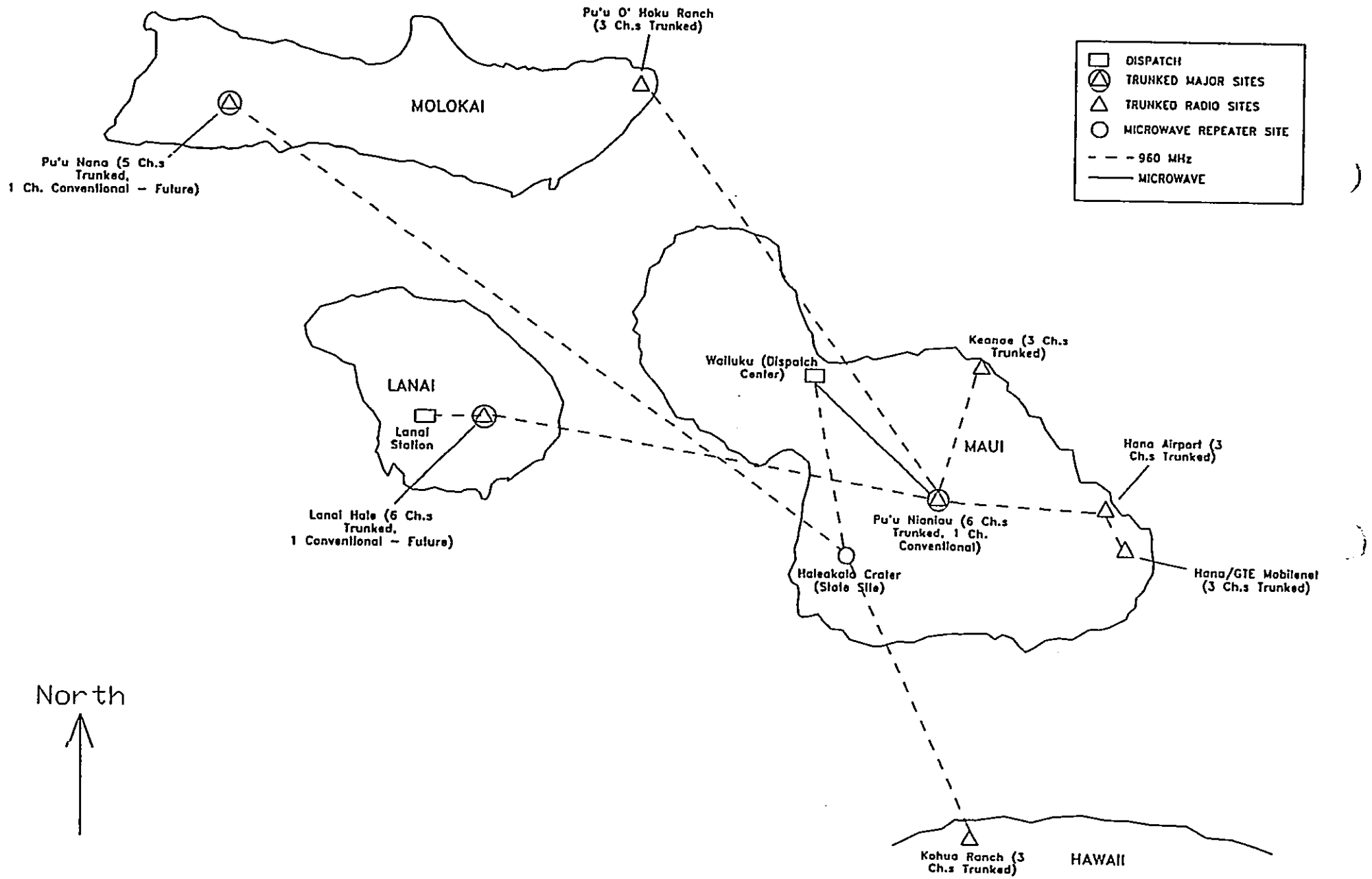

Table 1. Summary of Facility Improvements

Site	Tax Map Key	800 MHz Voice Radio	Analog Microwave	Equipment Shelter		Tower	
				New	Existing	New	Existing
Keanae	1-1-02: 10	X		X		50-ft SS	
Hana Airport	1-3-03: 22	X		X		40-ft SS	
Hana GTE Mobilnet	1-4-03: 09	X			X		30-ft MP
Puu Nianiau	2-3-05: 04	X	X	X		60-ft SS	
Puu Nana	5-1-02: 13	X	X		X		120-ft SS
Puu O Hoku Ranch	5-8-15: 1	X		X		40-ft SS	
Waiakeakua	4-9-02: por. 1	X	X	X		40-ft SS	

* Towers: SS Self Supporting, MP Monopole

SECTION 2 GENERAL ENVIRONMENTAL IMPACTS

A. Assessment Process

The scope of the project was discussed with staff of the Police Department, the County's communication consultants, and the radio contractor. State and County agencies were contacted for information relative to their areas of expertise. Time was spent in the field recording site conditions and conditions in the vicinity of each radio site. The discussions and field investigations allowed us to identify features which could affect or be affected by the proposed project. While acknowledging that each site exhibits different physical and environmental characteristics, there are some characteristics common to all. These similar conditions and characteristics are:

- *o* Each site has been modified by man's activities. In some instances this involves grubbing or grading work, construction of a building or ancillary facility, or a previous land use;
- *o* There are no rare, threatened, or endangered flora on any site;
- *o* There are no archaeological features on any site;
- *o* No site is located near fresh water bodies such as streams, natural water reservoirs, or wetlands; and
- *o* No site is located within a flood hazard area.

B. Land Alteration

Some land alteration is necessary to accommodate the planned facilities. Limited grubbing, grading, and filling are required to achieve design elevations for the equipment shelters or cabinets. The ground surrounding the shelter and tower will be graded to drain away from the respective structures. Affected areas near each site will be restored to pre-construction conditions after construction is completed. Considering the size of each communication site, these activities should not significantly increase erosion or alter drainage patterns.

Pending completion of soils testing and structural analysis, the type of foundation and amount of excavated area for the towers at each site cannot be determined at this time. Soil conditions determine the type and depth of footing to support the tower. Towers can be erected on matted, posted, or bell-shaped foundations. A typical rule-of-thumb is that the depth of footing is about 10-15% of the height of the tower.

C. Air Quality and Noise

Construction of the proposed improvements will temporarily impact ambient air quality and noise levels. Construction will generate fugitive dust, thereby increasing the amount of dust in the air, and construction machinery will elevate noise levels. These impacts are expected to be minimal because most sites are in remote locations away from populated areas. Construction activities will

comply with state Department of Health Air Quality Regulations and conditions attached to all approved grading plans.

D. Flood Hazards

None of the communication sites are located in identified flood hazard areas as most are located in upland or mountain areas. The one low-lying site at Hana Airport is designated Zone "C" which is defined as "areas of minimal flooding" (Federal Emergency Management Agency, 1981).

E. Avifauna

Bird fall out is a growing concern of wildlife officials brought on by the increasing number of tall buildings and structures in urban as well as non-urban areas. Fall out usually occurs from exhaustion or when birds collide with structures brought on by attraction to and disorientation from bright lights.

Bright lights (flood lights for example) and guy wires not radio towers per se are the major causes of fall-outs. Most of the planned radio towers are low in height and only the 60-foot high self-supporting tower at Puu Nianiau and 50-foot tower at Keanae is of significant height. No bright lights will be mounted on the towers.

The self-supporting towers will not be secured by guy wires thus mitigating a second cause of fall outs.

F. Public Services and Facilities

With the exception of the Waiakeakua site, electrical power is currently available to energize communications equipment at all sites. Water, wastewater disposal, or other public utilities are not required.

The project will have direct beneficial impacts on public services provided by the County. The Police and Fire departments and local government agencies will benefit as shortcomings in the existing system are eliminated. Other agencies can hook into the system at a later time.

G. Economic

Construction of the proposed radio microwave system will generate short-term employment opportunities for the Contractor, subcontractors, and material suppliers. Following completion, the remote sites will be unmanned but routinely maintained either by technicians from the Police Department radio shop or the radio contractor.

H. Radio Frequency (RF) Radiation*

Within the last several decades, the proliferation of radio frequency (RF) emitters in the environment has spurred extensive and ongoing research efforts to investigate the biological and public health effects of low-level non-ionizing radiation.

It should be emphasized that environmental levels of RF radiation routinely encountered by the public are well below hazardous levels. The U.S. Environmental Protection Agency has estimated that 98-99% of the population in seven U.S. urban areas studied is exposed to less than 0.001 miliwatts per centimeter squared.

In the United States, there is currently no official mandatory federal standard for protection of the public or workers from potentially hazardous exposure to RF radiation. Nonetheless, several federal agencies and non-government organizations have adopted general guidelines. The Occupational Safety and Health Administration (OSHA) generated a guideline for workers in 1971 but it was later ruled to be advisory only. The National Institute for Occupational Safety and Health (NIOSH) has been working on a recommended worker standard for some time. However, there is no evidence that NIOSH will issue a recommendation in the near future.

The Center for Devices and Radiological Health (CDRH), a branch of the U.S. Food and Drug Administration, has regulated radiation from microwave ovens since 1971. CDRH has established a radiation performance standard for microwave ovens that allows leakage (measured at five centimeters from the oven surface) of 1 milliwatt (mW) per square centimeter (cm^2) at the time of manufacture and a maximum level of 5 mW/cm^2 during the lifetime of the oven.

By far the most widely used guideline is from the American National Standards Institute (ANSI), a non-profit organization that develops recommended standards for a variety of applications. In 1982 ANSI issued revised RF protection guidelines (C-95.1, 1982) which were based on more recent data regarding the interaction of RF radiation within the human body. The study showed that the human body absorbs RF energy at some frequencies more efficiently that at others. The most restrictive limits are in the frequency range of 30-300 MHz, where maximum levels of 1 mW/cm^2, averaged over any six minute period of exposure, are recommended.

The recommendations were based on a determination that the threshold for hazardous biological effects was approximately 4 watts per kilogram (4W/kg). The W/kg is an expression for the rate of energy absorption in the body given in terms of the "specific absorption rate" or SAR. A safety factor of ten was then incorporated to arrive at the final recommended protection guidelines. In other words, the guidelines can be correlated with an SAR threshold of about 0.4W/kg.

ANSI has been in the process of revising its 1982 standard, and in early 1992, new standards (C-95.1, 1990) were released from committee. The new guidelines establishes two standard levels—controlled for equipment technicians and uncontrolled for the general public. The exposure times and levels are different for the two groups. The more rigorous standard is for the general public and this exposure level is used in this report. It should be noted, however, that the standards have not yet been generally accepted throughout the industry, including the FCC.

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*Schema Systems Inc., 1995.

Based on the more demanding 1992 ANSI standards for the general public, exposure levels applicable to the Police Department frequencies are shown below:

ANSI Exposure Standards

Frequency	Power Density (mW/c^2)
100 MHz to 300 MHz	0.2 mW/cm^2 over a 30 minute period
300 MHz to 15 GHz	Freq/1500 over a 30 minute period
15 GHz to 300 GHz	10 mW/cm^2 over a 30 minute period

The intensity of the radiation depends on the source, the distance from the source, and the radiation pattern. Given the source level and any given distance, the field intensity can be calculated fairly accurately, usually in fractions of a watt such as a milliwatt or microwatts that pass through a unit area of square centimeter.

Radiated RF energy from a given source decreases rapidly as distance is increased. In fact, the level decreases according to the inverse square law, that is, RF energy is inversely proportional to the square of the distance. Simply stated, as the distance doubles, the level of radiation decreases by a factor of four.

1. RF Exposure to County Microwave System

The microwave antennas to be used by the County system operate in the 960 MHz and 2 GHz band and have a highly directional beam for point-to-point communications. They are generally tower mounted at heights ranging from 30 to 60 feet above ground level. Depending on the transmitter power output (ranging from 2.5 watts to 6 watts), branching losses, transmission line losses, and size (diameter) and gain of antenna, the effective radiated power (ERP) from the antenna in the focused beam can range from about 250 to 4000 watts.

Because of the antenna's highly directional beam and typical height above ground, power densities at ground level from microwave antennas are markedly below the ANSI guidelines. An individual would have to stand *directly in front of the antenna for a significant period of time* in order to be exposed to a radiation level that might be considered harmful. This is generally is not possible due to the height of the antenna above ground.

Using the ANSI maximum uncontrolled exposure guidelines of 0.64 mW/cm^2 for 960 MHz and using a fifteen foot dish with (the largest one used) with an approximate ERP of 4000 watts, the location of maximum power density directly in the focal plane of the antenna is calculated as follows:

Location of Maximum Power Density	Calculated Maximum Power Density
42 feet in front of antenna	0.1183 mW/cm^2

Using the ANSI guideline of 0.64 mW/cm^2 for 2 GHz, and using a 8 foot dish (the largest one used) with an approximate ERP of 250 watts, the location of maximum power density directly in the focal plane of the antenna is calculated as follows:

Location of Maximum Power Density	Calculated Maximum Power Density
25 feet in front of antenna	0.1040 mW/cm^2

These calculations indicate that the exposure to microwave antenna radiation at the most dangerous distance directly in front of the antenna is well below the ANSI standard of 0.64 and 1.3 mW/cm^2 respectively for the two emission bands. Beyond that distance, and still directly in the radiating path of the dish, the level would decrease very rapidly and significantly. Exposure levels outside the direct path of the dish would be insignificantly small.

2. Police Department 800 MHz System

A typical Police Department 800 MHz radio site will consist of fixed transmitter stations varying from 3 at minor sites to 6 at major sites (one of which is a backup transmitter). The fixed stations will operate with a transmitter power output of 75 to 125 watts. The average effective radiated power (ERP) including transmitter combiner and transmission line loss plus antenna gain (+10 db) from the antenna for a single 800 MHz transmitter will be approximately 200 watts. Maximum ERP would occur on occasions when all 6 stations at a given site are transmitting simultaneously. In this case, for example, the combined ERP would be around 1200 watts. Fixed stations will not transmit continuously but will transmit intermittently and only when needed to carry public safety related communications.

The majority of 800 MHz antennas installed for the Police system will be tower mounted at heights ranging between 30 to 60 feet above ground level with an average height of about 50 feet. The antennas are designed to convey the signals in the direction of the horizon with very little emission in other directions, such as above or directly below the tower. Therefore, the power density around antennas at ground level will be significantly less than the ANSI guideline.

The ANSI guideline of 2.8 mW/cm^2 (Exposure Standards: 850 MHz/300=2.8 mW/cm^2) is used for calculating the exposure levels at varying distances from an antenna with a single transmitter of 200 watts ERP and multiple transmitters (6 X 200 watts) for a combined ERP of 1200 watts. The normal worse case is 5 transmitters. All six would only be on in an anomolous condition.

Calculated Level in mW/cm^2

Distance	200 watts ERP	1200 watts ERP
50 feet	0.0274100	0.1644600
500 feet	0.0002709	0.0016257
5000 feet	0.0000027	0.000016

The above show that for either level of ERP the exposure levels for two-way radios are lower than the 2.8 mW/cm^2 guideline established by ANSI.

SECTION 3 COMMUNICATION SITES AND FACILITIES

New radio communication facilities will be built at seven sites for the County of Maui Police Department 800 MHz Trunked Radio System. Site selection was based on the need to provide radio coverage to parts of the County where coverage is poor. Radio coverage testing and analysis confirmed that the selected sites will provide coverage to 95% of the County. The sites are named either after a geographic location, identifiable landmark, or an existing communication site.

This section summarizes potential environmental impacts resulting from planned improvements to specific sites and measures to mitigate adverse effects. Each site description includes a description of the proposed improvements, affected environment, and potential environmental impacts. The narrative is supplemented with Location Maps, Site Plans, Equipment Shelter Floor Plans, and Elevation Plans (if available).

Keanae
Site Profile

TAX MAP KEY:	1-1-02: 10
LAND AREA:	3.096 acres
Area of Use:	520 square feet
LAND OWNER:	State of Hawaii Department of Transportation
EXISTING USE:	Highway Baseyard
NEAREST TOWN:	Keanae
Distance from Site:	
PROPOSED USE:	Communication Facility
STATE LAND USE DISTRICT:	Agricultural
COMMUNITY PLAN AREA:	Agriculture
Zoning:	Agriculture
SPECIAL MANAGEMENT AREA:	Within Special Management Area

A. Location and Existing Use

The Keanae radio facility will be located on the grounds of a highway baseyard owned by the State of Hawaii Department of Transportation, Highways Division. The baseyard is located on the makai side of the Hana Highway overlooking the Keanae Peninsula about midway between the towns of Hana and Haiku (See Figure 1).

The site is not yet radio developed. On-site improvements include a wooden office building, an office trailer, a covered garage, graveled access driveway, a dilapidated wood/corrugated metal storage shed, and a smaller corrugated metal storage shed. An above ground water tank, the Keanae YMCA, and a residence are located across the gravel driveway from the office building.

B. Proposed Improvements

A building site between and behind the baseyard office building and a storage shed has been selected for the radio site. For the short term, only a radio cabinet and tower will be constructed. Radio controls and instruments will be housed in a free-standing stainless steel cabinet. The cabinet measures 3'L X 2' W X 6' H and is painted gray. A three-legged 50-foot high self-supporting tower will be erected adjacent to the equipment cabinet. One 4' diameter microwave dish antenna and two 17' tall omnidirectional antennas will be mounted on the tower. The radio

tower and the cabinet will be enclosed by fencing. A Site Plan and Elevation View are shown in Figures 2 and 3.

In the long-term, the equipment cabinet will be replaced by a permanent structure. All radio equipment will be housed in a pre-fabricated, fiber glass, single-story shelter measuring 8'L X 10'W X 9'H (See Figure 4). The shelter will be air conditioned to maintain a controlled operating environment.

The Keanae repeater will link with Puu Nianiau. This facility will provide radio coverage to areas between Keanae and Hana Keanae and Haiku.

C. Affected Environment

The Keanae baseyard stands at elevation 130' overlooking the Keanae Peninsula, a productive taro producing area. The building site is a relatively flat open area used for storing highway related materials such as broken light poles and highway guard rails. The area is covered by a mixture of gravel and grass.

The property is classified Agricultural by the State Land Use Commission and general planned Agriculture on the Hana Community Plan Land Use Map. Although designated agriculture, the property is not rated on Agricultural Lands of Importance to the State of Hawaii (ALISH) maps. The Land Study Bureau identifies a single land type---C14---comprising the property. The C rating means the land is fair(ly) suited for agriculture. There are no agricultural activities occurring on the subject property.

Except for scattered patches of grass, there is no vegetation on the radio site. Common gardenia *(Gardenia sp.)* and ti *(Cordyline terminalis)* grow alongside the office building and a hedge formed of ti has been planted next to the storage shed.

There are no archaeological features or historically significant buildings on the premises.

Water, power, and communication services are available at the baseyard.

D. Potential Environmental Impacts

Limited grubbing, excavation, and grading will be performed to clear the land and construct the tower foundation and pad for the equipment cabinet. It has not been determined if a larger concrete pad will be constructed in anticipation of installing a permanent structure at a later time. These activities, coupled with the relatively small building site (about 100 square feet) will not result in significant adverse impacts.

Construction activities will not disrupt normal, work activities at the baseyard.

The 50-foot tower will be a new object on the premises. It will rise above the adjoining single story buildings and may be visible from areas below the baseyard. Passersby on the Hana Highway may glimpse the structure when approaching from the Haiku direction. At this time there is no structure of similar height in the area.

