DEPARTMENT OF ENVIRONMENTAL SERVICES

CITY AND COUNTY OF HONOLULU

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JEREMY HARRIS
MAYOR

TIMOTHY E. STEINBERGER, P.E.
DIRECTOR

FRANK J. DOYLE, P.E.
DEPUTY DIRECTOR

IN REPLY REFER TO:
RE 02-031

February 12, 2002

Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control
State Office Tower
235 South Beretania Street, Room 702
Honolulu, Hawaii 96813-2437

Dear Ms. Salmonson:

Subject: Finding of No Significant Impact (FONSI) for the
Kawailoa Transfer Station Green Waste Recycling Improvements
Tax Map Key: 6-1-05: 18, (Oahu, Hawaii)

The City and County of Honolulu Department of Environmental Services has reviewed the comments received during the 30-day public comment period, which began on October 23, 2001. The department has determined that this project will have no significant environmental effect and has issued a Finding of No Significant Impact (FONSI) determination. Please publish a notice of this determination in the February 23, 2002, edition of *The Environmental Notice*.

We have enclosed four copies of the Final EA/FONSI and a completed OEQC Bulletin Publication Form. If you have any questions regarding the Final EA, please contact Wilma Namumnart at 527-5378 or the planning consultant, Group 70 International, Inc. (Cami Kloster) at 523-5866, ext. 148.

Sincerely,

John C. T. Lee

for TIMOTHY E. STEINBERGER
Director

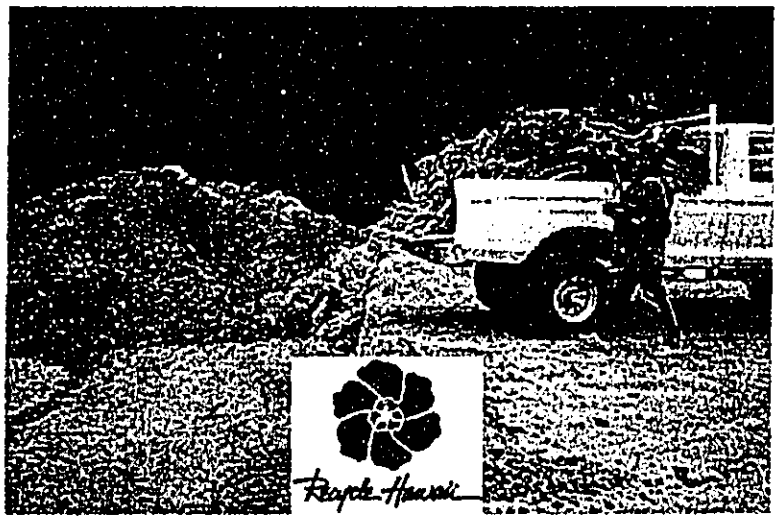
Enclosures

2002-02-23-OA-FEA

Kawailoa Transfer Station

Green Waste Recycling Improvements
Pūpūkea, Ko'olau Loa District, O'ahu, Hawai'i

TMK 6-1-05:18



Final Environmental Assessment and Application for Special Management Area Use Permit

Proposing Agency:

City and County of Honolulu
Department of Environmental Services

Prepared by:

Group 70 International, Inc.
Architecture • Planning • Interior Design • Environmental Services
925 Bethel Street, Fifth Floor
Honolulu, HI 96813

February 2002

Kawailoa Transfer Station

Green Waste Recycling Improvements
Pūpūkea, Ko'olau Loa District, O'ahu, Hawai'i

TMK 6-1-05:18

Final Environmental Assessment
and
Application for
Special Management Area Use Permit

This environmental document is prepared pursuant to Chapter 200 of Title 11, Administrative Rules, Department of Health, "Environmental Impact Statement Rules."

Proposing Agency:

City and County of Honolulu
Department of Environmental Services

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Group 70 International, Inc.
Architecture • Planning • Interior Design • Environmental Services
925 Bethel Street, Fifth Floor
Honolulu, HI 96813

February 2002

TABLE OF CONTENTS

LIST OF FIGURES

SECTION 1.0
GENERAL INFORMATION

The City and County of Honolulu Department of Environmental Services plans to provide needed recycling and refuse support to the North Shore community by improving the Kawailoa Transfer Station with green waste recycling facilities.

The project involves retrofitting the existing transfer station site to handle the collection and storage of green waste. The site will include a paved staging area; an extended tipping platform; a mulch distribution area and a new operations building. As proposed, this building will consist of approximately 300 square feet of office, restroom, equipment storage and circulation space.

The Kawailoa Transfer Station project site is located mauka of Kamehameha Highway at 62-180 Kawailoa Drive, Haleiwa, Hawaii (refer to Figure 1.1). The property is identified as TMK 6-1-05:18 and is currently owned and operated by the City and County of Honolulu. The parcel of land is located almost entirely within the Special Management Area (SMA).

CONTENT OF THE ENVIRONMENTAL ASSESSMENT

This report serves dual functions as a Special Management Area Use Permit (SMP) application and an Environmental Assessment (EA) for the proposed project. This EA has been prepared in accordance with the requirements of Chapter 343, Hawaii Revised Statutes and Hawaii Administrative Rules, Title 11, Department of Health, as the proposed action involves the use of public administered funds. It is anticipated that due to the limited impacts generated by this project, this Final Environmental Assessment will result in a Finding of No Significant Impact (FONSI).

This Environmental Assessment report is presented in eight sections. General information on the Kawailoa Transfer Station project is summarized in this section. It is followed by Section 2, which presents the proposed project, and Section 3, which describes the environment, affected by the project. Section 4 relates the project to the Coastal Zone Management (CZM) Program and Section 5 summarizes mitigative measures. Description and analysis of alternatives is given in Section 6. The anticipated determination and reasons for its believed outcome are given in Section 7. A list of references is provided in Section 8. Section 9 lists the agencies, organizations and individuals that received

copies of the EA. Written comments and responses received can be found in the Appendix A.

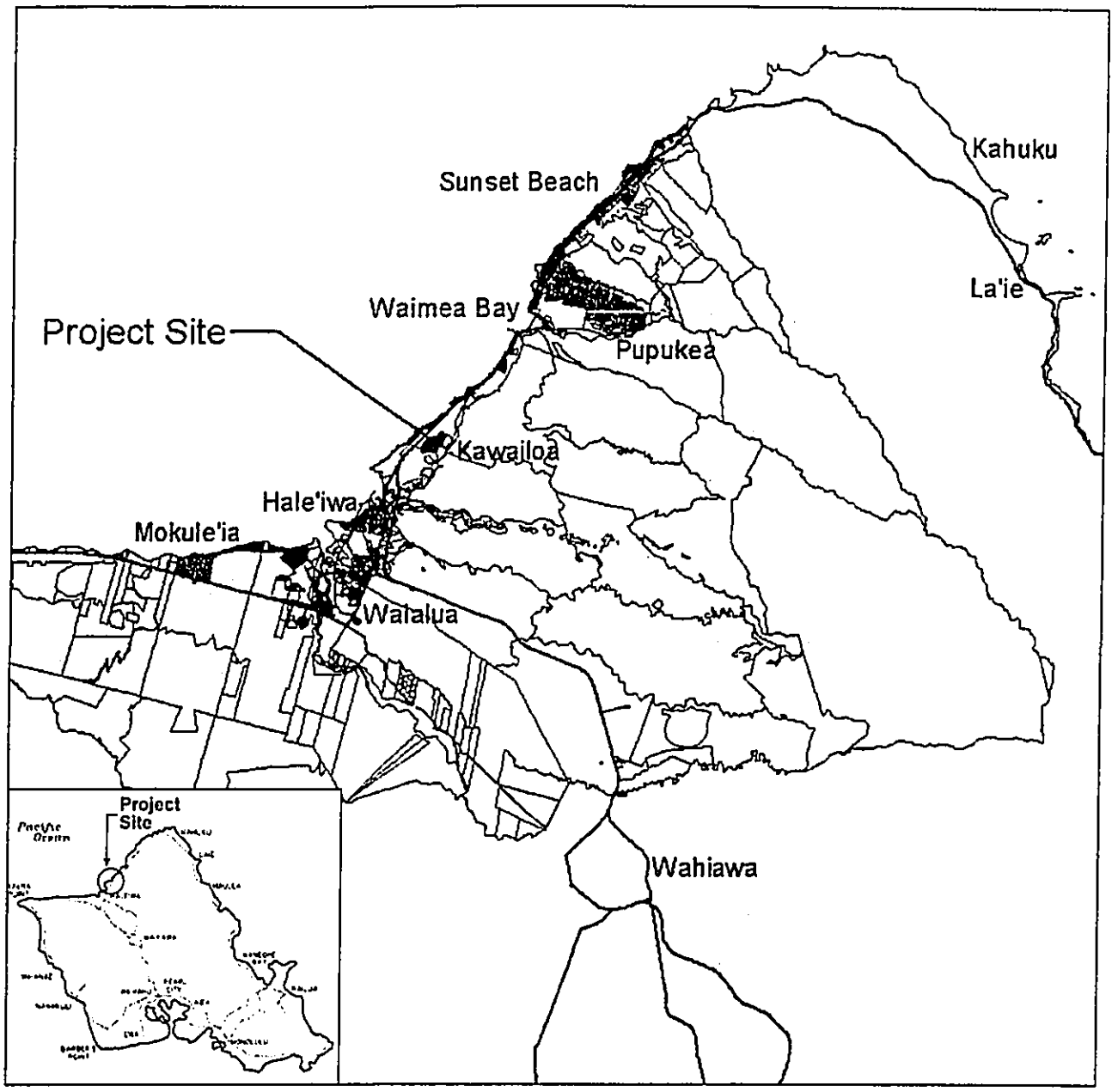


FIGURE 1.1
OAHU PROJECT LOCATION MAP

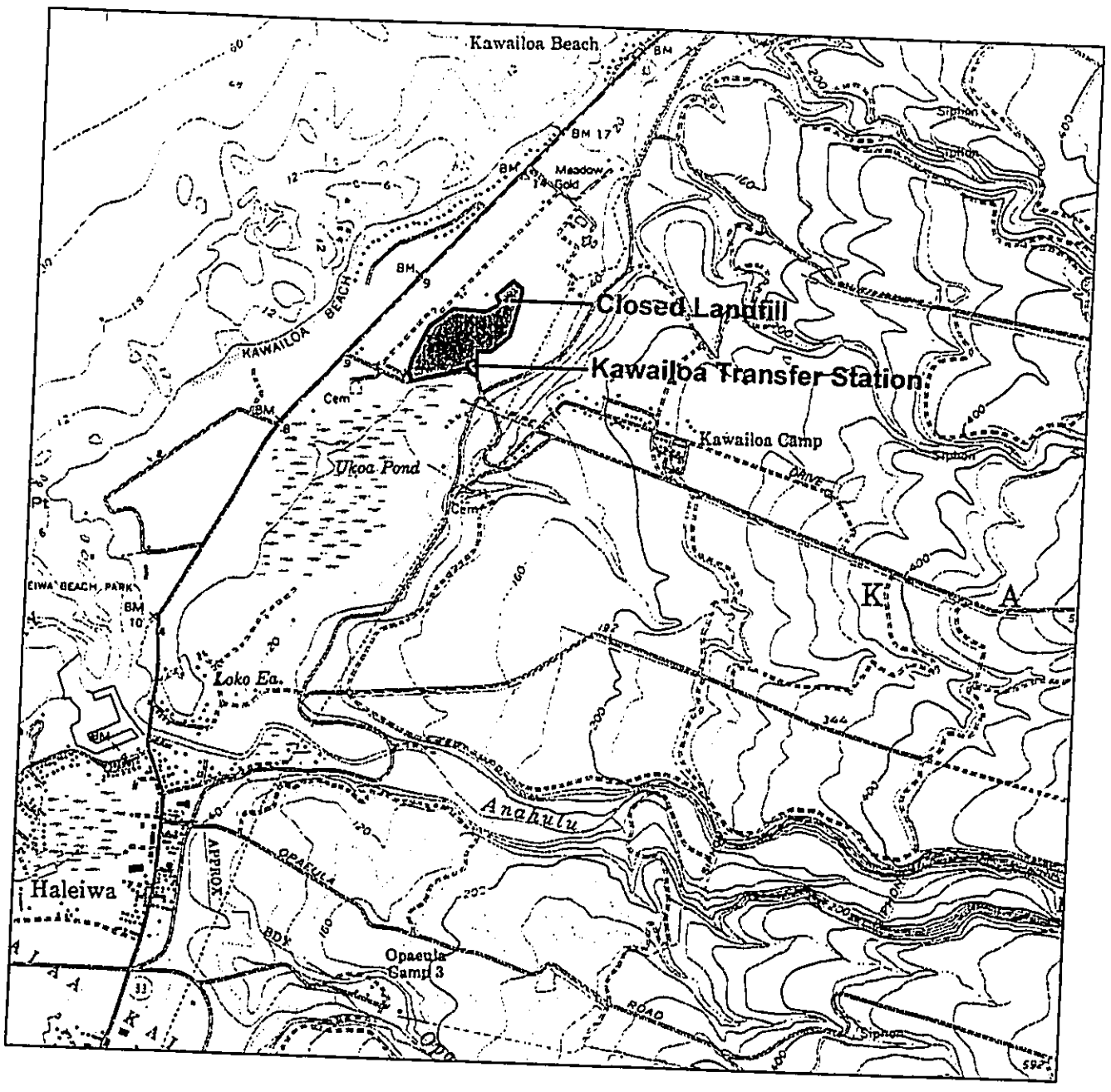


FIGURE 1.2
LOCATION/PROPERTY BOUNDARY MAP

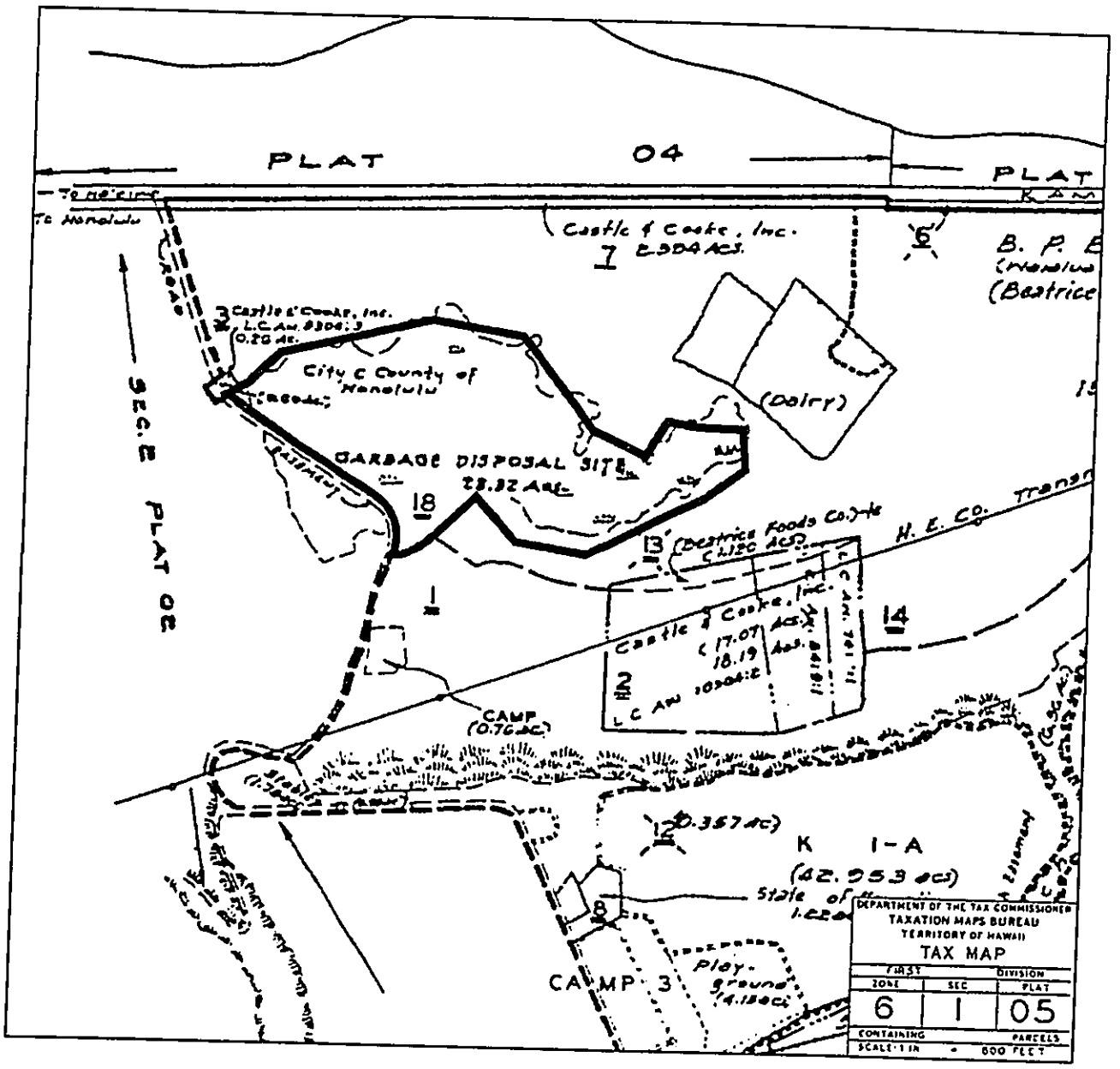


FIGURE 1.3
TAX MAP KEY MAP

Applicant / Land Owner:	City and County of Honolulu Dept. of Environmental Services 650 South King Street, 6th Floor Contact: Timothy Steinberger, Director Telephone: 808-527-6663
Recorded Fee Owner:	City and County of Honolulu Dept. of Environmental Services 650 South King Street, 6th Floor Contact: Timothy Steinberger, Director Telephone: 808-527-6663
Planning and Environmental Consultants:	Group 70 International, Inc. 925 Bethel Street, 5th Floor Honolulu, HI 96813 Contact: Jeffrey Overton, AICP Telephone: 808-523-5866 x104
Tax Map Key:	TMK 6-1-05:18 (Refer to Figure 1.3)
Project Area:	28.32 acres
Zoning Classification:	Agriculture 1 – Restricted
State Land Use Classification:	Agriculture – "A"

Agencies, Organizations and Individuals Contacted for this Assessment

- City and County of Honolulu, Dept. of Planning & Permitting
- City and County of Honolulu, Dept. of Design & Construction
- City and County of Honolulu, Dept. of Environmental Services
- Councilmember Rene Mansho (Reid Fujita, Council Aide)
- North Shore Neighborhood Board #27
- North Shore Vision Team, Vision Champion, Chip Hartman

The North Shore Vision Team identified the community's desire to have their green waste recycled and have a convenient location to obtain mulch. Throughout the process of developing the plans, the Vision Team has been involved. City and County of Honolulu departments were kept abreast of the project through informal meetings. The Neighborhood Board and Councilmember Rene Mansho's office have also received periodic communications on the project's progress.

SECTION 2.0
DESCRIPTION OF THE PROPOSED ACTION

2.1 GENERAL DESCRIPTION

2.1.1 Description of the Proposed Action

The City and County of Honolulu Department of Environmental Services, in collaboration with the City's North Shore Community Visioning Team intends to improve the Kawailoa Transfer Station to accommodate green waste recycling. The expansion will include extension of the existing tipping area, a mulch distribution area and a new transfer station operator's building.

Figure 2.2 depicts the conceptual site plan for the expanded transfer station. The general elements of the plan consist of the following programmed areas:

- Facility Manager's Building with office space, restroom, equipment storage and circulation – 328 square feet (see Figure 2.3);
- Paved parking, staging and circulation areas;
- Expanded tipping area including a new green waste transfer trailer receiving bay;
- A mulch distribution area of approximately 1550 square feet

Green waste will be received and transferred separately at the improved transfer station. A City contractor will chip the material and provide it for pick-up and distribution at sites around Oahu, including the improved Kawailoa facility.

The main traffic patterns at the transfer facility will not change with the improvements. City and County garbage and green waste trucks using the facility will continue to drive up onto the transfer station platform to unload into the transfer trailers. Residents who chose to bring excess garbage and yard waste to the transfer station are also directed up on the platform. Transfer trailers pull up at the lower edge of the platform to receive loads. The new pattern is residents who coming to pick-up mulch and will drive to the mulch pile's marked loading area.

2.1.2 Relation of the Parcel to the SMA

The project site is located almost entirely within the Special Management Area (SMA) as shown in Figure 2.1.

2.1.3 Location of the SMA

The Kawailoa Transfer Station is located mauka of Kamehameha Highway at 62-180 Kawailoa Road in Haleiwa, on the North Shore of Oahu. A location and property boundary map is shown in Figure 1.1 and a SMA map is shown in Figure 2.1. The Special Management Area encompasses Ukoa pond and includes the coastal areas leading to Kawailoa Beach.

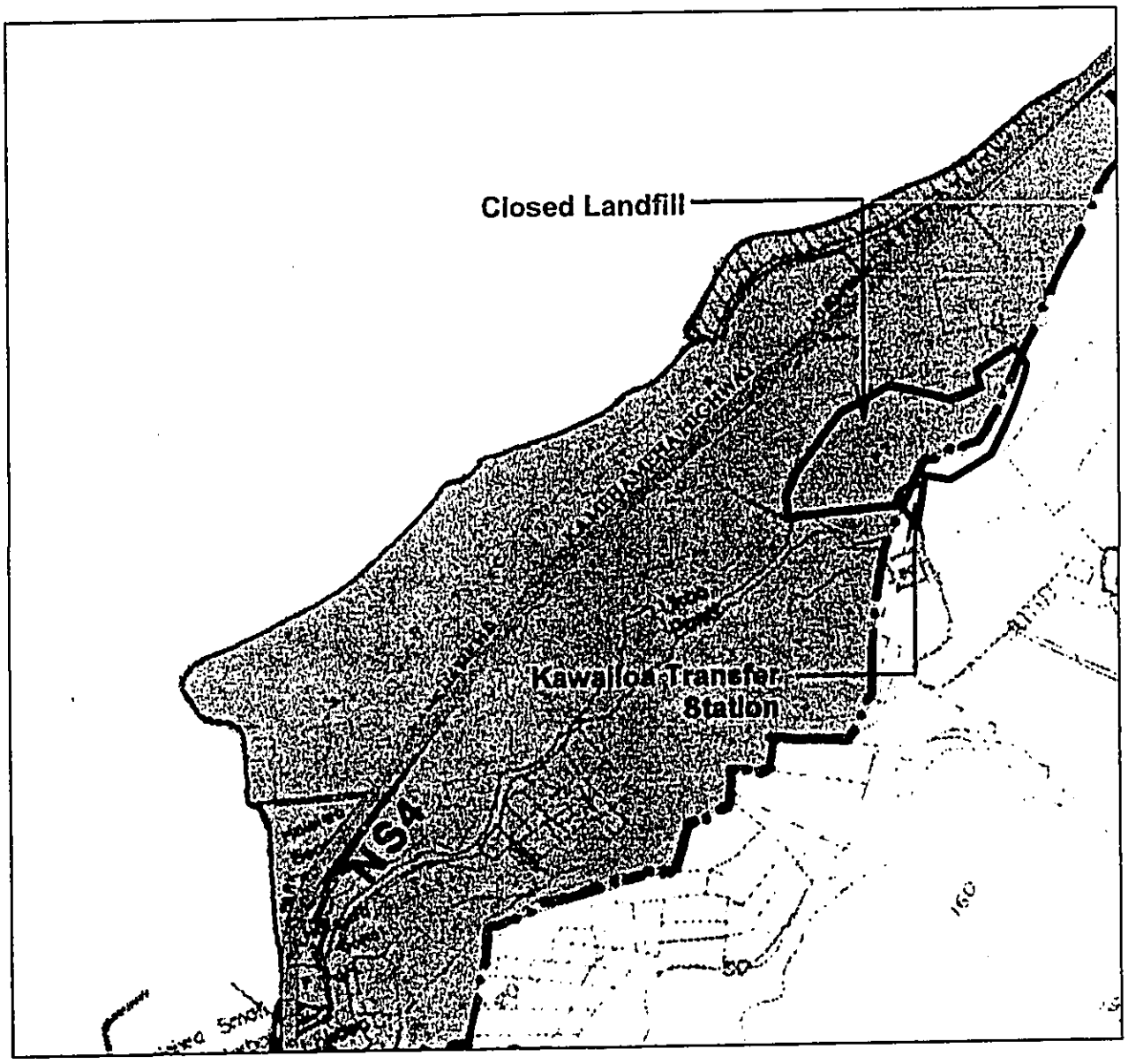
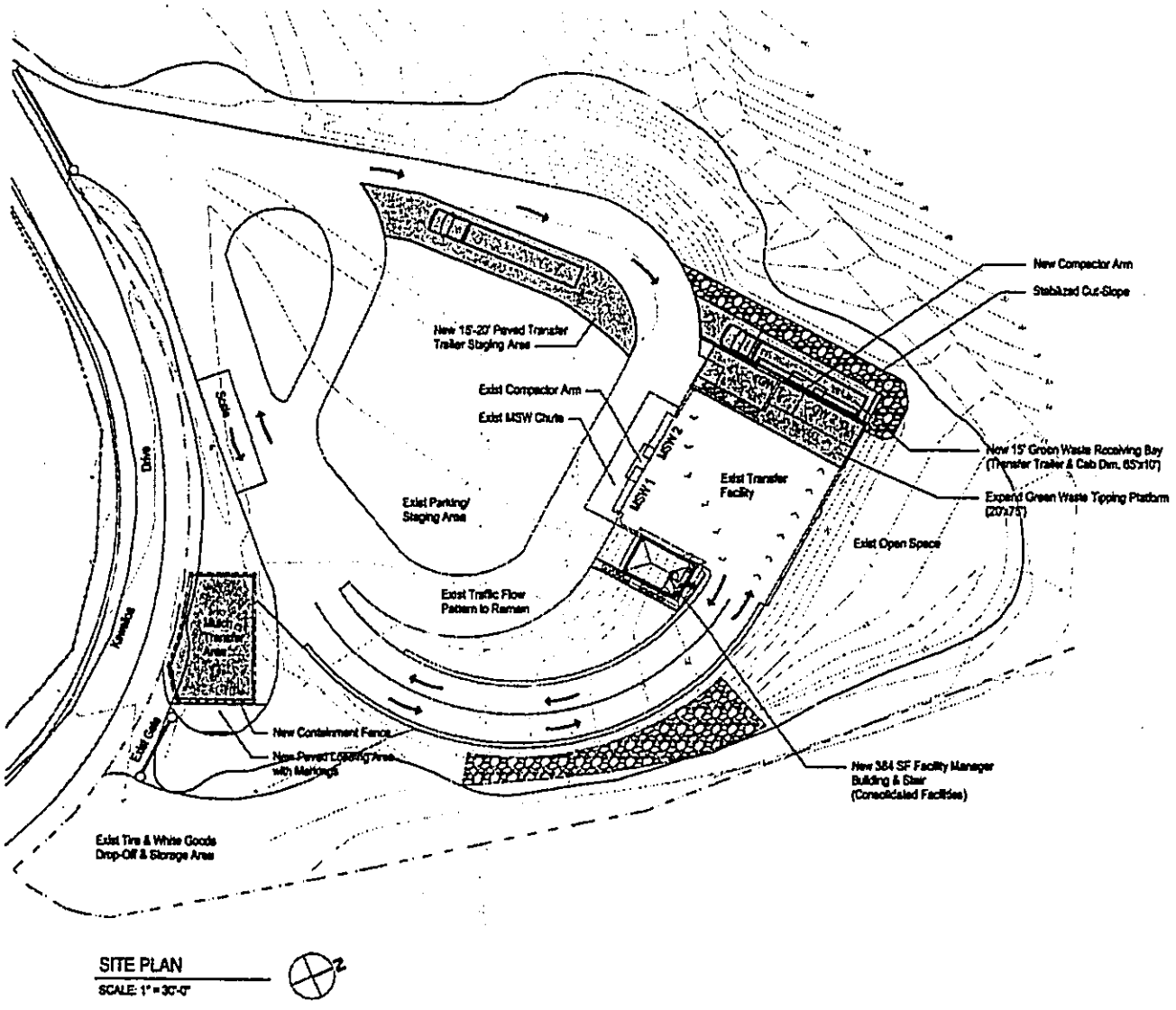
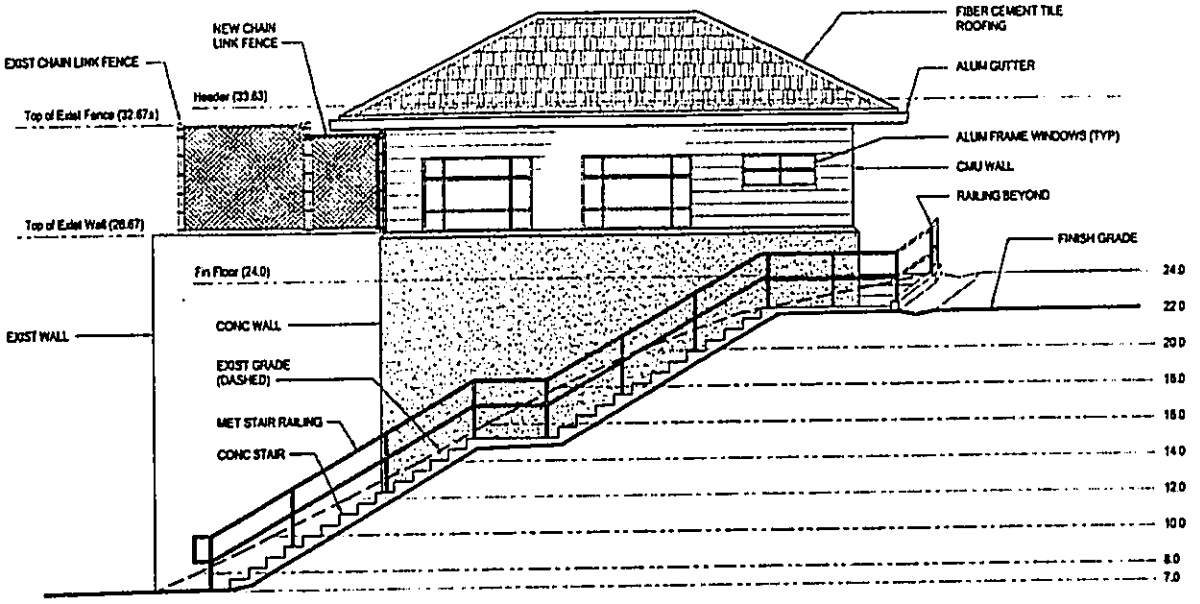


FIGURE 2.1
SPECIAL MANAGEMENT AREA

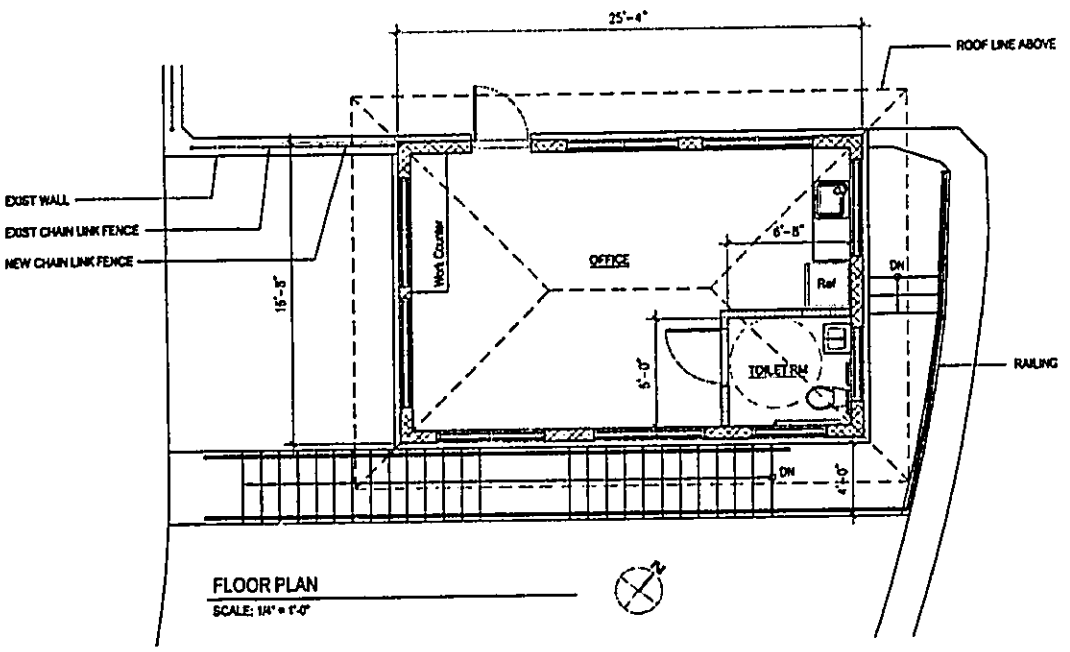


SITE PLAN
SCALE: 1" = 30'-0"

FIGURE 2.2
CONCEPTUAL SITE PLAN



SOUTH-EAST ELEVATION
SCALE: 1/4" = 1'-0"



FLOOR PLAN
SCALE: 1/4" = 1'-0"

FIGURE 2.3
THE FACILITY MANAGER'S BUILDING

2.1.4 Land Use Approvals Granted or Required

This section includes a description of the government approvals and permits required for improvement of the Kawailoa Transfer Station site. Applications will be filed in late 2001 or early 2002 with a construction start date dependent on funding sources.

