BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

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

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

FILE: HA-2800

MAY 15 1996

MEMORANDUM

TO: Gary Gill, Director
Office of Environmental Quality Control

FROM: Dean Uchida, Administrator
Land Division
Department of Land and Natural Resources

SUBJECT: Negative Declaration for GTE Hawaiian Tel Fiber Optic Telecommunication Cable Attachments to Existing HELCO Transmission Polelines, Kaumana to Waikii Via Saddle Road, Hawaii

The Department of Land and Natural Resources has reviewed the comments received during the 30-day public comment period which began on March 23, 1996. We have determined that this project will not have significant environmental effect and have issued a negative declaration. Please publish this notice in the OEQC Bulletin as soon as possible.

We have enclosed a completed OEQC Bulletin Publication Form and four copies of the final EA. Please contact Cathy Tilton of our Planning Branch at 587-0382, if you have any questions.

Enclosures

57

1996-08-08-HI-FEA- GTE Hawaiian Tel Fiber Optic Telecommunication Cable Attachment

FINAL ENVIRONMENTAL ASSESSMENT

for the

GTE HAWAIIAN TEL FIBER OPTIC TELECOMMUNICATION CABLE ATTACHMENTS TO EXISTING HAWAII ELECTRIC LIGHT COMPANY POWER TRANSMISSION POLELINE HILO TO KAMUELA

Kaumana to Waikii Link

PREPARED FOR:
GTE Hawaiian Tel

May 10, 1996

RMTC
R. M. Towill Corporation
420 Waikamilo Road, Suite 411
Honolulu, Hawaii 96817-4941
(808) 842 -1133 Fax: (808) 842 -1937

FINAL ENVIRONMENTAL ASSESSMENT

FOR

GTE HAWAIIAN TEL FIBER OPTIC
TELECOMMUNICATION CABLE ATTACHMENTS
TO EXISTING HAWAII ELECTRIC LIGHT COMPANY
POWER TRANSMISSION POLELINE -- HILO TO KAMUELA
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ISLAND OF HAWAII, HAWAII

Prepared for:

GTE HAWAIIAN TEL
P. O. Box 2200
Honolulu, Hawaii 96841

May 10, 1996

Prepared by:

R. M. Towill Corporation
420 Waikamilo Road, Suite 411
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PROJECT SUMMARY

Project:	GTE Hawaiian Tel Fiber Optic Telecommunication Attachments to Existing HELCO Power Transmission Pole Line, Hilo to Kamuela, Kaumana to Waikii Link
Applicant:	GTE Hawaiian Tel P. O. Box 2200 Honolulu, Hawaii 96841 Contact: Susan K. Eichor, Manager Phone No.: (808) 546-2095
Accepting Authority:	Department of Land and Natural Resources
Tax Map Keys:	3/2-5-01:06, 07, 12, 13; 3/2-5-02:14; 3/2-6-18:01, 04; 3/4-4-15: 02, 04, 08; 3/4-4-16: 03, 05, 06
Owners:	State of Hawaii; Mauna Kea Agribusiness; Hawaii Conference Foundation, United Church of Christ
Agent:	R.M. Towill Corporation 420 Waiakamilo Road, Suite 411 Honolulu, Hawaii 96817 Contact: Chester Koga Phone No.: (808) 842-1133
Existing Land Uses:	Conservation and Agriculture
State Land Use District:	Conservation and Agriculture
General Plan Land Use Designation:	Extensive and Intensive Agriculture, Forest Reserve
County Zoning Designation:	TMKs 3/2-6-18:01 and 3/4-4-15:02 are zoned A-40a (Agriculture-40 acres), the remaining parcels are zoned F/R (Forest Reserve).

SECTION 1

INTRODUCTION

GTE Hawaiian Tel is proposing to install a fiber optic telecommunications transmission network between Hilo, the scientific facilities at the top of Mauna Kea, and Kamuela to provide additional telecommunications capacity to accommodate projected requirements, and to improve connectivity between these areas and their existing interisland fiber cable in Kawaihae.

These improvements will also provide additional diverse routing capability and provide fiber optic connectivity to Maui, Oahu, and Kauai via GTE Hawaiian Tel's inter-island fiber cable system. In addition, these improvements will provide the Mauna Kea observatories the opportunity to transport the large amounts of data gathered at the summit at sufficient speed to perform remote observations.

GTE Hawaiian Tel is Hawaii's largest phone service provider which provides telecommunications facilities and services throughout the State of Hawaii. In 1990, GTE Hawaiian Tel processed over 7 million calls per day, or over 4,800 calls per minute. Annually, this accounted for approximately 2.6 billion calls. The current level of service experienced by GTE Hawaiian Tel is in a growth trend that continues uninterrupted, since 1981, when Hawaii had almost 432,000 telephone access lines. According to The State of Hawaii Data Book (1994), that number has increased by almost 50 percent to over 649,000 lines.

GTE Hawaii Tel anticipates that by late 1996, its existing facilities will be unable to accommodate projected requirements due to continuing and increasing levels of service demand. In order to meet projected growth requirements, GTE Hawaiian Tel proposed to install a fiber optic cable network between Hilo and Kamuela via Saddle Road.

The plan is to attach a fiber optic cable to existing Hawaii Electric Light Company, Inc. (HELCO) power transmission polelines that cross mid-island over the "saddle". HELCO's polelines deliver power from energy producing sources in East Hawaii to consumers in West Hawaii.

1.1 PURPOSE AND OBJECTIVES

The purpose of this environmental assessment is to address the impacts of the proposed fiber optic cable attachments to existing HELCO polelines located within the existing HELCO utility corridor that crosses over the middle of Hawaii Island, through lands owned by private owners and the State of Hawaii. These lands are located within the Forest Reserve, the Protective, Resource, and General Subzones of the Conservation District. The HELCO utility corridor also passes through critical habitat of an endemic forest bird - Palila (*Loxioides bailleui*), a federally-listed endangered species.

GTE Hawaiian Tel is seeking approval from the Board of Natural Resources (BLNR) for a Conservation District Use Permit (CDUP) to secure the right to use private/public lands affected by the utility corridor within the Conservation District. GTE Hawaiian Tel is also asking the BLNR for a Right-of-Entry and a Grant of Perpetual Easement over the HELCO utility corridor that affects lands owned by the State of Hawaii. This environmental assessment was prepared to fulfill the requirements for Chapter 343, Hawaii Revised Statutes (HRS), for use of lands within the Conservation District or owned by the State of Hawaii.

1.2 PROJECT DESCRIPTION

The overall project ranges from GTE Hawaiian Tel's Hilo Central Office in Hilo town, travels west mid-island to Humuula, and from Humuula continues west to GTE Hawaiian Tel's Kamuela Central Office (see Figure 1-1). A separate phase of this project will provide a fiber optic cable connection between GTE Hawaiian Tel's Humuula Radio Station and the University of Hawaii's mid-level facilities at Hale Pohaku on Mauna Kea. Within the overall project, the plan is to attach a fiber optic cable to a series of existing polelines from Hilo, Mauna Kea (Hale Pohaku), and to Kamuela. The ownership of the existing polelines varies;

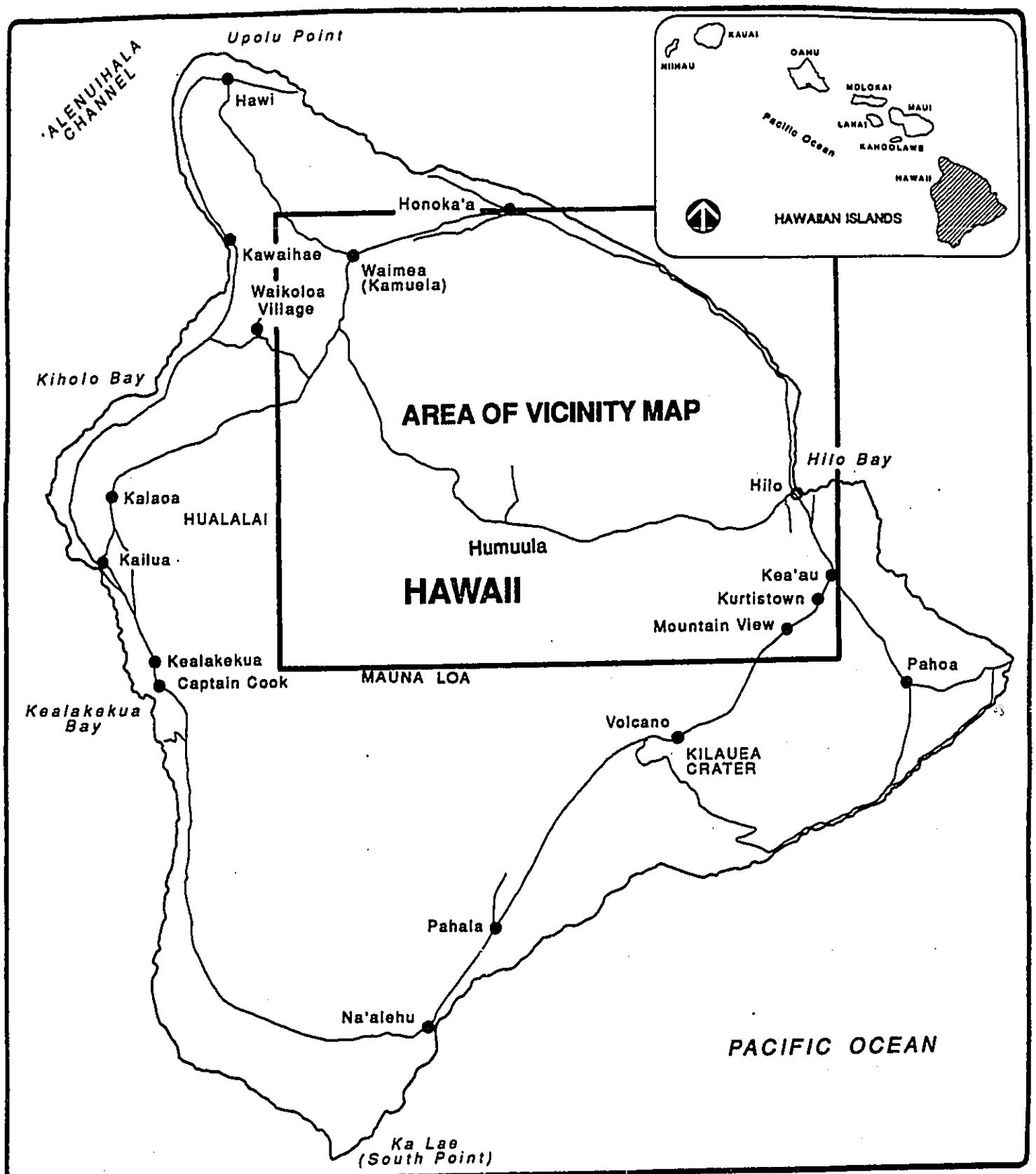

Figure 1-1

Location Map

GTE Hawaiian Tel Fiber Optic Project
Saddle Road Area, Hawaii

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July 1995

some are owned by GTE Hawaiian Tel, some jointly by GTE Hawaiian Tel and HELCO, and others by HELCO.

This environmental assessment focuses on GTE Hawaiian Tel's proposed use of the HELCO utility corridor that crosses over the middle of Hawaii island, through lands that are within the Conservation District or owned by the State between Kaumana City (Hilo) and Waikii (South Kohala) (see Figure 1-2). This assessment does not apply to two parcels of land owned by and under the jurisdiction of the Department of Hawaiian Home Lands (DHHL), tax map keys 3/3-8-01:07 & 13. GTE Hawaiian Tel has obtained DHHL license easements and approvals to install their equipment over these lands and no further processing is necessary. In addition, there are presently two other projects in progress affecting State lands: (1) Kukuau 2nd Request for Utility Easement, and (2) Waiakea Request for Utility Easement. The two utility easement requests and the Humuula to Hale Pohaku fiber optic link, mentioned previously, are not included in this environmental assessment. Environmental compliance for these phases of the overall project are being handled separately.

The following is a description and history of the HELCO utility corridor, HELCO equipment, and how GTE Hawaiian Tel proposes to utilize these resources for the section of their project located between Kaumana City and Waikii.

HELCO has two cross island power transmission [69 kilovolt (KV) and 138 KV] polelines that are used to transmit power from energy producing sources in East Hawaii to consumers at the scientific facilities on the top of Mauna Kea, the U. S. Army's Pohakuloa Training Area, and West Hawaii. HELCO instalied the 69 KV line in 1957 and the 138 KV line in 1987. For sections east of Kaumana City and west of Waikii the 69 KV and 138 KV polelines take totally separate routes. From Kaumana City to Waikii HELCO placed the 138 KV line parallel to the 69 KV line for two-thirds of the route and for the other one-third of the route, the 138 KV line veers north of the 69 KV line mainly to avoid a "Kipuka", a lava encircled land area, and an aerial crossing over Saddle Road.

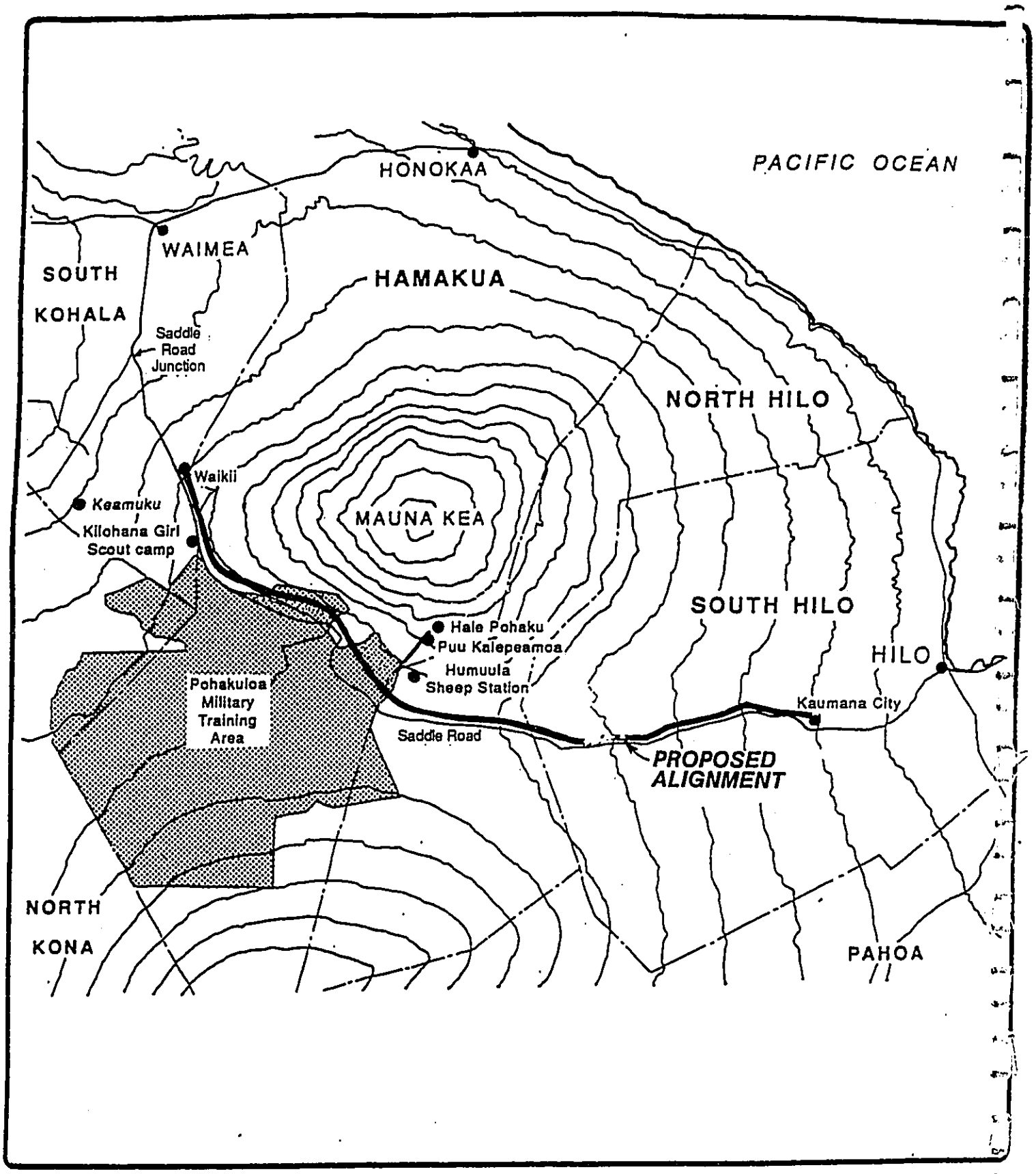

Figure 1-2
Vicinity Map
GTE Hawaiian Tel Fiber Optic Project
Saddle Road Area, Hawaii

No Scale

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The physical placement of the 138 KV poleline was the result of extensive community/ governmental reviews and responses to a 1983 HELCO Power Transmission Routing Study and accepted Environmental Impact Statement for the utility corridor. HELCO also prepared a Conservation District Use Application for their project in 1986 and went through that review process at the Department of Land and Natural Resources (DLNR). The applicable Conservation District Use Permits for this HELCO cross island utility corridor are No. HA-1554, HA-1554A, and HA-1904.

GTE Hawaiian Tel's proposed use of this utility corridor is supported by these associated governmental clearances that HELCO acquired for land use within the State lands or the Conservation District. All of the areas to be affected by the installation of the fiber optic cable within this corridor were fully assessed in the HELCO (1983) Environmental Impact Statement, Kaumana to Keamuku 138 KV Transmission Line.

The width of the HELCO utility corridor easement varies between 150 and 200 feet and provides a utility corridor for both the 69 KV and the 138 KV polelines, as well as an area that is reserved for a third cross island power transmission line. GTE Hawaiian Tel is asking for an easement that will overlay a portion of the existing HELCO utility corridor for the 69 KV and 138 KV lines. There will be no changes made to the existing utility corridor.

The 69 KV and 138 KV alignments are mainly located on the north side of and parallel to Saddle Road. In most places there is access from established jeep trails and HELCO maintenance roads along the corridor. Access to the more remote portions where the 138 KV line splits from the 69 KV line can be made via existing jeep trails using all-terrain and four-wheel drive vehicles. There will be no need to establish new roads nor will it be necessary to improve the existing roads. GTE Hawaiian Tel will use the existing road infrastructure to gain access to the pole sites.

The 69 KV poles are 60-65 feet high and the 138 KV poles are 80-85 feet high. GTE is proposing to attach fiber optic cable to 40 poles in the 69 KV alignment and to 243 poles in

the 138 KV line below the electrical power cables approximately 24.5-feet above ground level (see Figure 1-3). Even though the spans between the poles range from 230 feet to 605 feet, GTE Hawaiian Tel will not be placing intermediary poles for load bearing purposes because light-weight free span fiber will be installed. For the most part GTE Hawaiian Tel is proposing to attach the fiber optic cable to HELCO's 138 KV poles except for the areas near Kaumana City and Waikii where the 69 KV polelines provide the necessary transition from the joint utility network to and from the HELCO power transmission lines.

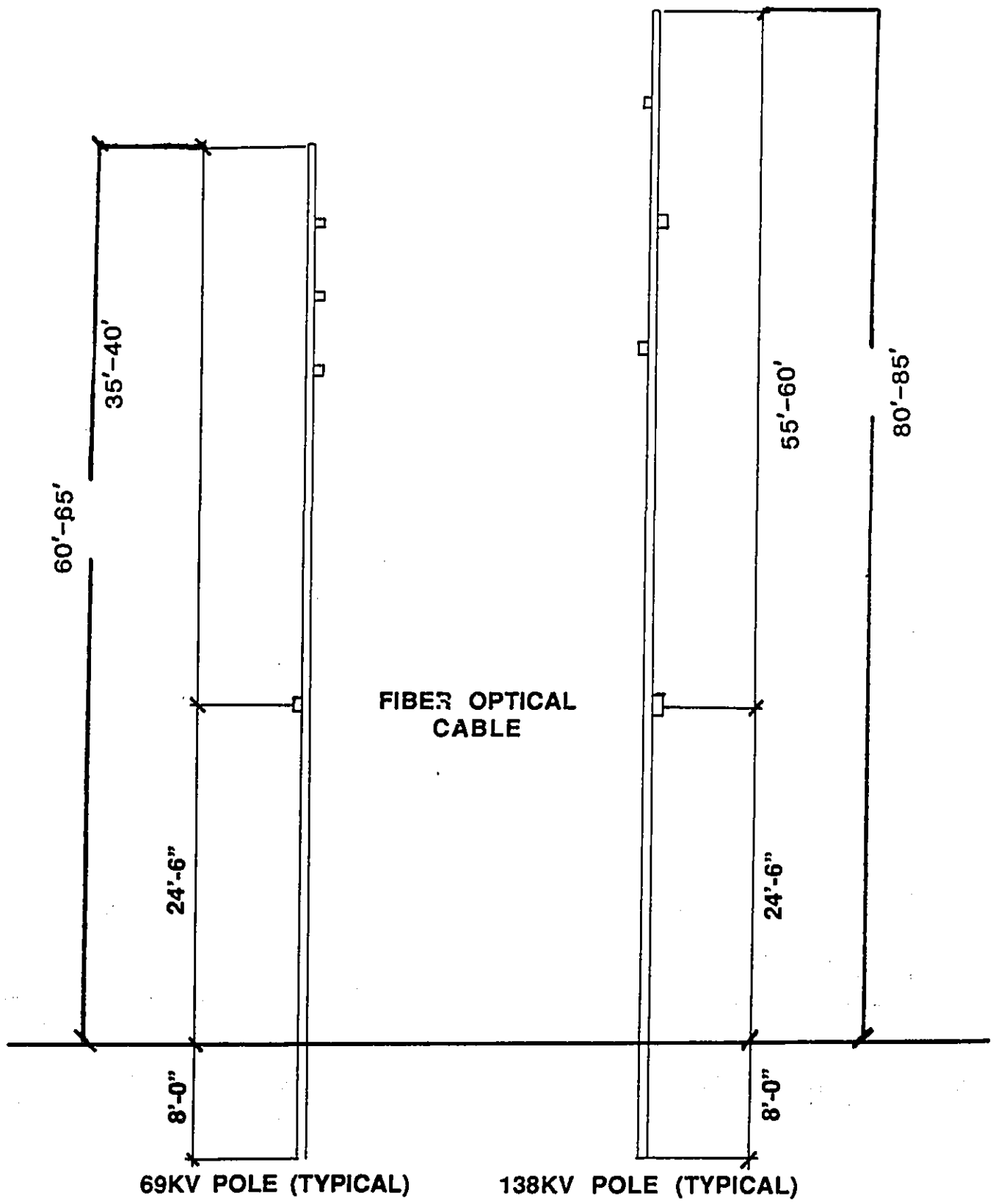
The 69 KV poles are supported by anchors/guy wires where the poleline changes direction and all of the 138 KV poles are supported by multiple anchors/guy wires. In order to provide proper support to the HELCO equipment, GTE Hawaiian Tel will attach storm guy wires to all the in-line poles. These storm guy wires will be attached to the existing HELCO anchors. Where the poleline changes direction GTE Hawaiian Tel will install new anchors and guy wires. These anchors will be placed within the same area as the poles and the existing HELCO anchors in ground that has already been disturbed by the initial HELCO pole placement (see Figure 1-4). The guy wires and anchors are intended to strengthen the pole's resistance to wind and inclement weather.

1.3 PROJECT BACKGROUND AND CABLE TECHNOLOGY

The following is a discussion of existing telecommunication facilities and how the determination was made to use fiber optics.

1.3.1 Hilo Telecommunications Background

Hilo is the second largest population center in the State of Hawaii and the largest business and population center on the Island of Hawaii. Both the University of Hawaii campus and the University Park which conducts research are located in Hilo and play an important role to the future economic and technological growth in the region.



Not to Scale

Figure 1-3
TYPICAL 69KV POLE & TYPICAL 138KV POLE
GTE Hawaiian Tel
Fiber Optic Cable - Kaumana

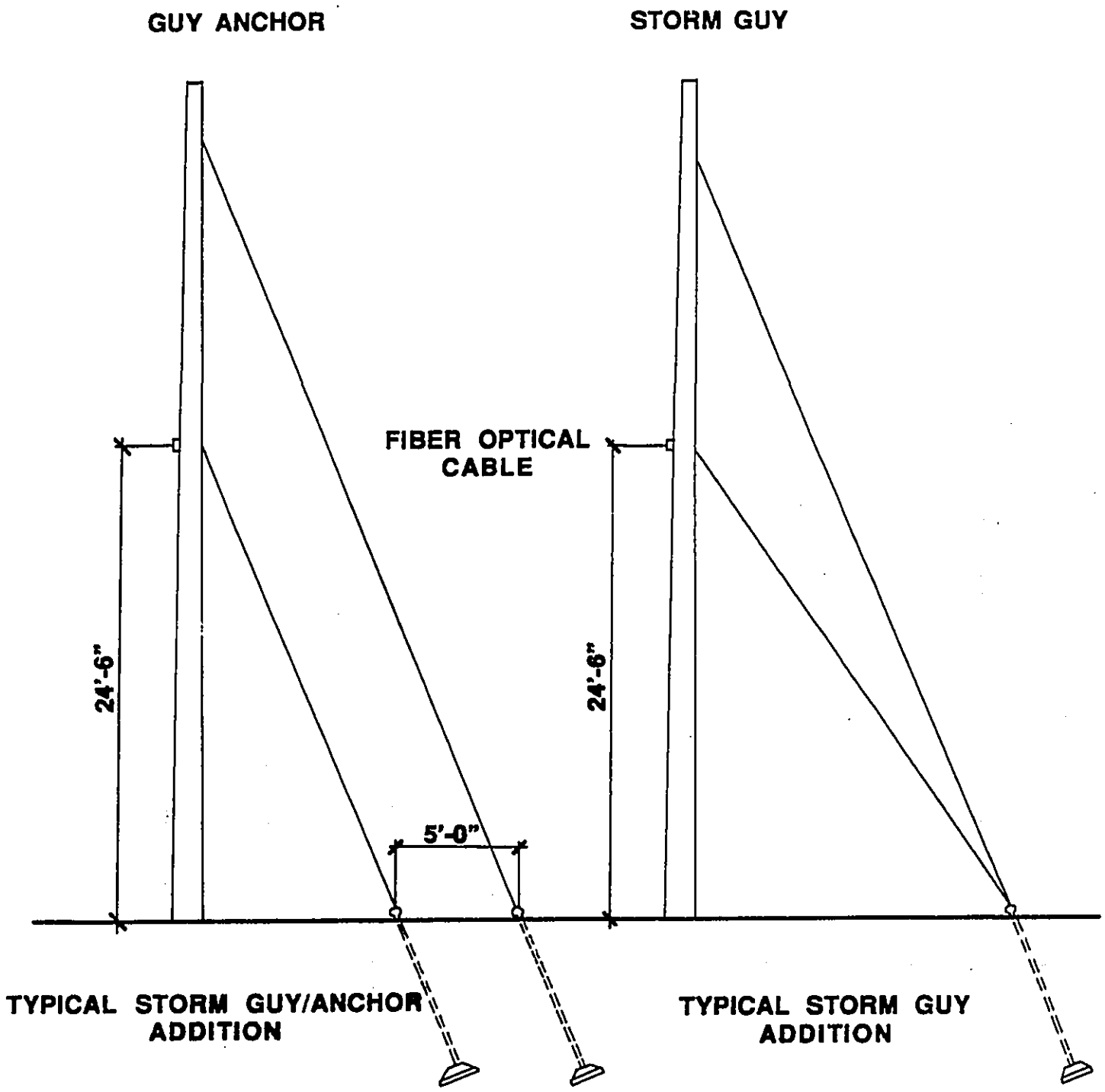


Figure 1-4
TYPICAL GUY/ANCHOR & TYPICAL STORM GUY/ANCHOR
GTE Hawaiian Tel
Fiber Optic Cable - Kaumana

Not to Scale

Telecommunications facilities in Hilo consist of digital microwave radios to Kona, Kamuela, and Honolulu. Interisland diversity is provided via an analog radio facility to Honolulu. Facilities to the Hawaii interisland fiber optic terminal in Kawaihae, consist of a digital microwave radio to Kamuela along Saddle Road, a fiber optic link via Kamuela to Kawaihae, and a combination of copper and fiber optic terrestrial cable facility from Hilo to Kawaihae via the Hamakua Coast.