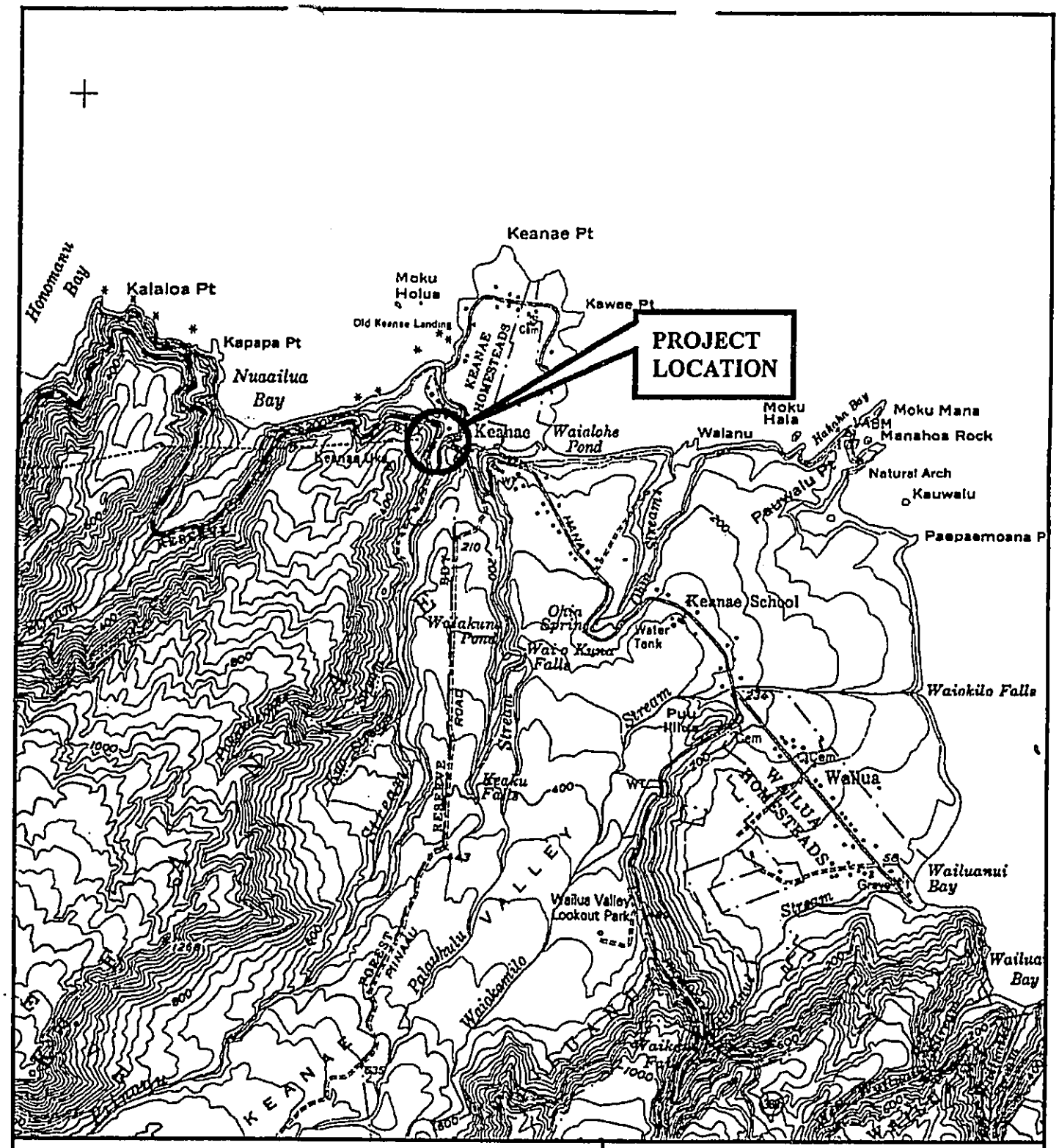


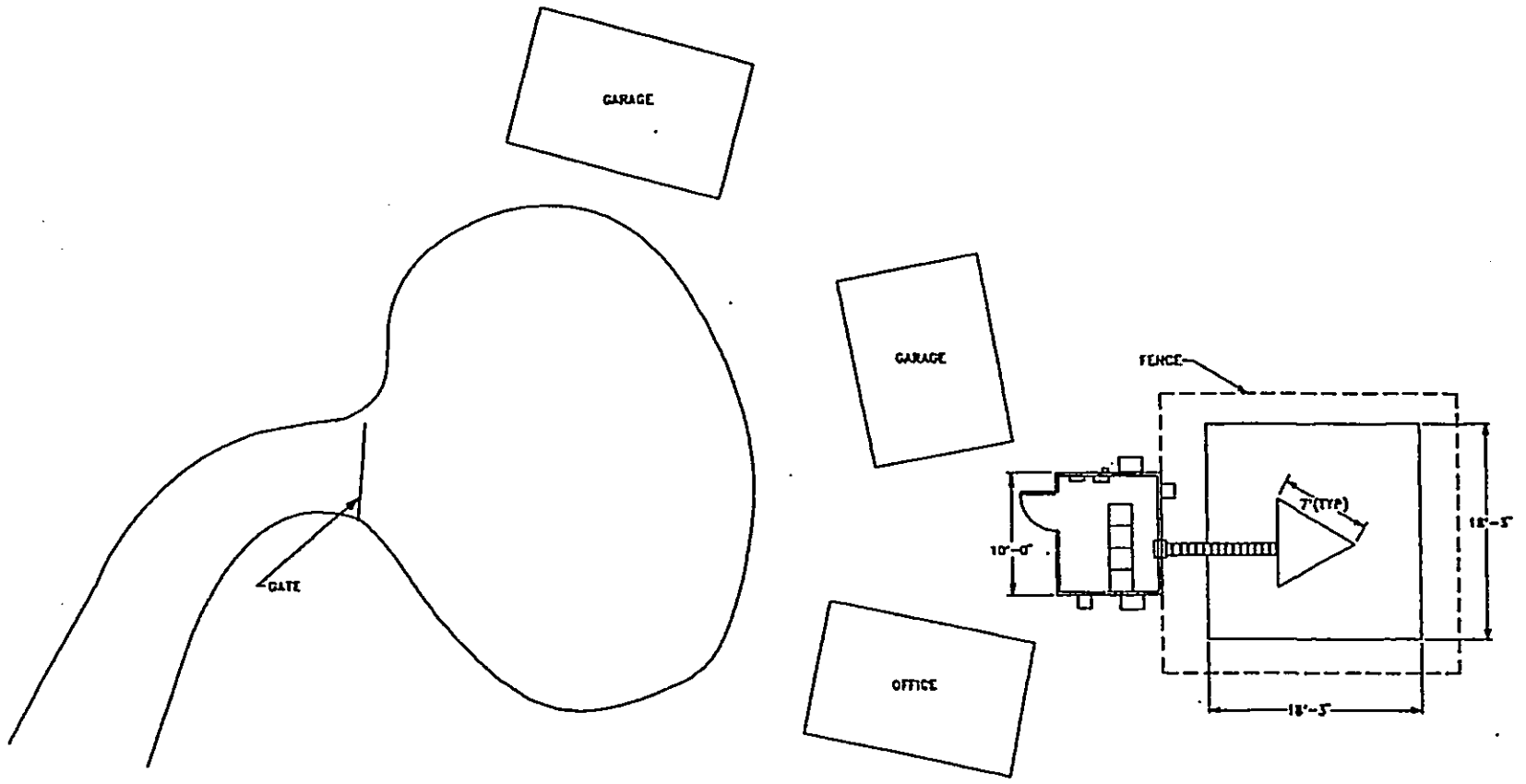
Figure 1
Location Map

Keanae

County of Maui Police Department
800 MHz Trunked Radio System
Source: USGS Keanae Quadrangle
Scale: 1"=2000'

GERALD PARK URBAN PLANNER

County of Maui
Keanae Site



C- 138-421

REVISIONS

Figure 2

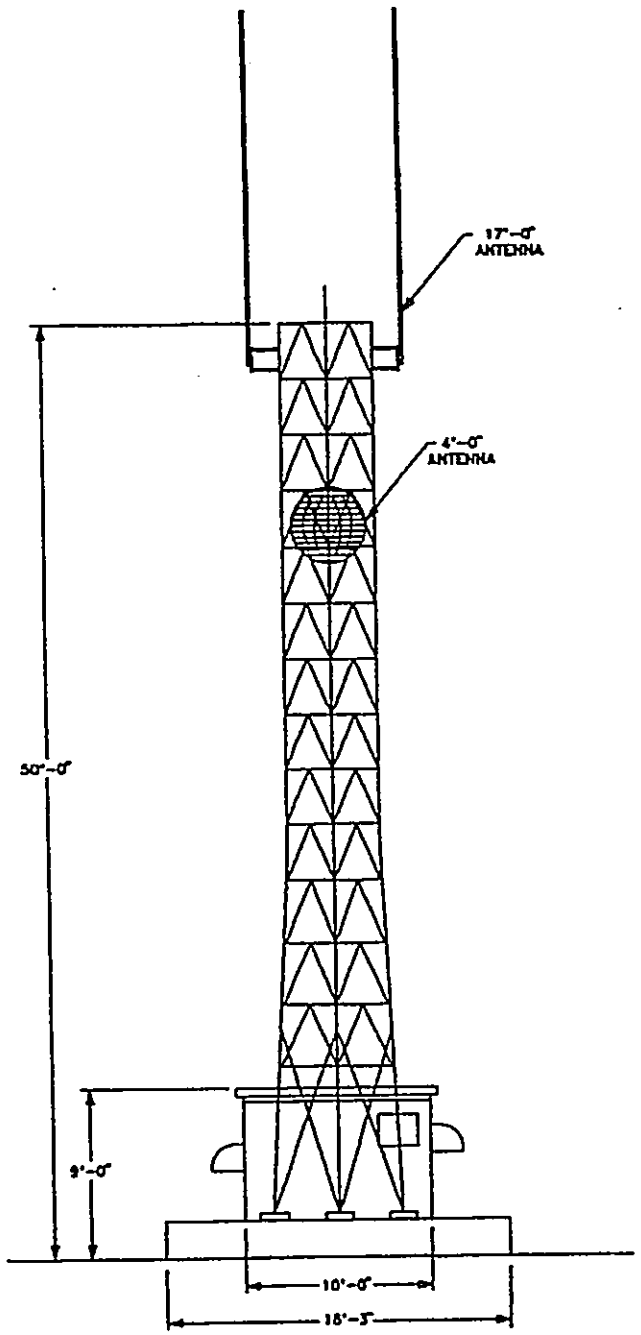
GENERAL NOTES

1. THIS DRAWING IS CONCEPTUAL IN NATURE & IS NOT INTENDED TO SHOW ALL THE REQUIRED WIRING FOR THIS SYSTEM.
2. ACTUAL BID EQUIPMENT LISTING MAY DIFFER FROM THIS ILLUSTRATION.
3. THERE IS NO WARRANTY BASED ON THIS ILLUSTRATION.

TOLERANCE UNLESS OTHERWISE SPECIFIED	DRAWN BY B.ZIEBELL	DATE 2-16-95	EF Johnson™
DECIMALS mm	CHECKED BY M.HOPPE	DATE 2-16-95	TITLE COUNTY OF MAUI KEANAE SITE
FINISH	APPROVED BY	DATE	
	APPROVED BY	DATE	EDRC NO. DRAWING NO. C- 030-8138-421
	RELEASE DATE		SCALE NONE SHEET 1 OF 1

County of Maui

Elevation View – Keanae Site



DRA
C- 030-8138-450
D

1. REDRAWN TO SCALE 1/64"=1' (10MAR.95)
2. CHANGED ANTENNA SIZES FROM 11' TO 5' & FROM 8' TO 4'. (11MAR.95)
3. MOVED BUILDING SO BOTTOM WAS FLUSH WITH BOTTOM OF TOWER.
4. CHANGED LENGTH OF ANTENNAS FROM 5' TO 17'. (14MAR.95)

GENERAL NOTES

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2. ACTUAL BID EQUIPMENT LIST(S) MAY DIFFER FROM THIS ILLUSTRATION.
3. THERE IS NO WARRANTY BASED ON THIS ILLUSTRATION.

TOLERANCE UNLESS OTHERWISE SPECIFIED		DRAWN BY	DATE	EF Johnson™
DECIMALS .XX	mm	B.ZIEBELL	2-16-95	
.XXX		CHECKED BY M.HOPPE	DATE 2-16-95	TITLE COUNTY OF MAUI ELEVATION VIEW - KEANAE SITE
MATL		APPROVED BY	DATE	
FINISH		APPROVED BY	DATE	CODE NO. DRAWING NO. C- 030-8138-450
		RELEASE DATE		SCALE NONE WT. SHEET 1 OF 1

Figure 3

County of Maui

Equipment Room Floor Plan – Keanae Site

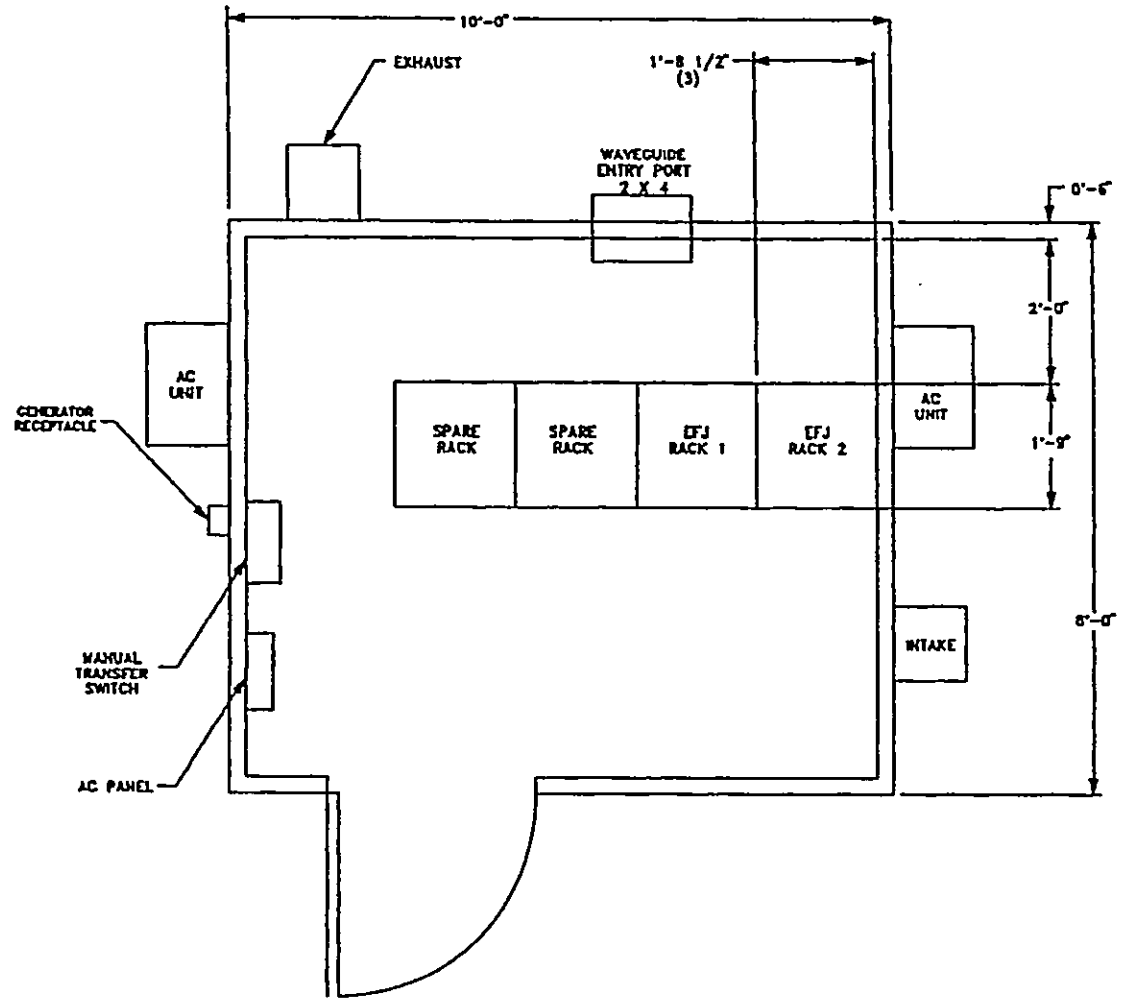


Figure 4

GENERAL NOTES

1. THIS DRAWING IS CONCEPTUAL IN NATURE & IS NOT INTENDED TO SHOW ALL THE REQUIRED WIRING FOR THIS SYSTEM.
2. ACTUAL BID EQUIPMENT LISTED MAY DIFFER FROM THIS ILLUSTRATION.
3. THERE IS NO WARRANTY BASED ON THIS ILLUSTRATION.

REVISIONS
1. DELETED RACK 3, ADDED SPARE RACK. (11MAR.95)

TOLERANCE UNLESS OTHERWISE SPECIFIED	DRAWN BY: R.ZIEBELL	DATE: 2-16-95	EF Johnson™
DECIMALS: .XX ±, .XXX ±, MFR., FINISH	CHECKED BY: C.COLBY	DATE: 2-16-95	TITLE: COUNTY OF MAUI EQUIPMENT ROOM FLOOR PLAN – KEANAE SITE
	APPROVED BY	DATE	CODE NO.
	APPROVED BY	DATE	DRAWING NO. C– 030-8138-410
	RELEASE DATE		SCALE: NONE U/M SHEET 1 OF 1

C– 138-410

Hana Airport
Site Profile

TAX MAP KEY:	1-3-03: 22 Portion Kauamanu-Kaeleku, Hana, Maui
LAND AREA:	143.96 acres
Area of Use:	520 square feet
LAND OWNER:	State of Hawaii
EXISTING USE:	Airport
NEAREST TOWN:	Hana
Distance From Site:	3.4 Miles
PROPOSED USE:	Communication Facility
STATE LAND USE DISTRICT:	Agriculture
COMMUNITY PLAN AREA:	Airport
Zoning:	Airport
SPECIAL MANAGEMENT AREA:	Within Special Management Area

A. Location and Existing Use

Hana Airport is located on the low-lying Kauamanu-Kaeleku coastal plain about 1 mile makai of the Hana Highway (See Figure 1). Formally opened in 1950, the airport services primarily fixed wing commuter and private propeller and rotary aircraft.

This site is not yet radio developed for County use. The Hana Airport radio facility will be built in an open field on the western side of the airport access road about 50 feet mauka of the airport office building and paved parking lot.

B. Proposed Improvements

Like the Keanae site, only a radio cabinet and tower will be constructed for short-term use. Radio controls and instruments will be housed in a free-standing cabinet. The stainless steel cabinet measures 3'L X 2' W X 6' high and will be painted gray. A 40-foot tall, self-supporting steel tower will be erected in a 10' X 10' area (100 square feet) adjacent to the equipment cabinet. One 10' and one 6' diameter microwave dish antenna and two 11' omnidirectional antennas will be mounted on the tower. The tower and equipment cabinet will be fenced. A Site Plan and Elevation Plan are shown in Figures 2 and 3.

In the long-term, radio equipment will be housed in a pre-fabricated fiber glass structure on a larger building site (about 520 square feet). The single-story shelter measures 12'L X 8'W X 9'H (See Figure 4). The shelter will be air conditioned to maintain a controlled operating environment. The shelter can be painted to match the existing exterior color of the airport buildings.

The Hana Airport repeater will link with the Hana GTE Mobilnet site about 3.5 miles to the south and Puu Nianiau about 15 miles to the west.

C. Affected Environment

Ground elevation averages 61 feet across the flat, open building site. Vegetation consists only of common Bermuda grass *(Cynodon dactylon)*. The grassy area and areas around the office building are well maintained. The presence of an above ground irrigation line suggests it is frequently watered.

Flood Insurance Rate Maps designate the Hana Airport Zone C which is defined as "areas of minimal flooding (Federal Emergency Management Agency, 1981)".

There are no archaeological features on the premises.

The Fish and Wildlife Service (April, 1996) commented that the Pacific golden-plover, a protected specie under the Migratory Bird Treaty Act of 1918 "is known to forage in grassy areas of the Hana Airport".

Although the Hana Airport is designated Agriculture on State land use maps it is not used for agricultural purposes. The Hana Community Plan general plans and zones the site Airport.

Several power poles 30-40 feet in height cross the grassy area about 20 feet to the east of the radio site. The radio facility will be located approximately 36 feet mauka of an existing 12' in diameter and 20-foot high self-supporting tower with dish antenna operated by Chronicle Cablevision.

Water and communication systems provided to the airport are available for the proposed use. Domestic wastewater is discharged into cesspools.

D. Potential Environmental Impacts

Limited grubbing, excavation, and grading will be performed to construct concrete foundations for the equipment cabinet and tower. These activities coupled with the relatively small affected area (about 100 square feet) will not result in significant environmental impacts. Dust suppression measures will be implemented to minimize fugitive dust raised during sitework. The Contractor also will exercise caution so as not to interfere with or damage adjacent power poles and antenna structures. It has not been determined if a larger concrete pad will be constructed in anticipation of installing a permanent structure at a later time.

The Fish and Wildlife Service expressed concern that antennas to be mounted atop the tower may pose a collision hazard for the Pacific golden-plover. To mitigate this potential impact, the radio contractor will consider using streamers or other visual devices which would allow plovers to avoid the antenna.

The tower itself will present a different object to be seen at the airport but its height is not significantly taller than the height of adjacent power poles. ***The Police Department wants their facility to blend with the existing decor and will paint their shelter and antenna and possibly landscape the area around the shelter (OEQC, 1996).***

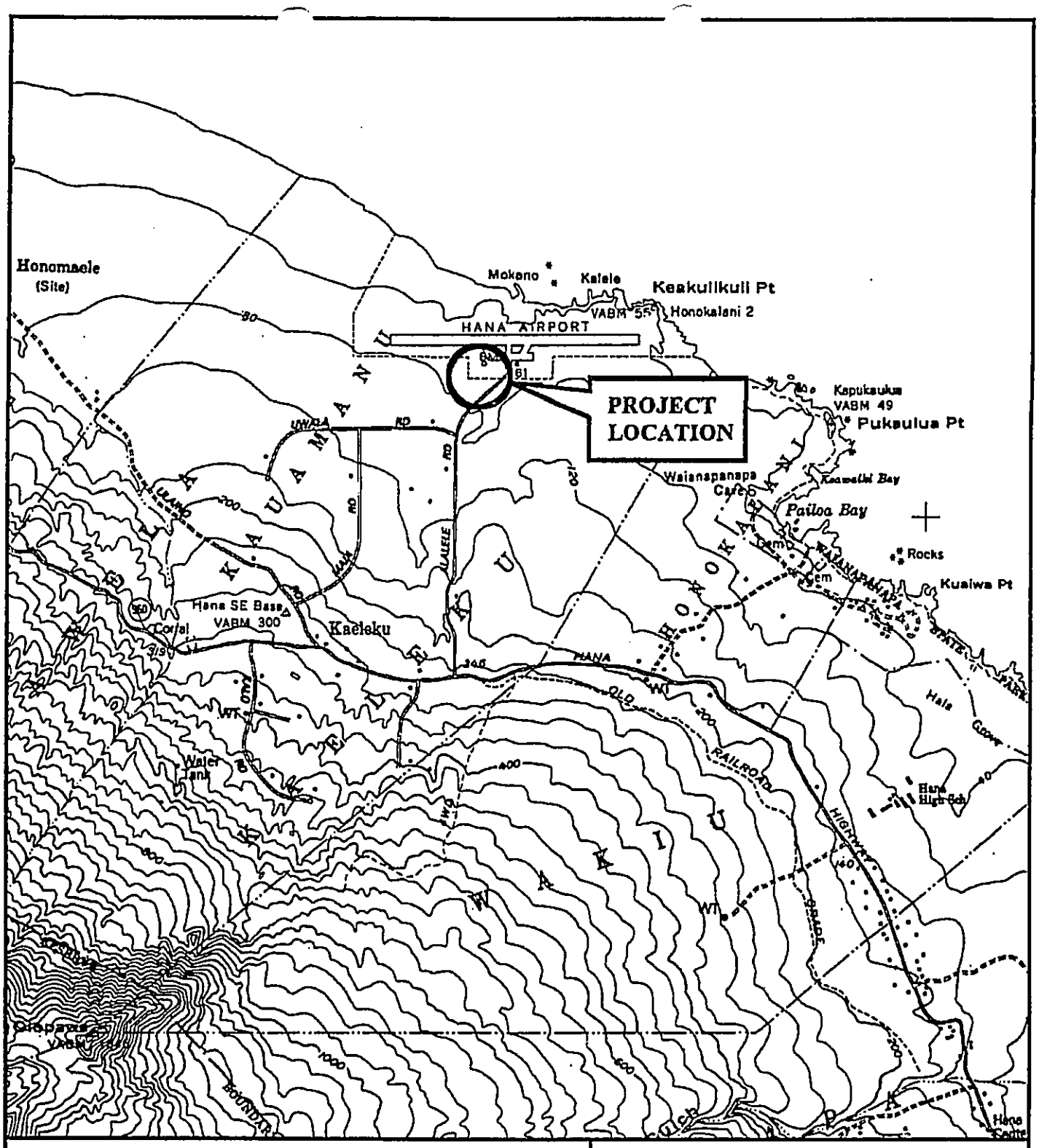


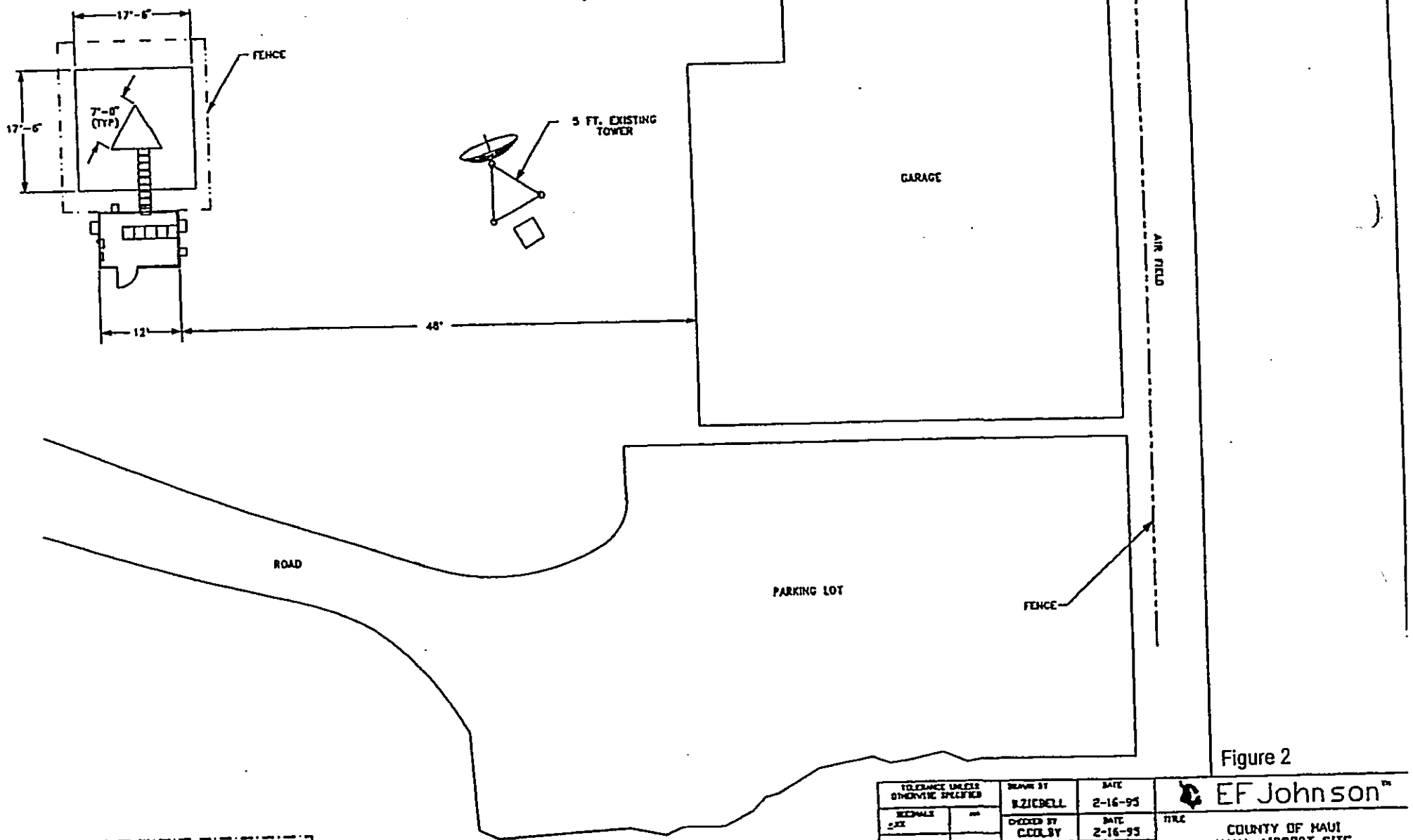
Figure 1
Location Map

Hana Airport

County of Maui Police Department
800 MHz Trunked Radio System
Source: USGS Hana Quadrangle
Scale: 1"=2000'