A. Special Management Area Use Permit (SMP)

Approval of an SMP is required because the project site lies within the Special Management Area surrounding Ukoa Pond and the North Shore coastline. Processing and approval of the SMP requires review from the Department of Planning and Permitting (DPP), Planning Commission, and City Council. Prior to the DPP's acceptance of the SMP application, the acceptance of a Final Environmental Assessment (EA)/Negative Declaration is required.

B. Required Permits for Construction

Several other approvals will be required from the City and County of Honolulu and State of Hawaii to implement the proposed action, some of which will include:

- Building Permit for Buildings, Electrical, Plumbing, and Sidewalk/Driveway Work (City & County Department of Planning and Permitting)
- Grading, Grubbing and Stockpiling Permit (City & County Department of Facility Maintenance)
- National Pollutant Discharge Elimination System (NPDES) Permit – Stormwater (State Department of Health, City & County Department of Facility Maintenance)
- Water System (Board of Water Supply)
- Individual Wastewater System (Department of Health)

2.2 TECHNICAL CHARACTERISTICS

2.2.1 Use Characteristics

The expanded tipping area and collection bins; green waste storage and transfer area; paved parking and circulation areas; a mulch distribution area; and a new operators' building required for the transfer station expansion will all be developed within the SMA.

2.2.2 Physical Characteristics

Figure 2.2 shows the existing transfer station and proposed improvements. Site improvements will be limited to the developed portion of the site and will include an approximately 7,500 square feet of the collection, transfer, parking and circulation, storage and operational space.

The project involves the replacement of the existing operator's shelter with a new 300 square-foot operations building. This building will include office space, restroom, equipment storage and circulation. A new stairway leading to the office is also included within this segment of the site improvement. The new office is intended to provide a vantage point for the entire transfer station.

Construction will also involve expanding the tipping area, a new green waste transfer trailer bay and a parking/staging area for green waste collection trucks. Expansion of the tipping area is intended to provide the added space a green waste transfer area will require and the greater number of vehicles the tipping area will have to accommodate at a single time. A mulch distribution area of approximately 1550 square-feet will be improved on a currently vacant portion of the site for transfer of free mulch product to the community.

A. Site Utilities

The transfer facility is already being served by the BWS system. There is adequate capacity in the existing BWS system to serve fire pressure and service requirements for site improvements. The improved site will be served by existing power and sewer lines.

B. Construction Characteristics, Including Demolition

The site, located almost entirely within the SMA, is currently occupied by the transfer station and will require minimal grading as part of the construction. The current schedule for development is tentatively scheduled for 2001, but construction is dependent on funding availability.

Development of the site will involve vegetation clearing, minor grading and excavation (cut and fill) and general construction. A brief description of each element is provided below.

The general construction of facilities will include the formation and placement of concrete foundations, paving, the installation of mechanical equipment, the installation of electrical wiring and equipment, general carpentry work, painting and the many other trades and work associated with construction projects.

C. Vegetation Clearing, Grading and Grubbing

The proposed recycling facilities will improve approximately 7,500 square feet of this 28.32-acre site. The site borders the capped Kawailoa landfill and a moderate level of grading and a retaining structure will be needed for site improvements directly adjacent to the landfill. Extension of the tipping platform and a new operator's office will involve additional foundational supports alongside the existing tipping platform requiring minor changes in grade. New areas for mulch distribution and trailer staging will occur on previously graded areas, and will require minor clearing in preparation for paving.

D. Excavations (Cut and Fill)

The site is generally level, however the topography of the existing landfill will be modified in a small area directly adjacent to the existing transfer station to accommodate the new green waste recycling facilities. Earthwork in other areas will generally consist of fine adjustments to site grades to allow for new paved areas. Grading operations will balance the existing material on-site, and there is no significant requirement for import or export of material anticipated at this point. There is potential for encountering the edge of the capped landfill during excavation work.

A minimum 20-foot setback will be provided between the edge of the closed landfill and the transfer station. A pre-construction investigation will be conducted to define the landfill edge. If the landfill edge is less than 20 feet from the facility, landfill material will be excavated, and hauled to Waimanalo Gulch Sanitary Landfill for disposal. The landfill cover will be replaced to create the needed setback area. The Office of Solid Waste Management will be conferred with during site investigation and construction processes.

2.2.3 Access to Site, Roadways, and Traffic

The County guidelines for completion of the EA and SMA Permit application do not require consideration of traffic impacts because it is not relevant to Chapter 25 ROH objectives and policies. Under Chapter 343 HRS, traffic is relevant, however, the Draft EA was not prepared pursuant to this statute. In the spirit of full disclosure, we include a brief discussion of traffic issues in this EA.

Kawailoa Road is expected to provide adequate access upon site improvement. A small to moderate increase in vehicle traffic will occur with the addition of green waste recycling services to the Transfer Station. The increase in traffic is not expected to necessitate roadway or access improvements on the site or to the surrounding area.

SECTION 3.0
AFFECTED ENVIRONMENT

This section addresses the potential environmental impacts of the project's construction and long-term operation at the site and surrounding area. Man-made features such as utilities and archeology are addressed, as are natural factors such as flora and fauna. The project's consistency with applicable land use policies set forth in the General Plan and North Shore Development Plan are also discussed.

3.1 EXISTING LAND USES AND ZONING

3.1.1 Description of the Site

The proposed green waste recycling site is currently an operating refuse transfer station, owned operated and maintained by the City and County of Honolulu Department of Environmental Services. The site is bordered by private property and accessed by Kawailoa Road, a public road, on its southern side. The transfer station facilities are directly adjacent to the closed Kawailoa Landfill capped in 1988.

Residential, agricultural and vacant areas surround the project site. The surrounding Sunset Beach/Waimea community is a primarily low to medium density residential area with numerous small-scale agricultural uses and small-scale commercial uses.

The Kuilima Resort and Turtle Bay Hilton Hotel are located approximately eight miles from the transfer station toward Kahuku. Retail and service businesses are located along Kamehameha Highway in the adjacent areas. Beach front and inland residences, beach parks and agricultural land comprise the majority of uses within the project's region between Haleiwa and Waimea Bay. Haleiwa is the nearest commercial center, located approximately 1.5 miles from the project site.

3.1.2 Description of the Surrounding Area

The proposed Kawailoa Transfer Station green waste collection and distribution improvements will be made on the existing 28.3-acre site, almost completely within the SMA boundary. The site, as shown in Figure 1.2, is bounded by primarily agricultural and open space land uses. A capped public landfill forms the site's western boundary with Kawailoa Drive, a public road, designating its southern property line. Private property open space, agricultural and farm uses surround the site.

3.1.3 Previous and Existing Land Uses

The site was formally an agricultural parcel and, since its use as a refuse transfer station, it has been subject to extensive site development and disturbance including bulldozing, paving and erosion. Currently, the site carries an Agricultural "A" state land use designation.

3.1.4 Considerations of Existing Plans and Policies

A. General Plan for the City and County of Honolulu

The following discussion provides an assessment of how the proposed project conforms to and implements the objectives and policies of the General Plan. Relevant objectives and policies of the General Plan pertaining to the proposed action are outlined below.

Economic Activity

Objective C ***To maintain the viability of agriculture on Oahu.***
Policy 7 *Encourage the use of more efficient production practices by agriculture, including the efficient use of water.*

Improvement of the Kawailoa Transfer Station to include green waste recycling facilities will enhance the efficiency of agricultural waste disposal practices. Improved green waste transfer efficiency and local mulch distribution will promote recycling and reuse for small-scale agricultural operations that are among the greatest sources of green waste on the North Shore.

Natural Environment

Objective A *To protect and preserve the natural environment.*
Policy 4 *Require development projects to give due consideration to natural features such as slope, flood and erosion hazards, water-recharge areas, distinctive land forms, and existing vegetation.*
Policy 10 *Increase public awareness and appreciation of Oahu's land, air, and water resources.*

Improving the Kawailoa Transfer Station with green waste transfer facilities will promote the protection and preservation the natural environment of the North Shore. The goals of the recycling program are to promote local refuse separation, reuse of waste materials and minimize the amount of waste end-products disposed of on Oahu. Each of these goals is consistent with the Natural Environment objectives of the General Plan.

The transfer station site will undergo minimal grading and alteration in adding the necessary green waste recycling facilities. No substantial vegetation, including large and mature trees, will be removed for construction of the proposed facilities. Intrusive vegetation will be cleared to proceed with construction and establish new paved areas. Because of the limited vegetation and existing uses, wildlife communities are sparse on the site. Construction and operation of new green waste transfer facilities are not expected to significantly increase traffic, noise or water pollution.

Once constructed, the new facilities will promote the importance of recycling and sustainable environmental practices within the North Shore community.

Transportation and Utilities

Objective B *To meet the needs of the people of Oahu for an adequate supply of water and for environmentally sound systems of waste disposal.*
Policy 3 *Encourage the development of new technology which will reduce the cost of providing water and the cost of waste disposal.*
Policy 4 *Encourage a lowering of the per-capita consumption of water and the per-capita production of waste*

Policy 5 *Provide safe, efficient and environmentally sensitive waste-collection and waste-disposal services.*
Policy 6 *Support programs to recover resources from solid-waste and recycle wastewater.*

Green waste recycling is an important element of waste reuse on Oahu. In general, green waste represents approximately 28% of the waste collected in the North Shore area and a large portion of the waste on the Island of Oahu. A locally based green waste collection and mulch distribution center at Kawailoa Transfer Station will enhance existing waste collection facilities and promote recycling and separated waste disposal in the area. Upon separation, the waste can be chipped and shredded into mulch available for distribution at the station, providing an environmentally sensitive reuse of a waste product.

Energy

Objective C ***To fully utilize proven alternative sources of energy.***
Policy 2 *Support the increased use of operational solid waste energy recovery and other biomass energy conversion systems.*

Improving the Kawailoa Transfer Station with green waste collection and mulch distribution facilities and services will reduce the amount of waste collected and disposed of by the City. The result will be a lower level of solid waste disposed and a smaller quantity of waste by-product present on Oahu. Conversion of the green waste to a mulch product available for free distribution provides a environmentally sound biomass energy conversion.

Physical Development and Urban Design

Objective A ***To coordinate changes in the physical environment of Oahu to ensure that all new developments are timely, well-designed, and appropriate for the areas in which they will be located.***
Policy 7 *Locate new industries and new commercial areas so that they will be well related to their markets and suppliers, and to residential areas and transportation facilities*
Policy 8 *Locate community facilities on sites that will be convenient to the people they are intended to serve.*

During the 1999 Community Vision Team process, the North Shore community expressed an interest in making better use of the green waste resource that was being disposed with the solid waste collected at Kawailoa. A local facility at Kawailoa will provide a convenient green waste drop-off and mulch distribution point for residents of the North Shore. The siting of the improved facilities is considered ideal because of the site's existing use as a refuse transfer station, its relative isolation from residential areas and the surrounding community's awareness of the center.

Culture and Recreation

Objective B ***To protect Oahu's cultural, historic, architectural, and archaeological resources.***

Policy 3 *Cooperate with the State and Federal governments in developing and implementing a comprehensive preservation program for social, cultural, historic, architectural, and archaeological resources.*

Policy 4 *Promote the interpretive and educational use of cultural, historic, architectural, and archaeological sites, buildings, and artifacts.*

Policy 5 *Seek public and private funds, and public participation and support, to protect social, cultural, historic, architectural, and archaeological resources.*

No archeological resources will be impacted by construction of the center as outlined in Section 3.3 of this document.

B. North Shore Sustainable Community Plan (NSSCP)

The following discussion provides an assessment of how the proposed action will conform to and implement the following key elements of the North Shore Sustainable Community Plan:

2.2.2 Support and Promote a Diversified Agriculture Industry

Implementation of a green waste recycling program at Kawailoa Transfer Station will provide support for local agricultural uses. Improved green waste transfer efficiency and local mulch distribution will promote recycling for small-scale agricultural operations that are among the greatest sources of green waste on Oahu. A more localized transfer facility will encourage proper green waste disposal and reduce the burden placed on agricultural

operations to transport green waste to a more distant facility.

2.2.7 *Provide Adequate Public Infrastructure, Facilities and Services*

C. Hawaii State Plan and State Functional Plans

Sec. 226-11 Objectives and policies for the physical environment - land-based, shoreline, and marine resources.

(a) Planning for the State's physical environment with regard to land-based, shoreline, and marine resources shall be directed towards achievement of the following objectives:

(2) Effective protection of Hawaii's unique and fragile environmental resources.

(b) To achieve the land-based, shoreline, and marine resources objectives, it shall be the policy of this State to:

(2) Ensure compatibility between land-based and water-based activities and natural resources and ecological systems.

(3) Take into account the physical attributes of areas when planning and designing activities and facilities.

(4) Manage natural resources and environs to encourage their beneficial and multiple use without generating costly or irreparable environmental damage.

(6) Encourage the protection of rare or endangered plant and animal species and habitats native to Hawaii.

(8) Pursue compatible relationships among activities, facilities, and natural resources.

(9) Promote increased accessibility and prudent use of inland and shoreline areas for public recreational, educational, and scientific purposes.

The improvement and subsequent operation of Kawailoa Transfer Station will provide a facility in the North Shore area that promotes green waste separation and recycling. The center will be improved with minimal impacts to the surrounding environment. The site lacks significant natural vegetation and wildlife resources because of previous disturbances and existing uses. The improved facility will be a compatible and beneficial use for the surrounding North Shore area.

Sec. 226-13 Objectives and policies for the physical environment-land, air, and water quality.

(a) Planning for the State's physical environment with regard to land, air, and water quality shall be directed towards achievement of the following objective:
(1) Maintenance and pursuit of improved quality in Hawaii's land, air, and water resources.
(2) Greater public awareness and appreciation of Hawaii's environmental resources.

(b) To achieve the land, air, and water objectives, it shall be the policy of this State:
(1) Foster educational activities that promote a better understanding of Hawaii's limited environmental resources.
(2) Promote the proper management of Hawaii's land and water resources.
(6) Encourage design and construction practices that enhance the physical qualities of Hawaii's communities.

In general, improved access to green waste separation facilities at Kawailoa will promote sound environmental practices and improved waste disposal efficiency. A promotional and educational program highlighting the benefits of green waste recycling is currently underway by the City and County of Honolulu. The program will include the capabilities of the Kawailoa recycling site upon improvement.

The proper management of Hawaii's resources, consistent with the objectives listed above, will be enhanced by the presence of an additional green waste recycling facility on Oahu.

D. Hawaii Environmental Impact Statement Rules; 11-200-12 Significance Criteria

(a) In considering the significance of potential environmental effects, agencies shall consider the sum of effects on the quality of the environment, and shall evaluate the overall and cumulative effects of an action.

(b) In determining whether an action may have a significant effect on the environment, the agency shall consider every phase of a proposed action, the expected consequences, both primary and secondary, and the cumulative as well as the short and long-term effects of the action. In most instances, an action shall be determined to have a significant effect on the environment if it:

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

The project does not involve a loss or destruction of natural or cultural resources as discussed in the previous sections.

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

The site to be improved is a vacant land and owned by the City and County of Honolulu. The improved facility at Kawailoa Transfer Station promotes sound environmental practices and the reduction of waste by-products.

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

The project does not conflict with state environmental policies in Chapter 344 HRS.

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

The proposed action will generate short-term economic benefits from construction activity and the long-term economic benefits of waste and transport cost reduction. Total project cost is an estimated $600,000.

(5) Substantially affects public health;

This project will have no adverse impact on public health. Rather, it will have a positive effect in reducing the necessity of waste incineration.

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

This project will have no impact on population. Other existing public facilities will not be affected.

(7) Involves a substantial degradation of environmental quality;

Development of the improved green waste collection and mulch distribution facilities at Kawailoa Transfer Station will have a positive effect on environmental quality in the North Shore area. Short-term construction activity may briefly affect the environmental quality of the immediate area, but construction activities will follow strict erosion control, noise reduction and air quality measures.

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

The improvement of Kawailoa Transfer Station has a positive effect on the surrounding environment and region for reasons discussed in the previous sections. Development of the improved facilities does not require a commitment for larger actions or development, and it does not induce further growth.

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

No rare, threatened, or endangered species or habitats are present on-site or will be substantially affected by this project.

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

The project is not anticipated to affect water quality or ambient noise levels.

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

The development of the project is limited to existing developed areas and has no potential significant effect on an environmentally sensitive area.

3.2 DESCRIPTION OF SITE ATTRIBUTES

3.2.1 Soils

The soil types or classifications for the project area are based on soil surveys by the USDA Soil Conservation service (SCS). The SCS system classifies soils by type, capability classification (SCS Rating), and permeability. Based on the USDA Soil Conservation Service (1972) map for the area, the project site soil is classified as Waialua stony silty clay (WIB). Directly adjacent to the site, coral outcrop (CR) soil type is found. The area across the road to the south contains marshlands (MZ). WkB soil types are found on other nearby lands. (Table 3-1).

The Land Study Bureau of the University of Hawaii (1972) classifies the project site " D" on a scale for which " A" is highest level of agricultural productivity and " E" is the lowest level. The adjacent areas are rate " D" and " E".

The site has been used as a solid waste facility and transfer station for over 20 years. Given previous development and existing uses at the project site, the proposed improvement area is not considered to be significant agricultural land by the above sources.

Soil	Soil Type	SCS Rating	Runoff	Erosion
Waialua Stony Silty Clay (WIB)	Weathered Igneous Rock	IIIe, irrigated	Slow	Slight
Coral Outcrop (CR)	Coral or Cemented Calcareous Sand	VIIIs, nonirrigated	Very slow to medium	Slight to moderate
Marsh (MZ)	Stony Silty Clay Loam	VIIw, nonirrigated		
Waialua Silty Clay (WkB)	Weathered Igneous Rock	IIe, irrigated	Slow	Slight

Table 3-1 Soil Conservation Service Soil Classification

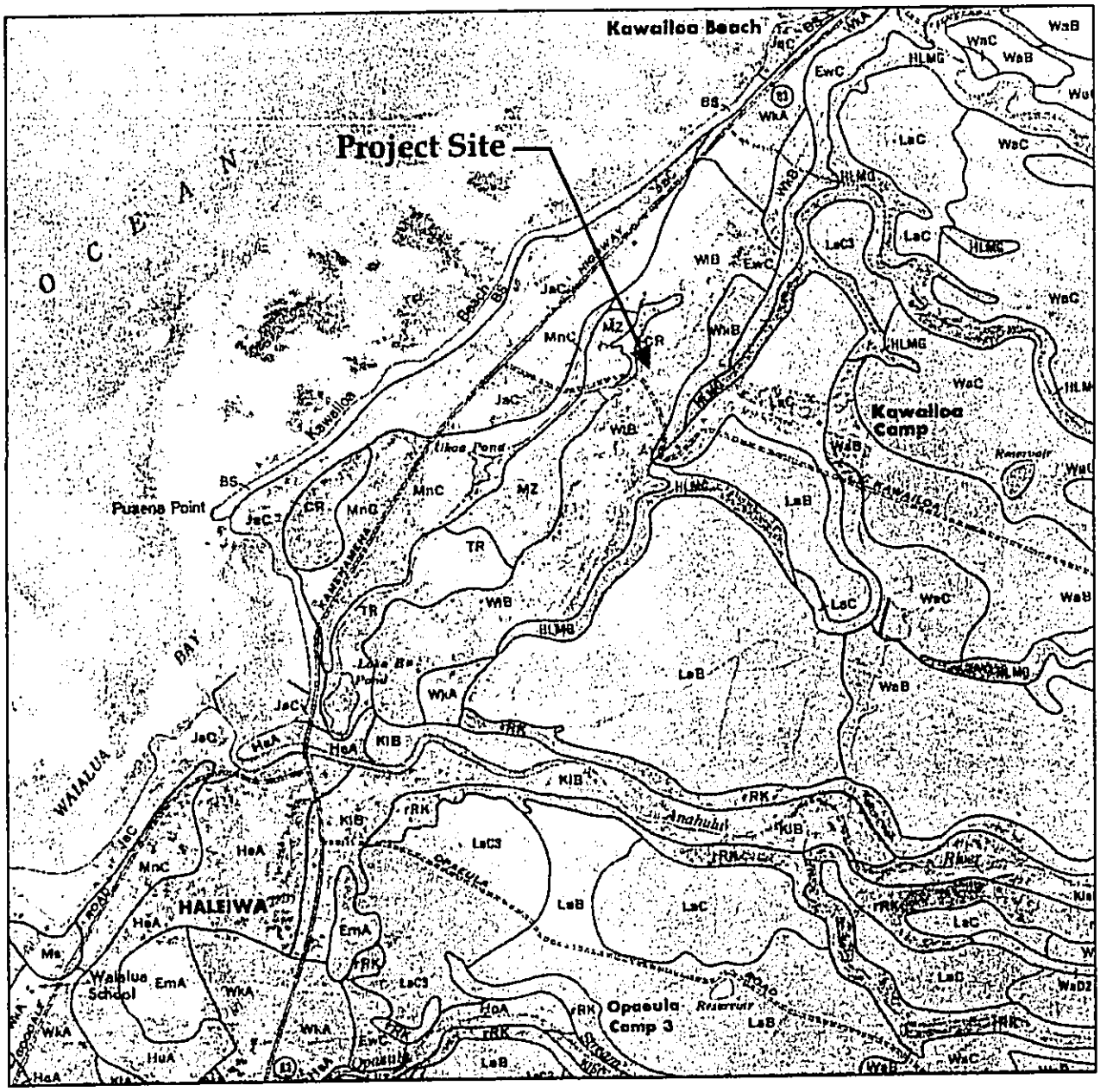


FIGURE 3.1 USDA SOIL CLASSIFICATIONS

3.2.2 Topography

The site's topography, as exhibited in Figure 3.2, varies, ranging from approximately 6-8 feet above mean sea level (msl) at the level parking area of the site to 40 feet above msl at the top of the capped Kawailoa landfill. The southern edge of the property is bordered by Kawailoa Road, which has an average elevation of approximately 6 to 8 feet. The raised tipping platform rises to an elevation of approximately 24 feet. The site contains slopes of 0 to 10 percent in the planned development area with the most extreme slopes occurring along the sides of the landfill. Figure 3.6 provides a selection of site photos displaying the varying topography of the site.

To the extent possible, the transfer station improvements will be designed to minimize changes to topography. Limited earthwork will be required to perform essential modifications to site grades and fine adjustments to accommodate construction of the new green waste recycling facilities. Minor grading will be required for new paved areas such as the proposed transfer trailer staging area and mulch distribution site. Over the main portion of the site, final elevations will generally be within one to two feet of existing grade. Refer to Section 3.2.1 for a discussion of soils and Section 3.5.1 for a discussion of surface runoff.

Grade alterations to the slope of the capped landfill bordering the existing transfer station facilities will be necessary to extend the transfer platform and provide space for a new green waste transfer trailer bay (See Figure 2.2). Site engineering during the design phase will be necessary to determine the extent of the cut into the landfill and specific retaining features. It is anticipated that these minor alterations to the slope of the landfill will not produce significant topographic or environmental impacts.

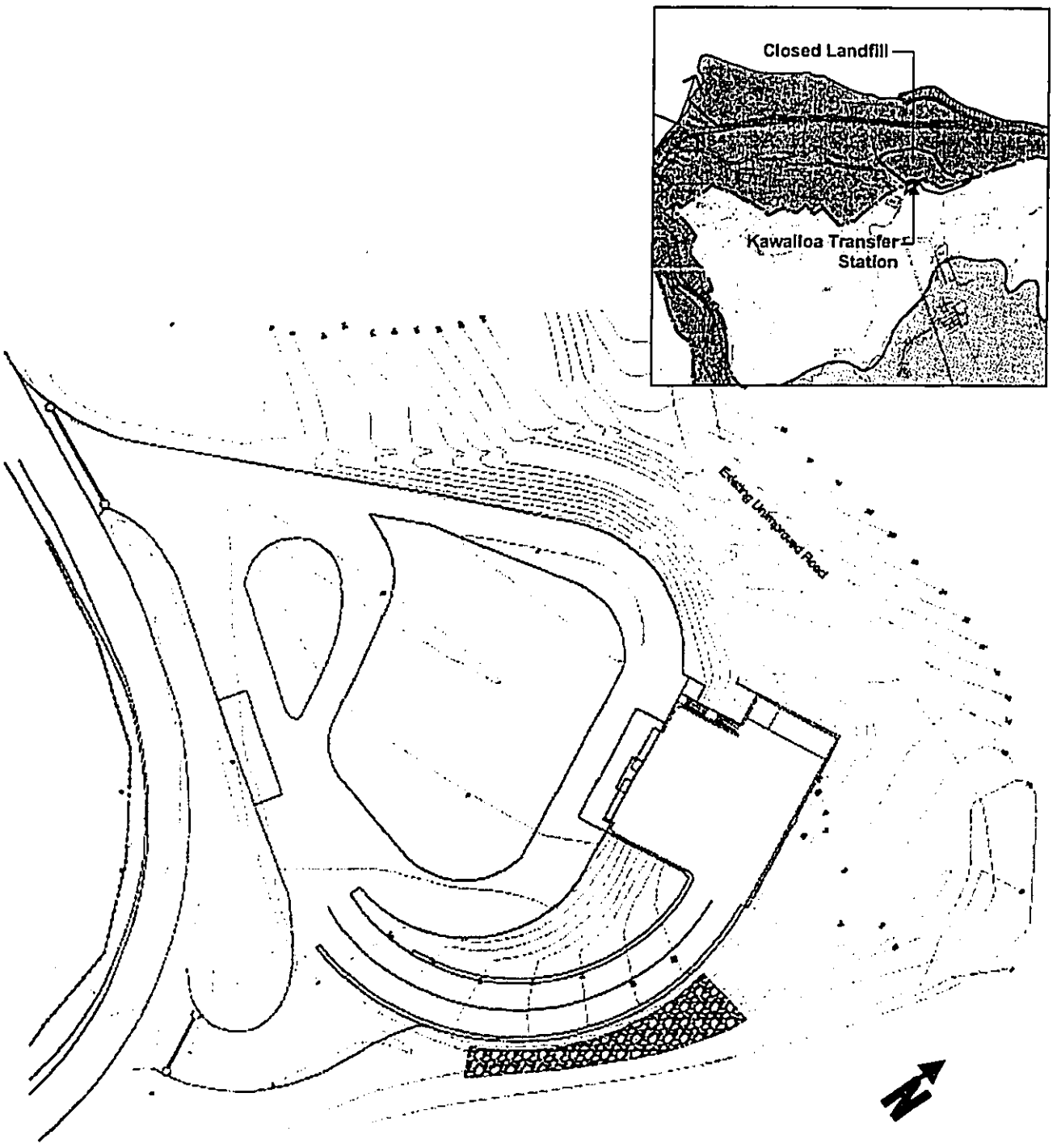


FIGURE 3.2 **SITE TOPOGRAPHY**

3.3 NATURAL RESOURCES

3.3.1 Publicly Owned or Used Beaches, Parks and Recreation Areas

The site is located in proximity to the coastal lowlands and popular beaches of the Haleiwa and Sunset Beach areas. Several world famous surfing spots including Waimea Bay and the Bonzai Pipeline, are located in proximity to the site.

3.3.2 Rare, Threatened, or Endangered Species and Habitats

The project area has been surveyed for botanical and wildlife resources. There are no endangered, candidate endangered or threatened plant or animal species present at the site.

A. Flora

The project site contains a variable secondary level of vegetation cover that reflects its use as a refuse transfer station, a portion of the site's past use as a landfill and existing high levels of traffic for refuse transfer.

Flora of surrounding areas includes nine broad vegetational communities. The general vegetation of the surrounding areas is a complex of secondary forests consisting of ironwood and eucalyptus, grasslands, herblands and weedy brushlands. The project area is dominated by beggar's tick (*Bidens pilosa*) and various grasses with koa haole (*Leucaena glauca*).

B. Fauna

The site is an active refuse transfer station with a high level of traffic passing through the site during its hours of operation. These conditions limit the amount of viable habitat present on-site.

There are several species of birds inhabiting the area, but none are an endangered species. Because of the geographical mobility of birds, they can appear in the area at any time. Cattle Egrets and pigeons are common in the project area. Other birds often found in the area may include the Spotted or Lace-necked Dove; the Barred or Zebra Dove, which is a game bird; and the Melodious Laughing-thrush (Chinese thrush). The Lessen Golden Plover is a migratory bird found in the area. This bird frequents open areas such as

lawns in residential areas.

Also located in the project area are several mammal species, including the house mouse, various rat species and the mongoose. None of these mammals are endangered or threatened species. With the possible exception of the house mouse, all of the smaller mammals prey on birds, their eggs and their young.

There are no endemic amphibians or land reptiles in the Hawaiian Islands. Introduced species include the common toad, frog, snake, skinks and geckos. These amphibians and land reptiles are present in the project area, but none are rare, endangered or of any special significance.

3.4 HISTORIC, CULTURAL AND ARCHAEOLOGICAL RESOURCES

3.4.1 Historic Resources

The Department of Land and Natural Resources Hawai'i Historic Preservation Division's Review indicates that they believe that no historic properties will be affected. Their belief is attributed to urbanization which has altered the land. A cultural impact assessment (CIA) was completed which also determined there would not be an impact on historic resources with this project.

The CIA found that there were two Land Commission Awards granted near the project area with the majority of remaining lands being held in trust by Bishop Estate. Information shared by those interviewed reveal that the area which eventually became the landfill area was used for discarding unwanted bulk items and not actual refuse during the 1950s. The plantation camps, including the nearby Kawailoa Camp, had on-site refuse facilities.

According to sources, the discarded bulk items would be piled together, forming little mounds that became "havens of treasures." In the opinion of some of those interviewed, the area was probably selected because of the proximity to the former camp and rail line, as well as it being a demarcated area located out of public view. As such, useful discarded items would often be recycled, creating almost an informal "swapping area" of used goods and wares. Government records indicate that the lands of the project area belonged to Bishop Estate, whereupon the area was used as a dump beginning in the mid-50s, and later became a landfill in 60s. A review of land assessment records indicates that a fee of condemnation was applied to the parcel in 1970, whereupon the land value at that time was estimated at approximately $3,000. Records indicate that in the mid-80s, site usage was shifted to a transfer station, which continues through present time.

