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GOVERNOR
STATE OF HAWAII



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HAWAIIAN HOMES COMMISSION

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DEPUTY TO THE CHAIRMAN

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
P.O. BOX 1879
HONOLULU, HAWAII 96805

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OFFICE OF ENVIRONMENTAL
QUALITY CONTROL

March 6, 2000

To: The Honorable Bruce S. Anderson, Director
Department of Health

Attention: Genevieve Salmonson, Director
Office of Environmental Quality Control

From: Raynard C. Soon, Chairman
Hawaiian Homes Commission

Subject: Finding of No significant Impact (FONSI) For the
Sandwich Isles Communications, Inc.'s Hilo Central
Office Complex, Hilo, Hawaii
Tax Map Key No. (3) 2-1-25:90 (por.)

The Department of Hawaiian Home Lands has reviewed the comments received during the 30-day public comment period on the draft environmental assessment for the above-referenced Hilo project.

At its regular monthly meeting held February 29, 2000, the Hawaiian Homes Commission granted the determination of Finding of No Significant Impact (FONSI) for the Final Environmental Assessment, dated February 2000. Please publish this notice in the March 20, 2000, OEQC Environmental Notice.

We have enclosed a completed OEQC Publication Form and four copies of the Final Environmental Assessment report. Should you have any questions, please call Linda Chinn, Acting Land Management Branch Manager, at 587-6432.

Enc.

c: PBR Hawaii

31

MAR 23 2000

FILE COPY

2000-03-23-HI-FEA-

SANDWICH ISLES COMMUNICATIONS, INC.
(Hilo Central Office Complex)

FINAL ENVIRONMENTAL ASSESSMENT

Sandwich Isles Communications, Inc.

Prepared by
PBR Hawaii

February 2000

SANDWICH ISLES COMMUNICATIONS, INC.
Hilo Central Office Complex

FINAL ENVIRONMENTAL ASSESSMENT

Sandwich Isles Communications, Inc.

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February 2000

SANDWICH ISLES COMMUNICATION, INC.
HILO CENTRAL OFFICE COMPLEX
Final Environmental Assessment

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SANDWICH ISLES COMMUNICATIONS, INC.
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1.0 INTRODUCTION

The Sandwich Isles Communication, Inc. (SIC) Hilo Central Office Complex project is a one-acre project planned within the Pana'ewa Industrial Lots, a 140-acre Department of Hawaiian Homes Lands (DHHL) industrial park.

1.1 PROJECT SUMMARY

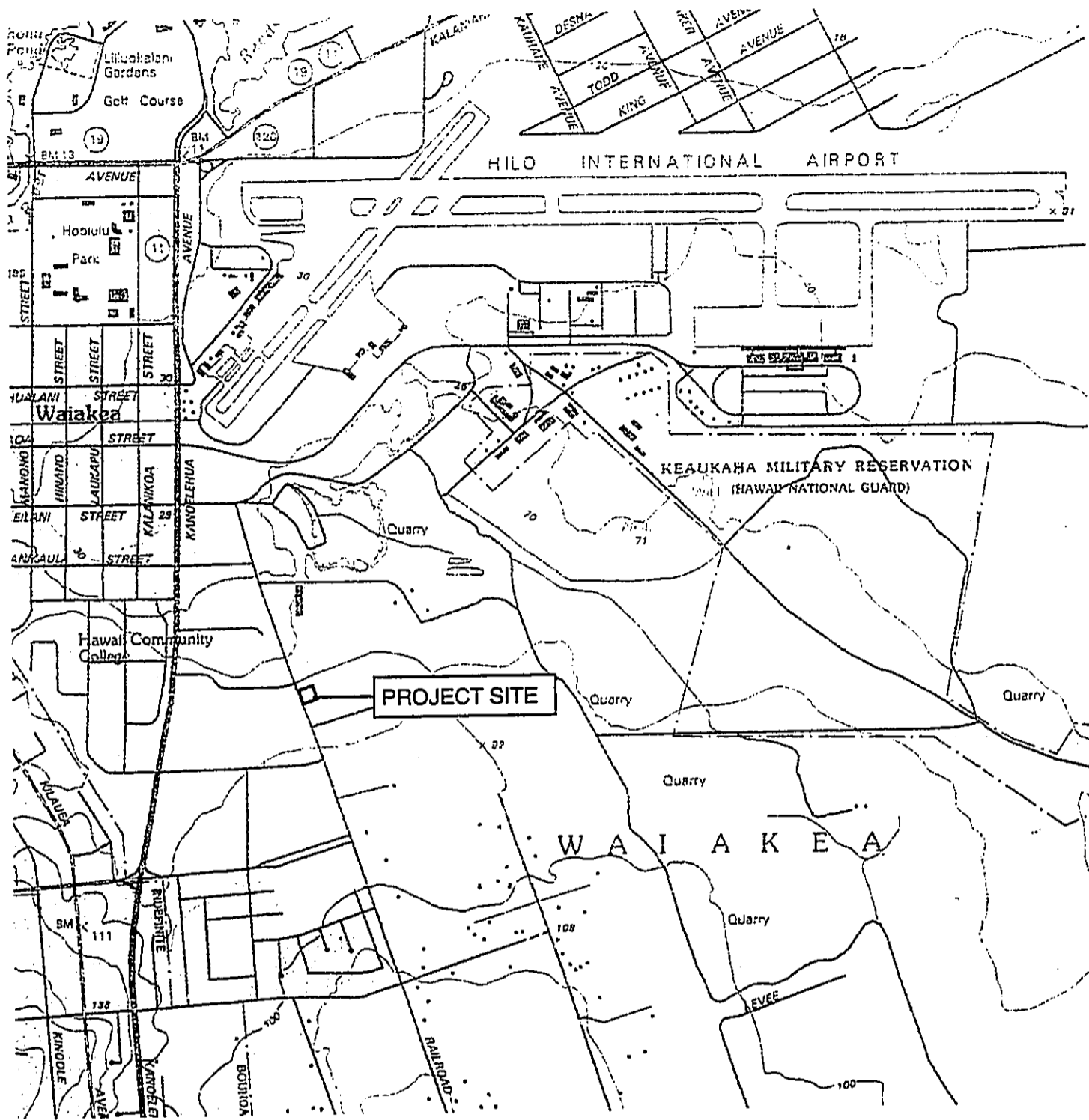
Project Name:	Sandwich Isles Communications, Inc. Hilo Central Office Complex
Applicant:	Sandwich Isles Communication, Inc.
Landowner:	State of Hawai'i Department of Hawaiian Home Lands
Location:	Railroad Avenue, Hilo, Hawai'i
Tax Map Key:	2-1-25: 90 (por.)
Existing Use:	Vacant land within Pana'ewa Industrial Lots
Proposed Use:	Central Office Building, Telecommunications Tower/Antenna, and Ancillary Office Building
Project Area:	One (1) acre
Land Use Designations:	·State Land Use: Urban ·General Plan: Industrial ·Zoning: General Industrial (MG-1a)
SMA:	The subject property is not in the SMA.
Actions Requested:	Chapter 343, <i>Hawai'i Revised Statutes</i> compliance
Approving Agency:	Department of Hawaiian Home Lands

1.2 ENVIRONMENTAL COMPLIANCE

This environmental assessment is prepared in compliance of State of Hawai'i, Chapter 343, *Hawai'i Revised Statutes* for the use of state lands and in accordance with Hawai'i Administrative Rules, Title 11, Department of Health, Chapter 200.

1.3 LOCATION

The site of the project is at Pana'ewa in Hilo, within the County of Hawai'i (Figure 1) approximately one mile from the Hilo International Airport.



LEGEND

 Project Site

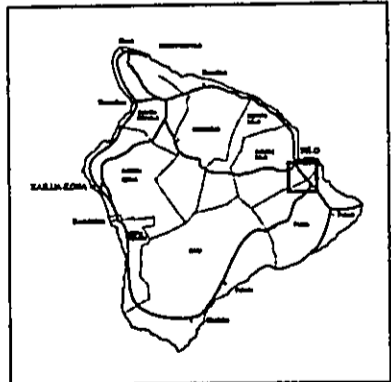
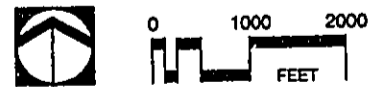



FIGURE 1
Regional Location Map

SANDWICH ISLES COMMUNICATIONS, INC.
Hilo Central Office Complex



January 2000 

Source: USGS Topographical Map

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HILO CENTRAL OFFICE COMPLEX
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1.4 LAND OWNERSHIP

The landowner is the State of Hawai'i Department of Hawaiian Home Lands. The subject project area is a one (1) acre portion of a larger 10.6 acre lot which is surrounded by other lots within the DHHL Pana'ewa Industrial Lots. The property is identified as TMK: 2-1-25: 90 (portion) (Figure 2).

1.5 BACKGROUND

The Hawaiian Homes Commission Act of 1920 (HHCA) was enacted by the Congress of the United States on July 21, 1921. Among its provisions, the Act established the Hawaiian Homes Commission to administer the provisions of the HHCA for the benefit of native Hawaiians. The Commission (HHC) sets broad operating policies for the Department of Hawaiian Home Lands with the Commission Chairman serving as the DHHL Director. Under the direction of the Chairman, the DHHL administers the provisions of the HHCA, as amended, under the guidance of the policies established by the Hawaiian Homes Commission.

The Pana'ewa Industrial Lots (as shown on Figure 2), created in the early 1990's, consist of 14 industrial lots, each approximately 10 acres in size. The proposed Sandwich Isles Communications Central Office Complex will occupy a one acre portion of one of the 10-acre lots.

1.6 IDENTIFICATION OF THE APPLICANT

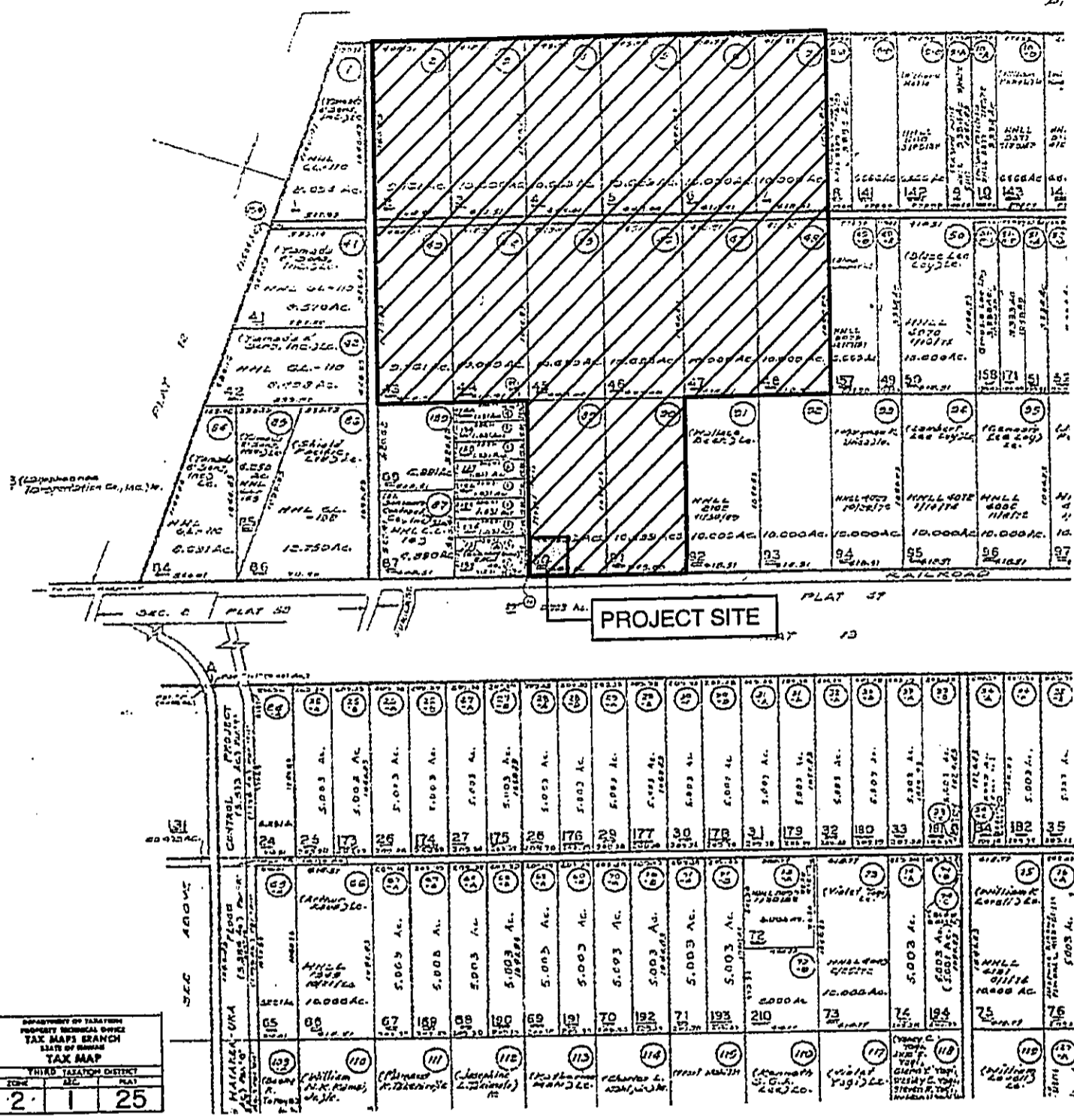
The mission of Sandwich Isles Communications, Inc. (SIC) is to provide state-of-the-art, broad band telecommunications services to native Hawaiians on lands administered by DHHL. SIC has a statewide license to serve Hawaiian Home lands by providing telecommunications services to beneficiaries and lessees on Hawaiian Home Lands and by providing telecommunications infrastructure at no cost to DHHL. SIC assists with installation costs, therefore, allowing more funds for residential development.

As a native Hawaiian company, SIC is committed to provide native Hawaiians with access to cost-competitive telephone service, and in the future, also provide state-of-the-art innovations such as educational programming, Internet services, video tele-conferencing and other fiber optic based services. SIC has plans to build a statewide fiber optic network interconnecting all Hawaiian Homes Communities.

SIC was incorporated in 1995 and has been serving native Hawaiians since 1998. It is currently serving native Hawaiian communities at Laiopua, Waimānalo, and Kalama'ula, and by year-end 2000, will serve additional native Hawaiian communities throughout the state.

1.7 IDENTIFICATION OF APPROVING AGENCY

The Department of Hawaiian Home Lands is the approving agency for the environmental assessment.



DEPARTMENT OF TAXATION PROPERTY RECORDS OFFICE TAX MAPS BRANCH STATE OF HAWAII TAX MAP		
THIRD TAXATION DISTRICT		
TOWNSHIP	RANGE	PLAT
2	1	25

LEGEND



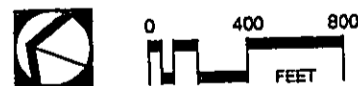
-  Project Site
-  DHHL Panaewa Industrial Lots

FIGURE 2

Tax Map Key / Land Ownership Map

SANDWICH ISLES COMMUNICATIONS, INC.

Hilo Central Office Complex



January 2000



Source: Tax Map Key

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1.8 IDENTIFICATION OF AGENCIES, ORGANIZATIONS, AND INDIVIDUALS CONSULTED

In the course of planning for this project, agencies (or agency documents), community individuals and organizations were consulted and/or provided information for the preparation of this environmental assessment.

County of Hawai'i Agencies

Board of Water Supply
Department of Public Works
Planning Department
Fire Department
Police Department

State of Hawai'i Agencies

Department of Business, Economic Development and Tourism, State Office of Planning
Department of Hawaiian Home Lands
Department of Health
Department of Transportation - Highways Division (Hilo Office)
Land Use Commission
Office of Environmental Quality Control

Federal Agencies

Federal Emergency Management Agency
U.S. Department of Agriculture, Rural Utilities Service
U.S. Department of the Army

Community Individuals and Organizations

Eleanor Ahuna
Priscilla Hocson, Keaukaha-Pana'ewa Farmers Association
Patrick Kahawaiola'a, Keaukaha Community Association
Tiffnie Kakalia, Pana'ewa Hawaiian Home Lands Community Association

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2.0 PROJECT DESCRIPTION

The description of the proposed Hilo Central Office Complex, construction activities, and preliminary development timetable and approximate development costs are described in this section.

2.1 BACKGROUND INFORMATION

2.1.1 Description of the Property

The Hilo Central Office Complex is located within the DHHL Pana'ewa Industrial Lots which consist of 14 parcels of 10 acres each, for a total of 140 acres, within Tax Map key 2-1-25: 2-7, 43-48, 90 and 91. The industrial lots are configured in three rows and consist of one row with two parcels and two rows with six parcels each. The subject project site is a one-acre portion of parcel 90 which fronts on Railroad Avenue.

The nearly level site has been cleared of vegetation and is located at the corner of Railroad Avenue and a private road serving eight small lots in the adjacent industrial park.

2.1.2 Surrounding Land Uses

The Pana'ewa Industrial Lots are located east of Railroad Avenue and south of Hilo International Airport. Land uses in the surrounding area include industrial uses to the north, east and west (including the airport industrial area and Kanoiehua Industrial Park) and agricultural uses to the south. The Prince Kūhiō Plaza (shopping center) is located approximately 1/2 mile to the west.

The one-acre subject lot is surrounded by other built and vacant industrial lots. The surrounding Pana'ewa Industrial Lots are overgrown with a variety of native and introduced plant species and vacant of any uses. Except for agricultural uses, the general area consists of both heavy and light industrial uses. Heavy industrial uses include the Hawai'i Electric Light Co. (HELCO) generating plant and a quarry while light industrial uses include warehousing and equipment storage.