GERALD PARK URBAN PLANNER

County of Maui
Hana Airport Site



GENERAL NOTES

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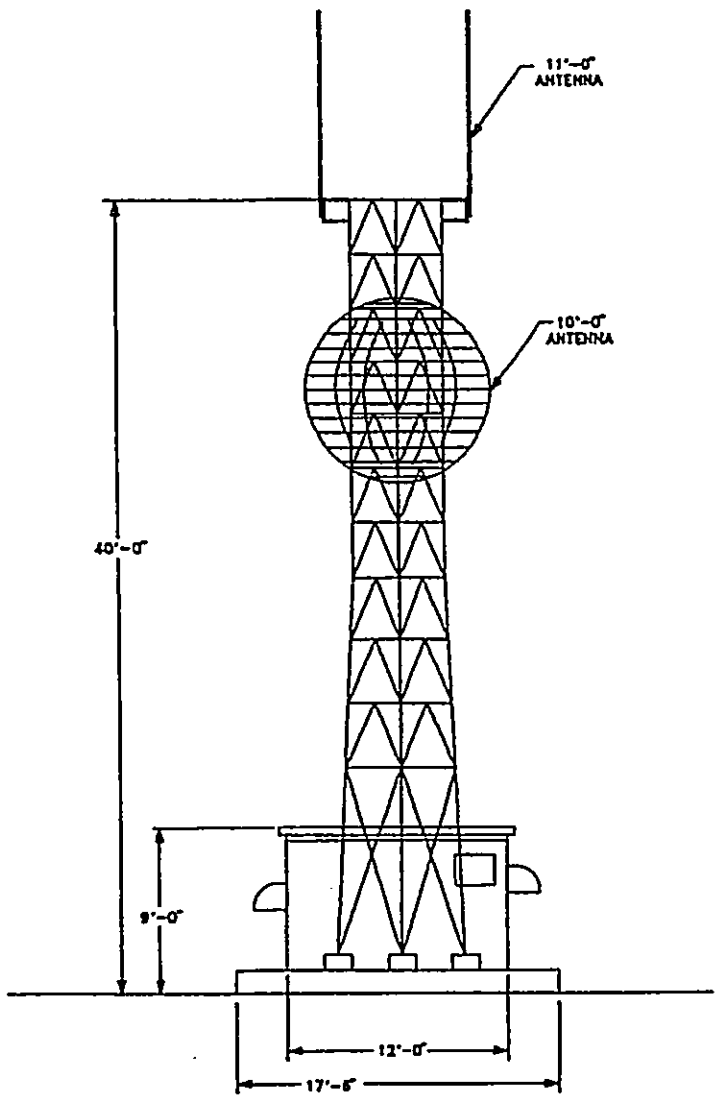
2. ACTUAL BID EQUIPMENT LISTED MAY DIFFER FROM THIS ILLUSTRATION.
3. THERE IS NO WARRANTY BASED ON THIS ILLUSTRATION.

TOLERANCE UNLESS OTHERWISE SPECIFIED	DRAWN BY B.ZIEBELL	DATE 2-16-95	EF Johnson
DECIMALS .XX .XXX	CHECKED BY C.COLBY	DATE 2-16-95	TITLE COUNTY OF MAUI HANA AIRPORT SITE
MATL	APPROVED BY	DATE	CODE NO. DRAWING NO. C- 030-8138-221
FINISH	APPROVED BY	DATE	SCALE NONE SIZE SHEET 1 OF 1
	RELEASE DATE		

Figure 2

23

County of Maui
Elevation View – Hana Airport Site



GENERAL NOTES

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2. ACTUAL BID EQUIPMENT LIST(S) MAY DIFFER FROM THIS ILLUSTRATION.
3. THERE IS NO WARRANTY BASED ON THIS ILLUSTRATION.

DR/
C- 030-8138-250

	REVISIONS
1.	REDRAWN TO SCALE 1/64"=1' (10.MAR.95)
2.	CHANGED ANTENNA SIZES FROM 11' TO 15' & FROM 8' TO 10'. (11.MAR.95)
3.	MOVED ANTENNA TO TOP OF TOWER, SHORTENED IT FROM 15' TO 11'.
4.	MOVED BUILDING SO THAT BOTTOM OF IT WAS EVEN W/ THE BOTTOM OF TOWER FOUNDATION. (13.MAR.95)
5.	REMOVED (2) FROM ANTENNA CALL-OUT. (14.MAR.95)

TOLERANCE UNLESS OTHERWISE SPECIFIED		DRAWN BY R.ZIEBELL	DATE 2-16-95
DECIMALS .XX	mm	CHECKED BY M.HOPPE	DATE 2-16-95
.X'S		APPROVED BY	DATE
MATL		APPROVED BY	DATE
FINISH		RELEASE DATE	

EF Johnson™

TITLE: COUNTY OF MAUI ELEVATION VIEW - HANA AIRPORT SITE

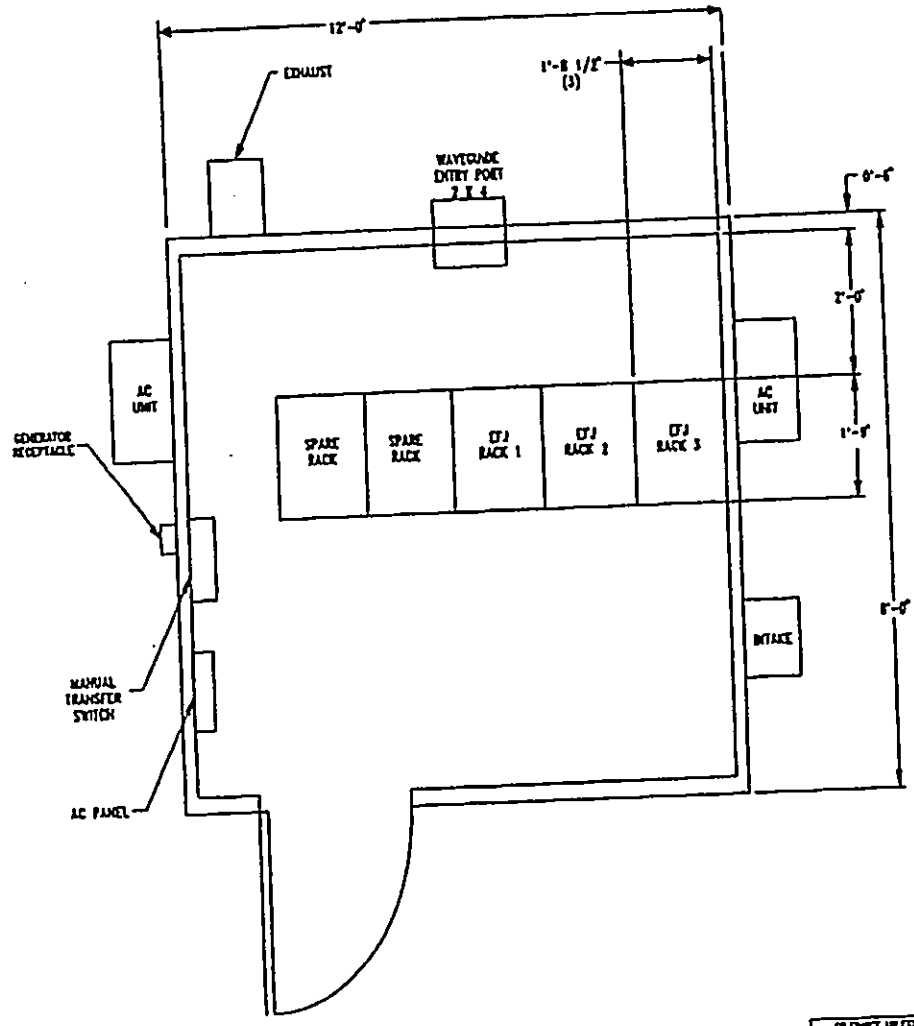
CODE NO. | DRAWING NO. C- 030-8138-250

SCALE NONE | SIZE | SHEET 1 OF 1

Figure 3

County of Maui

Equipment Room Floor Plan – Hana Airport Site



GENERAL NOTES

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2. ACTUAL BTS EQUIPMENT LISTED MAY DIFFER FROM THAT ILLUSTRATED
3. THERE IS NO WARRANTY BASED ON THIS ILLUSTRATION

DRAWING NO. C- 030-8138-210	
0	REVISIONS
1	DELETED RACK 4, ADDED SPARE RACK. (13MAR95)

DRAWING NO. C- 030-8138-250	
0	REVISIONS
1	REDRAWN TO SCALE 1/64"=1" (13MAR95)
2	CHANGED ANTENNA SIZES FROM 12' TO 13' & FROM 8' TO 10'. (13MAR95)
3	MOVED ANTENNA TO TOP OF TOWER, SHORTENED IT FROM 15' TO 12'.
4	MOVED BUILDING SO THAT BOTTOM OF IT WAS EVEN WI THE BOTTOM OF TOWER FOUNDATION. (13MAR95)
5	REMOVED (2) FROM ANTENNA CALL-OUT. (14MAR95)

TOLERANCE UNLESS OTHERWISE SPECIFIED			DRAWN BY B.ZIEMBELL	DATE 2-16-95	EF Johnson
DECIMALS .XX	.XXX		CHECKED BY C.COLBY	DATE 2-16-95	TITLE COUNTY OF MAUI EQUIPMENT ROOM FLOOR PLAN - HANA AIRPORT SITE
ANGLES ±			APPROVED BY	DATE	CAGE NO. DRAWING NO. C- 030-8138-210
MATL			APPROVED BY	DATE	SCALE NONE DATE SHEET 1 OF 1
FINISH			RELEASE DATE		

TOLERANCE UNLESS OTHERWISE SPECIFIED			DRAWN BY B.ZIEMBELL	DATE 2-16-95	EF Johnson
DECIMALS .XX	.XXX		CHECKED BY M.HOPPE	DATE 2-16-95	TITLE COUNTY OF MAUI ELEVATION VIEW - HANA AIRPORT SITE
ANGLES ±			APPROVED BY	DATE	CAGE NO. DRAWING NO. C- 030-8138-250
MATL			APPROVED BY	DATE	SCALE NONE DATE SHEET 1 OF 1
FINISH			RELEASE DATE		

Figure 4

GTE Hana Mobilnet
Site Profile

TAX MAP KEY:	1-4-03: 09 Wananalua, Hana, Maui
LAND AREA: Area of Use:	143.96 acres 10 square feet
LAND OWNER:	Hana Ranch
EXISTING USE:	Radio Communication Facility
NEAREST TOWN: Distance From Site:	Hana 1.2 Miles
PROPOSED USE:	Communication Facility
STATE LAND USE DISTRICT:	Agricultural
COMMUNITY PLAN AREA: Zoning:	Agriculture Agriculture
SPECIAL MANAGEMENT AREA:	Outside SMA

A. Location and Existing Use

The GTE Hana radio facility will be located in pasture lands on the upland slopes about 1 mile above the Hana Ranch Center (See Figure 1). This site was developed by GTE Mobilnet in 1992 to provide cellular telephone coverage to this part of East Maui.

The radio site is approximately 1,500 square feet in area (50' X 30') and enclosed by a 6-foot high chain link fence. An electrified cattle fence is attached to the chain link fence to keep grazing cattle away from the facility. Improvements include an equipment building (30'L X 18' W X 12'H), three 20-foot monopole antenna structure, electrical vault, emergency generator, and a 300 gallon above ground diesel fuel tank. A Site Plan is shown in Figure 2.

B. Proposed Improvements

Microwave and radio equipment will be installed on racks inside the existing equipment building and a microwave dish and 2 antennas will be attached atop one of the existing three monopole towers. Cable trays exist which support antenna cabling from the monopole to the equipment building. The Police Department is negotiating a lease agreement with GTE Mobilnet for use of their facilities.

The Hana GTE Mobilnet site will link with the Hana Airport site.

C. Affected Environment

The GTE Hana Mobilnet facility is located at about the 820 foot elevation overlooking Hana Town and Hana Bay. Lands surrounding the facility are used for grazing cattle and several head of cattle were observed at the higher elevations.

The affected environment is a 1,500 square foot compound improved by and operated as a communication facility by GTE Mobilnet. The environment within the radio compound is all man made and there is no natural environment to be directly affected by the proposed project. The ground of the compound is covered almost entirely by No. 3 rock except for concrete building pads on which the exterior improvements noted previously are mounted.

Shrubs planted on the lower side of the facility screen the compound from public view. In addition, the thin monopole antennas are barely visible from populated areas below.

The building site is on lands designated Agricultural by the State Land Use Commission. The Hana Community Plan general plans and zones the property Agriculture.

Access to the site is along a rough jeep trail through pasture lands beginning from the Hana Ranch Center. Use of the trail is restricted by the land owner. Underground conduits bring electrical power and telephone circuits from Hana town, one mile away. Emergency power is provided by a backup generator.

D. Potential Environmental Impacts

Because the proposed improvements will use an existing facility, the improvements will not create any ground disturbances, adversely alter the physical characteristics of the site and surrounding area, and adversely affect public views.

GTE Mobilnet (April, 1996) expressed concern about possible radio interference between the Police Department system and their cellular system. The radio contractor has checked the receive and transmit frequencies of the GTE system at Hana. Theyconfirm that there is adequate frequency separation between both systems and the County of Maui Police Department system will not overlap into the GTE Mobilnet celluar system at GTE Hana.

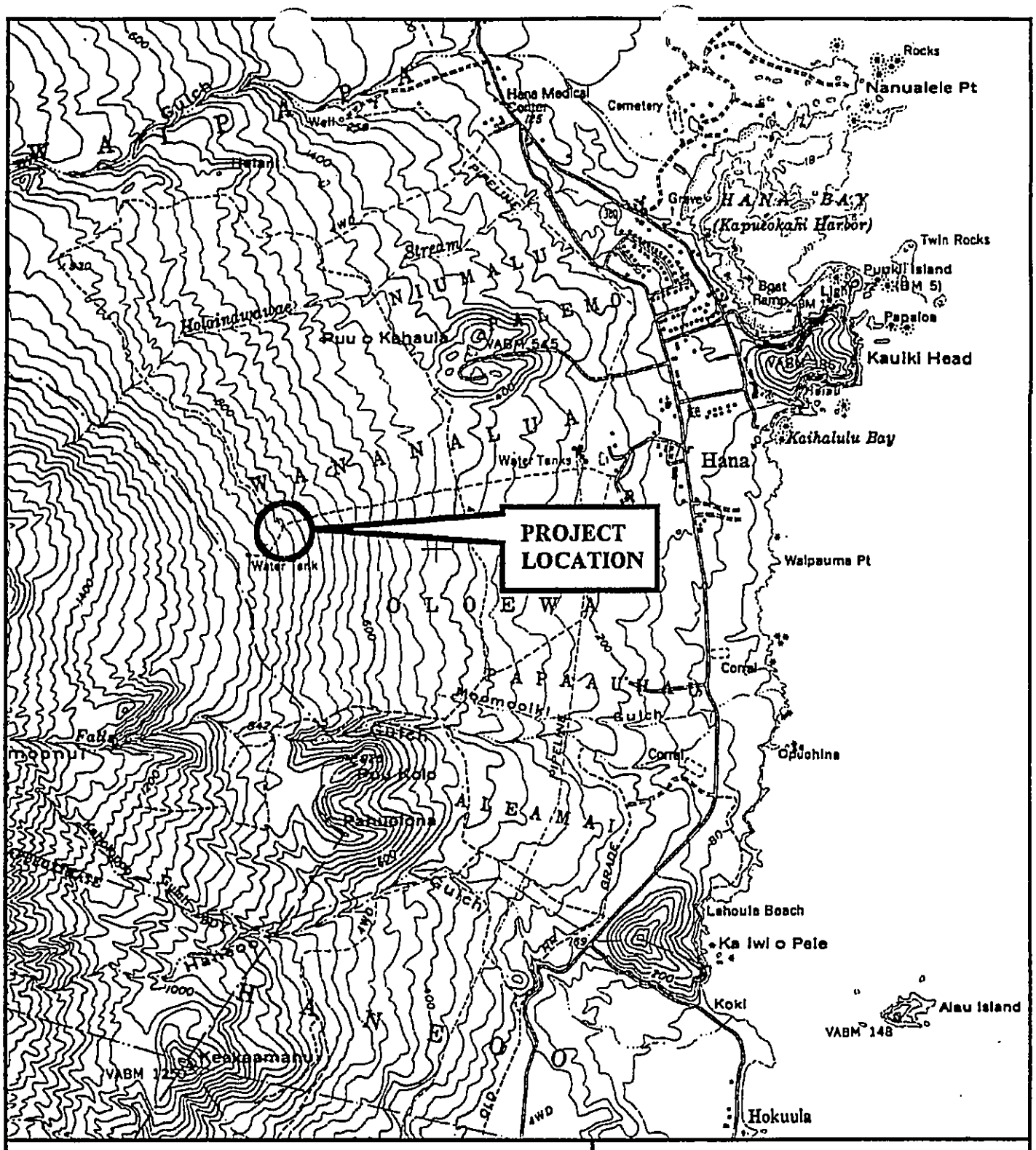
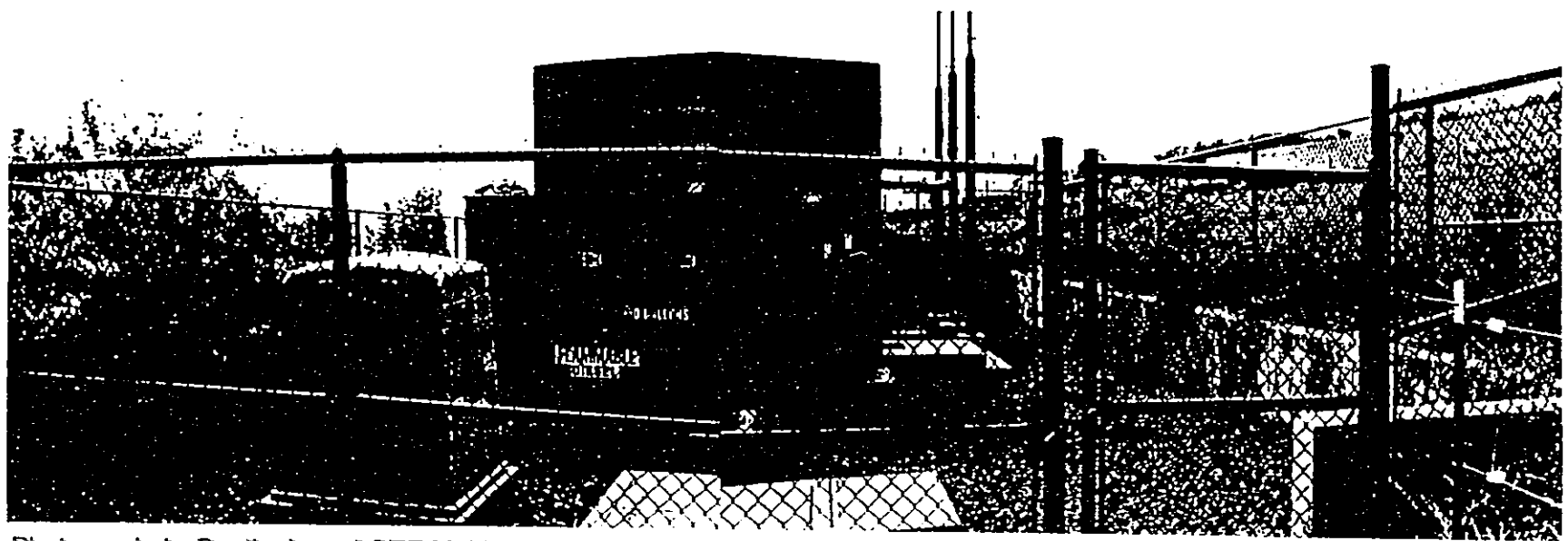


Figure 1
Location Map

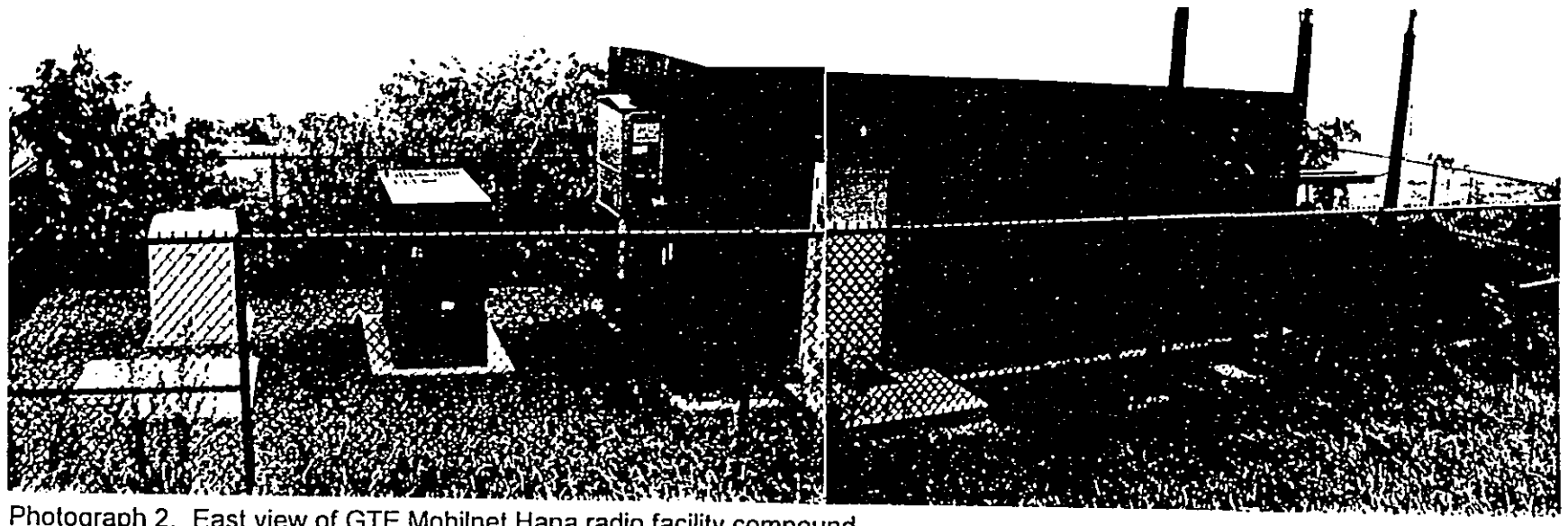
GTE Hana Mobilnet

County of Maui Police Department
800 Mhz Trunked Radio System
Source: USGS Hana Quadrangle
Scale: 1"=2000'

GERALD PARK URBAN PLANNER



Photograph 1. South view of GTE Mobilnet Hana radio facility compound. Entry gate at right.



