REF:PB:MA

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

File No.: MA-3095B

AUG 27 2002

Memorandum

To: Genevieve Salmonson, Director
Office of Environmental Quality Control

From: Dierdre S. Mamiya, Administrator
Land Division, Department of Land and Natural Resources

Subject: Final Environmental Assessment (EA) / Finding of No Significant Impact (FONSI) for the subdivision of a single parcel into three parcels by Maui Land and Pineapple Company near Honolua Bay, Lahaina District, Maui.

The Department of Land and Natural Resources has reviewed the comments received during the 30-day public comment period that ended July 23, 2002 for the subject project. We have determined that this project will not have significant environmental effects, and have therefore issued a FONSI. Please publish this notice in the September 8, 2002 issue of the Environmental Notice.

We have enclosed a completed OEQC Bulletin publication form and four copies of the final EA for the project. Comments on the draft EA were sought from relevant agencies and included in the final EA.

Please contact Masa Alkire of our Planning Branch at 587-0382 if you have any questions on this matter.

attachments

2002-09-08-MA-FEA

KALAEPĪHĀ LANDS

Final Environmental Assessment
TMK (2) 4-2-04:32

Prepared For:
Maui Land & Pineapple Company, Inc.

Prepared By:

PBR HAWAII

September 2002

KALAEPĪHĀ
LANDS

Final Environmental Assessment

TMK (2) 4-2-04:32

Prepared For:
Maui Land & Pineapple Company, Inc.

Prepared By:

PBR HAWAII

September 2002

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1.0 INTRODUCTION

This environmental assessment (EA) is prepared in accordance with Chapter 343, *Hawai'i Revised Statutes* (HRS), for proposed subdivision of lands at and surrounding Kalaepīhā Point in the Honolua ahupua'a of West Maui, on the Island of Maui. This chapter briefly reviews the background and nature of the proposed project, relevant statutory requirements, and the various sources consulted to develop the assessment.

1.1 SUMMARY

Project Name:	Kalaepīhā Lands
Location:	West Maui, Maui, Hawai'i
Judicial District:	Lahaina
Landowner:	Maui Land & Pineapple Company, Inc.
Applicant:	Maui Land & Pineapple Company, Inc.
Tax Map Key:	4-2-04:32
Project Area:	Approximately 21.3 acres
Existing Uses:	Vacant open space on the land above Kalaepīhā Point; public access stairway leading to beach fronting Mokulē'ia Bay; access trail to Honolua Bay along Honolua stream; surrounding ocean waters protected under Mokulē'ia/Honolua Marine Life Conservation District
Proposed Use:	Subdivision of the parcel into three lots. No development, construction activity, or change in land uses are currently proposed.
Land Use Designations:	State Land Use: Conservation District, Resource Subzone Community Plan: Conservation County Zoning: Not Zoned Special Management Area (SMA): Within the SMA
Permits/Approvals Required:	Compliance with: Chapter 343, *Hawai'i Revised Statutes* (HRS) Conservation District Board Permit Subdivision Approval
Approving Agency:	Department of Land and Natural Resources

1.2 LOCATION

The Kalaepīhā Lands are located in the northwest portion of West Maui (Figure 1) north of the Kapalua Resort and near Honolua Bay. The lands are between Honoapi'ilani Highway and the ocean. The entire area comprises approximately 21.3 acres, not including the immediate shoreline area. This environmental assessment describes and assesses both the overall property area and the specific parcels proposed for subdivision.

1.3 LAND OWNERSHIP

Maui Land & Pineapple Company, Inc., owns the parcel subject to this environmental assessment referenced by Tax Map Key 4-2-04: 32 (Figure 2).

1.4 IDENTIFICATION OF THE APPLICANT

The applicant is Maui Land & Pineapple Company, Inc.

1.5 IDENTIFICATION OF APPROVING AGENCY

In accordance with Chapter 343, HRS, environmental assessments must be accepted by the government agency empowered to issue permits for the project. In this instance, the Department of Land and Natural Resources is the approving agency.

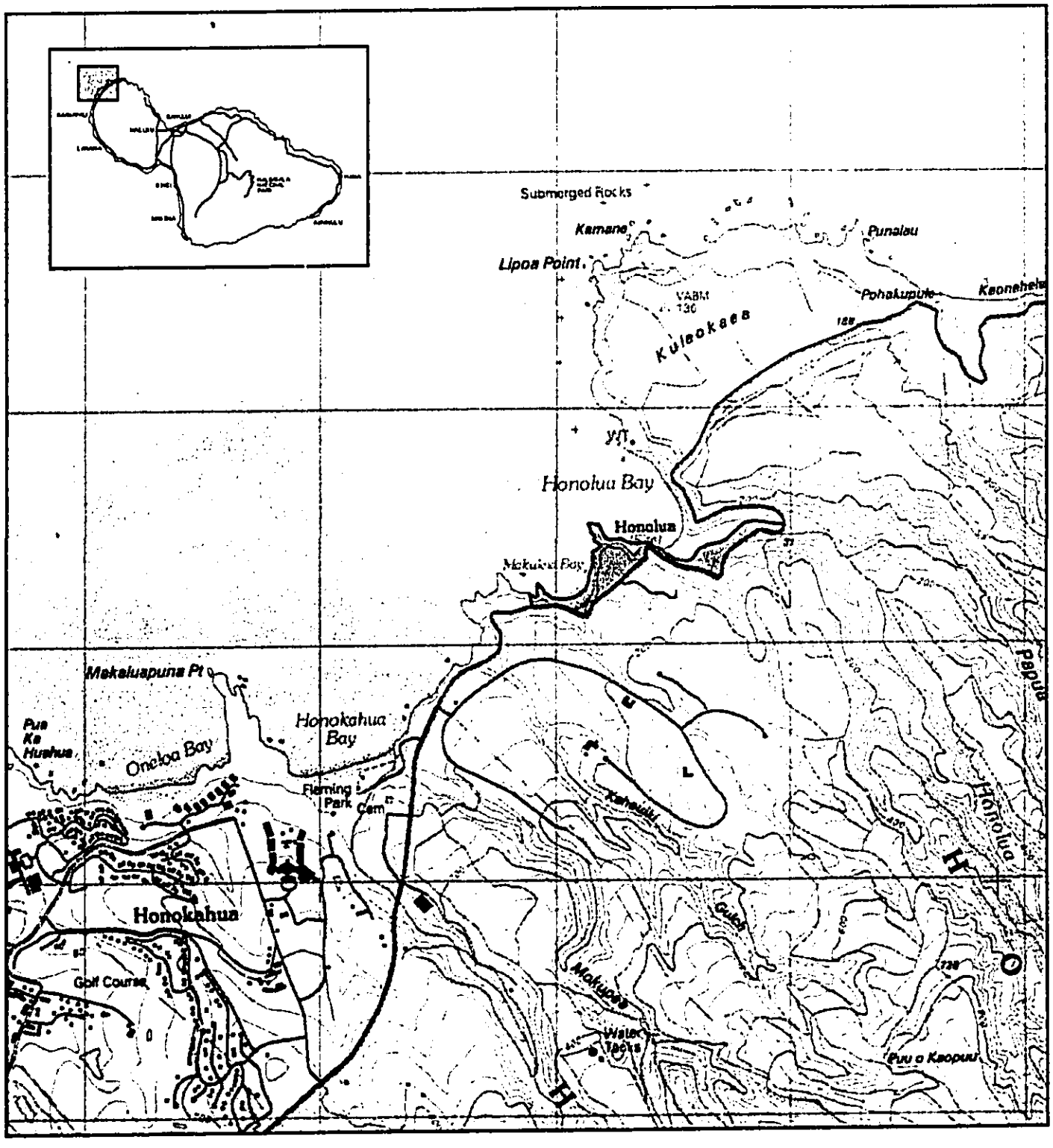
1.6 COMPLIANCE WITH STATE OF HAWAI'I ENVIRONMENTAL LAWS

Section 343-5, Hawai'i Revised Statutes (HRS), establishes eight "triggers" that require the preparation of an environmental assessment or environmental impact statement. Actions within the State Conservation District are one of the "triggers" that require an environmental assessment. The Kalaepīhā Lands are within the State Conservation District and, as such, this environmental assessment is prepared in compliance with Chapter 343, HRS, and in accordance with the provisions of Hawai'i Administrative Rules (HAR), Title 11, Department of Health, Chapter 200, Environmental Impact Rules.

This environmental assessment has also been prepared to satisfy the requirements of HAR Title 13, Department of Land and Natural Resources, Subtitle 1 Administration, Chapter 5, Conservation District Rules. These rules require an environmental assessment for subdivision of land within the Conservation District.

1.7 STUDIES CONTRIBUTING TO THIS ENVIRONMENTAL ASSESSMENT

Descriptions of the potentially affected environment, alternative actions considered, determination of impacts, and proposed mitigation measures are provided in this assessment. Description and analysis is based on site visits, widely available information addressing the characteristics of Kalaepīhā and surrounding areas, and site-specific technical studies. Specific technical studies prepared for this assessment include:



LEGEND

Kalaepiha Lands

Source: USGS Nāpili Quadrangle

Figure 1

Regional Location Map

KALAEPIHA LANDS

0 1000 2000 FEET

March 2002

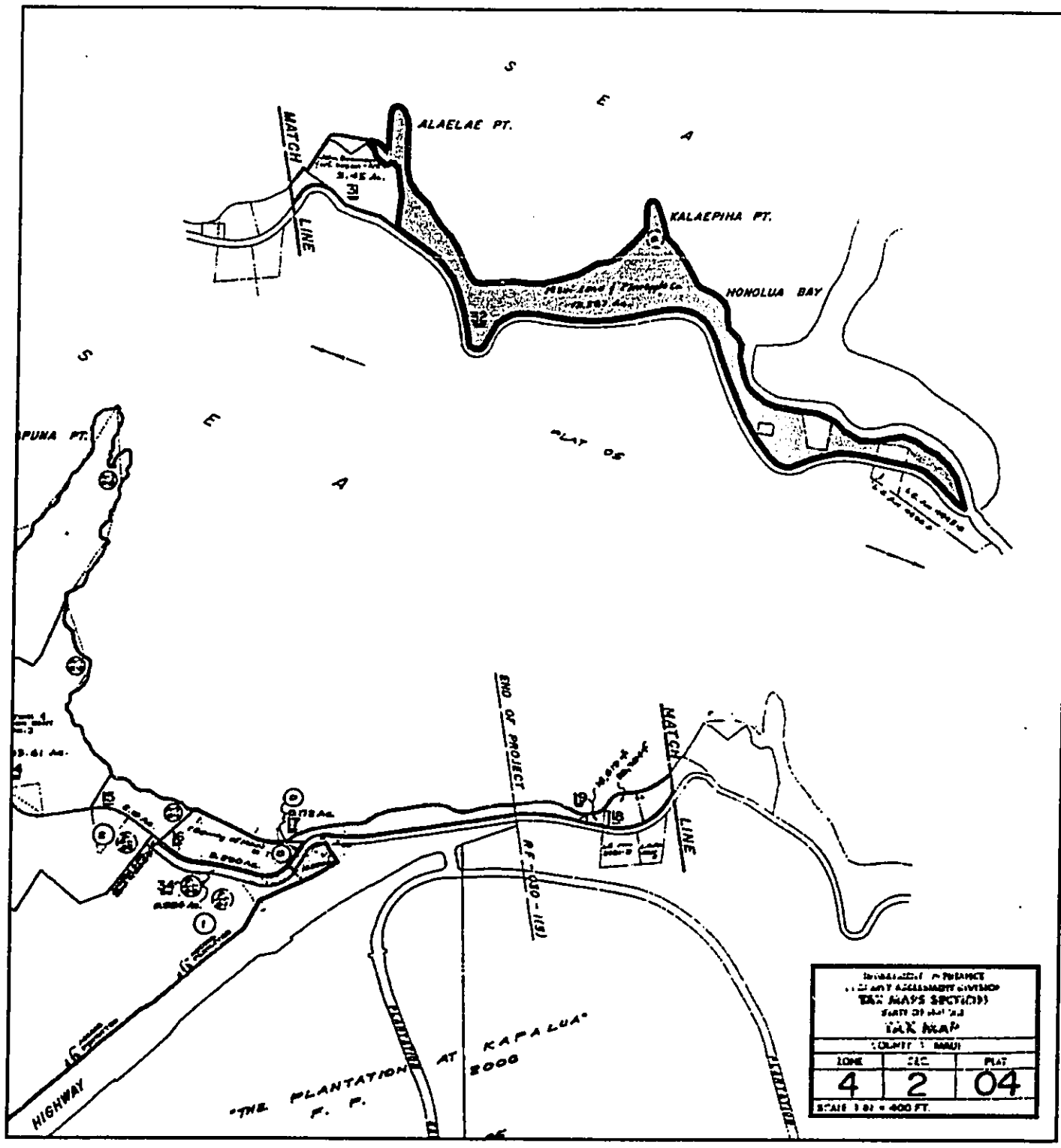


Figure 2

Tax Map Key

KALAEPIHA LANDS

0 400 800

FEET

Source: Tax Map Key

- The "Mokulē'ia Coastal Lands Botanical Survey" (Char 2001)
- The "Avifaunal and Feral Mammal Survey, Mokulē'ia Coastal Lands, Maui" (Bruner 2001)
- "An Archaeological Inventory Survey of a c. 23-acre Coastal Property Located in Honolua Ahupua'a, Lahaina District, Maui Island, TMK 4-2-04:32." (Fredericksen and Fredericksen. 2002).

1.8 IDENTIFICATION OF AGENCIES/INDIVIDUALS CONSULTED

Public agencies (or agency documents), private institutions, and individuals were consulted during the course of planning for the Kalaepīhā Lands subdivision, and for the purposes of this environmental assessment. These include:

State of Hawai'i Agencies

Department of Land and Natural Resources
- Historic Preservation Division
- Land Division
- State Parks Division

Land Use Commission
Office of Environmental Quality Control

County of Maui Agencies and Individuals

Councilmember Wayne Nishiki
Department of Parks and Recreation
Planning Department

Private Institutions

Maui Coastal Land Trust

Private Individuals

Gerald Shim

Public Hearing

In addition to the agencies, private institutions, and individuals listed above, on August 12, 2002, the Department of Land and Natural Resources held a public hearing on the Conservation District Use Application (CDUA) (MA-3095B), which was filed for the proposed Kalaepīhā Lands subdivision and required for subdivision of land in the Conservation District. The hearing was held on Maui at the Village Clubhouse at Kapalua (2000 Village Road, Kapalua Maui). Seven people signed the meeting sign-in sheet, although others were present. See Appendix A for a copy of the public hearing notice, a summary of the meeting, and the sign-in sheet.

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2.0 KALAEPĪHĀ LANDS DESCRIPTION

This chapter describes the proposed Kalaepīhā Lands subdivision. The property and surrounding region are described, and a preliminary timetable for the subdivision is provided. In-depth description of the potentially affected environment is provided in Section 4.0 of this document.

2.1 BACKGROUND

This section provides a description of land use in the immediate area of the Kalaepīhā Lands, and across the larger region of West Maui.

2.1.1 Location and Surrounding Uses

The Kalaepīhā Lands are located in the northwest portion of West Maui, within the County of Maui, Hawai'i (Figure 1). The property is north of the main Kapalua Resort area. Kalaepīhā Point[1] is the rocky peninsula , which forms the south shore of Honolua Bay and northeast shoreline of Mokulē'ia Bay. Honoapi'ilani Highway abuts the property on its southeast boundary. The area mauka or east of the highway includes Plantation Estates and The Plantation Golf Course, both of which are part of the Kapalua Resort. Kā'anapali Resort is located approximately five miles south via Honoapi'ilani Highway. Lahaina is about seven miles south.

Agricultural land and pineapple dominate the landscape to the north. Lands to the immediate south and southeast of Kalaepīhā are a mix of privately-owned parcels of the Plantation Estates and land used for Kapalua Resort's Plantation Golf Course. On the makai side of the highway a single family residence is being built on the parcel adjoining the Kalaepīhā parcel to the south. Most of the land further south is part of Kapalua Resort, which includes the Kapalua Bay Hotel and the Ritz-Carlton. Restaurants, homesites, condominiums, and tennis facilities, are also part of the resort.

The waters of Mokulē'ia Bay and Honolua Bay are within the Mokulē'ia/Honolua State Marine Life Conservation District. Fishing and other resource-extraction activities are prohibited here. The beach fronting Mokulē'ia Bay, is a popular recreational area, as is Honolua Bay. Ocean-oriented recreational activities are common at both Mokulē'ia Bay and Honolua Bay and include sunbathing, swimming, snorkeling, and surfing.

2.1.2 Description of the Property

The term "Kalaepīhā Lands" is being used as the name of the parcel (TMK 4-2-04: 32) (Figure 2) that includes Kalaepīhā Point, the steeply sloping land immediately to the south fronting Mokulē'ia Bay, and the land immediately to the north that forms the south side of Honolua Bay. The area of this parcel is approximately 21.3 acres. See Figures 3a and 3b for photographs of the property.

[1] One interpretation of the Hawaiian language place name *Kalaepīhā* is "The Piha Point," or the point of land that collects driftwood and other floating objects (after Pukui and Elbert 1971).

The uplands above Kalaepīhā Point are vacant. Maximum elevation is 127 feet at a small pu'u near Honoapi'ilani Highway. The headland is bounded on all makai exposures by steep cliffs, but most of the landscape atop Kalaepīhā Point slopes gently to the southwest.

The Honolua portion of the site is thickly wooded both along Honoapi'ilani Highway and along the bottomlands that drain Honolua Gulch. A trail in this area leads from Honoapi'ilani Highway to the edge of Honolua Bay.

The portion of the site fronting Mokulē'ia Bay also is wooded along the highway slope, with rocky peninsulas and a white sand beach dominating the downslope features. The Na Ala Hele Trails program of the Department of Land and Natural Resources, with permission from landowner Maui Land & Pineapple Company, Inc., has built a concrete stairway to provide access from the top of the buff to the beach fronting Mokulē'ia Bay. A small parking area is adjacent to the highway.

There is evidence of both prehistoric and historic activity on the land above Kalaepīhā Point. A possible ancient fish-spotting station and other prehistoric features have been located on the site. While there are no existing buildings, there is a concrete foundation of a former meat processing building on the site. Remnants of an old road are also visible and a dirt road curves into the area from a point just northeast of the intersection of Honoapi'ilani Highway and Honolua Place.

2.2 DESCRIPTION OF THE PROPOSED KALAEPĪHĀ LANDS SUBDIVISION

The proposed Kalaepīhā Lands subdivision does not involve any development, construction activity, or change in land uses. As proposed, the subdivision involves subdividing the land identified by TMK 4-2-04:32 (Figure 2) into three separate parcels as described below and shown on Figure 4.

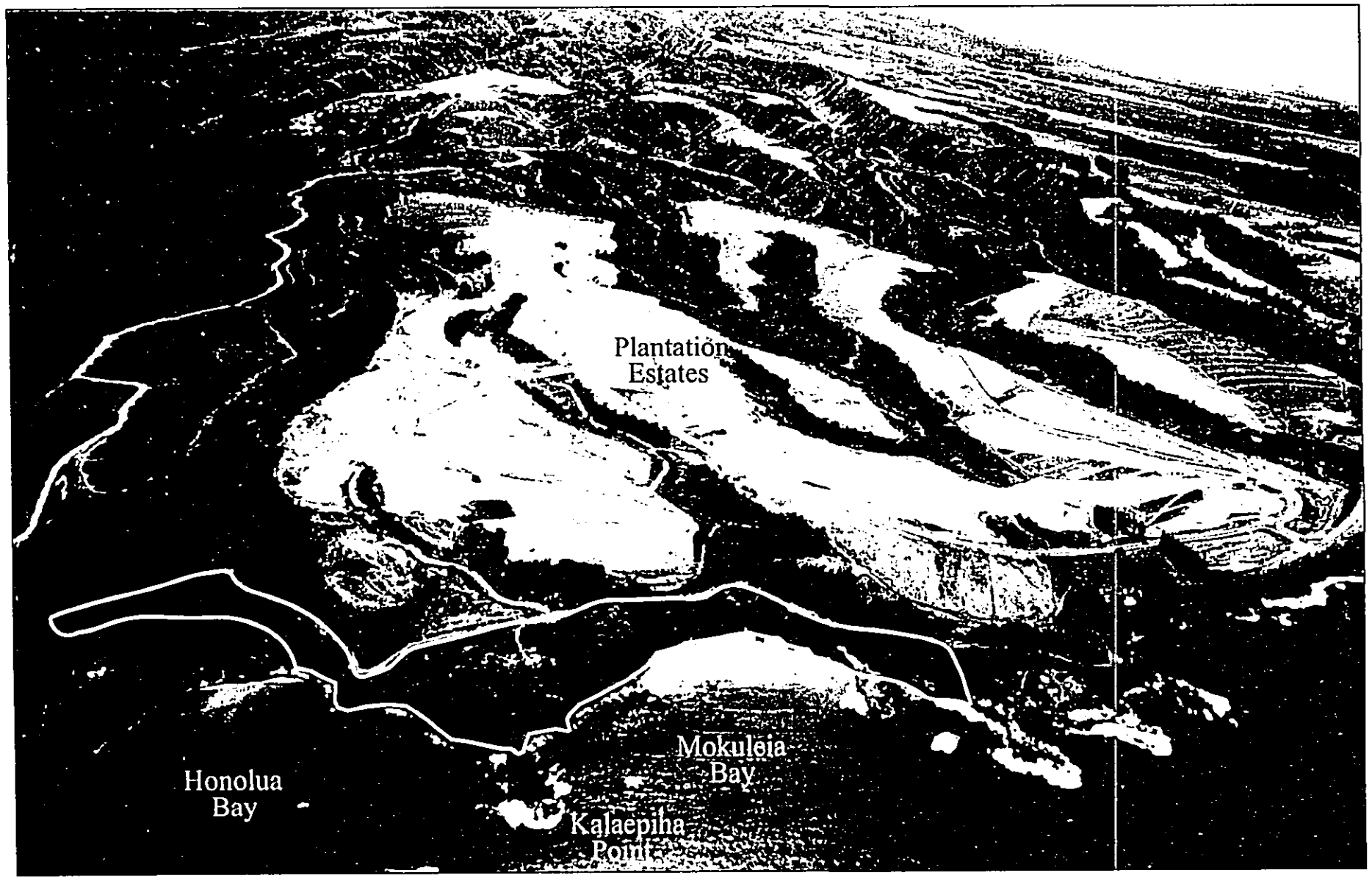
The TMK map specifies the total land area to be 13.587 acres, however, calculation based on recent topographical information indicates the area actually to be closer to 21.3 acres. The actual acreage will be determined when the area is surveyed. The TMK map also indicates that parcel 32 consists of three noncontiguous parcels. The parcel subject to the subdivision is the largest of the three lots.

The three parcels to be subdivided are described as follows:

1) **The Coastal Reserve** parcel would be approximately 4.3 acres and would include the land in front of Mokulē'ia Bay extending along the coastline to the south of Kalaepīhā Point It is proposed that this parcel be offered for donation to the State or a conservation organization. The donation would establish permanent conservation of the land, preserve open space and views, and ensure continued public access to Mokulē'ia Bay.

2) **The Kalaepīhā Point** parcel would be approximately 6.5 acres and would include the area above Kalaepīhā Point. The potential for a single-family home as identified under the Conservation District Rules[2] would be allocated to this parcel to the exclusion of the other two parcels, however, no construction is currently proposed.

[2] Hawai'i Administrative Rules, Title 13, Department of Land and Natural Resources, Subtitle 1 Administration, Chapter 5, Conservation.



LEGEND

Kalaepiha Lands
(Boundaries Approximate)

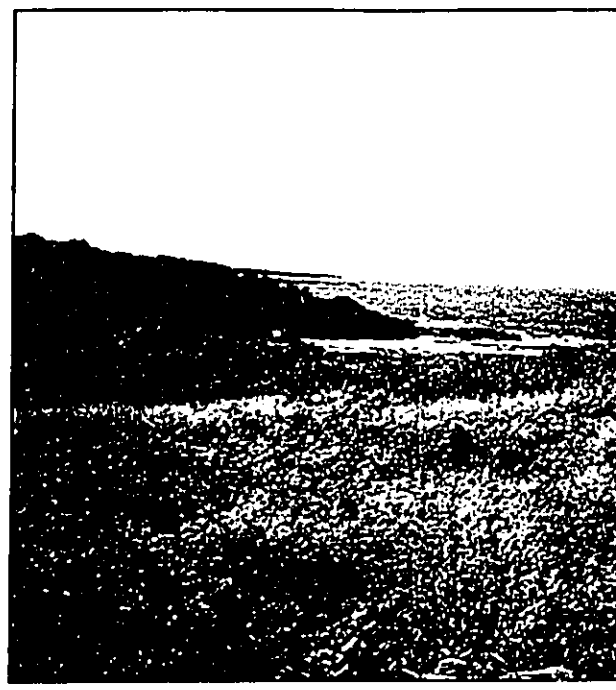
Figure 3a

Aerial Photograph

KALAEPIHA LANDS

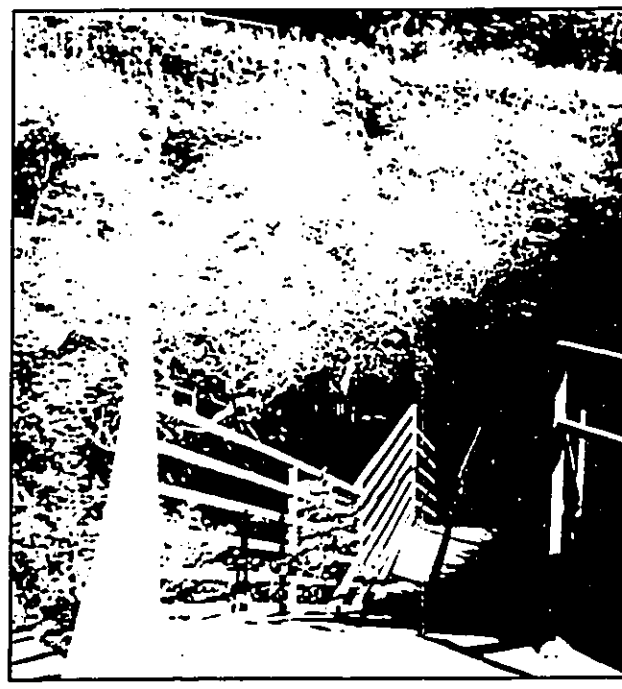
PBR

1. Kalaepiha Point.



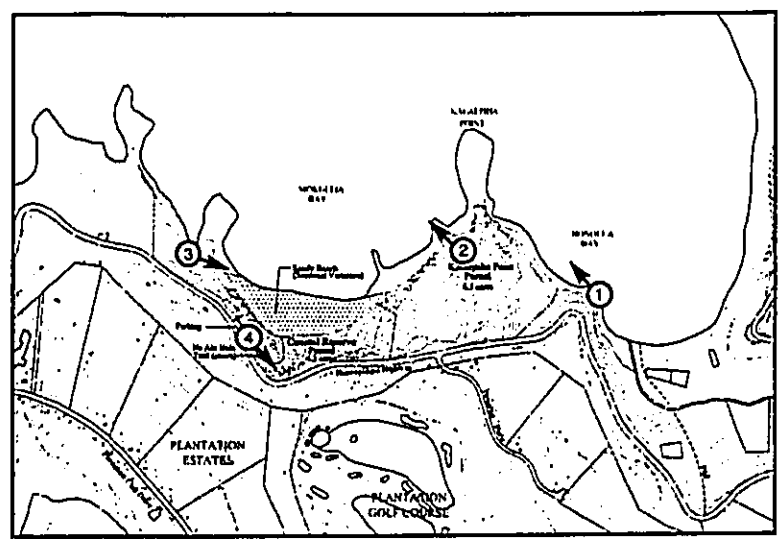
2. The land above Kalaepiha Point. Alaelae distance.

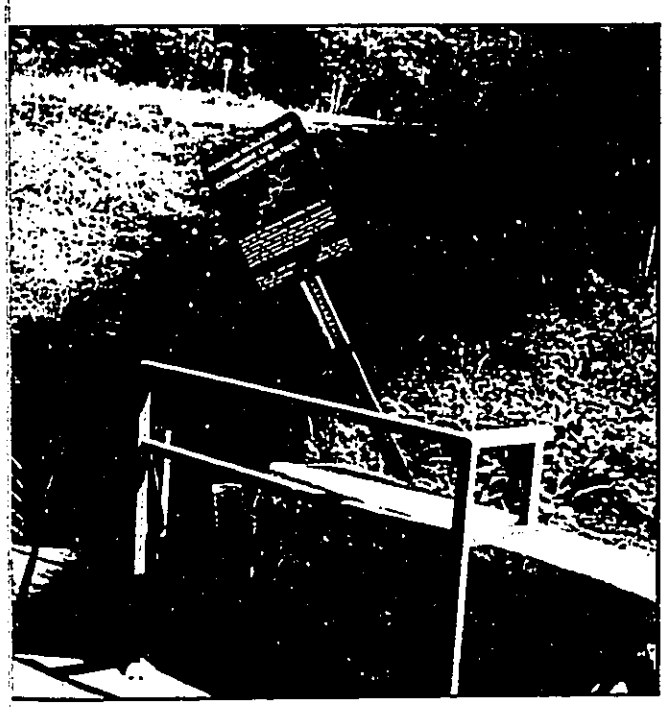
3. The Beach fronting Mokuleia Bay.



4. The Na Ala Hele access steps to Mokuleia

Point. Alaelae Point is seen in the





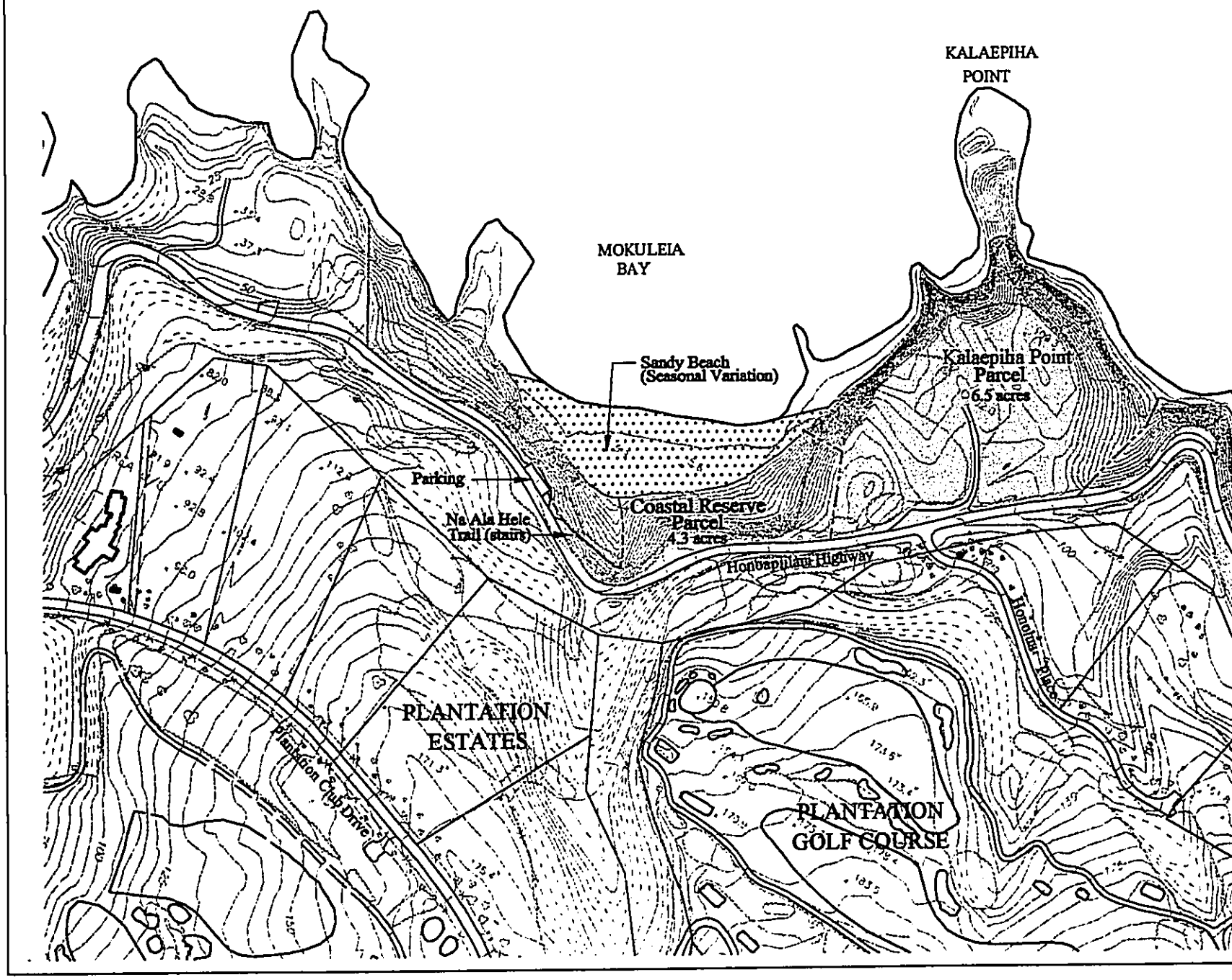
ps to Mokuleia Bay.

Figure 3B

Site Photographs

KALAEPIHA LANDS

PBR HAWAII



LEGEND

Kalaepiha Lands
(Shoreline Boundaries Approximate)

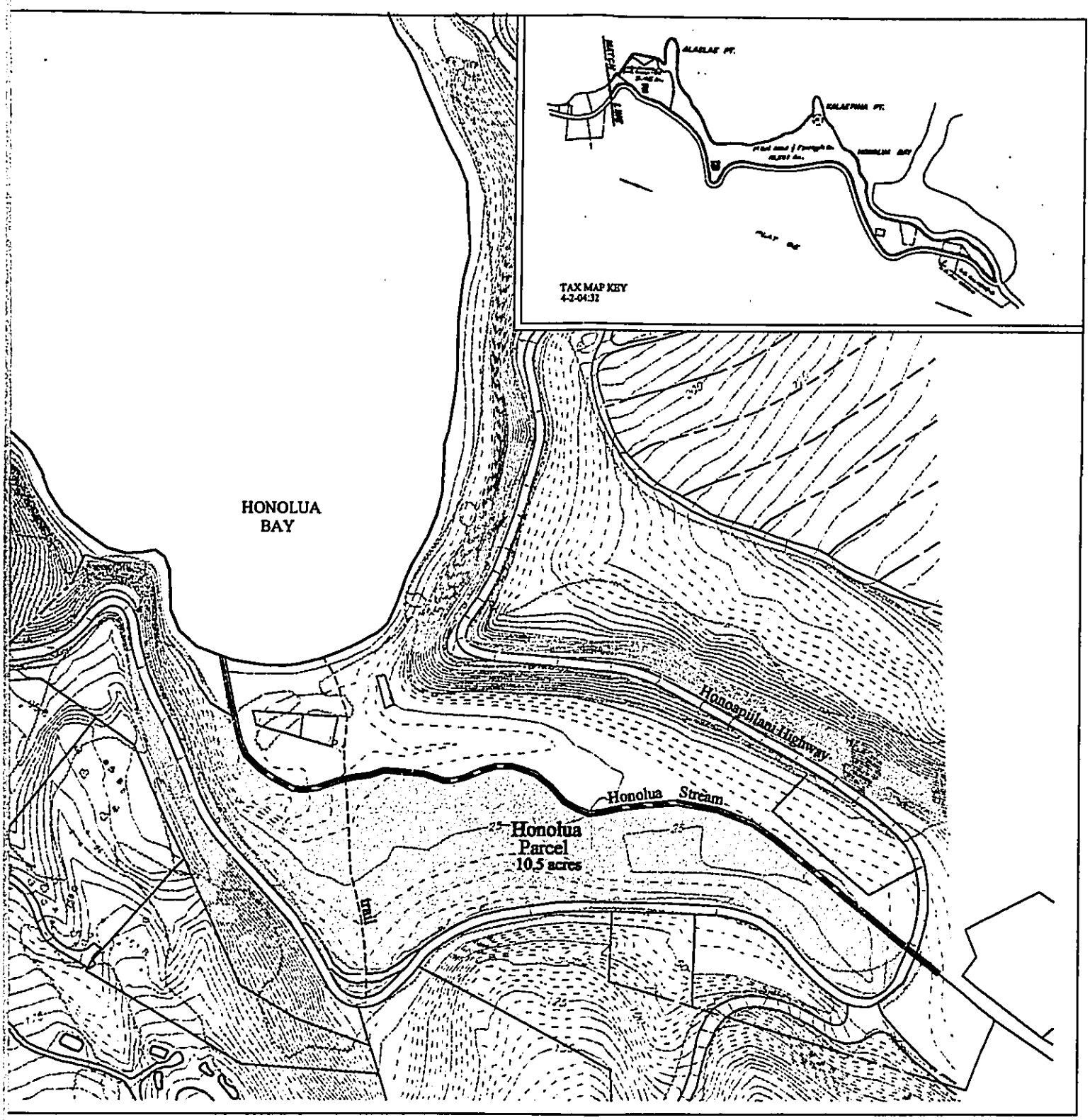


Figure 4

Preliminary Subdivision Plan

KALAEPIHA LANDS

3) **The Honolua** parcel would be approximately 10.5 acres and would include the lands east of the Kalaepīhā Point between Honoapi'ilani Highway, the shoreline, and along Honolua stream. Similar to the Coastal Reserve parcel, no changes in land use are proposed and no dwelling would be permitted on this parcel.

2.3 PROJECT TIMETABLE

Subdivision of Kalaepīhā Lands will occur after approval of the required Conservation District Board Permit (per HAR Title 13, Department of Land and Natural Resources Subtitle 1 Administration, Chapter 5, Conservation District).

This environmental assessment is being completed as a requirement of the Board Permit application process. Once an application is considered complete by the Department of Land and Natural Resources, a letter of acceptance is issued and the Board Permit application must be processed within a statutory 180-day time period.

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3.0 LAND USE CONFORMANCE

This section describes State of Hawai'i and County of Maui land use plans, policies, and ordinances relevant to subdividing the Kalaepīhā Lands. Each section includes discussion of how the subdivision conforms to each of the plans and requirements.

3.1 STATE OF HAWAI'I

3.1.1 State Environmental Impact Statement Law, Chapter 343, Hawai'i Revised Statutes

The State Environmental Impact Statement Law (Chapter 343, HRS) requires an environmental assessment be prepared for "any use within any land classified as conservation district." The Kalaepīhā Lands are within the State Conservation District and this document has been prepared in compliance with the State Environmental Impact Statement Law.

3.1.2 State Land Use Law, Chapter 205, Hawai'i Revised Statutes

The State Land Use Law (Chapter 205, HRS) establishes the State Land Use Commission (LUC). This body has authority to designate all lands in the State into one of four districts: Urban, Rural, Agricultural, or Conservation. As stated above, the Kalaepīhā Lands are within the State Conservation district (Figure 5).

Chapter 205, HRS delegates authority to govern the Conservation District to the Department of Land and Natural Resources, pursuant to the Conservation District Law (Chapter 183C, HRS). Subdivision of the Kalaepīhā Lands will conform to all stipulations associated with the Conservation District designation.

3.1.3 State Conservation District Law, Chapter 183C, Hawai'i Revised Statutes

The State Conservation District Law (Chapter 183C, HRS) requires the Department of Land and Natural Resources to: 1) establish subzones within the Conservation District; 2) adopt Administrative Rules governing the use of land within the Conservation District and the subzones; and 3) regulate land use in the Conservation District by the issuance of permits.

The Kalaepīhā Lands are within the "Resource" Subzone of the Conservation District (Figure 6). Subdivision of land within the Resource subzone is permissible, providing a Board Permit is obtained from the Board of Land and Natural Resources. This final environmental assessment was prepared in partial fulfillment of the requirements for the Board Permit.

3.1.4 State Conservation District Administrative Rules

The State Conservation District Administrative Rules (Hawai'i Administrative Rules, Title 13, Department of Land and Natural Resources, Subtitle 1 Administration, Chapter 5, Conservation) state the objective of the "Resource" Subzone is to "develop, with proper management, areas to ensure sustained use of the natural resources of those [Conservation] areas."

The Rules also provide for identified land uses within the subzones. Accordingly, a permitted use in the Resource subzone is "Subdivision of property into two or more legal lots of record which serves a public purpose and is consistent with the objectives of the subzone."

The public purpose served by the Kalaepīhā Lands subdivision is the permanent land conservation and continued public access to Mokulē'ia Bay that will be established by the donation of the Coastal Reserve parcel to the State or a conservation organization.

A Board Permit is required from the State Board of Land and Natural Resources (BLNR) before a subdivision can be implemented in the Conservation District. In evaluating the merits of a proposed land use, the Board of Land and Natural Resources applies the criteria listed under Section 13-5-30 of the Rules. Each of the criteria are listed below, followed by discussion of how the proposed Kalaepīhā Lands subdivision effectively conforms to each.

(1) The proposed land use is consistent with the purpose of the conservation district;

Discussion: The Kalaepīhā Lands subdivision will conserve, protect, and preserve the coastal lands surrounding Kalaepīhā Point. It is important to note that beyond the subdivision into three parcels, there is no land use being proposed. The subdivision into three parcels is consistent with the purpose and intent of the Conservation District, as follows :

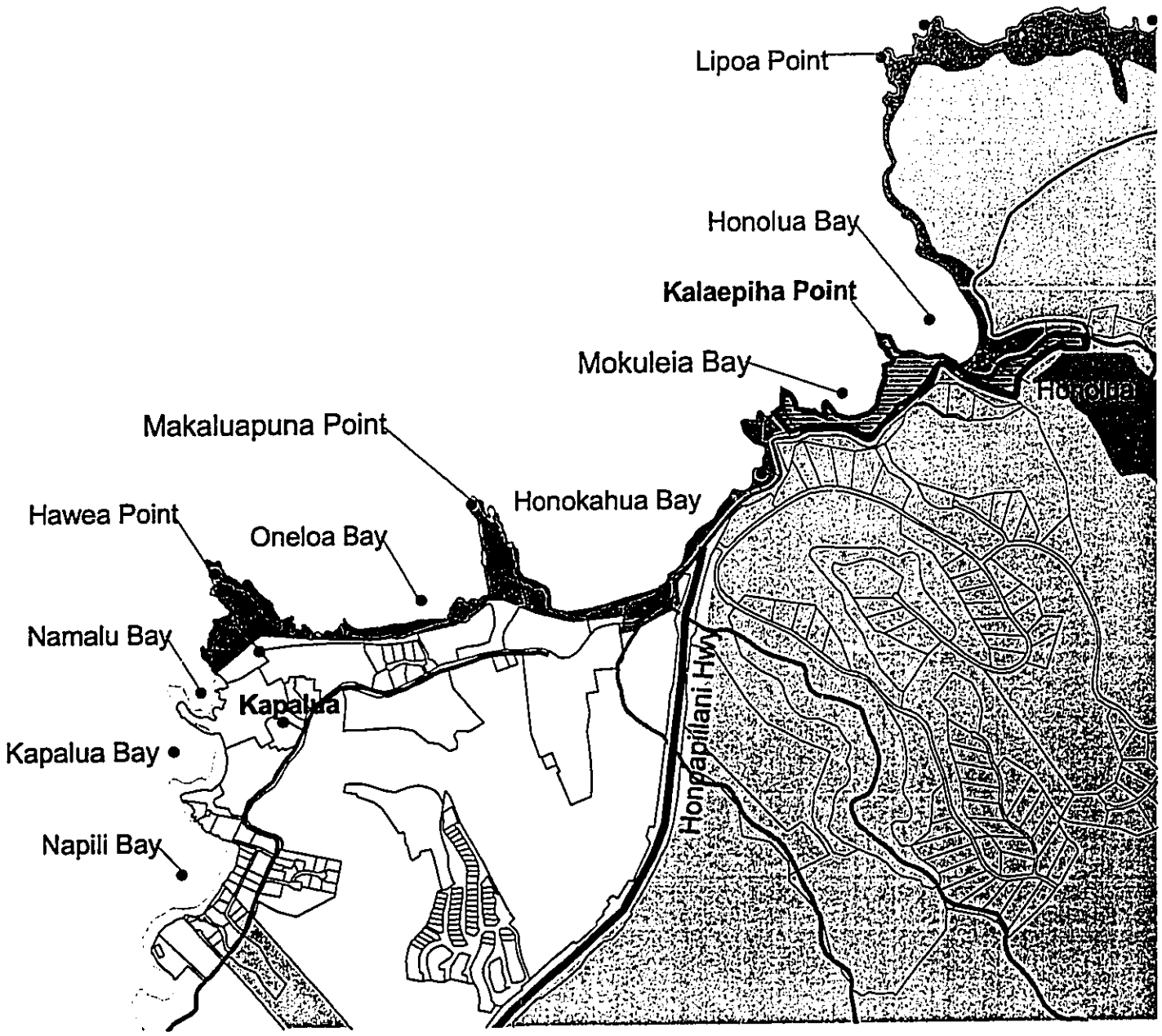
1) The Coastal Reserve parcel will establish permanent conservation of the land, preserve open space and views, and ensure continued public access to Mokulē'ia Bay.

2) The Kalaepīhā Point parcel will provide extensive open space and protection and preservation of archaeological sites while retaining the one homesite identified under the Conservation District rules.

3) Honolua parcel will protect the scenic attributes of the area and provide open space and public access to Honolua Bay and the Mokulē'ia/Honolua Marine Life Conservation District.

(2) *The proposed land use is consistent with the objectives of the subzone of the land on which the use will occur;*

Discussion: The Kalaepīhā Lands are within the Resource subzone. According to the Conservation District Rules, the objective of the resource subzone is to manage lands so as to ensure sustained use of the natural resources of the area. While there are no land use changes proposed, the Kalaepīhā Lands subdivision is consistent with, and will implement, this objective. In particular, securing the Coastal Reserve parcel in trust will ensure that public access is maintained, and the parcel's natural state is sustained and perpetuated. The Kalaepīhā parcel will provide extensive open space and protection and preservation of archaeological sites. The Honolua parcel will protect the scenic attributes of the area and provide open space and public access to Honolua Bay and the Mokulē'ia/Honolua Marine Life Conservation District.



LEGEND

- Kalaepiha Lands

State Land Use Districts

- Agriculture
- Conservation
- Rural
- Urban

- Major Roads
- Streams

Figure 5

State Land Use Districts

KALAEPIHA LANDS

NORTH

LINEAL SCALE (FEET)

1000 0 2000

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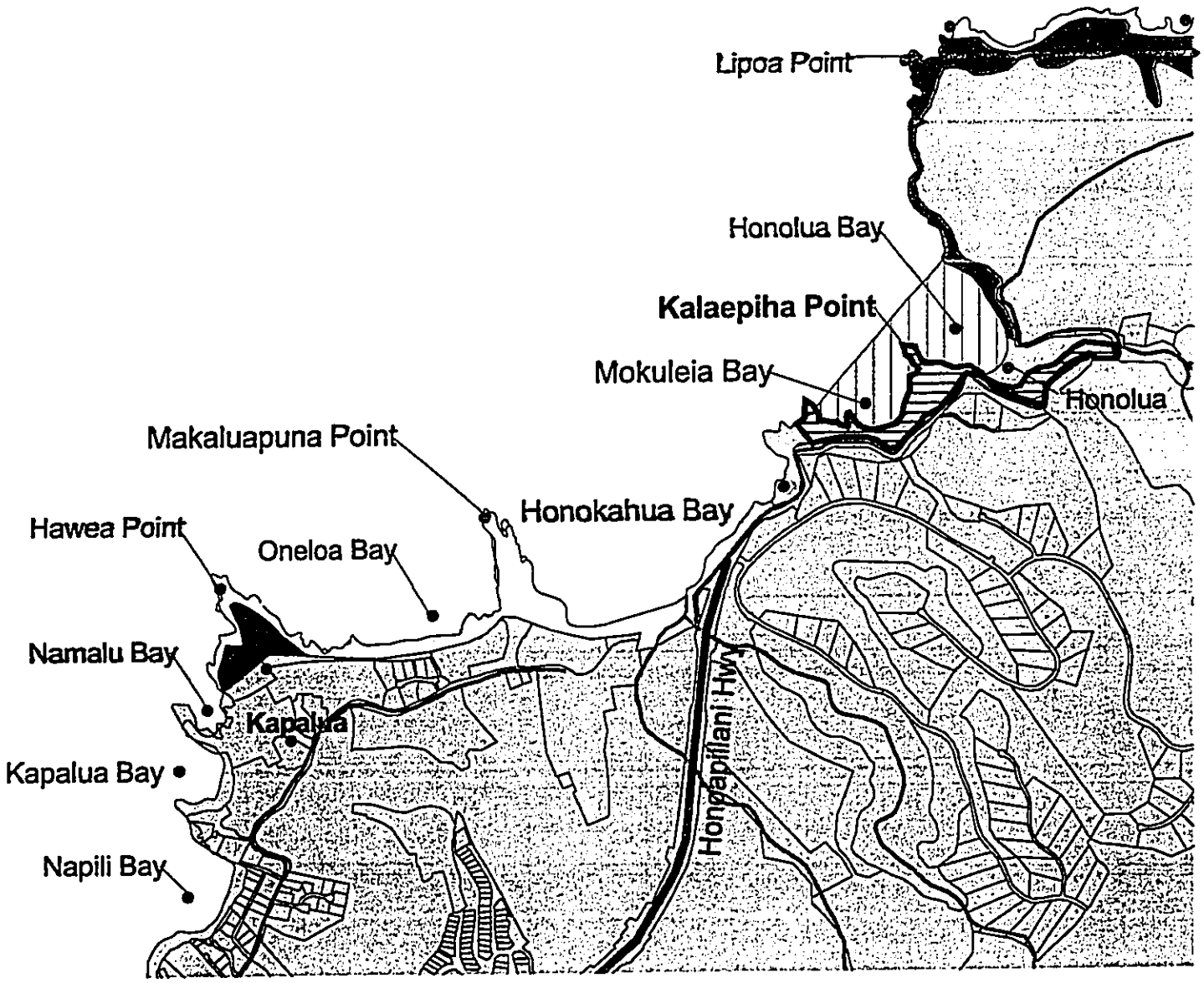


LEGEND

Kalaepiha Lands

Conservation District Subzones

- General
- Limited
- Preservation
- Resource
- Non Conservation District
- Major Roads
- Streams

Figure 6

Conservation District Subzones

KALAEPIHA LANDS

NORTH

LINEAL SCALE (FEET)

1000 0 2000

PBR HAWAII

(3) The proposed land use complies with provisions and guidelines contained in chapter 205A, HRS, entitled "Coastal Zone Management," where applicable;

Discussion: The proposed subdivision of the Kalaepīhā Lands complies with provisions and guidelines contained in Chapter 205A, HRS, entitled "Coastal Zone Management," by:

1) Increasing recreational opportunities accessible to the public;
2) Protecting and preserving the archaeological resources;
3) Protecting, preserving, and improving the quality of coastal scenic and open space resources;
4) Providing public or private facilities and improvements important to the State's economy;
5) Protecting a beach for public use and recreation; and
6) Promoting the protection, use, and development of marine and coastal resources to assure their sustainability.