3.4.2 Cultural and Archaeological Resources

The cultural impact assessment also revealed that there would not be an impact on cultural and archaeological resources by the proposed project. While the site does not contain resources for preserving, the surrounding area has features of note.

The lands located southwest of the existing project area and across the boundary of Kawailoa Drive include the waters of 'Uko'a Pond. 'Uko'a Pond is considered a Traditional Cultural Property based on the traditional accounts of Laniwahine, the mo'o akua associated to the pond, as well as related stewardship practices of known ali'i, specifically Kakuhihewa, Kamehameha I, and La'anui.

The majority of physical features associated to the plantation camp in the lands situated mauka of the project area have either been demolished or removed. The only remaining features are a shrine area located at the entryway of Kawailoa Drive from Kamehameha Highway, a historic cemetery located approximately 0.2 miles from the Transfer Station entryway, and remnants of a water pump station located on the property leased by Diamond C. Ranch.

Of those individuals interviewed for the CIA, there was no strong opinion in favor or in opposition to the proposed project. However, the idea of having a green waste separation and mulch pick-up area at the existing transfer station is favorable.

The proposed plans of retrofitting the existing transfer station to provide green waste recycling support to the North Shore community is a contemporary application of traditional land stewardship beliefs and practices through a purposeful engagement of conserving and recycling the area's natural resources.

The complete CIA is contained in Appendix B.

3.5 COASTAL VIEWS

The Coastal View Study, prepared by the City's Department of Land Utilization in 1987, does not identify the project site in its inventory of significant coastal views in the North Shore area. It does however, recognize the mountain ridge upslope of the site as an "important coastal landform". See Figure 3.5 for a selection of prominent site views.

3.6
WATER QUALITY

3.6.1 SURFACE RUNOFF, DRAINAGE AND EROSION HAZARDS

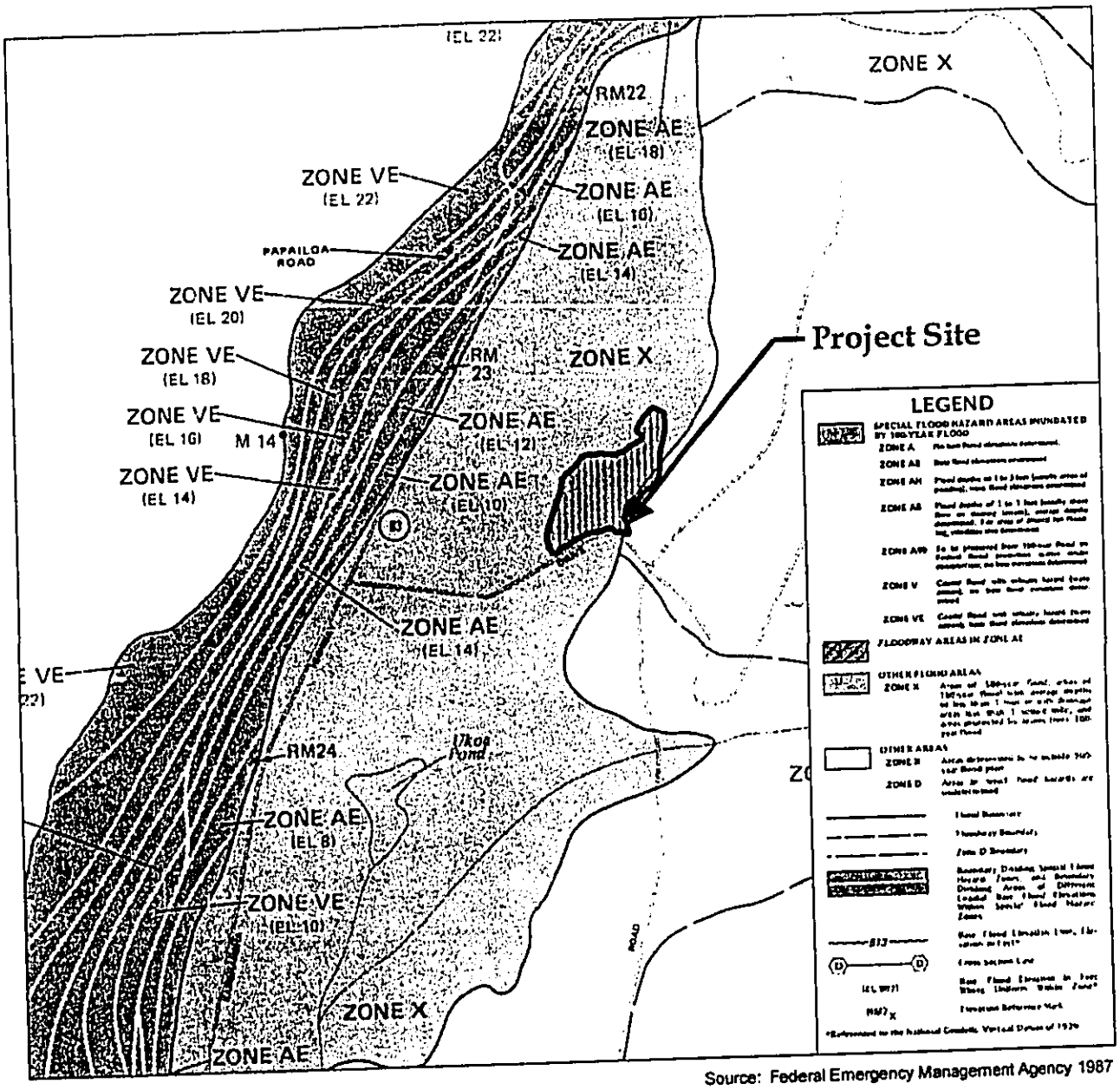
The site is situated across Kawailoa Road from Ukoa Pond and Marsh, a natural resource asset to the north shore community. The Marsh serves several functions. It is a flood control plain for the Puena area as well as a buffer zone and sink for sediment and nutrients caused by natural and human activity. Ukoa Pond provides flood storage during peak runoff periods as part of the channel design which conveys runoff into Loko Ea Pond and Waialua Bay. The Marsh is fed primarily by springs.

3.7
FLOOD AND GEOLOGICAL HAZARDS

The site is at the edge of Zone X on the Flood Insurance Rate Map (FIRM) (Refer to Figure 3.3). This rating indicates an area of 500-year flood; areas of 100-year flood with average depths of less than one foot or with drainage areas less than one square mile; and areas protected by levees from 100 year flood. The project site is within 2000 feet of the coastline areas which are susceptible to coastal flood and wave action.

3.6
GROUNDWATER EFFECTS

No wells are planned at the project site. The Board of Water Supply system will supply water to the transfer station.



Source: Federal Emergency Management Agency 1987

FIGURE 3.3 **FEMA FLOOD INSURANCE RATE MAP**

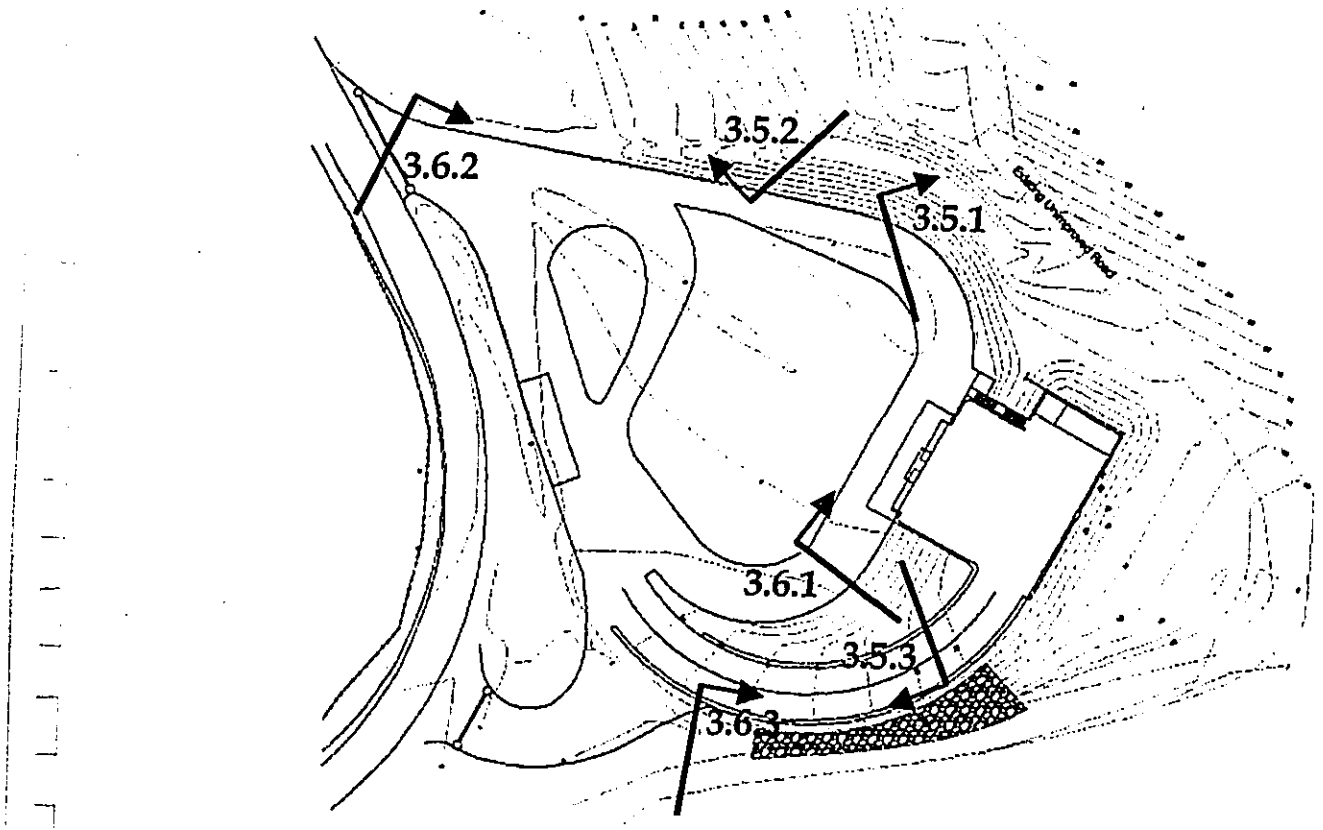


FIGURE 3.4 **SITE PHOTO KEYMAP**

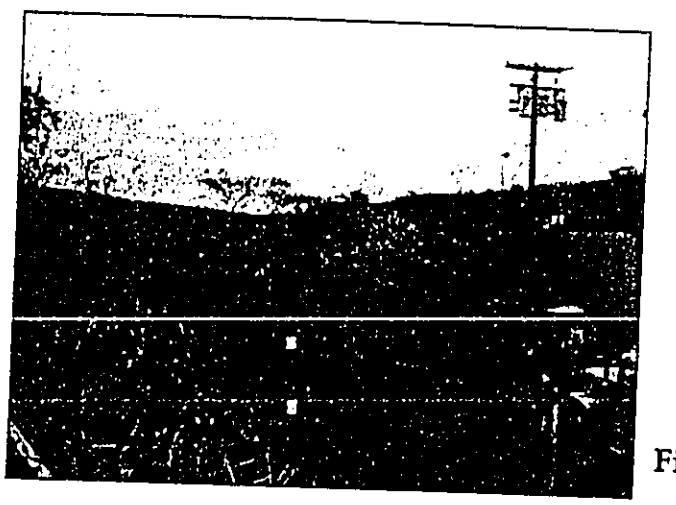


Figure 3.5.1

Figure 3.5.2

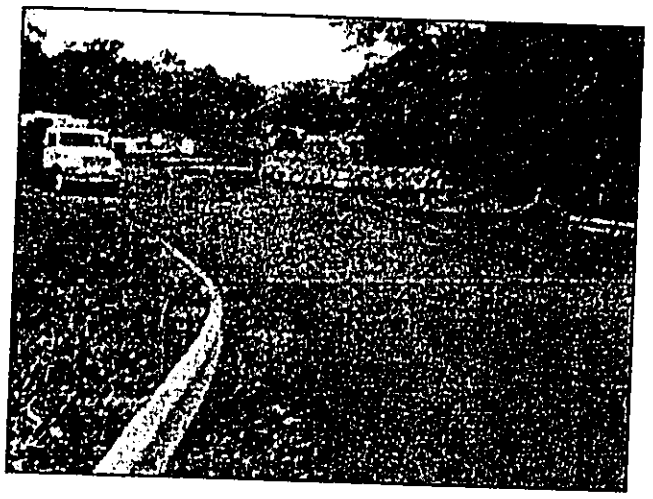


Figure 3.5.3

FIGURE 3.5 PROMINENT SITE VIEWS

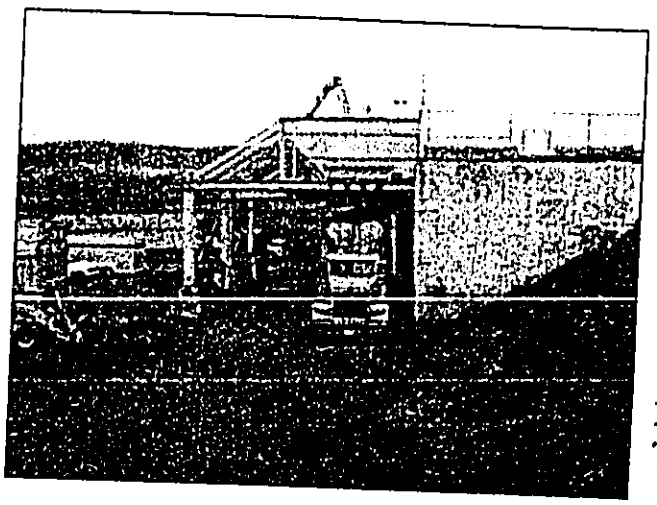


Figure 3.6.1
Transfer Platform

Figure 3.6.2
Transfer Station
from Entrance

Figure 3.6.3
Open Space Area
Behind Transfer
Station

FIGURE 3.6

SITE PHOTOS

SECTION 4.0
PROJECT IMPACTS
(CONFORMANCE TO THE COASTAL ZONE MANAGEMENT PROGRAM)

4.1 THE HAWAII COASTAL ZONE MANAGEMENT PROGRAM

The objectives of the Hawaii Coastal Zone Management Program, Section 205A-2, HRS, are to protect valuable and vulnerable coastal resources such as coastal ecosystems, special scenic and cultural values and recreational opportunities. The objectives of the program are also to reduce coastal hazards and to improve the review process for activities proposed within the coastal zone.

Nearly the entire 28.32-acre Kawailoa Transfer Station site is within the City and County of Honolulu Special Management Area (SMA). Described below are the seven objectives of the Hawaii Coastal Zone Management Program and an assessment of the project impacts relative to the CZM objectives and policies.

Historic Resources Objective

Protect, preserve and, where desirable, restore those natural and man made historic and pre-historic resources in the coastal zone management area that are significant in Hawaiian and American history and culture.

(a) Identify and analyze significant archaeological resources.

(b) Maximize information retention through preservation of remains and artifacts or salvage operations.

(c) Support State goals for protection, restoration, interpretation and display of historic resources.

No significant cultural remains are expected in the project area due to its former disturbance from agriculture and landfill operations. Further, areas where new work will be done are fill areas at the side of the landfill and transfer station platform. No further archeological work prior to construction is recommended.

Scenic and Open Space Resources Objective

Protect, preserve and, where desirable, restore or improve the quality of coastal scenic and open space resources.

(a) Identify valued scenic resources in the coastal zone management area.

(b) Insure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline.

(c) Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources.

(d) Encourage those developments which are not coastal dependent to locate in inland areas.

Although an improved green waste recycling facility does not represent a coastal dependent use, its construction will provide a new and unique public use as part of an existing facility. Improvements, limited to previously developed areas, will enhance existing facilities and improve site safety while promoting waste reuse.

The topography of the transfer station site limits the affect site improvements will have on the visual environment. The Kawailoa landfill is directly adjacent to development on the site and serves to isolate site facilities. The site does not have significant stationary views as determined by the City and County of Honolulu Coastal View Study of 1987.

Grading operations will make fine adjustments to existing grades to construct the proposed facilities. Construction will not cause substantial alteration of the topography while the dense perimeter trees will continue to serve as a visual buffer between the transfer station and surrounding areas. Views from roads and other public areas towards the mountains will not be affected by development of the new facilities.

Coastal Ecosystems Objective

Protect valuable coastal ecosystems from disruption and minimize adverse impacts on all coastal ecosystems.

(a) Improve the technical basis for natural resource management.

(b) Preserve valuable coastal ecosystems of significant biological or economic importance.

(c) Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs.

(d) Promote water quantity and quality planning and management practices which reflect the tolerance of fresh water and marine ecosystems and prohibit land and water uses which violate state water quality standards.

The proposed improvements to the Kawailoa Transfer Station will have no adverse effect on coastal ecosystems. Runoff will be controlled at the project site, and will not affect waters leading to the coast. Mitigative measures to reduce runoff for the short-term construction and long-term use of the site are discussed in detail in Section 5. The long-term effect on receiving waters resulting from the project is expected to be a positive improvement over current conditions.

Although there will be temporary disturbance during construction, no significant impact is expected to occur to any plant or wildlife species on the project site or in the surrounding areas during construction or operation of the proposed improvements.

Clearing and grubbing activities during construction will temporarily disturb the soil retention values of the limited existing vegetation and expose the soils to erosion forces. Despite construction site watering programs, wind erosion will likely cause some limited soil loss. Erosion and silt runoff during construction phases may result in short-term effects on water quality draining from the site. In addition, construction activities must comply with permit conditions regulated by City and State authorities.

With respect to structural features of the proposed improvements, the soil around the proposed operator's building will be initially treated to repel termites using chemicals that are approved for use by the Federal and State authorities, and applied in controlled amounts by a licensed pest control operation. The transfer station grounds will be periodically sprayed for pest control measures. However, it is very costly to apply these chemicals, and their use on this site will be strictly limited for both environmental and cost control reasons.

The use of approved chemicals in strictly controlled applications at the transfer station will not cause a significant contribution of biocides in runoff from the site. Even so, there will be some minimal amounts of these chemicals carried from the site. However, because of the limited size of the site and the chemical's susceptibility to volatilization and natural degradation, the applications at the site will likely not be detectable in runoff reaching ground water levels. The project is not expected to pose a threat to local or regional water quality and ecology.

Economic Uses Objective

Provide public or private facilities and improvements important to the State's economy in suitable locations.

(a) *Concentrate in appropriate areas the location of coastal dependent development necessary to the state's economy.*

(b) *Insure that coastal dependent development such as harbors and ports, visitor industry facilities, and energy generating facilities are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area.*

(c) *Direct the location and expansion of coastal dependent developments to areas presently designated and used for such developments and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:*

- *Utilization of presently designated locations is not feasible;*
- *Adverse environmental effects are minimized;*
- *Important to the State's economy.*

The proposed project will increase economic efficiency by increasing the likelihood of green waste recycling, a process that reduces waste quantities and disposal costs. Transport costs for area recyclers will also be reduced with the provision of a recycling facility in the local area. The selection of Kawailoa Transfer Station for green waste recycling improvements reflects the community's desire to utilize such a facility and its well-suited location.

The proposed action will generate short-term economic benefits from construction activity. Total project construction cost is estimated at approximately $600,000. Long-term economic benefits from the improved green waste recycling facilities will result from employment and on-going expenditures.

Coastal Hazards Objective

Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion and subsidence.

(a) *Develop and communicate adequate information on storm wave, tsunami, flood, erosion, and subsidence hazard.*

(b) *Control development in areas subject to storm wave, tsunami, flood, erosion, and subsidence hazard.*

(c) *Ensure that developments comply with requirements of the Federal Flood Insurance Program.*

(d) *Prevent coastal flooding from inland projects.*

The construction period will involve clearing and grubbing of vegetation of the site and some grading during development. On-site drainage measures will control runoff within the project site and the rate of discharge to non-developed areas. Measures that are typically implemented to lessen construction impacts of soil erosion and silt runoff in stormwater include:

- Minimize time of construction.
- Retain existing ground cover until the latest date before construction.
- Early construction of drainage control features.

- Use of temporary area sprinklers in non-active construction areas when ground cover is removed.
- Station water truck on-site during construction period to provide for immediate sprinkling, as needed, in active construction zones (weekends and holidays included).
- Continue watering of graded areas after construction activity has ceased for the day and on weekends.
- Sod or plant all cut and fill slopes immediately after grading work has been completed.
- Use temporary berms, cut-off ditches and other diversion channels, where needed, to interrupt runoff and divert it to the nearest sediment basin.
- Construct temporary sediment basins to trap silt.
- Construct temporary silt fences and straw bale barriers to trap silt.

The project site is at the edge of "Zone X" of the Federal Emergency Management Agency, Flood Insurance Rate Map classifications (refer to Figure 3.4). This zone is defined as "areas of 500-year flood; areas of 100-year flood with average depths of less than one foot or with drainage areas less than one square mile; and areas protected by levees from 100-year flood." Drainage patterns after development of the site are expected to remain similar to existing conditions. Mitigative measures to reduce erosion and runoff for the short-term construction and long-term use of the site are discussed in detail in Section 5.

Managing Development Objective

Improve the development review process, communication, and public participation in the management of coastal resources and hazards.

(a) *Effectively utilize and implement existing law to the maximum extent possible in managing present and future coastal zone development.*

(b) *Facilitate timely processing of application for development permits and resolve overlapping or conflicting permit requirements.*

(c) *Communicate the potential short and long-term impacts of proposed significant coastal developments early in their lifecycle and in terms understandable to the general public to facilitate*

public participation in the planning and review process.

The Kawailoa Transfer Station improvements are publicly motivated with the intention of providing mulch and green waste recycling options to the North Shore community. The following agencies, organizations and persons have sponsored and consulted on the planning process:

- City and County of Honolulu, Dept. Environmental Services
- City and County of Honolulu, Dept. of Planning & Permitting
- City and County of Honolulu, Dept. of Design & Construction
- Councilmember Rene Mansho (Reid Fujita, Council Aide)
- North Shore Neighborhood Board #27
- North Shore Vision Team

4.2 SMA GUIDELINES (SECTION 25-3.2, ROH)

The review guidelines of Section 25-3.2 of the Revised Ordinances of Honolulu (ROH) are used by the Department of Land Utilization and the City Council for the review of developments proposed in the Special Management Area (SMA). These guidelines are derived from Section 205A-26 HRS. The consistency of the proposed project with the guidelines is discussed below.

All development in the special management area shall be subject to reasonable terms and conditions set by the council in order to ensure that:

(a) Adequate access, by dedication or other means, to publicly owned or used beaches, recreation areas, and natural reserves is provided to the extent consistent with sound conservation principles;

(b) Adequate and properly located public recreation areas and wildlife preserves are reserved;

(c) Provisions are made for solid and liquid waste treatment, disposition, and management which will minimize adverse effects upon special management area resources; and

(d) Alterations to existing land forms and vegetation, except crops, and construction of structures shall cause minimum adverse effect to water resources and scenic and recreational amenities and minimum danger of floods, landslides, erosion, siltation or failure in the event of earthquake.

The proposed action will involve facilities improvements and within the SMA. The proposed project will generally be consistent with this SMA policy because no public areas or wildlife preserves are affected. Water and scenic resources will not be adversely affected.

Existing and proposed use of utilities are discussed in detail in Section 2.2.4. Existing electrical, solid waste disposal, and liquid waste disposal systems have adequate capacity to service the improved facilities.

The potential impacts of development on soils and water quality are discussed in Section 4.1. In general, only fine adjustments to the site grades are predicted for improvement of the existing facilities. Measures will be taken during construction and operation of the transfer station improvements to minimize soil erosion and potential effects to water quality.

No development shall be approved unless the council has first found that:

(a) The development will not have any substantial, adverse environmental or ecological effect except such adverse effect is minimized to the extent practicable and clearly outweighed by public health and safety, or compelling public interests. Such adverse effect shall include, but not be limited to, the potential cumulative impact of individual developments, each one of which taken in itself might not have a substantial adverse effect, and the elimination of planning options;

(b) The development is consistent with the objectives and policies set forth in Section 25-3.2 and area guidelines contained in Section 205A-26, Hawaii Revised Statutes; and

(c) The development is consistent with the County General Plan, Development Plans, Zoning and subdivision codes and other applicable ordinances.

Unavoidable short-term environmental effects will occur in the SMA during construction, including soils disturbance, erosion, limited clearing, wildlife disturbance, construction noise, dust and exhaust emissions, and views of construction. Following construction, these short-term impacts will cease, and there will be beneficial long-term impacts such as improved site appearance and safety.

The consistency of the proposed action with the objectives and policies of the Hawaii State Plan, County General Plan and the North Shore Sustainable Community Plan are described earlier in Section 3.1.4.

The council shall seek to minimize, where reasonable:

(a) Dredging, filling or otherwise altering any bay, estuary, salt marsh, river mouth, slough or lagoon;

(b) Any development which would reduce the size of any beach or other area usable for public recreation;

(c) Any development which would reduce or impose restrictions upon public access to tidal and submerged lands, beaches, portions of rivers and streams within the special management area and the mean high tide line where there is no beach;

(d) Any development which would substantially interfere with or detract from the line of sight toward the sea from the State highway nearest the coast; and

(e) Any development which would adversely affect water quality, existing areas of open water free of visible structure, existing and potential fisheries and fishing grounds, wildlife habitats, or potential or existing agricultural uses of land.

For the most part, these review guidelines do not apply to the proposed action. The project will not adversely affect water quality, as all of the site improvements are proposed for areas containing existing refuse transfer uses.

4.3 POTENTIAL CUMULATIVE AND SECONDARY IMPACTS

Cumulative effects are the impacts on the coastal zone which result from the incremental effects of an activity when added to other past present, and reasonably foreseeable future actions, regardless of what agency or person undertake such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Secondary effects are impacts that are associated with, but do not result directly from, an activity. Secondary effects can include growth- inducing effects and other effects related to induced changes in the pattern of land use.

The environmental analysis of the proposed project addresses full development of the facilities in the context of known planned or approved land uses in the vicinity.

SECTION 5.0
MITIGATIVE MEASURES

This section includes a summary presentation of mitigative measures planned for the project site to minimize potential impacts. The issues addressed are relevant to SMA issues, and additional mitigation is planned to offset other impacts that are not SMA-related.

5.1 POTENTIAL SHORT-TERM ADVERSE IMPACTS AND MITIGATIVE MEASURES

Project development activities will involve retrofitting the existing transfer station site to handle the collection and storage of green waste. Short-term construction related impacts on the environment will be generated by the project, and mitigative measures will be implemented to minimize these impacts.

Potential short-term adverse impacts and mitigative measures are listed below.

1. Soils will be disturbed for grading and excavation, and some short-term soil erosion will occur. Proposed mitigation will include soils management measures and drainage controls that will substantially minimize soil erosion.

   Mitigative measures will be implemented to reduce short-term soil erosion during construction. The impact of construction activities on soils will be mitigated by several measures, as listed below:

   (a) Development Planning:
   Steep slopes will be avoided for new construction activities to the greatest extent possible to minimize soil disturbance in areas with high erosion potential.

   (b) Construction Erosion Control:
   Construction activities will follow strict erosion control measures specified in the reports and regulations of the City and County of Honolulu, State Department of Health, U.S. Department of Agriculture - Natural Resources Conservation Service, and U.S. Environmental Protection Agency. Typical erosion control measures include Best Management Practices that will be applied at this project include the use of cut-off ditches and detention ponds to slow runoff, application of

hydromulch to establish temporary ground cover vegetation, and application of various soil stabilization and protection materials. .

Measures that are typically implemented to lessen short-term construction impacts of soil erosion and silt runoff in stormwater include:

- Minimize time of construction.
- Retain existing ground cover until the latest date before construction.
- Early construction of drainage control features.
- Use of temporary area sprinklers in non-active construction areas when ground cover is removed.
- Station water truck on-site during construction period to provide for immediate sprinkling, as needed, in active construction zones (weekends and holidays included).
- Continue watering of graded areas after construction activity has ceased for the day and on weekends.
- Sod or plant all cut and fill slopes immediately after grading work has been completed.
- Use temporary berms, cut-off ditches and other diversion channels, where needed, to interrupt runoff and divert it to the nearest sediment basin.
- Construct temporary sediment basins to trap silt.
- Construct temporary silt fences and straw bale barriers to trap silt.

The planned measures for the construction area are recommended by the U. S. Department of Agriculture, Natural Resources Conservation Service, including straw bale dikes, swale sediment traps, silt fence, grass outlet sediment traps and pipe outlet sediment traps.

2. In the event the excavation work affects the edge of the existing capped landfill, appropriate measures will be taken. Excavated landfill material will be disposed at the Waimanalo Gulch Sanitary Landfill. The disturbed landfill area will be capped with two feet of soil and reseeded or stabilized with rock material (slope area).

3. There is anticipated to be a slight increase in suspended sediments in storm runoff as a result of some unavoidable soil erosion during the construction period. Proposed soil management measures and drainage controls will minimize soil erosion and subsequent addition of suspended sediments to storm water runoff, as per State Department of Health (DOH) recommended techniques including Best Management Practices and Coastal Nonpoint Pollution Control programs. The project will be monitored under a required NPDES permit for construction of stormwater and erosion controls.

(a) Sloped Area Soil Erosion Protection:

During the site preparation phase of construction, involving grading and other earthwork, numerous measures will be taken to protect soils from erosion, especially in sloped areas. Graded areas will be stabilized immediately using hydromulch consisting of grass seed varieties, mulch and fertilizer. In addition, soil surface stabilizing products (gypsum base) can also be applied on slopes to essentially form a biodegradable shell that integrates the upper soil layer. Sloped areas will receive close attention to immediately fix the soil surface and rapidly establish ground cover vegetation. In a period as short as three weeks, a substantial temporary ground cover can be raised on the slopes. The hydromulch mix includes long-term grasses that eventually overgrow the temporary grasses. This careful approach to soil protection in sloped areas has been demonstrated very effectively in application at projects in rainy areas such as Mililani Mauka and Waikakalau Gulch.

(b) Dust Control:

A watering program will be implemented to minimize soil loss through fugitive dust particulate emission levels from construction sites. Other control measures include good housekeeping at the job-site, and paving or planting of bare soil areas as quickly as possible after construction to avoid dust generation.

4. Various introduced types of plant and wildlife species occur in areas of the project site will be affected by construction. Wildlife present on the site will generally be displaced during the construction period. This disturbance is expected to be temporary however, and in general, construction activities are not projected to be significantly more disrupting to wildlife than day-to-day operations of the transfer station.

5. Noise will be generated by construction activities on the project site. Construction operations must comply with State DOH regulations and the City and County of Honolulu Noise Ordinance, which limits construction operations and resultant noise to daytime hours and specific maximum levels. The relative isolation of the transfer station also limits the effect of construction noise on the surroundings.

6. Air quality will be affected by the generation of fugitive dust, and construction equipment and worker vehicle emissions. Dust conditions will be controlled by frequent watering of roadways, and other soil management measures. Equipment will be maintained in proper working order to minimize emissions.

7. Construction activities may be visible at the western edge of the project site, along Kahae Road. Views of construction operations on the site will be minimized by proper equipment and materials storage, minimized vegetation clearing, sensitive site planning and building design, and expedient re-vegetation after construction.

8. Kawailoa Transfer Station will coordinate its additional electrical supply needs, if any, with HECO to avoid service disruption to local customers.

5.2 POTENTIAL LONG-TERM ADVERSE IMPACTS AND MITIGATIVE MEASURES

Once the transfer station improvements are complete, some long-term impacts may occur. Mitigative measures will be implemented to minimize the long-term adverse effects of the project.

Potential long-term adverse impacts and mitigative measures are listed below.

1. Limited grading will be completed to make fine adjustments to the project site.

2. Landscaping and porous sub-drains will be maximized on the site to create a filter medium and promote percolation of water runoff before entering groundwater sources.

3. Water for the site will be derived from the City Board of Water Supply system. Wastewater generated on-site will be treated and disposed through an on-site individual wastewater system.