Photograph 2. East view of GTE Mobilnet Hana radio facility compound.

Puu Nianiau
Site Profile

TAX MAP KEY:	2-3-05: 04 Makawao, Maui
LAND AREA: Area of Use:	9,924.289 acres 1,200 square feet
LAND OWNER:	Haleakala Ranch Company
EXISTING USE:	Vacant
NEAREST TOWN: Distance From Site:	Pukalani 14.5 miles
PROPOSED USE:	Communication Facility
STATE LAND USE DISTRICT: Subzone:	Conservation Resource
COMMUNITY PLAN AREA: Zoning:	Pukalani-Kula-Makawao Agriculture
SPECIAL MANAGEMENT AREA:	Outside SMA

A. Location and Existing Use

The communication facility will be located at Puu Nianiau on the upper slopes of Mount Haleakala near the northwest corner of Haleakala National Park (See Figure 1).

The Police Department operates a radio repeater from an existing communication shelter owned by Maui Electric Company. Other tenants using the shelter include Maui Electric Company and East Maui Irrigation. User antennas are mounted on a 65-foot tall wooden pole outside the shelter. The Police Department has operated a base station at this location since 1972.

B. Proposed Improvements

The Maui Police Department proposes to construct a self-contained communication facility consisting of a pre-fabricated equipment shelter, 60-foot high self-supporting steel tower, emergency generator, and fencing. A Site Plan is shown in Figure 2.

Radio equipment will be housed in a pre-fabricated fiber glass equipment shelter bolted onto a concrete foundation. The self-contained shelter measures 18'L X 12'W X 9' H and will be air

Puu Nianiau
Site Profile

TAX MAP KEY:	2-3-05: 04 Makawao, Maui
LAND AREA: Area of Use:	9,924.289 acres 1,200 square feet
LAND OWNER:	*Haleakala Ranch Company*
EXISTING USE:	Vacant
NEAREST TOWN: Distance From Site:	Pukalani 14.5 miles
PROPOSED USE:	Communication Facility
STATE LAND USE DISTRICT: Subzone:	Conservation Resource
COMMUNITY PLAN AREA: Zoning:	Pukalani-Kula-Makawao Agriculture
SPECIAL MANAGEMENT AREA:	Outside SMA

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Radio equipment will be housed in a pre-fabricated fiber glass equipment shelter bolted onto a concrete foundation. The self-contained shelter measures 18'L X 12'W X 9' H and will be air

conditioned to maintain a proper operating environment. A 15KW emergency generator will be installed inside a separate compartment within the shelter (See Figure 3).

A three-legged 60-foot high self-supporting steel tower will be erected adjacent to the equipment shelter. Seven microwave dish antenna (sizes of 6', 8', 10' two at 15', and two at 4') and two 17' omnidirectional antennas will be mounted on the tower. The equipment building and radio tower will be enclosed by a 6-foot high chain link fence. An Elevation View is shown in Figures 4.

Primary power is already available at the site. The emergency generator will operate only during power outages and routine maintenance testing.

C. Affected Environment

The Puu Nianiau radio site is located at about the 6,900 foot elevation of Mount Haleakala. The site already has been developed for telecommunication uses including television receiving and re-broadcast, satellite reception, and radio communication facilities including equipment shelters, self-supporting antenna towers, and wood antenna poles.

The facility will be erected atop an elongated earth bank about 30 feet wide. The narrow site is bounded by the dirt access road on its lower side and a wire fence marking the boundary of Haleakala National Park on its upper side. The bank stands about 5-6 feet higher in grade than the dirt access road and slopes in the direction of the road.

Puu Nianiau is designated Conservation by the State Land Use Commission and the building site is within the Resource subzone of the conservation district.

The general area is sparsely vegetated with several pine trees watered by an inoperative drip irrigation system. On-site flora consists of the endemic species 'ohelo *(Vaccinium reticulatum)*, mamane *(Sophora chrysophylla)*, and pilo *(Coprosma ernodeoides)* and the indigenous pukiawe *(Styphelia tameiameiae)*. None are considered rare, threatened, or endangered .

There are no archaeological features on the premises.

No fauna was observed, however, pheasant are known to frequent the area and signs of the Nene goose *(Nesochen sandvicensis)* in the area have been previously observed. Harmer (No Date) reports that nesting sites of the endangered dark-rumped petrel *(Pterodroma phaeopygia sandwichensis)* may occur on Puu Nianiau although no nests have been located.

The site is accessed via a 15-foot wide dirt road from Haleakala Crater Road. The approximately 0.25 mile long road is owned by Haleakala Ranch Company and maintained by Maui Pineapple Co. The road is secured by a padlocked gate.

Electrical power is available at the site but telephone, municipal water and sewer facilities are not. A drip system irrigates several small pine trees planted on one side of the site, however, the source of the water is not known. The system is inoperative as the plastic tubing was observed to be broken in several area.

D. Potential Environmental Impacts

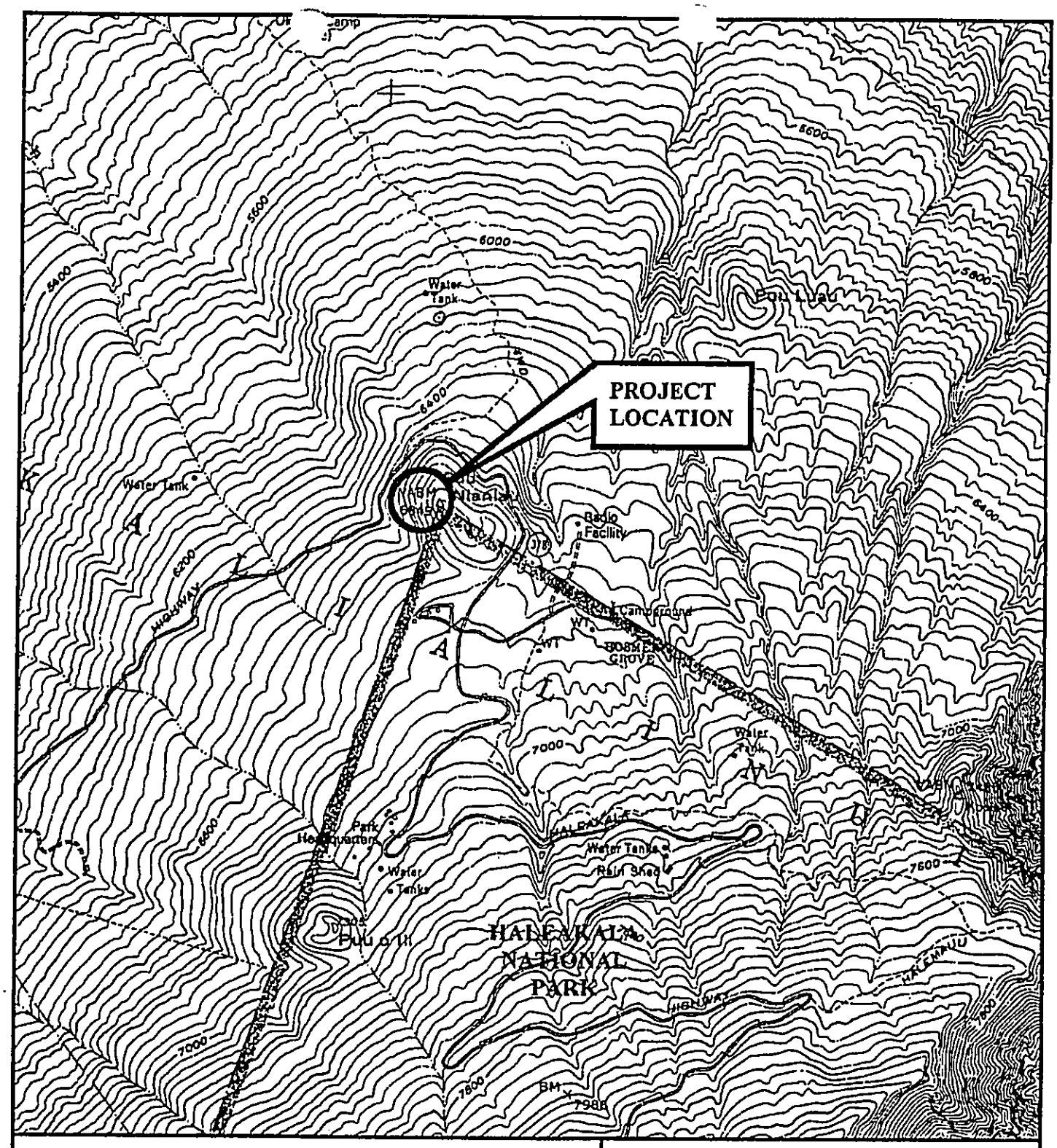
Grubbing, grading, and excavation are required to construct a level building pad and foundation for the shelter and tower and to set fence poles. The amount of excavation for the shelter and tower foundations will be determined after completion of soils testing and structural analysis (for the tower).

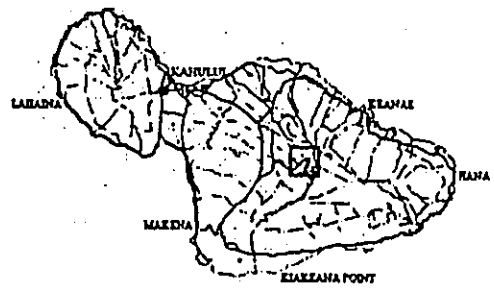
Vegetation within the building site will be grubbed and can be replanted outside the fenced enclosure. Should subsurface archaeological features be unearthed, work in the immediate area will cease and historic authorities notified for disposition of the finds.

The Police radio site and facilities should not interfere with existing radio and television facilities on the premises. If radio interference is detected, corrective measures will be taken immediately.

The 60-foot tower will be one of the taller structures on Puu Nianiau. Although similar in height to an existing 60-foot tower and wood antenna pole, it adds another object to be seen atop the puu from surrounding areas, sections of Haleakala Crater Road above and below the site, and the Ranger Station about 3/4 miles south of and higher in elevation than Puu Nianiau. This impact cannot be avoided but can be minimized by painting the tower to blend with its background.

Puu Nianiau was selected for a police radio facility because it is already radio developed, the Department operates a repeater from the site, and consolidating radio facilities and towers at this location makes more sense than erecting a complete communication shelter and tower at an unimproved site elsewhere. Interfering with the public enjoyment of the natural resource that is Haleakala not the intent of this project. However, the need to build and operate a radio facility at this location for public health, safety, and welfare outweighs visual concerns.





ISLAND OF MAUI

True North

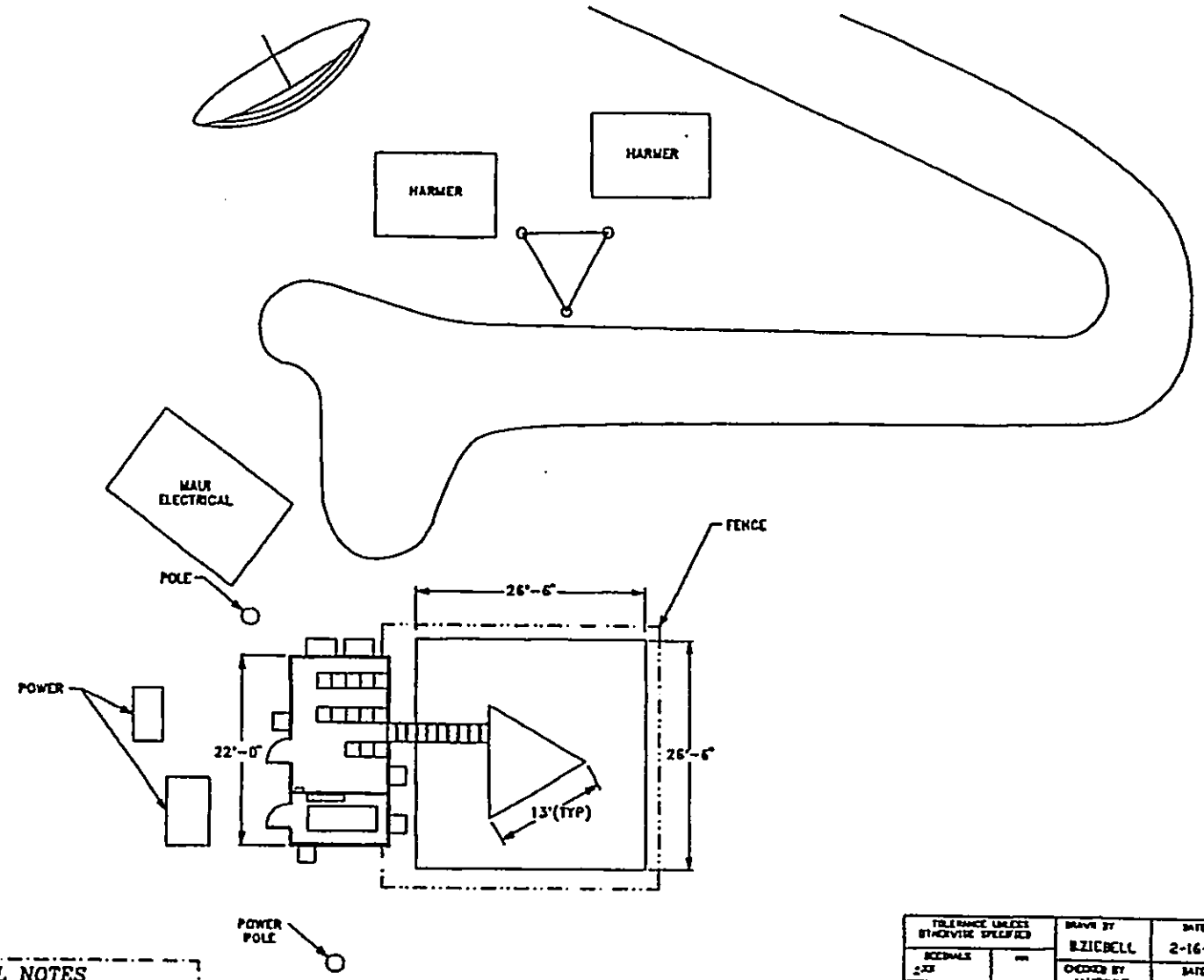
Figure 1
Location Map

Puu NiaNiau

County of Maui Police Department
800 MHz Trunked Radio System
Source: USGS Kilohana Quadrangle
Scale: 1"=2000'

GERALD PARK URBAN PLANNER

County of Maui
Pu'u Nianiau Radio Site



GENERAL NOTES

1. THIS DRAWING IS CONCEPTUAL IN NATURE & IS NOT INTENDED TO SHOW ALL THE REQUIRED WIRING FOR THIS SYSTEM.
2. ACTUAL BID EQUIPMENT LIST(S) MAY SUFFER FROM THIS ILLUSTRATION.
3. THERE IS NO WARRANTY BASED ON THIS ILLUSTRATION.

DRAWING C- .138-821

REVISIONS
1. CHANGED ORIENTATION OF BUILDING & TOWER 180°. (11MAR,95)

TOLERANCE UNLESS OTHERWISE SPECIFIED		DRAWN BY BZIEBELL	DATE 2-16-95
DECIMALS .XX	mm	CHECKED BY KHOPPE	DATE 2-16-95
.XXX		APPROVED BY	DATE
MATL		APPROVED BY	DATE
FINISH		RELEASE DATE	

EF Johnson™

TITLE: COUNTY OF MAUI PUU NIANIAU RADIO SITE

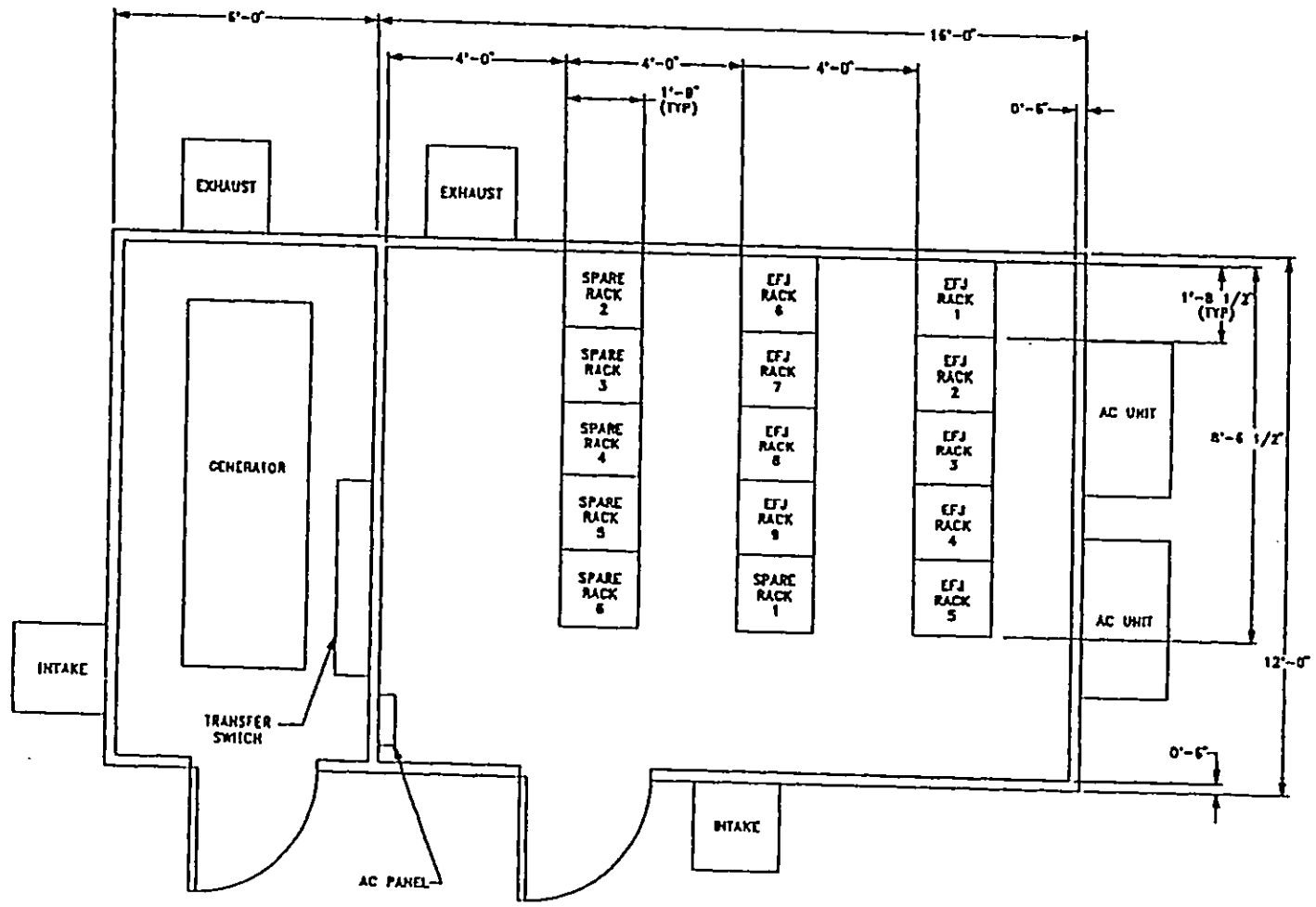
DRAWING NO. C- 030-8138-821

SCALE NONE | SHEET 1 OF 1

Figure 2

County of Maui

Equipment Room Floor Plan – Pu'u Nianiau Site



DRAWING NO
C- 38-810

NO	REVISIONS
1	ADDED SPARE RACK 85 & 86. (11MAR.95)

GENERAL NOTES

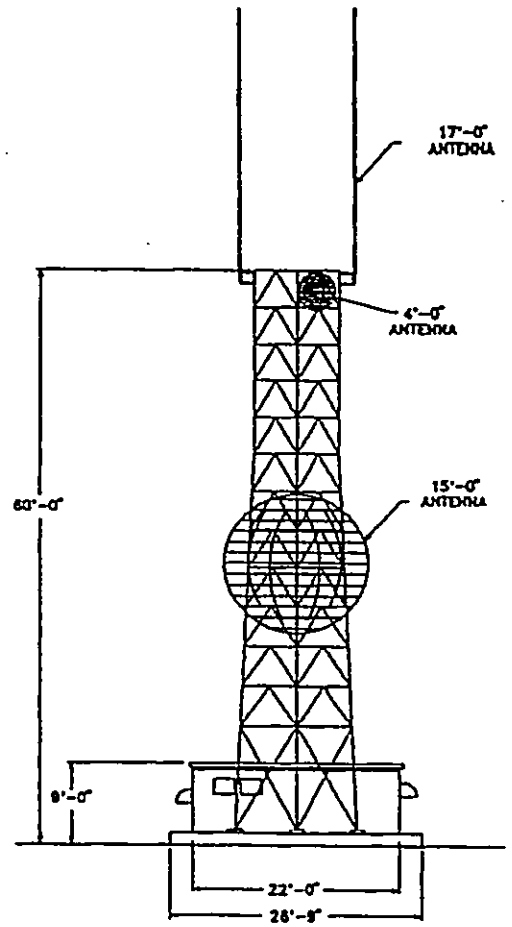
1. THIS DRAWING IS CONCEPTUAL IN NATURE & IS NOT INTENDED TO SHOW ALL THE REQUIRED WIRING FOR THIS SYSTEM.
2. ACTUAL BID EQUIPMENT LISTED MAY DIFFER FROM THIS ILLUSTRATION.
3. THERE IS NO WARRANTY BASED ON THIS ILLUSTRATION.