The Kalaepīhā Lands are within the Special Management Area (SMA) of the County of Maui (Figure 7). Development within the SMA requires a Special Management Area Use Permit. However, under Section 205A-22, Hawai'i Revised Statutes, "development" does not include "Subdivision of a parcel of land into four or fewer parcels when no associated construction activities are proposed . . ." As such, the subdivision of the Kalaepīhā Lands into three parcels is exempt from the SMA requirements.

(4) The proposed land use will not cause substantial adverse impact to existing natural resources within the surrounding area, community, or region;

Discussion: The subdivision of Kalaepīhā Lands will not cause substantial adverse impact to existing natural resources within the surrounding area, community, or region since there are no proposed land use changes.

(5) The proposed land use, including buildings, structures and facilities, shall be compatible with the locality and surrounding areas, appropriate to the physical conditions and capabilities of the specific parcel or parcels.

Subdivision of Kalaepīhā Lands is compatible with the locality and surrounding areas and appropriate to the physical conditions and capabilities of the specific parcel or parcels. No buildings or other changes in land uses are being proposed for the subdivided parcels. However, as previously stated, the Kalaepīhā Point parcel would retain the potential for the one single-family residence as is currently identified under the Conservation District rules.

(6) The existing physical and environmental aspects of the land such as natural beauty and open space characteristics, will be preserved or improved upon, whichever is applicable;

Discussion: The subdivision of the Kalaepīhā Lands will preserve the existing physical and environmental aspects of the land by securing the Coastal Reserve parcel in trust, thus ensuring the natural state of this parcel is maintained and perpetuated. In addition, the Honolua parcel will provide open space and enable public access to Honolua Bay and the Mokulē'ia/Honolua Marine

Life Conservation District. Finally, creation of the Kalaepīhā parcel will involve preservation of scenic views, vegetation, and archaeological resources.

(7) Subdivision of land will not be utilized to increase the intensity of land uses in the conservation district; and

Discussion: Subdivision of the Kalaepīhā Lands will not increase the intensity of land uses in the Conservation District. As previously stated, beyond the subdivision into three parcels, there are no proposed land use changes. While the Kalaepīhā Point parcel would retain the potential for one single-family dwelling, this use is currently permissible on the site without the subdivision. With the subdivision the Coastal Reserve and Honolua parcels will also be created, however, specific deed restrictions could be imposed to eliminate the potential for development of single-family residences on these parcels. Therefore subdividing the 21.3-acre Kalaepīhā Lands into three separate parcels will not result in increased density or intensity of land uses in the Conservation District..

(8) The proposed land use will not be materially detrimental to the public health, safety and welfare.

Discussion: The subdivision of the Kalaepīhā Lands will not be materially detrimental to the public health, safety and welfare as no new land uses are proposed beyond subdivision. Subsequent portions of this environmental assessment support the conclusion that no significant detrimental effects on public health, safety, or welfare can reasonably be anticipated to result from the subdivision.

3.2 COUNTY OF MAUI

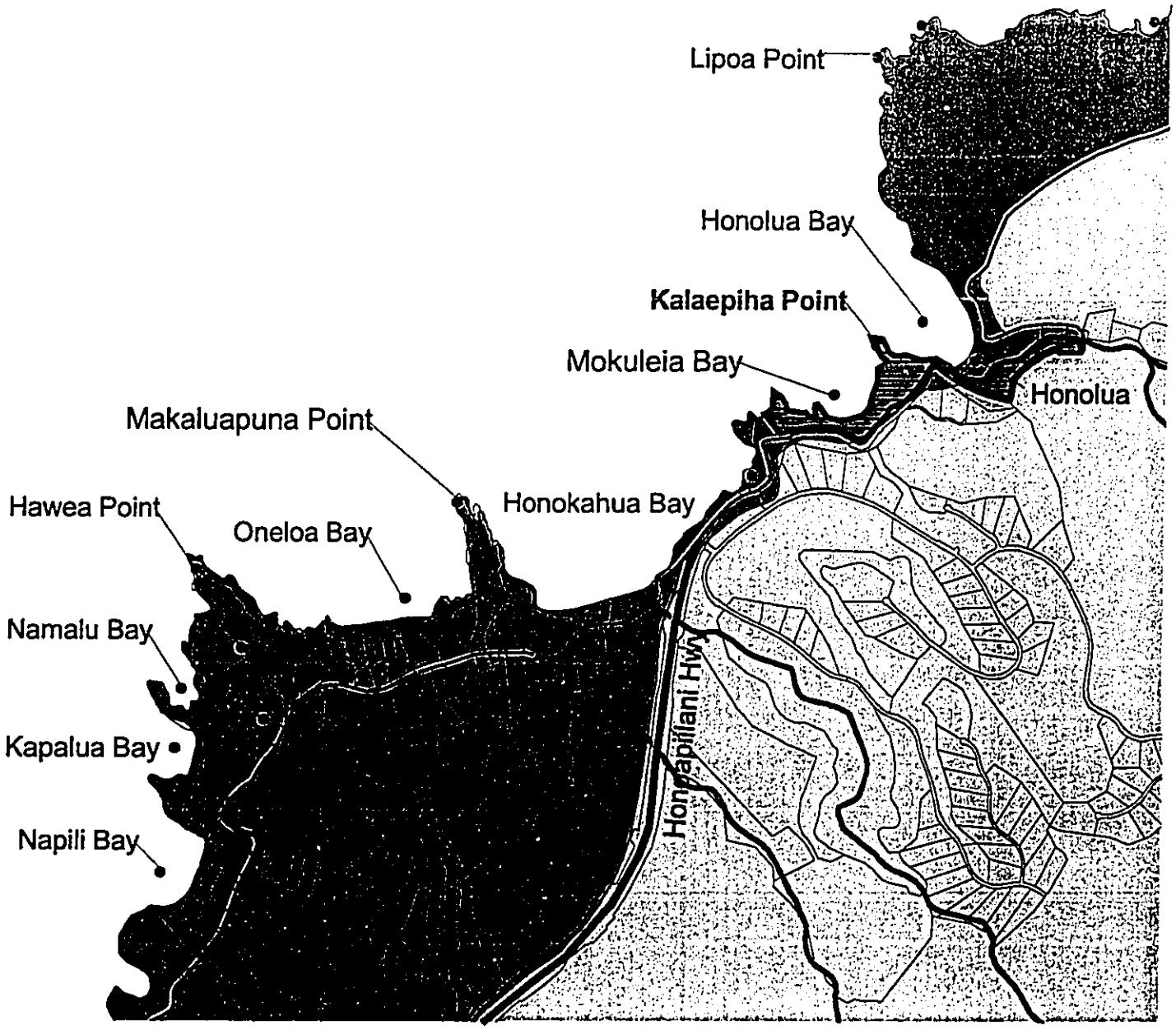
County-specific land use plans and ordinances pertaining to the proposed subdivision of the Kalaepīhā Lands include the *General Plan of the County of Maui 1990 Update*, the *West Maui Community Plan*, and the Maui County Code. The following subsections present relevant elements of these guidelines and regulations, accompanied with description of how each will be addressed during the course of the proposed subdivision.

3.2.1 General Plan

The County of Maui Charter requires that the Maui General Plan address the development-related needs and concerns of the citizens of Maui County. In so doing, it must set forth the desired patterns and characteristics of future growth, and assess the social, economic, and environmental effects of such change. Various objectives and policies have been established in the Plan to satisfy these goals. The proposed subdivision of the Kalaepīhā Lands effectively implements relevant General Plan objectives and policies, as discussed below.

B. Land Use

Objective 1: *To preserve for present and future generations existing geographic, cultural and traditional community lifestyles by limiting and managing growth through environmentally sensitive and effective use of land in accordance with the individual character of the various communities and regions of the county.*



LEGEND

- Kalaepiha lands
- Special Management Area
- Major Roads
- Streams

Figure 7

Special Management Area
KALAEPIHA LANDS

NORTH

LINEAL SCALE (FEET)
1000 0 2000

PBR HAWAII

Policy b: *Provide and maintain a range of land use districts sufficient to meet the social, physical, environmental and economic needs of the community.*

Policy c: *Identify and preserve significant historic and cultural sites.*

Policy e: *The County will explore ways to develop a Maui County Open Space Program which will preserve important scenic, cultural, recreational, environmental, and open space resources.*

Objective 2: *To use the land within the County for the social and economic benefit of all the County's residents*

Policy a. *Mitigate environmental conflicts and enhance scenic amenities, without having a negative impact on natural resources.*

Discussion: Given the fact that no land use changes are proposed, subdivision of the Kalaepīhā Lands will not alter the desirable attributes of northwest portion of West Maui. Land use in region the is characterized by low-density development, extensive areas of open space, and numerous recreational opportunities. The Kalaepīhā Lands subdivision will not alter these regional characteristics. Open space will be retained and important scenic, cultural, recreational, environmental resources will be preserved. The subdivision of the Kalaepīhā Lands will not result in any greater density beyond what is currently allowed on the existing parcel.

In addition the Coastal Reserve parcel would serve to protect the variety of natural resources and also could serve to qualify the area and its scenic and recreational attributes as components of a future Maui Open Space Program. Local public access to, and recreational use of, both Mokulē'ia and Honolua Bay would be ongoing. Given the scenic attributes and recreational potential of this part of West Maui, such opportunities may contribute significant economic benefits to the County.

C. Environment

Objective 1: *To preserve and protect the County's unique and fragile environmental resources.*

Policy a: *Preserve for present and future generations the opportunity to experience the natural beauty of the islands.*

Policy b: *Preserve scenic vistas and natural features.*

Objective 2: *To use the County's land-based physical and ocean-related coastal resources in a manner consistent with sound environmental planning practice.*

Policy a.: *Preserve, enhance, and establish traditional and new environmentally sensitive access opportunities for mountain and ocean resources.*

Policy b: *Evaluate all land-based development relative to its impact on the County's land and ocean ecological resources.*

Policy d: *Discourage all types of shoreline development that impact on traditional community or native activities which include food gathering, religious and recreational uses.*

Policy e: *Establish shoreline rules to maintain traditional beach access, beach use, and lateral access along shorelines.*

Discussion: Subdivision of the Kalaepīhā Lands will ensure preservation of the scenic and recreational potential of the area, as no new land uses are proposed. Given the fact that a valuable shoreline parcel is proposed to be donated to the State or a conservation organization, the subdivision will also satisfy elements of the General Plan that call for preservation, enhancement, and continued access to Maui's shoreline and coastal properties. The donation of the Coastal Reserve parcel will ensure continued access to Mokulē'ia Bay. In addition, the trail at the Honolua parcel will continue to provide access to Honolua Bay.

Cultural Resources

Objective 1: *To preserve for present and future generations the opportunity to know and experience the arts, culture and history of Maui County.*

Policy b: *Encourage the recordation and preservation of all cultural and historic resources, to include culturally significant natural resources.*

Discussion: An archaeological survey completed in January 2002, indicates the presence of prehistoric and historic features on the Kalaepīhā Lands. Maui Land & Pineapple Company, Inc., and will comply will all state and county laws and rules regarding the preservation of cultural and historic sites.

Economic Activity

General Objective 1: *To provide ans economic climate which will encourage controlled expansion and diversification of the County's economic base.*

General Objective 3: *Utilize an equitable growth management program which will guide the economic well-being of the community.*

Visitor Industry Objective 1: *To control the development of visitor facilities so that it does not infringe upon the traditional social, economic and environmental values of the community.*

Policy g: *Locate buildings so as to retain scenic vistas.*

Urban Design Objective 1: *To see that all developments are well designed and are in harmony with their surroundings.*

Urban Design Objective 3, Policy b: *Encourage community design which established a cohesive identity.*

Discussion: Given the dramatic beauty and recreational potential the Kalaepīhā Lands/Honolua area of West Maui, preservation of the coastline area may contribute significant economic benefits to the County by maintaining the image of Maui as a place of significant beauty and outstanding ocean recreation opportunities. In particular, securing the Coastal Reserve parcel in trust will ensure ongoing ocean and beach access and preservation of the area's natural and scenic qualities. Scenic views, vegetation, and archaeological sites will be preserved and maintained across Kalaepīhā Lands, and public access to the Mokulē'ia/Honolua Marine Life Conservation District will be ensured.

Recreation and Open Space

Objective 1: *To provide high-quality recreational facilities to meet community needs.*

Policy c. *Maintain the natural beauty of recreational areas.*

Objective 2. *To provide a wide range of recreational, cultural and traditional opportunities for all our people.*

Policy e. *Encourage the identification, restoration, and preservation of important archaeological, historical, and cultural sites.*

Policy i. *Encourage the use of public lands to expand and enhance outdoor recreational and cultural opportunities.*

Discussion: The vistas, landscape, and recreational opportunities at, and surrounding Kalaepīhā Lands have brought residents and visitors to the West Maui area for many years, and continue to do so. Maintaining these aspects of the site is in the best interest of the landowner and general public alike, and a primary consideration of subdivision process.

Creation of the Coastal Reserve and Honolua parcels is particularly responsive to the recreation and open space concerns outlined in the General Plan. Because of the subdivision, access to existing recreational opportunities at Mokulē'ia Bay and Honolua Bay will be preserved. In addition, the area's archaeological resources will be conserved, and the prehistoric and historic context of the sites and surrounding area have been analyzed and recorded for potential future use by interested parties.

3.2.2 West Maui Community Plan

The *West Maui Community Plan* is one of nine community plans developed to address both the general policies of the Maui County General Plan and the unique aspects of each region. This section outlines relevant goals, objectives, and policies of the *West Maui Community Plan*, and reviews the various ways in which the subdividing the Kalaepīhā Lands will effectively address these.

LAND USE

Goal
An attractive, well-planned community with a mixture of compatible land uses in appropriate areas to accommodate the future needs of residents and visitors in a manner that provides for the stable social and economic well-being of residents and the preservation and enhancement of the region's open space areas and natural environmental resources.

Objectives and Policies

2. *Preserve and enhance the mountain and coastal scenic vistas and open space areas of the region.*

5. *Preserve the current State Conservation District and the current State Agriculture District boundaries in the planning region, in accordance with this community plan and its land use map. Lands north of Kapalua and south of Puamana to the region's district boundaries should ensure the preservation of traditional lifestyles, historic sites, agriculture, recreational activities and open space.*

Discussion: The subdivision of the Kalaepīhā Lands does not require taking the lands out of the State Conservation District. In addition the subdivision of the lands will contribute to preservation of traditional lifestyles, historic sites, agriculture, recreational activities, and open space in the area.

Specifically, subdivision of the Kalaepīhā Lands will preserve the existing physical and environmental aspects of the land by securing the Coastal Reserve parcel in trust, by protecting the scenic attributes of entire Kalaepīhā area, by providing open space, and by ensuring public access to the Mokulē'ia/Honolua Marine Life Conservation District.

ENVIRONMENT

Goal
A clean and attractive physical, natural and marine environment in which man-made developments on or alterations to the natural and marine environment are based on sound environmental and ecological practices, and important scenic and open space resources are preserved and protected for public use and enjoyment.

Objectives and Policies

2. *Preserve agricultural lands and open space with particular emphasis on natural coastal areas along major highways.*

4. *Emphasize land management techniques such as natural landscaping, regular maintenance of streams and drainage ways and siltation basins, avoidance of development in flood-prone areas, and other measures that maintain stream water quality. Whenever feasible, such management techniques should be used instead of structural solutions, such as building artificial stream channels or diversion of existing natural streams*

14. *Protect the shoreline and beaches by preserving waterfront land as open space wherever possible. This protection shall be based on a study and analysis of the rate*

of shoreline retreat plus a coastal hazard buffer zone. Where new major waterfront structures or developments are to be approved, preservation should be assured for 50-100 years by employing a shoreline setback based on the rate established by the appropriate study.

15. *Create a coastal improvement district emphasizing equal preservation of both coastal lands and beaches through the adoption of zoning and land use controls that encourage compatible development in safe areas, provide for the long-term economic needs of beach and dune nourishment and maintenance, and enable strategic retreat from the coast wherever feasible through a program of land acquisition, economic incentives and specific construction guidelines.*

Discussion: The subdivision of Kalaepīhā Lands implements the above environmental objectives and policies on many levels. Donation of the Coastal Reserve parcel facilitates acquisition and preservation of coastal lands and will ensure this land remains as open space while preserving scenic vistas from the highway. This will also ensure public access to the beach fronting Mokulē'ia Bay. Scenic views, vegetation, and other importation features will be preserved and maintained on both the Kalaepīhā Point and Honolua parcels. In addition, the trail at the Honolua parcel will continue to provide access to Honolua Bay. Vistas of Mokulē'ia and Honolua Bay will continue to be unobstructed, and local stream water quality and natural landscaping will be maintained.

ECONOMIC ACTIVITY

Goal *A diversified economy that provides a range of stable employment opportunities for residents, allows for desired commercial services for the community, and supports the existing visitor and agricultural industries, all in a manner that will enhance both the community's quality of life and the environment.*

Implementing Action 2: *Quantify the economic value of agricultural lands and open space as a factor in resident and visitor satisfaction and as appropriate, incorporate this date in regional socio-economic assessments*

Discussion: Preservation of the recreational and scenic viewing potential at and surrounding Kalaepīhā Lands may contribute significant economic benefits to Maui County by maintaining its image as a place of significant beauty and extensive ocean recreation opportunities. Donation of the Coastal Reserve parcel will further this ideal by ensuring public access to the ocean, beach, and Mokulē'ia/Honolua Marine Life Conservation District. Economic benefits may also be enhanced through preserving the natural features, scenic views, vegetation, and archaeological sites across the entire Kalaepīhā Lands area.

CULTURAL RESOURCES

Goal
To preserve, protect and restore those cultural resources and sites that best represent and exemplify the Lahaina region's pre-contact, Hawaiian Monarchy, missionary and plantation history.

Objectives and Policies

1. *Preserve and protect significant archaeological, historical and cultural resources that are unique in the State of Hawai'i and Island of Maui.*

3. *Encourage and protect traditional shoreline and mountain access, cultural practices and rural/agricultural lifestyles. Ensure adequate access to our public shoreline areas for public recreation, including lateral continuity.*

6. *Ensure that new projects or developments address potential impacts on archaeological, historical, and cultural resources and identify all cultural resources located within the project area as part of initial studies. Further require that all proposed activity adequately mitigate potential adverse impacts on cultural resources.*

10. *Ensure that site identification and interpretation is not damaging to any historical or archaeological sites.*

Implementing Actions

3. *Identify specific historical or archaeological sites for protection and interpretation.*

Discussion: An archaeological report completed in January 2002, describes several prehistoric and historic sites and features on the Kalaepīhā Lands. Landowner Maui Land & Pineapple Company, Inc., will comply will all state and county laws and rules regarding the preservation of cultural and historic sites.

SOCIAL INFRASTRUCTURE

Goal

Develop and maintain an efficient and responsive system of public services which promotes a safe, healthy, and enjoyable lifestyle, and offers opportunities for self improvement and community well being.

Objectives and Policies

3. *Provide resource-oriented regional park facilities and public access along the shoreline for picnicking, camping, informal play, swimming, sunbathing, and other coastal-related activities along coastal lands makai of the existing or future realigned coastal highways from Honokahua Bay to the district's north boundary.*

7. *Ensure adequate public access to shoreline areas, including lateral access to establish the continuity of public shorelines.*

Implementing Actions

4. *Develop a long-range beach park acquisition program and development program involving residents, landowners, businesses, government, and public interest organizations.*

5. *Adopt a beach/mountain access dedication ordinance pursuant to Chapter 46, HRS, and acquire accesses through purchase, dedication, condemnation or land exchange.*

6. *Implement a program to acquire and develop sites for future park use, consistent with the Community Plan.*

Discussion: The subdivision of the Kalaepīhā Lands implements the above goals, objectives, policies, and implementing actions, perhaps better than any other areas addressed by the *West Maui Community Plan.* In particular, securing the Coastal Reserve parcel in trust will ensure that public access to the ocean and beach is maintained and the parcel's natural attributes are preserved. In addition, the trail at the Honolua parcel will continue to provide access to Honolua Bay. Popular recreational activities such as beachcombing, swimming, snorkeling, and surfing will continue to be facilitated via access at both of these areas.

The entire nearshore area surrounding the Kalaepīhā Lands is one of Hawai'i's ten Marine Life Conservation Districts (MLCDs), only two of which are located offshore Maui. The other Maui MLCD is located at Molokini Shoal. MLCDs are intended to protect nearshore resources. The subdivision of the Kalaepīhā Lands will perpetuate the preservation of this important area.

Planning Standards

The West Maui Community Plan also delineates planning standards that provide specific guidelines for development and design. The standards also clarify the intent of land use and town design objectives and policies.

5. CULTURAL RESOURCES

a. *Ensure that site identification and interpretation is not damaging to any sites.*

b. *Recognize the importance of buffer areas to enhance and protect sites.*

c. *Support the preservation of sites and site types identified earlier within the Polices and Objectives section related to Cultural Resources.*

d. *Recognize areas of historic vegetation and significant native vegetative zones as cultural resources.*

Discussion: An archaeological survey completed in January 2002, indicates the presence of several prehistoric and historic sites and features on Kalaepīhā Lands. Landowner Maui Land & Pineapple Company, Inc., will comply will all state and county laws and rules regarding the preservation of cultural and historic sites.

3.2.3 Maui County Code

3.2.3.1 County of Maui Zoning

The Kalaepīhā Lands are within the State Conservation District and are designated "Conservation" on the *West Maui Community Plan*. The County of Maui does not have a zoning designation for lands within the State Conservation District, which are largely administrated by the State Department of Land and Natural Resources.

3.2.3.2 Special Management Area

The Kalaepīhā Lands are within the Special Management Area (SMA) of the County of Maui (Figure 7). Development within the SMA requires a Special Management Area Use Permit. However, under Section 205A-22, Hawai'i Revised Statutes, "development" does not include "Subdivision of a parcel of land into four or fewer parcels when no associated construction activities are proposed . . ." As such, the subdivision of the Kalaepīhā Lands into three parcels would be exempt from the SMA requirements.

3.2.3.3 Subdivision Regulations

The subdivision of the Kalaepīhā Lands will comply with the provisions of Maui County Subdivision Ordinance (Title 18, Maui County Code).

3.3 APPROVALS AND PERMITS

An approximate list of permits and approvals required for the proposed subdivision of the Kalaepīhā Lands is presented on the next page.

Required Permits and Approvals

Permit/Approval	Responsible Agency
Chapter 343, HRS compliance	Department of Land and Natural Resources Office of Environmental Quality Control
Conservation District Use Board Permit	Department of Land and Natural Resources/Board of Land and Natural Resources
Special Management Area Exemption	County of Maui Planning Department
Subdivision Approval	County of Maui Department of Public Works and Waste Management
Compliance with Chapter 6E, HRS	State Historic Preservation Division

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

This chapter focuses on description of physical environmental conditions at the Kalaepīhā Lands. These conditions are considered in relation to the potential effects of the proposed subdivision process.

Because no land use changes are proposed, the process of subdividing the property will not generate physical effects or impacts.[3] Thus there are no findings of significant impacts, and no mitigative strategies are warranted. The Coastal Reserve parcel is intended to remain in its current natural state. Any future changes in land uses on the Kalaepīhā Point or Honolua parcels may require a separate environmental assessment or environmental impact statement in which specific impacts related to the proposed land use and mitigative measures would need to be addressed.

4.1 CLIMATIC CONDITIONS

Climatic conditions at Kalaepīhā are strongly influenced by close proximity to the ocean and its tendency to influence temperature and affect wind flow. This area of West Maui exhibits relatively low day-to-day and month-to-month variability in temperature. August highs approach 88°F, and January lows are around 62°F.

Prevailing northeast tradewinds typically reach about 16 to 20 knots or approximately 18 miles to 23 miles per hour (Juvik and Juvik 1998), but occasionally attain speeds of up to 45 miles per hour. Kona or southerly winds typically occur only a few days annually, and mostly in association with localized winter storms. The West Maui Mountains help shelter the Kalaepīhā area from the strong trade winds that affect much of windward Maui. The average annual rainfall around Kalaepīhā is about 20-30 inches. Rainfall is relatively light and occurs primarily between the months of November and April.

Potential Impacts and Mitigative Measures

Subdivision of Kalaepīhā Lands will have no effect on climatic conditions in the area or region and no mitigation strategies warranted in association with the proposed subdivision process. The Coastal Reserve parcel is intended to remain in its current natural state. Any future changes in land uses on the Kalaepīhā Point or Honolua parcels may require a separate environmental assessment or environmental impact statement in which specific effects related to the proposed land use and mitigative measures would need to be addressed.

[3] Collection of data that would be done for the physical act of surveying existing and new property bounds is permissible without a permit under State Conservation District rules. In cases where these activities are required for subdivision, they are not expected to incur significant impacts on the property or surrounding physical or human environments.

4.2 TOPOGRAPHY & GEOLOGY

The Kalaepīhā Lands are located on the makai side of Honoapi'ilani Highway in the Honolua area of West Maui. Elevations range from just above mean sea-level in the vicinity of Mokulē'ia Bay, to a maximum 127 feet on the land above Kalaepīhā Point.

For the purpose of geologic characterization, Maui is divided into East and West Regions. East Maui is dominated by Haleakalā Volcano. Kalaepīhā is situated on the leeward side of West Maui. West Maui is also a volcano, estimated to be more than two million years old. Its last eruptions occurred about 200,000 years ago.

There are five major geologic units on West Maui: (1) Pliocene and Pleistocene volcanic rocks, including the Wailuku and Honolua volcanic series; (2) Pleistocene and recent volcanic rocks, including the Lahaina volcanic series; (3) Pleistocene sediments which include calcareous dunes and consolidated earthy deposits; (4) recent sediments which include unconsolidated deposits; and (5) historic volcanic rocks (Juvik and Juvik 1998). Juvik and Juvik (ibid.) describe the geology of West Maui:

> An extinct volcano whose evolution includes shield, postshield and rejuvenated stages forms West Maui. Numerous cones, domes, dikes, flows, and pyroclastic deposits of mugearite, hawaiite, and trachyte represent the postshield stage, while the only evidence of its rejuvenated stage is a few vents and flows located mainly near Lahaina. Erosion has exposed nearly 4,900 vertical feet (1,490 meters) of volcanic layers on West Maui. (p. 43)

Typically, the West Maui basalt is comprised of thin-bedded a`a and pahoehoe lavas created by eruptions along rift zones. The soils of West Maui, which reach depths of about 20 feet, indicate that the volcanic activity probably stopped in the Pliocene or earliest Pleistocene era. This situation is described by MacDonald et al. (1983:376-378):

> Stream erosion of West Maui volcano has reached a late youthful to submature stage. Because of the thick armor of Honolua flows, the rainy northeastern slope has reached a less advanced stage of dissection than might otherwise be expected, and broad surfaces that have not been lowered much below the original surface lie between the deep canyons. In contrast, the drier southwestern slope has been much more deeply dissected, leaving sharp-crested ridges between the valleys.

Potential Impacts and Mitigative Measures

No impacts to the geology or topography at Kalaepīhā will occur in relation to the proposed subdivision process since no change in land use is proposed. Therefore, no mitigation measures are planned. The Coastal Reserve parcel is intended to remain in its natural state. Any future changes in land uses on the Kalaepīhā Point or Honolua parcels may require a separate environmental assessment or environmental impact statement in which specific effects related to the proposed land use and mitigative measures would need to be addressed.

4.3 SOILS AND DRAINAGE

Most of the Kalaepīhā Point parcel is gently sloping rocky soil. The land drops off abruptly along the rocky outcroppings that characterize the makai-side cliff features. The Honolua parcel is similar, with some alluvial soils occurring along the rocky bottomland in the terminal portion of Honolua Gulch and Stream. The Coastal Reserve parcel is rocky along its margins, with a stretch of fine coral sand comprising the beach at Mokulē'ia Bay and filling pockets between the lava outcroppings.

Three soil suitability studies have been prepared for lands in Hawai'i. These are the U.S. Department of Agriculture (USDA) *Soil Conservation Service Soil Survey* (SCS), the University of Hawai'i Land Study Bureau *Detailed Land Classification*, and the State of Hawai'i Department of Agriculture's *Agricultural Lands of Importance to the State of Hawai'i* (ALISH). The principal focus of these studies has been to describe the physical attributes of Hawai'i's lands and the relative productivity of different land types for agricultural production purposes.

The USDA SCS, *Soil Survey of the Islands of Kaua'i, O'ahu, Maui, Moloka'i, and Lāna'i*, classifies soils in the Kalaepīhā area into two distinct soil types: Alaeloa silty clays (AeC), and Rock Land (rRK). A brief description of these types follows:

> Alaeloa Silty Clays (AeC) - These well-drained soils are typically located in Maui's upland regions. Elevations range from 100 to 1,500 feet above sea level with slopes ranging from three to 70 percent. Where slopes range from seven to 15 percent, runoff is slow to medium and the erosion hazard is slight to moderate. In areas not previously eroded, the subsoil is approximately 48 inches thick and moderately acidic in the surface layer, and strongly acid in the subsoil. These soils are typically appropriate for pineapple, grazing, wild life habitat, and homesites. They are also amenable for containing water resources.
>
> Rock Land (rRK) - Rock land soils are defined by exposed rock which covers 25 to 90 percent of the surface. Rocky outcroppings and very shallow soils are the primary characteristics of this type. The outcrops are mainly basaltic and andesitic. This soil/land type ranges from nearly level to very steep. Elevations range from nearly sea level to more than 6,000 feet. Rock land is often used for pasture, and is often wildlife habitat. Water is often contained below rock land.

The University of Hawai'i Land Study Bureau document titled "*Detailed Land Classification - Island of Maui*" classifies lands at and in the vicinity of Kalaepīhā as "E" (Figure 8). This classification is based on a five-class productivity rating using the letters A, B, C, D, and E, where A represents the highest class of productivity and E the lowest. The "E" rated soils cover the entire site. These soils generally have little or no potential for soil-based agricultural production.

The Agricultural Lands of Importance to the State of Hawai'i (ALISH) system classifies lands in the vicinity of Kalaepīhā alternately as "Prime Agricultural Land," or "not classified" (Figure 9). ALISH defines Prime Agricultural Land as possessing the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops when treated and managed in accordance with modern farming methods. The unclassified lands that comprise the majority of acreage at Kalaepīhā are characterized as having no value for soil-based agriculture.

Apparent discrepancies between the ALISH and University of Hawai'i Land Study Bureau designations most likely relate to differences in degree of resolution provided in the respective soil map depictions, wherein the University of Hawai'i mapping system provides greater resolution and a more specific indication of soil quality at Kalaepīhā.

No modern physical infrastructure currently directs drainage flow in the Kalaepīhā area. Drainage across the Kalaepīhā parcel is non-directed and sheet flows over the area. Drainage is more directed in the Honolua parcel given the presence of Honolua stream and the alluvial topography in the area. Drainage in the Coastal Reserve parcel is a mix of non-directed sheet flow and flow directed by a series of small chasms makai of Honoapi'ilani Highway.

Potential Impacts and Mitigative Measures

As no change in land use is proposed, subdivision of the Kalaepīhā Lands will involve no impact on soil conditions or drainage patterns in the area. The proposed Coastal Reserve parcel is intended to remain in its natural state. Because the proposed subdivision process will have no direct impact on any soil or landscape types in the area, no mitigation measures are planned or called for at this time. Any future changes in land uses on the Kalaepīhā Point or Honolua parcels may require a separate environmental assessment or environmental impact statement in which specific impacts related to the proposed land use and mitigative measures would need to be addressed.

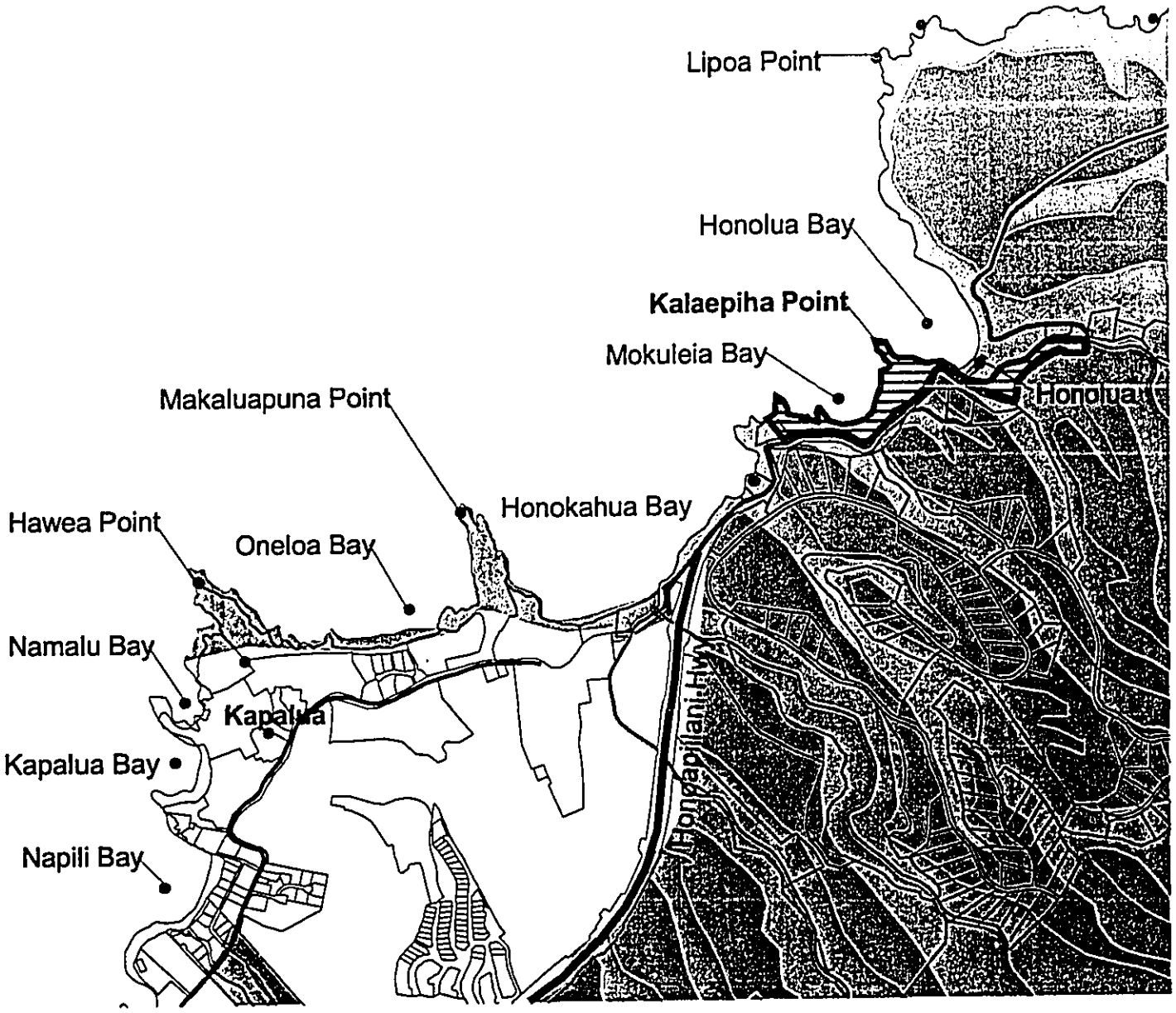
4.4 NATURAL HAZARDS

Natural hazards affecting the Hawaiian Islands include hurricanes, volcanic eruptions, earthquakes, and flooding. Volcanic hazards in the Kalaepīhā area are minimal insofar as recent activity is an indication of danger. No lava flows have impacted the West Maui region for at least 20,000 years (MacDonald et al. 1983).

Most earthquake activity in Hawai'i is related to volcanic rather than tectonic activity. Thousands of small earthquakes occur in Hawai'i each year, and moderate and disastrous earthquakes have rocked the islands in the past. The epicenter of the 1938 Maui Earthquake was six miles north of Maui. The quake registered 6.7 to 6.9 on the richter scale, generating landslides, ground fractures, and infrastructure damage across Maui.

Hurricanes have directly impacted Hawai'i twice in the past two decades. Both events were centered on Kaua'i. Hurricane 'Iwa struck in 1982 and Hurricane 'Iniki in 1992. While these events are relatively rare in Hawai'i, they do occur, and call for advanced planning and state and county policy considerations.

Flood hazards areas are depicted in the Flood Insurance Rate Map (FIRM) prepared by the Federal Emergency Management Agency (FEMA), National Flood Insurance Program. According to the FIRM, the majority of the Kalaepīhā Point parcel is within "Zone C," an area of minimal threat of flooding (Figure 10). The lower elevations of the Honolua and Coastal Reserve parcels are within FIRM 100-year flood zones, and there is potential for flash flooding in gulch areas. The entire immediate coastal zone area surrounding Kalaepīhā Point and Mokulē'ia/Honolua Bays is subject to high surf and associated hazards.



LEGEND

- Kalaepiha Lands

Soil Classifications

- A Excellent
- B Good
- C Fair
- D Poor
- E Very Poor

- Urban/Unclassified

- Major Roads
- Streams

Figure 8

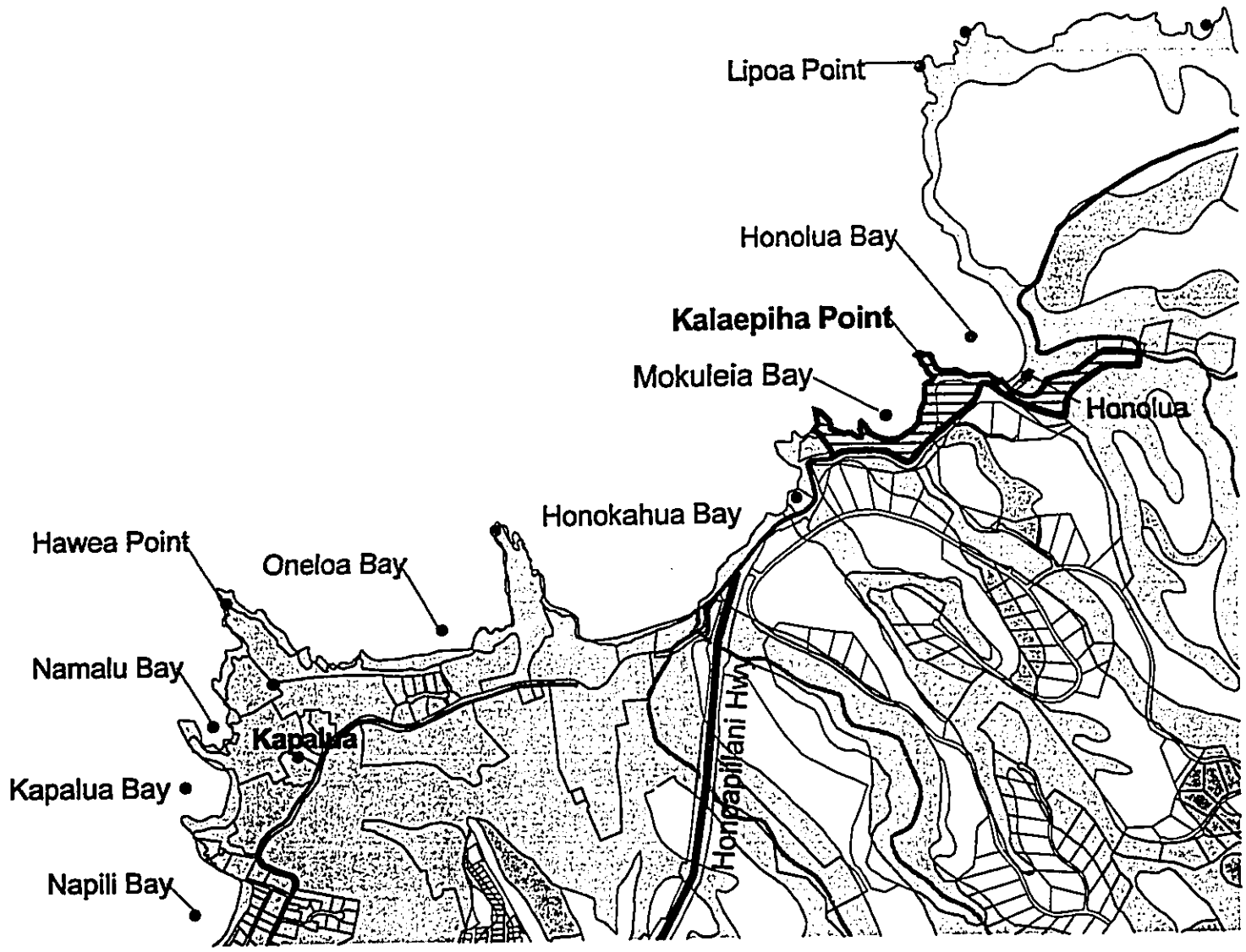
Detailed Land Classification

KALEAPIHA LANDS

NORTH

LINEAL SCALE (FEET)
1000 0 2000

PBR HAWAII



LEGEND

- Kalaepiha Lands

Agricultural Lands of Improtatance (ALISH)

- Prime
- Unique
- Other
- Unclassified Land
- Major Roads
- Streams

Figure 9

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

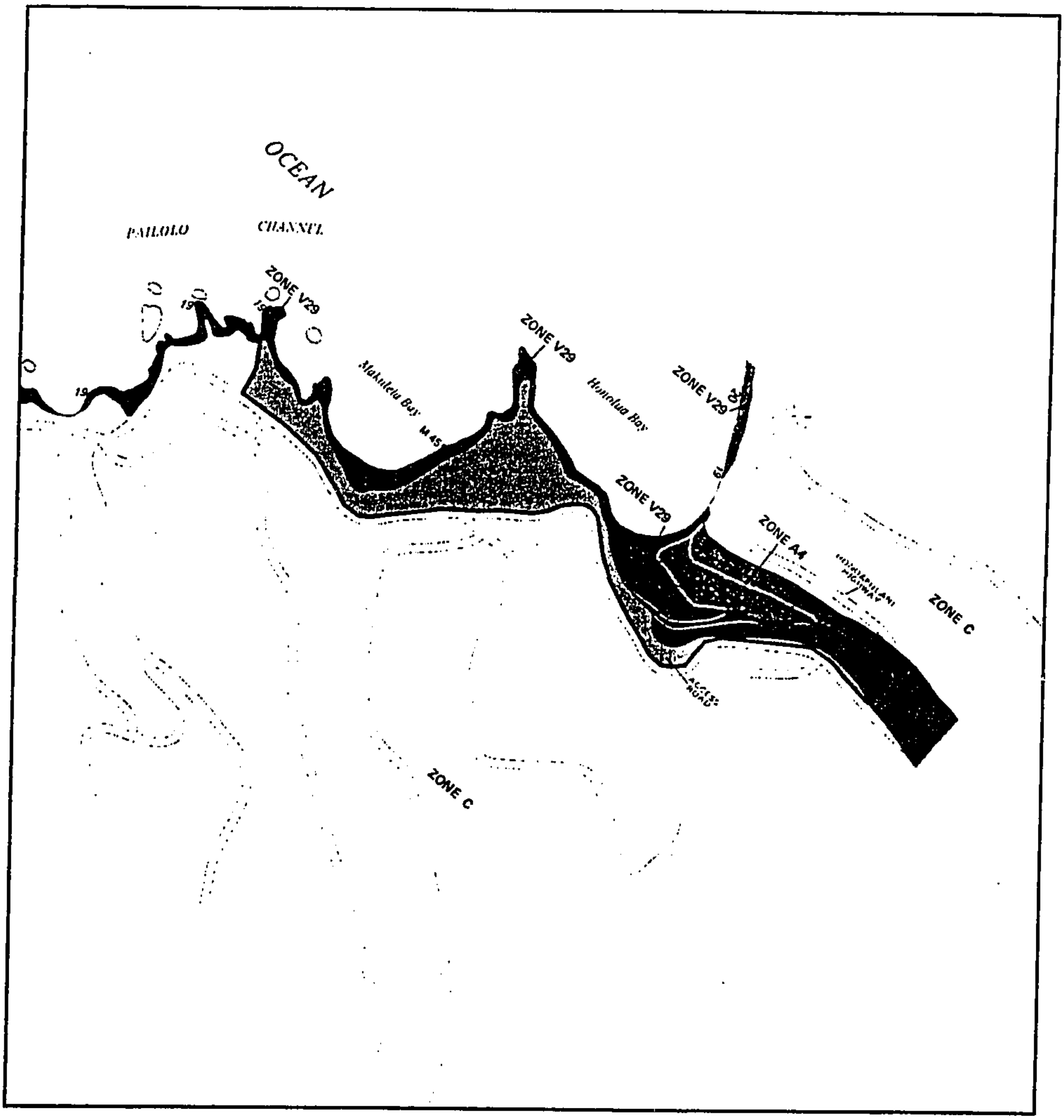
KALAEPIHA LANDS

NORTH

LINEAL SCALE (FEET)

1000 0 2000

PBR HAWAII



LEGEND

Kalaepiha Lands

ZONE A Areas of 100-year flood; base flood elevations and flood hazard factors determined

ZONE C Areas of minimal flooding

ZONE V Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined

Source: Federal Emergency Management Agency
Federal Insurance Administration

Figure 10

Flood Insurance Rate Map (FIRM)

KALAEPIHA LANDS

0 400 800
FEET

PBR

Steep slopes are subject to landslide problems, especially where unstable soils predominate. However, most of the soils in the Kalaepīhā area are relatively stable and therefore landslide threats are minimal.

Potential Impacts and Mitigative Measures

Because no change in land use is proposed, the subdivision process at Kalaepīhā will not present or exacerbate any hazard condition there or in surrounding areas, and no mitigative measures are planned or warranted at this time. Potential future land use changes in the Kalaepīhā area would require further assessment of the potential for exacerbating existing hazard areas and/or increasing exposure to potential hazards.

4.5 FLORA

No threatened or endangered plant species have been observed on the Kalaepīhā Lands. A botanical survey conducted by Char (2001) enumerated 101 floral species in the Kalaepīhā Point area and adjacent lands (see Appendix B). Of these species, 83 percent were introduced in recent centuries, four percent were introduced by Polynesians in prehistoric times, and 13 percent are native. Eleven of the native species are indigenous (that is, common to Hawai'i but also to other areas). The pā'ū o Hi'iaka vine and sedge species called *Cyperus phleoides* are endemic species (that is, found only in Hawai'i). Introduced species such as ironwood (*Casuarina equisetifolia*), koa hale (*Leucaena leucocephala*), Guinea grass (*Panicum maximum*), Christmas berry (*Shinus terebinthefolius*), and monkeypod trees (*Samanea saman*) dominate the local flora.

Coastal cliff vegetation on the Kalaepīhā Lands is characterized by stands of wind- and salt-pruned ironwood (*Casuarina equisetifolia*), and thickets of koa hale. Airplant (*Kalanchoe pinnata*), sourgrass (*Digitaria insularis*), and Guinea grass form the ground cover in these steep areas.

Patches of native plants were observed along the exposed rocky bluffs. These include 'ilima papa (*Sida fallax*), *Fimbristylis cymosa*, 'ōhelo kai (*Lycium sandwicense*), *Cyperus phleiodes*, 'ākulikuli (*Sesuvium portulacastrum*), kīpūkai (*Heliotropium curassavicum*), pā'ū o Hi'iaka *(Jacquemontia ovalifolia* subspecies *sandwicensis*), 'ilie'e (*Plumbago zeylanica*), and 'ala 'ala wai nui (*Pepperomia blanda* var. *Floribunda*).

Ironwood forest is typical along the relatively flat mauka or highway portion of the study area. Many individuals reach up to 60 feet in height, shedding a floor of ironwood "needles." Open areas of the forest support koa haole shrubs, Christmas berry, sourbush (*Pluchea carolinensis*), night-blooming cereus (*Hylocerus undatus*), Natal redtop grass *(Melinus repens*), Chinese violet (*Asystasia gangetica*), and Mauritius hemp (*Fucreaea foetida*).

A mixed forest of introduced tree species grows in the Honolua parcel. Java plum (*Syzygium cumini*) are abundant along the small stream, and milo *(Thespesia populnea*) are common where the stream meets the ocean. A stand of old monkeypod trees was observed here amidst numerous taro vines (*Epipremnum pinnatum*) and above a thick mat of Cat's claw timber (*Macfadyena unguis-cati*).

The mixed forest also supports rose apple (*Syzygium jambos*), mango (*Mangifera indica*), kukui (*Aleurites moluccana*), African tulip tree (*Spathodea campanualata*), Chinaberry (*Melia azederach*),

and 'opiuma (*Pithecellobium dulce*). Christmas berry, noni (*Morinda citrifolia*), haole koa, kolomona (*Senna surattensis*), and coffee (*Coffea arabica*) are also common. Guinea grass is observed where the canopy is open, and basket grass is the predominant cover in shady areas. Vines of Huehue haole (*Passiflora suberosa*), a member of the passionfruit family, are also common in the mixed forest.

The immediate environs of the Kalaepīhā Point parcel are open and grassy. Vegetation here is dominated by dense clumps of Guinea grass, small stands of ironwood, and patches of koa haole. Mexican poppy (*Argemone mexicana*), *Neonotonia wightii*, a common fodder legume, and Natal redtop grass (*Melinis repens*) are also present. Various ornamental species were observed near the remnants of structures still visible on the property. These include wandering Jew (*Tradescantia zebrina*), Cussonia spp., ti (*Cordyline fruticosa*), fan palm (*Livistonia spp.*), and bamboo (*Bambusa spp.*). Two rows of Norfolk Pine (*Araucaria heterophylla*) are established near the highway portion of the Kalaepīhā Point parcel. Kiawe (*Prosopis pallida*) and Christmas Berry also occur in this area.