2.2 PROJECT DEVELOPMENT GOALS AND OBJECTIVES

The mission of Sandwich Isles Communications, Inc. (SIC) is to provide state-of-the-art, broad band telecommunications services to native Hawaiians living on lands administered by the State Department of Hawaiian Home Lands (DHHL). SIC will provide service to future DHHL communities in the Hilo area including Kaūmana, Pi'ihonua, Waiākea, and Keaukaha.

As a native Hawaiian company, SIC is committed to provide native Hawaiian residents with access to cost-competitive telephone service and, in the future, state-of-the-art innovations such as educational programming, Internet services, video tele-conferencing and other fiber optic based services.

Initially, Sandwich Isles Communications, Inc. will provide telephone services to new DHHL developments. The network for Sandwich Isles Communications will be arranged in a host/remote configuration. The Hilo Host Switching Office (or Central Office) will be located in Pana'ewa. Remote switches will provide service in other locations throughout the island. The Hilo Central

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Office will serve as the hub for the island of Hawai'i. In the future, SIC will provide broad band telecommunications services to all of the SIC network. These include Internet services, cable TV, data transport, and high speed Internet access.

The Hilo Central Office may provide service in the future to other Hawaiian Home Land communities at the following locations: Pana'ewa, Waiākea, Maku'u, Humu'ula/Pi'ihonua, Honomū/Kahuā, Kaūmana, Kurtistown, 'Ōla'a, Puna, Keaukaha, Ponahawai, Wailau, Wai'ōhinu, Kamā'oa-Pu'u'eo.

2.3 DESCRIPTION OF THE PROJECT

SIC will initially lease trunking facilities from other telecommunications companies including GST, Time Warner, and GTE Hawaiian Tel. In the future, SIC will construct underground fiber optic cabling, some of which may use County of Hawai'i and State of Hawai'i road right-of-ways. In the Pana'ewa area, SIC will construct a manhole and underground conduits for fiber optic cable along Railroad Avenue.

The Hilo Central Office Complex Conceptual Site Plan is shown in Figure 3.

2.3.1 Project Design

The design of the project components will be similar to other industrial facilities. The one-acre site will require minimal grading to create a level lot. The property will be enclosed with a chain-link fence and appropriate landscaping will include native trees and shrubs.

2.3.2 Project Components

The components of the project include a Central Office building, telecommunications tower and antennas, ancillary office building, onsite parking, and emergency generator on the one acre lot.

2.3.2.1 Central Office Building

The Central Office Building will be approximately 3,800 square feet in area. The maximum height of the building will be 30 feet. The building will be characteristic of structures in industrial parks in the Hilo area and will be constructed of cement block and metal roofing. Architectural design elements will include a hipped roofline and landscaping with native hala trees. Architectural plans are shown on Figures 4 and 5.

Frame Room. The frame room houses the main distribution frame and electrical supply equipment. This includes connections from outside telephone and electrical from HELCO, batteries, and a rectifier.

Mechanical Room. The mechanical room houses the air conditioning equipment. The air conditioner maintains the proper air quality and temperature for the electrical supply equipment.

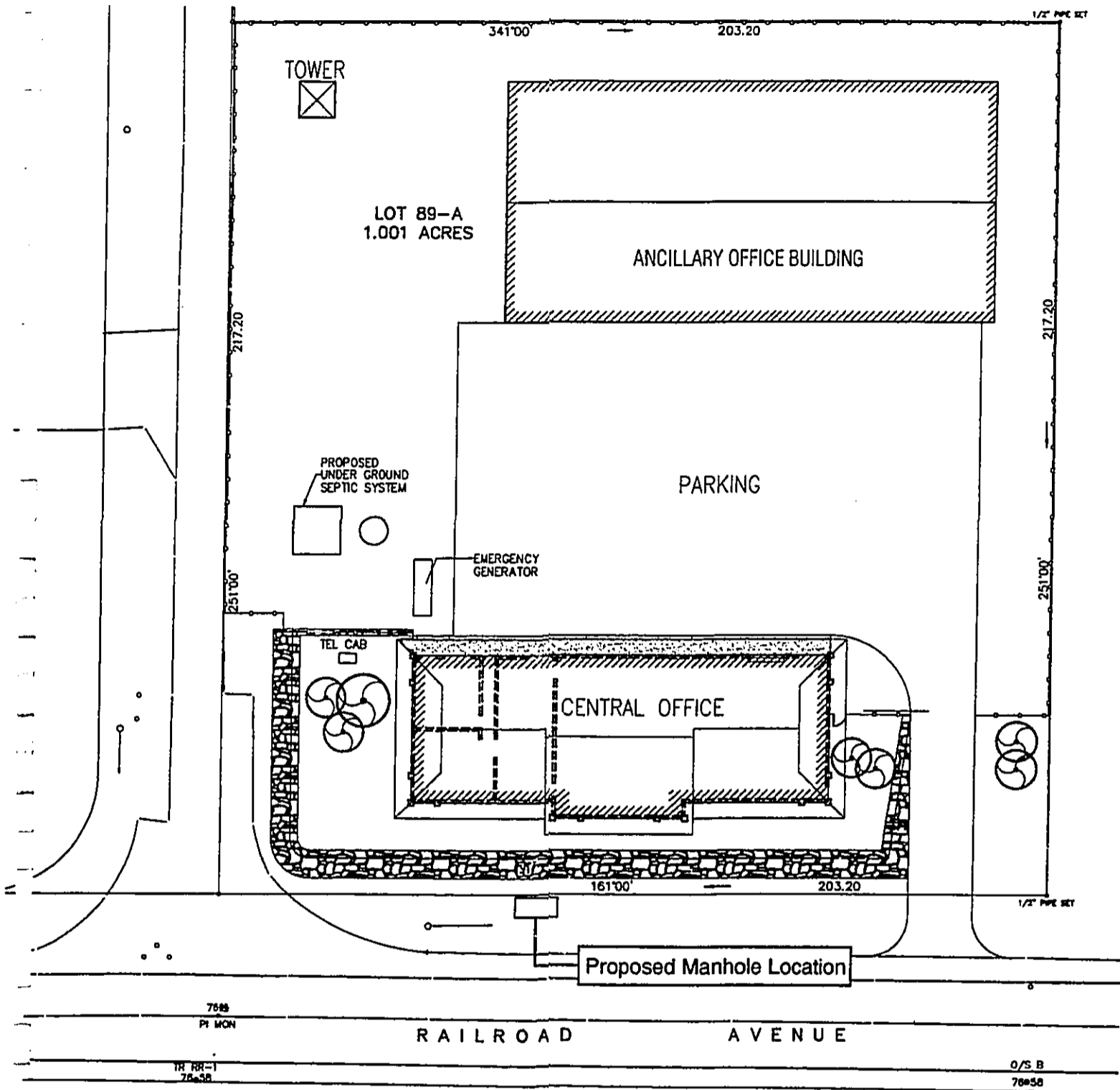




FIGURE 3
Conceptual Site Plan

SANDWICH ISLES COMMUNICATIONS, INC.

Hilo Central Office Complex

LEGEND

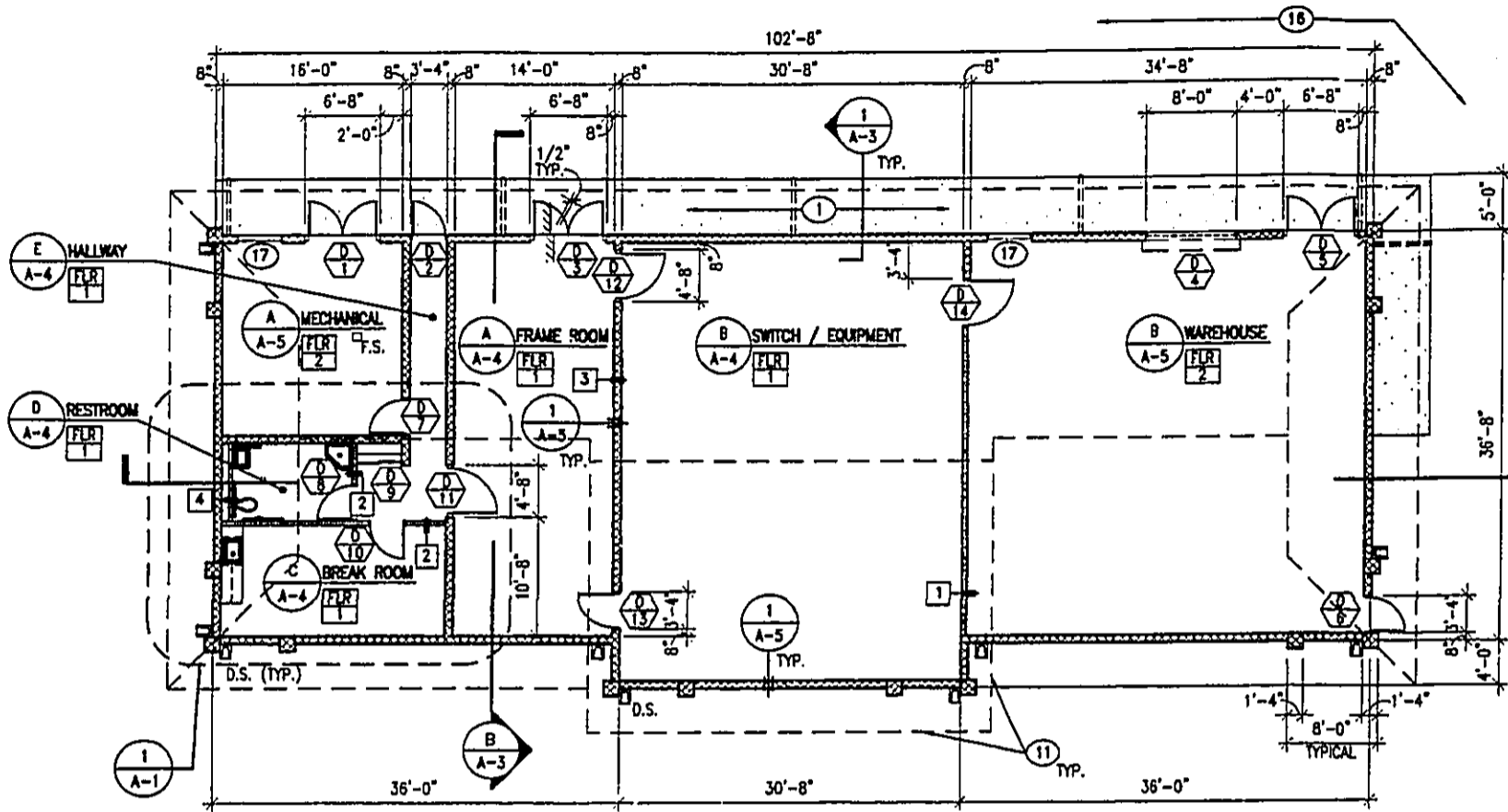
-  Hala Trees
-  Chain Link Fence

Source: Sandwich Isles Communications, Inc.
INK Architects, Inc.



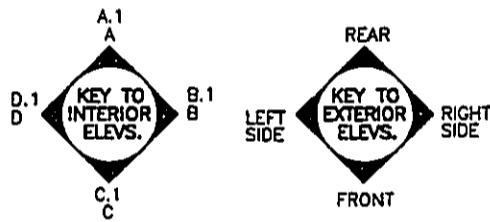
December 1999



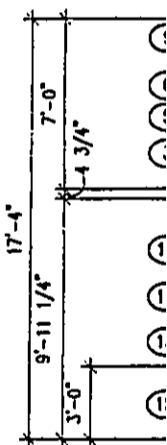


FLOOR PLAN

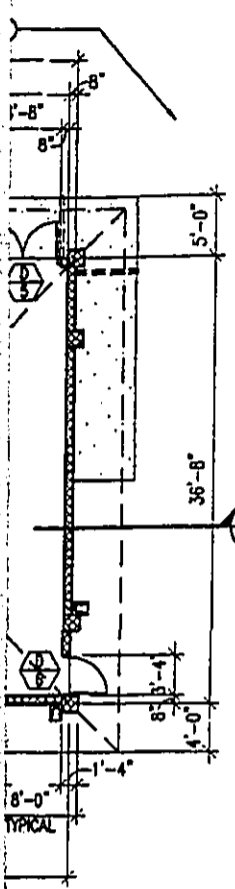
SCALE: 1/16" = 1'-0"



NOTE
1. FOR PARTITION TYPES (1) SEE SHEET A-6.



1 DET
A-1 SCALE



PAINING COLOR SCHEDULE

P 1	"CLEAR SEALANT" SEE SPECS.	EXTERIOR CONCRETE MASONRY UNITS
P 2	"PATINA GREEN" TO MATCH ROOF COLOR	EXTERIOR/INTERIOR DOOR/FRAME, WOOD FASCIA, EXHAUST FAN DUCT, VENT THRU ROOF, FLASHING
P 3	SINCLAIR: "ANTIQUE WHITE" "GLOSS"	INTERIOR CONCRETE MASONRY UNIT, GYPSUM BOARD
P 4	DEVOE'S: "TRU-GLAZE-3" "GLOSS EPOXY, WHITE"	4'-0" HIGH WAINSCOT (P 3 FOR CMU ABOVE WAINSCOT)
P 5	CUSTOM METAL ROOFING'S: "PATINA GREEN"	METAL ROOFING
P 6	SINCLAIR: "PAPER MACHE"	HARDI SOFFIT, EXPOSED PIPING, ELEC. CONDUITS
P 7	GRAY TO MATCH SEAWOLF GRAY LOUVER PAINT	HARDI PANEL, TRIMS & CABLE END

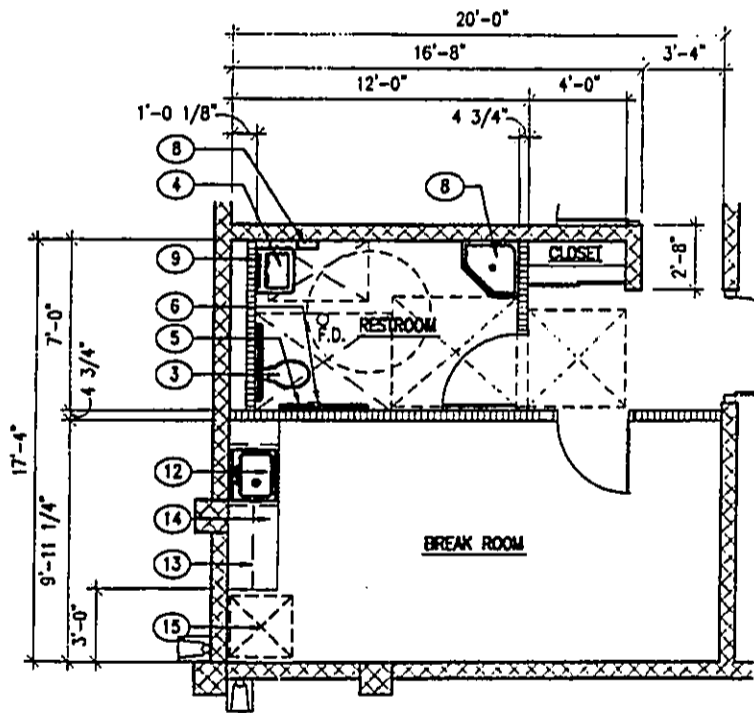
FLOORING SCHEDULE

FLR 1	VINYL COMPOSITION TILE (V.C.T.) W/ BASE	FINISH FLOORING
FLR 2	CONC. SEALANT SEE SPECS.	CONCRETE SLAB

KEYNOTES

(FOR THIS SHEET ONLY)

- ① 8" CONCRETE MASONRY UNIT (TYP.)
- ② CONCRETE WALKWAY.
- ③ ACCESSIBLE WATER CLOSET.
- ④ ACCESSIBLE LAVATORY.
- ⑤ GRAB BARS.
- ⑥ TOILET TISSUE DISPENSER.
- ⑦ SOAP DISPENSER.
- ⑧ PAPER TOWEL DISPENSER.
- ⑨ MIRROR
- ⑩ SERVICE SINK.
- ⑪ ROOF LINE ABOVE.
- ⑫ SINK (SEE MECH. DWGS.)
- ⑬ WALL CABINET ABOVE.
- ⑭ PLASTIC LAM. COUNTERTOP
W/ BACKSPLASH.
- ⑮ REFRIGERATOR
SPACE.
- ⑯ DRIVEWAY
(SEE CML DWGS.)
- ⑰ INTAKE LOUVER
(SEE MECHANICAL DRAWINGS)



1 DETAIL FLOOR PLAN
A-1 SCALE: 1/8" = 1'-0"

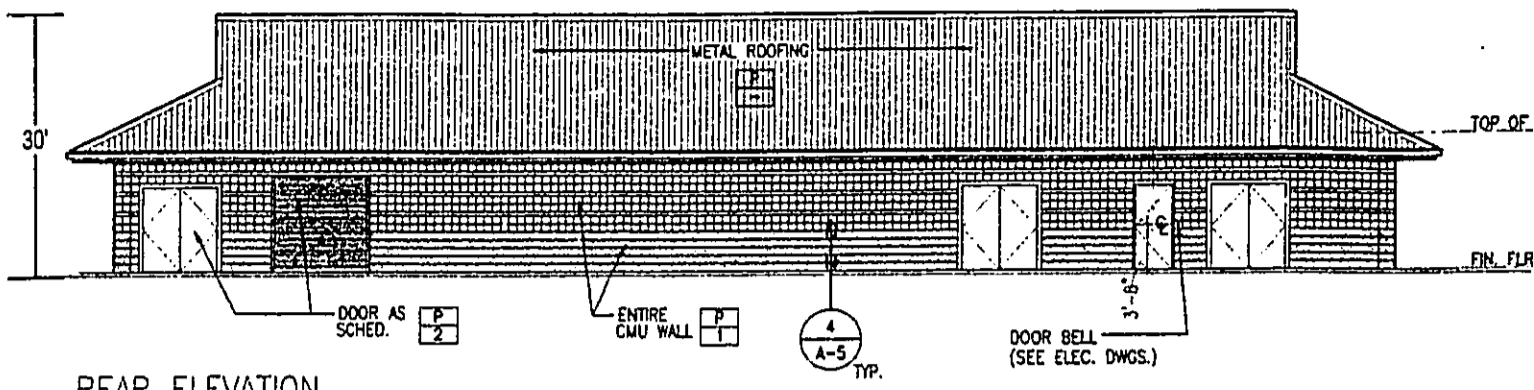
FIGURE 4
Floor Plan (Central Office Building)

SANDWICH ISLES COMMUNICATIONS, INC.