While radio technology is capable of carrying digital circuits, the existing radios are reaching the limit of their theoretical capacity and are unable to carry higher bandwidths given the present frequency spectrum available.

1.3.2 Mauna Kea Telecommunications Background

The Humuula to Hale Pohaku link is the first phase of the overall GTE Hawaiian Tel project and will connect GTE Hawaiian Tel's radio station at Humuula to the mid level facilities at Hale Pohaku on Mauna Kea. The existing HELCO 69 KV and 138 KV polelines being used for this portion of the GTE Hawaiian Tel project cross properties that are primarily designated Conservation, with one in Agriculture. Environmental compliance for this phase will be acquired by the University of Hawaii, Institute for Astronomy.

Present telecommunication facilities that provide service to Mauna Kea have reached maximum design capabilities. There have been advances in both computer and telecommunications applications that the existing digital microwave radio facilities are not able to accommodate in terms of the future bandwidth requirements for this location. Currently there are nine (9) telescopes located atop the Mauna Kea summit and (4) additional telescopes are under construction.

1.3.3 Solution

Fiber optics provide the higher capacities needed for current high speed LAN connectivity and video imaging. Future applications are expected to increase bandwidth requirements, making fiber optics the only viable solution for telecommunication requirements.

Until recently, digital microwave radios could provide the same services as fiber optics. At the time, both fiber optics and microwave radios operated with the same bandwidth capacity. Given the high cost of terrestrial facilities on Hawaii, digital microwave facilities were the most cost effective solution. Besides limited bandwidth, radio technology is not an alternative due to the lack of available frequencies. However, technology now demands the higher bandwidths that only fiber optics can provide. Advances in fiber optic cable design has also eliminated the need for supporting cable messenger, intermediate poles, and increased immunity to electromagnetic fields associated with 69 KV / 138 KV transmission lines. Use of this self-supporting dielectric fiber optic cable results in lower installation costs and greater safety for construction, and maintenance personnel.

Therefore, in order to meet the growing telecommunication requirements to Hilo and Mauna Kea, a fiber optic link should be made from Hilo to Hale Pohaku and to Kamuela. This is the most viable solution for GTE Hawaiian Tel because (1) they can utilize the HELCO polelines already present along the route; (2) the fiber optic cable can be attached with little physical impact to the immediate and surrounding areas; and (3) the superior bandwidth capacity of the fiber.

1.3.4 Fiber Optic Cable Technical Description

Fiber Optic telecommuncations cable utilizes hybrid spun glass as a transmission medium. Transmission of data is by way of light impulses. A cross-section of the fiber optic cable is shown in Figure 1-5. Fiber optic cables offer many advantages over telephone cables that utilize copper as a transmission medium. These advantages include immunity to a variety of problems including lightning effects, crosstalk, electromagnetic interference, as well as the elimination of performance degradation due to moisture, corrosion, and oxidation . They also do not require pressurization and provide large information carrying capacity. This translates into lower maintenance and equipment costs as well as the ability to easily increase the capacity for telecommunication service.

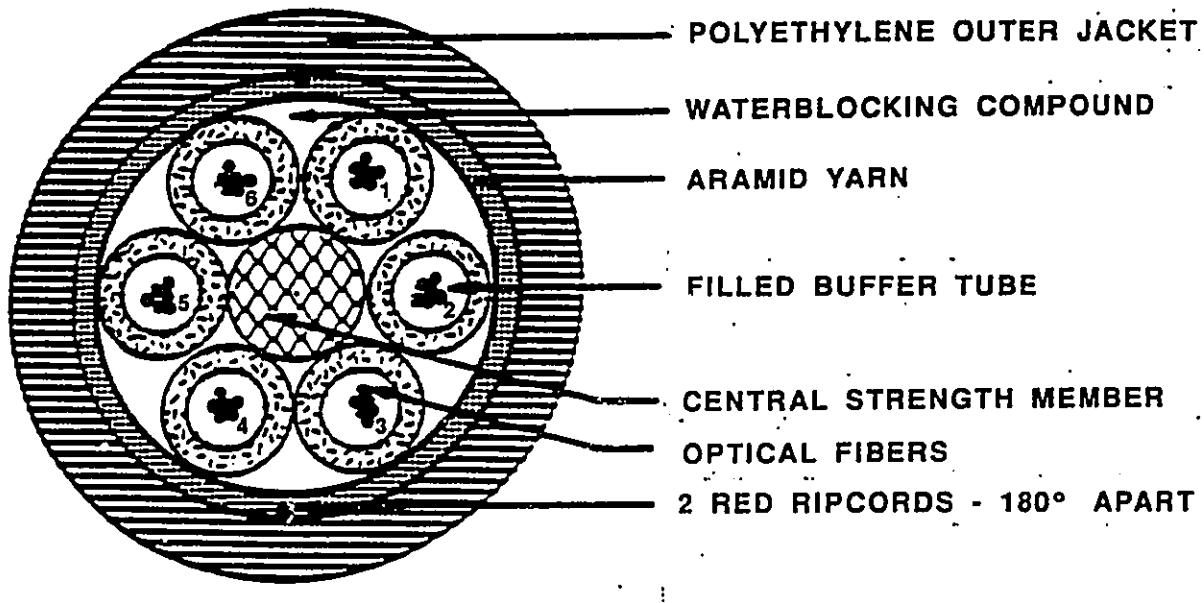


Figure 1-5

Cross-Section of Typical Fiber Optic cable

Saddle Road, Hawaii

No Scale

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1.4 CONSTRUCTION ACTIVITIES

1.4.1 General

All construction materials, fiber optic cables, and cable reel trailers will be brought in to the project site or towed by aerial lift trucks. The materials will be stored within three different staging areas set up for this purpose between Kaumana City and Humuula, at the bottom of the Mauna Kea access road and within the U. S. Army's Pohakuloa Training Area. The larger vehicles will also be left overnight at the staging areas to minimize the impact to traffic on Saddle Road. Since all of these staging areas have been utilized for construction activities and storage for other projects along the Saddle Road, GTE Hawaiian Tel will not be creating any additional ground disturbances in their staging areas.

Construction of the project will involve all work necessary to properly stabilize the poleline and attaching the fiber optic cable to the existing HELCO poles. This work will include attaching the fiber optic cable to 283 existing HELCO poles and excavating anchors for approximately 44 of those poles (4 within land zoned for Agriculture, 40 within Conservation).

New anchors will be installed where the poleline changes direction. The anchors will be installed between the pole and the existing HELCO anchors within previously disturbed areas (classified as "disturbed ground") during the installation of HELCO polelines. As such, there will be no new ground impacts caused by the installation of new anchors.

Installation of new guy wires and anchors involves excavating a 3-foot-diameter hole to a depth of 8 to 10 feet. The anchor, a concrete "slug", is then placed in the hole. A guy wire that is attached to the pole, is then connected to the new concrete anchor. The excavated material, if suitable, is then used as backfill to cover the anchor.

Excavation is usually accomplished by drills/augers driven by air compressors; however, blasting may be necessary to excavate the anchor hole. In blasting operations, a minimal charge is used to loosen and/or crack hard ground surface and/or subsurface at the hole site.

This action will generate noise and dust. To mitigate any impacts, the typical procedure would be to drill a hole large enough for a shaped charge and to cover the excavation site with a "blast blanket" to catch flying debris and muffle sound. A licensed contractor would do the blasting work, mark the blasting areas, and control traffic along roadways near blasting sites.

During a pre-assessment period GTE Hawaiian Tel provided U. S. Fish and Wildlife Service with information regarding this overall project and received several written responses that are attached in the comments section (Section 9) of this Environmental Assessment. In their response, Fish and Wildlife expressed some concerns regarding the use of dynamite within the Palila critical habitat and GTE Hawaiian Tel has agreed to avoid the use of dynamite to install anchors around the seven poles that are located within Palila critical habitat.

The in-line poles will not require the installation of new anchors but will require that new guy wires be attached. These guy wires will be attached to the existing HELCO anchors and no new ground disturbance will be required.

Once the guy wires are attached, the installers climb the pole and attach the hardware that will allow the cable to be pulled through and affixed to the pole. To prepare the poles for cable installation, two sizes of pulling line are threaded through pulleys attached to each pole. After the poles have been prepared, and the pulling line has been strung between them, a cable reel is set up about 60 feet from the uppermost pole and a pulling winch is set up on the opposite end of the line. Once this is completed, the cable is drawn through with the pulling line. The installers then climb the pole to adjust the tension in the line and to permanently attach the cable to the pole.

HELCO received environmental clearances for each pole site, but the area between the poles was not environmentally assessed. GTE Hawaiian Tel is aware that the area between the poles should not be disturbed and will make every effort to avoid any impacts in these areas.

Since they have to get the pulling line from one pole to the another, they will use the following approaches to avoid any impacts on the ground area between the poles:

- Aerial lift trucks will be used where road conditions permit.
- Walking between poles where ground conditions permit.
- Fiberglass telescoping poles, will be used to carry the rope over some areas that would be difficult to walk over. These poles are made of fiberglass and do not conduct electricity.
- Line guns that shoot rope over a distance.
- Helicopters, when all other access possibilities have been exhausted.

Access to the pole sites will be by either aerial lift trucks, four-wheel drive pickups, or all-terrain vehicles. The more remote areas can be accessed by using existing jeep trails to bring the workers as close as possible to the pole sites. The cable reel trailers are capable of holding up to 4 miles of fiber optic cable so the number of access sites needed for the trailers will be limited.

It is possible that some of the poles within the 69 KV alignment may need to be replaced due to deterioration from age. If this becomes necessary, GTE Hawaiian Tel will excavate a new pole hole within four feet of the existing pole so no new ground area will be disturbed.

1.4.2 Schedule and Cost

The project schedule is contingent on the processing of the Conservation District Use Permit Application. After application acceptance and permitted use within the Conservation District, construction will be approximately 6 months.

The estimated material and labor costs for installations within the Conservation District are as follows:

Labor	$ 795,000
Material	$ 485,000
Total	$1,280,000

SECTION 2

DESCRIPTION OF THE AFFECTED ENVIRONMENT

2.1 PHYSICAL ENVIRONMENT

2.1.1 Climate

The project site is located on the Island of Hawaii, along Saddle Road between Mauna Loa and Mauna Kea volcanoes. This section discusses the affected environment within the Conservation and Agriculture District just west of Kaumana City, to just before Waikii at the end of Pohakuloa Training Area (PTA).

Kaumana lies in the eastern section of Saddle Road and has annual rainfall generally in excess of 75 inches. Waikii is located in the western section of Saddle Road which lies in the "rain shadow" of Mauna Kea and is much drier, with average annual rainfall in some areas less than 15 inches. Air temperatures are warm to moderate throughout the year along Saddle Road, with a cooler climate at higher elevations. Measurements at the U.S. Army's Pohakuloa Training Area (PTA) indicate an average annual high temperature of 70 degrees Fahrenheit and an average low of 45 degrees Fahrenheit (EDAW,1983).

The "saddle" area, west of Kaumana, lies between Mauna Loa and Mauna Kea volcanoes. Ground elevations, along the route, vary from 1,050 feet at Kaumana to a high point of 6,800 feet above sea level near the Humuula Sheep Station. The "saddle" area experiences sea-mountain breezes in which cold air drains down slope at night. Fog in the morning hours is generally caused by the condensation which occurs when heat emanating from the land meets overlying cold air. In the afternoons, fog is produced when the cold coastal breezes from the west meet the warmer air in the "saddle" area.

Average annual wind speeds measured at PTA are four to six knots or five to seven miles per hour. There are no areas along the alignment when average wind speeds are much in excess of that range, since there is little direct exposure to ocean-borne winds.

Impacts and Mitigation

The proposed project is not expected to impact the local climate of the project area and vicinity.

2.1.2 Topography and Geology

Along the route, ground elevations vary from 1,050 feet near Kaumana to a high point of 6,800 feet above sea level near the Humuula Sheep Station. From the "saddle" area, the elevation drops to 5,500 feet, one mile south of the Kilohana Girl Scout Camp, and lastly reaches an elevation of 4,700 feet near Waikii.

The area consists of two rather distinct physiographic zones separated by the Humuula Sheep Station. The geology of the eastern portion is primarily of the younger Mauna Loa slopes and is of relatively recent lava flows. The western portion of the alignment is geologically composed of ash from Mauna Kea. The absence of recent lava flows in this area has allowed water erosion to form numerous intermittent stream beds and gulches, some of which intersect the alignment.

Impacts and Mitigation

Installation of new anchors will take place only in areas where the poleline changes direction. New anchors will be installed between the pole and the existing HELCO anchors within previously disturbed areas. Therefore, the impacts are expected to be minimal.

2.1.3 Soils

The soils along the alignment are varied. Along the western portion of the alignment, the soils can be broadly classified as lava flow association. This association has gentle to steep slopes, is excessively drained, with nearly barren lava flow on the uplands (USDA,1973). The eastern portion of the alignment can be broadly classified as Hanipoe-Maile-Puu-Oo association. This association has deep, gently sloping to steep, well- drained soils that have a medium-textured to moderately fine textured subsoil on uplands (USDA,1973).

There are nine soil types along the route. Descriptions of each soil type found along Saddle Road, from Waikii to Kaumana, are briefly described below:

Kilohana loamy fine sand (KZD) is located on 12 to 20 percent slopes and is found on the leeward side of Mauna Kea. The surface layer is very loamy, fine sand about 11 inches thick. It is underlain by volcanic ash, sand, and cinders at a depth of about 42 inches. Permeability is rapid and the erosion hazard is slight.

Very stony land (rVS) occurs on 10 to 15 percent slopes. It is a very shallow soil material with a proportion of aa lava outcrops. Soil erosion is slight.

Keekee loamy sand (KTB) occurs on a 0 to 6 percent slope in the saddle between Mauna Kea and Mauna Loa. The surface layer is about 9 inches thick consisting of loamy sand, silt foam, and fine sand. The subsoil is about 7 inches thick and consists of silty clay loam. The substratum is stratified sand and loam. Permeability is rapid, runoff is slow, and the hazard of soil blowing is moderate to severe.

Cinder land (rCL) consists of bedded cinders, pumice, and ash. The particles have jagged edges with a glassy appearance and show little or no evidence of soil development.

Aa lava (rLV) has practically no soil covering or vegetation. It is a mass of hard, glassy, sharp pieces piled in the tumble heaps. The surface is rough and broken. It is at an elevation from near sea level to 13,000 feet.

Laumaia extremely stony silt loam (LUC) occurs on gently sloping to moderately steep, 6 to 20 percent slopes. 3 to 15 percent of the surface is generally covered with stones. These soils are used for pasture where erosion hazard is slight and runoff is slow.

Laumaia silt loam (LAD) is located on 6 to 20 percent slopes, high on the windward side of Mauna Kea. The surface layer is 13 inches thick while the sub-soil is about 23 inches thick. The surface layer is extremely stony in places. Permeability is moderately rapid with medium runoff and a moderate erosion hazard.

Pahoehoe lava flows (rLW) is located at an elevation from sea level to 13,000. It is characterized by a billowy, glassy surface that is relatively smooth. In some areas the surface is rough and broken with hummocks and pressure domes. There is no soil covering and it is typically bare of vegetation except for mosses and lichens.

Keei extremely rocky muck (rKGD) occurs on 6 to 20 percent slopes. This soil is at intermediate elevations on Mauna Loa and Mauna Kea. Rocky outcrops occupy 25 to 50 percent of the surface. The surface layer is about 10 inches thick and underlain by pahoehoe lava bedrock. The soil above the lava is rapidly permeable, while the lava is slowly permeable. Runoff is medium and erosion is slight.

Impacts and Mitigation

Soil erosion was one of the factors considered when the HELCO 138 KV transmission line route was originally chosen in 1983. Because the saddle area experiences little rainfall, wind erosion tends to be more of a concern rather than water erosion. Areas of high erosion potential and steep slopes have generally been avoided (EDAW,1983). Even so, GTE Hawaiian Tel will make every effort to avoid any disturbance in areas susceptible to ground erosion.

No long term impacts are anticipated since temporary excavation for new anchors will take place only where the poleline changes direction in previously disturbed areas. If suitable, the excavated material will be used as backfill to cover the anchor.

2.1.4 Natural Hazards

The island of Hawaii is geologically the most active in the Hawaiian archipelago. Many volcanic eruptions and earthquakes have been recorded in historic times. Several faults and rift zones are present, as well as lava flows, tubes, and vents from volcanic activity. The U. S. Geologic Survey Map of Lava Flow Hazard Zones (1992), describes the area of the existing alignment to be along a variety of lava-flow hazard zones. The area south of Saddle Road is classified as a "Zone 2". Zone 2 areas are adjacent to and down slope of Zone 1. Fifteen to twenty-five percent of Zone 2 has been covered by lava since 1800, and 25 to 75 percent has been covered within the past 750 years. The eastern area is noted as a "Zone 3". Zone 3 areas are less hazardous than Zone 2 because of greater distance from recently active vents and topography. One to five percent of Zone 3 has been covered since 1800, and 15 to 75 percent has been covered within the last 750 years. The areas to the north are parts of the dormant Mauna Kea volcano. Only a small portion of this general area has been covered with lava in the past 10,000 years. While the entire Island of Hawaii is subject to earthquake and volcanic activity, the eastern portion of the alignment is more at risk than the western portion due to the greater volcanic activity of Mauna Loa as compared to Mauna Kea.

The installation of guys and anchors will help protect the poles from fall as a result of high winds and earthquakes.

2.1.5 Fire

Fire is a concern throughout the route but the probability of a fire starting from fiber optic cable is remote. Fiber optic cable uses hybrid spun glass as a transmission medium; transmission of data is by way of light impulses. Fiber optic cable offers immunity to a variety of problems including lightning effects and fire. The cable should not generate an increase in fire hazard. GTE Hawaiian Tel has prepared a Fire Management Plan that was approved by the State Division of Forestry and Wildlife and Hawaii County Fire Department. The maintenance of access roads by HELCO and GTE Hawaiian Tel alongside the existing

transmission line within the Conservation District, will reduce hazards to dry climate ecosystems by providing access for fire crews and equipment if necessary.

Impacts and Mitigation

Given the technical nature of the fiber optic cables there should not be any increased risk involved with the placement of the fiber optic cable to the existing HELCO poles. Strict implementation of a fire management plan during construction and maintenance will serve to minimize damage should a fire occur.

2.1.6 Hydrology

The following discussion on hydrology is taken from a study done by Walter Lum Associates, Inc. (1982) for the HELCO Transmission Line Routing Study, entitled *"HELCO Transmission Line Routing Study, Geotechnical Factors"*.

Hydrological features include surface waters that are perennial and intermittent in nature, groundwater areas, and rainfall patterns. Perennial surface waters encompass streams, lakes. wetlands and ponds. Intermittent surface waters occur in stream beds, gulches and stormwater retention basins on an incidental basis following periods of high rainfall.

A portion of the site lies in the "rain shadow" of Mauna Kea. This area is drier and experiences, on average, less than 15 inches of rainfall. On the other hand, the area to the east of Mauna Kea is wetter, experiencing an average rainfall of 75 inches or more.

The eastern portion of Mauna Kea is a groundwater resource area. This area is replenished primarily by rainfall in forest reserves, which act as watersheds. The protection of forest cover in high rainfall areas is important not only to prevent long-term soil erosion and sedimentation, but also for the continual extraction of rainfall from the moist tradewinds that pass over them.

There are no major perennial streams located along the project route. However, just northeast of Kaumana lies Wailuku River, a major perennial stream in Hawaii. Auwaiakeakua Gulch, an intermittent stream, is located near the western section of the project between Waikii and Keamuku. Other intermittent streams: Popoo, Waikii and Auwaiakea, do cross through the route in the extreme western section of the route.

Impacts and Mitigation

The project proposes installation of a fiber optic cable along the existing 138/69KV transmission line. No adverse impacts are anticipated on surface water, groundwater, or potable water sources since the project does not alter existing drainage patterns or have any long term water requirements.

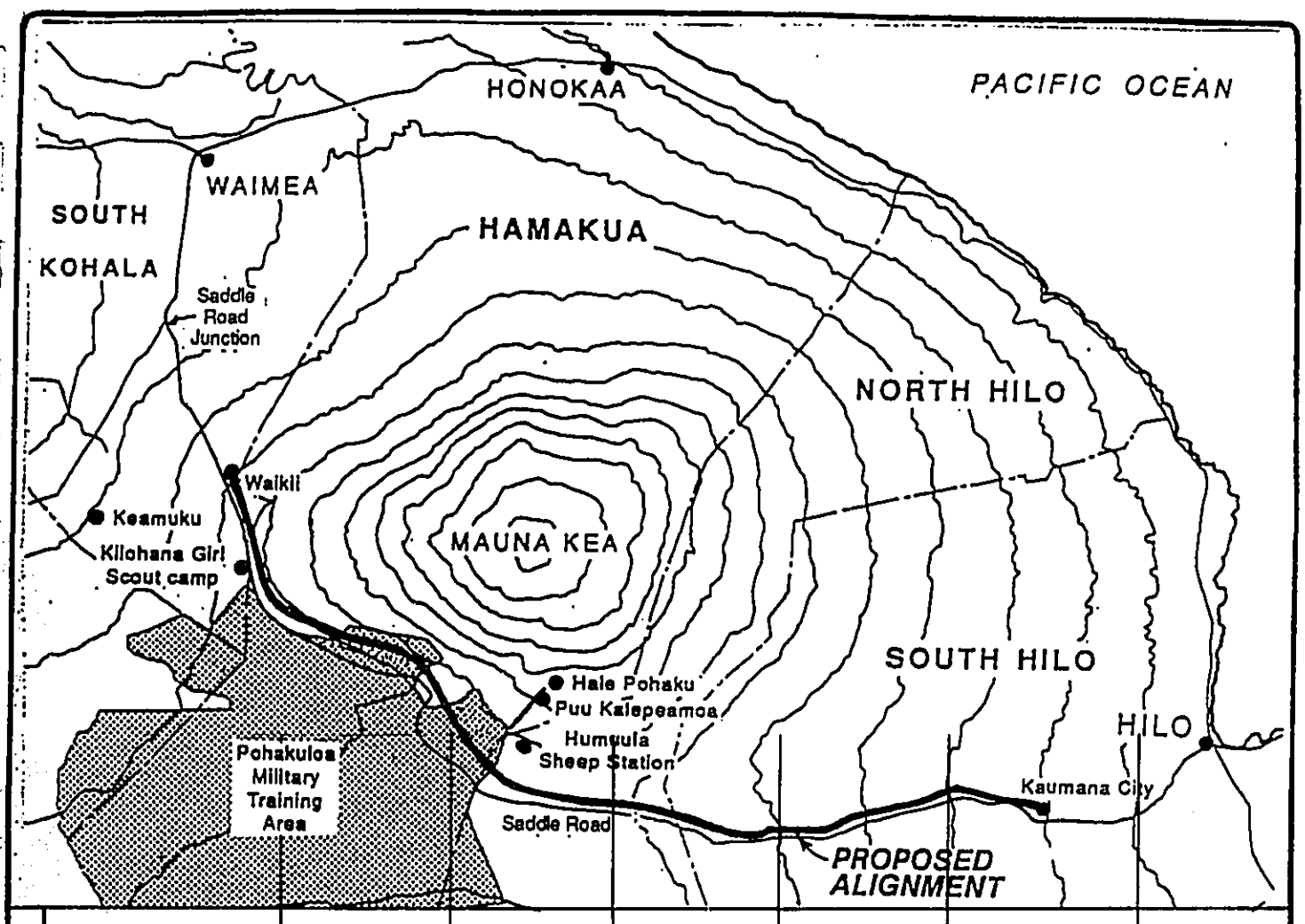
2.1.7 Flora and Fauna

The following section is based on the reports by Andrew J. Berger (1982), *"HECO/HELCO Transmission Line Routing and EIS/CDUA: Bird and Mammal Report"* and Wagner, et. al., Bernice P. Bishop Museum (1983), *"Biological Reconnaissance and Environmental Impact Assessment of HECO/HELCO Proposed Cross-Island 138 KV Transmission line: Botanical and Malacological Report".*

Along the alignment, the vegetation and wildlife reflect the geologic and climatic conditions. The project site has been divided into 5 sections to characterize the varying vegetation and habitats throughout the project site (see Figure 2-1).

For purposes of this section of the assessment, Section 1 refers to the area just past Kaumana City. The area can be characterized as having open and closed Ohia-Koa forests, with Kipuka nearby.