Potential Impacts and Mitigative Measures

No disturbance of land or associated flora is proposed in relation to the proposed subdivision process at Kalaepīhā Lands. The proposed Coastal Reserve parcel is intended to remain in its natural state. Any future change in land use in the Kalaepīhā area may require assessment of potential impacts on existing plant species though a separate environmental assessment or environmental impact statement. The botanical survey conducted by Char (2001) for the this environmental assessment provides a baseline for assessing any potential future impacts. No strategies for mitigating disturbance to floral species in the Kalaepīhā Lands area are planned or warranted at this time.

In their comment letter on the draft environmental assessment the Department of Land and Natural Resources Division of Forestry & Wildlife Maui office stated that two of their staff members conduced a site visit of the Kalaepīhā Lands on June 27, 2002. The letter further stated: "Our assessment of the area indicated the absence of any endangered flora or fauna on the parcel. The vegetation and terrain are accurately described in the Draft Environmental Assessment. We anticipate no adverse effects from this proposed subdivision as no physical changes are prescribed."

4.6 FAUNA

No threatened, endangered or native bird or mammal species were observed during the course of a faunal survey conducted at the Kalaepīhā Point area during March 2001 (Bruner 2001) (see Appendix C). Accessible areas were surveyed on foot, and cliff faces were viewed from above. Observations were made during both early morning and late afternoon hours when birds and mammals are typically most active.

Bruner suggests that much of the area is too exposed to predators to support breeding populations of native seabirds, and that available habitats are not appropriate for native land-based avian species. The endangered Hawaiian hoary bat was *not* observed during the study.

Three individuals of the migratory shorebird known as the Wandering tattler (*Heteroscelus inanus*) were observed foraging along the shoreline. This is a common winter visitor to the Hawaiian Islands. Bruner notes the likelihood that other migratory shorebirds also visit the area, though none

were observed during the course of the survey. Probable visitors include the Pacific Golden-Plover (*Pluvialis fulva*), the Sanderling (*Calidris alba*), and the Ruddy Turnstone (*Arenaria interpres*).

The House finch (Carpodacus mexicanus), which is often seen in association with ironwood trees in Hawai'i, was the most abundant avian species observed during the survey. Other avian surveys conducted in this part of Maui have arrived at similar findings.

A total of 12 introduced bird species were observed during the survey. Each is common to lowland areas of Maui. These are as follows: Gray Francolin (*Francolinus pondicerianus*), Rock Dove (*Columba livia*), Spotted Dove (*Streptopelia chinensis*), Zebra Dove (*Geopelia striata*), Hwamei (*Garrulax canorus*), Northern Mockingbird (*Mimus polyglottus*), Common Myna (*Acridotheres tristis*), Japanese White-eye (*Zosterops japonicus*), Northern Cardinal (*Cardinalis cardinalis*), Red-crested Cardinal (*Paroaria coronata*), House Finch (*Carpodacus mexicanus*), and Nutmeg Mannikin (*Lonchura punctulata*).

Two mammal species were observed. These were the Small Indian Mongoose (*Herpestes auropunctatus*) and assorted feral cats (*Felis catus*). While none were seen during the survey period, Bruner suggests that the local environment likely supports rats (*Rattus spp.*) and mice (*Mus musculus*).

Potential Impacts and Mitigation Measures

Because no change in land use is proposed, no disturbance of land or associated fauna will occur in association with the proposed subdivision process at Kalaepīhā. Any future change in land use in the Kalaepīhā area may require an assessment of the potential impacts on existing faunal species. The survey conducted by Bruner (2001) for this environmental assessment provides a baseline study for assessing any future impacts. No strategies for mitigating disturbance to bird or animal species at Kalaepīhā Lands are planned or warranted at this time.

In their comment letter on the draft environmental assessment the Department of Land and Natural Resources Division of Forestry & Wildlife Maui office stated that two of their staff members conduced a site visit of the Kalaepīhā Lands on June 27, 2002. The letter further stated: "Our assessment of the area indicated the absence of any endangered flora or fauna on the parcel. . . We anticipate no adverse effects from this proposed subdivision as no physical changes are prescribed."

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5.0 ASSESSMENT OF EXISTING HUMAN ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATIVE MEASURES

5.1 ARCHAEOLOGICAL AND HISTORIC RESOURCES

Archaeological studies focusing on Kalaepīhā and/or immediate environs have been conducted by Moore (1974) (see Appendix D-1), and Fredericksen and Fredericksen (2002) (see Appendix D-2). Moore (1974) focused his work on Honolua Valley, and describes a variety of sites and features located along the northern portions of Honolua Bay and eastward into Honolua Gulch. These include Puhalakau Hëiea and various smaller sites in the makai area, and Honualua Heiau in the mauka area (which is outside of the Kalaepīhā Lands area). The range of prehistoric sites described by Moore indicate ancient Hawaiians were harvesting inshore marine resources and cultivating dry-land crops in the area.

Moore also documented historic-era remains during his 1974 work. These include a concrete house foundation said to be remnant of the 1946 tsunami, and three historic grave sites. Of note for this assessment, he also documents various walled enclosures and associated historic-era detritus within the Honolua parcel of Kalaepīhā Lands. The author suggests the wall remains are associated with turn-of-the century Hawaiian *kuleana* habitation adjacent to Honolua Stream.

Fredericksen and Fredericksen (2002) focus on archaeological reconnaissance of the Kalaepīhā Point and Coastal Reserve parcels. A total of six previously unidentified sites were discovered in these areas. On the Kalaepīhā Point parcel, these include a paved prehistoric platform with associated access trail, a prehistoric fish spotting station, remnants of a possible prehistoric habitation site, remnants of an old road, and remnants of the a historic-era slaughterhouse. Two coastal rock overhang shelters were found in the Coastal Reserve parcel near the concrete steps providing access to the beach at Mokulē'ia Bay.

Two rock wall features previously identified along the Honoapi'ilani Highway and part of the Coastal Reserve parcel were also recorded by Fredericksen and Fredericksen. Finally, a coastal burial was discovered in an area south of the Kalaepīhā Lands.

According to Fredericksen and Fredericksen (ibid., p. 1), all sites in the Kalaepīhā Lands area qualify for significance under Criterion "d" of federal and state historic preservation guidelines; that is, yielding important information for prehistoric or historic research. Given potential cultural significance to Hawaiians, the fish spotting station may qualify under Criterion "e." Finally, the Old Government Road may qualify under Criteria "a" given its importance to broad understanding of historic transportation patterns on Maui.

Potential Impacts and Mitigation Measures

The State Historic Preservation Division has reviewed the Archaeological survey report prepared by Fredericksen and Fredericksen (2002) and has found the report acceptable. A copy of the acceptance letter is included in Appendix D-2.

Maui Land & Pineapple Company, Inc., has retained Xamanek Researches to prepare a preservation plan for identified historic and cultural sites and prepare a burial treatment plan. The preservation plan will discuss preservation measures and the long-term preservation of each site and specify appropriate buffer zones around each site.

When prepared, the preservation plan will be submitted to the State Historic Preservation Division (SHPD) for their review and approval. The burial treatment plan will be provided to the Maui Island Burial Council for their review and approval. Copies of these plans be provided to the Office of Hawaiian Affairs and Na Kūpuna O Maui.

Maui Land & Pineapple Company, Inc., will comply will all state and county laws and rules regarding the preservation of cultural and historic sites. However, since no change in land use is proposed, no disturbance of land or associated archaeological resources can be expected to occur in relation to the proposed subdivision process at Kalaepīhā. The Coastal Reserve parcel is intended to remain in its current natural state. Any future changes in land uses on the Kalaepīhā Point or Honolua parcels may require a separate environmental assessment or environmental impact statement in which specific impacts related to the proposed land use and mitigative measures would need to be addressed. The archaeological surveys conducted by Moore (1974) and Fredericksen and Fredericksen (2002) provide a baseline analysis of utility for assessment of any future impacts. No strategies for mitigating disturbance to these resources are planned or warranted at this time.

5.2 HISTORIC LAND USE AND CULTURAL IMPACTS

Kalaepīhā is part of Kā'anapali Moku, one of the 12 districts of ancient Maui. Kā'anapali District includes much of the land of the northwest portion of West Maui, including all of its northwest coastline, and much of its northeast exposure. Lahaina District borders Kā'anapali on the south, and Wailuku District lies adjacent to the southeast. Kalaepīhā is part of Honolua ahupua'a, with Honokahua ahupua'a situated to the south, and Honokohau to the north.

The history of land use in West Maui is similar to that of much of Hawai'i. Prior to contact with Europeans, ancient Hawaiians living here applied much of their time and energy to fishing, gathering of shoreline seafoods, terraced farming, and various cultural practices, including warfare (see Sterling 1998). Each of these activities left some indication of the past on the landscape, and the Kalaepīhā area was no exception. The possible fish-spotting station still standing on the land above Kalaepīhā Point clearly indicates the dietary importance of marine resources for Native Hawaiians of old, and perhaps also of contemporary times (Fredericksen and Fredericksen 2002). Other important prehistoric structures in the area include a Heiau for Kū'ula[4] along the beach in Honolua Bay, the Honolua Heiau in Honolua Gulch, and a reputed hōlua slide[5] site along the mauka side of what is now Honoapi'ilani Highway.

[4] According to Pukui and Elbert (1971:172), kū'ula is any stone god used to attract fish, whether tiny or enormous, carved or natural, named for the god of fishermen.

[5] Hōlua slides were the ancient site of a recreational activity unique to Hawai'i. Courses were constructed from grass or delineated on grassy slopes on which participants would ride a sled-like board (*papa hōlua*) through a course, probably at high speeds. The skill and danger involved may have meant the activity was a rather serious form of recreation.

Honolua Bay has long been an important site for ocean activities and related feats. Manu (1884), for instance, tells of brave Kihapi'ilani who long ago paddled a long surfboard from Honolua to Wailua on the eastern shore of Moloka'i. "He did not board any canoe" reports Manu, but "rode a long surfboard from Honolua and the wild surging waves of the Pailolo Sea carried him with no difficulty, a deed by which the famous waves of that deep blue sea were turned into a plaything as well as a sport by the chief."

Nearby Lahaina was an important center of economic activity in West Maui during historic times and served as capitol city of post-contact Hawai'i during the reign of Kamehamaha until Kamehameha II named Honolulu capitol in 1840. Lahaina's typically peaceful waters provided ideal anchorage for commercial whaling operations active in the Pacific during the period from about 1825 through 1860. This strengthened a cash economy and furthered dramatic social changes already endured by the Hawaiian people (Daws 1973). Lahaina was also the location of some of the earliest sugar enterprises in Hawai'i. A railroad transported cane to Pioneer Mill and Lahaina Sugar Company in Lahaina from points north, including fields in the Kā'anapali area.

The Great Mahele[6] and related events led to massive socioeconomic change throughout Hawai'i, including West Maui. Missionaries and entrepreneurs moved into northwest portions of the region, and land was used in new ways to suit various commercial enterprises and pursuits. Reverend Dwight Baldwin was one such historical figure. Baldwin arrived on Maui in 1831, and by the mid-1800s had been granted 2,675 acres of land in the northwest portion of the island. Baldwin's son Henry acquired other parcels in the area and eventually established Honolua Ranch in the early 1890's. The cattle operation quickly became the new focus of activity for turn-of-the-century West Maui under the management of Richard Searle. Remnant structures associated with the ranch are today still visible on the Kalaepīhā Point property.

Honolua Ranch was converted to a pineapple plantation in 1912, following an agricultural trend that began on O'ahu around the turn of the century. It was about this time that Searle built a new house overlooking Honolua called Maka'oi'oi, or "keen-eyed" -- indicative of the numerous open spaces and vantage points that characterize Kalaepīhā and Līpoa promontories.

Searle's granddaughter, Lucy Farden, reports that inter-island steamers called at Honolua on a monthly basis after about 1912. The steamship operators would anchor in deep water, then launch rowboats for on- and off-loading of people and goods at a long pier built in the innermost and calmest part of the Bay. Farden reports that the entire Honolua area was open and grassy rather than overgrown as it is today. The Searle ohana was an enterprising and busy group, reportedly tending to ranch, and later, plantation duties, milling coffee from nearby Honokahua, surround-netting akule, setting old-syle fish basket traps, and gathering limu and opihi (Farden 1979, as noted in Clark 2002).

By the 1920's, pineapple had been planted across West Maui from Māhinahina ahupua'a to Kahakuloa ahupua'a. A pineapple cannery was built at nearby Honokahua in 1914. Honolua Ranch became Baldwin Packers, Ltd., in 1923, with small plantation communities developing at Honokahua and Nāpili to support the operation.

[6] The Great land division. Refers to the process by which the traditional communal system of land tenure in Hawai'i was converted to a system of private ownership.

West Maui grew significantly during the first half of the 20th century when agricultural production was at its peak. Over 15,000 persons were resident in the region just prior to World War II. However, by 1970 the population base diminished to about 5,500 persons.

Maui Land & Pineapple Company, Inc., was formed in 1962 when Baldwin Packers merged with Maui Pineapple Company. Maui Land & Pineapple Company, Inc., then became the parent company of Kapalua Land Company, Ltd., which conceived of a master-planned resort featuring the Kapalua Bay Hotel along the shoreline of Honokahua ahupua'a. The hotel opened in 1978, beginning the transformation of historic ranch and pineapple lands into a modern destination resort complex.

The resident population of Lahaina District has rebounded in recent decades in relation with increasing development and tourism-related job opportunities. The 1980 U.S. Census counted over 10,000 residents, rising to 14,574 in 1990, and 16,137 in 1995. The 2000 census enumerated 17,969 persons resident in the District.

Potential Impacts and Mitigation Measures

Since no change in land use is proposed, no disturbance of land or associated cultural resources can be expected to occur in relation to the proposed subdivision process at Kalaepīhā. The Coastal Reserve parcel is intended to remain in its current natural state. Any future changes in land uses on the Kalaepīhā Point or Honolua parcels may require a separate environmental assessment or environmental impact statement in which specific impacts related to the proposed land use and mitigative measures would need to be addressed.

5.2 ROADWAYS AND TRAFFIC

The primary roadway in the Kalaepīhā area is Honoapi'ilani Highway. This is an arterial highway which in the vicinity of Kalaepīhā is oriented roughly north-south. Honolua Place, a dead-end road providing access to three lots of the Plantation Estates, intersects Honoapi'ilani Highway across from the Kaleapiha Point parcel.

In general, traffic flows smoothly in the vicinity of the Kalaepīhā Lands. Because of scenic vistas afforded from the highway and recreational opportunities at the Mokulē'ia Bay and Honolua Bay, the highway shoulders in this area are often used for parking.

Potential Impacts and Mitigation Measures

The subdivision process at Kalaepīhā will incur no change in existing roadways or traffic patterns since no land use changes are proposed. The Coastal Reserve parcel is intended to remain in its natural state. Any future changes in land uses on the Kalaepīhā Point or Honolua parcels may require a separate environmental assessment or environmental impact statement in which specific impacts related to the proposed land use and mitigative measures would need to be addressed. No strategies for mitigating potential changes in traffic patterns or related infrastructure are planned or warranted at this time.

5.3 NOISE

Ambient noise levels in the Kalaepīhā Lands area are estimated to range from 54 to 67 decibels, with primary sources being traffic from Honoapi'ilani Highway, wind, ocean waves breaking on the shore, and occasional distant aircraft. High surf events may tend to generate noise levels at the high end or above the measured range, especially along the lower elevations of the Coastal Reserve and Honolua parcels, which are extremely close to the ocean.

Potential Impacts and Mitigation Measures

Subdivision of the Kalaepīhā Lands will not exacerbate or otherwise affect ambient noise levels in the area. No mitigative strategies are planned or warranted at this time. The Coastal Reserve parcel is intended to remain in its current natural state. Any future changes in land uses on the Kalaepīhā Point or Honolua parcels may require a separate environmental assessment or environmental impact statement in which specific impacts related to the proposed land use and mitigative measures would need to be addressed.

5.4 AIR QUALITY

Regional and local climate and various anthropogenic sources tend to affect air quality at any given location. Hawai'i's remote location in the Central Pacific distant from major sources of pollution means that air problems generally result from local sources. Air quality can be diminished to some extent when intensive agricultural operations release fugitive soil dust, but these are relatively rare events. Other kinds of air pollution are limited in the West Maui region and are generally diffused by trade winds when they do occur. Air quality in the Kalaepīhā area therefore tends to be very good and is expected to be well within both State and Federal Air Quality Standards.

Potential Impacts and Mitigation Measures

Subdivision of the Kalaepīhā Lands will not exacerbate or otherwise affect air quality in the area. No mitigative strategies are planned or warranted at this time. The Coastal Reserve parcel is intended to remain in its current natural state. Any future changes in land uses on the Kalaepīhā Point or Honolua parcels may require a separate environmental assessment or environmental impact statement in which specific impacts related to the proposed land use and mitigative measures would need to be addressed.

5.5 VISUAL RESOURCES

The Kalaepīhā Lands area is visible from the distant ocean, and from Honolua Bay, Honoapi'ilani Highway, Plantation Estates, and Mokulē'ia Bay. The views from the area above Kalaepīhā Point include panoramas in both mauka and makai directions. During clear weather, the east end of Moloka'i is readily visible in the distance across Pailolo Channel.

Potential Impacts and Mitigation Measures

As no land use changes are proposed, the subdivision process for Kalaepīhā Lands will not affect view corridors or the aesthetic nature of the area. The Coastal Reserve parcel is intended to remain

in its current natural state, and any future changes in land uses potentially affecting visual resources in the area may need to be addressed in a separate environmental assessment or environmental impact statement. No associated mitigative strategies are planned or warranted at this time.

5.6 SOCIAL AND DEMOGRAPHIC CHARACTERISTICS

The Kalaepīhā Lands area is currently devoid of active use, with the exception of recreational access to the shoreline. The surrounding lands are minimally populated. There are a few scattered homesites adjacent to the ocean along this stretch of Honoapi'ilani Highway, but most area residents residing north of Nāpili live at Kapalua Resort, and many of those are on the island only during part of the year.

Job opportunities in the vicinity of Kalaepīhā are primarily associated with agriculture, area resorts, or private or public sector work in the Lahaina area. Most employment in the West Maui region is associated either with tourism or agriculture.

West Maui is among the most desirable resort/residential areas in Hawai'i. While areas adjacent to Kā'anapali Beach and Lahaina have become more urbanized in character, the Kapalua Resort area maintains a low density rural character. The area has a reputation for good weather and recreational opportunities.

The population of Maui County grew by about 28 percent between the 1990 and 2000 census periods. According to the 2000 U.S. Census figures, the population of Maui County was just over 128,000 persons, up from just over 100,000 in 1990. This continues a pattern of steady and significant long-term growth. Maui County was home to just 46,156 persons in 1960.

The population of West Maui (defined here as Lahaina, Kā'anapali, Nāpili-Honokōwai, and Kapalua was 17,748 persons, according to the 2000 Census. In addition to the resident population, approximately 38,000 non-residents visit Maui County on any given day, with some 15,000 of these populating West Maui.

While it remains relatively unpopulated and rural, the Kapalua CDP (Census Designated Place) also grew significantly since 1990. This area includes the area of Kalaepīhā Lands. The 1990 population of the Kapalua CDP was 394 persons in 1990, and 467 persons in 2000, an increase of 19 percent. Nearby Nāpili-Honokōwai CDP was home to some 4,357 persons in 1990, and some 6,788 persons in 2000.

Potential Impacts and Mitigative Measures

As no change in land use is proposed, no social, cultural, or socio-demographic impacts can be expected as a result of the Kalaepīhā Lands subdivision process. No socio-cultural or demographic mitigative strategies are planned or warranted at this time. The Coastal Reserve parcel is intended to remain in its current natural state, and will continue to provide recreational potential for local residents and visitors under any future scenarios. Any future changes in land uses on the Kalaepīhā Point or Honolua parcels that would present the potential for affecting social or other human dimensions in the area may need to be addressed in a separate environmental assessment or environmental impact statement.

5.7 ECONOMIC CHARACTERISTICS OF THE AREA

The Kalaepīhā Lands area is currently vacant and generates no direct revenue for the landowner Maui Land & Pineapple Company, Inc. Because the degree of visitation to Mokulē'ia Bay is not known, indirect economic impacts are also unknown. Maui Pineapple Company cultivates pineapple in the vicinity of Kalaepīhā Lands.

The larger West Maui Region is a significant center for tourism and related recreational amenities. Nearly one-quarter of all Maui jobs and upwards of $3 billion in economic activity are generated in West Maui each year. West Maui accounts for almost 30 percent of the island tax base and more than 20 percent of countywide assessed real property value.

Potential Impacts and Mitigation Strategies

No deleterious economic impacts can be expected as a result of the Kalaepīhā Lands subdivision process. The Coastal Reserve parcel is intended to remain in its current natural state. This, and preservation of scenic viewing and recreational opportunities across the Kalaepīhā Lands area, may present positive local and regional economic benefits insofar as the attractive natural features of this part of Maui are maintained. Any future changes in land uses occurring on the Kalaepīhā Point or Honolua parcels that present the potential for economic impacts would need to be addressed in a separate environmental assessment or environmental impact statement. No mitigative economic strategies are planned or warranted at this time.

5.8 AREA INFRASTRUCTURE

As noted previously, the Kalaepīhā area is adjacent to Honoapi'ilani Highway. This is the primary transportation route in the area. Other nearby roads such as Honolua Place (just mauka the current dirt road access point to Kalaepīhā) are quite small and involve very little traffic flow.

The Kalaepīhā Lands area is located near the Kapalua Resort water system, and any future land use in the Kalaepīhā area requiring water would most likely link to that system.

There are no sewer facilities within the Kalaepīhā Lands. Any future activity at Kalaepīhā Lands requiring wastewater disposal would require a septic system.

The main electrical, telephone, and cable television (CATV) overhead transmission lines in the Kalaepīhā area are located on the mauka side of Honoapi'ilani Highway.

Potential Impacts and Mitigation Strategies

Because no change in land use is proposed, no change in the capacity or provision of physical infrastructure can be expected as a result of the Kalaepīhā Lands subdivision process. The Coastal Reserve parcel is intended to remain in its current natural state. Any future changes in land uses occurring in the Kalaepīhā Point or Honolua parcels presenting the need for linkage to infrastructure would necessarily be addressed in a separate environmental assessment or environmental impact statement. No associated mitigative strategies are planned or warranted at this time.

5.9 PUBLIC SERVICES

Public schools in the West Maui region include the following:

- Kamehameha III Elementary (grades K-5).
- Nahienaena Elementary (grades K-5).
- Lahaina Intermediate (grades 6-8).
- Lahainaluna High School (grades 9-12).

Public safety services in the West Maui region are provided through Wahikuli in the Lahaina Civic Center. This facility serves all of West Maui.

Fire protection services are provided by the Nāpili Fire Station and the Lahaina Fire Station based at the Lahaina Civic and Recreation Center. The Nāpili Fire Station is located near the intersection of Honoapi'ilani Highway and Nāpilihau Street. This is approximately one and one-half miles from the Kalaepīhā Lands area. Presently, there is a staff of 15 firefighters operating three shifts of 5 firefighters on each shift, and one pumper truck. Backup from the Lahaina Station is approximately 10 minutes. The Lahaina fire station has one 1,250 gallon pumper truck with a crew of nine fire fighters per 24-hour shift. In addition, there is one ladder truck with a 75-foot aerial ladder, and 1,500 gpm capacity.

The West Maui region also has numerous land-based and coastal related recreational areas, including the following parks:

- Hanaka'ō'ō Beach Park
- Wahikuli Beach Park
- Wahikuli State Wayside Park
- Māla Beach Park
- Kelawea Park
- Paunau Park
- Malu'ulu O Lele Park
- Nāpili Park

Potential Impacts and Mitigation Strategies

No change in the capacity or provision of service infrastructure can be expected as a result of the Kalaepīhā Lands subdivision process. The Coastal Reserve parcel is intended to remain in its current natural state. Any future changes in land uses occurring on the Kalaepīhā Point or Honolua parcels that present the need for change to service infrastructure in the area would need to be addressed in a separate environmental assessment or environmental impact statement. No associated mitigative strategies are planned or warranted at this time.

6.0 ALTERNATIVES TO THE PROPOSED ACTION

According to Title 11, Department of Health, Chapter 200, Environmental Impact Statement Rules, Section 11-200-10(6), an environmental assessment must discuss potential alternatives to the proposed action.

The proposed Kalaepīhā Lands subdivision does not involve any change in land use or any development activity. As proposed, the subdivision involves subdividing the land identified by TMK 4-2-04:32 (Figure 2) into three separate parcels as described in Section 2.2 and shown on Figure 4. The potential for a single-family home on the unsubdivided parcel as currently identified in the Conservation District Rules[7] would be allocated to one of the subdivided parcels to the exclusion of the other two parcels. Thus the subdivision will not lead to increased intensity of land uses in the Conservation District.

The proposed subdivision action will not incur impacts, as described in Chapters 4 and 5 of this environmental assessment. Any future changes in land use on the Kalaepīhā Lands may require a separate environmental assessment or environmental impact statement in which specific impacts related to the proposed land use and mitigative measures would need to be addressed.

Three possible alternatives to the proposed subdivision were considered. These are: 1) a no action alternative; 2) outright sale of the entire property without subdivision; and 3) donation of the entire property to the State, County, or private conservation group without subdivision. These alternatives are discussed below.

6.1 THE NO ACTION ALTERNATIVE

The "no action" alternative would involve no subdivision of the Kalaepīhā Lands parcel. The parcel would remain as a whole. There would be no donation of a portion of the site to the State or a conservation organization. As identified under the Conservation District rules, the potential would remain for a single family house to be built somewhere on the unsubdivided parcel.

The no action alternative would prevent the public purpose served by the Kalaepīhā Lands subdivision: the permanent land conservation and continued public access to Mokulē'ia Bay that will be established by the donation of the Coastal Reserve parcel to the State or a conservation organization.

6.2 SELL THE ENTIRE PROPERTY

A second alternative is the sale of the entire Kalaepīhā Lands property. This alternative would involve no immediate change in the present disposition or use of the Kalaepīhā Lands property. If sold, any future use of the property would be contingent on the intent of the new landowner who would have the option to build a single family house which could be built anywhere on the

[7] Hawai'i Administrative Rules, Title 13, Department of Land and Natural Resources, Subtitle 1 Administration, Chapter 5, Conservation.

unsubdivided parcel with the approval of a Board Permit from the Board of Land and Natural Resources.

Rather than selling the entire parcel, Maui Land & Pineapple Company, Inc., has proposed the subdivision to preserve land for public use on the north and south side of Kalaepīhā Point. If the entire unsubdivided parcel were sold the public would lose the opportunity for the ensured public use that would be created from the subdivision.

6.3 DONATE THE ENTIRE PROPERTY

The entire Kalaepīhā Lands property could be donated to the State, County, or a conservation organization for use as a park. This alternative could provide for permanent conservation of the area and continued public shoreline access.

This may not be a feasible option for several reasons. First, economic rationality suggests that the Kalaepīhā Lands property is too valuable for landowner Maui Land & Pineapple Company, Inc., to donate in its entirety. Subdividing is preferable in that it would allow for balanced public and private use and benefits, while also maintaining the intent of the Conservation District designation.

Second, effective maintenance of the entire area may be too expensive for the State, County, or a conservation organization to undertake. Third, given the cliff hazards that characterize the makai margins of the area, the State, County, or a conservation organization may be unwilling to assume responsibility for continually maintaining safe conditions for the general public in these areas. Therefore, a mixed use approach may serve to balance the full range of costs and benefits between a prospective new landowner and donor recipient.

7.0 DETERMINATION, FINDINGS, AND REASONS FOR SUPPORTING DETERMINATION

To determine whether the proposed action may have a significant impact on the physical and human environment in question, all phases and expected consequences of the proposed action has been evaluated. Potential primary, secondary, short-range, long-range, and cumulative impacts have been evaluated. Based on this evaluation, a Finding of No Significant Impact (FONSI) has issued by the Accepting Authority (the State of Hawai'i Department of Land and Natural Resources). The supporting rationale for this finding is summarized in this chapter.

7.1 SIGNIFICANCE CRITERIA

According to the Department of Health Rules (11-200-12), an applicant or agency must determine whether an action may have a significant impact on the environment. This determination must consider all phases of the project, expected consequences both primary and secondary, cumulative impacts examined in conjunction with other projects, and its short and long-term impacts. In making the determination, the Rules establish "Significance Criteria" to be used as a basis for identifying whether significant physical and/or human environmental impacts will occur. According to the Rules, an action shall be determined to have a significant impact on the environment if it meets any one of specific criteria. The determination of impacts potentially resulting from the Kalaepīhā Lands subdivision process, and the associated rationale supporting that determination are organized based on these criteria, as follows.

(1) [The proposed action] Involves an irrevocable commitment to loss or destruction of any natural or cultural resources;

The proposed Kalaepīhā Lands subdivision process does not incur loss or destruction of natural or cultural resources in the Kalaepīhā Lands area. Because no change in land uses are proposed for the property, no natural or cultural resources are subject to impact. Any future changes in land uses may require a separate environmental assessment or environmental impact statement in which specific impacts related to the proposed land use are addressed.

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

No change in the potential for beneficial use of the environment can be expected to occur as a result of the Kalaepīhā Lands subdivision process. In fact, the proposed process may actually enhance such uses insofar as it leads to preservation of scenic and recreational potential and establishment of a coastal reserve.

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

The proposed subdivision process at Kalaepīhā does not conflict with State of Hawai'i environmental policy. This subdivision process is consistent with the Environmental Policies expressed in Chapter 343, HRS. No changes in land uses are proposed. Any future changes in land

uses may require a separate environmental assessment or environmental impact statement in which specific impacts related to the proposed land use are addressed.

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

No change in the social or economic welfare of local, regional, or State communities can be expected to occur as a result of the Kalaepīhā Lands subdivision process. The subdivision may actually enhance public welfare insofar as it establishes the necessary conditions for potential future designation of a coastal reserve, and preservation of natural attributes and recreational opportunities.

(5) Substantially affects public health;

The proposed subdivision process does not entail physical action and cannot therefore be expected to incur substantial changes in public health. The Coastal Reserve parcel at Kalaepīhā Lands is intended to remain in its current natural state. Any future changes in land uses on the Kalaepīhā Point or Honolua parcels would have to be in conformance with the Conservation District Rules which would preclude the potential for impacts on public health.

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

The Kalaepīhā Lands subdivision process will not incur secondary impacts associated with population growth, nor can it be expected to generate impacts on roads, water, sewer, or drainage systems. Given the inherently small-scale of development activity allowed under the Conservation District designation, potential future changes in land use at Kalaepīhā can be expected to be adequately served by existing infrastructure, and with no significant impacts. However, any changes in land use would need to be thoroughly addressed in a separate environmental assessment or environmental impact statement.

(7) Involves a substantial degradation of environmental quality;

The proposed Kalaepīhā Lands subdivision process does not involve substantial degradation of environmental quality in either the immediate or surrounding areas. The subdivision may actually enhance environmental quality insofar as it will establish a coastal reserve and perpetuate the preservation of natural attributes and recreational opportunities.

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

The proposed Kalaepīhā Lands subdivision process itself will not incur cumulative negative environmental effect or impacts. The Coastal Reserve parcel is intended to remain in its current natural state. Any future land use changes on either the Kalaepīhā or Honolua parcels would necessarily be in conformance with the Conservation District Rules, and may also require a separate environmental assessment or environmental impact statement.

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

There are no known rare, threatened, or endangered species in the Kalaepīhā Lands area and the proposed Kalaepīhā Lands subdivision will not affect such species or habitats.

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

The Kalaepīhā Point subdivision process will not impact air or water quality or ambient noise levels in the area. Any future changes in land uses may require a separate environmental assessment or environmental impact statement to address the specific impacts related to the proposed land use.

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

The Kalaepīhā Lands area includes both upland and ocean components. The proposed subdivision process will of itself have no effect on these environments, nor will it incur threats from ecological hazards. Any future changes in land uses may require a separate environmental assessment or environmental impact statement to address the specific impacts related to the proposed land use.

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

Because no change in land use is proposed, no vistas or view planes will be affected by the subdivision of the Kalaepīhā Lands. Coastal Reserve parcel is will remain in its natural state and as such view plains would remain protected. Any future changes in land uses on the Kalaepīhā Point or Honolua parcels may require a separate environmental assessment or environmental impact statement to address the specific impacts related to the proposed land use.

(13) Requires substantial energy consumption.

The Kalaepīhā Lands subdivision process will not in itself incur substantial energy consumption. Inasmuch as the Coastal Reserve parcel is intended to remain in its natural state, no significant level of energy consumption would be expected there. Given strict limitations on the scale of development in the Conservation District, this would also be expected any changes in land uses occurring on the Kalaepīhā Point or Honolua parcels. However, any future changes in land uses may require a separate environmental assessment or environmental impact statement to address the specific impacts related to the proposed land use.

7.2 DETERMINATION

On the basis of impacts and mitigative measures examined in this document and analyzed under the above criteria, it is has been determined that subdividing Kalaepīhā Lands will not have a significant effect on the local, County, or State-wide physical or human environments. Pursuant to Chapter 343,

Hawai'i Revised Statutes, the Accepting Authority, which in this case is the State of Hawai'i Department of Land and Natural Resources, has issued a Finding of No Significant Impact (FONSI).

8.0 REFERENCES

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9.0 COMMENTS ON THE DRAFT ENVIRONMENTAL ASSESSMENT & RESPONSES

The Draft Environmental Assessment and Conservation District Use Application were sent to the following agencies, organizations, and individuals. Where indicated the agency, organization, or individual submitted comments.

	AGENCY	DEA/CDUA Mail Date	Date of Comments
	STATE		
1	Department of Health	6/12/02	7/18/02
	Department of Health—Maui District Health Office	6/19/02	7/3/02
2	Department of Land and Natural Resources—Aquatic Resources	6/12/02	
3	Department of Land and Natural Resources—Engineering Division	6/12/02	
4	Department of Land and Natural Resources—Forestry & Wildlife, Maui	6/12/02	6/28/02
5	Department of Land and Natural Resources—Historic Preservation Division	6/12/02	7/11/02
6	Department of Land and Natural Resources—Maui District Land Office	6/12/02	
7	Department of Land and Natural Resources—Na Ala Hele	6/12/02	
8	Lahaina Public Library	6/12/02	
9	Office of Environmental Quality Control	6/12/02	7/12/02
10	Office of Hawaiian Affairs	6/12/02	7/5/02
11	University of Hawaii Sea Grant Extension Service Maui Office	6/12/02	6/24/02
	COUNTY OF MAUI	6/12/02	
12	Councilmember Wayne Nishiki	6/28/02	
14	Planning Department	6/12/02	6/26/02

The following pages contain comment letters received and responses.

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

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

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

RECEIVED
LAND DIVISION
2002 JUL 18 P 3:04
DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

In reply, please refer to:
File: 02-152/epo

July 18, 2002

Ms. Deirdre S. Mamiya, Administrator
Land Division
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

Dear Ms. Mamiya:

Subject: Conservation District Use Application (CDUA) and Draft Environmental Assessment (DEA)
Kalaepia Lands Subdivision -- Subdivision of single parcel into three parcels
Maui Land and Pineapple Company, Lahaina District, Maui
Tax Map Key: (2) 4-2-004:32

Thank you for the opportunity to review and comment on the subject proposal. The CDUA/DEA was routed to the various branches of the Environmental Health Administration. We have the following comments.

Wastewater Branch (WWB)

Currently, there are no sewer facilities within the Kalaepiha Lands. One third of this subdivision involves the construction of an area (6.5 acres) for potential single-family homes as allowed under the Conservation district Rules. No information on this development was presented in the assessment. At this time, we concur with the subdivision request provided that all wastewater generated is collected, treated and disposed of in accordance with the applicable Health rules.

All wastewater plans must conform to applicable provisions of the Department of Health's Administrative Rules, Chapter 11-62, "Wastewater Systems". We reserve the right to review the detailed wastewater plans for conformance to applicable rules.

If you have any questions, please contact the Wastewater Branch at (808) 586-4294.

Sincerely,

GARY GILL
Deputy Director
Environmental Health Administration

c: WWB
Maui District Health Office

PBR HAWAII
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Tel: (808) 521-5631
Fax: (808) 523-1402
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Hilo Office
[illegible]

Waikoloa Office
[illegible]

August 27, 2002

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

SUBJECT: KALAEPĪHĀ LANDS CONSERVATION DISTRICT USE APPLICATION AND DRAFT ENVIRONMENTAL ASSESSMENT, TMK (2) 4-2-04: 32

Dear Mr. Gill:

Thank you for your letter regarding the Kalaepīhā Lands Conservation District Use Application and Draft Environmental Assessment (EA) dated July 18, 2002, and addressed to Dierdre Mamiya of the Department of Land and Natural Resources (02-152/epo). As the planning consultant for the applicant, Maui Land & Pineapple Company, Inc., we are responding to your concerns.

The proposed Kalaepīhā Lands subdivision does not involve any development, construction activity, or change in land uses. On one of the three parcels created by the subdivision, the potential for one single-family home would be retained, as allowed under the Conservation District Rules. Currently there are no plans for a home or any other uses on this parcel. Therefore at this time, there will be no wastewater generated.

In the future, if uses proposed for the property will generate wastewater, the wastewater generated will be collected, treated, and disposed of in accordance with the applicable Department of Health rules. When uses generating wastewater are proposed, detailed wastewater plans will be made available for your review for conformance to the applicable rules.

We appreciate your participation in the review of the Conservation District Use Application and Draft Environmental Assessment.

Sincerely,

PBR HAWAII

Tom Schnell, AICP
Associate

cc: Robert McNatt/Maui Land & Pineapple Company, Inc.
Diedre S. Mamiya/Department of Land and Natural Resources, Land Division
Masa Alkire/Department of Land and Natural Resources, Land Division

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BENJAMIN J. CAYETANO
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF HEALTH
MAUI DISTRICT HEALTH OFFICE
54 HIGH STREET
WAILUKU, MAUI, HAWAII 96793

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

LORRIN W. PANG, M.D., M.P.H.
MAUI DISTRICT HEALTH OFFICER

July 3, 2002

Mr. Tom Schnell
PBR Hawaii
2123 Kaohu Street
Wailuku, Hawai'i 96793-2204

Dear Mr. Schnell:

Subject: **Kaleapiha Lands**
TMK: (2) 4-2-04:32

Thank you for the opportunity to comment on the Draft Environmental Assessment. We have no comments to offer at this time.

Should you have any questions, please call me at 984-8230.

Sincerely,

Herbert S. Matsubayashi
District Environmental Health Program Chief

c: OEQC
Masa Alkire, DLNR
EPO

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Hilo, Hawai'i 96720-4276
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Fax: (808) 961-4989
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WAILUKU OFFICE
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E-Mail: pbrmaui@hawaii.rr.com

August 27, 2002

Mr. Herbert S. Matsubayashi
District Environmental Health Program Chief
State of Hawaii
Department of Health
Maui District Health Office
54 High Street
Wailuku, Hawaii 96793

SUBJECT: KALAEPĪHĀ LANDS DRAFT ENVIRONMENTAL ASSESSMENT, TMK (2) 4-2-04: 32

Dear Mr. Matsubayashi:

Thank you for your letter regarding the Kalaepīhā Lands Draft Environmental Assessment (EA) dated July 12, 2002. We note that you have no comments to offer at this time.

We appreciate your participation in the review of the Draft Environmental Assessment.

Sincerely,

PBR HAWAII

Tom Schnell, AICP
Associate

cc: Robert McNatt/Maui Land & Pineapple Company, Inc.
Diedre S. Mamiya/Department of Land and Natural Resources, Land Division
Masa Alkire/Department of Land and Natural Resources, Land Division

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BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

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2002 JUL -3 A 10:

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
Division of Forestry & Wildlife - Maui
54 South High Street, Room 101
Wailuku, Hawaii 96793

GILBERT S. COLOMA-AGARAN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

ERIC T. HIRANO
DEPUTY DIRECTOR

June 28, 2002

Ms. Dierdre S. Mamiya, Administrator
Land Division
Department of Land and Natural Resources
P. O. Box 621
Honolulu, Hawaii 96809

Dear Ms. Mamiya

Subject: Request for Comments
Conservation District Use Application (CDUA) – Board Permit
Draft Environmental Assessment
TMK (2) 4-2-04:32

Two members of my staff conducted a site visit of the project area on June 27, 2002 to assess the natural resources and the general conditions and the topography of the 20.3 acre parcel.

The entire coastal strip is fronted by the Honolua-Mokuleia Marine Life Conservation District and includes two bays situated between rocky headlands. The beaches in each bay are popular tourist destinations although there are no facilities at these sites. The only amenities present are one very rough dirt road that accesses Honolua Bay and an improved cement stairway with railings that was constructed cooperatively with the landowner at Mokuleia Bay by our Division of Forestry and Wildlife Na Ala Hele Program to address a serious liability concern.

Our assessment of the area indicated the absence of any endangered flora or fauna on the parcel. The vegetation and terrain are accurately described in the Draft Environmental Assessment. We anticipate no adverse effects from this proposed subdivision as no physical changes are prescribed.

Thank you for the opportunity to comment on the above referenced project.

Sincerely,

Robert W. Hobdy
Forestry and Wildlife Manager

PBR HAWAII

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Managing Director
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VINCENT SHIGEKUNI
Senior Associate

GRANT MURAKAMI, AICP
Associate

August 27, 2002

Robert W. Hobdy,
Forestry and Wildlife Manager
Department of Land and Natural Resources
Division of Forestry & Wildlife—Maui
54 South High Street, Room 101
Wailuku, Hawaii 96793

SUBJECT: KALAEPĪHĀ LANDS CONSERVATION DISTRICT USE APPLICATION AND DRAFT ENVIRONMENTAL ASSESSMENT, TMK (2) 4-2-04: 32

Dear Mr. Hobdy:

Thank you for your letter regarding the Kalaepīhā Lands Conservation District Use Application and Draft Environmental Assessment (EA) dated June 28, 2002, and addressed to Dierdre S. Mamiya of the Department of Land and Natural Resources. As the planning consultant for the applicant, Maui Land & Pineapple Company, Inc., we are responding to your letter.

We note that two members of your staff visited the site and did not find any endangered flora or fauna on the parcel. We acknowledge that you anticipate no adverse effects from the proposed subdivision.

We appreciate your participation in the review of the Conservation District Use Application and Draft Environmental Assessment.

Sincerely,

PBR HAWAII

Tom Schnell, AICP
Associate

cc: Robert McNatt/Maui Land & Pineapple Company, Inc.
Diedre S. Mamiya/Department of Land and Natural Resources, Land Division
Masa Alkire/Department of Land and Natural Resources, Land Division

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BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

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DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING, ROOM 555
601 KAMOKILA BOULEVARD
KAPOLEI, HAWAII 96707

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
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2002 JUL 23 A 8:30

July 11, 2002

LOG NO: 30271
DOC NO: 0207CD19

MEMORANDUM

TO: Dierdre S. Mamiya, Administrator
Land Division

FROM: Don Hibbard, Administrator
Historic Preservation Division

SUBJECT: **Chapter 6E-42 Historic Preservation Review Pertaining to the Conservation District Use Application CDUA MA-3095B – Board Permit and Draft Environmental Assessment for the Proposed Subdivision of Single Parcel into Three Distinct Parcels by Maui Land and Pineapple Company Honolua Ahupua'a, Lahaina District, Island of Maui**
TMK: (2) 4-2-004:032

Thank you for the opportunity to review and comment on this CDUA application for the Maui Land and Pineapple Company's proposed subdivision of a single parcel into three distinct parcels, which was received by our staff 13 June 2002.

Based on the submitted CDUA and Draft EA, we understand the proposed undertaking does not involve any development, construction activity, or changes in land uses at this time. The proposed undertaking consists of subdividing the Kalaepiha Lands into three separate parcels: 1) the Coastal Reserve, approximately 4.3 acres which includes the land in front of Mokule'ia Bay and extends along the coast to the south of Kalaepiha Point. 2) The Kalaepiha Point parcel, approximately 6.5 acres and includes the area above Kalaepiha Point. In the future, this parcel may be considered for a single-family home. 3) The Honolua parcel, approximately 9.5 acres and includes the lands east of the Kalaepiha Point parcel between Honoapi'ilani Highway, the shoreline, and along Honolua Stream.

Xamanek Researches has recently conducted an archaeological inventory survey, including subsurface testing, of the subject properties (Fredericksen and Fredericksen 2002, *An Archaeological Inventory Survey of a c. 23 Acre Coastal Property in Honolua Ahupua'a, Lahaina District, Maui Island*...Xamanek ms.). Eight historic sites were identified during the inventory survey. Five sites date from the pre-Contact period to the early 1800s (5093, a

possible shrine and possible fish spotting station; 5094, remnants of a habitation deposit; 5007, temporary habitation; 5097, temporary habitation; 5098, rock shelter with a burial. The other three sites date to the late 1800s to the 1900s (5095, old government road remnant; 5096, concrete foundation of a slaughterhouse; 5006, plantation refuse dump). We accepted the findings of this survey (SHPD DOC NO.: 0206MK05/LOG NO.: 30087), with the understanding that the report undergo minor revisions. We have agreed that 6 historic sites are significant, and we have agreed with the mitigation recommendations - preservation of the six significant sites.

Given the above information, we recommend that any approved CDUA contain conditions requiring (1) an acceptable preservation plan for the five non-burial sites (submitted to our office for review and approval and with our office verifying that the plan has been successfully executed), (2) the requested minor revisions to the archaeological report be submitted to our office and be found acceptable, and (3) an acceptable burial treatment plan be submitted to the Maui Island Burial Council for review and approval.

If you have any questions, please call Cathleen Dagher at (808) 692-8023.

CD:amk

PBR HAWAII

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Thomas S. Witten, ASLA
President

Stan Duncan, ASLA
Executive Vice-President

August 27, 2002

Mr. Don Hibbard, Administrator
Historic Preservation Division
State of Hawaii
Department of Land and Natural Resources
Kakuhihewa Building, Room 555
601 Kamokila Blvd.
Kapolei, Hawaii 96707

SUBJECT: **KALAEPĪHĀ LANDS CONSERVATION DISTRICT USE APPLICATION AND DRAFT ENVIRONMENTAL ASSESSMENT, TMK (2) 4-2-04: 32**

Dear Mr. Hibbard:

Thank you for your letter regarding the Kalaepīhā Lands Conservation District Use Application and Draft Environmental Assessment (EA) dated July 11, 2002, and addressed to Dierdre Mamiya of the Department of Land and Natural Resources (LOG NO: 30271; DOC NO: 0207CD19). As the planning consultant for the applicant, Maui Land & Pineapple Company, Inc., we are responding to your concerns.

Regarding your three conditions suggested to be contained in an approved CDUA:

1) Maui Land & Pineapple Company, Inc., is currently preparing a preservation plan for the five non-burial sites; this plan will be submitted to your office for review and approval;

2) The requested minor revisions to the archaeological report have been made and submitted to your office, and we have received your final acceptance letter; the revised report will be included in the final EA;

3) Maui Land & Pineapple Company, Inc., is currently preparing a burial treatment plan to be submitted to the Maui Island Burial Council for review and approval. Please note that the burial site is outside of the project area.

We appreciate your participation in the review of the Conservation District Use Application and the Draft Environmental Assessment.

Sincerely,

PBR HAWAII

[signature]

Tom Schnell, AICP
Associate

cc: Robert McNatt/Maui Land & Pineapple Company, Inc.
Diedre S. Mamiya/Department of Land and Natural Resources, Land Division
Masa Alkire/Department of Land and Natural Resources, Land Division

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BENJAMIN J. CAYETANO
GOVERNOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

GENEVIEVE SALMONSON
DIRECTOR

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2002 JUL 12 P 1:38

July 12, 2002

Dierdre Mamiya
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

Attention: Masa Alkire

Dear Ms. Mamiya:

Subject: Draft Environmental Assessment (EA) for Kalaepiha Lands Subdivision, Maui

Document all contacts in the final EA, including those made during the pre-consultation phase, and include copies of any correspondence. This is especially true of the Historic Preservation Division of DLNR, given that historic and archeological resources have been identified.

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

Sincerely,

[signature]

GENEVIEVE SALMONSON
Director

c: Tom Schnell
Maui Land & Pineapple

JUL 12 '02 12:11PM DEPT. OF HEALTH (OEQC) (808) 586-4186 P.1

PBR HAWAII

August 27, 2002

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

SUBJECT: KALAEPĪHĀ LANDS DRAFT ENVIRONMENTAL ASSESSMENT, TMK (2) 4-2-04: 32

Dear Ms. Salmonson:

Thank you for your letter regarding the Kalaepīhā Lands Draft Environmental Assessment (EA) dated July 12, 2002, and addressed to Dierdre Mamiya of the Department of Land and Natural Resources. As the planning consultant for the applicant, Maui Land & Pineapple Company, Inc., we are responding to your concerns.

In response to your concern regarding documentation of contacts, all contacts will be documented in the Final EA.

Please note the that the State Historic Preservation Division has reviewed the archaeological survey report by Xamanek Researches for a portion of the property and has found the report acceptable, with minor changes, which have been made to the report. The acceptance letter from the State Historic Preservation Division and the revised archaeological report will be included in the Final EA.

We appreciate your participation in the review of the Draft Environmental Assessment.

Sincerely,

PBR HAWAII

Tom Schnell, AICP
Associate

cc: Robert McNatt/Maui Land & Pineapple Company, Inc.
Diedre S. Mamiya/Department of Land and Natural Resources, Land Division
Masa Alkire/Department of Land and Natural Resources, Land Division

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7-11-02; 11:14AM;

RECEIVED
LAND DIVISION
2002 JUL 11: 35

STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPIOLANI BOULEVARD, SUITE 500
HONOLULU, HAWAII 96813

HRD02-638

July 5, 2002

Diedre S. Mamiya, Administrator
Department of Land and Natural Resources
Land Division
P.O. Box 621
Honolulu, HI 96809

Subject: Conservation District Use Application MA-3095B
Honolua Bay, Lahaina District, Maui

Dear Ms. Mamiya:

We are in receipt of your request for comments on the above-referenced project.

OHA requests that identification, evaluation, and preservation of cultural resources be provided prior to approval of the subject application. Further, OHA asks that the applicant demonstrate that this subdivision is in the public interest by providing more information on the donation of the coastal reserve parcel.

