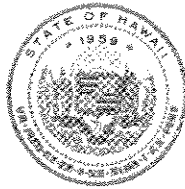


MAR 23 2007

LINDA LINGLE
GOVERNOR OF HAWAII



PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA
DEPUTY DIRECTOR

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ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS


STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

MAR 12 2007

MEMORANDUM

TO: Genevieve Salmonson, Director
Office of Environmental Quality Control

FROM: Samuel J. Lemmo, Administrator
Office of Conservation and Coastal Lands 

SUBJECT: Final Environmental Assessment (FEA)/Finding of No Significant Impact (FONSI) for Conservation District Use Application (CDUA) MA-3382

The Department has reviewed the Final Environmental Assessment (FEA) for the proposed commercial use of the grounds of the former Plantation Mill at Olowalu, Lahaina, Maui, TMK (2) 4-8-03:5. The applicant has added an appendix that includes his responses to comments received. The original CDUA has not changed.

The Draft Environmental Assessment (DEA) for CDUA MA-3382 was published in OEQC's December 23, 2006 *Environmental Notice* for the subject project.

The FEA is being submitted to OEQC. We have determined that this project will not have significant environmental effects, and have therefore issued a FONSI. The FONSI does not constitute approval of the CDUA; authority to grant or deny the final permit lies with the Board of Land and Natural Resources.

Please publish this notice in OEQC's upcoming March 23, 2007 *Environmental Notice*. We have enclosed four copies of the FEA for the project. The OEQC Bulletin Publication Form is being emailed to you as well as attached to this letter, and the summary remains unchanged.

Please contact Michael Cain of our Office of Conservation and Coastal Lands staff at 587-0380 if you have any questions on this matter.

RECEIVED
MAR 12 4:06 PM
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

c: Mark Roy, Consultant, Munekiyo & Hiraga, 305 High Street, Suite 104, Wailuku, HI 96793

attachments: OEQC Pubform
Final Environmental Assessment (4)

2007-03-23-MA-FEA-
PIONEER MILL

MAR 23 2007

RECEIVED
OFFICE OF CONSERVATION
AND COASTAL LANDS

Final Environmental Assessment

2007 MAR -8 P 12: 06

DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

USE OF FORMER PIONEER MILL PLANTATION MANAGER'S HOUSE AND SURROUNDING BOTANICAL GARDENS FOR SPECIAL EVENTS AND TEMPORARY EVENT-RELATED MINOR STRUCTURES

Approving Agency:

State of Hawai'i, Department of
Land and Natural Resources, Office
of Conservation and Coastal Lands

Applicant:

Olowalu Elua Associates LLC

March 2007

OFFICE OF CONSERVATION
AND COASTAL LANDS

07 MAR 12 P 4:06

RECEIVED



Final Environmental Assessment

USE OF FORMER PIONEER MILL PLANTATION MANAGER'S HOUSE AND SURROUNDING BOTANICAL GARDENS FOR SPECIAL EVENTS AND TEMPORARY EVENT-RELATED MINOR STRUCTURES

Approving Agency:

**State of Hawai'i, Department of
Land and Natural Resources, Office
of Conservation and Coastal Lands**

Applicant:

Olowalu Elua Associates LLC

March 2007



CONTENTS

I. PROJECT OVERVIEW	Page 1
A. PROJECT LOCATION AND EXISTING USE	Page 1
B. PROJECT DESCRIPTION	Page 1
C. SPECIAL EVENT USAGE INFORMATION	Page 5
D. OVERVIEW OF PERMIT REQUIREMENTS	Page 6
II. DESCRIPTION OF THE EXISTING ENVIRONMENT	Page 7
A. PHYSICAL SETTING	Page 7
1. Existing and Surrounding Land Use	Page 7
2. Climate	Page 7
3. Topography	Page 8
4. Soils	Page 8
5. Flood and Tsunami Hazards	Page 8
6. Flora and Fauna	Page 12
7. Archaeological Resources	Page 13
8. Air Quality	Page 14
9. Noise	Page 16
10. Scenic and Open Space Resources	Page 16
11. Shoreline Access	Page 16
B. SOCIO-ECONOMIC ENVIRONMENT	Page 17
1. Population	Page 17
2. Economy	Page 17
C. PUBLIC SERVICES	Page 18
1. Solid Waste Disposal	Page 18
2. Medical Facilities	Page 18
3. Police and Fire Protection	Page 18
4. Educational Facilities	Page 19
5. Recreational Facilities	Page 19
D. INFRASTRUCTURE	Page 19
1. Roadways	Page 19
2. Water	Page 21
3. Wastewater Systems	Page 21
4. Drainage	Page 21
5. Electrical, Telephone and CATV Considerations	Page 21
III. POTENTIAL IMPACTS AND MITIGATION MEASURES	Page 23
A. PHYSICAL ENVIRONMENT	Page 23

1.	Existing and Surrounding Land Uses	Page 23
2.	Topography and Landform	Page 23
3.	Flood and Tsunami Hazards	Page 23
4.	Flora and Fauna	Page 23
5.	Archaeological Resources	Page 24
6.	Cultural Assessment	Page 24
7.	Air Quality	Page 25
8.	Noise	Page 25
9.	Scenic and Open Space Resources	Page 25
10.	Shoreline Access	Page 25
B.	IMPACTS TO COMMUNITY SETTING	Page 25
1.	Population	Page 25
2.	Economy	Page 26
C.	PUBLIC SERVICES	Page 26
1.	Solid Waste Disposal	Page 26
2.	Police, Fire and Medical Services	Page 26
3.	Educational and Recreational Resources	Page 26
D.	INFRASTRUCTURE	Page 26
1.	Roadways	Page 26
2.	Water	Page 29
3.	Wastewater Systems	Page 30
4.	Drainage	Page 30
5.	Electricity, Telephone and CATV Systems	Page 30
IV.	RELATIONSHIP TO GOVERNMENTAL PLANS, POLICIES AND CONTROLS	
	STATE LAND USE DISTRICTS	Page 31
A.	STATE LAND USE DISTRICTS	Page 31
B.	MAUI COUNTY GENERAL PLAN	Page 33
C.	WEST MAUI COMMUNITY PLAN	Page 34
D.	ZONING	Page 36
E.	SPECIAL MANAGEMENT AREA OBJECTIVES AND POLICIES ...	Page 36
V.	SUMMARY OF ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE	
	AVOIDED	Page 46
VI.	ALTERNATIVES ANALYSIS	Page 47
A.	NO ACTION ALTERNATIVE	Page 47
B.	ALTERNATIVE LOCATION	Page 47
VII.	IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF	
	RESOURCES	Page 48
VIII.	FINDINGS AND CONCLUSIONS	Page 49

IX. LIST OF PERMITS AND APPROVALS Page 53

X. AGENCIES/ORGANIZATIONS CONSULTED DURING THE PREPARATION OF
THE DRAFT ENVIRONMENTAL ASSESSMENT AND RESPONSES
RECEIVED Page 54

XI. LETTERS RECEIVED DURING THE DRAFT ENVIRONMENTAL
ASSESSMENT REVIEW PERIOD AND RESPONSES TO SUBSTANTIVE
COMMENTS Page 56

XII. REFERENCES Page i

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LIST OF FIGURES

Figure 1. Regional Location Map	Page 2
Figure 2. Property Location Map	Page 3
Figure 3. Site Plan	Page 4
Figure 4. Soil Association Map	Page 9
Figure 5. Soil Classifications	Page 10
Figure 6. Flood Insurance Rate Map	Page 11
Figure 7. Location of Archaeological Sites	Page 15
Figure 8. West Maui Community Plan	Page 35
Figure 9. Special Management Area Boundary	Page 38

LIST OF APPENDICES

Appendix A.	Olowalu Makai-Komohana Final Subdivision Plat Map
Appendix B.	Site Photographs
Appendix C.	House Rules
Appendix D.	Letter from Department of Land and Natural Resources (DLNR), Office of Conservation and Coastal Lands (OCCL) Dated January 9, 2006
Appendix E.	Botanical Survey
Appendix F-1.	Archaeological Inventory Survey of Makai Olowalu Lands
Appendix F-2.	Archaeological Inventory Survey of Mauka Olowalu Lands
Appendix F-3.	Archaeological Inventory Survey Report Approval Letters from Department of Land and Natural Resources (DLNR), State Historic Preservation Division
Appendix F-4.	Archaeological Mitigation and Preservation Plan and SHPD Approval Letter
Appendix G.	Cultural Impact Assessment Interview Summaries
Appendix H.	Traffic Impact Assessment Report
Appendix I.	Summary of February 20, 2007 CDUA Public Hearing (Including Copies of Written Public Testimony Submitted to OCCL)

I. PROJECT OVERVIEW

I. PROJECT OVERVIEW

A. PROJECT LOCATION AND EXISTING USE

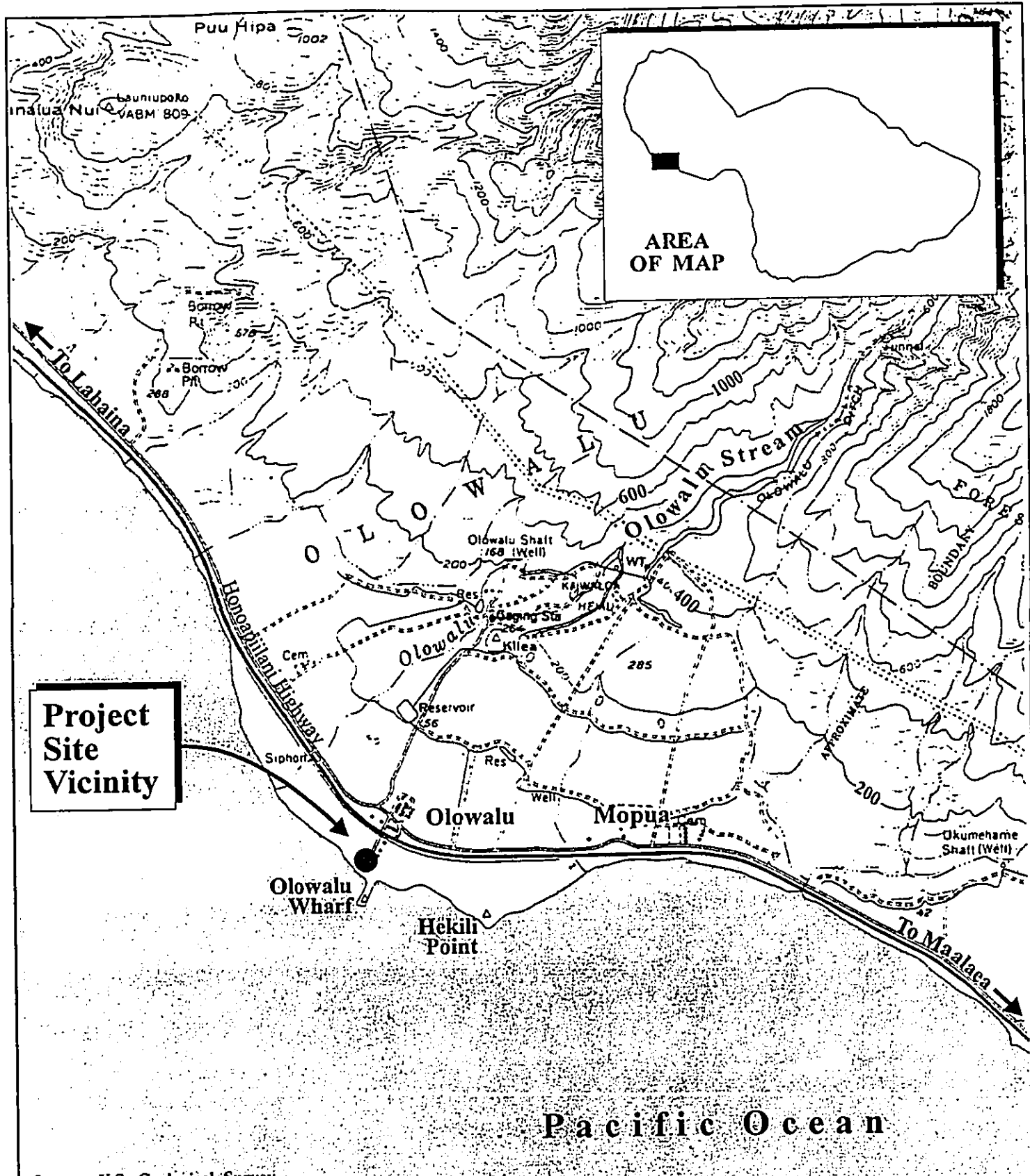
The subject property is located in Olowalu, Maui and represents Lot 4-A of the Olowalu Makai Komohana Subdivision. See **Figure 1**. It is owned by Olowalu Elua Associates LLC (hereafter referred to as the “applicant”). The subject property encompasses approximately ten (10) acres (435,600 square feet) and is identified by TMK (2)4-8-003:005. Access is provided from Honoapiʻilani Highway via a two-way State-owned roadway. See **Figure 2**.

B. PROJECT DESCRIPTION

The applicant is seeking to obtain the necessary after-the-fact land use approvals so that it can continue to hold special events, provide guest parking and erect temporary event-related minor structures (hereafter referred to as the “subject project”) on a portion of the subject property. See **Figure 3**.

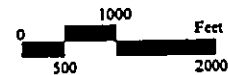
The 4.7-acre portion of the subject property (hereafter referred to as the “project site”) is designated entirely as “Conservation” by the State Land Use Commission. Refer to **Figure 3**. The project site encompasses a former Pioneer Mill plantation manager’s house (hereafter referred to as the “plantation manager’s house”), a private driveway, a garage, a former washhouse building and a large grassy lawn and botanical garden area. While not affected by the subject project, it is noted that the project site also encompasses the former Olowalu Sugar Mill and Olowalu Wharf area. It is also noted that there is a 20-foot lateral shoreline access and a 150-foot shoreline setback area fronting the project site. Refer to **Figure 3**. A plat map, showing the location of the lateral shoreline access and other easements for the Olowalu Makai Komohana Subdivision is presented in **Appendix “A”**.

In conjunction with the special events, the project site is also used to provide guest parking on a temporary basis. The subject project will also involve the use of various temporary event-related minor structures (including a temporary event tent) in the grassy lawn area adjacent to the plantation manager’s residence. The subject project will involve the use of two (2) (primary and alternate) locations for the erection of a temporary tent for special events, as needed. The tent to be utilized for special events at the primary location will be no larger than 1,400 square feet in size. The alternate location will be utilized for those



Source: U.S. Geological Survey

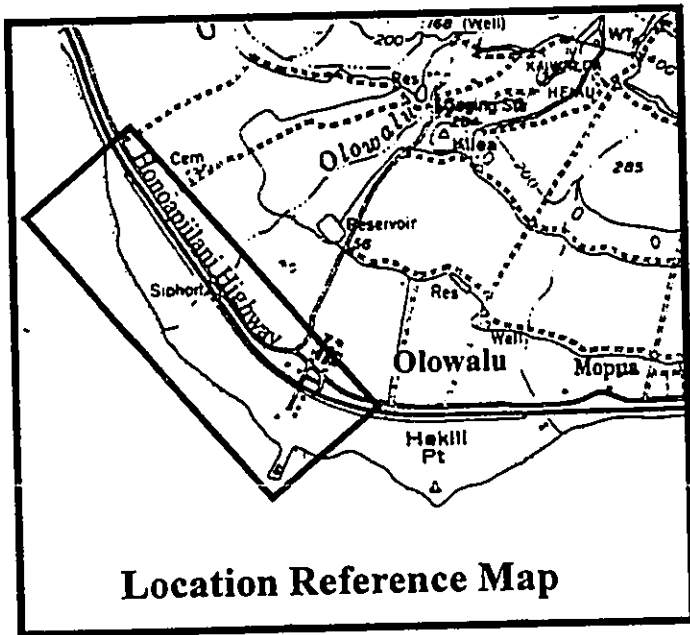
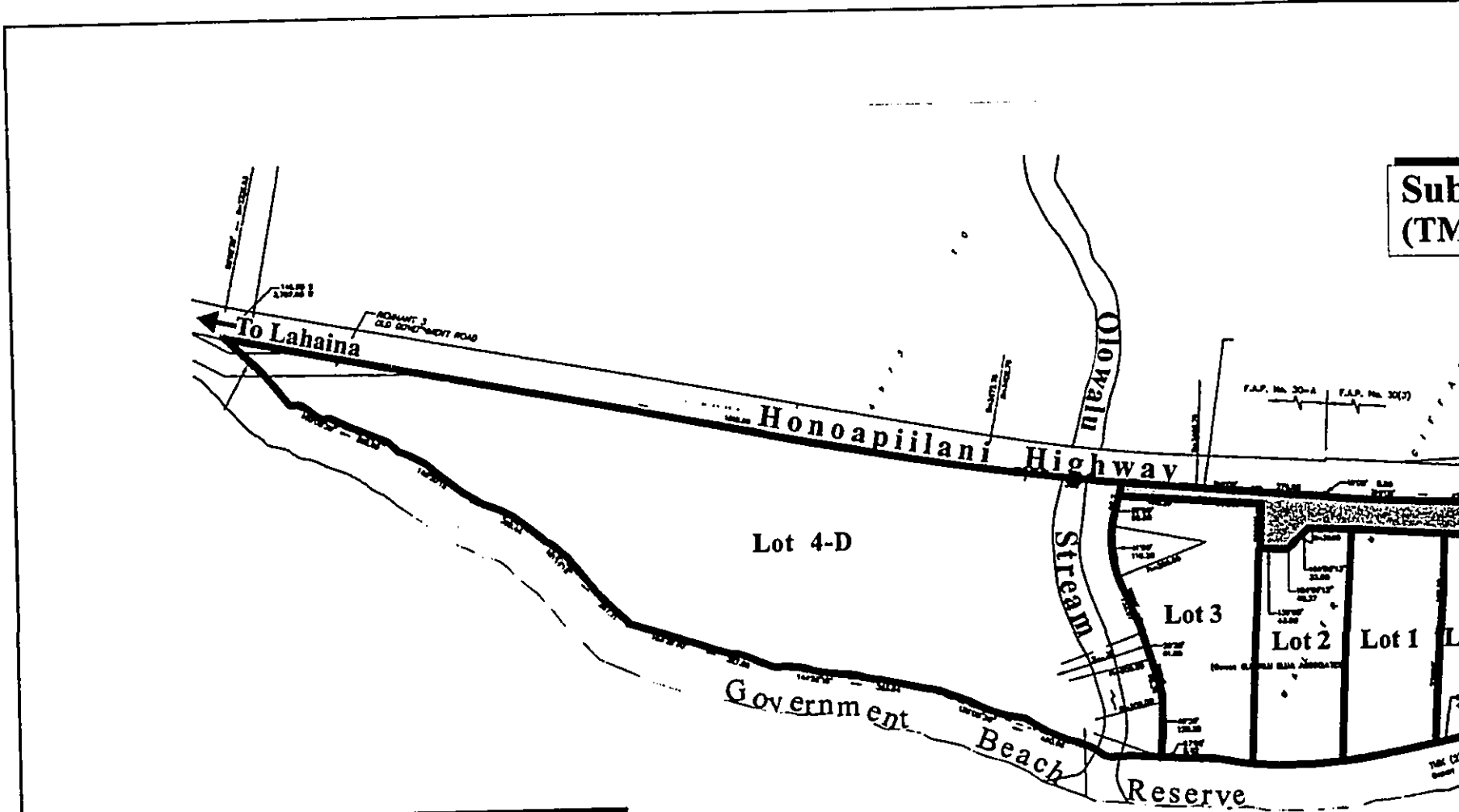
Figure 1 Use of TMK (2)4-8-03-005 (por.)
for Special Events and
Temporary Structures
Regional Location Map



Prepared for: Olowalu Elua Associates, LLC

MUNEKIYO & HIRAGA, INC.

WM\LC\Olowalu\elua\reg\loca



Pacific Ocean

Source: R.T. Tanaka Engineers, Inc.

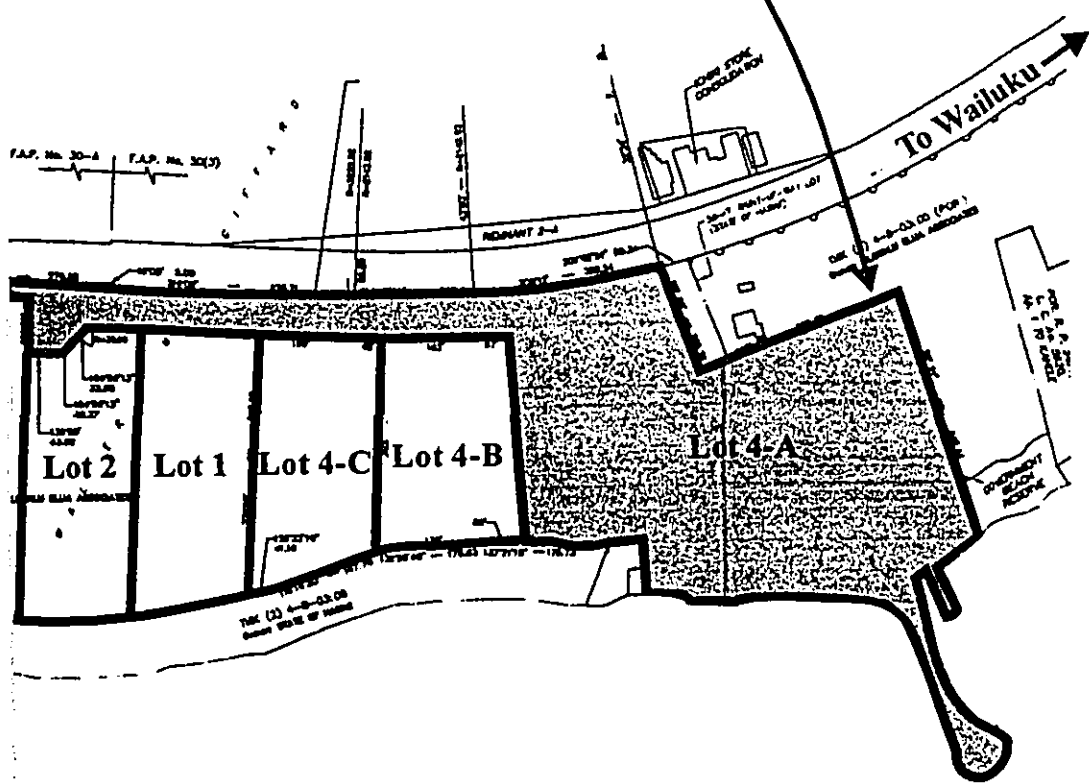
Figure 2

Use of TMK (2)4-8-03-005(por.) for Special Events
Property Location Map



Prepared for: Olowalu Elua Associates, LLC

**Subject Property
(TMK (2) 4-8-03:005)**

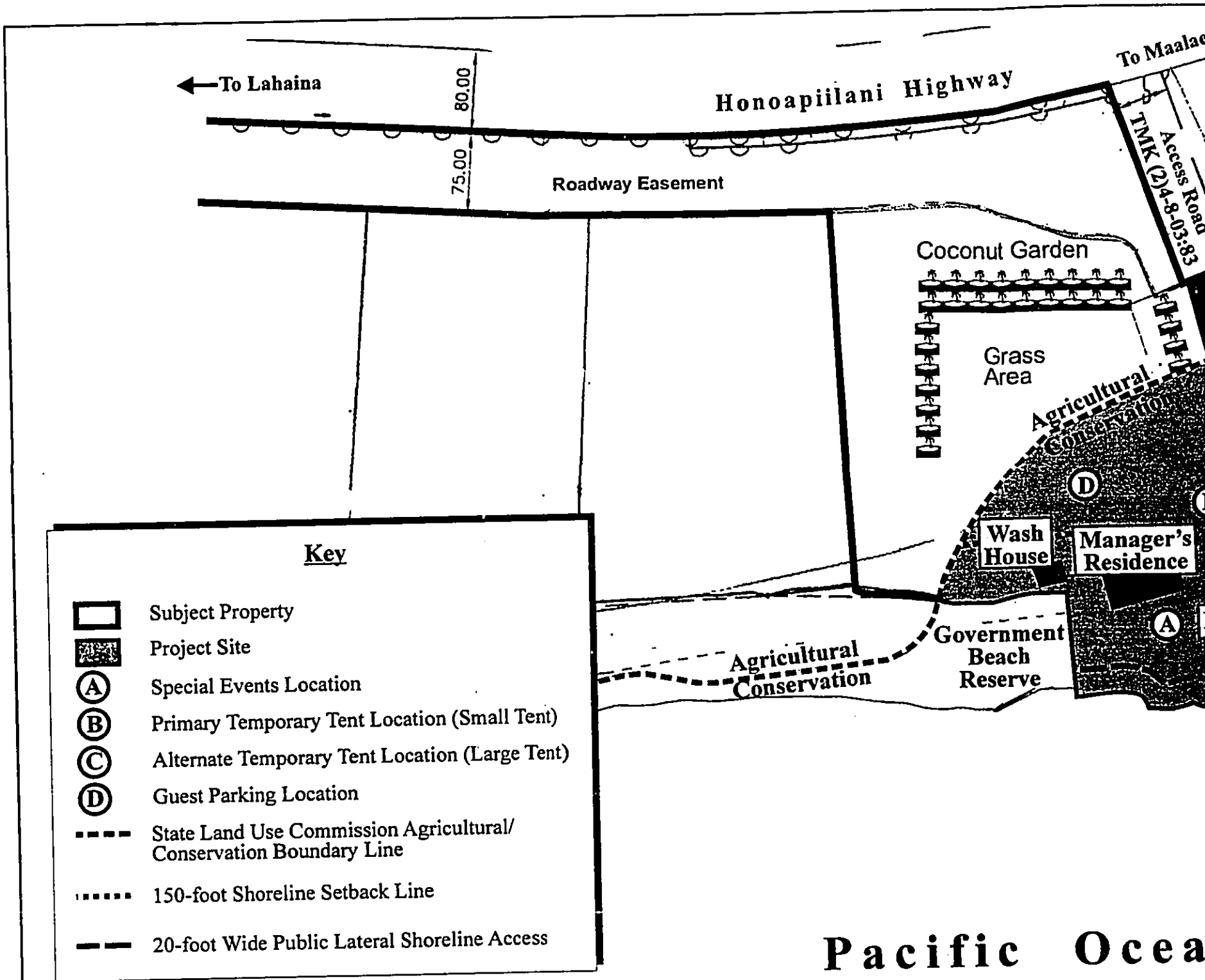


Ocean

ial Events and Temporary Structures NOT TO SCALE
on Map

MUNEKIYO & HIRAGA, INC.

WMLC/OlowaluHouse/property/location



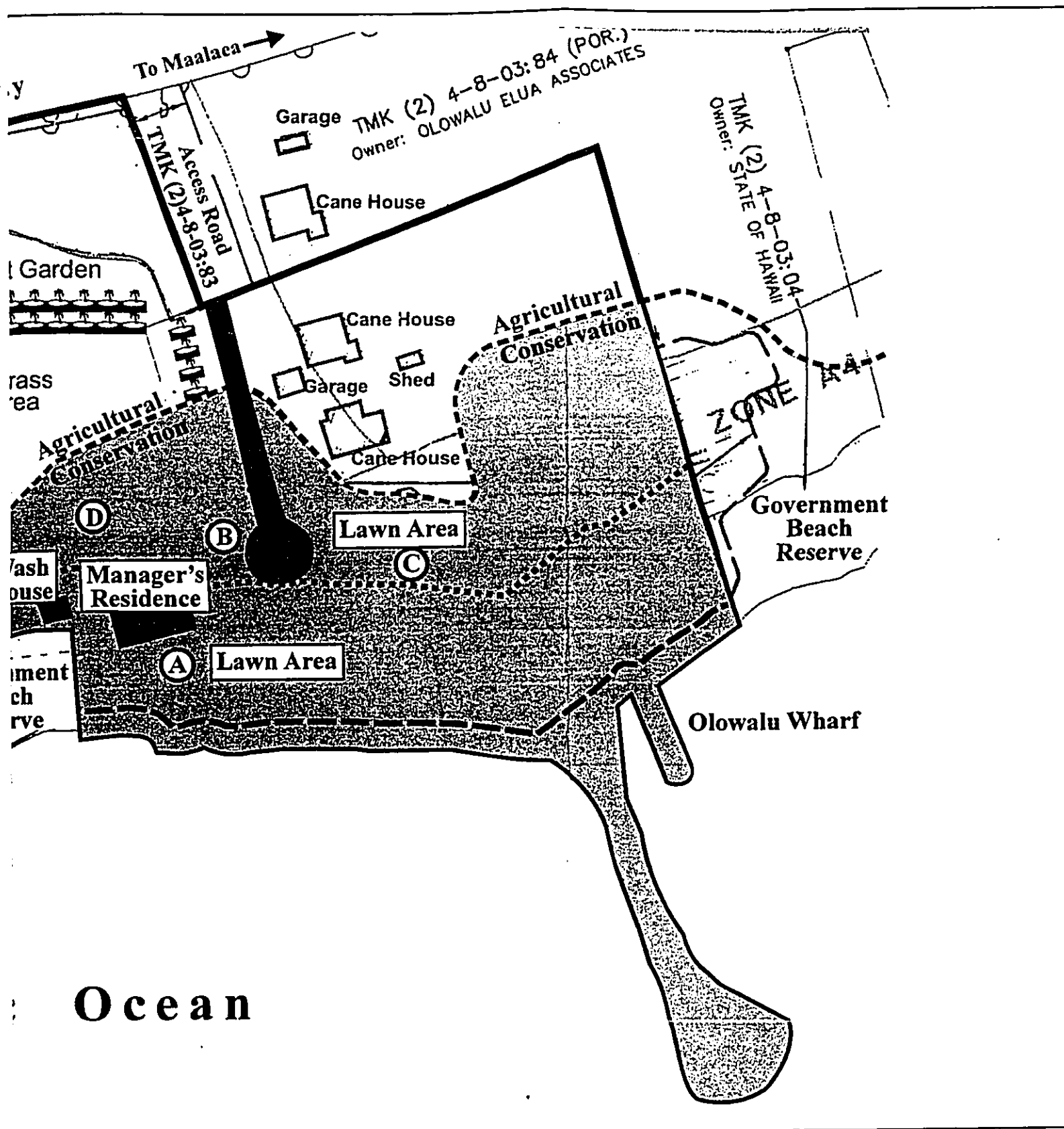
Source: Olowalu Elua Associates LLC

Figure 3

Use of TMK (2)4-8-03:005(por.) for Special Events Site Plan



Prepared for: Olowalu Elua Associates, LLC



Special Events and Temporary Structures
Plan

NOT TO SCALE

MUNEKIYO & HIRAGA, INC.

WMLC/OlowaluHouse/siteplan

events where a larger tent is required. The tent at the alternate location will be no larger than 4,800 square feet in size. The temporary tent will be removed in entirety after each special event. Refer to Figure 3.

Photographs of the project site are presented in Appendix "B".

C. SPECIAL EVENT USAGE INFORMATION

The use of the subject property for hosting special events dates back to the plantation days when the property was under the ownership of the Pioneer Mill. Feedback received from the former Manager/Vice President of the Pioneer Mill Sugar Company, Mr. George "Keoki" Freeland, suggests that first events at the property took place soon after the construction of the plantation manager's house in the 1920s. Since acquiring the land, the applicant has continued the practice of facilitating requests made by community groups, special events coordinators, friends, neighbors, and associates for use of the property fronting the former plantation manager's house.

Based on past usage information and the current list of 2006/2007 reservations, the applicant estimates that on average between 80 to 100 events are held at the project site each year which equates to 6 to 8 events per month. Approximately 90 percent of special events held at the project site are private weddings and/or wedding receptions. The remaining 10 percent balance of special events at the site consists of various non-profit fundraisers and meetings by entities, such as local companies and neighborhood/community groups. Non-profit groups that have previously utilized the site for special events include organizations, such as Big Brother Big Sisters, Boy Scouts of America, Hale Makua, Pacific Cancer Foundation, The Nature Conservancy, Lahaina Town Action Committee, Lahaina Hongwanji, Lahainaluna High School and Maui Economic Opportunity. The average size of special events is approximately 66 guests. Events larger than 200 guests in size are infrequent and are generally discouraged by the applicant through the imposition to additional site management regulations via a contractual addendum. To maintain the natural beauty of the subject property, use of the project site for special events has and is expected to average 10 events per month.

To ensure that events are conducted in a manner conducive with both the character of the subject property and the expectations of surrounding property owners, the applicant maintains and enforces a set of house rules for all special events held at the project site. The house rules impose a number of regulations on the organizers of special events relating to

parking/shuttling of guests, sizing/location of tents, solid waste disposal, restroom usage, smoking, music noise levels, breakdown of event-related equipment, etc. Non-compliance with the house rules by organizers of events results in the loss of security deposits which are placed with the applicant at the time of reservation. A copy of the house rules, including the contractual addendum for large groups, is presented in **Appendix "C"**.

D. OVERVIEW OF PERMIT REQUIREMENTS

The project site is designated "Conservation" by the State Land Use Commission, classified "Open Space" by the West Maui Community Plan and zoned "Hotel" by the County of Maui.

Inasmuch as the project site is located entirely within the State Land Use Commission "Conservation" district (Limited Subzone), the subject project will require a Board Permit from the Board of Land and Natural Resources (BLNR) of the Department of Land and Natural Resources (DLNR). A letter from DLNR, Office of Conservation and Coastal Lands (OCCL) (dated January 9, 2006), confirming the State permit requirements for the project, is presented in **Appendix "D"**. A Conservation District Use Application (CDUA) for a Board Permit was submitted to OCCL on March 21, 2006 and officially accepted for processing on December 19, 2006. This Environmental Assessment (EA), pursuant to Chapter 343, Hawai'i Revised Statutes (HRS), has been prepared in order to document and review the project's technical characteristics, environmental impacts and alternatives. The applicable trigger requiring the preparation of a EA is the use of State conservation lands. The approving agency for the HRS, Chapter 343 process is the OCCL. The EA will be used as the primary technical document for the CDUA. It is anticipated that the Final EA will be published at least 45 days prior to the 180-day expiration deadline on the CDUA application which is July 11, 2007. The CDUA application is currently being held in abeyance pending completion of the EA process and the issuance of a Finding of No Significant Impact (FONSI) by OCCL.

In addition to being located within the State Conservation District, the project site also falls within the County of Maui, Special Management Area (SMA). Accordingly, an SMA Minor Permit application for the subject project has been prepared and filed with the County of Maui, Department of Planning, for review and determination. Issuance of the SMA approval is anticipated to occur at least 45 days prior to the 180-day expiration deadline on the CDUA application.

II. DESCRIPTION OF THE EXISTING ENVIRONMENT

II. DESCRIPTION OF THE EXISTING ENVIRONMENT

A. PHYSICAL SETTING

1. Existing and Surrounding Land Use

The project site is located within a shoreline property near Olowalu Wharf. The property is situated approximately 14.5 miles from Wailuku and 5.5 miles from Lahaina Town.

In a regional context, Olowalu has historically been a plantation settlement. Prior to 1999 and the closure of Pioneer Mill, significant acreages of lands within the Olowalu area were cultivated in sugar cane. Land uses currently surrounding the subject property include two (2) acre agricultural lots associated with the Olowalu Makai (Komohana and Hikina) subdivisions, the Chez Paul restaurant, Olowalu General Store, Camp Olowalu (formerly known as Camp Pecusa) and Olowalu Village with various existing single-family residences reminiscent of the plantation era of the Olowalu area. On the Lahaina side of the subject property, one (1) of the four (4) lots associated with the Olowalu Makai subdivision is in the process of being developed. Vacant lands extend along the mauka and makai sides of Honoapi'ilani Highway towards Maalaea. A small portion of the subject property is currently utilized for coconut palm cultivation activities with the remaining balance of the ten (10) acre parcel supporting residential land uses. Refer to Figure 3. The two (2) plantation-era houses and the former Pioneer Mill Plantation Manager's residence, located within this remaining portion of the subject property, were constructed in 1918 and 1922, respectively, and were previously utilized by Pioneer Mill company for employee housing. The ruins of the Olowalu Sugar Mill are located approximately 100 meters southeast of the manager's house. Olowalu Wharf (consisting of a pier and breakwater) formerly used for the loading and unloading of sugar into barges, extends from the shoreline in this vicinity.

2. Climate

Like most areas of Hawai'i, Olowalu's climate is relatively uniform year round. This stability is attributed to its tropical latitude, its position relative to storm tracts and

the Pacific anticyclone, and the surrounding ocean. Variations in climate among different regions, then, are largely left to local terrain.

Wind patterns affecting the islands are typically out of the northeast which occurs 90 percent of the time during the summer, and 50 percent of the time in the winter.

Recorded temperatures in Lahaina, located approximately 5.5 miles to the north of Olowalu, range from an average high temperature in the high 80's to an average low temperature in the low 60's. Rainfall in the Olowalu area ranges between 15 to 20 inches per year.

3. Topography

Most of the Olowalu area surrounding the project site was formerly utilized for sugar cultivation and is now fallow. The topography of this area reflects the general topographical patterns of the West Maui region. Near the shoreline, the topography is generally flat to slightly sloping. Proceeding mauka, the land slopes gently higher to the foothills of the West Maui mountains. Elevations in the Olowalu area generally range from sea level to approximately 400 feet above sea level. The topography of the project site is generally flat to slightly sloping towards the ocean.

4. Soils












Underlying the project site is the Pulehu-Ewa-Jaucas association. See **Figure 4**. This series consist of well-drained soils on alluvial fans and stream terraces and in basins. These soils were developed in alluvium washed from basic igneous rock. The soil types specific to the project site consist of Pulehu clay loam, 0 to 3 percent slopes (PsA). See **Figure 5**.

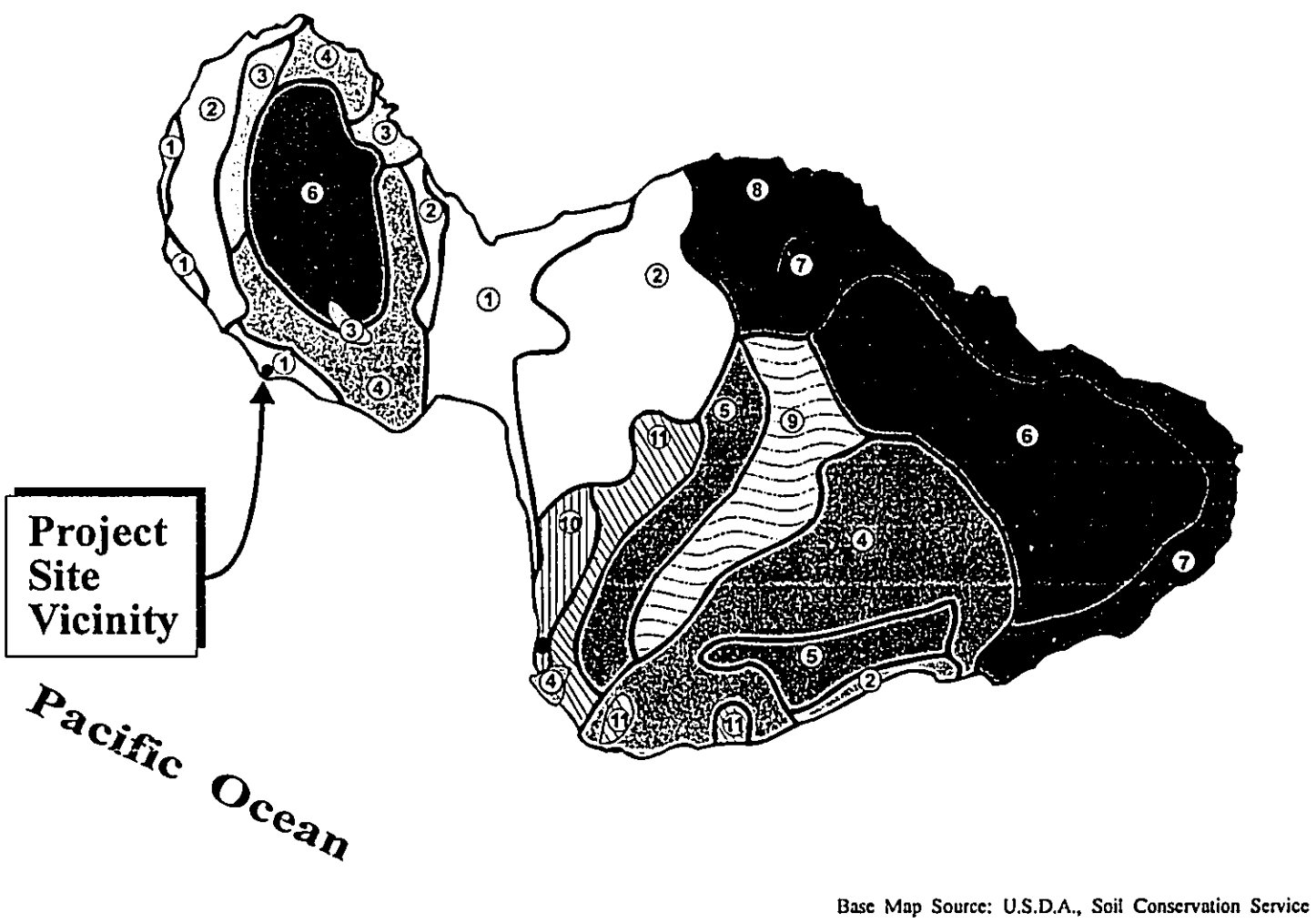
Pulehu clay loam (PsA) is a dark brown loam underlain by dark brown, dark grayish brown and brown, massive and single grain, stratified loam, loamy sand, fine sandy loam, and silt loam. Permeability is moderate, runoff is slow, and the erosion hazard is no more than slight.

5. Flood and Tsunami Hazards

The project site is located within Zone A4, an area of the 100-year flood with a base flood elevation of eight (8) feet. See **Figure 6**. The project site is situated within a

LEGEND

- | | |
|--|---|
|  Pulchu-Ewa-Jaucas association |  Hana-Makaalac-Kailua association |
|  Waiakoa-Keahua-Molokai association |  Pauwela-Haiku association |
|  Honolulu-Olelo association |  Laumaia-Kaipoi-Olinda association |
|  Rock land-Rough mountainous land association |  Keawakapu-Makena association |
|  Puu Pa-Kula-Pane association |  Kamaole-Oanapuka association |
|  Hydrandepts-Tropaquods association | |



Base Map Source: U.S.D.A., Soil Conservation Service

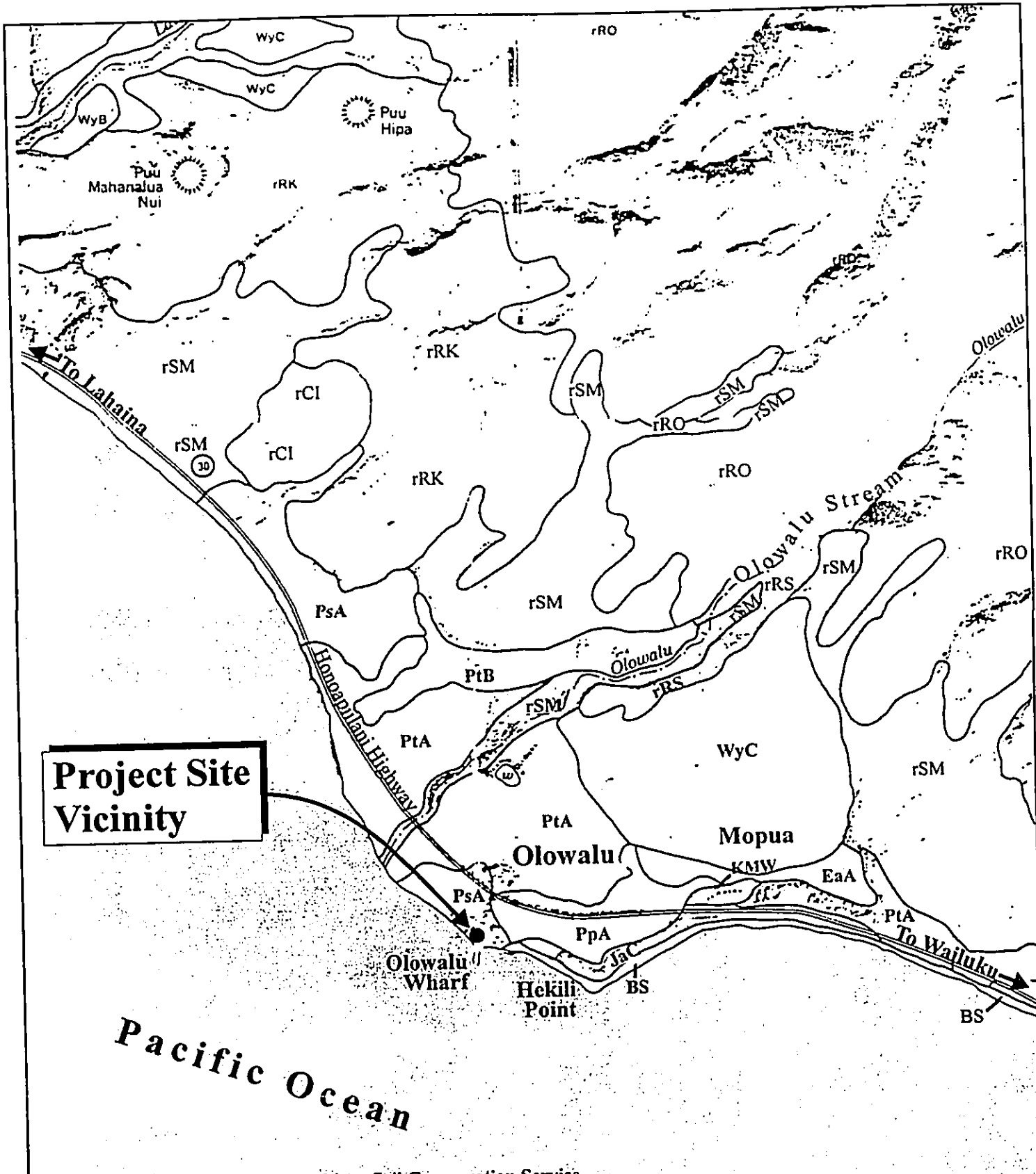
Figure 4 Use of TMK (2)4-8-03-005 (por.) NOT TO SCALE
 for Special Events and
 Temporary Structures
 Soil Association Map



Prepared for: Olowalu Elua Associates, LLC

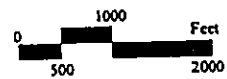
 MUNEKIYOHIRAGA, INC.

W:\L\OlowaluHouse\SOILS



Source: U.S. Department of Agriculture, Soil Conservation Service

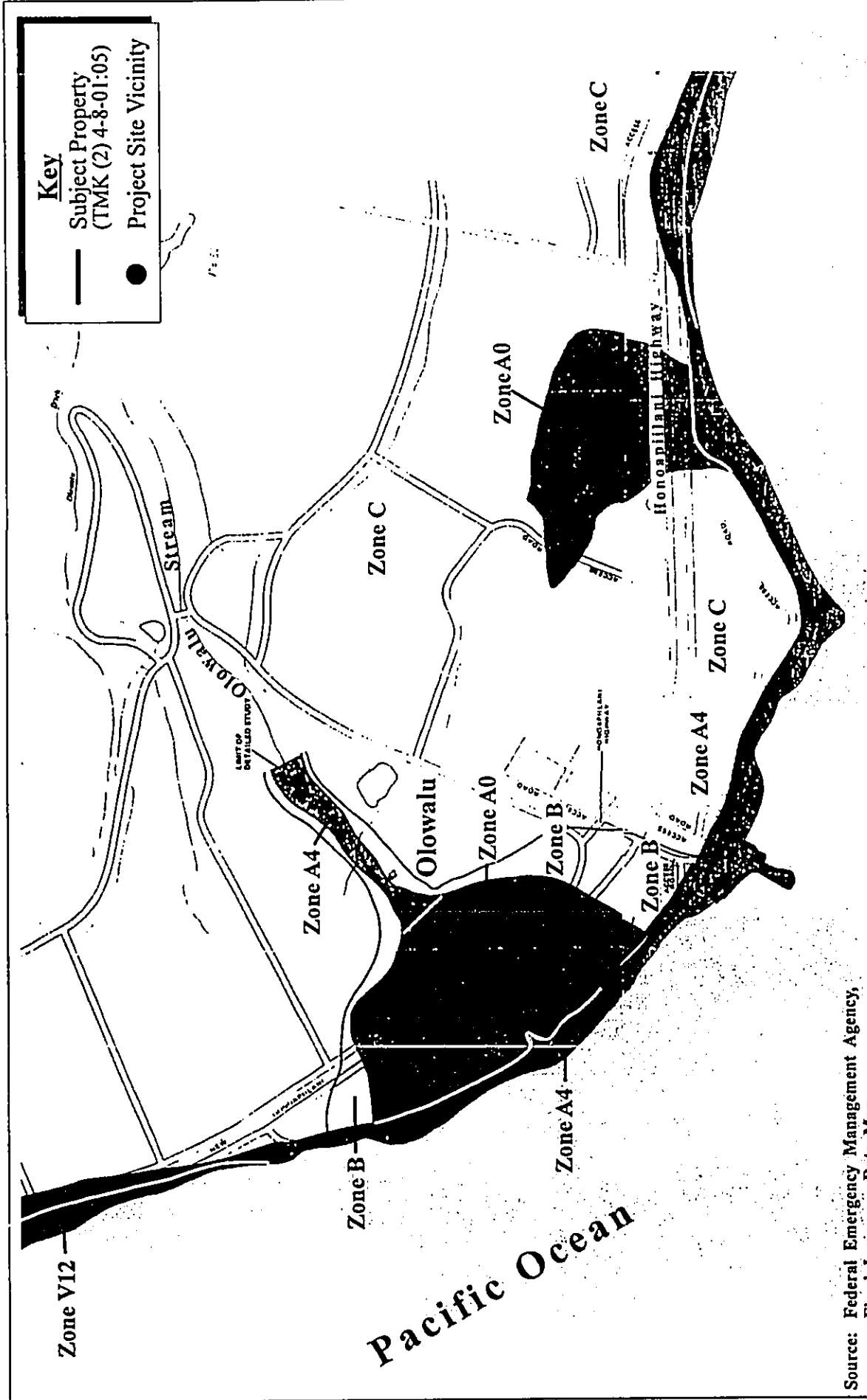
Figure 5 Use of TMK (2)4-8-03-005 (por.)
for Special Events and
Temporary Structures
Soil Classifications



MUNEKIYO HIRAGA, INC.

Prepared for: Olowalu Elua Associates, LLC

WMLC:\Olowalu\house\soilclas



Source: Federal Emergency Management Agency,
Flood Insurance Rate Map

Figure 6

Use of TMK (2)4-8-03-005 (por.)
for Special Events and
Temporary Structures
Flood Insurance Rate Map

NOT TO SCALE



Prepared for: Olowalu Elua Associates, LLC

Wmicalowalu@hawaii.rr.com

defined Tsunami Evacuation Area.

6. **Flora and Fauna**

A botanical survey of the Olowalu area was conducted by Char and Associates in conjunction with a previous subdivision of the applicant's lands in 2000. See Appendix "E". Prior to 1999, between 85 to 90 percent of the surrounding Olowalu area was formerly under sugar cane cultivation, or was used to support sugar cane related activities (plantation village, manager's residence, wharf facilities, etc.). The steeper kiawe and buffelgrass-covered slopes on the higher slopes of the Olowalu area were used for grazing cattle at one time. Uncultivated areas of Olowalu are characterized by introduced species, such as kiawe, buffelgrass, 'opiuma, koa haole, and lantana, are the dominant components of the vegetation.

Of a total of 115 plant species inventoried within the Olowalu study area, 94 (82 percent) are introduced or alien species; 5 (4 percent) are originally of Polynesian introduction; and 16 (14 percent) are native. Of the natives, 13 are indigenous, that is, they are native to the Hawaiian Islands and also elsewhere, and 3 are endemic, that is, they are native only to the Hawaiian Islands. The 3 endemic species are the nehe (Lipochaeta lavarum), wiliwili (Erythrina sandwicensis), and pua kala (Argemone glauca). None of the plants inventoried on the site is a threatened and endangered species or a species of concern (U.S. Fish and Wildlife Service 1997). All of the plants can be found in similar dry, lowland habitats throughout the main Hawaiian Islands. A botanical survey for the Ma'alaea to Lahaina 69 kilovolt transmission line (Char 1993) included portions of Olowalu and recorded similar findings.