Hilo Central Office Complex

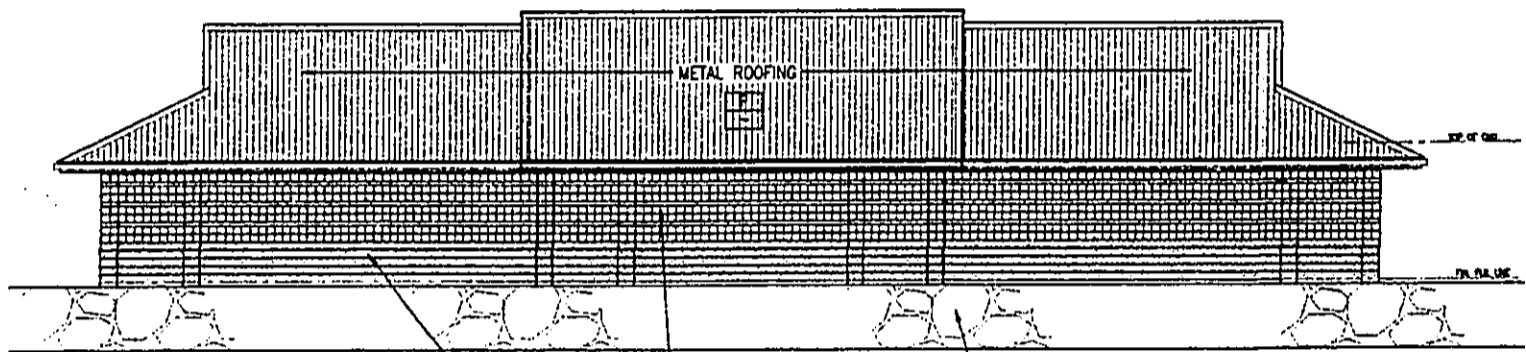
January 2000



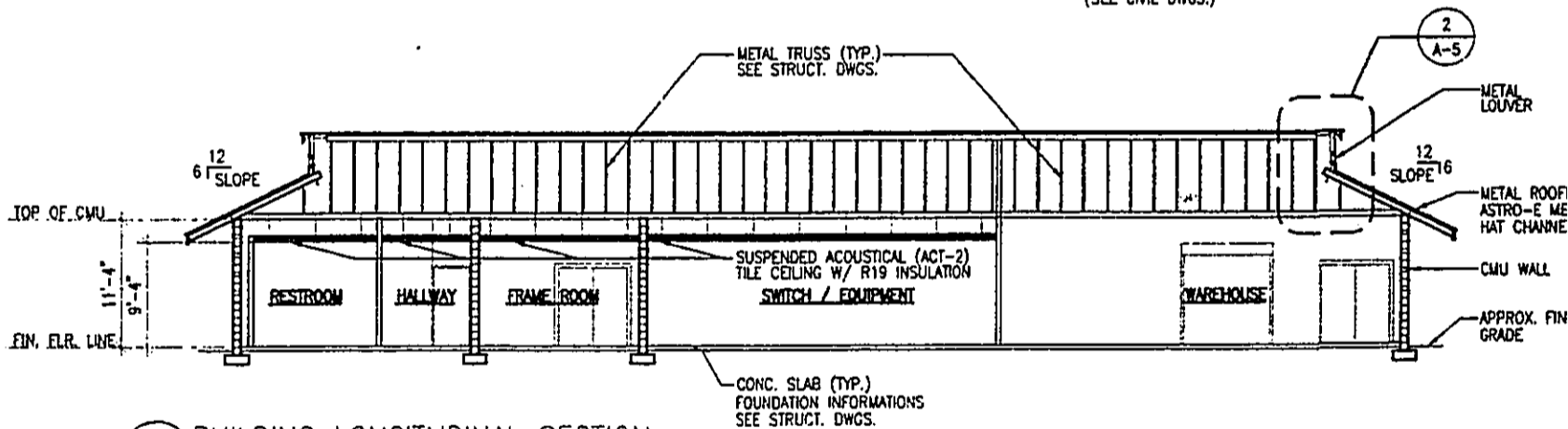


REAR ELEVATION
SCALE: 1/16" = 1'-0"

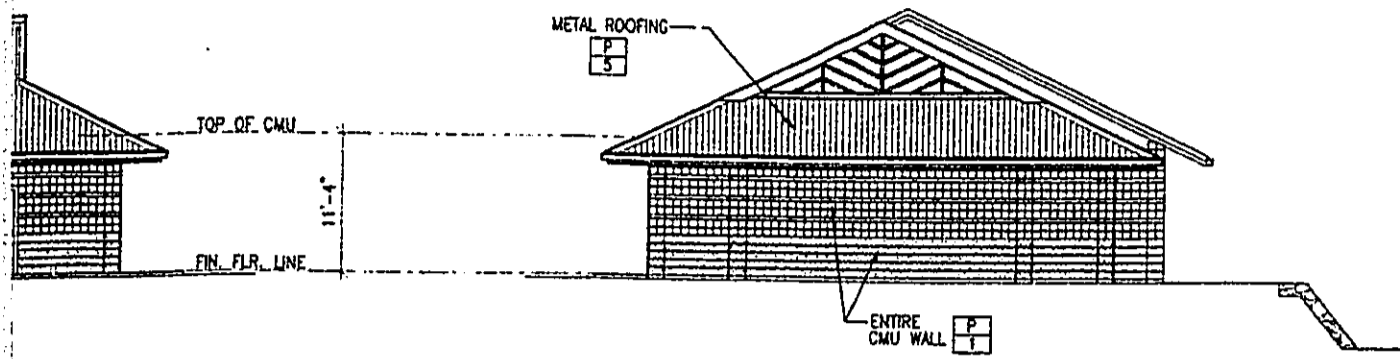
- LEGEND**
- SPLIT TILE
 - CENTER TILE



FRONT ELEVATION FROM MAIN STREET
SCALE: 1/16" = 1'-0"

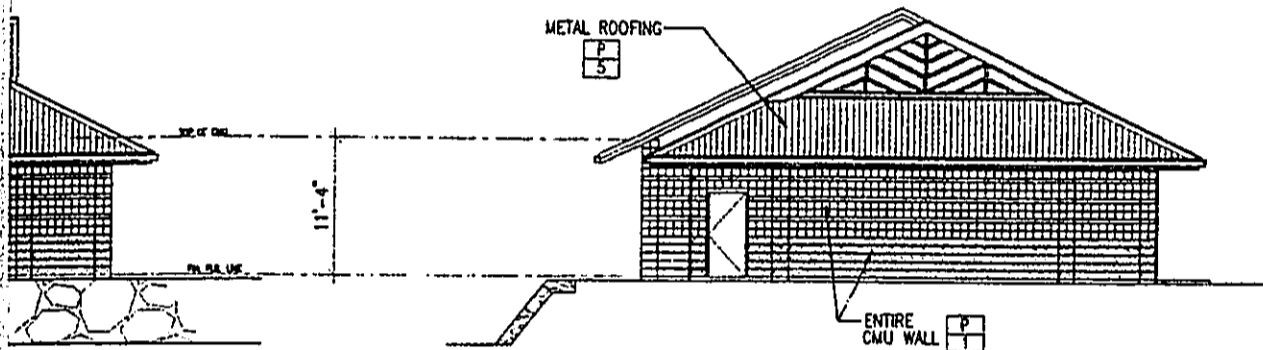


A BUILDING LONGITUDINAL SECTION
A-3 SCALE: 1/16" = 1'-0"

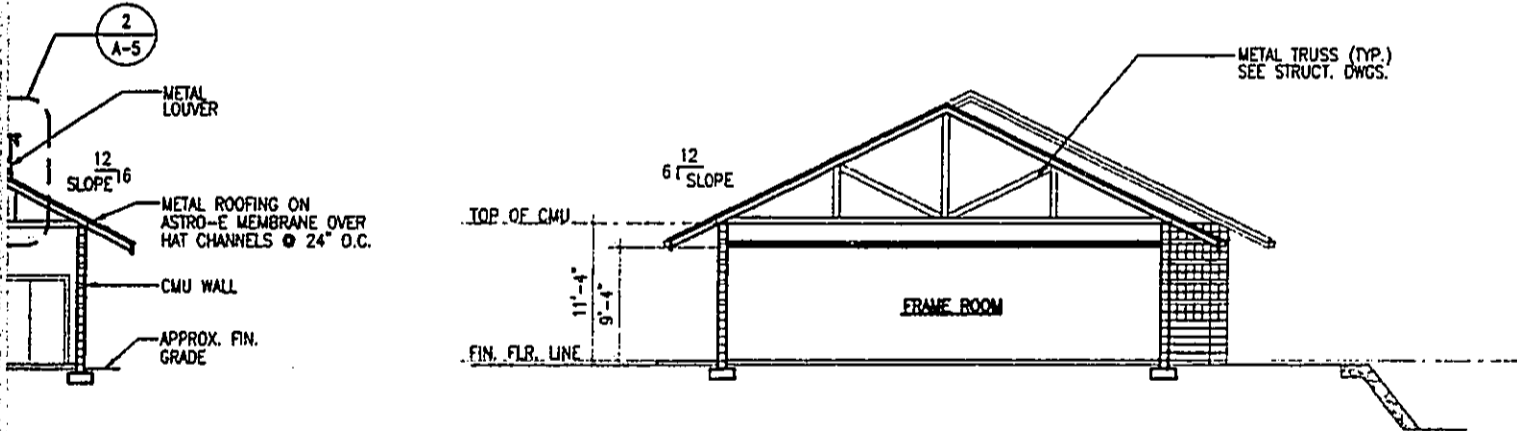


SIDE VIEW FROM PRIVATE ROAD
SCALE: 1/16" = 1'-0"

- LEGEND**
- SPLIT FACE CMU BLOCK
TILECO DARK GRAY (BASALT)
 - CENTER SCORE CMU BLOCK
TILECO STANDARD GRAY



SIDE VIEW ELEVATION
SCALE: 1/16" = 1'-0"



B BUILDING CROSS SECTION
A-3 / SCALE: 1/16" = 1'-0"

FIGURE 5
Building Sections / Elevations

SANDWICH ISLES COMMUNICATIONS, INC.
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Switch Room. The switch room has the telephone switching equipment. SIC uses state of the art switching equipment and computers with the capacity to handle a high number of calls reliably and efficiently. When there is trouble, a standby unit automatically begins to handle the call.

Warehouse. The warehouse will provide storage for parts and equipment.

Break Room. The break room includes a sink, office equipment, and lunch table.

Bathroom. Bathroom facilities are provided.

The proposed Central Office building will be similar to SIC's existing Laiopua Central Office building (Figure 6). The Central Office Building will be minimally manned initially with one of two technicians and is not a public building; however, ramp access is available through the service entry in accordance with the Americans with Disabilities Act (ADA) requirements. In the future, employment will increase to five to six employees.

2.3.2.2 Telecommunications/Microwave Antennae Tower (Future)

A telecommunications/microwave antennae tower is in the conceptual planning stage. Estimated time of use is between 2002 to 2005. Preliminary specifications include a tower 40 feet to 50 feet high and two to three microwave dish antennas 10 feet in diameter. The tower will be a standard tower to support common size and type of communication antennas. The tower will be built in accordance with the EIA Standard 222, the American Institute of Steel Construction (A.I.S.C.), the American Concrete Institute (A.C.I.) and county and state requirements. The structure requires a clear and unobstructed path for the microwave signal which works on a line-of-sight basis. The tower will be similar to other towers in the area as shown on Figure 6.

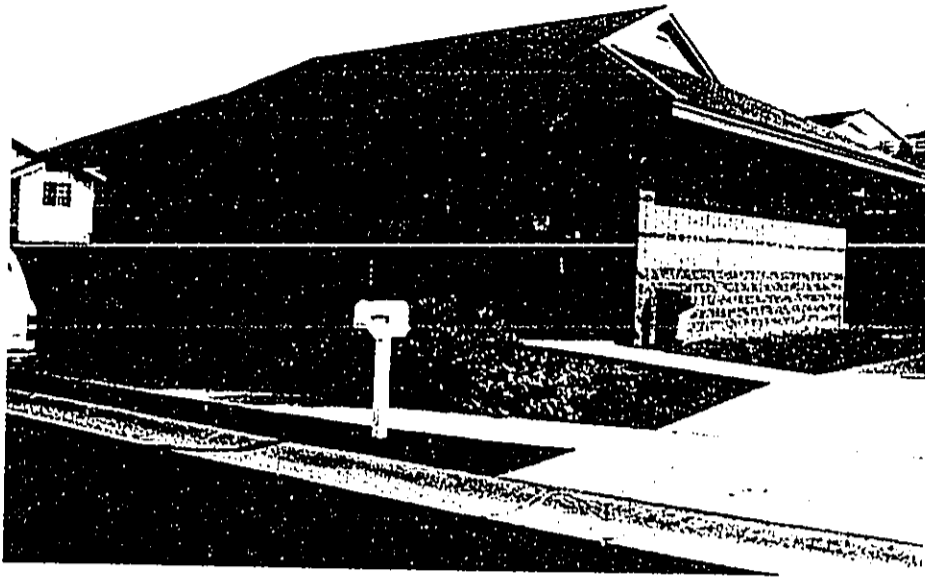
2.3.2.3 Ancillary Office Building - Business, Customer Service, and Additional Storage Office Building (Future)

As SIC's customer base on the island of Hawai'i increases, it is anticipated that an additional building for business, customer service, and additional storage facilities will be constructed on the property between 2004 and 2007. The building, in the conceptual planning stage, will be approximately 60 ft x 120 ft and will be approximately 1,200 sq. ft. in area.

2.3.3 Infrastructure Requirements

A new driveway from Railroad Avenue will be designed in accordance with County of Hawai'i requirements. Water and electrical hook-ups are available within Railroad Avenue. A septic system will be constructed (location is shown on Figure 3). Increase in surface runoff will be handled by an onsite drywell. The impact of the project on the available infrastructure is described in Section 4.2.9.

The proposed Central Office building will be similar to SIC's existing Central Office building at Laiopua in North Kona (pictured here).



The proposed telecommunication tower will be no higher than 50 feet tall and will support 2 (or more) antennas similar to the GTE tower (pictured here) located on DHHL property approximately two blocks west of the project site.

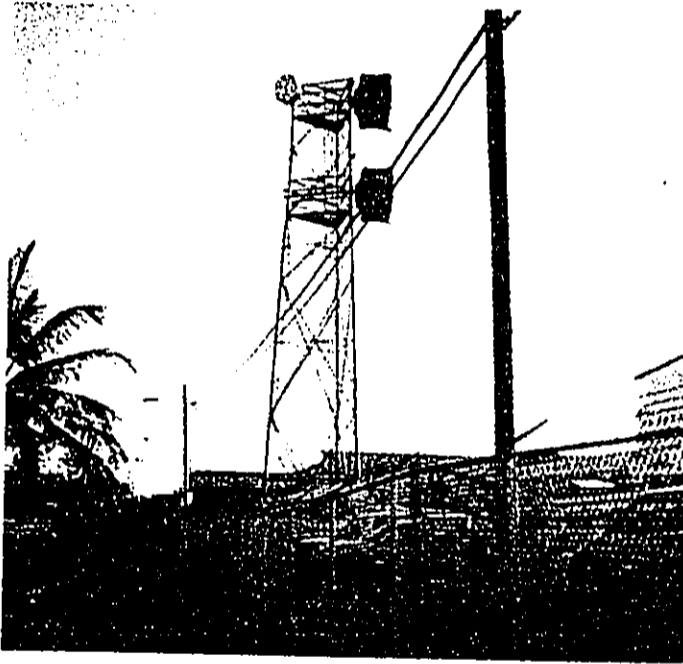


FIGURE 6

Photographs: Project Facilities

SANDWICH ISLES COMMUNICATIONS, INC.

Hilo Central Office Complex

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2.3.4 Off-site Improvements

A manhole within the Railroad Avenue right-of-way will be a 5' x 10' 6" x 78" (deep) flat wall manhole. The precast manhole will be of steel reinforced concrete (Appendix A). The manhole will be designed in accordance with AASHTO H-20-44 traffic bridge loading using 6,000 PSI compressive strength concrete and 50,000 psi yield strength ASTM A-708 steel reinforcement per CALCS #303.7. The precast manhole will be placed on a minimum 5 inch base of crusher run for ease of installation and even load distribution. Construction will require excavation within the roadway right-of-way. This work will be coordinated with the appropriate agency prior to construction.

Fiber optic cables will be housed in underground conduits and will run along Railroad Avenue from the manhole. Future construction of underground cabling will require the use of County of Hawai'i and State of Hawai'i easements and utility rights-of-way to reach the target communities they will service within the Hilo area. SIC will coordinate with the appropriate agencies to receive all applicable approvals as the new DHHL communities are planned.

2.4 OPERATIONS OF THE CENTRAL OFFICE

2.4.1 Staff

Currently, SIC employs eleven employees on a full time basis at its main office in Honolulu. Upon completion of the subject project, two to three full time equivalent new employees will be hired to operate the Hilo operations.