Protection and Preservation of Cultural Resources

The Board of Land and Natural Resources cannot adequately evaluate this application until historic and cultural properties have been identified and evaluated, and plans for their preservation have been crafted.

Identification and evaluation of cultural resources must be approved by the State Historic Preservation Division and subjected to Native Hawaiian review and comment. The application does not indicate that the archeological surveys have been reviewed and accepted by the State Historic Preservation Division. Further, since these sites have cultural significance for Hawaiians, Native Hawaiians should be consulted in evaluating the significance of these sites. Evidence of consultation with Native Hawaiians should be presented in this application.

A sound preservation plan is dependent upon completion of a thorough assessment of the resource. Again, consultation with Native Hawaiian individuals and organizations such as the Office of Hawaiian Affairs, Maui Island Burial Council and Na Kupuna of Maui should be undertaken. The preservation plan should address whether preservation

for each identified site will take the form of conservation or interpretation; specify the buffer zones around each site; and provide long-term preservation measures for each site.

Donation of the Coastal Reserve Parcel

A decision to subdivide this property in the public interest cannot be supported unless the applicant clearly demonstrates that the agency or organization that will be accepting the donation of the coastal reserve parcel is uniquely qualified to manage this parcel and has sufficient resources to do so.

A state agency or conservation organization can not reasonably opt to manage this parcel without having first evaluated the resources present and determined proper management of those resources. The application must establish criteria for the manager of the coastal reserve parcel and demonstrate how the selected state agency or conservation organization is uniquely qualified to manage the parcel based on established criteria. Further, confirmation that a state agency or conservation organization has the resources to properly manage this parcel must be included in this application.

Thank you for the opportunity to comment on the above referenced project. If you have questions, please contact Sharla Manley, policy analyst at 594-1944 or email her at sharlam@oha.org.

Sincerely,

Jalna S. Keala
Acting Director, Hawaiian Rights Division

cc: Board of Trustees
Clyde W. Namu'o, Administrator
Maui CAC

PBR HAWAII

LAND PLANNING
LANDSCAPE ARCHITECTURE
ENVIRONMENTAL STUDIES

August 27, 2002

Ms. Jalna S. Keala,
Acting Director, Hawaiian Rights Division
State of Hawaii
Office of Hawaiian Affairs
711 Kapi'olani Blvd.
Honolulu, Hawai'i 96813

SUBJECT: KALAEPĪHĀ LANDS CONSERVATION DISTRICT USE APPLICATION, TMK (2) 4-2-04: 32

Dear Ms. Keala:

Thank you for your letter regarding the Kalaepīhā Lands Conservation District Use Application (CDUA) dated July 5, 2002, and addressed to Dierdre Mamiya of the Department of Land and Natural Resources (HRD02-638). As the planning consultant for the applicant, Maui Land & Pineapple Company, Inc., we are responding to your concerns.

Protection and Preservation of Cultural Resources

Please note that the proposed subdivision of the Kalaepīhā Lands does not involve any development, construction activity, or change in land uses. Since no change in land use is currently proposed, no disturbance of land or associated archaeological or cultural resources will occur. Any future changes in land uses may require a separate environmental assessment or environmental impact statement in which specific impacts related to the proposed land use and mitigative measures would need to be addressed.

In response to concerns about identification, evaluation, and preservation of cultural resources, Maui Land & Pineapple Company, Inc., has retained Xamanek Researches to: 1) conduct a cultural impact assessment; 2) prepare a preservation plan for historic and cultural sites; and 3) prepare a burial treatment plan. The cultural impact assessment will include consultation with Native Hawaiian groups and individuals. The preservation plan will discuss preservation measures and the long-term preservation of each site and specify appropriate buffer zones around each site.

When prepared, the preservation plan will be submitted to the State Historic Preservation Division (SHPD) for their review and approval. The burial treatment plan will be provided to the Maui Island Burial Council for their review and approval. Copies of these plans and the cultural impact assessment also will be provided to the Office of Hawaiian Affairs and Na Kūpuna O Maui.

In the time since the CDUA and Draft EA were submitted to the Department of Land and Natural Resources, SHPD has found the archeological survey prepared by Xamanek Researches acceptable. As part of their review, SHPD suggested minor changes to the survey report. The revised survey report will be included in the final environmental assessment. The archaeological survey prepared by Moore is still being reviewed by SHPD.

Donation of the Coastal Reserve Parcel

Maui Land & Pineapple Company, Inc., has effectively managed over 29,000 acres of land on Maui for nearly a century, has an impressive history of responsible land stewardship, and has extensive assets in the West Maui region that depend the area's natural attributes. As such, Maui Land & Pineapple Company, Inc., has a vital interest in seeing that the Coastal Reserve parcel is adequately managed and maintained.

Maui Land & Pineapple Company, Inc., has discussed the donation of the Coastal Reserve parcel with the Maui Coastal Lands Trust and the parks departments of the State of Hawaii and the County of Maui. It is expected that the accepting organization will keep the area in its current natural state and any improvements (such as the provision of more parking spaces or restrooms) would be kept to a minimum, thus reducing maintenance costs. The Na Ala Hele Trails program of the Department of Land and Natural Resources has already built a concrete stairway to provide access to the beach fronting the Coastal Reserve parcel. The draft environmental assessment (which includes a botanical study, avifaunal and feral mammal survey, and two archaeological surveys) prepared for the CDUA provides a detailed evaluation of resources present on the property.

We appreciate your participation in the review of the Conservation District Use Application.

Sincerely,

PBR HAWAII

Tom Schnell, AICP
Associate

cc: Robert McNatt/Maui Land & Pineapple Company, Inc.
Diedre S. Mamiya/Department of Land and Natural Resources, Land Division
Masa Alkire/Department of Land and Natural Resources, Land Division

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UNIVERSITY OF HAWAII

Sea Grant Extension Service
Maui Community College

RECEIVED
2002 JUL 28 A 10:47

6/24/2002

Masa Alkire
State of Hawaii
Department of Land and Natural Resources
Land Division, Planning Branch
P.O. Box 621
Honolulu, Hawaii 96809

Re: File No: CDUA MA-3095B
Conservation District Use Application – Maui Land and Pineapple Company.
Application to subdivide parcel TMK (2) 4-2-04:32 located at Honolua, Lahaina District, Maui.

Thank you for providing me with the opportunity to review the Draft Environmental Assessment (E.A.) and Conservation District Use Application for TMK (2) 4-2-04:32, submitted by Maui Land and Pineapple Company Inc.

Having reviewed the above documents, I find that the proposal to subdivide the named lot into three parcels is not objectionable. The donation of the Coastal Reserve parcel to the state or a conservation organization will be greatly beneficial to the long-term preservation of and public access to this coastal area.

I have only one concern with the Draft E.A.. On page 12, first discussion paragraph, is the statement "With the subdivision the Coastal Reserve and Honolua parcels will be created, however, specific deed restrictions could be imposed to eliminate potential for development of single-family residences on these parcels." This is critical and must not be overlooked. Specific language must be drawn up to prohibit any residential development on both the Coastal Reserve and Honolua parcels. The current undivided lot allows the development of one single-family residence, and restricting that residence to the Kalaepiha Point parcel, once subdivision occurs, is reasonable.

Thank you for taking my comments into consideration with regards to this application.

Sincerely,

Zoe Norcross
Sea Grant Coastal Processes Extension Agent

310 Kaahumanu Avenue Kahului, Maui, HI 96732 Telephone: (808) 984-3335 Facsimile (808) 242-8733
E-Mail: norcross@soest.hawaii.edu

PBR HAWAII

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MEL LEONARD, AICP
Managing Director
Hilo Office

VINCENT SHIGEKUNI
Senior Associate

DAN MORGAN, AICP
Associate

August 27, 2002

Zoe Norcross, Director
Sea Grant Process Extension Agent
University of Hawaii
Sea Grant Extension Service
Maui Community College
310 Kaahumanu Avenue
Kahului, Hawaii 96732

SUBJECT: KALAEPĪHĀ LANDS CONSERVATION DISTRICT USE APPLICATION AND DRAFT ENVIRONMENTAL ASSESSMENT, TMK (2) 4-2-04: 32

Dear Ms. Norcross:

Thank you for your letter regarding the Kalaepīhā Lands Conservation District Use Application and Draft Environmental Assessment (EA) dated June 24, 2002, and addressed to Masa Alkire of the Department of Land and Natural Resources. As the planning consultant for the applicant, Maui Land & Pineapple Company, Inc., we are responding to your concerns.

We appreciate that you do not find the proposal to subdivide the subject parcel objectionable and that you find that the donation of the Coastal Reserve parcel to the state or a conservation organization will be greatly beneficial to the long-term preservation of, and public access to, this coastal area.

Regarding your concern about specific language to prohibit any residential development on the Coastal Reserve and Honolua parcels, Maui Land & Pineapple Company, Inc., is not opposed to this condition.

We appreciate your participation in the review of the Conservation District Use Application and Draft Environmental Assessment.

Sincerely,

PBR HAWAII

Tom Schnell, AICP
Associate

cc: Robert McNatt/Maui Land & Pineapple Company, Inc.
Diedre S. Mamiya/Department of Land and Natural Resources, Land Division
Masa Alkire/Department of Land and Natural Resources, Land Division

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7-11-02;11:14AM;

JAMES "KIMO" APANA
Mayor

JOHN E. MIN
Director

CLAYTON I. YOSHIDA
Deputy Director

RECEIVED
LAND DIVISION
2002 JUL -1 A 10:45
DEPT OF LAND & NATURAL RESOURCES
STATE OF HAWAII

COUNTY OF MAUI
DEPARTMENT OF PLANNING

June 26, 2002

Ms. Dierdre S. Mamiya
Department of Land and Natural Resources, Land Division
PO Box 621
Honolulu, Hawaii 96809

Dear Ms. Mamiya,

RE: Request for comments
Project Name: CONSERVATION DISTRICT USE APPLICATION
TMK: 4-2-004:032
I. D. No.: LTR 20023142

Please be advised that the above-referenced application has been received by the Maui Planning Department (Department). The Department has the following comments:

1. Community Plan designation is Conservation

2. How is this subdivision permitted in the Conservation district? If it is under the creation of public access, are the two parcels identified as Coastal Reserve and Honolua parcel going to be given to the State or County for public use?

3. The applicant states that the subdivision will not intensify the use, because of restriction in the subzone and that restriction on the deed could be imposed to restrict the construction of a single-family house. The department would encourage such a restriction on ALL parcels.

4. The applicant is currently in for an Special Management Area Assessment.

250 SOUTH HIGH STREET, WAILUKU, MAUI, HAWAII 96793
PLANNING DIVISION (808) 270-7735; ZONING DIVISION (808) 270-7253; FACSIMILE (808) 270-7634

Quality Seamless Service - Now and for the Future

Thank you for your cooperation. If additional clarification is required, please contact me at 270-7735.

Very truly yours,

JOHN E. MIN
Planning Director

JEM:JWA:jay
c: Clayton Yoshida, AICP, Deputy Director of Planning
Joseph W. Alueta , Staff Planner
Project File: CONSERVATION DISTRICT USE APPLICATION
General File

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PBR HAWAII

LAND PLANNING
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Executive Vice-President

JAMES LEONARD, AICP
Managing Director
Hilo Office

VINCENT SHIGEKUNI
Senior Associate

GRANT MURAKAMI, AICP
Associate

August 27, 2002

Mr. John Min,
Planning Director
County of Maui
Department of Planning
250 South High Street
Wailuku, Hawaii 96793

SUBJECT: KALAEPĪHĀ LANDS CONSERVATION DISTRICT USE APPLICATION, TMK (2) 4-2-04: 32

Dear Mr. Min:

Thank you for your letter regarding the Kalaepīhā Lands Conservation District Use Application (CDUA) dated June 26, 2002, and addressed to Dierdre Mamiya of the Department of Land and Natural Resources. As the planning consultant for the applicant, Maui Land & Pineapple Company, Inc., we are responding to your concerns.

Overall, the purpose of subdividing the Kalaepīhā Lands parcel is to create the opportunity to preserve land for public benefit, not to increase land use densities. The proposed subdivision will have no impact on the environment, archaeology, or cultural practices, as no change in land use is currently proposed. Future "uses" on any of the subdivided parcels would require a separate CDUA and environmental assessment or environmental impact statement.

The following are responses to your specific comments.

1) We note that the Community Plan designation for the parcel is Conservation;

2) Subdivision of property is an identified land use (P-11 SUBDIVISION OR CONSOLIDATION OF PROPERTY) within the Conservation District pursuant to Section 13-5-22 of the Hawaii Administrative Rules (Rules). Specifically the Rules provide that an identified use in the Resource Subzone is "Subdivision of property into two or more legal lots of record which serves a public purpose and is consistent with the objectives of the subzone."

   As stated on page 2 of the CDUA, "The public purpose served by the Kalaepīhā Lands subdivision is the permanent land conservation and continued public access to Mokulē'ia Bay that will be established by the donation of one of the subdivided parcels to the State or a conservation organization."

   The Coastal Reserve parcel has been offered for donation to the State, County, and the Maui Coastal Land Trust. The Honolua Parcel is currently not being offered for donation, however Maui Land & Pineapple Company, Inc., has had discussions with the parks departments of the State of Hawaii and the County of Maui about the long-term use of the area.

3) Regarding your comment that the Planning Department would encourage the restriction of a single-family house on all of the subdivided parcels, please note that under the Rules a single family house is an identified land use in the Resource Subzone of the Conservation District. Therefore, a single-family house currently could be built on the unsubdivided parcel with the approval of a Board Permit from the Board of Land and Natural Resources. After the subdivision of the parcel into three lots, we feel that it is reasonable to allow one single-family house on one of the lots, as this would not increase the density on the site beyond what is currently allowed.

Rather than selling the entire parcel with the potential for single-family house, Maui Land & Pineapple Company, Inc., has undertaken this subdivision to preserve land for public use on the north and south side of Kalaepīhā Point. It is unreasonable to recommend restrictions on the subdivision that would prohibit the construction of a single-family house on one of the parcels—a de facto downzoning—when the purpose of the subdivision is to create two parcels for improved public access. If a condition was placed on the subdivision to limit construction of a single-family house on all parcels, Maui Land & Pineapple Company, Inc., would withdraw the CDUA and the public would lose the opportunity for increased access that would be created from the subdivision.

4) We have received your letter dated July 26, 2002, granting a Special Management Area Minor Permit approval.

We appreciate your participation in the review of the Conservation District Use Application.

Sincerely,

PBR HAWAII

Tom Schnell, AICP
Associate

cc: Robert McNatt/Maui Land & Pineapple Company, Inc.
Diedre S. Mamiya/Department of Land and Natural Resources, Land Division
Masa Alkire/Department of Land and Natural Resources, Land Division

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8-14-02;10:01AM;

8-06-02

Chenoweth testimony for DLNR. Public Hearing @ Kapalua, AUG 13 '02

Masa Alkire
DLNR.
1151 PUNCHBOWL ST. ROOM 220
Honolulu, Hi., 96813

RE: Maui Land & Pine Subdivision of Land at Kapalua, 4-2-04:32 MA-3095 TB

The Office of Environmental Quality Control & the DLNR Public notice MA-3095 of the Maui Land & Pine proposal to subdivide KALAEPIHA lands, is not clear regarding future land use at the HONOLUA parcel (9.5AC). Future land use could be almost anything other than single family residence.

Robert McMatt (ML&P) explained to me that they intend to donate the 9.5AC for Public Use. This is great, but I wish that this laudable donation was described in the Public Notice of our newspaper.

I believe that the KALAEPIHA POINT 6.5AC. proposal to be contrary to our W. Maui Community Plan (ORD. 2476) — REF.: the Land Use Map & Land Use objective & Policy 5. — Page 16.

I must add, that ML&P. agricultural & preservation activities are very important to our life quality & greatly appreciated.

Sincerely,

DAVE CHENOWETH
340 FRONT ST., 96761

COPY: Maui Tomorrow & Sierra Club

PBR HAWAII

August 27, 2002

Mr. Dave Chenoweth
340 Front Street
Lahaina, Hawaii 96761

SUBJECT: KALAEPĪHĀ LANDS CONSERVATION DISTRICT USE APPLICATION, TMK (2) 4-2-04: 32

Dear Mr. Chenoweth:

Thank you for your letter regarding the Kalaepīhā Lands Conservation District Use Application (CDUA) dated August 6, 2002, and addressed to Masa Alkire of the Department of Land and Natural Resources. As the planning consultant for the applicant, Maui Land & Pineapple Company, Inc., we are responding to your concerns.

Maui Land & Pineapple Company, Inc., has proposed the Kalaepīhā Lands subdivision to preserve land for public use on the north and south side of Kalaepīhā Point while retaining their right to build one single family residence on the Kalaepīhā Point parcel. Under the Conservation District Rules[1] a single-family residence currently could be built on the unsubdivided parcel with the approval of a permit from the Board of Land and Natural Resources. After the subdivision of the parcel into three lots, restrictions would be put on the Coastal Reserve and Honolua parcels to prohibit the construction of single family residences.

Maui Land & Pineapple Company, Inc., has discussed the donation of the Coastal Reserve parcel with the Maui Coastal Land Trust and the parks departments of the State of Hawaii and the County of Maui. Maui Land & Pineapple Company, Inc., currently intends to retain ownership of the Honolua parcel and its long-range plans for the parcel are to provide improved public use and access to Honolua Bay.

We believe that the Kalaepīhā Lands subdivision is in substantial compliance with the West Maui Community Plan. Specifically Land Use Objective and Policy 5 states:

> 5. *Preserve the current State Conservation District and the current State Agriculture District boundaries in the planning region, in accordance with this community plan and its land use map. Lands north of Kapalua and south of Puamana to the region's district boundaries should ensure the preservation of traditional lifestyles, historic sites, agriculture, recreational activities and open space.*

Please note that Kalaepīhā Lands parcel is within the State Conservation District and the area is designated conservation on the West Maui Community Plan Land Use Map. Maui Land & Pineapple Company, Inc., is not proposing any changes to these conservation boundaries.

---

[1] Hawai'i Administrative Rules, Title 13, Department of Land and Natural Resources, Subtitle 1 Administration, Chapter 5, Conservation.

In addition, the creation of the Coastal Reserve and the Honolua parcels contribute to preservation of traditional lifestyles, historic sites, agriculture, recreational activities, and open space in the area. Specifically, creation of these parcels will preserve the existing physical and environmental aspects of the land by securing the Coastal Reserve parcel in trust, by protecting the scenic attributes of entire Kalaepīhā area, by providing open space, and by ensuring ongoing public access to the Mokulē'ia Bay and Honolua Bay, which are part of the Mokulē'ia/Honolua Marine Life Conservation District.

Thank you for your acknowledgment of Maui Land & Pineapple Company, Inc.'s ongoing agricultural and preservation activities which add to the quality of life in West Maui. We believe the subdivision of the Kalaepīhā Lands is in accord with, and perpetuates, this long standing commitment to Maui.

We appreciate your participation in the review of the Conservation District Use Application.

Sincerely,

PBR HAWAII

Tom Schnell, AICP
Associate

cc: Robert McNatt/Maui Land & Pineapple Company, Inc.
Diedre S. Mamiya/Department of Land and Natural Resources, Land Division
Masa Alkire/Department of Land and Natural Resources, Land Division

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APPENDIX A

PUBLIC HEARING NOTICE, SUMMARY, AND SIGN-IN SHEET

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

NOTICE OF PUBLIC HEARING ON PROPOSED LAND USE WITHIN THE CONSERVATION DISTRICT

DATE: August 12, 2002
TIME: 6:00 P.M.
PLACE: The Village Clubhouse at Kapalua, 2000 Village Road, Kapalua, Maui

The Department of Land and Natural Resources, State of Hawaii, pursuant to Chapter 183C, Hawaii Revised Statutes, will hold a public hearing to receive testimony on the following:

Conservation District Use Application MA-3095B – Maui Land and Pineapple Company Inc., is proposing to subdivide an approximately 20-acre parcel (TMK 4-2-04:32) in the State Conservation District into three parcels. The parcel is located in West Maui north of the Kapalua Resort near Honolua Bay. The three proposed parcels are described as follows: 1) a coastal reserve parcel (4.3 acres) includes lands in front of Mokuleia Bay. The applicant intends to offer this parcel for donation to the State or a conservation organization to establish permanent conservation of this land, preserve open space and views, and ensure continued public access to Mokuleia Bay. 2) A 6.5 acre parcel on Kalaepiha Point. The applicant intends to keep this parcel for a potential single family residence (SFR). No single family residence is presently being applied for. 3) Honolua parcel of 9.5 acres. The applicant intends that no dwelling be permitted on this parcel. Future land uses on the proposed parcels would require separate permitting and environmental assessments to address specific impacts related to the proposed projects.

A copy of the application and the project assessment report are available for inspection at the Lahaina Public Library and at the Department of Land and Natural Resources, Maui District Land Office, 54 High Street, Rm 101, Wailuku.

Any person may testify or present information on the application. If you have a legal interest that may be adversely affected by the application, you may have the right to request an administrative contested case hearing. However, you must make the request either orally or in writing by the close of this public hearing and file a written petition for a contested case hearing within 10 days after the date of this public hearing. If you do not make such a request, or fail to file a timely written petition with the Department of Land and Natural Resources, you may be precluded from obtaining a contested case hearing and judicial review. See Chapter 13-1 Hawaii Administrative Rules of the Department of Land and Natural Resources and Chapter 91 Hawaii Revised Statutes.

BOARD OF LAND AND NATURAL RESOURCES

for GILBERT S. COLOMA-AGARAN, Chairperson

Dated: JUL 18 2002

PUBLICATION DATE: July 23/02
Honolulu Star-Bulletin
Maui News

Public Hearing Summary
August 12, 2002

On August 12, 2002, the Department of Land and Natural Resources held a public hearing on the Conservation District Use Application (CDUA) (MA-3095B) which was filed for the proposed Kalaepihā Lands subdivision and required for subdivision of land in the Conservation District. The hearing was held on Maui at the Village Clubhouse at Kapalua (2000 Village Road, Kapalua, Maui). Seven people signed the meeting sign-in sheet, although others were present (see the following pages for a copy of the public hearing notice and the sign-in sheet).

Ted Yamamura, the Maui member of the Board of Land and Natural Resources, opened the hearing with a brief overview of why the hearing was being held. Masa Alkire, a planner from the Department of Land and Natural Resources Land Division, then continued the hearing and stated that the applicant, Maui Land & Pineapple Company, Inc., filed a CDUA to subdivide the approximately 20-acre Kalaepihā Lands parcel into three legal lots of record. He explained that this was legal as long as the subdivision involved a public purpose. In this case the public purpose was the donation of one of the subdivided parcels for preservation of public access. He also explained that restrictions would be put on two of the parcels to prohibit the construction of single family houses, so that only one single family house could be built on one of the parcels.

After Mr. Alkire's presentation, Ryan Churchill, an employee of Kapalua Land Company, Ltd (a subsidiary of applicant Maui Land & Pineapple Company, Inc.), described the subdivision in more detail. He explained the purpose of the subdivision was to preserve land for public use on the north and south side of Kalaepihā Point, while allowing for a single-family house on the Kalaepihā Point parcel. He said that Maui Land & Pineapple Company, Inc., has approached the Maui Coastal Land Trust as a possible recipient of the parcel in front of Mokulē'ia Bay and that they are also considering donation of the parcel to the State of Hawaii. He also explained that no development is proposed for the Honolua parcel and Maui Land & Pineapple Company, Inc.'s long-range plans for the parcel are to provide improved public use and access to Honolua Bay.

During the question and answer period that followed the presentations, Dale Bonar, Executive Director of the Maui Coastal Land Trust, explained that the Trust is currently in a due diligence stage in regard to making a decision on whether or not to accept the parcel at Mokulē'ia Bay and that they have a study group looking into what resources it would take to maintain the parcel. Mr. Bonar said that by the end of the month the Trust will have a board meeting to discuss the issue.

Gerald Shim, who along with relatives owns two parcels of land on the north side of Honolua Stream, was concerned that access to his property would be affected by the proposed subdivision. Bob NcNatt, an employee of Maui Land & Pineapple Company, Inc., also present at the meeting, clarified that the current terms of access to Shim's property would not be changed by the subdivision. Mr. Shim also stated that he and his relatives own another parcel in the area that is not identified on Tax Map Key maps. He said he is gathering all the paperwork necessary to show that he and his relatives own this unlocated parcel and would present this information to Maui Land & Pineapple Company, Inc., and the Department of Land and Natural Resources when he gets it all together.

Mr. Shim was also concerned that restrictions placed on the Maui Land & Pineapple Company, Inc., properties to limit the construction of single family homes would also be placed on his land. Mr. Churchill clarified that similar restrictions would not be placed on his property. After his concerns regarding his land were clarified, Mr. Shim said he had no concerns about the proposed subdivision.

8-14-02 10:01AM

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
PUBLIC HEARING ATTENDANCE
Regarding Maui Land and Pineapple Inc
Application for Subdivision approval
6PM August 12, 2002 Village Clubhouse, Kapalua Maui

1. Vic DuBray
2. Gloria and Chris Salem
3. Gerald Shim
4. Dale B. Bonar MCLT
5. Mitzi Smith Shim
6. Roylen Shim
7.
8.
9.
10.
11.
12.
13.
14.

APPENDIX B

BOTANICAL SURVEY

BOTANICAL SURVEY
MOKULEIA COASTAL LANDS
KAPALUA, LAHAINA DISTRICT, MAUI

by

Winona P. Char

CHAR & ASSOCIATES
Botanical Consultants
Honolulu, Hawai'i

Prepared for: Kapalua Land Development Company, Ltd.

March 2001

INTRODUCTION

The project site consists of approximately 31 acres of coastal lands, located between the D.T. Fleming Beach County Park and Honolua Gulch (Figure 1).

Field studies to assess the botanical resources on the project site were conducted on 26 January 2001 by a team of two botanists. The primary objectives of the survey were to:

1) provide a general description of the vegetation on the site;
2) inventory the flora;
3) search for threatened and endangered species as well as species of concern; and
4) identify areas of potential environmental problems or concerns and propose appropriate mitigation measures.

SURVEY METHODS

Prior to undertaking the field studies, a search was made of the pertinent literature to familiarize the principal investigator with other botanical studies conducted in the general area. Topographic maps and soil maps (with an aerial photobase) were examined to determine vegetation cover patterns, terrain characteristics, access, boundaries, and reference points.

A walk-through survey method was used. Notes were made on plant associations and distribution, substrate types, drainage, exposure, disturbances, topography, etc. Plant identifications were made in the field; plants which could not be positively identified were collected for later determination in the herbarium, and for comparison with the recent taxonomic literature.

The species recorded are indicative of the season ("rainy" vs. "dry") and the environmental conditions at the time of the survey. A survey taken at a different time of the year and under varying environmental conditions would no doubt yield slight variations in the species list, especially of the weedy, annual plants.

DESCRIPTION OF THE VEGETATION

Much of the parcel is characterized by rocky coastal cliffs, mapped as Rock land, "rRK", on the soil maps (Foote et al. 1972). The seaward facing portions support low windswept coastal cliff vegetation, while the inland areas abutting Honoapi'ilani Highway are covered primarily by ironwood forest. On the Honolua Gulch portion of the project site, the soils are mapped as Stony alluvial land, "rSM". This soil type consists of stones, boulders, and soil deposited by streams along the bottoms of gulches and alluvial fans (Foote et al. 1972). The Honolua Gulch area supports a dense forest composed of a number of introduced tree species.

A more detailed description of the vegetation types follows. An inventory of all the plants observed on the project site during the field studies is presented in the species list at the end of the report.

Coastal Cliff Vegetation

Coastal cliff vegetation is somewhat variable. In some places,

the vegetation consists of windpruned patches of ironwood trees (Casuarina equisetifolia), 3 to 6 feet tall. In other places, low thickets of koa haole (Leucaena leucocephala) are common along with airplant (Kalanchoe pinnata), sourgrass (Digitaria insularis), and Guinea grass (Panicum maximum).

Scattered along the exposed, rocky bluffs are patches of native plants. These include the low, mat-forming type of 'ilima or 'ilima papa (Sida fallax), Fimbristylis cymosa, 'ohelo kai (Lycium sandwicense), Cyperus phleoides, 'akulikuli (Sesuvium portulacastrum), kipukai (Heliotropium curassavicum), pa'uohi'iaka (Jacquemontia ovalifolia subspecies sandwicensis), 'ilie'e (Plumbago zeylanica), and 'ala 'ala wai nui (Pepperomia blanda var. floribunda).

Ironwood Forest

In most places bordering the highway, ironwood trees form large stands, 50 to 60 feet tall. There is usually a deep layer of fallen ironwood "needles" beneath the trees. Along the margins of the trees, where there is more light and a thinner mat of ironwood leaf and branch litter, Guinea grass forms scattered clumps, 3 to 4 feet tall. The more open areas between the stands of ironwood support patches of koa haole shrubs. Other plants found in these more open areas include Christmas berry (Schinus terebinthifolius), sourbush (Pluchea carolinensis), night-blooming cereus (Hylocereus undatus), Natal redtop grass (Melinis repens), Chinese violet (Asystasia gangetica), and Mauritius hemp (Furcraea foetida).

Mixed Forest

This forest, composed exclusively of introduced tree species, occurs on the more or less level floor of Honolua Gulch; the forest is 25 to 50 feet tall. Along the stream which marks the

boundary of the property, Java plum trees (Syzygium cumini) are abundant. Where the stream nears the ocean, milo trees (Thespesia populnea) become common. Other trees found within the gulch are rose apple (Syzygium jambos), mango (Mangifera indica), kukui (Aleurites moluccana), African tulip tree (Spathodea campanualata), Chinaberry (Melia azedarach), and 'opiuma (Pithecellobium dulce). Shrubs of Christmas berry, noni (Morinda citrifolia), koa haole, kolomona (Senna surattensis), and coffee (Coffea arabica), six to 12 feet tall, are common to abundant. Where the tree canopy cover is open, Guinea grass is the most abundant ground cover. In heavily shaded areas where the tree canopy cover is closed, the ground cover consists of low mats of basket grass (Oplismenus hirtellus). Vines of huehue haole (Passiflora suberosa), a member of the passion fruit family, are locally common.

A stand of large, old monkeypod trees (Samanea saman) is found within the mixed forest vegetation type. Cat's-claw climber (Macfadyena unguis-cati), a rambling, woody vine with tubular yellow flowers, covers the ground with a low, tangled mat; the plants also scramble up the tree trunks and branches. Taro vine (Epipremnum pinnatum) is also frequently encountered.

Remnant ornamental species mark old house sites. These include wandering Jew (Tradescantia zebrina), Cussonia sp., pikake (Jasminum multiflorum), ti (Cordyline fruticosa), fan palm (Livistonia sp.), and a clump of bamboo (Bambusa sp.).

DISCUSSION

Introduced species such as ironwood, koa haole, Guinea grass, Christmas berry, monkeypod, etc., are the dominant components of the three vegetation types recognized on the project site. Introduced or alien species are all those plants which were brought to the Hawaiian Islands by humans, intentionally or

accidentally, after Western contact, that is, Cook's arrival in the islands in 1778. Of a total of 101 species inventoried on the project site, 84 (83%) are introduced, four (4%) are originally of Polynesian introduction, and 13 (13%) are native. Eleven of the native species are indigenous, that is, they are native to the Hawaiian Islands and elsewhere. Two species are endemic, that is, they are native only to the Hawaiian Islands. These are the pa'uohi'iaka vine and the Cyperus phleoides sedge.

None of the plants found during the field studies is a threatened and endangered species or a species of concern (U.S. Fish and Wildlife Service 1999). Most of the native plants occur on the almost vertical, windswept coastal cliff areas. All of the native plants can be found in similar environmental habitats throughout the islands.

LITERATURE CITED

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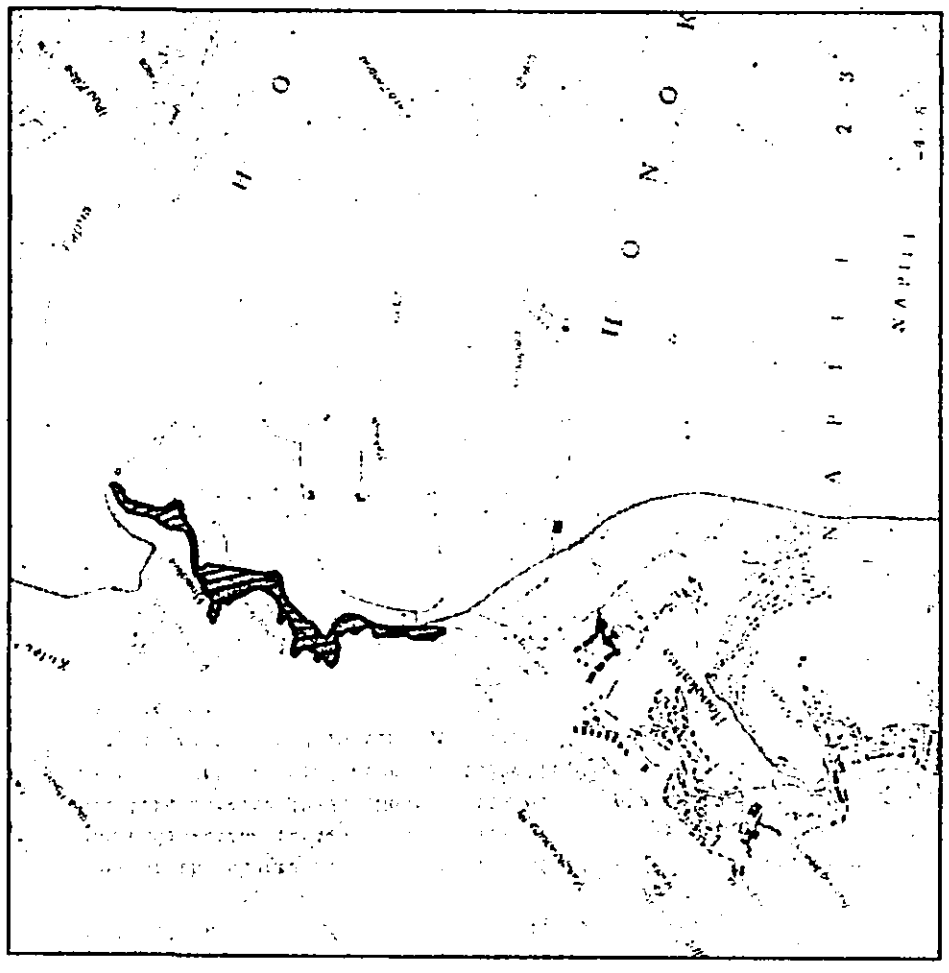

Figure 1
Botanical Survey

PLANT SPECIES LIST -- Mokuleia Coastal Lands

The following checklist is an inventory of all the plants observed on the project site during the field studies. The plant names are arranged alphabetically by families within each of three groups: Ferns, Dicots, and Monocots. The taxonomy and nomenclature of the Ferns follow Lamoureux (1988), while the flowering plants, Dicots and Monocots, are in accordance with Wagner et al. (1990). The few recent name changes for the flowering plants follow those reported in the Hawaii Biological Survey series (Evenhuis and Miller 1995-1998; Evenhuis and Eldredge 1999-2000).

For each species, the following information is provided:

1. Scientific name with author citation.
2. Common English and/or Hawaiian name(s), when known.
3. Biogeographic status. The following symbols are used:
   - E = endemic = native only to the Hawaiian Islands.
   - I = indigenous = native to the Hawaiian Islands and also elsewhere.
   - I? = questionably indigenous = data not clear if dispersal to the islands by natural or human-related mechanisms, but weight of evidence suggests probably indigenous.
   - P = Polynesian introduction = plants originally of Polynesian introduction prior to Western contact, that is, Cook's arrival in the islands in 1778.
   - P? = questionably a Polynesian introduction = may have been introduced by the Polynesians prior to Western contact or possibly introduced soon after Western contact.
   - X = introduced or alien = all those plants brought to the Hawaiian Islands by humans, intentionally or accidentally, after Western contact.
4. Presence (+) or absence (-) of a particular species within each of three vegetation types recognized on the project site (see text for discussion):

- c = Coastal Cliff Vegetation
- i = Ironwood Forest
- m = Mixed Forest

Scientific name	Common name	Status	Vegetation type c	i	m
ASTERACEAE (Daisy family)					
Ageratum conyzoides L.	maile hohono	X	+	-	-
Bidens pilosa L.	Spanish needle, ki, ki nehe	X	-	+	-
Conyza bonariensis (L.) Cronq.	hairy horseweed, ilioha	X	+	-	-
Pluchea carolinensis (Jacq.) G. Don	sourbush, pluchea	X	+	+	-
Pluchea indica (L.) Less.	Indian pluchea	X	-	+	+
Sonchus oleraceus L.	sowthistle, pualele	X	+	-	-
Synedrella nodiflora (L.) Gaertn.	nodeweed	X	-	-	+
BIGNONIACEAE (Bignonia family)					
Macfadyena unguis-cati (L.) A. Gentry	cat's-claw climber	X	-	-	+
Spathodea campanulata P. Beauv.	African tulip tree	X	-	-	+
BORAGINACEAE (Heliotrope family)					
Heliotropium curassavicum L.	kipukai, nena	I	+	-	-
CACTACEAE (Cactus family)					
Hylocereus undatus (Haw.) Britton & Rose	night-blooming cereus	X	+	+	+
Opuntia ficus-indica (L.) Mill.	panini, papipi	X	+	+	-
CARICACEAE (Papaya family)					
Carica papaya L.	papaya, mikana	X	-	-	+
CASUARINACEAE (She-oak family)					
Casuarina equisetifolia L.	ironwood, paina	X	+	+	-
CHENOPODIACEAE (Goosefoot family)					
Atriplex semibaccata R. Br.	Australian saltbush	X	+	+	-
Chenopodium murale L.	'aheahea	X	+	+	-
CONVOLVULACEAE (Morning glory family)					
Ipomoea indica (J. Burm.) Merr.	koali 'awa, koali 'awahia	I	-	+	+
Ipomoea ochracea (Lindl.) G. Don		X	-	+	-
Jacquemontia ovalifolia ssp. sandwicensis (A. Gray) K. Robertson	pa'uohi'iaka	E	+	-	-

Scientific name	Common name	Status	Vegetation type c	i	m
FERNS					
ADIANTACEAE (Maidenhair fern family)					
Adiantum hispidulum Sw.	Australian maidenhair	X	-	-	+
NEPHROLEPIDACEAE (Swordfern family)					
Nephrolepis multiflora (Roxb.) Jarrett ex Morton	hairy swordfern, 'okupukupu	X	-	+	-
POLYPODIACEAE (Common fern family)					
Phymatosorus scolopendria (Burm.) Pic.-Ser.	laua'e, lauwa'e	X	-	-	+
THELYPTERIDACEAE (Wood-fern family)					
Christella parasitica (L.) Levl.	wood-fern	X	-	-	+
FLOWERING PLANTS					
DICOTS					
ACANTHACEAE (Acanthus family)					
Asystasia gangetica (L.) T. Anderson	Chinese violet, coromandel	X	-	+	+
Justicia betonica L.	white shrimp plant	X	-	-	+
Thunbergia fragrans Roxb.		X	-	-	+
AIZOACEAE (Fir-marigold family)					
Sesuvium portulacastrum (L.) L.	'akulikuli	I	+	-	-
Tetragonia tetragonioides (Pall.) Kuntze	New Zealand spinach	X	+	+	-
ANACARDIACEAE (Mango family)					
Mangifera indica L.	mango, manako	X	-	-	+
Schinus terebinthifolius Raddi	Christmas berry	X	+	+	+
ARALIACEAE (Ginseng family)					
Cussonia sp. (?)		X	-	-	+
Schefflera actinophylla (Endl.) Harms	octopus tree, umbrella tree	X	-	-	+

Scientific name	Common name	Status	Vegetation type c	i	m
MELIACEAE (Mahogany family)					
Melia azedarach L.	Chinaberry, pride-of-India, 'inia	X	-	-	+
MORACEAE (Mulberry family)					
Ficus microcarpa L.f.	Chinese banyan	X	-	-	+
MYRSINACEAE (Myrsine family)					
Ardisia elliptica Thunb.	shoe button ardisia	X	-	-	+
MYRTACEAE (Myrtle family)					
Eucalyptus sp.	eucalyptus, gum tree, 'eukalikia	X	-	+	-
Psidium guajava L.	common guava, kuawa	X	-	-	+
Syzygium cumini (L.) Skeels	Java plum	X	-	-	+
Syzygium jambos (L.) Alston	rose apple, 'ohi'a loke	X	-	-	+
NYCTAGINACEAE (Four-o'clock family)					
Mirabilis jalapa L.	four-o'clock, marvel of Peru, nani ahiahi	X	-	-	+
OLEACEAE (Olive family)					
Jasminum multiflorum (Burm. f.) Andr.	star jasmine, pikake	X	-	-	+
OXALIDACEAE (Wood sorrel family)					
Oxalis corniculata L.	yellow wood sorrel, 'ihi 'ai	P?	+	-	-
PAPAVERACEAE (Poppy family)					
Argemone mexicana L.	Mexican poppy	X	-	+	-
PASSIFLORACEAE (Passion flower family)					
Passiflora edulis forma flavicarpa Degener	passionfruit, liliko'i	X	-	-	+
Passiflora suberosa L.	huehue haole	X	-	-	+
PIPERACEAE (Pepper family)					
Peperomia blanda var. floribunda (Miq.) H. Huber	'ala 'ala wai nui	I	+	-	-

Scientific name	Common name	Status	Vegetation type c	i	m
CRASSULACEAE (Orpine family)					
Kalanchoe pinnata (Lam.) Pers.	air plant, life plant, 'oliwa ku kahakai	X	+	-	-
CUCURBITACEAE (Gourd family)					
Momordica charantia L.	wild bittermelon	X	-	+	-
EUPHORBIACEAE (Spurge family)					
Aleurites moluccana (L.) Willd.	kukui, tutui	P	-	+	+
Chamaesyce hirta (L.) Millsp.	hairy spurge, garden spurge	X	-	+	-
Chamaesyce hypericifolia (L.) Millsp.	graceful spurge	X	-	-	+
Phyllanthus debilis Klein ex Willd.	niruri	X	+	-	-
FABACEAE (Pea family)					
Acacia confusa Merr.	Formosan koa	X	-	-	+
Canavalia cathartica Thouars	maunaloa	X	-	-	+
Desmanthus pernambucanus (L.) Thellung	slender mimosa	X	-	+	-
Desmodium incanum DC	Spanish clover, ka'imi	X	-	-	+
Leucaena leucocephala (Lam.) de Wit	koa haole	X	+	+	+
Neonotonia wightii (Wight & Arn.) Lackey		X	-	+	-
Pithecellobium dulce (Roxb.) Benth.	'opiuma	X	-	-	+
Prosopis pallida (Humb. & Bonpl. ex Willd.) Kunth	kiawe	X	-	+	-
Samanea saman (Jacq.) Merr.	monkeypod	X	-	-	+
Senna surattensis (N.L. Burm.) H. Irwin & Barneby	kolomona, kalamona	X	-	-	+
LAURACEAE (Laurel family)					
Cinnamomum burmannii (Nees) Blume	Padang cassia, cinnamon	X	-	-	+
MALVACEAE (Mallow family)					
Abutilon grandifolium (Willd.) Sweet	hairy abutilon, ma'o	X	-	-	+
Malvastrum coromandelianum (L.) Garcke	false mallow, hauuoi	X	-	-	+
Sida fallax Walp.	'ilima, 'ilima papa	I	+	-	-
Thespesia populnea (L.) Sol. ex Correa	milo	I?	-	+	+

Scientific name	Common name	Status	Vegetation type c	i	m
ARECACEAE (Palm family)					
Livistonia sp.	fan palm	X	-	-	+
Phoenix sp.	date palm	X	-	-	+
Roystonea sp.	royal palm	X	-	-	+
COMMELINACEAE (Spiderwort family)					
Tradescantia zebrina Bosse	wandering Jew	X	-	-	+
CYPERACEAE (Sedge family)					
Cyperus phleoides (Nees ex Kunth) Hillebr.		E	+	-	-
Fimbristylis cymosa R. Br.		I	+	-	-
LILIACEAE (Lily family)					
Aloe vera L.	aloe	X	-	+	-
POACEAE (Grass family)					
Bambusa sp.	bamboo	X	-	-	+
Chloris barbata (L.) Sw.	swollen fingergrass, mau'ulei	X	+	+	-
Coix lachryma-jobi L.	Job's tears	X	-	-	+
Cynodon dactylon (L.) Pers.	Bermuda grass, manienie	X	+	-	-
Digitaria ciliaris (Retz.) Koeler	Henry's crabgrass	X	+	-	-
Digitaria insularis (L.) Mez ex Ekman	sourgrass	X	+	+	-
Eleusine indica (L.) Gaertn.	wiregrass, manienie ali'i	X	-	+	-
Melinis repens (Willd.) Zizka	Natal redtop, Natal grass	X	-	+	-
Oplismenus hirtellus (L.) P. Beauv.	basket grass, honohono kukui	X	-	-	+
Panicum maximum Jacq.	Guinea grass	X	+	+	+
Sporobolus indicus (L.) R. Br.	Indian dropseed	X	+	-	-

Scientific name	Common name	Status	Vegetation type c	i	m
PLUMBAGINACEAE (Leadwort family)					
Plumbago zeylanica L.	'ilie'e, hilie'e	I	+	-	-
PORTULACACEAE (Purslane family)					
Portulaca oleracea L.	common purslane, pigweed, 'ihi	X	+	-	-
PRIMULACEAE (Primrose family)					
Anagallis arvensis L.	scarlet pimpernel	X	+	-	-
RUBIACEAE (Coffee family)					
Coffea arabica L.	coffee	X	-	-	+
Morinda citrifolia L.	noni	P	-	-	+
Paederia foetida L.	maile-pilau	X	-	-	+
SOLANACEAE (Nightshade family)					
Capsicum frutescens L.	chili pepper, nioi	X	-	-	+
Lycium sandwicense A. Gray	'ohelo kai, 'ae'ae	I	+	-	-
Solanum americanum Mill.	glossy nightshade, popolo	I?	-	+	-
Solanum seaforthianum Andr.	blue potato vine	X	-	-	+
STERCULIACEAE (Cacao family)					
Waltheria indica L.	'uhaloa, hi'aloa, kanakaloa	I?	+	-	-
VERBENACEAE (Verbena family)					
Lantana camara L.	lantana, lakana	X	-	-	+
Stachytarpheta jamaicensis (L.) Vahl.	Jamaica vervain, owi, oi	X	+	-	-
MONOCOTS					
AGAVACEAE (Agave family)					
Cordyline fruticosa (L.) A. Chev.	ti, ki	P	-	-	+
Furcraea foetida (L.) Haw.	Mauritius hemp	X	-	+	-
ARACEAE (Aroid family)					
Epipremnum pinnatum (L.) Engl	taro vine, pothos, golden pothos	X	-	-	+

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13 August 2001

PBR Hawaii
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Attention: Tom Schnell

SUBJECT Mokuleia Coastal Lands

Dear Mr. Schnell:

A portion of the Mokuleia Coastal Lands was not included in the original assessment report (Char 2001). This is the area identified as "AeC", Alaeloa silty clay, 7 to 15% slopes, on the soil maps (Foote et al. 1972). It is a relatively level area with fairly deep, well-drained soils located behind the point situated between Makuleia Bay and Honolua Bay.

Much of this area is open and grassy, and appears to have been disturbed in the past; it may have been used as a house site or grazed. The vegetation consists of dense clumps of Guinea grass (Panicum maximum), 3 to 4 ft. tall, with scattered smaller stands of ironwood (Casuarina equisetifolia) and koa haole shrubs (Leucaena leucocephala). Also occurring in this area in smaller numbers are the Mexican poppy (Argemone mexicana), Neonotonia wightii -- a common fodder legume, and Natal redtop grass (Melinis repens).

No threatened and endangered species or species of concern (U.S. Fish and Wildlife Service 1999) were found on this area.

Please do not hesitate to call me should you have any questions regarding the findings.

Sincerely,

Winona P. Char

References

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APPENDIX C

AVIFAUNAL AND FERAL MAMMAL SURVEY

AVIFAUNAL AND FERAL MAMMAL SURVEY

MOKULEIA COASTAL LANDS, MAUI

Prepared for:

Kapalua Land Company, Ltd.

Prepared by:

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Revised
18 April 2001

INTRODUCTION

The purpose of this report is to present the findings of a field survey at a 23 acre site called Mokuleia Coastal Lands located at Kapalua, Maui (Fig. 1). Published and unpublished resources are also noted to supplement the results of the field survey. The purpose of the field survey was:

1- To document the species of birds and mammals currently on or near the site.

2- To note the various habitats available to birds and mammals at this location.

3- To record any natural resources important to native and migratory species.

GENERAL SITE DESCRIPTION

The 23 acre site designated as Mokuleia Coastal Lands is a narrow property located between the highway and the shoreline. The topography of much of the site is steep. Introduced vegetation composed of Ironwood (*Casuarina equisetifolia*), Christmas Berry (*Schinus terebinthifolius*), Kiawe (*Prosopis pallida*), and Koa Haole (*Leucaena leucocephala*) dominate the property. The shoreline fronting the parcel contains both rocky and sandy beaches.

METHODS OF SURVEY

The field survey was conducted on parts of 3, 18 March 2001. The area accessible by foot was walked and the cliff faces were viewed from above. All birds and mammals seen were tallied. Observations were taken both early and late in the day when birds were most active. Weather conditions during the survey varied from clear to light rain showers. Winds were light in the morning but brisk later in the day. These conditions did not limit the collection of data. Scientific and common names follows Pratt (1999), Pyle (1997), and Honacki et al. (1982).

RESULTS AND DISCUSSION

NATIVE BIRDS: (Landbirds and Seabirds)

No native birds were tallied on this survey. The location of the site and the available habitats are not appropriate for native landbirds. Seabirds nest at a few protected locations on the main Hawaiian Islands (Hawaii Audubon Society 1993). Predation and human disturbance limit were these birds can breed. This site is too exposed to human activity and predators to support breeding populations of native seabirds.

MIGRATORY BIRDS:

One species of migratory shorebird was recorded on the survey. Three Wandering Tattlers (*Heteroscelus incanus*) were observed foraging along the shoreline. This species is not threatened or endangered and is one of the common winter migrants to Hawaii (Pratt et al. 1987, Hawaii Audubon Society 1993). Other migratory shorebirds that potentially could utilize the shoreline include: Pacific Golden-Plover (*Pluvialis fulva*), Sanderling (*Calidris alba*), and Ruddy Turnstone (*Arenaria interpres*).