Figure 3

TOLERANCE UNLESS OTHERWISE SPECIFIED	DRAWN BY R.ZIEBELL	DATE 2-16-95	EF Johnson™
DECIMALS .XX .XXX ANGLE MATL FINISH	CHECKED BY C.COLBY	DATE 2-16-95	TITLE COUNTY OF MAUI EQUIPMENT ROOM FLOOR PLAN – PU'U NIANIAU SITE
	APPROVED BY	DATE	CODE NO. DRAWING NO. C- 030-8138-810
	APPROVED BY	DATE	SCALE NONE SIZE SHEET 1 OF 1
	RELEASE DATE		

County of Maui

Elevation View – Pu'u Nianiau Site



DRA
C- 030-8138-850

REVISIONS
1. REDRAWN TO SCALE 1/64"=1' (10.MAR.95)
2. CHANGED THE SIZE OF THE ANTENNA FROM 11 FT. TO 5 F (11.MAR.95)
3. ADDED A 15 FT. ANTENNA (11.MAR.95)
4. CHANGED 15 FT. ANTENNA TO 17 FT. ANTENNA.
5. MOVED BUILDING SO THAT BOTTOM WAS EVEN WITH FOUNDATION BOTTOM.
6. CHANGED LOCATION OF 4' ANTENNA. (13.MAR.9
7. REMOVED (2) FROM ANTENNA CALL-OUT. (14.MAR.9

GENERAL NOTES

1. THIS DRAWING IS CONCEPTUAL IN NATURE & IS NOT INTENDED TO SHOW ALL THE REQUIRED WIRING FOR THIS SYSTEM.
2. ACTUAL BID EQUIPMENT LIST(S) MAY DIFFER FROM THIS ILLUSTRATION.
3. THERE IS NO WARRANTY BASED ON THIS ILLUSTRATION.

Figure 4

TOLERANCE UNLESS OTHERWISE SPECIFIED	DRAWN BY: BZIEBELL	DATE: 2-16-95	EF Johnson™
DECIMALS .XX .XXX MATL FINISH	CHECKED BY: MHOPPE	DATE: 2-16-95	TITLE: COUNTY OF MAUI ELEVATION VIEW - PU'U NIANAIU SITE
	APPROVED BY	DATE	CODE NO.
	APPROVED BY	DATE	DRAWING NO. C- 030-8138-850
	RELEASE DATE		SCALE: NONE U/M SHEET 1 OF 1

Puu Nana
Site Profile

TAX MAP KEY:	5-1-02:13 Kaluakoi, Molokai
LAND AREA: Area of Use:	9,924.289 acres 12 square feet
LAND OWNER:	Molokai Ranch
EXISTING USE:	Communication Facility
NEAREST TOWN: Distance From Site:	Mauna Loa 4.5 Miles
PROPOSED USE:	Radio Communication Facility
STATE LAND USE DISTRICT:	Agricultural
COMMUNITY PLAN AREA: Zoning:	Agriculture Agriculture
SPECIAL MANAGEMENT AREA:	Outside SMA

A. Location and Existing Uses

The Puu Nana radio facility will be located atop Puu Nana (formerly Mauna Loa) about 4.5 miles east of Mauna Loa town, Molokai (See Figure 1).

The Police Department has operated a base station at this location since 1978. Their radio equipment is housed in a 20'L X 8'W X 8'H hollow tile equipment shelter. Although a 50-foot wood pole antenna is adjacent to the equipment shelter, police department microwave dish, yagi, and whip or omnidirectional antennas are mounted on an adjoining tower owned by Maui Electric Company. The equipment shelter and pole antenna are located outside a fenced enclosure surrounding a water reservoir and communication facilities belonging to others.

B. Proposed Improvements

Microwave and radio equipment will be housed in an existing 18'L X 12'W (216 square foot) equipment building owned by Maui Electric Company (MECO). MECO has agreed to lease to the Police Department about 12 square feet of rack space in their building and space on their tower for mounting antenna. Cable trays will be installed to support cabling from the tower to the equipment building.

After the Police Department radio system has been energized, its existing radio facility will be dismantled and equipment building removed.

Puu Nana, one of the base stations in the Police radio system, will link both microwave and voice radio with a State of Hawaii site at Halcakala, Maui.

C. Affected Environment

Located in west central Molokai at an elevation of 1,345 feet above mean sea level, Puu Nana is an ideal site for telecommunication use and has been extensively developed for that purpose. Vendors including GTE Hawaiian Tel, Chronicle Cablevision, Maui Electric Company, Federal government users, and Cellular One maintain facilities atop the summit.

With the exception of installing cable trays to support cabling between the tower and shelter, all improvements will be confined to the interior of the shelter thus there is no natural features to be directly affected by the proposed improvements.

No wildlife was observed but cattle droppings were noted in the vicinity of the Police Department equipment shelter.

Puu Nana is designated Agricultural on State land use district boundary maps. The Molokai Community Plan general plans and zones the site Agriculture.

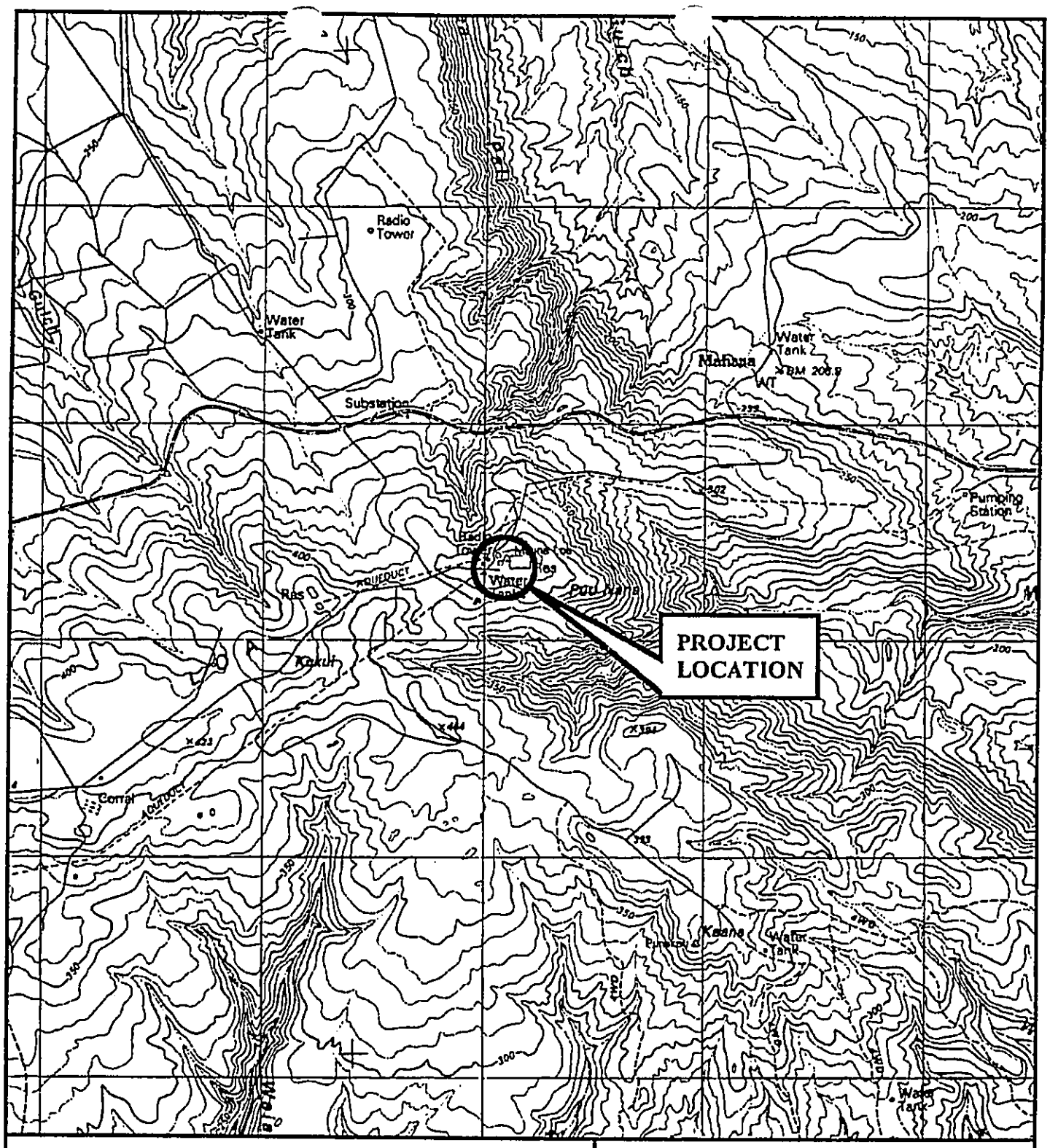
Puu Nana is accessed from Highway 460 via a dirt road crossing private property. The dirt road is about one mile long and secured by several padlocked gates.

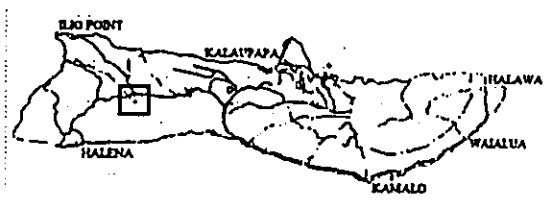
Primary power is brought to the summit via overhead cables.

D. Potential Environmental Impacts

Because the proposed improvements will use an existing facility, the improvements will not create any ground disturbances, cause erosion, affect drainage patterns, and adversely affect public views.

Because the Department will share the use of the MECO tower, a study needs to be completed to determine if this tower can withstand 155 mph.





ISLAND OF MOLOKAI

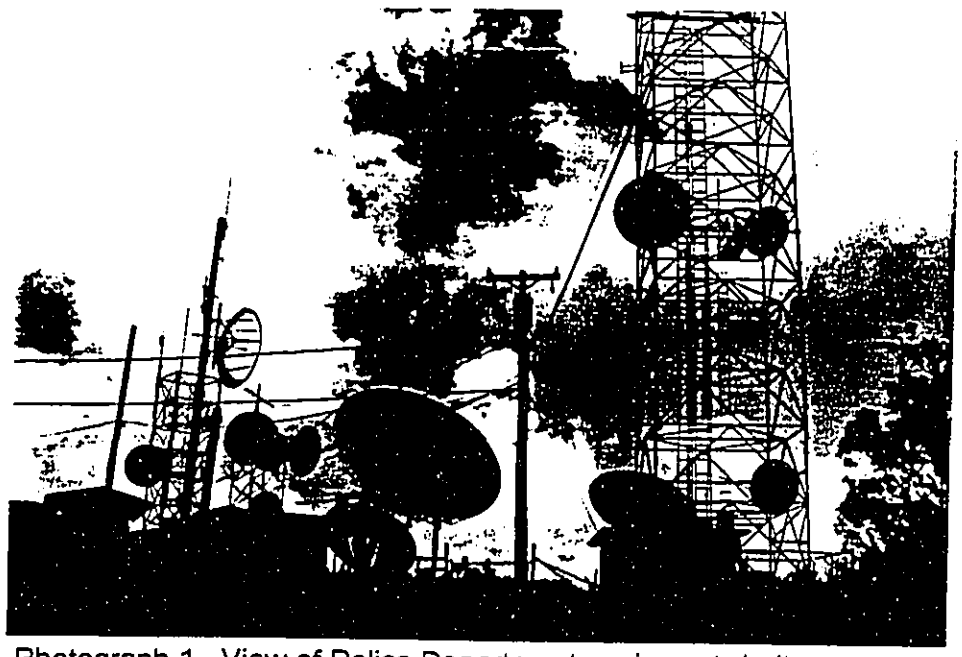
True North

Figure 1
Location Map

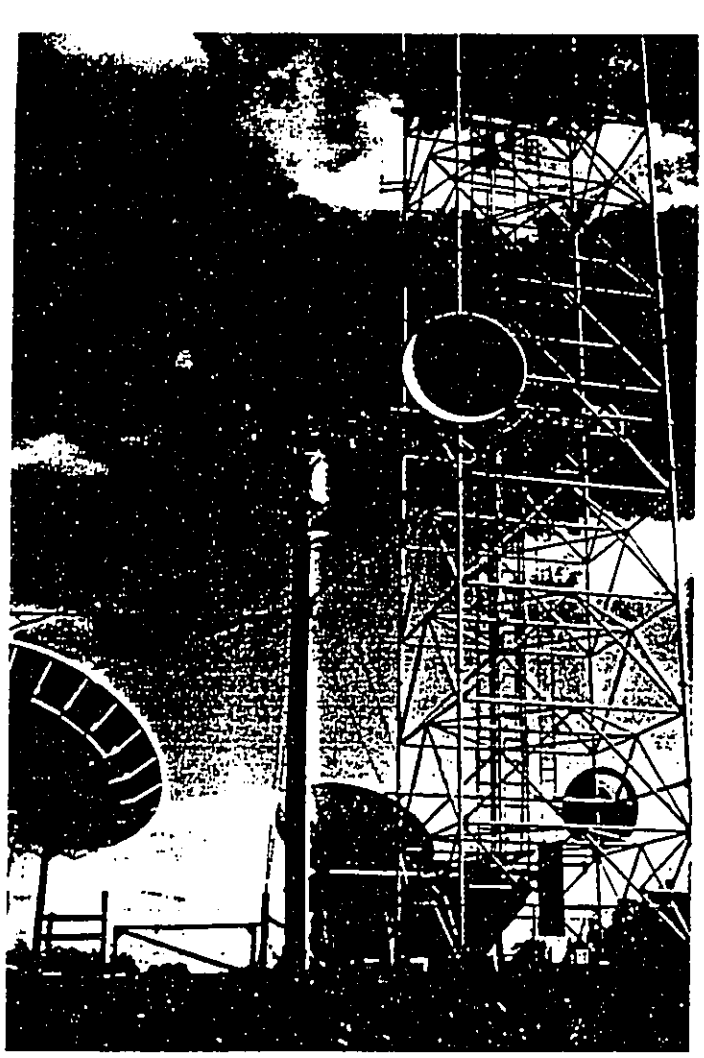
Puu Nana

County of Maui Police Department
800 MHz Trunked Radio System
Source: USGS West Molokai Quadrangle
Scale: 1"=2000'

GERALD PARK URBAN PLANNER



Photograph 1. View of Police Department equipment shelter and monopole (lower left) and MECO equipment shelter and antenna tower (lower right).



Photograph 2. Close-up of MECO equipment shelter and antenna tower.

Puu O Hoku Ranch
Site Profile

TAX MAP KEY:	5-8-15: 1 Keopukaloa, Molokai
LAND AREA: Area of Use:	85.22 acres 900 square feet
LAND OWNER:	Puu O Hoku Ranch
EXISTING USE:	Paddock
NEAREST TOWN: Distance From Site:	Kaunakakai 26 Miles
PROPOSED USE:	Communication Facility
STATE LAND USE DISTRICT:	Agricultural
COMMUNITY PLAN AREA: Zoning:	Agriculture Agriculture
SPECIAL MANAGEMENT AREA:	Outside SMA

A. Location and Existing Use

The Police Department is proposing to locate a communication facility on a section of ranch lands owned by Puu O Hoku Ranch on the east end of Molokai (See Figure 1). This site is not radio developed. The Puu O Hoku radio site will be located in a livestock paddock approximately 250 feet west of an old, uninhabited ranch dwelling and tack room/shop building. The ranch buildings about situated about .5 mile makai of the state highway leading north to Halawa Valley.

B. Proposed Improvements

For the immediate future, only a radio cabinet and tower will be constructed. Radio controls and instruments will be housed in a free-standing cabinet. The stainless steel cabinet measures 3'L X 2' W X 6' high and will be painted gray. A 40-foot tall, self-supporting steel tower will be erected in a 10' X 10' area (100 square feet) adjacent to the equipment cabinet. One 8' diameter microwave dish antenna, one 4' microwave dish, and two 17' omnidirectional antennas will be mounted on the tower. The tower and equipment cabinet will be fenced and may be electrified to keep browsing cattle away. A Site Plan and Elevation Plan are shown in Figures 2 and 3.

In the long-term, the radio cabinet will be replaced by a pre-fabricated fiber glass structure. The single-story shelter measures 12'L X 8'W X 9'H (See Figure 4). The shelter will be air conditioned to maintain a controlled operating environment. The shelter will be painted to match the existing its surroundings.

The Puu O Hoku Ranch station will provide radio coverage to sections of East Molokai and Northwest Maui and will link with Puu Nianiau.

C. Affected Environment

The radio site is located between elevation 180-200 feet overlooking gulch lands and sections of the Molokai coastline to the east. From this site, the island of Maui is clearly visible across the Pailolo Channel.

There are no historic sites or cultural features on the radio site. However, Historic Site Maps identify this section of Puu O Hoku Ranch as a historic district or complex (Site Number 1013). This designation applies mainly to the ranch buildings which will not be affected by the proposed project.

Vegetation consists primarily of pasture grass with ironwood *(Casuarina equistifolia)* and scattered eucalyptus trees *(Eucalyptus sp.)* functioning as windbreaks around the paddock.

Cattle, and horses on occasion, graze the paddock. Many species of birds probably frequent the lush ranch lands but only a single pheasant (*Phasianus versicolor)* was observed during our site visit.

Ranch lands are designated Agricultural on State Land Use Commission land use district boundary maps and general planned Agriculture on the Molokai Community Plan. Lands surrounding the ranch buildings including the radio site are categorized as Other Important Agricultural Lands on Agricultural Lands of Importance to the State of Hawaii maps (Department of Agriculture, 1977, Sheet MO-5). The State Department of Agriculture defines this category as "Land other than Prime or Unique Agricultural Land that is also of statewide or local importance for agricultural use". The Land Study Bureau identifies a single land type---C8---on the building site. The "C" rating means the land is fair(ly) suited for agriculture.

Primary power is available from overhead lines on a power pole adjacent to the old ranch dwelling.

D. Potential Environmental Impacts

A building area of 100 square feet will be grubbed, graded, and excavated to site the equipment cabinet and tower. It has not been determined if a larger concrete pad will be constructed in anticipation of installing a permanent structure at a later time. The amount of excavation required for the tower will be determined after soils testing and structural analysis. Following construction, the paddock will be restored to as near pre-construction conditions as possible.

Should subsurface archaeological features be unearthed, work in the immediate area will cease and historic authorities notified for proper disposition of the finds.

The radio site will remove approximately 900 square feet of agricultural land from intermittent grazing use. In comparison to the total acreage of Puu O Hoku Ranch and the acreage of the land parcel on which the radio site will be located, the radio site should not have deleterious effects on agricultural activities.

The 40-foot tower will be the tallest man-made object in the immediate area and its upper section (approximately 10 feet) may be visible to passersby when viewed from different locations. The paddock is well screened by trees and the equipment shelter is too low to be seen either from the road (looking makai) or the ocean (looking mauka). The upper section of the tower rises slightly above tree level and may be visible through the trees from the road. Because of the makai sloping elevation, sections of the tower should be visible from the ocean. If necessary, the tower and equipment shelter can be painted to blend with its background and soften its visual impact.