Section 2 is wetter and lightly covered with native Ohia-Koa forests, ranging from dense growths with canopy heights of 50 feet or more, to sparsely-covered younger growths on



Description	Section 5	Section 4	Section 3	Section 2	Section 1
Average Annual Rainfall	under 20"	50-75"	75-150"	150-250"	250"
Vegetation	Grasses, scattered Mamane-Naio forest	Mamane-Naio forest; pasture	Mamane-Naio forest, barren aa lava, pasture	Closed Ohia-Koa forest	Urban; alien grasses, Ohia-Koa forest, Kipuka
Soils	Ash from Mauna Kea	Keekee loamy sand	Laumaia extremely stony silt loam	Kaei extremely rocky muck	Kaei extremely rocky muck
Birds and Mammals	Palila Critical Habitat; game birds	Palila Critical Habitat; game birds	Some endemic forest birds; sheep	Endemic forest birds	Introduced birds; native forest birds

Figure 2-1
Vegetation and Habitat Descriptions
GTE Hawaiian Tel Fiber Optic Project
Saddle Road Area, Hawaii

No Scale

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August 1995

relatively recent lava flows (EDAW,1983). This area is classified primarily Conservation land use area. Some of the older forest areas have been classified as Kipuka, which are pockets of relatively pristine ecosystems that have been surrounded by lava flows occurring in the past couple of centuries.

They occur in open lava flows and contain Ohia-Koa, native shrubs and herbs. Kipuka are of considerable interest to evolutionary biologists because of their older successional stage and relative isolation from other natural habitats. These areas are important, for they hold populations of endemic forest birds, arthropods, (i.e., insects, spiders) and snails. Relatively undisturbed Kipuka provide habitat for plant-feeding arthropods and land snails which depend on various species of native trees, shrubs, and ferns which are found in abundance in these areas (EDAW,1983). The existing alignment comes close to only one of the many Kipuka that were identified in the field investigations for the 1983 Transmission Line Routing Study done for HELCO. The existing 138 KV Line does pass near a small Kipuka located approximately 5 miles west of Kaumana City. However, this Kipuka is avoided since the 138 KV route shifts slightly northward by a few hundred feet (EDAW,1983).

The importance given to an area depends on the extent to which an area has been previously disturbed. The population of endemic forest birds also varies according to the degree of disturbance by lava flows, human activities, or other causes. These endemic species, primarily members of the honeycreeper family, are most common between elevations 4,000 to 6,000 feet. Therefore, they are most likely to be found in the denser Ohia-Koa forest areas in Section 2.

Collapsed lava tubes formed in pahoehoe lava constitute another important habitat in these wetter areas. Surface vegetation provides the main energy source to the caves via root penetration. The cave-adapted arthropods which live in these highly sensitive environments are subject to surface alteration or destruction. There is one cave whose entrance is located adjacent to the existing 69 KV poleline in Section 2. However, the cave and surrounding

area were found to be undisturbed (Wagner,1983). The 138 KV route avoids this Kipuka and it does not pass through any other lava tube habitats (Wagner,1983).

In the western portion of Section 4, elevations are above 6,500 feet and rainfall is minimal. In this section, the proposed project crosses through Mamane-Naio forest. This is a dry, low-lying scrub forest with canopy heights no more than 15 feet. There are several endemic host-specific species of pomace fly associated with Naio, several other species of native seed bug and at least three native species of land snail in this area (Berger,1982). The Mamane-Naio ecosystem provides a nesting and foraging habitat for five species of endemic forest birds - Pueo (*Asio flammeus*), Elepaio (*Chasiempis sandwichensis*), Amakihi (*Hemignathus virens*), Palila (*Loxioides bailleui*), and Akiapolaau (*Hemignathus parvus*). Of these species, the Palila and Akiapolaau are listed as endangered species. The Palila is rarely seen at elevations as low as the proposed project and has not been seen nesting in the area. In addition, there are no published records of the Akiapolaau being seen at elevations this low (Berger,1982). Even with the infrequent sightings of Palila in the area, much of the proposed alignment through Sections 4 and 5 are within the lower portion of the designated Palila Critical Habitat. GTE Hawaiian Tel will make every attempt to avoid trimming of Mamane-Naio trees but if necessary they will hire a certified aborist to assess the situation, prepare a trim plan , and oversee the actual trimming of the Mamane-Naio trees. A jeep road follows this section of the route which serves a variety of purposes such as ranching operations, hunting access and utility line maintenance access.

The alignment closely follows Saddle Road in the extreme western portion of Section 5 and heads north towards Waikii. This portion can be characterized by dry grassland and open scrub forests consisting mostly of exotic plant species, particularly in areas which have been disturbed by grazing or fire (Berger, 1982).

Wildlife along the alignment consists of mammals, birds, insects, and mollusks. Common mammals in the area are feral cats, dogs, cattle, goats, sheep, and pigs. The only endemic mammal is the nocturnal Hawaiian bat.

Impacts and Mitigation

There are several endemic species of birds, insects and land snails which are dependent upon the habitats within the project alignment. The project, as such, does not involve the degradation or removal of any important habitat; therefore, affects on plants and wildlife populations are expected to be minimal and temporary. It is highly improbable that any endangered species will be affected even on a temporary basis.

The route includes sections of Mamane-Naio forests which the Palila depends on for survival. GTE Hawaiian Tel will make every attempt to avoid trimming of Mamane-Naio trees but if it does become necessary GTE Hawaiian Tel will hire a licensed aborist to assess the situation, prepare a trim plan, and oversee the actual trimming of the Mamane-Naio trees.

Where the route crosses through the Army's designated Palila Critical Habitat, GTE Hawaiian Tel will make every effort to avoid construction activities during the Palila nesting season (April - September). However, if it becomes necessary to work in the Palila Critical Habitat during the established nesting period, prior to any construction activity, GTE will hire an ornithologist to determine whether or not any nesting birds are within the immediate area.

During informal consultations with U. S. Fish and Wildlife, GTE Hawaiian Tel has agreed to the following additional mitigating measures:

- No night construction;
- No lights on polelines;
- Implementaiton of the approved a fire management plan (see Appendix C);
- Develop a Mamane trim plan, if required;
- Removal of soil from construction equipment before start of project;

- Restrict construction during the Palila's breeding season under conditions outlined above;
- Avoid the use of dynamite for anchors within the Palila critical habitat;
- Avoid any potential impacts on birds as outlined in 10/17/95 letter from U.S. Fish and Wildlife. (See attached letters in Section 10, Comments). and
- Coordinate with PTA Environmental Office to avoid impact on "species of concern" and to coordinate with botanist for information regarding possible additional populations of endangered plants along the utility corridor.

2.1.8 Air Quality and Noise Levels

Construction activities, including the use of blasting or drilling of holes for anchors/guy wires, will lower air quality and increase noise levels in limited areas for temporary periods.

A hovering helicopter generates approximately 93 dBA at a distance of about 100 feet. Blasting will generate approximately levels of up to 95 dBA at the same distance (EDAW,1983). This is substantially higher than noise levels along the major portion of the alignment, except for areas near Pohakuloa Training Area which experience equivalent noise levels on an occasional basis. The outdoor noise levels will be loud enough to interfere with human speech (60 dBA or greater) within approximately a half-mile of each construction site (EDAW,1983).

Impacts and Mitigation

Air quality impacts will result primarily from dust generated by blasting and the movement of construction vehicles over unpaved roads. This particularly will be the case in the areas southeast from Waikii (Sections 4 and 5), where the climate is dry. It has been estimated that construction activity of this sort can generate small-size particulates (less than 30 microns in diameter) at a rate of 1.2 tons per acre per month without any mitigation (EDAW,1983). To mitigate any impacts from blasting, it is necessary to drill a hole large

enough for a shaped charge and to cover the excavation site with a "blast blanket" in order to catch flying debris and to muffle sound.

Noise and air quality disturbance are expected to be minimal. Construction noise may be audible to some residents near the upper Kaumana area.

2.1.9 Archaeological and Historic Resources

The 1983 Routing Study, for the HELCO 138 KV transmission line from Kaumana to Keamuku , contains an archaeological assessment, *Saddle Road, Hawaii Island: Archaeological Reconnaissance*, by William Barrera Jr. (1983). This archaeological assessment is being used as a basis for this environmental assessment since the proposed GTE Hawaiian Tel project follows and utilizes transmission polelines previously erected throughout the same route. The archaeological assessment stated that significant archaeological or historical sites were absent from the proposed right-of-way of the powerline. Additionally, the State Department of Land and Natural Resources (DLNR) Historic Preservation Office also agreed that the project will have "no effect" on significant historic sites (see attached letter in Section 9, Comments).

The proposed GTE Hawaiian Tel project is not expected to effect any sites which have been placed on the Hawaii State Register of Historic Places or any other areas which have been identified as having historic value. The only known historic site which the project would actually cross is the extensive Parker Ranch District which contains no apparent remains or structures within or near the alignment itself.

Impacts and Mitigation

From the findings mentioned above, the proposed fiber optic cable attachments will not impact any historical or archaeological resources. However, should any unidentified cultural remains be uncovered during construction, work in the immediate area will cease and the appropriate agencies will be contacted for further instructions.

2.1.10 Aesthetics

Visual impacts from attaching fiber optic cable below the HELCO power transmission cables and placement of additional guy wires within existing HELCO guy wires should be minimal. The anchors will placed underground and as such will not be visible.

2.2 SOCIO- ECONOMIC ENVIRONMENT

2.2.1 Population

The proposed project crosses through three separate districts within the County of Hawaii, Hamakua, North and South Hilo. According to the 1990 U. S. Census, the total population of the three regions is approximately 52,000 (State of Hawaii Data Book, 1994). This represents an increase from 1980, when the populations of the same areas totalled approximately 49,000 (State of Hawaii Data Book, 1994). The primary impact of the improvements, will affect the broader population of the State by ensuring increased intrastate, interstate, and international telecommunications reliability within Hawaii.

2.2.2 Land Ownership and Surrounding Land Use

The project occurs within Conservation and Agricultural land use areas. Because the proposed project affects lands in the Conservation District and owned by the State of Hawaii, the project is subject to compliance with Chapter 343, Hawaii Revised Statutes, HRS.

The State owned lands are in the Conservation district, with two in the Agriculture district. These areas are identified by Tax Map Keys:

	State Land Use	**Owner(s) and Lessee(s)**
3/2-5-01:06	Conservation	State of Hawaii
3/2-5-02:14	Conservation	State of Hawaii
3/2-6-18:01	Agriculture	State of Hawaii
		Le: Alfred J. Nobriga
3/2-6-18:04	Conservation	State of Hawaii

	State Land Use	Owner(s) and Lessee(s)
3/4-4-15:02	Agriculture	State of Hawaii
		Le: Richard Smart TR
3/4-4-15:04	Conservation	State of Hawaii
3/4-4-15:08	Conservation	State of Hawaii
		Le: U.S. Army
3/4-4-16:03	Conservation	State of Hawaii
		Le: U.S. Army (portion)
3/4-4-16:05	Conservation	State of Hawaii
		Le: U.S. Army (portion)
3/4-4-16:06	Conservation	State of Hawaii
		Le: U.S. Army

Other parcels that are privately owned and in the Conservation district can be identified by Tax Map Keys:

	State Land Use	Owner(s) and Lessee(s)
3/2-5-01:07	Conservation	Mauna Kea Agribusiness
3/2-5-01:12	Conservation	Hawaii Conference Foundation
3/2-5-01:13	Conservation	Hawaii Conference Foundation

Surrounding land uses include Pohakuloa Training Area (PTA), the Pohakuloa area of Mauna Kea State Park, and other undeveloped open areas. A portion of the proposed project passes through the approach and departure zone of Bradshaw Airfield. The proposed project will not have any adverse impacts on the surrounding environment.

2.3 PUBLIC FACILITIES AND SERVICES

2.3.1 Transportation Facilities

Vehicle access for the proposed project is from either the west (Kona) or east (Hilo) via Saddle Road (Highway 20) which is a 20-30 feet wide, two-lane, asphalt roadway. Although Saddle

Road is paved, there are portions that are narrow and in poor condition. The County of Hawaii has jurisdiction over Saddle Road but Federal government agencies have been involved in plans that will provide for a realignment of Saddle Road. The proposed GTE Hawaiian Tel project involves the attachment of fiber optic cable to existing HELCO pole lines, portions of which may need to be relocated once a firm route for the new Saddle Road is established. Since final route selection for the road alignment is at least a year away (with actual construction period not determined) it is difficult to determine the extent of impact the proposed GTE Hawaii Tel project will have on the future road realignment. At this point, it appears that if there is a conflict between the final route for the road and the existing pole lines it will be necessary to relocate the fiber cable along with the existing poles and HELCO power cables.

Since all large trucks and other slow moving vehicles will be left within the staging areas overnight, this project should not add more than ten round trips per day to the traffic on Saddle Road.

The 69 KV and 138 KV alignment are located mainly on the north side of and parallel to Saddle Road. In most places there is access from established jeep trails and HELCO maintenance roads and access in the more remote areas can be made via existing roadways using all -terrain and four wheel drive vehicles. There will be no need to establish new roads nor will it be necessary to improve the existing roads. GTE Hawaiian Tel will use the existing road infrastructure to gain access to the pole sites.

Impacts and Mitigation

If there is a conflict between the final route of the Saddle Road realignment project and the existing pole lines, the fiber cable along with the existing poles and the HELCO power cables will be relocated.

2.3.2 Recreational Facilities

There are several recreation areas along the existing alignment. Along the proposed alignment, most of the State owned land is undeveloped and used occasionally for recreation, hunting, and resource conservation. The only public park located near the project route is Mauna Kea State Park. Access through this area will be coordinated with the Department of Land and Natural Resources, Divison of State Parks. The impacts in this area are expected to be minimal.

SECTION 3
RELATIONSHIP TO STATE AND COUNTY LAND USE PLANS AND POLICIES

3.1 THE HAWAII STATE PLAN

The Hawaii State Plan (Chapter 226, Hawaii Revised Statutes) provides a guide for the future of Hawaii by setting forth a broad range of goals, objectives, and policies to serve as guidelines for growth and development of the State. The proposed project is consistent with the Hawaii State Plan. The following objectives of the State Plan are relevant to the proposed project:

Section 226-10.5: Economy- Information Industry

The proposed project assists in the State's objective of positioning Hawaii as the leader in providing information services in the Pacific. The proposed project will continue development and expansion of Hawaii's telecommunications infrastructure and will help to accommodate future growth in the information industry.

Section 226-14: Facility Systems - In General

The proposed project supports the State's goals for achieving telecommunications systems necessary for Statewide social, economic, and physical objectives.

Section 226-18: Facility System - Energy/Telecommunications

The proposed project will help to ensure adequate and dependable telecommunication services for Hawaii by promoting efficient management of existing and proposed facilities, and by promoting installation of new telecommunications cables.

3.2 STATE FUNCTIONAL PLANS

The Hawaii State Functional Plan (Chapter 226) provides a management program to control and utilize Hawaii's natural resources, to improve current conditions, and attend to various societal needs. The proposed project is consistent with the following objectives of the State Functional Plans:

Educational Implementing Action A(4)(c):

The proposed project will help to ensure adequate telecommunication services necessary for Hawaii's educational institutions.

Education Implementing Action (3)(e):

The proposed project enables school library media centers to effectively manage and provide access to information and knowledge through telecommunications.

3.3 STATE LAND USE LAW

The State Land Use classifications for the project site are Conservation and Agricultural (see Figures 3-1a to 3-1g in Appendix A). The purpose of the Conservation District is to preserve and manage major open space and recreational lands, and land of scenic and other natural resource value. The Conservation District is further divided into subzones (see Figures 3-2a to 3-2g, See Appendix B). The subzones are identified by resource characteristics and boundaries. Construction activity within Conservation-designated land requires a Conservation District Use Permit. This permit will be applied for as part of this project. No land use change is required for the proposed project.

3.4 COUNTY ZONING

Most of the areas along the alignment are zoned for extensive agriculture, pasture, range land, and forest reserve (see Figure 3-3). The proposed attachments are not in conflict with planned land uses, since according to zoning provisions for the County of Hawaii Section 25-51 communication utilities are permitted in these areas. All required permits will be obtained before construction begins.

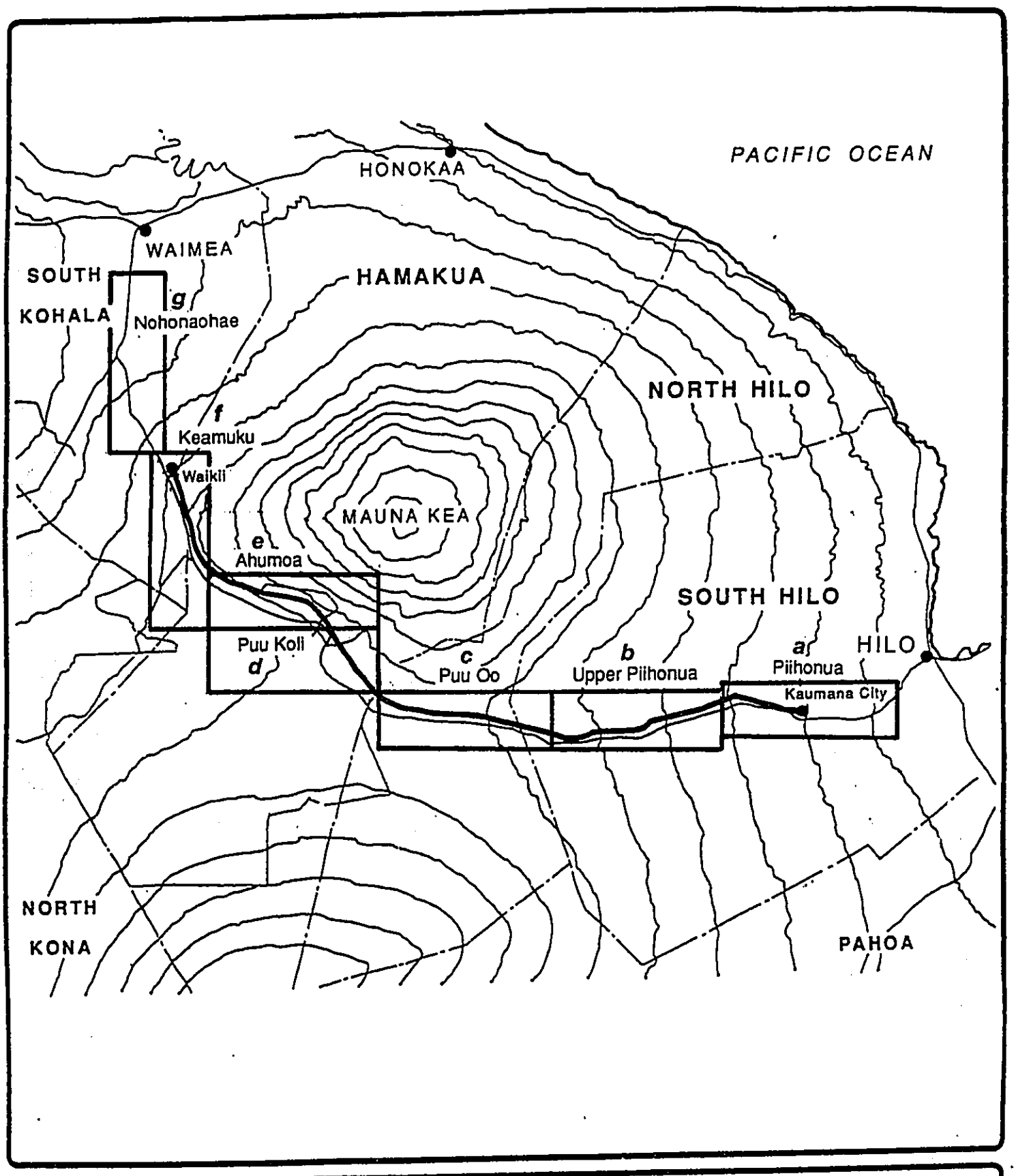

Figure 3
Key map to Land Use District & Conservation District Subzone Maps

No Scale

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August 1995

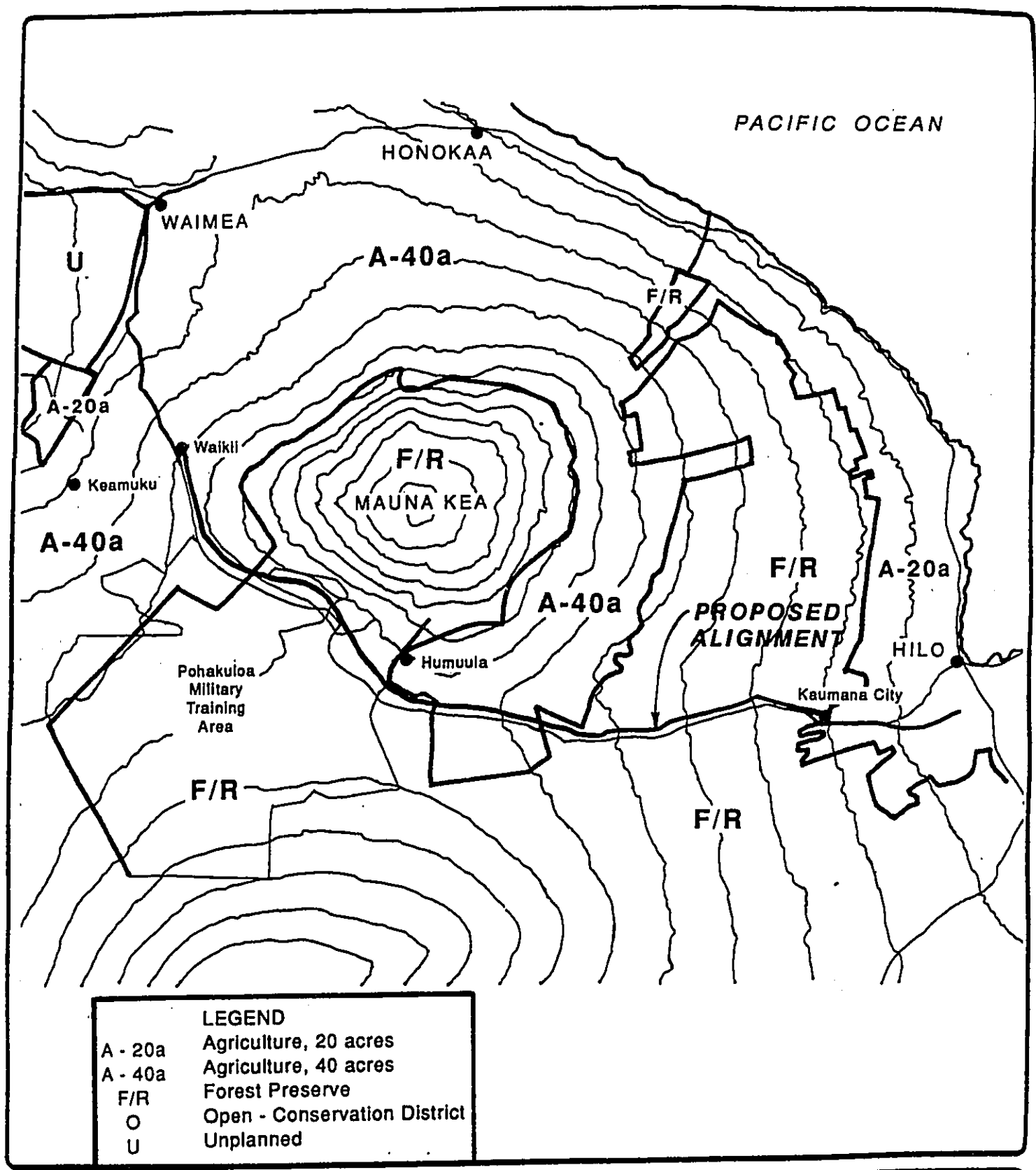

Figure 3-3

Existing Zoning

GTE Hawaiian Tel Fiber Optic Project
Saddle Road Area, Hawaii

No Scale

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July 1995

SECTION 4

ALTERNATIVES TO THE PROPOSED ACTION

4.1. NO ACTION

The no action alternative prevents GTE Hawaiian Tel from accommodating the projected telecommunication requirements between Hilo and Kamuela and the projected requirements of the Mauna Kea scientific community. GTE Hawaiian Tel will also be prevented from handling the growing telecommunication requirements between Hilo and Maui, Kauai, and Oahu. A primary disadvantage of this alternative would be that without the addition of the fiber optic cable through this area, GTE Hawaiian Tel cannot accommodate the continual growth. Losses resulting from this alternative would include:

- Lost connectivity to the scientific facilities on Mauna Kea;
- Limited capacity of to handle the predicted increase in volume;
- Lost employment opportunities which would have been realized in connection with the cable installation, maintenance, and operation; and,
- Lost tax revenues for County and State government from the cable vendor, and increased public and private telecommunications usage.

The no action alternative was not deemed a satisfactory solution to the needs described.

4.2 ALTERNATIVES

4.2.1 Alternative Routes. Consideration was given to running a fiber optic cable from Hale Pohaku to Kamuela via Saddle Road. The fiber optic connectivity to Hilo would be provided by running a fiber optic cable from Kamuela to Hilo via the Hamakua Coast. This alternative would increase the distance of the project route, the project costs, as well as lengthen the time of construction. Therefore, this route is not a feasible alternative at this time due to higher costs, distance and additional time needed for installation.

GTE Hawaiian Tel also considered the possibility of installing a new poleline from Kaumana to Waikii and decided that this was not an option for the following reasons: (1) The installation of a new poleline would create many new impacts on the environment within the Conservation District; (2) there was no way to justify the negative impacts of excavation for new poles/anchors; and (3) additional negative visual impacts and extremely high costs involved with a new poleline installation.

4.2.2 HELCO Polelines (69 vs 138 KV polelines). The two existing HELCO polelines were studied to determine the feasibility of using one of them for this project. The 69 KV alignment was more accessible for construction and maintenance purposes but it appeared that many of the poles would need replacing due to age and exposure to the extreme weather conditions. The poles and other equipment within the 138 KV alignment were installed in 1987 and are in good condition. It appeared that the fiber optic cable could be attached to existing poles in the 138 KV alignment without pole replacements and with minimal impact on the surrounding ground area.

The acceptable solution to the mid-island crossing has GTE Hawaiian Tel attaching their fiber optic cable to as much of the equipment within the 138 KV alignment a possible. GTE Hawaiian Tel has elected not to use the section of 138 KV alignment that travels from the HELCO Kaumana Substation to just west of Kaumana City as well as the section at the end of PTA that crosses to the south side of Saddle Road and goes cross country around Waikii Ranch to the HELCO Keamuku Substation. These sections are not going to be used because they do not provide GTE Hawaiian Tel with reasonable access to the utility network that ties into their telecommunications network. In order to provide a transition to and from the 138 KV alignment and the joint utility network, GTE Hawaiian Tel will be attaching their cable to some of the poles within the 69 KV alignment. The cable will be attached to 5 poles in the 69 KV alignment just west of Kaumana City and to 243 poles in the 138 KV alignment to the end of PTA. At this point, GTE Hawaiian Tel will attach the cable to 35 poles within the HELCO 69 KV alignment to provide for the transition to the joint utility network near Waikii.