2.4.2 Operating Hours

The Central Office facility will be in continuous operation to provide uninterrupted telephone service to customers. Customer service (888-995-7274) is available 24 hours daily.

2.5 SUSTAINABLE BUILDING DESIGN

An evaluation of the plans for the Central Office Complex indicates that the project will 1) minimize energy for operation and maintenance, 2) preserve and conserve water and other natural resources, 3) minimize health risks to those who construct, maintain, and occupy the building, 4) minimize construction waste, 5) recycle and reuse generated constructed wastes, and 6) provide the highest quality and most effective product.

2.6 DEVELOPMENT TIMETABLE AND APPROXIMATE COSTS

The provision of telephone services to new HHL homestead subdivisions and their beneficiaries, tenants, and lessees is considered to be a high priority. Construction of the Central Office building will follow the receipt of all required permits and approvals. Commencement of construction is planned for March 2000 with operations beginning in August 2000. The estimated cost of construction of the Central Office building is approximately \$1,000,000. The cost of the telephone equipment is estimated to be about \$1,800,000.

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The planning for the telecommunications tower/antennas and the ancillary office building is preliminary and ongoing. Construction is anticipated between 2002 - 2005 and 2004 - 2007, respectively.

3.0 LAND USE CONFORMANCE

Relevant State of Hawai'i and County of Hawai'i land use plans, policies, and ordinances are described below.

3.1 STATE OF HAWAI'I

3.1.1 State Land Use District

The State Land Use District designation for the Pana'ewa Industrial Lots is Urban (Figure 7) and is consistent with the proposed industrial uses.

3.1.2 Department of Hawaiian Home Lands

Several studies and policy documents of the DHHL have been prepared for the Pana'ewa area and the Pana'ewa Industrial Lots including the following: 1) *The Pana'ewa Plan* (Ming Chew Associates 1986), 2) *Hawaiian Home Lands: Land Assessment Studies, Phase 2 - Second Set of Priority Tracts* (PBR HAWAII 1993) identifies the project area for industrial uses, and 3) *Pana'ewa Industrial Lots Master Plan* (Wilson Okamoto & Associates 1991).

The Hilo Central Office Complex project responds to the plans and policies of the DHHL.

3.2 COUNTY OF HAWAI'I

Relevant land use plans of the County of Hawai'i which pertain to this project include the General Plan and the County zoning code.

3.2.1 General Plan

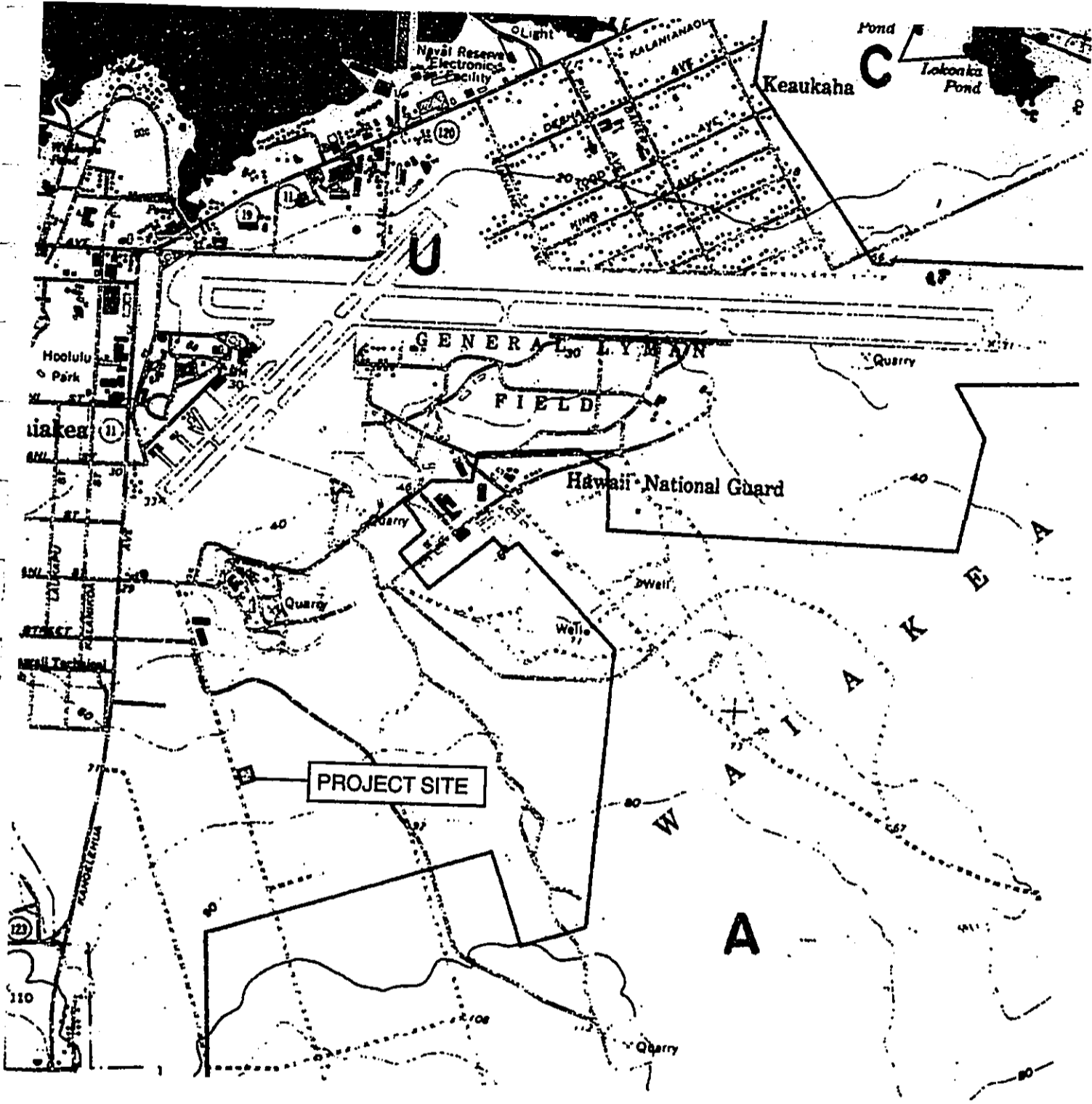
The Hawai'i County General Plan, Land Use Pattern Allocation Guide (LUPAG) map designates the Hilo Central Office Complex site for "Industrial" uses (Figure 8).

The proposed project is in compliance with the General Plan because it will be located in an area that has been designated industrial and will assist in the general welfare and prosperity of the people of Hawai'i.

3.2.2 Hawai'i County Zoning

The Hawai'i County zoning designation for the subject site is MG-1a (General Industrial - one acre minimum) (Figure 9).

All aspects of the Hilo Central Office Complex are in compliance with the Hawai'i County Zoning Code. Buildings will be no taller than 30 feet and the antenna tower will not exceed 50 feet, in accordance with the zoning code.



LEGEND

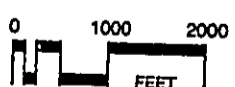
 Project Site

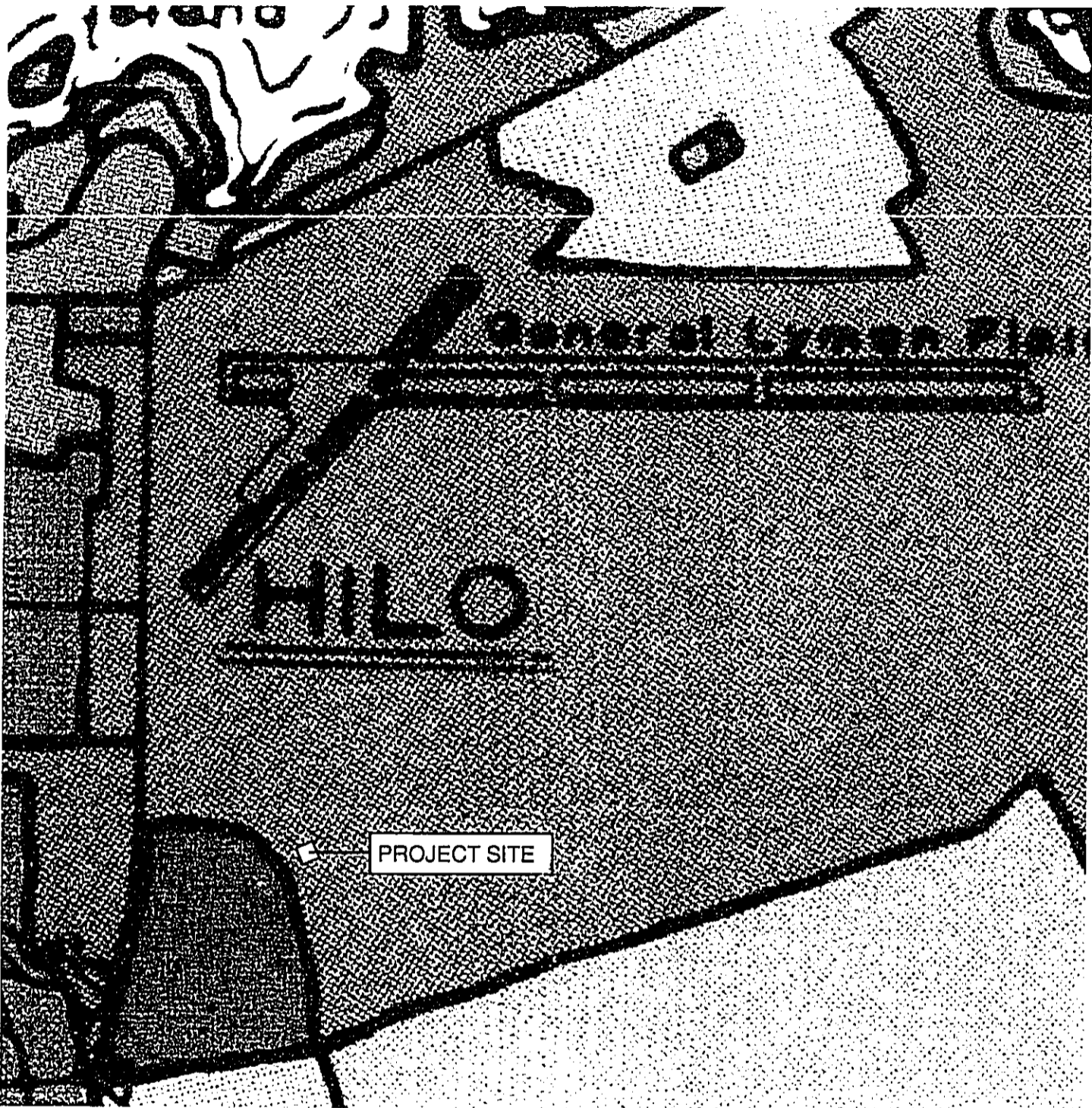
FIGURE 7
State Land Use Boundary Map

SANDWICH ISLES COMMUNICATIONS, INC.








Hilo Central Office Complex

Source: State Land Use Commission





LEGEND

-  High Density Urban
-  Medium Density
-  Low Density
-  Industrial
-  Orchards
-  Resort
-  Open Area

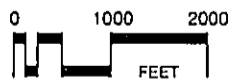
Source: The General Plan, Hawaii County Land Use Pattern Allocation Guide Map

FIGURE 8

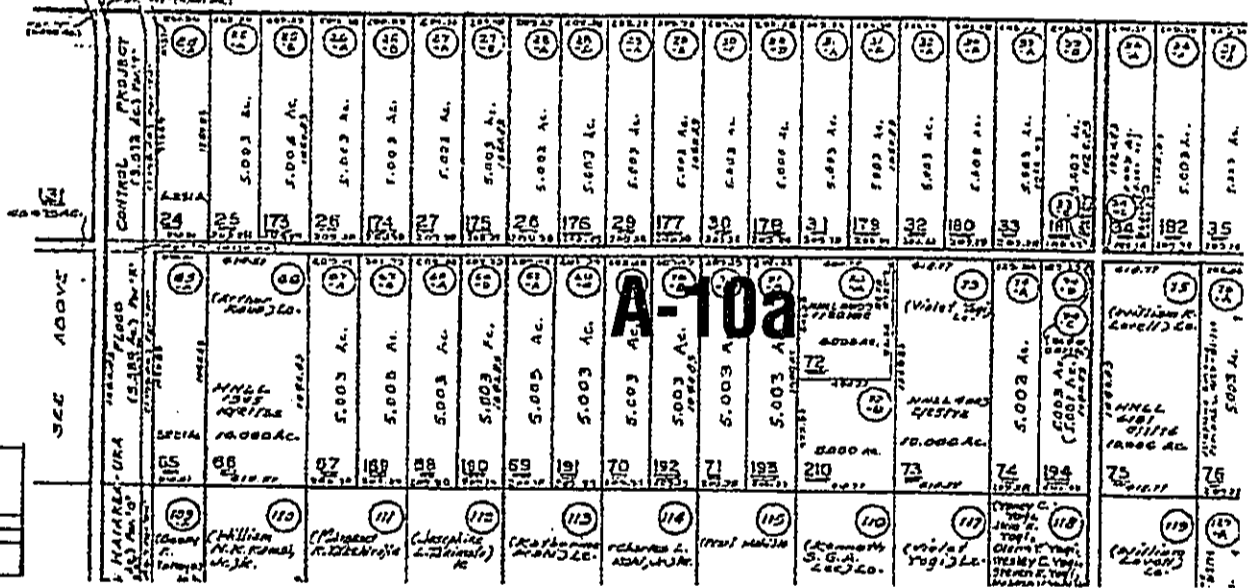
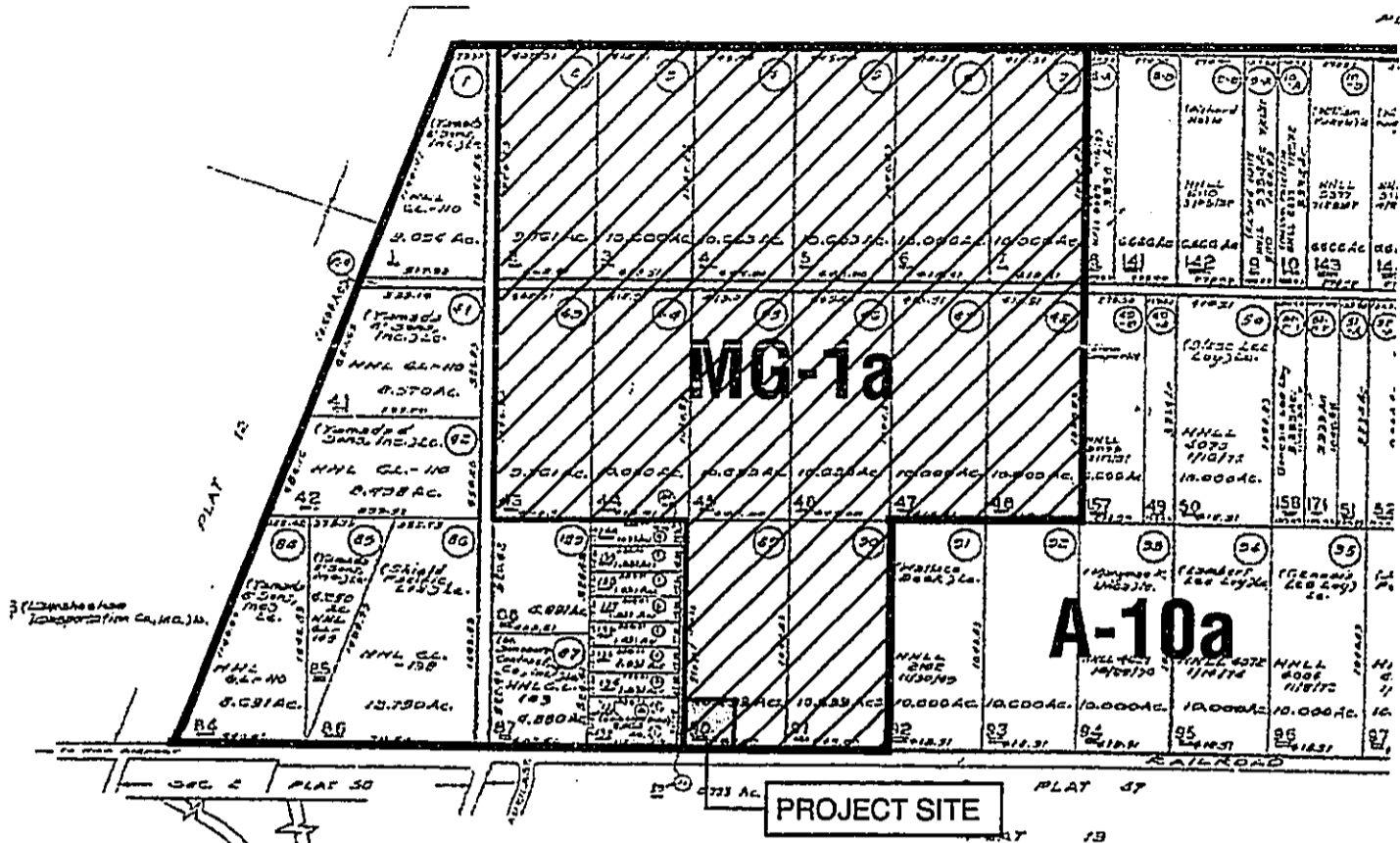
General Plan, Land Use Pattern Allocation Guide Map

SANDWICH ISLES COMMUNICATIONS, INC.