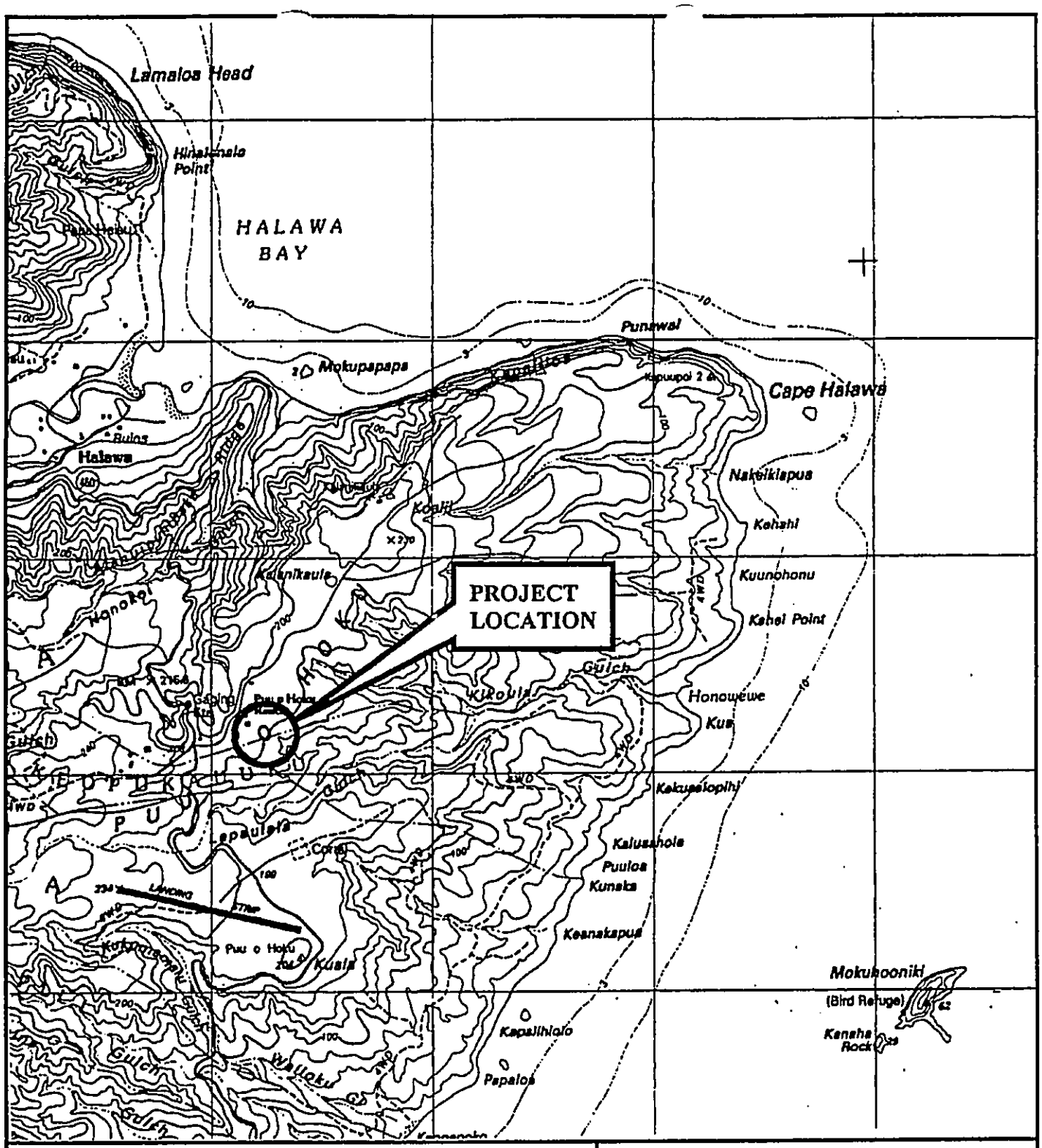


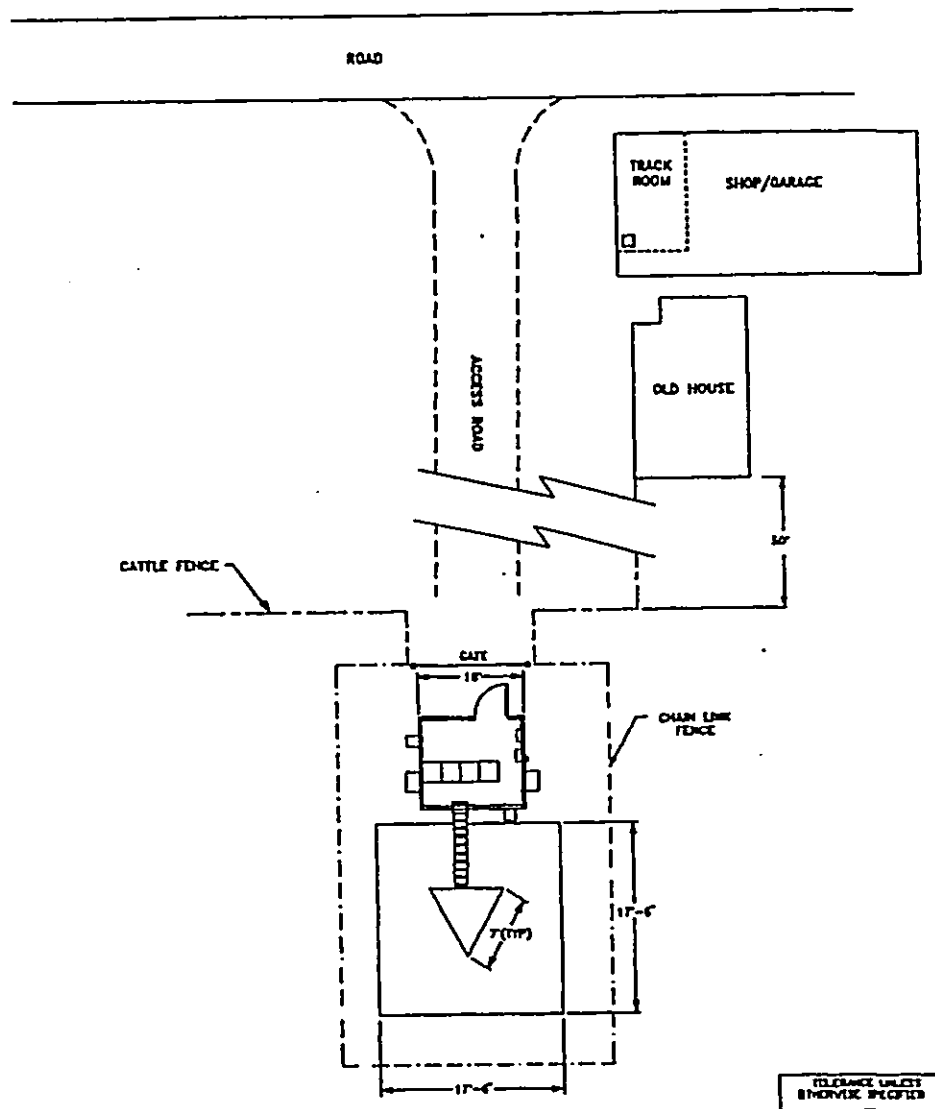
Figure 1
Location Map

Puu O Hoku Ranch

County of Maui Police Department
800 MHz Trunked Radio System
Source: USGS East Molokai Quadrangle
Scale: 1"=2000'

GERALD PARK URBAN PLANNER

County of Maui
Pu'u O' Hoku Ranch Site



45

GENERAL NOTES

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2. ACTUAL BID EQUIPMENT LIST(S) MAY DIFFER FROM THIS ILLUSTRATION.
3. THERE IS NO WARRANTY BASED ON THIS ILLUSTRATION.

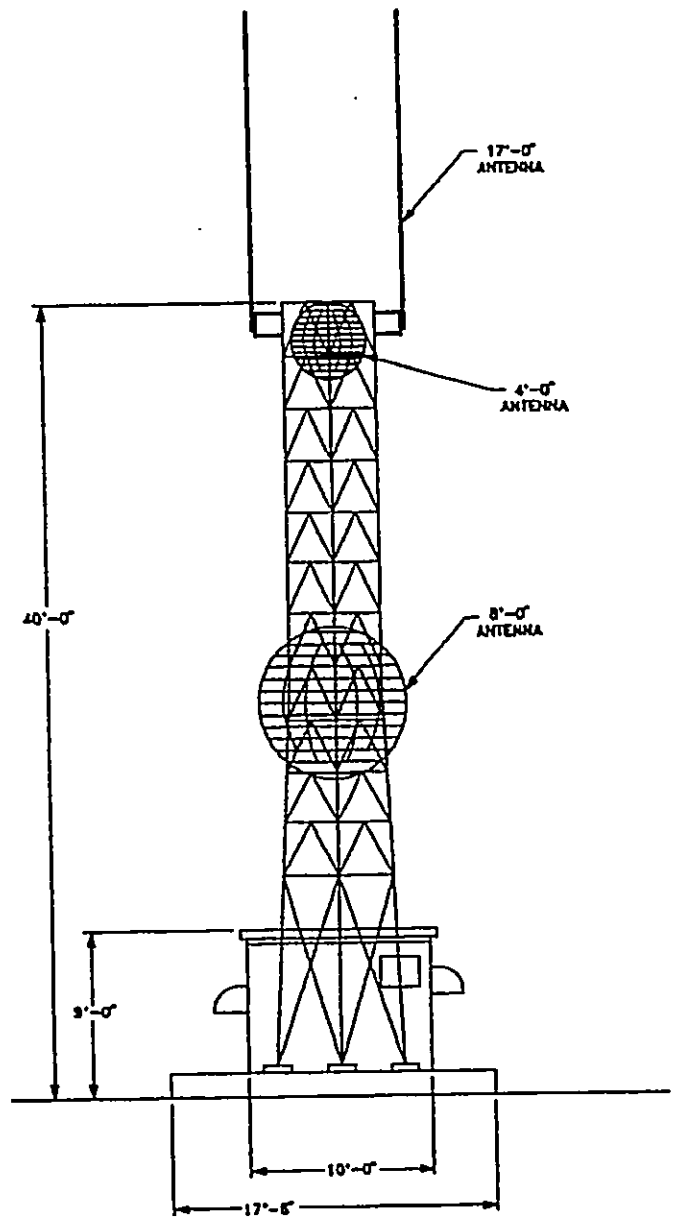
DR/ C- 8-1021
REVISIONS

Figure 2

TOLERANCE UNLESS OTHERWISE SPECIFIED	DRAWN BY B.ZIEBELL	DATE 2-16-95	EF Johnson™
DECIMALS .xx .xxx ANGL FINISH	CHECKED BY C.COLBY	DATE 2-16-95	TITLE COUNTY OF MAUI PU'U O' HOKU RANCH SITE
	APPROVED BY	DATE	
	APPROVED BY	DATE	CODE NO. DRAWING NO. C- 030-8138-1021
	RELEASE DATE		SCALE NONE UNIT SHEET 1 OF 1

County of Maui

Elevation View – Pu'u O'Hoku Ranch Site



DRAWING NO.
C- 030-8138-1051

NO	REVISIONS
1.	REDRAWN TO SCALE 1/64"=1' (10MAR.95)
2.	CHANGE THE SIZE OF THE ANTENNAS FROM 11 FT. TO 15 F (11MAR.95)
3.	CHANGED THE SIZE OF TOP ANTENNAS FROM 15' TO 17'.
4.	ADDED 4' ANTENNA.
5.	MOVED BUILDING SO BOTTOM OF BUILDING IS LEVEL WITH BOTTOM OF FOUNDATION. (13MAR.95
6.	REMOVED (2) FROM ANTENNA CALL-OUT. (14MAR.95

GENERAL NOTES

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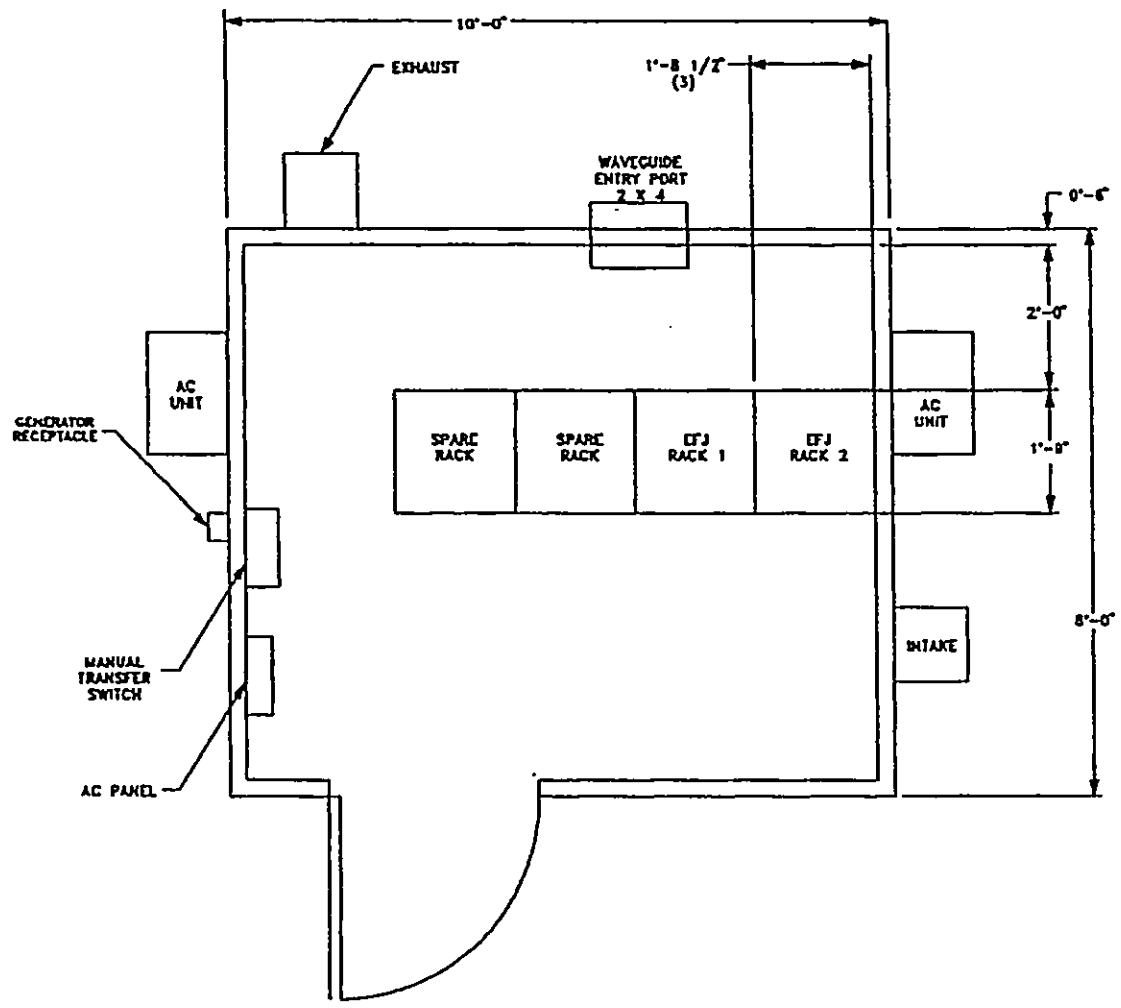
2. ACTUAL BID EQUIPMENT LIST(S) MAY DIFFER FROM THIS ILLUSTRATION.
3. THERE IS NO WARRANTY BASED ON THIS ILLUSTRATION.

TOLERANCE UNLESS OTHERWISE SPECIFIED	DRAWN BY B.ZIEBELL	DATE 2-16-95	EF Johnson™
DECIMALS .XX / .XXX	CHECKED BY M.HOPPE	DATE 2-16-95	TITLE: COUNTY OF MAUI ELEVATION VIEW - PU'U O'HOKU RANCH SITE
MATL	APPROVED BY	DATE	CODE NO.
FINISH	APPROVED BY	DATE	DRAWING NO. C- 030-8138-1051
	RELEASE DATE		SCALE NONE / SHEET 1 OF 1

Figure 3

County of Maui

Equipment Room Floor Plan – Pu'u O'Hoku Site



DR	ID
C-	38-1010

REVISIONS

1. DELETED EFJ RACK#3, ADDED SPARE RACK. (11MAR.95)

GENERAL NOTES

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TOLERANCE UNLESS OTHERWISE SPECIFIED		DRAWN BY	DATE	EF Johnson™
DECIMALS .XX / .XXX / METAL / FINISH	mm	B.ZIEBELL	2-16-95	
		CHECKED BY C.COLBY	DATE 2-16-95	TITLE: COUNTY OF MAUI EQUIPMENT ROOM FLOOR PLAN – PU'U O'HOKU SITE
		APPROVED BY	DATE	
		APPROVED BY	DATE	CODE NO. / DRAWING NO. C- 030-8138-1010
		RELEASE DATE		SCALE NONE / SHEET 1 OF 1

Figure 4

Waiakeakua
Site Profile

TAX MAP KEY:	4-9-02: por. 1 Kaohai, Lanai
LAND AREA:	88,213 acres
Area of Use:	2,025 square feet
LAND OWNER:	Castle and Cooke, Inc.
EXISTING USE:	Vacant
NEAREST TOWN:	Lanai City
Distance From Site:	3.6 miles
PROPOSED USE:	Communication Facility
STATE LAND USE DISTRICT:	Conservation
Subzone:	Resource
COMMUNITY PLAN AREA:	Lanai
Zoning:	None
SPECIAL MANAGEMENT AREA:	Outside SMA

A. Location and Existing Use

The Waiakeakua radio facility will be located near the summit of Waiakeakua Peak, Lanai (See Figure 1). The site is presently vacant and generally unimproved. A temporary, 40-foot high guyed radio tower has been erected in a corner of the site for testing radio signal strength and direction.

A Conservation District Use Application (CDUA) was approved in 1989 allowing Motorola Communications Inc. to construct an electrical power line and co-habitation telecommunication facility on the site. The proposed improvements have yet to be constructed. An extension of time to commence construction and complete the proposed improvements was approved in January, 1995.

B. Proposed Improvements

The Maui Police Department proposes to construct a self-contained communications facility consisting of a pre-fabricated equipment shelter, 40-foot high self-supporting steel tower, emergency generator, and fencing. A Site Plan is shown in Figure 2.

Radio equipment will be housed in a pre-fabricated fiber glass equipment shelter bolted onto a concrete foundation. The self-contained shelter measures 18'L X 12'W X 9' H and will be air

conditioned to maintain a proper operating environment. A 15KW emergency generator will be installed inside a separate compartment within the shelter (See Figure 3).

A three-legged 40-foot high self-supporting steel tower will be erected adjacent to the equipment shelter. The tower will be bolted onto a poured in place concrete foundation. One 10-foot diameter and one 4-foot diameter microwave dish antenna and two 17-foot omnidirectional antennas will be mounted on the tower. The equipment building and radio tower will be enclosed by a 6-foot high chain link fence. An Elevation View is shown in Figures 4.

Primary power will be brought to the site from existing power lines about .5 miles away and downslope of the site. A ten-foot wide electrical easement will be extended to the site to service the facility. Approximately 1,980 feet of power line will be suspended overhead and approximately 900 feet place underground to the radio site. This is a separate project and will be constructed by others under a separate contract.

The emergency generator will operate only during power outages and routine maintenance testing.

C. Affected Environment

At an elevation of 3,200+ feet msl, the site provides a commanding view of upland ridges and gulches, the southeast Lanai coastline, and the island of Maui in the distance. The site is relatively level with a difference of about 1-2 feet in elevation from its high side along a dirt road to its makai side where the ground drops off steeply. Somewhat triangular in shape, the site encompasses an area of approximately 3,600 square feet.

The compacted ground is severely eroded and generally devoid of vegetation except along the makai edge of the site where several hearty species cling precariously to the top of the bank. These include pukiawe *(Stypelia tameiameiae)*, tea tree *(Leptosporum scoparium)*, swamp mahogany *(Eucalyptus robusta)*, and *'ohi'a (Metrosideros sp.)*. Of the four species, 'ohi'a is an endemic, pukiawe is indigenous, and the other two are exotics. The temporary antenna has been erected on top of a small hill covered with primarily with pukiawe.

An archaeological reconnaissance survey (International Archaeological Research Institutue, Inc., 1986) reported "no evidence of archaeological or historical remains were observed within or adjacent to the project area. The possibility for subsurface deposits appears to be nil".

There are no electrical, water, or communication systems servicing the project site. The site is accessible by an unimproved dirt road (Lanaihale Road or the Munro Trail) requiring a 4-wheel drive vehicle. The trail is open to visitors desiring a birds eye view of the Lanai and its sister islands of Maui, Molokai, and Kahoolawe.

D. Potential Environmental Impacts

Located in a remote, high elevation area, construction of the proposed improvements is not anticipated to result in significant adverse environmental impacts. The site of the radio facility is severely eroded, almost devoid of vegetation, and there are no historical features on the premises.

Limited grubbing, grading, and excavating will be performed to construct level concrete building pads for the equipment shelter and to divert runoff away from the facility. More extensive

excavation will be required to construct the foundation for the tower. These activities will alter the land slightly but should not accelerate site erosion.

Should subsurface archaeological features be unearthed, work in the immediate area will cease and historic authorities notified for proper disposition of the finds.

The 40-foot self-supporting tower does not require guy wires. To minimize potentially adverse visual impacts, the shelter and tower will be painted to blend with their surroundings.

Following construction, equipment staging and material storage areas will be restored to near pre-construction conditions.