4.2.3 Underground Construction. GTE Hawaiian Tel did consider the underground placement of the cable versus the attachment of the cable on the existing HELCO pole lines. The underground installation option has advantages, disadvantages and other obstacles that had to be assessed.

Advantages to underground installation are increased protection from the forces of nature and low visual impacts. However, the low visual impacts are a benefit only if the changes to land forms caused by trenching for the underground system can be removed and the affected areas returned to its pre-construction condition.

In order to place the cable underground, GTE Hawaiian Tel would have to either place the underground facilities within the existing utility corridor or establish a new route that would be somewhere outside the existing utility corridor. Any placement of the cable underground would cause new environmental impacts through lands that are within Conservation, Forest Reserve, and in Palila Critical Habitat and would trigger impacts that are seen as disadvantageous and are as noted below.

Disadvantages to the underground installation are as follows:

- Potential for increased soil erosion and physical/visual alteration of land forms due to the trenching/grading that will be necessary;
- Potential disruption and damage to biological resource due to removal of wildlife habitat;
- Possible removal of Mamane/Naio trees within the Palila Critical Habitat;
- Potential disturbance of subsurface archaeological sites;
- Higher construction costs, approximately 5 times more than attaching to the existing overhead system;
- Difficulty of access for repair; and
- A longer construction interval.

Based on an evaluation of the advantages and disadvantages of undergrounding, attaching to the existing poleline was favored to placing the cable underground.

4.2.4 Microwave Radio Systems. The use of additional or modification of Hawaiian Tel's existing microwave radio systems are not feasible alternatives when compared to fiver optics, due to its capacity limitations and higher maintenance costs. Problems associated with transmission congestion of microwave radio systems include:

- Introduction of interference to voice band data and voice transmission;
- Loss of signal strength and signal reliability; and
- Frequency capacity limitations.

In comparison with microwave radio systems, fiber optic technology is the only means of providing the bandwidth capacity necessary to meet the growing telecommunication requirements.

4.3 RECOMMENDED ACTION

The recommended action is to proceed with attaching the fiber optic cable to as much of the HELCO 138 KV alignment as possible and to utilize sections of the HELCO 69 KV alignment as a transition to and from the existing telecommunications network. This is the recommended action because:

- The proposed attachments can utilize the existing HELCO facilities with minimal visual and physical impact;
- The proposal is cost effective;
- The existing HELCO utility corridor can be used without expansion; and
- The technical nature of the use of a fiber optic network provides the only reasonable solution to the growing telecommunications needs on the island of Hawaii.

SECTION 5

RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF THE ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

No short-term exploitation of resources resulting from development of the project site will have long-term adverse consequences. The appearance of the land along the approximate 49 mile long existing polelines will not be altered.

During construction there may be temporary effects on wildlife and existing botanical resources. Once construction is complete the area should return to its normal conditions.

Long-term gains resulting from development of the proposed project include provision of more effective State telecommunications systems (by means of fiber optic cables). The proposed project will maintain and enhance economic productivity by increasing intraisland, interisland, interstate, and international telecommunications service.

SECTION 6

IRREVERSIBLE/IRRETRIEVABLE COMMITMENT OF RESOURCES BY THE PROPOSED ACTION

Development of the proposed project will involve the irretrievable loss of certain environmental and fiscal resources. However, the costs associated with the use of these resources should be evaluated in light of recurring benefits to the residents of the region, the State of Hawaii and the County of Hawaii.

It is anticipated that the construction of the proposed project will commit the necessary construction materials and human resources (in the form of planning, designing, engineering, construction labor, landscaping, and personnel for management and maintenance functions). Reuse for much of these various materials and resources is not practicable. Although labor is compensated during the various stages of development, labor expended for project development is non-retrievable.

SECTION 7

NECESSARY PERMITS AND APPROVALS

7.1 STATE

Department of Land and Natural Resources

- Conservation District Use Permit
- Right-of-Entry
- Grant of Easement

Department of Hawaiian Home Lands

- Grant of Easement

7.2 COUNTY OF HAWAII

Hawaii County Department of Public Works

7.3 PRIVATE LAND OWNERS

Right-of -Entry/ Grant of Easement

- Hawaii Conference Foundation
- Mauna Kea Agribusiness

SECTION 8

CONSULTED AGENCIES AND PARTICIPANTS IN THE PREPARATION OF THE ENVIRONMENTAL ASSESSMENT

8.1 STATE AGENCIES

State Land Use Commission

Department of Land and Natural Resources

Office of State Planning

Department of Transportation

Office of Environmental Quality Control

8.2 COUNTY OF HAWAII

Planning Department

Department of Water Supply

Department of Parks and Recreation

Department of Public Works

Hawaii County Fire Department

8.3 FEDERAL AGENCIES

Fish and Wildlife Service

U. S. Army - Pohakuloa Training Area

8.4 PRIVATE

Hawaii Electric Light Company, Inc.

Mauna Kea Agribusiness

Hawaii Conference Foundation, United Church of Christ

SECTION 9

DETERMINATION

In accordance with the provisions set forth in Chapter 343, Hawaii Revised Statutes, and the significance criteria in Section 11-200-12 of Title 11 Chapter 200, this assessment has preliminarily determined that the project will have no adverse impact to water quality, air quality, existing utilities, noise, archaeological sites, or wildlife habitat, and that an Environmental Impact Statement is not required. All anticipated impacts will be temporary and the environmental quality of the area will return to preconstruction conditions. Therefore, it is anticipated that a negative declaration will be issued for this project.

SECTION 10

COMMENTS RECEIVED

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: TR

APR 11 1996

Michael D. Wilson
State of Hawaii
Department of Land and Natural Resources
P.O. Box 621
Honolulu, HI 96809

Re: Conservation District Use Application HA-2800

Dear Mr. Wilson:

The U.S. Fish and Wildlife Service (Service) has reviewed the Conservation District Use Application (CDUA) for the installation of GTE Hawaiian Tel's fiber optic telecommunication cable along Saddle Road between Kaumana and Waikii on the island of Hawaii. The purpose of the project is to meet the growing telecommunications requirements between Hilo, the scientific facilities on Mauna Kea, and Kamuela. The proposed project involves attaching a fiber optic cable to existing Hawaii Electric and Light Company polelines. Access to the polelines during construction will be via existing roads. The Service offers the following comments for your consideration.

The Service provided comments on the proposed project on August 23 and October 17, 1995, as well as comments on the Draft Fire Contingency Plan on September 21, 1995. The Draft Environmental Assessment (EA) provided in support of the application includes the Service's comments on the proposed project. The Draft EA also includes mitigation measures agreed to by GTE Hawaiian Tel during an informal consultation with the Service. Mitigation measures agreed to by GTE Hawaiian Tel include the following: no night construction; no lights on polelines; preparation of a fire management plan and a mamane trim plan; restricted construction during the palila's breeding season; avoiding the use of dynamite for anchors within the palila critical habitat area; and avoiding other potential impacts on birds.

The CDUA states that GTE Hawaiian Tel will hire a licensed arborist to prepare a trim plan and oversee trimming if trimming of mamane or naio trees is necessary. The application also states the construction activities in palila critical habitat will be avoided during the palila nesting season, and if construction during that period is necessary, GTE Hawaiian Tel will hire an ornithologist to determine if any nesting birds are in the area. The CDUA also includes the Draft Fire Contingency Plan, which incorporates all of the Service's previous suggestions.

The Service would like to offer additional recommendations not discussed in our previous letters. *Chamaesyce olowaluana*, a plant that is classified as a species of concern, is present in the palila critical habitat area. *Silene hawaiiensis*, a plant that is federally threatened, is also found near the transmission corridor at Pohakuloa Training Area. The Service recommends that the contractor take care to avoid these species during installation of the telecommunications cable. The Pohakuloa Training Area Environmental Office (808/523-5196) can advise the contractor on specific locations of these two species where special care is warranted. The Service also recommends that the contractor contact William Moore, Okahara and Associates, Inc. at 808/961-5527 to get information on the botanical survey currently underway for the proposed Saddle Road realignment project. This survey may find additional populations of endangered and threatened plants along the fiber optic cable transmission corridor where care should be taken to avoid any project impacts. Finally, the Service recommends that the contractor clean soil off machinery and equipment prior to beginning the project in order to avoid spreading weed seeds to sensitive areas.

The Service recommends that the Draft Fire Contingency Plan be approved by the Fire Department, County of Hawaii and the Hawaii Branch Manager, Division of Forestry and Wildlife, Department of Land and Natural Resources, before work on the project begins. As long as this plan is approved and the other commitments made during the informal consultation and outlined in the Draft EA and CDUA application are followed, the Service does not object to the issuance of this permit. The Service appreciates the opportunity to comment on the proposed project. If you have questions regarding these comments, please contact Fish and Wildlife Biologist Tanya Rubenstein at 808/541-3441.

Sincerely,

Brooks Harper

Brooks Harper
Field Supervisor
Ecological Services

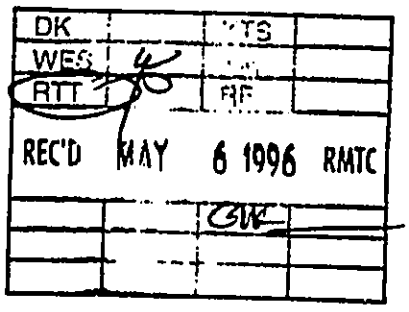
cc: R.M. Towill Corporation
GTE Hawaiian Tel
Pohakuloa Training Area Environmental Office

GTE Hawaiian Tel

GTE Hawaiian Telephone Company Incorporated
P.O. Box 2200 Honolulu, HI 96841 (808) 546-4511

Beyond the call

May 2, 1996



Mr. Brooks Harper, Field Supervisor
Ecological Services
United States Department of the Interior
Fish and Wildlife Service
300 Ala Moana Boulevard, Room 3108, P.O. Box 50088
Honolulu, Hawaii 96850

Attn. Ms. Tanya Rubenstein

Dear Mr. Harper:

Subject: Conservation District Use Application HA-2800
GTE Hawaiian Tel Fiber Optic Cable Project
Kaumana to Waikii, Island of Hawaii

Thank you very much for your April 12, 1996 letter regarding additional comments relating to subject GTE Hawaiian Tel project. We would like to offer this confirmation of our written agreements, as well as additional information your office may find pertinent to the proposed project.

GTE Hawaiian Tel will abide by the mitigation measures as outlined in U. S. Fish and Wildlife correspondence dated August 23, 1995, October 17, 1995 and the latest letter dated April 11, 1996. These letters will be included in the Final Environmental Assessment being submitted to the Department of Land and Natural Resources, Office of Conservation and Environmental Affairs (OCEA).

As a follow up to previous concerns relating to the presence of the Dark-rumped Petrel and the Newell's Shearwater, we refer you to a recent study conducted for the U. S. Army Garrison, Hawaii within Pohakuloa Training Area (PTA) by Rana Productions, Reggie David. During the birds nesting season a radar detector was set up during the evening and early morning hours in an attempt to detect any birds that may be coming in to the area to nest as well as when they leave to go back out to sea. Whenever possible visual confirmation was attempted. According to this study, no birds were detected in the area.

We have contacted the Environmental Office of the Pohakuloa Training Area and this office has agreed to physically identify specific areas of concern as well as to accompany GTE Hawaiian Tel representatives and/or their contractor to these areas to be sure that extra care is taken to eliminate any possible impacts on threatened plants within PTA.

Okahara & Associates (OA) has indicated that the flora and fauna studies within the areas outside of PTA have not been completed. We have sent OA a request asking for permission to contact the two Botanists that are conducting the studies and have been assured that these studies will be made available to us once they are complete. The areas where the existing pole lines are located have been previously disturbed and we will make every effort to limit our activities to these areas to minimize any possible adverse impacts on flora and fauna.

We are also transmitting a copy of the Fire Management Plan that has been approved by the County of Hawaii, Fire Department as well as Department of Land and Natural Resources, Forestry and Wildlife.

Thank you very much for taking the time to present your concerns.

Very truly yours,

Susan K. Eichor

Susan K. Eichor
Manager-Regional Operations Support

SE:GN:wto
Enclosure

c: C. Koga - R. M. Towill Corporation
S. Henderson - Pohakuloa Training Area
S. Padaken - Lucent Technologies
G. Yadao - GTE Hawaiian Tel

BENJAMIN J. CAYETANO
GOVERNOR

GARY GILL
DIRECTOR

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

DK		KTS	
WES		NM	
RTT		RF	
REC'D APR 5 1996 RMTC			

April 3, 1996

Michael D. Wilson, Director
Department of Land and Natural Resources
Land Division
PO Box 621
Honolulu, Hawaii 96809

Attention: Cathy Tilton

Dear Mr. Wilson:

Subject: Draft Environmental Assessment (EA) for GTE Hawaiian Tel Fiber Optic Telecommunications Cable, Kaumana to Waikii; South Hilo to South Kohala

Please include the following in the final EA:

1. A discussion of underground placement of cables as an alternative method of installation.

2. Possible impacts of the realignment of the saddle road on this project.

If you have any questions, please call Nancy Heinrich at 586-4185.

Sincerely,

GARY GILL
Director

c: Susan Eichor
Chester Koga

GTE Hawaiian Tel

GTE Hawaiian Telephone Company Incorporated
P.O. Box 2200 Honolulu, HI 96841 (808) 546-4511

Beyond the call

May 2, 1996

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

Dear Mr. Gill:

Subject: Comments, Draft Environmental Assessment
GTE Hawaiian Tel Fiber Optic Cable Project
Kaumana to Waikii, Island of Hawaii

This will acknowledge receipt of your letter to Michael D. Wilson, dated April 3, 1996, relating to the Draft Environmental Assessment for subject project. We offer the followir·· responses to your concerns and will cover these matters within the Final Environmental Assessment as requested.

GTE Hawaiian Tel did consider the underground placement of the cable versus the installation of the cable on the existing Hawaii Electric Light Company, Inc. (HELCO) pole lines. The underground installation has advantages and disadvantages some of which are as follows.

Advantages to underground installation are increased protection from the forces of nature and low visual impacts.

Disadvantages to the underground installation are that there may be potential for increased soil erosion and physical/visual alteration of land forms due to the trenching/grading that will be necessary; disruption and damage to biological resources due to removal of wildlife habitat and vegetation; possible removal of vegetation within the Forest Reserve lands; possible removal of Mamane/Naio trees within the Palila Critical Habitat; disturbance of subsurface of archaeological sites; higher construction costs, approximately 5 times more than attaching the cable to the existing overhead system; difficulty of access for repair; and a longer construction interval.

Based on an evaluation of the advantages and disadvantages of the underground option GTE Hawaiian Tel favors the pole line attachment alternative.

GTE Hawaiian Tel has been following the progress of the Saddle Road realignment project and will be kept advised as this project progresses. The proposed project involves the attachment of fiber optic cable to existing HELCO pole lines, portion of which may need to be relocated once construction starts on the Saddle Road realignment project. At this point, it appears that if there is a conflict between the final route for the road and the existing pole lines, it will be necessary to relocate the fiber cable along with the existing poles and HELCO power cables. Since final route selection for the road realignment is at least a year away (with actual construction period not determined), it is difficult to determine the extent of impact the proposed GTE Hawaiian Tel project will have on the road realignment project.

As previously stated these matters will be included in the Final Environmental Assessment. If you have questions please call Wanda Ota at 546-8705 or Chester Koga, R. M. Towill at 842-1133. Thank you for your comments.

Very truly yours,

Susan K. Eichor

Susan K. Eichor
Manager-Regional Operations Support

SE:GN:wto

c: C. Koga - R. M. Towill Corporation
S. Padaken - Lucent Technologies
G.Yadao - GTE Hawaiian Tel

BENJAMIN J. CAYETANO
GOVERNOR

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
JERRY M. MATSUDA
GLENN M. OKIMOTO

LM

RECEIVED
DIVISION OF
LAND MANAGEME
MAR 28 9 49 AM '96

CT

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

MAR 22 1996

DEPT. OF LAND
& NATURAL RESOURCES
STATE OF HAWAII

RECEIVED
96 MAR 27 P1:30

IN REPLY REFER TO:
HWY-
7.958

TO: MICHAEL D. WILSON, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

FROM: KAZU HAYASHIDA KH.
DIRECTOR OF TRANSPORTATION

SUBJECT: CONSERVATION DISTRICT USE APPLICATION HA-2800
GTE HAWAIIAN [illegible]EL FIBER OPTIC TELECOMMUNICATION
CABLE, KAUMA[illegible] TO WAIKII, ISLAND OF HAWAII
TMK: 2-5-1: [illegible], 7, 12, 13; 2-5-2: 14;
2-6-18: 4; 4-4-15: 2, 4, 8; 4-4-16: 3, 5, 6

Thank you for your memorandum requesting our comments on the subject project. Please inform the applicant that we have recently begun planning improvements to the Saddle Road. At this time, we have not resolved whether these improvements will require relocation of either the Saddle Road or Hawaii Electric Light Company poles along the highway.

Division of Forestry & Wildlife

1151 Punchbowl Street, Rm. 325 • Honolulu, HI 96813 • (808) 587-0166 • Fax: (808) 587-0160

March 7, 1996

c\wfdedua\9596\ha-2800.wfc

MEMORANDUM

TO: Dean Uchida, Administrator
Division of Land Management

FROM: Michael G. Buck, Administrator

SUBJECT: **Installation of Fiber Optic Telecommunication Attachments to Existing HELCO Power Transmission Pole Lines, File No. HA-2800**

We have reviewed File No. HA-2800. The Environmental Assessment addresses our concerns regarding biological, botanical and fire matters. We agree with the mitigative measures that the applicant has coordinated with the U.S. Fish and Wildlife Service. Therefore, we have no objections to the proposed project.

cc: Hawaii Branch

HA-2800

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

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

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

JAN 23 1996

MEMORANDUM

TO: Cathy Tilton

FROM: Gary Martin

THROUGH: for Dean Uchida

SUBJECT: Conservation District Use Application HA-2800, GTE Hawaiian Tel, Hawaii, Tax Map Key:Various

GTE Hawaiian Tel's use of HELCO's existing easements over public lands for its fiber optic telecommunication overhead lines is cost effective and also avoids proliferating the island with such facilities, thus, benefitting the public in both instances.

Accordingly, we have no objection to CDUA, HA-2800.

GTE Hawaiian Tel should be informed that if the conservation district use is approved by the Land Board, the disposition of the subject easements over state-owned land must be obtained through the Land Management Branch of the Land Division.

Attachments

cc: Hawaii Land Board Member
Hawaii District Land Office

HA-2800

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

CHAIRPERSON
MICHAEL D. WILSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTY DIRECTOR
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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

DIVISION OF STATE PARKS
P. O. BOX 621
HONOLULU, HAWAII 96809

January 5, 1996

CI

MEMORANDUM

TO: Roger C. Evans, Administrator
Office of Conservation and Environmental Affairs

FROM: Ralston H. Nagata
State Parks Administrator

SUBJECT: Authorization to Process CDUA on State Owned Lands, Hilo to Kamuela, Kawaii
File No. HA-2800

The project description indicates the proposed fiber optic cable will be placed on polelines in an established utility corridor.

The DRAFT EIS states that impacts are expected to be minimal on Mauna Kea State Park, located near the corridor (page 26). We concur except for possible impacts during construction. Construction times and access through the park should be coordinated with our Division.

RECEIVED
DIVISION OF
LAND MANAGEMENT
JAN 8 4 02 PM '96

ck 4-8-95 CA

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
Office of Conservation and Environmental Affairs
Honolulu, Hawaii

FILE NO.: HA-2800
SUSPENSE DATE: Three Weeks

DEC 29 1995

MEMORANDUM

TO: Aquatic Resources, Conservation & Resources Enforcement, Forestry & Wildlife/NARS, Land Management, State Parks, Historic Preservation, Water & Land Development

FROM: Roger C. Evans, Administrator

SUBJECT: Request for Authorization from the Department to Process a Conservation District Use Application Located on State-owned Lands

All Conservation District Use Applications (CDUA) must be signed by the landowner prior to the submission of the application to the Department. Applications involving the use of State lands require the signature of the Chairperson on behalf of the Board of Land and Natural Resources (unless the applicant has a legal interest in the land).

Please review the attached application and comment with respect to your division's present and future programs. Your comments will then be forwarded to the Chairperson for consideration on whether to sign as landowner on this CDUA (Note: The Chairperson;s signature on the application does not constitute the Department's endorsement of the proposed use.)

General information regarding the attached application is provided below:

RECEIVED
JAN 2 1996
Div. of Aquatic Resources

APPLICANT: GTE Hawaiian Tel

AGENT: Chester Koga
R.M. Towill Corporation

PROPOSED USE: GTE Hawaiian Tel Fiber Optic Telecommunication Attachments to existing HELCO Power Transmission Pole Line

LOCATION: Hilo to Kamuela, Kaumana to Waikii Link

TMKs: 2-5-1: 6, 7 (private: Mauna Kea Agribusiness), 12 (private: Hawaii Conference Foundation),

No Comments

RECEIVED
JAN 23 PM 96
DIVISION OF LAND MANAGEMENT

LAND MANAGEMENT DIV. ID:808-587-0455 FEB 15'96 11:22 No.001 P.06

13 (private: Hawaii Conference Foundation)
2-5-2: 14
2-6-18: 4
4-4-15: 2, 4, 8 (Leased: U.S. Army)
4-4-16: 3, 5 (Leased: U.S. Army), 6 (Leased U.S. Army)

Thank you for your cooperation in this matter. PLEASE RETURN ALL ATTACHMENTS. If no response is received by the suspense date, we will assume there are no comments. Should you have any questions, or need additional time, please contact Cathy Tilton at 7-0377.

Attachment

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
Office of Conservation and Environmental Affairs
Honolulu, Hawaii

FILE NO.: HA-2800
SUSPENSE DATE: Three Weeks

DEC 29 1995

MEMORANDUM

TO: Aquatic Resources, Conservation & Resources Enforcement, Forestry & Wildlife/NARS, Land Management, State Parks, Historic Preservation, Water & Land Development

FROM: Roger C. Evans, Administrator

SUBJECT: Request for Authorization from the Department to Process a Conservation District Use Application Located on State-owned Lands

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Please review the attached application and comment with respect to your division's present and future programs. Your comments will then be forwarded to the Chairperson for consideration on whether to sign as landowner on this CDUA (Note: The Chairperson;s signature on the application does not constitute the Department's endorsement of the proposed use.)

General information regarding the attached application is provided below:

APPLICANT: GTE Hawaiian Tel

AGENT: Chester Koga
R.M. Towill Corporation

PROPOSED USE: GTE Hawaiian Tel Fiber Optic Telecommunication Attachments to existing HELCO Power Transmission Pole Line

LOCATION: Hilo to Kamuela, Kaumana to Waikii Link

TMKs: 2-5-1: 6, 7 (private: Mauna Kea Agribusiness), 12 (private: Hawaii Conference Foundation),

13 (private: Hawaii Conference Foundation)
2-5-2: 14
2-6-18: 4
4-4-15: 2, 4, 8 (Leased: U.S. Army)
4-4-16: 3, 5 (Leased: U.S. Army), 6 (Leased U.S. Army)

Thank you for your cooperation in this matter. PLEASE RETURN ALL ATTACHMENTS. If no response is received by the suspense date, we will assume there are no comments. Should you have any questions, or need additional time, please contact Cathy Tilton at 7-0377.

Attachment

(x) We have no objections.

For Chief Engineer

FEB -2 1996

January 12, 1996

LOG NO: 16247
DOC NO: 9601PM03

MEMORANDUM

TO: Roger Evans, Administrator
Office of Conservation and Environmental Affairs

FROM: Don Hibbard, Administrator
State Historic Preservation Division

**SUBJECT: FILE NO. HA-2800. Request for Authorization from the Department to Process a Conservation District Use Application Located on State-owned Lands (GTE Hawaiian Tel Fiber Optic Line)
Hilo to Kamuela, Kaumna to Waikii Link
TMK: 2-5-1: 6, 7; 2-5-2: 14; 2-6-18:4; 4-4-15: 2, 4, 8; 4-4-16: 3, 5**

The discussion of historic sites in both the Draft Environmental Assessment and the CDUA are out-of-date. Both documents fail to mention the existence of a significant archaeological site at Pu`u Kalepeamoa, a portion of which was damaged during the placement of one of the Helco transmission line poles near the substation. Special care should be taken to avoid doing any further damage to this site, which is described in a 1990 report by Patrick C. McCoy entitled *Survey and Test Excavations of the Pu`u Kalepeamoa Site, Mauna Kea, Hawai`i*. The EA should make reference to this report, which contains photo documentation of the damage that was done. We believe that the proposed project will have a "no adverse effect" on the Pu`u Kalepeamoa Site on condition that: (1) no new grading or other ground altering improvements shall be made to the approach to Poles 53 through 57 on the west side of Pu`u Kalepeamoa, and (2) GTE Hawaiian Tel staff or their contractors shall be briefed on historic preservation concerns by staff archaeologist Marc Smith (933-4346) the first day of work at Hale Pohaku.

PM:amk

R. M. TOWILL CORPORATION

420 Waiakamilo Rd. #411 Honolulu, HI 96817-4941 (808) 842-1133 Fax (808) 842-1937

February 29, 1996

Ms. Kathy Tilton
Division of Land Management
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

Dear Ms. Tilton:

SUBJECT: File No. HA-2800. Conservation District Use Application for GTE Hawaiian Tel Fiber Optic Telecommuncations Cable Attachments to Existing Hawaii Electric Light Company Transmission Poleline Kaumana to Waikii Link

The following is in response to your letter of February 15, 1996 regarding comments received from the various Divisions and offices within the Department.

We note that the following responded that they had no objections:

1. Division of Forestry and Wildlife. The final Fire Management Plan is attached.
2. Division of Land Management. Disposition action is currently being coordinated with the Division of Land Management.
3. Division of State Parks. Work plans will be coordinated with State Parks.
4. Aquatic Resources
5. Water and Land Development

Regarding comments received from Historic Preservation Division (HPD). We would like to note that the Pu`u Kalepeamoa site is not within the existing transmission line easement, therefore will not be impacted by this project. We are prepared to review our construction plans with HPD staff to assure them that there will not be any adverse impacts.

Please call me should you have any additional questions or concerns.