Coastal vegetation in the Olowalu area occurs as a narrow band along the seaward front of the lands between the ocean and the Honoapi'ilani Highway. Formerly cultivated sugar cane (saccharum officinarum) fields are typically located mauka of this coastal vegetation zone. Species of flora present within the botanical gardens of the project site include large specimen of Monkey Pod, Fig, Norfolk Pine, Gum and Palm trees.

Surrounding the project site, the beaches consist of rounded, waterworn basalt and bleached coral rubble. In places, a few pockets of grayish-colored, fine sand are found along the black and white colored cobble beaches. The coastal vegetation on this type of substrate consists of low, scattered mats of pohuehue or beach morning glory (Ipomoea pes-caprae) with clumps of buffelgrass (Cenchrus ciliaris), a few

small wind-pruned trees of kiawe (Prosopis pallida) and 'opiuma (Pithecellobium dulce), and small mixed patches of swollen fingergrass (Chloris barbata), 'uhaloa (Waltheria indica), koa haole (Leucaena leucocephala), and sourbush (Pluchea carolinensis). Where the Olowalu Stream nears the ocean, there is a berm of basalt boulders and coral rubble. A small pond surrounded by scattered patches of Australian saltbush (Atriplex semibaccata) and a few shrubs of hau (Hibiscus tiliaceus) and scurbush are found here.

Fauna present within the Olowalu area include a host of introduced species, including the Japanese White-eye (Zosterops japonicus), Zebra-dove (Geopelia striata), spotted dove (Streptopelia chinensis), and common Myna (Acridotheres tristis). In addition, feedback received from the DLNR, Forestry and Wildlife Division indicates that three (3) endangered species of wildlife birds have also been observed in the vicinity of the subject property. These species are the Newell's Seawater, the Nene (Hawaiian Goose) and the Dark-Rumped Petrel. The Hawaiian hoary bat (Lasiurus cinereus semotus) was sighted outside of the assessment area near Mopua in 1989 (conversation with Mike Richardson, USFWS, September 29, 1999). Other mammals common to this area include rats, mice and mongoose.

7. Archaeological Resources

The project site is located in the Olowalu ahupua'a. Olowalu was an important agricultural area in pre-contact times. As long as water was available, the hot climate was ideal for producing taro.

In the post-contact period, the Olowalu area was notable for the infamous Olowalu Massacre which took place in 1790. This involved a cultural misunderstanding which resulted in tragic consequences.

As foreign influence became more pervasive following the unification of the Hawaiian Islands under Kamehameha, Lahaina became the center for West Maui because of favorable conditions for sailing craft. An 1832 missionary census showed the population of Lahaina at 4,028; Olowalu at 832; and Ukumehame at 573.

Following the Great Mahele in 1848, there were 46 individual Land Commission awards granted in the ahupua'a of Olowalu. The majority are in the upper reaches of the property, along Olowalu Stream. The distribution of land awards and a review of late 1800's and early 1900's plantation maps suggest that the stream was channeled

in a general, straighter north-south direction sometime after the Mahele. This was probably done to control flooding of agricultural fields.

The Olowalu Sugar Company is said to have been an enterprise of King Kamehameha V, who reigned from 1863 to 1872. He began the operation sometime during his reign. It was incorporated as the Olowalu Sugar Company in May 1881 and eventually was sold to Pioneer Mill Company, Ltd. in 1931. The Olowalu Mill was probably constructed in the 1870's located adjacent to the wharf. A two-foot gauge railroad was built parallel to the old government road. The plantation manager's house, located approximately 100 meters to the northwest of the Mill within the project site, was built around 1920. There are also three (3) other houses between the Mill and the highway, which may have been built around the same time.

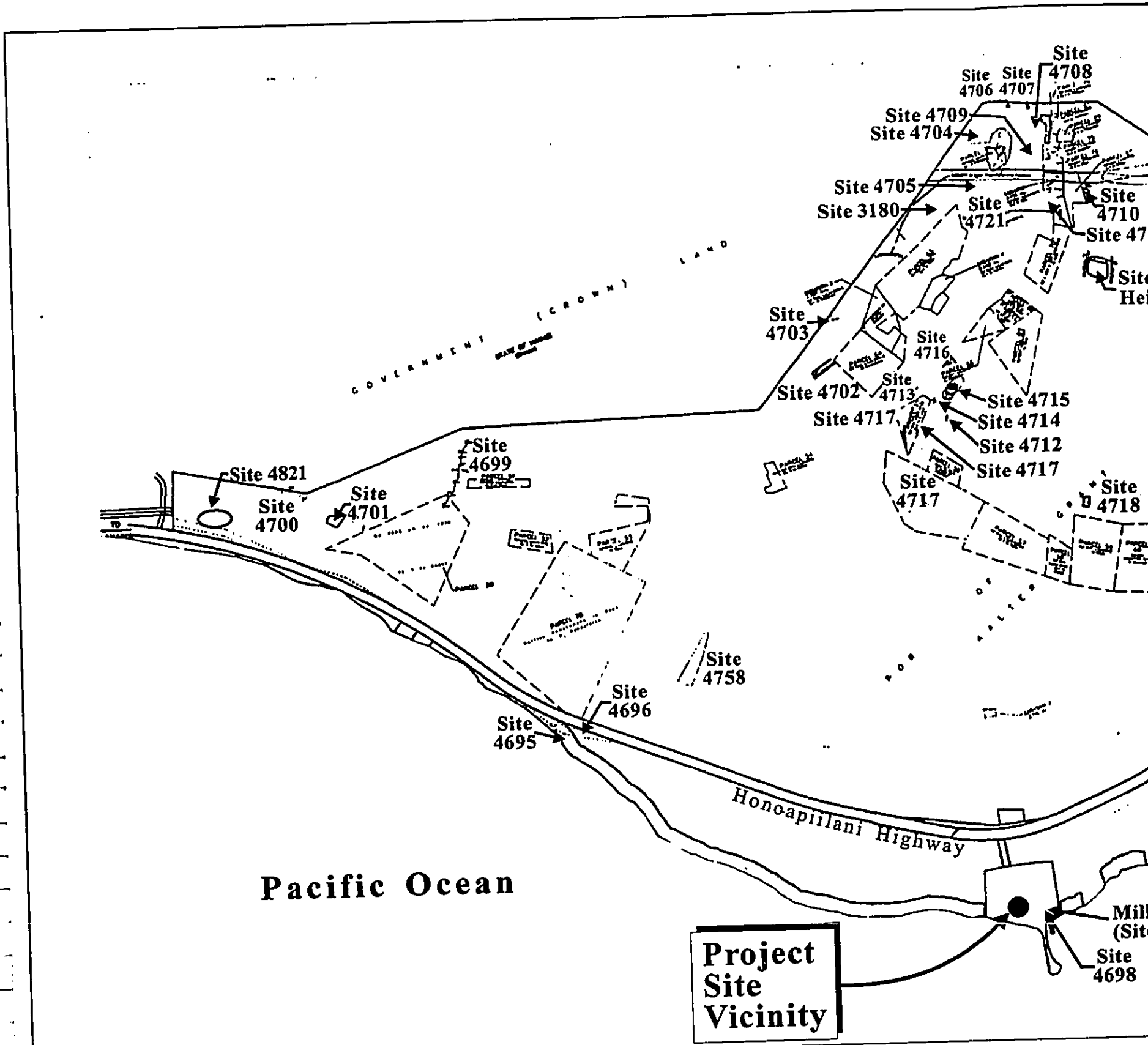
Archaeological inventory surveys of the applicant's lands on both the mauka and makai (including the project site) sides of the Honoapi'ilani Highway were conducted by Xamanek Researches in 1998/1999. An Archaeological Mitigation and Preservation Plan was also prepared for the makai area in May 2001. See **Appendix "F"**. A map identifying the significant archaeological sites in the Olowalu area is presented in **Figure 7**. The survey did not identify any significant surface or subsurface archaeological resources within the vicinity of the location fronting the plantation manager's house which is utilized for the special events.

The archaeological inventory survey reports for the mauka and makai areas were approved by the State Historic Preservation Division (SHPD) on February 25, 2000 and April 12, 2000, respectively. The Archaeological Mitigation and Preservation Plan was approved by SHPD on June 4, 2001. Refer to **Appendix "F"**.

8. Air Quality

There are no point sources of airborne emissions within close proximity of the project site. Smoke and dust from sugar cane harvesting and cultivation operations formerly caused an intermittent impact to the region's air quality. However, since Pioneer Mill Company, Inc. has ceased its sugar growing operations, this temporary air quality impact has also ceased.

Although minimal, airborne pollutants are largely attributable to vehicular exhaust from traffic along the region's roadways, as well as dust from unplanted or recently plowed fields. However, sources are intermittent and prevailing winds quickly



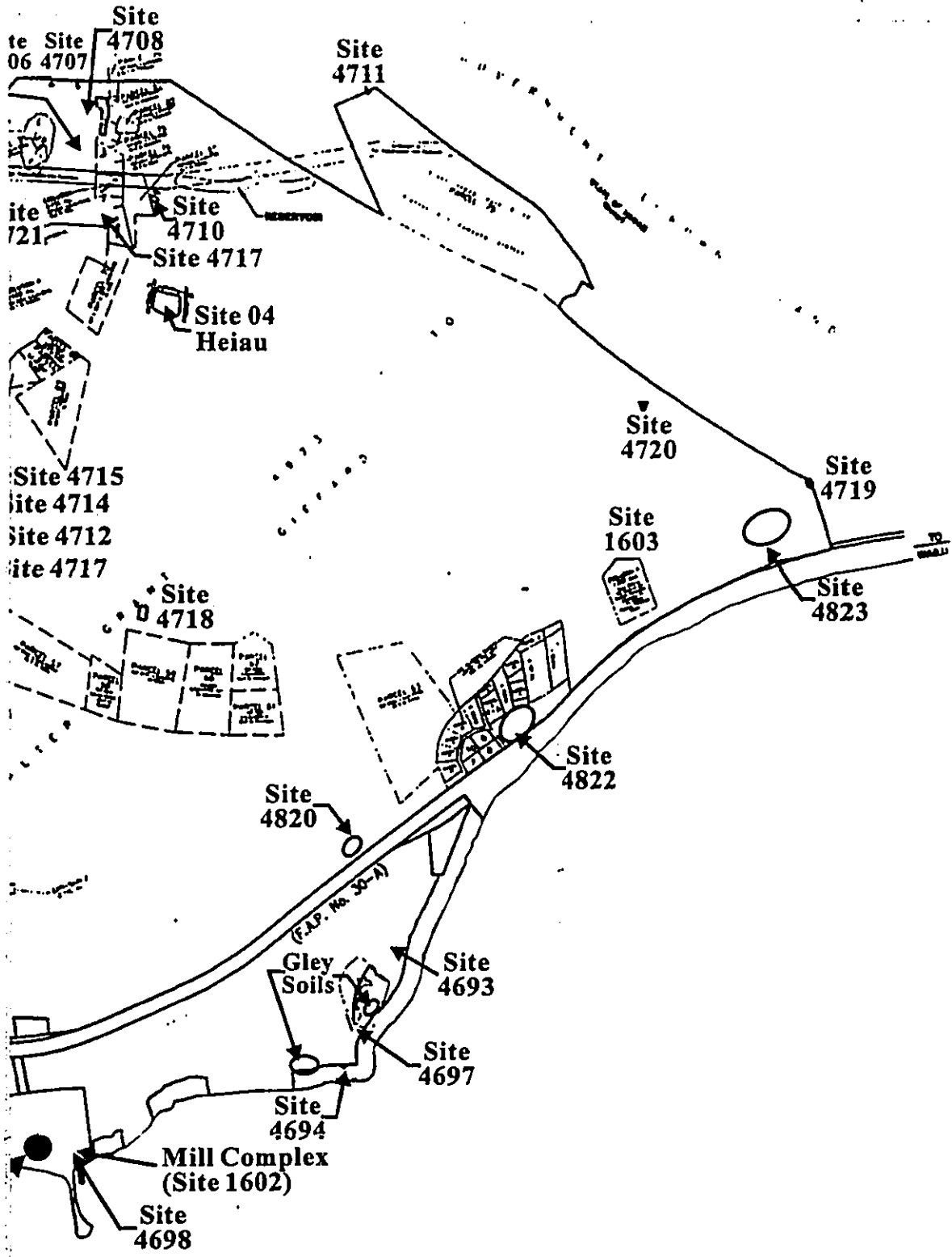
Source: Xamanek Researches

Figure 7

Use of TMK (2)4-8-003:005 (por.) for Special Events and Location of Archaeological Sites



Prepared for: Olowalu Elua Associates, LLC



Events and Temporary Structures NOT TO SCALE
 al Sites

MUNEKIYO & HIRAGA, INC.

disperse particulates generated by these temporary sources.

9. Noise

Vehicular noise from traffic traveling along Honoapi'ilani Highway are the primary sources of intermittent noise at the project site. Ambient noise conditions are generally attributable to natural conditions such as ocean waves, wind and rain.

10. Scenic and Open Space Resources

The project site offers excellent views and vistas of the Pacific Ocean, as well as the islands of Lana'i and Kahoolawe. The Kihei-Makena coastline and the islet of Molokini are also visible from this locale. The West Maui Mountains and Olowalu Valley can be seen to the northeast of the property. The property is not part of a significant view corridor. The shoreline fronting the project site is comprised of beaches consisting of predominantly detrital cobble or shingle ('ili'ili) deposits. Refer to Appendix "A".

A government beach reserve provides an open space buffer along the shoreline on either side of the project site. Refer to Figure 3. The width of the beach reserve varies with shoreline accretion and erosion but generally is approximately 100 feet in width. These lands are open to the public.

11. Shoreline Access

The shoreline fronting the project site consists of rounded, waterworn basalt and bleached coral rubble. An existing seawall runs along a portion of the property in front of the banyan tree.

From the original grant in 1906, the State reserved a "right of way, 50 feet in width (or so much of said 50 feet as may be deemed necessary for public use), extending from Government Belt Road to Olowalu Landing". Permanent public access between Olowalu Landing and Honoapiilani Highway is currently provided across the applicant's property via a recorded easement. The applicant has created a parking area and pedestrian pathway near Olowalu Landing.

Existing government beach reserves provide lateral shoreline access along most of the shoreline in the vicinity of the property. Access to the government beach reserve

is available through both the eastern and western ends where the reserve meets the Honoapi'ilani Highway, and through the access to the Olowalu Landing. In addition to the government beach reserves, a 20-foot wide lateral public access easement exists along the entire shoreline fronting the subject property. Refer to Appendix "A".

B. SOCIO-ECONOMIC ENVIRONMENT

1. Population

The resident population of the West Maui Community Plan region has demonstrated a substantial increase over the last two decades. Population gains were especially evident in the 1970's as the rapidly developing visitor industry attracted many new residents. The population of the Lahaina District increased from 14,574 in 1990 to 17,967 in 2000. Projections of the resident population in the Lahaina District for the years 2010, 2020 and 2030 are 21,577, 25,096 and 28,903, respectively (County of Maui, June 2006).

Growth at the County level exhibits a similar pattern. The County's resident population increased from 101,709 in 1990 to 128,968 in 2000. Projections for the resident County population in 2010, 2020 and 2030 are 151,300, 174,450 and 199,550, respectively (County of Maui, June 2006).

2. Economy

The economy of Maui is heavily dependent upon the visitor industry. The dependency on the visitor industry is especially evident in West Maui, which is one of the State's major resort destination areas. The Kaanapali Resort includes a number of hotels, including the Maui Marriott Resort (720 rooms), Hyatt Regency Maui (816 rooms), the Westin Maui (761 rooms), and the Sheraton Maui (510 rooms).

West Maui's visitor orientation is reflected in the character of Lahaina Town, which serves as a center for visitor-related retail outlets, as well as visitor-related activities.

In terms of the agriculture industry, Pioneer Mill Company, Inc. ceased sugar cane cultivation on its lands in 1999. Of its 6,700 acres, approximately 500 acres are currently utilized for the growing of coffee. Other crops, such as seed corn, are being planned. Additionally, Maui Land and Pineapple Company's pineapple fields in the

Honolua region are an important component of the region's agricultural base.

C. PUBLIC SERVICES

1. Solid Waste Disposal

Single-family residential solid waste collection service is provided by the County of Maui on a once-a-week basis. Residential solid waste collected by County crews is disposed at the County's Central Maui Landfill, located four miles southeast of the Kahului Airport. In addition to County-collected refuse, the Central Maui Landfill accepts commercial waste from private collection companies.

To facilitate solid waste collection services for the West Maui region, a refuse transfer station has been established at the former County landfill site which is located to the north of the subject properties.

2. Medical Facilities

The only major medical facility on the Island is Maui Memorial Medical Center, located approximately 16 miles from Olowalu, midway between Wailuku and Kahului. The 196-bed facility provides general, acute, and emergency care services.

Regular hours are offered by private medical practices in Lahaina, which include the Maui Medical Group, Lahaina Physicians, West Maui Healthcare Center, and Kaiser Permanente Lahaina Clinic.

3. Police and Fire Protection

The project site is within the Lahaina Police Station service area, which services all of the Lahaina district. The Lahaina Station is located in the Lahaina Civic Center complex at Wahikuli, approximately 7.5 miles from the project site. The Lahaina Patrol includes 47 full-time personnel, including one (1) captain, one (1) lieutenant, police officers, public safety aides, and administrative support staff.

Fire prevention, suppression and protection services for the Lahaina District are provided by the Lahaina Fire Station, also located in the Lahaina Civic Center and the Napili Fire Station, located in Napili. The Lahaina Fire Station includes an engine and a ladder company, and is staffed by 30 full-time personnel. The Napili

Fire Station consists of an engine company including fifteen (15) full-time fire fighting personnel.

4. **Educational Facilities**

The West Maui area is served by four public schools operated by the State of Hawai'i, Department of Education: Lahainaluna High School; Lahaina Intermediate School; King Kamehameha Elementary School; and Princess Nahienaena Elementary School. All of the public schools are located within the Lahaina Town area.

5. **Recreational Facilities**

West Maui is served by numerous recreational facilities offering diverse opportunities for the region's residents. There are seventeen (17) County parks and three (3) State beach parks in West Maui. Approximately one-third of the County parks are situated along the shoreline and provide excellent swimming, diving, and snorkeling opportunities.

In addition, Kaanapali and Kapalua Resorts operate world-class golf courses which are available for public use.

D. INFRASTRUCTURE

1. **Roadways**

A Traffic Impact Analysis Report (TIAR) has been prepared for the subject project by SSFM International, Inc. based on feedback received during early consultation with the State Department of Transportation (SDOT). See Appendix "H". The only major roadway facility providing vehicular access to and from the Olowalu area is Honoapi'ilani Highway, a State-owned and maintained highway linking West Maui with the central valley of the island. This highway through Olowalu primarily serves as access for vehicles traveling to and from the Lahaina, Kaanapali and Kapalua resort areas. In the vicinity of the project site, this highway is a two-lane rural highway generally aligned in an east to west direction following the coastline. The highway has a posted speed limit of 35 miles per hour (mph) in the vicinity of the project site which increases to 45 mph outside of this area. This highway has 12-foot-wide lanes with paved shoulders varying in widths from about 6 to 10 feet wide.

Ingress and egress opportunities to the project site are provided through an existing paved private driveway (hereafter referred to as the "project driveway") from Honoapi'ilani Highway. The driveway connects to the highway forming a four-way intersection (hereafter referred to as the "project intersection") with the driveway serving the Olowalu General Store. The project intersection is designed to operate as a four-way STOP-sign controlled intersection.

A gate controlling access into the project driveway is situated at the entrance. The project driveway extends toward the plantation manager's house before terminating at a cul-de-sac. This project driveway also provides public shoreline access to the Olowalu Wharf area.

Along Honoapi'ilani Highway at the project intersection, storage lanes are provided for various turning movements. A striped left-turn storage lane of about 600 feet in length is provided for vehicles traveling in the westbound direction making turns into the project site. There is also a striped median area extending several hundred feet further beyond (east direction) this storage lane. A right-turn deceleration lane of 295 feet with another 150 feet for taper is provided for vehicles traveling eastbound and entering through the project driveway. An acceleration lane of 270 feet is provided for vehicles making right-turns exiting the project driveway to merge onto the highway traveling in the eastbound direction.

The driveway across of the project driveway leads into a paved parking lot which serves both the Olowalu General Store and Chez Paul Restaurant. The Olowalu General Store serves as a convenience stop. During the weekdays, Olowalu General Store is open from 6:00 a.m. to 6:30 p.m. The Chez Paul restaurant serves only dinner and is open on a daily basis from 6:30 p.m. A vacant structure is situated on the south side of the restaurant. A second driveway entrance into this parking lot is also located about 200 feet east of this driveway. For vehicles traveling in the eastbound direction making left-turns into the Olowalu General Store driveway, a storage lane of over 500 feet is also provided. The STOP-sign controlled project driveway also provides a left-turn/through lane and separate right-turn lane.

A former cane haul road also runs along the mauka (inland) side of the highway. This cane haul road is generally routed near the highway but diverts inland behind the Olowalu General Store and Chez Paul Restaurant area. The cane haul road formerly served as an access road for the Pioneer Mill property/cane land. Several

private homes are located mauka of the store, access to which is provided by an unpaved road (referred to as Olowalu Village Road) that extends mauka from the cane haul road.

2. **Water**

The County of Maui Department of Water Supply presently does not service the Olowalu area. Water supply for the limited number of residential and commercial uses (including the subject property) in the Olowalu area is provided by Olowalu Water Company, LLC (OWC). OWC is a public water system (ID# 209). OWC provides both potable and non-potable irrigation water for residents and agricultural users within the 700-acre region known as Olowalu. The OWC received a Certificate of Public Convenience and Necessity (CPCN) from the State of Hawai'i Public Utilities Commission to provide potable water service in August of 2000. In November 2003, the OWC amended the CPCN to add the sales of irrigation water.

3. **Wastewater Systems**

There are no County operated wastewater disposal facilities in the Olowalu area, including the project site. Individual wastewater disposal needs in the Olowalu area are currently addressed either by cesspools or septic tanks. Wastewater generating facilities located within the plantation manager's house and the former washhouse building are currently served by single cesspool facility.

4. **Drainage**

Other than existing culverts which convey drainage beneath Honoapi'ilani Highway, the Olowalu area contains no other drainage improvements. Runoff generally sheet flows from the northeast to the southwest collecting in various swales and gullies. The Olowalu area, including the project site, contains no engineered drainage systems.

5. **Electrical, Telephone and CATV Considerations**

Electrical power and telephone service are provided to the project site and Olowalu area in general by Maui Electric Company, Ltd. (MECO) and Hawaiian Telcom, via overhead lines along Honoapi'ilani Highway. MECO's 69 kilovolt overhead transmission lines from Central Maui to the Lahaina-Kapalua area extend along the lands situation mauka of the Honoapi'ilani Highway and the project site. Oceanic

Time Warner does not currently provide cable service to the Olowalu area, including the project site.

III. POTENTIAL IMPACTS AND MITIGATION MEASURES

III. POTENTIAL IMPACTS AND MITIGATION MEASURES

A. PHYSICAL ENVIRONMENT

1. Existing and Surrounding Land Uses

The subject project involves the use of the plantation manager's house and surrounding botanical gardens for special events and temporary event-related minor structures (including a temporary tent). The subject project does not involve any ground-altering or construction activities. As such, the subject project is considered to be compatible with the existing and surrounding land uses.

2. Topography and Landform

The subject project does not involve any ground-altering or construction activities and will not change the existing topography and landform of the project site.

3. Flood and Tsunami Hazards

As there are no ground-altering or construction activities associated with the subject project, flood and tsunami hazards are not anticipated to increase.

4. Flora and Fauna

As there are no ground-altering or construction activities associated with the subject project, there will be no long term impacts on flora and fauna resources in the area. Use of the project site for special events will be confined to the lawn area surrounding the plantation manager's house. Any potential for short-term impacts on endangered bird species will be minimized through implementation and enforcement of the house rules. All lighting for special events will be required to be directed away from (mauka) of the ocean to protect any Newells' Shearwater that may be transitioning through the area. The house rules will also inform event coordinators on both the potential presence of endangered bird species in the area and the applicable section under State Law prohibiting the "take" of such species.

5. **Archaeological Resources**

No ground-altering activity or construction activities will occur in connection with the subject project. As such, the subject project will not impact any potential undiscovered subsurface historic resources within the project site. Special events at the project site are confined to the lawn area in the direct vicinity of the former plantation manager's residence. This event location is buffered by naupaka hedge and is estimated to be approximately 250 feet from the Olowalu Sugar Mill Complex. The use of the property for special events will be limited to the duration of each particular event. In addition, all related equipment and temporary tent structures will be removed from the site in its entirety at the end of each event to ensure that the property is returned to its original condition. To further ensure that events are conducted in a manner conducive with the surroundings of the subject property, the applicant voluntarily maintains and enforces a set of house rules. The house rules impose a number of regulations on the organizers of special events relating to parking/shuttling of guests, sizing/location of tents, solid waste disposal, restroom usage, smoking, music noise levels, breakdown of event-related equipment, etc. Non-compliance with the house rules results in the loss of security deposits which are placed at the time of reservation. No impacts to existing surface historic resources are therefore anticipated to result from the hosting of special events at the project site.

6. **Cultural Assessment**

To obtain input on cultural perspectives in the vicinity of the project site, interviews with two (2) long-term residents of the Olowalu area were conducted during the preparation of the Draft EA. Summaries of the interviews with Katherine Diolinda King and Donald Fujii are presented in **Appendix "G"**.

Based on State archaeological reviews, land use history and information gained from informant interviews, the subject project is not anticipated to have an adverse impact upon cultural resources. Cultural-related practices conducted in the vicinity of the property are limited to recreational swimming, fishing and ocean access activities. The subject project will not encroach into the 20-foot lateral shoreline access easement which fronts the property. Based on the foregoing, cultural practices or resources are not anticipated to be adversely impacted by the subject project.

7. Air Quality

The proposed project involves the use of the project site for special events and temporary minor structures. The subject project does not involve construction of physical improvements. As such, there are no anticipated air quality impacts associated with the subject project.

8. Noise

As with air quality, there are no impacts to ambient noise levels associated with the proposed project. The house rules maintained by the applicant and enforced during all special events at the project site prohibit live entertainment and stipulate a maximum noise decibel level for all events. Refer to **Appendix "C"**. Noise monitors are utilized at all times during events to ensure that maximum noise levels are respected.

9. Scenic and Open Space Resources

The subject project does not involve ground-altering or construction activities. As such, the use of the project site for special events and temporary minor structures is not anticipated to affect the long-term aesthetic and visual character of the surrounding Olowalu area.

10. Shoreline Access

The subject project, involving use of the project site for special events and temporary event-related minor structures, will not impact access and recreational opportunities along the shoreline. The subject project will not encroach into the existing 20-foot lateral public access easement which runs along the shoreline of the subject property.

B. IMPACTS TO COMMUNITY SETTING

1. Population

The subject project, involving temporary use of the project site for special events and temporary minor event-related structures, will not have an adverse impact upon population parameters.

2. **Economy**

The operation of special events at the project site will provide tangible economic benefits to the West Maui region in the form of employment and generation of tax revenues.

C. PUBLIC SERVICES

1. **Solid Waste Disposal**

All solid waste generated during the operation of special events at the project site will be transported offsite for final disposal at the Central Maui Landfill in Puunene. As stipulated in the house rules, organizers of special events larger than 100 people in size are required to provide an additional dumpster to supplement the onsite solid waste disposal capacity. Recycling of cans and glass bottles by the organizers of special events, as appropriate, will be encouraged by the applicant.

2. **Police, Fire and Medical Services**

Police, fire protection and medical services are not expected to be adversely impacted by the subject project. The project will not extend existing service area limits.

3. **Educational and Recreational Resources**

The subject project will not adversely affect educational and recreational services and facilities.

D. INFRASTRUCTURE

1. **Roadways**

As mentioned previously, a Traffic Impact Analysis Report (TIAR) has been completed for the subject project to analyze the probable traffic impacts resulting from the subject project. Refer to **Appendix "H"**.

The study methodology incorporated the recommended practice and guidelines described in the Institute of Transportation Engineers (ITE) *Traffic Access and Impact Studies for Site Development* (ITE, 2005). The study methodology involved the following work:

1. Field survey and manual traffic counts at the unsignalized intersection of Honoapi'ilani Highway with the project driveway to assess and evaluate existing traffic conditions.
2. Analysis of existing traffic conditions.
3. Evaluation of trip generation characteristics for the subject project for the study year and further analysis and assessment of conditions.
4. Identification of mitigation measures and other recommendations, if any, to address impacts on traffic conditions.

A survey of existing traffic conditions was conducted at the project access intersection on Honoapi'ilani Highway. Historic 24-hour traffic volume data available from the SDOT, Highways Division were reviewed to determine when the weekday afternoon and morning peak hours occur near the project site. Historical traffic count data along Honoapi'ilani Highway were obtained and reviewed for count stations located east and west of the project site. This traffic count data indicated that the weekday morning and afternoon peak hours generally occurred between the time periods of 6:30 a.m. and 7:45 a.m., and between 3:30 p.m. and 4:30 p.m., respectively.

Manual traffic counts were subsequently taken at the project intersection on Tuesday, October 11, 2006 during the afternoon peak period from 3:30 p.m. to 5:30 p.m., and on Wednesday, October 12, 2006 during the morning peak period from 6:30 a.m. to 8:30 a.m.

The counts showed that the morning peak hour occurred from 6:30 a.m. to 7:30 a.m., and the afternoon peak hour occurred from 3:30 p.m. to 4:30 p.m. In general, traffic conditions during the afternoon peak period were noticeably busier than the morning peak period. The afternoon peak hour had over 400 total volumes more than the morning peak hour.

Research was conducted to identify any major approved developments or roadway infrastructure improvements planned for completion by 2007 in the immediate vicinity of the project site. Such developments would be included in estimating future traffic conditions. There are no other major developments known to be

completed by 2007 in the vicinity of the project site.

The TIAR findings indicate that the existing unsignalized intersection of Honoapi'ilani Highway with the project driveway and Olowalu General Store driveway presently operates at a good Level Of Service (LOS) during the weekday morning and afternoon peak hours. Vehicular movements into and out from these driveways are relatively low. Left-turn movements from the highway into these driveways operate with short delays during both peak hours. The availability of long storage lanes for these movements minimizes delays to through-traffic along the highway. Vehicles exiting the project driveway experience average to very long traffic delays trying to make left-turns or cross the highway into the Olowalu General Store. However, the number of vehicles making these movements were observed to be very low in volume.

Without the subject project in the year 2007, there would be little change to the operating conditions of the project intersection. Through-traffic volumes along the highway would increase slightly primarily due to background traffic growth.

With the project, traffic conditions at the project intersection are projected to operate under similar conditions to those without the project in the year 2007 during both weekday morning and afternoon peak hours. Therefore, this project should not have a significant impact on the project intersection or Honoapi'ilani Highway. The subject project is not expected to have any effect during the morning peak hour conditions since events would generally occur in the afternoon and early evening time horizons.

Left-turn movements from the highway into the driveways at the project intersection would continue to operate with short delays during both peak hours at LOS B. The availability of sufficient storage lanes for these movements minimizes delays to through-traffic along the highway. The westbound left-turn storage lane is about 600 feet long, which should be more than adequate to accommodate queues of vehicles entering the site.

Eastbound vehicles also have a deceleration lane of about 300 feet to make right-turns into the project site which should be more than adequate to accommodate the projected number of vehicles entering this site. An eastbound acceleration lane is also provided for vehicles exiting the site which should accommodate the low

number of vehicles projected making this movement.

Exiting vehicles making left-turns or crossing the highway to access the Olowalu General Store would continue to experience average to very long traffic delays. However, the number of cars making these movements would continue to be very low. The majority of cars exiting the Olowalu General Store driveway generally make right-turns heading towards Lahaina. With an event conducted at the project site, the number of vehicles exiting during peak afternoon conditions is also projected to be relatively low since the majority of traffic would be entering the site for the event. Cars departing from the project site after events would typically occur after afternoon peak hour traffic conditions.

In summary, the TIAR states that the subject project is expected to have minimal impact on traffic flow on Honoapi`ilani Highway at the project driveway. Existing improvements already provided at this intersection are deemed adequate to accommodate projected volumes resulting from the subject project. Therefore, no mitigation measures are recommended.

To ensure that special events are operated in a manner conducive to the local environs of the property, the applicant has implemented the following onsite vehicle management measures in the house rules (refer to **Appendix "C"**):

- Event parking within the project site is limited to a maximum of 100 vehicles, including staff and delivery personnel.
- Parking attendants are mandatory for groups exceeding 75 people in size except when a shuttle bus service is provided.
- A shuttle bus service to the project site for guests is required for events in excess of 200 people in size.

A copy of the house rules is presented to event organizers at the time of reservation. Failure to adhere to the house rules results in the loss of the organizer's security deposit.

2. Water

The subject project will involve minimal use of potable water. All drinks provided for the special events will be transported to the project site from an offsite location.

As such, only minimal additional demand on the existing groundwater supply system (owned by the applicant) is anticipated to result from the subject project.

3. Wastewater Systems

Existing restroom facilities within the former wash house will be utilized to accommodate wastewater generation requirements for special events at the project site. The wash house was renovated by the applicant in 1999 and contains four (4) toilets (two (2) male and two (2) female). For events larger than 100 people in size, event organizers will be required by the applicant to provide one (1) portable toilet for every additional 25 guests in order to supplement the existing onsite wastewater infrastructure.

Based on the usage for events, coordination will be undertaken with the State Department of Health, Wastewater Branch to assess applicable upgrade requirements for the existing cesspool which serves the restroom facilities in the former wash house building. Should the cesspool need to be upgraded, the house rules will be revised to require portable toilets to be utilized for all special events in the occurring interim period while the applicant undertakes the necessary repair and maintenance work to improve the wastewater treatment system.

4. Drainage

The subject project, involving use of the project site for special events and temporary event-related minor structures, will not affect the existing drainage characteristics of the site or the surrounding Olowalu area.

5. Electricity, Telephone and CATV Systems

Based on prior experience at the project site, the existing electrical infrastructure is anticipated to be sufficient to support the short-term electrical load requirements of regular lighting and entertainment equipment used during events. For those events, utilizing specialized lighting and entertainment equipment, anticipated to result in a higher than average electrical demand, the house rules require the provision and use of a portable generator by the contracted event organizer. As such, no impact to electrical, telephone and cable systems is anticipated to result from the subject project.

**IV. RELATIONSHIP TO
GOVERNMENTAL PLANS,
POLICIES AND
CONTROLS STATE LAND
USE DISTRICTS**

IV. RELATIONSHIP TO GOVERNMENTAL PLANS, POLICIES AND CONTROLS STATE LAND USE DISTRICTS

A. STATE LAND USE DISTRICTS

Chapter 205, Hawai'i Revised Statutes, relating to the Land Use Commission, establishes four (4) major land use districts in which all lands in the State are placed. These districts are designated "Urban", "Rural", "Agricultural", and "Conservation". Although the subject property encompasses lands classified as both "Agricultural" and "Conservation", the project site where the subject project will occur is classified entirely as "Conservation".

Lands within the State Conservation District are under the jurisdiction of the Department of Land and Natural Resources. Title 13, Hawai'i Administrative Rules, establishes rules and procedures which regulate land use in the Conservation District. Title 13 establishes subzones within the Conservation District. These subzones are designated "Protective" (P), "Limited" (L), "Resource" (R), "General" (G), and "Special" (S).

The subject project, which is considered an identified use within the Limited Resource Subzone of the Conservation District, requires a Board permit from the Department of Land and Natural Resources (DLNR). Refer to **Appendix "D"**. Accordingly, a Conservation District Use Application (CDUA) for the subject project has been prepared in accordance with Title 13.

Thus, with regard to the subject project's consistency with the purpose of the Conservation District, the following criteria is discussed:

1. **The proposed land use is consistent with the purpose of the Conservation District:**

The subject project is permissible within the Conservation District and is not contrary to the purpose of conserving, protecting and preserving important natural resources of the State.

2. **The proposed land use is consistent with the objectives of the subzone of the land on which the use will occur:**

The subject project does not involve any ground-altering or construction activities and is consistent with the objectives of the Limited Subzone. As such, the subject project will not result in any adverse effect on natural resources of the area.

3. **The proposed land use complies with provisions and guidelines contained in Chapter 205A, HRS, entitled "Coastal Zone Management," where applicable:**

The subject project complies with provisions and guidelines in Chapter 205A, HRS. An application for a Special Management Area (SMA) Minor Permit for the subject project is currently being processed by the County of Maui, Department of Planning. Issuance of SMA approval for the project is anticipated to occur at least 45 days prior to the 180-day expiration deadline on the CDUA.

4. **The proposed land use will not cause substantial adverse impact to existing natural resources within the surrounding area:**

The subject project will not involve any permanent improvements within the Conservation District. As such, no adverse impact to existing natural resources within the surrounding area is anticipated.

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

The subject project does not involve construction of any permanent improvements within the Conservation District. In this regard, there will be no significant changes to the environment within the Conservation District as a result of the project.

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:**

The subject project will preserve the physical and environmental aspects of the existing landscape. The intent is to preserve the natural beauty and open space

characteristics of the area.

7. **Subdivision of land will not be utilized to increase the intensity of land uses in the conservation district:**

The subject project does not involve the subdivision of land nor does it involve any ground-altering or construction activities within the Conservation District.

8. **The proposed land use will not be materially detrimental to public health, safety and welfare:**

No impacts to the public's health, safety and welfare are anticipated to result from the subject project.

B. MAUI COUNTY GENERAL PLAN

The Maui County General Plan (1990 Update) sets forth broad objectives and policies to help guide the long-range development of the County. As stated in the Maui County Charter:

"The general plan shall indicate desired population and physical development patterns for each island and region within the county; shall address the unique problems and needs of each island and region; shall explain the opportunities and the social, economic, and environmental consequences related to potential developments; and shall set forth the desired sequence, patterns, and characteristics of future developments".

The subject project is in keeping with the following General Plan objectives and policies:

Objective (Land Use):

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.

Policies:

- Provide and maintain a range of land use districts sufficient to meet the social, physical, environmental and economic needs of the community.
- Identify and preserve significant historic and cultural sites.

Objective (Environment):

To preserve and protect the County's unique and fragile environmental resources.

Policies:

- Preserve for present and future generations the opportunity to experience the natural beauty of the islands.
- Preserve scenic vistas and natural features.

C. WEST MAUI COMMUNITY PLAN

The project site is located in the West Maui Community Plan region. This region is one (1) of nine (9) Community Plan regions established in the County of Maui. The Community Plans establish regional planning guidelines. The West Maui Community Plan Land Use Map designates the project site as Open Space. See Figure 8.

The proposed project implements the following goals, objectives and policies of the West Maui Community Plan.

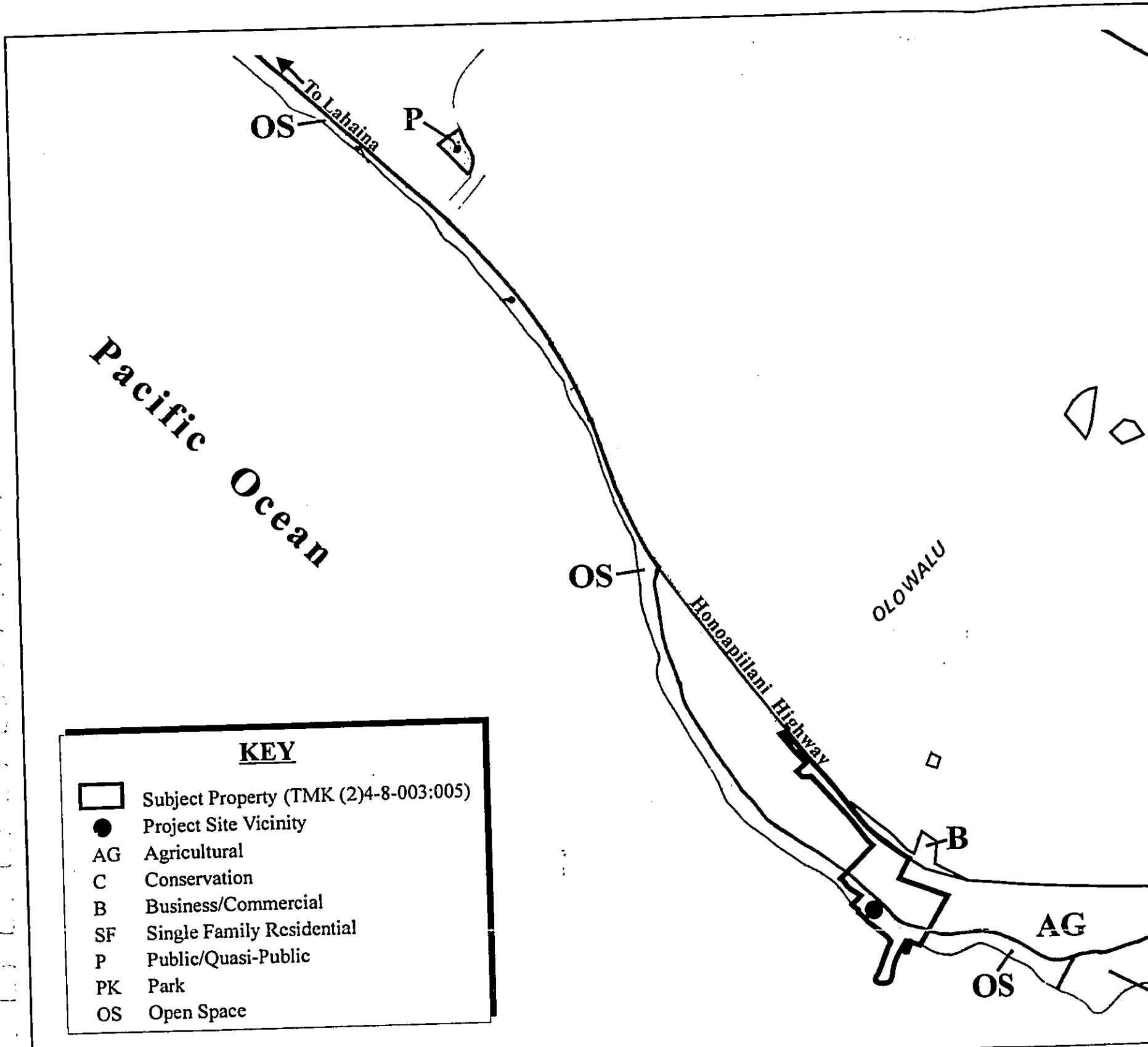
LAND USE

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 for the West Maui Region in General

- Protect and enhance the quality of the marine environment.
- Preserve and enhance the mountain and coastal scenic vistas and the open space areas of the region.
- 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.
- Provide and maintain parks and beach access for the present and future needs of residents and visitors.



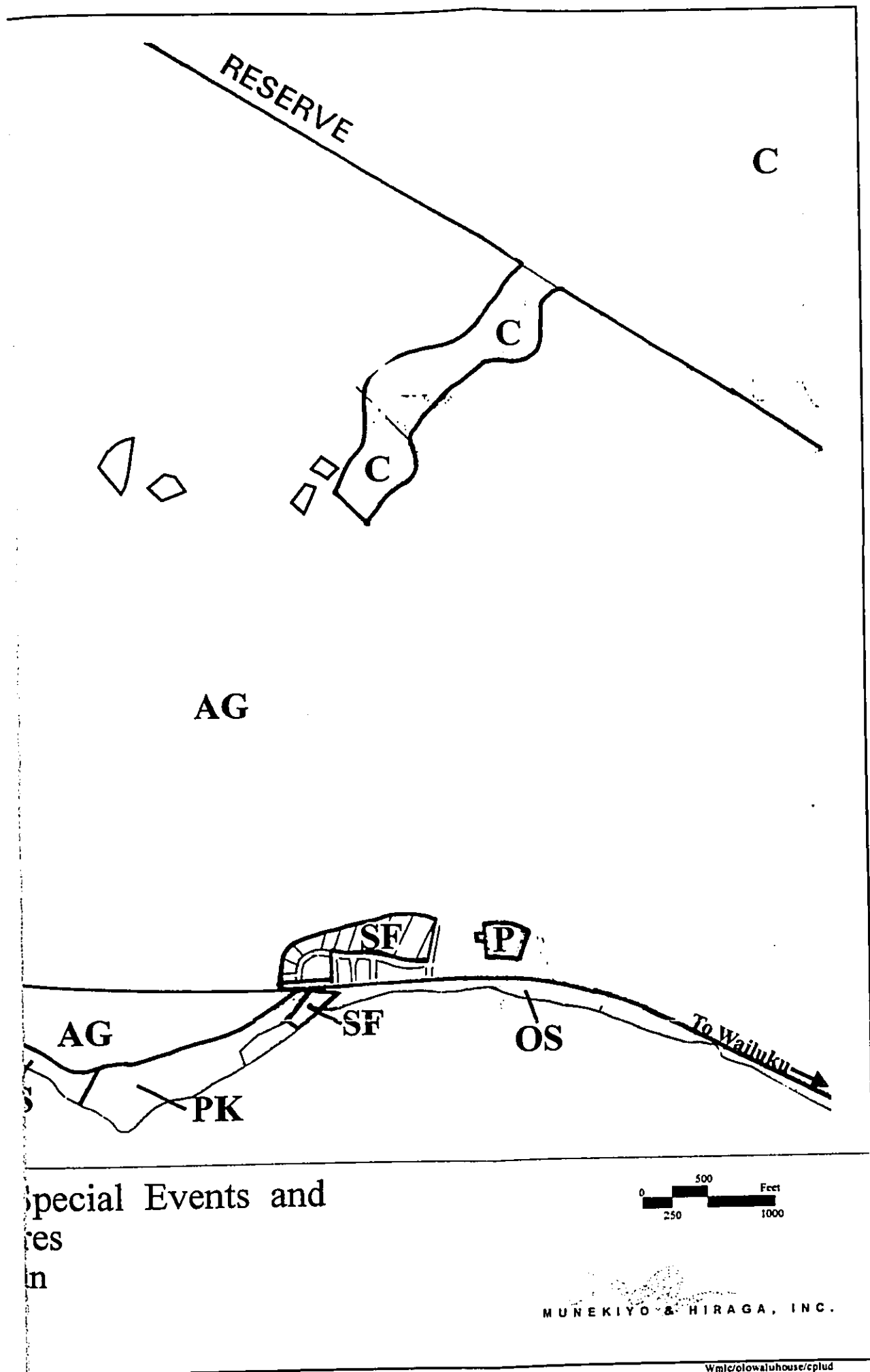
Source: West Maui Community Plan

Figure 8

Use of TMK (2)4-8-003:005 (por.) For Special Ex
 Temporary Minor Structures
 West Maui Community Plan



Prepared for: Olowalu Elua Associates, LLC



Special Events and
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MUNEKIYO & HIRAGA, INC.

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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.

Objectives and Policies

1. Promote a diversified economic base which offers long-term employment to West Maui residents, and maintains overall stability in economic activity in the areas of:
 - b. Visitor-related service/commercial services
 - d. Resident-related service/commercial services

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

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

D. ZONING

The project site is zoned "Hotel" by the County of Maui. The subject project is allowable under the current zoning designation for the property.

E. SPECIAL MANAGEMENT AREA OBJECTIVES AND POLICIES

Pursuant to Chapter 205A, Hawai'i Revised Statutes, and the Rules and Regulations of the

Planning Commission of the County of Maui, actions located within the SMA are evaluated with respect to SMA objectives, policies and guidelines. As mentioned in Chapter I, the project site is located within the County SMA, and is, therefore, subject to SMA review requirements. See Figure 9. An application for an SMA Minor Permit is currently undergoing review by the County of Maui, Department of Planning. Issuance of the SMA approval for the project is anticipated to occur at least 45 days prior to the 180-day expiration deadline on the CDUA.

This section addresses the project's relationship to applicable coastal zone management considerations, as set forth in Chapter 205A and the Rules and Regulations of the Maui Planning Commission.

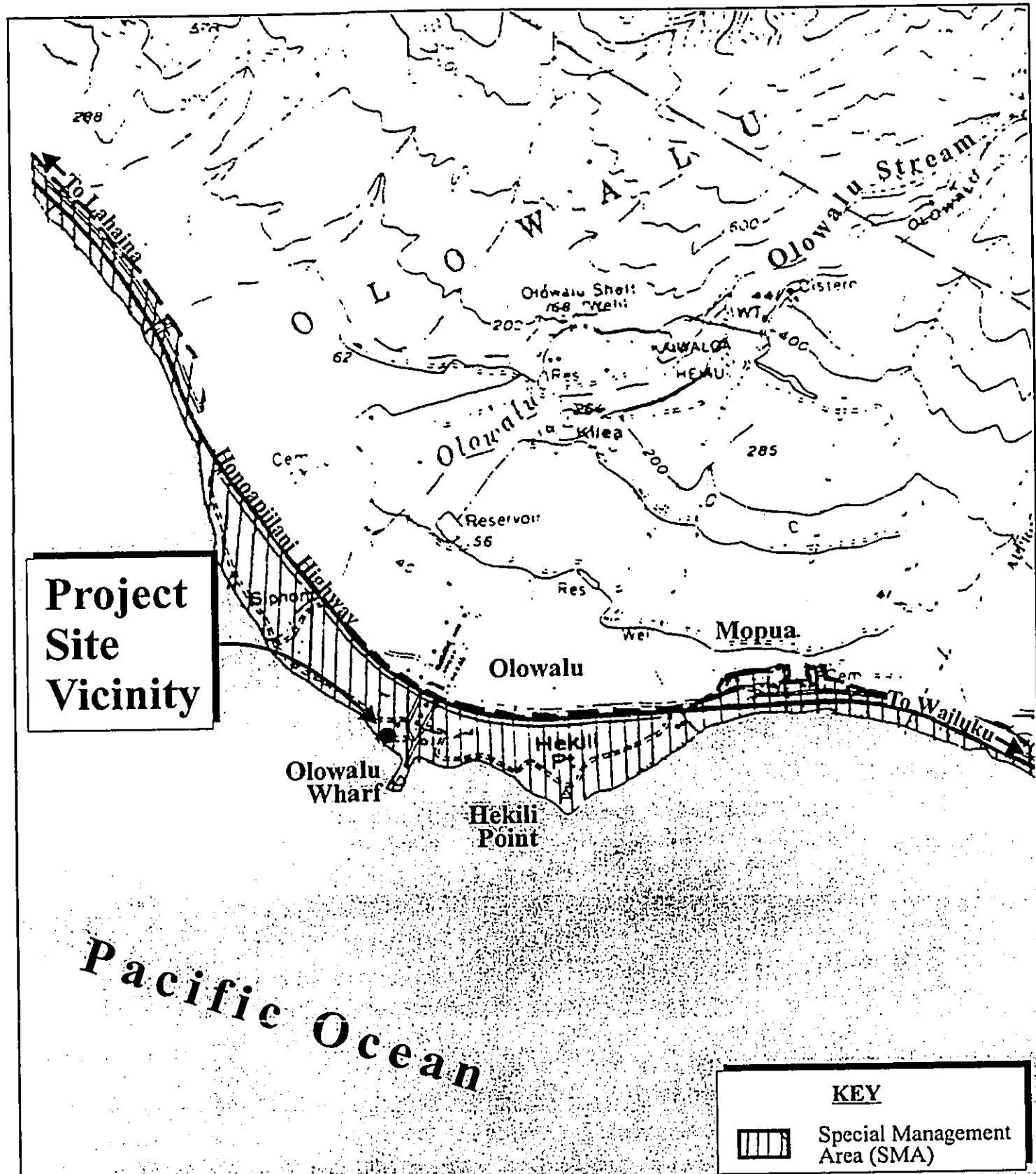
(1) **Recreational Resources**

Objective:

Provide coastal recreational opportunities accessible to the public.