4. Vegetation clearing will be necessary for infrastructure development. Most open land will be re-vegetated with grasses, trees, and other plants as soon as possible after clearing. No significant vegetation or native plants will be affected by the development of the new recreation center.

5. Existing habitat for birds and other wildlife species in the SMA will not be affected.

SECTION 6.0
ALTERNATIVES TO THE PROPOSED PROJECT

6.1 NO-ACTION ALTERNATIVE

The "no-action" alternative would result in the continued use of the transfer station to collect and store materials before transport to HPOWER, the City's waste-to-energy facility. The City collected green waste from the Waialua to Laie area would be taken with the rest of the refuse to HPOWER and not be recycled. Residents self-hauling their green waste for recycling would have to travel to either the Laie or Wahiawa Refuse Convenience Centers. The nearest locations for residents to pick-up mulch would continue to be at Waimea Adventure Park or the Wahiawa Community Garden.

In this alternative the tipping floor extension and the new facility manager's office would not be built. Although the alternative would have no direct adverse environmental impacts from project construction, no-action means that North Shore residents would not have a means to locally recycle their green waste and the amount of material going to the landfill would not be reduced.

6.2 RECYCLING ON-SITE

Under this alternative, an area of the closed landfill would be used to process the green waste. This would be the most intensive use of the site. The benefits of the alternative are that the green waste would not need to be transported for processing.

The green waste would be stored in piles to age and to accumulate for batch processing. Storage piles would need to be monitored to ensure that decomposition does not heat the piles to an unsafe level. Periodically a large tub grinder would be brought on-site to grind the green waste into mulch. During the grinding operation, noise and dust would be generated. This alternative would also use a larger area than the proposed project and more extensive grading would be required to prepare the site. This alternative might include grading of the closed landfill area.

While this alternative offers the savings in transporting the material, the costs associated with grinding the material on-site are many. Managing a mulching operation requires expertise and equipment that are usually cost effective at a larger scale. These factors coupled with impact of grading a large area for operations

make this a less viable option.

6.3 OFF-SITE COLLECTION

A third alternative to the proposed project would be an off-site location for green waste collection and storage. This would entail building a completely new tipping floor area for green waste transfer. With a new site the environmental impacts of construction dust and noise might affect the surrounding community, especially if the site is located closer to a residential area. Traffic around the new site would increase with City and private vehicles accessing the facility. The convenience to residents would be decreased as many residents would need to travel to both facilities when they have green waste and refuse items for disposal.

If suitable off-site land could be found, this alternative would still provide a local opportunity for green waste recycling. However, operating a second transfer facility would be a loss of efficiency and increased costs for the City and taxpayers. The additional impacts of new site construction, the increased traffic, the loss of convenience and operating efficiency do not make this an attractive alternative.

SECTION 7.0
FINDINGS AND REASONS SUPPORTING ANTICIPATED DETERMINATION

After reviewing the significance criteria outlined in Chapter 343, Hawaii Revised Statutes (HRS), and Section 11-200-12, State Administrative Rules, Contents of Environmental Assessment, it is anticipated that the proposed action will not result in significant adverse effects on the natural or human environment. A Finding of No Significant Impact (FONSI) is anticipated for this project.

The potential impacts of the Kawailoa Transfer Station improvements and its future use have been fully examined and discussed in this Environmental Assessment. As stated earlier, there are no significant environmental impacts expected to result from the proposed action. This determination is based on the following assessments:

1. The proposed project does not result in irrevocable commitment to loss or destruction of any natural or cultural resources. The project site has been previously disturbed by the construction and generation of the landfill and of the transfer station.
2. The proposed project does not curtail the range of beneficial uses of the environment. The transfer station improvements will be made on land that is set aside for handling the North Shore's solid waste. As land abutting a closed landfill, this is a beneficial use to the environment.
3. The proposed project does not conflict with the State's long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS, and any revisions thereof and amendment thereto, court decisions, or executive orders.
4. The proposed project does not substantially affect the economic or social welfare of the community or state in a negative way. The locally-available mulch may provide an economic benefit to area residents and farmers.
5. The proposed project does not substantially affect public health. Any construction impacts to the air, noise and water quality will be mitigated in compliance with the State Department of Health and Administrative Rules. The

reduction in landfill disposal needs by recycling green waste provides a net benefit. Currently most of the North Shore green waste is disposed of at HPOWER (Honolulu Program Of Waste Energy Recovery).

6. The proposed project does not involve substantial secondary impacts, such as population changes or effects on public facilities. The primary impact is an alteration of a public facility in response to community needs and desire to recycle green waste.
7. The proposed project does not involve a substantial degradation of environmental quality. As mentioned above, the project site is an existing transfer station at a closed landfill where disturbance to the environment has already occurred. Little or no new impacts will result from the facility improvements.
8. The proposed project does not have a cumulative effect on the environment, nor does it pose a commitment for larger actions.
9. The proposed project does not substantially affect rare, threatened or endangered species or its habitat.
10. The proposed project does not detrimentally affect air or water quality or ambient noise levels. The nearby wetlands will not be adversely affected. As noted above, construction-related impacts will be mitigated by compliance with the State Department of Health Administrative Rules.
11. The proposed project is not 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. While the proposed project is at the edge of Flood Insurance Rate Map (FIRM) Zone X, an area of 500-year floods, flood impacts are not expected to cause significant damage.
12. The proposed project will not affect scenic vistas and view planes identified in county or state plans or studies. The surrounding topography of the closed landfill provides a visual barrier between the transfer station and Kamehameha Highway.
13. The proposed project will not require substantial energy consumption. The energy consumption levels should remain nearly the same.

Based on the evaluation of the project under each of the significance criteria, further consideration of the project's impacts

through an Environmental Impact Statement is not warranted. A Finding of No Significant Impact (FONSI) is anticipated for this project.

SECTION 8.0
LIST OF REFERENCES AND PERSONAL COMMUNICATIONS

City and County of Honolulu, Department of Real Property Assessment. Tax Map for TMK 6-1-05:18.

City and County of Honolulu, Department of Land Utilization. 1987. Coastal View Study.

City and County of Honolulu, Department of Planning and Permitting. 2000. GIS Database Zoning Data.

City and County of Honolulu, Department of Land Utilization. 1985. Special Management Area (SMA) Map.

City and County of Honolulu, Department of Planning and Permitting. 2000. GIS Database Special Management Area (SMA) Data.

City and County of Honolulu, Department of Planning and Permitting. 2000. GIS Database Topography Data.

City and County of Honolulu, Planning Department. 1992. General Plan for City and County of Honolulu.

City and County of Honolulu, Planning Department. Updated 1995. Development Plan Land Use Map.

City and County of Honolulu, Planning Department. Updated 1995. Development Plan Public Facilities Map.

City and County of Honolulu, Planning Department. 1999. North Shore Sustainable Communities Plan.

Federal Emergency Management Agency. September 4, 1987. Flood Insurance Rate Map, City and County of Honolulu, Panel 20 of 135.

Hawaii Coastal Zone Management Program (Office of State Planning). December 1995. Hawaii's Coastal Nonpoint Pollution Control Program Draft Management Plan.

State of Hawaii Land Use Commission. Updated 1995. State Land Use District Map.

State of Hawaii, Department of Agriculture. January 1977. Agricultural Lands of Importance to the State of Hawaii (ALISH) Maps - Island of Oahu – Waimea, Hawaii Quadrangle.

U.S Department of Agriculture, Soil Conservation Service. August 1972. Soil Survey of Islands of Kauai, Oahu, Maui, Molokai and Lanai, State of Hawaii. Prepared in cooperation with the University of Hawaii Agricultural Experiment Station

U.S. Geological Survey. 1983. Topographic Quadrangle Maps - Oahu – Waimea.

SECTION 9.0
AGENCIES, ORGANIZATIONS AND INDIVIDUALS RECEIVING COPIES OF THE EA

Agency/Organization	Comments Received
State Agencies	
Department of Health	X
Environmental Management Division	
Department of Land and Natural Resources	
Division of Forestry and Wildlife	X
Land Division	
State Historic Preservation Division	X
Department of Transportation	
Office of Environmental Quality Control	X
Office of Hawaiian Affairs	X
Office of State Planning	
State Land Use Commission	
Department of Business, Economic Development and Tourism	
Resources and Technology Division	
Department of Hawaiian Homelands	X
University of Hawai'i Environmental Center	
Hawaii Documents Center	
Legislative Reference Bureau	
Waialua Public Library	
Representative Michael Magaoay	
Senator Robert Bunda	
City and County of Honolulu	
Board of Water Supply	X
City Councilmember Rene Mansho	
Department of Design and Construction	
Department of Environmental Services	
Department of Facilities Maintenance	
Honolulu Fire Department	X
Honolulu Police Department	X
Department of Planning and Permitting	

Organizations

North Shore Neighborhood Board No. 27
North Shore Vision Team
Sunset Beach Community Association X

Local Utilities

Hawaiian Electric Company

Appendix A

Draft Environmental Assessment Comments and Responses

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

DIVISION OF FORESTRY AND WILDLIFE
1151 PUNCHBOWL STREET
HONOLULU, HAWAII 96813

October 17, 2001

RECEIVED
OCT 19 2001
GROUP 70

Mr. Jeff Overtone
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

Dear Mr. Overtone:

Subject: Draft EA and SMA Use Permit – Kawailoa Transfer Station Green Waste Recycling Improvements, Pupukea, Ko'olau Loa District, O'ahu, Hawaii.

We appreciate the opportunity to comment on your draft EA and SMA permit above. We have no objections to the proposed improvements to Kawailoa Transfer Station of which it includes the Kawailoa capped landfill, North Shore, Oahu. Thank you for allowing us to comment on your project.

Sincerely yours,

Michael G. Buck
Administrator

C: DOFAW, Oahu Branch
City and County of Honolulu
OEQC

GROUP 70
INTERNATIONAL

January 8, 2002

Mr. Michael G. Buck, Administrator
Department of Land and Natural Resources
Division of Forestry and Wildlife
1151 Punchbowl Street
Honolulu, HI 96813

Subject: Kawailoa Transfer Station
Green Waste Recycling Improvements
Draft Environmental Assessment
TMK 6-1-05:18

Dear Mr. Buck:

Thank you for your October 17, 2001 letter regarding the Draft Environmental Assessment for Kawailoa Transfer Station. We acknowledge that you have no objections to the proposed improvements.

Your comment letter and this response will be included in the Final Environmental Assessment. We appreciate your input for the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Jeffrey H. Overton, AICP
Chief Environmental Planner

BENJAMIN J. CAYETANO
GOVERNOR
STATE OF HAWAII

RAYNARD C. SOON
CHAIRMAN
HAWAIIAN HOMES COMMISSION

JOBIE M. K. M. YAMAGUCHI
DEPUTY TO THE CHAIRMAN

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

RECEIVED
OCT 19 2001
GROUP 70

October 18, 2001

Mr. Jeff Overton
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, HI 96813-4307

Dear Mr. Overton:

Subject: Kawailoa Transfer Station Green Waste Recycling Improvements, Draft Environmental Assessment, TMK 6-1-5:18, Pupukea, Oahu, Dated October, 2001

Thank you for the opportunity to review the subject application. The Department of Hawaiian Home Lands has no comment to offer.

If you have any questions, please call Daniel Ornellas of our Planning Office at 586-3836.

Aloha,

Danell Yagodich

for Raynard C. Soon, Chairman
Hawaiian Homes Commission

GROUP 70
INTERNATIONAL

January 8, 2002

Raynard C. Soon, Chairman
Hawaiian Homes Commission
Department of Hawaiian Home Lands
P.O. Box 1879
Honolulu, HI 96805

Subject: Kawailoa Transfer Station
Green Waste Recycling Improvements
Draft Environmental Assessment
TMK 6-1-05:18

Dear Mr. Soon:

Thank you for your October 18, 2001 letter regarding the Draft Environmental Assessment for Kawailoa Transfer Station. We acknowledge your statement of no comment.

Your letter and our response will be printed in the Final Environmental Assessment. We appreciate your input for the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Jeffrey H. Overton, AICP
Chief Environmental Planner

BENJAMIN J. CAYETANO
GOVERNOR

GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186

October 25, 2001

Mr. Timothy E. Steinberger, Director
Department of Environmental Services
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Steinberger:

Subject: Draft Environmental Assessment for the Kawailoa Transfer Station, Oahu

Thank you for the opportunity to review the subject document. We have the following comments.

1. Please describe how long the mulch will be present on the site. We are concerned about the fire hazard posed by the heat generated in the mulch. The closeness of the mulch to dry brush adds to our fire concerns. What are the mitigation measures to minimize the fire potential?

2. Please show on a site plan (which includes Ukoa Pond) the drainage patterns of the transfer station. What is the likelihood of nutrients and contaminants entering Ukoa Pond? Please list mitigation measures to minimize the flow of nutrients and contaminants into Ukoa Pond.

3. The State Department of Agriculture recently informed OEQC of the existence of pest tree frogs near transfer stations. OEQC believes green waste may be a mode of transport for the tree frogs. Please consult with the DOA (Larry Nakahara) and develop appropriate mitigation measures to minimize the spread of the tree frog via transfer stations.

4. Please state and justify the finding of no significant impact determination based on an evaluation of the 1996 version of section 11-200-12 of the EIS rules. Please see the attached example.

Sincerely,

Genevieve Salmonson
Director

c: Group 70

GROUP 70
INTERNATIONAL

Francis S. Oda,
Arch. D., AIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H. Nihei, AIA, CSI
James I. Nishimoto, AIA
Ralph E. Portmore, AICP
Stephen H. Yuen, AIA
Linda C. Miki, AIA

George I. Atta, AICP
Paul P. Chorney, AIA
Wendy Lee Cook, AIA, CDT
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Stuart M. Jow, AIA
Charles Y. Kaneshiro, AIA
Dean H. Kitamura
Frank B. McCue
Kyle K. Nakamoto
Kathryn A. Nam
Jeffrey H. Overton, AICP
Christine M. Ruotola, AICP
Norma J. Scott
Scott Tangonan
Sharon Ching Williams, AIA

January 8, 2002

Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control
State of Hawaii
235 S. Beretania Street, Suite 702
Honolulu, HI 96813

Subject: Kawailoa Transfer Station
Green Waste Recycling Improvements
Draft Environmental Assessment
TMK 6-1-05:18

Dear Ms. Salmonson:

Thank you for your October 25, 2001 letter regarding the Draft Environmental Assessment for Kawailoa Transfer Station. We have prepared the following responses to your comments.

Mulch Storage

The collected raw green waste will be transferred to a contractor's site to be ground up and either returned to Kawailoa as mulch or processed into compost. The mulch piles on site will be 12 feet long by 8 feet wide by 4 feet high and are not of sufficient quantity or composition to self-combust. One load of mulch will be delivered every two weeks to the designated mulch area and will not be piled on top of other mulch. If mulch is not being taken off site, new loads will not be delivered. The quantity of mulch to be stored on site at any one time is less than 60 cubic yards. Expressed demand indicates that mulch piles will quickly be used.

The normal moisture level in the mulch would cause smoldering, and not a flame, if an outside ignition source were present. No smoking signs will be posted at the mulch pick up site. During dry weather, the mulch can be wetted as a precaution. The mulch will be stored on a paved area and vegetation cleared surrounding area, so the nearby vegetation is not at risk for burning.

Mulch Nutrients and Contamination

As mentioned above, the collected raw green waste will be transferred to a contractor's site to be ground up and either returned to Kawailoa as mulch or processed into compost. The mulch, the ground up green waste, is very low in available soluble nutrients or contaminants, and the likelihood is negligible that the pond would receive nutrient loaded run-off.

Eleutherodactylus

Eleutherodactylus species, non-native Caribbean frogs, have not been found near the Kawailoa Transfer Station (per Larry Nakahara of the State Department of Agriculture). These frogs have been reported near a transfer station on the Big Island.

Finding of No Significant Impact

Please see the added Section 7.0 of the Final EA that details the finding of no significant impact determination for the transfer station improvements.

Your comment letter and this response will be included in the Final Environmental Assessment. We appreciate your input for the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Jeffrey H. Overton, AICP
Chief Environmental Planner

POLICE DEPARTMENT

CITY AND COUNTY OF HONOLULU

801 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96813 - AREA CODE (808) 529-3111
http://www.honolulupd.org
www.co.honolulu.hi.us

JEREMY HARRIS
MAYOR

LEE D. DONOHUE
CHIEF

MICHAEL CARVALHO
ROBERT AU
DEPUTY CHIEFS

OUR REFERENCE CS-KP

November 1, 2001

Mr. Jeff Overton
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

Dear Mr. Overton:

Thank you for the opportunity to review and comment on the Draft Environmental Assessment for the Kawailoa Transfer Station Green Waste Recycling Improvements Project.

The project area is serviced by officers of District 2 (Wahiawa). Overall, the proposal will have a minimal, if any, impact on the facilities or services of this department.

If there are any questions, please call Ms. Carol Sodetani of the Support Services Bureau at 529-3658.

Sincerely,

LEE D. DONOHUE
Chief of Police

By
EUGENE UEMURA
Assistant Chief of Police
Support Services Bureau

cc: Ms. Genevieve Salmonson, OEQC
Ms. Wilma Namumnart, DES

Serving and Protecting with Aloha

GROUP 70
INTERNATIONAL

January 8, 2002

Mr. Lee D. Donohue, Chief of Police
Police Department
City and County of Honolulu
801 S. Beretania Street
Honolulu, HI 96813

Subject: Kawailoa Transfer Station
Green Waste Recycling Improvements
Draft Environmental Assessment
TMK 6-1-05:18

Dear Mr. Donohue:

Thank you for your November 1, 2001 letter regarding the Draft Environmental Assessment for Kawailoa Transfer Station. We acknowledge your statement that the proposed project would have a minimal, if any, impact on police facilities or services.

Your letter and our response will be printed in the Final Environmental Assessment. We appreciate your input for the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Jeffrey H. Overton, AICP
Chief Environmental Planner

Group 70 International, Inc. • Architecture • Planning • Interior Design • Building Diagnostics • Assets Management • Environmental Services
925 Bethel Street, 5th Floor • Honolulu, Hawaii 96813-4307 • Ph (808) 523-5866 • Fax (808) 523-5874 • www.group70int.com • mail@group70int.com

FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU
3375 KOAPAKA STREET, Suite H425 • HONOLULU, HAWAII 96819-1869
TELEPHONE: (808) 831-7761 • FAX: (808) 831-7750 • INTERNET: www.co.honolulu.hi.us

JEREMY HARRIS
MAYOR

ATTILIO K. LEONARDI
FIRE CHIEF

JOHN CLARK
DEPUTY FIRE CHIEF

November 6, 2001

Mr. Jeffrey H. Overton, AICP
Chief Environmental Planner
Group 70 International, Inc.
925 Bethel Street, Fifth Floor
Honolulu, Hawaii 96813-4307

Dear Mr. Overton:

Subject: Kawailoa Transfer Station Green Waste Recycling Improvements
Draft Environmental Assessment

We received your letter dated October 11, 2001, regarding the Draft Environmental Assessment for the above-mentioned project.

The Honolulu Fire Department (HFD) requests that the following be complied with for the new Facility Manager's office:

1. Provide a private water system where all appurtenances, hydrant spacing, and fire flow requirements meet Board of Water Supply standards.

2. Provide a fire department access road within 150 feet of the first floor of the most remote structure. Such access shall have a minimum vertical clearance of 13 feet 6 inches, be constructed of an all-weather driving surface complying with Department of Transportation Services (DTS) standards, capable of supporting the minimum 60,000 pound weight of our fire apparatus, and with a gradient not to exceed 20%. The unobstructed width of the fire apparatus access road shall meet the requirements of the appropriate county jurisdiction. All dead-end fire apparatus access roads in excess of 150 feet in length shall be provided with an approved turnaround having a radius complying with DTS standards.

3. Submit civil drawings to the HFD for review and approval.

Should you have any questions, please call Battalion Chief Kenneth Silva of our Fire Prevention Bureau at 831-7778.

Sincerely,

Attilio K. Leonardi

ATTILIO K. LEONARDI
Fire Chief

AKL/SK:jo

cc: Wilma Namumnart, Department of Environmental Services, Refuse Division
Genevieve Salmonson, Office of Environmental Quality Control

GROUP 70
INTERNATIONAL

January 8, 2002

Mr. Attilio K. Leonardi, Fire Chief
Fire Department
City and County of Honolulu
3375 Koapaka Street, Suite H425
Honolulu, HI 96819

Subject: Kawailoa Transfer Station
Green Waste Recycling Improvements
Draft Environmental Assessment
TMK 6-1-05:18

Dear Mr. Leonardi:

Thank you for your November 6, 2001 letter regarding the Draft Environmental Assessment for Kawailoa Transfer Station. We have prepared the following responses to your comments regarding issues.

Private Water System:

The Department of Environmental Services will coordinate with the Board of Water Supply to ensure that the improvement construction will meet the necessary standards.

Fire Department Access Road:

The existing facility is presently in compliance for fire department access and turn-around ratios. The improvements to the station will not change the compliance.

Submit Civil Drawings to HFD:

Construction drawings will be submitted to the Honolulu Fire Department for review and approval.

Your comment letter and this response will be included in the Final Environmental Assessment. We appreciate your input for the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Jeffrey H. Overton, AICP
Chief Environmental Planner

PHONE (808) 594-1888

FAX (808) 594-1865

STATE OF HAWAI'I
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAI'I 96813

HRD01/340

November 7, 2001

Jeffrey H. Overton
Group 70 International, Inc.
925 Bethel Steet, 5th Floor
Honolulu, HI 96817

Subject: Kawailoa Transfer Station Green Waste Recycling Improvements Draft Environmental Assessment

Dear Mr. Overton:

Thank you for the opportunity to review the above-referenced environmental assessment.

The Office of Hawaiian Affairs requests that you prepare a cultural impact statement, pursuant to Act 50, Session Laws of Hawaii 2000. The cultural impact statement must identify and address the effects on Hawai'i's culture and traditional and customary practices, irregardless of the level of existing use. At a minimum, the draft EA should identify individuals and organizations with expertise on cultural practices with whom consultation has occurred.

If you have any questions, please call Sharla Manley, Policy Analyst, at 594-1944.

Sincerely,

Colin C. Kippen, Jr.
Deputy Administrator, Hawaiian Rights Division

cc: Board of Trustees
Clyde Namu'o, Administrator
Department of Environmental Services, Refuse Division
Office of Environmental Quality and Control

GROUP 70
INTERNATIONAL

Francis S. Oda,
Arch. D., AIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H. Nihei, AIA, CSI
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Dean H. Kitamura
Frank B. McCue
Kyle K. Nakamoto
Kathryn A. Nam
Jeffrey H. Overton, AICP
Christine M. Ruotola, AICP
Norma J. Scott
Scott Tangonan
Sharon Ching Williams, AIA

January 8, 2002

Mr. Colin C. Kippen, Jr.
Deputy Administrator, Hawaiian Rights Division
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, HI 96813

Subject: Kawailoa Transfer Station
Green Waste Recycling Improvements
Draft Environmental Assessment
TMK 6-1-05:18

Dear Mr. Kippen:

Thank you for your November 7, 2001 letter regarding the Draft Environmental Assessment (EA) for Kawailoa Transfer Station. An assessment of potential cultural impacts of the proposed project will be included in the Final EA.

The project site was used as a dump beginning in 1954, and a decade later, operations continued onsite as it became a landfill. In 1987 the site usage switched to a transfer station, a use that continues today. It is a heavily disturbed land area that does not possess unique landforms, shoreline, trails, or natural habitat. With this unusual site history we do not expect significant cultural findings. However, for the Final EA, we will contact individuals and organizations with expertise in cultural practices to assess possible cultural impacts.

Your comment letter and this response will be included in the Final Environmental Assessment. We appreciate your input for the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Jeffrey H. Overton, AICP
Chief Environmental Planner

Group 70 International, Inc. • Architecture • Planning • Interior Design • Building Diagnostics • Assets Management • Environmental Services
925 Bethel Street, 5th Floor • Honolulu, Hawaii 96813-4307 • Ph (808) 523-5866 • Fax (808) 523-5874 • www.group70int.com • mail@group70int.com

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
Kakuhihewa Building, Room 555
601 Kamokila Boulevard
Kapolei, Hawaii 96707

HAWAI`I HISTORIC PRESERVATION DIVISION REVIEW

Log #:28567
Doc #:0111EJ09

To: Jeff Overton
Name of Agency/Applicant: Group 70 International, Inc.
Address of Agency/Applicant: 925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

SUBJECT: Draft Environmental Assessment (DEA) and Special Management Area Use Permit for the City and County of Honolulu Kawailoa Transfer Station Green Waste Recycling Improvements

Ahupua`a: Pupukea
District Island: Ko`olauloa, O`ahu
TMK: 6-1-005:018

1. We believe there are no historic properties present, because:

a) intensive cultivation has altered the land ____
b) residential development/urbanization has altered the land ✓
c) previous grubbing/grading has altered the land___
d) an acceptable archaeological assessment or inventory survey found no historic properties ___
e) Other: No archaeological or historical sites are likely to be found due to land alteration from former agricultural use and from the existing developed landfill.

Thus, we believe that "no historic properties will be affected" by this undertaking ✓.

2. This project has already gone through the historic preservation review process, and mitigation has been completed ___.

Staff: Elaine Jourdane Date: 11/13/01

Title: Assistant Archaeologist - O`ahu
Phone: (808) 692-8027

c: Wilma Namumnart, C&C of Honolulu, Department of Environmental Services, Refuse Division, 650 S. King Street, 6th Floor, Honolulu, HI 96813
Genevieve Salmonson, Director OEQC, 235 S. Beretania St., Suite 702, Honolulu, HI 96813

GROUP 70
INTERNATIONAL

January 8, 2002

Ms. Elaine Jourdane
Hawai'i Historic Preservation Division
Department of Land and Natural Resources
Kakuhihewa Building, Room 555
601 Kamokila Boulevard
Kapolei, HI 96707

Subject: Kawailoa Transfer Station
Green Waste Recycling Improvements
Draft Environmental Assessment
TMK 6-1-05:18

Dear Ms. Jourdane:

Thank you for your November 13, 2001 letter regarding the Draft Environmental Assessment for Kawailoa Transfer Station. We acknowledge your belief that there are no historic properties present and no historic properties will be affected.

Your comment letter and this response will be included in the Final Environmental Assessment. We appreciate your input for the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Jeffrey H. Overton, AICP
Chief Environmental Planner

Group 70 International, Inc. • Architecture • Planning • Interior Design • Building Diagnostics • Assets Management • Environmental Services
925 Bethel Street, 5th Floor • Honolulu, Hawaii 96813-4307 • Ph (808) 523-5866 • Fax (808) 523-5874 • www.group70int.com • mail@group70int.com

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843

November 14, 2001

Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

Attention: Jeff Overton

Gentlemen:

Subject: Your Transmittal of October 11, 2001 of the Draft Environmental Assessment and Special Management Area Use Application for the Kawailoa Transfer Station Improvements, Pupukea, TMK: 6-1-05: 18

Thank you for the opportunity to review the subject document for the proposed green waste recycling station improvements.

We have the following comments to offer:

1. The on-site fire protection requirements should be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department.

2. There is one existing water service consisting of a 1-inch water meter serving the site.

3. The availability of water will be determined when the Building Permit Applications are submitted for our review and approval. If water is made available, the applicant will be required to pay the applicable Water System Facilities Charges for resource development, transmission and daily storage.

4. Board of Water Supply approved Reduced Pressure Principle Backflow Prevention Assemblies are required to be installed immediately after all water meters serving the site.

If you have any questions, please contact Scot Muraoka at 527-5221.

Very truly yours,

for CLIFFORD S. JAMILE
Manager and Chief Engineer

cc: Office of Environmental Quality Control
Department of Environmental Services

GROUP 70
INTERNATIONAL

January 8, 2002

Mr. Clifford S. Jamile, Manager and Chief Engineer
Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, HI 96813

Subject: Kawailoa Transfer Station
Green Waste Recycling Improvements
Draft Environmental Assessment
TMK 6-1-05:18

Dear Mr. Jamile:

Thank you for your November 14, 2001 letter regarding the Draft Environmental Assessment for Kawailoa Transfer Station. We have prepared the following responses to your comments.

On-Site Fire Protection:

On-site fire protection requirements will be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department.

Existing Water Service:

Thank you for notifying us about the 1-inch water meter serving the site. We understand this may be an issue with adequacy of fire protection and that the matter will be addressed in the building design/permitting stage.

Water Availability:

It is understood that water availability determination will be made when the Building Permit Applications are filed, and applicable charges will be required to be paid by the applicant.

Reduced Pressure Principle Backflow Prevention Assemblies

These assemblies will be installed on water meter serving the site.

Your comment letter and this response will be included in the Final Environmental Assessment. We appreciate your input for the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Jeffrey H. Overton, AICP
Chief Environmental Planner

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

BRUCE S. ANDERSON, Ph.D., M.P.H.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. BOX 3378
HONOLULU, HAWAII 96801

In reply, please refer to:
File:

01-138/epo

November 23, 2001

Mr. Jeffrey H. Overton, AICP
Chief Environmental Planner
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

Dear Mr. Overton:

Subject: Draft Environmental Assessment and Application for Special Management Area Use Permit for the Kawailoa Transfer Station, located at 62-180 Kawailoa Drive, Haleiwa, Hawaii.
(Tax Map Key: 6-1-05: 18)

Thank you for the opportunity to review and comment on the subject document. We have the following comments to offer at this time:

Clean Air Branch

The proposed improvement activities include constructing paved parking, staging, and circulation areas, triggers a concern in potential dust problems. There is a significant potential for fugitive dust to be generated during clearing and removal of debris, grubbing, grading, and excavation. Implementation of adequate dust control measures during all phases of construction is warranted. Construction activities must comply with provisions of Chapter 11-60.1, Hawaii Administrative Rules, section 11-60.1-33 on Fugitive Dust.

The contractor should provide adequate means to control dust from road areas and during the various phases of construction activities. These means include, but are not limited to:

a. Planning the different phases of construction, focusing on minimizing the amount of dust-generating materials and activities, centralizing on-site vehicular traffic routes, and locating potentially dusty equipment in areas of the least impact;

b. Providing an adequate water source at site prior to start-up of construction activities;

c. Landscaping and rapid covering of bare areas, including slopes, starting from the initial grading phase;

d. Controlling of dust from shoulders, and access roads;

e. Providing adequate dust control measures during weekends, after hours, and prior to daily start-up of construction activities; and

f. Controlling of dust from debris being hauled away from project site.

If you have any questions on fugitive dust issues, please contact Ms. Crystal Peltier of the Clean Air Branch at (808)586-4200.

Solid & Hazardous Waste Branch

1. Under conditions of Solid Waste Permit TF-0017-95, the City and County of Honolulu shall submit a revised operations manual to reflect changes in transfer station operations that will result from the proposed improvements;

2. The closed landfill adjacent to the transfer station is a regulated site under solid waste regulations. The Office of Solid Waste Management (OSWM) acknowledges the possibility that the closed landfill may be disturbed during construction. OSWM requests that the detailed site planning and engineering design information be forwarded to the OSWM for review; and

3. The OSWM recommends that a minimum 20-foot setback be provided between the edge of the closed landfill and transfer station boundary. If this recommendation cannot be met, it is recommend that the City and County of Honolulu confers with the OSWM on this element of the design.

If you have any questions, please contact Mr. Lane Otsu of the Solid & Hazardous Waste Branch at (808)586-4240.

Sincerely,

for GARY GILL
Deputy Director
Environmental Health Administration

c: CAB
SHWB
CWB

GROUP 70
INTERNATIONAL

January 8, 2002

Mr. Gary Gill, Deputy Director
State Department of Health
P.O. Box 3378
Honolulu, HI 96801

Subject: Kawailoa Transfer Station
Green Waste Recycling Improvements
Draft Environmental Assessment
TMK 6-1-05:18

Dear Mr. Gill:

Thank you for your November 23, 2001 letter regarding the Draft Environmental Assessment for Kawailoa Transfer Station. We have prepared the following responses to your comments.