Very truly yours,

Chester T. Koga

Chester T. Koga, AICP
Project Manager

cc: GTE Hawaiian Tel

RECEIVED
DIVISION OF
LAND MANAGEMENT
Apr 24 9 12 AM '96

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
Land Division
Honolulu, Hawaii

RECEIVED
DIVISION OF
LAND MANAGEMENT
HILO, HAWAII
MAY 7 2 10 PM '96

FILE NO.: HA-2800
Acceptance Date: 2/19/96
180-Day Exp. Date: 8/17/96
SUSPENSE DATE: 21 Days

MEMORANDUM

~~TO:~~ From:

Hawaii Land Agent

~~FROM:~~ TO:

Dean Uchida, Administrator
Land Division

SUBJECT: REQUEST FOR COMMENTS
Conservation District Use Application

APPLICANT: GTE Hawaiian Tel

AGENT: Chester Koga, R. M. Towill Corporation

FILE NO.: H-2800

REQUEST: Installation of Fiber Optic Telecommunication Attachments to Existing HELCO Power Transmission Pole Lines

LOCATION: Kaumana to Waikii, via Saddle Road, Hawaii

TMK(s): 2-5-1: 6,7,12,13; 2-5-2: 14; 2-6-18: 4; 4-4-15: 2,4,8; 4-4-16: 3,5,6

PUBLIC HEARING: YES__X__ NO____

Should you require additional information, please call Cathy Tilton at 587-0377.

If no response is received by the suspense date, we will assume there are no comments.

Attachment(s) 4/23/96

TO: DEAN Y. UCHIDA, ADMINISTRATOR

FROM: HAWAI'I DISTRICT LAND OFFICE

We have no comments to offer regarding this project.

LN

Stephen K. Yamashiro
Mayor

Virginia Goldstein
Director

Norman Olesen
Deputy Director

County of Hawaii

PLANNING DEPARTMENT

25 Aupuni Street, Room 109 • Hilo, Hawaii 96720-4252
(808) 961-8288 • Fax (808) 961-9615

March 22, 1996

Honorable Michael D. Wilson
Chairperson
Board of Land and Natural Resources
P.O. Box 621
Honolulu, HI 96809

Dear Mr. Wilson:

Conservation District Use Application No. HA-2800
Proposed Development: Proposed Fiber Optic Telecommunications Network from Hilo to Waimea, Island of Hawaii
Developer: GTE Hawaiian Telephone Company Incorporated (GTE HTCo)
Tax Map Key: Portions of 2-5-01:6, 7, 12, 13; 2-5-02:14; 2-6-18:1, 4; 3-8-1:7, 13; 4-4-15:8; 4-4-16:3, 5; & 4-4-16:10

Thank you for your letter requesting our comments regarding a Conservation District Use Permit Application for the proposed installation of fiber optic telecommunications cables from upper Kaumana in South Hilo to the vicinity of Waikii in South Kohala.

Based on the information provided within the submittals, the installation of the fiber optic telecommunications cable(s) will utilize existing joint Hawaii Electric Light Co. (HELCO)/GTE HTCo utility poles and existing HELCO transmission poles, with the exception of those poles which may require replacement due to deterioration. We have the following comments to offer:

1. We find that the proposed improvements will be situated on lands which are not located within the County's Special Management Area (SMA). Therefore, further review of the proposed improvements against the county's SMA rules and regulations will not be required.

2. The proposed alignment which will accommodate the installation of the telecommunication cable will traverse over lands zoned Agricultural-20 acres (A-20a) and Agricultural-40 acres (A-40a). Section 25-51(a) of Chapter 25, Hawaii County Code

Stephen K. Yamashiro
Mayor

Virginia Goldstein
Director

Norman Olesen
Deputy Director

RECEIVED
DIVISION OF LAND MANAGEMENT
MAR 28 2 20 PM '96

County of Hawaii
PLANNING DEPARTMENT
25 Aupuni Street, Room 109 • Hilo, Hawaii 96720-4252
(808) 961-8288 • Fax (808) 961-9615

RECEIVED
96 MAR 28 A8:37
DEPT OF LAND & NATURAL RESOURCES
STATE OF HAWAII

March 22, 1996

Honorable Michael D. Wilson
Chairperson
Board of Land and Natural Resources
P.O. Box 621
Honolulu, HI 96809

Dear Mr. Wilson:

Conservation District Use Application No. HA-2800
Proposed Development: Proposed Fiber Optic Telecommunications Network from Hilo to Waimea, Island of Hawaii
Developer: GTE Hawaiian Telephone Company Incorporated (GTE HTCo)
Tax Map Key: Portions of 2-5-01:6, 7, 12, 13; 2-5-02:14; 2-6-18:1, 4; 3-8-1:7, 13; 4-4-15:8; 4-4-16:3, 5; & 4-4-16:10

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Based on the information provided within the submittals, the installation of the fiber optic telecommunications cable(s) will utilize existing joint Hawaii Electric Light Co. (HELCO)/GTE HTCo utility poles and existing HELCO transmission poles, with the exception of those poles which may require replacement due to deterioration. We have the following comments to offer:

1. We find that the proposed improvements will be situated on lands which are not located within the County's Special Management Area (SMA). Therefore, further review of the proposed improvements against the county's SMA rules and regulations will not be required.

2. The proposed alignment which will accommodate the installation of the telecommunication cable will traverse over lands zoned Agricultural-20 acres (A-20a) and Agricultural-40 acres (A-40a). Section 25-51(a) of Chapter 25, Hawaii County Code

(Zoning Code) states that *"Communication, transmission, and power lines of public and private utilities and governmental agencies are permitted uses within any district."* Therefore, the installation of the telecommunications cable over and across lands designated Agricultural by the County Zoning Code is considered a permitted use.

We have no objections to the issuance of a Conservation District Use Permit for the proposed installation of telecommunications cable from Kaumana to Waikii.

Thank you for giving our office the opportunity to comment.

Please contact Daryn Arai of this office should you have any questions.

Sincerely,

VIRGINIA GOLDSTEIN
Planning Director

DSA:mjs
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xc: West Hawaii Office

COMMENTS RECEIVED DURING THE EA PREPARATION

JOHN WAIHEE
GOVERNOR OF HAWAII

WILLIAM W. PATY, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

LIBERT H. LANDGRAF
DEPUTY

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

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

July 17, 1987

MEMORANDUM

TO: Roger Evans, OCEA

FROM: Ralston H. Nagata, State Parks Administrator

SUBJECT: CDUA HA-1904 -- Historic Preservation Comments on Cross-Island Transmission Line
Multiple, Hawaii Island

We have received an archaeological survey report on this project (Barrera 1987. Saddle Road, Hawaii Island: Archaeological Survey of 138KV Powerline.). We can now follow-up our previous memorandums of April 22, 1987 and May 21, 1987 to your office and conclude historic preservation review. We will do this review for the entire transmission line, as the report covers the entire line; thus, it covers CDUA HA-1904 and 1554.

Our previous questions have all been answered. We now agree that the project area has been surveyed, and all historic sites have been identified -- totalling 6. Sufficient information has been gathered to evaluate the significance of all the sites, except the "Trail" and the "Wall", and we have additional information on these sites in the State of Hawaii's Inventory of Historic Places under Hawaii Island site numbers 10,309 (Pu'u O'o Trail) and 7119 (Humuula Sheep Station), respectively.

The site significance assessments in the report (p. 16) actually should be stated somewhat differently. We do agree that all sites except 10,309 and 7119 are not significant or are no longer significant. However, contrary to the report's conclusion, we believe that sites 7119 and 10,309 are still significant. Both are significant for their information content (criterion "d" of the National and Hawaii State Registers of Historic Places), and both are likely to be significant as excellent examples of a site type -- ranches and trails (criterion "c"). The trail is also likely to be culturally significant to the Hawaiian ethnic group, and both these sites may also be significant for events relating to broader trends in prehistory and history on Hawaii Island (criterion "a"). A broader review of these sites is needed, including their full extent and historical context. But, the sites are clearly significant.

However, even though the project area does contain these two significant sites, the project has been designed to miss the two sites which we still consider significant. Thus, we believe the project will have "no effect" on significant historic sites.

RALSTON H. NAGATA

cc: J. Fernandez, Hawaiian Electric Co.
Planning Dept., County of Hawaii

... to include surveying with photogrammetry. The Board approved a time extension on January 25, 1985.

99-935 Lalawai Drive
Aiea, Hawaii 96701
(808) 486-5707

AT&T
Network Systems

Suite G-310
3375 Koapaka Street
Honolulu, HI 96819-1868
808 836-4640
FAX 808 839-4515

September 11, 1995

Howard H. Horiuchi
Acting Forestry and Wildlife Manager
Department of Land and Natural Resources
Division of Forestry and Wildlife
P. O. Box 4849
Hilo, Hawaii 96720

Dear Mr. Horiuchi:

GTE Hawaiian Telephone Company Incorporated (GTE HTCo)
Proposed Fiber Optic Telecommunications Network
Hilo to Waimea
Island of Hawaii

Thank you very much for your prompt response to my request for comments on subject project. Your letter of September 6, 1995 has been forwarded to GTE HTCo. They will respond directly to your request for signage as well as your concerns regarding fire hazards in the area.

GTE HTCo will have a fire contingency plan in place prior to working in the area. Steve Bergfeld of DLNR/Forestry and Wildlife provided my office with a general outline for a fire contingency plan in a conservation area and is reviewing a preliminary draft of the GTE HTCo fire contingency plan.

Aloha,

Sandy Padaken
Easement Coordinator

c: Gordon Yadao, GTE HTCo
Chester Koga, R. M. Towill

G. Y

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF FORESTRY & WILDLIFE
P.O. BOX 4849
HILO, HAWAII 96720
(808) 933-4221
FAX (808) 933-4495

September 6, 1995

Sandy Padaken
99-935 Lalawai Drive
Aiea, HI 96701

Dear Ms. Padaken:

The Division of Forestry and Wildlife, Hawaii District office received your project proposal for GTE HTCo's "Proposed Fiber Optic Telecommunications Network Hilo to Waimea, Island of Hawaii". The wildlife section recommends that signage be placed ahead and arrear of the working crew to warn recreational users of their presence in the area.

The forestry section's concerns relate to the high fire danger that exist in the area. We request the project's working crew(s) be extremely careful with any use of fire/smoking and to avoid parking vehicles in tall, dry grassy areas.

Sincerely,

Howard Horiuchi

HOWARD H. HORIUCHI
Acting Forestry & Wildlife Manager

99-935 Lalawai Drive
Aiea, Hawaii 96701
(808) 486-5707

AT&T Network Systems

Suite G-310
3375 Koapaka Street
Honolulu, HI 96819-1868
808 836-4640
FAX 808 839-4515

September 11, 1995

Milton D. Pavao
Manager
Department of Water Supply
County of Hawaii
25 Aupuni Street
Hilo, Hawaii 96720

Dear Mr. Pavao:

GTE Hawaiian Telephone Company Incorporated (GTE HTCo)
Proposed Fiber Optic Telecommunications Network
Hilo to Waimea
Island of Hawaii

Thank you very much for your prompt response to my request for comments on subject project. Your letter of September 6, 1995 has been forwarded to GTE HTCo.

Aloha,

Sandy Padaken
Easement Coordinator

c: Gordon Yadao, GTE HTCo
Chester Koga, R. M. Towill

G. Y.

Stephen K. Yamashiro
Mayor

Virginia Goldstein
Director

Norman Olesen
Deputy Director

County of Hawaii
PLANNING DEPARTMENT
25 Aupuni Street, Room 109 • Hilo, Hawaii 96720-4252
(808) 961-8288 • Fax (808) 961-9615

March 11, 1996

Ms. Sandy Padaken
Easement Coordinator
AT&T Network Systems
99-935 Lalawai Drive
Aiea, HI 96701

Dear Ms. Padaken:

General Inquiry [Environmental Assessments-General]
Proposed Development: Proposed Fiber Optic Telecommunications Network from Hilo to Waimea, Island of Hawaii
Developer: GTE Hawaiian Telephone Company Incorporated (GTE HTCo)
Tax Map Key: Portions of 2-5-01:6, 7, 12, 13; 2-5-02:14; 2-6-18:1, 4; 3-8-1:7, 13; 4-4-15:8; 4-4-16:3, 5; & 4-4-16:10

Thank you for your letter dated February 17, 1996, transmitting a copy of the draft environmental assessment for the proposed installation of fiber optic telecommunications cables from upper Kaumana in South Hilo to the vicinity of Waikii in South Kohala.

We find that the proposed improvements will be situated on lands which are not located within the County's Special Management Area. We have no further comments beyond those provided in our previous letter to you dated September 27, 1995.

Please contact Daryn Arai of this office should you have any questions.

Sincerely,

VIRGINIA GOLDSTEIN
Planning Director

DSA:mjs
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xc: West Hawaii Office

99-935 Lalawai Drive
Aiea, Hawaii 96701
(808) 486-5707

March 21, 1996

AT&T Network Systems

Airport Industrial Park
Suite G-310
3375 Koapaka Street
Honolulu, HI 96819-1868
808 836-4840
FAX 808 839-4515

OSP

Virginia Goldstein
Director, Planning Department - County of Hawaii
25 Aupuni Street
Hilo, Hawaii 96720-4252

Dear Ms. Goldstein:

Subject: County of Hawaii, Planning Department General Comments-Environmental Assessment
GTE Hawaiian Tel Proposed Fiber Optic Cable Project
Hilo to Waimea, Island of Hawaii

This will acknowledge receipt of your letter dated March 11, 1996 that provided your office's follow-up comments as well as verification on the location of the subject project in relation to the County of Hawaii's Special Management Area. Since GTE Hawaiian Tel is currently involved in processing a Conservation District Use Application (CDUA) for this project your letter has been forwarded to Department of Land and Natural Resources, Office of Conservation and Environmental Affairs (OCEA).

This will also serve to provide a correction on the Tax Map Key numbers for the properties on the March 11, 1996 letter. The parcels that are covered in the Draft Environmental Assessment, and affected by the proposed project, are portions of Tax Map Key: 3/2-5-01:06, 07, 12, 13; 3/2-5-02:14; 3/2-6-18:01, 04; 3/4-4-15:02, 04, 08; 3/4-4-16: 03, 05, 06. Tax Map Key 3/3-8-01:07 & 13 are properties that are owned by Department of Hawaiian Home Lands and while they are affected by this project it was not necessary to cover the use of these lands within the Draft Environmental Assessment.

Your office will probably receive a request for comment on this project from OCEA as part of the processing for a CDUA for GTE Hawaiian Tel. It's difficult to avoid the duplicate reviews but I'm hoping that your office's preassessment review/response and follow up review will make it easier to provide comments to OCEA.

If there are questions don't hesitate to give me a call. Thank you for taking the time to provide a timely reply!

Aloha,

Sandy Padaken

Sandy Padaken
Easement Coordinator

Glenell S. Smoot
Concurred with by Glenell S. Smoot

c: Gordon Yadao, GTE Hawaiian Tel
Chester Koga, R. M. Towill
Cathy Tilton, OCEA

G. Y. _____

Recycled Paper

Hawaii Electric Light Company, Inc. • PO Box 1027 • Hilo, HI 96721-1027

February 23, 1994

Mrs. Sandy Padaken
Easement Coordinator
Volt
P. O. Box 485
Pahala, Hawaii 96777

Dear Sandy:

SUBJECT: Kaumana to Keamuku 138kv Transmission Line
Island of Hawaii

In response to your letter of February 22, 1994, we have no objections to GTE Hawaiian Telephone Company asking the State of Hawaii to grant joint easements to HELCO and GTE HTCO over the affected State-owned lands, provided GTE HTCO pays one-half of the appraisal fees and one-half of the consideration payable to the State.

Should you have any questions, feel free to call me at 969-0161.

Very truly yours,

Mark K. Gushiken
Land Agent

99-935 Lalawai Drive
Aiea, Hawaii 96701
(808) 486-5707

AT&T Network Systems

Airport Industrial Park
Suite G-310
3375 Koapaka Street
Honolulu, HI 96819-1868
808 836-4840
FAX 808 839-4515

OSP

March 22, 1996

Cathy Tilton
Department of Land and Natural Resources
Office of Conservation and Environmental Affairs
1151 Punchbowl Street, Room 220
Honolulu, Hawaii 96813

Dear Ms. Tilton:

Subject: County of Hawaii-Planning Department General Comments
GTE Hawaiian Tel Proposed Fiber Optic Telecommunications Network
Hilo to Kamuela, Island of Hawaii

GTE Hawaiian Tel contracts Lucent Technologies (formerly AT&T Network Systems) to assist them with easement acquisitions and coordinating the effort to secure permits for their projects on the island of Hawaii.

This letter accompanies copies of comment letter received from County of Hawaii-Planning Department as well as my response to their office that provided correction to the tax map key numbers they used. Their letter also verified that this project is not within the County of Hawaii Special Management Area.

I wasn't sure that you had this in your file so I've also enclosed a copy of a letter from Hawaii Electric Light Company, Inc., dated February 23, 1994, that verifies their position on the State of Hawaii's granting of easements for the utility corridor to GTE Hawaiian Tel.

Aloha,

Sandy Padaken

Sandy Padaken
Easement Coordinator

Glenell S. Smoot

Concurred with by Glenell S. Smoot

c: Gordon Yadao, w/out attachments
Wanda Ota, with attachments
Chester Koga, with attachments

G. Y. _____

DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAII
25 AUPUNI STREET • HILO, HAWAII 96720
TELEPHONE (808) 969-1421 • FAX (808) 969-6996

September 1, 1995

Sandy Padaken, Easement Coordinator
AT&T Network Systems
234 Waianuenue Avenue, Suite 105
Hilo, HI 96720

GTE HAWAIIAN TELEPHONE COMPANY INCORPORATED (GTE HTCO)
PROPOSED FIBER OPTIC TELECOMMUNICATIONS NETWORK, HILO TO WAIMEA
TAX MAP KEY 2-5-1:6, 7, 12; 2-5-2:14; 2-6-18:1;
3-8-1:7,13; 4-4-15:8; 4-4-16:3, 5, 10

We have reviewed the proposed project.

Please be informed that the Department of Water Supply does not have a water system within the project areas.

Milton D. Pavao, P.E.
Manager

WA

... Water brings progress...

99-935 Lalawai Drive
Aiea, Hawaii 96701
(808) 486-5707
OSP

AT&T
Network Systems

Airport Industrial Park
Suite G-310
3375 Koapaka Street
Honolulu, HI 96819-1868
808 836-4840
FAX 808 839-4515

October 23, 1995

Virginia Goldstein
Planning Director
25 Aupuni Street, Room 109
Hilo, Hawaii 96720

Dear Ms. Goldstein:

Subject: GTE Hawaiian Telephone Company Incorporated (GTE HTCo)
Proposed Fiber Optic Network
Hilo to Waimea, Island of Hawaii

This will acknowledge receipt of your letter of September 27, 1995 regarding the County of Hawaii, Planning Department's general comments on the proposed GTE HTCo fiber optic cable project. We will provide your office with a copy of the draft environmental assessment once it is complete.

Thank you very much for taking the time to provide comment on this project.

Aloha,

Sandy Padaken
Easement Coordinator

c: Gordon Yadao, GTE HTCo
Chester Koga, R. M. Towill

G. Y.

Stephen K. Yamashiro
Mayor

Virginia Goldstein
Director

Norman Olesen
Deputy Director

County of Hawaii

PLANNING DEPARTMENT

25 Aupuni Street, Room 109 • Hilo, Hawaii 96720-4252
(808) 961-8288 • Fax (808) 961-9615

September 27, 1995

Ms. Sandy Padaken
Easement Coordinator
AT&T Network Systems
99-935 Lalawai Drive
Aiea, HI 96701

Dear Ms. Padaken:

General Inquiry [Environmental Assessments-General]
Proposed Development: Proposed Fiber Optic Telecommunications Network from Hilo to Waimea, Island of Hawaii
Developer: GTE Hawaiian Telephone Company Incorporated (GTE HTCo)
Tax Map Key: Portions of 2-5-01:6, 7, 12, 13; 2-5-02:14; 2-6-18:1, 4; 3-8-1:7, 13; 4-4-15:8; 4-4-16:3, 5; & 4-4-16:10

Thank you for your letter dated August 18, 1995, requesting our comments regarding the proposed installation of a fiber optic telecommunications cables from upper Kaumana in South Hilo to the vicinity of Waikii in South Kohala.

Based on the information provided within your submittal and the understanding that the installation of the fiber optic telecommunications cable(s) will utilize existing joint Hawaii Electric Light Co. (HELCO)/GTE HTCo utility poles and existing HELCO transmission poles, we have the following comments to offer:

1. Section 205-4.5(7) of Chapter 205, Hawaii Revised Statutes (State Land Use Law) states that *"Public, private, and quasi-public utility-lines and roadways . . . .but not including offices or yards for equipment, material, vehicle storage, repair or maintenance,"* are permitted uses within the State Land Use Agricultural District. The proposed installation of telecommunication cable(s) is consistent with this section of statute.

2. Section 25-51(a) of Chapter 25, Hawaii County Code (Zoning Code) states that *"Communication, transmission, and power lines of public and private utilities and governmental agencies are permitted uses within any district."* Therefore, the installation of the telecommunications cable over and across lands designated Agricultural by the State Land Use Commission and County Zoning Code are considered permitted uses.

3. According to the submittal, several staging areas must be established to store heavy equipment and materials as well as to park the larger vehicles overnight. These staging areas will be located adjacent to the Mauna Kea Access Road; between Kaumana and Humuula; and another within the Pohakuloa Training Area between Humuula and Waikii. All of these sites have been used as staging areas in the past, presumably during the initial installation of the existing joint utility and transmission poles.

   During your September 27, 1995, telephone conversation with Daryn Arai of my staff, it was clarified that all three proposed staging areas will be located on lands situated within the State Land Use Conservation District. The County has no jurisdiction over the use of lands located within the Conservation District.

We will reserve further comment pending our receipt of the Draft Environmental Assessment for the proposed development which is currently being prepared in accordance with Chapter 343, Hawaii Revised Statutes. Once again thank you for allowing our office the opportunity to comment.

Please contact Daryn Arai of this office should you have any questions.

Sincerely,

VIRGINIA GOLDSTEIN
Planning Director

DSA:mjs
LPadak01.dsa

xc: West Hawaii Office

99-935 Lalawai Drive
Aiea, Hawaii 96701
(808) 486-5707
OSP

AT&T
Network Systems

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Suite G-310
3375 Koapaka Street
Honolulu, HI 96819-1868
808 836-4840
FAX 808 839-4515

October 23, 1995

Gregory G. Y. Pai
Director
Office of State Planning
P. O. Box 3540
Honolulu, Hawaii 96811-3540

Dear Mr. Pai:

Subject: GTE Hawaiian Telephone Company Incorporated (GTE HTCo)
Proposed Fiber Optic Network
Hilo to Waimea, Island of Hawaii

This will acknowledge receipt of your letter of September 27, 1995 regarding the your office's general comments on the proposed GTE HTCo fiber optic cable project. GTE HTCo will follow up with a response on comments regarding the Palila, endangered animals, consultation with Department of Land and Natural Resources, Division of Forestry and Wildlife & U. S. Fish and Wildlife and the visual impacts of the new cable.

Thank you very much for taking the time to comment on this project.

Aloha,

Sandy Padaken
Easement Coordinator

c: Gordon Yadao, GTE HTCo
Chester Koga, R. M. Towill

G. Y.

Recycled Paper

OFFICE OF STATE PLANNING

Office of the Governor

MAILING ADDRESS: P.O. BOX 3540, HONOLULU, HAWAII 96811-3540
STREET ADDRESS: 250 SOUTH HOTEL STREET, 4TH FLOOR
TELEPHONE: (808) 587-2846, 587-2800

BENJAMIN J. CAYETANO, Governor

FAX: Director's Office 587-2848
Planning Division 587-2824

Ref. No. C-1438

September 27, 1995

Ms. Sandy Padaken
AT&T Network Systems
99-935 Lalawai Drive
Aiea, Hawaii 96701

Dear Ms. Padaken:

Subject: GTE Hawaiian Telephone Company Incorporated (GTE HTCo), Proposed Fiber Optic Telecommunications Network, Hilo to Waimea, Island of Hawaii, TMK:2-5-01:6, 7, 12, 13; 2-5-02:14; 2-6-18:1, 4; 3-8-01:7, 13; 4-4-15:8; 4-4-16:3, 5; and 4-4-16:10

We have reviewed the proposal to install fiber optic cables on 329 existing wooden poles that are part of Hawaii Electric Light Company (HELCO), Inc., 138 KV and 69KV lines. The 80-85 foot high poles begin in upper Kaumana/Hilo and cross mid-island to the Keamuku substation above Waikoloa/Anaehoomalu. We note that 227 of the poles are located within the Conservation District. The spans between the poles range from 230 to 605 feet, and each of the poles is supported by multiple anchors/guy wires. The applicant will install additional anchors within ground areas that have already been disturbed by the initial pole installation. Several previously used staging areas will be used to store heavy equipment and materials. Existing jeep trails and HELCO maintenance roads will be used for access purposes.

We agree with GTE HTCo that construction should be avoided in the mamane/naio forest which is a critical habitat for the Palila bird, especially during the April to September nesting season.

Provisions should also be made to protect other endangered animals such as the Alala bird or Hawaiian Crow. The Department of Land and Natural Resources, Division of Forestry and Wildlife, and the U.S. Fish and Wildlife Service should be consulted.

Finally, the visual impacts of the new cable should be discussed. Thank you for the opportunity to comment on this application. If there are any questions, please contact Lorene Maki of the Land Use Division at 587-2888.

Sincerely,

Gregory G.Y. Pai, Ph.D.
Director

COMMENT FORM

Date Sent: August 18, 1995

Date Received: _____

Please return within two weeks from date received to Sandy Padaken-AT&T Network Systems, 99-935 Lalawai Drive, Aiea, Hawaii 96701.

PROPOSED GTE HTCo FIBER PROJECT WILL ATTACH TO EXISTING HELCO POLE LINE THAT CROSSES OVER FOLLOWING PROPERTIES

Tax Map Key 2-5-01:06, Owner: State of Hawaii, Conservation.
Tax Map Key: 2-5-01:07, Owner, Mauna Kea Agribusiness, Conservation.
Tax Map Key: 2-5-01:12 & 13, Owner: The Hawaii Conference Foundation, Conservation.
Tax Map Key: 2-5-02:14, Owner: State of Hawaii, Conservation.
Tax Map Key: 2-6-18:01 & 04, Owner: State of Hawaii, Conservation.
Tax Map Key: 3-8-01:7, Owner: Department of Hawaiian Home Lands, Agriculture.
Tax Map Key: 3-8-01:13, Owner, Department OF Hawaiian Home Lands, Conservation.
Tax Map Key: 4-4-15:08, Owner: State of Hawaii, Lessee, U. S. Army, Conservation
Tax Map Key: 4-4-16: 3 & 5, Owner, State of Hawaii, Lessee, U. S. ARMY, Conservation.
Tax Map Key: 4-4-16:10, Owner: State of Hawaii, Lessee, U. S. Army, HELCO, Conservation.