Policies:

- (A) Improve coordination and funding of coastal recreational planning and management; and
- (B) Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:
 - (i) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;
 - (ii) Requiring replacement of coastal resources having significant recreational value, including but not limited to surfing sites, fishponds, and sand beaches, when such resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the state for recreation when replacement is not feasible or desirable;
 - (iii) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;
 - (iv) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;
 - (v) Ensuring public recreational use of county, state, and federally owned or controlled shoreline lands and waters having recreational value consistent with public safety standards and conservation of natural resources;



Source: County of Maui, Department of Planning

Figure 9 Use of TMK (2)4-8-03-005 (por.) **NOT TO SCALE**
 for Special Events and
 Temporary Structures
 Special Management Area Boundary



MUNEKIYO HIRAGA, INC.

Prepared for: Olowalu Elua Associates, LLC

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- (vi) Adopting water quality standards and regulating point and non-point sources of pollution to protect, and where feasible, restore the recreational value of coastal waters;
- (vii) Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing; and
- (viii) Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, county planning commissions; and crediting such dedication against the requirements of Section 46-6, HRS.

Response: The subject project will maintain coastal zone access and recreational opportunities. The existing 20-foot lateral shoreline access easement and government beach reserve will remain unaffected by the subject project.

(2) **Historic Resources**

Objective:

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

Policies:

- (A) Identify and analyze significant archeological resources;
- (B) Maximize information retention through preservation of remains and artifacts or salvage operations; and
- (C) Support state goals for protection, restoration, interpretation, and display of historic resources.

Response: The subject project does not involve ground-altering or construction activities. As such, no impacts to historic resources are anticipated as a result of the subject project.

Special events at the project site are confined to the lawn area in the direct vicinity of the former plantation manager's residence. This event location is estimated to be approximately 250 feet from the Olowalu Sugar Mill Complex. The use of the property for special events will be limited to the duration of each particular event. In addition, all related equipment and temporary tent structures will be removed from the site in its entirety at the end of each event to ensure that the property is returned

to its original condition. To further ensure that events are conducted in a manner conducive with the surroundings of the subject property, the applicant voluntarily maintains and enforces a set of house rules. The house rules impose a number of regulations on the organizers of special events relating to parking/shuttling of guests, sizing/location of tents, solid waste disposal, restroom usage, smoking, music noise levels, breakdown of event-related equipment, etc. Non-compliance with the house rules results in the loss of security deposits which are placed at the time of reservation. No impacts to existing surface historic resources are therefore anticipated to result from the hosting of special events at the project site.

(3) **Scenic and open space resources**

Objective:

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

Policies:

- (A) Identify valued scenic resources in the coastal zone management area;
- (B) Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;
- (C) Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources; and
- (D) Encourage those developments which are not coastal dependent to locate in inland areas.

Response: The subject project will not adversely impact scenic or open space resources nor will it alter the existing topographic character of the project site.

(4) **Coastal ecosystems**

Objective:

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

Policies:

- (A) Improve the technical basis for natural resource management;
- (B) Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;
- (C) Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs; and
- (D) Promote water quantity and quality planning and management practices which reflect the tolerance of fresh water and marine ecosystems and prohibit land and water uses which violate state water quality standards.

Response: The subject project will not involve ground-altering or construction activities. No impacts to coastal ecosystems are, therefore, anticipated to result from the subject project.

(5) **Economic uses**

Objective:

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

Policies:

- (A) Concentrate coastal dependent development in appropriate areas;
- (B) Ensure that coastal dependent development such as harbors and ports, and coastal related development such as visitor facilities and energy generating facilities, are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area; and
- (C) Direct the location and expansion of coastal dependent developments to areas presently designated and used for such developments and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:
 - (i) Use of presently designated locations is not feasible;
 - (ii) Adverse environmental effects are minimized; and
 - (iii) The development is important to the State's economy.

Response: The subject project will provide beneficial impacts to the local economy through the provision of employment and the generation of tax revenues. In the long term, the subject project will not adversely affect the region's economic stability.

(6) **Coastal hazards**

Objectives:

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

Policies:

- (A) Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and nonpoint source pollution hazards;
- (B) Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and nonpoint pollution hazards;
- (C) Ensure that developments comply with requirements of the Federal Flood Insurance Program;
- (D) Prevent coastal flooding from inland projects; and
- (E) Develop a coastal point and nonpoint source pollution control program.

Response: The subject project will not involve ground-altering or construction activities. The sensitivity of the project site to coastal hazards will not increase as a result of the subject project.

(7) **Managing development**

Objective:

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

Policies:

- (A) Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;
- (B) Facilitate timely processing of applications for development permits and resolve overlapping of conflicting permit requirements; and
- (C) Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life-cycle and in terms understandable to the public to facilitate public participation in the planning and review process.

Response: All aspects of the subject project will be conducted in accordance with applicable State and County requirements. Opportunity for review of the subject project is offered through the HRS, Chapter 343 Environmental Assessment (EA)

review process and the State Conservation District Use Application (CDUA) and County Special Management Area (SMA) permit processes.

(8) **Public participation**

Objective:

Stimulate public awareness, education, and participation in coastal management.

Policies:

- (A) Maintain a public advisory body to identify coastal management problems and to provide policy advice and assistance to the coastal zone management program;
- (B) Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal-related issues, developments, and government activities; and
- (C) Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.

Response: EA, State CDUA and County of Maui SMA proceedings are all applicable to the subject project. Opportunities for public awareness, education, and participation in coastal management are provided through the EA, CDUA and SMA review and approval processes.

A public hearing was held on February 20, 2007 as part of the CDUA process. It is noted that all public testimony received at the hearing was in support of the subject CDUA request. Copies of written testimony submitted to OCCL by individuals unable to attend the meeting in person is presented in **Appendix "I"**.

(9) **Beach protection**

Objective:

Protect beaches for public use and recreation.

Policies:

- (A) Locate new structures inland from the shoreline setback to conserve open space and to minimize loss of improvements due to erosion;
- (B) Prohibit construction of private erosion-protection structures seaward of the

shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities; and

- (C) Minimize the construction of public erosion-protection structures seaward of the shoreline.

Response: The subject project does not involve ground-altering or construction activities which would affect drainage patterns on the project site. No impacts to beach processes are anticipated to affect the subject project. Access and recreational opportunities along the shoreline fronting the project site will be maintained as a result of the subject project. The temporary tent structure will be erected and maintained outside of the 150-foot shoreline setback area. The temporary tent will be removed from the project site at the end of each special event.

(10) **Marine Resources**

Objective:

Implement the State's ocean resources management plan.

Policies:

- (A) Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;
- (B) Assure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;
- (C) Coordinate the management of marine and coastal resources and activities management to improve effectiveness and efficiency;
- (D) Assert and articulate the interests of the State as a partner with federal agencies in the sound management of ocean resources within the United States exclusive economic zone;
- (E) Promote research, study, and understanding of ocean processes, marine life, and other ocean resources in order to acquire and inventory information necessary to understand how ocean development activities relate to and impact upon ocean and coastal resources; and
- (F) Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.

Response: The subject project does not involve ground-altering or construction activities, which would affect drainage patterns on the project site. No impacts to marine resources along the Olowalu coastline are anticipated to result from the subject project.

In addition to the foregoing objectives and policies, SMA permit review criteria pursuant to Act 224 (2005) provides that:

No special management area use permit or special management area minor permit shall be granted for structures that allow artificial light from floodlights, uplights, or spotlights used for decorative or aesthetic purposes when the light:

- (1) Directly illuminates the shoreline and ocean waters; or
- (2) Is directed to travel across property boundaries toward the shoreline and ocean waters.

In addressing light pollution issues, all temporary lighting equipment used during special events will be shielded and of the directional down lighting variety to mitigate light pollution and to prevent lighting traveling across property boundaries toward the shoreline and ocean. All lighting used for special events will be required by the house rules to be faced away (mauka) from the ocean.

**V. SUMMARY OF
ADVERSE
ENVIRONMENTAL
EFFECTS WHICH
CANNOT BE AVOIDED**

V. SUMMARY OF ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

The subject project will not involve any ground-altering or construction activities as associated impacts. Potential effects anticipated to result from the operation of special events on the project site include short-term noise and light-generated impacts. The applicant intends to minimize these short-term impacts by regulating event operation through the strict implementation and enforcement of house rules. Refer to **Appendix "C"**. Such impacts will be limited in nature to the duration of each special event at the project site.

Accordingly, the subject project is not anticipated to create any significant, long-term adverse environmental impacts.

VI. ALTERNATIVES ANALYSIS

VI. ALTERNATIVES ANALYSIS

A. NO ACTION ALTERNATIVE

Implementation of the subject project will not affect the existing physical or environmental conditions of the project site, but would allow the applicant to continue to offer a highly desirable and suitable location to organizations and individuals in the community for the operation of special events. In this regard, the no action alternative is not deemed to be a feasible consideration.

B. ALTERNATIVE LOCATION

In selecting a site for the subject project, the applicant considered a number of alternate properties. An assessment of a variety of factors, including history and natural beauty of all surrounding areas, proximity to tourist centers and weather conditions was completed prior to site selection. The current project site was selected as the most appropriate site for special events.

**VII. IRREVERSIBLE AND
IRRETRIEVABLE
COMMITMENTS OF
RESOURCES**

VII. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

The use of the project site for special events and temporary minor event-related structures will involve the irreversible and irretrievable commitment of both land and fiscal resources. Other resource commitments include energy, labor and material resources.

In addition, the subject project does not require a commitment of government services or facilities, nor does it place additional requirements on police, fire, medical and social services.

VIII. FINDINGS AND CONCLUSIONS

VIII. FINDINGS AND CONCLUSIONS

The “Significance Criteria”, Section 12 of the Administrative Rules, Title 11, Chapter 200, “Environmental Impact Statement Rules”, were reviewed and analyzed to determine whether the subject project has significant impacts on the environment. The following analysis is provided:

1. **No Irrevocable Commitment to Loss or Destruction of any Natural or Cultural Resources Would Occur as a Result of the Proposed Project**

The subject project does not result in any adverse long-term environmental impacts. There are no known, rare, endangered or threatened species of flora located within the project site. Any potential for short-term impacts on endangered bird species will be minimized and through implementation and enforcement of the house rules. All lighting for special events will be required to be directed away from (mauka) of the ocean to protect any Newells’ Shearwater that may be transitioning through the area. The house rules will also inform event coordinators on both the potential presence of endangered bird species in the area and the applicable section under State Law prohibiting the “take” of such species.

Furthermore, no impacts to cultural or historic resources will occur as a result of the subject project. It is, therefore, anticipated that the subject project does not warrant implementation of measures designed to protect cultural and historic resources.

2. **The Proposed Action Would Not Curtail the Range of Beneficial Uses of the Environment**

The use of the project site for the subject project will not curtail the range of beneficial uses of the environment.

3. **The Proposed Action Does Not Conflict with the State’s Long-Term Environmental Policies or Goals or Guidelines as Expressed in Chapter 344, Hawai’i Revised Statutes**

The State’s Environmental Policy and Guidelines are set forth in Chapter 344, Hawai’i Revised Statutes and were reviewed in connection with the subject project. The subject project is in consonance with the guidelines.

4. **The Economic or Social Welfare of the Community or State Would not be Substantially Affected**

The subject project will provide additional economic opportunity to the West Maui region through the creation of employment positions and the generation of tax revenues. The social welfare of the community will not be negatively affected by the subject project.

5. **The Proposed Action Does Not Affect Public Health**

No impacts to the public's health and welfare are anticipated to result from the use of the project site for the subject project.

6. **No Substantial Secondary Impacts, Such as Population Changes or Effects on Public Facilities are Anticipated**

The use of the project site for the subject project will not affect the island's population base. The subject project will not significantly impact existing traffic flows along Honoapi`ilani Highway.

The continued use of the project site for the subject project will not adversely impact public services such as police, fire and medical services. Impacts upon educational, recreational and solid waste parameters are also not expected to result from implementation of the subject project. The applicant will enforce the house rules (as outlined in Appendix "C") to ensure that the subject project is implemented in a manner conducive to the existing infrastructure available in the Olowalu area.

7. **No Substantial Degradation of Environmental Quality is Anticipated**

No substantial degradation of environmental quality is anticipated from the use of the project site for the subject project.

8. **The Proposed Action Does Not Involve a Commitment to Larger Actions, Nor Would Cumulative Impacts Result in Considerable Effects on the Environment**

The subject project is confined to the use of the project site for special events and temporary event-related minor structures and does not represent a commitment to larger actions. There are no cumulative impacts associated with the subject project which would result in considerable effects on the environment.

9. **No Rare, Threatened or Endangered Species or Their Habitats Would be Adversely Affected by the Proposed Action**

There are no known significant habitats or rare, endangered or threatened species of flora at the project site. The present condition of environmental features at the project site will be maintained as the subject project does not involve implementation of any ground-altering or construction activities.

Any potential for short-term impacts on endangered bird species will be minimized and through implementation and enforcement of the house rules. All lighting for special events will be required to be directed away from (mauka) of the ocean to protect any Newells' Shearwater that may be transitioning through the area. The house rules will also inform event coordinators on both the potential presence of endangered bird species in the area and the applicable section under State Law prohibiting the "take" of such species.

10. **Air Quality, Water Quality or Ambient Noise Levels Would not be Detrimentially Affected by the Proposed Project**

The use of the project site for the subject project will not impact air quality, water quality or noise parameters.

11. **The Proposed Project Would Not Affect Environmentally Sensitive Areas, Such as Flood Plains, Tsunami Zones, Erosion-Prone Areas, Geologically Hazardous Lands, Estuaries, Fresh Waters or Coastal Waters**

No ground-altering or construction activities are involved in the subject project. As such, the use of the project site for the special events and temporary event-related minor structures will not result in any significant impacts to coastal waters.

Special events at the project site are confined to the lawn area in the direct vicinity of the former plantation manager's residence. This event location is estimated to be approximately 250 feet from the Olowalu Sugar Mill Complex. The use of the property for special events will be limited to the duration of each particular event. In addition, all related equipment and temporary tent structures will be removed from the site in its entirety at the end of each event to ensure that the property is returned to its original condition. To further ensure that events are conducted in a manner conducive with the surroundings of the subject property, the applicant voluntarily maintains and enforces a set of house rules. The house rules impose a number of regulations on the organizers of special events relating to parking/shuttling of guests, sizing/location of tents, solid waste disposal, restroom usage, smoking, music noise

levels, breakdown of event-related equipment, etc. Non-compliance with the house rules results in the loss of security deposits which are placed at the time of reservation. No impacts to existing surface historic resources are therefore anticipated to result from the hosting of special events at the project site.

12. The Proposed Action Would Not Substantially Affect Scenic Views and Viewplanes Identified in County Plans or Studies

The subject project is not associated with any impacts to scenic views or view planes.

13. The Proposed Action Would Not Require Substantial Energy Consumption

The subject project does not involve the utilization of equipment requiring substantial energy consumption. For those events (utilizing specialized lighting and entertainment equipment) for which supplemental energy demand is anticipated, provision of a portable generator by event coordinators is required by the house rules. Refer to **Exhibit "C"**.

Based on the foregoing findings, it is anticipated that the assessment of the subject project will result in the issuance of a Finding of No Significant Impact (FONSI).

**IX. LIST OF PERMITS
AND APPROVALS**

IX. LIST OF PERMITS AND APPROVALS

The following State and County permits and approvals will be required for the subject project.

State of Hawai'i

1. Conservation District Use Permit (Board Permit) from the Department of Land and Natural Resources (DLNR)

County of Maui

1. Special Management Area Minor Permit from the County of Maui, Department of Planning

Coordination with the appropriate administering agencies will be conducted during the HRS, Chapter 343 EA process.

**X. AGENCIES/
ORGANIZATIONS
CONSULTED DURING THE
PREPARATION OF THE
DRAFT ENVIRONMENTAL
ASSESSMENT AND
RESPONSES RECEIVED**

X. AGENCIES/ORGANIZATIONS CONSULTED DURING THE PREPARATION OF THE DRAFT ENVIRONMENTAL ASSESSMENT AND RESPONSES RECEIVED

The following agencies were contacted prior to or during the preparation of the Draft Environmental Assessment. Comments received from these agencies, as well as responses to substantive comments, are included in this chapter.

- | | |
|---|---|
| 1. Ranae Ganske-Cerizo, Soil Conservationist
Natural Resources Conservation Service
U.S. Department of Agriculture
210 Imi Kala Street, Suite 209
Wailuku, Hawai'i 96793-2100 | 6. Patricia Hamamoto, Superintendent
State of Hawai'i
Department of Education
P.O. Box 2360
Honolulu, Hawai'i 96804 |
| 2. George Young
Chief, Regulatory Branch
U.S. Department of the Army
U.S. Army Engineer District, Honolulu
Regulatory Branch
Building 230
Fort Shafter, Hawai'i 96858-5440 | 7. Chiyome Fukino, M.D., Director
State of Hawai'i
Department of Health
919 Ala Moana Blvd., Room 300
Honolulu, Hawai'i 96814 |
| 3. Robert P. Smith, Field Supervisor
U. S. Fish and Wildlife Service
300 Ala Moana Blvd., Rm. 3-122, Box 50088
Honolulu, Hawai'i 96813 | 8. Denis Lau, Chief
Clean Water Branch
State of Hawai'i
Department of Health
919 Ala Moana Blvd., Room 300
Honolulu, Hawai'i 96814 |
| 4. Ted Liu, Director
State of Hawai'i
Department of Business, Economic
Development & Tourism
P.O. Box 2359
Honolulu, Hawai'i 96804 | 9. Herbert Matsubayashi, District
Environmental Health Program Chief
State of Hawai'i
Department of Health
54 High Street
Wailuku, Hawai'i 96793 |
| 5. Laura Thielen, Director
State of Hawai'i
Office of Planning
P.O. Box 2359
Honolulu, Hawai'i 96804 | 10. Peter Young, Chairperson
State of Hawai'i
Department of Land and Natural
Resources
P. O. Box 621
Honolulu, Hawai'i 96809 |

- | | |
|---|--|
| <p>11. Melanie Chinen, Administrator
State of Hawai'i
Department of Land and Natural Resources
State Historic Preservation Division
601 Kamokila Blvd., Room 555
Kapolei, Hawai'i 96707</p> | <p>19. Milton Arakawa, Director
County of Maui
Department of Public Works and Environmental Management
200 South High Street
Wailuku, Hawai'i 96793</p> |
| <p>12. Rodney Haraga, Director
State of Hawai'i
Department of Transportation
869 Punchbowl Street
Honolulu, Hawai'i 96813</p> | <p>20. Kyle Ginoza, Director
County of Maui
Department of Transportation
200 South High Street
Wailuku, Hawai'i 96793</p> |
| <p>13. Clyde Namu'o, Administrator
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawai'i 96813</p> | <p>21. George Tengan, Director
County of Maui
Department of Water Supply
200 South High Street
Wailuku, Hawai'i 96793</p> |
| <p>14. Carl Kaupololo, Chief
County of Maui
Department of Fire and Public Safety
200 Dairy Road
Kahului, Hawai'i 96732</p> | <p>22. Neal Shinyama, Manager – Engineering
Maui Electric Company, Ltd.
P.O. Box 398
Kahului, Hawai'i 96733</p> |
| <p>15. Alice Lee, Director
County of Maui
Department of Housing and Human Concerns
200 S. High Street
Wailuku, Hawai'i 96793</p> | <p>23. Mahealani Strong, Executive Director
West Maui Taxpayers Association
P.O. Box 10338
Lahaina, Hawai'i 96761</p> |
| <p>16. Michael W. Foley, Director
County of Maui
Department of Planning
250 South High Street
Wailuku, Hawai'i 96793</p> | <p>24. Executive Director
Lahainatown Action Committee
648 Wharf Street, Suite 102
Lahaina, Hawai'i 96761</p> |
| <p>17. Glenn Correa, Director
County of Maui
Department of Parks and Recreation
700 Halia Nako Street, Unit 2
Wailuku, Hawai'i 96793</p> | <p>25. Hawaiian Telcom
60 S. Church Street
Wailuku, Hawai'i 96793</p> |
| <p>18. Thomas Phillips, Chief
County of Maui
Police Department
55 Mahalani Street
Wailuku, Hawai'i 96793</p> | |

MAY 01 2006

United States Department of Agriculture



 NRCS Natural Resources
Conservation Service

Our People...Our Islands...In Harmony

210 Imi Kala Street, Suite #209, Wailuku, HI 96793-2100

April 26, 2006

Munekiyo & Hiraga, Inc.
Attention: Mark Alexander Roy, Planner
305 High Street Suite 104
Wailuku, Hawaii 96793

Dear Mr. Roy,

SUBJECT: Early Consultation Request for Use of Former Pioneer Mill Plantation Manager's Residence and Surrounding Botanical Gardens for Special Events and Temporary Event-Related Minor Structures at TMK (2)4-8-003:005(por), Olowalu, Maui, Hawaii

The information provided does not provide adequate information to comment on the temporary site. We highly recommend this project obtain all necessary permits, CDUA, EA etc and approval from DLNR before impacting this area.

Thank you for the opportunity to comment.

Sincerely,

Ranae F. Garske-Cerizo
District Conservationist

cc: David "Buddy" Nobriga, West Maui SWCD Chair
Daniel Ornellas, DLNR Land Division



MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO

KARLYNN KAWAHARA

November 16, 2006

Ranae Ganske-Cerizo
Natural Resources Conservation Service
Attention: Diana L. Perry
210 Imi Kala Street, Suite 209
Wailuku, Hawaii 96793

SUBJECT: Use of Former Pioneer Mill Plantation Manager's Residence and Surrounding Botanical Gardens for Special Events and Temporary Event-Related Minor Structures at TMK (2) 4-8-003:005 (por.), Olowalu, Maui, Hawaii

Dear Ms. Ganske-Cerizo:

Thank you for your letter, dated April 26, 2006, responding to our request for early consultation comments on the subject project.

All applicable permits are in the process of being obtained for the project. An application for a County of Maui, Special Management Area (SMA) minor permit was filed for the project on October 28, 2005 and is currently being processed by the Department of Planning. A Conservation District Use Application (CDUA) for a Board Permit will also be submitted to the Department of Land and Natural Resources. A Board Permit is required due to the project's location within the State Land Use Commission "Conservation" district. Determination on the CDUA will occur upon receipt of SMA approval, completion of the Chapter 343 (Hawaii Revised Statutes) Environmental Assessment (EA) process and issuance of a Finding of No-Significant Impact (FONSI) for the project.

Ranae Ganske-Cerizo
November 16, 2006
Page 2

We appreciate the input provided by your office. A copy of the Draft Environmental Assessment will be provided for your review and comment.

Very truly yours,



Mark Alexander Roy, Planner

MAR:tn

cc: Arlene Torricer and Glenn Tremble, Olowalu Elua Associates, LLC
David "Buddy" Rodrigues, West Maui SWCD Chair
David Ornellas, Department of Land and Natural Resources

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APR 25 2008



DEPARTMENT OF THE ARMY
U. S. ARMY ENGINEER DISTRICT, HONOLULU
FT. SHAFTER, HAWAII 96858-5440

REPLY TO
ATTENTION OF

April 21, 2006

Regulatory Branch

File NO. POH-2006-193

Mr. Mark Alexander Roy
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Roy:

This letter is in response to your request for comments on the Former Pioneer Mill Plantation Manager's Residence and Surrounding Botanical Gardens, TMK: (2)4-8-03:05 (por.) located in Olowalu, Maui. The site is used to host special events involving the erection of tents, stages and other minor structures on the lawn. For aesthetic purposes planters are placed temporarily on the shoreline area fronting the parcel.

On April 20, 2006 a site visit was conducted by Ms. Lolly Silva of my staff. She was greeted by Mr. Pete Ugrinitch who was maintaining the lawn area for an upcoming event. Mr. Ugrinitch lives adjacent to this parcel and maintains the site as needed. Based on an inspection of the area, there are no other waters of the U.S. to include wetlands found on this parcel, except for the adjacent ocean waters fronting this parcel. It does not appear that events and/or activities related to land use involves the discharge of dredged or fill material into the adjacent aquatic environment; therefore a Department of the Army permit is not required.

We appreciate the opportunity to comment on this project. Should you have questions, you may contact Ms. Silva at (808) 438-7023 or by FAX at (808) 438-4060 and refer to the file number above.

Sincerely,

A handwritten signature in black ink, appearing to read "George P. Young".

George P. Young, P.E.
Chief, Regulatory Branch



MICHAEL T. MUNEKIYO
GWEN DHASHI HIRAGA
MITSURU "MICH" HIRANO

KARLYNN KAWAHARA

November 16, 2006

George P. Young, P.E.
Chief, Regulatory Branch
Department of the Army
Attention: Lolly Silva
U.S. Army Engineer District, Honolulu
Ft. Shafter, Hawaii 96858-5440

SUBJECT: Use of Former Pioneer Mill Plantation Manager's Residence and Surrounding Botanical Gardens for Special Events and Temporary Event-Related Minor Structures at TMK (2) 4-8-003:005 (por.), Olowalu, Maui, Hawaii (File No. POH-2006-193)

Dear Mr. Young:

Thank you for your letter dated April 21, 2006, responding to our request for early consultation comments on the subject project. We acknowledge your determination that a Department of Army (DA) permit is not required for the project.

We appreciate the input provided by your office. A copy of the Draft Environmental Assessment will be provided for your review and comment.

Very truly yours,

Mark Alexander Roy, Planner

MAR:tn

cc: Arlene Torricer and Glenn Tremble, Olowalu Elua Associates, LLC
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305 High Street, Suite 104, Wailuku, Hawaii 96793 • ph: (808)244-2015 • fax: (808)244-8729 • planning@mhinonline.com

environment
planning
government

LINDA LINGLE
GOVERNOR

MAY 01 2006
PATRICIA HAMAMOTO
SUPERINTENDENT



STATE OF HAWAII
DEPARTMENT OF EDUCATION
P.O. BOX 2360
HONOLULU, HAWAII 96804

OFFICE OF THE SUPERINTENDENT

April 28, 2006

Mr. Mark Alexander Roy, Planner
Munekiyo & Hiraga Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Roy:

Subject: Early Consultation for Use of Lands at Olowalu, Maui, TMK: 4-8-003: por. 005

The Department of Education (DOE) has no comment to offer as early consultation for the proposal to use ten acres of land at Olowalu for special events.

If you have any questions, please call Heidi Meeker of the Facilities Development Branch, at (808)733-4862.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Patricia Hamamoto".

Patricia Hamamoto
Superintendent

PH:ly

cc: Randolph Moore, Acting Assistant Superintendent, OBS
Duane Kashiwai, Public Works manager, FDB
Ron Okamura, Lahainaluna Complex Area Superintendent

AN AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY EMPLOYER

LINDA LINGLE
GOVERNOR OF HAWAII



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

MAY 01 2006
CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

In reply, please refer to:
EMD / CVB

04080PKP.06

April 25, 2006

Mr. Mark Alexander Roy
Planner
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Roy:

Subject: Early Consultation for Request for Use of Former Pioneer Mill Plantation Manager's Residence and Surrounding Botanical Gardens for Special Events and Temporary Event-Related Minor Structures

The Department of Health (DOH), Clean Water Branch (CWB), acknowledges receipt of the subject document, dated April 17, 2006. The CWB has reviewed the limited information contained in the subject document and offers the following comments:

1. The Army Corps of Engineers should be contacted at (808) 438-9258 for this project. Pursuant to Federal Water Pollution Control Act (commonly known as the "Clean Water Act" (CWA) Paragraph 401(a)(1), a Section 401 Water Quality Certification (WQC) is required for "[a]ny applicant for Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters..." (emphasis added). The term "discharge" is defined in CWA, Subsections 502(16), 502(12), and 502(6); Title 40, Code of Federal Regulations (CFR), Section 122.2; and Hawaii Administrative Rules (HAR), Chapter 11-54.
2. In accordance with HAR, Sections 11-55-04 and 11-55-34.05, the Director of Health may require the submittal of an individual permit application or a Notice of Intent (NOI) for general permit coverage authorized under the National Pollutant Discharge Elimination System (NPDES).
 - a. An application for an NPDES individual permit is to be submitted at least 180 days before the commencement of the respective activities. The NPDES application forms may also be picked up at our office or downloaded from our website at <http://www.hawaii.gov/health/environmental/water/cleanwater/forms/indiv-index.html>.

- b. An NOI to be covered by an NPDES general permit is to be submitted at least 30 days before the commencement of the respective activity. A separate NOI is needed for coverage under each NPDES general permit. The NOI forms may be picked up at our office or downloaded from our website at:
<http://www.hawaii.gov/health/environmental/water/cleanwater/forms/genl-index.html>.
- i. Storm water associated with industrial activities, as defined in Title 40, CFR, Sections 122.26(b)(14)(i) through 122.26(b)(14)(ix) and 122.26(b)(14)(xi). [HAR, Chapter 11-55, Appendix B]
 - ii. Construction activities, including clearing, grading, and excavation, that result in the disturbance of equal to or greater than one (1) acre of total land area. The total land area includes a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale. **An NPDES permit is required before the commencement of the construction activities.** [HAR, Chapter 11-55, Appendix C]
 - iii. Discharges of treated effluent from leaking underground storage tank remedial activities. [HAR, Chapter 11-55, Appendix D]
 - iv. Discharges of once through cooling water less than one (1) million gallons per day. [HAR, Chapter 11-55, Appendix E]
 - v. Discharges of hydrotesting water. [HAR, Chapter 11-55, Appendix F]
 - vi. Discharges of construction dewatering effluent. [HAR, Chapter 11-55, Appendix G]
 - vii. Discharges of treated effluent from petroleum bulk stations and terminals. [HAR, Chapter 11-55, Appendix H]
 - viii. Discharges of treated effluent from well drilling activities. [HAR, Chapter 11-55, Appendix I]
 - ix. Discharges of treated effluent from recycled water distribution systems. [HAR, Chapter 11-55, Appendix J]
 - x. Discharges of storm water from a small municipal separate storm sewer system. [HAR, Chapter 11-55, Appendix K]
 - xi. Discharges of circulation water from decorative ponds or tanks. [HAR, Chapter 11-55, Appendix L]


Mr. Mark Alexander Roy
April 25, 2006
Page 3

3. In accordance with HAR, Section 11-55-38, the applicant for an NPDES permit is required to either submit a copy of the new NOI or NPDES permit application to the State Department of Land and Natural Resources, State Historic Preservation Division (SHPD), or demonstrate to the satisfaction of the DOH that the project, activity, or site covered by the NOI or application has been or is being reviewed by SHPD. If applicable, please submit a copy of the request for review by SHPD or SHPD's determination letter for the project.
4. Any discharges related to project construction or operation activities, with or without a Section 401 WQC or NPDES permit coverage, shall comply with the applicable State Water Quality Standards as specified in HAR, Chapter 11-54.

The Hawaii Revised Statutes, Subsection 342D-50(a), requires that "[n]o person, including any public body, shall discharge any water pollutants into state waters, or cause or allow any water pollutant to enter state waters except in compliance with this chapter, rules adopted pursuant to this Chapter, or a permit or variance issued by the director."

If you have any questions, please contact Mr. Alec Wong, Supervisor of the Engineering Section, CWB, at (808) 586-4309.

Sincerely,


DENIS R. LAU, P.E., CHIEF
Clean Water Branch

KP:np



MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO

KARLYNN KAWAHARA

November 16, 2006

Denis R. Lau, P.E., Chief
State of Hawaii
Department of Health
Clean Water Branch
P. O. Box 3378
Honolulu, HI 96801-3378

SUBJECT: Use of Former Pioneer Mill Plantation Manager's Residence and Surrounding Botanical Gardens for Special Events and Temporary Event-Related Minor Structures at TMK (2) 4-8-003:005 (por.), Olowalu, Maui, Hawaii (Ref No. 04080PKP.06)

Dear Mr. Lau:

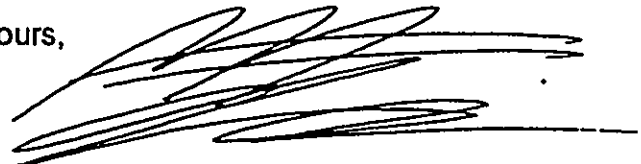
Thank you for your letter dated April 25, 2006, responding to our request for early consultation comments on the subject project. On behalf of the applicant, we offer the following responses to the comments noted:

1. A copy of the early consultation letter for the subject project was transmitted to the Department of the Army on April 13, 2006 for review and comment. In a letter dated April 21, 2006 the Department of the Army confirmed that a DA permit is not required for the project.
2. As the subject project will not involve construction or demolition activities, it is anticipated that an individual permit of a Notice of Intent (NOI) for general coverage under the National Pollutant Discharge Elimination System (NPDES) will not be required.
3. The project will comply with all applicable requirements of Section 11-55-38, Hawaii Administrative Rules (HAR).
4. The project will comply with all applicable State Water Quality Standards as specified in Chapter 11-54, HAR.

Dennis R. Lau, Chief
November 16, 2006
Page 2

We appreciate the input provided by your office. A copy of the Draft Environmental Assessment will be provided for your review and comment.

Very truly yours,



Mark Alexander Roy, Planner

MAR:tn

cc: Arlene Torricer and Glenn Tremble, Olowalu Elua Associates, LLC
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LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF HEALTH
MAUI DISTRICT HEALTH OFFICE
54 HIGH STREET
WAILUKU, MAUI, HAWAII 96793-2102

APR 28 2006

CHIYOME L. FUKINO, M. D.
DIRECTOR OF HEALTH

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

April 27, 2006

Mr. Mark Alexander Roy
Planner
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawai'i 96793

Dear Mr. Roy:

Subject: Use of TMK: (2) 4-8-003:005 (por.) for Special Events

Thank you for the opportunity to participate in the early consultation process for the proposed use of the subject property for special events, etc. We have no comments to offer at this time.

Should you have any questions, please call me at 808 984-8230.

Sincerely,

A handwritten signature in black ink, appearing to be "H. Matsubayashi", written over a circular stamp or mark.

Herbert S. Matsubayashi
District Environmental Health Program Chief

LINDA LINGLE
GOVERNOR



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

MAY 09 2006
RODNEY K. HARAGA
DIRECTOR

Deputy Directors
BARRY FUKUNAGA
BRENNON T. MORIOKA
BRIAN H. SEKIGUCHI

IN REPLY REFER TO:

STP 8.2143

May 4, 2006

Mr. Mark Alexander Roy
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Roy:

Subject: Early Consultation
Former Pioneer Mill Plantation Manager's Residence and Botanical Gardens
TMK: (2) 4-8-003: 005 (por.), Olowalu, Maui

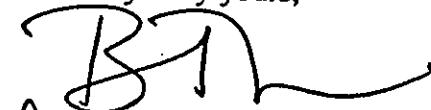
Thank you for your advance notification on the proposed special or temporary event uses for the subject site.

Your assessment report should contain a description of the type (e.g. luaus, weddings, community celebrations, etc.), attendance sizes, projected number of events, the subsequent and anticipated final development of the site, and a Traffic Impact Analysis Report (TIAR).

The TIAR should include an evaluation of and improvements for the intersection and highway at any entrance(s) to the site and a traffic control-parking plan, particularly for events of very large attendance. We anticipate that the full build out of the site may need a channelized intersection with auxiliary lanes for acceleration, deceleration and storage, or further improvements. Any necessary intersection and highway improvements to accompany interim or temporary uses of the site should facilitate the transition to the future build out to minimize traffic interruptions along the highway.

We appreciate the opportunity to provide our comments and look forward to receiving your assessment report for our further review.

Very truly yours,


for RODNEY K. HARAGA
Director of Transportation



MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO

KARLYNN KAWAHARA

November 16, 2006

Rodney K. Haraga, Director
Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813-5097

SUBJECT: Use of Former Pioneer Mill Plantation Manager's Residence and Surrounding Botanical Gardens for Special Events and Temporary Event-Related Minor Structures at TMK (2) 4-8-003:005(por.), Olowalu, Maui, Hawaii (Reference: STP 8.2143)

Dear Mr. Haraga:

Thank you for your letter dated May 4, 2006, responding to our request for early consultation comments on the subject project.

Following receipt of your comment letter, discussions with State DOT representatives have been held to further clarify the scope of work necessary to address traffic concerns related to the subject project. Based on this feedback, the applicant has proceeded to contract the services of a traffic engineer (SSFM International, Inc.) to prepare a Traffic Impact Analysis Report (TIAR) for the project. A copy of the TIAR will be included in the Draft Environmental Assessment for the project.

We appreciate the input provided by your office. A copy of the Draft Environmental Assessment will be provided for your review and comment.

Very truly yours,

Mark Alexander Roy, Planner

MAR:tn

cc: Arlene Torricer/Glenn Tremble, Olowalu Elua Associates, LLC
Ron Sato, SSFM International, Inc.

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OCT 05 2006

PHONE (808) 594-1888

FAX (808) 594-1865



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

HRD06/2366

September 29, 2006

Mark Alexander Roy
Planner
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, HI 96793

**RE: Request for early consultation request for use of former Pioneer Mill Plantation
Manager's Residence and surrounding botanical gardens for special events and temporary
event-related minor structures, Olowalu, Maui, TMK: 4-8-003:005**

Dear Mark Alexander Roy,

The Office of Hawaiian Affairs (OHA) is in receipt of your request for comments on the above project, which would include allowing Olowalu Elua Associates, LLC to host special events on a portion of the above-described property. We apologize for the delayed response and have no comments at this time.

Thank you, however, for the opportunity to comment, and we look forward to reviewing the forthcoming Draft Environmental Assessment, and Special Management Area and Conservation District Use permit applications. If you have further questions, please contact Heidi Guth at (808) 594-1962 or e-mail her at heidig@oha.org.

Sincerely,

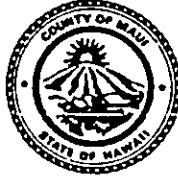
A handwritten signature in cursive script, appearing to read "Clyde W. Nāmu'o".

Clyde W. Nāmu'o
Administrator

ALAN M. ARAKAWA
Mayor

MICHAEL W. FOLEY
Director

WAYNE A. BOTEILHO
Deputy Director



MAY 16 2006

COUNTY OF MAUI
DEPARTMENT OF PLANNING

May 16, 2006

Mr. Alexander Roy
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Roy:

RE: Preconsultation Comments for the Preparation of an Environmental Assessment for the Proposed Special Event Activities and Related Improvements at the Pioneer Mill Plantation Manager's Residence Located at TMK: 4-8-003:005 (portion), Olowalu, Maui, Hawaii (EAC 2006/0013)

The Maui Planning Department (Department) is in receipt of your request for comments in preparation of a Draft Environmental Assessment (EA) for the above-referenced project. The Department understands that the proposed action includes the following:

- The portion of the property that is the subject of the Draft EA are those lands designated as "Conservation" by the State Land Use Commission; and
- The primary use proposed is hosting special events for private, community, and charitable organizations. To accommodate the special events, the following improvements are proposed: guest parking, temporary event-related minor structures (tents and performance stage), and minor landscaping features.

Based on the foregoing, the Department provides the following comments as pre-consultation in preparation of the Draft EA:

1. The land use designations for the project area are as follows:
 - State Land Use – Conservation District
 - West Maui Community Plan – Open Space

Mr. Alexander Roy
May 16, 2006
Page 2

- County Zoning – Hotel District
- Other – located within the Special Management and Shoreline Setback areas.

The Department requires the following permits in order to establish the use: Special Management Area Permit and Shoreline Setback Approval.

2. Property Description

- a. Include supporting documentation of all non-conforming structures located within the shoreline setback area.

3. Project Description

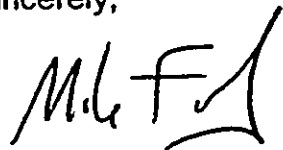
- a. Provide a detailed discussion of the proposed use to include at a minimum:
- i. How many people are anticipated at these events?
 - ii. How long do the events last (i.e., 7 - 10 p.m.)?
 - iii. How often are the events anticipated? Provide estimates based on a weekly basis.
 - iv. Discuss the type of events. Define the difference between private, community, and charitable events. Further, the Department considers events scheduled for monetary compensation a commercial activity.
- b. Describe any proposed improvements to the parking area. If the intent is to pave the area, provide the total area and discuss potential drainage impacts.
- i. How many vehicles can be accommodated in the designated parking area? Discuss how overflows will be accommodated.
- c. In addition to the existing nonconforming uses in the Shoreline Setback area, identify any new uses or improvements in the setback area in the discussion and on site plans.

Mr. Alexander Roy
May 16, 2006
Page 3

- d. Identify the maximum area considered for the erection of the temporary tent.
4. Potential Impacts and Mitigative Measures
 - a. Discuss impacts to traffic along Honoapiilani Highway during periods of the special events. Honoapiilani Highway is a state roadway. Provide documentation from State Department of Transportation (DOT) regarding the proposed action.
 5. The proposed action triggers compliance with Chapter 343, HRS, due to "use within the conservation district" and "use within the shoreline setback area." For actions proposed within the shoreline setback area, the Department or Planning Commission is the accepting authority on environmental assessments. However, given that the greater review of the proposed action is to establish the proposed use, the Department defers to the Department of Land and Natural Resources (DLNR) as the accepting authority.

Thank you for the opportunity to comment. Please include the Department on the mailing list for the Draft EA. Should you require further clarification, please contact Ms. Kivette Caigoy, Environmental Planner, at 270-7811.

Sincerely,



MICHAEL W. FOLEY
Planning Director

MWF:KAC:bv

c: Kivette A. Caigoy, Environmental Planner
Colleen M. Suyama, Staff Planner
DLNR, OCCL
Project File
General File
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MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO

KARLYNN KAWAHARA

November 16, 2006

Michael F. Foley, Director
County of Maui
Department of Planning
250 South High Street
Wailuku, HI 96793

SUBJECT: Use of Former Pioneer Mill Plantation Manager's Residence and Surrounding Botanical Gardens for Special Events and Temporary Event-Related Minor Structures at TMK (2) 4-8-003:005(por.), Olowalu, Maui, Hawaii (EAC 2006/0013)

Dear Mr. Foley:

Thank you for your letter dated May 16, 2006, responding to our request for early consultation comments on the subject project. We would like to offer the following responses to the comments noted in your letter:

1. We acknowledge the confirmation from the department that the project site is designated as "Conservation District" by the Land Use Commission, classified as "Open Space" by the West Maui Community Plan and zoned as "Hotel District" by the County of Maui.

Further, we acknowledge that the project site is located within the Special Management Area (SMA) and that a portion falls within the Shoreline Setback Area (SSA). An SMA Minor Permit application for the subject project was submitted to the department on October 28, 2005. As applicable, a request for Shoreline Setback Approval will also be submitted to the department for review and determination.

2. A description of non-conforming structures located within the SSA will be included within the Draft Environmental Assessment (EA) for the project.
3. (a) A full description of the project will be included within the Draft EA, of which will include the size, duration, frequency and type of events.
(b) Details regarding the use of the designated grassed parking area will be presented in the Draft EA. As use will be both infrequent and limited in

Michael W. Foley, Director
November 16, 2006
Page 2

duration, the applicant is not proposing any physical improvements to the designated parking area. Implementation of onsite traffic management measures will also be discussed in the Draft EA.

- (c) Any new uses or improvements in the SSA will be discussed in the Draft EA and represented on the site plan for the project.
 - (d) The maximum area for the erection of the temporary tent will be indicated in the Draft EA.
4. A Traffic Impact Analysis Report (TIAR) is currently being prepared by the traffic engineer (SSFM International, Inc.) for the project. A copy of the TIAR will be included in the Draft EA along with all DOT correspondence letters.
 5. We acknowledge the determination made by the department that the Department of Land and Natural Resources (DLNR) is the appropriate Accepting Authority for the project.

We appreciate the input provided by your office. A copy of the Draft Environmental Assessment will be provided for your review and comment.

Very truly yours,



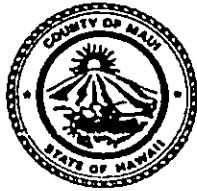
Mark Alexander Roy, Planner

MAR:tn

cc: Arlene Torricer/ Glenn Tremble, Olowalu Elua Associates, LLC
Ron Sato, SSFM International, Inc.

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ALAN M. ARAKAWA
Mayor



MAY 08 2006

GLENN T. CORREA
Director

JOHN L. BUCK III
Deputy Director

(808) 270-7230
Fax (808) 270-7934

DEPARTMENT OF PARKS & RECREATION

700 Hali'a Nako'a Street, Unit 2, Wailuku, Hawaii 96793

May 2, 2006

Mark Alexander Roy, Planner
Munekiyo & Hiraga, Inc.
305 High Street Suite 104
Wailuku, Hawaii 96793

RE: Early Consultation Request for Use of Former Pioneer Mill Plantation Manager's Residence and Surrounding Botanical Gardens for Special Events and Temporary Event-Related Minor Structures at TMK (2) 4-8-003:005(por.), Olowalu, Maui, Hawaii

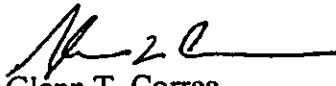
Dear Mr. Roy:

Thank you for the opportunity to review and provide early comment on the Use of the Former Pioneer Mill Plantation Manager's Residence and Surrounding Botanical Gardens for Special Events and Temporary Event-Related Minor Structures.

Upon review of the submitted project description and accompanying maps, we have no comment to offer at this time.

Should you have any questions or other concerns, please call me, or Patrick Matsui, Chief of Parks Planning & Development at 808-270-7387.

Sincerely,


Glenn T. Correa
Director

c: Patrick Matsui, Chief of Parks Planning & Development



ALAN M. ARAKAWA
MAYOR

OUR REFERENCE
YOUR REFERENCE

POLICE DEPARTMENT
COUNTY OF MAUI

55 MAHALANI STREET
WAILUKU, HAWAII 96793
(808) 244-6400
FAX (808) 244-6411

April 28, 2006

MAY 03 2006



THOMAS M. PHILLIPS
CHIEF OF POLICE

KEKUHAUPIO R. AKANA
DEPUTY CHIEF OF POLICE

Mr. Mark Alexander Roy, Planner
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, HI 96793


Dear Mr. Roy:

SUBJECT: Early Consultation Request for Use of Former Pioneer Mill Plantation Manager's Residence and Surrounding Botanical Gardens for Special Events and Temporary Event-Related Minor Structures at TMK (2) 4-8-003:005 (por.), Olowalu

Thank you for your letter of April 13, 2006, requesting comments on the above subject.

We have reviewed the information submitted for this project and have enclosed a copy of our comments. As always, thank you for giving us the opportunity to comment on this project.

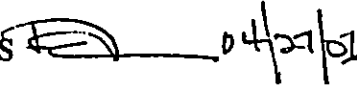
Very truly yours,


Assistant Chief Sydney Kikuchi
for: Thomas M. Phillips
Chief of Police

c: Michael Foley, Planning Department

Enclosure

COPY

TO : THOMAS PHILLIPS, CHIEF OF POLICE
VIA : CHANNELS  04/21/06
FROM : RICKY UEDO, SERGEANT, LAHAINA PATROL
SUBJECT : EARLY CONSULTATION REQUEST

Sir, this form of communication is being forwarded to your office regarding an Early Consultation Request for Use of Former Pioneer Mill Plantation Manager's Residence and Surrounding Botanical Gardens for Special Events and Temporary Event-Related Minor Structures in Olowalu.

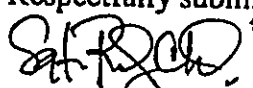
The property in question has held events there in the past. The property is accessed through Olowalu town from Honoapiilani Highway. The area is not visible from the highway due to the trees and brush.

We have not received any negative feedback or have had problems due to events held at this location, although any time there is a function, there is a potential for problems on any given day.

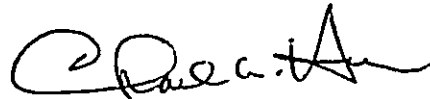
I don't see a problem from the police standpoint with this project.

Submitted for your review.

CONWR W/ASSESSMENT.
APR 21 2006
4/21/06

Respectfully submitted,

Sgt. Ricky E. Uedo #1512
Lahaina Patrol Division
April 21, 2006 @ 0940 hours

LEFT TURN LANE IN PLACE. NO IMPROVEMENTS.

 4/21/06



MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO

KARLYNN KAWAHARA

November 16, 2006

Thomas M. Phillips, Chief
Police Department
Attention: Sydney Kikuchi, Assistant Chief
55 Mahalani Street
Wailuku, Hawaii 96793

SUBJECT: Use of Former Pioneer Mill Plantation Manager's Residence and Surrounding Botanical Gardens for Special Events and Temporary Event-Related Minor Structures at TMK (2) 4-8-003:005 (por.), Olowalu, Maui, Hawaii

Dear Chief Phillips:

Thank you for your letter dated April 28, 2006, responding to our request for early consultation comments on the subject project. The applicant concurs with the observations made by Sergeant Uedoi that there have been no problems associated with events held at the subject property to date. The applicant remains committed to ensure that all future events at this location are conducted not only in accordance with the house rules, but that the privacy of the neighboring Olowalu landowners is also maintained.

We appreciate the input provided by your office. A copy of the Draft Environmental Assessment will be provided for your review and comment.

Very truly yours,

Mark Alexander Roy, Planner

MAR:tn

cc: Arlene Torricer and Glenn Tremble, Olowalu Elua Associates, LLC
F:\DATA\WMLC\OlowaluHouse\MPDECresponse.wpd

JUN 28 2006

ALAN M. ARAKAWA
Mayor

MILTON M. ARAKAWA, A.I.C.P.
Director

MICHAEL M. MIYAMOTO
Deputy Director

Telephone: (808) 270-7845
Fax: (808) 270-7955



COUNTY OF MAUI
**DEPARTMENT OF PUBLIC WORKS
AND ENVIRONMENTAL MANAGEMENT**
200 SOUTH HIGH STREET, ROOM 322
WAILUKU, MAUI, HAWAII 96793

RALPH NAGAMINE, L.S., P.E.
Development Services Administration

DAVID TAYLOR, P.E.
Wastewater Reclamation Division

CARY YAMASHITA, P.E.
Engineering Division

BRIAN HASHIRO, P.E.
Highways Division

TRACY TAKAMINE, P.E.
Solid Waste Division

June 21, 2006

Mr. Mark Alexander Roy, Planner
MUNEKIYO & HIRAGA, INC.
305 High Street, Suite 104
Wailuku, Maui, Hawaii 96793

Dear Mr. Roy:

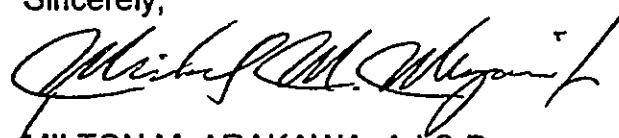
**SUBJECT: REQUEST FOR EARLY CONSULTATION FOR OLOWALU
ELUA ASSOCIATES, LLC.
TMK: (2) 4-8-003:005 (POR)**

We reviewed your early consultation request and have the following comments:

1. Include event recycling. Call 270-7874 for information.
2. Commercial kitchen facilities within the proposed project shall comply with pre-treatment requirements (including grease interceptors, sample boxes, screens etc.).
3. No activities/temporary facilities should be permitted in the Public Lateral Shoreline Access area.

Please call Michael Miyamoto at 270-7845 if you have any questions regarding this letter.

Sincerely,


MILTON M. ARAKAWA, A.I.C.P.
Director

MMA:MMM:jm

S:\LUCA\CZM\Draft Comments\48003005_olowalu_elua_assoc_early_cons_jm.wpd



MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO

KARLYNN KAWAHARA

November 16, 2006

Milton M. Arakawa, A.I.C.P., Director
County of Maui
Department of Public Works and
Environmental Management
Attention: Michael Miyamoto
200 South High Street, Room 322
Wailuku, HI 96793

SUBJECT: Use of Former Pioneer Mill Plantation Manager's Residence and Surrounding Botanical Gardens for Special Events and Temporary Event-Related Minor Structures at TMK (2) 4-8-003:005(por.), Olowalu, Maui, Hawaii

Dear Mr. Arakawa:

Thank you for your letter dated June 21, 2006, responding to our request for early consultation comments on the subject project. We would like to offer the following responses to the comments outlined in your letter:

1. Event recycling opportunities will be discussed in the Draft EA.
2. The kitchen at the Former Pioneer Mill Plantation Manager's Residence is not considered to be a commercial kitchen establishment and is not used as such for the purposes of the subject project. All food for events at this location is prepared by privately contracted caterers at an off-site location. The house rules, maintained and administered by the applicant for the project, require caterers of special events to be licensed by the State of Hawaii, Department of Health and possess all necessary food preparation permits. Should the kitchen at the residence be utilized as a commercial establishment at some point in the future, the applicant will ensure compliance with all applicable pretreatment requirements.
3. All special events and accompanying temporary structures at the project site will occur outside of the Public Lateral Shoreline Access area.