1. Clean Air Branch

   Thank you for providing guidance on appropriate measures for controlling fugitive dust. The construction phase the project will comply with rules for dust control.

2. Solid and Hazardous Waste
   a. The City and County will submit a revised operating plan to reflect the changes in transfer station operations resulting from the proposed changes.
   b. The Office of Solid Waste Management (OSWM) will receive detailed site planning and engineering design information for review.
   c. A minimum 20-foot setback will be provided between the edge of the closed landfill and the transfer station. A pre-construction investigation will be conducted to define the landfill edge. If the landfill edge is less than 20 feet from the facility, landfill material will be excavated, and hauled to Waimanalo Gulch Sanitary Landfill for disposal. The landfill cover will be replaced to create

the needed setback area. The Office of Solid Waste Management will be conferred with during site investigation and construction processes.

Your comment letter and this response will be included in the Final Environmental Assessment. We appreciate your input for the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Jeffrey H. Overton, AICP
Chief Environmental Planner

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Sunset Beach Community Association
P.O.Box 471 · Haleiwa, Hawaii 96712

11/24/01

Mr. Jeff Overton
Group 70 International, Inc.
925 Bethel Street, Fifth Floor
Honolulu HI 96813-4307

Dear Mr. Overton,

At our most recent community association meeting held 11/21/01, several members had comments regarding the Draft Environmental Assessment and application for Special Management Area Use Permit for the Kawailoa Transfer Station.

Everyone spoke favorably of the idea of a sustainable green waste facility, but the following comments and questions regarding the draft EA arose:

1. No mention of traffic pattern for the green waste facility users
2. Given that a wetland surrounds the transfer station, why aren't Federal agencies (such as Army Corp of Engineers and US Federal Wildlife Service) on the mailing list to review the EA?
3. Is there an estimate of daily tonnage? I.e.) cost analysis showing there is enough tonnage to justify entire operation. Since it is not self sufficient, should there be justification for fuel costs, labor etc. for this method versus the current system. Does this method use fewer resources than hauling to Hpower where it is converted to electricity?
4. Quality of Waimanalo mulch is unknown, and pests uncommon to this side of island may be brought over.
5. Where does the drain off go from the mulch stockpile? The surrounding area is wetland, and the EA does not specifically address how the draining water will NOT enter the surrounding marsh.
6. No interpretation of soil classification listed.

We thank you for the opportunity to make comments concerning this project, and hope that some of these points can be clarified.

Sincerely,

Andrea Woods

Andrea Woods, President
Sunset Beach Community Association

cc: North Shore Neighborhood Board #27

GROUP 70
INTERNATIONAL

Francis S. Oda,
Arch. D., AIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H. Nihei, AIA, CSI
James I. Nishimoto, AIA
Ralph E. Portmore, AICP
Stephen H. Yuen, AIA
Linda C. Miki, AIA

George I. Atta, AICP
Paul P. Chorney, AIA
Wendy Lee Cook, AIA, CDT
Philip T. Cuccia
Sutobin Halim
Jeremy C. Hsu, AIA
Roy A. Inouye, AIA, CSI
Stuart M. Jow, AIA
Charles Y. Kaneshiro, AIA
Dean H. Kitamura
Frank B. McCue
Kyle K. Nakamoto
Kathryn A. Nam
Jeffrey H. Overton, AICP
Christine M. Ruotola, AICP
Norma J. Scott
Scott Tangonan
Sharon Ching Williams, AIA

January 8, 2002

Ms. Andrea Woods, President
Sunset Beach Community Association
PO Box 471
Haleiwa, HI 96712

Subject: Kawailoa Transfer Station
Green Waste Recycling Improvements
Draft Environmental Assessment
TMK 6-1-05:18

Dear Ms. Woods:

Thank you for your November 24, 2001 letter regarding the Draft Environmental Assessment (EA) for Kawailoa Transfer Station. We have prepared the following responses to your comments.

1. Facility Traffic Patterns

The Final EA includes a discussion of facility traffic patterns. The main traffic patterns at the transfer facility will not change with the improvements. City and County garbage and green waste trucks using the facility drive up onto the transfer station platform to unload into the transfer trailers. Residents who chose to bring excess garbage and yard waste to the transfer station are also directed up on the platform. Transfer trailers pull up at the lower edge of the platform to receive loads. The new pattern is residents who coming to pick-up mulch and will drive to the mulch pile's marked loading area.

2. Wetland Impact

The mulch that will be made available on site is ground-up yard waste. Unlike compost, mulch has almost no available nutrients to run off. Since run-off effects will be negligible, Federal agencies were not included on the review list. We will send a copy of the Final EA to the US Fish and Wildlife Service and address any concerns raised.

3. Why Recycle Green Waste?
   It has been estimated that 28% of residential green waste across the island is green waste. The percentage of green waste for Kawailoa is assumed to be near this number. The actual tonnage being transferred out from the station will remain the same with the separate transport of the green waste. The composting facility and HPOWER are both located in the Campbell Industrial Park within a mile of each other so that the cost of transport is almost equivalent. The importance of processing the green waste is to take moisture out of the material into HPOWER for a better burning fuel and to create a local beneficial end use of soil amendments from a resource in the waste stream.

4. Mulch Quality and Source
   Mulch will be brought on site from City contractors who process the green waste from around the island. Most mulch will not be from the windward side of the island as mulch from windward green waste is mainly utilized locally. The grinding processes used by the contractors make it difficult for many pests to survive, however, there is the possibility of pests being spread. Community gardeners and residents around the island have been using mulch from a variety of Oahu sources for more than a decade already without reported incident.

5. Mulch Pile Drainage
   Please see the above section on Wetland Impact for an explanation regarding the lack of nutrient availability.

6. Soil Classification
   An additional explanation of soil classification terms has been added to the soils section in 3.2.1. Please see the attached revised text.

Your comment letter and this response will be included in the Final Environmental Assessment. We appreciate your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Jeffrey H. Overton, AICP
Chief Environmental Planner

Group 70 International, Inc. • Architecture • Planning • Interior Design • Building Diagnostics • Assets Management • Environmental Services
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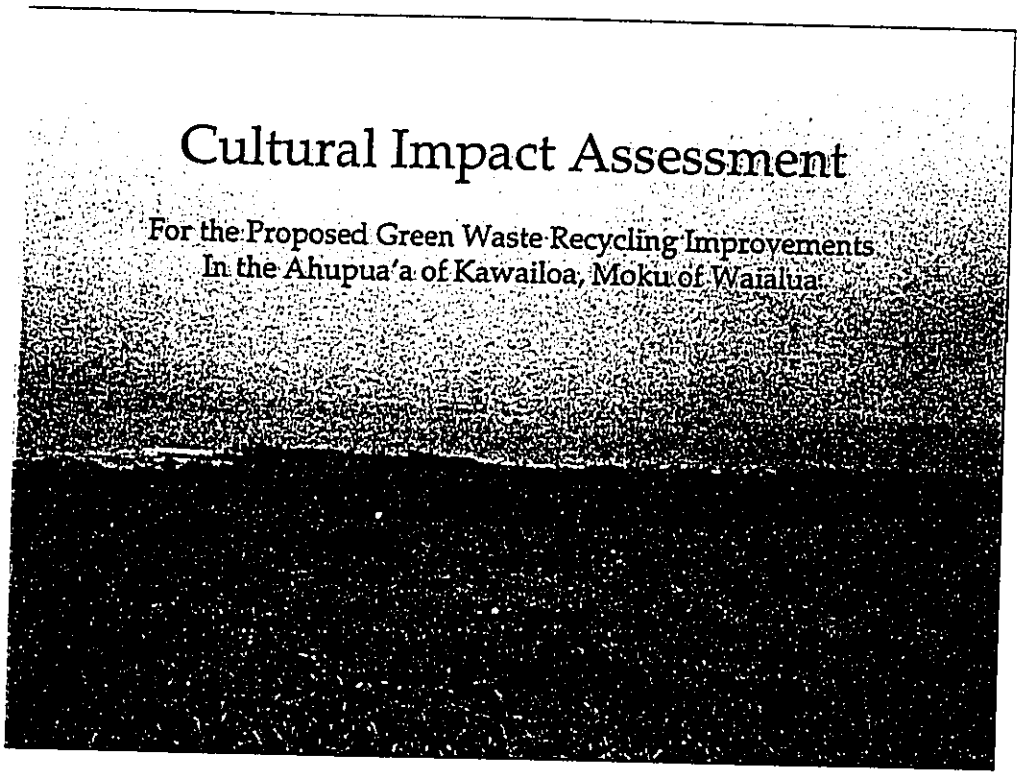
Appendix B
Cultural Impact Assessment

Kawailoa Transfer Station

Kawailoa, Waialua District, O'ahu, Hawai'i
TMK 6-1-005:018



Applicant:

City and County of Honolulu
Department of Environmental Services
650 South King Street, 6th Floor
Honolulu, HI 96813

February 2002

Group 70 International, Inc. • Architecture • Planning • Interior Design • Environmental Services •
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TABLE OF CONTENTS

LIST OF FIGURES

APPENDICES

Section 1.0
Project Summary

1.0 PROJECT SUMMARY

This Cultural Impact Assessment (CIA) has been prepared in accordance with regulatory requirements of Chapter 343, Hawai'i Revised Statutes, as amended by H.B. No. 2895, H.D. 1 of the State of Hawai'i Twentieth Legislature and approved as Act 50. The purpose of this Act is to "require that environmental impact statements include the disclosure of the effects of proposed actions on the cultural practices of the community and the State," specifically addressing the effects on Hawai'i's culture, and traditional and customary rights.

1.1 OVERVIEW OF THE PROPOSED PROJECT

The City and County of Honolulu Department of Environmental Services is proposing to make improvements to its Kawailoa Transfer Station to institute green waste separation. As shown in Figures 1-1 and 1-2, the project site is situated in the ahupua'a of Kawailoa, Waialua District, on the island of O'ahu. The project area is located mauka of Kamehameha Highway, adjacent to the closed Kawailoa Landfill. Currently the transfer station can collect and store refuse for transport to HPOWER, O'ahu's waste to energy facility. Green waste is not currently being separated for recycling, and the North Shore community wishes to expand the facility to provide a function and capability of recycling green waste.

As shown in Figures 1-3 and 1-4, the parcel is bounded on the southwest by Kawailoa Drive, and by the closed landfill to the northwest. Located across Kawailoa Drive is 'Uko'a Pond, which is situated on land that is currently leased by Diamond C. Ranch from Bishop Estate. The areas located mauka of the Transfer Station are comprised of a series of light duty and unimproved dirt roads that lead to various diversified agricultural parcels that are situated on lands that once served as a plantation camp.

1.2 CULTURAL IMPACT ASSESSMENT METHODOLOGY

Several references were used in deriving the methodology to conduct this cultural impact assessment. The applied methodology was derived from guidelines and protocols that were provided from two distinctive sources: 1) those mandated in existing regulations, agency guidelines, draft administrative rules, and court decisions; and 2) those mandated from protocol training as taught by recognized kūpuna (elders) and kumu hula (sources of indigenous and historical knowledge).

The methodology for this cultural impact assessment was primarily based upon identifying those project-specific factors that contribute in developing an appropriate level of scope including:

a) the physical and cultural characteristics of the specific area that define the landscape, including the levels of land use transition and modification that has occurred;

b) the existing land use patterns for the specific project area;

c) the known cultural properties, features, resources, practices, and beliefs within or associated with the specific project area;

d) the known or identified individuals and organizations with expertise in the identified cultural practices and beliefs or that possess specific historical and cultural knowledge of the area in question;

e) the associative linkages between family names, place names, and cultural properties;

f) the availability of recorded historical and cultural information for the specific area;

g) the potential effects of the proposed project on known cultural properties, features, resources, practices, or beliefs associated within or to the specific area.

The developing parameters as to defining what level this project would possess a "potential significant impact" were established based upon information obtained through both informal discussions and formal interviews, as well as a review and summary of previously conducted archaeological work and historical documentation of the project area.

1.2.1 Review of Known Written Records

A review of historical documents, maps, and photographs was conducted at the State Historic Preservation Division library, the Bernice Pauahi Bishop Museum Archives and Library, the Hawai'i State Library, State Bureau of Conveyances, the Hawai'i State Archives, the City and County of Honolulu Real Property Assessment Division, and the library resources of Group 70 International, Inc. The assessment included a review of Land Commission Awards, testimonies from the Native and Foreign Register, recorded journal logs, 19th century Hawaiian language newspapers, recorded historical accounts, as well as archaeological studies and surveys previously conducted within or near the project area.

An effort was also made to identify various recorded oral traditions including nā oli (chants), nā mele (musical compositions), and nā mo'olelo (associative stories) that mentioned specific place names associated with the Waialua District and the ahupua'a of Kawailoa. Several of these recorded accounts were documented in Hawaiian text, whereupon translations and preliminary interpretative analysis of each composition's kaona (a narrative technique employed by the composer that infuses multi-layers of contextual meanings into the particular chant or mele) was performed.

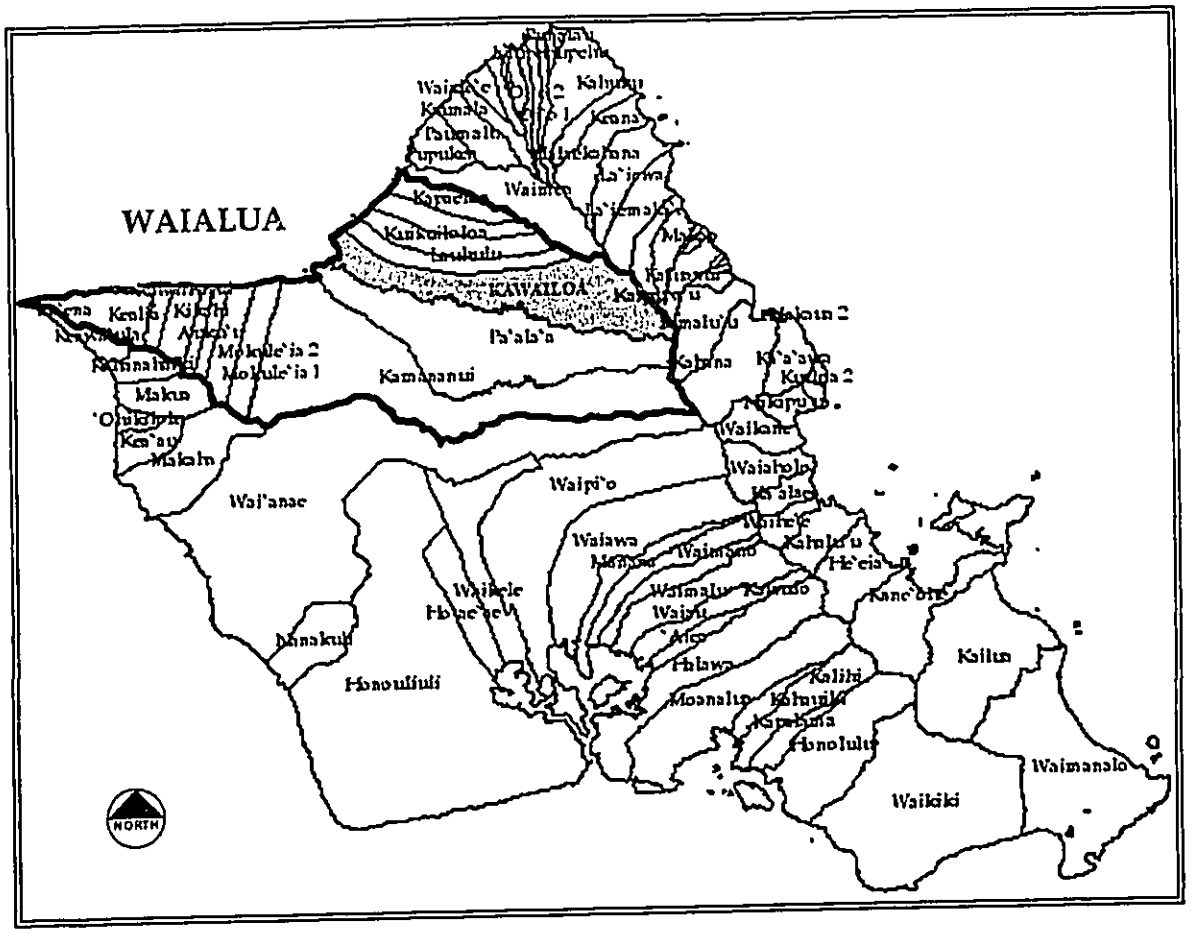


FIGURE 1-1 AHUPUA'A LAND DIVISIONS, ISLAND OF O'AHU

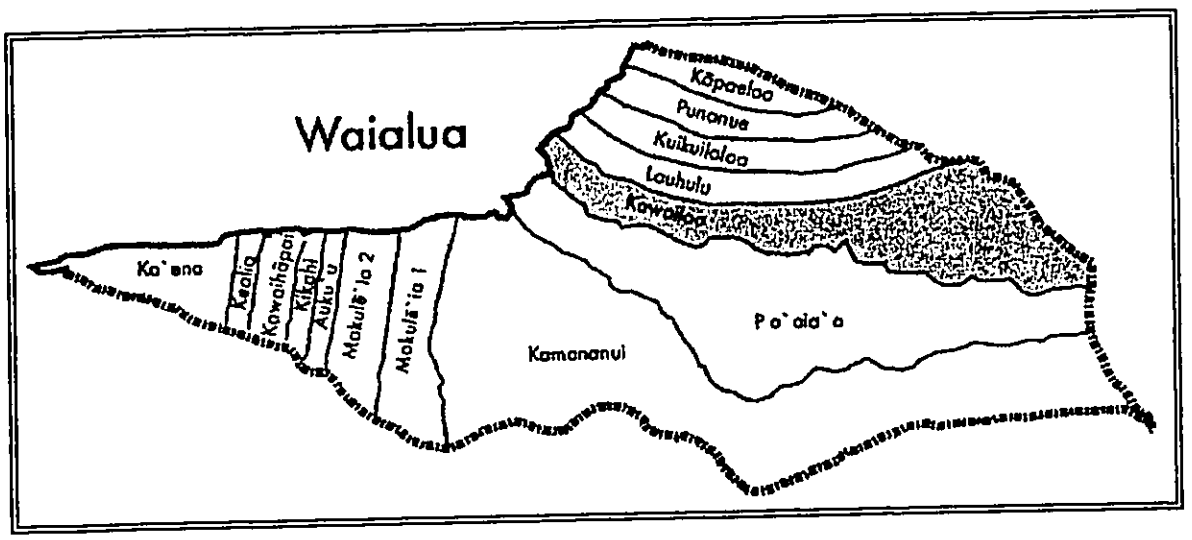
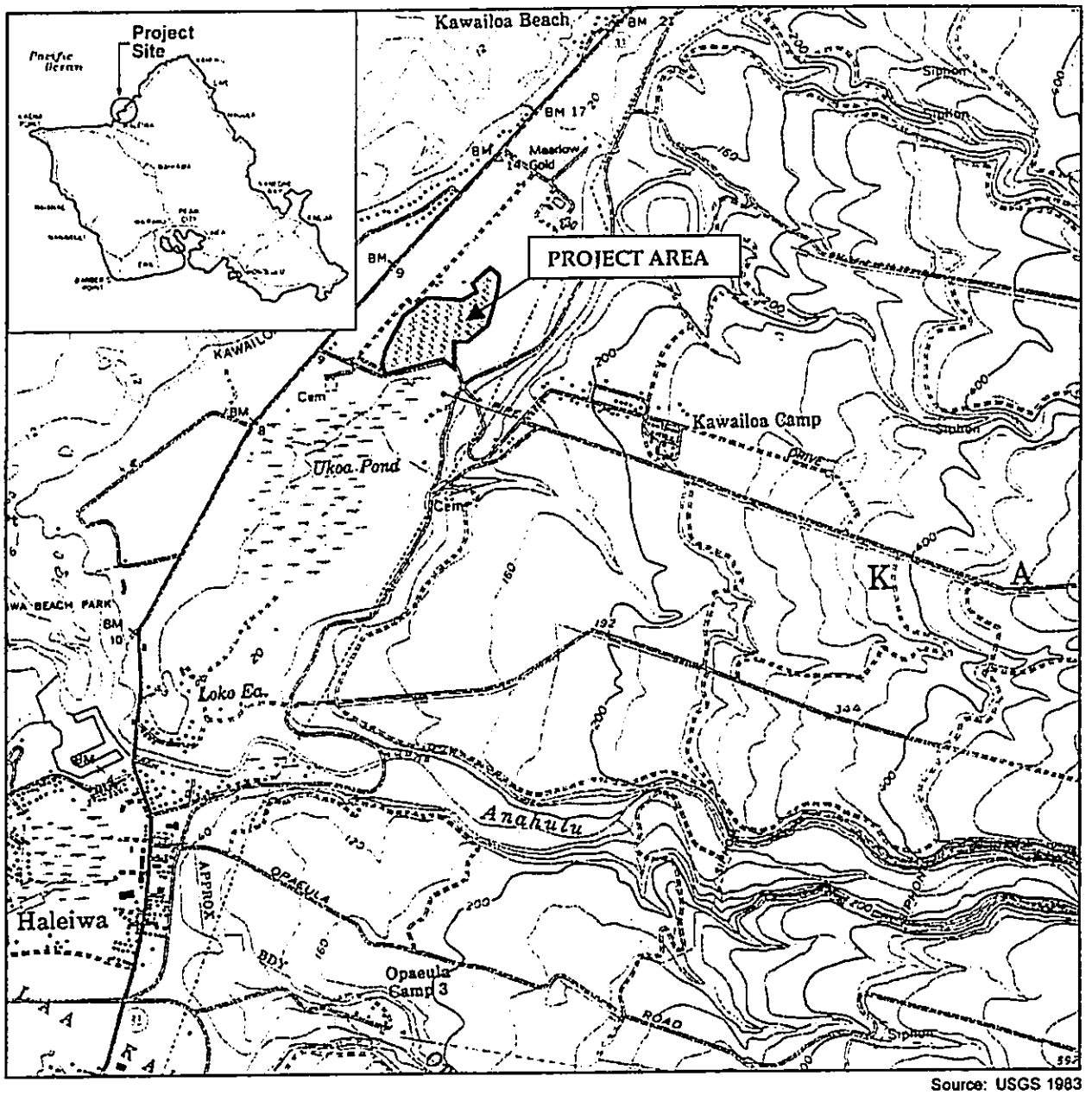


FIGURE 1-2 AHUPUA'A LAND DIVISIONS WITHIN WAIALUA DISTRICT, O'AHU



Source: USGS 1983

FIGURE 1-3 PROJECT LOCATION MAP

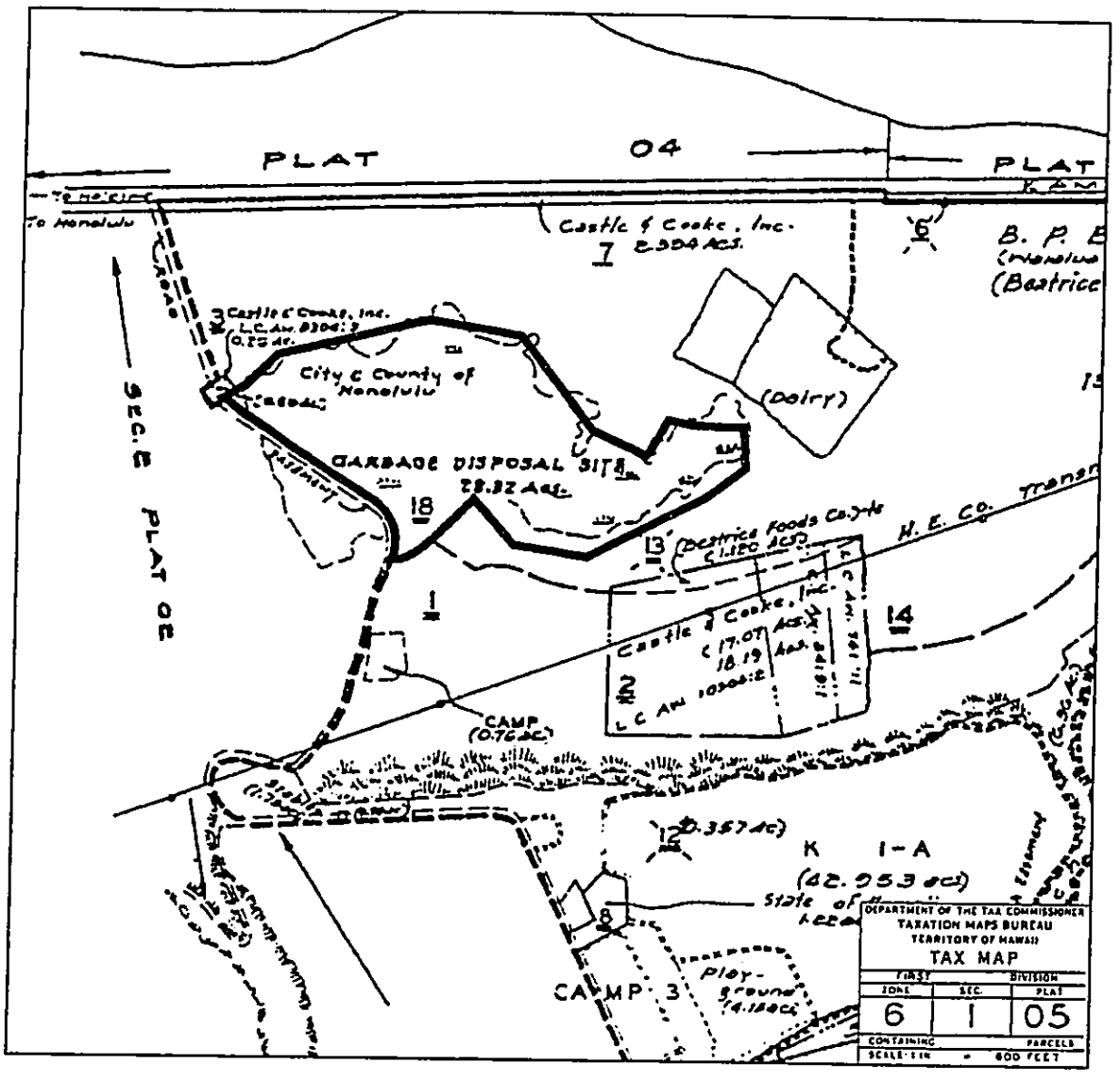


FIGURE 1-4 TMK 6-1-005:018 PARCEL MAP

1.2.2 Knowledgeable Organizations and Individuals

Various agencies, organizations, community members, and cultural/lineal descendants with ties to Kawailoa were initially contacted to identify those individuals with cultural expertise and knowledge of the project area and the surrounding vicinity. As contacts were established, further inquiry was conducted to assess the primary cultural concerns associated to the Kawailoa ahupua'a and the potential impacts relative to the project.

Attempts were made to contact several organizations that included the Department of Land and Natural Resources State Historic Preservation Division, the O'ahu Island Burial Council, the Hawai'i-Pacific Studies Department of the Bernice Pauahi Bishop Museum (a new merger of several departments including the Anthropology Department and CRCC), the Bishop Estate Land Division, the Office of Hawaiian Affairs, the Waialua Civic Club, as well as several hula hālau (training centers for hula practitioners).

Efforts were made to identify those individuals that either grew up in the Kawailoa area or the greater Waialua District, and that were potentially knowledgeable of traditional cultural properties, traditional and customary practices, as well as any established contemporary cultural uses near or within the project area. The initial list of contacts was comprised of three individuals. Upon establishing contact with these individuals, other potential contacts were referred.

Within predetermined limitations, a conscious effort was made to contact nā kūpuna, nā kumu hula and nā kua'āina (literally translated as "the backbone of the land", referring to those individuals or families that have strong associative ties to a specific place) that potentially would be able to share some 'ike (knowledge) of the Kawailoa ahupua'a.

Upon identifying those individuals that were knowledgeable of the cultural features, resources, beliefs, and practices, pre-interviews were conducted via informal telephone discussions or informal in-person talk story sessions. Depending upon the level of detailed information provided in response to pre-interview questions, a determination was made whether to conduct a formal interview with the individual. Decisions regarding the most appropriate time and manner to conduct the interview were left to the discretion of the interviewee.

To complement the on-going development of discussions with potential knowledgeable individuals, information derived from interviews previously conducted and recorded by other agencies or organizations were included in this report with permission granted by those interviewed. In these specific cases, the interviewees were recognized kūpuna and as such, a respect for their time and energy was considered paramount. Thus, if the information could be obtained from interviews previously conducted, it was determined that only those subject areas requiring further inquiry would be discussed.

A summary of those organizations and individuals contacted during the course of the cultural impact assessment and the informal format of questions is presented in Appendix A and B, respectively.

1.3 SCOPE OF WORK

The following scope of work was proposed in preparing this cultural impact assessment study:

1) Conduct a review and summary of historical documentation for purposes of identifying potential traditional cultural properties, features, resources, beliefs, and practices within or near the project area.

2) Conduct an analysis of information provided in archaeological reports and known oral traditions of areas near or within the project area as a means of identifying traditional land use activities, cultural resources, and associative practices and beliefs.

3) Compile and summarize information obtained from informal discussions and formal interviews with identified knowledgeable individuals regarding historic and traditional practices that are site-specific and inclusive of the ahupua'a of Kawailoa.

4) Prepare a report that summarizes the information obtained from research conducted from which an evaluation of the potential cultural impacts related to proposed development area will be provided. As necessary, recommendations to mitigate potential impacts will also be included.

Section 2.0

Legacy in the Landscape

2.0 LEGACY IN THE LANDSCAPE

2.1 NATURAL SETTING

'O Waialua, kai leo nui	*Waialua, with the resounding voice of the ocean*
Ua lono ka uka o Līhu'e	*The uplands of Līhu'e have heard*
Ke wā la Wahiawā e	*A roaring sound that reaches Wahiawā*
Kuli wale, kuli wale i ka leo	*Indeed a deafening voice*
He leo no ke kai e	*A voice that emerges from the sea (Emerson: 1915, 99)*

Chanted by Hi'iakaikapoliopele during her arduous journey to Kaua'i, these words of adoration for the mokuoloko, the district of Waialua exemplify the powerful natural forces of its coastal waters. Waialua is one of six interior land districts that divide up the mokupuni, the island of O'ahu. These mokuoloko are further subdivided into smaller tracts of land called ahupua'a that varied in size depending upon the natural resource yields that existed within a particular region. The boundary definitions of ahupua'a include mountainous (ma uka) and coastal (ma kai) resources and were often subdivided into smaller tracts of land with varying degrees of intended use, purpose, and function.

According to the Kūhano Report on Ancient Land Divisions of O'ahu (December 12, 1873) the mokuoloko of Waialua was divided up into 14 ahupua'a that included the northwestern area of Ka'ena and extended east until Kāpaeloa. A review of changes later made in 1909 as compared to the known ahupua'a districts of 1859 was conducted, revealing that the ahupua'a of Waianae uka was a later addition to the Waialua district. In 1866, the ahupua'a of Waimea, previously belonging to the mokuoloko of Ko'olauloa, was added as well to the Waialua district.

The project area is located within the ahupua'a of Kawailoa, noted in various oral traditions and written records as an area abundant with mountainous and coastal resources. Along its seaward slopes, the mokuoloko of Waialua was endowed with a rich water supply stemming from three major tributary systems: Anahulu River, 'Ōpae'ula Stream, and Helemano Stream whose headwaters lie in the upper mountain regions of the Ko'olau Range. As such, these systems provided an extensive supply of freshwater that contributed to the land use patterns of the area as a primary agricultural center.