INTRODUCED BIRDS:

Twelve species of introduced birds were found on the survey. Table One gives the names of these species and their relative abundance. None are threatened or endangered. Rock Doves (*Columba livia*) were seen landing on the rocky cliffs along the shoreline. This species nests in this type of habitat and perhaps is breeding at this site. These birds are also commonly kept as caged birds. The most abundant species was the House Finch (*Carpodacus mexicanus*). They are frequently associated with Ironwood trees. The relative abundance and the number of species were similar to an earlier survey in this region (Bruner 1989).

MAMMALS:

The only two species of mammals recorded were the Small Indian Mongoose (*Herpestes auropunctatus*) and feral Cats (*Felis catus*). Rats (*Rattus spp.*) and mice (*Mus*

musculus) also likely occur at this location. The endangered Hawaiian Hoary Bat (*Lasiurus cinereus semotus*) was not observed. Two evenings were devoted to looking for this species. The Hawaiian Hoary Bat is not common on Maui (Tomich 1986, Kepler and Scott 1990). This species forages in a wide variety of natural and disturbed habitats. They generally roost solitarily in trees. On Kauai and the Big Island they can frequently be seen flying at dusk over bays.

CONCLUSIONS

The survey of this site found the typical array of introduced birds that normally occur in the lowlands on Maui. The presence of the migratory Wandering Tattler was also expected. Other migratory shorebirds probably also use the shoreline for foraging. Seabirds nesting on the main Hawaiian Islands are only successful where predator access can be regulated. This property is too open to predators for seabirds to nest. The native and endangered Hawaiian Hoary Bat was not observed. This is not unusual given its low relative abundance on Maui.

No unique resources important to native landbirds were discovered on the property. This site consists of disturbed second growth vegetation and is easily impacted by human activity.

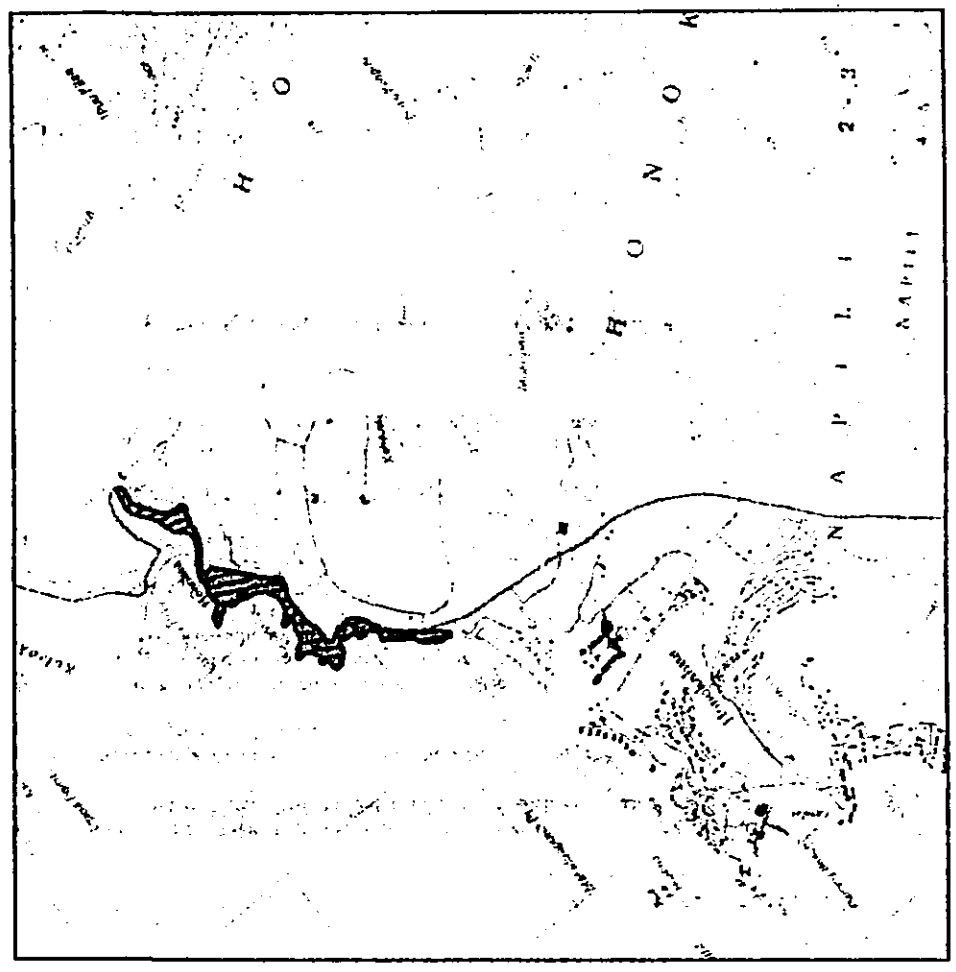

Figure 1
Faunal Survey

TABLE 1

Introduced birds recorded at Mokuleia Coastal Lands, Kapalua, Maui. Relative abundance estimates are based on the following scale: Abundant = 25+; Common = 15, 25; Uncommon = 5-14; Rare = less than 5 tallied over the course of the survey.

COMMON NAME	SCIENTIFIC NAME	RELATIVE ABUNDANCE ESTIMATE
Gray Francolin	*Francolinus pondicerianus*	R
Rock Dove	*Columba livia*	U
Spotted Dove	*Streptopelia chinensis*	C
Zebra Dove	*Geopelia striata*	C
Hwamei	*Garrulax canorus*	R
Northern Mockingbird	*Mimus polyglottos*	R
Common Myna	*Acridotheres tristis*	C
Japanese White-eye	*Zosterops japonicus*	C
Northern Cardinal	*Cardinalis cardinalis*	C
Red-crested Cardinal	*Paroaria coronata*	U
House Finch	*Carpodacus mexicanus*	A
Nutmeg Mannikin	*Lonchura punctulata*	U

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APPENDIX D-1

ARCHAEOLOGICAL SURVEY REPORT OF
HONOLUA VALLEY
KENNETH R.MOORE 1974

Ms. 042274

ARCHAEOLOGICAL SURVEY OF HONOLUA VALLEY, MAUI

by

Kenneth R. Moore

Prepared for

Maui Land & Pineapple Co., Ltd.

Kahului, Maui

April 1974

Department of Anthropology

BERNICE P. BISHOP MUSEUM

Honolulu, Hawaii

ABSTRACT

This report covers 13 archaeological sites surveyed by Bishop Museum personnel within Honolua Valley, Maui, property of Maui Land and Pineapple Co., Ltd. Eleven sites appear to be prehistoric (pre-European contact); two sites date to historic times. The Museum recommends that four sites--D14-5, -6, and -10, and portions of D14-9--be incorporated into proposed development plans.

ACKNOWLEDGMENTS

I would like to thank Mr. Colin Cameron, President of Maui Land and Pineapple Co., along with Mr. George Nagunuma, Mr. Dyke Furakawa, and the rest of the staff at the Honolua division, for their fine cooperation and assistance during our fieldwork in Honolua Valley.

People instrumental in producing this report are: the survey crew--Margaret Luscomb, Elaine Rogers, Charles Keau, and Leslie Bruce--and the Museum staff, especially Dr. Yosihiko H. Sinoto, Patience Bacon, Mary Judd, Peter Gilpin, Reiko Hall, John McLaughlin, Janet Gordon, and Kathleen Kelly. To each of them I express my deep appreciation.

CONTENTS

ILLUSTRATIONS

INTRODUCTION

This is a report of the archaeological walk-through survey of the Honolua Valley property of Maui Land and Pineapple Company, Ltd., on Maui, conducted by staff members of the Department of Anthropology, Bernice P. Bishop Museum. The work was done under contract from Belt Collins and Associates, Ltd.

The surveyed area (Fig. 1) is approximately 90 acres, including the floor, walls, and embayment arms of Honolua Valley. Fieldwork was conducted from 3 to 12 March 1974, during which period 13 archaeological sites in this area were located, described, and mapped by a crew of four under the direction of the author.

Survey methods varied in response to topographic and vegetative conditions. In open areas, the five crew members, spaced 10 to 12 meters apart, walked in a line, covering 40-meter-wide sweeps. In more confined and/or densely vegetated areas, where visibility was restricted, closer spacing and zig-zag search patterns were used. Once located, sites were plotted in relation to previously established transit points, which were keyed to a master overlay of the survey area. This method allowed rapid and accurate site plotting in the thick underbrush. Brunton compass and tape were used to make plans of the sites, and photographic records were made on 35-mm roll film.

This report includes the following: 1) a site-location map (Fig. 1) with a general description of the lower Honolua Valley, 2) detailed descriptions and plans of sites encountered during the survey, and 3) evaluations and specific recommendations regarding each site. An appendix listing some local informants is included at the end of the report.

Vegetation in the valley includes only four indigenous--wiliwili (Erythrina sandwicensis), kukui - candlenut (Aleurites moluccana), milo (Thespesia populnea), and niu - coconut palm (Cocos nucifera)--and numerous exotic flora--bamboo, in clumps; castor bean; christmasberry; croton; guava; hibiscus; koa haole (Leucaena glauca); lantana; monkeypod; morning glory; night-blooming cereus; panini, cactus; passion fruit; philodendron; and tamarind.

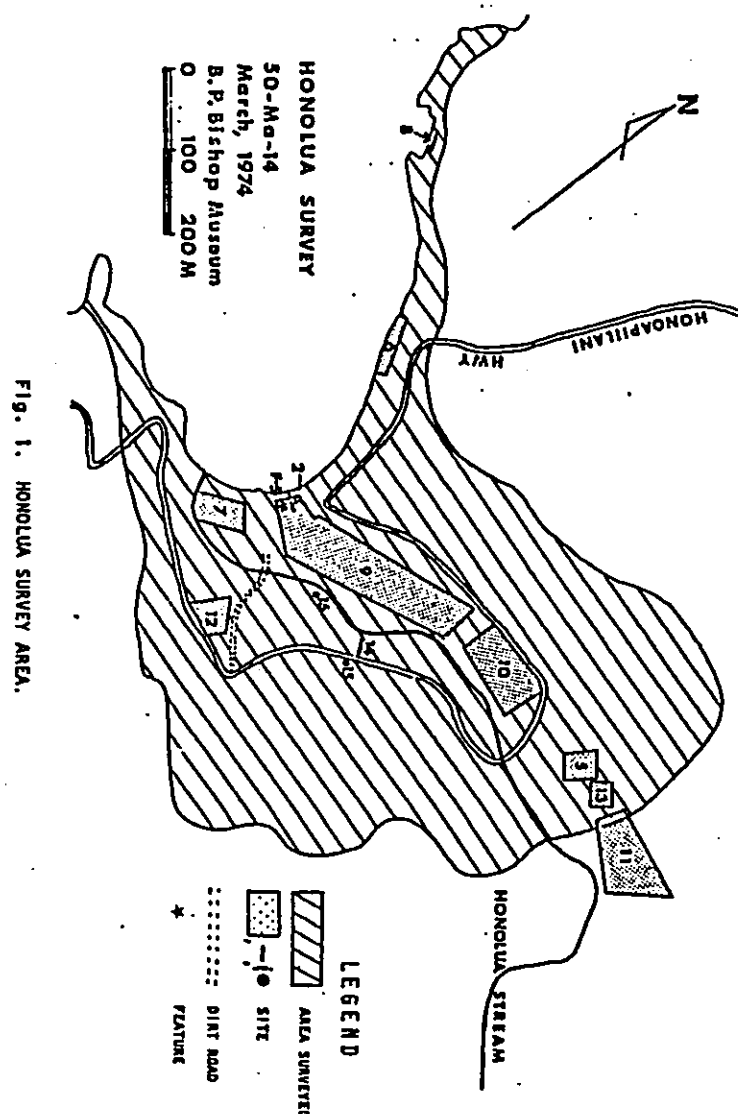


Fig. 1. HONOLUA SURVEY AREA.

SITE DESCRIPTIONS

SITE D14-2 - PUHALAKAU HEIAU

This area is thought to be the location of the now-destroyed Puhalakau Heiau, as evidenced by some scattered possible paving lying on the surface in the makai portions of the present parking area at Honolua Beach. Walker (1931:118) indicated that this area (his site 17) could have been where the heiau was located. Unfortunately, however, his description is open to interpretation, making definite site placement difficult.

Informant Dr. James Fleming (personal communication) stated that a stone structure here was destroyed in the early 1900s to construct pig pens, but that he did not know if this structure was a heiau.

SITE D14-5 - HONDAULA HEIAU

This complex series of walls, platforms, and enclosures is thought to represent Honuaula Heiau. Regardless of the structure's proper name, its size and complexity certainly merit the designation heiau. The site is located on the northern taluvial slopes of Honolua Valley, c. 100 m NE of the Honoapiilani Highway bridge over Honolua Stream. The site is a large, rectangular enclosure encompassing six main feature areas, which are discussed below. A plan view is given in Fig. 2.

Area A is a partially stone-paved earthen terrace lying at the foot of the pali. A wall extends to the N (mauka), beyond the terrace to the base of the pali, where it forms a protective barrier against a loose rock outcrop. The terrace is enclosed on the E and W by well-built side walls of core-filled construction, c. 0.7 m high and 2 m wide. The E wall has an unusual inward-facing bulge 3 m deep and 0.4 m high, indicating a special (though unknown) function.

The steep hillside behind the heiau comes up to the northern edge of area A, where a broken line of terracing, c. 0.4 - 0.8 m high, lies. This is the lowest of a series of apparent dry-agricultural terraces that lie on the slope above (N of) the heiau. Area A has a 0.5-m-high platform with a slightly concave surface constructed of water-worn cobbles, that runs along the southern edge of the

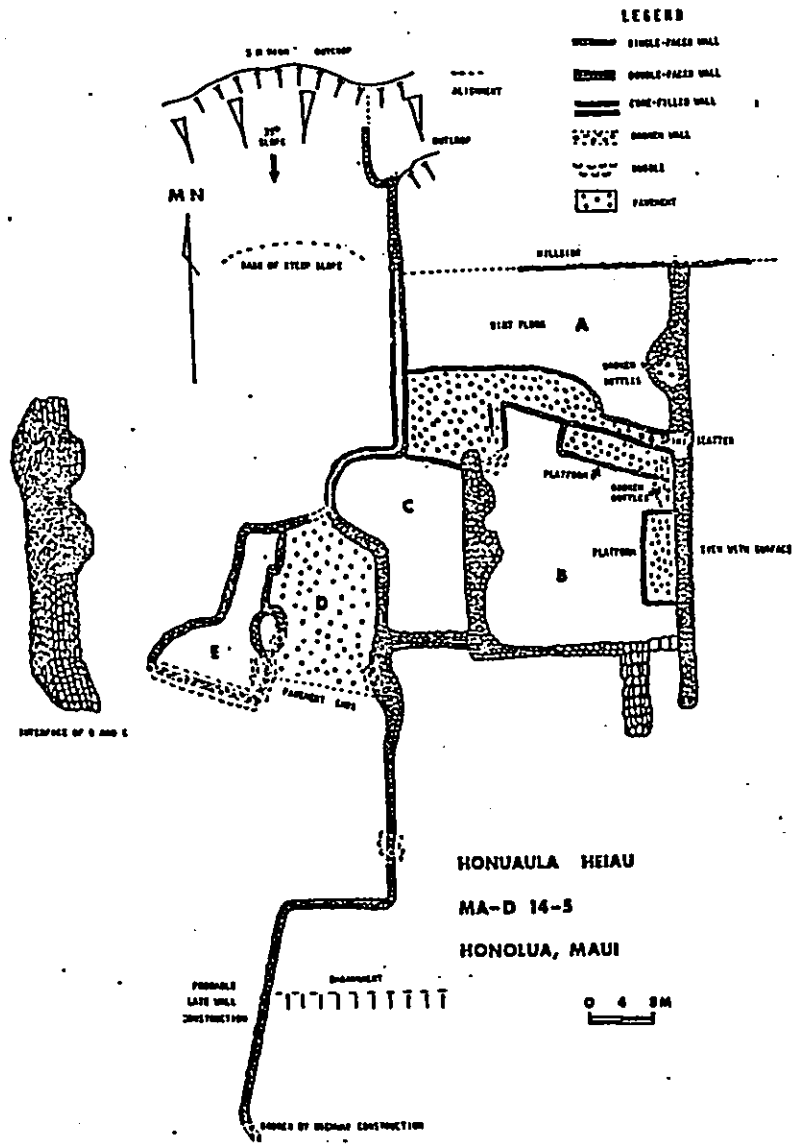


Fig. 2. PLAN OF HONUAULA HEIAU.

terrace, forming a shared boundary with areas B and C. The terrace face itself is from 0.7 (in area C) to 2 m (in area B) high. Discontinuous wall alignments visible on the platform indicate that the platform fill may antedate the facing walls and thus the heiau may have been built in stages, and that the platform is a relatively late addition to the structure.

Area B is a large enclosure (28 x 26 m) formed by core-filled walls. The E wall of the enclosure continues from the E wall of area A, with an inside wall height of 1.2 m (the ground surface is even with the wall on the outside). A paved, 0.8-m-high, 10-m-long platform extends 4 m inward from the center of this wall. A similar platform, c. 0.9 m high and 3 m wide, lies at the base of the terrace face in the NE corner of the enclosure. Both platforms are paved with water-worn cobbles and are littered with 'opihi (limpet), cowrie, drupe, and conus shells. Bottles lie over this entire area. The western wall of B is the eastern wall of area C; it is c. 2 m wide and from 0.5 to 1.7 m high. Two inward-facing bulges, similar to that found in area A, occur on this wall, protruding c. 2 m into the enclosure. As with the first projection, the function of these structures is unknown. The S wall of the enclosure, from 1.4 to 1.7 m wide and c. 0.9 m high, turns S to form one side of a 3-m-wide entrance passage to the enclosure; the other side of the passage is formed by the E wall of the heiau, extending S of area B. This entrance was presumably the "front" of the heiau. There is a sunken-boulder "step" in the passage that extends from the S wall alignment, another indication of a multiphase construction for the heiau.

Area C is a smaller (28 x 12 m) enclosure, formed by strongly built, core-filled walls. The N and E walls are shared with areas A and B respectively, as already described. The S wall is c. 2 m wide and 1 m high and abuts the E wall. The W wall is also c. 2 m wide, and it has a wide westerly semicircle in its NW corner. The NW and SE wall junctures appear to be abutments instead of bonded, continuous corners, suggesting a later addition to areas A and B.

Areas D and E cover an area c. 24 x 32 m, on the W side of the main structure. These areas are enclosures with their southerly portions missing or broken down. The walls are of stacked construction, with a few core-filled segments. The N wall, c. 1.5 m wide and 0.7 m high, has been broken down where it joins area C's curved perimeter, apparently to provide access to the paved eastern enclosure, Feature D. The wall dividing the two areas has a circular center section which may previously have surrounded a tree.

Site D14-5 is in an excellent state of preservation and offers very good opportunity for further research. The range and variety of surface remains indicate occupation from precontact into the late historic period.

SITE D14-6 - GRINDING STONES

This is a series of basalt boulders with one or more facets resulting from use as grinding surfaces (Fig. 3). These stones are located along a 60-m segment of the N shoreline of Honolua Bay, beginning c. 200 m NW of the present launching ramp. Many of the boulders are partially covered by rock fall from the cliffs above; many more may be assumed to be buried. Twelve boulders, with a total of 39 grinding surfaces, were recorded, as tabulated below.

Feature No.	No. of Surfaces	Condition	Notes
1	5	Fair	Partially covered by rockfall
2	2	Poor	Algae; mollusk-encrusted; position disrupted; canted
3	8	Fair	Partially covered by rockfall
4	1	Fair	Fragment of boulder; position disrupted
5	1	Poor	Partially weathered fragment of boulder; position disrupted
6	8	Excellent	Finest in group
7	1	Fair-Good	Position disrupted
8	4	Fair	Partially covered
9	3	Fair	Position disrupted
10	3	Fair	
11	2	Fair	Probably displaced; exposed at low tide
12	1	Good	Position disrupted

Only the better examples were recorded; an estimated 40 additional grinding surfaces may be found in this area. These grinding stones were probably used for the sharpening of basalt adzes and, as such, represent a unique record of this Hawaiian activity in Honolua.

SITE D14-7 - HISTORIC STRUCTURE

Located on the S side of Honolua Beach, this site represents a historic occupation of a kuleana (LCA 4243D, Ap. 2*). Only the concrete house foundations and three historic graves remain. The houses were reportedly destroyed by the 1946 tsunami and never rebuilt. The site map is presented in Fig. 4.

Fig. 3. GRINDING SURFACES ON BOULDER.

* LCA = Land Court Award; Ap. 2 - Apana No. 2.

The site comprises eight features. Feature 1 is a bi-faced, core-filled wall to the N of the house remains. Feature 2 is a set of four concrete steps 1.5 m high. Feature 3 is a rectangular outline of stream cobbles that may represent a grave; no headstone is visible. Feature 4 is a 0.4-m-high concrete foundation that is probably related to the steps makai of it. Lying alongside the foundation on the S is feature 5, a cement-capped grave; the headstone or marker has been removed from its concrete setting. Feature 6 appears to be a grave similar to feature 3; again, no headstone is visible. Two coral artifacts (an octopus-lure sinker and an abrader) were found on the surface 3 m SW of feature 6. Feature 7 is a 1.5-m-long, 0.2-m-wide, 0.6-m-high piece of concrete foundation lying in a stream wash. This may be the base of the footbridge across Honolua Stream that was in use during the valley's occupation by Honolua Ranch Co..

SITE D14-8 - POSSIBLE MIDDEN

This is a possible temporary fishermen's camp located on the N shoreline of Honolua Bay, c. 600 m NW of the present launching ramp. The site is delineated by a discontinuous, 15-m-long, 2- to 10-cm-thick band of dark sandy clay with charcoal flecks that is eroding out of a narrow red-clay shelf. A 1-m-long line of water-washed cobbles lies directly above the dark band on the N. Present excavation potential is good; however, the site lies in an exposed position and may soon erode away.

SITE D14-9 - HISTORIC STRUCTURES

Stretching from the beach up the N side of the valley for c. 250 m, this site represents the remains of the Honolua Ranch Complex. Bordered by Honolua Stream on the S and by the pali on the N, the site comprises 10 features, all but two of which are related to historic activity. The two exceptions are a wall (feature 3) and a grindstone (feature 5) located along the beach at the W end of the site. These two features are of possible prehistoric origin. A plan view of the site is given in Fig. 5.

Feature 1 is a stacked wall, c. 0.7 m wide and from 0.5 to 1 m high, running along the base of the talus fan at the mouth of the valley. This wall turns S and ends at the central dirt-road access to the beach. The last 10 m of this wall has been used as the W wall of a cattle pen. Feature 2 is a 230-m-long re-

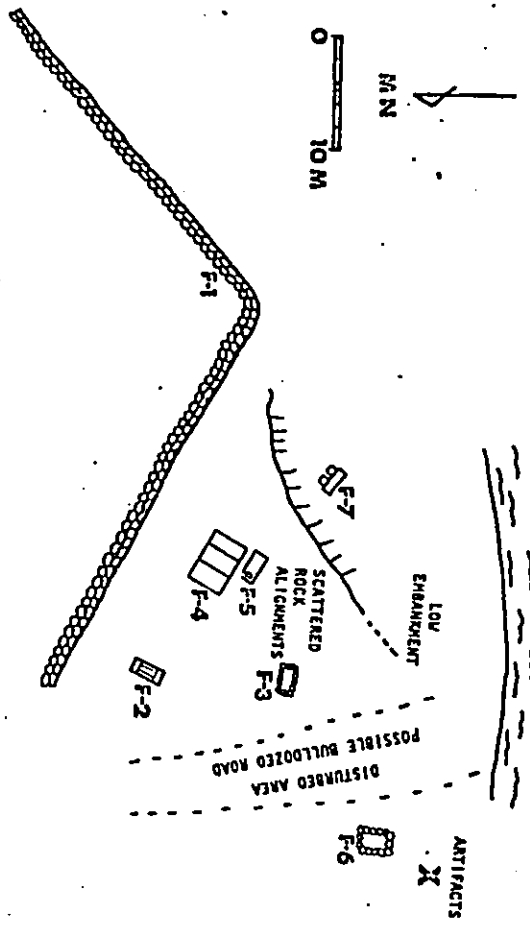


Fig. 4. HISTORIC HOUSE COMPLEX.

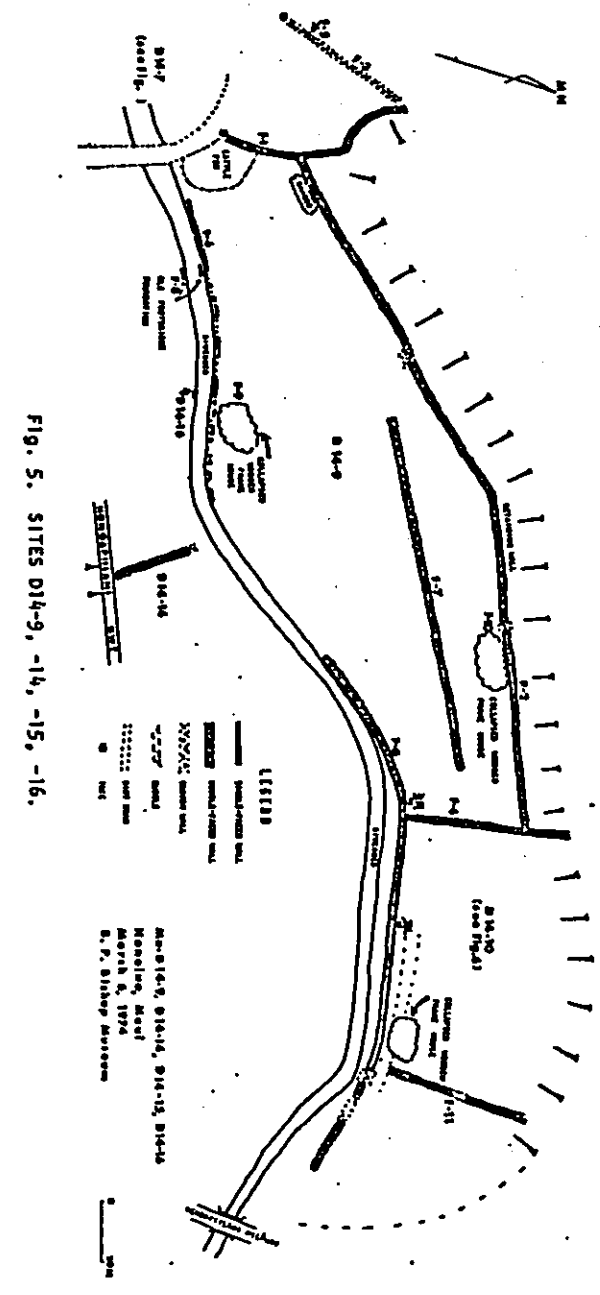


Fig. 5. SITES D14-9, -14, -15, -16.

taining wall, c. 1 m high, situated at the base of the pali. It is well-faced with angular basalt along most of its length. This type of construction is indicative of work by Japanese stone masons, according to informants Charles Keau and Dyke Furakawa.

Feature 3 is a free-standing retaining wall 1 m wide, 0.4 m high on the mauka and 0.8 m high on the makai side, running along N Honolua Beach. It is broken down in several places and may be prehistoric. This wall may have been part of Puhalakau Heiau (D14-2).

Feature 5 is a boulder 0.7 x 0.7 x 0.4 m, with two overlapping grinding surfaces, 57 x 44 x 8 cm deep. This boulder is located in wall feature 3 of D14-9, under the second coconut tree N of the launching ramp. Its presence further corroborates the probable antiquity of feature 3. It is recommended that this grinding stone be removed and placed in an appropriate location where it will be safe from vandalism and artifact hunters.

Feature 6 is a discontinuous rock wall running along the N side of Honolua Stream. Beginning as a single line of stones mauka of the dirt-road crossing, and broken down in several places, the wall appears to be a defense against flooding. The wall height varies considerably, but averages between 1.1 and 1.3 m in undamaged sections. Stacked with water-worn boulders from the stream bed, the wall is in only fair condition and appears never to have been as well faced as wall feature 2.

Feature 7 is a 120-m-long wall lying roughly parallel to and 20 m S of wall feature 2. In the makai half of the wall's length, the wall functions as a soil retainer, 1.1 m high, forming a terrace to the N; the remainder of the wall is bi-faced and free-standing, 1.1 m wide and 0.6 m high. Bits of coral, a blue-and-white rice bowl, and an OK Soda Works bottle were found on the wall.

Feature 8 is the cement-set stone foundation for a footbridge across Honolua Stream. Foundation remains are found on both sides of the stream bed, 40 m upstream from the present dirt-road crossing.

SITE D14-10 - HOUSE PLATFORM/BURIAL COMPLEX

Site 10 comprises 10 features located just makai of the E bend of Honopiilani Highway on the N side of the valley. The 50 x 80 m complex is framed by wall

features 4, 6, and 11 of site D14-9, and corresponds to the location of LCA 4065 Ap. 3. A plan view is given in Fig. 6.

Feature 1 is a possible historic grave with a rectangular stone alignment, one stone high. A grave marker is situated at the nauka end of the feature, but no card or marking is visible. Informant Dyke Furakawa says that this feature is Sam Manu'ua's mother's grave.

Feature 2 is a crude, square mound, 0.3 m high, that has collapsed. Pieces of coral and animal bone were found on the surface.

Feature 3 is a circular stone mound, 0.3 m high, with pieces of coral on top.

Feature 4 consists of a 14-m-long terraced earthen platform in poor condition. Numerous historic artifacts litter the surface. Both this and feature 8 m may have been house platforms. The following three structures are located on this platform:

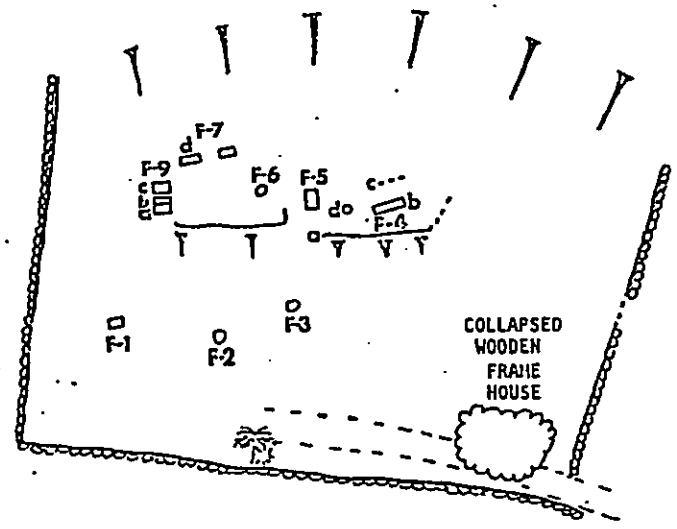
1. Structure a is a crude, rectangular stone mound, 1.1 m high, with a depression on the N side. It is in poor condition. Bits of coral and historic artifacts are scattered over the surface.
2. Structure b is an alignment of four small boulders, 0.3 m high, probably representing a facing that is partially covered by rockfall from road construction above the site.
3. Structure c is a possible hale lua depression 0.6 m deep; some stone lining appears to be a facing. The feature is in poor condition. It is covered by corrugated iron and timbers.

Feature 5 is a possible burial, consisting of a core-filled stone mound (1.5 m high on the N, 0.5 m high on the S), in fair condition. This unusual feature could be collapsed on the S side. Its function is uncertain.

Feature 6 is a possible shrine, comprising a large boulder (1.8 m high) with a small semicircular platform (2 m high) on the makai side. The overall effect is that of a low platform surrounding a large, isolated boulder. One piece of coral was found on the platform.

Feature 7 is a possible burial mound of crude construction; it is 0.6 m high and is in fair condition.

Feature 8 is a terrace facing 18 m long, 0.2 to 0.8 m high; its condition is generally poor.



Ma-D14-10
Honolua, Maui
March, 1974
B. P. Bishop Museum

Fig. 6. HOUSE PLATFORM/BURIAL COMPLEX.

Feature 9 consists of four small terraces that may represent burials; their dimensions are tabulated below.

Terrace	Long (m)	Wide (m)	High (m)
a	2.4	2.1	0.4
b	2.4	1.4	0.6*
c	2.5	2.1	0.5
d	2.5	1.0	0.4

*Depression in center

Terraces a, b, and c are in fair to good condition, while terrace d is in very poor condition. Talus fall from recent road construction covers the upper section of this area.

Site D14-10 exhibits both Hawaiian and post-contact features, as evidenced by the change from burial mounds to graves and from house platforms to wooden structures.

SITE D14-11 - AGRICULTURAL COMPLEX

This dry agricultural complex with an associated house platform lies on the N side of the valley, c. 140 m mauka of the Honoapiilani Bridge over Honolua Stream. A plan view is given in Fig. 7. The site contains 14 features, described below.

Features 1 and 2 are roughly parallel, gully-facing walls running c. 120 m mauka from Honolua Stream toward the N side of the valley. These walls average from 0.5 to 1 m in height and are in fair to good condition. They appear to provide protection from floods and possibly act as boundaries.

Feature 3 is a scattered shell midden in a washed-out area of feature 2. Most of the shell is either 'opihi (Patella sandwichensis) or pipipi (Nerita picea); *a few drupe (Drupa sp.) were also seen. An age estimate for this deposit* is difficult.

Feature 4 is a well-made, rock-faced earthen terrace, c. 20 m long and 1.5 m high, in excellent condition. The W side of the terrace face has been alluviated

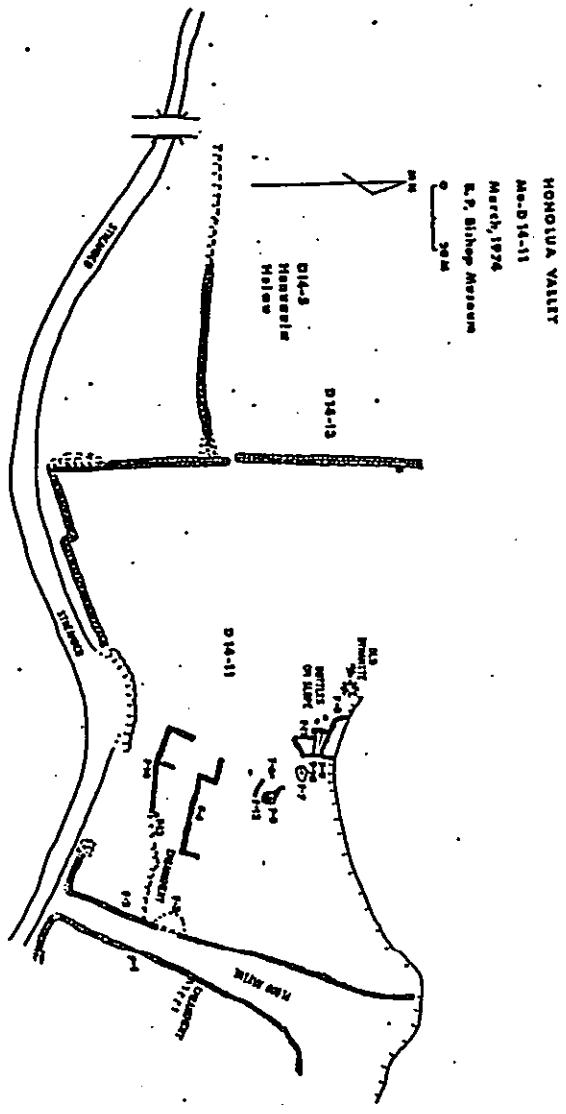


Fig. 7. AGRICULTURAL COMPLEX.

by a small wash running over the terrace at this point. This terrace and its companion, feature 14, appear to have been used for dry-land agriculture.

Feature 5 is a crude, broken-down rock mound 0.5 m high.

Feature 6 is a possible grinding surface--55 x 40 cm by 8 cm deep--on a boulder fragment.

Feature 7 consists of a large boulder (1 m high by 4 m wide) with a possible small grinding surface, and a large (40-cm diameter by 15 cm depth) depression on top. Both the grinding surface and depression are badly pitted from chemical weathering.

Features 8, 9, and 10 are a series of low (0.3-m high) cobble-paved terraces stepping down from the nose of a talus fall at the base of the pali. These terraces are probable house platforms.

Feature 11 is a dirt-filled terrace, outlined by a one-stone-high, cobble alignment. This terrace may have been a later addition to the living platforms above. A large bottle dump lies to the W of the terraces, indicating occupation into historic times.

NOTE: A CASE OF OLD DYNAMITE LIES BROKEN OPEN ON THE SURFACE JUST N OF TERRACE FEATURES 8, 9, 10, AND 11. THE STICKS OF DYNAMITE ARE FADED AND "SWEATING" AND COULD BE EXTREMELY DANGEROUS. (Reported at the time of the survey to Dyke Furakawa)

Feature 12 is a single row of small boulders (c. 0.3 m high) that may represent an old terrace face.

Feature 13 is a stone-lined pit of 1.2-m diameter and 0.3-m depth. No charcoal was located in or around this feature, so it has been tentatively identified as a food-storage pit.

Feature 14 is a stone-faced, earthen terrace fronting or natural embankment. The well-constructed terrace face stands 1.2 m high and is c. 25 m long. The face of the terrace has a 0.4-m step reminiscent of pond-field terrace construction; however, the lack of a known water source precludes this possibility. Feature 14 is therefore identified as a dry-agriculture terrace.

Features 15 and 16 are part of an extensive wall network running from the beach mauka along the N side of Honolua Valley (see Fig. 5). Feature 15 is a 100-m-long wall along Honolua Stream makai of the terraces at site 11. Its construction varies from core-filled to stacked, but it is uniformly solid in appearance, c. 1 m high and 0.7 m wide. The mauka portions of feature 15 have been washed out by river erosion, but it appears to have been continuous with the lower portion of feature 2 at one time. Feature 16 is the western boundary wall of site 11, running from its junction with feature 15 at the stream toward the pali about 100 m away. This feature also displays varied construction techniques, but it is more massively built, being c. 1.2 m high and 0.9 m wide. A 3-m-wide gate lies halfway along its c. 120-m length. This entire wall network (including wall features 1, 2, 4, 7, and 11 of site D14-9) is probably a late development in the valley's history, coming into being only after the introduction of the western concept of private property.

SITE D14-12 - WALLED ENCLOSURE

This large walled enclosure lies S of the dirt access road to Honolua Bay, c. 55 m mauka of the road's cobbled stream crossing. See Fig. 8 for a plan view. The enclosure was apparently used in the turn-of-the-century activity in the valley, as evidenced by the considerable historic debris littering the surface. Construction of the Honoapiilani Highway has obliterated the rear (S) portions of the enclosure, which probably extended to the valley wall. This site corresponds to LCA 3807 (unreadable), Ap. 2, and presumably represents a Hawaiian kuleana.

Feature 1 is a bi-faced, core-filled stone wall running along the S side of the dirt road to Honolua Beach. The wall is c. 0.8 m high and 1.0 m wide. Several bottle fragments lie S of the wall, which is in only fair condition.

Feature 2 is a multi-stacked wall forming the E boundary of the enclosure. Broken down in places, the wall averages 1 m in height and c. 0.7 m wide.

Feature 3 consists of a stone-filled platform 2 m wide and 0.8 m high, contiguous with the inner face of feature 2. Pieces of coral lie among the stone fill, indicating that this platform may have had some special significance for the enclosure's occupants.

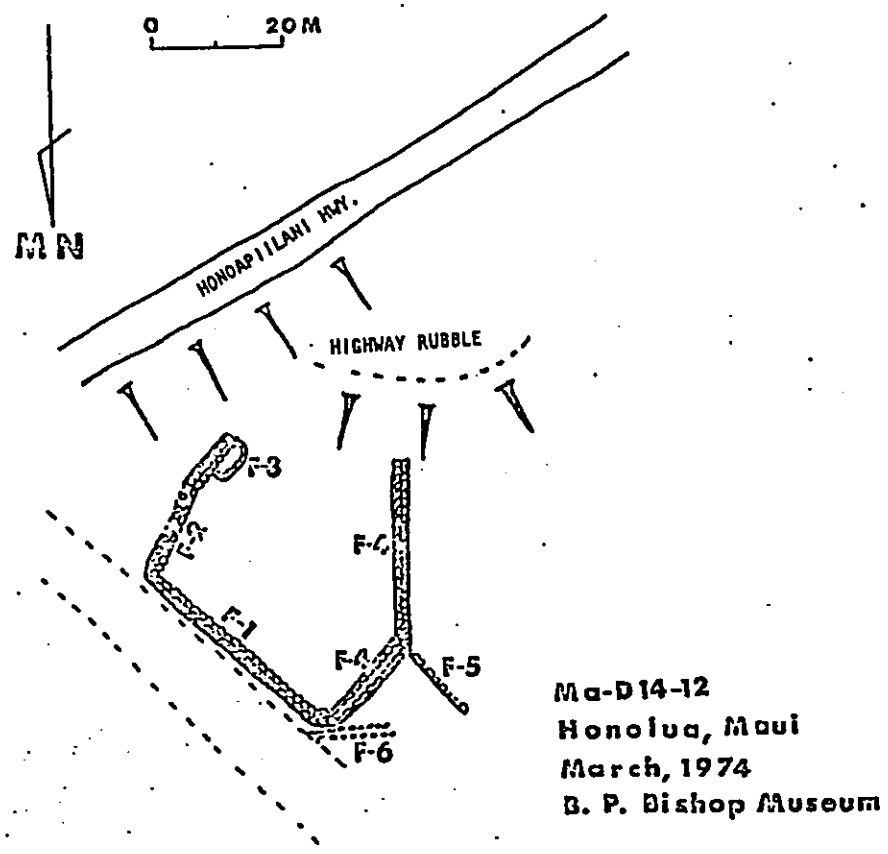


Fig. 8. WALLED ENCLOSURE.

Feature 4 is a bi-faced, core-filled wall (c. 0.8 to 1.0 m high on the outside and 1 m wide) forming the N boundary of the enclosure. The ground surface is significantly higher on the inside of the wall, ranging from 0.1 to 0.4 m below the top of the wall. This differential indicates that alluviation has taken place within the enclosure and may account for the paucity of surface remains visible.

Feature 5 is a low, broken-down boulder spur running NW from the center of feature 4. Approximately 0.4 m high and 2 m wide, the spur has a variety of historic material lying on top of it.

Feature 6 is a 1-m-wide, 0.4-m-deep, stone-lined ditch 6 m long, running from the dirt road past feature 4. The ditch continues unlined for an additional 5 m. This ditch is probably a historic feature constructed to provide for water runoff from the road.

SITE D14-13 - HISTORIC HOUSE AND BURIALS

Comprising 10 features, including historic house ruins, terraces, and burial mounds, site 13 covers c. 50 x 70 m. Because of its proximity, it appears to have ties with Honuaula Heiau (D14-5). This area has been designated a site because of the cluster of possible prehistoric burial mounds in the NE corner (Fig. 9); the burial mounds may, in fact, have some direct affiliation with the heiau.

Feature 1 is the ruins of a collapsed tin-roofed wooden house 8 x 3 m. Historic artifacts abound on the surface about the house.

Feature 2 is a one-stone-high alignment of cobbles.

Feature 3 is a one-stone-high alignment of cobbles that has been alluviated from the N side, creating a low (c. 1-m-high) terrace.

Feature 4 is a line of low (c. 0.2-m-high) terracing running up slope toward the pali. Upper portions of this feature are much less distinct, possibly indicating that this section had been "robbed" of stones for the construction of other features.

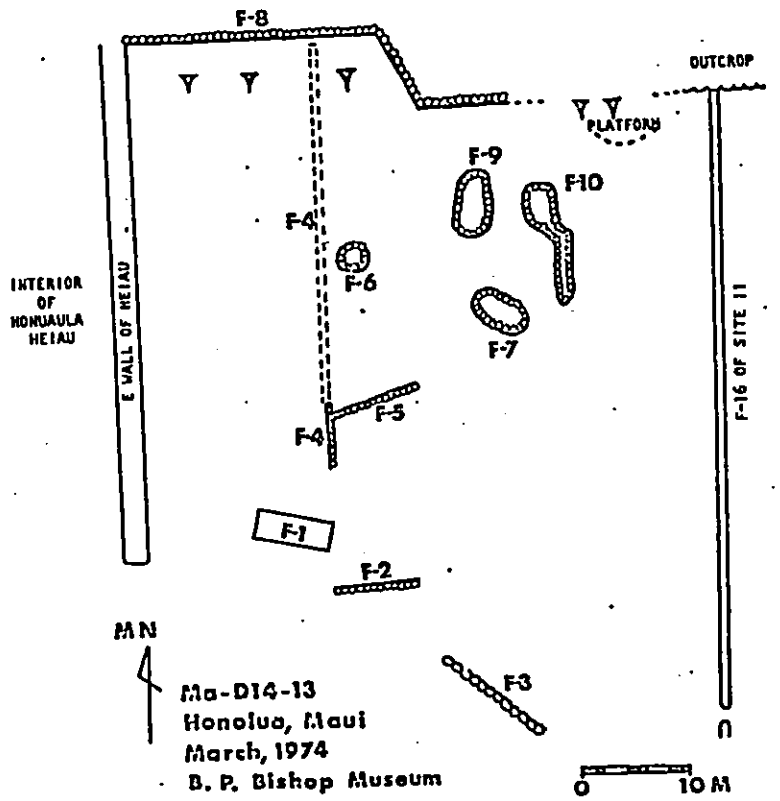


Fig. 9. HISTORIC HOUSE AND BURIALS.

Feature 5 is a short, low, terrace spur jutting off feature 4 toward the E. This spur, and the preceeding three features, are probably the remnants of a dry-agriculture field.

Feature 6 is comprised of a possible burial mound, 0.4 m high. The top of this circular mound is relatively flat and is roughly paved.

Feature 7 is another possible burial mound, 0.6 m high and faced on the sides. The top is flat and roughly paved.

Feature 8 is a stone-faced terrace (0.6 to 0.7 m high) running along the base of the pali. The W extent of the terrace joins the NE corner of Honuaula Heiau. and may be more accurately identified as an extension of the heiau.

Feature 9 is a possible burial mound, 0.5 m high. The facing is broken down in some places, allowing rough interior paving to spill out.

Feature 10 is an irregular stone mound, 0.3 to 0.5 m high, with a broken-down, core-filled wall segment on its S side. The mound itself is well faced and has a rough stone paving.

SITE D14-14 - WALL SEGMENT

This isolated wall segment is located in the S central portion of the valley, extending 16 m from the bank of Honolua Stream to the edge of the main highway (see Fig. 5). The wall is heavily constructed of c. 0.5-m-diameter boulders and is 1 to 2 m wide and 0.8 m high. Feature 14 does not correspond to any known kuleana tracts and may be of historic construction.

SITE D14-15 - SKELETAL REMAINS

Immediately across Honoapiilani Highway from feature 14 is a human skull exposed in the mauka face of the road cut (see Fig. 5). The right parietal and frontal bones of the skull are visible in the cut. The skull is partially crushed, making sex determination difficult; however, it appears to be that of a mature male. The bones lie c. 0.3 m below the ground surface in a stratum of red-brown clay overlying a much thicker deposit of coarse brown clay. The upper stratum appears to be alluvial deposition from the ridge above, and the skull may have been washed down from the old kuleana (LCA 3803:1) there.

SITE D14-16 - MIDDEN

This is a scattered shell midden, 0.03 m thick and 0.3 m across. This apparent erosional fragment occurs in the S bank of Honolua Stream c. 75 m above the present dirt-road crossing. Fragments of 'opihi (limpet) shell and flecks of charcoal were observed. The center for the midden is apparently somewhere upslope from this area. The location for this site is given in Fig. 5.

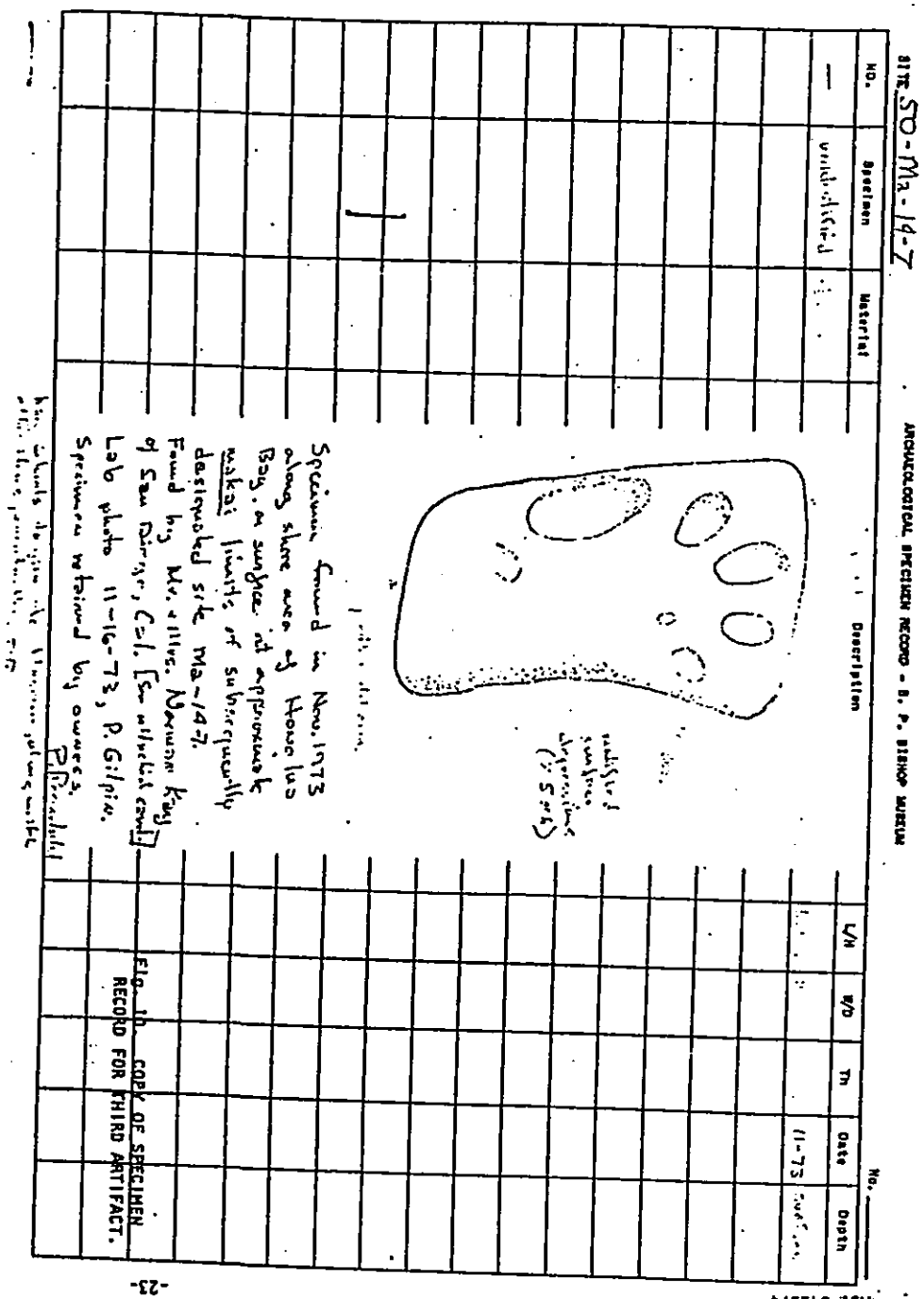
SUMMARY AND CONCLUSIONS

As shown on the survey map (Fig. 1), a wide range of site types exists in Honolua Valley, from a possible coastal fishermen's camp to inland dry-agriculture terraces and fields with an associated heiau. Many sites in the lower valley have been modified by historic occupation, making them difficult to interpret. However, those sites that remain indicate that the chief economic pursuits of the Hawaiians there were the exploitation of inshore marine resources and the cultivation of dry-land crops.