Hilo Central Office Complex



January 2000



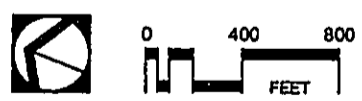
DEPARTMENT OF TAXATION PROPERTY RECORDS OFFICE TAX MAPS BRANCH STATE OF HAWAII		
TAX MAP		
ENTIRE TAXATION DISTRICT		
ZONE	SEC.	PLAT
2	1	25

- LEGEND**
-  Project Site
 -  DHHL Panaewa Industrial Lots
 -  MG-1a General Industrial - 1 Acre
 -  A-10a Agriculture - 10 Acres

Source: County of Hawaii

FIGURE 9
Zoning Map

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Hilo Central Office Complex



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3.2.3 Special Management Area

The project site is not in the Special Management Area (SMA).

3.3 APPROVALS AND PERMITS

During the implementation stages of the project, the applicant will be working with the County review agencies for examination and approval of project plans and specifications.

Required Permits and Approvals

Permit/Approval	Responsible Agency
Chapter 343, HRS compliance	Department of Hawaiian Home Lands DOH Office of Environmental Quality Control
Grading/Building Permits	County Building Department
Driveway connection to County road	County Department of Public Works
Water	County Board of Water Supply
Septic System	State Department of Health

4.0 DESCRIPTION OF THE AFFECTED ENVIRONMENT, POTENTIAL IMPACTS OF THE PROPOSED ACTION, AND MITIGATIVE MEASURES

The environment surrounding the proposed project includes the physical or natural environment and the human or social environment. This section describes the existing conditions, potential impacts to the environment, and proposed mitigative measures.

4.1 PHYSICAL CHARACTERISTICS

4.1.1 Climate

The climate of the region is generally warm and humid with average daily temperatures ranging from 68 to 80 degrees Fahrenheit in the winter months and 72 to 87 degrees in the summer months, and average rainfall ranges from 125 to 150 inches per year, with the winter months receiving the majority of the rainfall. Winds are dominated by trades from the northeast with southwestern winds associated with "Kona" storms occurring predominately in the winter months. In the absence of the trades or storm conditions, winds occasionally become light and variable and, at times, the diurnal heating and cooling of the Island gives rise to onshore sea breezes during the day and offshore land breezes at night. Strong winds do occur at times in connection with storm systems moving through the area.

Potential Impacts and Mitigation Measures

As the project will not have a significant impact on the microclimate of the area, no mitigation measures are warranted. The proposed project will have no effect on climatic conditions and no mitigative measures are necessary. Project landscaping will help mitigate any localized temperature increases from the built structures.

4.1.2 Topography/Geology

The one-acre site is a nearly level property with elevations ranging from 77 feet to 84 feet above mean sea level (MSL). The site is vacant.

The parcel is relatively level with an overall slope of about 1-2 percent and elevations ranging from 77 feet to 84 feet MSL. The geology of the site is classified as Ka'ū Basalt which consists of lava flows, vent deposits, littoral deposits, and tephra-fall deposits of tholeiitic basalt and rare transitional basalt of Mauna Loa Volcano.

Potential Impacts and Mitigative Measures

The site has been modified through vegetation removal. The planned development on the flat site will not require any major alterations. Grading activities will entail some minor cut and fill; and, therefore, no significant impacts to the site topography are anticipated.

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All grading operations will be conducted in full compliance with dust and erosion control and other requirements of the County of Hawai'i Grading Ordinance and the provisions of Chapter 11-60.1, Hawai'i Administrative Rules, Section 11-60.1-33 on fugitive dust. Best management practices (BMPs) to mitigate pollutants will be included in the construction plans. Other measures to protect against wind erosion during construction periods include water spraying and planting of ground cover as soon as possible following grading and grubbing activities. With adherence to County regulations and standards and implementation of standard control measures, further mitigation measures are not warranted.

4.1.3 Soils

There have been three soil suitability studies prepared for Hawai'i whose principal focus have been to describe the physical attributes of land and the relative productivity of different land types for agricultural production. These are: 1) the U.S. Department of Agriculture Soil Conservation Service (SCS) Soil Survey; 2) Land Study Bureau Detailed Land Classification; and 3) the Agricultural Lands of Importance to the State of Hawai'i (ALISH).

Soil Conservation Survey. According to the *United States Department of Agriculture Soil Conservation Service, Soil Survey of the Island of Hawai'i, State of Hawai'i, 1972*, the soils on the site are classified as Pāpa'i Extremely Stony Muck (rPAE) as shown in Figure 10. The Pāpa'i series consists of well-drained, thin, extremely stony organic soils over fragmented 'A'ā lava. In a representative profile, the surface layer is very dark brown extremely stony muck about 8 inches thick. Permeability is rapid, runoff is slow, and the threat of erosion hazard is slight.

Detailed Land Classification. For agricultural purposes, the *Detailed Land Classification, Island of Hawai'i* (University of Hawai'i, Land Study Bureau, 1972) has developed a five-class productivity rating system using the letters A, B, C, D, and E with soils rated as follows: A ("very good"); B ("good"); C ("fair"); D ("poor"); and E ("very poor"). The classification for the subject classifies the subject lands as E271 with a rating of "very poor" (Figure 11). The physical characteristics of the soils of the property are generally unsuited for most soil-based forms of agriculture.

Agricultural Lands of Importance to the State of Hawai'i. The State Department of Agriculture *Agricultural Lands of Importance to the State of Hawai'i (ALISH)* system of defining agricultural suitability has classified the property as "other important agricultural lands" (Figure 12).

Potential Impacts and Mitigation Measures

The project site is within the County's General Industrial zoning district which does not allow farming as a permitted use, however, the processing of agricultural products are allowed. While most of the area in the vicinity is zoned for industrial uses, nearby DHHL lands are available for agricultural uses.

Given the agricultural limitations of the existing soil conditions, and the extent of other more suitable agricultural lands in the region, the curtailment of potential agricultural use on the site is not considered a significant impact.

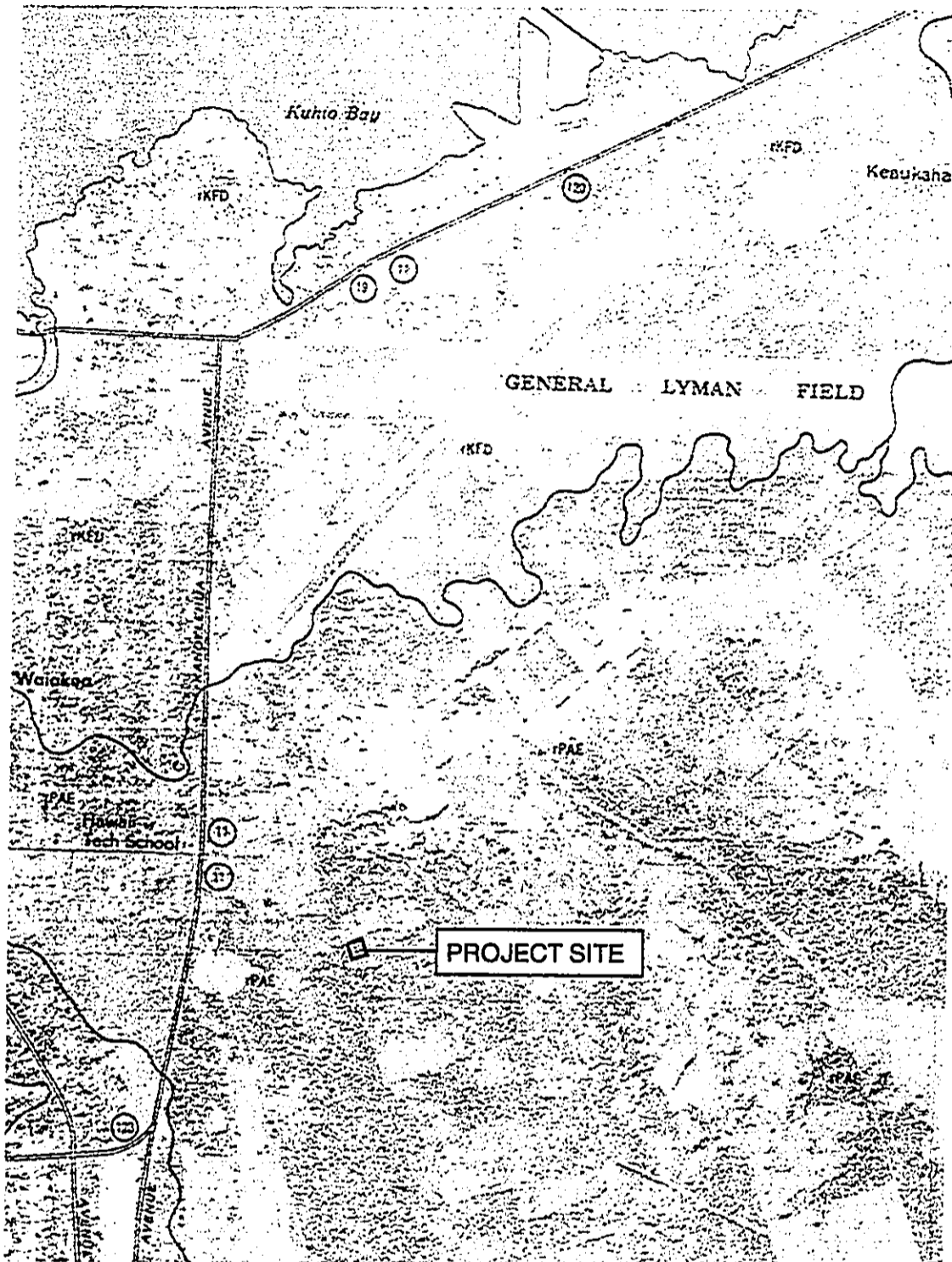





FIGURE 10
SCS Soil Survey

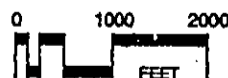
SANDWICH ISLES COMMUNICATIONS, INC.

Hilo Central Office Complex

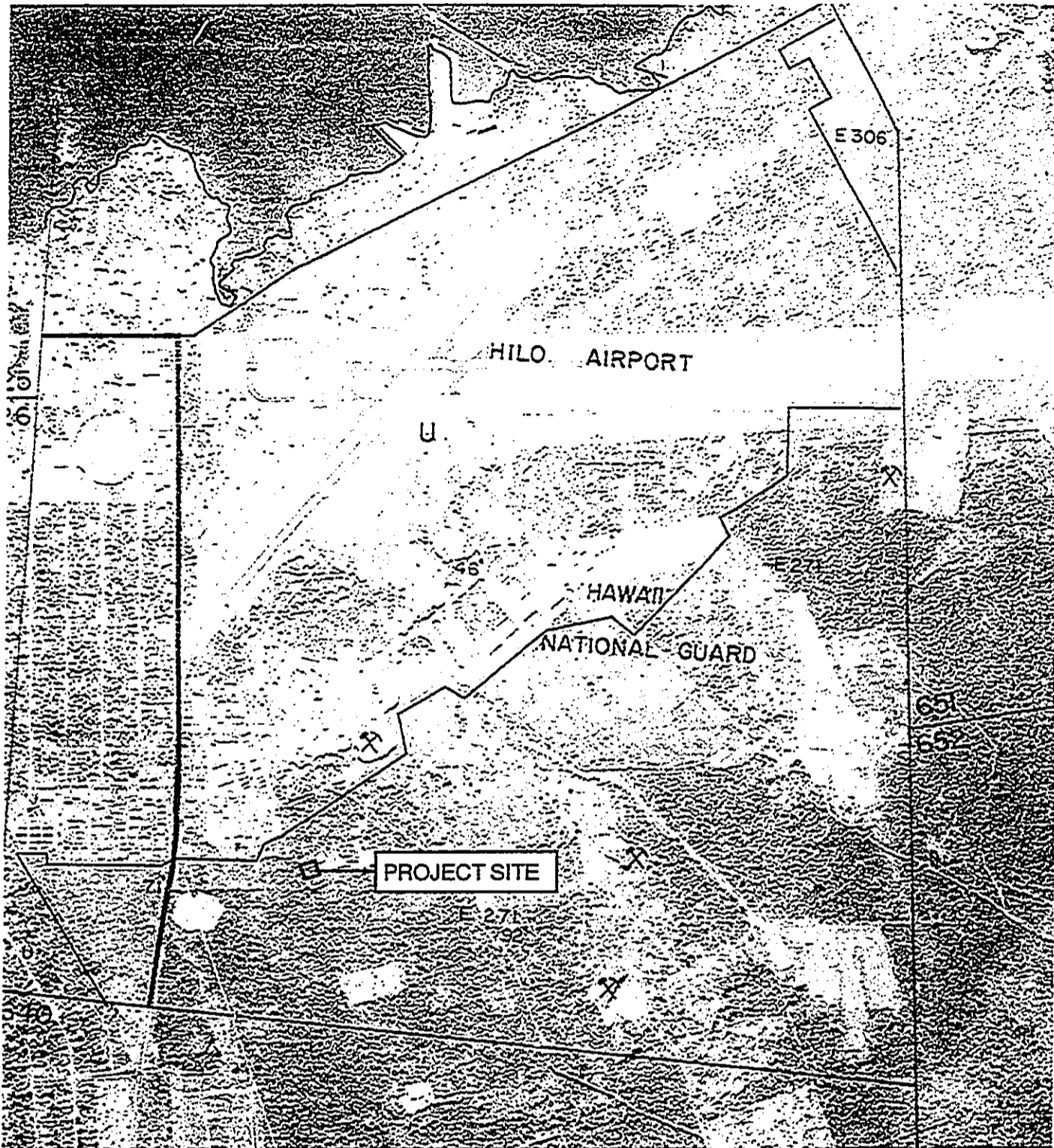
LEGEND

-  Project Site
-  Papa'i Extremely Stony Muck
-  Keaukaha Extremely Rocky Muck




Source: USDA, Soil Conservation Service Soil Survey of Island of Hawaii, State of Hawaii



January 2000



LEGEND

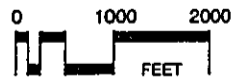
-  Project Site
-  Soil Series - 'A'a
-  Soil Series - Almost bare Pahoehoe

Source: State of Hawaii Department of Agriculture

FIGURE 11
Detailed Land Classification

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Hilo Central Office Complex



January 2000



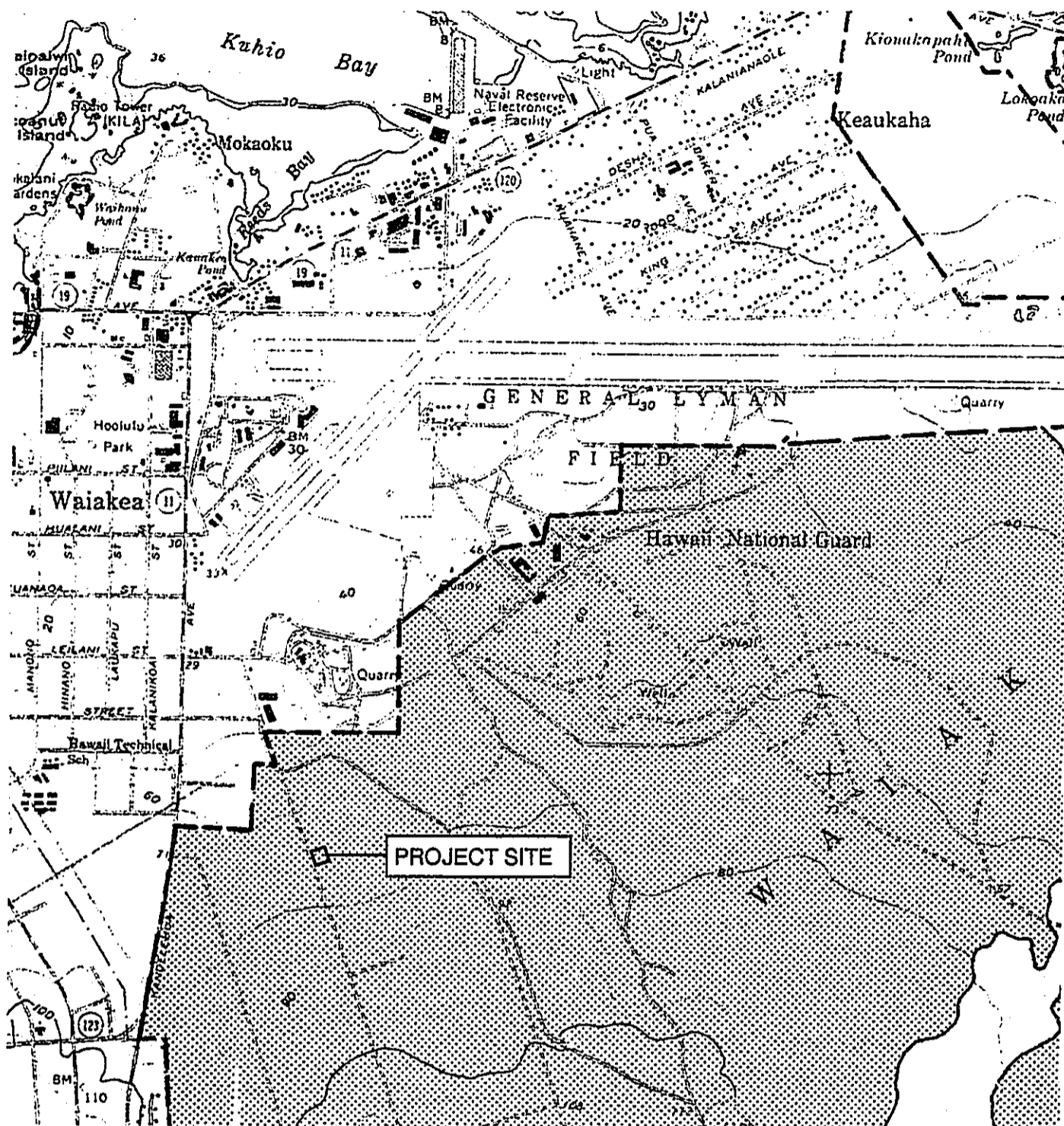
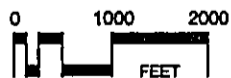


FIGURE 12

Agricultural Lands of Importance to the State of Hawaii (ALISH)

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Hilo Central Office Complex



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LEGEND

-  Project Site
-  Other Important Agricultural Land

Source: State of Hawaii Department of Agriculture

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4.1.4 Drainage

No municipal drainage system is available in the area of the Pana'ewa Industrial Lots. Surface runoff from individual lots is normally routed to either dry wells for disposal or onto nearby streets. Depending upon the size of the lot, there may be more than one dry well located on the property.