As late as the mid-1800s, the gentle sloping contours of Kawailoa were a complement to its level coastal plains, providing ideal physical conditions for the development of lo'i kalo, terraced wetland taro fields. The upper kula, country lands provided ideal terrain for planting 'uala (sweet potato) and wauke (paper mulberry). Historical records indicate that the coastal plain region was used for planting 'uala, melons, and raising livestock. Dispersed in between the gulches and ridges of the upper valley, small 'okipu'u, forest clearings were created for purposes of planting small gardens (Sahlins and Kirch: 1992; Handy et al: 1972, 466).

The ahupua'a of Kawailoa includes extensive terraced areas that are north of the Waialua River, as well as the level lands situated north and south of Anahulu River, and the "swampy land east of Puena [*sic*] Point." The area's most productive natural assets are two large fishponds, 'Uko'a and Loko Ea, respectively that provided a variety and abundance of mullet fish.

As diverse and abundant at its land resources, the ahupua'a of Kawailoa also provided abundance in its coastal resources. The mokuoloko of Waialua has two bays, Kaiaka and Waialua Bay, with the latter having a broad beach (current day Hale'iwa Beach Park) that extends out towards Pua'ena Point, located approximately one mile southwest of the project area. Kaiaka, meaning "shadowy sea," and named by the famous prophet, Kaopulupulu, is a small bay located about two miles southwest of the project area and is comprised of a narrow strip of beach, approximately 500 yards long that is protected by an offshore reef (Clark: 1977, 111-113; Sterling and Summers: 1978, 90). Portions of the nearshore area are suitable for recreational swimming.

The kahakai (coastal shoreline) of Kawailoa extends from Pua'ena Point to the Wananapaoa Islands in Waimea Bay. This stretch of coastline consists of various stretches of sandy beach with intermittent outcroppings of reef and lava rock and is most noted for its extensive offshore surfing breaks. The coastal areas adjacent to the project area were traditionally known as Papa'iloa and Kūkae'ohiki, and were noted for its littoral resources as well as its surf (Ibid, 115).

2.2 HISTORICAL BACKGROUND

2.2.1 Ka Wā Kahiko

Prior to the arrival of Captain Cook in 1778 to the Hawaiian Islands, much of the early documentation of Hawaiian history was preserved in oral traditions, as the early Hawaiians possessed no form of writing. These oratories consisted of chants, poems, riddles, legends, myths, and songs, which were passed down from generation to generation. The cultural significance of the Waialua district and the ahupua'a of Kawailoa in the conscience of native Hawaiians is illustrated in the numerous oral traditions associated both with the mokuoloko and the ahupua'a as being an area of residence for ruling ali'i (chiefs). A succinct review of the influential ruling chiefs that resided in the area is provided below.

Waia

'O Wākea noho iā Papahānaumoku	*Wākea joins in union with Papahānaumoku*
Hānau o Hawai'i, he moku	*Born is Hawai'i, an island*
Hānau o Maui, he moku	*Born is Maui, an island*
Hoi hou 'o Wākea noho iā Ho'ohōkūkalani	*Wākea returns to join in union with Ho'ohōkūkalani*
Hānau o Moloka'i, he moku	*Born is Moloka'i, an island*
Hānau o Lāna'ikaula, he moku	*Born is Lāna'ikaula, an island*
Liliopū punalua 'o Papa iā Ho'ohōkūkalani	*Papa possesses a jealous rage towards Ho'ohōkūkalani*

Ho'i hou 'o Papa, noho iā Wakea	*Returning thereafter to Wākea*
Hānau o O'ahu, he moku	*Born is O'ahu, an island*
Hānau o Kaua'i, he moku	*Born is Kaua'i, an island*
Hānau o Ni'ihau, he moku	*Born is Ni'ihau, an island*
He 'ula a o Kaho'olawe	*A reddish hue that is of Kaho'olawe*

In one of the cosmogenic traditions of native Hawaiians, known as the Kumulipo, the creatures of the water are born first, establishing the first tier of ancestral identity. This Pule Ho'ola'a Ali'i (the sanctifying prayer of a ruling chief) was first chanted at the birth of Kalaninui'iamamao, also known as Lonoikamakahiki, as a prayer that sanctified the chief through the recital of his genealogical line. Over two thousand lines in length, the Kumulipo divides ancient Hawaiian history in sixteen wā (time periods) that unfold the creation of all natural elements through a specific genealogical procession. The concept and application of the mo'okū'auhau, of knowing the genealogical line, of an ali'i became of primary importance in establishing social order in traditional times.

Of direct pertinence to the district of Waialua, the Kumulipo acknowledges the genealogical lineages of Wākea and Papahānaumoku, in the twelfth and thirteen wā, respectively. The emergence of these two lineages comes from such a time of antiquity that these ancestral figures are attributed with the cultural identity of being Sky Father and Earth Mother. In multiple variations of this oratory, the union of these two figures results in the birth of Hāloa, considered to be the progenitor of all native Hawaiians thereby providing evidence that all chiefly genealogical lines are descended from the same source (Kame'eleihiwa: 1999).

Various oral traditions give an account of Waia, the son of Hāloa and chief of O'ahu, whose name literally translates to "disgraced, shame, and dishonor." Most accounts describe the period of Waia's reign as a time of political corruption and turmoil. In the mo'olelo (historical account) of Hi'iaka, it is the district of Waialua, translated as "doubly disgraceful", that the chief Waia took residence. As one possible meaning of the district's name, it is conceivable that the place name of "Waialua" served as a disdainful remembrance of shame and dishonor brought upon by this ali'i's malevolent rule (Malo: 1951, 244-246; Handy et al: 1972; Beckwith: 1970; 298-299).

Kapawa

O Kapawa o ke ali'i o Waialua	*Kapawa, the ruling chief of Waialua*
I Hānau i Kūkaniloko	*Born at Kūkaniloko*
O Wahiawā ke kahua	*Wahiawā is the foundation*
O Līhu'e ke ēwe	*Līhu'e is the umbilical cord*
O Ka'ala ke piko	*Ka'ala is the navel*
O Kapukapukakea ka a'a	*Kapukapukakea is the womb*
O Kaiaka i Maeaea	*Kaiaka is at Maeaea*

Through the accounts provided in several oral traditions, it is suggested that as early as the Voyaging Period (1000-1180 AD), the district of Waialua was a royal residence (approximately 1060 AD) with the rule of Keaunui, son of the chief Māweke, whose

genealogical lineage is traced to Wākea and Papahānaumoku through the Nana-Ulu lineage. One of the last reigning chiefs of this lineage was Kapawa (Lake: 2001).

There were two places set aside for the birth of chiefs as signs that they were ali'i nui, high chiefs: Kūkaniloko (Figures 2-1 and 2-2) in the district of Waialua, and Holoholokū at Wailua, Kaua'i. Built by Nanakaoko and his wife Kahihi'okalani as a cultural piko (center) for the birth of their child Kapawa, Kūkaniloko was the birthplace of the island's first ali'i nui (ruling chief). For over 28 generations from Hulihonua to Wākea, no one individual was made a ruling chief over another. It is suggested that due to a smaller population size, social order was regulated through the hierarchy of the 'ohana, the family unit (Kamakau: 1992(a): 38-39, 136). However, the establishment of Kūkaniloko with its rigorous protocols contributed to an evolution of social stratification, creating a new order and with it an emerging classification of ali'i.

As the first ali'i born at Kūkaniloko, Kapawa was part of a class of chiefs that were each characterized as "an ali'i, an akua, a wela- a chief, a god, a blaze of heat." The chiefs of Līhu'e, Wahiawā, and Halemano on the island of O'ahu were called lō ali'i, characterized as "gods, unseen, resembling men." These ali'i were named as such because of a commitment to continually reside at these places, faithfully perpetuating and guarding their established kapu (sacred consecrations) (Ibid, 35-36).

FIGURE 2-1 KŪKANILOKO HEIAU

FIGURE 2-2 KŪKANILOKO BIRTH STONES

However, it is noted that under the failing rule of Kapawa, a new social, political, and spiritual order emerges with a strict kapu system that is introduced by Pā'ao, a high priest that arrives from a distant land (Kahiki). As an endnote, it is Pā'ao that usurps Kapawa as ruling chief, thereby ending the legacy of rule for this genealogical line. It is Pā'ao that introduces the luakini heiau, a political and spiritual center designated for high chiefs, which mandated a tribute of human sacrifice. As part of the social development of the Waialua district, oral traditions and archaeological records indicate that luakini heiau and ko'a structures, spiritual centers with distinctive functional roles and associations to specific akua (spiritual deities), were constructed within the region.

As illustrated in the above excerpt of Kapawa's birth chant and the other various oratories, the descriptive attributes for each place name provides layers of kaona, contextual layers of meaning that are subject to cultural interpretation. In this birth chant, the use of place names within the Waialua district would suggest a concerted emphasis on defining those significant areas that served a distinctive functional role in the societal regimes of this particular ruling chief.

2.2.2 Pre-Contact to the Early 1800s

Since the time of Waia, the abundance of resources made the district of Waialua a favorable place of residence for ali'i with lands designated for agricultural production, aquaculture cultivation, and habitation. As such, the district became a population center with increased patterns of settlement through Post-Contact. One of the earliest known records of western contact in the district comes from a journal log of Captain Charles Clerke, who sailed into Waimea Bay on February 27, 1779. As noted by Captain Clerke, the district of Waimea was considered abundant in fertile land:

Here was a fine expanse of lowland bounteously cloath'd with verdure, on which were situated may large villages and extensive plantations (Beaglehole: 1967, 610).

Prior to this record, early native historical records account the sighting of Captain Cook's ship as it sailed past the island of O'ahu. As noted, the arrival of Captain Cook's arrival during the time of Makahiki, a period of celebrating the growth and abundance of the land in tribute of the akua Lonoikamakahiki, created a stir amongst the native community:

"Ma Waimea i Kaua'i ke kī mua 'ana mai o Kāpena Kuke, i kapa 'ia aku ho'i e ko Hawai'i nei 'o Lono ('oia kekahi akua kahiko loa i holo i Kahiki), ua 'ike 'ia e ko Waialua a me ko Wai'anae ka moku, ma ka 'ao'ao hema mai ka pi'i 'ākau 'ana mai..." (Kī'oko'a: Ianuari 19, 1867)

It was at Waimea, Kauai that Captain Cook set anchor, whereupon he was also thought to be throughout Hawai'i as Lono (an ancient god that arrived from Kahiki), being first sighted from the Waialua and Wai'anae districts, from the south edging northward.

Early native historical records also account the arrival of Captain George Vancouver in 1792:

'O ka lua o ka moku o Vanekouva, 'o Daedalesa ka inoa, a ua holo loa 'oia ma Ko'olau o O'ahu, a kū ihola ma Waimea, Ko'olauloa; he awa maika'i nō ia e pili pū ana me Waialua, a he awa kū mau 'ia nō ho'i e nā moku. Ma laila kahi i pepehi 'ia ai ke kapena a me ka a'o hōkū (Kū'oko'a: Mei 18, 1867).

The second of Vancouver's ships, its name being the Daedalus, sailed to the Ko'olau area of O'ahu, and set anchor at Waimea in Ko'olauloa, a good harbor nestled near the area of Waialua, a harbor used as a place of port for various ships. It was here that the captain of the ship and navigator were beaten to death.

Recorded native accounts and journal logs suggest that during this visit, a malicious plot involving the seizure of foreign weapons and supplies resulted in a double murder of Vancouver's captain and navigator. Prior to this incident, Captain Vancouver, who was from Albion, Great Britain, was noted for his advisory role to many chiefs from all islands. His arrival was perhaps one of the earliest introductions of Christianity to the area and his journal logs were the first to note the decrease in native population as result of being introduced to foreign diseases and continuance of warfare between rival chiefs.

The encounter at Waialua memorialized a dynamic shift in political maneuvering amongst the various chiefs and the change in social thinking that native Hawaiians had regarding foreigners. No longer were foreigners looked upon in awe and wonder as enigmas to the native Hawaiian conscience. The arrival of foreigners, in some cases, represented opportunities of commercialized negotiations through the establishment of these social and political relationships. In other cases, as documented in the Waialua incident, the supplies and weaponry of foreigners became central targets of exploitation and acquisition for purposes of shifting and usurping the existing political paradigm (Kamakau: 1992(c), 163-165).

After it became known that the captain and navigator had been beaten to death, the men aboard the *Daedulus*, which was anchored just outside Waimea Bay, realigned the ship and began firing towards Waimea Valley. The battle continued for five days until a decision was made to continue the journey towards Ni'ihau. Native historical records account the events thereafter:

O ua mau haole nei ho'i i pepehi 'ia 'ai ma Waimea, ua kauō hele 'ia mai Waimea aku a hiki ma Waialua, a hala loa akula i Mokulē'ia, ma muli o ka mana'o hana loko 'ino o kekahi po'e kanaka. (Kū'oko'a: Mei 18, 1867)

The foreigners that were beaten to death at Waimea had their bodies dragged from Waimea to Waialua until Mokulē'ia, as a symbolism of extreme hatred of some foreigners.

Early historic records suggest that the area of Waialua continued to be used as a settlement area for ruling chiefs, including the infamous chief Kahekili of Maui and

Kamehameha I, in 1785 and 1801, respectively (Kamakau: 1992(c), 132-136; Kirch and Sahlins: 1992, 5i). Records indicate that after Kamehameha's victory in the Battle of Nu'uanu, he appointed several of his advisors as district chiefs to establish some jurisdictional oversight in restoring the island's efficient levels in agricultural production. For the district of Waialua, merchant journals indicate that Ke'eaumoku Cox was the overseer for the region.

2.2.3 Transitions in the Early 1800s

Between 1812 through 1830, the rise in the increased demand for sandalwood created a new trade that influenced and changed previous land tenure practices in Waialua. The timber, cut from the upland slopes of the Ko'olau mountains above Waialua, was hauled down to Waialua Bay for transport and trade. After Kamehameha's death in 1819, Liholiho continued extensive government-initiated efforts in sandalwood trade. By 1827, a major initiative promoted the continued extraction of this natural commodity for the specified purpose of decreasing a portion of debts incurred by the government (Kirch and Sahlins Vol. 1: 1992, 59). As the labor-intensive harvest efforts of sandalwood increased so did the maintenance and sustainability of the traditional agricultural terraces decreased.

On October 23, 1819, the American Board of Commissioners for Foreign Missions sent the first company of missionaries to the islands (Borthwick et al: 1998, 10). Arriving from the Boston headquarters aboard the *Thaddeus*, these Protestant missionaries began to establish political and social relationships with ruling ali'i. As result, the early 1800s were becoming as time of political and economic change as illustrated with the abolition of the kapu system by Liholiho and Ka'ahumanu and the increasing ventures in commercial activity.

In 1829, all of Waialua was under the control of Lydia Kekuaipi'ia Namahana, sister of Kahekilo Ke'eaumoku, and her husband, Gideon La'anui, great-grandson of Keoua. Kekuaipi'ia Namahana was named after her mother, Namahana, the sister of the infamous Maui chief Kahekili. As with other ali'i of this time, both Kekuaipi'ia and La'anui were active in commercial activity of the sandalwood trade and in the growing establishment of the Protestant faith.

The testimony of La'anui to the Land Commission during the Māhele provides insight as to how the Waialua District came under control of Namahana and he:

My Kuaipua [sic] is the foundation of my claim here in Waialua, and I have truly become a kama'āina here, like the native children of the place. After I had been living at Waialua for a little while with Kekuaipi'ia, the 'ili of 'Uko'a became hers, that is at Kamananui, along with Kalopa [sic], the two of them. Ka'ahumanu asked Ke'eaumoku for Loko Ea and he consented to be given to Pi'ia and she gave me 'Uko'a, Loko Ea, and Kalopa in Kamananui. When Ke'eaumoku died in 1824, Ka'ahumanu gave Pi'ia all of Waialua, from one point to the other, just for her support, and Kawailoa from the sea inland to the mountain and one side to the other, excepting the kus. Pi'ia then said to me: Your land is Kawailoa, from upland to the sea and one side to the other, I

retain no ku in it; I give it to you, together with the two 'ili of Pa'ala'a and the six 'ili at Kamananui. 'Uko'a and Loko Ea are to be joined with the ahupua'a of Kawailoa. This Pi'ia spoke to me. (As presented in Kirch and Sahlins: 1992, 95).

After her passing on September 12, 1829, all of her lands were bequeathed back to her sister Ka'ahumanu. Ka'ahumanu allowed La'anui to assume the role of konohiki over Waialua until his death in 1849 (Kame'eleihiwa: 1992, 106; Kirch and Sahlins Volume 1: 1992, 94). Records indicate that La'anui continued to serve in his role as konohiki while residing at Kawailoa until his death.

On June 5, 1832, Ka'ahumanu passed away at her home in Mānoa. In her will, all of her lands and political status as Kuhina Nui were passed on to Elizabeth Kīna'u, daughter of Kamehameha and Kaheiheimaile (Ibid, 120). Kīna'u became the wife of Matatio Kekūanaō'a, a kaukau ali'i (lesser chief) of O'ahu and Maui lineages. Kīna'u's children were Davida Kamehameha, Mosese Kekuaiwa, Lota Kapuāiwa Kamehameha, Alexander Liholiho, and Victoria Kamāmalu. In 1839, Kīna'u died of quite suddenly of mumps. Kamāmalu inherited Kīna'u's political status of Kuhina Nui and her mother's lands (Ibid, 123).

Nearly a month after Ka'ahumanu's death in 1832, John S. Emerson and his wife, American Protestant missionaries, established a mission in the rural area of Waialua. Their mission home was located on the banks of Anahulu Stream. Records indicate that Emerson taught western methods of agricultural production as well as the Gospel to the local community. In 1834, Emerson established a school in Waialua and was the headmaster and pastor until 1842, spending the next 4 years at the Lāhainaluna Seminary in Maui.

In 1848, during the reign of Kamehameha III, the Māhele, a western concept of land tenure derived into legislation, created a reformation of the land system in Hawai'i. It was the first time a system of separation and identification of the associative rights of the king and the chiefs to the land was created. The result of the Māhele led to the division and distribution of land, thus creating a system of possession rights and private title to land. During this process, all lands were placed into one of three categories: Crown Lands (for the occupant of the throne), Government Lands, and Konohiki Lands.

2.2.4 Post-Māhele Period

Records indicate that in 1848, Kamāmalu, at the young age of nine years, was the fourth largest holder of lands. As such, she held nearly half the lands in Waialua district, including the ahupua'a of Kawailoa. As an ali'i nui, she was required to yield nearly 71 percent of her land to the Mō'i and was left with only 48 parcels. In the district of Waialua, she retained only two of eight parcels (Ibid, 248). As shown in Figures 2-3 and 2-4, the area of Kawailoa was awarded to Kamāmalu as LCA 7713, and Royal Patent 4475, Apana 33.

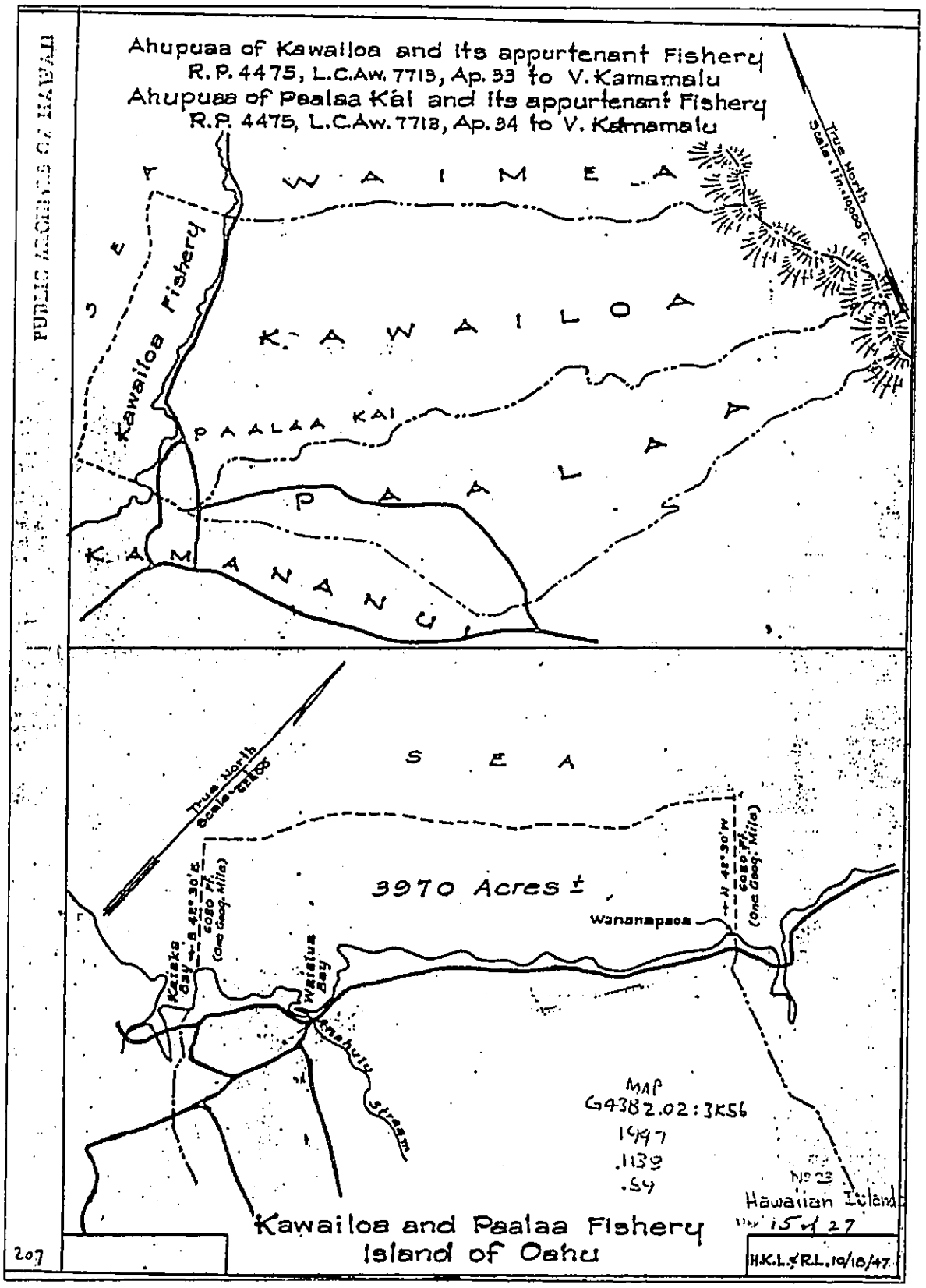


FIGURE 2-3 LANDS OF V. KAMĀMALU

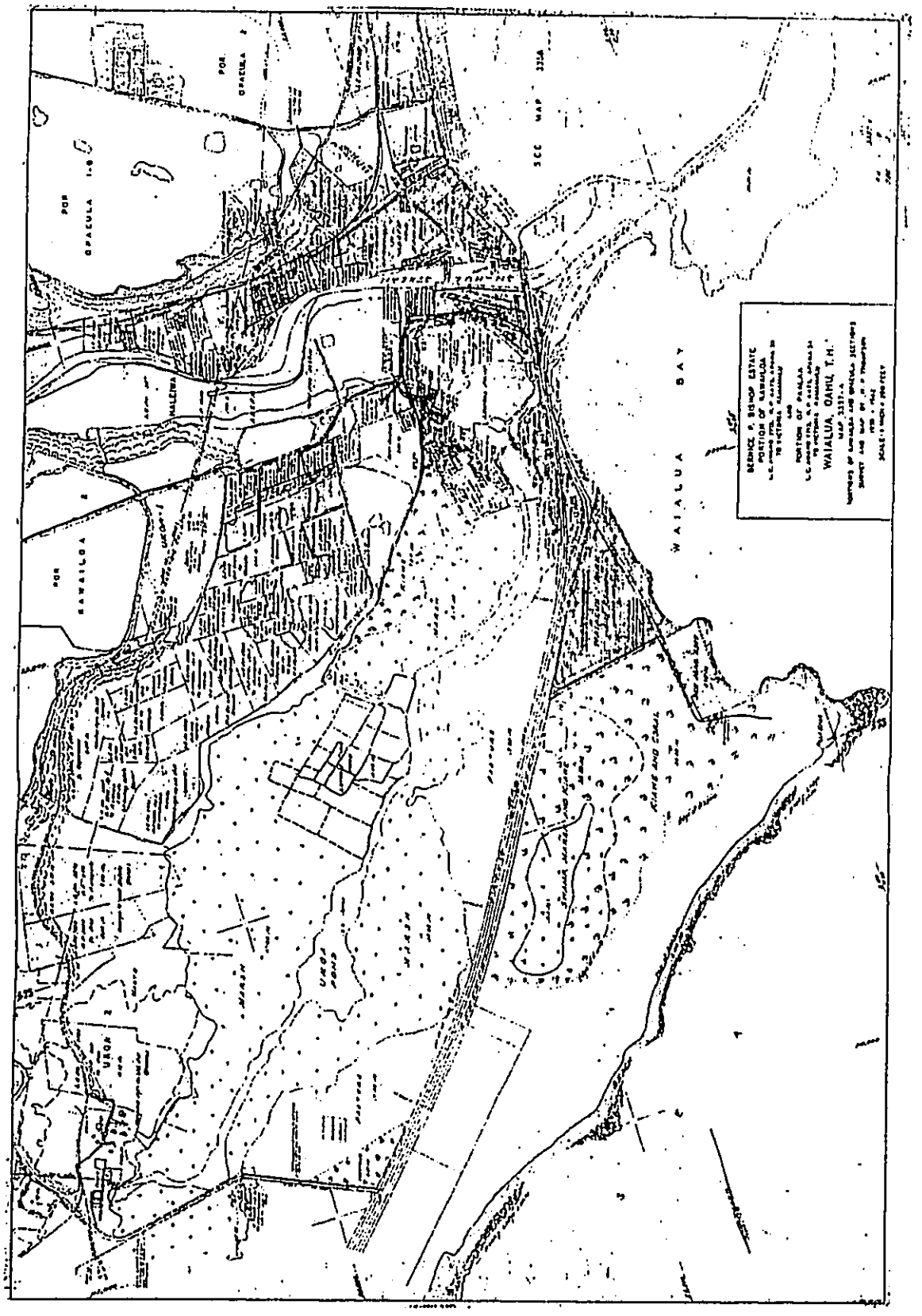


FIGURE 2-4 BERNICE PAUAHI BISHOP ESTATE MAP, 1938-1942

All lands that were identified as Crown Lands, Government Lands, and Konohiki Lands were "subject to the rights of native tenants." To clarify the definition of these rights, the Privy Council adopted resolutions, which authorized the Land Commission to award fee simple titles to all native tenants who could demonstrate that they either occupied or improved any portion of these lands. Over 140 Land Commission Awards (LCAs) were recorded in the ahupua'a of Kawailoa. Those awarded lands can be characterized as a small representation of the overall population. The majority of awardees were comprised of the local elite that possessed the financial and social authority to sustain further occupancy and usage of the property in question (Borthwick et al: 1998, 13).

After her death in 1866, Kamāmalu's lands were inherited by her father, Matatio Kekūanaō'a, who passed away two years later. The inherited lands then went to his son, Lota Kapuāiwa (Kamehameha V), and then to his half-sister, Ruta Ke'elikolani, after Kapuāiwa's death in 1872. Ke'elikolani had to petition for the estate and received it in its entirety in 1873. In 1833, Ruta Ke'elikolani died, whereupon her entire estate was inherited by her cousin Bernice Pauahi Bishop (Ibid, 310). In 1884, Pauahi died of cancer, leaving all of her lands in trust for the establishment of the Kamehameha Schools.

In 1864, Emerson retired from his pastoral duties and lived out his remaining years in Waialua. His contributions to the changing and evolving society of Waialua are evidenced in the observation that no other part of the island had been better versed in the Scriptures than in Waialua. In 1867, Emerson passed away at his home in Waialua and was succeeded by Orramel Gulick, who became the headmaster of Waialua Female Seminary, a mission secondary school taught entirely in Hawaiian. The name of the school's two-story dormitory was called "Hale'iwa", a name that would be initially adopted by the owners of the Hale'iwa Hotel that was built on the former site of the seminary school in 1899. Later, the name would continue to be used for the entire community around the hotel.

In 1892, Queen Lili'uokalani built a summer home on the shores of Anahulu River and attended the present site of the church with her name, signifying that through the tumultuous times of change, the allure of the Waialua district as a residence of royal still prevailed.

2.2.5 Development of Agricultural Production

Records indicate that as early as 1836, sugar was an established agricultural crop in the lands of Waialua. It was Emerson that cultivated and refined sugar into molasses. Various individuals contributed to the overall growth and development of sugarcane lands in Waialua including Levi Chamberlain, Halstead and Gorden, and the Halstead Brothers until the establishment of the Waialua Agricultural Company (also known as the Waialua Sugar Company) in 1889, which was incorporated by Castle and Cooke (Suzuki: 1993, 12; Wilcox: 1998, 108). Within the first years of operation, the company expanded its production acreage and land base, constructed a new mill and railway system, and developed an intricate water irrigation and allocation system where two thirds of its flow was provided from groundwater resources and the balance by surface

water. The result of these improvements was an increase in sugar production from approximately 5000 to 20,000 tons between 1900 and 1905. By the mid-1970s, the company reached peak production levels of nearly 60,000 tons of sugar annually.

As sugarcane production increased, other agricultural activities soon emerged in the late 1800s. As shown in an 1884 Hawaiian Government Survey Map of Waialua Bay (Figure 2-5), most of the area near the project area was still comprised of marshland. Vast parcels of marshlands throughout Waialua and including those in Kawailoa were used for rice cultivation. Chinese settlers, initially brought to the islands in 1852 as laborers for sugar production, began to supply an increasing domestic market demand for rice. By 1892, close to 182 acres of marshland was utilized for rice cultivation in the ahupua'a of Mokulē'ia, Kamananui, and Kawailoa (Borthwick et al: 1998, 15).

With the establishment and growth of the Waialua Sugar Company came an expansion of lands designated for sugarcane production and the development of the O'ahu Railway and Land Company, as shown in Figures 2-6 and 2-7. By 1898, this rail system connected the areas of Waialua and Kahuku to Honolulu, Pearl City, and Wai'anae, fortifying the island's production and distribution efforts in sugarcane production. The O'ahu Railway and Land Company finally ceased its rail line operations in 1947.

Through the 1920s and 30s, the Waialua Sugar Company had established itself as an emerging leader in Hawaii's sugar industry, ranking fourth in sugar production by 1931 and transforming over 1000 hectares of prime coastal alluvial terrain. (Kirch and Sahlins Volume 1: 1992, 17). The most notable feature of the sugar company and a contributor to its success was the design of its flume system, which was used for field irrigation. A configured system of portable concrete flumes dramatically improved production per acre ratios ever recorded. However, as a direct result of the failing market of Hawaii's sugar industry, the Waialua Sugar Company was the last surviving sugar plantation to close down on O'ahu in 1995 (Wilcox: 1998, 110).

Situated in the eastern section of Waialua Sugar Company were pineapple lands, operated by Dole Fresh Fruit Company. Both companies were subsidiaries of the same parent company, Dole Food Company, and due to the close proximity of both agricultural operations, the demarcation lines between both agricultural ventures would continuously shift. In summary, significant impacts derived from evolving land use patterns attributable to sugar and pineapple production have altered the natural and cultural landscape.