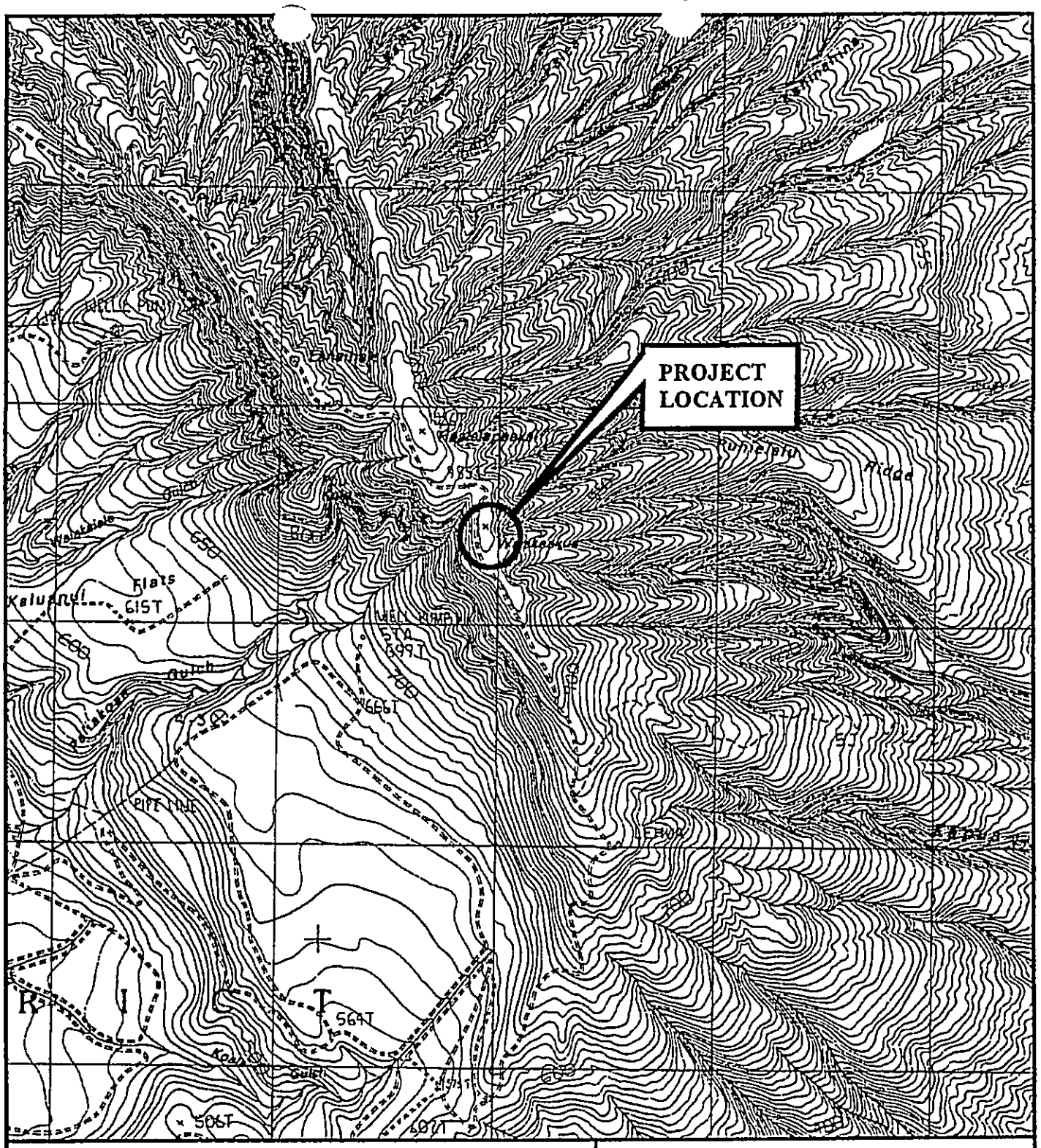


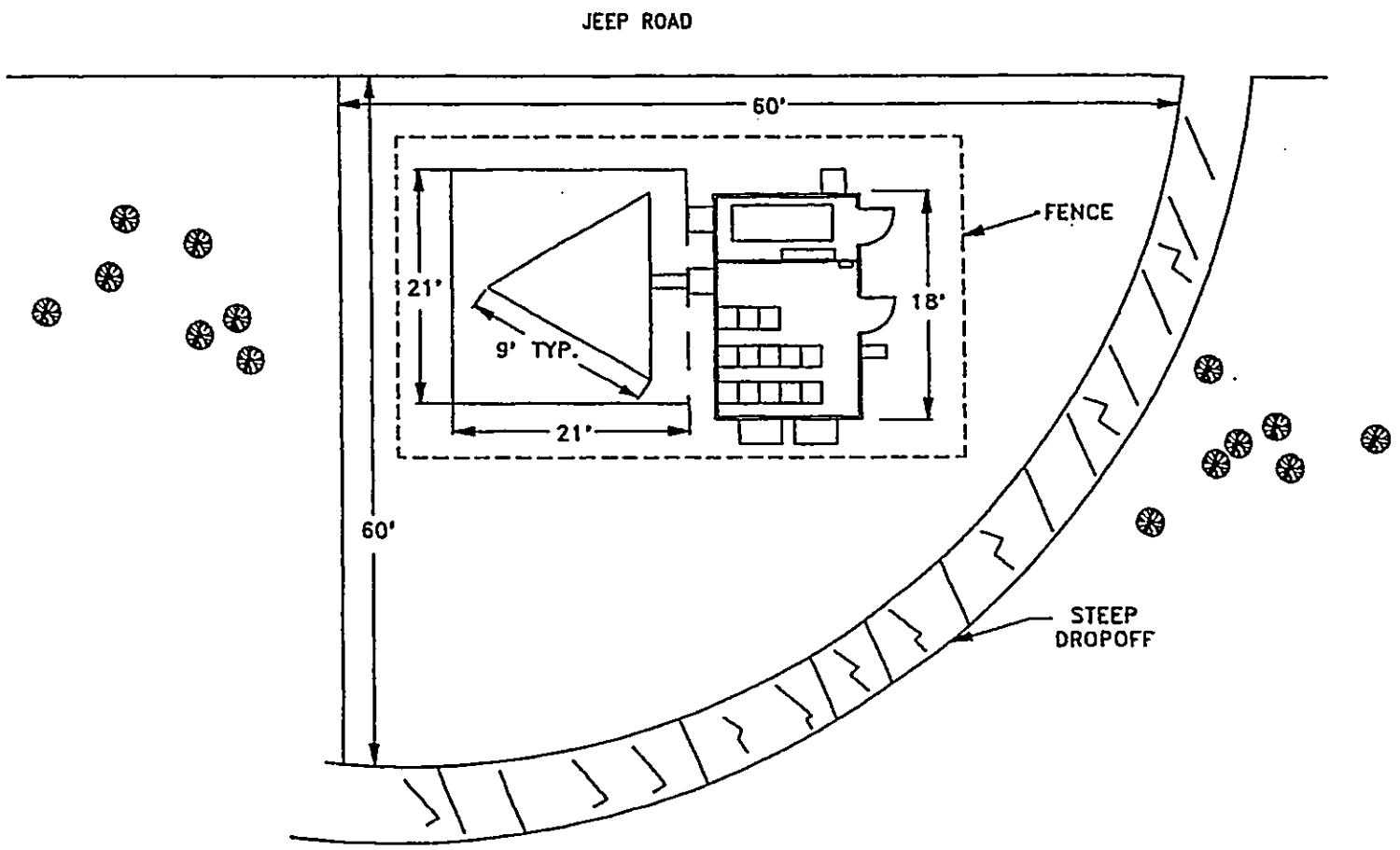
Figure 1
Location Map

Waiakeakua

County of Maui Police Department
800 MHz Trunked Radio System
Source: USGS Lanai South Quadrangle
Scale: 1"=2000'

GERALD PARK URBAN PLANNER

County of Maui
Lanai Hale Site



DWG C- 138-621

REVISIONS

1. CHANGED SIZE & ORIENTATION OF BUILDING. (11MAR.95)
2. ADDED DIMENSIONS & DROP OFF. (11MAR.95)

Figure 2

GENERAL NOTES
1. THIS DRAWING IS CONCEPTUAL IN NATURE & IS NOT INTENDED TO SHOW ALL THE REQUIRED WIRING FOR THIS SYSTEM.
2. ACTUAL BID EQUIPMENT LIST(S) MAY DIFFER FROM THIS ILLUSTRATION.
3. THERE IS NO WARRANTY BASED ON THIS ILLUSTRATION.

TOLERANCE UNLESS OTHERWISE SPECIFIED	DRAWN BY A.SCHLOSSER	DATE 2-16-95	EF Johnson™
DECIMALS .XX / .XXX	CHECKED BY C.COLBY	DATE 2-16-95	TITLE COUNTY OF HAUI LANAI HALE SITE
MATL	APPROVED BY	DATE	CODE NO.
FINISH	APPROVED BY	DATE	DRAWING NO. C- 030-8138-621
	RELEASE DATE		SCALE NONE SHEET 1 OF 1

County of Maui

Equipment Room Floor Plan – Lanai Hale Site

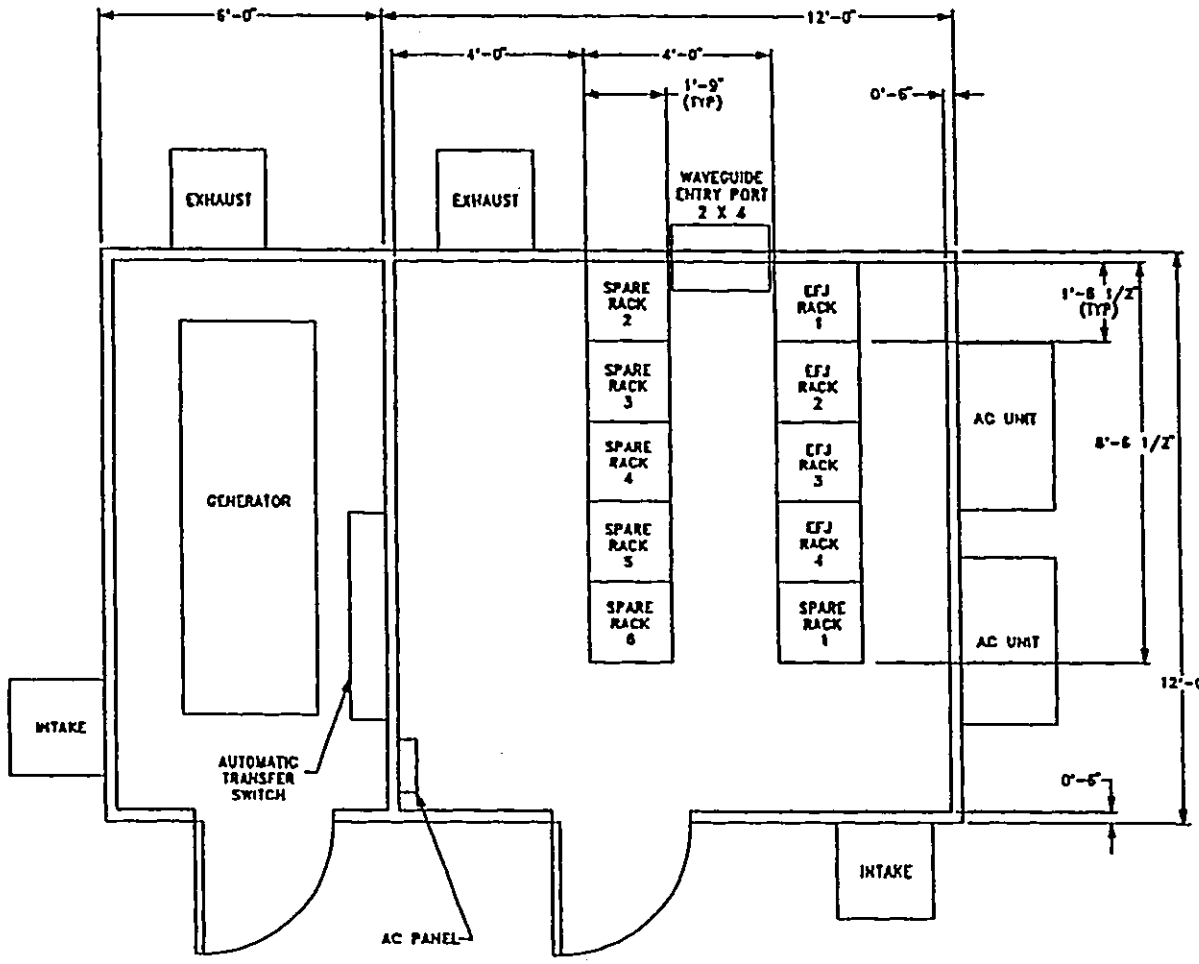


Figure 3

GENERAL NOTES

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3. THERE IS NO WARRANTY BASED ON THIS ILLUSTRATION.

TOLERANCE UNLESS OTHERWISE SPECIFIED	DRAWN BY B.ZIEBELL	DATE 2-16-95	EF Johnson™
DECIMALS / FRACTIONS / ANGL / FINISH	CHECKED BY C.COLBY	DATE 2-16-95	TITLE: COUNTY OF HAUI EQUIPMENT ROOM FLOOR PLAN - LANAI HALE SITE
	APPROVED BY	DATE	CODE NO. / DRAWING NO. C- 030-8138-611
	APPROVED BY	DATE	SCALE NONE / SIZE / SHEET 1 OF 1
	RELEASE DATE		

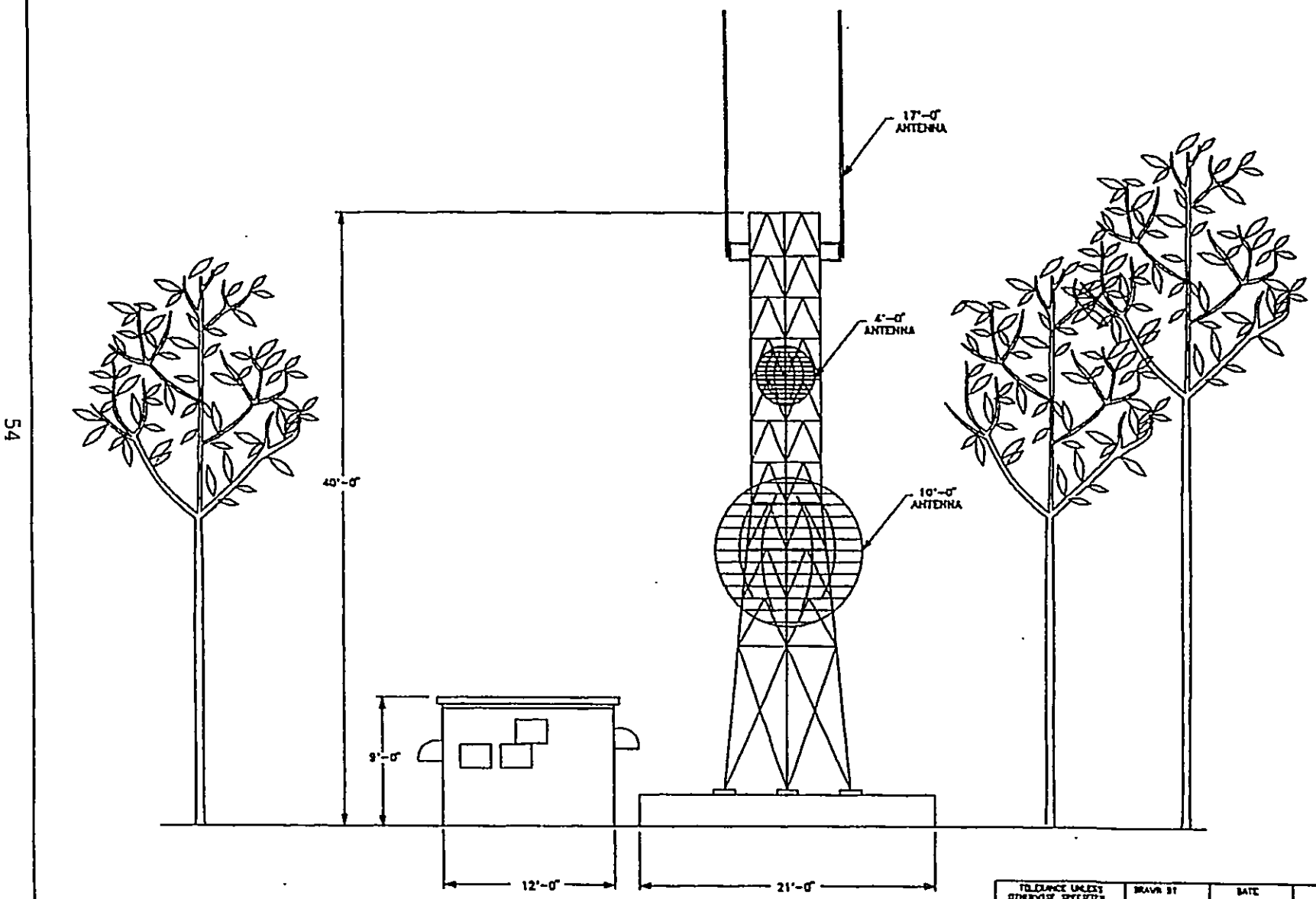
C- 030-611

REVISIONS

1. DELETED EFJ RACK #5. ADDED SPARE RACK #6. (11MAR95)

County of Maui

Elevation View – Lanai Hale Site



DRAWING
C- 030-8138-655

REVISIONS

1. REDRAWN TO SCALE 1/64"=1' (9.MAR.95)
1. CHANGED SIZE OF TOP ANTENNA.
2. ADDED 4 FT ANTENNA.
3. CHANGED ORIENTATION OF BUILDING IN RELATION TO TOWER.
4. CHANGED SIZE OF BUILDING (11.MAR.95)
5. CHANGED LENGTH OF ANTENNA FROM 15' TO 17'. (14.MAR.95)

GENERAL NOTES

1. THIS DRAWING IS CONCEPTUAL IN NATURE & IS NOT INTENDED TO SHOW ALL THE REQUIRED WIRING FOR THIS SYSTEM.
2. ACTUAL BID EQUIPMENT LISTED MAY DIFFER FROM THIS ILLUSTRATION.
3. THERE IS NO WARRANTY BASED ON THIS ILLUSTRATION.

TOLERANCE UNLESS OTHERWISE SPECIFIED		DRAWN BY	DATE
DECIMALS ±.X	FRACTIONS	B.ZIEBELL	2-16-95
±.XX		CHECKED BY C.COLBY	DATE 2-16-95
ANGLES		APPROVED BY	DATE
FINISH		APPROVED BY	DATE
		RELEASE DATE	

EF Johnson™

TITLE: COUNTY OF MAUI ELEVATION VIEW - LANAI HALE

CODE NO. | DRAWING NO. C- 030-8138-655

SCALE | SIZE | SHEET OF

Figure 4

SECTION 4 ALTERNATIVES TO THE PROPOSED ACTION

A. No Action

The no action alternative is unacceptable. Maintaining the existing radio communication system is not an acceptable alternative because the mode of communication is outdated and prone to failure and repairing or replacing system components as needed poses an unacceptable risk to public safety. In addition, poor radio coverage in certain areas of the island jeopardizes the safety of persons residing in those areas.

The no action alternative will main the status quo of the selected radio sites and preclude any short and long-term impacts, beneficial and adverse described in this Assessment.

B. Alternative Sites

Of the seven sites comprising the Police Department radio system evaluated in this Assessment, two are existing sites. Five sites are new or relocated from an existing site. These new sites were selected on the basis of radio coverage surveys and land availability.

SECTION 5 LIST OF LAND USE PERMITS AND APPROVALS

Site/Permit	Authority
Keanae	
State Special Permit	Maui Planning Commisson
County Special Use Permit	Maui Planning Commission
Special Management Area Permit	Maui Planning Commission
Hana Airport	
State Special Permit	Maui Planning Commisson
County Special Use Permit	Maui Planning Commission
Special Management Area Permit	Maui Planning Commission
Hana GTE	
State Special Permit	Maui Planning Commisson
County Special Use Permit	Maui Planning Commission
Puu Nianiau	
Conservation District Use Application	Board of Land and Natural Resources
Puu Nana	
State Special Permit	Molokai Planning Commisson
County Special Use Permit	Molokai Planning Commission
Puu O'Hoku Ranch	
State Special Permit	Molokai Planning Commisson
County Special Use Permit	Molokai Planning Commission
Historic Site Review	Historic Preservation Division State of Hawaii
Waiakeakua	
Conservation District Use Application	Board of Land and Natural Resources

SECTION 6 AGENCIES AND ORGANIZATIONS TO BE CONSULTED

*Notice of the Draft Environmental Assessment for the County of Maui Police Department 800 MHz Trunked Radio System was published in the Office of Environmental Quality Control Environmental Notice of March 8, 1996. Copies of the Draft Environmental Assessment were mailed to the agencies and organizations listed below. Publication in the Environmental Notice initiated a 30-day public comment period which ended on April 8, 1996. An asterik * identifies agencies and organizations that submitted written comments to the Draft Environmental Assessment. Comments letters and responses are found in Appendix A of the Final Environmental Assessment.*

Federal

National Park Service
*U.S. Department of the Interior, U.S. Fish and Wildlife Service

State of Hawaii

Department of Agriculture
Department of Health
*Department of Land and Natural Resources
    *Historic Sites Division
*Department of Transportation
*Office of Environmental Quality Control
Office of State Planning

County of Maui

*Planning Department
Public Works
    Engineering
    Land Use and Codes
Department of Fire Control
Civil Defense

Others

*GTE Mobilnet of Hawaii
Hana Ranch
*Haleakala Ranch
Maui Electric Company
Molokai Ranch Ltd.
Puu O Hoku Ranch
Castle and Cooke Properties, Inc.

SECTION 7 DETERMINATION OF SIGNIFICANCE

Chapter 200 (Environmental Impact Statement Rules) of Title 11, Administrative Rules of the State Department of Health, establishes criteria for determining whether an action may have significant effects on the environment (11-200-12). The relationship of the proposed project to these criteria is discussed below.

1) Involves an irrevocable commitment to loss or destruction of any natural or cultural resource;

   There are no cultural resources on any of the sites proposed for communication facilities. The endemic 'ohi'a and indigenous pukiawe are considered natural resources at the Waiakeakua site but none of these species except for one plant growing in the area to be improved will be removed. This plant can be replaced in kind somewhere on site.

   Plant species at Puu Nianiau also are considered natural resources. Plants in the area of the equipment shelter and radio tower will be removed and replanted elsewhere on site.

2) Curtails the range of beneficial uses of the environment;

   The project does not curtail the beneficial uses of the environment.

3) Conflicts with the state's long-term environmental policies or goals and guidelines as expressed in chapter 344, Hawaii Revised Statutes, and any revisions thereof and amendments thereto, court decisions or executive orders;

   The project does not conflict with long-term environmental policies, goals, and guidelines of the State of Hawaii.

4) Substantially affects the economic or social welfare of the community or State;

   The project will not substantially affect the economic or social welfare of the State.

5) Substantially affects public health;

   Public health will not be adversely affected by the proposed project.

6) Involves substantial secondary impacts, such as population changes or effects on public facilities;

   Substantial secondary impacts are not anticipated.

7) Involves a substantial degradation of environmental quality;

   Environmental quality at each of the radio sites will not be degraded. All sites affected by construction will be restored to near pre-construction conditions.

8) Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions;

The project is not a precursor for a larger action.

9) Substantially affects a rare, threatened or endangered species, or its habitat;

There are no rare, threatened or endangered flora at any of the communication sites. It has been reported that the nene has been observed and the dark rumped petrel may nest at Puu Nianiau but no nests have been observed.

10) Detrimentally affects air or water quality or ambient noise levels; or

Ambient air quality will be affected by fugitive dust and combustion emissions but can be controlled by measures stipulated in this Assessment. Construction noise will be pronounced during site preparation work but should diminish once the building is erected. All construction activities will comply with air quality and noise pollution regulations of the State Department of Health.

11) Affects an environmentally sensitive area such as a flood plain, tsunami zone, erosion prone area, geologically hazardous land, estuary, fresh water, or coastal waters.

The project will not affect environmentally sensitive areas identified above. However, sites at Puu Nianiau and Waiakeakua are located in the State Conservation District.

Based on the above criteria, the County of Maui Police Department 800 MHz Trunked Radio System will not result in significant adverse environmental impacts and an Environmental Impact Statement should not be required.

REFERENCES

County of Maui, Planning Department. *General Plan, Community Plans, Special Management Area Maps.* Various.

Department of Agriculture, State of Hawaii. 1971. *Agricultural Lands of Importance to the State of Hawaii* (Maps). Various.

Department of Land and Natural Resources, State of Hawaii, Historic Preservation Division. *Historic Site Maps, County of Maui.* Various.

Federal Emergency Management Agency, 1981. *Flood Insurance Rate Maps County of Maui.* Various Community Panels.

Harmer Radio and Electronics, Inc. 1989. *Conservation District Use Application MA-4/25/89-2264.*

Land Use Commission, State of Hawaii. *Land Use District Boundary Maps, County of Maui.* Various.

Land Study Bureau. 1967. *Detailed Land Classification Island of Maui.* 1967. Land Study Bureau Bulletin No. 7.

Motorola Communications International, Inc. 1989. *Conservation District Use Application LA-7/20/89-2300.*

Park, Gerald Urban Planner. 1995. *Field Observations.*

Schema Systems Inc. 1995. *Analysis of Radiation Levels Resulting from County of Maui Microwave and 800 MHz Radio Systems.*

Soil Conservation Service. 1972. *Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii.* United States Department of Agriculture, Soil Conservation Service in cooperation with the University of Hawaii Agricultural Experiment Station, U.S. Government Printing Office, Washington D.C.

APPENDIX A

COMMENT LETTERS AND RESPONSES

HALEAKALA RANCH COMPANY
ESTABLISHED IN 1888

RECEIVED 3/19/96

March 15, 1996

Gerald Park
Gerald Park Urban Planer
1400 Rycroft Street - Ste. 876
Honolulu, Hawaii 96814-3021

Dear Mr. Park:

RE: County of Maui Police Department 80 MHz Radio System

We have reviewed the Draft Environmental Assessment you sent us and find that it looks okay. We will continue to work with the County on it.