Milton M. Arakawa, A.I.C.P., Director
November 16, 2006
Page 2

We appreciate the input provided by your office. A copy of the Draft Environmental Assessment will be provided for your review and comment.

Very truly yours,



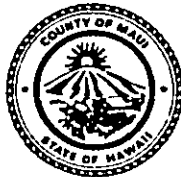
Mark Alexander Roy, Planner

MAR:tn

cc: Arlene Torricer/Glenn Tremble, Olowalu Elua Associates, LLC

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ALAN M. ARAKAWA
MAYOR



APR 24 2006

KYLE K. GINOZA
Director
DON A. MEDEIROS
Deputy Director
Telephone (808) 270-7511
Facsimile (808) 270-7505

DEPARTMENT OF TRANSPORTATION

COUNTY OF MAUI
200 South High Street
Wailuku, Hawaii, USA 96793-2155

April 19, 2006

Mr. Mark Alexander Roy, Planner
Munekiyo & Hiraga, Inc.
305 High Street
Suite 104
Wailuku, HI 96793

SUBJECT: Early Consultation Request for Use of Former Pioneer Mill Plantation
Manager's Residence and Surrounding Botanical Gardens for Special
Events and Temporary Event-Related Minor Structures at TMK (2)4-
8-003:005(por.), Olowalu, Maui, Hawaii

Dear Mr. Roy,

In response to your letter regarding the above subject matter, we have reviewed the project overview and location maps and have no comments to add at this time.

Should you have any questions, or require additional information, please feel free to contact our office at 270-7511.

Sincerely,

A handwritten signature in black ink, appearing to read "Kyle K. Ginoza", is written over a horizontal line.

Kyle K. Ginoza,
Director

/dcy

MAY 12 2006



May 10, 2006

Mr. Mark Roy, Planner
Munekiyo & Hiraga, INC.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Roy,

Subject: Early Consultation Request for Use of Former Pioneer Mill Plantation Manager's Residence and Surrounding Botanical Gardens for Special Events and Temporary Event-Related Minor Structures
Olowalu, Maui, Hawaii
TMK: (2) 4-8-003:005 (por.)


Thank you for allowing us to comment on the subject project, which was received on April 17, 2006.

In reviewing our records and the information received, Maui Electric Company (MECO) has no objection to the project at this time. The manager's residence is currently being served from a single phase 25kVA transformer. Electrical service capacity is limited to its existing facilities, therefore, this service may not be adequate for events requiring a large electric demand. For that reason, we highly encourage the developer's electrical consultant to submit the electrical drawings and project time schedule as soon as practical so that an upgrade (if required) can be provided on a timely basis.

In addition, we suggest that the developer and/or their consultant make contact with Walter Enomoto of our Demand Side Management (DSM) group at 872-3283 to review potential energy conservation and efficiency opportunities for their project.

Should you have any other questions or concerns, please call Kim Kawahara at 871-2345.

Sincerely,


Neal Shinyama
Manager, Engineering

NS/kk:lh

c: Walter Enomoto – MECO DSM



MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO

KARLYNN KAWAHARA

November 16, 2006

Neil Shinyama, Manager, Engineering
Maui Electric Company
210 West Kamehameha Avenue
P.O. Box 398
Kahului, Hawaii 96733-6898

SUBJECT: Use of Former Pioneer Mill Plantation Manager's Residence and Surrounding Botanical Gardens for Special Events and Temporary Event-Related Minor Structures at TMK (2) 4-8-003:005(por.), Olowalu, Maui, Hawaii

Dear Mr. Shinyama:

Thank you for your letter dated May 10, 2006, responding to our request for early consultation comments on the subject project. We acknowledge that MECO has no objections to the project at this time.

The applicant for the project, Olowalu Elua Associates, LLC, maintains a list of house rules to ensure that events at the subject property are conducted in a manner conducive to the capacity of the onsite electrical infrastructure. Based on prior experience with past events at the site, the existing infrastructure is anticipated to be sufficient to support the electrical load requirements for regular lighting and entertainment equipment. The current set of house rules require the provision of a portable generator for special events (utilizing specialized lighting and entertainment equipment) anticipated to result in a higher than average electrical demand on the existing infrastructure. A copy of the house rules will be included in the Draft Environmental Assessment (EA) for the project.

The applicant has no immediate plans to develop the subject property. Should the applicant proceed with a development proposal in the future, necessary coordination with MECO will be undertaken at that time to ensure that the necessary upgrades are provided. Energy conservation opportunities for any will also be evaluated and implemented as appropriate, prior to the implementation of any future development project at the subject property.

Neil Shinyama, Manager, Engineering
November 16, 2006
Page 2

We appreciate the input provided by your office. A copy of the Draft Environmental Assessment will be provided for your review and comment.

Very truly yours,



Mark Alexander Roy, Planner

MAR:tn
Attachment

cc: Arlene Torricer and Glenn Tremble, Olowalu Elua Associates, LLC
F:\DATA\WMLC\OlowaluHouse\MECOECresponse.wpd

APR 19 2006

Hawaiian Telcom

April 18, 2006

Munekiyo & Hiraga, Inc.
305 High Street Suite 104
Wailuku, Hawaii 96793

ATTN: Mr. Mark Alexander Roy, Planner

SUBJECT: Early Consultation Request for Use of Former Pioneer Mill Plantation
Manager's Residence and Surrounding Botanical Gardens for Special Events
and Temporary Event-Related Minor Structures at TMK: (2) 4-8-003:005
(por.), Olowalu, Maui, Hawaii

Dear Mr. Roy;

Thank you for providing Hawaiian Telcom Incorporated, the opportunity to comment on the
Early Consultation Request for Use of Former Pioneer Mill Plantation Manager's Residence
and Surrounding Botanical Gardens for Special Events and Temporary Event Related Minor
Structures at TMK: (2) 4-8-003:005 (por.), Olowalu, Maui, Hawaii.

Hawaiian Telcom has no comments on this project at this time.

If there are any questions, please call me at (808) 242-5258.

Sincerely,



Sheri Tihada
Senior Engineer –
Network Engineering & Planning

C: File (3045 LHNA)
S. Tihada

**XI. LETTERS RECEIVED
DURING THE DRAFT
ENVIRONMENTAL
ASSESSMENT REVIEW
PERIOD AND RESPONSES
TO SUBSTANTIVE
COMMENTS**

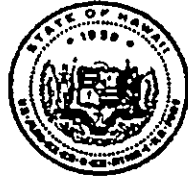
XI. LETTERS RECEIVED DURING THE DRAFT ENVIRONMENTAL ASSESSMENT REVIEW PERIOD AND RESPONSES TO SUBSTANTIVE COMMENTS

A Draft Environmental Assessment for the subject project was filed and published in the Office of the Environmental Quality Control's The Environmental Notice on December 23, 2006.

Comments on the Draft EA were received during the 30-day public comment period. Comments, as well as responses to substantive comments, are included in this chapter.

DEC 20 2006

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
OFFICE OF CONSERVATION AND COASTAL LANDS

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA
DEPUTY DIRECTOR

DEAN A. NAKANO
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING

FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

REF:OCCL:MC

CDUA MA-3392

Acceptance Date: December 13, 2006
180-Day Exp. Date: July 11, 2007

DEC 19 2006

Mark Alexander Roy
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawai'i 96793

Dear Mr. Roy:

NOTICE OF ACCEPTANCE AND PRELIMINARY ENVIRONMENTAL DETERMINATION
Conservation District Use Application (MA-3392)
BOARD PERMIT

This acknowledges receipt and acceptance for processing your Conservation District Use Application [CDUA] and Draft Environmental Assessment for the commercial use of the former Pioneer Mill's general manager's house and surrounding grounds, TMK (2) 4-8-03:5, at Olowalu, Lahaina District, Maui. The 10.5 acre parcels lies partially in the Limited Subzone of the State Land Use Conservation District; however, the 4.7-acre area of proposed use lies entirely within the Conservation District.

The parcel currently contains the former Pioneer Mill Plantation manager's house, a driveway, a garage, a former washhouse building, a large grassy lawn, and a botanical garden. Pursuant to Hawai'i Administrative Rules [HAR] §13-5-2, the infrastructure qualifies as a non-conforming use. The shoreline area is an undeveloped Government Beach Reserve, and a public 20-foot wide lateral shoreline access traverses the subject parcel. The subject parcel also includes the former Olowalu Sugar Mill and Olowalu wharf, although these are not within the project area.

According to the information provided, you propose to use the former plantation manager's residence and surrounding grounds for private events such as weddings, parties, and fund-raisers. There would be no physical changes to the infrastructure, although some events might require a temporary tent be erected on the lawn. The application specifies two possible locations for a tent. The primary location would allow for a tent no more than 1400 square feet in size. The alternate location would be used for larger events, and would allow for a tent no greater than 4800 square feet in size.

The existing washhouse building will be used as a public restroom.

No structures, parking lots, barricades, walls, etc. will be placed within the 150 foot shoreline setback area. Also, the 20-foot lateral shoreline access area will be maintained, and will remain unobstructed for events

The tents and any other associated infrastructure would be removed immediately following an event. You estimate that the area will host between 80 to 100 events at the project site each year. Based upon past years, 90% of the special events are weddings and wedding receptions. The average event size is 66 persons. The application states that events with over 200 people are infrequent; however, it does not discuss how infrequent, nor does it state a maximum size for an event¹.

You have been holding events at the location since an unspecified date. In December, 2005 the Maui County Planning Department notified the you that this should be discontinued until you had secured the proper permits from the Department of Land and Natural Resources (DLNR). The Planning Department noted that some events had been scheduled through May 2006, but the applicant agreed to not schedule any after that time. The application does not state whether this use has been discontinued or not².

After reviewing the application, the Office of Conservation and Coastal Lands (OCCL) finds that:

1. The proposed use is an identified use within the Conservation District according to HAR §13-5-22 *Identified land uses in the protective subzone, P-9 STRUCTURES, EXISTING, (C-1) Demolition, removal, or alteration of existing structures, facilities, and equipment. Any historic property shall be evaluated by the department for historical significance.*

OCCL notes that the office originally had identified the project as a Botanical Garden and Private Park. After reviewing the application, OCCL feels that the proposed use is better represented as a change in use of an existing structure pursuant to §13-5-22 (P-9).

This use requires a departmental permit from the DLNR. However, pursuant to HAR §13-5-33 (j) *A board permit shall be required when the chairperson determines that the scope of the proposed use, the necessity of an environmental impact statement, or the public interest requires a board permit.* The chairperson has determined that, due to the scope of the work and its potential impacts, a board permit should be required. The final decision as to whether to grant or deny the permit lies with the Board of Land and Natural Resources (BLNR).

2. A public hearing pursuant to HAR §13-5-40 will be required.

¹ Please discuss this in the Final Environmental Assessment.

² These uses should not be occurring without the authorization of the BLNR. Should we find that such uses are taking place we would need to stop the CDUA process and initiate an enforcement action.

3. Pursuant to HAR §13-5-31 *Permit applications*, the permit requires that an environmental assessment be carried out. A Finding of No Significant Impact (FONSI) to the environment is anticipated for the proposed project. The draft environmental assessment (DEA) for the project has been submitted to the Office of Environmental Quality Control (OEQC) to be published in the December 23, 2006 issue of the *Environmental Notice*.

Your CDUA will be given to the Board for their consideration after all reviews and evaluations of the proposal have been made. Should you have any questions, please contact Michael Cain of the OCCL at 587-0048.

Aloha,



PETER T. YOUNG, Chairperson
Board of Land and Natural Resources

cc: DLNR -- Forestry, DOCARE, Na Ala Hele, Land Division, *Historic Preservation*
Maui County - Department of Planning, Cultural Resources Commission
Office of Hawaiian Affairs
Department of Hawaiian Homelands
Lahaina Public Library

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
OFFICE OF CONSERVATION AND COASTAL LANDS

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

JAN 25 2007

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA
DEPUTY DIRECTOR

DEAN A. NAKANO
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

REF:OCCL:MC
CDUA MA-3392

Acceptance Date: December 13, 2006
180-Day Exp. Date: July 11, 2007

JAN 24 2007

Mark Alexander Roy
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawai'i 96793

Dear Mr. Roy:

SUBJECT: Conservation District Use Application MA-3392 [BOARD PERMIT]
Commercial Use of Olowalu Plantation Grounds
Olowalu, Lahaina, Maui
TMK (2) 4-8-03:5

Dear Mr. Roy:

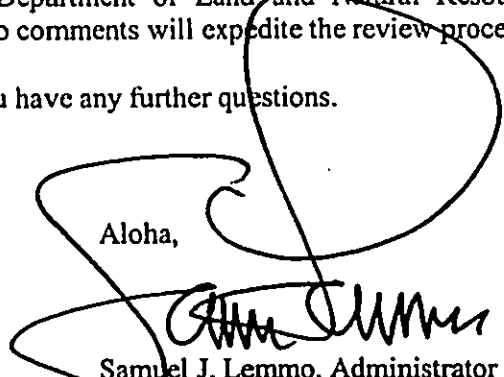
This letter is regarding the processing of CDUA MA-3392. The public and agency comment period on your application has closed. Attached to this letter are copies of the comments received by the Office of Conservation and Coastal Lands (OCCL) regarding your CDUA. Please send copies of your responses to the questions raised in these letters directly to the authoring agency as well as to the OCCL.

Please submit four print copies and one digital (or six paper copies) of the Final EA to us by March 12, 2007 so it can be submitted for the March 23, 2007 edition of the *Environmental Notice*. Please also include a new electronic summary of the project if it has changed from the original proposal.

After we receive your response, and when the concerns raised have been adequately addressed, we will place your CDUA before the Board of the Department of Land and Natural Resources for their consideration. Early submittal of your response to comments will expedite the review process.

Please call Michael Cain at 587-0048, should you have any further questions.

Aloha,


Samuel J. Lemmo, Administrator
Office of Conservation and Coastal Lands

PHONE (808) 594-1888

FAX (808) 594-1865



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

RECEIVED
OFFICE OF CONSERVATION
AND COASTAL LANDS

2007 JAN 16 A 9:12

DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

HRD06/2366B

January 8, 2007

Samuel J. Lemmo
Administrator
Office of Conservation and Coastal Lands
Department of Land Natural Resources
P.O. Box 621
Honolulu, HI 96809

RE: Conservation District Use Application (MA-3392) and Draft Environmental Assessment, Commercial Use of Former Olowalu Plantation, Olowalu, Lahaina, Maui, TMK: 4-8-003:005

Dear Sam Lemmo,

The Office of Hawaiian Affairs (OHA) is in receipt of your December 19, 2006, request for comment on the above-referenced, proposed project, which would include the commercial use of the former Pioneer Mill's general manager's house and surrounding grounds for various functions, such as weddings, parties and fund-raisers. OHA offers the following comments.

We urge the applicant to formalize shoreline access and assure that the planned special events will not preclude continual public access to the shore. OHA appreciates that the applicant has created a temporary parking area near Olowalu Landing, and requests that plans for a more permanent access point be presented.

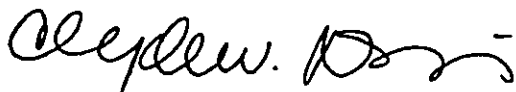
The Draft Environmental Assessment (DEA) includes an archaeological inventory survey of the Olowalu Makai Development Parcel, in which the proposed use area is located. Several historic properties, including traditional Native Hawaiian habitation sites and a burial ground, are located at, or near, the proposed use area. The acceptance letter of the inventory survey from the Department of Land and Natural Resources, which was included in the DEA, states that preservation plans for these sites must be in place prior to any permit approvals. We do not see any evidence of approved preservation plans, and ask that this condition be met prior to approval of the CDUA.

Samuel Lemmo
Administrator
January 8, 2007
Page 2

OHA further requests that, should iwi kūpuna or Native Hawaiian cultural or traditional deposits be found during any ground disturbance associated with this proposed use, work will cease, and the appropriate agencies will be contacted pursuant to applicable law.

Thank you for the opportunity to comment. If you have further questions or concerns, please contact Heidi Guth by phone at (808) 594-1962 or by e-mail at heidig@oha.org.

Sincerely,



Clyde W. Nāmu'o
Administrator

C: Thelma Shimaoka
Community Resources Coordinator
OHA – Maui Office
140 Hoohana Street, Suite 206
Kahului, HI 96732



MICHAEL J. ...
GWEN ...
MITSURU ...
KARL ...

March 6, 2007

Clyde Namu`o, Administrator
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawai'i 96813

SUBJECT: Conservation District Use Application (CDUA) (MA-3392) and Draft Environmental Assessment (EA) for Use of Former Pioneer Mill Plantation Manager's House and Surrounding Botanical Gardens for Special Events and Temporary Event-Related Minor Structures, TMK (2) 4-8-003:005, Olowalu, Maui

Dear Mr. Namu`o:

Thank you for your letter of January 8, 2007, providing comments on the CDUA application and Draft Environmental Assessment (EA) for the subject project.

On behalf of the applicant, Olowalu Elua Associates, we offer the following responses to the comments noted in your letter:

Shoreline Access Opportunities

The existing 20-foot lateral shoreline access easement which fronts the property was established as a condition of the Special Management Area (SMA) Use Permit (SM1 990021) for the Olowalu Subdivision which was approved by the Maui Planning Commission on September 12, 2000.

Shoreline access opportunities along the aforementioned easement will not be impacted by special events being held at the property. All event-related equipment will be located outside (mauka) of the 20-foot lateral shoreline access easement. Furthermore, all equipment will be removed after each event to ensure that the property is returned to its natural condition.

Permanent public access between Olowalu Landing and Honoapi`ilani Highway is currently provided via a recorded easement. The applicant will continue to monitor and maintain conditions within the access easement to ensure the continuation of public access opportunities to Olowalu Landing.

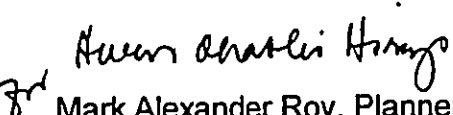
Clyde Namu'o, Administrator
March 6, 2007
Page 2

Archaeological Considerations

An Archaeological Mitigation and Preservation Plan was prepared for the makai lands of the subdivision in May 2001. The plan was approved by the State Historic Preservation Division (SHPD) on June 4, 2001. Copies of both the preservation plan and the SHPD approval letter will be included in the Final EA document.

We appreciate the input provided by your office. Should you have any questions, please do not hesitate to contact me at (808) 244-2015.

Very truly yours,


for Mark Alexander Roy, Planner

MAR:tn

cc: Arlene Torricer, Olowalu Elua Associates
Michael Cain, DLNR, Office of Conservation and Coastal Lands

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LINDA LINGLE
GOVERNOR OF HAWAII



GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
DEPARTMENT OF HEALTH
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
235 SOUTH BERETANIA STREET
LEIOPAPA A KAMEHAMEHA, SUITE 702
HONOLULU, HAWAII 96813
Telephone (808) 586-4185
Facsimile (808) 586-4186
Electronic Mail: OEQC@doh.hawaii.gov

January 18, 2007

Ms. Arlene Torricier
Olowalu Elua Associates
33 Lono Street, Suite 450
Kahului, Hawaii'i 96732

Mr. Mark Alexander Roy
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

RECEIVED
OFFICE OF CONSERVATION
AND COASTAL LANDS
2007 JAN 23 A 10: 53
DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

Mr. Samuel J. Lemmo
Mr. Michael Cain
State of Hawaii'i - Department of Land and Natural Resources
Office of Conservation and Coastal Lands
P.O. Box 621
Honolulu, Hawaii 96821

Dear Ms. Torricier and Messrs. Lemmo, Cain and Roy:

The Office of Environmental Quality Control has reviewed the draft environmental assessment for the Use of the Former Pioneer Mill Plantation Manager's House and Botanical Gardens for Special and Temporary Event-Related Minor Structures, Tax Map Key Number (2nd) 4-8-003, parcel 005, in the judicial district of Lahaina, submitted to the Office of Environmental Quality Control by way of a December 13, 2006, memorandum of Samuel J. Lemmo to Genevieve Salmonson (File No. MA-3392). The Office of Environmental Quality Control offers the following comment for your consideration.

1. **Newells' Shearwater:** Please consult with the U. S. Fish and Wildlife Service, Honolulu Office, about night lighting conditions to prevent impacts to Newell's Shearwater (*Puffinus auricularis newelli*).
2. **Wastewater System:** Applicant must check with DOH - wastewater branch for the requirement for a large capacity usage. For non-residential commercial use, federal regulations governing large capacity cesspools apply if on any given day of the year, twenty or more persons use the facility. For more information on this, please contact Mr. Thomas See of the Wastewater Branch at (808) 586-4294.

Thank you for the opportunity to comment. If there are any questions, please call Mr. Leslie Segundo, Environmental Health Specialist, at (808) 586-4185.

Sincerely,


GENEVIEVE SALMONSON
Director of Environmental Quality Control



MICHAEL
GWEN
MITSURU
KARL

March 6, 2007

Genevieve Salmonson, Director
Office Of Environmental Quality Control
Attention: Leslie Segundo, Environmental
Health Specialist
235 S. Beretania Street, Suite 702
Honolulu, Hawaii 96813

SUBJECT: Conservation District Use Application (CDUA) (MA-3392) and Draft Environmental Assessment (EA) for Use of Former Pioneer Mill Plantation Manager's House and Surrounding Botanical Gardens for Special Events and Temporary Event-Related Minor Structures, TMK (2) 4-8-003:005, Olowalu, Maui

Dear Ms. Salmonson:

Thank you for your letter of January 18, 2007, providing comments on the CDUA application and Draft Environmental Assessment (EA) for the subject project.

On behalf of the applicant, Olowalu Elua Associates, we offer the following responses to the comments noted in your letter:

Newells' Shearwater

We acknowledge your comment regarding the sensitivity of Newells' Shearwater to man-made light sources. To prevent potential impacts on Newells' Shearwater in the vicinity of the project site, all lighting for special events will be directed away from ocean resources. To ensure that events are conducted in a manner conducive with both the environmental characteristics of the property, the applicant maintains and enforces a set of house rules for all special events at the project site. The house rules impose a number of regulations on the organizers of special events relating to parking/shuttling of guests, sizing/location of tents, solid waste disposal, restroom usage, smoking, music noise levels, breakdown of event-related equipment, etc. Non-compliance of the house rules by organizers of events results in the loss of security deposits which are placed with the applicant at the time of reservation. The house rules will be revised to ensure that event coordinators comply with the aforementioned lighting requirements. A copy of the revised house rules will be included in the Final EA document.

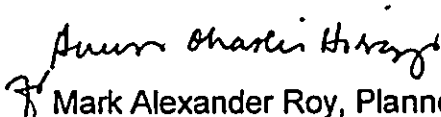
Genevieve Salmonson, Director
March 6, 2007
Page 2

Wastewater System

We acknowledge your comment concerning large capacity cesspools. The applicant will coordinate the State of Hawaii, Department of Health (Wastewater Branch) to evaluate applicable cesspool upgrade requirements.

We appreciate the input provided by your office. Should you have any questions, please do not hesitate to contact me at (808) 244-2015.

Very truly yours,


Mark Alexander Roy, Planner

MAR:tn

cc: Arlene Torricer, Olowalu Elua Associates
Michael Cain, DLNR, Office of Conservation and Coastal Lands

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Division of Forestry & Wildlife


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

January 22, 2007

MEMORANDUM

TO: Michael Cain, Planner
OCCL

FROM: Paul J. Conry, Administrator
Division of Forestry and Wildlife



DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

2007 JAN 22 P 3:05

RECEIVED
OFFICE OF CONSERVATION
AND COASTAL LANDS

SUBJECT: CDUA MA-3392 Commercial use of Former Olowalu Plantation Grounds by Olowalu Elua Associates, LLC TMK: (2) 4-8-03: 5 at Olowalu, Lahaina, Maui.

We have reviewed the subject CDUA MA-3392 and provide the following comments for your consideration. The plantation grounds are habitat for endangered wildlife birds. The nene and dark-rumped petrel are listed and protected by State law. We recommend that the staff of Olowalu Plantation and their guests avoid these endangered species because chapter 195D-4, HRS prohibits the "take" (take is defined as - harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect) of endangered species. Please call John Medeiros at (808) 873-3510 for nene inquiries or Fern Duvall at (808) 873-3502 for petrel inquiries. Conflicts between endangered species and the public can be avoided through education and information. Thank you for the opportunity to comment on this project.

C: DOFAW Maui Wildlife

DIVISION OF FORESTRY & WILDLIFE - MAUI

MEMORANDUM

DATE: 19January2007
TO: Nelson Ayers
THROUGH: John Cumming
FROM: Shane De Mattos, Wildlife Biologist
808-243-4659 Phone
808-984-8111 Fax

SUBJECT: Comments on CDUA for Olowalu Elua Associates, LLC

Nelson,

A few comments regarding the request for the Conservation District Use Application MA-3392 Commercial Use of Former Olowalu Plantation Grounds. The applicant should be aware that there are endangered species that frequent the project area and this will require special attention. Endangered species are afforded special protection under the endangered species act and the applicant must be familiar with the laws that govern this. Through past Division of Forestry and Wildlife surveys, there has been Nene (Hawaiian goose) that frequented the project area on a consistent basis. Other endangered species may visit or reside in the project area as well. Due to the greater human traffic in the project area, endangered species/human encounters may increase causing conflicts. If and when these and other situations related to endangered species arise, notification to the proper individuals must be done. Any questions or concerns regarding Nene (Hawaiian goose) should be directed to John Medeiros (873-3510). All other endangered species questions or concerns should be directed to Dr. Fern Duvall (873-3502).

- mitigation impacts / \$ HCP endangered birds
dark-rumped petrel



MICHAEL J. HIRAGA
GWEN D. HIRAGA
MITSURU HIRAGA
KAREN HIRAGA

March 6, 2007

Paul Conry, Administrator
State of Hawai'i
Department of Land and Natural
Resources
Division of Forestry and Wildlife
1151 Punchbowl Street, Room 325
Honolulu, Hawai'i 96813

SUBJECT: Conservation District Use Application (CDUA) (MA-3392) and Draft Environmental Assessment (EA) for Use of Former Pioneer Mill Plantation Manager's House and Surrounding Botanical Gardens for Special Events and Temporary Event-Related Minor Structures, TMK (2) 4-8-003:005, Olowalu, Maui

Dear Mr. Conry:

Thank you for your letter of January 22, 2007, providing comments on the CDUA application and Draft Environmental Assessment (EA) for the subject project.

On behalf of the applicant, Olowalu Elua Associates, we acknowledge the determination from your office that the certain endangered wildlife birds, such as the Nene and dark-rumped petrel have been observed in the vicinity of the project site. We also note that the two (2) aforementioned species are listed and protected under Chapter 195, Hawai'i Revised Statutes.

To ensure that events are conducted in a manner conducive with the environmental surroundings of the subject property, the applicant maintains and enforces a set of house rules for all special events held at the property. The house rules impose a number of regulations on the organizers of special events relating to parking/shuttling of guests, sizing/location of tents, solid waste disposal, restroom usage, smoking, music noise levels, breakdown of event-related equipment, etc. Non-compliance with the house rules results in the loss of security deposits which are placed at the time of reservation. In light of your office's comments, the house rules will be revised to ensure event coordinators are informed and educated on both the potential presence of endangered bird species in the area and the applicable section under State Law prohibiting the "take" of such species. A copy of the revised house rules will be included within the Final EA.


305 High Street, Suite 104 Wailuku, Hawaii 96793 ph: (808)244-2015 fax: (808)244-8729 planning@mhincollie.com

environment
planning
government

Paul Conry, Administrator
March 6, 2007
Page 2

We appreciate the input provided by your office. Should you have any questions, please do not hesitate to contact me at (808) 244-2015.

Very truly yours,


For Mark Alexander Roy, Planner

MAR:tn

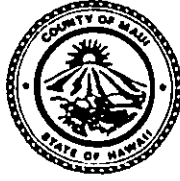
cc: Arlene Torricer, Olowalu Elua Associates
Michael Cain, DLNR, Office of Conservation and Coastal Lands

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CHARMAINE TAVARES
Mayor

JEFFREY S. HUNT
Director

COLLEEN M. SUYAMA
Deputy Director



FEB 14 2007

COUNTY OF MAUI
DEPARTMENT OF PLANNING

February 7, 2007

Mr. Samuel J. Lemno, Administrator
Office of Conservation and Coastal Lands
Department of Land and Natural Resources
Post Office Box 621
Honolulu, Hawaii 96809

Attention: Mr. Michael Cain
Dear Mr. Lemno

RE: Request for Comments on Conservation District Use Application for Commercial Use of the Former Olowalu Plantation at Maui TMK: 4-8-003:005 (por.) Olowalu, Lahaina, Island of Maui (CDUA MA-3392) (RFC 20060124)

Olowalu Elua Associates, LLC (Applicant) has submitted a Conservation District Use Application (CDUA) and Draft Environmental Assessment (DEA) to conduct commercial activities on approximately 4.7 acres of a 10.5 acre parcel located within the State Conservation District, Limited Subzone.

The commercial activity is the use of the former Pioneer Mill plantation's manager house and surrounding botanical gardens for special events. The average number of guests at these events are approximately 66 persons. Parties with the number of guests larger than 200 are highly discouraged. The average number of special events per month is six(6) to eight (8).

The Maui Planning Department (Department) has reviewed the CDUA and DEA, and have the following comments to offer:

1. The 4.7 acre portion of the property is designated as follows:

State Land Use District:	Conservation
West Maui Community Plan:	Open Space
Zoning:	Hotel
Special Management Area:	Yes

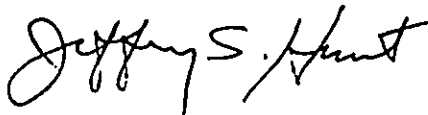
Attention: Mr. Michael Cain
Mr. Samuel J. Lemno
February 7, 2007
Page 2

2. A Special Management Area (SMA) Minor Permit (SMA 2005/0644) application has been submitted to the Department to also allow for this event, as well as to allow for the use of temporary structures in specified locations. Enclosed is a copy of the Department's response of November 27, 2006 on the SMA Minor Permit application.
3. Pursuant to the Special Management Areas Rules of the Maui Planning Commission, the final decision on this SMA Minor Permit application will be held in abeyance until the Chapter 343, Hawaii Revised Statutes (HRS) process is completed.
4. The project is located within an area identified as the Olowalu Sugar Mill Complex (Complex) (Site 50-50-08-1602). The Complex is deemed significant under Criterion A and D of the Federal and State historic preservation guidelines. The applicant should explain how the proposed activities are consistent and or complement this historic property.
5. On the morning of January 26, 2007, Department Staff (Staff) conducted a site inspection of the Property from the adjacent State beach reserve. Staff observed the preparation of an event as.
 - a. Approximately six (6) large round tables tops leaning against the two (2) large trees adjacent to the Plantation Manager's House as well as two (2) stacks of folding chairs; and
 - b. A Surf Rental truck being unloaded with additional smaller tables, chairs, and other supplies to be set up in the vicinity of the two large trees and Plantation Manager's House.
6. The same morning, Department Staff notified County and State enforcement officials as well as the Staff Planner at the Department of Land and Natural Resources Office of Conservation and Coastal Lands (DLNR-OCCL) handling the Conservation District Use Application (CDUA) for this project that there may be a potential violation.

Attention: Mr. Michael Cain
Mr. Samuel J. Lemno
February 7, 2007
Page 3

Thank you for the opportunity to comment. Should further clarification be required please contact Ms. Robyn Loudermilk, Staff Planner of this office, by email to robyn.loudermilk@co.maui.hi.us or by telephone at 270-7180.

Sincerely



JEFFREY S. HUNT, AICP
Planning Director

JSH:RLL:sls

Enclosure

c: Colleen M. Suyama, Deputy Planning Director
Clayton I. Yoshida, AICP, Planning Program Administrator
Aaron Shinmoto, PE, Planning Program Administrator
Robyn L. Loudermilk, Staff Planner
DLNR-Conservation & Enforcement Maui Office
[REDACTED] Munekiyo & Hiraga, Inc.
Arlene M. Torricer, West Maui Land Company, Inc.
SMX 2005/0644 Project File
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ALAN M. ARAKAWA
Mayor

MICHAEL W. FOLEY
Director

Don Couch
Deputy Director



NOV 28 2006

COUNTY OF MAUI
DEPARTMENT OF PLANNING

November 27, 2006

Mr. Mark Alexander Roy
Munekiyo & Hiraga, Inc.
305 S. High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Roy:

RE: Special Management Area Assessment Application For The Use Of
The Former Pioneer Mill Plantation Manager's Residence And
Surrounding Botanical Gardens For Special Events And Temporary
Event-Related Minor Structures At TMK (2) 4-8-003:005 (por.),
Olowalu, Maui, Hawaii (SMX 2005/0644)

In response to your letter dated November 9, 2006, please be advised as follows:

1. We acknowledge that the structures within the 150 ft. shoreline setback area consisting of the pavers and stepping stones and the portable stage and electrical outlets have been removed and that no further permitting will be required;
2. We acknowledge that the existing CMU wall near the Banyan tree identified on the certified shoreline map dated March 25, 1999, is an existing non-conforming structure. Further, it is our understanding that the stacked paver on the wall has been removed;
3. It is our understanding that the Department of Land and Natural Resources has determined that the use of the area for special events within the State Conservation District requires an Environmental Assessment (EA) pursuant to Chapter 343, Hawaii Revised Statutes. As part of this review a Traffic Impact Analysis Report (TIAR) is being prepared for review by the State Department of Transportation (DOT) and for inclusion in the EA;

In order for this office to continue processing of the SMA Assessment Application the Final EA is required which shall include the TIAR and comments and responses from DOT;

Mr. Mark Alexander Roy
November 27, 2006
Page 2

4. We acknowledge that the former washhouse building is identified on a site map of Olowalu Village dated April 9, 1936, and is an existing non-conforming structure located within the Shoreline Setback Area. However, since the "repair/maintenance" work was conducted without the appropriate review and permits in 1999, we cannot determine that the work will qualify as an exemption under the Special Management Area Rules of the Maui Planning Commission;

Further, the repair/maintenance of the washhouse building should be included in the Environmental Assessment based on the fact the building is being used as a public restroom. The increased impacts resulting from the public restrooms should be addressed as part of the EA;

It is assumed that the restroom facilities are also being used for the special events and as such should be reviewed with the SMA Assessment for the special events and not as a separate after-the-fact permit;

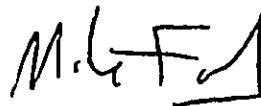
5. We acknowledge that based on your revised site plan, no structures such as temporary tents, parking lots, fences/barricades/walls, stage, etc. shall be erected within the 150 ft. Shoreline Setback Area and that a Shoreline Setback Approval will not be required. Further, the minimum 20 ft. lateral public access as identified on the revised site plan required for the property shall be maintained and unobstructed during the special events;
6. Further, it is our understanding that the proposed special events activities will occur entirely within the State Conservation District with the approval of the Department of Land and Natural Resources or the Board of Land and Natural Resources. Further, the coconut garden and grassed area located within the State Agricultural District and identified on the revised Site Plan is not part of the proposed use; and
7. Relative to the list of events scheduled for 2006 and 2007, you are again reminded that until the special events use is granted by the State of Hawaii the use of the area should not be continued. The Maui Planning Department, during our December 2005 site inspection of the area, had previously advised your client that we would not support the continuation of the use of the area for special events until the appropriate approvals have been obtained. We did understand

Mr. Mark Alexander Roy
November 27, 2006
Page 3

that there were a few events already pre-scheduled to May 2006 but after that no other events would be scheduled until the necessary approvals were obtained.

Thank you for your cooperation. If additional clarification is required, please contact Ms. Colleen Suyama, Staff Planner, of this office at colleen.suyama@co.maui.hi.us or 270-7512.

Sincerely,



MICHAEL W. FOLEY
Planning Director

MWF:CMS:bv

c: Clayton I. Yoshida, AICP, Planning Program Administrator
Colleen M. Suyama, Staff Planner
Sam Lemmo, Administrator, Office of Conservation and Coastal Lands, DLNR
Project File
General
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MICHAEL
GWEN
MITSURU
KAWAII

March 6, 2007

Jeffrey S. Hunt, AICP, Director
County of Maui
Department of Planning
Attention: Robyn Loudermilk, Staff Planner
250 South High Street
Wailuku, Hawai'i 96793

SUBJECT: Conservation District Use Application (CDUA) (MA-3392) and Draft Environmental Assessment (EA) for Use of Former Pioneer Mill Plantation Manager's House and Surrounding Botanical Gardens for Special Events and Temporary Event-Related Minor Structures, TMK (2) 4-8-003:005, Olowalu, Maui (RFC 20060124)

Dear Mr. Hunt:

Thank you for your letter of February 7, 2007, providing comments on the CDUA application and Draft Environmental Assessment (EA) for the subject project.

On behalf of the applicant, Olowalu Elua Associates, we offer the following responses to the comments noted in your letter:

1. We acknowledge that the property is designated Conservation by the State Land Use Commission, designated Open Space by the West Maui Community Plan and zoned Hotel by the County of Maui. We also note the confirmation that the property is located within the County of Maui's Special Management Area (SMA).
2. We acknowledge your comment that the SMA Assessment (SMX 2005/0644) application (submitted on October 28, 2005) is currently being processed by the department.
3. It is our understanding, based on discussions with the Staff Planner Robyn Loudermilk, that final determination on the SMA application will be held in abeyance pending issuance of a Finding of No Significant Impact (FONSI) by the approving agency for the Environmental Assessment (EA). The approving agency is the Department of Land and Natural Resources (DLNR), Office of Conservation and Coastal Lands (OCCL).

305 High Street, Suite 104 Wailuku, Hawaii 96793 ph: (808)244-2015 fax: (808)244-8729 planning@mhincollid.com

environment
planning
environment

4. We acknowledge that the Olowalu Sugar Mill Complex (Site 50-50-08-1602) is located within the subject property near the publicly-accessible Olowalu Landing area. The Olowalu Sugar Mill Complex was identified by an Archaeological Inventory Survey (AIS) that was completed for the applicant's makai lands in 1999. The AIS Report was approved by the DLNR State Historic Preservation Division (SHPD) on April 12, 2000. An Archaeological Preservation and Mitigation Plan was subsequently prepared in May 2001 and approved by SHPD in June 4, 2001.


Special events at the project site are confined to the lawn area in the direct vicinity of the former plantation manager's residence. This event location is estimated to be approximately 250 feet from the Olowalu Sugar Mill Complex. The use of the property for special events will be limited to the duration of each particular event. In addition, all related equipment and temporary tent structures will be removed from the site in its entirety at the end of each event to ensure that the property is returned to its original condition. To further ensure that events are conducted in a manner conducive with the surroundings of the subject property, the applicant voluntarily maintains and enforces a set of house rules. The house rules impose a number of regulations on the organizers of special events relating to parking/shuttling of guests, sizing/location of tents, solid waste disposal, restroom usage, smoking, music noise levels, breakdown of event-related equipment, etc. Non-compliance with the house rules results in the loss of security deposits which are placed at the time of reservation. No impacts to the Olowalu Sugar Mill Complex are therefore anticipated to result from the hosting of special events at the location defined in the Draft EA.

5. It is our understanding that the site visit identified in your letter was conducted by the department on January 22, 2007.
6. We also understand that DLNR-OCCL was informed of a potential violation following the department's site visit (see No. 5 above). Letters were submitted (by the applicant) to both DLNR/OCCL and the department on January 22, 2007 and January 29, 2007 responding to the observations made during the above-noted site visit. Copies of these two (2) letters have been provided as **Exhibit "A"** and **Exhibit "B"** for your reference.

Jeffrey S. Hunt, AICP, Director
March 6, 2007
Page 3

We appreciate the input provided by your office. Should you have any questions, please do not hesitate to contact me at (808) 244-2015.

Very truly yours,


Mark Alexander Roy, Planner

MAR:tn

Attachments

cc: Arlene Torricer, Olowalu Elua Associates

Michael Cain, DLNR, Office of Conservation and Coastal Lands

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LOWALU ELUA ASSOCIATES LLC

33 Lono Avenue, Suite 450 ♦ Kahului, Maui, Hawaii 96732
Telephone (808) 877-4202 ♦ Facsimile (808) 877-9409

January 22, 2007

Mr. Michael Cain
Department of Land and Natural Resources
Office of Conservation and Coastal Lands
PO Box 621
Honolulu, HI 96809

Re: *Olowalu Manager's House*
January 22, 2007 Wedding
TMK: 4-8-03:05 (por); CDUA MA-3392

Dear Mr. Cain,

As requested, we are writing to advise of and request clarification for the hosting of a non-commercial event at the Olowalu Manager's House on Monday, January 22, 2007.

We do concur that a wedding was held at the privately owned Olowalu Manager's House on Monday, January 22, 2007. The wedding party was an acquaintance of one of the owners' representatives and held at the property as a courtesy / pro-bono event. It was the wedding of a Maui local – a one day event; no structures were erected therefore no physical changes to the infrastructure were anticipated. The party was aware that "special care" of the grounds was expected (e.g. no structures within 150' of the shoreline; the 20-foot lateral shoreline access area would remain unobstructed; clean up of the area would be expected at the end of the event, etc).

The May 23, 2000 correspondence (Ref.: PB:SL) from then Land Division Administrator, Dean Y. Uchida, to Olowalu Elua Associates LLC advised the *"The Land Division does not regulate activities that do not involve a land use. For instance, hunting, hiking, gatherings or other temporary or transitory activities, whether commercial or non-commercial, are not defined as land uses and therefore do not fall under our regulatory authority. A land use as defined under Section 13-5-22 of the Department's Administrative Rules involves the placement or erection of any solid material on the land for more than 14 days, or which causes permanent change in the land area..."*. Permission for allowing the wedding to be held at the property was viewed as the property owner allowing their home to be enjoyed by friends and neighbors as long as care was taken. As such, it was of the owners' opinion that the use of their property was not violating the spirit and intent of the conservation district's purpose as written in HRS §13-5-1.

EXHIBIT A

We are currently processing a CUA and Draft EA with you for the use of the subject property for like events, and request clarification / opinion of the owners' legal rights to use their property in the interim. Please know that no harm or willful violation of the law was intended. We sincerely appreciate your conservation efforts and hope our diligence and concerted efforts to comply with your Department's requests for reviews, approvals and permits are viewed as such. We sincerely apologize for any misunderstanding and thank you for the opportunity to share our thoughts and events as they have transpired.

Respectfully,
OLOWALU ELUA ASSOCIATES LLC



Arlene M. Torricer
Project Coordinator, West Maui Land Company, Inc.

Cc: Olowalu Elua Associates LLC
Mark Alexander Roy, Munekiyo & Hiraga, Inc.
Robyn Loudermilk, County of Maui, Department of Planning
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LOWALU ELUA ASSOCIATES LLC

33 Lono Avenue, Suite 450 ♦ Kahului, Maui, Hawaii 96732
Telephone (808) 877-4202 ♦ Facsimile (808) 877-9409

January 29, 2007

Mr. Michael Cain
Department of Land and Natural Resources
Office of Conservation and Coastal Lands
PO Box 621
Honolulu, HI 96809

**Re: Request for Clarification
Transitory Activities on Privately Owned Property in Conservation District
Olowalu Manager's House – TMK: 4-8-03:05 (por); CDUA MA-3392**

Dear Mr. Cain,

Thank you for allowing us the opportunity to comment regarding the gathering at our Olowalu Manager's House last week. During our review to provide commentary, we came across a few questions that we would like to have clarified.

In a January 26, 2000 correspondence, we requested clarification on the transitory activities held at the Olowalu Manager's House (Property) from the DLNR, and received a response (Ref.: PB:SL) from then Land Division Administrator, Dean Y. Uchida on May 23, 2000, stating that the *"The Land Division does not regulate activities that do not involve a land use. For instance, hunting, hiking, gatherings or other temporary or transitory activities, whether commercial or non-commercial, are not defined as land uses and therefore do not fall under our regulatory authority. A land use as defined under Section 13-5-22 of the Department's Administrative Rules involves the placement or erection of any solid material on the land for more than 14 days, or which causes permanent change in the land area..."*

Based on the May 23, 2000 response and relevant sections of HRS & HAR (below), the owners of the Property understood that the activities (commercial and non-commercial) were not considered 'Land Use' in the Conservation District and not regulated by the DLNR.

*HAR Title 13-5 – DLNR Administration, Conservation District
HAR §13-5-1 Purpose. The purpose of this chapter is to regulate land use in the conservation district for the purpose of conserving, protecting, and preserving the important natural resources of the State through appropriate management and use to promote their long-term sustainability and the public health, safety, and welfare. [Eff DEC 12 1994] (Auth: HRS §183C-3) (Imp: HRS §183C-1)*

EXHIBIT 'B'

HRS §183C-2 & HAR§13-5-2 Definitions – Both governing chapters define "Land Use" as:

1. The placement or erection of any solid material on land;
2. The grading, removing, harvesting, dredging, mining, or extraction of any material or natural resource on land;
3. The subdivision of land; or
4. The construction, reconstruction, demolition, or alteration of any structure, building, or facility on land.

In our conversation on January 22, 2007, you seemed to indicate a distinction of permitted land use between commercial versus non-commercial in the Conservation District. It seems we may be in agreement that non-commercial transitory gatherings are permitted on Conservation lands provided no defined Land Uses (above) occur. The gray area in our opinion seems to be the commercial use. We note that the nature of the gatherings at the property is activity-based, rather than a land use requiring physical improvements. These activities appear to parallel similar activity-based actions such as the conduct of surfing or windsurfing classes on the beach, or the conduct of organized physical exercise activities held by local groups.

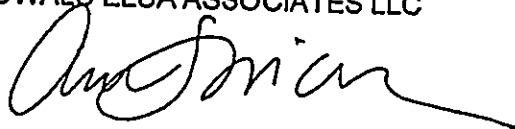
Since the May 23, 2000 letter from the DLNR, it seems the laws, rules or DLNR's interpretation thereof may have changed. To comply with the concerns, we are processing a CDUA and Draft EA as requested to allow the community and the land owners to use the Property for commercial and non-commercial gatherings of family, friends and neighbors. The public comment period for the Draft EA ended on January 22, 2007, and a public hearing for the CDUA is scheduled on February 20, 2007.

We would like to be sure that we are following due process for the events held at the Property, and request the following clarification:

1. Are transitory gatherings a defined Land Use on Conservation Land?
2. Do non-commercial transitory gatherings on Conservation Lands require special approval?
3. Do commercial transitory gatherings on Conservation Lands require special approval?

Thank you again for your time and assistance in helping us clarify our interpretation.

Respectfully,
OLOWALU ELUA ASSOCIATES LLC



Arlene M. Torricer
Project Coordinator, West Maui Land Company, Inc.

Cc: Olowalu Elua Associates LLC
Mark Alexander Roy, Munekiyo & Hiraga, Inc.
Robyn Loudermilk, County of Maui, Department of Planning
\\\\Wmlsbs\WML\Master Documents\Olowalu\Olowalu Plantation House\olo Managers House\lohse ltr dlnr_1-29-07.doc

XII. REFERENCES

XII. REFERENCES

AECOS, Inc., Maui Coastal Zone Atlas, 1981.

Char & Associates, Botanical Survey, Olowalu Lands, Lahaina District, Maui, March 1999.

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County of Maui, West Maui Community Plan, February 1996.

County of Maui, Department of Planning, Socio-Economic Forecast: The Economic Projections for the Maui County General Plan 2030, June 2006.

County of Maui, Office of Economic Development, Maui County Data Book 2005.

Department of Geography, University of Hawai'i, Atlas of Hawai'i, 3rd Edition, 1998.

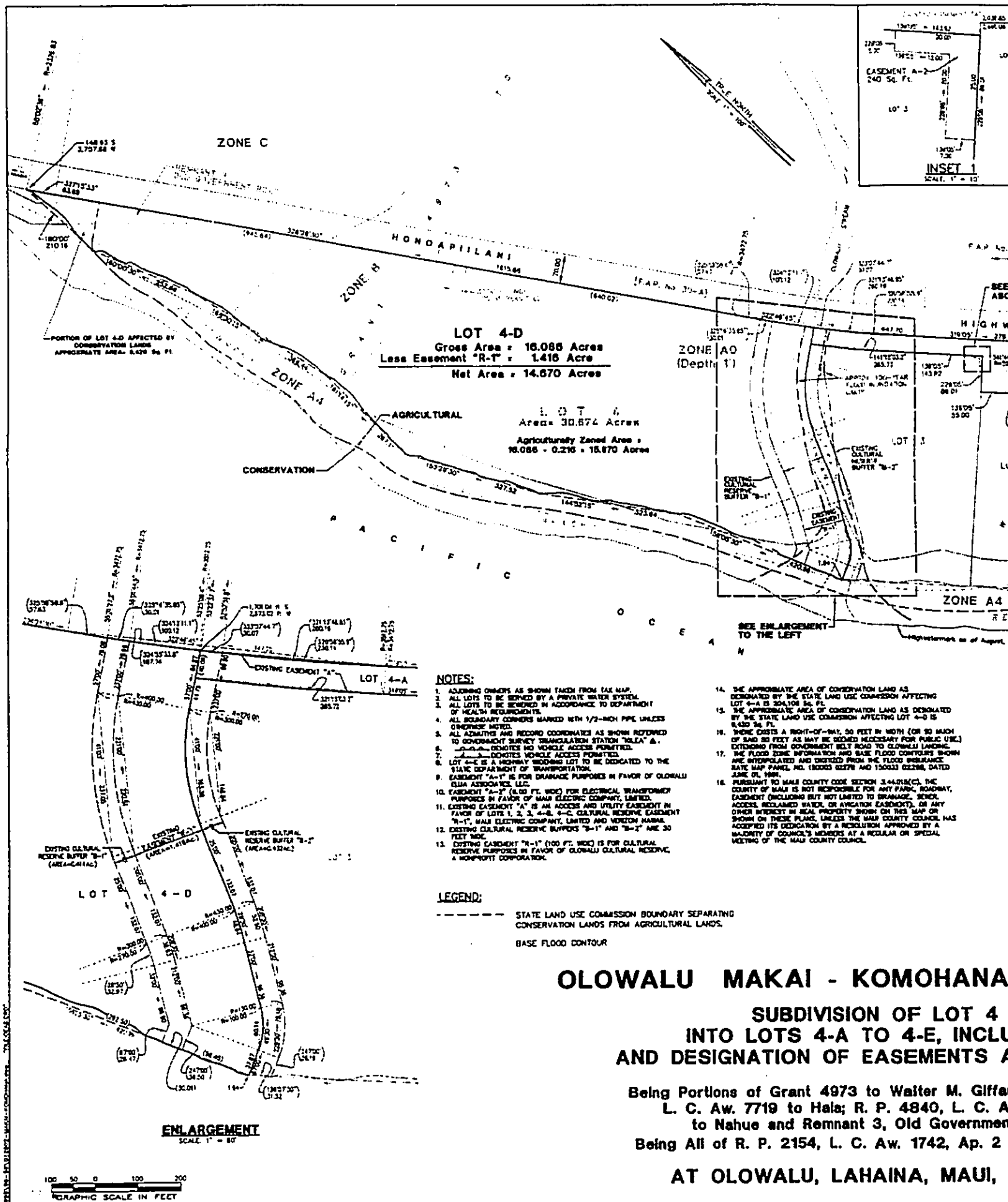
Federal Emergency Management Agency, Flood Insurance Rate Map, Community Panel Number 150003 0229B, Effective Date: June 1, 1981.