The Flood Insurance Rate Map (Community-Panel No. 155166 0885 C) indicates that the property is in Zone X (areas determined to be outside the 500 year flood plain).

Potential Impacts and Mitigative Measures

Construction work on the site will temporarily expose bare soil and will slightly increase the erosion potential until the building foundations are in place. After that, the presence of impermeable surfaces (walkways and driveways) and landscaping will reduce the overall rate of erosion. The project specifications will incorporate erosion control requirements to mitigate any negative impacts during construction.

The natural terrain of the project site is nearly level and will require minimal grading. The finished grade will therefore, be close to the existing level grade on the site. The surface of the one acre lot will be graveled.

The amount of impervious area added by the project is small in relation to the larger basin. As a result, changes to the runoff coefficient are expected to be negligible. Therefore, the proposed project will not significantly increase the peak discharge to the existing drain system. A dry well will be installed to handle any additional surface runoff created by the built conditions of the project.

4.1.5 Natural Hazards

The island of Hawai'i has a Zone 3 Seismic Probability Rating. Zone 3 areas are at risk from major earthquake damage, especially to structures that are poorly designed or built. In comparison, O'ahu has a Zone 2A rating and Maui has a Zone 2B, indicating the frequency and severity of seismic occurrence of an island that includes an active volcano.

The United States Geologic Survey has identified lava flow hazard zones for the island of Hawai'i. The current map divides the Island into zones that are ranked on a scale of ascending risk from 1 to 9 based on the probability of coverage by lava flows. These zones are based chiefly on the location and frequency of both historic and prehistoric eruptions and also take into account the larger topographical features of the volcanoes that will affect the distribution of lava flows. Along with most of the Hilo area, the area in which the site is located is designated as Lava Flow Hazard Zone 3. Zone 3 is considered less hazardous than Zone 2 (which is adjacent to and down slope of active risk zones), because of greater distance from recently active vents and/or because the topography makes it less likely that flows will cover these areas. The site is situated on a lava flow that occurred between 750 and 1,500 years ago. The nearest historic flow approached Hilo in 1880, terminating in the area of what is now the University of Hawai'i at Hilo Research and Technology Park, approximately four miles from the project site.

The State of Hawai'i has been affected by devastating hurricanes, 'Iwa in 1982 and 'Iniki in 1992. While it is difficult to predict these natural occurrences, it is reasonable to assume that future events

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could be likely given the recent record. The project area, as the rest of the island or state, is no more or less vulnerable to the destructive winds and torrential rains associated with hurricanes.

Potential Impacts and Mitigation Measures

The project will not exacerbate any hazardous conditions. The Hawaiian islands are associated with volcanic eruption or tectonic movement. All structures will be constructed for protection from earthquakes and destructive winds and torrential rainfall of tropical hurricane in accordance with the Building Codes adopted by the County of Hawai'i

4.1.6 Flora and Fauna

The one-acre project site has been cleared of vegetation. The surrounding areas which are uncleared consists of forest dominated by waiawī (strawberry guava), which forms a dense canopy layer of 15 - 25 feet, broken by scattered individuals of native 'ōhi'a, which are usually 30-40 feet high. In some areas umbrella plant overtops the waiawī. Isolated clusters and individuals of hala are also scattered in the canopy. Small patches dominated by uluhe fern are scattered throughout the forest. No threatened and endangered species or species of concern were found on the site. No wetlands occur on the site.

The usual complement of introduced birds common to the forests of this area of Pana'ewa are found on the adjacent properties and on the project site including Japanese white-eye, northern cardinal, spotted doves, common myna, zebra doves, melodious laughing thrush, house finch, and chestnut mannikin.

No threatened or endangered species are believed to be present. These findings are consistent with the conclusions of surveys to assess the biological resources at a nearby parcel (TMK: 2-1-13: 02 (por.) and 154) in Pana'ewa (Terry 1999 and Ohashi 1999).

Potential Impacts and Mitigative Measures

The property has been recently cleared of all vegetation. Vegetation on the surrounding lots consists of exotic and native species, therefore, it is determined that the proposed development of the site should not have a negative impact on the biological resources.

4.2 HUMAN ENVIRONMENT

4.2.1 Archaeological and Historic Resources

The project area in Pana'ewa is within a relatively unproductive area between the "coastal" and "upland agricultural zones" according to an archaeological study prepared for another DHHL parcel (TMK: 2-1-13: 154) located nearby the subject project site (Scientific Consultant Services, Inc. 1999). And, although agricultural practices were possible in the project area, more productive agricultural lands were located further inland.

The project site has been cleared through grubbing activities and is therefore vacant of any uses.

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Potential Impacts and Mitigative Measures

No impacts are anticipated to the already cleared lot. However, in the event that any archaeologically significant artifacts, bones, or other indicators are uncovered during construction, work will cease in the area and the State Historic Preservation Division will be contacted.

4.2.2 Roads and Traffic

The major roadway serving the East Hawai'i region is the Hawai'i Belt Road which is called Kanoelehua Avenue in the Hilo area. Kanoelehua Avenue runs parallel to Railroad Avenue about 1/2 mile west of Railroad Avenue. In this area, Kanoelehua Avenue is a divided roadway with center median and three travel lanes in each direction. Major signalized intersections are located at Kanoelehua Avenue and Maka'ala Street and Kanoelehua Avenue and Puainako Road. Left turn storage lanes and turning signals are located at each intersection. These intersections carry most of the traffic entering and exiting Prince Kūhiō Plaza.

Railroad Avenue fronts the Pana'ewa Industrial Lots and provides access to the Hilo Central Office Complex. In this area, Railroad Avenue is a two lane road with one travel lane in each direction. The ownership jurisdiction of the roadway unclear at this time and is being clarified with the State of Hawai'i and the County of Hawai'i. The road is asphalt paved and in relatively good condition and carries a light load of traffic. However, the recent eastward extension of Maka'ala Street and Puainako Road between Kanoelehua Avenue and Ohuohu Street will add to the traffic load on Railroad Avenue.

Potential Impact and Mitigative Measures

The construction period of the project will increase traffic on area roadways; however, this impact will be limited to a period of two to three months. Once completed and operational, the project will contribute a minimal increase of traffic on the area roadways and service areas.

4.2.3 Air Quality

The site is subject to tradewinds year round. There is no negative health concern from respirable dust at the subject property.

Potential Impacts and Mitigative Measures

Construction of the proposed project will not significantly impact air quality. Vehicular emissions will increase from construction equipment during the short construction period. However, state and federal air quality standards will not be exceeded and no significant adverse impacts are anticipated.

Mitigation measures available to minimize air quality impacts include dust control measures such as frequent watering during construction and rapid establishment of gravel and plant materials once grading is completed. However, should dirt be tracked onto the highway, washdown will be undertaken to prevent fugitive dust formation. Increased vehicular traffic will not violate state or federal air quality standards based on the moderate level of existing traffic volumes in the project region.

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4.2.4 Noise

Noise in the vicinity of the project is generally from traffic, and occasional overhead aircraft, adjacent industrial uses, and natural sounds associated with weather (e.g. wind and rain), and birds.

Potential Impacts and Mitigative Measures

During the construction period, the use of construction equipment is expected to increase the noise levels on the site. Proper mitigating measures (such as limiting construction to daylight hours) will be employed to minimize the noise impacts. All work will be monitored to comply with State Department of Health noise limits. There are no sensitive land uses, including residential homes in the vicinity of the project site. Therefore, the Hilo Central Office Complex communications facility will not have any potential noise impacts to any residential neighborhood.

4.2.5 Visual Resources

The project site is set back from Kanoelehua Highway and can only be seen from within the Industrial zoned parcels surrounding the subject site. Photographs of the project site are shown in Figure 13.

Potential Impacts and Mitigative Measures

The proposed project will generally not be visible to the public except for those traveling on Railroad Avenue and within the industrial area. The project is therefore not anticipated to affect any public views and its design will conform to the character of the General Industrial zoning district.

The Central Office building will be similar to SIC's central office building at Laiopua in Kona. The height of the telecommunications tower will not exceed the maximum limit of 50 feet and will be similar to other towers. The Laiopua facility and a similar type of tower are shown in Figure 6.

4.2.6 Social and Employment Characteristics

Sandwich Isles Communications, Inc. is a native Hawaiian telephone company dedicated to serving Hawaiian Home Lands beneficiaries and lessees. SIC operates under a license granted by DHHL authorizing SIC to be the exclusive provider of telecommunication services on land administered by DHHL, and a Certificate of Authority granted by the Public Utilities Commission to serve Hawaiian Home Lands.

Currently SIC employs eleven employees on a full time basis at its Honolulu office. SIC contracts with numerous local construction, engineering, and communication companies, thereby indirectly providing employment to residents of Hawai'i.

Potential Impacts and Mitigative Measures

The proposed Hilo Central Office Complex will provide telecommunications services to new Hawaiian Home Lands residential subdivisions within the East Hawai'i region. The DHHL master plan includes planned subdivisions in the Hilo area at Kaūmana, Pi'ihonua, Waiākea, and Keaukaha.



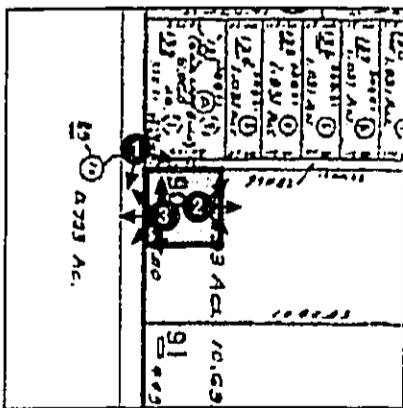
1. View of the Hilo Central Office Complex site from the corner of Railroad Avenue and the adjacent private driveway.



2. View of the back of the property (looking east towards native species (e.g. waiawi and ohia trees).



3. View of other DHHL industrial lands across from the SIC Hilo Central Office Complex site.





the property (looking east). Vegetation in the surrounding area consists of introduced and walawi and ohia trees).



FIGURE 13
Site Photographs

SANDWICH ISLES COMMUNICATIONS, INC.
Hilo Central Office Complex

January 2000



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The construction of the project will provide short-term employment opportunities. Positive economic impacts from construction related employment will result from the proposed project. The new facility will generate two to three long-term jobs to staff the new central office complex.

4.2.7 Economic Factors/Government Revenues

Currently the project site generates no income but it requires little in the way of government services.

Potential Impacts and Mitigative Measures

DHHL, as the landowner, will commit the one-acre parcel toward the project, and Sandwich Isles Communications, Inc., through funding provided by the Rural Utilities Services, a federal program, will expend internal funds to construct the project. Sales taxes on building materials will be generated during construction. Also, those employed during construction will generate income taxes. In addition, the proposed uses supplement and enhance social services provided by the State government.

4.2.8 Infrastructure

Infrastructure improvements necessary for the project will be provided by connecting to existing infrastructure and utility easements.

4.2.8.1 Roadways

The project site is accessed directly from Railroad Avenue via Puainako Road or Maka'ala Street which connects to Kanoelehua Avenue. A new driveway connection will be constructed and connected to Railroad Avenue.

Potential Impacts and Mitigative Measures

Traffic will be generated during the short-term construction period however, over the long-term, the proposed facility will generate minimal traffic. The connection of the access driveway will be coordinated with the State or the County

4.2.8.2 Water System

Water service near the Pana'ewa Industrial Lots is provided by the County Department of Water Service (DWS). The water used in this area is supplied from the DWS 1.0 million gallon Puainako Reservoir located between Komohana and Kāwili Streets on Puainako Street. From this reservoir, a 19-inch transmission main runs along Puainako Street to Railroad Avenue, then a 12-inch line is used to service the local area.

This 12-inch line located along Railroad Avenue is the closest water service to the Pana'ewa Industrial Lots. An 8-inch line also is located along 'Auwae Road on the southern end of the Industrial Lots.

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Potential Impacts and Mitigative Measures

The estimated average daily demand for water for the project is anticipated to be similar to a single family dwelling unit, given the limited number of plumbing fixtures for the project. A request for a lateral connection for domestic service will be made to the Department of Water Supply's main which is located along Railroad Avenue.

4.2.8.3 Wastewater Treatment and Disposal

No municipal sewer service is provided in the area of the Pana'ewa Industrial Lots. Individual wastewater treatment systems are used to treat sewage and dispose of effluent. The State Department of Health has jurisdiction over the construction of individual wastewater treatment systems and disposal of the effluent.

Potential Impacts and Mitigative Measures

The Hilo Central Office Complex is estimated to generate approximately 60 gallons per day (gpd) of effluent (less than a single family residence) since the facility will generally be unmanned. Sewage will be handled by an on-site septic system with a 1,000-gallon capacity in compliance with State of Hawai'i Department of Health regulations.

4.2.8.4 Drainage Facilities

No municipal drainage system is available in the area of the Pana'ewa Industrial Lots. Surface runoff from individual lots is normally routed to either dry wells for disposal or onto nearby streets. Depending upon the size of the lot, there may be more than one dry well located on the property.

Potential Impacts and Mitigative Measures

The proposed development will increase runoff because impermeable surfaces from the construction of buildings and the paved parking lot. The remainder of the lot will be graveled for ease of maintenance. The frontage of the site and the central office building will be grassed and landscaped with the native hala (pandanus). Additional drainage runoff will be directed to a drywell and to landscaped areas within the project area.

4.2.8.5 Utilities

Overhead electrical and other communications utilities services for the project are available from the utility distribution system along Railroad Avenue. Electric power is available to the site by Hawai'i Electric Light Company, Inc. (HELCO) overhead utility lines along Railroad Avenue. Hook-ups to the water are available at stub-out connectors in Railroad Avenue.

Potential Impacts and Mitigative Measures

Electrical utilities services will be provided to the project by overhead service. Two or three pole mounted fixtures for site lighting will be installed at the entrance and along side the buildings. The construction plans will be provided to the County for review and approval and will be in compliance with the specifications of the County.

SANDWICH ISLES COMMUNICATIONS, INC.
HILO CENTRAL OFFICE COMPLEX
Final Environmental Assessment

4.2.9 Solid Waste Disposal

Construction material debris will be recycled or disposed of at a County approved landfill.

It is anticipated that most of the solid waste generated from the proposed facility will consist of general office products. Solid waste generated during the operation of the project will be disposed of at a County approved landfill.

4.2.10 Public Services

4.2.10.1 Fire Protection

Fire protection is provided by the County of Hawai'i Fire Department, Kawaihine Station located approximately five minutes from the Pana'ewa project site. Existing fire hydrants are located on Railroad Avenue.

Potential Impacts and Mitigative Measures

In the unlikely event of an onsite fire, the County's existing fire protection services will respond as necessary. There may be an occasional and unavoidable demand for fire protection services associated with the project. The applicant will advise the Fire Department of project implementation and phasing to permit adequate planning and advance notice of project completion. Existing levels of fire protection services and facilities are considered adequate to service the proposed project.

4.2.10.2 Police Protection

Police protection services in the Hilo area are provided from the County of Hawai'i Police Department located at its main station at 349 Kapi'olani Street approximately 10 minutes from the Pana'ewa project site. In addition, 24-hour motor patrol is available in the area of project.

Potential Impacts and Mitigative Measures

There may be an occasional and unavoidable demand for police protection services associated with the project, however, it is anticipated that the existing police service will be adequate and will not be adversely affected by the proposed development. The Central Office building and other proposed structures will be designed with built-in security measures (e.g. intrusion door alarms).

4.2.10.3 Health Care Services

Various health care services in Hilo provide primary patient care to adults, women, and children. All facilities currently provide out-patient care. The nearest hospital is Hilo Hospital on Waiānuenu Avenue approximately 10 to 15 minutes from the project location by ambulance service. Ambulance service is available from the nearest fire station.

Potential Impacts and Mitigative Measures

The proposed facility is unlikely to impact health care and emergency services.

**SANDWICH ISLES COMMUNICATIONS, INC.
HILO CENTRAL OFFICE COMPLEX
Final Environmental Assessment**

4.2.10.4 Proximity of Other Services

The project is located in an industrial zoned area with commercial and transportation services located in the nearby region, thereby providing better efficiency and economies of scale.

SANDWICH ISLES COMMUNICATIONS, INC.
HILO CENTRAL OFFICE COMPLEX
Final Environmental Assessment

5.0 ALTERNATIVES TO THE PROPOSED ACTION

In compliance with the provisions of Title 11, Department of Health, Chapter 200, Environmental Impact Statement Rules, Section 11-200-17(f), *the "known feasible" alternatives to the proposed project are limited to those that would allow the objectives of the project to be met, while minimizing potential adverse environmental impacts.* As such, several alternatives have been evaluated.

5.1 NO ACTION ALTERNATIVE

The "no action" alternative would result in the parcel remaining in its current vacant state which would yield little or no benefit to either the licensee (SIC), the licensor (DHHL), DHHL beneficiaries, or the County or the State, and would curtail SIC's options to provide expanded telephone services in East Hawai'i. The no action alternative would also preclude SIC from meeting its program objectives and would deprive the County and the State from the tax revenues that would be derived from the construction of the proposed Hilo Central Office Complex and in the course of providing telephone services. Moreover, the no action alternative will not accomplish the desired goal of optimally serving the beneficiaries of the Department of Hawaiian Home Lands with telephone service.