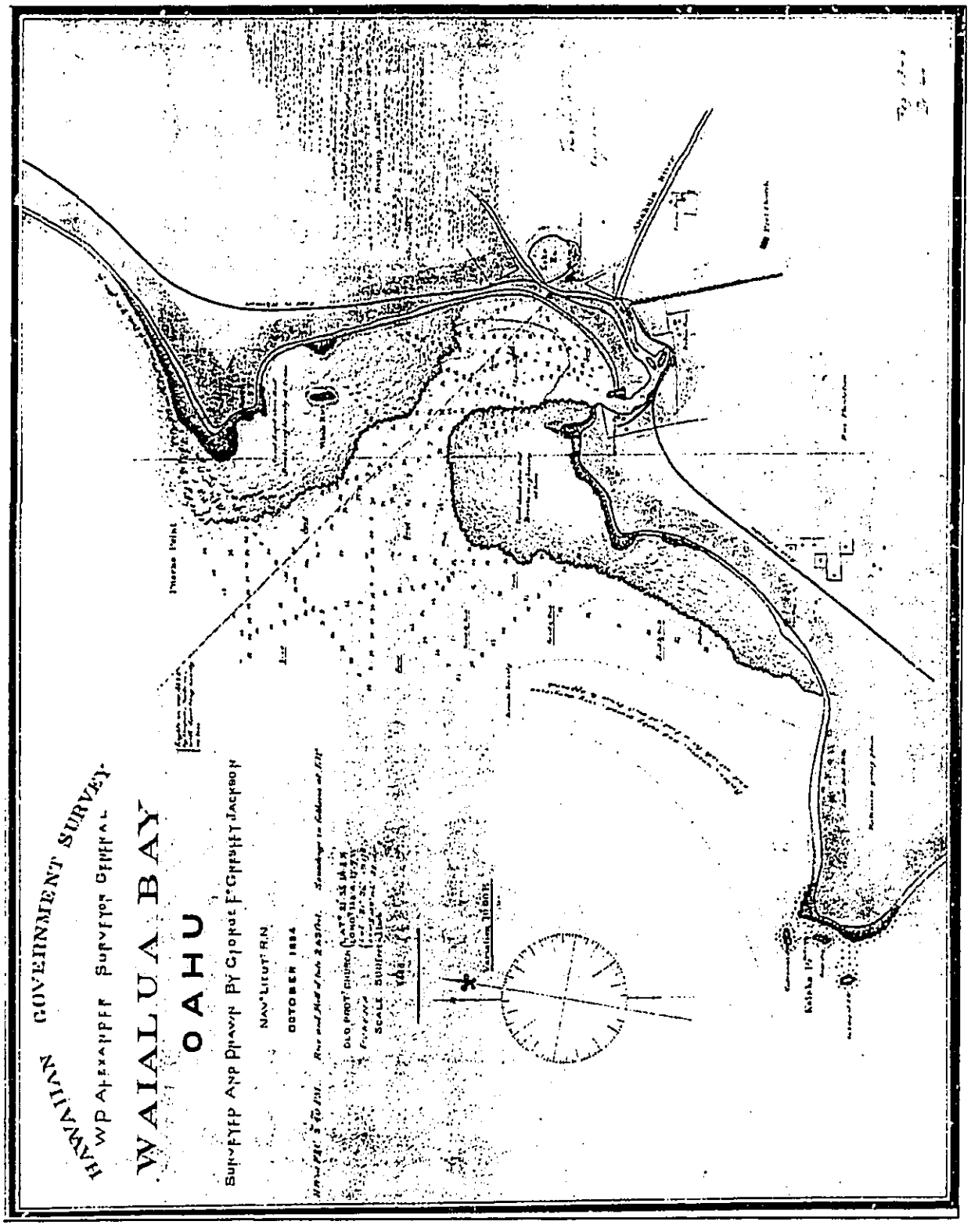


FIGURE 2-5 HAWAIIAN GOVERNMENT SURVEY MAP, OCTOBER 1884

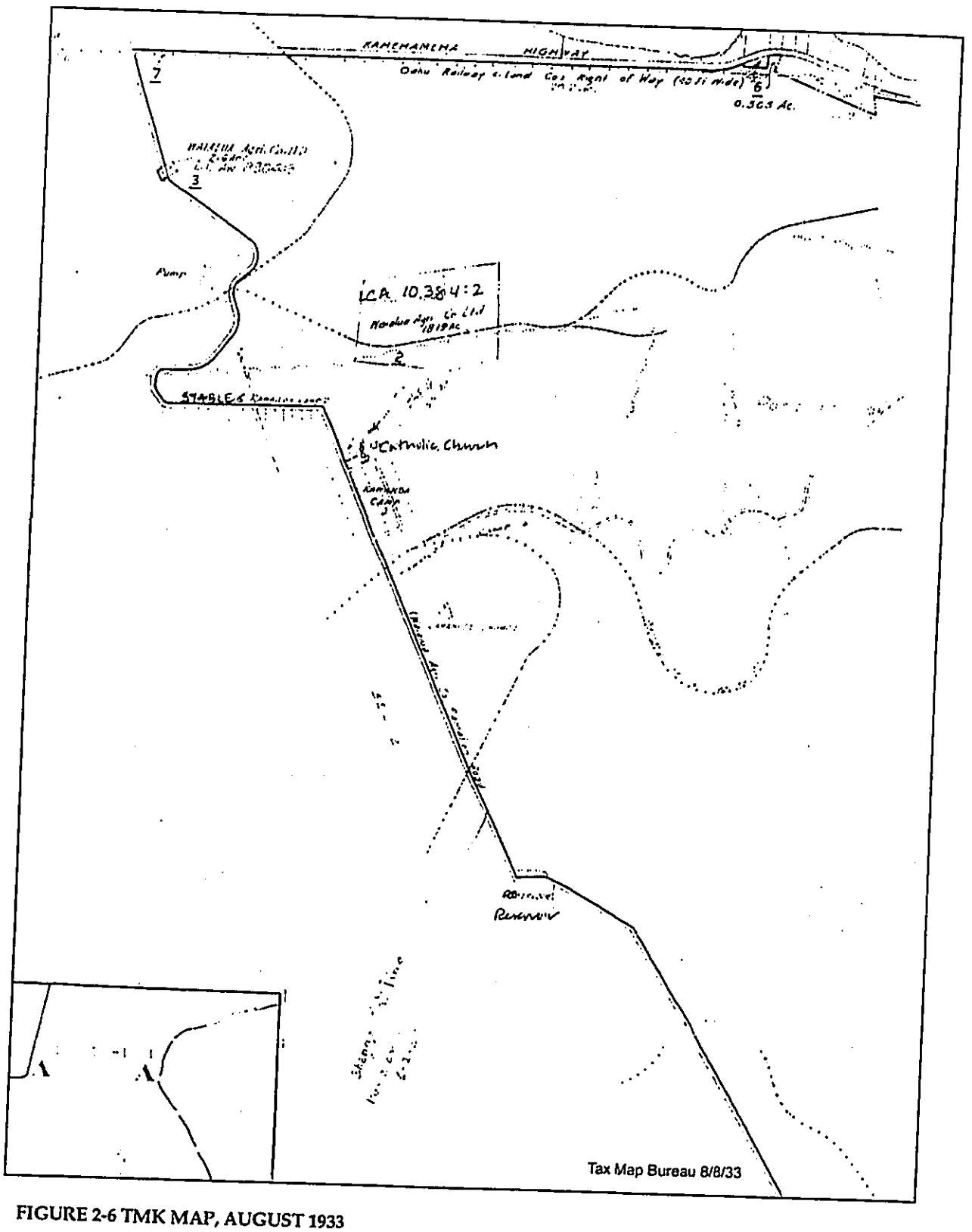


FIGURE 2-6 TMK MAP, AUGUST 1933

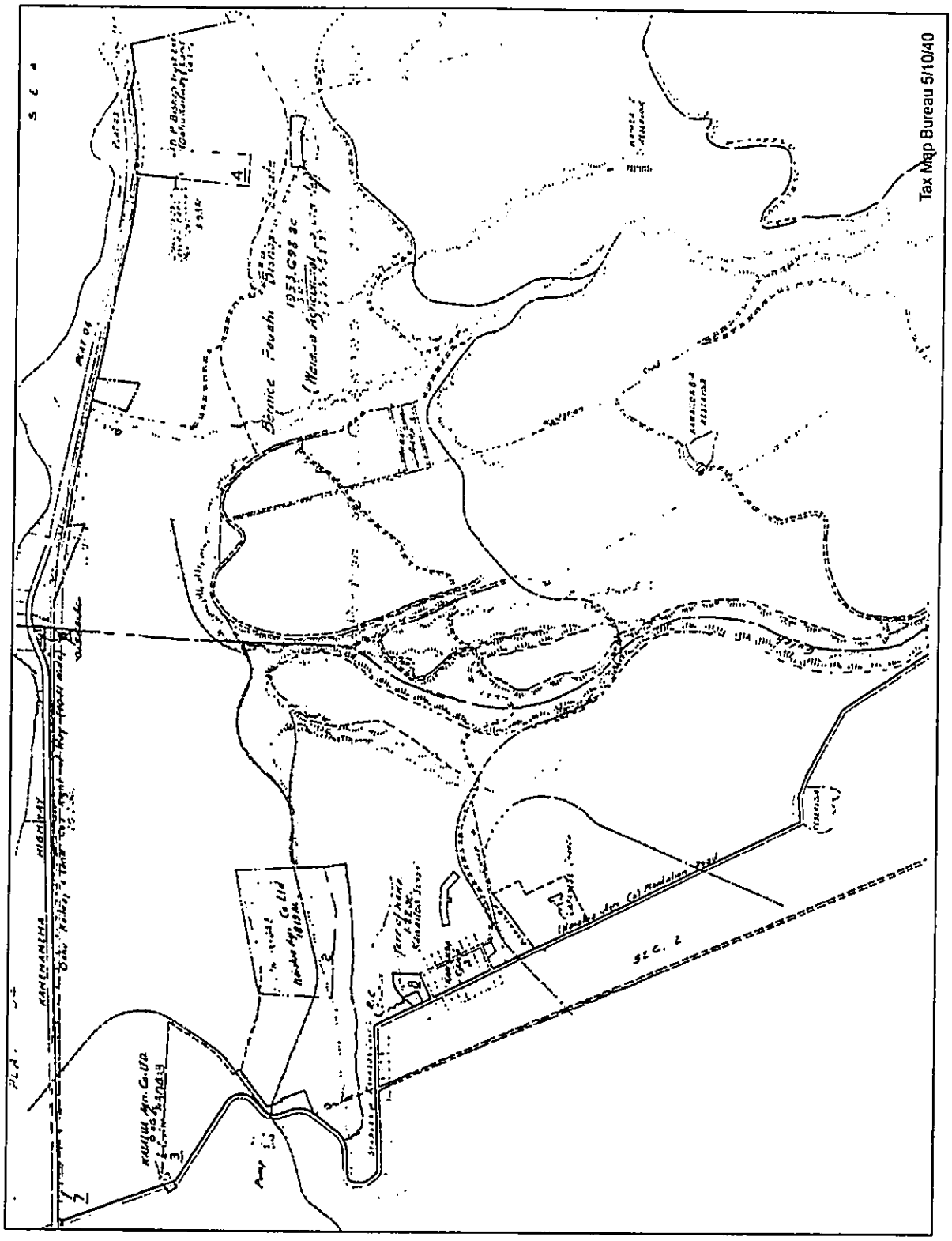


FIGURE 2-7 TMK MAP, MAY 1940

2.2.6 Kawailoa Camp

In the northeastern section of Waialua Sugar Company's operations, four large tracts were devoted solely for purposes of sugarcane production. These tracts included the lands of Waimea, Kawailoa, 'Ōpae'ula, and Helemano. Within the Kawailoa tract and situated in lands mauka of the project area, a plantation camp, known as Kawailoa Camp, was built. According to those interviewed, the camp was comprised of various facilities including plantation huts, a gymnasium, a swimming pool, a Catholic church, the Soto Mission, and a theater. In the mid-1930s, the sugar company replaced the old-style plantation huts with new homes (Figure 2-8), which were owned outright by Bishop Estate but managed by the Waialua Sugar Company. By 1997, the Kawailoa Camp area was bought by Dole Corporation, whereupon retired plantation workers living in the area were relocated to another mill camp in Waialua. The camp area was demolished with only a historic cemetery and shrine, a water pump house, and remnants of a boilermaker as a few reminders of this plantation community, as shown in Figures 2-9 through 2-12.

FIGURE 2-8 KAWAILOA PLANTATION HOUSE (circa 1935)
Source: Michael Woodfin

FIGURE 2-9 FORMER KAWAILOA CAMP SITE

FIGURE 2-10 REMNANTS OF PUMP STATION BOILERMAKER

FIGURE 2-11 HISTORIC CEMETERY

FIGURE 2-12 LAMENTATION SHRINE

2.2.7 Kawailoa Transfer Station

As shown in Figure 2-6, there were two Land Commission Awards granted near the project area with the majority of remaining lands being held in trust by Bishop Estate. Information shared by those interviewed reveal that the area which eventually became the landfill area was used for discarding unwanted bulk items and not actual refuse during the 1950s. The plantation camps, including the nearby Kawailoa Camp, had on-site refuse facilities.

According to sources, the discarded bulk items would be piled together, forming little mounds that became "havens of treasures." In the opinion of some of those interviewed, the area was probably selected because of the proximity to the former camp and rail line, as well as it being a demarcated area located out of public view. As such, useful discarded items would often be recycled, creating almost an informal "swapping area" of used goods and wares. Government records indicate that the lands of the project area belonged to Bishop Estate, whereupon the area was used as a dump beginning in the mid-50s, and later became a landfill in 60s. A review of land assessment records indicates that a fee of condemnation was applied to the parcel in 1970, whereupon the land value at that time was estimated at approximately $3,000. Records indicate that in the mid-80s, site usage was shifted to a transfer station, which continues through present time.

2.3 CULTURAL RESOURCES AND PRACTICES

2.3.1 Ka 'Ano o Ka Po'e Kahiko

For any cultural landscape, the interpretative analysis of form, function, and role of the inherent cultural mores and traditions must be conducted within the epistemological context and framework of the host culture. As such, a guiding principle that characterizes the cognitive relationship of native Hawaiians with the natural environment is understanding that all natural areas possess mana, a divine power that exists because these areas are comprised of specific elements that are personifications or manifestations of the akua (spiritual deities).

The presence of the akua and 'aumakua (family guardians) are exemplified through the natural elements of rain, wind, sun, earth, cloud formations, and ocean forms that are intrinsic to a specific geographical space. Ancestral knowledge of the land and its resources was recorded and passed down intergenerationally through the derivation and establishment of place names, as well as the development of several oratory forms. These recorded forms of ancestral knowledge provided insights as to "best management" practices that were employed in traditional times and are perpetuated in contemporary uses through the invocation of identifiable subsistence practices. Further, an inherent aspect of native Hawaiian stewardship in relation to any given area's natural and cultural landscape is the continuance of established cultural values of conservation and management to ensure the sustainability of the area's natural resources for generations to come.

The survivability of traditional Hawaiian practices is defined by understanding, physically and spiritually, the assumed roles of man and the natural elements in creating a sustainable environment. Therefore, in conducting this cultural impact assessment, a review of known and shared traditional cultural knowledge as applicable to understanding the beliefs, customs, and practices that occurred within the ahupua'a of Kawailoa was conducted.

2.3.2 Wahi Pana- Legendary Places

The concept of "wahi pana" is a cultural interpretation of spatially defined areas. Wahi pana are sacred spaces that include such cultural properties as heiau sites, sacred pōhaku (stones), burial grounds, weather phenomenon, or any natural or geographical features that are associated with deities or significant natural, cultural, or historical events. In native Hawaiian thought, even if the tangible features of a particular cultural property or site no longer exists, there is a distinct imprint that is left upon the natural and cultural landscape, whereby the mana (divine power) of all previous persons and activities associated to a defined space still manifests itself. A review of known wahi pana in the ahupua'a of Kawailoa is provided below.

'Uko'a Pond

Situated across the road boundary from the existing project area, 'Uko'a Pond is a distinguished wahi pana belonging to the ahupua'a of Kawailoa (Figures 2-13 and 2-15). The pond is part of a tributary system, an upwelling of freshwater that feeds Loko Ea, an inland pond located southwest of 'Uko'a. 'Uko'a Pond is a natural feature of the area's landscape, whose fishing resources would have been available for use since the earliest settlement. According to archaeological reports, it is believed that fishponds were utilized during the late Expansion (1100-1650) through Protohistoric (1650-1795) periods as part of an intense agricultural production system (Athens et. al: 1995, 22). Records from 1883 indicate that 'Uko'a fishpond was believed to have a subterranean connection with the ocean, as the waters of the pond would be adversely affected during the presence of strong offshore conditions and stormy weather. Several of those interviewed also recollect that the pond would fill up with mullet fish from the ocean during those times that offshore conditions were strong.

At the northern portion of the pond, a circular hole at the end of the pond was characterized as the hale hālau, the residence of Laniwahine, a mo'o akua, who was considered as the kia'i (guardian) of the pond. Through the cultural practice of kākū'ai 'ana, of dedicating a family member that has passed on to death to become a family protector, Laniwahine and her brother Puhi'ula, personified as an eel, are responsible for protecting the pond's resources from exploitation or degradation (Kamakau: 1992(b), 82; Beckwith: 1970, 126). Recorded historical accounts and information shared in interviews describe Laniwahine as a powerful akua, whose body was long and terrifying. According to some legends, her appearance foretold of some impending ill fortune as suggested in an excerpt of a chant for Kamehameha V:

Exposed are the teeth of Laniwahine, when the upper and lower jaw separates.

FIGURE 2-13 'UKO'A POND HEADWATERS

FIGURE 2-14 POSSIBLE AKUA STONE ('UKO'A)

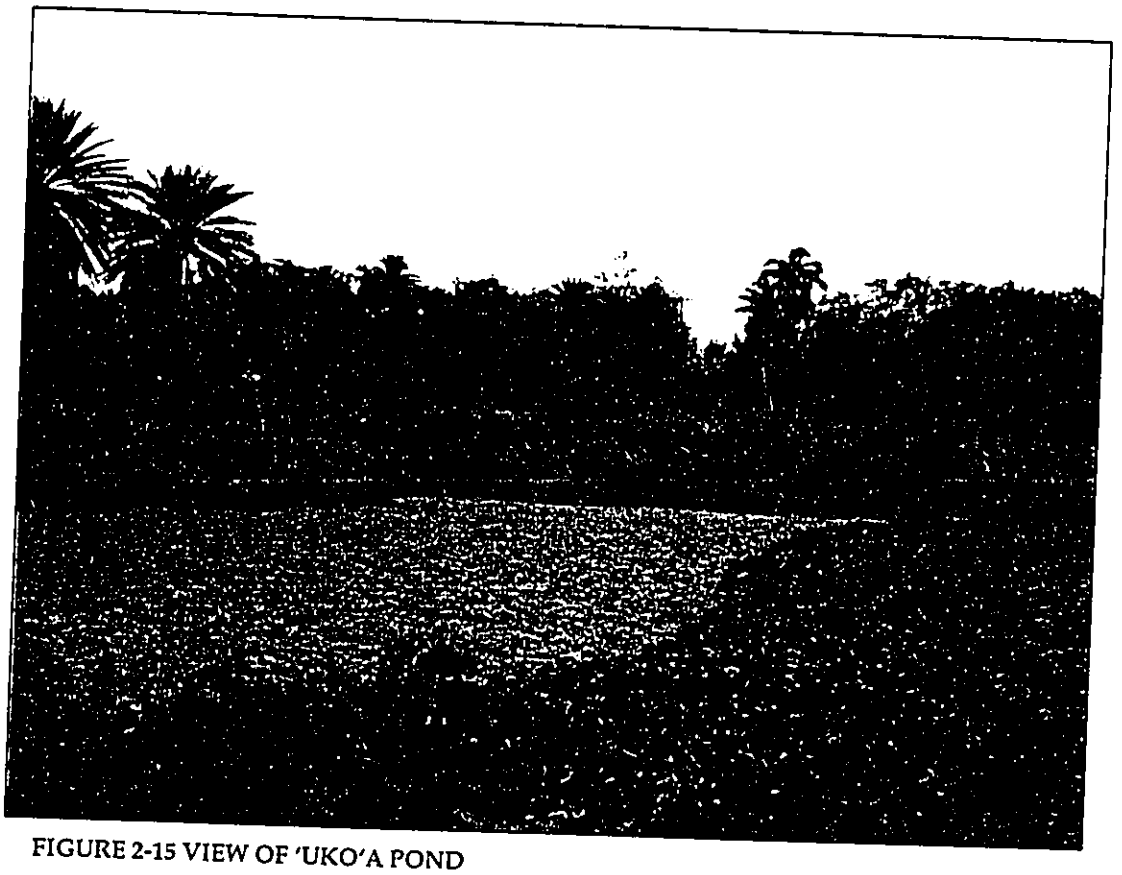


FIGURE 2-15 VIEW OF 'UKO'A POND

Further, according to legend, Niukala, the shark god, once resided at 'Uko'a. Even after the abolition of the kapu system and the implementation of variant belief and value system, documentation would suggest that the practice of kākū'ai 'ana and the inherent kuleana (associative responsibilities) to this practice continues until today with the area's multiple associations to akua figures.

According to archaeological accounts of 1933, the long narrow freshwater pond was approximately one mile in length. The pond was characterized as having a tunnel that connected the ocean with the sea providing passage for Laniwahine when she wished to bathe in the ocean. Records state that ho'okupu (literally translated as "that which causes growth, generally applied as a definition for tributes given to various akua forms) was systematically presented at an akua stone, located near the old Pump Number 4 Station of the Waialua Agricultural Company. Both a tree and stone once demarcated this sacred space that was utilized by the people of Kawailoa as a means of acknowledging and honoring this akua through a meticulous and disciplined cultural practice (McAllister: 1933, 142). The derived kuleana would have included the proper maintenance of the physical space, which included the headwaters of an artesian well that outflowed to the pond.

The distinguishing feature of the pond was its ample fish stock; comprised of a distinctive school of 'anae (mullet fish) or āholehole (Hawaiian flagtail) whose skin colorings emulated the markings of various types of other fish species. Both recorded historical accounts and discussions with knowledgeable sources indicate that of all the fish in 'Uko'a, there was a kapu (regulated prohibition) of extracting the white mullet fish, which was considered as belonging to Laniwahine (Kamakau: 1992KPK, 84).

Not much information was revealed regarding the life of Laniwahine prior to the written accounts that attribute her role as the kia'i of 'Uko'a. However, since Laniwahine is noted as an akua mo'o, there are associative cultural inferences that can be derived. Persons that are deified with specific kinolau (body forms) attributes have to possess a familial relationship to that deity form. Therefore, the honorific tributes to Laniwahine as the mo'o akua of 'Uko'a would suggest that there is a distinctive genealogical association between this mo'o and the initial settlers of Kawailoa. Further, this association and the applied cultural practice of kākū'ai 'ana would indicate that there is a definitive set of kuleana that are inherently recognized and perpetuated. Venerated for their ability to sustain the health, welfare, and productive resource yields for all freshwater ponds on the island of O'ahu, akua mo'o were and are integral elements of cultural identification and definition for communities like Kawailoa with such natural features.

As recorded in native historical accounts, during the reign of Kakuhihewa, royal chief born at Kūkaniloko in the mid 16th century, the island of O'ahu was noted for its high agricultural yields. The ponds of 'Uko'a and Loko Ea were considered as bountiful sources of choice fish, and as such were considered favorite locales of the ruling chief (Kamakau: 1991, 68).

After Kamehameha's victory over Kalanikūpule's forces at Nu'uanu in 1795, a major rehabilitative effort of reviving agricultural production ensued. During the eminent rule of Kamehameha between 1797 and 1811, a time of peace was introduced and fortified through a conscious application of government interventions designed to return the islands to efficient levels of sustainability and productivity.

As illustrated in native historical accounts, it was the intent of Kamehameha to ensure that resources were available and their use appropriately regulated to ensure that sustainable and productive yields were achieved in helping to rejuvenate a native population that had been subjected to years of decline as a result of battle deaths.

I ka noho 'ana o Kamehameha iā O'ahu, ua ho'āla a'e 'oia i nā ali'i a me nā maka'āinana e mahi 'ai, a 'oia pū nō kekahi e hele i ka mahi 'ai a e lawelawe nō ho'i ma kekahi hana, inā he amo pōhaku, amo lā'au paha. A 'ike ho'i nā ali'i, nā 'aialo a me nā maka'āinana, ua lawelawe paka ko lākou haku me ka 'auamo 'ana a laila,'o ka pupukahi a'ela nō ia o ka hana. Pēlā nō 'oia i hana 'ai iā Kawainui, iā Ka'elepulu, 'Uko'a, Maunalua a me nā loko a pau o O'ahu. (Ku'oko'a: 'Aukake 3, 1867, Helu 35)

While Kamehameha resided on O'ahu, he encouraged the ali'i and commoners to farm and he himself would fish and continue his laborious efforts at carrying rock or timber. Both the ali'i and commoners observed that their lord would fervently work hard at the tasks at hand. Of particular note, he labored at the fishponds of Kawainui, Ka'elepulu, 'Uko'a, Maunalua and other various other ponds of O'ahu.

Fishponds, like 'Uko'a Pond, were a means of feeding the royal court and retinue while in residence. The pond continued as a favorite source of fish during the reign of Liholiho, Kamehameha II, as depicted in this excerpt from native historical accounts relating a journey made by the king and his followers:

Hele ka'apuni ka Mō'i Liholiho iā O'ahu me kana mau mō'i wahine elima, 'o Keopuolani, 'o Ka'ahumanu, a me kekahi poe ali'i kane a me na punahele, ma ka au wa'a peleleu a kaulua, a ma ka lio [ke]kahi, a ma Ko'olau ke ka'apuni ana a noho ihola i Waialua no ka 'anae o 'Uko'a me ka lawai'a āholehole (Ku'oko'a: Feberuari 1, 1868, Helu 58).

The ruling king Liholiho circumnavigated the island of O'ahu with his five wives, Keopuolani, Ka'ahumanu, his chiefs and personal friends, some sailing in a fleet of double-hulled canoes, others by horseback, traveling from the Ko'olau area, purposely stopping at Waialua for the 'anae fish of 'Uko'a and to fish for the āholehole.

Further, the journal accounts of Levi Chamberlain describes his sighting of La'anui while walking with Emerson:

Saturday Jany. 26, 1833. Walked with Mr. Emerson some distance in a northerly direction to visit a sick man and to view some stones upon the seashore...We returned by the way of the pond. Saw La'anui and his company fishing in a canoe in the centre [sic]. It is said there are many fish

in the pond and that ducks there are sometimes very numerous. (Sterling and Summers: 1978, 120).

As indicated in recorded accounts, 'Uko'a Pond symbolized the once thriving abundance of natural resources that existed in the district of Waialua- *Pupuhi ka i'a o 'Uko'a, naue ka 'iki-* so numerous are the fish of 'Uko'a, their breath stirs the rushes. Information shared by those interviewed reveal that during particular times of the year, especially during heavy rains, the pond would be abundantly full with 'ama'ama (striped mullet), 'anae, āholehole (silver perch), and one interviewee stated that the pond would sometimes have pāpio (crevally). The pond was also home to Samoan crabs, tilapia, 'ōpae huna (freshwater shrimp), and 'o'opu nakea (goby). Waterbirds such as the 'alae 'ula (Hawaiian mudhen), 'auku'u (black-crowned night heron) and the 'alae ke'oke'o (Hawaiian coot) feed on algae within the pond's waters.

However, more recent accounts have stated that the quality and quantity of water have changed, no longer flowing as forcefully as it once did. The dynamic flow of the water brought depth and clarity to the fishpond. However, after Waialua Sugar Company created alterations to the water flow patterns in the area, the flowrate of the stream and pond has decreased over the years. According to those interviewed, there are preliminary plans to have the pond become a natural reserve or sanctuary for wildlife.

Pua'ena

According to early archaeological reports, it was upon the death of a beloved ali'i, named 'Elani, that his body was placed on a ledge of rocks near Pua'ena Point, where it was allowed to decompose. 'Elani was the father of the ruling chief of O'ahu, Kahahana, who was himself killed by the infamous Maui chief, Kahekili. This place became known as Kahakakau Kanaka, translated as "the body stretcher." The offshore winds would waft the odors of the decaying corpse to the coastal area of Hale'iwa, which became known as Maeaea, meaning "malodorous." Early recorded native accounts indicate that if a deceased person had no one to care for them upon passing on to death, the corpse would be taken to this place and allowed to decompose. The fluids from the decaying body would trickle into the nearshore coastal waters, thereby attracting sharks (McAllister 1933: 141-142).

In several chants, the coastal area of Pua'ena is also noted for its strong and prevalent offshore conditions that make for ideal surf conditions, as shown in Figure 2-16. Legend states that Puna'aikoa'e, legendary surfer and chief of Kaua'i, traveled to O'ahu to surf the waters of Pua'ena (Kamakau, Na Hana, 80). Additionally, other known cultural sites included a healing stone and a ko'a heiau (consecrated fishing grounds).

The soil content of the Pua'ena area is mostly comprised of Jaucas Sands, characterized as well-drained calcareous soils developed from coral and seashells. It has been documented throughout the islands that Jaucas Sands near fresh stream outlets to the ocean often contain traditional burials. Previously conducted archaeological work conducted in the Pua'ena area has revealed numerous traditional burial sites.

'Ili'ilikea Heiau

This cultural feature no longer exists but early archaeological records and informal discussions with knowledgeable sources suggest that this heiau may have existed in the area just northwest of the project area. Destroyed in 1916 by W. Harpham for the Waialua Agricultural Company, historical records indicate that between 1905 and 1907 the heiau consisted of two divisions, approximately 75 feet by 267 feet, whose walls were in good condition (McAllister: 1933, 142).

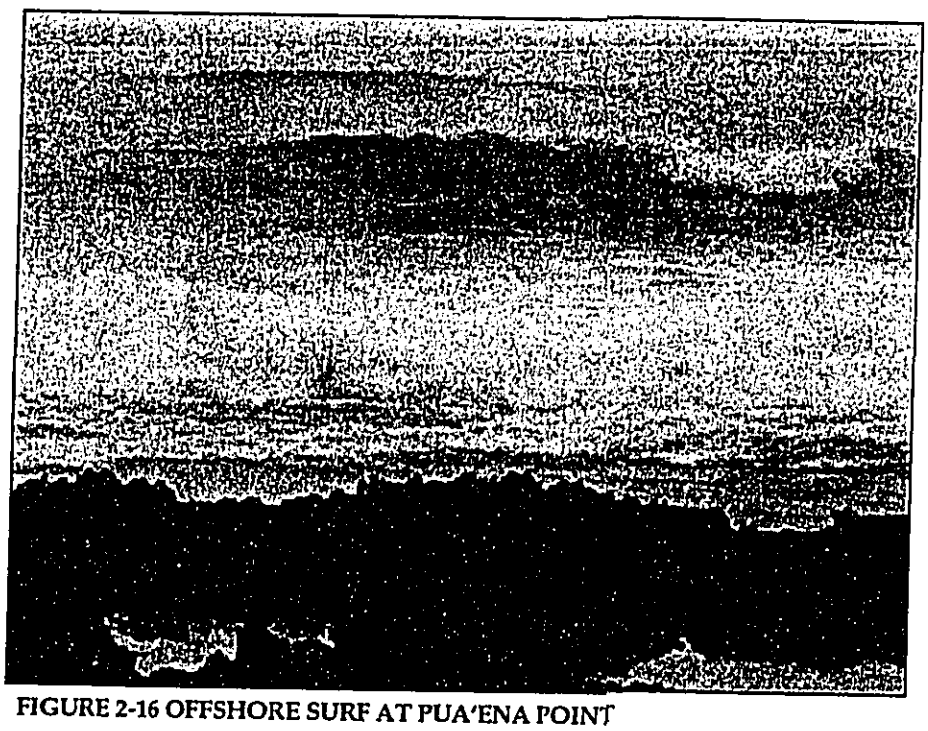


FIGURE 2-16 OFFSHORE SURF AT PUA'ENA POINT

Lauhulu Plain

Situated just north of the project area, this coastal plain was identified as the area that Hi'iakaikapoliopele took a moment to gaze upon the grandeur of the summit of Ka'ala. The name translates to meaning "dry banana leaf, as a bundle" or "fast, swift, as of destruction." Further research revealed no additional information.