Munekiyo & Hiraga, Inc., Application for Conservation District Use Permit, Subdivision of Olowalu Lands, July 2001.

Munekiyo & Hiraga, Inc., Special Management Area Use Permit Application, Subdivision of Olowalu Lands, November 1999.

APPENDIX A.

**Olowalu Makai-Komohana
Final Subdivision Plat Map**



LOT 4-D
 Gross Area = 16.086 Acres
 Less Easement "R-1" = 1.416 Acres
 Net Area = 14.670 Acres

LOT 4
 Area = 30.874 Acres
 Agriculturally Zoned Area =
 16.086 - 0.216 = 15.870 Acres

NOTES:

1. ADJOINING OWNERS AS SHOWN TAKEN FROM TAX MAP.
2. ALL LOTS TO BE SERVED BY A PRIVATE WATER SYSTEM.
3. ALL LOTS TO BE SERVED IN ACCORDANCE TO DEPARTMENT OF HEALTH REQUIREMENTS.
4. ALL BOUNDARY CORNERS MARKED WITH 1/2-INCH PIPE UNLESS OTHERWISE NOTED.
5. ALL ADJUSTMENTS AND RECORD COORDINATES AS SHOWN REFERRED TO GOVERNMENT SURVEY TRIANGULATION STATION "OLEA" & "OLEA-1".
6. "X" DENOTES NO VEHICLE ACCESS PERMITTED.
7. "V" DENOTES VEHICLE ACCESS PERMITTED.
8. LOT 4-C IS A HIGHWAY WIDENING LOT TO BE DEDICATED TO THE STATE DEPARTMENT OF TRANSPORTATION.
9. EASEMENT "A-1" IS FOR DRAINAGE PURPOSES IN FAVOR OF OLOWALU OLUA ASSOCIATES, LLC.
10. EASEMENT "A-2" (8.00 FT. WIDE) FOR ELECTRICAL TRANSFORMER PURPOSES IN FAVOR OF MAUI ELECTRIC COMPANY, LIMITED.
11. EXISTING EASEMENT "A" IS AN ACCESS AND UTILITY EASEMENT IN FAVOR OF LOTS 1, 2, 3, 4-B, 4-C, CULTURAL RESERVE EASEMENT "B-1", MAUI ELECTRIC COMPANY, LIMITED AND WILSON HANNAH.
12. EXISTING CULTURAL RESERVE BUFFERS "B-1" AND "B-2" ARE 30 FEET WIDE.
13. EXISTING EASEMENT "R-1" (100 FT. WIDE) IS FOR CULTURAL RESERVE PURPOSES IN FAVOR OF OLOWALU CULTURAL RESERVE, A NONPROFIT CORPORATION.
14. THE APPROXIMATE AREA OF CONSERVATION LAND AS DESIGNATED BY THE STATE LAND USE COMMISSION AFFECTING LOT 4-A IS 304,108 SQ. FT.
15. THE APPROXIMATE AREA OF CONSERVATION LAND AS DESIGNATED BY THE STATE LAND USE COMMISSION AFFECTING LOT 4-D IS 6,430 SQ. FT.
16. THERE EXISTS A RIGHT-OF-WAY, 50 FEET IN WIDTH (OR SO MUCH OF SAID 50 FEET AS MAY BE SOON NECESSARY FOR PUBLIC USE), EXTENDING FROM GOVERNMENT BELT ROAD TO OLOWALU LANDING. THE FLOOD ZONE INFORMATION AND BASE FLOOD CONTOURS SHOWN ARE INTERPOLATED AND DERIVED FROM THE FLOOD INSURANCE RATE MAP PANEL NO. 150003 02278 AND 150003 02298, DATED JUNE 01, 1999.
17. PURSUANT TO MAUI COUNTY CODE SECTION 3.44.01(C), THE COUNTY OF MAUI IS NOT RESPONSIBLE FOR ANY PAVEMENT, ROADWAY, EASEMENT (INCLUDING BUT NOT LIMITED TO DRAINAGE, SEWER, ACCESS, RETAINED WATER, OR AVIATION EASEMENTS), OR ANY OTHER INTEREST IN REAL PROPERTY SHOWN ON THIS MAP OR SHOWN ON THESE PLANS, UNLESS THE MAUI COUNTY COUNCIL HAS ACCEPTED ITS DESIGNATION BY A RESOLUTION APPROVED BY A MAJORITY OF COUNCIL'S MEMBERS AT A REGULAR OR SPECIAL MEETING OF THE MAUI COUNTY COUNCIL.

LEGEND:

- - - STATE LAND USE COMMISSION BOUNDARY SEPARATING CONSERVATION LANDS FROM AGRICULTURAL LANDS.
- BASE FLOOD CONTOUR

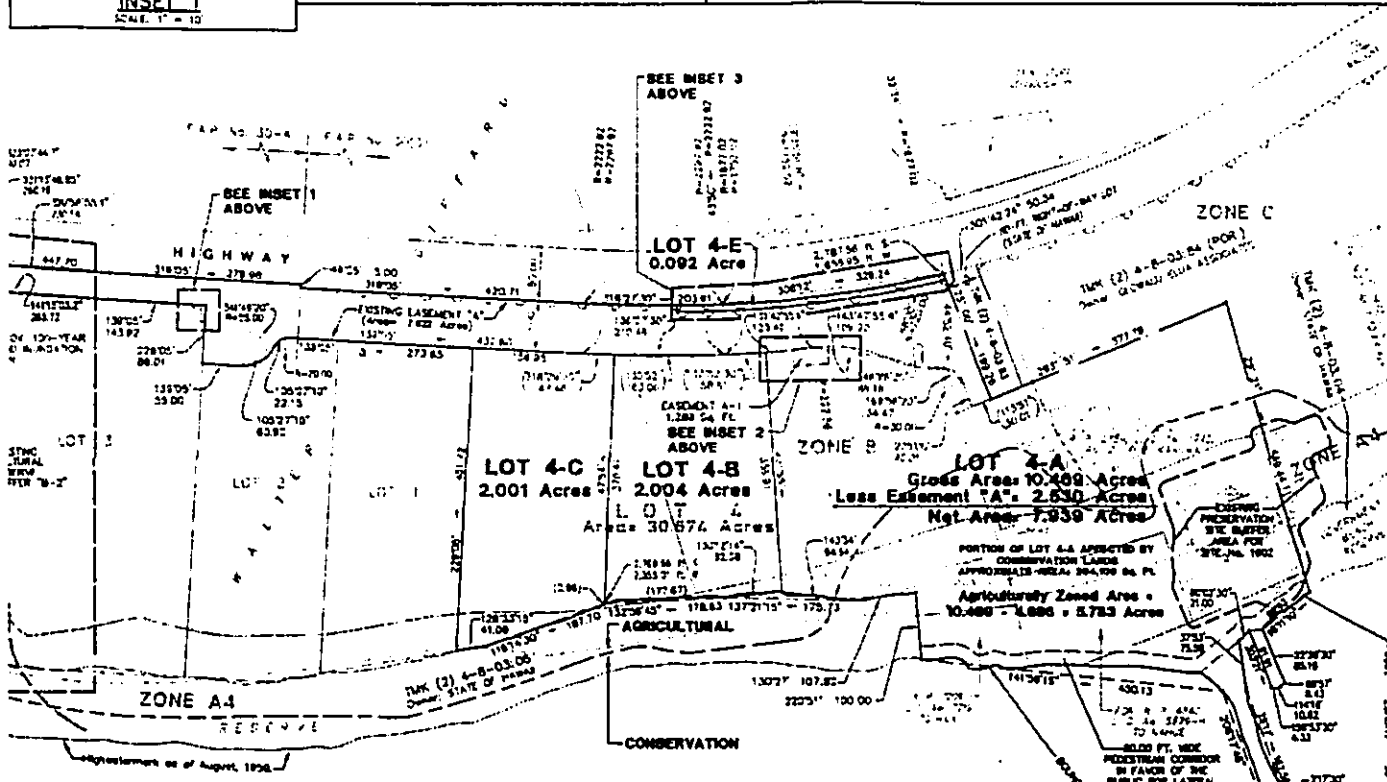
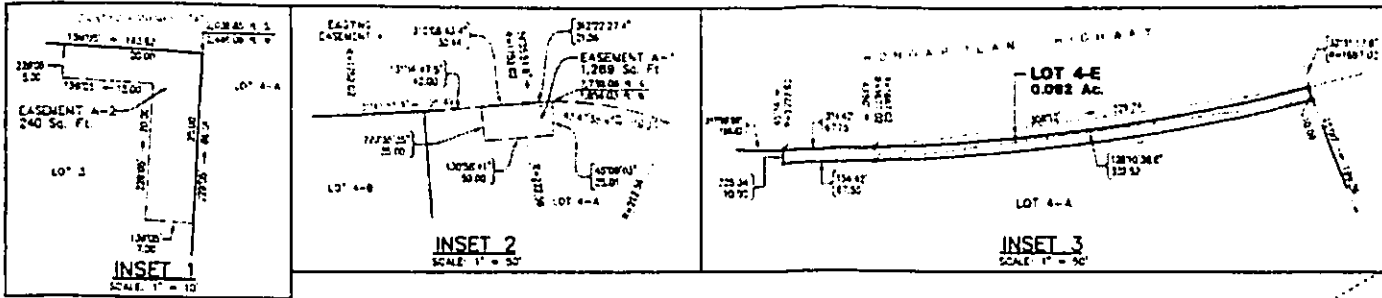
OLOWALU MAKAI - KOMOHANA
 SUBDIVISION OF LOT 4
 INTO LOTS 4-A TO 4-E, INCL
 AND DESIGNATION OF EASEMENTS A

Being Portions of Grant 4973 to Walter M. Giffa
 L. C. Aw. 7719 to Hala; R. P. 4840, L. C. A
 to Nahue and Remnant 3, Old Government
 Being All of R. P. 2154, L. C. Aw. 1742, Ap. 2
AT OLOWALU, LAHAINA, MAUI,

See Map Key (2) 4-B-03: 05 (PORTION), 41, 42 & 43
 871 KOLU STREET, SUITE 201
 WAILUKU, MAUI, HAWAII 96703

R. T. TANAKA ENGINEERS, INC.
 SURVEYORS - CIVIL & STRUCTURAL ENGINEERS

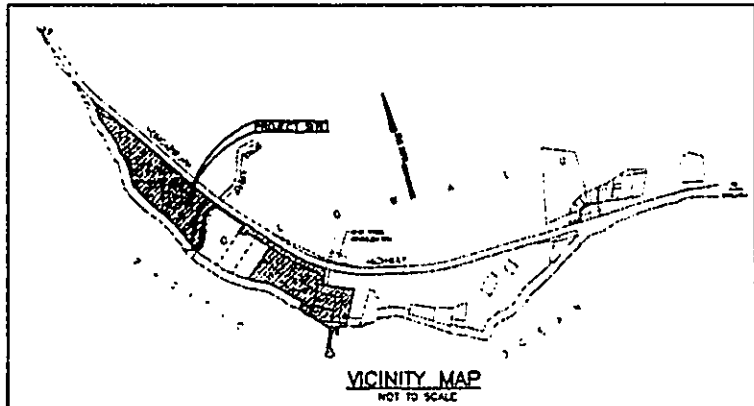
DOCUMENT CAPTURED AS RECEIVED



NON LAND AS DESIGNATION AFFECTING AFFECTING LOT 4-B IS

BY IN WITH (OR SO MUCH NECESSARY FOR PUBLIC USE) AS TO CROWN LANDS, BE FLOOD CONTROLS SHOWN IN THE FLOOD INSURANCE 40 150001 02238, DATED

NON 34415161, THE FOR ANY FARM, ROADWAY, TO DRAINAGE, BENCH, OR EASEMENTS, OR ANY PER ON THIS MAP OR SAUS COUNTY COUNCIL HAS FROM APPROVED BY A REGULAR OR SPECIAL



APPROVED APPROVAL

Signature: [Signature]

MOHANA SUBDIVISION

**OF LOT 4
TO 4-E, INCLUSIVE,
EASEMENTS A-1 AND A-2**

to Walter M. Giffard; R. P. 7209,
P. 4840, L. C. Aw. 5829-H
3, Old Government Road
Aw. 1742, Ap. 2 to Z. Kaauwal

AINA, MAUI, HAWAII

Client: OLOWALI ELUA ASSOCIATES, L.L.C.
Address: 173 MOHANA STREET
KAHALUI, MAUI, HAWAII 96732

THIS WORK WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION

Signature: [Signature] DATE: 02/20/02

KIRK T. TANAKA DATE

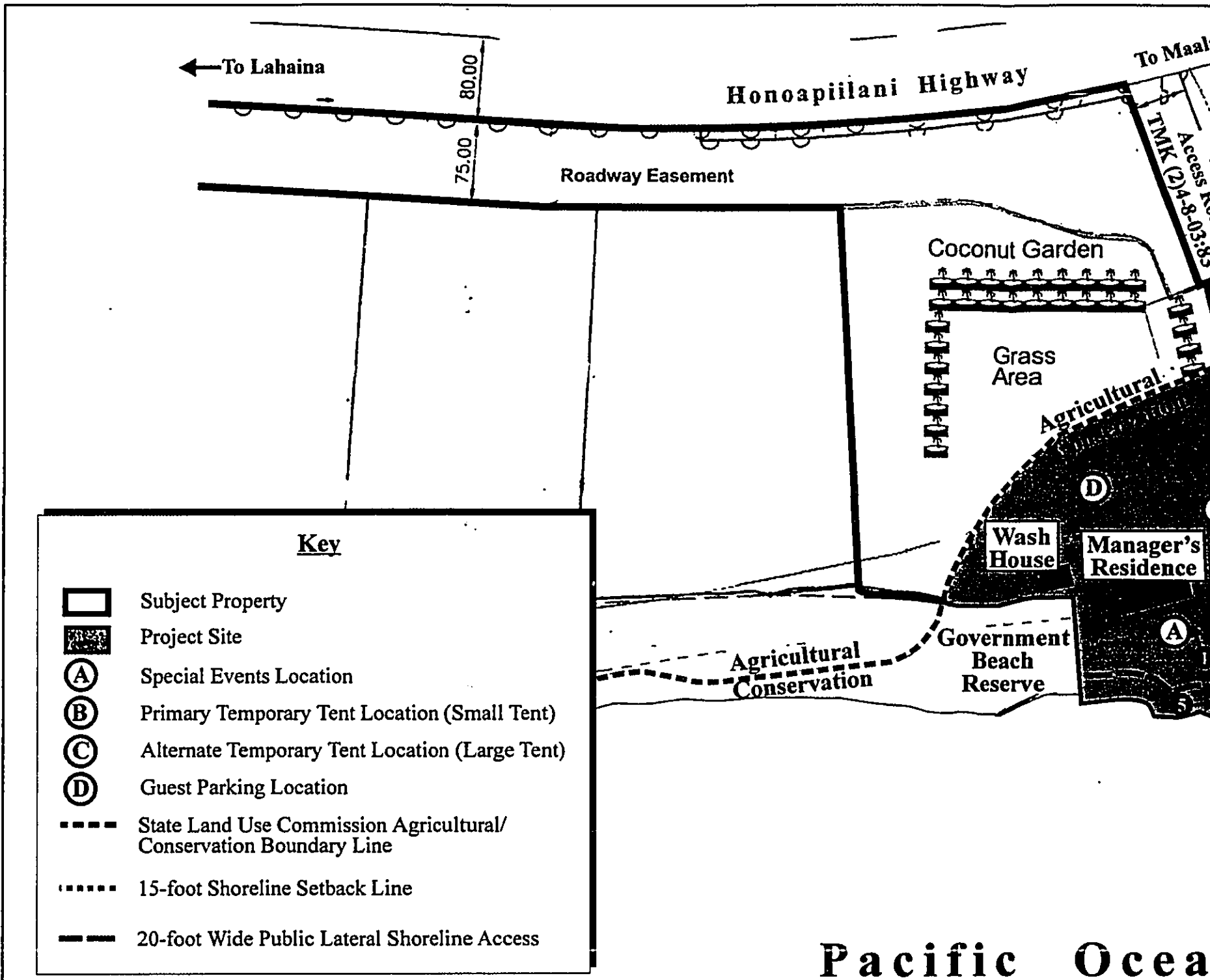
REVISED: JUNE 8, 2001
REVISED: MAY 29, 2002
REVISED: FEBRUARY 13, 2002
REVISED: JANUARY 23, 2002
REVISED: OCTOBER 19, 2001
REVISED: OCTOBER 08, 2001
REVISED: SEPTEMBER 12, 2001
REVISED: AUGUST 23, 2001
JAN 04, 2001

ENGINEERS, INC.
STRUCTURAL ENGINEERS

LUCA FILE No. 4.780
JOB NO. 98-54
50' x 42' = 2.75 Sq. Ft.

APPENDIX B.

Site Photographs



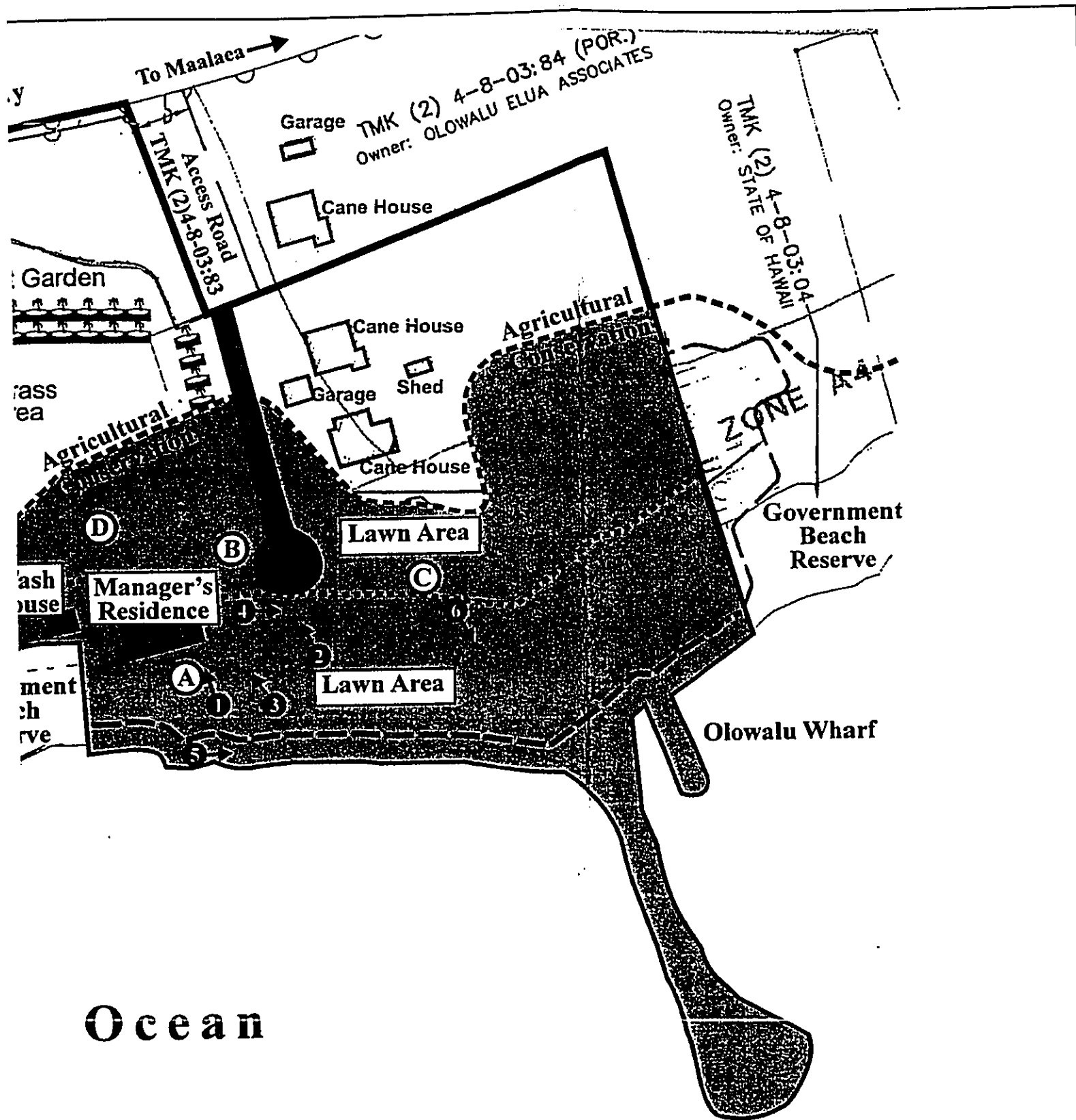
Source: Olowalu Elua Associates, LLC

Use of TMK (2)4-8-03:005(por.) for Special Events

Photographic Reference Map



Prepared for: Olowalu Elua Associates, LLC



Special Events and Temporary Structures
Reference Map

NOT TO SCALE

MUNEKIYO HIRAGA, INC.

WMLC\Olowalu\house\photoref



Photo No. 1: Mauka view of special event location in front of former Pioneer Mill Plantation Manager's Residence



Photo No. 2: Mauka view of driveway and turning area looking towards Honoapi'ilani Highway



Photo No. 3: Mauka view of primary temporary tent location between former Pioneer Mill Plantation Manager's Residence and turning area of driveway



Photo No. 4: View looking east of alternate temporary tent location between turning area of driveway and Olowalu Wharf area



**Photo No. 5: View looking east along shoreline
towards Olowalu Wharf**



Photo No. 6: Makai view of Olowalu Wharf area

APPENDIX C.

House Rules

HISTORIC OLOWALU PLANTATION HOUSE HOUSE RULES

PROPERTY ORIENTATION:

It's required by planner to contact the caretakers, Doug or Donna Poseley, prior to function to familiarize with property. The property requires careful consideration as to tent set-up, parking, lighting, restrooms, landscaping, house use, and security and safety issues.

PARKING:

All guests, coordinators and caterers must park in the designated parking area on the mauka (mountain) side of the Olowalu Plantation House. Coordinators, caterers and set-up staff may use the circular driveway for temporary loading and unloading. Driving on the lawn is prohibited. Limos and other vehicles disembarking and embarking wedding party members may also use the circular driveway. Events in excess of 75 guests will require parking attendants, unless shuttle buses are provided. Events in excess of 200 people will require shuttle buses.

TENT SITE:

Tents are not permitted within the shoreline setback area, which runs 150' back (mauka) from the length of the certified shoreline.

CATERERS:

Caterers must have State Health Certificate and abide by State health laws to use the Olowalu Plantation House. A copy of that license must be submitted to OPH prior to event. Caterers are fully responsible for the clean up of the kitchen and outdoor areas where food will be served. If interior or exterior spaces require additional clean up, it will be back charged to caterer and deducted from security deposit. Caterers should contact the caretakers prior to the event to familiarize themselves with kitchen, appliances, set-up, and delivery instructions. Please **NO dumping of ice** on lawn or in plantings.

GARBAGE:

All garbage must be disposed of in dumpster in parking area. If dumpster becomes full, caterers are required to dispose OFF property. **Functions over 100 people, an additional dumpster is required and the responsibility of caterers.**

HISTORIC OLOWALU PLANTATION HOUSE HOUSE RULES

RESTROOMS:

The bathhouse is located on the north side of the house by kitchen. All guests are encouraged to use this facility, as the 80-year-old plumbing in main house is inadequate. The bathhouse has a men and women's room with two stalls in each. They accommodate up to 100 people. **One portable toilet is required per 25 guests over 100.**

SMOKING:

There is a "no smoking" rule for the bathhouse, main house and lanai's. The planner is responsible for removing cigarette butts from the lawn.

PRIVATE SPACES:

The bedrooms and baths in the house are limited to the wedding party. The hall door should remain closed during event. The foyer and great room are the only public spaces. Caterers have access to kitchen and bath off kitchen.

INTERIOR FURNISHINGS:

All furniture and furnishings should remain in place, unless pre-authorized. Any loss or damages to furnishings will be deducted from security deposit.

LANDSCAPING:

Any excessive damage to lawn, landscape plants or irrigation will be charged to planner and deducted from security deposit.

BREAKDOWN:

Planners and/or caterers are required to remove everything they furnished for the event. This includes tables, chairs, linens, landscape lighting, tiki torches, trash, electrical and music related items by 8:00 a.m. the following morning. Please note that irrigation will run during the night. To avoid a minimum \$100.00 back charge for clean-up, planners should return the following morning to inspect grounds for rubbish.

HISTORIC OLOWALU PLANTATION HOUSE HOUSE RULES

MUSIC:

We are no longer allowing live bands for after dinner music. Approved Disc Jockeys will be allowed. The noise curfew is 10:00 p.m. Music and excessive noise must cease at that time or refund of the security deposit will be at risk. Decibel readers must be used by musicians and DJ's and decibels are limited to 85 from 15' directed at speakers. Speakers must be placed on side stage and directed toward the ocean. Please ask your sound technician to call or meet with caretakers prior to event for planning. Disregard of this rule will result in loss of security deposit.

SPECIAL LAND USE CONSIDERATIONS:

The property is located within the State of Hawaii's Conservation District and the County of Maui's Special Management Area. The following requirements address environmental/conservation/shoreline concerns associated with the property and/or the surrounding vicinity:

- **Exterior/Decorative Lighting:** All exterior/decorative lighting shall be appropriately screened and directed away from ocean resources so as to not cause any unreasonable glare to prevent possible harm to Newells' Shearwater and other seabirds.
- **Native and Endangered Species:** Certain native and endangered wildlife bird species protected by State law (such as the nene and dark-rumped petrel), have been sited in the Olowalu area. All agents, users and guests at the property are hereby advised that Hawaii Revised Statutes, Chapter 195D-4 prohibits the "take" (defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect) of endangered species.
- **Public Shoreline Access:** A 20-foot lateral shoreline access easement fronts the entire (makai) length of the property. All events, including any event related equipment, shall be located outside (mauka) of the 20-foot lateral shoreline as to not interfere with lateral pedestrian access.

HISTORIC OLOWALU PLANTATION HOUSE

Site Use Contract Terms

OWNERS AGENT:

Doug and Donna Poseley are the caretakers of this property. They reside in the first house on the left as you enter gate, and will be on property for the duration of the function. Should you have any concerns, questions, or emergencies, they can be contacted at 280-3459 or 280-2426.

RESERVATION HOLDS:

A reservation may be held for thirty days. If a contract has not been initiated at that time, the reservation will automatically drop from the calendar.

CONTRACTS:

From the time a contract has been issued, the permittee has 30 days to secure date by returning stated reservation deposit requirements. We accept checks, cash, money orders and travelers' checks, but no credit cards. Please make payable to Olowalu Elua Associates and send to 810 Olowalu Village Road; Lahaina, Hawai'i 96761,

PAYMENTS:

Please see deposit requirement on your Site Use Agreement. The deposit and signed copies of the contract, commission agreement and this document should be received in our office within 30 days of receipt. One month prior to the event, all remaining dues payable as well as the refundable security deposit should be received at above address.

INSURANCE REQUIREMENT:

As stated in the contract, OEA requires a one million dollar policy for the day of the event, naming Olowalu Elua Associates LLC as additional insured. You may ask your event coordinator or caterer if they will provide this on your behalf and indicate the name of this provider in the insurance policy line on the contract. It is the responsibility of the permittee to obtain this policy and forward to OEA. Events will be cancelled provided this coverage is not in effect.

HISTORIC OLOWALU PLANTATION HOUSE

Site Use Contract Terms

SECURITY DEPOSITS AND COMMISSIONS:

Refundable security deposits and commissions will be recorded at the end of each month and checks will be issued shortly thereafter.

CANCELLATIONS:

If an event is cancelled outside of 120 days of occasion, the deposit is fully refundable. If inside of 120 days, we will attempt to re-book. If booked at the same rate, the deposit is fully refundable. If new booking is less than original booked rate, the refund is adjusted to loss. Changes in dates after contract is issued do not incur penalties and deposit monies are transferred to new contract.

ACKNOWLEDGMENT:

We, the undersigned, have read, understand and agree to the terms and conditions of the "House Rules." We agree to abide by owner's restrictions on use of this property.

This is a legal document and should be read carefully before signing.

SIGNATURE _____

DATE _____

Contract Addendum for Large Groups

Parking:

The parking at the Olowalu Plantation House is limited to 100 vehicles. This includes staff and delivery. The drop-off area by the kitchen should be cleared away during events. Events in excess of 75 people require parking attendants and groups in excess of 200 people will require shuttle service.

Toilets:

The county requires one toilet per 25 people. We supply four toilets in our bathhouse. You **MUST** furnish portable toilets to accommodate your guests. They can be set-up on either side of existing bathhouse.

Garbage:

Events over 100 people will need to furnish an additional dumpster or make arrangements with Property Manager for disposal options.

Electric:

Our electrical output is limited. There are several outlets on the exterior Lana'i walls and kitchen exterior walls. If you have sophisticated equipment, lighting, sound system, etc. you should bring in a generator to insure consistent power.

Event Coordinator:

All events over 50 people require a professional event coordinator for the day. This person will need to meet with the Property Manager to discuss guidelines.

I have read and understand the additional requirements for large groups and will comply with these obligations.

Contract Signature

APPENDIX D.

**Letter from Department of
Land and Natural Resources
(DLNR), Office of
Conservation and Coastal
Lands (OCCL) Dated
January 9, 2006**

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
OFFICE OF CONSERVATION AND COASTAL LANDS
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

JAN 10 2006
PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
ROBERT K. MASUDA
DEPUTY DIRECTOR - LAND
DEAN NAKANO
ACTING DEPUTY DIRECTOR - WATER
AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES EMPLOYMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

REF:OCCL:MC

Correspondence: MA-06-142

JAN - 9 2006

Gwen Ohashi Hiraga
Project Manager
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawai'i 96793

Dear Ms. Hiraga,

SUBJECT: Request for Environmental Assessment Exemption Determination for a private park at the old Pioneer Mill Plantation, TMK (2) 4-8-3:41, 42, & 43, at Olowalu, Lahaina, Maui.

The Department of Land and Natural Resources, Office of Conservation and Coastal Lands (OCCL) is in receipt of your letter, dated December 27, 2005, regarding the need for an Environmental Assessment along with a Conservation District Use Application for a project at the old Pioneer Mill Plantation at Olowalu.

According to your letter, you wish to use the former plantation manager's residence and surrounding grounds for private events such as weddings, parties, and fund-raisers. There would be no physical changes to the infrastructure, although some events might require a temporary tent be erected on the lawn. The tent would measure 20'x30', and would be removed immediately following the event.

You've asked for confirmation that the parcel falls in the Conservation District, and whether the tent falls under the class of actions exempt from Environmental Assessment requirements.

Based on the information you provided, OCCL finds that the parcels in question, TMK (2) 4-8-003: 41, 42, & 43, all fall in the Conservation District, Limited Subzone.

As stated in your letter, the proposed project is an identified use in the Limited Subzone, pursuant to HAR §13-5-23, *Identified land uses in the limited subzone, L-2, Botanical Gardens and Private Parks, D-1, Botanical gardens and private parks under an approved management plan.* This use requires a Board Permit from the DLNR. The final decision as to whether to approve or deny the permit lies with the Land Board.

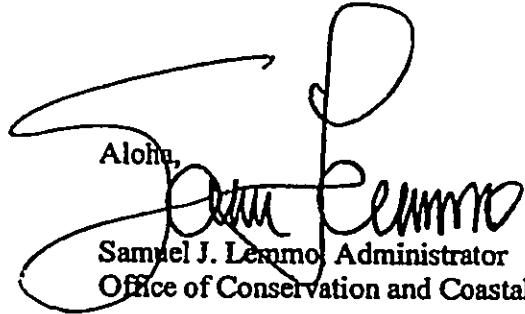
REF:OCCL:MC

Correspondence: MA-06-142

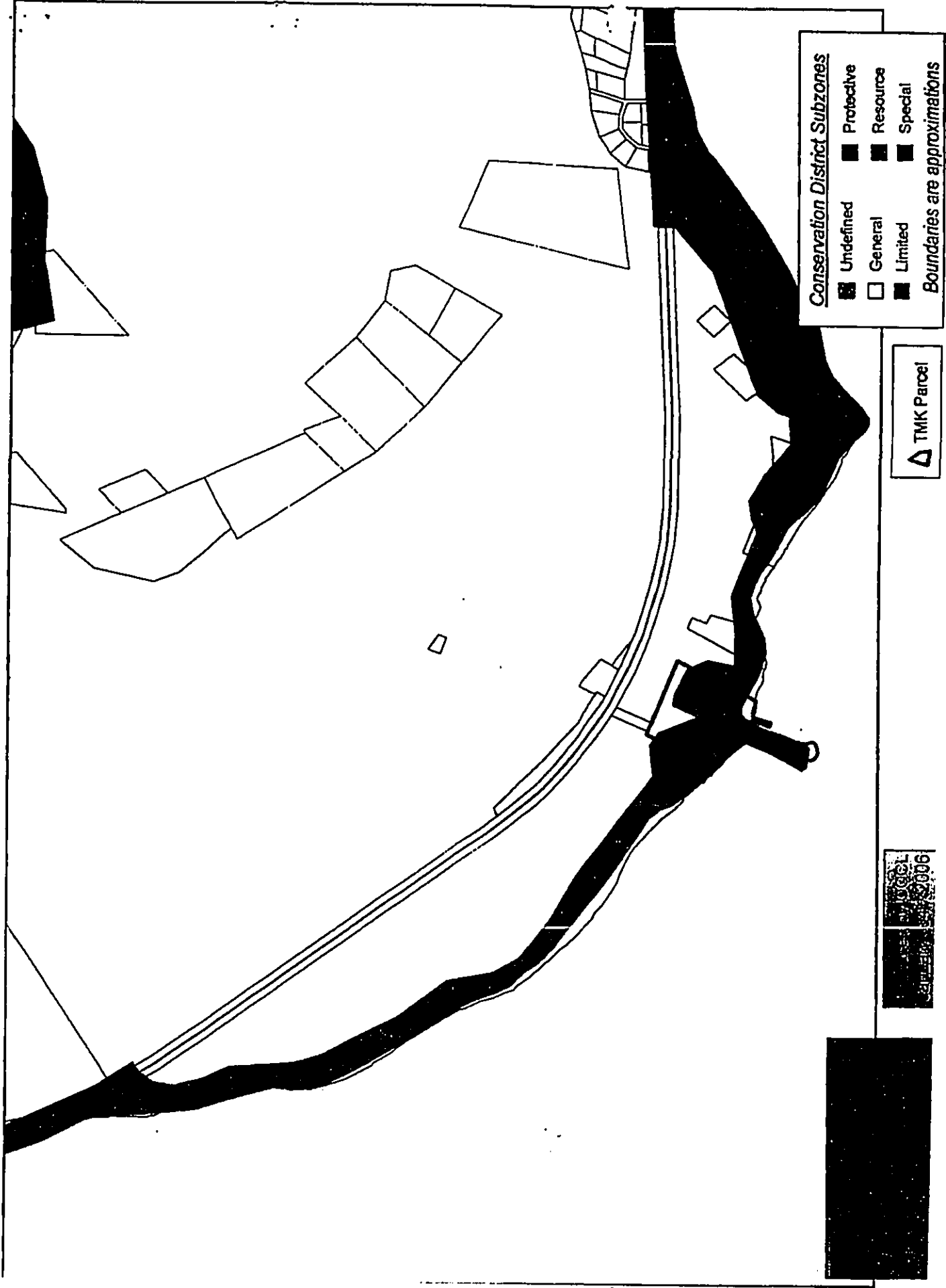
Your letter also asked whether the temporary tent would be exempt from triggering an Environmental Assessment. This in itself might be, although the project overall does need an Environmental Assessment as required by HRS 343. This is triggered by the project's location in the Conservation District, and the potential social and economic impacts on the neighboring community. The proposed use does not fall under any of the exempt classes of action.

You also included with your letter a copy of the Approved EIS Exemption List for the Division of Land Management. This is not the same list that OCCL follows. Chapter 343, HRS, requires that each Division keep its own list of exemptions; OCCL follows §11-200-8 *Exempt Classes of Action* from HAR Chapter 200, *Environmental Impact Statement Rules*. I've enclosed a copy for your future reference. The complete chapter is available online at hawaii.gov/health/about/rules/11-200.html.

I've enclosed a CDUA and a copy of Chapter 13-5 of the Hawai'i Administrative Rules along with the list of exempt classes of action. Please call Michael Cain at 587-0048, should you have any further question.

Aloha,

Samuel J. Lemmo, Administrator
Office of Conservation and Coastal Lands

cc: DLNR Chair
Maui County Planning



§11-200-8 Exempt Classes of Action

- A. Chapter 343, HRS, states that a list of classes of actions shall be drawn up which, because they will probably have minimal or no significant effect on the environment, may be declared exempt by the proposing agency or approving agency from the preparation of an environmental assessment provided that agencies declaring an action exempt under this section shall obtain the advice of other outside agencies or individuals having jurisdiction or expertise as to the propriety of the exemption. Actions declared exempt from the preparation of an environmental assessment under this section are not exempt from complying with any other applicable statute or rule. The following list represents exempt classes of action:
1. Operations, repairs, or maintenance of existing structures, facilities, equipment, or topographical features, involving negligible or no expansion or change of use beyond that previously existing;
 2. Replacement or reconstruction of existing structures and facilities where the new structure will be located generally on the same site and will have substantially the same purpose, capacity, density, height, and dimensions as the structure replaced;
 3. Construction and location of single, new, small facilities or structures and the alteration and modification of the same and installation of new, small, equipment and facilities and the alteration and modification of same, including, but not limited to:
 - a. Single-family residences less than 3,500 square feet not in conjunction with the building of two or more such units;
 - b. Multi-unit structures designed for not more than four dwelling units if not in conjunction with the building of two or more such structures;
 - c. Stores, offices, and restaurants designed for total occupant load of twenty persons or less per structure, if not in conjunction with the building of two or more such structures; and
 - d. Water, sewage, electrical, gas, telephone, and other essential public utility services extensions to serve such structures or facilities; accessory or appurtenant structures including garages, carports, patios, swimming pools, and fences; and, acquisition of utility easements;
 4. Minor alterations in the conditions of land, water, or vegetation;
 5. Basic data collection, research, experimental management, and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource;
 6. Construction or placement of minor structures accessory to existing facilities;
 7. Interior alterations involving things such as partitions, plumbing, and electrical conveyances;
 8. Demolition of structures, except those structures located on any historic site as designated in the national register or Hawaii register as provided for in the National Historic Preservation Act of 1966, Public Law 89-665, 16 U.S.C. §470, as amended, or chapter 6E, HRS;

APPENDIX E.

Botanical Survey

BOTANICAL SURVEY

- 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, soil maps, and a recent colored aerial photograph were examined to determine vegetation cover patterns, terrain characteristics, access, boundaries, and reference points. Access was from along the network of cane haul roads which criss-cross the property; the roads provided entry to all parts of the study area.

**BOTANICAL SURVEY
OLOWALU LANDS
LAHAINA DISTRICT, MAUI**

by

**Winona P. Char
CHAR & ASSOCIATES
Botanical Consultants
Honolulu, Hawaii**

A walk-through (pedestrian) 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 less disturbed, uncultivated areas such as the steeper slopes along the northwestern boundary, the coastline, and the stream area were more intensively surveyed as these portions of the property were more likely to harbor native plant communities and, perhaps, rare plants. No survey was made of the residential and recreational camp areas or the former plantation village area.

Prepared for: **OLOWALU ELUA ASSOCIATES, LLC**

March 1999

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

Five general vegetation types are recognized on the Olovalu Lands project site. These are the coastal vegetation, sugar cane fields, irrigation system vegetation, gulch vegetation, and the kiawe/buffelgrass community. An inventory of the plant species found within these vegetation types is presented at the end of the report.

No survey was made of the developed residential areas and the former, now overgrown, plantation camp site behind the store and restaurant. A very large tree (Ficus religiosa), which is on the Maui County's exceptional trees' list, is located mauka of the store, near a water tank.

Coastal Vegetation

Coastal vegetation occurs as a narrow band along the seaward front of the makai parcel. Immediately behind this narrow band of vegetation are the actively cultivated sugar cane (Saccharum officinarum) fields. A few homes including the plantation manager's house and a church-run camp are also found along the coastline.

On the western half of the makai parcel, the beaches consist of rounded, waterworn basalt and bleached coral rubble. In places, a few pockets of grayish-colored, fine sand are found along the black and white colored cobble beaches. The coastal vegetation on this type of substrate consists of low, scattered mats of pohuehue

or beach morning glory (Ipomoea pes-caprae) with clumps of buffelgrass (Cenchrus ciliaris), a few small wind-pruned trees of kiawe (Prosopis pallida) and 'opiuma (Pithecellobium dulce), and small mixed patches of swollen fingergrass (Chloris barbata), 'uhaloa (Waltheria indica), koa haole (Leucaena leucocephala), and sourbush (Pluchea carolinensis). Where the Olovalu Stream nears the ocean, there is a berm of basalt boulders and coral rubble. A small pond surrounded by scattered patches of Australian saltbush (Atriplex semibaccata) and a few shrubs of hau (Hibiscus tiliaceus) and sourbush are found here.

Along the eastern half of the makai parcel, the substrate along the coastline is primarily grayish colored, fine sand with scattered pockets of cobble beach. Kiawe trees form a dense belt along the coastline down to the water's edge. Vegetation under the trees is sparse due to the heavy shade and consists of small patches of sourbush, buffelgrass, Bermuda grass (Cynodon dactylon), Australian saltbush, etc., along the margins of the treeline. Near the plantation manager's house, there are a few trees of monkeypod (Samanea saman) and Livistona sp. tucked in among the kiawe trees.

Sugar Cane Fields

The sugar cane fields occur on level to moderately sloping, well-drained soils on alluvial fans and stream terraces. The soils on the site belong primarily to the Pulehu and Waine'e soil series (Foote et al. 1972).

The fields of sugar cane in various stages of cultivation or growth cover the majority of the property. Recently harvested fields support a few patches of weedy species such as Bermuda grass, nutgrass (Cyperus rotundus), Boerhavia coccinea, 'uhaloa, swollen fingergrass, castor bean (Ricinus communis), and hairy horseweed

(Conyza bonariensis). Some fallowed fields support a few seedlings of kiawe, 'opiuma, and koa haole, especially along the margins of the fields.

Within the fields which have been planted, the rapidly growing sugar cane plants tend to shade out and exclude other species. Only the nutgrass has adapted well to growing under the sugar cane plants. Most of the other weedy species are found along the margins of the fields where there is more light available. Some of the more frequently observed species found here include little bell or pink bindweed (Ipomoea triloba), buffelgrass, Guinea grass (Panicum maximum), Natal reedtop grass (Melinis repens), hairy spurge (Chamaesyce hirta), Mexican fireweed (Euphorbia heterophylla), and coat buttons (Tridax procumbens).

Irrigation System Vegetation

This vegetation type occupies only a small portion of the project site and is associated with the irrigation ditches, reservoirs, and small overflow areas. A number of plant species are restricted to or are more abundant along the irrigation system.

Along the walls of the ditches, tussocks of moss and small clumps of ferns and mostly annual species are found. These include hairy sword fern (Nephrolepis multiflora), pteris (Pteris vittata), Maui pamakani (Ageratina riparia), Fimbristylis dichotoma, molasses grass (Melinis minutiflora), and rabbit-foot grass (Polypogon monspeliensis). A number of wetland indicator species such as primrose willow or kamole (Ludwigia octovalvis), Job's tears (Coix lachryma-jobi), California grass (Brachiaria murica), honohono (Commelina diffusa), and jungle rice (Echinochloa colona) also occur here.

The reservoirs on the site are ringed by a dense scrub composed of koa haole, California grass, castor bean, a few trees of Java plum (Syzygium cumini) and 'opiuma, and a varied assortment of weedy species. Elodea densa, a submerged aquatic flowering plant, is abundant in the two larger reservoirs. Ducks and other waterbirds eat the plants. The two larger reservoirs provide feeding and nesting habitat for the endangered 'Alae Ke'oke'o or Hawaiian Coot (Fulica americana alai).

Gulch Vegetation

In most places along the Olowalu Stream gulch, there is a dense forest; this can be easily seen on the aerial photograph. For about a third of its length, where the gulch enters the property on the mauka end near a flume and down past Kilea pu'u, the vegetation along the gulch is composed of large trees of 'opiuma, 45 to 50 ft. tall and 2 to 3 ft. in diameter. Along the lower two-thirds of the gulch, the vegetation is a mix of tall kiawe trees and 'opiuma trees with smaller scattered stands of Java plum. In places, the kiawe may be locally abundant.

Scattered here and there along the stream banks are a few trees of kukui nut (Aleurites moluccana). Other woody components found occasionally on the gulch floor include Chinaberry (Melia azedarach), koa haole, lantana (Lantana camara), guava (Psidium guajava), kolomona (Senna surattensis), and sourbush. Ground cover is somewhat open and patchy with sourgrass (Digitaria insularis) and panicgrass (Panicum maximum var. trichoglume) in the shadier areas, and buffelgrass in the sunnier, open areas. The native 'ilie'e (Plumbago zeylanica), a sprawling shrub with clusters of white flowers, can be found in the rockier areas along the gulch.

The stream along the gulch bottom is dry except for where it

enters the property and is diverted into the irrigation system. Waterworn stones and boulders with pockets of barren soil characterize the bottom of the stream. In a few places, the damp and shaded banks support clumps of hairy sword fern, wood-fern (Christella parasitica), gold fern (Pityrogramma calomelanos), pteris, Australian maidenhair (Adiantum hispidulum), maidenhair fern (Adiantum raddianum), and mosses.

Kiawe/Bufelgrass Community

The uncultivated areas along the mauka boundary of the project site support a kiawe/buffelgrass plant community or vegetation type. These areas were grazed in the past as there are old fence lines where it adjoins the sugar cane fields. This plant community occurs on stony alluvial land ("rSM" on the soil maps -- Foote et al. 1972), rock land ("rRK"), and rock outcrop ("rRO").

Where this plant community abuts the sugar cane fields in areas with deeper soils, the kiawe trees are 20 to 30 ft. tall and form a somewhat closed-canopy forest with tree cover about 60%. Buffelgrass occurs as a dense cover, 2 to 3 ft. tall, between the trees. Prickly shrubs of lantana are common in these areas.

In the areas with rock outcrop and rock land, the kiawe trees are more widely spaced, about 10 to 30% tree cover, and are 5 to 20 ft. tall. The buffelgrass cover is somewhat patchy and rocky outcroppings are frequent. Scattered shrubs of koa haole and klu (Acacia farnesiana) are frequently observed. Rocky outcroppings support native plants such as pill grass (Heteropogon contortus), 'a'ali'i (Dodonaea viscosa), 'ilima (Sida fallax), and 'uhaloa. A few trees of wiliwili (Erythrina sandwicensis) also occur here. Other species which occur here in small numbers include virgate mimosa (Desmanthus pernambucanus), wild zinnia (Zinnia peruviana),

running pop (Passiflora foetida), bristly foxtail (Setaria verticillata), smooth rattlespod (Crotalaria pallida), Natal redtop, and hairy merremia (Merremia aegyptia).

Kilea, a small rocky hill or pu'u (elevation 264 ft.) near Olowalu Stream, also is covered by a kiawe/buffelgrass community. The large rock faces on the western portion of the pu'u are noted for their large collection of petroglyphs. About three dozen plants of nehe (Lipochaeta lavarum), a native shrub with silvery gray leaves and large daisy-like flowers, is found on the northwestern slopes of Kilea. The native poppy or pu'a kala (Argemone glauca) is found near the summit of the pu'u.

DISCUSSION AND RECOMMENDATIONS

Between 85 to 90% of the project site is or has been under sugar cane cultivation, or has been used to support sugar cane related activities (plantation village, manager's residence, wharf facilities, etc.). The steeper kiawe and buffelgrass-covered slopes on the mauka portion of the property were used for grazing cattle at one time. On the uncultivated portions of the property, introduced species such as kiawe, buffelgrass, 'opiuma, koa haole, and lantana are the dominant components of the vegetation.

Of a total of 115 plant species inventoried on the Olowalu Lands project site, 94 (82%) are introduced or alien species; 5 (4%) are originally of Polynesian introduction; and 16 (14%) are native. Of the natives, 13 are indigenous, that is, they are native to the Hawaiian Islands and also elsewhere, and 3 are endemic, that is, they are native only to the Hawaiian Islands. The 3 endemic species are the nehe (Lipochaeta lavarum), wiliwili (Erythrina sandwicensis), and pu'a kala (Argemone glauca). None of

the plants inventoried on the site is a threatened and endangered species or a species of concern (U.S. Fish and Wildlife Service 1997). All of the plants can be found in similar dry, lowland habitats throughout the main Hawaiian Islands. A recent botanical survey for the Ma'alaea to Lahaina 69 kv transmission line (Char 1993) included portions of the mauka parcel and recorded similar findings.

Present plans envision a nature study/cultural resources park for the Olowalu Stream gulch and Kilea pu'u. It is recommended that native plants which occur on the drier portions of west Maui be used for landscaping. These include the wiliwili, 'iile'e, nehe, 'ilima, pua kala, etc., which already occur on the property. The two larger reservoirs should be retained since they provide habitat for the endangered 'Alae Ke'oke'o or Hawaiian Coot. The weedy scrub around the reservoirs should be replaced by native trees and shrubs, and bird observation stations can be set up around the reservoirs. The two large reservoirs are close to the gulch and can be easily incorporated into the nature study/cultural resources park.

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PLANT SPECIES LIST -- Olowalu 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, eds., 1995-1998).

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 = plants originally of Polynesian introduction prior to Western contact, that is, Cook's discovery of the islands in 1778.
 - P? = questionably Polynesian = may be a Polynesian introduction or possibly introduced early in historical times (after 1778).
 - X = introduced or alien = all those plants brought to the Hawaiian Islands by humans, intentionally or accidentally, after Western contact.
 - X? = questionably introduced = date of introduction very early; may possibly be indigenous or of Polynesian introduction.