5.2 OTHER STATE LANDS

The State of Hawai'i Department of Land and Natural Resources (DLNR) and the DHHL own other tracts of land in the near vicinity and the region which are utilized for commercial, industrial and homesteading purposes. The DLNR industrial lots are situated primarily within two areas, the Kanoiehua Industrial Lots and Hilo Industrial Development. Within these two mature projects there are approximately 60 industrial leases in effect encompassing about 40 acres according to the market study for the Pana'ewa Industrial Lots Master Plan (Wilson Okamoto & Associates 1991).

The other industrial area in the Hilo area is the DHHL Kaei Hana 1 Industrial Subdivision and other industrial lots east of Kanoiehua and west of Railroad Avenue. There are approximately 50 industrial leases within Kaei Hana Industrial Subdivision covering approximately 53.7 acres and 5 leases covering 57.8 acres in the Pana'ewa area.

5.3 ALTERNATIVE INDUSTRIAL PARKS

The W.H. Shipman Industrial Park, located at Kea'au, is approximately seven miles east of Hilo was also considered as a potential site. However, the distance from Hilo and added costs associated with the distance ruled out this location.

6.0 DETERMINATION, FINDINGS, AND REASONS FOR SUPPORTING DETERMINATION

To determine whether the proposed action may have a significant impact on the environment, every phase and expected consequences, both primary and secondary, and the cumulative as well as short- and long-term effects have been evaluated. Based on the analyses performed and research evaluated, a finding of no significant impact is anticipated as summarized in this section.

6.1 SIGNIFICANCE CRITERIA

According to the Department of Health Rules (11-200-12), an applicant or agency must determine whether an action may have a significant impact on the environment, including all phases of the project, its expected consequences both primary and secondary, its cumulative impact with other projects, and its short and long-term effects. In making the determination, the Rules establish "Significance Criteria" to be used as a basis for identifying whether significant environmental impact will occur. According to the Rules, an action shall be determined to have a significant impact on the environment if it meets any one of the following criteria:

- (1) Involves an irrevocable commitment to loss or destruction of any natural or cultural resources;**

The proposed site has been historically disturbed and does not contain any significant natural resources. No features of archaeological or cultural significance are they likely to be found based on the lack of historical or prehistoric settlement and agricultural use of the site.

As such, the project should have "no effect" on historic resources. However, should any archaeologically significant artifacts, bones, or other indicators of previous on-site activity be uncovered during the construction phases of development, their treatment will be conducted in compliance with the requirements of the Department of Land and Natural Resources, Historic Preservation Division.

- (2) Curtails the range of beneficial uses of the environment;**

The project site is within an industrial zoned area. The construction of the proposed Hilo Central Office Complex facilities is consistent with and will implement the intent of the underlying County zoning and foreclose other uses, however, the proposed use will be beneficial to new HHL communities through the provision of telecommunications services. The site is vacant land surrounded by urban, and other industrial and agricultural uses.

- (3) Conflicts with the State's long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS; and any revisions thereof and amendments thereto, court decisions, or executive orders;**

The proposed project will not conflict with the environmental policies set forth in the State Plan and Chapter 344, *Hawai'i Revised Statutes*.

SANDWICH ISLES COMMUNICATIONS, INC.
HILO CENTRAL OFFICE COMPLEX
Final Environmental Assessment

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

The proposed project will have a positive impact on the social and economic environment by providing some short-term construction related jobs and two to three long-term employment positions in the Hilo area. The project will also provide modern, state-of-the-art telecommunication systems for use by DHHL beneficiaries, thereby providing for the economic and social welfare of the target group and the wider community.

(5) Substantially affects public health;

Impacts to public health may be temporarily affected by air and noise impacts during construction, however, these will be of a short-term duration, and insignificant, especially when weighed against the positive economic and social benefits associated with the project. The long-term operations of the Hilo Central Office Complex project will not have a significant impact on air and noise quality levels and will not generate pollutants that would impact the public health in the surrounding area.

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

The project will not induce future development or population changes since it does not provide excess infrastructure capacity, attract visitors or new residents, or generate significant new employment opportunities. It does provide a service to new HHL communities and the native Hawaiians who will reside therein. The project will not usurp the land use planning process but will instead help to implement County and State land use policies.

The infrastructure demands on roads, water, and sewer drainage systems are minimal and can be accommodated by the existing systems.

In addition, the construction and operation of the SIC Hilo Central Office Complex will generate new sources of direct and indirect revenue for individuals, the County of Hawai'i, and the State of Hawai'i by providing construction employment opportunities, and new long-term jobs (two to three positions). Indirect employment in a wide range of service-related industries will also be created from construction during project development.

(7) Involves a substantial degradation of environmental quality;

The proposed development will utilize disturbed vacant land and is not expected to degrade environmental quality on-site or in the surrounding neighborhood. The property was previously extensively modified and today lacks any significant natural resources. Appropriate best management practices will provide safeguards for protection of water quality during the short-term construction period. There will be no significant degradation of air, water, or noise quality.

CORRECTION

THE PRECEDING DOCUMENT(S) HAS
BEEN REPHOTOGRAPHED TO ASSURE
LEGIBILITY
SEE FRAME(S)
IMMEDIATELY FOLLOWING

SANDWICH ISLES COMMUNICATIONS, INC.
HILO CENTRAL OFFICE COMPLEX
Final Environmental Assessment

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

The proposed project will have a positive impact on the social and economic environment by providing some short-term construction related jobs and two to three long-term employment positions in the Hilo area. The project will also provide modern, state-of-the-art telecommunication systems for use by DHHL beneficiaries, thereby providing for the economic and social welfare of the target group and the wider community.

(5) Substantially affects public health;

Impacts to public health may be temporarily affected by air and noise impacts during construction, however, these will be of a short-term duration, and insignificant, especially when weighed against the positive economic and social benefits associated with the project. The long-term operations of the Hilo Central Office Complex project will not have a significant impact on air and noise quality levels and will not generate pollutants that would impact the public health in the surrounding area.

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

The project will not induce future development or population changes since it does not provide excess infrastructure capacity, attract visitors or new residents, or generate significant new employment opportunities. It does provide a service to new HHL communities and the native Hawaiians who will reside therein. The project will not usurp the land use planning process but will instead help to implement County and State land use policies.

The infrastructure demands on roads, water, and sewer drainage systems are minimal and can be accommodated by the existing systems.

In addition, the construction and operation of the SIC Hilo Central Office Complex will generate new sources of direct and indirect revenue for individuals, the County of Hawai'i, and the State of Hawai'i by providing construction employment opportunities, and new long-term jobs (two to three positions). Indirect employment in a wide range of service-related industries will also be created from construction during project development.

(7) Involves a substantial degradation of environmental quality;

The proposed development will utilize disturbed vacant land and is not expected to degrade environmental quality on-site or in the surrounding neighborhood. The property was previously extensively modified and today lacks any significant natural resources. Appropriate best management practices will provide safeguards for protection of water quality during the short-term construction period. There will be no significant degradation of air, water, or noise quality.

SANDWICH ISLES COMMUNICATIONS, INC.
HILO CENTRAL OFFICE COMPLEX
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- (8) Is individually limited but cumulatively has considerable effect on the environment, or involves a commitment for larger actions;**

The project is small in scale (one acre) when contrasted with the overall land area available and appropriately zoned for general industrial use within the DHHL Pana'ewa Industrial Lots and within the other industrial parks in the Hilo region.

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

There are no endangered or threatened flora or fauna species associated with the site.

- (10) Detrimentially affects air or water quality or ambient noise levels;**

The proposed project will not include any significant sources of air emissions or noise levels that would violate existing Federal or State standards. Wastewater flows will be disposed via an approved septic system. The drainage system will be designed in compliance with County and State regulations to protect the groundwater quality and not adversely impact downstream properties. Sitework will be in accordance with grading permit conditions to minimize erosion, non-point source pollution, and dust.

- (11) Affects or is likely to suffer damage by being located in an environmentally sensitive area, such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, freshwater, or coastal waters.**

The project is located approximately four miles from the shore and is not located within a flood plain or other environmentally sensitive area. Shoreline, valleys, or ridges will not be impacted by the development.

- (12) Substantially affects scenic vistas and view planes identified in county or state plans or studies;**

Proposed structures will be designed and built to conform to the requirements of the County zoning and building codes and will not affect any identified scenic vistas and view planes.

- (13) Requires substantial energy consumption.**

The construction and operation of the Hilo Central Office Complex will not require substantially more energy consumption than would be required for projects of a similar type and scale. Energy conservation techniques, such as use of day lighting and energy efficient lighting, waste heat recovery with centralized air-conditioning, and the use of proper building orientation and landscaping, where practical, to reduce heat loads, will be evaluated as part of the facility planning and design of the proposed facilities.

**SANDWICH ISLES COMMUNICATIONS, INC.
HILO CENTRAL OFFICE COMPLEX
Final Environmental Assessment**

6.2 PRELIMINARY DETERMINATION

On the basis of the above criteria, and the discussion of impacts and mitigative measures contained in this document, it is anticipated that the proposed projects will not have a significant effect on the environment.

**SANDWICH ISLES COMMUNICATIONS, INC.
HILO CENTRAL OFFICE COMPLEX
Final Environmental Assessment**

7.0 COMMENTS AND RESPONSES

The public comment period as required by Chapter 343, Hawai'i Revised Statutes, on the Draft EA resulted in the following responses from governmental agencies. The comments and our responses are included in this section.

7.1 COMMENTS RECEIVED ON THE DRAFT EA

County of Hawai'i

Planning Department
Police Department

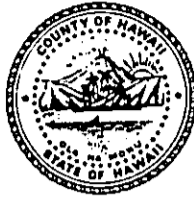
State of Hawai'i

Department of Transportation
Office of Environmental Quality Control

7.2 DRAFT EA COMMENT LETTERS AND THE APPLICANT'S RESPONSES

The following section includes letters responding to the Draft EA and the Applicant's responses.

Stephen K. Yamashiro
Mayor



Virginia Goldstein
Director

Russell Kokubun
Deputy Director

County of Hawaii

PLANNING DEPARTMENT

25 Aupuni Street, Room 109 • Hilo, Hawaii 96720-4252
(808) 961-8288 • Fax (808) 961-8742

January 27, 2000

Mr. Llewellyn Biven
Sandwich Isles Communications, Inc.
Pauahi Tower, Suite 2750
Honolulu, HI 96813

Dear Mr. Biven:


**Draft Environmental Assessment for a Central Office Building,
Telecommunications Tower/Antenna, and Ancillary Office Building
TMK: 2-1-25: Por. 90 (Department of Hawaiian Home Lands)**

Thank you for your letter dated January 14, 2000, transmitting a copy of the preliminary draft environmental assessment (DEA) for the above-described project. The landowner of the parcel is the Department of Hawaiian Home Lands (DHHL), and the County has no jurisdiction on lands owned by the DHHL. However, we have reviewed the information provided and offer the following comments:

- County Zoning MG-1a (General Industrial)
- SLU (State Land Use) Urban
- County General Plan Industrial
- Special Management Area The subject property is not situated within the SMA

Thank you for the opportunity to provide comments. Should you have any questions, please contact our department at 961-8288.

Sincerely,


VIRGINIA GOLDSTEIN
Planning Director

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Mr. Llewellyn Biven
Sandwich Isles Communications, Inc.
Page 2
January 27, 2000

c: Genevieve Salmonson, OEQC
Linda Chinn, DHHL
✓Yukie Ohashi, PBR Hawaii (Honolulu)



LAND PLANNING
LANDSCAPE ARCHITECTURE
ENVIRONMENTAL STUDIES

February 22, 2000

Virginia Goldstein, Planning Director
County of Hawaii
Planning Department
25 Aupuni Street, Room 109
Hilo, Hawaii 96720-4252

Dear Ms. Goldstein:

We are responding to your letter dated January 27, 2000 on behalf of Sandwich Isles Communications, Inc.

Thank you for participating in the environmental review process.

Sincerely yours,

PBR HAWAII

A handwritten signature in black ink, appearing to read 'Yukie Ohashi', written over a horizontal line.

Yukie Ohashi
Environmental Planner

c: Mr. Llewellyn Biven, Sandwich Isles Communications, Inc.

Wm. Frank Brandt • Thomas S. Witten • R. Stan Duncan • Russell Y. J. Chung

HONOLULU OFFICE

1001 BISHOP STREET, PACIFIC TOWER, SUITE 650, HONOLULU, HAWAII 96813-3429
TELEPHONE: (808) 521-5631 FAX: (808) 523-1402 EMAIL: pbrho@aloha.net

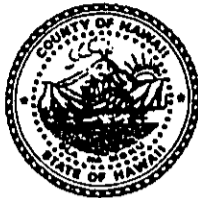
WAILUKU OFFICE

2123 KAOHUA STREET, WAILUKU, HAWAII 96793-2204
TELEPHONE: (808) 242-2878 FAX: (808) 242-2902

HILO OFFICE

101 AUPUNI STREET, HILO LAGOON CENTER, SUITE 310, HILO, HAWAII 96720-4276
TELEPHONE: (808) 961-3333 FAX: (808) 961-4989

Stephen K. Yamashiro
Mayor

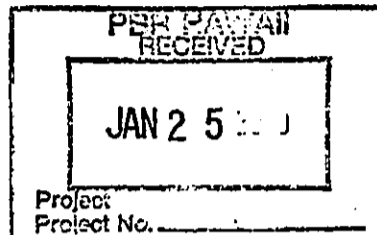


Wayne G. Carvalho
Police Chief

James S. Correa
Deputy Police Chief

County of Hawaii
POLICE DEPARTMENT

349 Kapiolani Street • Hilo, Hawaii 96720-3998
(808) 935-3311 • Fax (808) 961-2702



January 24, 2000

Mr. Llewellyn Biven
Sandwich Isles Communications, Inc.
Pauahi Tower, Suite 2750
1001 Bishop Street
Honolulu, HI 96813

Dear Mr. Biven:

SUBJECT: SANDWICH ISLES COMMUNICATIONS, INC.
HILO CENTRAL OFFICE COMPLEX
TAX MAP KEY: 2-1-25: 90 (PORTION)

Staff has reviewed the draft Environmental Assessment for the above-referenced proposed project and has no comments or objections to offer at this time.

Thank you for the opportunity to comment.

Sincerely,

WAYNE G. CARVALHO
POLICE CHIEF


THOMAS J. HICKCOX
ASSISTANT POLICE CHIEF
FIELD OPERATIONS BUREAU

FHR:lk

cc: Office of Environmental Quality Control
Department of Hawaiian Home Lands
~~PER HAWAII~~



LAND PLANNING
LANDSCAPE ARCHITECTURE
ENVIRONMENTAL STUDIES

February 22, 2000

Thomas J. Hickcox, Assistant Police Chief
Police Department
County of Hawaii
349 Kapiolani Street
Hilo, Hawaii 96720-3998

Dear Mr. Hickcox:

We are responding to your letter dated January 24, 2000 on behalf of Sandwich Isles Communications, Inc.

Thank you for participating in the environmental review process.

Sincerely yours,

PBR HAWAII

A handwritten signature in black ink, appearing to read 'Yukie Ohashi', written over the typed name.

Yukie Ohashi
Environmental Planner

c: Mr. Llewellyn Biven, Sandwich Isles Communications, Inc.

Wm. Frank Brandt • Thomas S. Witten • R. Stan Duncan • Russell Y. J. Chung

HONOLULU OFFICE

1101 BISHOP STREET, PACIFIC TOWER, SUITE 650, HONOLULU, HAWAII 96813-3429
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TELEPHONE: (808) 961-3335 FAX: (808) 961-4989

BENJAMIN J. CAYETANO
GOVERNOR



KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097
February 18, 2000

IN REPLY REFER TO:
STP 8.9418

Mr. Llewellyn Biven
Sandwich Isles Communications, Inc.
Pauahi Tower, Suite 2750
1001 Bishop Street
Honolulu, Hawaii 96813

Dear Mr. Biven:

Subject: Sandwich Isles Communications, Inc.
Hilo Central Office Complex
Draft Environmental Assessment (DEA)
TMK: 2-1-25: 90 (portion)

Thank you for your transmittal requesting our review of the subject project.

Due to the nature of the proposed development and its close proximity to the Hilo International Airport the applicant should submit a Federal Aviation Administration (FAA) Form 7460-1 Notice of Proposed Construction or Alteration to the FAA, Honolulu District Office.

Please contact our Airports Division, Planning Branch at 838-8810 should you have any questions.

We appreciate the opportunity to provide comments.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Kazu Hayashida".

KAZU HAYASHIDA
Director of Transportation

c: Ms. Genevieve Salmonson, Office of Environmental Quality Control
Ms. Linda Chinn, Department of Hawaiian Home Lands
Ms. Yukie Ohashi, PBR Hawaii



LAND PLANNING
LANDSCAPE ARCHITECTURE
ENVIRONMENTAL STUDIES

February 23, 2000

Kazu Hayashida, Director of Transportation
State of Hawaii
Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813-5097

Dear Mr. Hayashida:

We are responding to your letter dated February 18, 2000 on behalf of Sandwich Isles Communications, Inc.

The applicant will submit a Federal Aviation Administration (FAA) Form 7460-1 Notice of Proposed Construction or Alteration to the FAA, DOT Honolulu District Office for your review prior to construction.

Thank you for participating in the environmental review process.

Sincerely yours,

PBR HAWAII

A handwritten signature in black ink, appearing to read 'Yukie Ohashi', is written over the typed name.

Yukie Ohashi
Environmental Planner

c: Mr. Llewellyn Biven, Sandwich Isles Communications, Inc.