Sites indicating marine exploitation are few--the possible fishermen's camp (D14-8), the octopus-lure sinker found at site D14-7, and shell middens at sites D14-11 and 16. Nevertheless, when viewed with respect to the rich marine resources available in Honolua Bay, those remains indicate the exploitation of a good variety of reef and shell fish. It is also possible that the grinding surfaces (D14-6) were used in an auxilliary manner as salt pans.

The extensive network of dry-agriculture terraces along the lower valley walls, along with the large terraces in sites D14-11 and -13 indicate that the primary crops in the valley were the sweet potato and dry-land taro. The close association of Honuaula Heiau with these dry-agriculture features suggests that the heiau may have been related to agricultural pursuits.

A third artifact of site D14-7 was found last year by visitors and recently brought to our attention. Apparently found near the two previously described artifacts, this specimen is c. 16 x 10 x 5 cm and composed of basalt. Both ends and the surface depressions display working or cultural modification. Its function is unknown. A copy of the specimen record is presented as Fig. 10.



RECOMMENDATIONS

Specific recommendations for individual archaeological sites in the lower Honolua Valley are presented in the following table.

BM Site No.	Site Name	Recommendation
- 2	Puhalakau Heiau	If development occurs in this area, conduct test excavation to determine if definite subsurface materials are present.
- 5	Honuaula Heiau	Preserve; of high interest to layman and professional alike; could be very successfully incorporated in park/historic-trail plans.
- 6	Boulders Having Grinding Surfaces	Preserve; as with -5 above, this area could be effectively transformed into a place of historic interest.
- 7	Historic Houses /Grave Complex	State law requires that all burials exhumed by construction be properly re-interred, and relatives of the deceased buried on site must be consulted prior to any development.
- 8	Stratified Cultural Remains	Excavate soon to prevent loss resulting from weathering.
- 9	Honolua Ranch Complex	Incorporate portions of complex into development plans if possible, as a historic phase of Honolua's past; preserve grinding stone (feature 5) as soon as possible to secure this artifact from damage or loss.
-10	House Platform /Burial Mounds	Preserve as part of park development showing transition in life styles; as with site -7, relatives of the deceased must be notified prio to development.
-11	Agricultural Terraces/House Platforms	Although not in proposed park zone, would make ideal extension of trail system past Honuaula Heiau. Exposed dynamite should be removed immediately.
-12	Walled Enclosure	Incorporate into park development plans if feasible.
-13	Historic House /Burial Mounds	Preserve burials; house is of no significance.
-14	Wall	Not significant
-15	Skull in Roadcut	Probably not threatened by development; if to be destroyed, however, skull should be excavated and reinterred elsewhere.
-16	Exposed Midden	Probably not threatened by development; if to be destroyed, however, excavate this midden.

Appendix A. POSSIBLE INFORMANTS

Local Maui residents who formerly lived in Honolua:

Hideo Kurose	Honolua	Phone 669-6045
Children of D.T. Fleming		
Dr. James F. Fleming	Naikapu	244-7055
Euphence Vockrodt (Mrs. Jack E.)	Upper Kimo Dr.	878-1410
Bruce L. Fleming	Lower Kimo Dr.	878-1878
David A. Fleming	Napili	669-6183

Current Hawaiian residents of Honokakua (town currently called Honolua)

John L. Kaaihue 1898 - left Kipahulu (where he was born); one of oldest Hawaiians in the neighborhood	52 Honolua	669-6164
Rev. John M. Kukahiko		669-6103
Harry Pali		669-6085

Hawaiians who owned apana or are related to landowners

Haili Keahi, deceased

Mrs. Helen M. Kaaikamanu) Billianor (niece) 908 Kopili aged 61; remembers ulu, but no taro makai of highway; owns 1/40 share of TMK 4-2-01:8		661-0315 661-0315
Mrs. Henry Shim 1647 Ainakea Rd., Lahaina		661-3136

Sam Manu'ua, deceased (Mother's grave makai the road)
(inquire of Julaine Chun Sanchez--works at Maui Land & Pineapple, Honolua Division Shop)

Mrs. Sam Kalani Puuohala

APPENDIX D-2

ARCHAEOLOGICAL INVENTORY SURVEY REPORT
FOR HONOLUA AHUPUA'A (TMK 4-2-04:32)
XAMANEK RESEARCHES (FREDERICKSEN & FREDERSICKSEN) 2001

8- 8-021 8:26AMKAPALUA LAND CO.

FROM : XAMANEK RESEARCHES PHONE NO. : 8085726988

1808 669 8454 # 2/ 2

Aug. 03 2002 02:17PM P02

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

GILBERT S. COLOMA-AGARAN, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCES MANAGEMENT

DEPUTIES
ERIC T. HIRANO
LINNEL NISHIOKA

HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING, ROOM 555
601 KAMOKILA BOULEVARD
KAPOLEI, HAWAII 96707

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND
STATE PARKS

July 25, 2002

Mr. Erik Fredericksen
Xamanek Researches
P.O. Box 880131
Pukalani, Hawai'i 96788

LOG NO: 30373
DOC NO: 0207MK09

Dear Mr. Fredericksen,

SUBJECT: Historic Preservation Review - 6E-42 - Archaeological Inventory Survey 23 Acre Coastal Property for Kapalua Land Co.
Honolua Ahupua'a, Lahaina District, Maui
TMK (2) 4-2-4:32

Thank you for the opportunity to review the revisions for this report which our staff received on June 27, 2002 (Fredericksen and Fredericksen 2002, *An Archaeological Inventory Survey Of a c.23 Acre Coastal Property in Honolua ahupua'a, Lahaina District, Maui island, TMK 4-2-04:32*...Xamanek ms.).

The revised pages included minor changes in text, the addition of a map indicating the areas in which previous archaeological work have been conducted, and additions to the references.

We previously agreed that this report was acceptable, with the condition that the minor changes in the Attachment be submitted to our Maui and O'ahu offices. All of our concerns have now been addressed.

Aloha,

Don Hibbard, Administrator
State Historic Preservation Division

MK:jen

c: John Min, Director, Department of Planning, County of Maui, FAX 270-7634
Bert Ratte, County of Maui, Land Use and Codes, FAX 270-7972
Glen Uemu, County of Maui, Land Use and Codes, FAX 270-7972

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

GILBERT S. COLOMA-AGARAN, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
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AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND
STATE PARKS

June 12, 2002

Mr. Erik Fredericksen
Xamanek Researches
P.O. Box 880131
Pukalani, Hawai'i 96788

LOG NO: 30087
DOC NO: 0206MK05

Dear Mr. Fredericksen,

SUBJECT: Historic Preservation Review - 6E-42 - Archaeological Inventory Survey 23 Acre Coastal Property for Kapalua Land Co.
Honolua Ahupua'a, Lahaina District, Maui
TMK (2) 4-1-1: por 9

Thank you for the opportunity to review this report which our staff received on May 15, 2002 (Fredericksen and Fredericksen 2002, *An Archaeological Inventory Survey Of a c.23 Acre Coastal Property in Honolua ahupua'a, Lahaina District, Maui island, TMK 4-2-04:32*...Xamanek ms.).

The background section acceptably establishes the ahupua'a settlement pattern and predicts the likely site pattern in the project area. The historical information provided summarizes the history of the post-contact period land uses.

The survey has adequately covered the project area with 100% coverage via transects spaced @ 5 m apart. The transects were oriented roughly parallel to Honoapi'ilani Highway. Eight historic sites were identified. Testing was conducted at four of the eight sites identified in the project. Of the eight historic properties identified during the project, two were previously identified. Site descriptions and interpretations are acceptable. Five sites are pre-European to early 1800s in age (5093 a possible shrine and possible fish spotting station; 5094, remnants of a habitation deposit; 5007, a temporary habitation; 5097, a temporary habitation site consisting of two overhang rock shelters; 5098, consists of a rock overhang with a sub-adult burial). The remaining three sites are late 1800s-1900s in age (5095, a remnant of the old government road; 5096, concrete foundation of the 1915-1920 slaughterhouse; 5006, a plantation refuse dump that yielded evidence of site footing in areas of older artifacts).

We agree with the significance assessments – the burial and fishing shrine/spotting station (5098, 5093) are significant for their information content (criterion D of the Hawaii Register of Historic Places) and for their cultural significance (criterion E), and 4 sites are significant solely for their information content. We agree that 5006 (the refuse

dump) and 5096 (slaughterhouse foundation) are "no longer significant" because they were significant solely for their information content and an adequate and reasonable amount of that information was recovered/recorded during the survey. Thus, 6 significant historic sites are present in the project area.

We agree with the proposed mitigation commitment – preservation of all 6 significant sites. The Maui Island Burial Council will have to vote on the proposal to preserve the burial site (5098).

The next step in the historic preservation review process would be the submittal of a preservation plan for the 5 non-burial sites. The burial site is treated separately with a burial treatment plan and the Maui Island Burial Council's review of that plan.

We find this report to be acceptable, with the condition that the minor changes in the Attachment be submitted to our Maui and O'ahu offices in perforated replacement pages. As always, if you disagree with our comments or have questions, please contact Dr. Melissa Kirkendall (Maui/Lana'i SHPD 243-5169) as soon as possible to resolve these concerns.

Aloha,

Don Hibbard, Administrator
State Historic Preservation Division

MK:jen

Attachment

c: John Min, Director, Department of Planning, County of Maui, FAX 270-7634
Bert Ratte, County of Maui, Land Use and Codes, FAX 270-7972
Glen Ueno, County of Maui, Land Use and Codes, FAX 270-7972
DLNR Burials Program

Attachment 1

Needed Revisions to

An Archaeological Inventory Survey Of a c.23 Acre Coastal Property in Honolua ahupua'a, Lahaina District, Maui Island, TMK 4-2-04:32

General Comments

1. Page 9, paragraphs 2 and 3. These two paragraphs have been duplicated

2. Page 11, paragraph 4. The report on the Honokahua burials has been finished, reviewed, and accepted with minor changes.

3. References. We note that six references are missing from the bibliography: Foote et al. 1972, Walker 1931, Ashdown 1972, Moore 1974, Kirch 1973, and Nohara, pers. comm 2001.

4. Maps. Please include a map indicating the locations of previous archaeology conducted in the ahupua'a/general area.

page 8 included in original draft

An Archaeological Inventory Survey
Of a c. 23-Acre Coastal Property
in Honolua *Ahupua`a*,
Lahaina District, Maui Island
(TMK 4-2-04: 32)

Prepared for:
Kapalua Land Company, Ltd.
Kapalua, Maui

Prepared by:

Erik M. Fredericksen
Demaris L. Fredericksen

Xamanek Researches
Pukalani, Hawaii

May 1, 2002
(Revised June 25, 2002)

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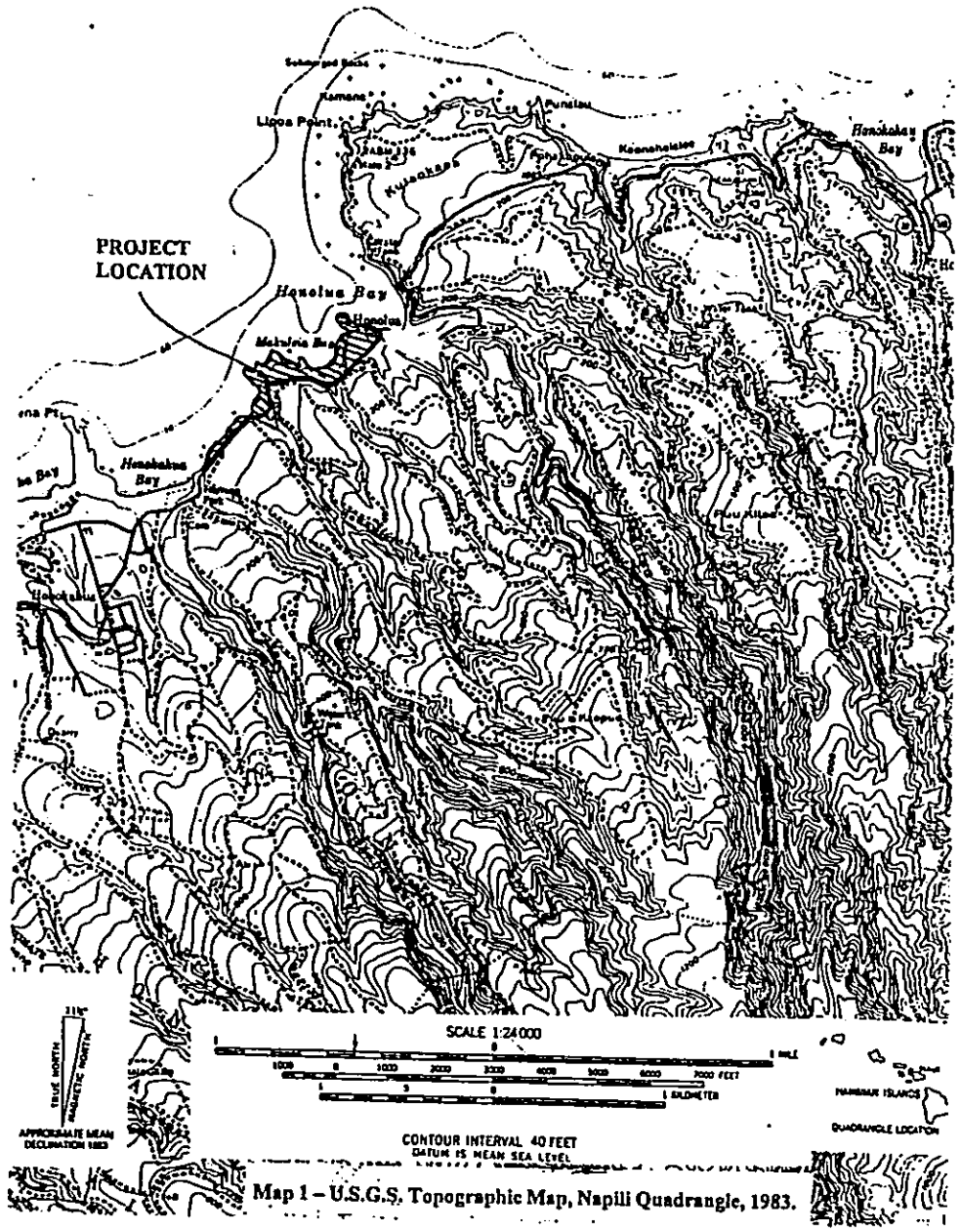
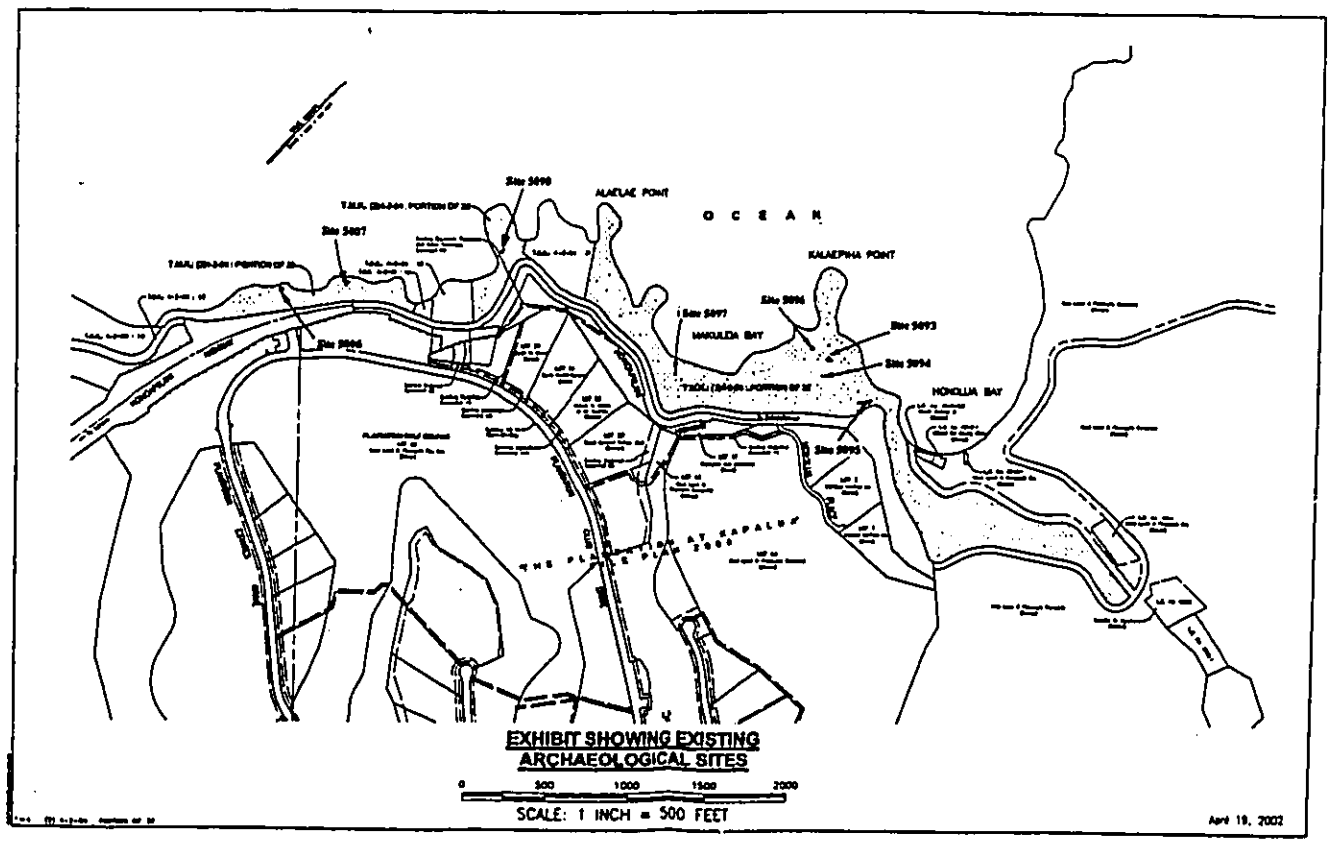
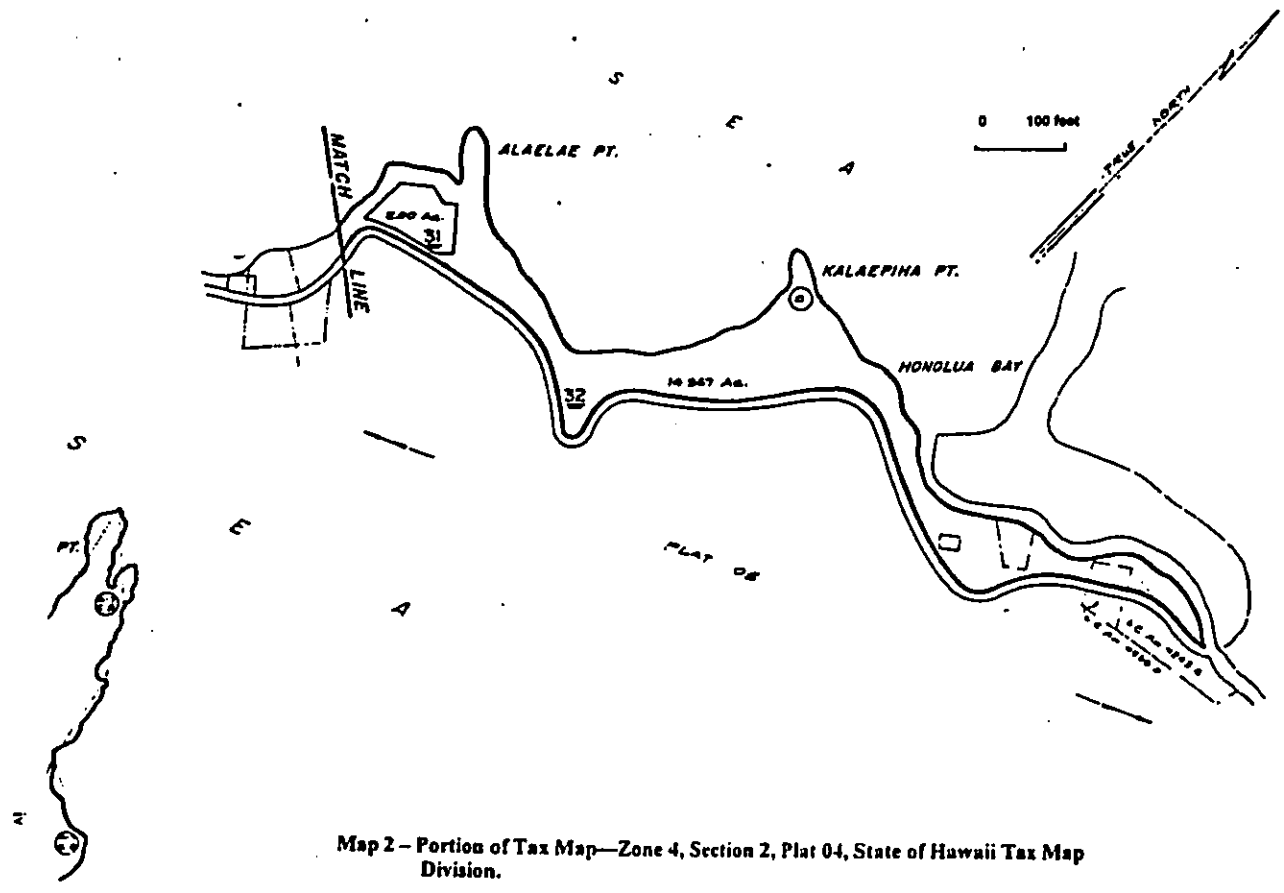


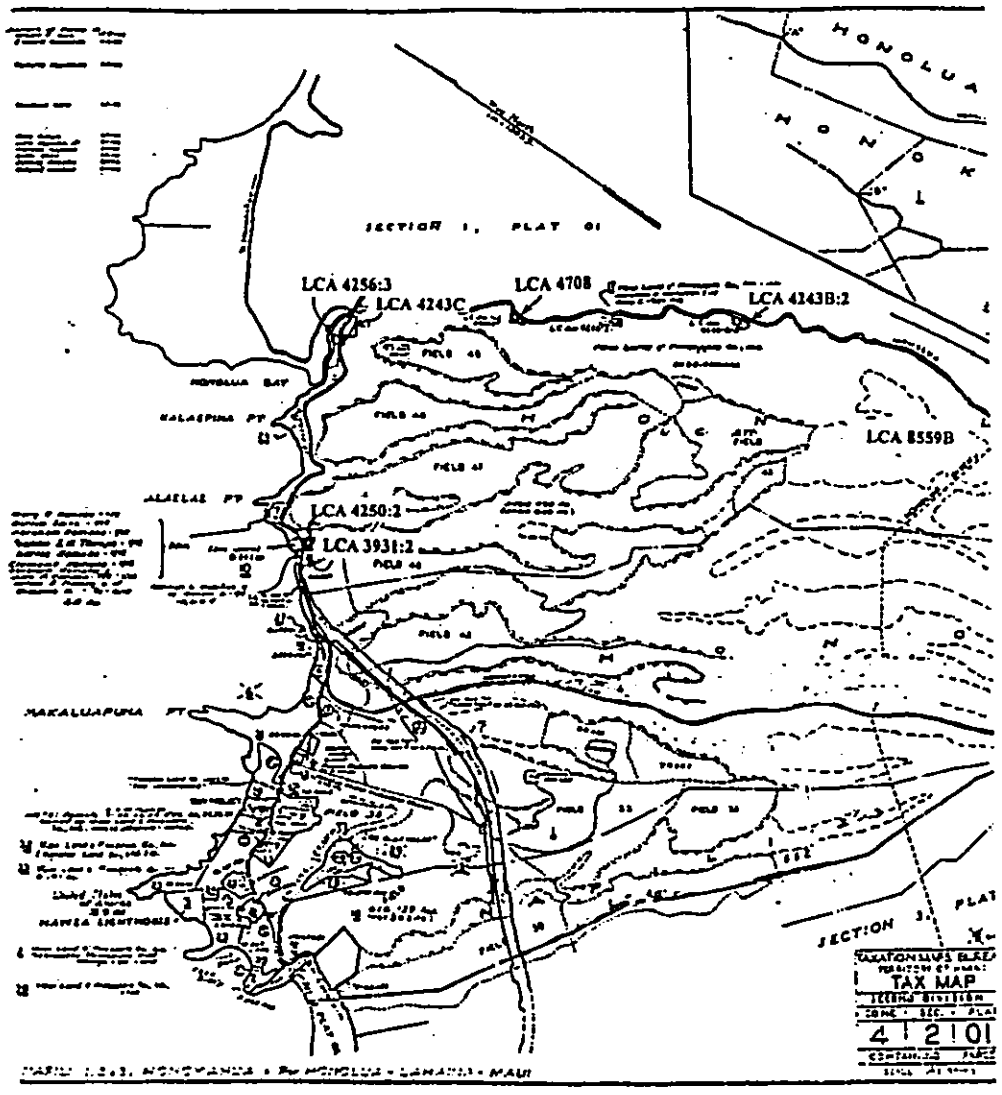
Map 1 – U.S.G.S. Topographic Map, Napili Quadrangle, 1983.



Map 3 – Location of sites recorded during 2001 inventory survey.



Map 2 – Portion of Tax Map—Zone 4, Section 2, Plat 04, State of Hawaii Tax Map Division.



Map 4 – Tax Map 4-2-01, showing some of the LCAs in Honolua *Ahupua'a*.

INTRODUCTION

Xamanek Researches was contacted by Kapalua Land Company, Ltd. in the late fall of 2000 about conducting cultural impact assessment studies for two project areas—a coastal parcel of approximately 23 acres in Honolua and a c. 475 acre parcel in Honokahua and Napili. It was subsequently determined that both project areas required archaeological inventory surveys as well. We were asked to submit proposals for the required work. Our proposals were accepted, and we were subsequently retained to carry out the necessary work on the *makai* 23-acre parcel (TMK 4-2-04: 32).

The present project area lies *makai* (west) of Honoapi'ilani Highway, in Honolua *ahupua'a*, Lahaina District. This elongated parcel is an estimated 1.3 km. in length and varies from c. 25 meters to up to 250 meters in width. Fieldwork for our inventory survey was conducted during the spring of 2001.

This study was carried out in accordance with the current standards governing inventory level surveys as required by the Department of Land and Natural Resources, State Historic Preservation Division.

Study Parcel

This narrow parcel undulates along the shoreline of Mokuleia and Honolua Bays. At two places, near Alaelae Point and Kalaepiha Point, Honoapi'ilani Highway moves further inland. The elevation of the study area extends from sea level to as much as c. 80 feet AMSL.

The soils in the area consist of Molokai silty clay loam of the Waiakoa-Keahua-Molokai association, which occur over *pahoehoe* rock. These well-drained soils are formed from material weathered from basic igneous rock. They range from nearly level to relatively steep, and extend up to 1000 feet in elevation (Foote et al., 1972). Rainfall amounts to about 20-30 inches per year, and the vegetation in the project area can be quite dense. It consists of introduced species, including *koa haole* (Leucaena glauca), ironwood (Casuarina equisetifolia), Christmasberry (Schinus terebinthifolius), red hibiscus (Hibiscus rosa-sinensis), *hau* (Hibiscus tiliaceus), night-blooming cereus (Hylocereus undatus), and various shrubs, grasses and annual weeds

BACKGROUND HISTORICAL INFORMATION

This portion of West Maui was not as heavily populated in precontact times, as was the windward side of the island. The project area extends along the coastline *makai* of Honoapi'ilani Highway from Kalaepiha Point to near the entrance of Plantation Estates. The northern boundary of the project area lies on Kalaepiha Point and overlooks Honolua Bay.

Precontact and early post-contact times

The study region is situated to the north of Lahaina. There are 5 large valleys in this western portion of the West Maui Mountains. They are Honokawai, Kahana, Honokahua, Honolua, and Honokahau. Handy and Handy (1972, pg. 494) note:

"The first four all had extensive lo'i lands in their valley bottoms, where terraces rose tier on tier in symmetrical stone-faced lo'i. On this part of the coast there is no sloping kula land seaward of the valleys as there is back of Lahaina and southeastward. Honokohau in particular, which is watered by a large rivulet flowing from far back in the mountains, had the most extensive system of lo'i along this coast."

The 5 valley agricultural systems no doubt supplied much of the food required by a fair-sized population, which lived in clusters at the mouths of them. These were linked together by the "*ala loa*" (long path)—a trail system which was said to have been built by Kiha-a-Pi'ilani, son of Pi'ilani, in the early 1500s. Walker (1931, p. 301) notes:

"The north end of West Maui also is traversed by a paved trail. Sections of it can bee seen from Honolua to Honokohau and Kahakuloa. It is paved with beach rocks and has a width of four to six feet. Disregarding elevations and depressions it takes the shortest route between two points that is possible for foot travel. This trail is also spoken of as the Kihapiilani Trail."

According to Martha R. Fleming (1933, p. 3-9), as reported in Handy and Handy (1972), much of the *Alaloa* had been covered or obliterated during the course of road building in the late 19th and early 20th century. The route of the present Honoapi'ilani Highway probably covers this ancient feature in the coastal region of Honolua *ahupua'a*.

The traditional district or *moku* of Ka'anapali was the location of one of the encounters between chiefs of Maui and the Island of Hawaii, as they struggled for ascendancy. Samuel Kamakau (1992, p. 74) tells about the conflict that took place in

1738, after an entire year of preparation by the Big Island chief Alapa'i. He states:

"What was this war like? It employed the unusual method in warfare of drying up the streams of Kaua'ula, Kanaha, and Kahoma (which is the stream near Lahainaluna). The wet taro patches and the brooks were dried up so that there was no food for the forces of Ka-uhi or for the country people. Alapa'i's men kept close watch over the brooks of Olowalu, Ukumehame, Wailuku and Honokawai. When Pele-io-holani[1] heard that Alapa'i was at Lahaina he gathered all his forces at Honokahua and at Honolua. At Honokawai an engagement took place between the two armies and the forces of Alapa'i were slaughtered and fled to Keawawa. There Alapa'i heard that Pele-io-holani had landed at Honokahua and had an army stationed at Keawawa, and he disposed his forces, some on sea and some on land. Although Pele-io-holani had but 640 men against Alapa'i's 8,440 from the six districts of Hawaii, there were among them some famous warriors. ...Pele-oi-holani intended to unite his forces with those of Ka-uhi, but Alapa'i's men held Lahaina from Ukumehame to Mala on the north...Pele-oi-holani was surrounded on all sides, mauka and makai, by the forces of Alapa'i.... The two ruling chiefs met there again, face to face, to end the war and become friends again, so great had been the slaughter on both sides...."

The post-contact land management in this region is discussed by Silva (1986) and is summarized here. In the late 18th or early 19th century, Kamehameha I gave the entire *ahupua'a* of Honokahua to Isaac Davis, in return for his help during Kamehameha's wars of conquest. Davis, along with another Englishman named John Young, had been "detained" by Kamehameha. Davis' ship, the Fair American, had been captured and all aboard except him had been killed. Young was kept ashore until his ship, the Eleanora departed without him. Both men were treated so well by Kamehameha that they were quite willing to remain with him, acting as his advisors while he consolidated his power within the islands. Kamehameha gave both men large tracts of land in northwest Maui.

Upon the sudden death of Isaac Davis in 1810, his land holdings in Honokahua were managed by John Young. When Young died in 1835, the land was divided among both Young's and Davis' heirs. During the Mahele in 1848, a formal 2,650-acre grant—the entire ahupua'a of Honokahua—was awarded formally to Davis' daughter, Kale (Sally) Davis (LCA 8522B, RP 2236), who was the wife of Alexander Adams, another favorite of Kamehameha I.

A census taken in 1831 estimated that the entire population of Ka'anapali totaled only 8.5% of the island total of 35,062—about 2,980 (Schmitt, 1973, p. 18). By 1836, it had dropped to about 5.5% of the island total—1,341 (Ibid., p. 38).

Land Commission Awards

There are 19 Land Commission Awards recorded in Honolua *ahupua'a* in Ka'anapali District that are included on the Waihona 'Aina database. In the Index of Awards, there are 37 awards listed in Honolua *ahupua'a*, but several listings appear to

[1] Pele-io-holani was chief of Oahu, and an ally of Ka-uhi, a son of Kekaulike. Another name for Ka-uhi is Ka'ihu-pumai-ka-hoaka—Ka-uhi-covered-by-the-shadow-of-the-crescent-moon (Kamakau, p. 73).

represent separate *apana* under a single Royal Patent award. Most are scattered in the valley, and were awarded for taro production, sweet potato production, *kula* and/or house lots. By far the largest was to William C. Lunalilo (Kamehameha IV), which consisted of 3860 acres—nearly the entire *ahupua`a* (LCA 8559B). A few native *kuleana* parcels were awarded. Four are shown on tax map 4-2-01, located just *mauka* (southeast) of the highway. Two (LCA 4243C, and LCA 4256:3) are situated at the mouth of Honolua Stream, and two (LCA 3931:2 and LCA 4250:2) near the entrance to the Plantation Estates. None are on the area presented in this report. Other LCAs (4243B and 4708) on the chart below are spaced along Honolua Stream (Refer to Map 4), and included for additional information on land use in Honolua *ahupua`a*.

Table 1

Land Commission Awards in Project Vicinity

LCA #	Location--*ili*	Awardee	R.P. #	Area	Usage
3803:1	Moomuku	Lalahua	3349	-	Houselot and *kula*
3931:2	Kahauiki	Naiwimawaho	6962	3.42	*Kula uala*, pasture
4243C	-	Kauwewahine	4765	3.06	Potato *mo`o*
4256[2]	Papahao	Kenao	4189	2.0 acs.	-
	Kauhihonohono	Kenao	4189	1.01 ac.	-
	Kauhuhonohono	Kenao	4189	1.43 ac.	-
4243D:2	Kaluaokalaiwahine	Makaole	4188	4.33 ac.	*Kula uala*
4250:2	Kaluanui	Kaui	4776	12.29 ac.	*Kula uala*, pasture
4243B:2	Kukuikanu	Kukalehua	4781	1.83ac.	Pasture
4708:2	Kaea	Mahuka	---	11.408 ac.	*Kalo* land *makai*

LCA 4243C to Kauwewahine.
N.R. 155v6[3]
Greetings to the Land Commissioners: I hereby petition you for my six lo`i, two potato kihapai. The names of the potato mo`s are Naioio and Pahahao.
Four potato mo`o are at Kaohe, and `Ili of Honolua, also the house lot.
The land of my wahine, Named Kaluaokaliiwahine, has 26 lo`i . The mo`o waihae* 17 + 10+27, and also a small potato kihapai are at Pakihi.
HELUPOINA ma
F.T. 371v7[4]
This claim is included under the No. 4243 but no number is given to it. Makaole, sworn, The claimant's land is one piece in Pahiki, Honolua. The claimant received it from Keliipoina in 1837 or before. His title was never disputed. It is a kula land.

[2] These were not found in the Waihona `Aina database. Information is taken from the Index of Awards.
[3] N.R. refers to the Native Register testimony.
[4] F.T. refers to Foreign Testimony.

N.T. 229v5[5]
This claim is with no. 4243 Keliipoina, work done on June 21, 1849. Makaole, sworn, He has seem Kauwewahine's section at the ili of Pahiki in Honolua. Land from Keliipoina before 1827, no objection to this potato pasture.

LCA 3931 (3 *apana*) to Naiuinawaho, Kaanapali, January 18, 1848.
N.R. 138v6
Greetings to the Land Commissioners: I hereby petition for my land claim. I have an area of land in the ku of Kahauiki, which is named Puaakea. I also have a house lot in Kahauiki, Honolua.
F.T. 272v7
Haulili, swom, I know the lands of the claimant. They are in Kahauiki, Honolua. They are in 3 pieces.
No. 1 is a kula land.
No. 2 is a kula uala.
No 3 is a kula iuka loa.
The claimant received these lands from Nalimu long before 1839 in very ancient times and his title has never been disputed.
N.T. 138v5
Hauili, sworn, Naiuinawaho's lands are in the ili of Puaakea in Honolua consisting of threepasture sections. This land was from Nalimu during Hoapili's time. No objections...

LCA 4243B (7 *apana*) to Kukalehua, 3.42 acres, January 18, 1848.
F.T. 370v7
This claim is in the same paper with No. 4243 but is not numbered.
Makaole, sworn, the claimant's lands are 7 pieces in Honolua.
The claimant received these lands from his ancestors in ancient times and has possessed them in peace from the days of Kamehameha I. There are 2 poalima lois in piece No. 6.
F.T. 370v7
Makaole, sworn, the claimant's lands are 7 pieces in Honolua.
No. 1 is a kula land in Kukuikanu.
No. 2 is a kula land in Kukuikanu.
No. 3 is a kula land in Kukuikanu.
No. 4 is a kula land in Kukuikanu.
No. 5 is a kalo land in Papahao.
No. 6 is a kalo land in Malili.
No. 7 is a kula land in Kukuikanu.
N.T. 227-228v5
June 29, 1849
This is very old land since the time of Kamehameha I, no objections. Two poalinas in Malili.

[5] N.T. refers to Native Testimony.

LCA 4708 to Mahuka, Honolua, January 19, 1848—11.408 acres.
N.R. 193v6
Greetings to the Land Commissioners: I hereby petition for my land claim. There are 37 lo'i. There are 18 mo'o waihae*[6] and 2 mo'o lauhala, a total of 20. Furthermore, there is the kula, in the 'Ili of Kaea, in Honolua. MAKUHA
F.T. 376-377v7
Kaaiakaia, sworn, I know the lands of Mahuka. They are in the ili of kaea, Honolua.
No. 1 is a kalo land makai.
No. 2 is a kalo land makai.
No. 3 is a kalo land uika loa.
No. 4 is a kula land uika loa.
No. 5 is a kula land uika loa.
The claimant received these lands from his ancestors in the days of Kamehameha I and his title has never been disputed.
No. 2 is bounded:
Mauka by the ili of Hikiapo
Lahaina by the pali of Honolua
On other two sides by the creek of Honolua.

Of the four LCAs shown on the tax map that lie closest to the project area, three were used for sweet potato production and/or for pasturelands. Information of land use for the fourth one was not found, indicating that it may not have been awarded. In any event, its similar location would suggest a similar use. Of the LCAs shown on the tax map that are situated along the *mauka* reaches of Honolua valley, one was for *taro lo'i*, and the other for pastureland.

Post-1850s—Honolua Ranch era

The population of West Maui continued to decline in the second half of the 19th century following the collapse of the Pacific whaling industry in the 1860s. This collapse was prompted by the discovery of oil in Pennsylvania a decade or so earlier. Those who had worked in the support occupations for supplying whaling ships since the 1840s, had to look elsewhere for their livelihood.

In Lahaina, sugar production was developing, while to the north in Ka'anapali district, other options such as ranching and cultivation of different crops began to emerge. These new crops included coffee and pineapples. The lands of Kale Davis became part of the Campbell Estate in the later part of the 19th century. Honolua Ranch was also established, and pioneered cattle ranching in this region of Maui.

In 1890, Henry Perrine Baldwin, the son of missionary Dwight Baldwin, visited Honolua. Here he met with Richard C. Searle and his wife—a Hawaiian Chiefess, who was a descendent of the Kamehameha, Konia, Lunalili, Davis and Young families. Here the families lived in the "old style" raising cattle and horses, raising *taro* in Honokohau, and fishing along the coast. Baldwin saw an opportunity for putting lands into

[6] According to Pukui and Elbert (p. 348): "Agricultural land term commonly used in the 1840s, especially on Maui; meaning unknown."

production, and around 1892 began leasing the Campbell lands, including Honolua Ranch. Richard Searle was hired as manager and continued the ranching activities and initiated coffee production. The coffee venture proved unprofitable, and was soon terminated. Eventually, Baldwin acquired the Campbell-Damon holdings in Honolua and Honokahau, and the lands of various families including descendants of Kale Davis and James Young Kanehoa (Ashdown, 1972).

Following Baldwin's death in 1911, David T. Fleming became manager of Honolua Ranch. He had had experience with pineapple growing in Haiku, and gradually began shifting the focus of the ranch to pineapple production. In 1915, the Honolua Ranch/Baldwin Packers complex was moved from Honolua to Honokahua. A pineapple cannery was built, as were the Honolua Stables. By the 1920s, pineapple was being grown in West Maui on a large scale, becoming the dominant crop of the region (Ibid.).

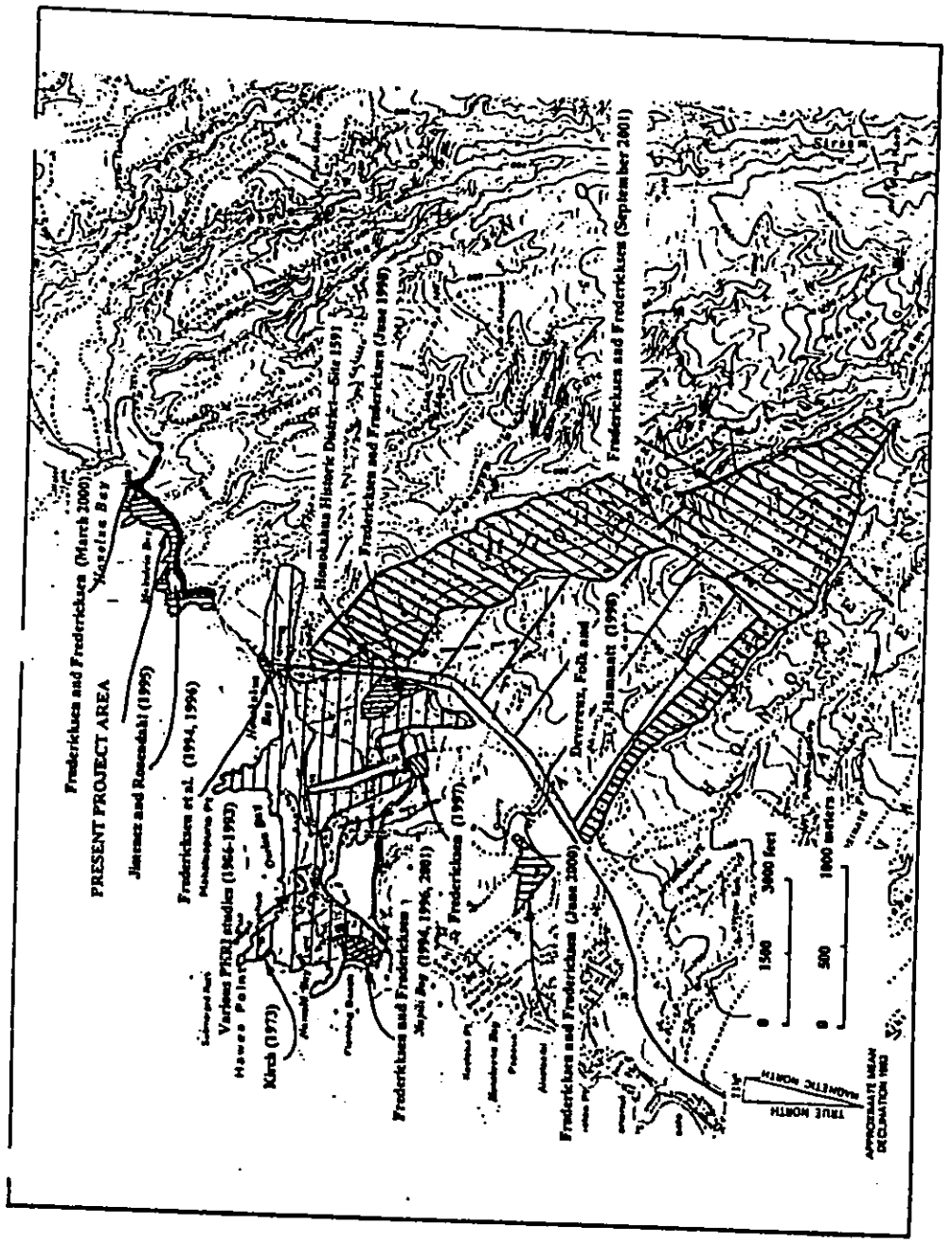
The small plantation communities of Honokahua and Napili developed around the Honolua Ranch/Baldwin Packers pineapple operations, and the population of Lahaina District increased in the first 4 decades of the 20th century. Honolua Stable ceased operation in c. 1963, following the merger of Baldwin Packers with Maui Land and Pineapple Company. As early as 1964, Maui Land and Pineapple Co. began planning resort development, which has culminated in the Kapalua/Ritz-Carlton complex that exists today.

Oral History

In 1995, Mr., Clement Kamaka was interviewed by Kepa Maly (PHRI, Jimenez and Rosendahl, 1995, p. B-6) as part of an inventory survey being conducted on a coastal parcel at the southern end of the current project area.

The parcel under study in 1995 contains the Kamaka family gravesite (Site 4142), according to Mr. Kamaka.[7] He was raised by his *tutu* until 1941, when the family moved to Oahu to pursue employment. Each summer he and his brothers and sisters returned to Maui and stayed with *tutu*—Julia Koa. They helped maintain the family gravesite and fished from the point. His grandmother taught them to spot fish and undertake various kinds of fishing—diving in Mokuleia and Kahauiki bays, and bamboo pole fishing using *opihi* for bait. They also would join in night fishing with the *hukilau* at Honolua Bay. A fish spotter stood on the point below the slaughterhouse and directed the boats to net the *akule*.

[7] Mr. Kamaka was born in c. 1937.



PREVIOUS ARCHAEOLOGICAL RESEARCH

Three *heiau* are located in the general coastal area in fairly close proximity to the study corridor. These were recorded during the survey done by Winslow Walker in 1929-1930 (Walker, 1931). One is located in the Honokahua—Site 16, and two are in Honolua—Sites 17 and 18. Site 16 is identified as Kahuaiki *heiau*, and is described as follows: "A small irregular platform of stones whose walls have been taken for stock pens." Its location is noted as "*mauka* to Kahauiki Camp a short distance up the west side of a gulch of the same name." (Ibid., p. 119). Site 17 is identified as Puhalakau (Ai Maia) *heiau*. Its location is "*makai* to Honolua Park along shore." Its description reads: "Heiau for Kuula. Level space showing some paving with small stones. Modern stone walls and houses built on the site obliterating its outlines. Fisherman's ko'a formerly on beach has been washed away," according to informant Kepuhi Keahi of Honolua (Ibid. p. 120). Site 18 is called Honuaula *heiau*, and was located in Honolua Gulch just east of a bend in the road. It is described as "Remains of old stone platforms and walls. Measures 29 ft. on south, 46 on west, 20 on north, 54 on east. North wall 3 ft. thick. Whole interior formerly paved with stone, now largely removed to build pens." (Ibid., p. 121).

Honolua Valley

Subsequent research (Moore, 1974) indicates that Site 18 was destroyed and was not Honua'ula *heiau*. Honua'ula *heiau* is Site 1471, a complex series of walls, platforms, and enclosures, and is in excellent shape. It is located east of the highway beyond Honolua Stream Bridge.

This archaeological survey covered some 90 acres[8], including the floor, walls, and embayment arms of Honolua Valley. Thirteen archaeological sites were located, described and mapped (Refer to Map 6). Findings included probable location of Walker's Site 17 (Puhalakau *Heiau*-Site 17), Honua'ula *Heiau* (Site 1471), a series of basalt boulders used as grinding surfaces (Site 1751), an historic structure associated with *kuleana* LCA 4243D, *apana* 2[9] (Site 1752), a possible stratified midden (Site 1753),

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[8] Including a portion of TMK: 4-2-04: 32—Refer to Tax Map—Map 2 of this report.
[9] To Makaole for sweet potato cultivation.

historic structures associated with Honolua Ranch Complex (Site 1754), a house platform/burial complex (Site 1755), an agricultural complex (Site 1756), a walled enclosure (Site 1757), an historic house with associated burials (Site 1758), a wall segment (Site 1759), skeletal remains possibly associated with LCA 3803:1[10] (Site 1760), and a midden scatter (Site 1761).[Ibid.]

Mitigation recommendations included data recovery for Site 17, preservation for Sites 1471 and 1751, appropriate treatment of burials located in Site 1752, data recovery at Site 1753, incorporation of Honolua Ranch Complex into plans and preserve grinding stone (Site 1754), and preservation of Site 1755 through 1758. Site 1759 wall is considered no longer significant. The exposed midden (Site 1761) should be excavated, and Site 1760 skeletal remains should be disinterred and reinterred elsewhere (Ibid.).