4. Presence (+) or absence (-) of a particular species within each of five vegetation types recognized on the project site (see text for discussion):

c = Coastal Vegetation
s = Sugar Cane Fields
i = Irrigation System Vegetation
g = Gulch Vegetation
k = Kiawe/Buffelgrass Community

<u>Scientific name</u>	<u>Common name</u>	<u>Status</u>	<u>Vegetation type</u>				
			<u>c</u>	<u>s</u>	<u>i</u>	<u>g</u>	<u>k</u>
FERNS							
ADIANTACEAE (Maidenhair fern family)							
<i>Adiantum hispidulum</i> Sw.	Australian maidenhair	X	-	-	-	+	-
<i>Adiantum raddianum</i> Presl	maidenhair fern, 'iwa'iwa	X	-	-	-	+	-
HEMIONITIDACEAE (Gold fern family)							
<i>Pityrogramma calomelanos</i> (L.) Link	gold fern	X	-	-	-	+	-
NEPHROLEPIDACEAE (Sword fern family)							
<i>Nephrolepis multiflora</i> (Roxb.) Jarrett ex Morton	hairy sword fern, 'okupukupu	X	-	-	+	+	-
PTERIDACEAE (Pteris family)							
<i>Pteris vittata</i> L.	pteris	X	-	-	+	+	-
THELYPTERIDACEAE (Wood-fern family)							
<i>Christella parasitica</i> (L.) Levl.	wood-fern	X	-	-	+	+	-
FLOWERING PLANTS							
DICOTS							
AMARANTHACEAE (Amaranth family)							
<i>Amaranthus spinosus</i> L.	spiny amaranth, pakai kuku	X	-	-	+	-	-
ANACARDIACEAE (Mango family)							
<i>Mangifera indica</i> L.	mango, manako	X	-	-	+	-	-
ASTERACEAE (Daisy family)							
<i>Ageratina adenophora</i> (Spreng.) R. King & H. Robinson	Mauī pamakani, pamakani haole	X	-	-	+	-	-
<i>Ageratina riparia</i> (Regel) R. King & H. Robinson	Hamakua pamakani	X	-	-	+	+	-
<i>Ageratum conyzoides</i> L.	maile hohono	X	-	+	+	+	-

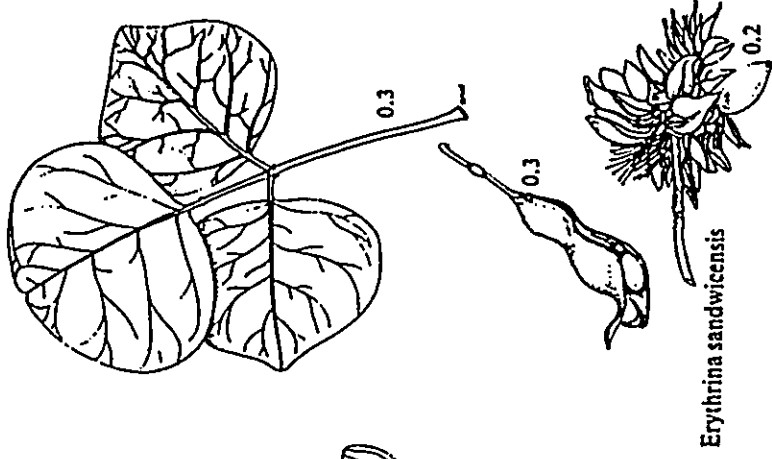
<u>Scientific name</u>	<u>Common name</u>	<u>Status</u>	<u>Vegetation type</u>				
			<u>c</u>	<u>s</u>	<u>i</u>	<u>g</u>	<u>k</u>
<i>Bidens cynapiifolia</i> Kunth	West Indian beggar's tick	X	-	-	+	+	-
<i>Bidens pilosa</i> L.	Spanish needle, ki, ki nehe	X	-	-	+	+	-
<i>Conyza bonariensis</i> (L.) Cronq.	hairy horseweed, ilioha	X	-	+	-	+	-
<i>Eclipta prostrata</i> (L.) L.	false daisy	X	-	+	+	-	-
<i>Emilia fosbergii</i> Nicolson	pualele	X	-	+	+	+	-
<i>Lipochaeta lavarum</i> (Gaud.) DC	nehe	E	-	-	-	+	+
<i>Pluchea carolinensis</i> (Jacq.) G. Don	pluchea, sourbush	X	+	+	+	+	-
<i>Pluchea indica</i> (L.) Less.	Indian pluchea, Indian fleabane	X	+	-	+	-	-
<i>Sonchus oleraceus</i> L.	sowthistle, pualele	X	-	-	+	+	-
<i>Synedrella nodiflora</i> (L.) Gaertn.	nodeweed	X	-	-	-	+	-
<i>Tridax procumbens</i> L.	coat buttons	X	-	+	+	+	-
<i>Zinnia peruviana</i> (L.) L.	wild zinnia	X	-	+	-	-	+
BATACEAE (Saltwort family)							
<i>Batis maritima</i> L.	pickleweed, 'akulikuli kai	X	+	-	-	-	-
BORAGINACEAE (Heliotrope family)							
<i>Heliotropium curassavicum</i> L.	kipukai, nena	I	+	-	-	-	-
BUDDLEIACEAE (Butterfly bush family)							
<i>Buddleia asiatica</i> Lour.	dog tail, huele 'ilio	X	-	-	+	-	-
CHENOPODIACEAE (Goosefoot family)							
<i>Atriplex semibaccata</i> R. Br.	Australian saltbush	X	+	-	-	-	-
<i>Chenopodium murale</i> L.	'aheahea	X	-	-	-	-	+
CONVOLVULACEAE (Morning glory family)							
<i>Ipomoea alba</i> L.	moonflower, koali pehu	X	-	-	+	+	-
<i>Ipomoea indica</i> (J. Burm.) Merr.	koali 'awahia, koali 'awa	I	-	-	+	+	-
<i>Ipomoea pes-caprae</i> ssp. <i>brasiliensis</i> (L.) Ooststr.	pohuehue, beach morning glory	I	+	-	-	-	-
<i>Ipomoea triloba</i> L.	little bell	X	-	+	-	-	-
<i>Merremia aegyptia</i> (L.) Urb.	hairy merremia, koali kua hulu	X?	-	+	+	-	+

Scientific name	Common name	Status	Vegetation type				
			c	s	i	g	k
CUCURBITACEAE (Gourd family)							
<i>Lagenaria siceraria</i> (Molina) Standl.	squash	X	-	-	-	+	-
<i>Momordica charantia</i> L.	wild bittermelon, balsam pear	X	-	-	+	+	-
EUPHORBIACEAE (Spurge family)							
<i>Aleurites moluccana</i> (L.) Willd.	kukul, tutui	P	-	-	+	+	-
<i>Chamaesyce hirta</i> (L.) Millsp.	hairly spurge, garden spurge, koko kahiki	X	-	+	+	-	-
<i>Chamaesyce hypericifolia</i> (L.) Millsp.	graceful spurge	X	-	+	-	-	+
<i>Chamaesyce hyssopifolia</i> (L.) Small		X	-	+	-	-	-
<i>Euphorbia heterophylla</i> L.	Mexican fireweed, kaliko	X	-	+	-	-	-
<i>Ricinus communis</i> L.	castor bean, koi	X	-	+	+	+	+
FABACEAE (Pea family)							
<i>Acacia farnesiana</i> (L.) Willd.	klu	X	-	-	+	-	+
<i>Chamaecrista nictitans</i> (L.) Moench	partridge pea, lauki	X	-	+	-	+	-
<i>Crotalaria pallida</i> Aiton	smooth rattiepod, pikakani	X	-	+	+	-	+
<i>Desmanthus pernambucanus</i> (L.) Thellung	virgate mimosa, slender mimosa	X	-	-	+	+	+
<i>Desmodium cajanifolium</i> (Kunth) DC		X	-	-	+	-	-
<i>Desmodium tortuosum</i> (Sw.) DC	Florida beggarweed	X	-	+	+	+	-
<i>Erythrina sandwicensis</i> Degener	wiliwili	E	-	-	-	-	+
<i>Erythrina variegata</i> L. cv. "Tropic Coral"		X	-	+	-	-	-
<i>Leucaena leucocephala</i> (Lam.) de Wit	koa haole, ekoa	X	+	+	+	+	+
<i>Macroptilium latyroides</i> (L.) Urb.	wild bean, cow pea	X	-	+	+	-	-
<i>Pithecellobium dulce</i> (Roxb.) Benth.	'optuma	X	+	+	+	+	+
<i>Prosopis pallida</i> (Humb. & Bonpl. ex Willd.) Kunth	kiawe, algaroba	X	+	+	+	+	+
<i>Samanea saman</i> (Jacq.) Merr.	monkeypod	X	+	-	-	-	-
<i>Senna surattensis</i> (H.L. Burm.) H. Irwin & Barneby	kolomona, kalamona	X	-	-	-	+	+
LAMIACEAE (Mint family)							
<i>Hyptis pectinata</i> (L.) Poit.	comb hyptis	X	-	-	+	-	-
<i>Leonotis nepetifolia</i> (L.) R. Br.	lion's ear	X	-	-	+	+	-
<i>Salvia occidentalis</i> Sw.	West Indian sage	X	-	-	-	+	-

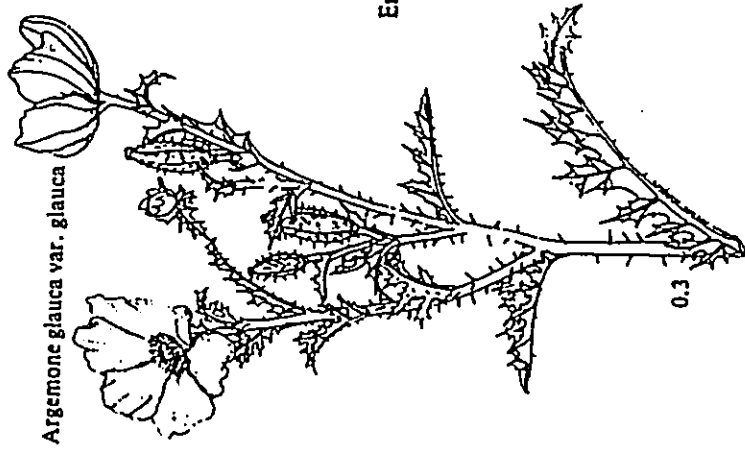
Scientific name	Common name	Status	Vegetation type				
			c	s	i	g	k
MALVACEAE (Mallow family)							
<i>Abutilon grandifolium</i> (Willd.) Sweet	hairly abutilon, ma'o	X	-	+	+	+	+
<i>Hibiscus tiliaceus</i> L.	hau	I?	+	-	-	-	-
<i>Malvastrum coromandelianum</i> (L.) Garcke	false mallow	X	-	-	+	+	-
<i>Sida acuta</i> ssp. <i>carpinifolia</i> (L.f.) Borssum Waalkes	acute-leaved sida	X	-	-	-	+	-
<i>Sida fallax</i> Walp.	'ilima	I	-	-	+	-	+
<i>Sida rhombifolia</i> L.	Cuba jute	X	-	+	-	-	-
<i>Thespesia populnea</i> (L.) Sol. ex Correa	milo	I?	+	-	-	-	-
MELIACEAE (Mahogany family)							
<i>Melia azedarach</i> L.	Chinaberry, pride-of-India, 'inia	X	-	-	-	+	-
MORACEAE (Mulberry family)							
<i>Artocarpus altilis</i> (Parkins. ex Z) Fosb.	'ulu, breadfruit	P	-	+	-	-	-
MYRTACEAE (Myrtle family)							
<i>Eucalyptus saligna</i> Sm.	Sydney blue gum	X	-	+	-	-	-
<i>Eucalyptus</i> spp.	gum tree, eucalyptus, 'eukalikia	X	-	+	+	-	-
<i>Psidium guajava</i> L.	guava, kuawa	X	-	-	-	+	-
<i>Syzygium cumini</i> (L.) Skeels	Java plum	X	+	+	+	+	+
NYCTAGINACEAE (Four-o'clock family)							
<i>Boerhavia coccinea</i> Mill.		X	-	+	+	-	-
<i>Boerhavia glabrata</i> Blume	alena	I	-	-	-	-	+
ONAGRACEAE (Evening primrose family)							
<i>Ludwigia octovalvis</i> (Jacq.) Raven	primrose willow, kamoie	P?	-	-	+	-	-
OXALIDACEAE (Wood sorrel family)							
<i>Oxalis corniculata</i> L.	yellow wood sorrel, 'ihi 'ai	P?	-	-	-	+	-
PAPAVERACEAE (Poppy family)							
<i>Argemone glauca</i> (Nutt. ex Prain) Pope	pua kala, kala, native poppy	E	-	-	-	-	+

	Scientific name	Common name	Status	Vegetation type					
				c	s	i	g	k	
	PASSIFLORACEAE (Passion flower family) <i>Passiflora foetida</i> L.	running pop, pohapoha	X	-	-	-	-	+	
	PLUMBAGINACEAE (Leadwort family) <i>Plumbago zeylanica</i> L.	'ilie'e, hille'e	I	-	-	-	+	-	
	PORTULACACEAE (Purslane family) <i>Portulaca oleracea</i> L.	pigweed, common purslane, 'ihl	X	-	+	-	-	+	
	SAPINDACEAE (Soapberry family) <i>Dodonaea viscosa</i> Jacq.	'a'ali'i, 'a'ali'i ku makani	I	-	-	-	-	+	
	SOLANACEAE (Nightshade family) <i>Solanum americanum</i> Mill. <i>Solanum lycopersicon</i> var. <i>cerasiforme</i> (Dunal) Spooner, Anderson & Jansen	popolo, glossy nightshade wild tomato, currant tomato	I? X	-	+	-	+	-	
17	STERCULIACEAE (Cacao family) <i>Waltheria indica</i> L.	'uhaloa, hi'aloa, kanakaloa	I?	+	+	+	-	+	
	VERBENACEAE (Verbena family) <i>Lantana camara</i> L. <i>Stachytarpheta urticifolia</i> (Salisb.) Sims	lantana, lakana nettle-leaved vervain, owl, oi	X X	-	-	-	+	+	
	ZYGOPHYLLACEAE (Creosote bush family) <i>Tribulus terrestris</i> L.	puncture vine, goat head	X	-	+	-	-	-	
	MONOCOTS								
	ARECACEAE (Palm family) <i>Cocos nucifera</i> L. <i>Livistonia</i> sp.	coconut, niu	P X	+	-	-	-	-	
	CANNACEAE (Canna family) <i>Canna indica</i> L.	Indian-shot, ali'ipoe, poloka	X	-	-	-	+	-	

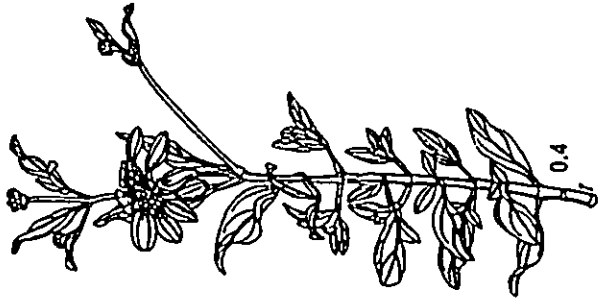
	Scientific name	Common name	Status	Vegetation type				
				c	s	i	g	k
	COMMELINACEAE (Spidervort family) <i>Commelina diffusa</i> N.L. Burm.	honohono	X	-	-	+	-	-
	CYPERACEAE (Sedge family) <i>Cyperus rotundus</i> L. <i>Cyperus</i> sp. <i>Fimbristylis dichotoma</i> (L.) Vahl	nutgrass, nut sedge	X X I	-	+	-	-	-
	HYDROCHARITACEAE (Frog's-bit family) <i>Egeria densa</i> Planch.	elodea	X	-	-	+	-	-
	POACEAE (Grass family) <i>Brachiaria mutica</i> (Forssk.) Stapf <i>Brachiaria subquadriflora</i> (Trin.) Hitchc. <i>Cenchrus ciliaris</i> L. <i>Cenchrus echinatus</i> L. <i>Chloris barbata</i> (L.) Sw. <i>Coix lacryma-jobi</i> L.	California grass buffelgrass common sandbur, 'ume 'alu, kuku swollen fingergrass, mau'uiei Job's tears, pu'ohe'ohe, kukaekolea	X X X X X X X	+	-	+	+	-
18	<i>Cynodon dactylon</i> (L.) Pers. <i>Digitaria insularis</i> (L.) Mez ex Ekman <i>Digitaria</i> sp. <i>Echinochloa colona</i> (L.) Link <i>Heteropogon contortus</i> (L.) P. Beauv. ex Roem. & Schult. <i>Leptochloa uninervis</i> (K. Presl) Hitchc. & Chase <i>Melinis minutiflora</i> P. Beauv. <i>Melinis repens</i> (Willd.) Zizka <i>Panicum maximum</i> Jacq. <i>Panicum maximum</i> var. <i>trichoglume</i> Eyles ex Robyns <i>Polypogon monspeliensis</i> (L.) Desf.	Bermuda grass, manienie sourgrass crabgrass jungle rice pili, pili grass leptochloa molasses grass Natal redtop, Natal grass Guinea grass green panicgrass rabbitfoot grass, Montpellier beardgrass	X X X X I? X X X X X X X X X X	-	-	-	-	+



Erythrina sandwicensis



Argemone glauca var. *glauca*



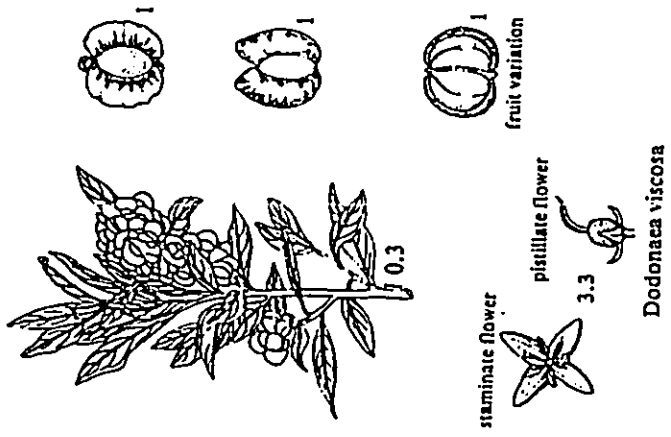
Lipochaeta lamarum



Plumbago zeylanica

From Wagner et al. (1990).

From Wagner et al. (1990).



From Wagner et al. (1990).

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APPENDIX F-1.

**Archaeological Inventory
Survey of Makai Olowalu
Lands**

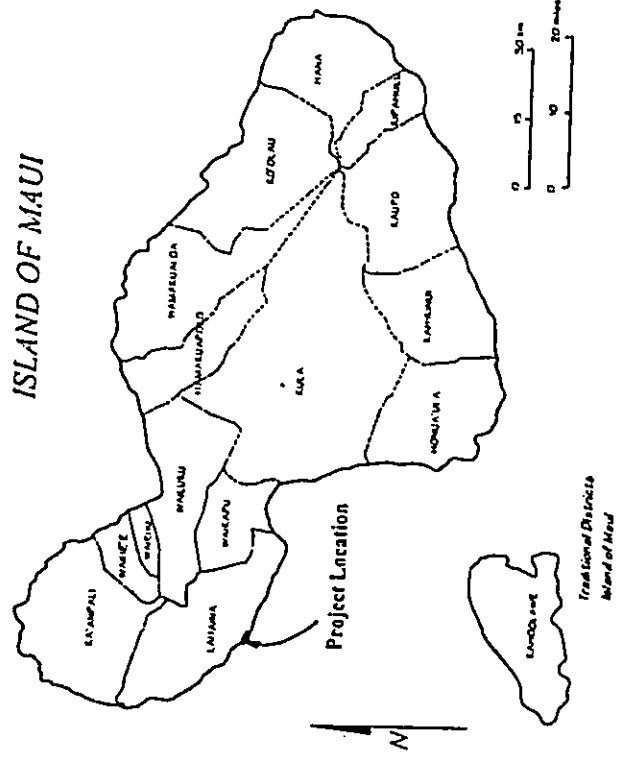
ARCHAEOLOGICAL INVENTORY
SURVEY OF MAKAI PORTION (Phase 1) OF
OLOWALU DEVELOPMENT PARCEL
OLOWALU AHUPUA'A, LAHAINA
DISTRICT, MAUI ISLAND
(TMK 4-8-3: por. 5)

Prepared for:
Olowalu Elua Associates
Kahului, Maui

Prepared by:
Xamane Researches
Pukalani, Hawaii

Demaris L. Fredericksen
Erik M. Fredericksen

January 28, 2000





ABSTRACT

Amman, P. (1997). *Archaeological investigations of the site of the Olowalu Sugar Mill, Maui, Hawaii*. Ph.D. thesis, University of Hawaii, Honolulu. This thesis reports on the archaeological investigations of the site of the Olowalu Sugar Mill, Maui, Hawaii. The site is a prehistoric site and is located on the eastern coast of Maui. The site is a prehistoric site and is located on the eastern coast of Maui. The site is a prehistoric site and is located on the eastern coast of Maui.

The Olowalu Sugar Mill Site (19-02-0000) is a significant archaeological site on the eastern coast of Maui, Hawaii. It is a prehistoric site and is located on the eastern coast of Maui. The site is a prehistoric site and is located on the eastern coast of Maui.

Preservation of the archaeological site of the Olowalu Sugar Mill is a significant issue. The site is a prehistoric site and is located on the eastern coast of Maui. The site is a prehistoric site and is located on the eastern coast of Maui. The site is a prehistoric site and is located on the eastern coast of Maui.

Table of Contents

Map 1 - U.S.G.S. Topographic Map, Olowalu Quadrangle, 1983..... iv
 Map 2 - Tax Map, Zone 4, Section, Plat 3, State of Hawaii..... v
 Map 3 - Topographic map of project area, showing location of sites..... vi
 Map 4 - Portion of 1881 map showing Government Road..... vii
 and *kuleana* located in Olowalu.
 Map 5 - Location of Land Commission Awards present in study area..... viii
 Map 6 - Portion of Alexander 1906 map, which shows the old and new Olowalu Stream
 Stream beds..... ix
 Map 7 - Tax Map showing the location of the Land Commission Awards in
 Olowalu *ahupua'a*..... x
 Map 8 - Tax Map showing location of informant's property..... xi
 Map 9 - Topographic map showing the location of Site 4793 Burial Preserve..... xii

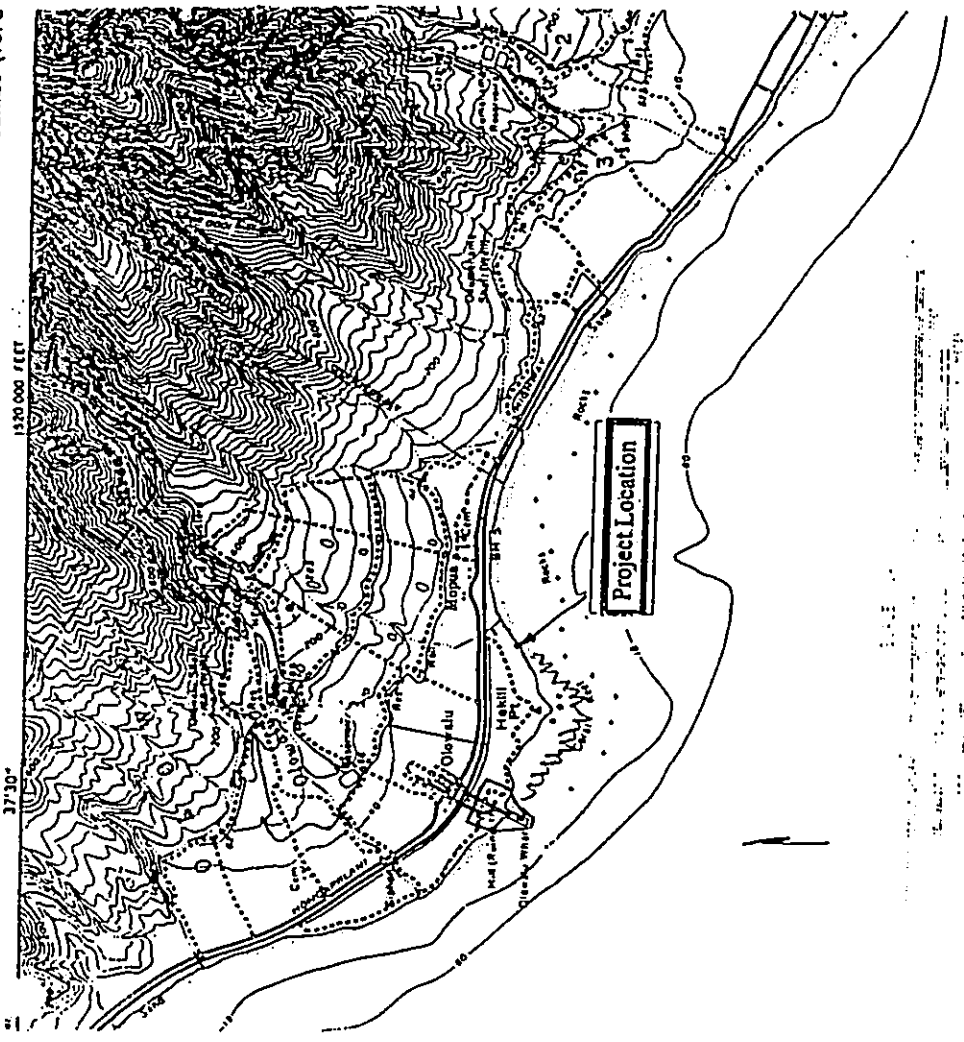
INTRODUCTION..... 1
 STUDY AREA..... 2
 Natural History..... 2
 BACKGROUND RESEARCH..... 2
 Precontact to 1850s..... 5
 Table 1 - Land Commission Awards—*maka'i* parcel..... 11
 Plantation Era..... 11
 Figure 1 - 1916 U.S.G.S. drainage map (Wilcox, 1996, p. 123)..... 13
 Oral History Interviews..... 14
 PREVIOUS ARCHAEOLOGICAL STUDIES..... 15
 Launiupoko..... 18
 Ukumehame..... 19
 Maui Electric Company's Lahaina to Maalaea Transmission Line..... 20
 Settlement Patterns and Expectation of Findings..... 21
 Figure 2 - Reproduction of map from Maui Electric report..... 23
 ARCHAEOLOGICAL FIELD METHODS..... 25
 Figure 3 - Map of *maka'i* parcel showing the locations of Backhoe Trenches..... 26
 ARCHAEOLOGICAL FINDINGS..... 27
 Site 50-50-08-4693..... 27
 Figure 4 - Plan view of Site 4693—burial ground..... 28
 Figure 5 - Plan view of Burial finds #1 and #4—Site 4693..... 30
 Figure 6 - East-northeast face profile of BT 8, showing location of Burial #2..... 31
 Figure 7 - West-southwest face profile of BT 8..... 31
 Figure 8 - Plan view of Burial finds #3 and #5, and Find #6 scatter..... 33

Site 50-50-08-4694..... 34
 Figure 9 - Plan view of Site 4694..... 35
 Figure 10 - North face profile of Test Unit 1—Site 4694..... 36
 Figure 11 - East face profile of Test Unit 2—Site 4694..... 38
 Figure 12 - North face profile of Test Unit 2—Site 4694..... 38
 Figure 13 - East face profile of Test Unit 3—Site 4694..... 39
 Site 50-50-08-4695..... 40
 Figure 14 - Plan view of Site 4695..... 41
 Site 50-50-08-4696..... 42
 Site 50-50-08-4697..... 42
 Figure 15 - East and south face profiles of Test Unit 1—Site 4697..... 42
 Figure 16 - South face profile of Test Unit 2—Site 4697..... 44
 Site 50-50-08-4698..... 45
 Figure 17 - West face profile of Test Unit 1—Site 4698..... 46
 Site 50-50-08-1602..... 47
 Figure 18 - Plan view of Olowalu Sugar Mill ruins (Site 1602)..... 49
 Figure 18a - Photo of Olowalu Sugar Mill taken in between 1870 and 1890..... 50
 Backhoe Trenches..... 51
 Figure 19 - West face profile of Backhoe Trench 21..... 52
 Figure 20 - West face profile of Backhoe Trench 23..... 52
 Figure 21 - West face profile of section of BT 23..... 52
 Figure 22 - West face profile of Backhoe Trench 59..... 54
 Figure 23 - East face profile of Backhoe Trench 83..... 54
 Radiometric Dates..... 55
 SUMMARY AND CONCLUSIONS..... 56
 Precontact to 1850s..... 56
 Plantation Era..... 57
 Site Significance Evaluations..... 57
 Mitigation Recommendations..... 58
 REFERENCES..... 60
 Table 2 - Inventory Level Significance Evaluations..... 62
 Table 3 - Summary of Subsurface Results at Site 4694—TU 1..... 63
 Table 4 - Summary of Subsurface Results at Site 4694—TU 2..... 64
 Table 5 - Summary of Subsurface Results at Site 4694—TU 3..... 65
 Table 6 - Summary of Subsurface Results—Site 4697..... 66
 Table 7 - Summary of Subsurface Results—Site 4698..... 67
 Table 8 - Summary of portable remains from subsurface testing..... 68
 Table 9 - Indigenous Artifacts Recovered..... 69
 Table 10 - Summary of Backhoe Trenches..... 70
 APPENDIX A - Radiometric Data from Beta Analytic, Inc..... 76
 APPENDIX B - Land Commission Awards in Olowalu *ahupua'a*..... 81

Photo 1 - Mouth of Olowalu Stream..... 84
 Photo 2 - General *maka'i* view of eastern portion of study area. Monkeypod
 Trees line Honoapi'iiani Highway (Highway 30)..... 84

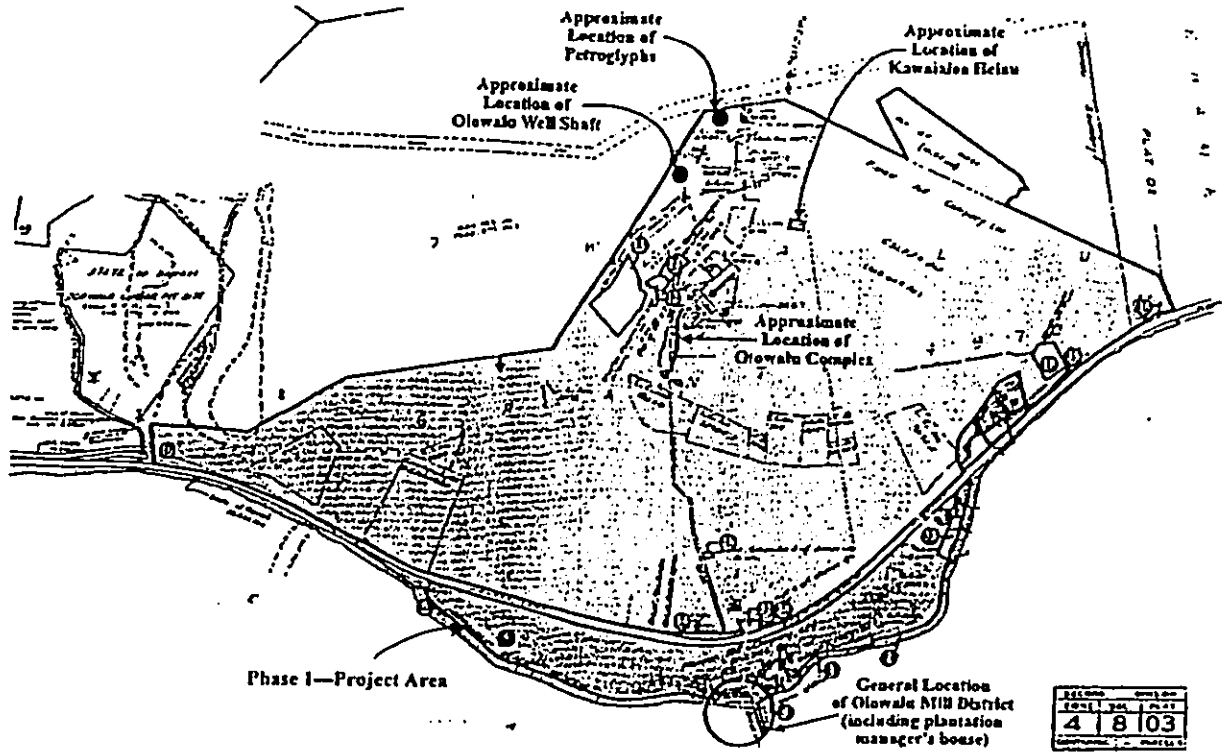
Photo 3 - Mitigation of Burial find #1 in access road.....85
 Photo 4 - Excavation of Backhoe Trench 14—BT 13 in foreground—Burial find to the left.....85
 Photo 5 - Backhoe Trench 8, containing Burial #2. View to the northwest.....86
 Photo 6 - Burial mitigation in process—view to the northwest.....86
 Photo 7 - West wall of Backhoe Trench 14 showing marine sand deposits.....87
 Photo 8 - Southern portion of Backhoe Trench 23.....87
 Photo 9 - West face profile of BT 23, showing the banded sand deposits in the *makai* end of the trench.....88
 Photo 10 - Site 4694 rock structure. Test Unit 2 in process.....88
 Photo 11 - Test Unit 1 in Site 4694 rock structure.....89
 Photo 12 - Backhoe Trench 8 with burial find covered with blue tarp, showing the proximity of the burials to the ocean.....90
 Photo 13 - Backhoe Trench 78, located on the west side of Olowalu Stream. Note the shallow water table.....90
 Photo 14 - Boat launching ramp at Site 1602—Olowalu Sugar Mill.....91
 Photo 15 - View of the Mill area from the end of the jetty.....91
 Photo 16 - Manager's House and cottage to the right.....92
 Photo 17 - View of ruins of largest structure—view to the east.....92
 Photo 18 - View of eastern portion of ruins, in the vicinity of the mule pen.....93
 Photo 19 - Ruins of brick feature on *makai* end of large building foundation.....93
 Photo 20 - Large tree growing within the brick structure.....94
 Photo 21 - Iron post with rigging and eye on top. Ruins of the mill are behind thick vegetation.....94

OLOWALU QUADRANT
 HAWAII—MAUI CO
 ISLAND OF MAUI—LAHAINA
 7.5 MINUTE SERIES (TOPO)



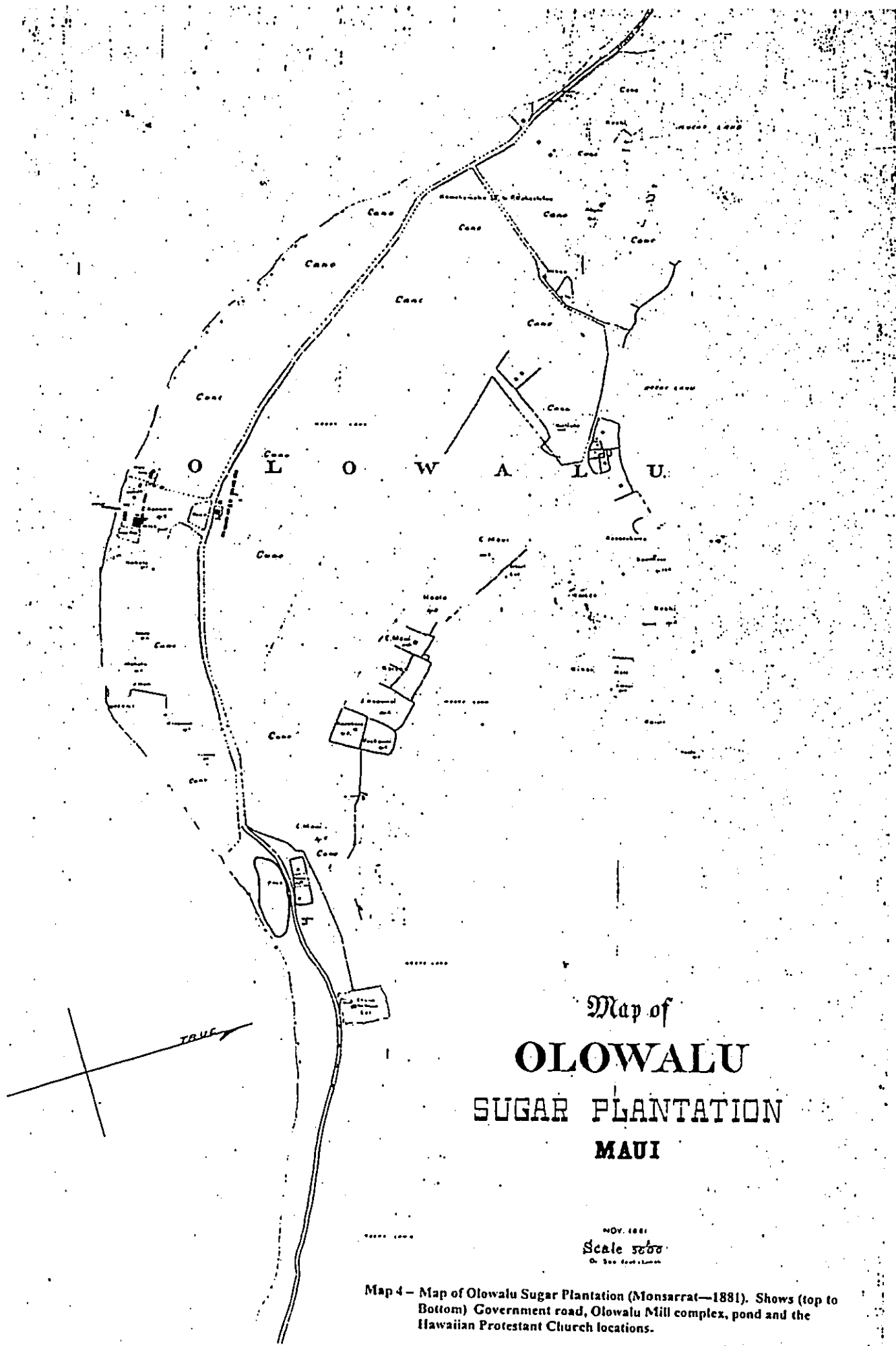
Map 1 - U.S.G.S. Topographic Map, Olowalu Quadrangle, 1983.

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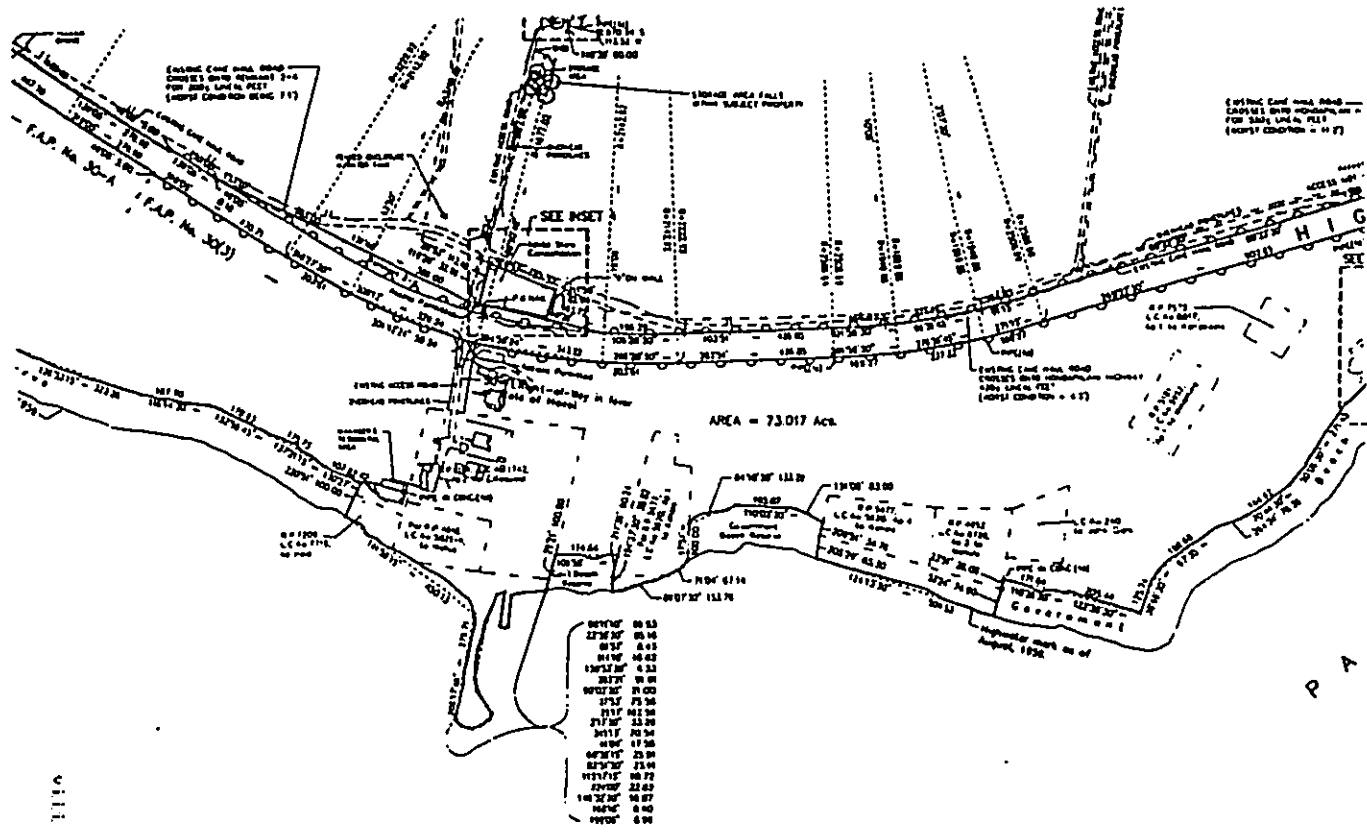
Map 2 - Tax Map, Zone 4, Section, Plat 3. State of Hawaii.

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Map 4 - Map of Olowalu Sugar Plantation (Monsarrat—1881). Shows (top to Bottom) Government road, Olowalu Mill complex, pond and the Hawaiian Protestant Church locations.

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Map 5 - Location of Land Commission Awards present in study area.

E.S. Craighill and Elizabeth Handy (1972, p. 492) note:

"Lahaina District was a favorable place for the high chiefs of Maui and their entourage for a number of reasons: the abundance of food from both land and sea; its equable climate and its attractiveness as a place of residence; it had probably the largest concentration of population, with its adjoining areas of habitation; easy communication with the other heavily populated areas of eastern and northern West Maui. The Four Streams; and with the people living on the western, southwestern and southern slopes of Haleakala; and its proximity to Lanai and Molokai."

Concerning Olowalu, they continue (Handy and Handy, 1972, p. 492):

"Olowalu, the largest and deepest valley on southwest Maui, had even more extensive lo'i lands both in the valley and below. Just at the mouth of the valley we found in 1934 a little settlement of five kaubale (family homes) surrounded by their flourishing lo'i. There are said to be abandoned lo'i far up in the valley. In and below the next valley, Launipiko (sic.), there were no evidences of lo'i, and the people of Olowalu said there had never been any. But we think there must have been a few, although the land is, in general, dry and rough."

While these observations were made in the earlier part of the 20th century, there is no doubt that Olowalu was an important agricultural area in precontact times. As long as water was available, the hot climate was ideal for producing taro. It was the ability to produce quantities of taro that contributed to a substantial population, and placed West Maui in a position of prominence throughout the island.

The southeastern section of the *makai* parcel, closest to shore, is identified as Jaucas sand (JaC). Typically such sands occur on 0 to 12 percent slopes. They are characteristically pale-brown in color, and more than 60 inches deep. Permeability is rapid, and runoff is very slow to slow. The major hazard is wind erosion in places where the surface vegetation has been removed (ibid., p. 48). In the northwestern portion of the study area, in the vicinity around the present mouth of Olowalu stream, soils are classified as Pulehu clay loam (PsA). This series consists of well-drained soils on alluvial fans and stream terraces. They developed in alluvium washed from basic igneous rock. The soils are nearly level (0 to 3 percent slopes), permeability is moderate, runoff is slow. The surface is characteristically dark brown clay loam up to 20 inches thick, underlain by 40 inches or more of banded sandy loam, silt loam, etc. Beneath this is coarse, gravelly or sandy alluvium (ibid., pp. 115-116).

Lying *makua* of the Jaucas sands is a region of Pulehu silt loam (PpA) which is similar to Pulehu clay loam (0 to 3 percent slopes), but with a somewhat coarser texture. This soil is ideal for sugarcane. Stretching along the shore, *makai* of the Jaucas sands, is a strip of beach sand (BS). Beaches occur as sandy, gravelly, or cobbly areas. They are constantly washed and re-washed by ocean waves, and consist mainly of light colored sands derived from coral and seashells (ibid., p. 28).

Observed vegetation on the project area is dominated by various alien species. *Kiawe* (*Prosopis pallida*) trees form the primary overstory vegetation in the coastal strip, along with scattered *Opiuma* trees (*Pluccellobium dulce*). At least 2 varieties of palm trees were observed in the landscaped area near the former plantation manager's house. Finally, a few *hau* trees (*Hibiscus ilicifolius*) and *mita* trees (*Thepsisia populnea*) were noted north of the manager's residence. *Milo* is a native species, while *hau* is thought to be a probable Polynesian introduction. Various landscaping plants were also found in the plantation area. Finally, several salt tolerant species including Indian fleabane (*Pluchea indica*) were observed near the coast.

Much of the parcel was previously under sugar cane cultivation. While sugar cane is no longer cultivated on the *makai* project area, ratoon (wild, or volunteer) cane was growing on much of the parcel at the time of the survey.

The property is generally level to slightly sloping, and contains streambed deposits in many areas. In addition, marine sand deposits underlie much of the southeastern project area. Olowalu Stream empties into the ocean to the west of the manager's home. The *makai* project area contains approximately 2 miles of shoreline.

The entire study area occupies a large alluvial fan spreading from the mouth of Olowalu Valley to the ocean. It is bisected by Olowalu Stream, which took a more northwest-southeast path in the past. Olowalu Stream is one of 4 major waterways in the Lahaina District—the others being Ukumehame, Launiupoko, and Kaua'ula—which provided water for agricultural activity that supported a considerable precontact population.

BACKGROUND HISTORICAL RESEARCH

Precontact to 1850s

Because Lahaina District had ample resources that supported a large population, it became a focal point in the struggle for power between important chiefs. One of the fiercest battles was between Maui chief Ka-ūhi, and the chief of Hawaii, Alapa'i in the mid-18th century. Concerning this war, Samuel Kamakau relates the following:

A whole year Alapa'i spent in preparation for the war with Maui. It was in 1738 that he set out for the war in which he swept the country. What was this war like? It employed the usual method in warfare of drying up the streams of Kūna'ūla, Kanaha, and Mahoma (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-ūhi or for the country people. Alapa'i's men kept close watch over the brooks of Olowalu, Ukumehame, Wailuk, and Honokawai. When Pele-io-halani heard that Alapa'i was at Lahaina he gathered all his forces at Honokahua and at Honohua. 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-halani 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-halani had but 640 men against Alapa'i's 8,440 from the six districts of Hawaii, there were among them some famous warriors.... Pele-io-halani intended to unite his forces with those of Ka-ūhi, but Alapa'i's men held Lahaina from Ukumehame to Mala on the north, and in attempting to aid Ka-ūhi, Pele-io-halani became involved with the difficulty. The hardest fighting, even compared with that at Napili and at Honokahua in Ka'anapali, took place on the day of the attack at Pu'unenē. Pele-io-halani was surrounded on all sides, auuka and auakai, by the forces of Alapa'i, led by Ka-lani-'opu'u and Keoua. The two ruling chiefs met there again, face to face, to end the war and became friends again, so great had been the slaughter on both sides...." (Kamakau, 1992, p. 74).

At the end of this period of warring, Kamehameha-nui became the ruling chief of Maui. Alapa'i returned to Hawaii. There, following the death of Keoua, in 1752,

* Pele-io-halani was the ruling chief of Oahu. Maui chief Ka-ūhi sent a present to him and requested his help in defending Maui (Kamakau, p. 74).

relations between Alapa'i and Ka-lani-'opu'u began to sour, because the latter felt that Alapa'i had some part in causing Keoua's death. Battles were fought between the two rivals, and eventually Ka-lani-'opu'u succeeded in establishing his rule over the entire island of Hawaii in 1754, after he "seized and cruelly put to death and baked" (ibid., p. 78) the son of Alapa'i, Keawe-opala.

In the years from 1775 to 1779 there was constant warfare between Ka-lani-'opu'u and Kahekili, the younger brother of Kamehameha-nui. Ka-lani-'opu'u engaged in battles all around the island of Maui. At Waikapu, he was defeated and routed by the forces of Kahekili in 1776. Still nursing a fierce hatred for Kahekili for his defeat, Ka-lani-'opu'u launched another series of attacks—sailing to Kaupo, Lahaina, and on to Lanai, where his forces ravaged and slaughtered the citizens. When food ran out on Lanai, he moved on to Maui where food was abundant, and fed his soldiers on taro from Honokahua. After this he headed around West Maui for Ko'olau. Upon landing at Hamakualoa, he engaged in battle with Kahekili's forces, who put up such a fierce fight that Ka-lani-'opu'u fled in his canoes. When Ka-lani-'opu'u made landfall at Ko'olau "he slew the common people and maltreated the captives by urinating into their eyes" (Kamakau, p. 91).

Arrival of Europeans

It was toward the last part of this 4-year period of warfare, in January of 1778, that Captain James Cook sailed into the islands—and set in motion a wave of changes that would engulf the Hawaiian people in years to come.

Ka-lani-'opu'u returned to Hawaii from Maui in January of 1779, during Cook's visit in Kealahou. When he saw how many women were prostituting themselves on board Cook's ship, he forbade the women from continuing to visit the vessel. He treated Cook hospitably, however, "giving him hogs, taro, potatoes, bananas, and other provisions, as well as feather capes, helmets, *kahili*, feather leis, wooden bowls beautifully shaped, tapa cloths of every variety, finely-woven mats of Puna, and some especially fine mats made of pandanus blossoms" (Kamakau, p. 101). The most desired trade items, as far as the Hawaiians were concerned, were guns, ammunition, and iron.

In the month of February, Cook sailed away, only to discover that a mast on one of his ships was defective and needed immediate repair. He put back to Kealahou, where developing tensions between the Hawaiians and the *haoles* (foreigners) resulted in the theft of a longboat. When Cook went ashore to retrieve it, he and 4 of his crewmen were killed. The body of the slain Captain was delivered to Ka-lani-'opu'u, who offered it in sacrifice. Afterwards "they stripped the flesh from the bones of Lono. The palms of the hands and the intestines were kept; the remains (*pele*) were consumed with fire. Ka-lani-'opu'u was kind enough to give the bones to the strangers on board the ship, but some were saved by the kahunas and worshipped" (Kamakau, p. 103).

It was not until 1786, that foreign vessels again visited the Hawaiian Islands. The first ships were the King George, under Captain Portlock, and the Queen Charlotte, under

Captain Dixon. They landed at Kealahou on May 26th, but found the "natives troublesome and no chief of apparently sufficient authority to keep them in order", so they left on the 27th (Fornander, 1996, p. 230). On May 28th, the notable French explorer, La Perouse, anchored near Lahaina on Maui, after having visited the southern part of the island that bears his name—La Perouse Bay. Other vessels followed, which were chiefly occupied in the fur trade on the Northwest Coast of America. Hawaii also became a stopover on the trade route to and from China. The most desirable trade items continued to be arms and ammunition, which were in high demand by the different chiefs. For the most part, trading was friendly. However, cultural misunderstandings sometimes led to tragic consequences. Such was the case that culminated in the infamous incident that occurred off Olowalu in 1790.

Olowalu Massacre

The ship Eleanora, under the command of Captain Metcalf, and a smaller schooner, Fair American, under the command of Metcalf's son, Thomas, arrived off Hawaii island in the winter of 1789, to engage in trade. In February 1790, the Eleanora proceeded to Honua'ula on Maui to trade there. The following is Fornander's recounting of what followed (pp. 232-234):

"The native accounts state that the captain was an irritable and harsh man, and liberal in his use of the rope's-end on trifling provocations: yet trade was continued and his ill-usage submitted to for the gain the common people thought they obtained in the barter of the commodities for those that the foreigner brought them.

Kalala, the widow of Kalaniopuu, with her new husband, Kaopuiki, and her family, were at this time living in the village of Olowalu, some fifteen miles from where Metcalf's vessel was anchored. Hearing of the arrival of the trading ship at Honua'ula, Kaopuiki got ready a number of hogs and other produce, and started for Honua'ula to trade for muskets, ammunition, and such other articles. It is not known that Kaopuiki received any bad usage from Captain Metcalf, although others did; but noticing that the ship's boat was left towing astern during the night, Kaopuiki formed the design of getting the boat into his possession. The following night the plan was carried into effect, the boat was set adrift from the vessel, the watchman, who had fallen asleep in her, was killed, the boat towed ashore and broken up for the sake of the iron fastenings, and Kaopuiki and his men returned to Olowalu.

When the loss of the boat and the death of the seaman were ascertained in the morning, Captain Metcalf fired on the people ashore, and took two prisoners, from one of whom belonging to Olowalu it is thought that he received information as to who the party was that had stolen his boat. In a day or two the vessel left her anchorage at Honua'ula and came to anchor at Olowalu."

The account is continued by Kamakau (pp. 145-147):

² An informant, Ms. Adeline Rodrigues was told by her grandfather that their property was the location of Kalala's residence. See Maps 6 and 8.