Please see project description attachment for more details. Your comments and recommendations are appreciated.

X Approved as submitted	_____ Not Applicable
_____ Disapproved or Conditional Approval	_____ Extra Review Period Requested

Comments: It does not appear that any County recreational facilities would be impacted by the project.

Glenn Miyao
Reviewing Person

Dept of Parks & Rec., County of Hawaii
Agency/Division

September 20, 1995
Date

99-935 Lalawai Drive
Aiea, Hawaii 96701
(808) 486-5707

AT&T
Network Systems

Suite G-310
3375 Koapaka Street
Honolulu, HI 96819-1868
808 836-4640
FAX 808 839-4515

September 11, 1995

Casey Yanagihara
Department of Public Works
County of Hawaii
25 Aupuni Street
Hilo, Hawaii 96720

Dear Mr. Yanagihara:

GTE Hawaiian Telephone Company Incorporated (GTE HTCo)
Proposed Fiber Optic Telecommunications Network
Hilo to Waimea
Island of Hawaii

Thank you very much for your prompt response to my request for comments on subject project. Your letter of September 6, 1995 has been forwarded to GTE HTCo. We understand that as long as GTE HTCo does not need to create any new access roads and conforms to Chapter 27 Hawaii County Code when there is a crossing of drainageways your office has no objections.

I've attached a copy of your comment form. Please note the second sentence of the written comment section. Am I correct in assuming that you mean to say "we have [no] objections."?

Yes, "we have no objections".

GTE HTCo will respond directly to your concerns.

Aloha,

Sandy Padaken

Sandy Padaken
Easement Coordinator

c: Gordon Yadao, GTE HTCo
Chester Koga, R. M. Towill

G. Y.

COMMENT FORM

Date Sent: August 18, 1995

Date Received: 27 AUG 95

Please return within two weeks from date received to Sandy Padaken-AT&T Network Systems, 99-935 Lalawai Drive, Aiea, Hawaii 96701.

PROPOSED GTE HTCo FIBER PROJECT WILL ATTACH TO EXISTING HELCO POLE LINE THAT CROSSES OVER FOLLOWING PROPERTIES

Tax Map Key 2-5-01:06, Owner: State of Hawaii, Conservation.
Tax Map Key: 2-5-01:07, Owner, Mauna Kea Agribusiness, Conservation.
Tax Map Key: 2-5-01:12 & 13, Owner: The Hawaii Conference Foundation, Conservation.
Tax Map Key: 2-5-02:14, Owner: State of Hawaii, Conservation.
Tax Map Key: 2-6-18:01 & 04, Owner: State of Hawaii, Conservation.
Tax Map Key: 3-8-01:7, Owner: Department of Hawaiian Home Lands, Agriculture.
Tax Map Key: 3-8-01:13, Owner, Department OF Hawaiian Home Lands, Conservation.
Tax Map Key: 4-4-15:08, Owner: State of Hawaii, Lessee, U. S. Army, Conservation
Tax Map Key: 4-4-16: 3 & 5, Owner, State of Hawaii, Lessee, U. S. ARMY, Conservation.
Tax Map Key: 4-4-16:10, Owner: State of Hawaii, Lessee, U. S. Army, HELCO, Conservation.

Please see project description attachment for more details. Your comments and recommendations are appreciated.

✓ Approved as submitted

_____ Not Applicable

_____ Disapproved or Conditional Approval

_____ Extra Review Period Requested

Comments:
If there are no new access roadways required, and pursuant to Section 10-3(6)(10): HCC, we have no objections.
Any crossings of drainageways shall be in conformance to Chapter 27: HCC.

Greg Yanagihara — Reviewing Person

DPW-ENG — Agency/Division

8/28/95 — Date

COMMENT FORM

Date Sent: August 18, 1995

Date Received: 8/22/95

Please return within two weeks from date received to Sandy Padaken-AT&T Network Systems, 99-935 Lalawai Drive, Aiea, Hawaii 96701.

PROPOSED GTE HTCo FIBER PROJECT WILL ATTACH TO EXISTING HELCO POLE LINE THAT CROSSES OVER FOLLOWING PROPERTIES

Tax Map Key 2-5-01:06, Owner: State of Hawaii, Conservation.
Tax Map Key: 2-5-01:07, Owner, Mauna Kea Agribusiness, Conservation.
Tax Map Key: 2-5-01:12 & 13, Owner: The Hawaii Conference Foundation, Conservation.
Tax Map Key: 2-5-02:14, Owner: State of Hawaii, Conservation.
Tax Map Key: 2-6-18:01 & 04, Owner: State of Hawaii, Conservation.
Tax Map Key: 3-8-01:7, Owner: Department of Hawaiian Home Lands, Agriculture.
Tax Map Key: 3-8-01:13, Owner, Department OF Hawaiian Home Lands, Conservation.
Tax Map Key: 4-4-15:08, Owner: State of Hawaii, Lessee, U. S. Army, Conservation
Tax Map Key: 4-4-16: 3 & 5, Owner, State of Hawaii, Lessee, U. S. ARMY, Conservation.
Tax Map Key: 4-4-16:10, Owner: State of Hawaii, Lessee, U. S. Army, HELCO, Conservation.

Please see project description attachment for more details. Your comments and recommendations are appreciated.

x Approved as submitted

_____ Not Applicable

_____ Disapproved or Conditional Approval

_____ Extra Review Period Requested

Comments:
We would like to get a copy of the U.S. Army, Fish and Wildlife and DLNR Forestry and Wildlife data regarding fire concerns, and also a copy of the fire prevention plan created by HELCO.

We urge that the road and area about the poles, guy wires, and anchors be kept clear and visible should fire operations be necessary.

Nelson M. Tsuji, Fire Chief — Reviewing Person

Hawaii County Fire Department — Agency/Division

8/24/95 — Date

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Ecoregion
300 Ala Moana Blvd, Room 3108
P.O. Box 50088
Honolulu, HI 96850

In Reply Refer To: DLB

Ms. Sandy Padaken
AT&T Network Systems
99-935 Lalawai Drive
Aiea, Hawaii 96701

OCT 17 1995

Dear Ms. Padaken:

The U.S. Fish and Wildlife Service (Service) has received your September 22, 1995, letter requesting comments on the proposed installation of a fiber optic telecommunication network from Hilo town, west to Saddle Road, crossing mid-island to Waikii Ranch, and north to Waimea town. The fiber optic line will run along the existing Hawaii Electric Light Company, Inc. (HELCO) pole line. HELCO has a maintenance road parallel to the existing pole line and, therefore, no new roads will be necessary for this proposed project.

The project will include the installation of two (2) additional anchors around twenty-seven (27) existing HELCO poles. Seven of these poles are located in the area designated as critical habitat for the federally endangered palila (*Loxiodes bailleui*). In the information provided with a previous letter, dated August 18, 1995, you had stated that the anchors would be placed in the area between the initial pole and the existing anchor. The Service agrees with your decision to avoid the use of any dynamite within the area of the palila critical habitat.

In a letter dated August 23, 1995, the Service provided comments on the *UH Pohakuloa to Hale Pohaku Utility Corridor* segment of your proposed project. We stated our appreciation of your concern for protected wildlife and your efforts to minimize any potential impacts. Our concerns and suggestions are the same as those expressed in that letter. On September 21, 1995, we provided input concerning the fire management plan. The comments provided in this letter also remain unchanged.

The area being reviewed by the Service for this project has expanded and we would like to make you aware of additional bird species that may be seen along the roadway from Hilo to Waimea. The Hawaii creeper or Hawaii 'alauahio (*Oreomystis mana*) and the 'akiapola'au (*Hemignathus munroi*), both of which are listed as federally endangered species, are found throughout the upper elevations in native forests on the windward or eastern slopes of Mauna Kea. The federally endangered Hawaii 'akepa (*Loxops coccineus coccineus*) is also found along the upper slopes of Mauna Kea; however, the roadway does not cut directly through its habitat. The Hawaiian goose or nene (*Branta* (=*Nesochen*) *sandvicensis*), may also be observed along the roadway from Hilo to Waimea. You should take these species into consideration and avoid any potential impacts.

As per your request for information concerning nesting seasons, the dark-rumped petrel, also known as the Hawaiian petrel or 'ua'u (*Pterodroma phaeopygia sandwichensis*), which is listed as federally endangered, nests from March through November. The Newell's shearwater (*Puffinus auricularis*), which is listed as federally threatened, nests from April through November. Although the nesting season and breeding behavior of the band-rumped storm petrel (*Oceanodroma castro cryptoleucura*), has not been described, this species is usually seen in-land from December through March.

A recent study regarding the collisions of birds with overhead lines has been conducted through Edison Electric Institute. You may wish to contact Edison Electric Institute for a copy of their publication entitled Mitigating Bird Collisions with Power Lines: The State of the Art in 1994 by calling 1-800-EEI-5453 or writing to them at 701 Pennsylvania Avenue, N.W., Washington, D.C. 20004-2696

Thank you for the opportunity to comment on your proposed project. If you have any questions, please contact our Branch Chief for Interagency Cooperation, Ms. Margo Stahl, or Fish and Wildlife Biologist Diane Bowen at 808/541-3441.

Sincerely,

Brooks Harper

Brooks Harper
Field Supervisor
Ecological Services

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Ecoregion
300 Ala Moana Blvd, Room 6307
P.O. Box 50167
Honolulu, HI 96850

In Reply Refer To: DLB

AUG 23 1995

Mr. Robert A. McLaren
University of Hawaii at Manoa
Institute for Astronomy
2680 Woodlawn Drive
Honolulu, Hawaii 96822

Dear Mr. McLaren:

The U.S. Fish and Wildlife Service (Service) has received your August 10, 1995, letter requesting comments on the proposed installation of a fiber optic line within the *UH Pohakuloa to Hale Pohaku Utility Corridor* of Mauna Kea on the island of Hawaii. The fiber optic line will run from Pohakuloa to Pu'u Kalepeamoa along the existing Hawaii Electric Light Company (HELCO) 69 kV pole line. The Service would like to offer the following comments.

We appreciate your concern for protected wildlife and your efforts to minimize any potential impacts. As you stated in your letter, the fiber optic line will traverse designated critical habitat of the federally endangered palila (*Loxiodes bailleui*). However, we do not anticipate any disturbance to the palila as long as you follow the guidelines identified in your letter and summarized below.

You stated that, if at all possible, construction will not occur during the palila's breeding season, which is from April through September with the peak months being April, May, and June. If it is necessary to begin construction during these months, the Service agrees with your plans to have an ornithologist survey the area to verify the occurrence, or lack thereof, of palila nests. The Service also agrees with your decision to proceed with construction only if no nests are found.

A meeting between our offices was held on August 8, 1995, to discuss the proposed project. During that meeting, we mentioned the possible occurrence of the dark-rumped petrel, also known as the Hawaiian petrel or 'ua'u (*Pterodroma phaeopygia sandwichensis*), which is listed as federally endangered, the Newell's shearwater (*Puffinus auricularis*), which is listed as federally threatened, and the band-rumped storm petrel (*Oceanodroma castro cryptoleucura*), which is listed as a candidate species in the project area. Therefore, we recommend that the ornithologist check the area for seabird nest burrows prior to digging of any trenches.

Other measures identified in your letter, i.e., no night construction, no lights, and the development of a Fire Management Plan, are all acceptable to the Service as means to minimize impacts to wildlife. We would appreciate receiving a copy of your final Fire Management Plan for inclusion in our files.

You mentioned in your letter that it may be necessary to trim and/or cut back several mamane (*Sophora chrysophylla*) trees. The Service agrees with your plans to hire a certified arborist to assess the activity. We would also suggest that you contact State Forester, Steve Bergfeld (933-4221) of the Hawaii State Division of Forestry and Wildlife for information on their requirements

with regard to the cutting of native vegetation. We recommend that the cutting and/or trimming of any mamane be kept to a minimum since the palila is dependent on this species of tree.

As long as the above guidelines are followed, the Service does not object to the installation of the fiber optic line as described in your letter and as discussed at the August 8, 1995 meeting between our offices. As a final note, be sure to contact the U.S. Department of Army prior to entering land leased to them, i.e., the Pohakuloa Training Area.

Thank you for the opportunity to comment on your proposed project. If you have any questions, please contact our Branch Chief for Interagency Cooperation, Ms. Margo Stahl, or Fish and Wildlife Biologist Diane Bowen at 808/541-2749.

Sincerely,

Brooks Harper

Brooks Harper
Field Supervisor
Ecological Services

COMMENT FORM

Date Sent: August 18, 1995

Date Received: 08/29/95

Please return within two weeks from date received to Sandy Padaken-AT&T Network Systems, 99-935 Lalawai Drive, Aiea, Hawaii 96701.

PROPOSED GTE HTCo FIBER PROJECT WILL ATTACH TO EXISTING HELCO POLE LINE THAT CROSSES OVER FOLLOWING PROPERTIES

Tax Map Key 2-5-01:06, Owner: State of Hawaii, Conservation.
Tax Map Key: 2-5-01:07, Owner, Mauna Kea Agribusiness, Conservation.
Tax Map Key: 2-5-01:12 & 13, Owner: The Hawaii Conference Foundation, Conservation.
Tax Map Key: 2-5-02:14, Owner: State of Hawaii, Conservation.
Tax Map Key: 2-6-18:01 & 04, Owner: State of Hawaii, Conservation.
Tax Map Key: 3-8-01:7, Owner: Department of Hawaiian Home Lands, Agriculture.
Tax Map Key: 3-8-01:13, Owner, Department OF Hawaiian Home Lands, Conservation.
Tax Map Key: 4-4-15:08, Owner: State of Hawaii, Lessee, U. S. Army, Conservation
Tax Map Key: 4-4-16: 3 & 5, Owner, State of Hawaii, Lessee, U. S. ARMY, Conservation.
Tax Map Key: 4-4-16:10, Owner: State of Hawaii, Lessee, U. S. Army, HELCO, Conservation.

Please see project description attachment for more details. Your comments and recommendations are appreciated.

_____ Approved as submitted

__X__ Not Applicable

_____ Disapproved or Conditional Approval

_____ Extra Review Period Requested

Comments:
This area is not under the State Highways jurisdiction. We have no objections for the areas listed above. The following items are required for work in the State Highways right-of-ways: 1) Plan review and necessary permits are required; 2) Underground installation may be required. 3) Minimizing poles and highway crossing as well as minimum height clearances shall be a major consideration.

Stanley Tamura — DOT-Highways Division, Hawaii District
Reviewing Person — Agency/Division

09/07/95
Date

cc: HWY-C, -HE

REFERENCES

1. *Biological Reconnaissance and Environmental Assessment of HECO/HELCO Proposed Cross-Island 138 KV Transmission Line: Botanical, Entomological and Malacological Report,* Wagner, W.L., Warshauer, F.R. (Department of Botany), Gagne, W.C., Howarth, F.G., Nishida, G.M., Samuelson, G.A. (Department of Entomology), Christensen, C.C. (Division of Malacology, Department of Zoology), Bernice P. Bishop Museum, 1983.
2. Environmental Impact Statement Kaumana to Keamuku, 138 KV Transmission Line, EDAW Inc., 1983.
3. *HECO/HELCO Transmission Line Routing and EIS/CDUA: Bird and Mammal Report,* Andrew J. Berger, 1982.
4. *HELCO Transmission Line Routing Study, Geotechnical Factors,* Walter Lum Associates, Inc., December, 1982.
5. Map Showing Lava-Flow Hazard Zones, Island of Hawaii, Wright, et al., U.S. Geological Survey, 1992.
6. *Saddle Road, Hawaii Island: Archaeological Reconnaissance,* William Barrera, Jr., February 1983.
7. Soil Survey of Island of Hawaii, State of Hawaii, United States Department of Agriculture Soil Conservation Service, 1973.
8. The State of Hawaii Data Book 1991: A Statistical Abstract, Department of Planning and Economic Development, State of Hawaii, 1991.
10. The State of Hawaii Data Book 1993-94: A Statistical Abstract, Department of Planning and Economic Development. State of Hawaii 1994.

APPENDIX A

STATE LANDUSE DISTRICT BOUNDARY MAPS

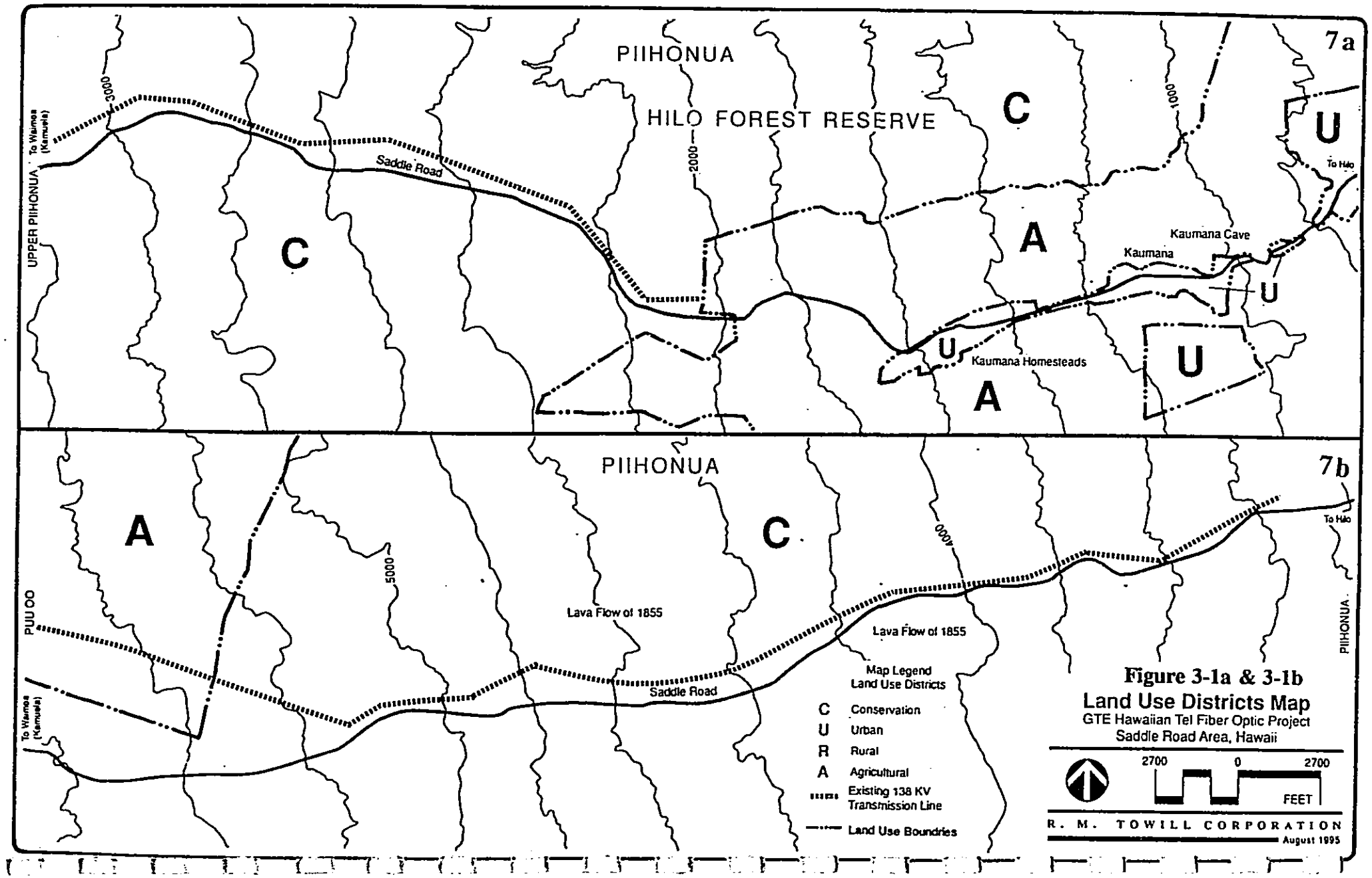
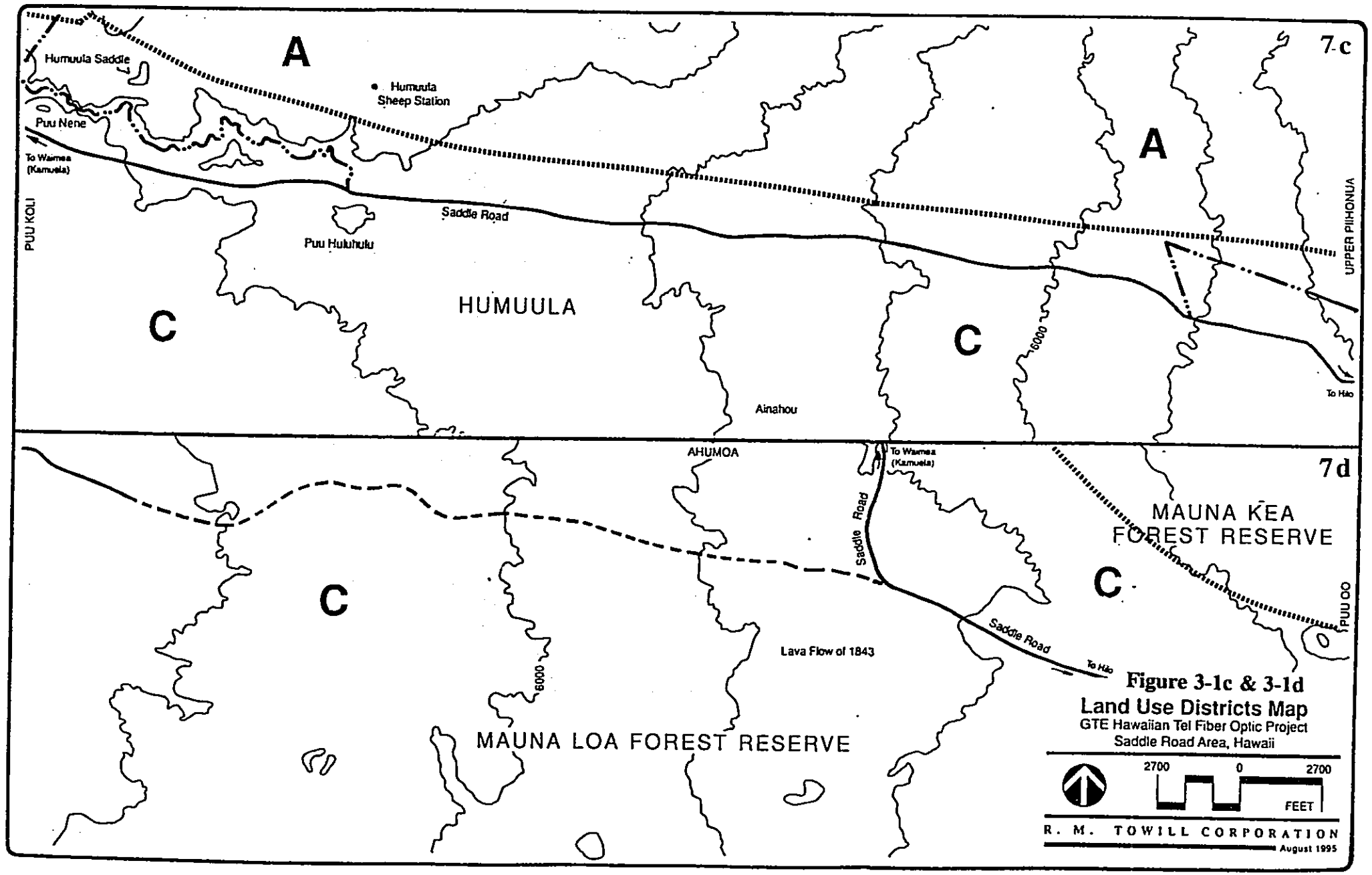


Figure 3-1a & 3-1b
Land Use Districts Map
GTE Hawaiian Tel Fiber Optic Project
Saddle Road Area, Hawaii


7c
A
Humuula Saddle
Humuula
Sheep Station
Puu Nene
To Waimea
(Kamuela)
PUU KOLI
Saddle Road
Puu Huluhulu
HUMUULA
C
A
UPPER PIIHONUA
C
6000
To Hilo
Ainahou
AHUMOA
To Waimea
(Kamuela)
7d
Saddle Road
MAUNA KEA
FOREST RESERVE
C
C
PUU OO
Saddle Road
To Hilo
Lava Flow of 1843
6000
MAUNA LOA FOREST RESERVE
Figure 3-1c & 3-1d
Land Use Districts Map
GTE Hawaiian Tel Fiber Optic Project
Saddle Road Area, Hawaii
2700
0
2700
FEET
R. M. TOWILL CORPORATION
August 1995