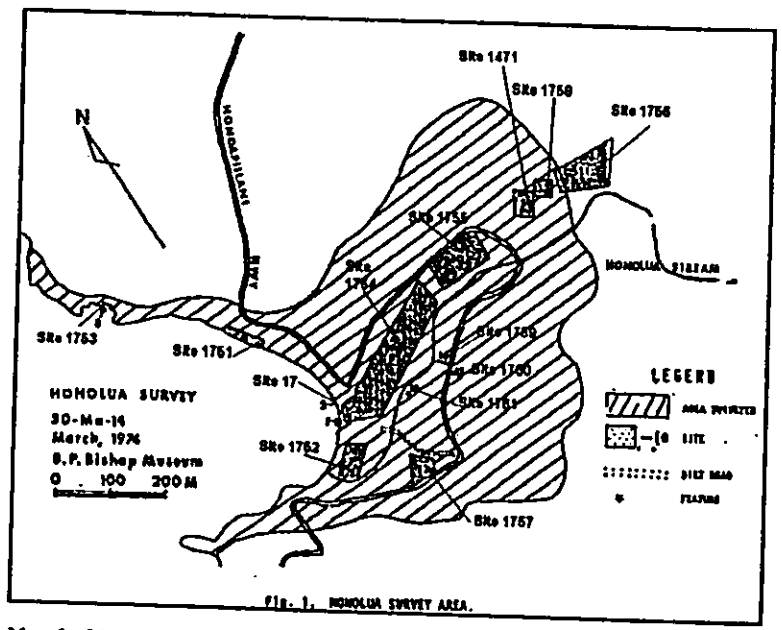

Fig. 1. HONOLUA SURVEY AREA.

Map 6 – Map showing sites found in 1974 archaeological survey by Bishop Museum (adapted from Moore, 1974, p. 2).

[10] To Lalahua for *kula* and bouselot.

Maui Land and Pineapple Company Development

This area of development is part of the Honokahua Historic District (Site 50-50-01-1591). This Historic District, as described in the 1973 State Inventory of Historic Places, includes the plantation village, the cannery facilities of Baldwin Packers, Honolua Ranch Stables, Honolua Ditch, the Maui Pineapple Office, the Honolua Store, plantation camp housing and two churches (Wright, 1974, short form data sheet). In a 1973 survey for Maui Land and Pineapple Company, in connection with the Honolua Development, the Bishop Museum's Department of Anthropology did work at Fleming Beach (at Kapalua), to the northeast of the subject parcel (Kirch, 1973). Kirch also worked at Fleming Beach Park at Honokahua Bay, and at Hawea Point Oneloa Bay and Makaluapuna Point. A site-complex made up of 8 features (Site 1346) was identified at Hawea Point, and was interpreted as a temporary Hawaiian settlement for marine exploitation and dated from c. AD 1500. Another site (Site 1347) was a cave shelter on the cliff face of Hawea Point, while a third, Site 1348 was identified as a stone terrace platform, and was located on a promontory overlooking Oneloa Bay. During this survey the Honokahua Burial Site (Site 1342) was first identified. Several sites were located and described, including a house site, terrace, enclosure and midden deposits, along the south band of Honokahua Stream on the east side of Fleming Beach Park (Site 1345) [Kirch, 1973].

Numbers of archaeological projects have been undertaken and completed in the general Kapalua Resort complex in the intervening years. Archaeological research for Kapalua Hotel Development, Parcel 2-H was divided into three phases of investigation—reconnaissance survey, intensive survey and testing, and data recovery/mitigation excavations. In early 1986, initial clearing for access roads exposed disturbed human skeletal material. The pedestrian survey pinpointed 6 areas where human remains were present, expanding the boundaries of the Honokahua Burial area, and calling for a more detailed intensive survey to be conducted (Haun and Rosendahl, 1986).

This intensive survey was conducted, and included both surface and systematic soil coring and test excavations. A total of 8 sites were identified, including Honokahua Burial Site (site 1342). The probable boundaries for this burial site were defined, and areas of probability for burial recovery were formulated. Other prehistoric sites reported included segments of a prehistoric trail (Site 2015), and a subsurface cultural deposit (Site 2016). Three historic sites were associated with ranching—Honolua Ranch Stables, a concrete water trough and an enclosure (BPBM D12-15). Two other sites—a walled shelter near a trail and a recent hearth, and a rubble pile, were of indeterminate age (Donham, 1986).

Beginning in March of 1987, the data recovery and mitigation excavations began and continued until December 1988, when fieldwork was halted, due to external pressure. The interim results of the fieldwork were presented in an informational report describing the Honokahua Burial area as a multi-component burial site with over 1000 prehistoric burials. The site appears to have been used from as early as AD 600, according to radiocarbon analysis (Donham, 1989). The final report on archaeological findings has been reviewed and accepted. Archaeological work associated with the development of the

Kapalua/Ritz-Carlton Resort complex by PHRI resulted in over 24 reports between 1986 and 1992.

After secession of excavation at the Honokahua Burial site, the Ritz-Carlton Hotel, site was moved inland to a less culturally sensitive area. The archaeological monitoring strategy for the new Ritz-Carlton Hotel site included additional research in areas contiguous to the Honokahua burial grounds. This project work was divided into 3 areas (Guerriero, et. al., April 1993, p. 31). Area I contained 5 sites (Sites 2869, 2870, 2971, 2874 and 2875). One site was identified in Area II—Site 2872; in Area III—three sites were located (Sites 1342A, 2873 and 2876).

Site 2869 consists of 2 historic subsurface cultural deposits, and one historic feature containing 694 historic artifacts primarily of Japanese origin. The other feature also contained historic materials, although considerably fewer in number. These deposits probably represent a refuse dump for the nearby Japanese Plantation Camp (Ibid., p. 34). Site 2870 is part of another refuse dump, including structural remnants related to Honolua School and its outbuildings. Site 2871 consists of features (dwellings, tennis court, grandstands, Quonset hut, potting area) associated with late-plantation-era mid-management personnel activity during the 1940s through the 1960s (Ibid., p. 36). Site 2872 consists of historic stone-faced terracing and retaining walls. Site 2872 is composed of 6 features, a communal outhouse, a stone pile placed on corrugated roofing, 2 pits containing non-indigenous material and shell midden, and 2 bowl-shaped fire pits (*imu*). All features are considered modern. Site 2875 is a concrete foundation floor, perhaps a relic of plantation life in the early to mid-20th century (Ibid., pp. 38-41).

In Area III, 3 sites were identified. Site 1342A consists of 10 prehistoric human burials peripheral to the central burial ground. Site 2873 consists of precontact cultural deposits and fire pits indicative of prehistoric habitation, and Site 2876, which is a prehistoric trail remnant (Ibid., pp. 41-49). In Site 1342A, BU-2 was located 1.7-1.8 m. below surface and produced two datable radiocarbon samples. One ranged from AD 1703-1918, and another, recovered from a deeper level yielded a date range from AD 1270-1650. A third radiocarbon date of AD 1670-1950 was recovered from BU-7 (Ibid.).

Although two dates could be within the post-contact period, the method of burial (flexed) is precontact in configuration. Site 2873 consists of a series of *imu*. Charcoal from 3 of these fire pits dated the utilization of the area between AD 1423-1680 (Ibid., pp. 58-60). Such features are ordinarily associated with habitation, but no clear habitation sites were found in Area III.[11]

Site 2876 is a trail segment located among the burials and is probably a segment of the prehistoric trail mentioned earlier—Site 2015. It consists of 2 parallel alignments of large angular and subangular basalt bounders, stacked roughly in 2 courses. The interior is paved with angular basalt and small cobbles, with some scattered waterworn coral fragments present as well (Guerriero, et. al., 1993, p. 60).

[11] At Fleming Beach Park located west of the archaeological sites just discussed, where Honokahua Stream enters the ocean, Kirch found habitation indicators such as midden deposits (Kirch, 1973). Site 2873 may be associated with that complex.

In May of 1994, Xamanek Researches conducted an archaeological inventory survey on a 12.1-acre area referred to as the Kapalua Bay Hotel and The Bay Club grounds, which lies northeast of the project area. A series of 28 subsurface backhoe tests were excavated. While no historic sites were located during our survey, an area of sand dune deposits was noted at the northern end of the project parcel. It was impossible to test the area at the time, because of underground sprinkler systems and electrical conduits. The recommendation was to survey this portion in the event that the area was to be developed in the future (Fredericksen, et. al., September 1994).

In May of 1996, Xamanek Researches returned to examine the previously untested dune areas. As an addendum to the original inventory survey, the findings, which were negative, were reported in September 1996 (Fredericksen, et.al.). However, archaeological monitoring was recommended during any future earthmoving activities in the dune area (Zone B).

Kapalua Land Company, Ltd. began development of this parcel in 2000, and retained Xamanek Researches to carry out the required monitoring program. During the course of the project 3 previously unidentified sites were located. These consisted of Site 4814—a post-contact crypt burial; Site 4815—a precontact subsurface habitation layer and Site 5059—previously disturbed human remains (Fredericksen, March 2001). Site 4815 yielded a radiocarbon age of 290 +/- 40 BP, and a calibrated date range of AD1490 to 1665. The intercept of the radiocarbon age with the calibration curve fell at AD 1640.

In June through July of 1997, Cultural Surveys Hawaii, Inc. undertook an inventory survey of c. 450 acres, identified as Project District 2, and located on the *mauka* side of Honoapiilani Highway, south of the present project area (Devereux, Folk and Hammatt, Draft February, 1998). Eight sites were identified—seven of which had been previously unrecorded. They consist of walls, boulder terraces and a boulder pavement, an overhang shelter cave, an historic reservoir, a road bridge, and a cemetery. The eighth is Site 1591, the Honokahua Historic District. None appeared to be precontact.

In November of 1997, Xamanek Researches conducted a reconnaissance survey for the proposed 11-acre Spa Resort Project at Kapalua. This parcel is bordered on the south by Honoapiilani Highway, on the west by the Pineapple Hill Subdivision, on the north by Simpson Way and on the east by Office Road (Fredericksen, November 17, 1997). The now-closed Pineapple Hill Restaurant is located in the center of the parcel. The building was built in 1915, and was the home of D. T. Fleming, manager of Honolua Plantation. The survey did not locate any significant material remains, except for the aforementioned building. Since the building has been severely damaged by termite activity, it was recommended that photo documentation of the structure be done, if the owner decided to demolish the building. While no other archaeological work was deemed necessary, on-call monitoring was recommended, in the event that any significant material cultural remains are encountered during construction activities.

The 475-acre *mauka* portion of the Kapalua District 2 project area was surveyed during the summer of 2001. A total of 37 sites were located in 2 *ahupua'a*—Napili 2-3, and Honokahua (Sites 50-50-01-5127 through 5163). They are located in the drainage systems between the flat areas of pineapple cultivation. They consist of temporary habitation rock shelters, small agricultural complexes, ceremonial complexes, possible burials, and ranch and plantation-era sites. Four radiocarbon dates ranged from mid-fifteenth century to more recent times; one returned a modern date; and one rock shelter dated to the late precontact to early post-contact period (Fredericksen and Fredericksen, September 2001).

Fleming Beach Park

Fleming Beach Park lies to the southwest of the present project area, and is a popular recreation park, maintained by the County of Maui. In February and March of 1994, Xamanek Researches undertook subsurface testing in the areas of the park destined for renovation work (Fredericksen, et. al., May 1994). Renovation plans called for the construction of a restroom facility on a sand dune area, and a connecting walkway path from the existing parking. A total of 10 manual 1.0 x 2.0 meter test units were excavated, and ranged in depth from 1.2 to 2.2 meters in depth. Additionally, 109 auger tests were placed at 2 meter intervals over the area, and ranged from 0.3 to 1.2 meters in depth. The manual testing was required as part of an agreement between the County of Maui Recreation Department, the Maui and Lana'i Islands Burial Council, and the State Historic Preservation Division. The testing was designed to assure a "buffer" zone of at least 1 meter between surface construction and possible cultural material and/or human remains that might lie below that depth.

At sometime in the past, in an effort to stabilize the sand dune, a cap of reddish brown clay had been placed on the loose sand. It ranges in thickness from 0.4 to 1.0 meter in tested locations. It most likely was obtained from the streambed to the south. No indigenous cultural material was found *in situ*. However, one test unit contained some indigenous artifacts and shell midden, mixed with modern historic material. It appeared that this area of the park had been filled in the relatively recent past. It is not known from where the fill material originated. Finally, there were no human remains located in the tested areas (Fredericksen, et. al., May 1994).

On August 29, 1995, human remains were uncovered while workers were digging a sewer line. Xamanek Researches investigated and found the remains to be part of an *in situ* burial, contained within a basin-shaped pit. Given that the individual was buried in a flexed position, it was determined that the remains were that of a Native Hawaiian, probably peripheral to the Site 1342A burial complex on the adjacent property (Fredericksen, et. al., February 1996, p. 4). Mitigation of this burial included sifting the disturbed sands to recover displaced skeletal remains, construction of a concrete enclosure and cement cap, and refilling the excavation.

Other archaeological studies

An archaeological inventory survey was conducted by PHRI in 1995 on a 2.47-acre coastal parcel (4-2-4: 31) that lies in the midst of the present study area on Alaelae

Point. Five sites consisting of six components were identified during the survey. They included a fire pit (Site 4141), terrace (Site 4142), platform (Site 4143), modified outcrop (Site 4144), and boundary wall (Site 4145). A radiocarbon age of 210 +/- 50 BP, with calibrated cylindrical ranges of AD 1528-1555, 1633-1704, 1720-1820, and 1916-1954, was obtained from Site 4144 (Jimenez and Rosendahl, October 1995).

In the latter portion of 1999, a survey of the Honoapi'ilani Highway corridor was undertaken by Xamanek Researches. The corridor extended c. 1.7 km. from Alaelae Point to Honolua Bay. One site—50-50-01-4829—was identified. It consisted of two dry-laid rock retaining wall sections that support Honoapi'ilani Highway across an unnamed drainage area near Mokuleia Bay (Fredericksen and Fredericksen, March 2000).

Settlement Patterns and Expectation of Findings

The precontact *ahupua'a* settlement pattern in this region of Maui includes permanent and temporary habitation sites located along the coastal regions, and in the inland valleys, which included extensive *lo'i* systems. While the population of Honokahua in the 1830s was not estimated to be great[12], the precontact population was likely considerably larger. The extensive burial ground at Honokahua to the south of the present project area also suggests a sizable precontact population.

The kinds of sites that might be expected along the coast associated with habitation would be stone structures such as enclosures, midden deposits, and burial areas. It is also possible that part of the precontact encircling trail—Alaloa—Sites 2015, and 2876, that were identified near the Honokahua Burial Site in 1986 and 1993, may have crossed the coastal area of the *ahupua'a* of Honolua as well.[13] In the valleys, sites such as stone walls, enclosures, pond fields and irrigation ditches associated with taro production might be expected. Temporary habitation sites could be identified by walled enclosures, fire and refuse pits, etc. They could also take the form of rock shelters, both in valleys and along the rocky coasts, wherever such geological features were present. Two heiau are known to have existed—one on the *makai* side of the road, and one *mauka* in Honolua valley.

As far as the inland area between valleys is concerned, this region has been under pineapple cultivation for decades. Prior to that, cattle grazing occurred. Today, modern golf courses exist in some areas. These areas were no doubt utilized in precontact times for the gathering of forest products from temporary camps or habitation sites, and perhaps for some dry land cultivation with similar temporary habitation areas. However, it would not be expected to find remaining evidence of this activity as a result of the more recent usage.

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[12] Refer to page 3 of this report.

[13] In other areas of Maui the historic government (*aupuni*) road followed the *Alaloa* trail, which was built about 1516 by Kihapi'ilani after his conquest of the whole island. This trail "was paved with stones along much of its extent, hence it was referred to as the '*kipapa* (pavement) of Kihapi'ilani'. (Fleming, 1933, p. 7—in Handy and Handy, 1972, p. 489).

Site expectations in project area

The kinds of precontact sites that might be expected along the coastal headlands covered by this inventory survey might be temporary camps or habitation areas associated with dry land cultivation, fish spotting sites, and possibly remnants of the 17th century trail that once encircled the island. Concentrations of human burials would not be expected, since the pattern in this region reveals that burials seem to be concentrated in the coastal sand dune/beach areas. However, in some of the headland geological features, the occasional rock shelter may exist, which could contain human burials. Such was the case with Site 1347, located on the cliff face at Hawea Point, which was recorded by Kirch (1973).

The kinds of post-contact sites that might be present would be features associated with ranching activities such as refuse dumps, rock walls and animal pens. Also features associated with road building, as with Site 4829, may occur on the *makai* side of Honoapi'ilani Highway.

ARCHAEOLOGICAL METHODS

The c. 23-acre project area was surveyed during March and April 2001. Field personnel included Mark Donham, Daniel Vicars and Hugh Coflin, while Erik Fredericksen acted as the principle investigator for the overall project. Walter and Demaris Fredericksen were the senior advisors for this inventory survey, and the latter provided background research and worked on the overall production and editing of this report.

The inventory survey was carried out in two phases. The first phase consisted of a surface walkover that located six previously unidentified archaeological sites. In general, this narrow, irregularly shaped project area was visually inspected with c. 5-meter transect intervals. Transect lines were generally oriented parallel with Honoapi'ilani Highway. Sea cliff areas—particularly in the vicinity of Mokuleia Bay and Kalaepiha Point—were inspected from the shoreline and transected where safety conditions allowed.

The second phase of the inventory survey consisted of evaluation of the six previously unrecorded sites and two previously identified (but unrecorded sites). Field mapping was carried out with handheld compasses and metric survey tapes. Test units were excavated at four of the eight sites. These test units were excavated by stratigraphic

layers and 10-cm artificial levels were used in layers that exceeded 10 cm in thickness. Excavated soil was screened through 1/8th inch hardware cloth. All material culture remains recovered from the screening process were collected for subsequent laboratory analysis by Xamanek Researches. Standard laboratory procedures were used in this process. Two charcoal samples were collected in the field and placed in aluminum foil. One sample was submitted to Beta Analytic, Inc. in Florida for subsequent radiometric analysis. No other material culture remains were transported off-island. Written, descriptive notes were kept in the field and photographs were taken with color film.

ARCHAEOLOGICAL FIELD RESULTS

A total of six previously unrecorded archaeological sites were located during our inventory survey. These include a paved enclosure with an associated access trail and probable fish-spotting station (Site 5093), a remnant of a possible habitation area (Site 5094), a remnant of the Old Government Road (Site 5095), an old concrete slab associated with a former slaughter house (Site 5096), two coastal rock overhang shelters (Site 5097), and an *in situ* coastal burial (Site 5098). In addition, more information was gathered on two previously identified sites—a plantation-era refuse dump (Site 5006), and a small coastal enclosure (Site 5007). Each of these sites is discussed below. Refer to Map 3 for general site locations within the *makai* project area.

Previously unidentified Sites 5093-5098

These six sites were located during the current project and lie northeast of Sites 5006 and 5007. Each of these sites is discussed below.

Site 5093 on Kalaepiha Point (Figures 2-7, Photos 3-8)

This northeasterly most site lies on Kalaepiha Point. This point of land borders the southwestern portion of Honolua Bay and has a commanding view of the coast to the northeast and southwest (Photo 3). This portion of the project area drops off sharply to the northeast an estimated 30 meters (100 ft) to Honolua Bay below. Site 5093 (Figure 2) consists of a paved platform/enclosure and a possible fish spotting station. Alien vegetation noted in the vicinity of this site included *koa haole*, alien grasses and annual weeds, and a few small ironwood saplings (Photo 4). Surface visibility tended to be fair

to good in the general area. Site 5093 is in generally fair condition. A cleared area associated with the former slaughterhouse (Site 5096) lies to the southwest. This area appears to have been relatively recently bulldozed as well. Site 5093 consists of two components—a platform/enclosure (Feature A) and an access trail to the possible fish spotting station (Feature B).

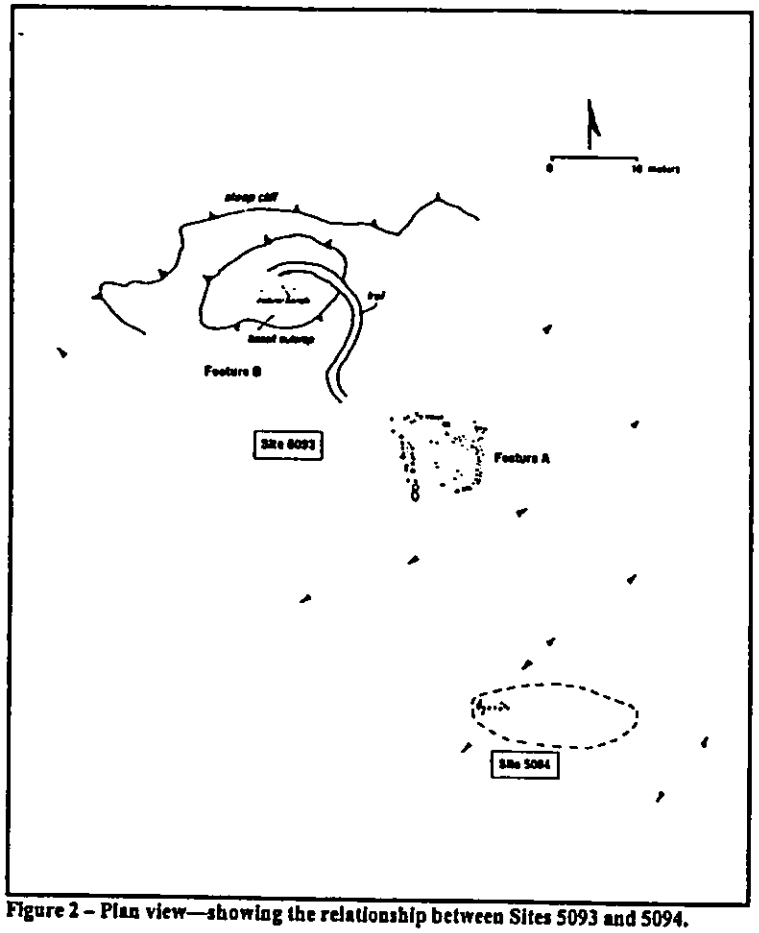


Figure 2 – Plan view—showing the relationship between Sites 5093 and 5094.

Feature A

This semi-rectangular platform/enclosure is located on a knoll that overlooks Honolua Bay. Feature A (Figure 3) appears to have been impacted by previous vegetation clearing activities possibly associated with the ranching era and/or the more recent slaughterhouse demolition. The intact portion of Feature A measures c. 11-meters N/S by 10 meters E/W by a maximum height of 45 cm. The remains of a core-filled wall are visible along the western portion of the enclosure (Photo 5), while remnant alignments are present along the other sides of the structure. Several water worn basalt pebbles and pieces of coral are exposed in portions of the interior. Subsequent investigation revealed that the interior is paved with this water worn material. It appears very possible that the sides of this paved structure were formerly higher. It is interesting to note that only relatively young *koa haole* saplings are located on the knoll, indicating that the area has likely been cleared of vegetation within the last 10-15 years. Scattered modern refuse was noted on the surface in the general vicinity of this enclosure. Four test units were utilized to investigate subsurface conditions at Feature A.

Test Unit 1

This 1-meter square unit was placed in a previously disturbed area of the northwestern portion of the structure (Figure 4). Test Unit 1 was utilized to assess whether or not there was any subsurface remnant of Feature A. This shallow unit was a maximum of 25 cm deep and terminated at weathered bedrock. The brown (7.5 YR 5/3) silty loam (Layer I) present in TU 1 did not contain any material culture remains. There was no remnant of the structure wall or the pavement encountered in this test instance.

Test Unit 2

Test Unit 2 was excavated in the interior of Feature A to verify the presence of what appeared to be a water worn pavement. Unit dimensions were 1.0 meter by 1.0 meter by 40 cm. in depth and orientation was to the NW. Two soil strata and a water worn pavement were encountered in TU 2 (Figure 5).

Layer I (0-22 cmbs) consisted of loose, brown (7.5 YR 5/3) silty loam. This stratum was up to 20 cm. thick and contained 5-10% by volume subangular pebbles and cobbles. A water worn pavement consisting of water worn *'ili 'ili* and coral was encountered at c. 5 cmbs and was up to 15 cm thick in this location (Photo 6). Recovered material culture remains from Layer I included 13.1 g. of marine shellfish, 1.4 g. of dog teeth fragments, 2.1 g. of fish bone, 2.0 g. of mammal (non-human) bone, 8.0 g. of scattered charcoal[14], and three indigenous artifacts. These artifacts included two utilized basalt flakes (Art. # 1-2), and a *puka* shell ornament (Art. #3). Artifact #1 measures 62.0 x 48.5 x 12.0 mm., and weighs 31.8 g. Artifact #2 measures 27.0 x 9.0 x 3.0 mm. and weighs 0.7 g. The *puka* shell ornament is 10 mm. in diameter x 9.0 mm. in thickness and weighs 0.4 g.

Layer II (c. 21-40 cmbs) was composed of light brown (10 YR 6/4) clay loam.

[14] This charcoal was recovered from the upper 5 cm of the unit and was not submitted for analysis.

This dry, compact stratum contained less than 5% by volume subangular cobbles and pebbles. Weathered bedrock pieces increased with depth and TU 2 was halted at 40 cmbs at more intact weathered bedrock. No cultural materials were found in this layer.

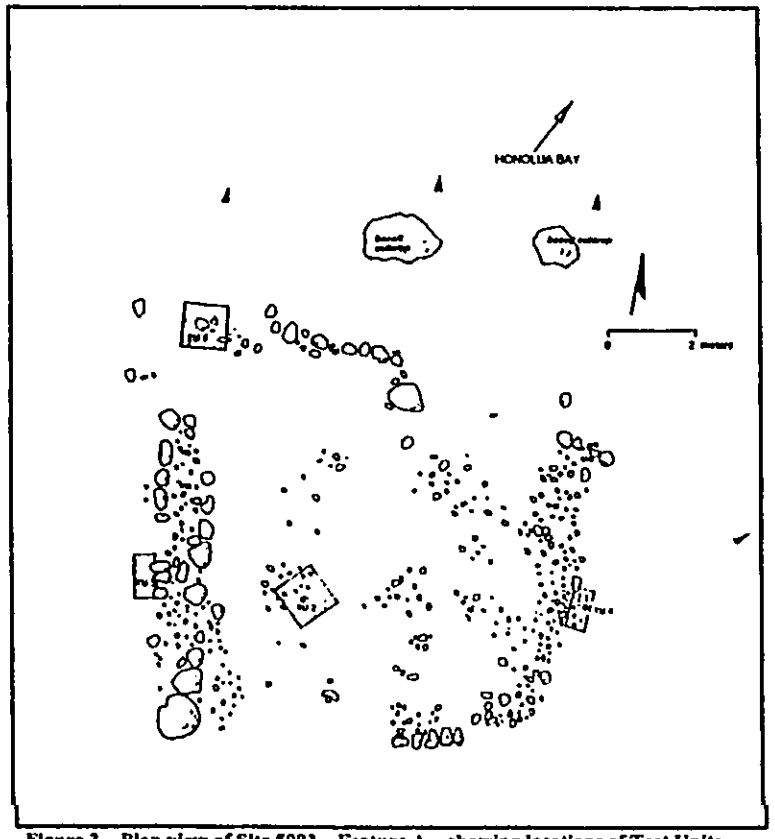


Figure 3 – Plan view of Site 5093—Feature A—showing locations of Test Units.

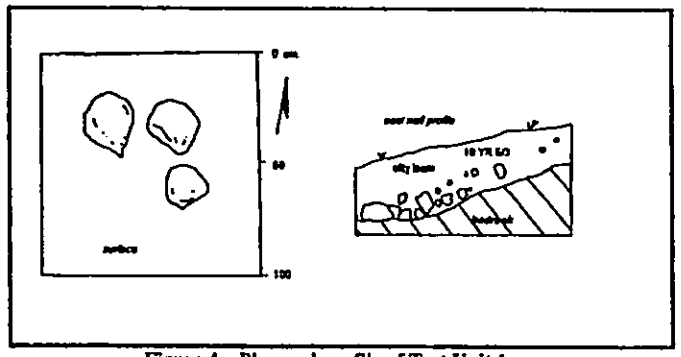


Figure 4 – Plan and profile of Test Unit 1.

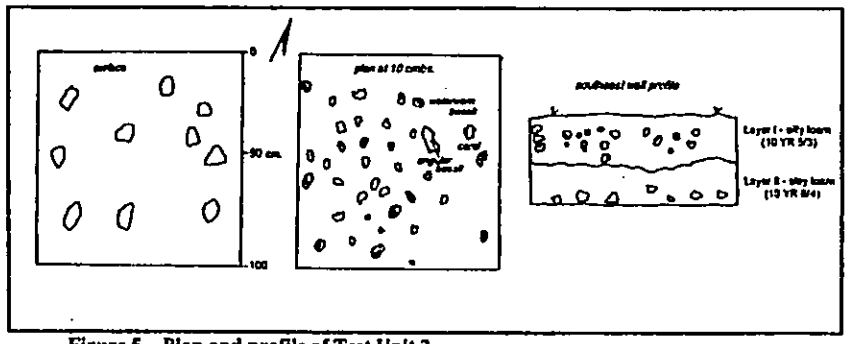


Figure 5 – Plan and profile of Test Unit 2.

Test Units 3 and 4

Both of these units were used to investigate conditions adjacent to the exterior western and eastern edges of Feature A. Both units were 0.5 meter wide by 1.0 meter long and c. 40 cm deep. No evidence of the Feature A pavement was encountered in either of these units. In addition, no significant material culture remains were found in either unit. Layer I (0-23 cmbs) was composed of the common brown (7.5 YR 5/3) silty

loam. Layer II consisted of light brown clay loam and weathered bedrock. Excavation was halted at 40 cmbs due to increasingly dense, weathered bedrock.

Remnants of the Feature A wall were located in the ENE profile of TU 3 and in the west wall of TU 4. The visible, intact portions of the structure did not extend into Layer II in either test instance (Figures 6-7).

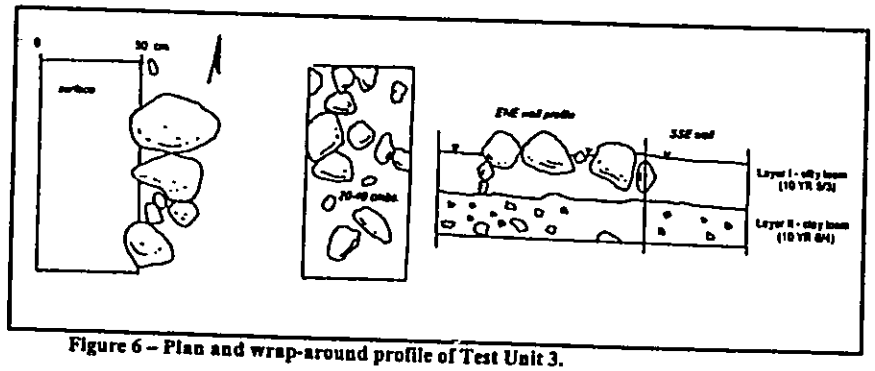


Figure 6 – Plan and wrap-around profile of Test Unit 3.

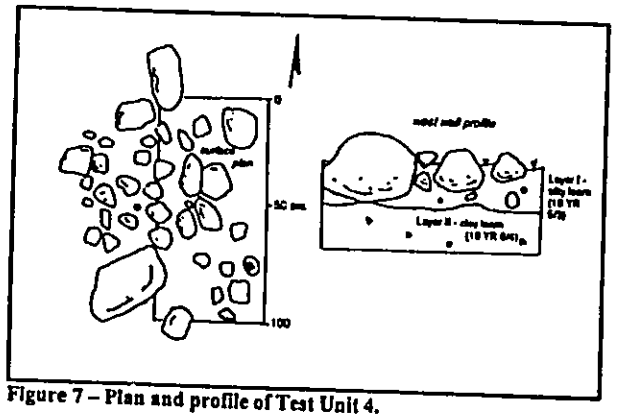


Figure 7 – Plan and profile of Test Unit 4.

Feature B

This feature consists of an unpaved trail that extends from near the northwestern portion of Feature A to what is an excellent vantage point that overlooks Mokuleia Bay to the southwest, and Honolua Bay to the northeast (Figure 2).[15] Oral history information

[15] This portion of Kalaepiha Point may be the area near Honolua Bay that was referred to by Mr. Clement Kamaka (Jimenez and Rosendahl, 1995) in the historic background section of this report.

supplied by Mr. William Waiohu of the Maui/Lana'i Islands Burial Council, and Mr. Aimoku Pali of Honokohau Valley indicates that this portion of Kalaepiha Point was utilized in relatively recent historic times as a fish-potting station. No modification of the vantage point or the trail was noted during several inspections of the area.[16]

Discussion

Inventory level work conducted at Site 5093 revealed a paved platform/enclosure—Feature A, and a possible fish spotting station—Feature B. While portions of Feature A appear to have been impacted by previous land clearing activities, this platform/enclosure is in generally fair condition. The source area for the water worn pebble and coral pavement is likely Honolua Bay beach area some 200 meters (650 ft) to the ESE of this site. This relative distant source area indicates that a substantial amount of labor was expended in order to pave Feature A. The labor expenditure necessary to construct the c. 110-meter square platform/enclosure and pavement on the most prominent flat portion of Kalaepiha Point suggests that Feature A might have had a ceremonial function associated with fishing activities. The proximity of Feature B—a probable fish spotting station—further suggests a traditional ceremonial function for this site. Site 5093 is interpreted as a precontact site, portions of which (Feature B) continued to be used into modern times. Oral information provided by Mr. William Waiohu and Mr. Aimoku Pali indicated that this area was considered to be an important fish spotting area in their lifetimes.

Site 5094 (Figures 2, 8-9)

This site remnant lies c. 29 meters southeast of Site 5093 on the slope of the knoll at c. 80-85 ft. AMSL. Site 5094 is composed of a short alignment/terrace remnant and a very low-density surface scatter. Relatively recent bulldozing activities have impacted this site and the area surrounding it. In addition a relatively recent backhoe trench scar was observed in the immediate vicinity. Vegetation observed in this sloping (c. 15%) area included *koa haole* saplings, alien grasses, and annual weeds (Photo 4). Weathered bedrock is visible along portions of the slope in and above the site. Scattered modern refuse was noted on the surface in the vicinity of this site remnant.

Site 5094 is in poor condition. The overall dimensions of this site are c. 18 meters E/W by 7 meters N/S (Figure 8). The low-density surface scatter consists of a few pieces of marine shellfish remains, water worn pebbles and coral. One indigenous artifact, a large basalt grinding stone (Art. #5) was recovered from the previously disturbed surface (Photo 1). This large, vesicular basalt rock measures 450 mm. in length by 250 mm. in width by 240 mm. in thickness, and weighs 31.75 kg. It exhibits use wear on three

[16] Erik Fredericksen visited Feature B on separate occasions with Mr. William Waiohu of the Maui Lana'i Islands Burial Council, and Mr. Leslie Kuloloio of Na Kupuna o Hawai'i. While both men were previously unaware of the existence of the Feature A platform/enclosure, they each strongly felt that it had a ceremonial function, based on its location. In addition, both men recalled having heard from *Kupuna* that the Kalaepiha Point area was an important fish spotting area.

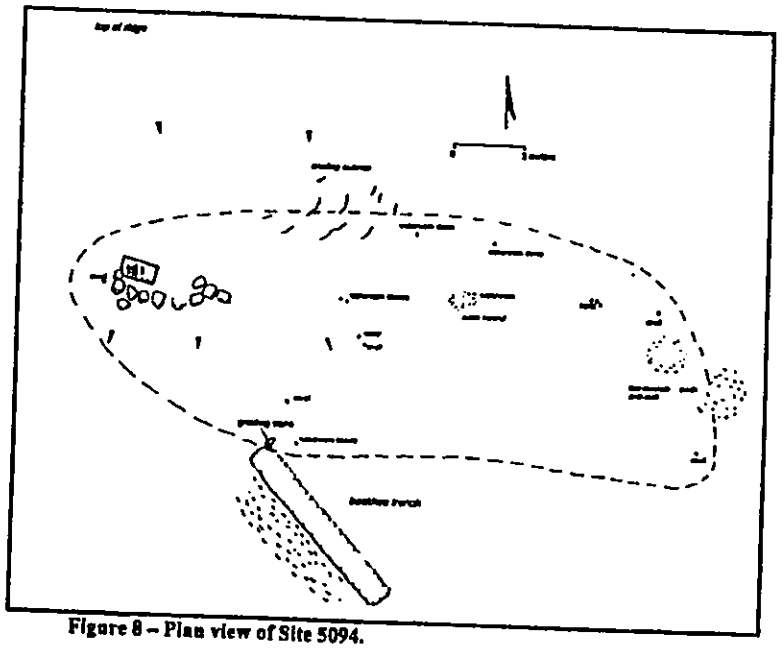


Figure 8 – Plan view of Site 5094.

sides. The single course alignment—Feature A—measures c. 3.25 meters E/W by 0.75 meter wide by a maximum of 0.40 meter high. Three low soil and rock piles (maximum of 40 cm. high) are located on the eastern side of the surface scatter. The backhoe trench mentioned above lies just south of the limits of the surface scatter. One test unit was utilized to investigate subsurface conditions at this site.

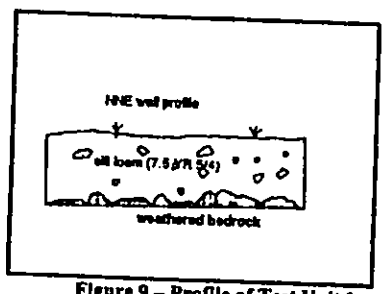


Figure 9 – Profile of Test Unit 1.

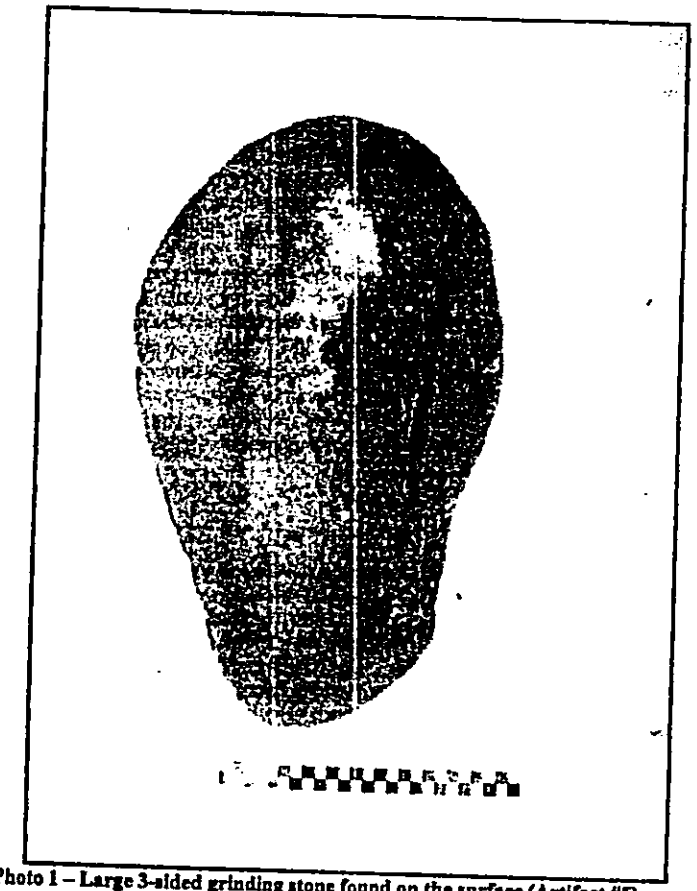


Photo 1 – Large 3-sided grinding stone found on the surface (Artifact #5).

Test Unit 1

This unit was placed just upslope (north) of the alignment to assess subsurface conditions. The unit was oriented NW-SE and measured 1.0 meter by 0.5 meter. One soil layer was encountered before TU 1 was halted at weathered bedrock at c. 18-20 cmbs (Figure 9).

Layer I was up to 20 cm. thick in this test location. This loose, rocky stratum consisted of brown (7.5 5/4) silty loam. This stratum contained 50-75% by volume weathered bedrock pieces and yielded 1.1 g of *kukui* nut and two waterworm pebbles.

Discussion

Site 5094 has been impacted by previous land clearing activities. While the age of this site remains somewhat unclear, it appears probable that it is a precontact rather than a post-contact historic property. Its function remains somewhat unclear, given the previous disturbance. However, based on the presence of scattered shellfish remains and the grind stone artifact, Site 5094 is tentatively interpreted as a possible habitation area remnant.

TABLE 2

Summary of Subsurface Results for Sites 5093 and 5094

	Site 5093 Test Unit 2	Site 5094	Site 5094 Test Unit 1
	Layer I 0-20 cmbs	surface	Layer I 0-20 cmbs
GASTROPODA			
Cellana sp.			
Conus sp.	0.4		
Cypraea sp.	12.4		
Thaididae sp.			
BIVALVIA			
Isognomon sp.	0.3		
BONE			
Teeth, mammal	1.4 (dog)		
Fish	2.1		
Unidentified	2.0		
FLORAL			
Charcoal	8.0		
UNWORKED CORAL (pieces)	(2) 1.2		(1) 1.1
WATERWORN PEBBLES (pieces)	(1) 4.3		(2) 7.3
ARTIFACTS			
Utilized basalt flake	#1-2		
Grindstone		#5	
Poke shell	#3		

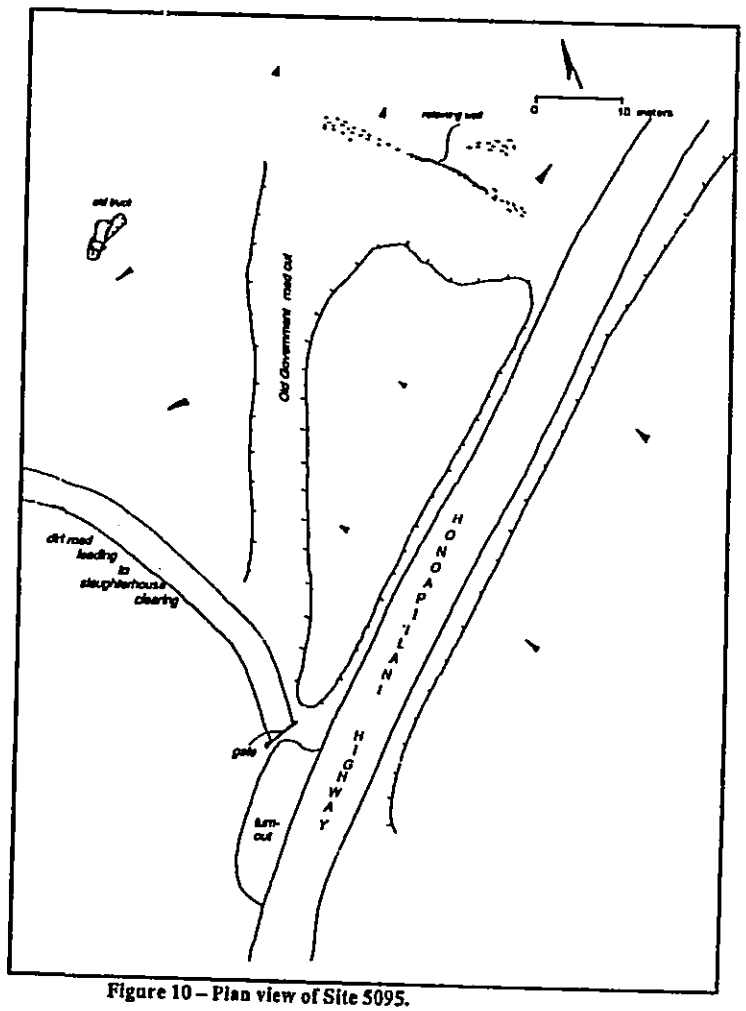


Figure 10 – Plan view of Site 5095.

Site 5095 (Figure 10: Photo 9)

This site consists of a remnant of the Old Government Road and an associated retaining wall that crosses a portion of the project area.[17] This site is paralleled by Honoapi'ilani Highway on its eastern side. Site 5094 is truncated by a dirt access roadway that is probably associated with the former slaughterhouse (Site 5096) on its southwestern side, and by the new highway on its northeastern side. Vegetation present in this area consists of *koa haole* saplings, alien grasses, and annual weeds. Estimated elevations for this portion of the project area are 75-80 ft. AMSL. Site 5095 is in generally fair condition.

The visible remnants of this site include the old road cut and a dry laid retaining wall. The intact portion of the road cut extends some 60 meters NNE/SSW by 35 meters WNW/ESE and measures c. 7.5 meters in width. The intact portion of the retaining wall is c. 12 meters NW/SE and is up to 75 cm. high. It is fairly well-constructed from subangular basalt, but is in generally poor condition (Photo 9). No excavation was undertaken at this post-contact site.

Discussion

This portion of the Old Government Road is the only recognizable remnant of this late 1800's roadway encountered in the project area.

Site 5096 (Figure 11; Photos 10, 15-16)

This site remnant consists of the concrete foundation of the former slaughterhouse that was located on Kalaepiha Point. The former building was a landmark and the area—particularly the beach to the southwest—was generally known as "slaughterhouse" in the past. The nearby beach is to some extent still referred to by this name rather than Mokuleia Beach. Site 5096 lies at c. 65-70 ft AMSL in a cleared area. Modern refuse and portions of several abandoned vehicles were observed in the general area. Relatively recent bulldozing activities have extensively disturbed the general area. The concrete slab measures 7.6 meters NW/SE by 4.8 meters NE/SW by 0.4 m. in height (Photo 10).

The northeastern portion of this site has been impacted—possibly from the demolition of the former building. The northwestern portion of the slab slopes downward at approximately 20 degrees into what is interpreted as a blood drainage trough. This portion of the slab appears to be somewhat newer than the rest of the foundation. While it remains unknown, it may be possible that a later lessee of the building added the northwestern part of the foundation.

According to Mr. Wesley Nohara, Manager of Honolua Plantation (Maui Pineapple Company, Ltd.), the slaughterhouse was constructed between about 1915 and

[17] In other areas of Maui the old government road *(aupuni)* followed the Alaloa trail, which was built in c. 1516 by Kihapi'ilani following his conquest of the whole island (Fleming, 1933, p.7—Handy and Handy, 1972, p. 489). The section of the government road in this part of Maui was originally constructed in the late-1800s according to Mr. William Waiohu and was subsequently modified through the mid-1900s.

1920 (personal communication, 2001). It was originally part of Honolua Ranch, which

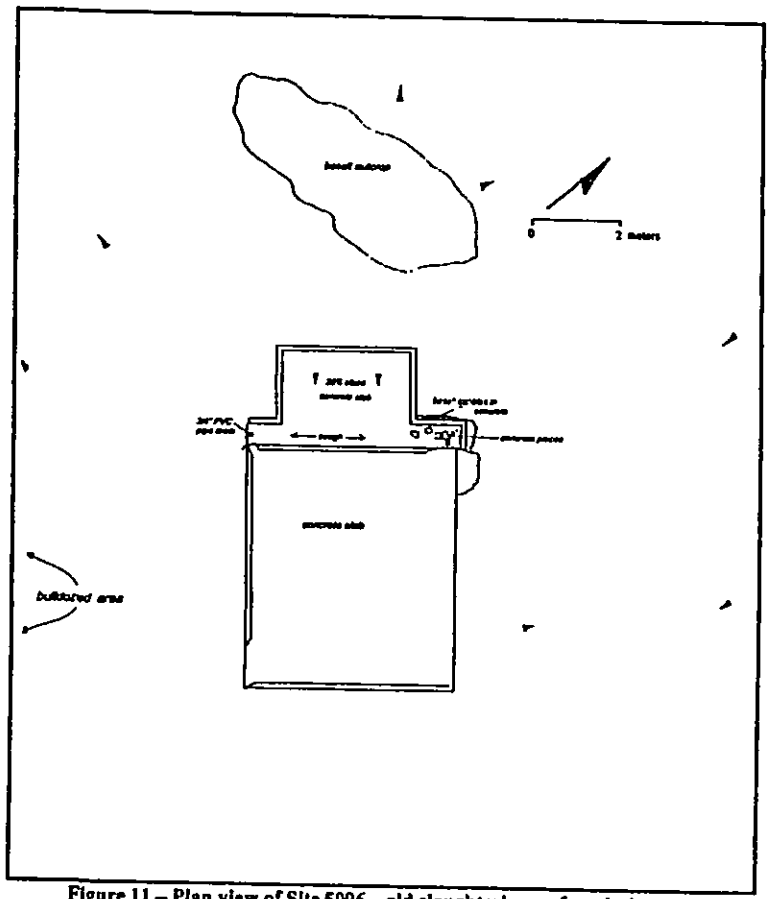


Figure 11 – Plan view of Site 5096—old slaughterhouse foundation.

subsequently became Baldwin Packers in the 1920s. Mr. Nohara indicated that the slaughterhouse was closed in the early 1940s. The area was subsequently leased to company employees who raised pigs on portions of the project area. Both Mr. Nohara and Mr. William Waiohu, MLIBC Member, believe that the building was torn down sometime during the 1940s-1950s. No subsurface work was conducted at this site.

Discussion

The overall integrity of Site 5096 is poor. The existing slab is all that remains of the former building. The surrounding area has been extensively cleared by past bulldozing activities.

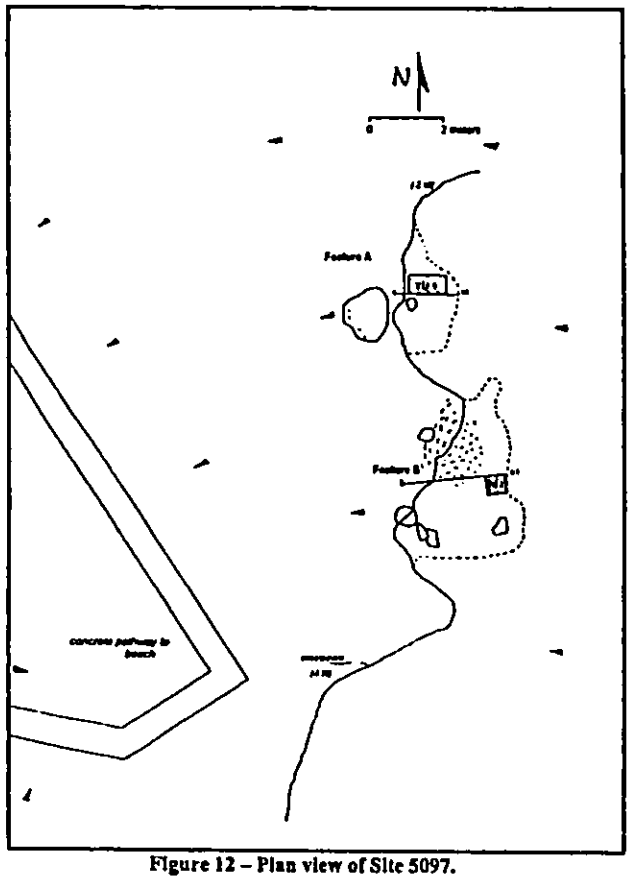


Figure 12 – Plan view of Site 5097.