Wm. Frank Brandt • Thomas S. Witten • R. Stan Duncan • Russell Y. J. Chung

HONOLULU OFFICE

1001 BISHOP STREET, PACIFIC TOWER, SUITE 650, HONOLULU, HAWAII 96813-3429
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HILO OFFICE

101 AUPUNĪ STREET, HILO LAGOON CENTER, SUITE 310, HILO, HAWAII 96720-1276
TELEPHONE: (808) 961-3333 FAX: (808) 961-1989

BENJAMIN J. CAYETANO
GOVERNOR



GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

236 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186

FEB 24 2000

February 22, 2000

Mr. Llewellyn Biven
Sandwich Isles Communications, Inc.
Pauahi Tower, Suite 2750
1001 Bishop Street
Honolulu, Hawai'i 96813

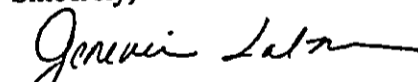
Dear Mr. Biven:

We have reviewed the draft environmental assessment for Sandwich Isles Communications' proposed Hilo Central Office Complex prepared by PBR Hawai'i and submitted to us by the Department of Hawaiian Home Lands. We offer the following comments for your consideration and response.

1. **Collocation of Future Telecommunications Antennae:** In Section 2.3.2.2., please discuss whether the other telecommunications antennae and microwave transmitters will be allowed to collocate on the monopole. If so, discuss possible visual impacts and interference impacts, if any.
2. **Green Building Guidelines:** Section 2.5 discusses sustainable building design. Please consider using the Environmental Council's sustainable building guidelines (enclosed) in the design of the facility.

Thank you for the opportunity to comment. If you have any questions, please call Leslie Segundo at 586-4185.

Sincerely,


GENEVIEVE SALMONSON
Director

Enclosure

c: Ms. Linda Chinn, Department of Hawaiian Home Lands
Ms. Yukie Ohashi, PBR Hawai'i



LAND PLANNING
LANDSCAPE ARCHITECTURE
ENVIRONMENTAL STUDIES

February 24, 2000

Genevieve Salmonson, Director
State of Hawaii
Office of Environmental Quality Control
235 South Beretania Street
Suite 702
Honolulu, Hawaii 96813

SUBJECT: SANDWICH ISLES COMMUNICATIONS, INC.
HILO CENTRAL OFFICE COMPLEX

Dear Ms. Salmonson:

We are responding to your letter dated February 22, 2000 on behalf of Sandwich Isles Communications, Inc. We offer the following responses to your comments:

1. **Collocation of Future Telecommunications Antennae.** There are no plans at the present time to allow other telecommunications antennae and microwave transmitters to collocate on the planned tower facility.
2. **Green Building Guidelines.** The Environmental Council's sustainable building guidelines will be considered in the design of the building.

Thank you for participating in the environmental review process.

Sincerely yours,

PBR HAWAII

Yukie Ohashi
Environmental Planner

c: Mr. Llewellyn Biven, Sandwich Isles Communications, Inc.

Wm. Frank Brandt • Thomas S. Witten • R. Stan Duncanson • Russell A. J. Chung

HONOLULU OFFICE

1001 BERTHOUD STREET, 14TH FLOOR, SUITE 1400, HONOLULU, HAWAII 96813-1429
TELEPHONE: (808) 521-5631 • FAX: (808) 521-4302 • EMAIL: plh@pbr.com

WAILUKU OFFICE

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HILO OFFICE

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TELEPHONE: (808) 961-3135 • FAX: (808) 961-0989

SANDWICH ISLES COMMUNICATIONS, INC.
HILO CENTRAL OFFICE COMPLEX
Final Environmental Assessment

8.0 REFERENCES

- Baker, H.L. et al., 1965. *Detailed Land Classification, Island of Hawai'i*. L.S. Land Study Bureau, University of Hawai'i.
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Final Environmental Assessment

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APPENDIX A

Manhole Specifications

5'-0" x 10'-6" FLAT WALL MANHOLE x 78" DEEP

NOTES:

- MANHOLE DESIGNED IN ACCORDANCE WITH AASHTO M-29-44 TRAFFIC BRIDGE LOADING USING 8,000 PSI COMPRESSIVE STRENGTH CONCRETE AND 60,000 PSI YIELD STRENGTH ASTM A-708 STEEL REINFORCEMENT PER CALCS. #30347.
- MANHOLE TO BE PLACED ON A MIN. 6" BASE OF CRUSHER RUN FOR EASE OF INSTALLATION AND EVEN LOAD DISTRIBUTION.
- LIMITS OF COVER OVER ROOF SECTION IS 1'-0" TO 3'-0".
- ALL WALLS AND CEILINGS SHALL BE PAINTED WHITE.

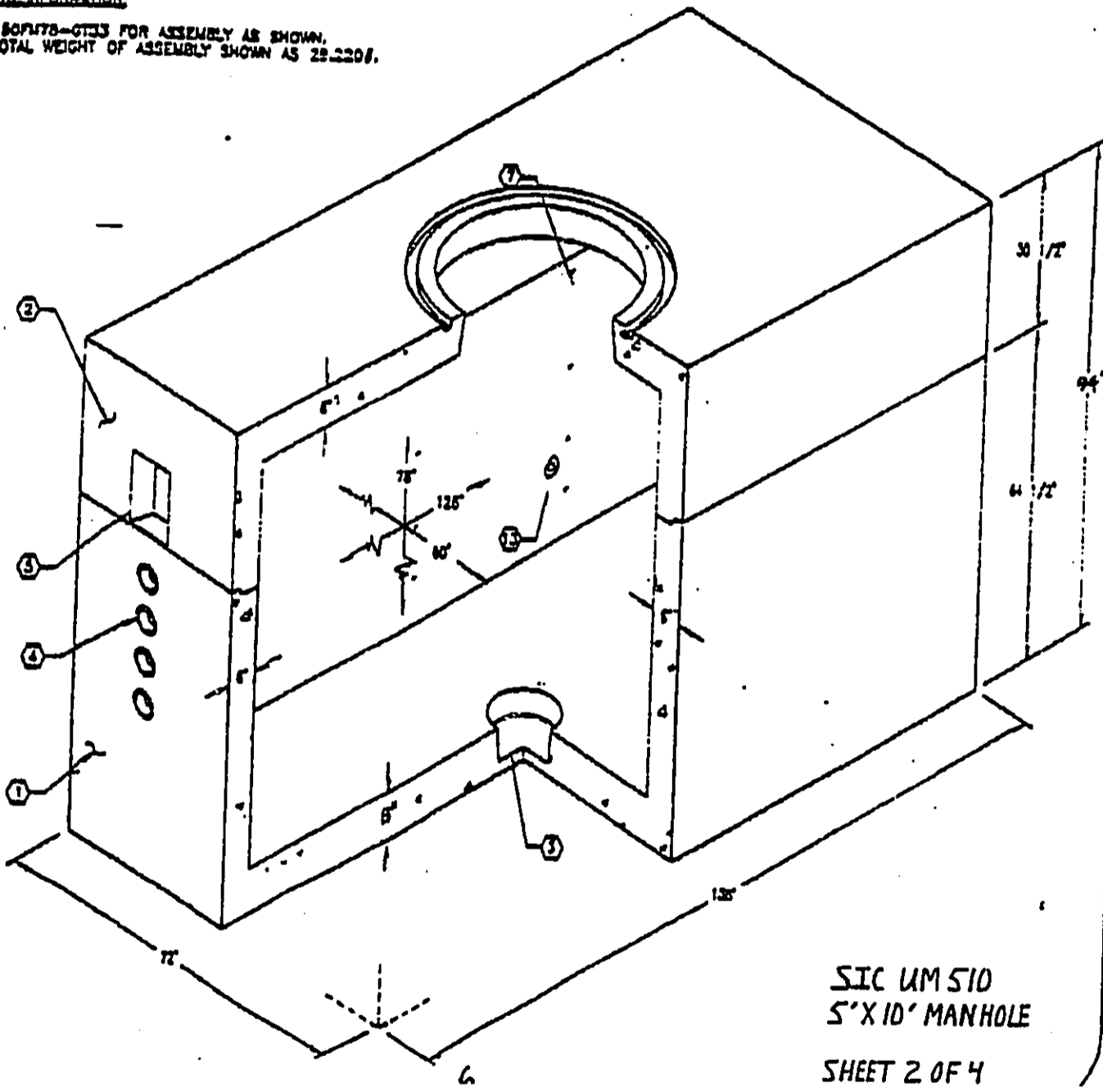
THE FOLLOWING MATERIAL TO BE SHIPPED WITH THE MANHOLE

- a) 7/8" x 1 3/4" GASKET (34 REQ'D.).
- b) 1/2" x 2" HEX HEAD PLATED BOLTS (40 REQ'D.).
- c) 1/2" x 1 1/4" HEX HEAD PLATED BOLTS (30 REQ'D.).
- d) 1/2" HEAVY HEX HEAD GALV. NUT (30 REQ'D.).
- e) 1/2" x 3/4" HEX HEAD PLATED BOLTS (20 REQ'D.).
- f) 1/4" FENDER WASHER PLATED (40 REQ'D.).
- g) BONDING RIBBON (28 FT.).
- h) 14 HOLE CABLE RACKS (8 REQ'D.).
- i) 32 HOLE CABLE RACKS (8 REQ'D.).
- j) 8 SUPPORTS (30 REQ'D.).
- k) 4-3383 LADDER STEPS (2 REQ'D.).
- l) 4-3800 LADDER 6" (1 REQ'D.).

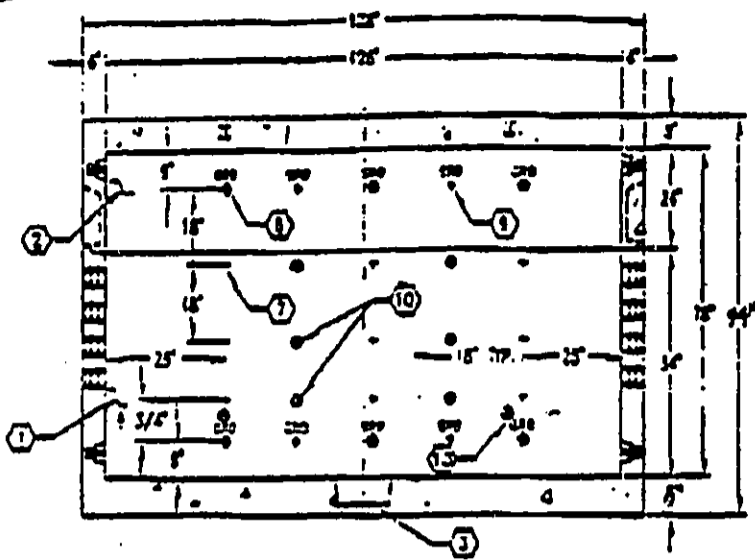
1. 450-224-33, 34" BOTTOM SECTION (450-191), WT. 18,200#.
2. 450-224-33, 26" ROOF SECTION (450-183), WT. 10,320#.
3. 12" x 12" DIA. SURP. x 8 1/2" DEEP (500-489), BOTTOM SECTION (1) CORE MTD.
4. 6" DIA. GREY TERMS (04502), LOCATE AS FOLLOWS: BOTTOM SECTION (18) SHELL MTD.
5. 7" x 12" K.O. x 4 1/2" DEEP (5000-490), DRAFT T=2" S1-E2=1" 8=0". ROOF SECTION (4) SHELL MTD.
6. 7/8" DIA. 3 3/8" GALV. FULL IRON (05-2182), BOTTOM SECTION (4) CORE MTD.; ROOF SECTION (4) CORE MTD.
7. + 1/2" PLASTIC RACKING INSERT. BOTTOM SECTION (16) CORE MTD. ROOF SECTION (8) CORE MTD.
8. 1/2" THRD. BRONZE INSERT BRAZED TO STRUCTURAL STEEL. "CR" SHALL BE STENCILED IN RED LETTERS ON THE CONCRETE ABOVE INSERT. BOTTOM SECTION (8) CORE MTD.; ROOF SECTION (8) CORE MTD.
9. 1/2" THRD. BRONZE INSERT W/TAL BRAZED TO STRUCTURAL STEEL. "CR" SHALL BE STENCILED IN RED LETTER ON THE CONCRETE ABOVE EACH INSERT. BOTTOM SECTION (4) CORE MTD.; ROOF SECTION (4) CORE MTD.
10. 1/4" P-15-T INSERT. BOTTOM SECTION (8) CORE MTD.; ROOF SECTION (4) CORE MTD.
11. 2 TON x 11" GALV. RISS FOR HANDLING. ROOF SECTION (4) SURFACE MTD.
12. 4 TON x 8 1/2" GALV. RISS FOR HANDLING. BOTTOM SECTION (4) SURFACE MTD.
13. 4 TON x 4 3/4" GALV. RISS FOR HANDLING. BOTTOM SECTION (4) CORE MTD.

ORDERING INFORMATION:

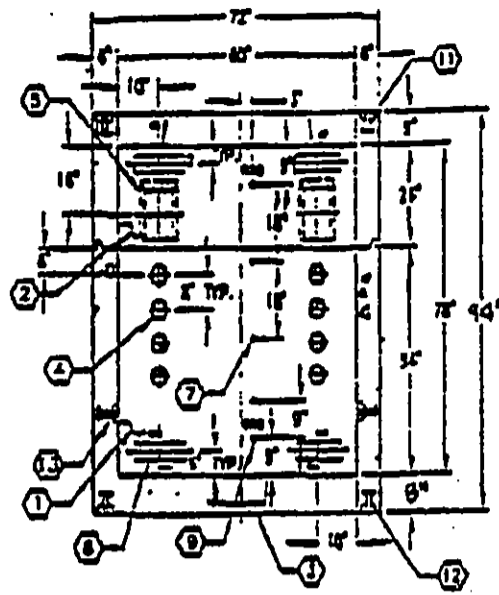
880P478-0713 FOR ASSEMBLY AS SHOWN.
TOTAL WEIGHT OF ASSEMBLY SHOWN AS 28,220#.



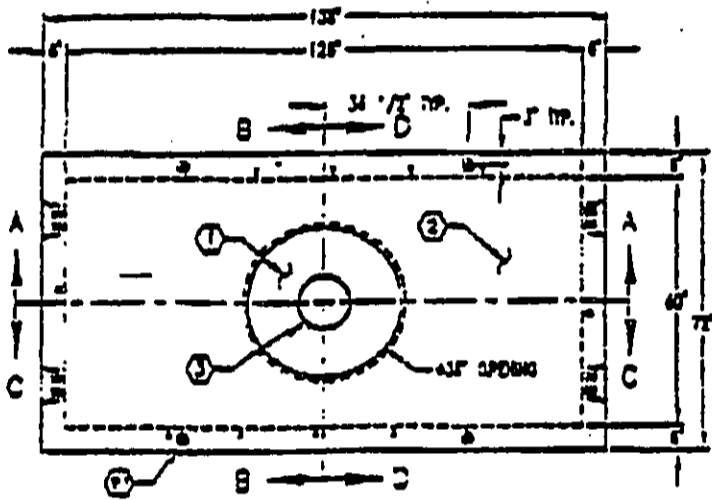
SIC UM 510
5' X 10' MANHOLE
SHEET 2 OF 4



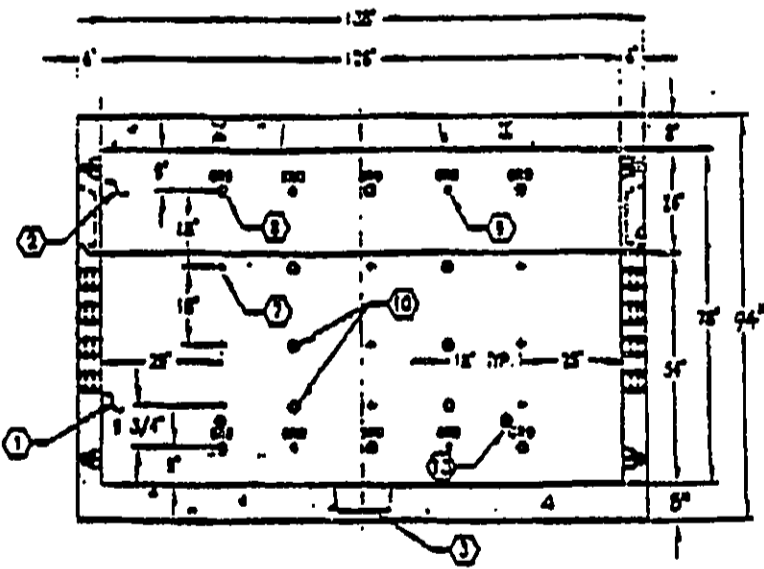
SECTION A-A



SECTION B-B

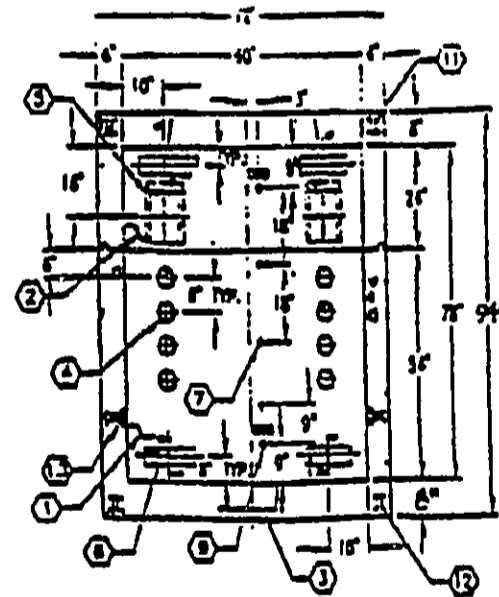


PLAN VIEW



SECTION C-C

SIC UM 510
5' X 10' MANHOLE



SECTION D-D

SHEET 4 OF 4