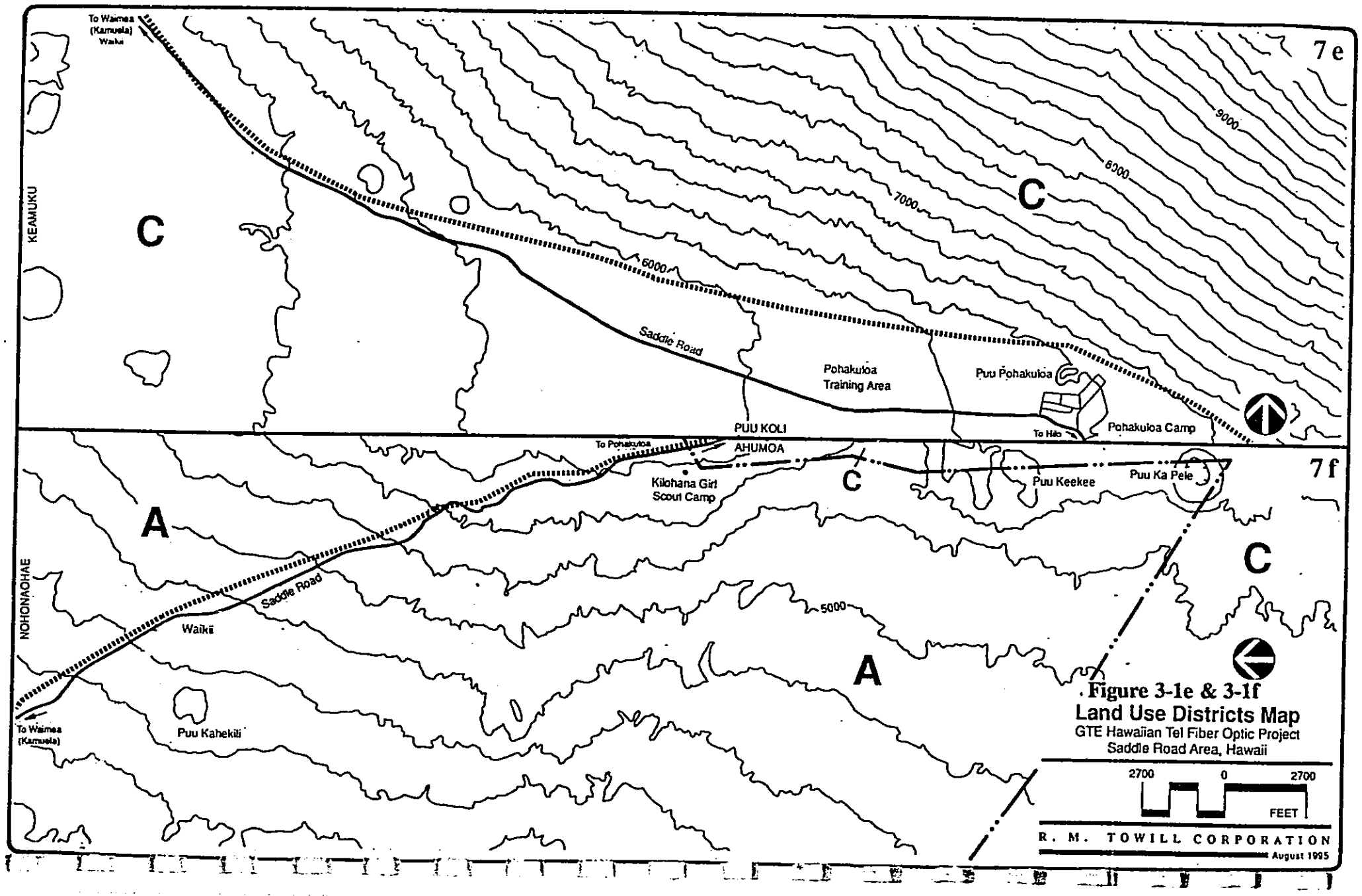


Figure 3-1e & 3-1f
Land Use Districts Map
GTE Hawaiian Tel Fiber Optic Project
Saddle Road Area, Hawaii

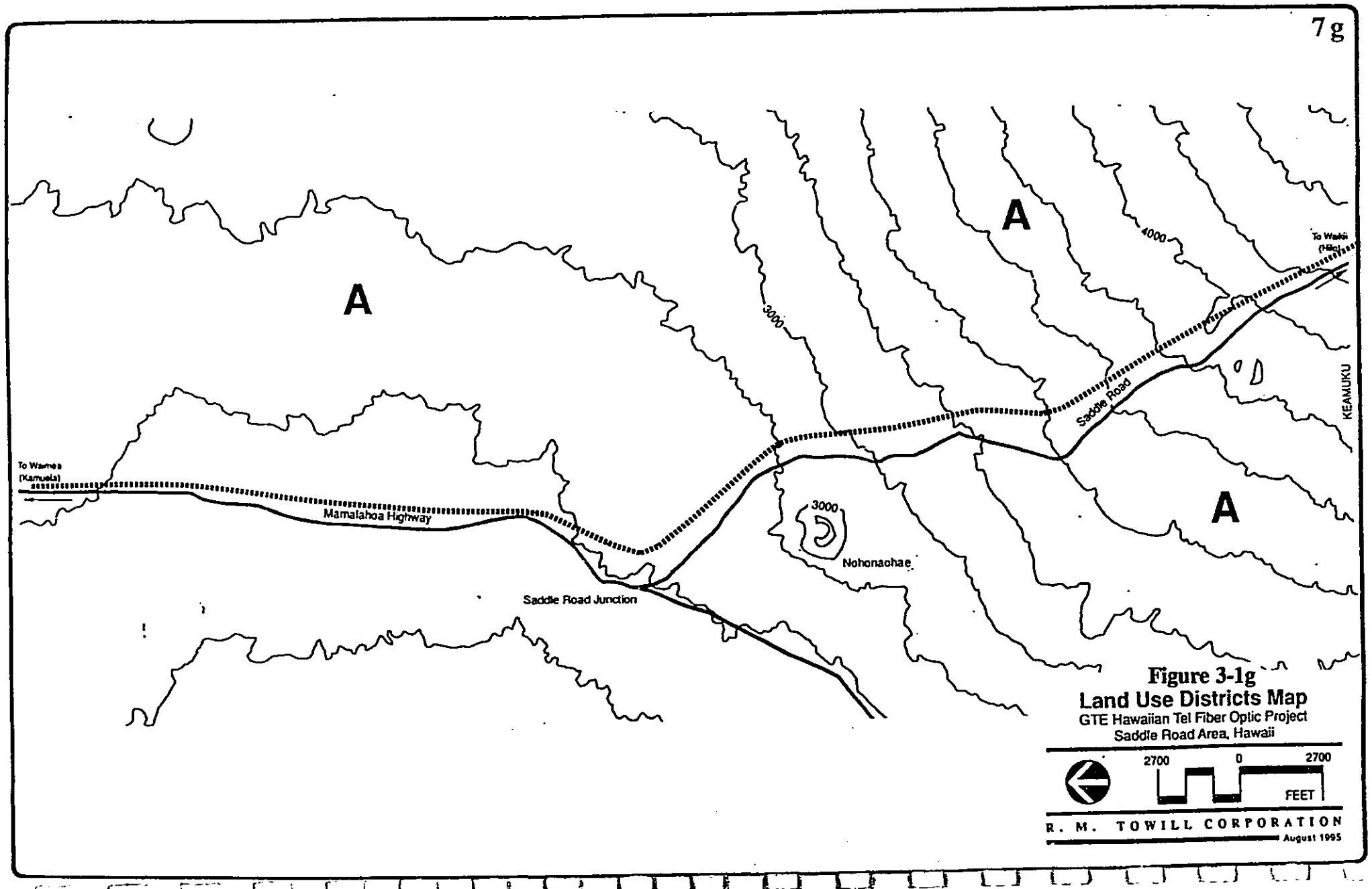


Figure 3-1g
Land Use Districts Map
GTE Hawaiian Tel Fiber Optic Project
Saddle Road Area, Hawaii

2700 0 2700
FEET

R. M. TOWILL CORPORATION
August 1995

APPENDIX B

STATE CONSERVATION DISTRICT SUBZONE MAPS

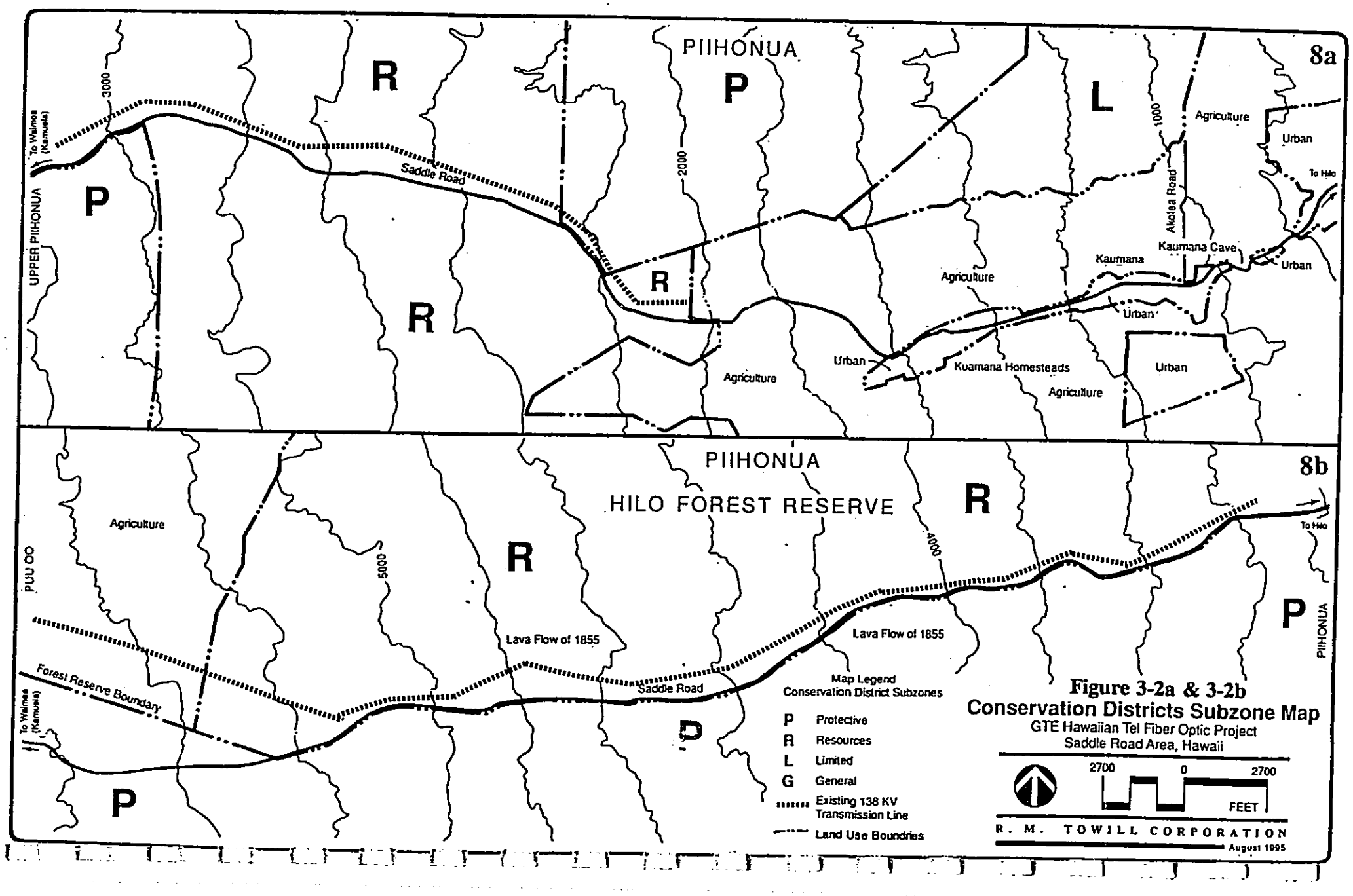


Figure 3-2a & 3-2b
Conservation Districts Subzone Map
GTE Hawaiian Tel Fiber Optic Project
Saddle Road Area, Hawaii

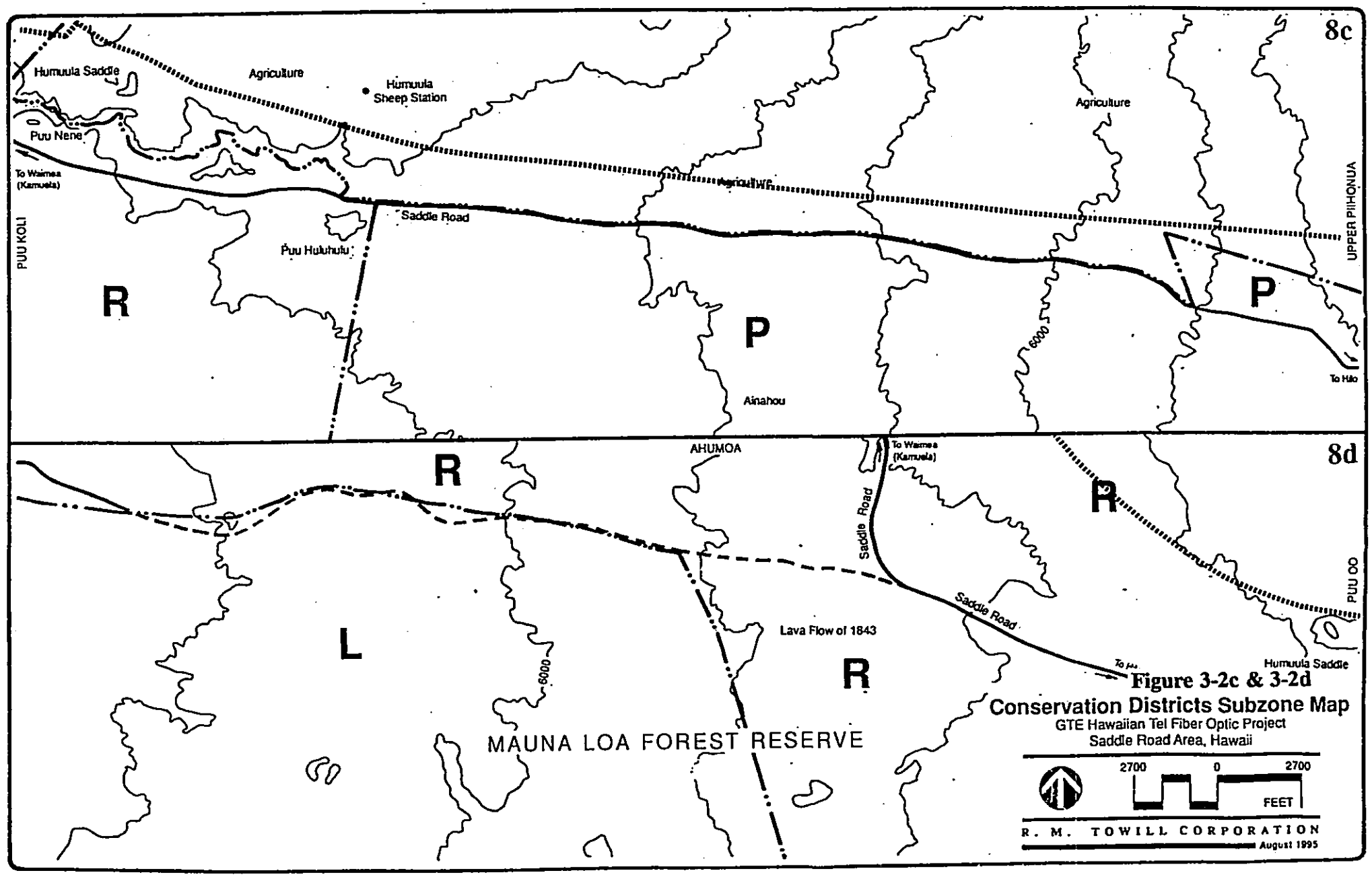


Figure 3-2c & 3-2d
Conservation Districts Subzone Map
GTE Hawaiian Tel Fiber Optic Project
Saddle Road Area, Hawaii

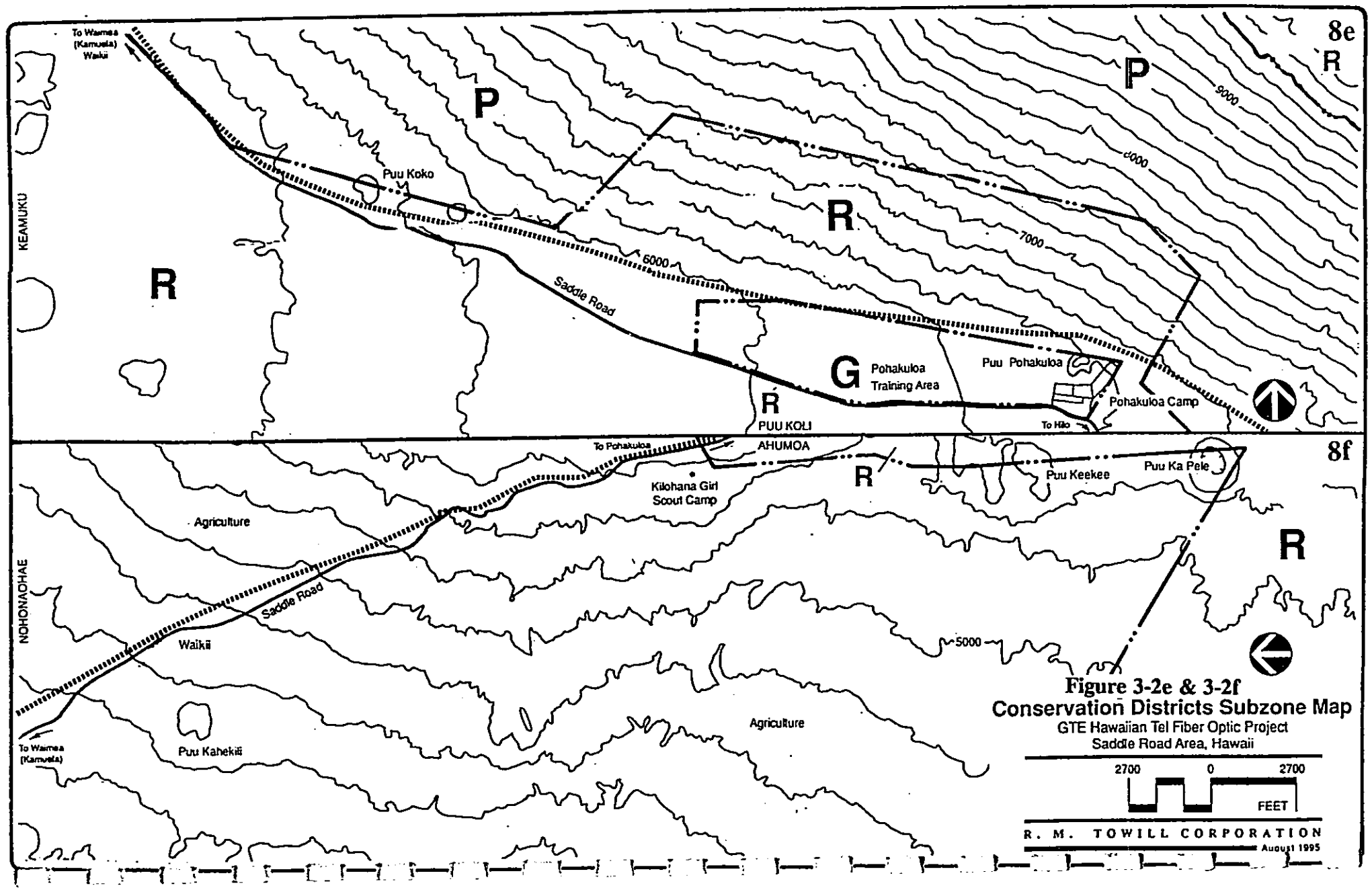


Figure 3-2e & 3-2f
Conservation Districts Subzone Map
GTE Hawaiian Tel Fiber Optic Project
Saddle Road Area, Hawaii

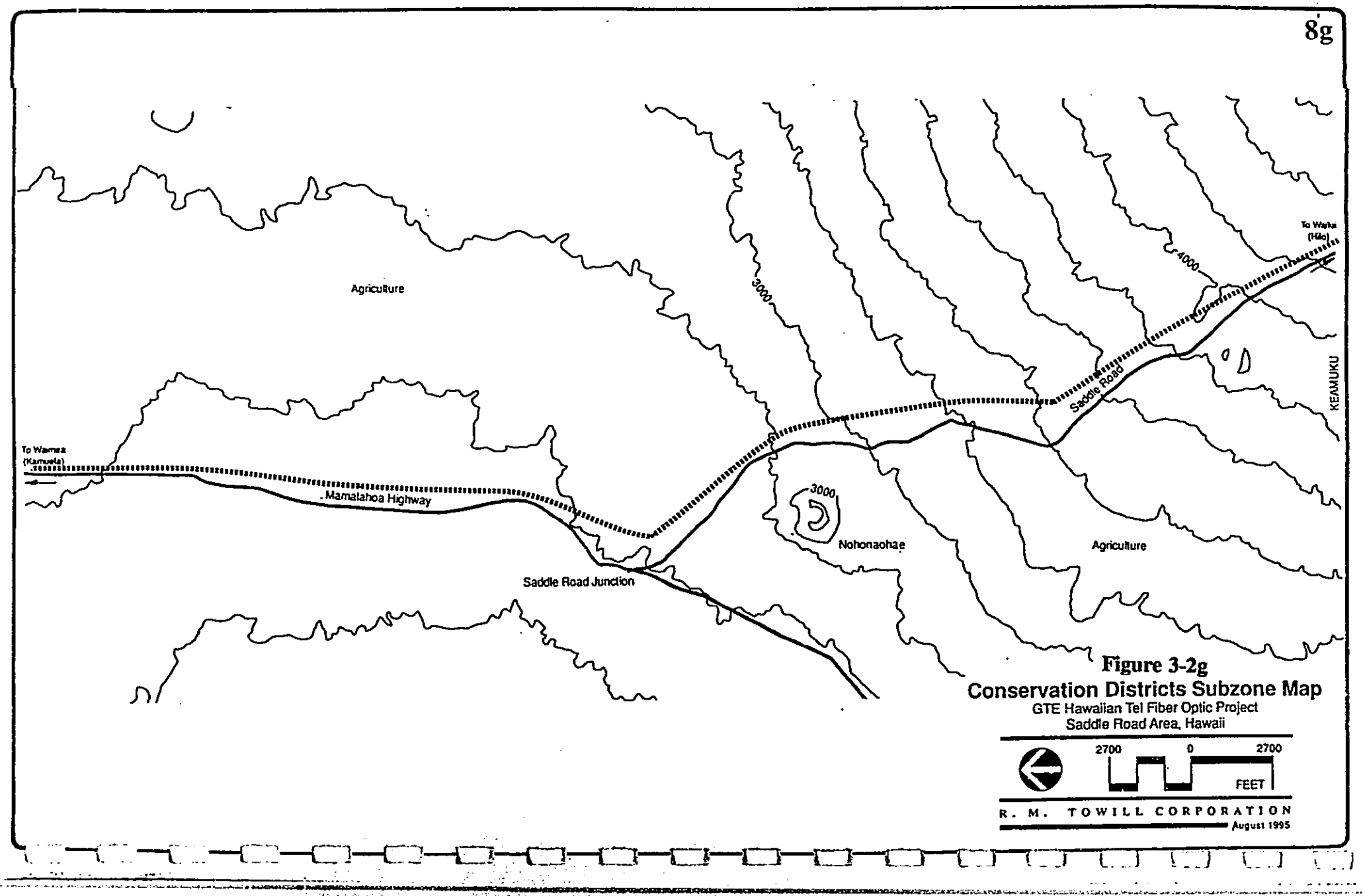


Figure 3-2g
Conservation Districts Subzone Map
GTE Hawaiian Tel Fiber Optic Project
Saddle Road Area, Hawaii

APPENDIX C

FIRE CONTINGENCY PLAN

FIRE CONTINGENCY PLAN
for
CONSERVATION DISTRICT USE APPLICATION
GTE HAWAIIAN TELEPHONE COMPANY INCORPORATED
FIBER OPTIC TELECOMMUNICATIONS POLE LINE
from
Kaumana to Waikii

ISLAND OF HAWAII

1. OWNER:

Land Owners: State of Hawaii, Mauna Kea Agribusiness, Hawaii Conference Foundation
Use: GTE Hawaiian Tel, pole line easement

ADDRESS:
GTE Hawaiian Tel
P. O. Box 4249
Hilo, Hawaii 96720

Phone: 808-933-6411

Prepared by:
Sandy Padaken, AT&T Network Systems
99-935 Lalawai Drive
Aiea, Hawaii 96701

II. LOCATION:

Island: Kaumana to Waikii, Cross Island, Hawaii
Tax Map Key: 3/2-5-01:06, 07, 12, 13; 3/2-5-02:14;
3/2-6-18:01, 04, 3/4-4-15:02, 04; 08;
3/4-4-16:3, 5 & 6 See attached maps.

Fire Stations: Kaumana Fire Station, 24 hour facility.
Pohakuloa Training Area Fire Station, 24 hour facility.
Waikoloa Fire Station, 24 hour facility, volunteer fire assistance available.

III. APPROVED USE:

GTE Hawaiian Tel's Telecommunications fiber optic cable line located on existing Hawaii Electric Light Company, Inc. high voltage power transmission pole line.

IV. POTENTIAL IGNITION SOURCES OF ACCIDENTAL FIRES DURING CONSTRUCTION:

Potential ignition sources during the construction period of the project include: exposure from vehicle/heavy equipment exhaust and fuel systems; blasting operations; use of electrical equipment; smoking in unauthorized areas; and parking vehicles/heavy equipment in tall grass or heavy vegetation.

V. AVAILABLE FIRE-FIGHTING RESOURCES:

A. During field inspection for the project all vehicles will be equipped with fire extinguishers.
B. During construction all vehicles/equipment will be equipped with fire extinguishers.
C. During the construction period crews of eight (8) to ten (10) people will be on site during working hours and can be used to fight fires.
D. Three flappers shall be provided to each construction crew.

VI. ACCESSIBILITY FOR FIRE EMERGENCY RESPONSE:

The telecommunications equipment will be installed on portions of existing Hawaii Electric Light Company, Inc. (HELCO) 69/138 KV power transmission pole lines that crosses mid-island from Kaumana to Waikii. Approximately 28 miles of the pole line are within lands in the conservation district and agriculture zoned property. Two-thirds of the pole line lies parallel to Saddle Road and access is available either directly from Saddle Road or from existing jeep and and HELCO maintenance roads. Within the remaining one-third of the route the pole line is accessible by jeep trails or helicopters in an emergency situation. Within Pohakuloa Training Area (PTA) the pole line is adjacent to a jeep trail and this can be used to access the pole line a fire emergency. There are obstacles to obtaining access to some sections since it is difficult to determine exactly where specific access roads are located from Saddle Road. If there is a fire incident the construction crews will send a person out to the nearest paved road to aid emergency vehicles in gaining quick access to the fire site.

VII. FIRE CONTINGENCY PLAN-APPLICABLE TO CONSTRUCTION AND MAINTENANCE ACTIVITIES:

A. Prevention:

The items listed below will help to reduce fire hazards.

1. Smoking shall be prohibited from within 50 feet of combustible or flammable materials.
2. Smoking shall only be allowed in designated areas specifically identified for this purpose. Any designated smoking area will be devoid of vegetation.
3. Appropriate containers will be provided for the disposition of cigarette butts by smokers. Smokers will be reminded to dispose of their cigarette butts in an appropriate manner.

4. No burning will be allowed.
5. All fuels, solvents and lubricants will be stored at least 50 feet away from any vegetation, dead or growing.
6. One or more persons will be designated as a "Fire Watch" person. These people will need to be trained in grass/forest fire fighting techniques.
7. Vehicle parking will not be allowed on dead or growing vegetated areas.
8. Telephone (landline, mobile, or cellular) will be available on-site to call for emergencies. Two way radios will also be available for commercial dispatch.
9. Construction and maintenance crews will have emergency telephone numbers for fire departments located in Kaumana City, Pohakuloa Training Area, Waikoloa and Waimea.

B. Presuppression:

The equipment listed below will be kept on-site during construction operations:

1. Fire extinguishers-placed in all vehicles/heavy equipment.
2. Telephone (landline, mobile, or cellular) will be available on-site to call for emergencies. Two way radios will also be available for emergencies.
3. Protective fire-fighting gear for construction workers to include safety glasses, hard hats and gloves.
4. Three fire flappers will be available on site for each construction crew.