Burial Grounds

Native historical accounts describe that in 1827, during the time when Kamehameha III was staying at Waoala and Ka'ahumanu and other chiefs were residing at Maeaea, identified practices within the ahupua'a included the building and consecration of ko'a heiau and the protection of burial grounds.

As previously stated, known traditional Hawaiian burial grounds exist along the shoreline areas of Pua'ena. As shown in Figure 2-11 and 2-12A, a historic Japanese cemetery and an associated shrine at the entrance of Kawailoa Drive serve as examples of contemporary burial practices that are no longer active. According to those

interviewed, the shrine is a defined cultural space that was used for lamentation purposes.

Trail System

As depicted in native historical accounts, the coastal area of Kawailoa was part of an extensive trail system that circumvented much of O'ahu. Based upon the description provided in historical texts and information shared by those interviewed, the trail system of 1810, which extended from Kawaihāpai and Mokulē'ia, crossed over Kaiaka River and the sandy plains of Pa'ala'a and Kawailoa until Kamani, a village located along the southwestern banks of 'Uko'a Pond. The trail coursed along the sandy beaches of Maeaea, that had a canoe landing and was considered a good harbor for ships. Records indicate that by this time, residences were established along the pond areas of Loko Ea and 'Uko'a. Between the stretch of Maeaea and the houses located at 'Uko'a, a trail that extended from Kamani to the sluice gate of Loko Ea was situated on the seaward side (Ī'ī: 1995, 97-98).

2.3.3 Meaning of Place Names

He like wale no a mai Ka'ena a Waialua	*It is alike in appearance from Ka'ena to Waialua*
Pili pono a kula ka lā	*Where the sun remains shining*
I Mananui kea ho'onui a'ela	*At Mananui the charm increases*
I ka leo o ke kai o Pua'ena	*With the voice of the sea at Pua'ena*
Ke hohola a'ela i ke kula o Lauhulu	*That spreads on the plain of Lauhulu*
Mehe lei hulu mamo ala	*Like a lei made of mamo feathers*
No ka uka o Halemano	*For the upland of Halemano*
O ke kū mai inoa o Ka'ala	*So stands Ka'ala*

Composed by Louis Nakeu in the early 20th century, this excerpt from a mele hō'āeae (love chant) illustrates how contemporary accounts preserved in oral traditions still utilize place names for purposes of revealing some information that describes the area's natural elements and/or cultural resources that exist in that area. Place names are often indicative of the physical form and composition of the area's natural landscape and its resources, including the elements of sun, wind, and rain (Malo: 1951, 14).

Some oral accounts suggest the district name of Waialua as several meanings. As previously stated, the first definition, meaning "doubly disgraceful," is in reference to Waia, grandson of Wākea. Other sources suggest the meaning of the name is in reference to the confluence of two streams that formed the Waialua River, with the name translated as "Wai" meaning "freshwater" and "'alua" meaning "two or twice." It should be noted that the appropriate spelling of this interpretation would be "Wai'alua." Finally, one source stated that the name is in reference to a lo'i once situated near the former Halstead residence. The name of Kawailoa literally translates to meaning "the long freshwater," referencing the natural feature of the area's major tributary.

The coastal region from Pua'ena to Papa'iloa is a rocky shoreline, suitable for diving only on calm days. The translation of the name, Papa'iloa, provides two meanings, "long hut" that refers to a temporary shack such as is put up near a fishing grounds, and the other "excessive pāpa'i" perhaps referring to an abundance of crabs. The translation of Kūkae'ōhiki, meaning "excrement of sand crabs," refers to the large holes dug up by the 'ōhiki in the sand during the night (Pukui, Elbert: 1986). Both of these areas are primarily rocky and are fronted by a low reef. The physical characteristics of this beach area help to create powerful rip currents and dangerous backwashes.

FIGURE 2-17 VIEW OF KAWAILOA SHORELINE

2.4 SUMMARY

Historical documentation indicates that as early as the 11th century, the area of Waialua with its vast natural resources was a favorite place for royal residence. Identified traditional cultural practices of the makai region of the Kawailoa ahupua'a were primarily focused on aquacultural cultivation activity in 'Uko'a Pond and the development of sugarcane production with the advent of the Waialua Sugar Company. Sources suggest that the project area, once comprised of marshland, served as a repository for discarded bulk items during the operations of the plantation camp from the 1930s to 1950s. The area became a county landfill in the 1950s and then a transfer station in the mid-1980s through present time. Contemporary land uses near the existing project area include ranching and diversified agricultural activities.

Section 3.0
Findings and Recommendations

3.0 FINDINGS AND RECOMMENDATIONS

3.1 SUMMARY OF FINDINGS

Based upon the information obtained from the review of historical documentation, archaeological reports, oral traditions, informal discussions, and formal interviews, the following is a summary of findings in regards to the proposed Kawailoa Transfer Station project:

1) Excluding two generalizations of native Hawaiian cultural beliefs, there are no other identifiable cultural properties, resources, features, beliefs, or practices directly associated to the project area. Regarding the native Hawaiian epistemological approach to "land use," the two prevalent and generally applied principles which continue to be perpetuated are:

    a) Recognizing that all ʻāina (literally translated as "that which feeds", but commonly applied as a definition for "land") is born of Papahānaumoku (Earth Mother). This guiding principle is the foundation from which the cultural values of aloha ʻāina and mālama ʻāina are derived.

    b) Acknowledging that although traces of a physical imprint of traditional cultural properties, resources, features, beliefs, and practices may no longer remain, there is a thriving spiritual imprint that remains in the form of mana, the spiritual essence of those kūpuna that have come before.

    As such, the proposed plans of retrofitting the existing transfer station to provide green waste recycling support to the North Shore community is a contemporary application of traditional land stewardship beliefs and practices through a purposeful engagement of conserving and recycling the area's natural resources.

2) The lands located southwest of the existing project area and across the boundary of Kawailoa Drive include the waters of ʻUkoʻa Pond. ʻUkoʻa Pond is considered a Traditional Cultural Property based on the traditional accounts of Laniwahine, the moʻo akua associated to the pond, as well as related stewardship practices of known aliʻi, specifically Kakuhihewa, Kamehameha I, and Laʻanui.

3) The majority of physical features associated to the plantation camp in the lands situated mauka of the project area have either been demolished or removed. The only remaining features are a shrine area located at the entryway of Kawailoa Drive from Kamehameha Highway, a historic cemetery located approximately 0.2 miles from the Transfer Station entryway, and remnants of a water pump station located on the property leased by Diamond C. Ranch.

4) Of those individuals interviewed for this project, there was no strong opinion in favor or in opposition to the proposed project. However, the idea of having a green waste separation and mulch pick-up area at the existing transfer station is favorable.

3.2 PROPOSED RECOMMENDATIONS & MITIGATIVE MEASURES

The proposed facility expansion is planned for development within the existing limits of the City and County of Honolulu Transfer Station. Based upon the stated findings, the cultural impact assessment has determined that the proposed project should not have any significant or adverse effect on the identified cultural properties, features, resources, beliefs, or practices associated within or near the project area. Thus, there are no recommendations for further mitigative action. It is the desire of those interviewed that proposed planned development would encourage the North Shore community to practice the cultural value of mālama 'āina, of perpetuating natural resource conservation through the activities of green waste recycling.

Section 4.0
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Wyban, Carol Araki
1992 *Tide and Current: Fishponds of Hawai'i.* Honolulu: University of Hawai'i Press.

Yeomans, Sarah K.
2001 *Archaeological Data Recovery at Site 50-80-01-5795, located in the ahupua'a of Kawailoa, Waialua District, Island of O'ahu TMK: 6-2-03: por. 6 and 9.* Report prepared for Kauahikaua and Chun Architects.

APPENDIX A

List of Organizations and Individuals Contacted in Conducting the Cultural Impact Assessment

	Name	Contact None	Contact KM	Initial Contact	Expertise	Potential	Affiliation	Additional Comments	Knowledge Shared
1	Asano, Amy	-	+	1/28/2002	KM, KP	2	LR	Cousin of Jimmy Awai and sister to Hau'oli Hiers	Born in 1936, recalls the project area being an open dump that was comprised of mounds of discarded items since the 1940s. Recalls many "trips to the dump" where her father would look for "treasures" - usable items that were discarded by other individuals. Remembers a washhouse built nearby. Thinks the "discarding area" was "selected by the community" of the time (site of current landfill) because the location was away from public view.
2	Awai, Jimmy	-	+	1/31/2002	KM, LH, KP	3/R	LR	Referred Masa Gunda, retired landfill worker	Does not recall the project area being a dump until the early 50s. His father was principal of Kawaikau school, located at Kawaikau Camp. Mr. Awai lived at the camp area since the 1930s. Recalls beach area being vacant, except for one individual, a haule man, that lived near Laniikea Beach. Stated that during the plantation times, areas within the camp were specifically designated for refuse disposal. Stated that are not too many people left that are from Kawaikau. Spoke of the stock of fish that existed in 'Uka'o Pond. Spoke of the freshwater pool near the old pump house that used to open until the 60s.
3	Awai, Nake'u	-	+	1/3/2002	KM, CP	1/R	LR	Referred Betty Jenkins and Kapu Smith	He remembers stories associated to Uka'a Pond-Mermaid, Buriab-Pua'ena (near where they want to put the ecopark); Said older sister (MR) knew more stories; 'Ohana is from Pa'ala'akai
4	Belcher, Patty Lei	-	+	12/27/2001	AL	1	BPBM	Provided referral to several historical texts and maps	[redacted]
5	Diamond, Van H.	-	-	[redacted]	HC	1/R	OHC	Referred Kamana'o Mills via voice message; OHC Chair	[redacted]
6	Dan	-	+	1/28/2002	CP	2	LR	Ranch Hand for Diamond C Ranch	Recalls stories shared from kūpuna regarding Kawaikau Camp (no longer exists), the rock wall feature, 'Uka'a Pond, and the artesian well. Stated that freshwater pond has an adequate supply of prawns. Stated that since the mauka areas have been converted to diversified agricultural activities (plumeria farms, seed corn) that there has been increasing encounters with wild pigs that come from the mountain to the lower regions of Kawaikau (including the ranch area adjacent to the project site). Expressed concern over the increased amount of illegal dumping of bulk items along Kawaikau Drive.
7	Hausey, Emmaline	-	+	1/28/2002	KM	3	LR	Owner of Diamond C Ranch	A sandbar used to run from the beginning of the pond located by ocean entrance by white bridge all the wayto section of the pond located closest to the intersection of Kawaikau Drive. At the entryway of Kawaikau Drive, stated that the existing shrine used to be cared for by the Waialua Hongwanji. Stated that the shrine was built as a place for temporary lamentation and prayer. Stated that the shrine is supposed to be cared for by the Wahiawā Hongwanji but that the ranch has been temporarily taking care of it. Spoke of a rock wall feature that ran from the former site of Queen Lili'uokalani's home up to the edge of the pond. She remembers playing at the gymnasium at Kawaikau Camp. Spoke of an artesian well and pump house located at the northwest edge of the ranch and a Japanese historic cemetery just off the dirt military transport road. Remembers the dump always being there. Stated that there are plans for utilizing the pond's resources as a wildlife sanctuary.
8	Hausey, James E.	-	+	1/28/2002	KP	3	LR	Owner of Diamond C Ranch	Recalls numerous bountiful catches of ahole hole and mullet fish. Said the ocean current would bring them in from underwater lava tubes through a makaha, and that the fish was there for the harvesting.
9	Hiers, Hau'oli	-	+	2/1/2002	KP	2	LR	Cousin of Jimmy Awai and sister to Amy Asano.	Recalls stories about the mo'o, Laniwahine, associated to 'Uka'a Pond. Father was a fire captain during the plantation days. Recalled a story where her father had to pump some of the water from 'Uka'a Pond to fight a fire. Recalls swimming at a pool which was next to the gymnasium up at Kawaikau Camp. Recalls the plantation having a theater. Recalls the Kepani Church up mauka. Believed that the shrine located at the entryway of Kawaikau Drive was associated to the church. Recalls a Bo tree which to her knowledge was the only one of its kinds on that side of the island. According to what she was told, in Buddhist practices, the Bo tree was used for purposes of meditation.
10	Hirota, John	-	+	1/21/2002	KM	1	WSC	55 years old, long-time worker of Waialua Agricultural Company.	Does not remember much of that area. Recalled the project area always being a dump and remembers the plantation camps.
11	Holt-Takamine, Victoria	-	+	12/26/2001	KM, KH	1/R	LR, PAI	Referred Nake'u Awai, Alisha Smith, Aunty Betty Jenkins, and John Hirota	Cited genealogy chant for Kapawa, first ali'i born at Kūkaniloko, as well as several other chants for the Waialua District.
12	Jenkins, Betty	-	+	1/23/2002	KP, KM	1/R	LR	Kupuna; Referred Aunty Hau'oli (Lorna) Hiers and Amy Asano	[redacted]
13	Jourdane, Elaine	-	+	12/27/2001	HPS	1	SHPD	Assistant Archaeologist, Oahu	Based upon previously conducted archaeological work in the Kawaikau area, no cultural impacts are anticipated with the expansion of existing facilities within the project area.

	Name	Contact None	Contact KM	Initial Contact	Expertise	Potential	Affiliation	Additional Comments	Knowledge Shared
14	Kuni, Dean	-	+	1/8/2002	KM	2/R	LR	Brother of Alisha Smith; Referred Jimmy Awai;Said he would get more family referrals but suggested that I speak to his hānai dad, Jimmy Awai, noted historian for the area.	Recalls a muliwai area near Uka'a Pond; states natural conditions have changed, doesn't know if muliwai area still exists. Remembers stories of underwater pukas that ran under the reef and connected to Uka'a Pond. He states that a kupuna once told him a story of a heiau near the project area but doesn't know exactly where.
15	Lebo, Susan	-	+	12/27/2001	AA/HA	1	BPBM	Specialty is post-contact change in 19th Century Hawai'i	
16	Mills, Kamana'o	-	+	C	BC		OBC		Mentioned that burials were found along the beach area of Kawaiku.
17	Smith, Alisha	-	+	1/7/2002	KM, KH	1/R	HMP	Referred Dean Kuni and Betty Jenkins. Recommended that I ask DK for family contacts (Maile, Lopez, and Spilner).	
18	Smith, Kapu	-	-	C			BELD		

KEYS

Initial Contact:	C	**Attempted to contact on 3 occassions; no contact established**
Expertise:	AA/HA	Associate Anthropologist/ Historical Anthropologist
	AL	Archive Librarian
	BC	Burial Council
	CP	Cultural Practitioner
	CRS	Cultural Resources Specialist
	HDR	Historical Documentary Researcher
	HPS	Historic Preservation/Cultural Resources Management Specialist
	KH	Kumu Hula
	KM	Kanaka Maoli
	KP	Kupuna
	LH	Local Historian
Potential:	0	None
	1	Limited information; possible follow-up contact
	2	Useful information; probable follow-up contact
	3	Good information; definite follow-up; potential formal interview informant
	R	Provided referral(s) to other potential informants and/or information sources
Affiliation:	BELD	Bishop Estate Land Division
	BPBM	Bernice Pauahi Bishop Museum
	HMP	Hālau o Nā Maoli Pua
	LR	Local Resident
	OBC	O'ahu Burial Council
	PAI	Pua Ali'i Ilima
	SHPD	State Historic Preservation Division
	WSC	Waialua Sugar Company

APPENDIX B

Informal Questions in Reference to Kawailoa Transfer Station Cultural Impact Assessment

Informal Questions in Reference to Kawailoa Transfer Station Cultural Impact Assessment

Date:_____

Time:_____

Location:_____

Interviewer:_____

What is your name?

When were you born?

Where were you born?

Who are/were your parents?

Where did you grow up?

Additional family background:

Where are you presently residing?

How did you become familiar with the historic sites or events associated with Kawailoa?

Are you familiar with the area of Kawailoa where the existing City and County Transfer Station is situated? How familiar?

Have you heard of a pond or other Hawaiian sites in the area of the CCTS?

Are you familiar with place names such as Pua'ena, 'Uko'a? How familiar?

Are there are place names near the project site that are not mentioned that you can share?

Have you heard stories about the place names or sites of Kawailoa?

Traditional Land residency, land use, gathering rights, and practices:

Ceremonial sites or practices; House sites; Shoreline Resources; Gathering Practices Burials;

Any thoughts about the proposed expansion of the CCTS?

Kawailoa Transfer Station

Green Waste Recycling Improvements
Pūpūkea, Ko'olau Loa District, O'ahu, Hawai'i

TMK 6-1-05:18

Final Environmental Assessment
and
Application for
Special Management Area Use Permit

This environmental document is prepared pursuant to Chapter 200 of Title 11, Administrative Rules, Department of Health, "Environmental Impact Statement Rules."

Proposing Agency:

City and County of Honolulu
Department of Environmental Services

Prepared by:

Group 70 International, Inc.
Architecture • Planning • Interior Design • Environmental Services
925 Bethel Street, Fifth Floor
Honolulu, HI 96813

February 2002

TABLE OF CONTENTS

LIST OF FIGURES

SECTION 1.0
GENERAL INFORMATION

The City and County of Honolulu Department of Environmental Services plans to provide needed recycling and refuse support to the North Shore community by improving the Kawailoa Transfer Station with green waste recycling facilities.

The project involves retrofitting the existing transfer station site to handle the collection and storage of green waste. The site will include a paved staging area; an extended tipping platform; a mulch distribution area and a new operations building. As proposed, this building will consist of approximately 300 square feet of office, restroom, equipment storage and circulation space.

The Kawailoa Transfer Station project site is located mauka of Kamehameha Highway at 62-180 Kawailoa Drive, Haleiwa, Hawaii (refer to Figure 1.1). The property is identified as TMK 6-1-05:18 and is currently owned and operated by the City and County of Honolulu. The parcel of land is located almost entirely within the Special Management Area (SMA).

CONTENT OF THE ENVIRONMENTAL ASSESSMENT

This report serves dual functions as a Special Management Area Use Permit (SMP) application and an Environmental Assessment (EA) for the proposed project. This EA has been prepared in accordance with the requirements of Chapter 343, Hawaii Revised Statutes and Hawaii Administrative Rules, Title 11, Department of Health, as the proposed action involves the use of public administered funds. It is anticipated that due to the limited impacts generated by this project, this Final Environmental Assessment will result in a Finding of No Significant Impact (FONSI).

This Environmental Assessment report is presented in eight sections. General information on the Kawailoa Transfer Station project is summarized in this section. It is followed by Section 2, which presents the proposed project, and Section 3, which describes the environment, affected by the project. Section 4 relates the project to the Coastal Zone Management (CZM) Program and Section 5 summarizes mitigative measures. Description and analysis of alternatives is given in Section 6. The anticipated determination and reasons for its believed outcome are given in Section 7. A list of references is provided in Section 8. Section 9 lists the agencies, organizations and individuals that received

copies of the EA. Written comments and responses received can be found in the Appendix A.

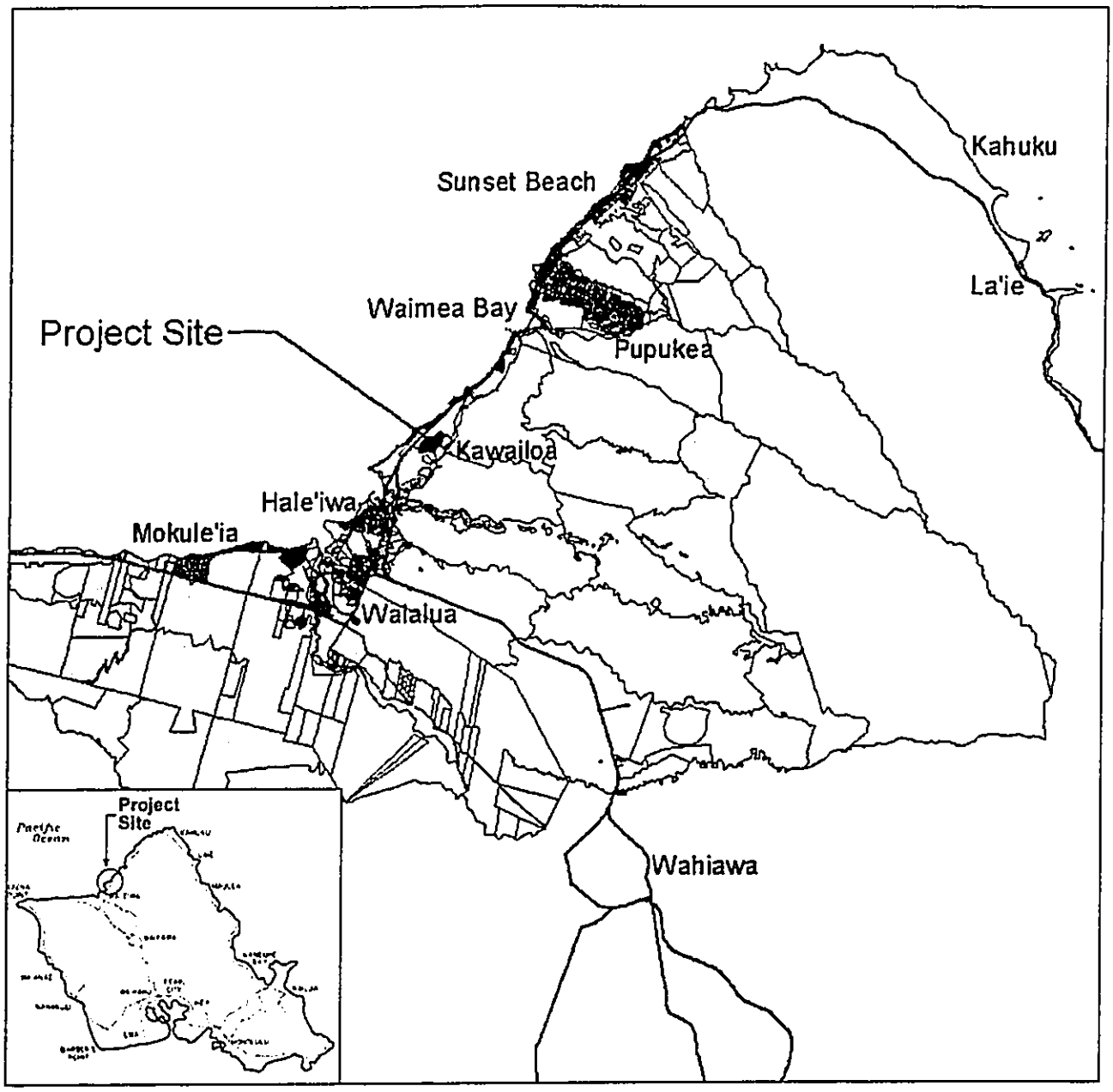

FIGURE 1.1
OAHU PROJECT LOCATION MAP

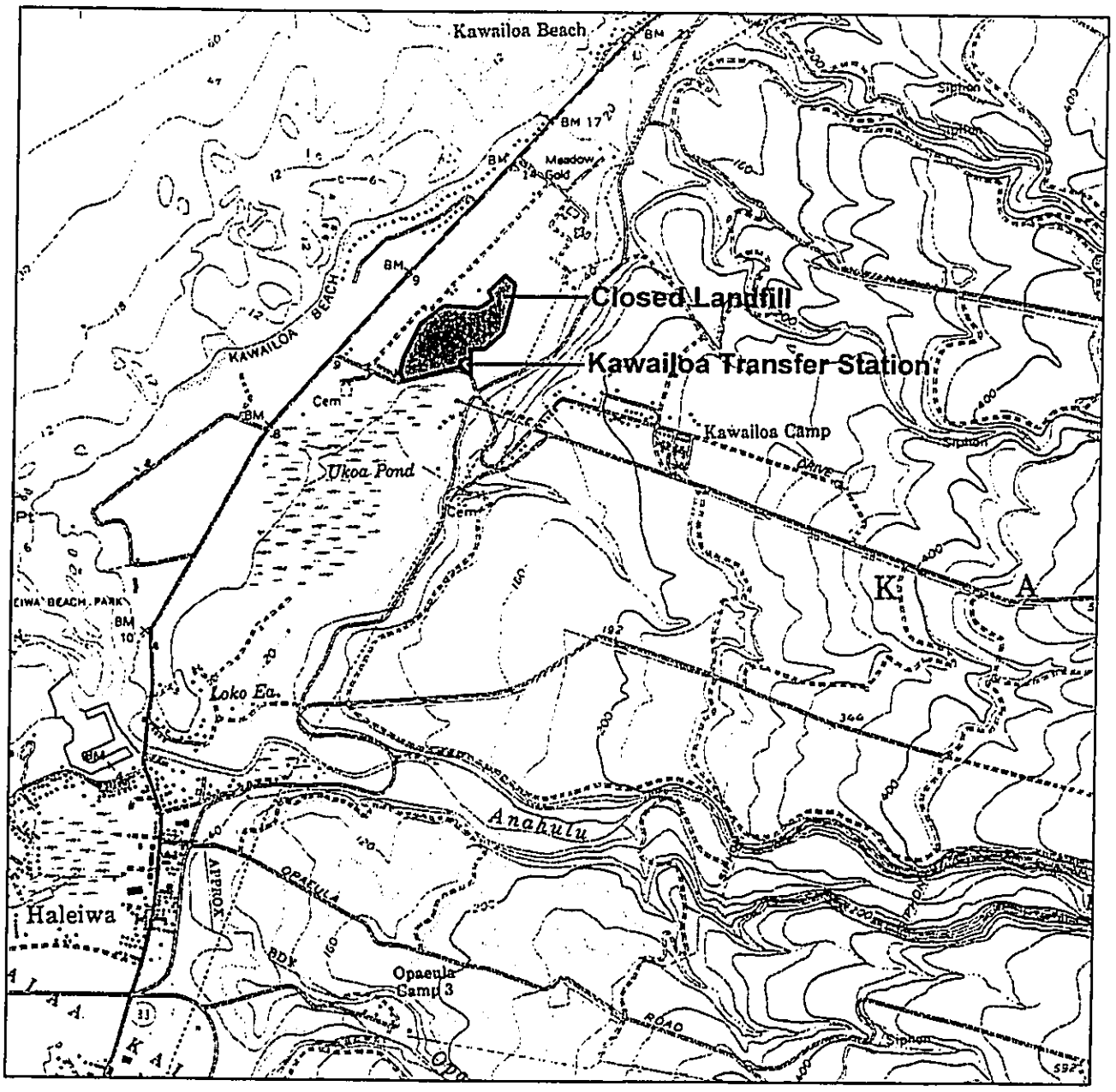

FIGURE 1.2
LOCATION/PROPERTY BOUNDARY MAP

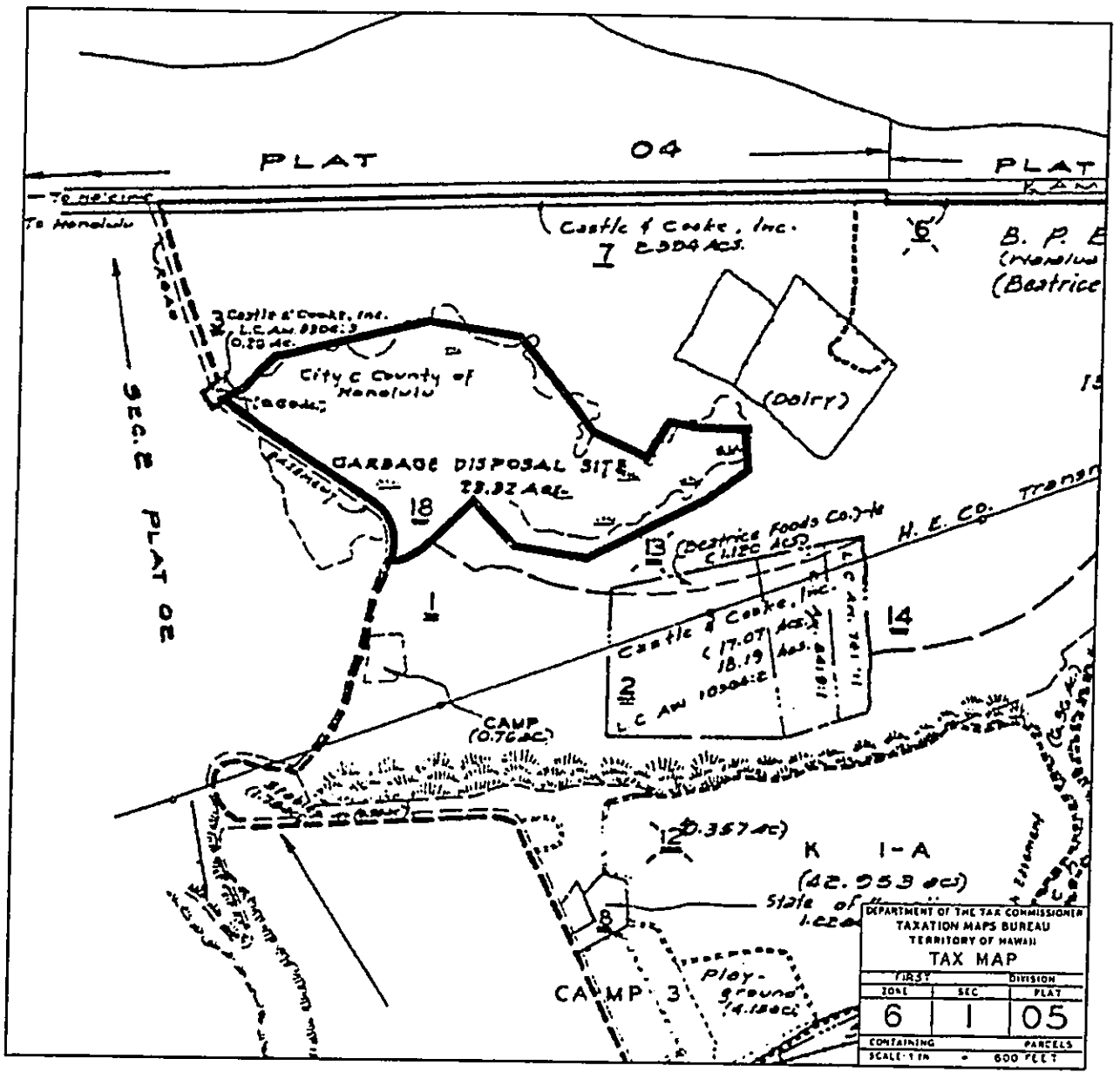

FIGURE 1.3
TAX MAP KEY MAP

Applicant / Land Owner:	City and County of Honolulu Dept. of Environmental Services 650 South King Street, 6th Floor Contact: Timothy Steinberger, Director Telephone: 808-527-6663
Recorded Fee Owner:	City and County of Honolulu Dept. of Environmental Services 650 South King Street, 6th Floor Contact: Timothy Steinberger, Director Telephone: 808-527-6663
Planning and Environmental Consultants:	Group 70 International, Inc. 925 Bethel Street, 5th Floor Honolulu, HI 96813 Contact: Jeffrey Overton, AICP Telephone: 808-523-5866 x104
Tax Map Key:	TMK 6-1-05:18 (Refer to Figure 1.3)
Project Area:	28.32 acres
Zoning Classification:	Agriculture 1 – Restricted
State Land Use Classification:	Agriculture – "A"
Agencies, Organizations and Individuals Contacted for this Assessment	• City and County of Honolulu, Dept. of Planning & Permitting • City and County of Honolulu, Dept. of Design & Construction • City and County of Honolulu, Dept. of Environmental Services • Councilmember Rene Mansho (Reid Fujita, Council Aide) • North Shore Neighborhood Board #27 • North Shore Vision Team, Vision Champion, Chip Hartman

The North Shore Vision Team identified the community's desire to have their green waste recycled and have a convenient location to obtain mulch. Throughout the process of developing the plans, the Vision Team has been involved. City and County of Honolulu departments were kept abreast of the project through informal meetings. The Neighborhood Board and Councilmember Rene Mansho's office have also received periodic communications on the project's progress.