"...in the morning Kai-lala declared a tabu restricting canoes from going out to the ship on pain of being burned to death if they disobeyed. 'Withered grass' (Mau imae) was the name of this law. It belonged to Kai-lala alone and to her children and grandchildren: no other chief could declare such a tabu. It lasted three days. On the fourth the tabu was ended, and canoes in great numbers went out to trade with the foreigners. Many came from Lahaina as well as from Ku'ānapali, Lanai, and neighboring places. The canoes gathered under the ship's sides, the men eager to procure iron, beads, looking-glasses, scissors, muskets for the constant warring going on at the time, red cloth and other foreign material. Little did they suspect the terrible carnage that was to follow, a carnage without any effort to apprehend and punish the offenders or any pity for the innocent. So these Christians murdered the Hawaiian people without any more mercy than cannibal Nukuhivans show, or people of pagan lands. Canoes that drifted toward bow or stern were compelled by a shower of stones to keep amidships, and when all were clustered together, the captain was pretending to trade, and the people were busily eyeing the objects they desired, just as Aka-kone and another man had climbed upon the deck, the ship opened fire and shot the people down without mercy, just as if they were creatures without souls. Even those who swam away were shot down. John Young was an eyewitness on board the ship and has testified to the great number who were killed at this time. At noon that day the Eleanora (sic) sailed, and the people went out and brought the dead ashore, some diving down into the sea with ropes and others using hooks; and the dead were heaped on the sands at Olowalu. Because the brains of many were oozing out where they had been shot in the head, this battle with the ship Eleanora and her captain was called 'The spilled brains' (Kaioiapahu). It was a sickening sight, as Mahulu and others have reported it; the slaughtered dead were heaped upon the sand, wives, children, parents, and friends came to view and mourn over their dead, and the sound of loud wailing arose."

Fornander relates the incident (pp. 233-234):

"But Captain Metcalf meditated a terrible revenge for the loss of his boat and the death of his seaman. As the canoes collected around the ship, he ordered the guns and small arms to be loaded, and the unsuspecting natives were ordered to keep their canoes off the waists of the ship, and when any strayed either under the bows or the stern, they were pelted with stones or other missiles until they rejoined the fleet of canoes lying off either broadside of the ship waiting for trade to commence. When all was ready, Captain Metcalf mounted on the rail and gave orders to open the ports of the ship, loaded with small shot and grapnel, and the musketry of the sailors, were fired in the crowd of canoes lying within easy range on both sides. The carnage was immense. Over a hundred natives were killed outright, and several hundred more or less seriously wounded. The confusion, the wailing, the rush to escape was indescribable.

After this cruel and wanton vengeance on an innumerable multitude—for the main trespasser, Kaopuiki (sic), was not among the slain, and does not appear to have been slain that day—Captain Metcalf lifted his anchor and proceeded to Hawaii to join his tender, the Fair American."

On the morning of March 17th the Fair American was captured off Kaupulehu in North Kona by Kamehameha, a great chief and supporter of Kamehameha. He had

suffered a beating at the hands of the elder Meicall, and vowed vengeance on the next foreign vessel he could get aboard. The 18-year old captain, Thomas Metcalf, was thrown overboard and drowned, and the other members of the crew were killed. For some reason, the mate, Isaac Davis, was wounded, but his life spared. The vessel was taken ashore and the guns, ammunition and general cargo, along with the wounded Davis, were taken to Kamehameha at Kealahoukua.

The Eleanora was anchored there at Kealahoukua. The boatswain, John Young, and several other men had gone ashore. Young became separated from his fellow crewmembers, and was detained by Kamehameha, since the latter needed a foreigner to show him how to use the newly acquired guns and ammunition (Ibid., p. 235). The Eleanora waited for 2 days for Young to return. On the third day when he did not appear, Captain Metcalf sailed away, not knowing the fate of his son.

Davis and Young spent the remainder of their lives in the service of Kamehameha. Their knowledge of foreign technology proved extremely valuable to Kamehameha. One of the cannons which was taken from the Fair American, Lopaka, was used in the Battle of Kepaniwai, where Kamehameha defeated the warriors of Kahekili, in 1790. The Maui warriors were driven into Iao Valley, attacked with the cannon and other firearms, and slaughtered in great numbers. Those that escaped did so by climbing over the steep ridge and down into Olowalu Valley.⁷

Although his warriors were defeated on Maui, Kahekili still commanded a sizeable army on the island of Oahu. He was considered to be a very old chief when he was visited at Lahaina by Vancouver in March of 1793. Kamakau reports (1992, p. 165) that during this meeting Vancouver urged Kahekili to stop fighting and establish friendly relations with the chiefs of Hawaii. Kahekili said that it was not right for the chiefs of Hawaii to raid Maui "and rob and pillage without cause. Kahekili requested Vancouver, if he desired peace, to stay there all the time and guard him against further wars." Vancouver recognized that Kamehameha had superior numbers of chiefs and warriors, and they possessed firearms and the knowledge of their use. Sometime after Vancouver's departure for Oahu, Kahekili died.

With the great chief's passing, Kamehameha moved to bring Maui and Oahu under his rule. In 1796, following the battle of Nu'uuanu, the southern islands were united under one chief for the first time.

Early 19th century

Foreign influence became more and more pervasive following the unification of the Hawaiian Islands under Kamehameha. These forces brought commercial, social and religious changes to Lahaina District, as well as to the other islands. Lahaina was the

⁷ According to Handy and Handy (1972, p. 490), the overland trail provided a link between the Lahaina District and the north coast of West Maui, as well as allowing the exploitation of forest resources found at higher elevations. More specifically, this trail extended mauka into Olowalu Valley and over the summit at Mauna Kukui.

center for West Maui because of the favorable conditions for sailing craft that is found in the Lahaina Roads. The first whaling ships anchored off Lahaina in 1819, and the provisioning of these ships became a lucrative new venture. Following a few years later, missionaries from New England were added to the mix, and the wheels of acculturation turned ever more quickly. By 1832, the missionaries conducted a census which gave the population of Lahaina as 4,028; Olowalu as 832; and Ukumehame as 573 (Schmitt, 1973).

At this time, Lahaina was considered the capitol of the Hawaiian Kingdom, primarily because Kamehameha III preferred to reside there rather than in Honolulu. However, by 1845, he agreed to move the capitol permanently to Oahu, although Lahaina was still the residence of many important people associated with the Kamehameha line.

Following the Mahele in 1848, there were 42 individual Land Commission Awards granted in the ahupua'a of Olowalu, between the years 1852 and 1855. The majority are in the upper reaches of the property, along Olowalu stream. The distribution of land awards, and the present route of the stream suggest that the stream was channeled in a general, straighter north-east direction sometime after the Mahele. This was probably done to control flooding of agricultural fields. The award plots run across the alluvial fan in a northwesterly-southeasterly direction. A 1906 map of the Olowalu Plantation, made by A. C. Alexander, shows the new, straighter route of the stream (Map 6).⁴

The land awards range in size from one to'i on 0.047 acres, to a houselot and kula amounting to 8.638 acres. Most are kuleana associated with taro production, residences and surrounding lands. There are 9 LCAs on the makai portion of the study area. The earliest was a houselot granted to John Clark on August 22, 1849. The other 8 were granted between 1852 and 1855, and are scattered along the coastline. All are referred to as houselots. Map 5 shows the locations and Table 1 details these awards.

The remainder of the ahupua'a was crown land, that was originally granted to Kamehameha III. Kamehameha IV granted one 17.5-acre parcel of that crown land to Nahaoleleua in 1858. Crown lands became government lands after the annexation of the Hawaiian Islands in 1893.⁵

⁴ Refer to Appendix B for the complete list of LCA awards for the ahupua'a of Olowalu.
⁵ A deed provided by Mr. Hirosejo, of Olowalu (Lua Associates, states that in conformity with the Land Act of 1893, all of the land "situate at Olowalu and Ukumehame in the District of Lahaina, Island of Maui" was "granted and confirmed unto Walter M. Gifford for the consideration of Thirty-seven Thousand Seven Hundred and Fifty Dollars" (\$37,700.00). This was identified as Land Patent No. 4973, and was a cash purchase at public auction, which took place on July 9, 1906. Title was granted on July 31, 1906. The land area in Olowalu was 684.7 acres, exclusive of L.C.A.s, school lots and land sold by Kamehameha IV to Kahauleiua, all of which amounted to 96.4 acres.

Messrs. H. Hackfeld & Co.
Agents Olowalu Company

Gentlemen:

I am directed by the Minister of the Interior to acknowledge receipt of your favor of the 20th inst. Asking permission for the company to lay a narrow gauge railroad at Olowalu, and to inform you in reply that the company is hereby authorized to build a narrow gauge railroad for use of their plantation along the side of the Government road, upon express condition that the said railway shall in no wise interfere with the traffic on the Government road; and in such places where it may be found necessary to cross the Government road, proper guards or bridges shall be built for the safety of the public.

I have the honor to be
Your obedient Servt.
J.S. Hassinger
Chief Clerk

TABLE I

Land Commission Awards - makai parcel ⁶						
TMK	Size in acres	Royal Patent	LCA Number	Year conveyed	Awardtee	Nature of use
4-8-03: 41	.375	7209	7719	9/22/1853	Hia	House lot
4-8-03: 42	.835	4840	5839-11	1/17/1852	Nahue	House lot
4-8-03: 43	3.386	2154	1742-2	9/26/1853	Z. Kaauwal	House lot
4-8-03: 44	1.313	5477	5620-1	3/6/1855	Kahale	House lot
4-8-03: 45	.881	5477	5620-4	3/6/1855	Kahale	House lot
4-8-03: 46	.913	4952	6728-2	9/22/1933	Mahulu	House lot
4-8-03: 47	.597		240	8/22/1849	John Clark	House lot
4-8-03: 48	.792	5181	5952-1	9/24/1853	Minamina	House lot
4-8-03: 49	.3	7372	8812-1	9/24/1933	Kanakaole	House lot

Plantation Era

Olowalu Sugar Company

The Olowalu Sugar Company is said to have been an enterprise of King Kamehameha V, who reigned from 1863 to 1872. He began the operation sometime during his reign, under the name of the West Maui Sugar Company. It was incorporated as the Olowalu Sugar Company on May 6, 1881, and the agents were H. Hackfeld & Company. It was sold in 1877, and a reference states that in 1884, the agents were Macfarlane & Co (Wilcox, 1996, p. 5). From 1898 to 1910, W.G. Irwin & Company were the agents. This company was consolidated into C. Brewer & Co., and they assumed the agency until December 1931, when it was purchased by Pioneer Mill Company, Ltd. (HRHP, Wright, 1974).⁷ Maps 4 and 6 show the Olowalu Sugar Company lands in Olowalu in 1881 and 1906 respectively. Figure 1 shows the water system for the plantation in 1916.

Additional information is sketchy. There are references to repairs made to the Olowalu wharf in 1884, with the costs being shared by the Hawaiian government and the sugar company. This wharf is shown on the 1881 map of Olowalu Sugar Plantation (Map 4). In 1915, new boilers were installed in the mill along with other improvements. The boilers replaced some that had been in operation for 35 years (ibid.).

There is some information on the plantation railroad found in the Letter Books of the Hawaiian Kingdom dated October 31, 1881 (Conde and Best, 1974, p. 263):

⁶ This information was provided by Mr. Robert Thorpe, coordinator for the Olowalu project, and came from the Royal Patent/Award Books, Bureau of Conveyances archives through Eric Guarnaceo of Hawaii.
⁷ The ruins of the Olowalu Sugar Company mill have been identified as Site 30-50-08-1602.

With this, a 2-foot gauge railroad was built, and apparently the cars were pulled by mules until the latter part of 1889, when the Baldwin Locomotive Works engine—Olowalu—was ordered for plantation use (ibid.).⁸ In 1882 the railroad was extended an additional 2 miles south to Ukumehame, making a total of 3 miles of track. In 1905, a second locomotive from Baldwin Works replaced the original machine. By 1918 another mile had been added, making it a 4-mile line.

The Olowalu Mill was probably constructed in the 1870s. A photograph is reproduced in Maui Remnants (Bartholomew and Bailey, 1994, p. 45), and is one of the few in existence.⁹ It shows the iron pole, which still remains (Photo 21) that was probably used to guide cables or ropes, to boats tied to the pier. It may be part of a type of loading system that was used in the sugar industry at other mills.

The manager's house, which lies 100 meters to the northwest of the Mill, was built somewhere from 1910 to 1915. It is a one-story wooden structure with a sloping hip roof and ventilated gable ends. A front porch is seven bays long and is marked by a simple balustrade. Rafter ends are left exposed and the house is raised approximately 3 feet about grade (HRHP, Wright, 1974). There are also 3 other plantation houses located between the Mill and the highway, that may have been built around the same time.

In 1931, when the Olowalu Sugar Plantation was bought out by Pioneer Mill Company, all of the railroad equipment transferred to that company. By 1933, the mill was being dismantled and the machinery sold to a company in the Philippines (The Maui News, June 15, 1933). Pioneer Mill Company grew cane on much of the study parcel until fairly recently.

⁸ The 1881 map (Map 4) of the Olowalu Sugar Plantation shows the mule pen directly to the east of the Olowalu Sugar Mill (Site 30-50-08-1602).
⁹ It is included in this report on page 46a.

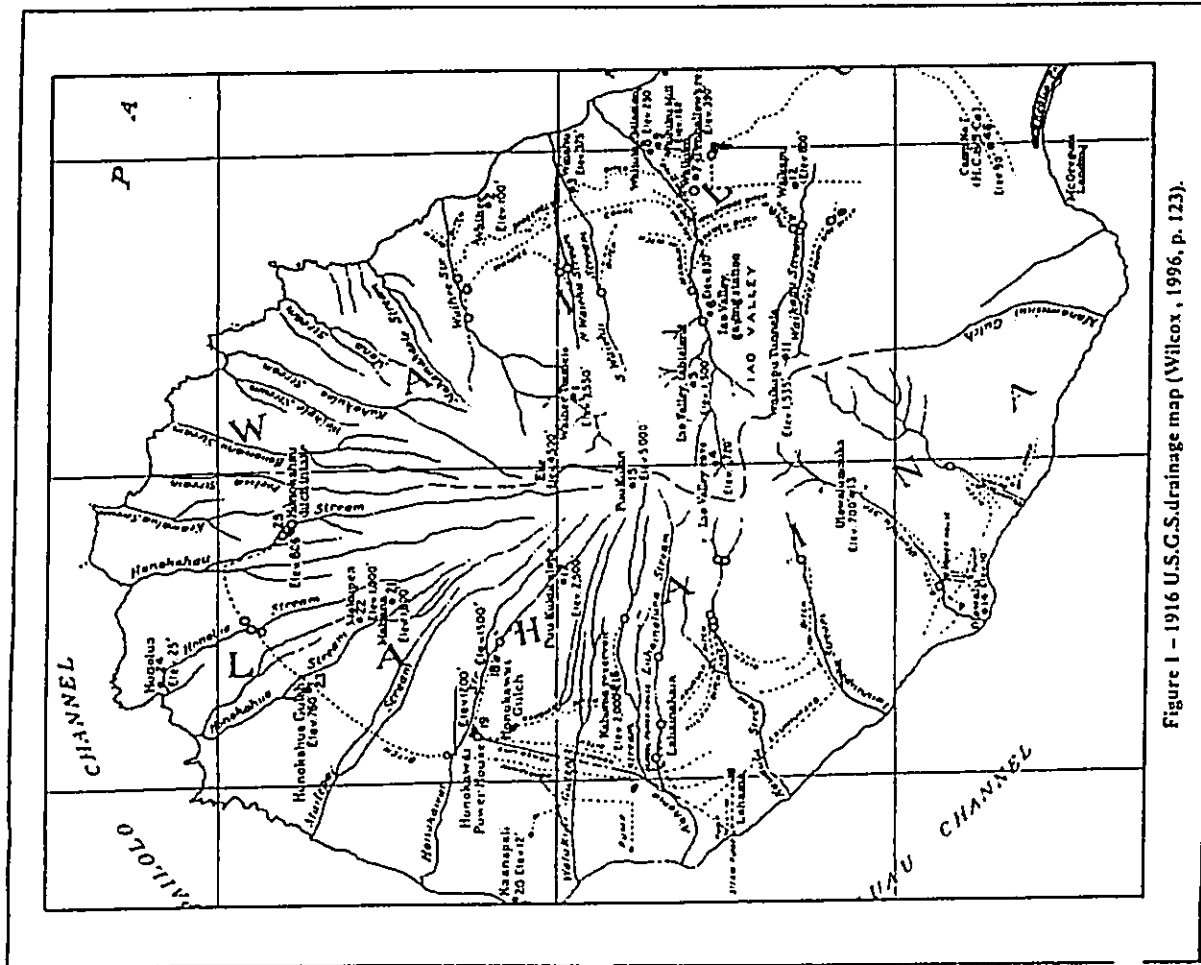


Figure 1 - 1916 U.S.G.S. drainage map (Wilcox, 1996, p. 123).

Of course, the sugar operations in Olowalu would not have been possible without a water system to irrigate the fields. The water system irrigated the upper cane fields of the watershed, and supplied drinking water to Olowalu Village. It was a rather small and crude system that had a capacity of 11 mgd and a median of 4.08 mgd (Wilcox, 1996, pp. 134-137). The 1913 drainage map (Figure 1) shows the ditch system at Olowalu (Ibid., p. 123).

Oral History Interviews

One of the individuals who is knowledgeable about Olowalu, interviewed by Erik Fredericksen, was resident John Ka'aea. Mr. Ka'aea was born in 1917 in Ukumehame, and was baptized in 1918 at the Catholic Church, which was located just to the east of the mauka study area. His father was a Japanese contract laborer for Olowalu Sugar Company, and arrived to work there in September of 1897. Mr. Ka'aea is one of 12 children in the Fujishiro family. He changed his name to Ka'aea, but did not specify when. He was educated at the Olowalu school which he said was on the corner lot next to the Adie (Adeline) Rodrigues' property.¹⁰ Mrs. Mookini was his teacher. In 1930 the school closed, and Mr. Ka'aea continued his education in Lahaina. He moved to Olowalu permanently in 1948.

He started working for Pioneer Mill in 1933, and was a brakeman on field engines used to set portable wooden flumes in the fields. He worked in the sugar industry for 35 years. In 1940, there was a major effort to clear the fields of large rocks and boulders. Mr. John T. Moir was the supervisor, and the rock piles that exist today in the mauka portion of the property, were completed under his direction.¹¹

He also talked about an old fish pond—Kaloko o Kapa'ike—which was located just mauka of the study parcel (Map 6). He remembered that the pond was filled in 1950 or 1951, when Honoapi'iani Highway was constructed. He did not know how long it had been there, but assumed it was old.

According to another informant, Mrs. Adie Rodrigues, this pond was for the *cif'i'i* that lived on the same property where she now resides. Her grandfather indicated to her that their property had been the residence of Chiefess Kalola, one of the people involved in the tragic Olowalu massacre incident. Mrs. Rodrigues also said that no one had lived at Hekili Point after 1932.¹²

Mr. Ka'aea also mentioned the Kawasaki Store, which goes back to the late 19th century. Sometime shortly after World War II the Kawasaki Store went out of business and it became known as Olowalu Store—a landmark on the road between Wailuku and Lahaina.

¹⁰ The Rodrigues' property is located mauka of the pond shown on Map 6. Within that property is LCA 8573, Apana 1 to Kailiua—a house lot. Apana 2 is located west of Olowalu stream between 75 and 85 feet AMSL. The Rodrigues' property is Lot 4 in the Olowalu Subdivision (Map 8).

¹¹ This clearing on the mauka portion of the property was done primarily with machinery. This would have been shortly after the purchase of Olowalu Sugar Company by Pioneer Mill Company.

PREVIOUS ARCHAEOLOGICAL STUDIES

There have been 4 other archaeological inventory surveys conducted near Olowalu in recent years. Prior to those studies, the only archaeological work had been the survey of *heiau* on the island of Maui that was conducted by Winslow Walker in 1929 to 1930, and the Statewide Inventory conducted in 1973-74. Both the Walker and State surveys documented significant sites in Olowalu *ahupua'a*.

Walker noted that there were two *heiau* structures on the mauka portion of the present study parcel. The larger structure is named Kawaialoa (Site 50-50-08-4). He described it as follows (1931, p. 108):

Location: On the rising ground south of Kileu Hill above the ditch.

Description: A large walled heiau in good condition. It measures 156 x 110 feet. The walls range in thickness from 8 1/2 feet on the west to 12 feet on the south and east where it is composed of two terraces. The highest part is 10 feet high. The north wall is lower and ranges from 5 to 8 feet thick. Several low terraces and enclosures are found inside. The low platforms in the western part are probably graves of recent date. The entrance evidently was at the north. At a point on the west wall and at two points on the south wall are piles of stones cone-shaped whose use or purpose could not be determined. Rough red vesicular basalt is the material used in the heiau construction and no coral is found. No artifacts were found there."

He goes on to mention a smaller *heiau* which is located in the cane fields below the ditch. It is described as measuring 40 x 60 feet. He reported that all of the interior structures had been destroyed, and he had not been able to find out what it had been named (*ibid.*).

The Statewide survey relocated Kawaialoa *Heiau*, but was unable to locate the smaller, unnamed one. Another indigenous site that the survey documented was the Olowalu Complex (site 50-50-08-1200). The site lies about 0.5 mile mauka of Highway 30 (Hanaopi'ilani Highway) on the north side of Pu'u Kilea. The complex is made up of

2 features—the Olowalu Petroglyphs and a natural rock overhang at the base of the cliff, which was probably used as a shelter (HRHP, Connolly, 1973)¹¹.

The rock overhang was excavated by Elspeth Sterling in 1962. It was given a Bishop Museum site number—M-4. It is documented as follows (Sterling, 1998, pp. 26-27):

"Description: The main part of the sheltered bluff runs about 60 feet mauka-makai and forms about 12-15 feet from the wall to the irregular sloping edge. It is about 20 feet up on the side of the hill from the road. It appears the water has run through with enough force to leave the rock base floor and forming more and more shelter under the overhang. Although Olowalu receives very little rain, water has in some way run off the cliff and through the shelter.

Makai of the main area the bluff slopes down to a little open terraced area about 3' x 5' against the wall of the bluff. Makai and below this is another level somewhat protected area. Both of these produced no material except an occasional shell which had washed in.

On Tuesday December 11, Lyman Harada and Larry Windley accompanied me. We set up the grid which was rather extensive. This was with high hopes, not so much for the interior floor as for the outer edge.

We first sifted through the dirt dug out by a previous excavator. This produced some shell, kukui, oil or sugar cane leaf, obsidian, Hawaiian diamonds, etc. We then dug the disturbed area which is G-18, G-19, G-10. This produced more of same material with addition of a coral file and kanane pebble. The bone point was picked up in G-18, lying on the surface of excavated depression.

The F line marks more or less the interior floor of the shelter. This floor consisted of rock or gravel and occasional water worn stone. The material was not found generally throughout the floor but only in pits of ash which went down through the gravel to 12 inches.

We tried E-18 which is toward the outer edge. We had to dig through about 6 inches of soil until we reached ash where we found the same type of material although this appeared older. At the end of the third day we decided there was no reason to continue with the digging.

Our conclusion is that the area was not lived in but merely used as a camp site or resting place.

The bluff (at this time of year) affords shade from the sun until mid-afternoon. However, a light rain fell Wednesday night and the whole shelter was damp except for a small spot under the lowest overhang....

We believe the early campers camped on the outer edge and as the floor eroded away they were able to move further in. The material was not scattered throughout the floor which was rock and gravel... but found only in ash fire pits which extended down 12 inches through the gravel.

The material continued to produce little variety and practically no artifacts, tools or variety in food remains.

¹¹ Subsequently the Olowalu rock shelter was given site number 50-50-08-1201.

There was no evidence of post-European occupation, which caused us to wonder if the shelter ceased to be used when the trail through Olowalu to Iao fell into disuse. Without the present trees there is probably a good view out over the plains. Perhaps army look-outs camped at the spot.

According to the HRHP short form (Connolly, 1973), the northern, sheer cliff face of Pu'u Kilea, is covered with over 70 petroglyphs in two areas. At the time of the Statewide survey the site had been turned into a small park next to the access road. A viewing platform had been erected in Area 1. Here the petroglyphs extended about 8 meters across, and were situated from 1 to 4.7 meters up the rock face. Area 2 lies about 15 meters south of Area 1, and is adjacent to the road. Here the petroglyphs extend along the cliff, and are placed on the large rocks in front of the cliff for about 60 meters. They extend up the cliff face from 0.5 to 3.3 meters. In Area 1 there are at least 41 figures, included human forms with stick and triangular bodies; animals (probably dogs and horses); circles; a sail, and other indistinct forms. They range in size from 2 x 2 cm. to 35 x 55 cm. In Area 2, there are at least 31 petroglyphs. The figures here include human forms with stick and triangular bodies, historic writing, animals including dogs and horses, a figure resembling a coffee pot, a large fish or whale, a figure with five lines radiating from the head, an outrigger canoe with sail, and many indistinct forms. These range in size from 4 x 6 cm. to 40 x 40 cm. One of the historic forms, early Hawaiian writing, measures 80 cm. by 10 cm.

It is noted in the 1973-74 survey that the petroglyphs had been vandalized. Some had been covered with paint, chalk, crayon and charcoal. Also modern graffiti and profanity, along with "poor attempts to imitate the early Hawaiian petroglyph forms" (Ibid.) had been added. This desecration was not mentioned in 1962, when the Bishop Museum undertook excavations in the adjacent rock overhang shelter.

The petroglyph site was given valuable status, for the State Registry, and a hand written note also indicated that it was a "National Register quality site", but it would have to undergo a cleaning program to remove the paint and other substances that have been recently added. It also recommended that complete and accurate data should be recorded on all petroglyphs at this site (Ibid.).

Two historic sites were also identified during the statewide survey—the Historic District associated with Olowalu Sugar Company mill (Site 50-50-08-1602) and the Olowalu Stone Church ruins at Mopua (Site 50-50-08-1603).

The Olowalu Historic District (Olowalu Sugar Company Mill site and associated residences) was discussed in the previous section. The Church ruins site (Site 1603¹¹), is described as follows (HRHP, Wright, 1974):

¹¹ This church lies in the mauka study area of Olowalu (Phase 2). Additional information can be found in that report. Its location is shown on the historic map from 1881 (Map 4) of this report. It appears that the north arrow is point directly toward it.

"The general shore district of Olowalu was a small Hawaiian village of farmers and fishermen, located about half way between Lahuina and Maaalaea, toward Wailuku. A mission station from Lahuina was established at Mopua in 1835, and in 1837 a small adobe and thatch roof church was built. Early in 1858, work began on the construction of a stone church and by May, 1859, the walls were completed. The exact date of the finishing of the church is not known. Originally it may have had a thatch roof, but a previously unidentified photograph, most likely taken about 1890, shows the church with a shingled gable roof and short square steeple.

Members of the church voted in 1868 to become an independent church, keeping that status until 1897 when again the church affiliated with the mother church in Lahuina. (The usual founding date of May 10, 1868, relates to this) At some time prior to 1930 the church was abandoned. Clearing and reconditioning work was done in 1960 by an ecumenical work group. ...

The church ruins stand on a slightly sloping plain with the mountains to the northeast forming a spectacular background. On the W side of the ruins are remains of a cemetery, heavily overgrown. The walls of the church are 30 by 60 feet, parts being collapsed, and the loose rock has been piled outside the S entrance. Three window openings are indicated for each side, with one at the N end, the altar end. Constructed of fieldstones set in mortar, with quoins of coral blocks cut from the reef off Hakiit Point, the church once was a fine example of a Protestant mission church."¹⁵

Launiupoko

In 1990, Paul H. Rosendahl, Inc. (PHRI) conducted an archaeological inventory survey of a 440-acre parcel for a proposed golf course in Launiupoko ahupua'a (Graves and Goodfellow, 1991) which lies to the north of Olowalu. During the fieldwork, 47 sites consisting of over 70 component features were identified. The sites were placed in the following formal types: terrace, clearing pile, agricultural plot, rock pile, canal, retaining wall, flume, flaked boulder, alignment, rock shelter, C-shape, wall upright, L-shape, petroglyph panel, corral, fence, cairn, and road. They fell into the following functional types: agriculture, animal husbandry, habitation, temporary habitation, and marker.

The findings were presented in terms of functional categories. The agricultural complexes predominated, consisting of 60% of the sites identified. These formal feature types included terraces, agricultural plots, rock clearing piles, cleared areas, canals and retaining walls. The terracing is extensive in Launiupoko. Much of it is interpreted as being historic, and connected with Pioneer Mill large-scale plantation agriculture. Other, smaller, agricultural plots found in the project area were probably used for horticultural activities, and consist of small dirt patches, enclosed by stacked-rock walls and windbreaks (Ibid., p. 10).

¹⁵ It should be noted that in 1930, the shingled roof caught fire from a cane fire spark and burned. The Olowalu Sugar Company apparently agreed to provide the labor to replace the roof, if church members would supply the material. However, the changes that occurred when Pioneer Mill bought out Olowalu Sugar did not include the reconstruction of the church roof (THE MAUI NEWS, November 24, 1996).

The habitation sites comprise 19% of the sites, and consist of rock-filled terraces, uprights, overhangs, small C and L-shaped structures, and rock alignments. These sites often contain agricultural features within them. They tend to be larger, with a variety of features present (Ibid., p. 12). The rock overhang shelters are found primarily on the north and south sides of Launiupoko Gulch.¹⁶ The sites classified as having an animal husbandry function, are historic, as are the roads.

The subsurface testing at habitation and agricultural sites yielded a series of radiocarbon dates that fell into a range from c. 1200 to 1650 AD. The authors conclude that many of the precontact sites were modified or destroyed by historic plantation and ranching activity. No doubt, the water system developed in precontact times was modified to suit the needs of sugarcane production, as was the extensive system of terraces.

In 1998, the site was revisited by PHRU after it was purchased by Launiupoko LLC. The report prepared earlier had never been submitted to SHPD for review. There were several unanswered questions that needed addressing, and 6 additional days of field work were carried out from December 1997 to March 1998 (Graves, Goodfellow, Haun, April 1998).

The authors conclude that the pre-contact population of Launiupoko *ahupua'a* was probably limited. This is supported by the lack of *kuleana* land claims made during the Mahele (Ibid., p. 9). They proposed that there probably had been permanent habitation settlements along the coast, while the alluvial plains and drainages were used for agriculture, and would have had temporary habitation sites associated (Ibid.).

This model of settlement had to be revised. They state (Ibid., p. 36):

"The model predicted that permanent settlement would be focused at the coast. The upper portion of the project area appears to be the lower extent of prehistoric settlement on the inland, better-watered portion of Launiupoko Ahupua'a. This settlement probably occurred between the 1200s and 1400s. Temporary habitation sites associated with agriculture were predicted by the model. The project results date temporary habitation sites to the 1400s and later, with three age ranges overlapping the late 1600s ..."

Although the age ranges for two habitation sites extend to the 1900s, the absence of associated historic materials indicates the sites were probably not occupied later than the early 1800s. Thus, as predicted by the model, traditional sites were probably abandoned as people moved to new economic centers, in this case the coastal communities such as Lahaina."

Ukumehame

¹⁶ Site 2672 is a modified rockshelter with a petroglyph panel and rock-filled terrace, quite similar to the Olowalu Complex (Sites 1200 and 1201). However, the petroglyphs are in the dipline of the overhang and have been significantly eroded over time (Graves and Goodfellow, p. 29).

On the southern side of Olowalu is the *ahupua'a* of Ukumehame. This is another large, alluvial fan which spreads out below Ukumehame canyon. It was surveyed in 1997 by Cultural Surveys Hawaii (Devereaux, et. al., 1997). There were 16 sites and site complexes identified within the 440-acre project area, most in higher elevations near the mouth of the canyon. They were grouped into class-types such as agricultural, habitation, *heiau*, petroglyphs, human graves, irrigation ditches, and a basalt quarry.

Two *heiau*, Hiki'i (Site 50-50-08-2), and Ukumehame¹⁷ (Site 50-50-08-3) were previously noted by Walker in the 1930 survey. The latter was thought to contain human gravesites, and is in relatively poor condition. Hiki'i *Heiau* has been recently reconstructed by volunteers connected to Ukumehame resident families.

Maui Electric Company's Lahaina to Maalaea Transmission Line

The transmission line is located between 0.9 and 2.0 miles *mauka* from the coastline. It extends through the *ahupua'a* of Waikapu, Ukumehame, Olowalu, Launiupoko, Polanui, Pohaiki, Waimea, and Kuia. An archaeological inventory survey was conducted on the 14.7-mile long corridor in 1994, by Cultural Surveys Hawaii (Robins, Folk and Hammatt, 1994). A total of 34 archaeological sites were identified in the project area—all of which were evaluated as significant archaeological resources (Ibid., p. 109). Subsequently, and additional survey of access roads, and monitoring of the pole replacement process was conducted in 1996 and 1997—also by CSH (Devereaux, Colin and Hammatt, 1997).

At Olowalu the transmission line crosses the *mauka* portion of the study area at ca. 350 to 400 feet AMSL (poles 40-56). Specific reference to Olowalu is made in the discussion of restoration efforts to the areas that were impacted by access road construction and power pole excavations. The 2 poles mentioned in Olowalu are poles 31 and 34 (Ibid., p. 77), but these do not appear to be associated with Olowalu. The maps included at the end of the report show that there are 2 sites (Sites 3180 and 3172) which are present in the Olowalu stream area, beneath the power lines between poles 52 and 54 (Figure 2).

Site 3180 is identified as a cattle wall that has been attributed to ranching. Its condition is rated fair to good, and it occurs at 240-400 ft. AMSL. It is described as follows (Robins, Folk and Hammatt, 1994, p. 82):

"Site -3180 is a wall which is crossed by the preferred alignment just beyond the west side of Olowalu Stream. The wall extends along the mauka perimeter of the cane fields, and like Sites -3167 and -3170, was probably constructed to keep cattle outside of the cane fields and kuleana. The terrain is rocky and slopes moderately to the southwest. The wall is stacked and vertically faced with basalt boulders. It measures an average width and height of 1.0 m. (3.3 ft)."

¹⁷ The name was given by DLNR archaeologists during the 1973 statewide survey (Devereaux, et. al., 1997, p. 36).

The report does not state its length.

Site 3172 is identified as a canal, associated with cane irrigation. Its condition is listed as excellent, and the linear extent was not determined. It was noted at the 200 foot elevation level. It is described as follows (Ibid., p. 78):

"Site 3172 is a historic ditch located on the southeast side of Olowalu Stream. The terrain southeast of the ditch descends steeply to the Olowalu stream bed. The stream bed was dry during the survey. Vegetation consists of an assortment of introduced fruit trees and grasses."

The ditch is constructed of cemented stone on its southeast side and concrete on its northwest side. It measures approximately 0.8 m. (2.6 ft.) by 0.5 m. (1.6 m.)[sic.] deep and is currently used for cane irrigation."

Settlement Patterns and Expectation of Findings Precontact to 1850s

The *makai* and *mauka* portions of the study area represent the valley, alluvial fan and mouth of Olowalu Stream, and typically include several environmental zones. Archaeological studies in the stream gulches and colluvial slopes in both Ukumehame and Launiupoko *ahupua'a*, situated to the east and west of Olowalu, provide interesting comparisons. Evidence for the pattern of irrigated agricultural practice occurs in the stream narrow upper valleys and stream gulches in both cases. At lower elevations, on colluvial slopes, dry land cultivation—probably sweet potatoes—was practiced in Launiupoko. However, neither area was studied along the coast line.

No archaeological studies have been done in the coastal area that stretches from Ukumehame and Launiupoko. However, given the general settlement patterns associated with the *ahupua'a* system found elsewhere in the Labaina District, one would expect to find traces of precontact permanent occupation near the shoreline (Graves, Goodfellow and Haun, 1998). These would typically be found at stream mouths, and would be habitation sites associated with activities concerned with marine resource exploitation, and possibly agriculture and aquaculture (i.e. taro pondfields and fishponds) as found in Labaina. The features that might remain would take the form of stone house platforms, canoe *luka*, fishing shingles, rock alignments, and so forth. Subsurface features would likely be occupation floors and fire hearths, and burials. A probable fishpond is present in Olowalu, in the *mauka* portion of the study parcel, as shown on Maps 4 and 6. It is probable that this dates from precontact times. If such features were present in the *makai* study area, the subsurface manifestations would be in the form of gley soil deposits, behind sand berms near shore.

The distribution of Land Commission Awards in the *ahupua'a* show taro lands following the stream bed from the narrow upper valley floor, across the colluvial slopes

to the mouth of the stream (Map 6). The LCAs shown on the *makai* portion are all identified as houselots, some of which are connected, with taro lands in the upper valley. What might remain of these habitation sites would be stone walls, house foundations, etc. Subsurface indications could be midden deposits, house floors or occupation surfaces.

Since most of the *makai* study area was cultivated for growing sugarcane, the likelihood of surface remnants seems unlikely. However, it is possible that remnants of such features could be present on the fringes of cultivated fields.

Plantation Era

The known sites on the *makai* study parcel are associated with the Olowalu Sugar Company complex. The mill itself was dismantled in the early 1930s, and only some of the stone foundations remain. The site was documented during the Statewide Inventory survey in 1973, and additional archival research is being conducted by Ms. Gail Bartholomew Ainsworth at the present time. A small settlement consisting of houses of plantation *luna* also exists on the parcel, along with cane fields, roads and a water delivery system.¹¹

¹¹ The archival research on the Plantation era had not progressed very far at the time of the writing on this report. More detailed information on the Plantation era settlement pattern can be found in the Olowalu *Mauka* report (Phase 2) (Fredericksen and Fredericksen, February, 2000) of this archaeological inventory survey. Appendix C of that report contains more maps and photos, along with census information and a chronology of Olowalu School and plantation management.

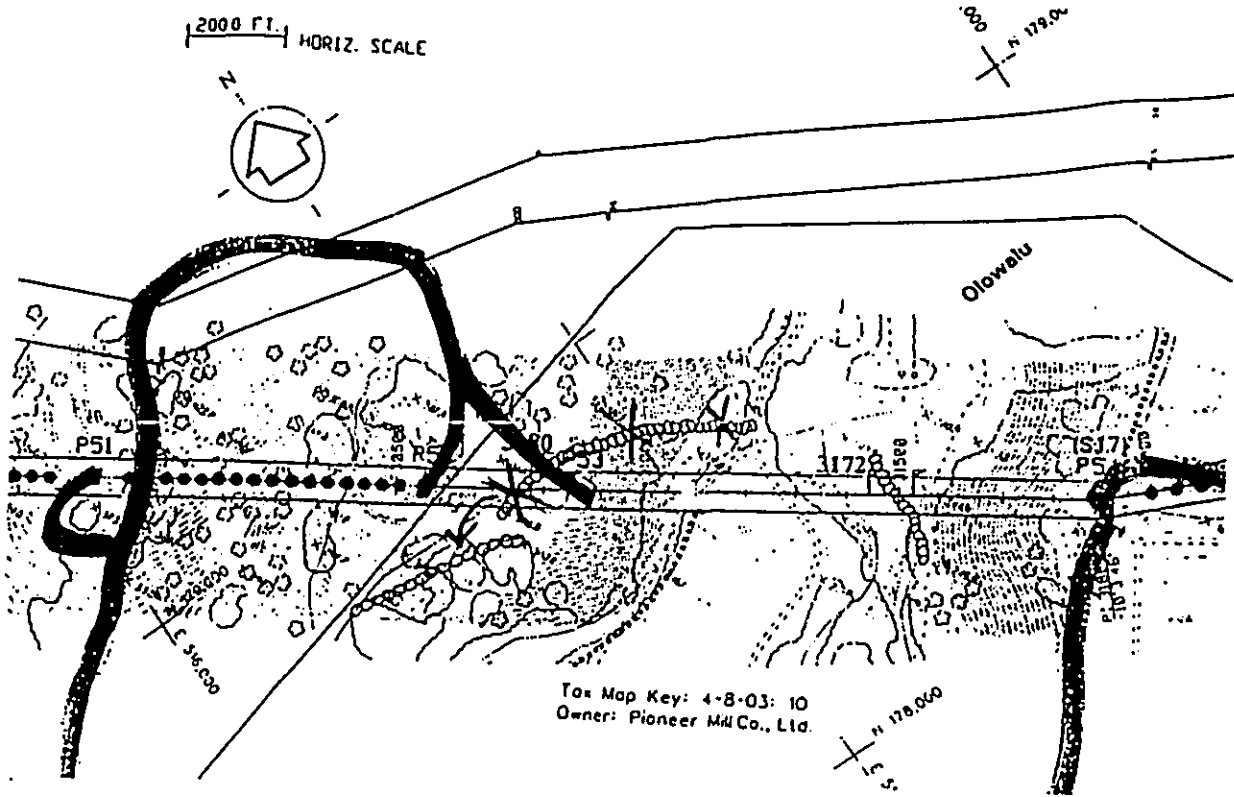
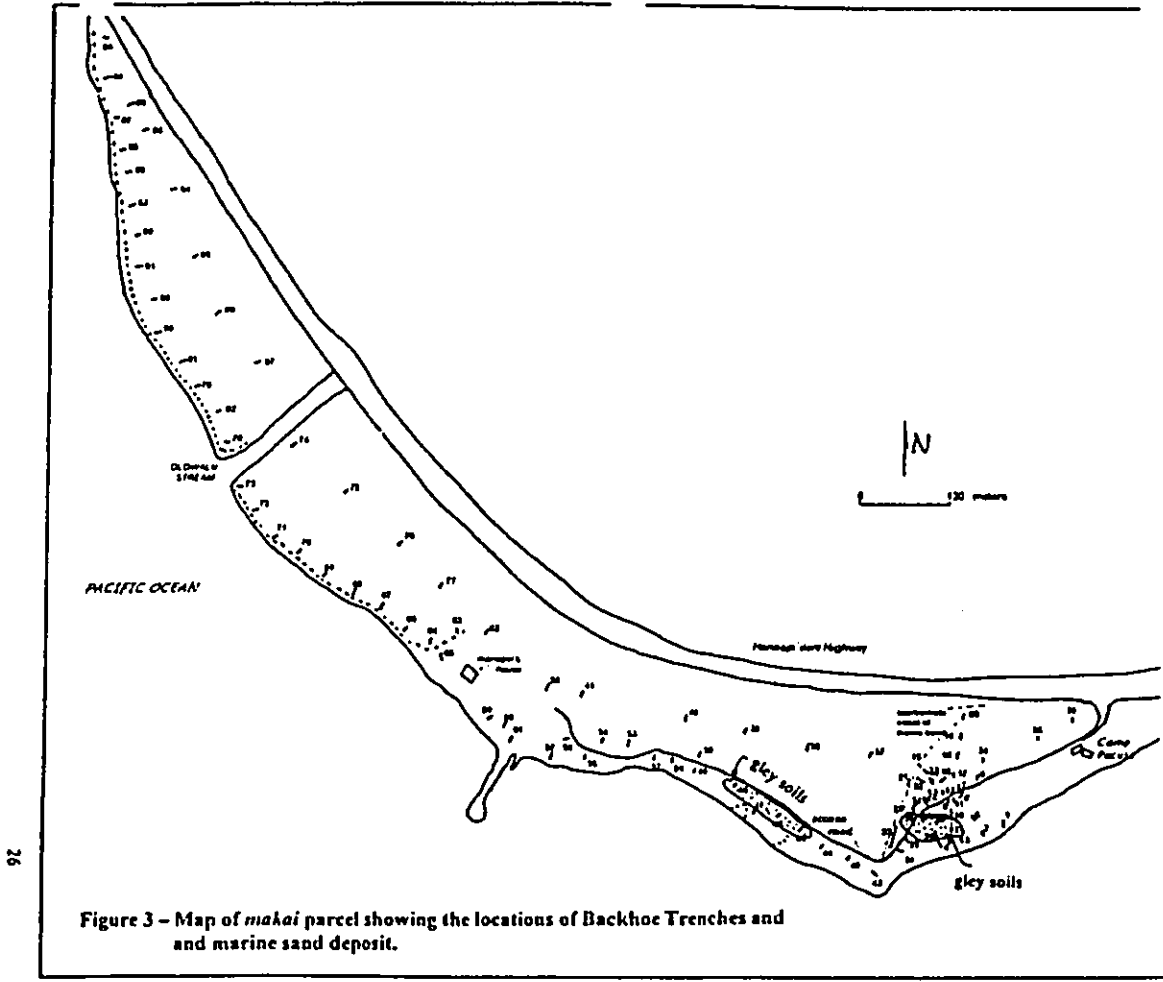


Figure 2 - Reproduction of map from Maui Electric report (Robins, Folk, and Hammatt, 1994) showing Olowalu sites.



ARCHAEOLOGICAL FIELD METHODS

Fieldwork was conducted by Xamanek Researches personnel during October, November and December of 1998. Research team members included Marceal Ball, Hugh Coffin, Mark Donham and Erik Fredericksen. Erik Fredericksen was the field director, and the overall project coordinators were Walter and Demaris Fredericksen.

The archaeological inventory survey was carried out in 2 phases. A pedestrian walkover of the c. 73-acre parcel was first conducted. Surface sweeps were oriented roughly N-S, using a 5 meter spacing between survey members. Ground visibility ranged from poor to good, depending upon vegetative cover. In general, about half of the beach strand area along the 2-mile coast was densely vegetated. In addition, portions of the abandoned sugar cane fields contained up to 2-meter tall ratoon (not cultivated) cane plants. Three surface sites were found during this phase of the inventory survey. In addition to the ruins of the Olowalu Sugar Mill (Site 1602). Descriptive notes were taken in the field and photographs were taken with color film.

Subsurface investigation, mapping and site evaluation formed the second phase of our inventory survey. Site maps were prepared with metric measuring tapes and hand help compasses. Representative backhoe trench profiles and all test unit profiles were recorded. It was not possible to closely inspect some trenches because of safety concerns. A total of 97 backhoe trenches (Figure 3), 3 backhoe scrapes, and 6 manual test units were utilized to investigate subsurface conditions on the project area.

The 6 1-meter square test units were excavated by stratigraphic layers, using 10 cm. levels in thicker strata. All soil was screened through 1/8-inch hardware cloth. Several bulk samples were collected and screened in the laboratory. All material culture remains were collected in the field for subsequent analysis. Laboratory work was conducted on Maui, and none of the cultural materials, except for 2 charcoal¹⁰ samples, were transported off island. Common laboratory methods were used in the analysis of collected material.

¹⁰ Charcoal radiocarbon samples were collected in the field in bulk, and separated for surrounding material by flotation. The charcoal was then dried and placed in aluminum foil and sent to Beta Analytic, Inc. for radiometric analysis.

ARCHAEOLOGICAL FINDINGS

A total of 6 previously unrecorded sites were located on the *makai* project area during the inventory level survey. These include 3 surface, 2 subsurface sites, and a burial area. Site 50-50-08-4693 is interpreted as a burial ground, probably dating from the precontact period. Site 4694 consists of a coastal rock structure with an associated subsurface cultural deposit. Site 4695 is a stone platform/terrace structure at the shoreline near the western end of the project area. Site 4696 consists of a segment of the old Government Road. Site 4697 appears to be an early post-contact habitation area that lies in the vicinity of the Site 4693 burial ground. The last site (Site 4698) located on the *makai* project area is interpreted as a late-precontact habitation area. In addition to the sites mentioned above, the project area also contains the ruins of the Olowalu Sugar Mill (Site 1602). Refer to Tables 2 through 7 for manual excavation results, Table 8 for backhoe trench results, and Table 9 for site significance assessments.

Site 50-50-08-4693

This site lies near Hekili Point, within c. 50 meters of the existing coastline (see Photos 2 through 6). It is interpreted as a probable precontact burial ground. An existing, unpaved access road separates the abandoned sugar cane field to the north and the wooded coastal strand to the south (Figure 4). The general area *makai* of the access road is vegetated with salt-tolerant species such as Indian flabane (*Pluchea indica*), salt bush, *kiawe* trees, opiuma trees, and various alien grasses. An unpaved access road cuts through the dense vegetation to the coast.

On 13 November 1998, human remains were located by Mark Donham and Erik Fredericksen. An informant, who wished to remain anonymous, had indicated on the previous day that there was an area where he recalled seeing "bones" in the past. Careful inspection along the *makai* berm of the cane access road yielded 3 cranium fragments and 1 femur shaft fragment. Subsequent inspection of the area yielded a surface scatter of previously disturbed human skeletal materials. Following consultation with Maui/Lana'i Islands Burial Council members, it was decided to conduct subsurface testing to determine the presence of burials.

A series of backhoe trenches were then placed in the vicinity of the surface scatter in order to assess subsurface conditions (Figure 5). Two backhoe trenches (BT 8 and 13)

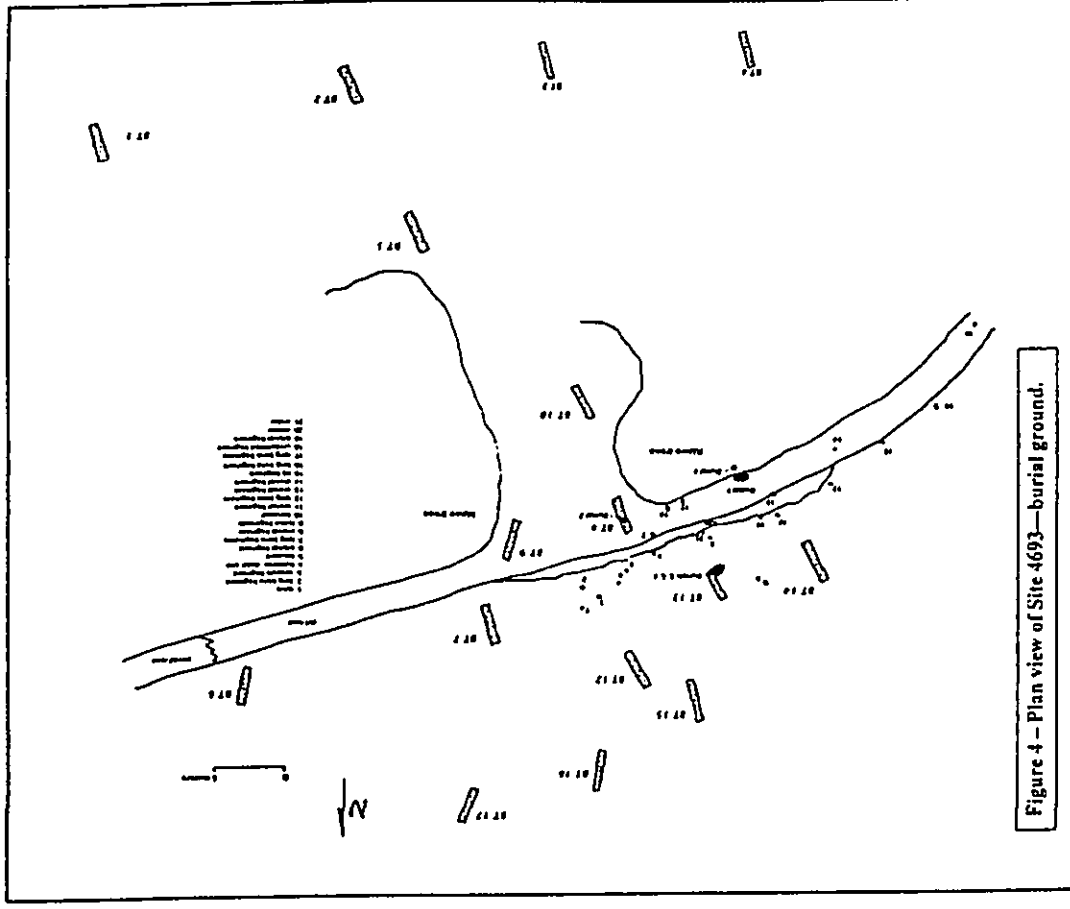


Figure 4 — Plan view of Site 4693—burial ground.

exposed *in situ* human remains. In addition, a single back-blade pass along the road located a heavily impacted *in situ* burial. Given the presence of these burials, we halted mechanical testing in the immediate area. Manual investigation was then undertaken on the burial in the road (Burial #1), and on the remains that were located in BT 8 and BT 13. Subsequent investigation yielded 3 additional finds of human skeletal remains.

Find #1 (Burial #1)

This first burial was found on 19 November 1998 by Hugh Coffin and Mark Donham during a single back-blade pass on the sugar cane access road. Burial #1 was located within 5 cm. of the existing surface of the graded road. This set of human remains has been heavily impacted over the years by activities associated with the maintenance of the road and by vehicular traffic. The remains were partially exposed and mapped (Figure 5; Photo 3).