Sincerely,

Peter D. Baldwin
President

/cdl

529 KEALALOA AVENUE • MAKAWAO, HAWAII 96768 • TELEPHONE: (808) 572-7326

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

RECEIVED 4/5/96

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
STATE HISTORIC PRESERVATION DIVISION
33 SOUTH KING STREET, 6TH FLOOR
HONOLULU, HAWAII 96813

MICHAEL D. WILSON, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
DEPUTY
GILBERT COLOMA-AGARAN
AQUACULTURE DEVELOPMENT PROGRAM
AQUATIC RESOURCES
CONSERVATION AND ENVIRONMENTAL AFFAIRS
CONSERVATION AND RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION DIVISION
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

March 22, 1996

LOG NO:16657
DOC NO: 9603SC13

Mr. Gerald Park
Gerald Park Urban Planner
1400 Rycroft Street, Suite 876
Honolulu, Hawaii 96814-3021

Dear Mr. Park:

SUBJECT: Historic Preservation Review of the Proposed Locations for County of Maui Police Department 800 MHz Radio System Islands of Maui, Moloka'i, and Lana'i, County of Maui, State of Hawaii

Thank you for the opportunity to comment on the proposed locations for the installation of seven new 800 MHz radio system components at selected sites on the islands of Maui, Lana'i, and Moloka'i. Our review is based on historic reports, maps, and aerial photographs maintained at the State Historic Preservation Division; no field inspection was made of most of the subject parcels. Exceptions include the proposed Moloka'i locations at Pu'u O Hoku Ranch, which Sara Collins of our staff visited in November 1994, and the Pu'u Nana facility, which Ms. Collins visited in November 1995.

MAUI ISLAND

Proposed Site at Keanae, Hana District, TMK: 1-1-02: 10
A new 50-ft high, self-supporting radio tower, a radio cabinet, and an equipment shelter are to be built on the grounds of the State of Hawaii Department of Transportation (DOT) Keanae baseyard. Since this is an existing facility, previously modified for DOT use, it is highly unlikely that significant historic sites are still present. Therefore, we believe that construction of the new radio facilities at the Keanae DOT baseyard will have "no effect" on significant historic sites.

Proposed Site at Hana Airport, Hana District, TMK: 1-3-03: 22
A radio cabinet and 40-foot high, self-supporting steel tower are to be built on a vacant grass field on the airport property, adjacent to the airport office building and a paved parking lot. Since the proposed site is within an area already modified for aviation purposes, it is highly unlikely that significant historic

sites are still present. Therefore, we believe that the construction of the new radio facilities at the Hana Airport site will have "no effect" on significant historic sites.

Proposed Site at the Hana GTE Mobilnet Facility, Hana,

Hana District, TMK: 1-4-03:09
New microwave and radio equipment will be installed in an existing building and new antennas will be attached to existing monopole towers. Since no new structures are to be built, we believe that the use of the Hana GTE Mobilnet Facility will have "no effect" on significant historic sites.

Proposed Site at Puu Nianiau, Makawao District, TMK: 2-3-05: 04
An equipment shelter, a 60-foot high self-supporting tower, an emergency generator, and fencing will be built at the Puu Nianiau site, which has been improved for other communications facilities. There are existing structures owned by Maui Electric and East Maui Irrigation, and an access road. Since the proposed site for these improvements is part of an existing facility, it seems unlikely that significant historic sites area still present. Therefore, we believe that construction of the proposed Puu Nianiau facilities by the Maui Police Department will have "no effect" on significant historic sites.

MOLOKA'I ISLAND

Proposed Site at Pu'u Nana, Kaluakoi, Moloka'i, TMK: 5-1-02:13
Microwave and radio equipment are to be installed within an existing building and on an existing antenna tower at the Pu'u Nana radio facility. Since these are existing buildings at a previously modified area, it is highly unlikely that significant historic sites are still present. Therefore, we believe that the proposed improvements to be made at the Pu'u Nana facility will have "no effect" on significant historic sites.

Proposed Site at Pu'u O Hoku Ranch, Keopukaloa, Moloka'i.

TMK: 5-8-15: 1
A radio cabinet, equipment shelter, and a 40-foot high, self-supporting tower are to be built in a former livestock paddock approximately 250 west of two ranch buildings, *makai* of the state highway. As noted by the applicant, Pu'u O Hoku Ranch is a historic site, with SIHP No. 50-60-05-1013. The Ranch is primarily significant for its potential to provide information on the historic ranching era on Moloka'i; in particular, its historic significance derives from the ranch structures, which date from the 1930s.

The November 1994 field inspection by our staff indicated that most of the pasture areas of Pu'u O Hoku Ranch have been previously cleared or chain-dragged. Consequently, since the proposed site

is within a former livestock paddock, it seems unlikely that any significant historic sites would be present in the subsurface deposits. The primary effects of the proposed construction of the radio facilities would be on the visual integrity of Site 1013. The applicant (p. 43) proposes to retain sufficient tree cover and also paint the radio tower and equipment shelter a camouflaging color so as to better blend with their surroundings. If these measures are carried out by the applicant and landowner, then we believe that the proposed construction of radio facilities at Pu'u O Hoku Ranch will have "no adverse effect" on significant historic sites.

LANA'I

Proposed Site at Waiakeakua, Kaohai, Lana'i, TMK: 4-9-02: 1
An equipment shelter, 40-foot high self-supporting tower, emergency generator, and fencing are to be built at a site previously selected and used by Motorola Communication, Inc. As noted by the applicant, an archaeological reconnaissance survey was conducted of the subject site in 1986, and no physical or documentary evidence was found of historic sites (*Letter Report: Archaeological Reconnaissance Survey of the Proposed Motorola Transmission Site, Lanai*. 1986. Athens). In view of these negative findings and the fact that the proposed radio facilities are to be constructed within the previously surveyed parcel, we believe that use of the radio transmission site at Waiakeakua, Lana'i will have "no effect" on significant historic sites.

According to the applicant (p. 4), ground-altering work will be done at the Keanae, Hana Airport, Pu'u Nianiau, Pu'u O Hoku, and Waiakeakua sites. We would thus like to recommend that all construction and grading plans prepared for these five project sites include the following construction note:

> Should historic remains such as artifacts, burials, concentrations of shell or charcoal be encountered during construction activities, work shall cease immediately in the immediate vicinity of the find, and the find shall be protected from further damage. The contractor shall immediately contact the State Historic Preservation Division (587-0047), which will assess the significance of the find and recommend an appropriate mitigation measure, if necessary.

Should you have any questions, please feel free to call Sara Collins at 587-0013.

Aloha,

DON HIBBARD, Administrator
State Historic Preservation Division

SC:jen

BENJAMIN J. CAYETANO
GOVERNOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

220 SOUTH KING STREET
FOURTH FLOOR
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186

RECEIVED 4/9/96

GARY GILL
DIRECTOR

April 8, 1996

Honorable Howard H. Tagomori, Chief
Police Department, County of Maui
55 Mahalani Street
Wailuku, Hawaii 96793

Dear Chief Tagomori:

We respectfully submit for your response pursuant to Section 343-5(c), Hawaii Revised Statutes, the following comments on a February 1996, Draft Environmental Assessment ("DEA") for the County of Maui Police Department 800 MHz Trunked Radio System, Islands of Maui, Molokai, and Lanai, State of Hawaii. This document was submitted to our office by your February 26, 1996, letter (CH:at). Notice of availability of this DEA was published in the March 8, 1996, and March 23, 1996, editions of the *Environmental Notice*.

1. **POSSIBLE USE OF EXISTING TOWERS.** Please discuss whether your agency has considered as an alternative the use of existing towers (if any) for new equipment shelters and towers at Keanae, Hana Airport, Puu Nianiau, Puu o Hoku and Waiakeakua.

2. **VISUAL IMPACTS.** Please discuss potential measures to mitigate visual impact of antennae such as the use of artificial palm fronds, etc. (see attached photos and description taken from the Cyber Tel Cellular Communications Facility project on Kauai).

3. **POSSIBLE LEASE OF TOWERS TO ACCOMODATE FUTURE USES.** With increased use of personal communications systems, the Office anticipates that more antennae sites will be in demand. Please discuss the potential of leasing towers to accomodate future uses by other users including other communications companies, etc.

Please include this letter and your response in the final environmental assessment and notice of determination for this project. If there are any questions, please call Mr. Leslie Segundo, Environmental Health Specialist at 586-4185. Thank you for the opportunity to comment.

Sincerely,

GARY GILL
Director of Environmental Quality Control

c: Assistant Chief Charles H. P. Hall, County of Maui Police Department
Mr. Gerald Park, Gerald Park Urban Planner

GERALD PARK
Urban Planner

Planning
Land Use
Research
Environmental
Studies

1400 Rycroft Street
Suite 876
Honolulu, Hawaii
96814-3021

Phone/Fax
(808) 942-7484

April 12, 1996

Gary Gill, Director
Office of Environmental Quality Control
State of Hawaii
220 South King Street, Fourth Floor
Honolulu, Hawaii 96813

Dear Mr. Gill:

Subject: County of Maui Police Department 800 MHz Trunked Radio System

Thank you for reviewing and offering comments on the Draft Environmental Assessment prepared for the subject project. In response to your comments, we offer the following:

1. There are no existing equipment shelters and radio towers at Keanae, Puu O Hoku Ranch, and Waiakeakua that could be used (or shared) with the Police Department. There is an existing 20-foot high radio tower at Hana Airport but no equipment shelter. The tower is of insufficient height and structural integrity to accommodate two microwave dish and two omnidirectional antennas belonging to the Police Department.

At Puu Nianiau, the County has entered into negotiations with Haleakala Ranch to replace an existing equipment building owned by the Ranch with a new equipment shelter. The shelter will be located on the same building pad as the existing structure and the Police Department will co-habit the shelter with other commercial radio users. A new 60-foot tower will replace an existing wooden monopole and may be able to accommodate other users (See also response to Comment 3 below).

2. The Police Department will co-habit equipment shelters and towers at Puu Nana and GTE Hana Mobilnet thus measures to mitigate visual impacts are not required. Puu O Hoku Ranch and Waiakeakua are remote locations and antennas will be surrounded by tall trees which should conceal them from public view. In addition, equipment shelters will be painted to blend with their surroundings.

The equipment shelter and tower at Keanae is located at a State of Hawaii baseyard and may be visible to the public from the Hana Highway and from areas below the baseyard. The antenna may be painted to blend with its environment to mitigate potential adverse impacts.

At Hana Airport, the equipment shelter and tower will be located in an open grassy area alongside the airport access road. This site is developed for radio use and no

measures have been instituted to visually soften the presence of an existing self-supporting tower. The Police Department wants their facility to blend with the existing decor and will paint their shelter and antenna and possibly landscape the area around the shelter. There are no plans to attach artificial vegetation to any of the proposed towers.

3. The Police Department will consider sharing radio tower space with other radio users. However, the towers to be erected have been specified to withstand 150 mph winds based on tower loadings for Police Department antennas only. Therefore, future users will have to conduct wind loading analyses and the results must clearly demonstrate that their antenna will not affect the structural integrity of the tower and will not adversely affect police communication facilities before they are allowed to use the towers.

Thank you for participating in the environmental assessment review process.

Sincerely,

GERALD PARK URBAN PLANNER

Gerald Park

cc: C. Hall, MPD
G. Marin, SSI

GTE Mobilnet
More Than Cellular Phones, Cellular Service.℠
733 Bishop St.
Suite 1900
Honolulu, HI 96813

RECEIVED 4/3/96

April 2, 1996

Mr. Gerald Park
Gerald Park Urban Planner
1400 Rycroft Street, Suite 876
Honolulu, Hawaii 96814-3021

Re: Maui Police Department
Hana Site
Environmental Assessment Draft

Dear Gerald:

GTE Mobilnet of Hawaii, Incorporated has some concern that the Maui Police Department's new system will operate in the 821 MHz to 866 MHz portion of the 800 MHz band (as stated in Section 1, D. 1. on page 3 of your report) since portions of it overlaps in our band.

We request that the Maui Police Department's consultant investigate and determine to be sure that the Maui Police Department's new system will not interfere with our system.

Thank you.

Very truly yours,

Gary Hahn
Administrator - Site Acquisitions

cc: Duane Tanouye
John Thompson
Theodore Kato

GERALD PARK
Urban Planner
■
Planning
Land Use
Research
Environmental
Studies
■
1400 Rycroft Street
Suite 876
Honolulu, Hawaii
96814-3021
■
Phone/Fax
(808) 942-7484

April 23, 1996

Gary Hahn
Administrator, Site Acquisitions
GTE Mobilnet
733 Bishop Street
Suite 1900
Honolulu, Hawaii 96813

Dear Mr. Hahn:

Subject: County of Maui Police Department 800 MHz Trunked Radio System

Thank you reviewing and offering comments on the Draft Environmental Assessment prepared for the subject project. We offer the following in response to your concern.

Our communications contractor has checked the receive and transmit frequencies of the GTE cellular system at Hana. They confirm that there is adequate frequency separation between both systems and the County of Maui Police Department system will not overlap into the GTE Mobilnet cellular system at GTE Hana.

The frequency separation between the Police Department system and the GTE Mobinet cellular system is as follows:

Receive separation: 24.8875 MHz
Transmit separation: 11.0575 MHz

Thank you for participating in the environmental assessment review process. If you have any questions, please call me at 942-7484.

Sincerely,

GERALD PARK URBAN PLANNER

Gerald Park

cc: C. Hall, MPD
G. Marin, SSI

United States Department of the Interior

FISH AND WILDLIFE SERVICE
PACIFIC ISLANDS ECOREGION
300 ALA MOANA BOULEVARD, ROOM 3108
BOX 50088
HONOLULU, HAWAII 96850
PHONE: (808) 541-3441 FAX: (808) 541-3470

In Reply Refer To: HMM

Mr. Gerald Park
Gerald Park Urban Planner
1400 Rycroft Street, Suite 876
Honolulu, HI 96814-3021

APR - 8 1996

Dear Mr. Park:

The U.S. Fish & Wildlife Service (Service) has reviewed the Draft Environmental Assessment (EA) for the County of Maui Police Department 800 MHz Trunked Radio System, Maui, Molokai and Lanai, Hawaii. The proposed project involves upgrading existing transmission facilities at the Hana GTE Mobilnet site at Hana, Maui and at Puu Nana, Molokai, and construction of new self - supporting towers and antennae at five additional sites: Keanae, Maui; Hana Airport, Maui; Puu Nianiau, Maui; Puu O Hoku Ranch, Molokai; and Waiakeakua, Lanai. An equipment shelter will also be constructed at each site.

General Comments

The Draft EA for the proposed project includes a summary description of the affected environment. However, this summary does not adequately describe the existing species or address the impacts the proposed project may have on these species at all of the proposed sites.

Specific Comments

To the best of our knowledge, no protected wetlands, plants or animals occur in the immediate areas of the Keanae, GTE Hana Mobilnet, Puu Nana and Puu O Hoku Ranch sites. Therefore, we concur with the Draft EA's conclusions that no significant impacts to fish and wildlife resources are anticipated as a result of the proposed activities at these sites. Review of our files produced further information on fish and wildlife resources at the Hana Airport, Puu Nianiau and Waiakeakua sites.

Hana Airport - The Pacific golden-plover (*Pluvialis fulva*) is known to forage in grassy areas of the Hana Airport and is protected under the Migratory Bird Treaty Act of 1918 [16 U.S.C. 703-712; 40 Stat. 755], as amended. While loss of foraging habitat as a result of the proposed construction is expected to be negligible, the Service is concerned that the proposed tower and, especially, the attached 11-foot antennas may prove to be a collision hazard for Pacific golden-plovers.

Puu Nianiau - The Draft EA states that the endangered nene (*Nesochen sandvicensis*) and the endangered dark-rumped petrel (*Pterodroma phaeopygia*) may occur at this site. According to a Haleakala National Park Biologist, dark-rumped petrels do not use this site for nesting or overflights, and nene use of the area is restricted to occasional foraging. Therefore, no significant impacts to these species are expected as a result of the proposed construction.

Waiakeakua - While we know of no protected plants or animals in the immediate area of the proposed tower construction at the Waiakeakua site, the planned extension of electrical lines to the tower and clearing of the accompanying 10-foot wide electrical easement could impact rare plants, including Federal Species of Concern (species which may qualify for listing, but for which insufficient information is available) *Exocarpos gaudichaudii* and *Cyanea grimesiana* ssp. *grimesiana*, which may occur very near the proposed tower site.

Summary Comments/Service Recommendations

The Service recommends that the above information be incorporated into the Final EA for the proposed project and that measures to minimize potential Pacific golden-plover collisions at the Hana Airport site be addressed. These measures could include the use of streamers or other visual devices which would allow the plovers to avoid antennas. We further recommend that environmental documentation for extension of electrical lines to the Waiakeakua site include a survey of proposed routes conducted by a qualified botanist, so that the final route may avoid any rare plants in the area.

The Service appreciates this opportunity to comment on the proposed project. If you have any questions, please contact Fish and Wildlife Biologist Heather McSharry at the above numbers.

Sincerely,

Brooks Harper
Field Supervisor
Ecological Services

cc: Haleakala National Park, Maui
DLNR, Honolulu
DOFAW, Honolulu
DOFAW, Maui

GERALD PARK
Urban Planner

Planning
Land Use
Research
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1400 Rycroft Street
Suite 876
Honolulu, Hawaii
96814-3021

Phone/Fax
(808) 942-7484

April 12, 1996

Brooks Harper
Field Supervisor, Ecological Services
U.S. Department of the Interior
Fish and Wildlife Service, Pacific Islands Ecoregion
Box 50088
Honolulu, Hawaii 96850

Dear Mr. Harper:

Subject: County of Maui Police Department 800 MHz Trunked Radio System
U.S. Department of the Interior: HMM

Thank you for reviewing and offering comments on the Draft Environmental Assessment prepared for the subject project. We offer the following in response to your comments.

1. We will incorporate the information you provided about the Pacific golden-plover at the Hana Airport site into the Final Environmental Impact Statement.

2. In 1989, the Board of Land and Natural Resources approved a Conservation District Use Application submitted on behalf of Motorola Communications Inc. to construct a telecommunication facility at Waiakeakua Peak, Lanai. The CDUA application included the clearing and construction of a 10-foot wide electrical powerline easement. The powerline easment was surveyed and no rare plants were identified.

3. Your comment about the use of streamers or other visual devices to minimize potential Pacific golden-plover collisions with the antennas at the Hana Airport site has been passed on the radio contractor for consideration.

Thank you for participating in the environmental assessment review process.

Sincerely,

GERALD PARK URBAN PLANNER

Gerald Park

cc: C. Hall, MPD
G. Marin, SSI

BENJAMIN J CAYETANO
GOVERNOR OF HAWAII

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

RECEIVED
4/10/96

APR -9 1996

MICHAEL D WILSON
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTY
GILBERT S COLOMA-AGARAN

AQUACULTURE DEVELOPMENT PROGRAM
AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
CONSERVATION AND ENVIRONMENTAL AFFAIRS
CONSERVATION AND RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT
WATER RESOURCE MANAGEMENT

Ref.:LM-PEM

File No. PM-96-004

Mr. Gerald Park
Gerald Park Urban Planner
1400 Rycroft Street, Suite 876
Honolulu, Hawaii 96814-3021

Dear Mr. Park:

SUBJECT: Review of Draft Environmental Assessment for County of Maui Police Department 800 MHz Radio System, Islands of Maui, Molokai and Lanai

We have reviewed the Draft Environmental Assessment for the County of Maui Police Department 800 MHz Radio System and would like to offer the following comments:

Division of Forestry and Wildlife

1. No objections to the request for the islands of Maui and Molokai. The applicant is aware that the dark-rumped petrel, an endangered bird species and groundnester, have been known to frequent the area around Puu Nianiau. The applicant should have a contingency plan in case these birds come in contact with their facility. We suggest that Mr. Meyer Ueoka, Maui Branch Wildlife Biologist (984-8100), be notified of the date and time when the facility will be constructed.

2. The applicant should be aware that the facility of Lanai is within the boundary of Lanai Company's forest stewardship program. It should not have any affect on the program.

Land Division - Planning & Technical Services

A Conservation District Use Permit (CDUP) is needed for facilities at Puu Nianiau, Maui. An extension of the CDUP for the facility at Waiakeakua, Lanai may be necessary.

Should you have any questions, please contact Patti Miyashiro at 587-0430 of our Land Division in Honolulu.

Aloha,

for MICHAEL D. WILSON

c: Maui Land Board Member

LINDA CROCKETT LINGLE
Mayor

DAVID W. BLANE
Director

GWEN OHASHI HIRAGA
Deputy Director

COUNTY OF MAUI
PLANNING DEPARTMENT
250 S. HIGH STREET
WAILUKU, MAUI, HAWAII 96793

RECEIVED
4/10/96

April 8, 1996

Mr. Gerald Park
Urban Planner
1400 Rycroft Street
Suite 876
Honolulu, Hawaii 96814-3021

Dear Mr. Park:

RE: Environmental Assessment for County of Maui
Police Department 800 Mhz Radio System

Thank you for the opportunity to comment on the proposed Police Department Radio System.

The purpose of the proposed project is to replace an old, unreliable, and failure-prone VHF radio network that has served the Police Department for over 20 years.

The proposed radio system is located predominantly in the State Agricultural District and pursuant to Hawaii Revised Statutes, Title 13 §205-4.5(7), is a permissible use within the district.

The review of the draft environmental assessment for the subject project has not identified any potential impacts based on the significance criteria listed in §11-200-12 of the Environmental Impact Statement Rules. Additionally, the proposed project is in keeping with the General Plan of the County of Maui and the various community plans in the stated objective of: "to improve the quality and availability of public facilities".

We appreciate the opportunity to provide comments. If you have any questions, please feel free to contact Don A. Schneider of this office at 243-7735.

Very truly yours,

Gwen Ohashi Hiraga

DAVID W. BLANE
Director of Planning

DWB:das
cc:Colleen Suyama
Don Schneider
Project File

BENJAMIN J. CAYETANO
GOVERNOR

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
JERRY M. MATSUDA
GLENN M. OKIMOTO

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

IN REPLY REFER TO:
STP 8.7287

April 9, 1996

Mr. Gerald Park
Gerald Park Urban Planner
1400 Rycroft Street, Suite 876
Honolulu, Hawaii 96814-3021

Dear Mr. Park:

Subject: Draft Environmental Assessment for the
County of Maui Police Department
800 MHz Radio System

Thank you for your transmittal of February 27, 1996.

Our comments are as follows:

Keanae Site

1. The County of Maui needs to coordinate the plans for the proposed police radio facility at our Keanae Highway Maintenance Baseyard with the Highways Division Maui District Engineer. We have plans scheduled to repair and renovate the baseyard that may affect our ability to accommodate the proposed radio facility.

2. Assuming that the radio facility can be accommodated, the County will have to negotiate a lease or revocable permit with our Highways Division for use of any portion of the baseyard.

Hana Airport Site

1. The applicant should file a Form 7460-1, "Notice of Proposed Construction or Alteration", with the Federal Aviation Administration (FAA) for a determination.

We appreciate the opportunity to provide comments.

Very truly yours,

Glenn M Okimoto

KAZU HAYASHIDA
Director of Transportation