C. Suppression:

In the event of a fire emergency the following steps will be taken:

1. The County Fire Department shall be notified immediately by calling 911 by telephone or two way radio communication if telephone service is not available.
2. If the fire emergency is located near to or within Pohakuloa Training Area (PTA) the fire department within PTA will be called at 961-3383.
3. A member of the construction crew will leave the scene and take a designated position on Saddle Road to provide directions to the location of the fire.
4. While waiting for the fire department is being notified and arrive members of the construction crew will immediately begin fire-fighting procedures.
5. Within the all areas, especially those designated as critical habitat for Palila birds, extra effort will be made to utilize fire fighting strategies that will reduce the possibility of damage to flora/fauna, cultural resources and mamane/naio trees.

VIII. PROTECTION OF FLORA/FAUNA & CULTURAL RESOURCES:

A. Presuppression:

1. GTE HTCo will identify resources on all construction plans.
2. Prior to the start of work each week the designated "Fire Watch" person will assess the resources contained with the current area of construction to establish a plan to provide priority fire protection to flora/fauna as well as cultural/historic sites

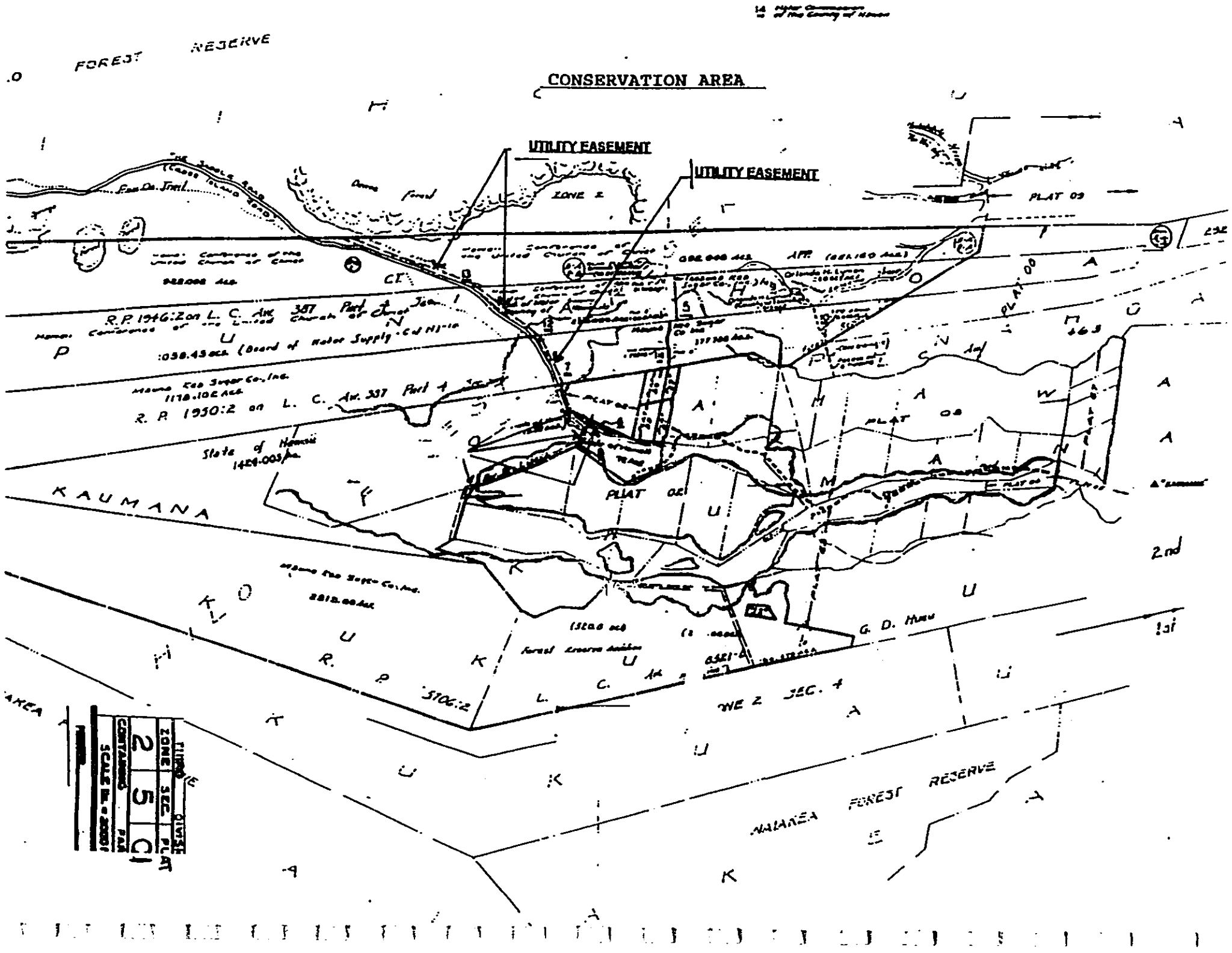
B. Post Event:

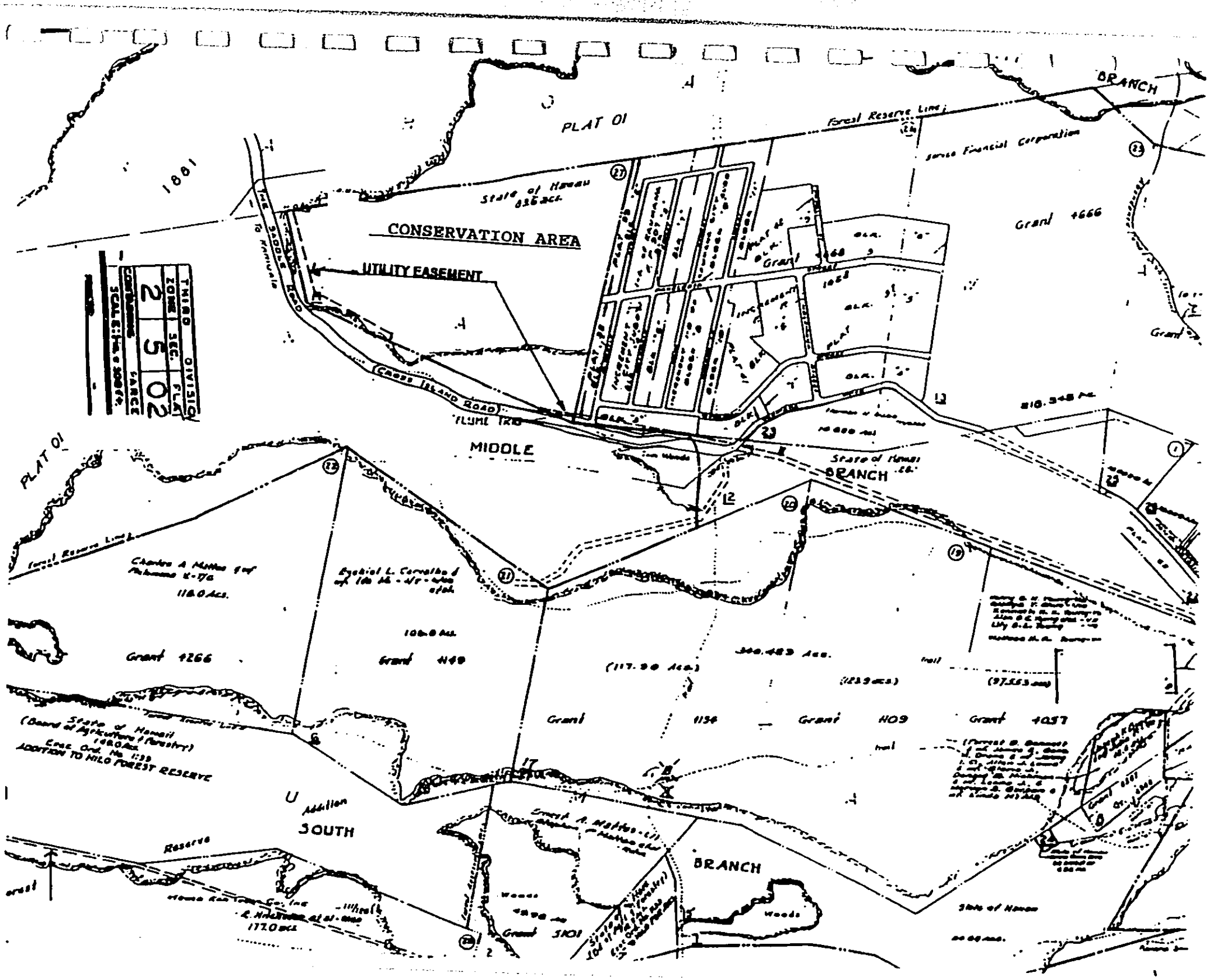
1. Should a fire occur GTE Hawaiian Tel will work with Department of Land and Natural Resources Forestry and Wildlife (DLNR) in any restoration effort DLNR deems necessary.

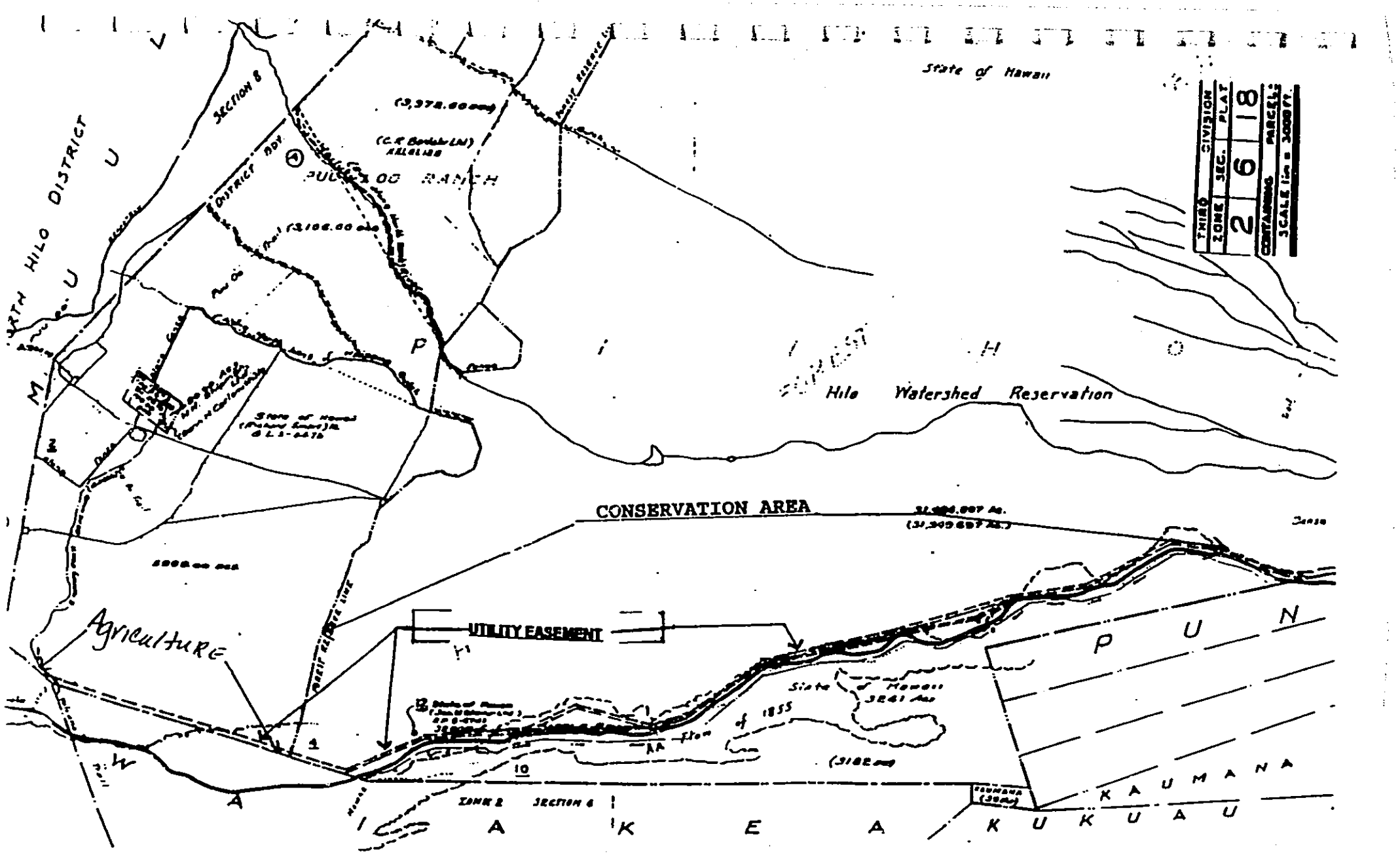
APPROVED:

Nelson Tsuji, Fire Chief, Fire Department, Fire Department, County of Hawaii

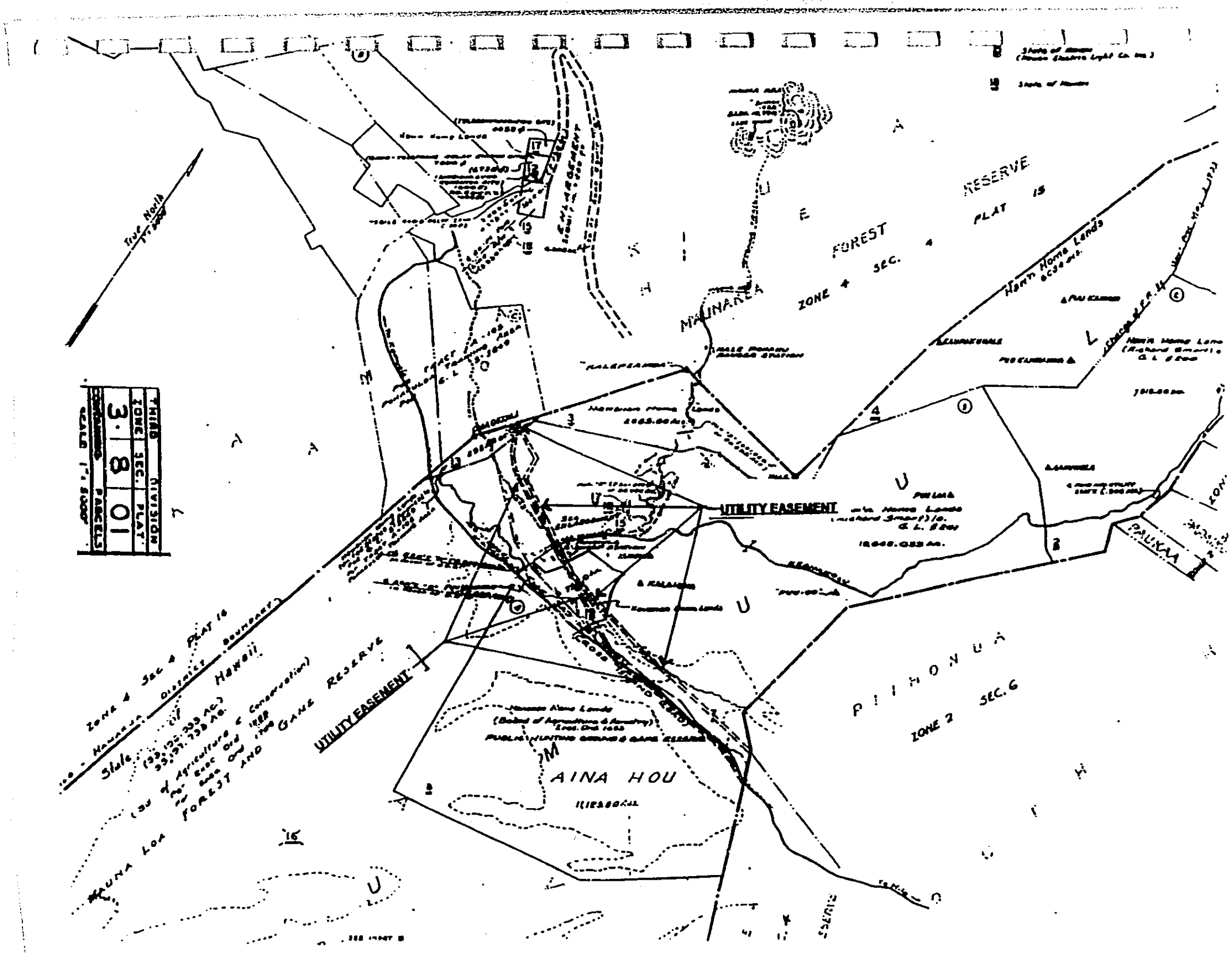
Hawaii Branch Manager, Division of Forestry and Wildlife, Dept. of Land and Natural Resources, State of Hawaii

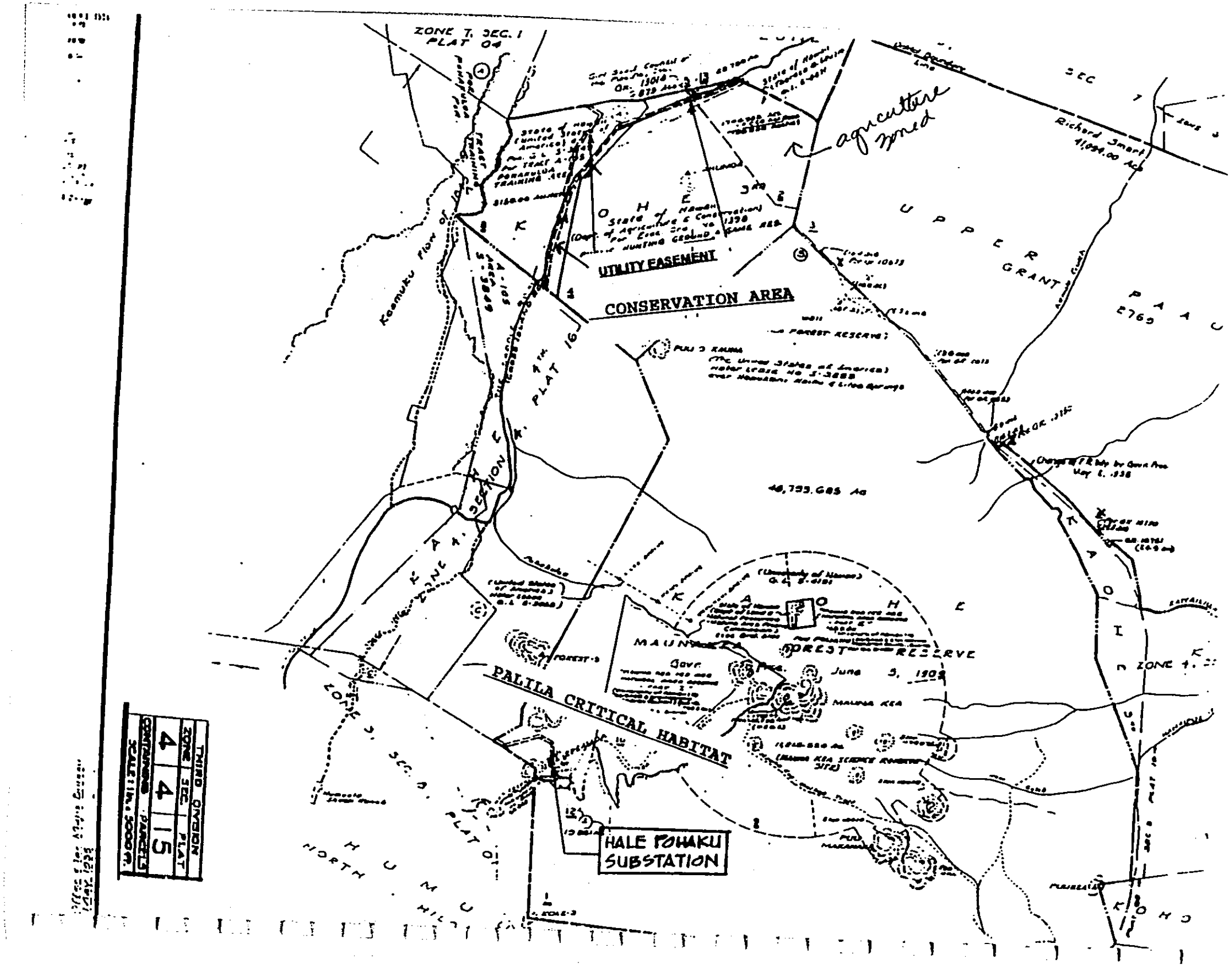

CONSERVATION AREA
UTILITY EASEMENT
UTILITY EASEMENT
FOREST RESERVE
KAUMANA
PLAT 03
PLAT 00
PLAT 05
PLAT 06
ZONE 2
R.P. 1946:2 on L. C. Aw. 387 Part of Share 1
R. P. 1950:2 on L. C. Aw. 387 Part 1
State of Hawaii
1424-003
G. D. Haun
WE 2 SEC. 4
NAIAKEA FOREST RESERVE
TMK
ZONE 2
SEC. 5
PLAT CI
SCALE IN. = 2000 FT.

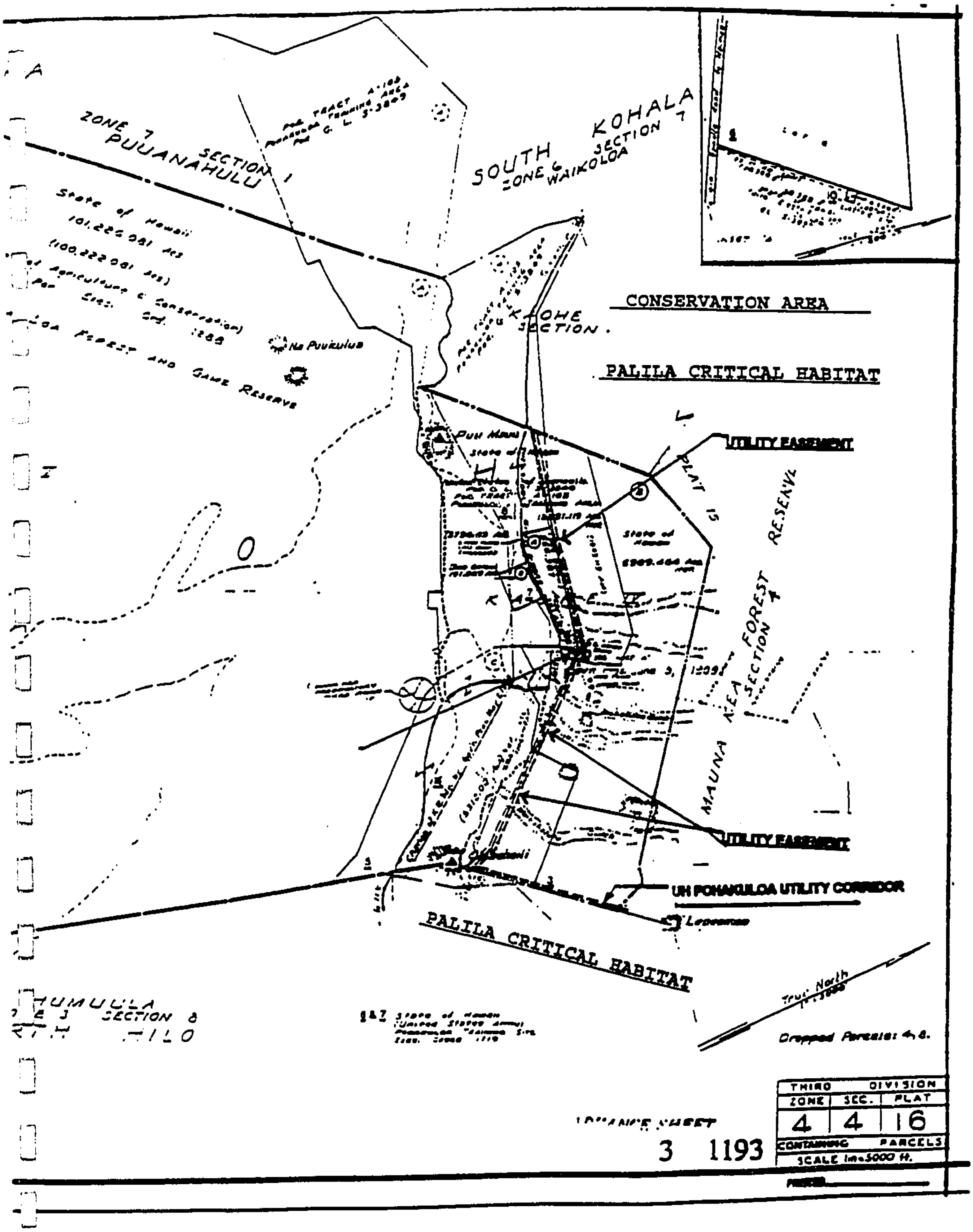

CONSERVATION AREA
UTILITY EASEMENT
CROSS ISLAND ROAD
PLAT 01
MIDDLE
BRANCH
SOUTH
BRANCH
Forest Reserve Line
State of Hawaii
Grant 4666
Grant 4266
Grant 4049
Grant 1134
Grant 4057
Grant 5101
THIRD DIVISION
ZONE 2
SEC. 5
PLAT 02
PARCEL



PIIHONUA, SOUTH HILO, HAWAII


THIRD DIVISION
ZONE 3
SEC. 8
PLAT 10
PARCELS
RESERVE
FOREST
ZONE 4
SEC. 4
PLAT 15
MAUNALEA
UTILITY EASEMENT
UTILITY EASEMENT
AINA HOU
PUHONUA
ZONE 2
SEC. 6
PAUKAA
MAUNA LOA FOREST AND GAME RESERVE
ZONE 4 SEC 4 PLAT 16
HAWAII


ZONE 7, SEC. 1
PLAT 04
agriculture zoned
UTILITY EASEMENT
CONSERVATION AREA
UPPER GRANT
Richard Smart
41,894.00 Ac
46,733.685 Ac
PALILA CRITICAL HABITAT
HALE POHAKU
SUBSTATION
MAUNA KEA
FOREST RESERVE
June 3, 1908
THIRD DIVISION
ZONE 4 SEC. 4 PLAT 15
CONTAINING PARCELS
SCALE 1 INCH = 2000 FEET


ZONE 7 SECTION 1
PUUANAHULU
SOUTH KOHALA
ZONE 6 SECTION 7
WAIKOLOA
State of Hawaii
KAOHE SECTION
CONSERVATION AREA
PALILA CRITICAL HABITAT
UTILITY EASEMENT
PLAT 15
MAUNA KEA FOREST RESERVE
SECTION 4
UTILITY EASEMENT
UH POHAKULOA UTILITY CORRIDOR
PALILA CRITICAL HABITAT
HUMUULA
SECTION 8
True North
Dropped Parcels: 4, 8.
THIRD DIVISION
ZONE | SEC. | PLAT
4 | 4 | 16
CONTAINING PARCELS
SCALE 1in.=5000 ft.
3 1193