Site 5097 (Figure 12-14; Photo 11)

This coastal site is located near a concrete beach access walkway to Mokuleia Beach (Slaughterhouse Beach). It consists of 2 rock overhang shelters that lie within c.

35 meters of the beach deposit. These overhangs lie along the eastern side of a gulch at c. 20 to 25 feet AMSL. Vegetation noted in the general area included *kukui* nut and *kiawe* trees, *koa haole* shrubs, alien grasses and annual weeds. Previous bulldozing activities associated with road improvements appear to have impacted the area at the top of the ridge above the site. These overhang features are situated within 5 meters of one another below this disturbed area (Figure 12; Photo 11). Both features underwent subsurface testing.

Feature A (Figure 13)

This overhang is the closest to the ocean of the two shelters. It lies c .9 meters WNW of the concrete access pathway to the beach. The dimensions of the covered portion of this rock shelter are c. 3.5 N/S meters width by 1.75 meters E/W in depth by 1.45 meters in maximum height. No material culture remains were observed on the floor of Feature A. One test unit was utilized to assess subsurface conditions in this location.

Test Unit 1

Test Unit 1 was oriented E/W and measured 1.0 meter E/W by 0.5 meter N/S. The surface of this unit was covered with loose rocks—possibly from minor roof collapse. A total of four strata were encountered before TU 1 was halted at 90 cmbs in sterile soil (Figure).

Layer I (0-10 cmbs) was made up of loose, reddish brown (2.5 YR 5/3) very fine silt. This stratum contained a few scattered subangular pebbles and cobbles. Recovered material culture remains from Layer I included 24.9 g. of marine shellfish, 0.2 g. of sea urchin body parts, 0.2 g. of fish bone, 2.1 g. of *kukui* nut shell, 23.0 g. of scattered charcoal, and a 1976 U.S. penny.

Layer II (c. 9-28 cmbs) was composed of reddish gray (2.5 YR 5/1) silt. This dry, compact stratum contained less than 20% by volume subangular cobbles and pebbles. The layer yielded items interpreted as food midden including 40.7 g. of common marine shellfish, 2.4 g. of Echinoderm body parts, a trace of crab shell, 0.2 g. of fish bone, and 0.3 g. of unidentified bone. Other recovered remains consisted of 0.2 g. of *kukui* nut shell, 25.4 g. of scattered charcoal, and two unworked basalt flakes. In addition, four subsurface features originated in this layer.

Feature 7.1 (c. 10-18 cmbs) consisted of a hearth remnant that was a maximum of 31 cm N/S by 24 cm E/W. The dark reddish gray (2.5 YR 4/1) feature fill yielded cultural materials including 0.6 g. of marine shellfish and 27.7 g. of charcoal.

Feature 7.2 was encountered at c. 18 cmbs and extended to 27 cmbs. This dark reddish gray (2.5 YR 3/1) hearth consisted of a basin shaped pit that was partly lined with fire cracked rocks on its northern side. It was a maximum of 56 cm. N/S by 45 cm. E/W and extended into the southern face of TU 1. Recovered cultural materials included 4.8 g. of marine shellfish remains, 0.1 g. of sea urchin body parts, and 123.0 g. of charcoal. One sample was placed in aluminum foil and submitted to Beta Analytic, Inc. in Florida for

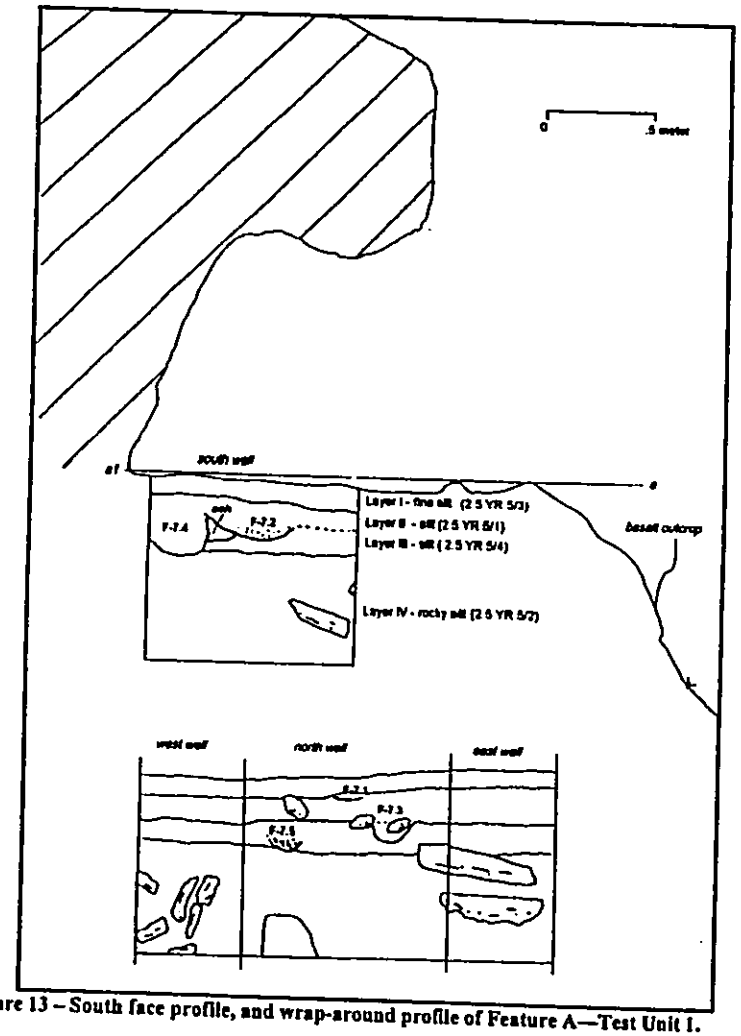


Figure 13 – South face profile, and wrap-around profile of Feature A—Test Unit 1.

radiometric analysis. This sample returned a conventional date of 260±60 BP. At 2 sigma (95% probability) the corrected date ranges were AD 1500-1690, 1730-1810, and 1920-1950, with a date at the intercept of the radiocarbon age with calibration curve of AD 1660 [Appendix A].

Feature 7.3 (c. 26-36 cmbs) consisted of a small semi-circular pit that was up to 16 cm. in diameter. The reddish brown (2.5 YR 5/3) pit fill of this feature was sterile. The function of this pit remains unclear.

Feature 7.4 (c. 20-34 cmbs) was partly capped by the Feature 7.2 hearth. This relatively deep pit extended into the northern, southern and western faces of TU 1. The weak red (2.5 YR 5/2) fill of this pit yielded 7.9 g. of scattered marine shellfish remains. The function of this pit continues to be unclear. Layer III (c. 26-39 cmbs) was composed of reddish brown silt that contained moderate amounts of subangular basalt cobbles and pebbles (c. 30% by volume). This compact stratum yielded a trace (0.3 g.) of marine shellfish remains and contained one subsurface feature.

Feature 7.5 consisted of a charcoal concentration that is tentatively interpreted as possible hearth remnant or a burned root. A total of 18.6 g. of charcoal were recovered from this otherwise sterile feature.

Layer III (c. 27 to 34 cmbs) was composed of reddish brown silt (2.5 YR 5/1). This relatively compact stratum contained c. 50% by volume subangular rocks—probably from roof collapse. A total of 0.3 g. of marine shellfish remains were recovered from the upper few centimeters of this layer.

Layer IV extended from c. 34 cmbs to the bottom of the unit. This weak red (2.5 YR 5/2) silty clay was very compact and yielded increasing amounts of weathered bedrock with depth. This stratum was sterile and TU 2 was abandoned at or near intact bedrock.

Feature B (Figure 14)

This second overhang lies c. 2 meters south or *mauka* of Feature A. While this second shelter is the larger of the two overhangs, an earth and rock pile that may represent possible push from the area above the shelter obscures much of its interior.[19] This relatively spacious rock shelter measures 4.5 meters N/S by 3.5 meters E/W by up to 1.7 meters high. No material culture remains were noted on the exposed portion of the floor of the overhang. One test unit was placed in an area that was free of the soil and rock that covered much of the floor.

Test Unit 2

This subsurface test was 50 by 50 cm. and a maximum of 50 cm. deep and was excavated near the back of the overhang. Three sterile soil layers were located before TU 2 was abandoned due to difficult digging conditions (Figure 14).

Layer I (0-24 cmbs) consisted of reddish brown (2.5 YR 4/4) clay. This compact stratum contained low amounts of subangular rock. Layer II (c. 16-38 cmbs) was composed of light reddish brown (2.5 YR 7/4) silt with moderate amounts of roof spall. Layer III extended from c. 25 cmbs to the bottom of TU 2 at c. 65 cmbs.

[19] The area at the top of the gulch has been bulldozed in the past—possibly from improvements to Honoapi'ilani Road.

Table 3

Summary of Subsurface Results – Test Unit 1—Site 5097

	L I L 2 0-10 cmbs	Fea. 7.1 10-18 cmbs	L II, L 1 9-19 cmbs	L II, L 2 19-28 cmbs	Fea. 7.2 18-37 cmbs	Fea. 7.4 28-34 cmbs	Fea. 7.5 28-33 cmbs	Layer III 37-36 cmbs
GASTROPODA								
Cellana sp.	1.9		8.2	3.1	0.4	0.1		
Conus sp.	0.4							
Cypraea sp.	0.8		6.5	1.2		6.8		
Granula sandwicensis	0.2		1.1	0.1				
Nerita picea	7.4	0.1	5.3	1.7		0.9		0.1
Nerita sandwicensis								
Planaxis sp.	11.5	0.5	8.7	3.3	0.4	0.1		0.1
Thaididae sp.	0.5							
Unidentified	1.8			0.1	4.0			0.1
BIVALVIA								
Isognomon sp.	0.6		1.1	0.3				
ECHINOIDEA								
Sea urchin	0.2		2.2	0.2	0.1			
Pencil urchin								
CRAB				0.1				
BONE								
Fish	0.2		0.1	0.1				
Unidentified			0.3					
FLORAL								
Kukui nut shell	2.1		0.2					
Charcoal	23.0	27.7	5.6	19.8	123.0		18.6	
UNWORKED BASALT FLAKES (pieces)			(2) 20.3					
UNWORKED CORAL (pieces)	(1) 0.2							
Historic Artifacts								
U.S. penny (1976)	1							

Discussion

Subsurface investigations at Site 4097 indicate that at least Feature A was utilized as a temporary habitation area. While TU 2 failed to yield any material culture remains, it seems likely that the Feature B overhang also served as a temporary shelter. As noted earlier, much of the floor area of this second overhang was unavailable for testing purposes due to slope wash and/or dozer push.

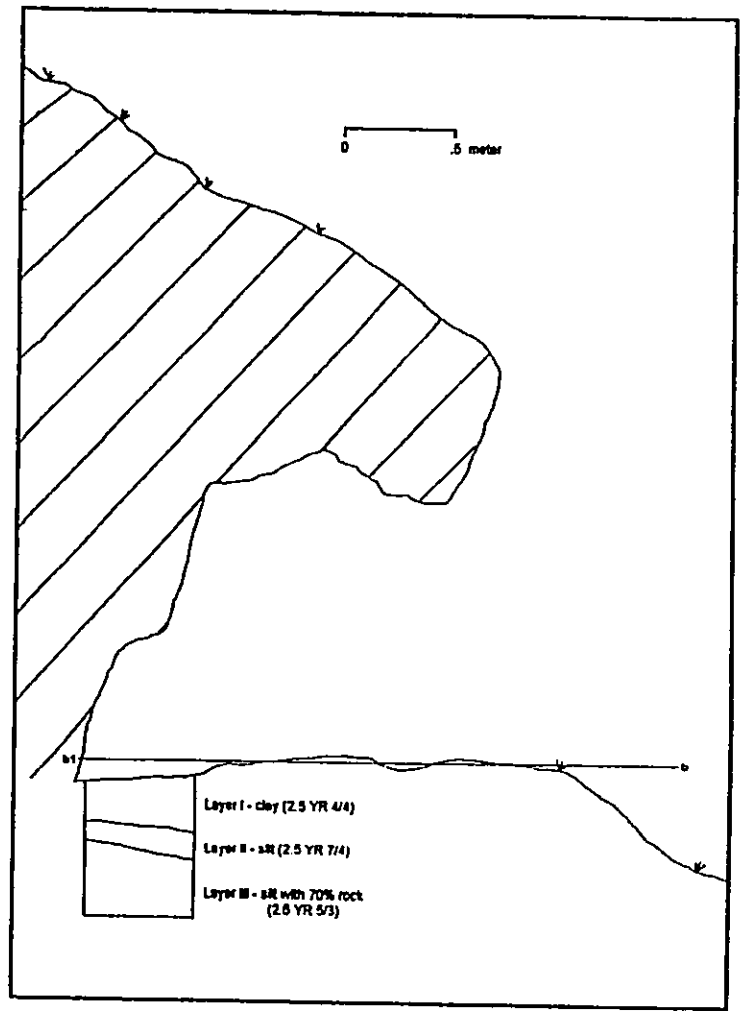


Figure 14 – North face profile of Feature B—Test Unit 2.

Site 5098 (Figures 15-17; Photos 12-13)

This site consists of a rock overhang that contains a burial. The site is located on the southwestern side of Alaelae Point. The overhang faces west overlooking a small bay, locally known as Kahauiki (Jimenez and Rosendahl, 1995, p. B-5). A c. 6-meter high cliff lies c. 3 meters SSW of the site. It is estimated that Site 5098 is c. 20-22 ft. AMSL. Alien vegetation noted in the vicinity of this site consisted of ironwood trees, alien grasses and annual weeds, and a few *panini* (cactus). Surface visibility tended to good in the general area. Site 5098 is in good condition. The general area is informally used for fishing and surfing activities. A berm associated with Honoapi'ilani Highway lies upslope and c. 16 meters to the east of this site.

The overhang is 3.5 meters wide by 1.1 meters deep by 1.1 meters maximum height (Photos 12 and 13). Several pieces of water worn coral were noted on the surface of the overhang prior to subsurface investigation. One unit was utilized to test this coastal overhang.

Test Unit 1

This test unit measured c. 1.0 by 1.0 meter and was placed at the back of the overhang. Unit stratigraphy consisted of two layers—a deposit of relatively thick slope wash, and pit fill (Figure 15).

The slope wash—Layer I—was up to 20 cm deep and consisted of material that appeared to be derived from a nearby berm associated with Honoapi'ilani Highway. This light brown (7.5 YR 6/3) clay was sterile.

Layer II was encountered between 10 and 20 cmbs. This loose, brown (7.5 YR 5/2) silty loam is interpreted as burial pit fill. The upper 15-20 cm. of this fill layer contained numbers of waterworn pebbles and coral (200 + pieces). The pit fill contained quantities of subangular basalt cobbles. In addition, scattered material culture remains were found throughout this loose, rocky layer. These scattered remains included 46.6 g. of marine shellfish, 0.5 g. of Echinoderm body parts, 1.0 g. of dog teeth, a trace of fish bone, 14.2 g. of *kukui* nut, 47.5 g. of charcoal, 2 unworked basalt flakes, 7 pieces of branch coral, and an indigenous artifact. This artifact (Art. #4) was located at c. 84 cmbs and consists of a piece of water-rounded basalt that possesses a central cavity (Photo 2). While much of this artifact appears to be naturally formed, portions of its interior appear to have been enlarged. Some slight pecking and abrasion scars were visible on the interior of the artifact.[19] This artifact is tentatively interpreted as a *kukui* nut oil lamp. It was located in an upright position and was placed c. 15 cm. above what is interpreted as a human burial.

A human cranium was located at 94 cmbs in the northeastern corner of TU 1 (Figure 17). A portion of the cranium was exposed and it was determined that this individual is a sub-adult.[20] Inspection of the exposed portion of this cranium indicated

[19] Measurements are 280.0 x 180.0 x 80.0 mm.; weight is 3.85 kg.
[20] This determination is based on dentition.

that it is facing to the west *(makai)*. A large horizontal flat rock at least 75 cm. long by 40 cm. wide was exposed just to the west of the skull. This rock was left in place to avoid impacting the nearby cranium. No further work was conducted on this find that is interpreted as a primary burial.

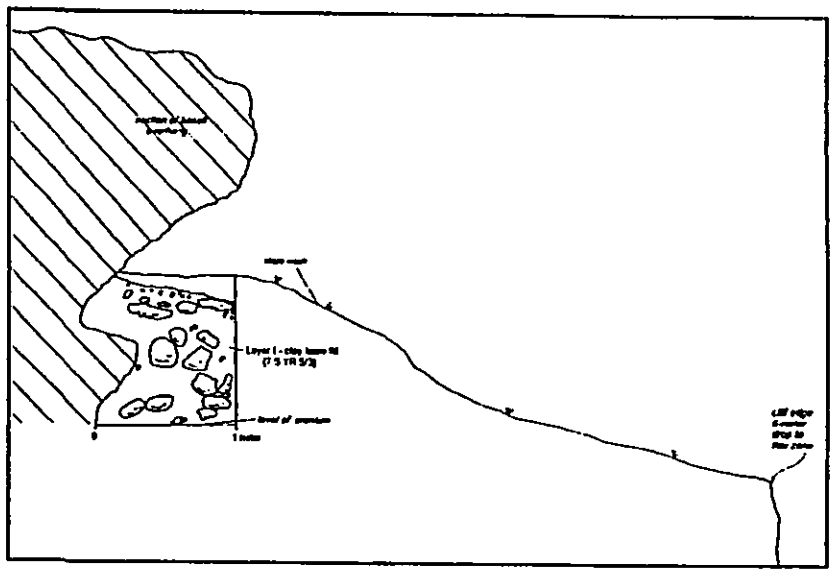
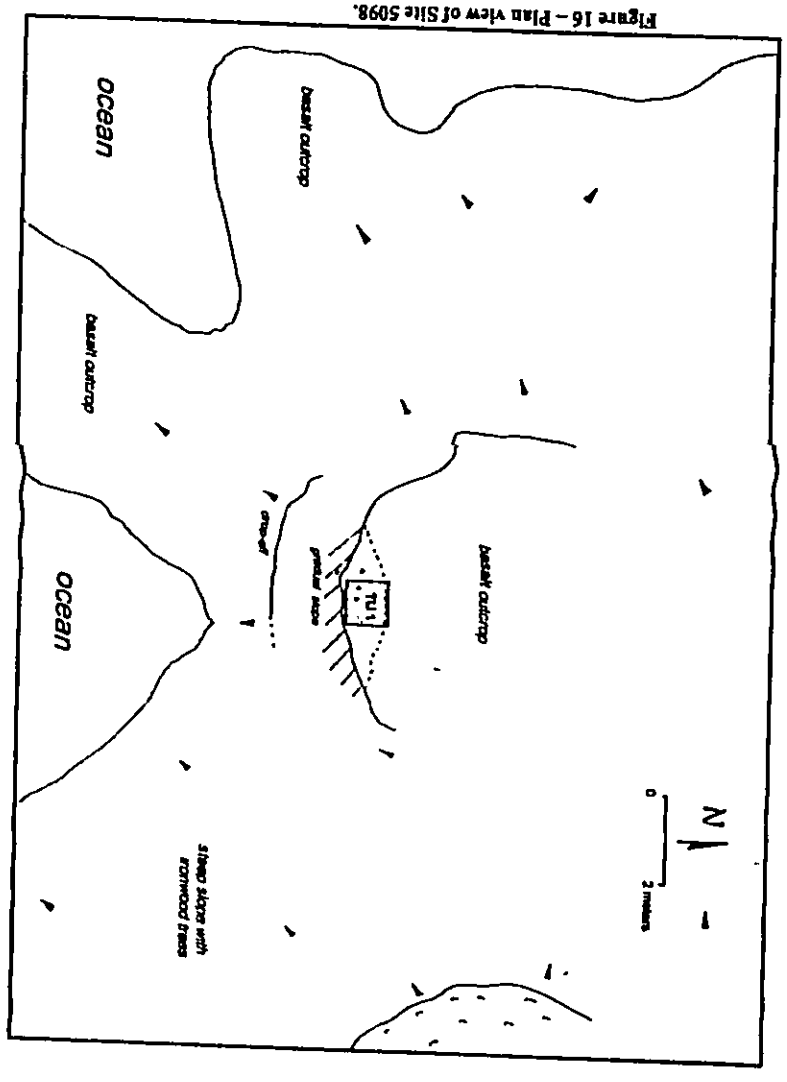


Figure 15 – East wall profile of Site 5098,Test Unit 1—excavated to depth of burial.

Discussion

Site 5098 lies along the coast and faces *makai*. The individual that is likely contained here appears to have been buried in an upright position facing the west. The *kukui* nut lamp (Artifact #4) was reinterred in the test unit, and Test Unit 1was back filled at the request of the Maui/Lana'i Islands Burial Council. Site 5098 is interpreted as a precontact coastal Hawaiian burial.

Figure 16 – Plan view of Site 5098.



As required by law, a Legal Notice was published in The Maui News and the Honolulu Advertiser on May 20, 21, and 23, 2001. Mr. Alexander Ross contacted Kapalua Land Company, Ltd. and he was subsequently interviewed by Erik Fredericksen. He indicated that he is a lineal descendent of the Koa family and of the individuals buried in the gravesite (Site 4142) on Parcel 31 [see discussions in previous archaeology and historic background sections of this report]. This parcel lies to the northeast of Site 5098, and was surveyed by PHRI in 1995. He was previously unaware of the fact that an unmarked burial is contained in this coastal rock overhang.

Table 4

Summary of Subsurface Results – Test Unit 1—Site 5098

	L II, L1 10-20 cmbs	L II, L2 20-30 cmbs	L II, L3 30-40 cmbs	L II, L4 40-50 cmbs	L II, L 5 50-60 cmbs	L II, L 6 60-70 cmbs	L II, L 7 70-80 cmbs	L II, L 8 80-90 cmbs	L II, L 9 90-100 cmbs
GASTROPODA									
Cellana sp.	0.9	4.9							
Conus sp.	0.5							0.3	0.1
Cypraea sp.	5.9	5.0			1.2				
Nerita picea					18.9	2.0	0.8		1.2
Planaxis sp.			0.2				0.1		*0.1*
Strombus sp.		*0.1*	*0.1*		*0.1*				
Thaididae sp.		0.7			0.8				
Turbo sandwicensis		0.7							
Unidentified	0.2	1.8	0.2		0.1	0.1			
ECHINOIDEA									
Sea urchin									
Pencil urchin				0.5					
BONE									
Teeth, mammal							0.7 (dog)		0.3
Fish		0.1							
Unidentified					0.1				
FLORAL									
Kukui nut shell	1.8	2.8	4.6			1.6	0.8	0.4	1.3
Charcoal	0.9	5.5	3.8			13.8	2.4	3.1	18.0
UNWORKED BASALT FLAKES (pieces)	(1) 1.4	(1) 0.2							
UNWORKED CORAL (pieces)	(1) 0.3				(3) 13.8	(1) 0.2	(2) 4.2		
FIRE-CRACKED ROCKS									
CHALCEDONY (Jasper)									
ARTIFACTS									
Basalt lamp								#4	

Weight in grams

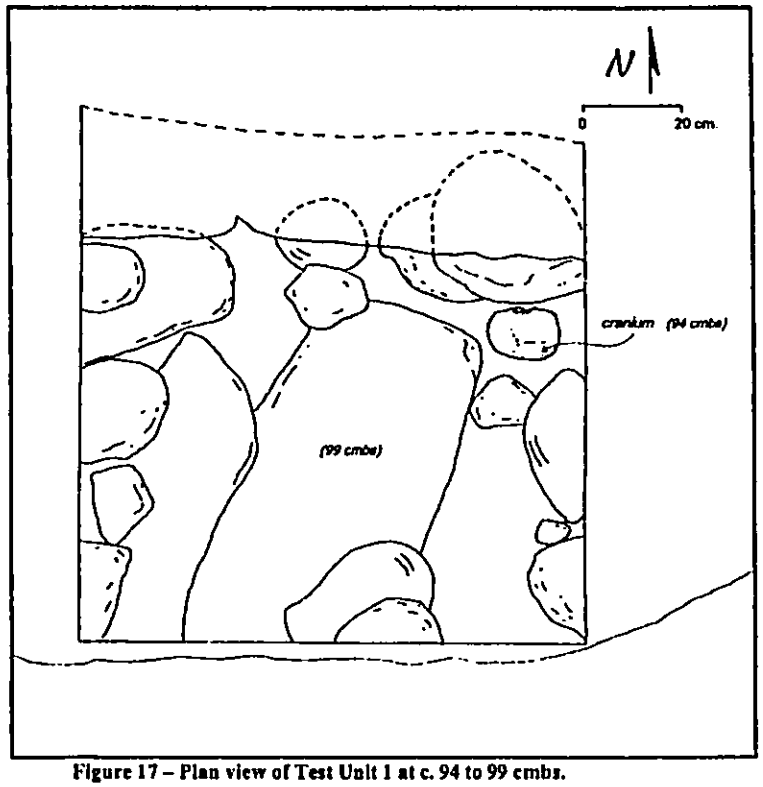


Figure 17 – Plan view of Test Unit 1 at c. 94 to 99 cmbs.

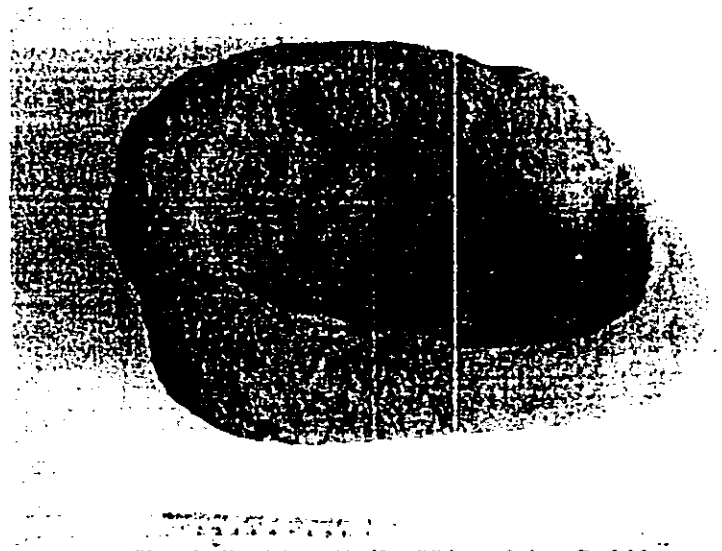


Photo 2 – Basalt lamp (Artifact #4) located above Burial 1.

Previously identified sites—Sites 5006 and 5007

Both of these sites were previously identified during an inspection of the southwestern portion of the project area in 2000 by Xamanek Researches (Fredericksen, 2000). This inspection was undertaken at the request of Kapalua Land Company, Ltd., in order to assess the potential impact of iron wood tree removal on unknown sites in a c. 245 meters (800 ft) long area along Honoapi'ilani Highway.[21] Two previously unidentified sites were located during this inspection and subsequently assigned SIHP No. 50-50-09-5006 and Site 5007.

Site 5006 (Figure 18)

Site 5006 consists of a plantation-era refuse dump. This first site is the most southwesterly one located on the project area. It essentially lies along the shoreline at the

[21] The existing proposal calls for the removal of these trees calls for them to be flush cut.

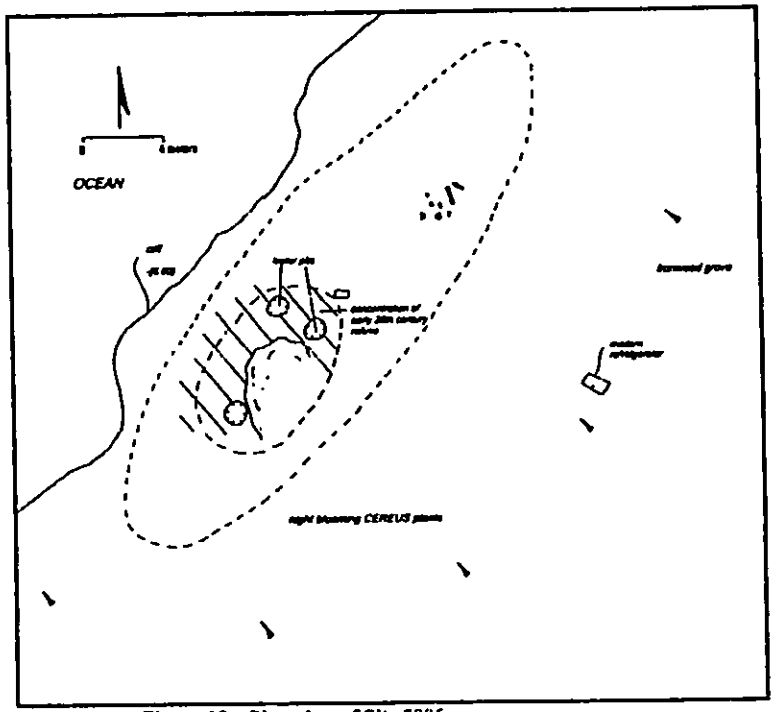


Figure 18 – Plan view of Site 5006.

base of a c. 5-meter high cliff. Vegetation noted in the area consisted of ironwood trees, alien grasses and annual weeds, and some night blooming cereus. This historic site measures c. 32 meters NE/SW by 10 meters NW/SE.

Noted surface remains included early bottle fragments (some with early 1900s finishes), various iron and metal parts, early 20th century ceramic sherds, and more recent refuse. The oldest surface artifacts were noted in an area c. 6-meters NW/SE by 10 meters NE/SW (Figure 18). At least three site-looting pits were noted during our survey. All three of these looter pits were located in the area with older artifacts. There was no subsurface testing done at this historic refuse dump, nor were items lying on the surface collected.

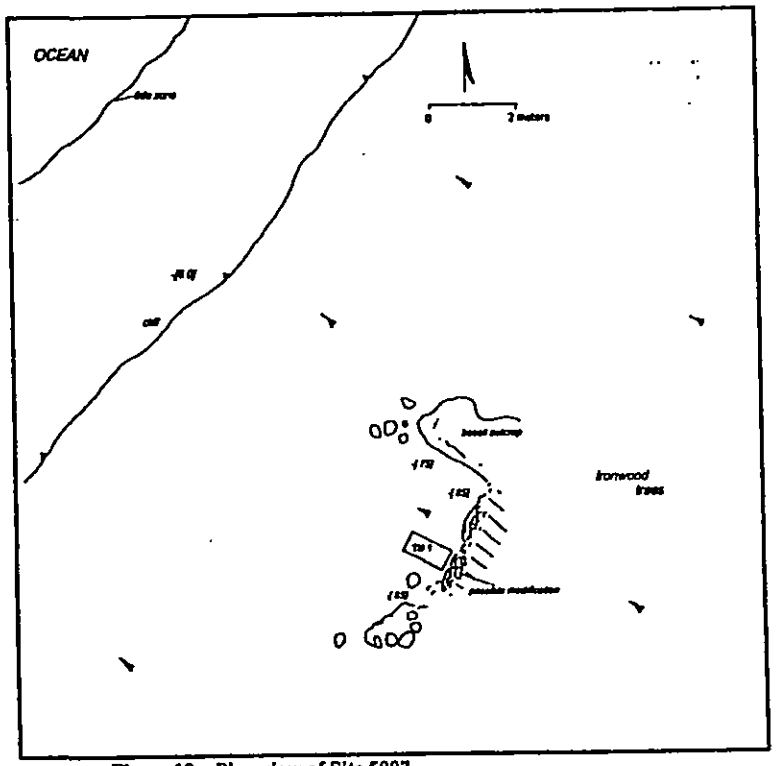


Figure 19 – Plan view of Site 5007.

Site 5007 (Figures 19-20; Photo 14)

This second previously identified site lies c. 250 meters northeast of Site 5006. Site 5007 is near the ocean and consists of a partial enclosure. A c. 6-meter high cliff separates this site from the boulder shoreline. Vegetation noted in this sloping (c. 20%) area included ironwood trees, alien grasses and annual weeds, and isolated *'ilima* shrubs. It is estimated that this site lies c. 20-25 ft AMSL.

Site 5007 is a single component site consisting of an "L-shaped" modified outcrop that forms a partial enclosure (Photo 14). The open portion of this enclosure faces the nearby ocean. It measures c. 6 meters NE/SW by 2.1 meters NW/SE and is a maximum of 85 cm. in height. This site is in generally fair to good condition and appears to be

unaltered. Surface duff composed primarily of decayed ironwood needles covers much of surface in the vicinity of this site. Scattered modern refuse was noted on the surface to the northwest of this enclosure. One test unit was utilized to investigate subsurface conditions at this enclosure.

Test Unit 1

This test unit measured 1.0 WNW by 0.5 meter and was up to 60 cm. in depth. Two strata were encountered before TU 1 was terminated at bedrock (Figure 20).

Layer I (c. 0-18 cmbs) was composed of brown (7.5 YR 5/4) silty clay loam with 30% by volume of weathered bedrock. Material culture remains recovered from this loose stratum included 1.4 g. of fish bone, and 1.8 g. of mammal (non-human) bone. No additional subsurface cultural materials were found in this layer.

Layer II (c. 11-28 cmbs) consisted of light brown (10 YR 6/3) silty clay and weathered bedrock. This slightly compact layer was sterile, and excavation was terminated at bedrock.

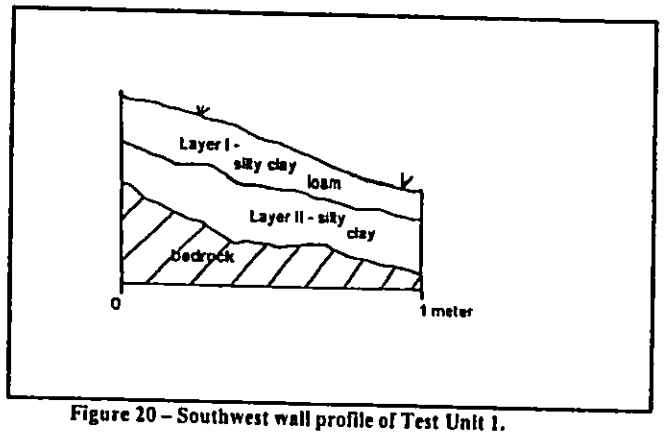


Figure 20 – Southwest wall profile of Test Unit 1.

Discussion

Given this site's proximity to the ocean, it appears plausible that it could have been used as a temporary shelter for fishermen. However, there were no precontact artifacts or post-contact materials recovered during the excavation of TU 1.

Radiometric Dating Analysis

One radiocarbon date was obtained from Site 5097—a rock overhang shelter—Feature A. There were a number of subfeatures found in Test Unit 1. Feature 7.2 was a basin shaped fire-pit that contained over 100 grams of charcoal and numerous fire-cracked rocks. It occurred between 18 and 27 cm. below the surface. The radiocarbon age was 240 +/- 60 BP, and the calibrated date brackets are AD 1500 to 1690, AD 1730 to 1810, and AD 1920 to 1950. The intercept date falls at AD 1660. This date is roughly in the same time bracket as other coastal habitation site dates for this section of Maui.

Table 5

Radiocarbon dates for coastal habitation sites in the Kapalua vicinity

Beta #	Location/provenience	Radiocarbon age	Calendric dates	Intercept date	Firm
143073	Coconut Grove, Kapalua Site 4815, Feature 1, hearth	290 +/- 40 BP	AD 1490 to 1665	AD 1640	XR
85034	Site 4144, [PHRI 1995] Feature B, 20-40 cmbs	210 +/- 50 BP	AD 1528-1555 AD 1633-1704 AD 1720-1820 AD 1916-1954		PHRI
156508	Site 5097, Feature A rock overhang, fire pit (present study)	240 +/- 60 BP	AD 1500-1690 AD 1730-1810 AD 1920-1950	AD 1660	XR

SUMMARY AND CONCLUSIONS

A total of six previously unidentified archaeological sites were located during our inventory survey. These cultural resources have been assigned SIHP No. 50-50-09-5093-5098. In addition, information was gathered on two previously identified sites—Sites 5006 and 5007. Each of these sites is briefly discussed below.

Site 5093 lies on Kalaepiha Point and consists of a paved platform/enclosure (Feature A) along with an associated access trail to what is interpreted as a fish spotting station (Feature B). Excavation at the Feature A enclosure/platform revealed a water worn pavement and yielded low amounts of material culture remains including three indigenous artifacts. Information obtained from informants indicates that this area has continued to be an important traditional fishing area into recent times. Portions of Site 5093 have been impacted by previous earth moving activities. Feature A of this site is interpreted as a probable ceremonial structure that was likely associated with fishing activities in precontact times, and possibly into the post-contact period. Feature B appears to be a fish spotting station that may still be utilized by contemporary fishermen. Site 5093 is considered to be the most culturally significant site identified during the inventory survey.

Site 5094 is tentatively interpreted as a remnant of a precontact habitation area that also lies on Kalaepiha Point. This site has been impacted by previous land clearing activities. It is in generally poor condition.

Site 5095 is located near Kalaepiha Point and is interpreted as a remnant of the Old Government Road. This site remnant consists of a section of dry laid rock retaining wall and the old road cut. The site is in generally fair condition. It is the only remnant of the old road that was encountered on the project area.

Site 5096 is a remnant of the old slaughterhouse that was built on the point in the early 1900s. This site remnant consists of a concrete slab. Bulldozing activities have impacted the general area around this site. Site 5096 is in poor condition.

Site 5097 consists of two rock overhang shelters (Features A and B) that are located near Mokuleia Bay. Subsurface investigation at Feature A yielded moderate amounts of material culture remains along with four subsurface features. A charcoal sample from a hearth (Feature 7.2) returned a conventional date range of 260±60 BP. At 2 sigma (95% probability) the corrected date ranges for this sample are AD 1500-1690,

1730-1810, and 1920-1950. The lack of any recognizable post-contact cultural materials tends to support the earlier date ranges. Feature B was tested with negative results. However, it is important to note that much of the floor of this shelter was unavailable for testing because it was covered by what appeared to be relatively recent slope wash from a bulldozed area on the ridge above this overhang. Site 5097 is interpreted as a temporary habitation area that was likely associated with marine resource acquisition. Its location would have provided attractive temporary shelter to individuals engaged in this kind of activity. Even with a lack of subsurface cultural material, it seems likely that this site could have been utilized during the late-precontact period and early post-contact times, when such activities were still part of the subsistence pattern.

Site 5098 lies on the southwestern side of Alaelae Point. This site is interpreted as coastal burial of a sub adult. Limited excavation at this site produced indigenous material culture remains including a *kukui* nut lamp. Given the location and the context of this site, it is interpreted as a precontact Native Hawaiian burial. This site is in generally good condition.

Site 5006 was identified in an earlier inspection of a portion of the project area, but not assessed. This site consists of a plantation-era rubbish dump. Bottle hunters have looted portions of this site and its overall integrity is poor.

Site 5007 consists of a modified outcrop that forms an "L" shaped partial enclosure. This coastal site was tested and yielded very low amounts of material culture remains. Given this site's proximity to the shoreline, it appears that it may have served as temporary shelter for persons engaged in fishing activities. It is possible that this site was utilized in both precontact as well as post-contact times.

Site Significance Assessments

The following significance evaluations are based on the Rules Governing Procedures for Historic Preservation Review (DLNR 1996; Chapter 275). According to these rules, a site must possess integrity of location, design, setting, materials, workmanship, feeling and association and shall meet one or more of the following criteria:

Criterion "a"—Be associated with events that have made an important contribution to the broad patterns of our history;

Criterion "b"—Be associated with the lives of persons important in our past;

Criterion "c"—Embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; or possess high artistic value;

Criterion "d"—Have yielded, or is likely to yield, important information for research on prehistory or history;

Criterion "e"—Have an important traditional cultural value to the native Hawaiian people or to another ethnic group of the state due to associations with traditional cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts.

Table 6 summarizes the significance assessments for the sites located on the project area. Sites 5006, 5007, and 5093-5098 qualify for significance under Criterion 'd"—for their information content. In addition, several of the sites qualify for importance under multiple significance criteria. Site 5093, a paved platform/enclosure and fish spotting station with trail, also qualifies under Criterion "e"—as a place of significance to the Native Hawaiian culture. The remnant of the Old Government Road—Site 5095—qualifies under Criterion "a", because of it is an important part of the post-contact transportation patterns on Maui. Site 5098—the coastal burial—qualifies under Criterion "e"—for its Native Hawaiian cultural significance.

Mitigation Recommendations

Six of the eight sites discussed above retain their significance assessments. In-place preservation is recommended for Sites 5007, 5093, 5095, 5097 and 5098. Most of these sites are located in areas that pose relatively few preservation problems. The integrity of Site 5094 has been altered by previous land clearing activities, and additional work in the form of data recovery is recommended if in-place preservation is not feasible for this site remnant. Sites 5006 and 5096 have yielded adequate information and no further work is recommended for them.

Table 6

Site Assessments and Mitigation Recommendations

Site Number	Description	Function	Significance	Mitigation
5006	Plantation-era dump	Refuse disposal	D	NLS*
5007	Modified outcrop	Temporary shelter	D	Preservation in place
5093	Kalaepaha Point Feature A Paved platform/enclosure	Probable ceremonial structure associated with traditional fishing area	D, E	Preservation in place
	Feature B Leveled observation area	Traditional fish-spotting area, still being used	D, E	Preservation in place
5094	Kalaepaha Point Surface site which has undergone alteration	Precontact habitation area remnant	D	Preservation in place Or data recovery[22]
5095	Old Government Road	Transportation	A, D	Preservation in place
5096	Historic concrete slab	Former slaughterhouse	D	NLS
5097	Two rock overhang shelters	Precontact temporary habitation area	D	Preservation in place
5098	Alaelae Point rock overhang	Burial site containing one subadult	D, E	Preservation in place

*No longer significant

[22] In the event that preservation is not feasible, data recovery should be undertaken.

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APPENDIX A

Radiometric Analysis

by
Beta Analytic, Inc.
Miami, Florida

BETA

BETA ANALYTIC INC.

DR. M.A. TAMERS and MR. D.G. HOOD

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REPORT OF RADIOCARBON DATING ANALYSES

Dr. Walter Frederickson — Report Date: 6/21/01

Xamanek Researches — Material Received: 6/14/01

Sample Data	Measured Radiocarbon Age	13C/12C Ratio	Conventional Radiocarbon Age(*)
Beta - 156508 SAMPLE : KAPALUA MAKAI #1 ANALYSIS : Radiometric-Priority delivery MATERIAL PRETREATMENT : (charred material): acid/alkali/acid 2 SIGMA CALIBRATION :	260 +/- 60 BP	-25.9 o/oo	240 +/- 60 BP Cal AD 1500 to 1690 (Cal BP 450 to 260) AND Cal AD 1730 to 1810 (Cal BP 220 to 140) Cal AD 1920 to 1950 (Cal BP 30 to 0)

Dates are reported as RCYBP (radiocarbon years before present, "present" = 1950A.D.). By international convention, the modern reference standard was 95% of the C14 content of the National Bureau of Standards' Oxalic Acid I, calculated using the Libby C14 half life (5568 years). Quoted errors represent 1 standard deviation statistics (68% probability) & are based on combined measurements of the sample, background, and modern reference standards.

Measured C13/C12 ratios were calculated relative to the PDB-1 international standard and the RCYBP ages were normalized to -25 per mil. If the ratio and age are accompanied by an [*], then the C13/C12 value was estimated, based on values typical of the material type. The quoted results are NOT calibrated to calendar years. Calibrate to calendar years should be calculated using the Conventional C14 age

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-25.9:lab. mult=1)

Laboratory number: Beta-156508

Conventional radiocarbon age: 240±60 BP

2 Sigma calibrated results: (95% probability) Cal AD 1500 to 1690 (Cal BP 450 to 260) and Cal AD 1730 to 1810 (Cal BP 220 to 140) and Cal AD 1920 to 1950 (Cal BP 30 to 0)

Intercept data

Intercept of radiocarbon age with calibration curve: Cal AD 1660 (Cal BP 290)

1 Sigma calibrated results: (68% probability) Cal AD 1640 to 1670 (Cal BP 310 to 280) and Cal AD 1770 to 1800 (Cal BP 180 to 150) and Cal AD 1940 to 1950 (Cal BP 10 to 0)

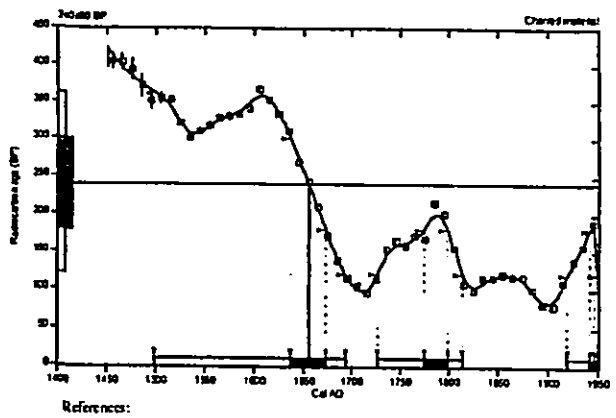

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Photo 3 – View to the northeast across Honolua Bay from Kalaepiha Point.

Photo 4 – General view to the northeast of young *koa haole* growth on portion of Kalaepiha Point. Site 5093 lies at the crest of the rise; Site 5094 at right.

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Photo 5 – View to the northwest over a portion of Feature A—Site 5093.

Photo 6 – Plan view of pavement exposed in Test Unit 2, Site 5093—Feature A.

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Photo 7 – West face profile of Test Unit 4, Site 5093—Feature A.

Photo 8 – View to the northeast across a portion of Feature B—Site 5093.

Photo 9 – View to the east of a portion of the Site 5095 retaining wall (Tlanoapi'tlani Highway in background).

Photo 10 – View to the west across Site 5096—old concrete foundation at right.

Photo 11 – View to the southeast of Feature B overhang. Site 5097. Portion of Feature A visible at left.

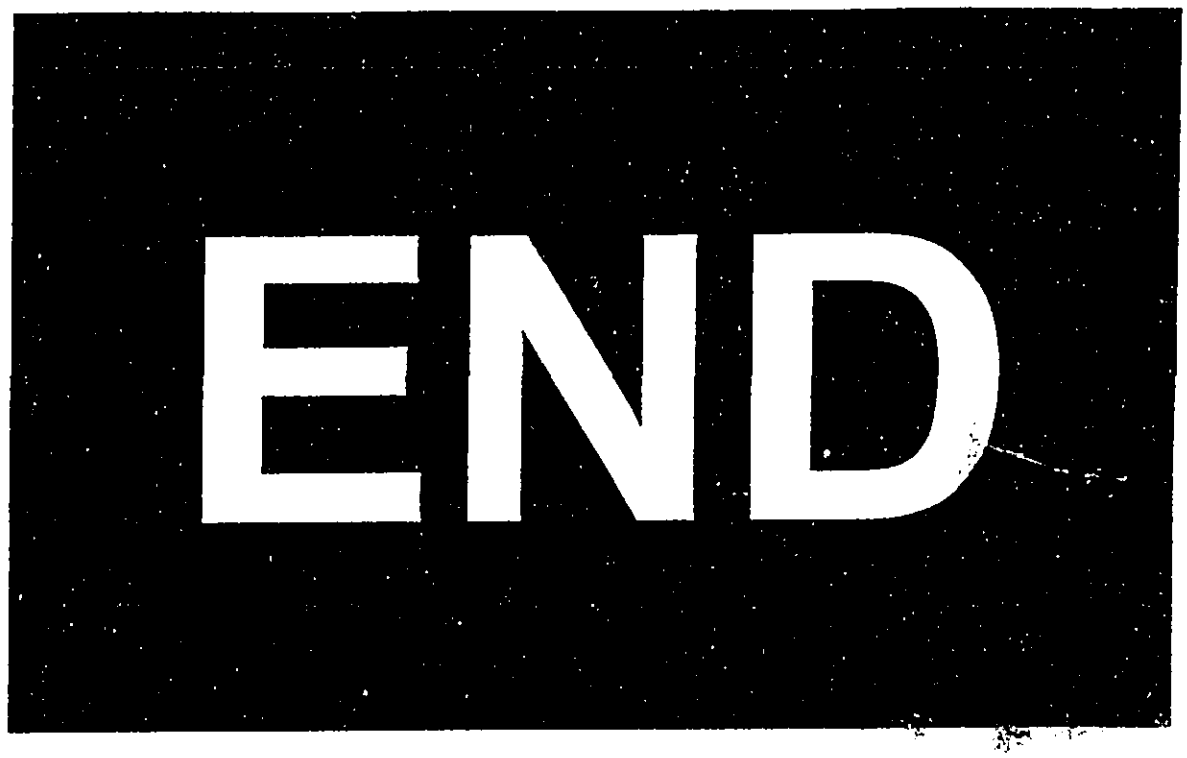
Photo 12 – View to the northeast across Site 5098. Honoapi'ilani Highway berm in upper right.

Photo 13 – View to the southwest across Site 5098.

Photo 14 – View to the northeast across Site 5007.

CONTINUE ON

Reel 52-A



CERTIFICATION

I HEREBY CERTIFY THAT THE MICROPHOTOGRAPH APPEARING IN THIS REEL OF FILM ARE TRUE COPIES OF THE ORIGINAL DOCUMENTS.

2004
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SIGNATURE OF OPERATOR

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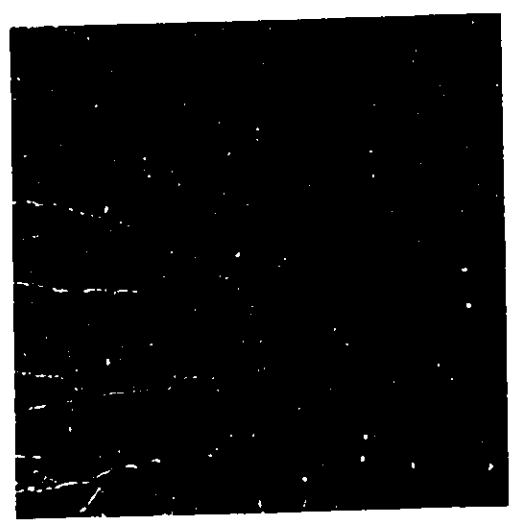
PRECISION℠ RESOLUTION TARGETS

RIGHT

150 MM

6 ″



PL-3 8½"x11" PAPER PRINTED GENERAL TARGET

DENSITY TARGET