While this burial has obviously been impacted by past activities, it is nevertheless, interpreted as remnant of an *in situ* burial. The presence of a partially articulated hand supports this interpretation. Further work on these remains was halted due to the deteriorated condition of the skeletal materials. Burial #1 was covered with screened sand and the road was blocked off with large tree branches.

Find #2 (Burial #2)

The second find was also made on 19 November 1998. Burial #2 was located by Hugh Coffin and Erik Fredericksen during the excavation of a stratigraphy trench (BT 8) [Figures 6 and 7; Photo 12]. The remains of an adult were found c. 80 to 85 cmbs., at ground water level. The backhoe bucket dislodged a portion of the burial when it broke through a large *kiawe* root. The inadvertently disturbed remains were subsequently recovered from the back dirt pile and from the trench floor.

This burial is located in a pit that was truncated by the backhoe when it broke through the root. Examination of the screened pit fill did not yield any post-contact material culture remains. Burial #2 appears to represent a precontact interment. The burial pit extended from a coarse, very pale brown (10 YR 8/2) marine sand deposit into the underlying very pale brown (10 YR 8/4) cemented marine sand deposit.

Find #3 (Burial #3)

This find was made in the abandoned cane field by Marciel Ball and Hugh Coffin on 20 November 1998. Backhoe Trench 13 was less than 30 cm. deep when human skeletal material was noted (Figure 8). Closer examination revealed pit-outline in the trench containing a cluster of metacarpals and phalanges, which appeared to be from the same individual. Manual excavation into the southeastern face of BT 13 located a right ulna and radius, along with a right femur and fibula. The ulna and radius lay below the plow-zone and apparently had not been disturbed.

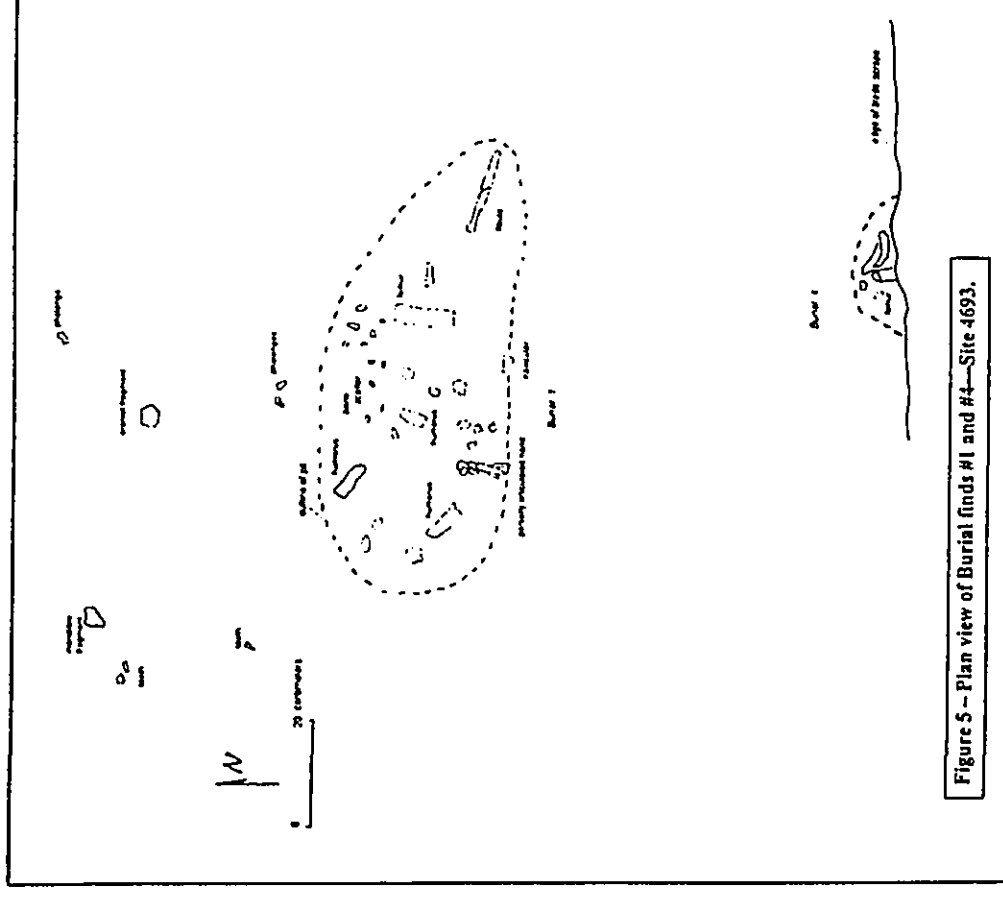


Figure 5 - Plan view of Burial finds #1 and #2—Site 4693.

Find #4 (Burial #4)

This find was made by Mark Donham on 21 November 1998 as he was completing mitigation work on the Find #1 burial. Find #4 lies c. 1 meter south of Find #1 and is c. 40 cm. below the berm surface on the *makai* side of the access road (Figure 5). A clear pit outline was noted and only a small portion of the burial was exposed. No effort was made to further expose it because of a clear commitment from Olowalu Elua Associates to create a burial preservation area on this part of the project area.

A small portion of a femur appears to have been shattered by past road maintenance activities. However, the overall condition of the remains appears to be good.

Find #5 (Burial #5)

Finds #5 and #6 were made by Mark Donham on 24 November 1998 while he was investigating Find #3 in BT 13. These finds also lie in the abandoned sugar cane field and have been disturbed by earlier plowing and cultivation.

Find #5 lies c. 2.5 m. to the west of Find #3. Much of this individual skeleton has been impacted by the plow zone, as it lies between 25 and 35 cm. below the existing surface. The lower vertebral column and much of the pelvis are articulated (Figure 8). The left radius, and the right ulna and radius were also found, along with several scattered hand bones and 2 articulated phalanges. A fine-mark imprint was clearly visible in the sand, indicating that the upper portion of the find was likely displaced by mechanical plowing. It is possible that the scatter to the north of Find #5 is part of the *in situ* individual.

A total of 4 lithic flakes were found resting directly on top of the lower arm bones on the *in situ* portion of Find #5 (Figure 8). These flakes ranged from 9 to 18 cm. in length and appear to represent single-use artifacts. The labor expended to produce these artifacts appears to have been minimal. It is interesting to note that none of the other long bones of this individual were located. It may be that the lithic flakes were used to separate the major long bones from the individual, and then discarded on what remained of the burial.²⁰ The absence of the long bones could be explained as well by the extensive disturbance the burial has sustained.

Find #6 (Scattered remains)

Find #6 was located c. 1.5 to 2 meters northwest of Find #5. This scatter contained a c. 18 cm.-long portion of a radius in addition to other unarticulated skeletal

²⁰ Human long bones were used as raw material for fishhook manufacture. Peter Buck (Te Rangī Hiroa) states: "Human long bones, particularly the thigh bone, were cut in lengths probably with sharp-edged pieces of stone flakes. The lengths were cut into rectangular pieces to correspond with the length and width of the proposed hook." (1937, Volume VII, p. 324) Again he states that when burying an individual "secrecy was observed, because it was feared that the bones might be stolen by an enemy to make fishhooks or to ornament stop bowls and so degrade the deceased and his family." (1957, V. XIII, p. 569).

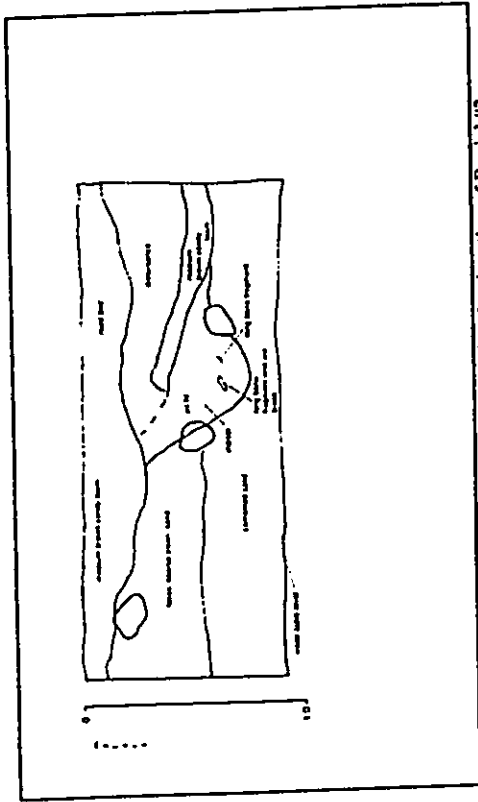


Figure 6 – East-northeast face profile of BT 8, showing location of Burial #2.

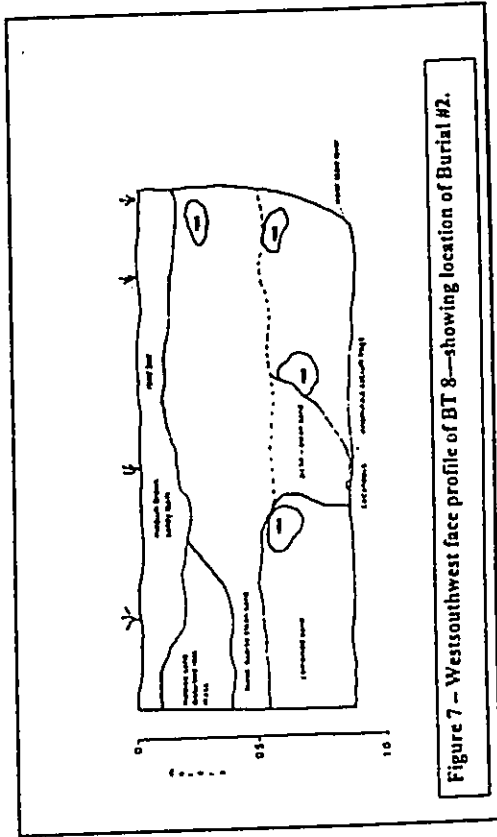
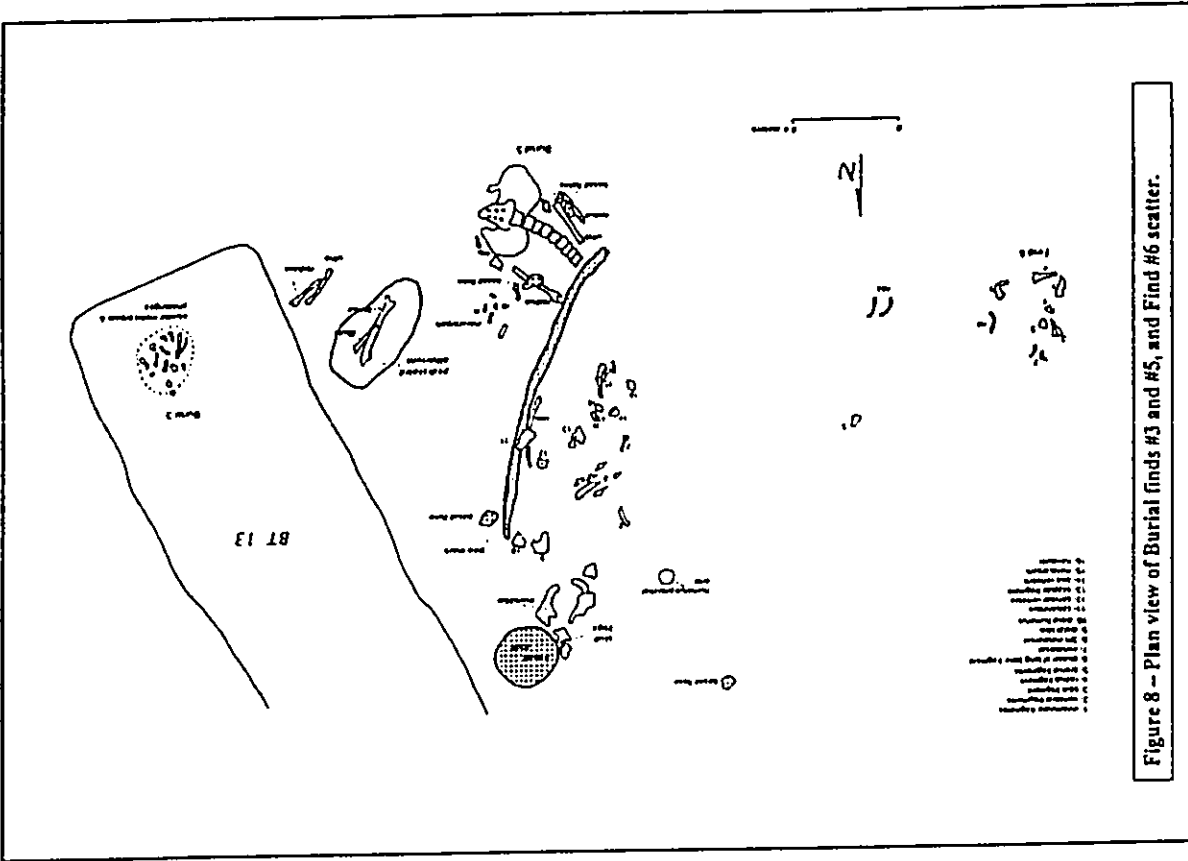


Figure 7 – West-southwest face profile of BT 8—showing location of Burial #2.



fragments (Figure 8). This find was initially thought to represent a disturbed portion of an *in situ* burial. However, Find #6 is now interpreted as a scatter of human remains. The previously disturbed remains are located in the plow zone within 20 cm. of the existing surface.

Discussion

This portion of the project area contains relatively thick marine sand deposits which were probably exposed during precontact times. Subsurface investigation yielded articulated portions of at least 5 individuals. Find #6 is interpreted as scattered remains. Find #2 was the deepest of all subsurface finds and did not appear to have been impacted by post-contact agricultural activities. Find #4 was much nearer to ground surface, but appeared to be intact. All other subsurface finds had been heavily disturbed.

The 6 subsurface finds appear to represent indigenous burials. Unfortunately, post-contact agricultural activities have severely impacted Finds #1, #3, #5 and #6. The other burials are more intact, and Finds #2, #3 and #4 were contained within pit features. Indigenous lithic tools were found in association with what remained of Find #5. No post-contact cultural materials were associated with any of the finds. Sex and age determination for the burials was not possible from the fragmented remains recovered, and the MLIBC requested that no further excavation of *in situ* portions be undertaken. The borders of the burial preserve are based on the burial council's recommendations

The proximity of the disturbed finds to the existing surface, and the distribution of human remains on the surface of the sugar cane field, suggests that additional burials are likely to be present. Mr. Sonny Waiohu, a long-time employee of Pioneer Mill, remembers seeing "bones" in this part of the *makai* fields on several occasions. In addition, we located 3 of the finds with the partial excavation of 2 backhoe trenches and a single surface scrape. It seems quite probable that additional burials are located in the immediate area and in the vegetative undergrowth *makai* of the access road.

Site 50-50-08-4694

This site is located on Hekili Point (Photos 10 and 11). It rests c. 3-4- feet AMSL and lies within 20 m. of the existing high water mark in the Beach Reserve. Alien vegetation observed in the vicinity of Site 4694 included *Kiawe* and *Opiuma* trees, salt tolerant Indian fleabane, and various grasses and succulent weeds. The site consists of an L-shaped wall of waterworn basalt cobbles and a few small boulders (Figure 9; Photo 10). In addition, several coral cobbles were noted in the structure wall.

This structure ranges from 30 to 60 cm. in height and is up to 1.2 meters wide. It is c. 10 meters E-W by c. 9.5 meters N-S on the west leg. The northern portion of this leg appears to have been impacted by past bulldozing activities likely associated with the nearby abandoned sugarcane field. The eastern end of the site did not appear to have been mechanically damaged. The overall labor expenditure for the construction of this structure was moderate to high, and its overall condition is fair. However, a portion of

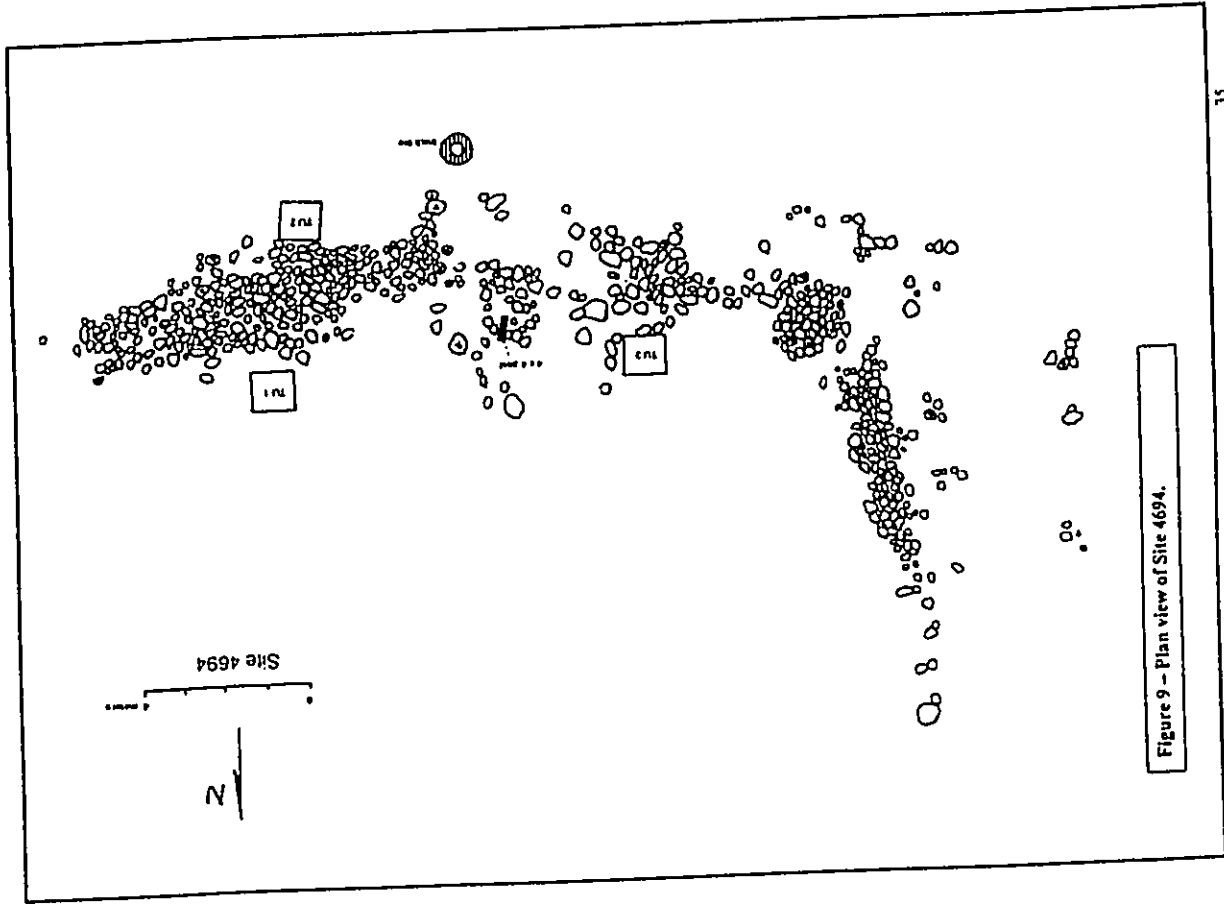


Figure 9 - Plan view of Site 4694.

this structure appears to have been impacted in the past 50 years. No post-contact material culture remains were noted in the structure of the site. However, a 4 x 4-inch timber was apparently placed in the rock structure in modern times. The dimensions (3 1/2 x 3 1/2 inches) of the post and its generally good condition suggest it was put there in recent times.

A total of 3 test units were utilized to investigate subsurface conditions. No subsurface features were encountered in any of the 1-meter square test units.

Test Unit 1

This first test unit was excavated on the north side of the structure. A relatively low amount of material culture remains were present in this c. 1 meter deep unit. Four layers were encountered before excavation of TU 1 was halted (Figure 10).

Layer 1 was 17 to 19 cm. thick and consisted of dark brown sandy loam (10 YR 3/3). This humus rich soil contained c. 30 waterworm pebbles, a few pieces of waterworm coral, scattered charcoal (7.9 g.), and a single *pipipi* (*Nerita picea*) shell. No other material culture remains were present in this loose dry stratum. The soil boundary with the underlying stratum was abrupt and clear.

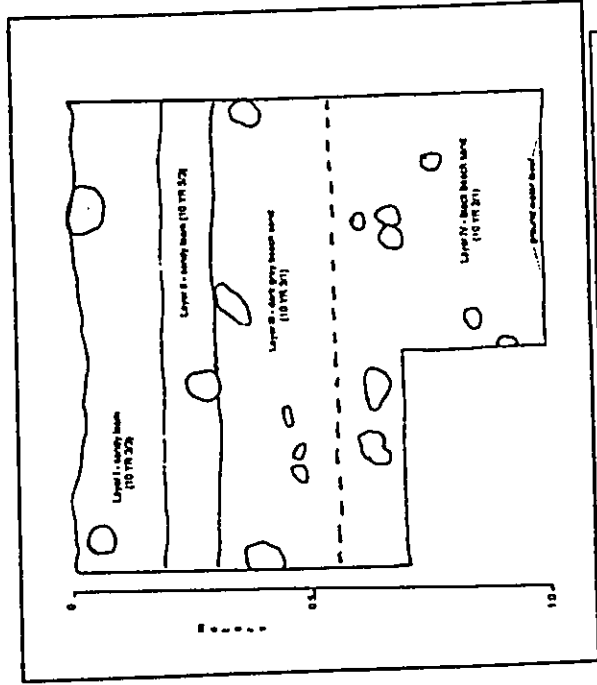


Figure 10 - North face profile of Test Unit 1—Site 4694.

Layer II was up to 10 cm. thick and extended to 29 cmb. This brown sandy loam (10 YR 5/3) contained relatively large amounts of waterworn basalt cobbles and pebbles (c. 15% by volume). In addition, over 80 pieces of waterworn coral were noted. Small amounts of shell midden were recovered, along with 3 flakes of volcanic glass (3.6 g.), 2 unworked basalt flakes (4.3 g.), a Maui "diamond" (0.1 g.) and a *Puka* shell (0.1 g.). This last item is interpreted as an ornament and has an enlarged hole. Floral remains were composed of 2.0 g. of scattered charcoal. The boundary separating this loose, dry stratum from the one beneath was clear.

Layer III is interpreted as a beach sand deposit. This very dark gray (10 YR 3/1) layer was up to 25 cm. thick. A low amount of material culture remains were recovered from this stratum, which included marine shell, unidentified mammal bone, and a *kukui* nut shell. In addition to the above materials beach basalt cobbles, pebbles and coral were found. The lower part of this stratum graded into a slightly darker beach sand deposit.

Layer IV was encountered at c. 52 to 55 cmb. This black sand layer (10 YR 2/1) was essentially sterile. The southwestern quadrant of TU 1 was excavated to 1 meter below surface. The ground water table was encountered about 1 meter below surface, and excavation in the unit was terminated.

Test Unit 2

This second subsurface test was excavated on the *makai*, or south side of the structure. It was intended to gain information about the subsurface extent of the wall. Low amounts of material culture remains were found in this test unit, which contained 4 strata (Figures 11 and 12).

Layer I was up to 20 cm. thick and was composed of dark brown sandy loam (10 YR 3/3). This very friable soil contained large amounts of organic material. Numbers of waterworn pebbles and coral pieces were present throughout this layer. The stacked portion of the structure wall extended through Layer I. Small amounts of marine shell, a lead pellet, and 15.2 g. of charred *Kirawe* wood were recovered. The soil boundary with the lower layer was clear and abrupt.

Layer II was a maximum of 10 cm. thick and reached a depth of 25 cmb. This brown sandy loam (10 YR 5/3) yielded c. 30 waterworn pebbles and cobbles, a few waterworn pieces of coral, an unworked piece of coral, a small amount of marine shellfish remains, and 2.7 g. of scattered charcoal. Inspection of the northern profile of TU 2 revealed that Layer II did not extend into the structure wall (Figure 12).

Layer III beach sand deposit was encountered between 20 to 25 cmb, and was up to 30 cm. thick. This very dark gray sand (10 YR 3/1) yielded low amounts of material culture remains consisting of marine shellfish, and 3.7 g. of charred *kukui* nut shell. In addition, fairly large amounts (c. 30% by volume) of waterworn beach cobbles and pebbles were present in this deposit. It was determined that the Site 4694 wall extended to c. 35 cmb. Layer III graded into Layer IV between 50 to 54 cmb.

Layer IV was composed of the common black sand (10 YR 2/1). This beach deposit did not contain any material culture remains, and excavation was halted at 60 cmb.

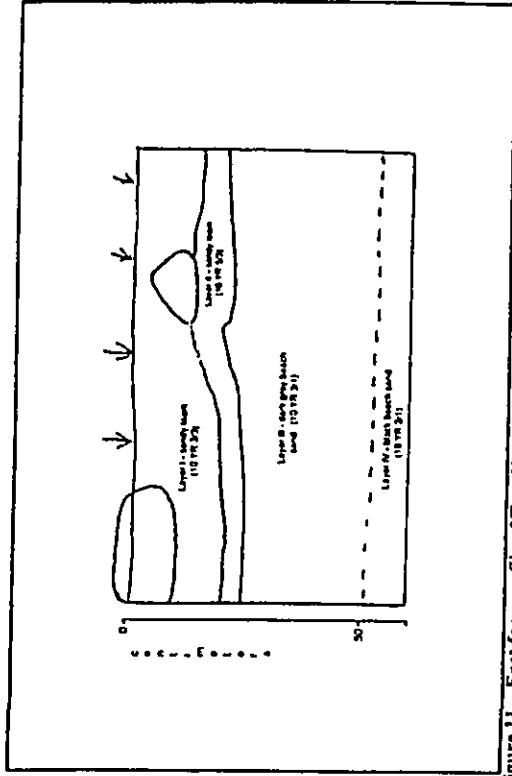


Figure 11 — East face profile of Test Unit 2—Site 4694.

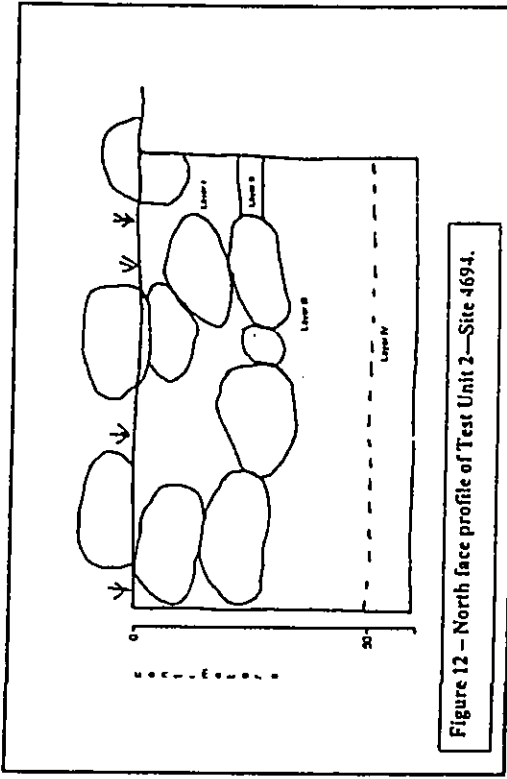


Figure 12 — North face profile of Test Unit 2—Site 4694.

This last unit was placed on the *mauka* or north side of the structure. Test Unit 3 was excavated in an attempt to recover a charcoal sample. A moderate amount of material culture remains were recovered. The same soil layers were present as were encountered in the other test units (Figure 13).

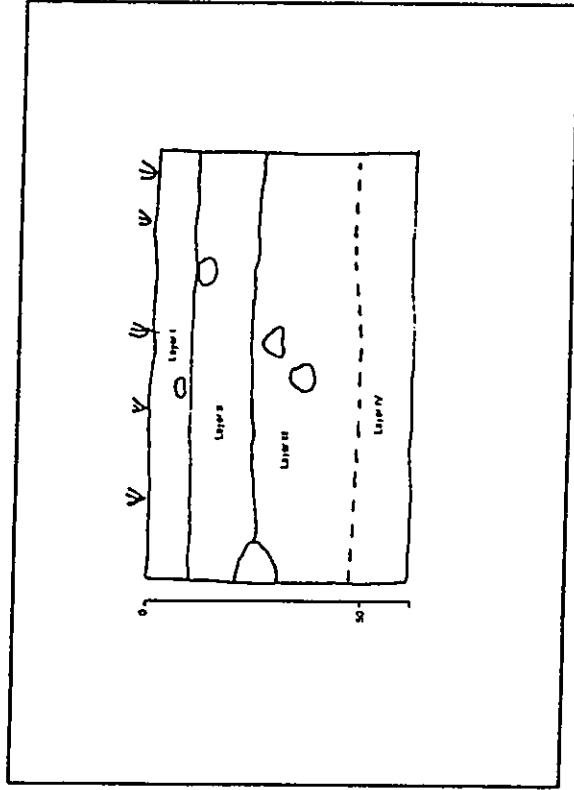


Figure 13 - East face profile of Test Unit 3—Site 4694.

Layer I was 8 to 10 cm. thick and was made up of the same dark brown (10 YR 3/3) sandy loam that was found elsewhere. A low amount (c. 5% by volume) of waterworn basalt cobbles and pebbles were present in this stratum, along with a few waterworn coral pieces. One cowrie shell (*Cypraea* sp.) was found in the layer, along with 0.7 g. of scattered charcoal, and 2 unworked basalt flakes.

Layer II deposit was somewhat thicker in this unit and extended up to 25 cmbs. The brown sandy loam (10 YR 5/3) contained low amounts of waterworn basalt cobbles and pebbles. Portable remains included 12.9 g. of marine shell, 1.6 g. of scattered charcoal, 7.9 g. of waterworn *kukui* nut shell, 1 unworked basalt flake, and 1 piece of unutilized coral.

Layer III was encountered between 22 and 25 cmbs. This very dark gray sand (10 YR 3/1) yielded low amounts of material culture remains and was up to 29 cm. thick.

Recovered portable remains included 30.4 g. marine shellfish, unidentified mammal bone, 2 unworked basalt flakes, and 2 pieces of unutilized coral. Finally, a rusted iron spike (42 mm. long) was recovered from the upper portion of Level I (22-32 cmbs.) This post-contact artifact was partially encircled by a *kiawe* root, and it appears possible that this spike could have been vertically displaced by the root. Water rounded cobbles, pebbles, and coral became increasingly common in the lower portion of the stratum. A probe was utilized to determine the depth of the Site 4694 wall below surface beyond the south face of TU 3. Structure rocks were detected to a maximum depth of c. 40 cmbs.

The black beach sand (10 YR 2/1) of Layer IV was encountered between 45 and 48 cmbs. This beach deposit yielded only waterworn marine shellfish remains and is interpreted as a culturally sterile layer. Excavation was halted at 60 cmbs.

Discussion

Investigation at Site 4694 yielded information on the subsurface extent of the rock structure itself and the 4 soil layers present. It appears probable that the structure was built on the upper portion of the Layer III deposit. Both Layers I and II appear to have formed after the construction of the feature. There was no clearly defined cultural layer located. No suitable charcoal samples were recovered to allow for radiometric dating. However, the material culture remains finds (volcanic glass, basalt flakes, *kukui*, food remains), though sparse, seem typical of precontact habitation sites. With little or no clearly associated post-contact remains present, it appears as if this is a habitation site with subsurface deposits, and what remains of a rock wall around it. The inland extent of this site has been obliterated by sugarcane cultivation activity.

Site 50-50-08-4695

This site lies near the northwestern extreme of the *makai* project area. Site 4695 is located at the high water mark. It is constructed of waterworn and angular basalt boulders and cobbles. Remnants of weathered concrete are present as well. It is c. 10 meters long on the N-S axis, by up to 4.5 meters wide. It is about 1.1 meter above the beach level (Figure 14). Much of this site is covered by dense *hau* growth. The overall condition of the site is generally poor. The construction style of this feature, i.e. the mixture of waterworn, angular rocks, and concrete indicate that it was built in post-contact times. It is important to point out that this site has been impacted by storm waves in the past, and the broken pieces of coral that were noted in between the feature boulders and cobbles were probably cast ashore by high surf.

Recently broken and unbleached coral pieces on the structure tend to reinforce the above interpretation. A few sherds of a blue on white porcelain tea pot were present on the surface of the feature. Site 4695 may represent some sort of retaining wall, possibly for a pull-off associated with a nearby section of the Old Government road. This site lies in the Beach Reserve and will not be impacted by development of the property. It has generally low research potential.

Site 50-50-08-4696

This site consists of Remnant 3 of the Old Government Road that is located on the topographic maps of the project area. It is c. 15 m. wide by 100 m. long and is oriented at c. 135 degrees. The old black-top road segment on the study parcel is covered by extensive *hau* growth and is in poor overall condition. It is truncated by the nearby Honoapiʻilani Highway. It lies within the Beach Reserve and is c. 15 to 18 meters northeast of coastal Site 4695. An old road that is shown on the 1881 Olowalu Sugar Plantation map is presumed to mark the course of the road, of which this site is a remnant (Map 4). The Old Government road followed a traditional trail that encircled the island in precontact times. Much of the Old Government Road was abandoned in the early 1950s when Honoapiʻilani Highway was constructed. However, the existing Pioneer Mill cane haul road continues to follow along much of the former road bed.

Site 50-50-08-4697

This is a subsurface site, which lies in the abandoned sugar cane field to the west of the Site 4693 burial ground. Site 4697 was encountered during the excavation of the 30-meter long BT 23. Portions of a dog skeleton were located near the 15.5 meter point of the long trench (Figure 20; Photos 8 and 9). Subsequently, charcoal flecking and a few pieces of marine shell were noted in the profile of BT 23. Two 1-meter square test units were utilized, in order to evaluate subsurface conditions near the 17-meter mark in BT 23.

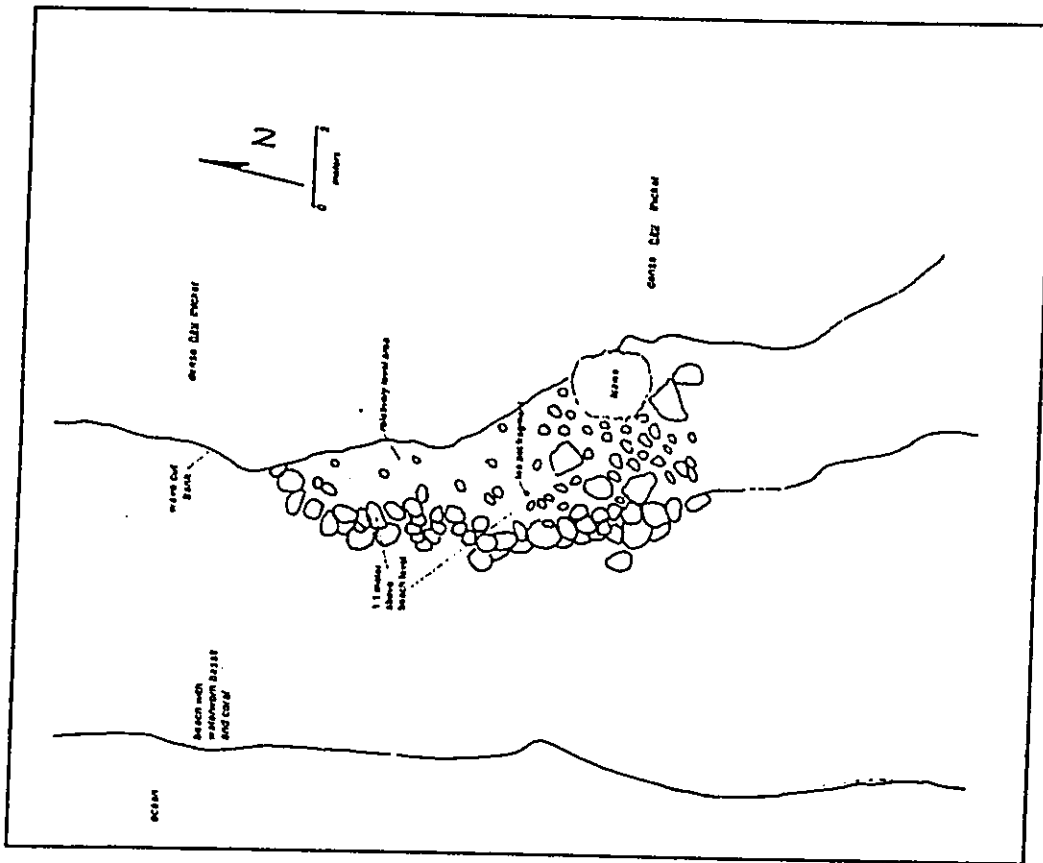


Figure 14 - Plan view of Site 4695.

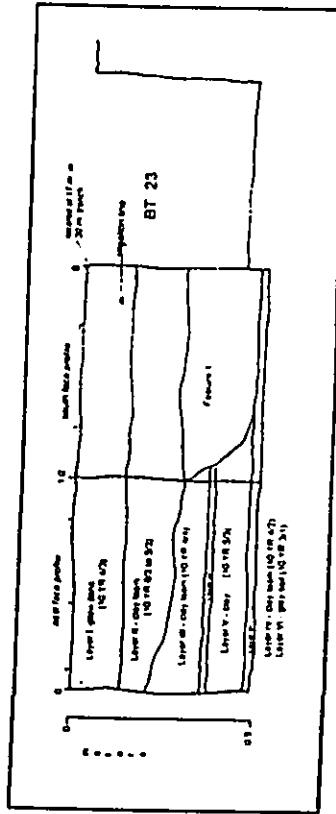


Figure 15 - East and south face profiles of Test Unit I—Site 4697.

Test Unit 1

This unit was excavated on the eastern side of BT 23. It was placed c. 1.5 meters *muuka* or north of the area where the dog skeletal remains were previously encountered. This first test unit contained 6 soil layers (Figure 15).

Layer I was up to 25 cm. thick and was composed of the common brown (10 YR 4/3) sandy loam found elsewhere in much of the *makai* portion of the abandoned sugar cane field. This agriculturally disturbed layer contained 3.0 g. of scattered marine shell fish remains, 5.3 g. of echinoderm body parts, 2 pieces of white ceramic, and several sections of black plastic irrigation tubing. The soil boundary with the underlying stratum was somewhat indistinct.

Layer II was pale brown (10 YR 6/3) to brown (10 YR 5/3) and appeared to have been partially impacted by the overlying plow zone. This clay loam stratum was up to 16 cm. thick and contained 14.7 g. of scattered marine shell fish remains, 36.0 g. of urchin body parts, a dog tooth, scattered fish bone (0.4 g.) and a broken mammal tooth (non-human). In addition, 2 white ceramic pieces, an unidentified piece of plastic, a Maui "diamond" quartz, and a concentration of charcoal (10.7 g.) were encountered.²¹ A plow scar extended through the bulk of Layer II to a maximum depth of 39 cmbs.

Layer III was encountered between 39 and 41 cmbs. This dark yellowish brown (10 YR 4/4) clay loam was about 10 cm. thick. It contained low amounts of material culture remains, including 5.8 g. of marine shell fish remains and 14.6 g. of urchin body parts. In addition, this damp clay loam contained a subsurface feature—Feature 1.1.

Feature 1.1

This feature made itself apparent at c. 48 cmbs. near the southern face of TU 1. It runs up to 80 cm. wide in TU 1, and extended into the unexcavated southern profile of the unit. This irregularly shaped pit was a maximum of 33 cm. deep (from c. 48 to 81 cmbs.). Test Unit 2 was excavated adjacent to TU 1, in order to investigate the feature more fully. Material culture remains in this feature were recovered from both test units. These consisted of 70.6 g. of marine shell fish, 48.1 g. of echinoderm parts, 0.5 g. of fish bone, 3 unworked coral pieces, and a small Maui "diamond" (0.3 g.).²² An Asian-motif ceramic shard was located in the top few centimeters of Feature 1.1. Floral remains consisted of 11.9 g. of scattered charcoal. A radiocarbon sample was submitted to Beta Analytic, Inc. This sample returned a date of 120 +/- 70 RCYBP. The calibrated results put the date at between AD 1650 and 1950. The intercepts of the radiocarbon age with the calibrated curve fell at AD 1695, AD 1725, AD 1815, and AD 1920 (refer to Appendix A).

While a ceramic shard was found near the top of the feature, there were no other historic materials recovered. The radiocarbon date does not clearly indicate a time frame for Feature 1.1. This irregularly shaped pit truncated the Layer IV deposit.

²¹ This charcoal concentration contained one of the ceramic pieces.

²² Crystals of white quartz—some of gem quality (Macdonald, Abbott and Peterson, 1983, p.488).

Layer IV was present in the northern portion of TU 1. This thin dark grayish brown (10 YR 4/2) clay loam extended from c. 63 to 67 cmbs. No material culture remains were found in this slightly compact stratum. Layer V extended from 67 to 82 cmbs. This layer was a moist, compact brown clay (10 YR 5/3). No material remains were found in this stratum.

Layer VI was composed of saturated very dark gray clay (10 YR 3/1). This gley soil appeared to be sterile. Excavation was halted at a maximum depth of 90 cmbs.

Test Unit 2

This unit was excavated adjacent to and *makai* (south) of TU 1, in order to more fully investigate Feature 1.1. Six similar strata were encountered in this 1-meter square unit (Figure 16). Layer I was a maximum of 37 cm. thick. The plow zone (10 YR 4/3) yielded 8.0 g. of scattered marine shell fish, 19.6 g. of urchin body parts, 2.6 g. of pig bone, and unworked basalt flake, 3 pieces of unworked coral, a piece of white ceramic, a green bottle glass fragment, and a piece of iron. In addition, plastic drip-line irrigation tubing was located just to the east of the test unit.

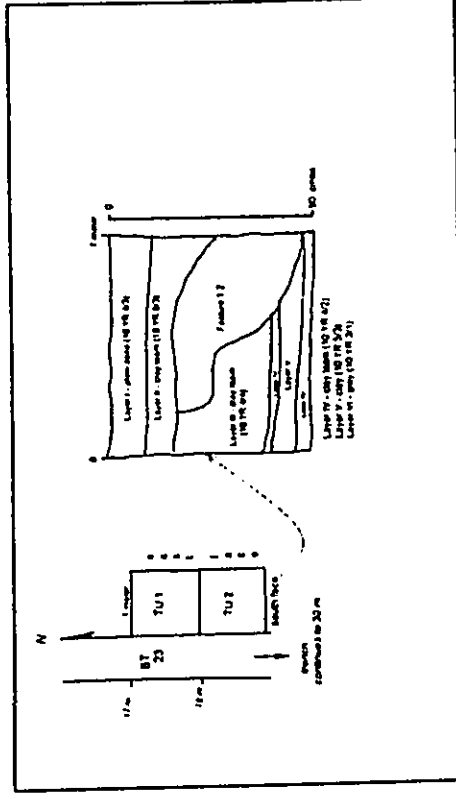


Figure 16 — South face profile of Test Unit 2—Site 4697. Figure on the left shows relationship of Test Units to Backhoe Trench 23.

Layer II was located c. 25 to 27 cmbs. and consisted of the common pale brown (10 YR 6/3) to brown (10 YR 5/3) clay loam. This somewhat compact layer yielded 58.4 g. of marine shell fish remains, 62.1 g. of echinoderm body parts, a dog tooth, 15.4 g. of

scattered charcoal, and a rusted iron spike (92 mm. long). This stratum appeared to be largely intact.

Layer III was encountered at 38 to 40 cmbs. Only a small portion of stratum was present in the eastern half of TU 2. Feature 1.1 extended into much of the dark yellowish brown (10 YR 4/4) clay loam. All material culture remains located in the Feature 1.1 pit were combined with those found in the TU 1 portion of the same feature.

Layer IV was encountered at c. 60 to 69 cmbs. and was a maximum of 6 cm. thick. This thin stratum was located only in the eastern portion of TU 2. No material culture remains were recovered from this dark grayish brown (10 YR 4/2) clay loam.

Layer V was encountered at c. 66 cmbs. and was a maximum of 12 cm. thick. This brown (10 YR 5/3) clay was somewhat compact and moist. This stratum was also sterile. The Layer VI deposit extended from 78 cmbs. to the bottom of TU 2 at 90 cmbs. This saturated gley soil was very dark gray (10 YR 3/1) in color and did not yield any cultural materials.

Discussion

A series of auger probes were made to determine the extent of this subsurface site. Beginning at the test units, the subsurface cultural deposit appeared to extend c. 6 meters northwest, and about 3 to 4 meters west, giving an area extent of c. 30 to 40 square meters to the west of the burial preserve. It may also extend to the east, but that area is within the burial preservation reserve itself, and was not further tested. No plan view drawing of the estimated area of the site was made.

Excavation at Site 4697 yielded a radiocarbon date that could fall into the late precontact or early post-contact period, although it was far from being definitive. The post-contact material items included bottle glass and ceramic sherds. There were 2 houselot *kuleana* awards in the general vicinity (LCA 8817:1 and LCA 5952:1). Site 4697 could be a remnant of activity associated with one of these. The radiocarbon calibrated date bracket was AD 1695 to 1950— with 4 intercepts, falling at AD 1695, AD 1725, AD 1815 and AD 1920.

Site 50-50-08-4698

This last site was located during backhoe testing near the ruins of the former Olowalu Mill (Site 1602). Backhoe Trench 59 was excavated just to the east of the landscaped area of the former manager's home. This backhoe trench lies within c. 25 m. of the existing shoreline. Charcoal flecking and scattered marine shellfish remains were noted in the profile and subsequently, a 1-meter square test unit was excavated to further investigate subsurface conditions.

Test Unit 1

This subsurface test was located in the western fact of BT 59. A total of 6 layers, including a cultural deposit (Layer III) were located (Figure 17). The uppermost layer consisted of dark brown (10 YR 3/3) clay loam that was humus rich. Angular and waterworn basalt cobbles were common in this loose, somewhat dry stratum. Material culture remains included modern refuse that was not collected. In addition, 12.8 g. of scattered marine shellfish remains, 5.9 g. of pencil urchin spine, a trace of crab shell, 14.9 g. of pig bone, 142.8 g. of cut beef bone, 6.5 g. of *kukui* nut shell, 3 pieces of unworked coral and a trace of charcoal. Layer I was about 30 cm. thick.

Layer II was up to 19 cm. thick and was composed of brown (10 YR 5/3) silty loam. This loose stratum contained low amounts (less than 5% by volume) of basalt cobbles and pebbles. A low amount of material culture remains were recovered from this

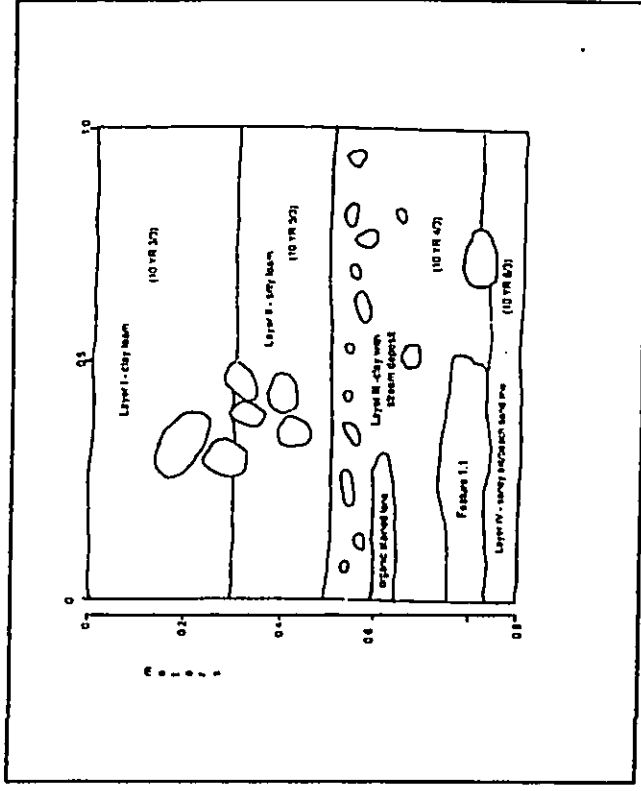


Figure 17 - West face profile of Test Unit 1—Site 4698.

layer. Portable remains included 2.2 g. of scattered marine shell fish, 4.4 g. of pencil urchin spine, a mammal tooth, and a trace of charcoal.

Layer III had a higher clay content than the overlying stratum. This lower layer was brown (10 YR 4/5) in color and contained an *in situ* cultural deposit. This moist, compact stratum contained stream gravel and sand deposits, material culture remains, and a subsurface feature. Portable remains in the c. 32 cm. thick layer included 61.2 g. of marine shell fish remains, 36.3 g. of echinoderm body parts, 17.1 g. of charcoal, 2 unworked basalt flakes, 2 flakes of volcanic glass (2.9 g.), and 5 pieces of unworked coral. The 2 volcanic glass flakes are of good quality. A feature was located in Level 2 (59 to 69 cmbs.) and extended to the bottom of Layer III.

Feature 1.1 is interpreted as a hearth remnant, and yielded 26.1 g. of charcoal. This feature was a maximum of 61 cm. wide and its lower section extended into the unexcavated western profile of the unit. The eastern part of the feature was truncated by the BT 59 excavation. A suitable charcoal sample was collected and sent to Beta Analytic, Inc. This sample returned a radiocarbon age of 230 +/- 70 RCYBP. This sample yielded a date range (at 2 sigma, 95% probability) of AD 1495 to 1950. The intercept data indicated that the intercept of the radiocarbon age and the calibration curve fell at AD 1665. This date is comfortably in precontact times. The latter date of 1950 is attributed to atmospheric testing. Given the lack of post-contact material culture remains, this site is interpreted as precontact.

The lower portions of Layer III contained less cultural material and Level 4 (79 to 83 cmbs.) was sterile. The soil boundary with the bottom-most stratum in TU 1 was abrupt and clean.

Layer IV consisted of dark, yellowish brown (10 YR 4/4) sandy silt mixed with pale brown (10 YR 6/3) sand banding. This moist stratum extended to the bottom of TU 1 at 90 cmbs. Excavation was halted just above the ground water table.

Discussion

Excavation next to BT 59 yielded a precontact cultural deposit. It appears that the site might extend under the landscaped portion of the nearby Manager's house, but that area was not available for subsurface testing. Backhoe Trench 60 which lies 20 meters to the east did not contain any precontact cultural materials, indicating that the site did not extend beyond that point to the east. A series of auger probes, revealed that the site extended about 8 meters north of the test unit location, c. 3 meters to the south. The area to the east has been recently filled in. With this information, we estimate that the extent of Site 4698 to c. 35 to 50 square meters. No plan drawing was made of this site. Given its proximity to the ocean, it was probably a permanent habitation site, if one follows the traditional settlement pattern coastal zone model.

This subsurface site lies between the ruins of the old Mill and the Manager's house, both of which are not going to be disturbed. This area will be part of a planned Olowalu Mill Complex interpretative center.

Site 50-50-08-1602

The ruins of the old Olowalu Sugar Mill lie on the *makai* side of Honoapiʻilani Highway, approximately 20 meters from the shore (see Photos 14 through 21). The historic and archaeological material on this site was presented earlier in this report—in the section deals with background information. The reader is referred to that section. In addition, historic background research is being pursued by Ms. Gail Ainsworth, who has been contracted by Olowalu Elua, LLC to collect information which can be used in an interpretative exhibit. Additional research on our part was viewed as a duplication of effort. Pertinent historical information on the Mill and surrounding plantation

community will be included in the companion report dealing with the Olowalu *Mauka* (Phase 2) portion of this inventory survey. The reader is referred to that report for additional information on the Olowalu Mill complex.

A rough sketch map was included in the short data form completed during the 1974 statewide inventory of historic places. A map of the ruins, as they are today, was prepared by Mark Donham for the present inventory survey (Figure 18). The buildings associated with the Mill include the manager's house, which was probably built around 1910. There are 3 other dwellings that were the residences of other managerial personnel connected with the plantation. These lie *mauka* between the remnants of the mill foundation and the highway. On the ocean side of the mill is the remnant of a boat-landing ramp and pier, which was used to load sugar onto cargo ships that would transfer it to market (Photo 21). A longer, more substantial breakwater or jetty, located on the Lahaina side of the ramp, extends c. 50 meters into the ocean, perpendicular to the shoreline. This creates a relatively calm basin leading up to the boat ramp.

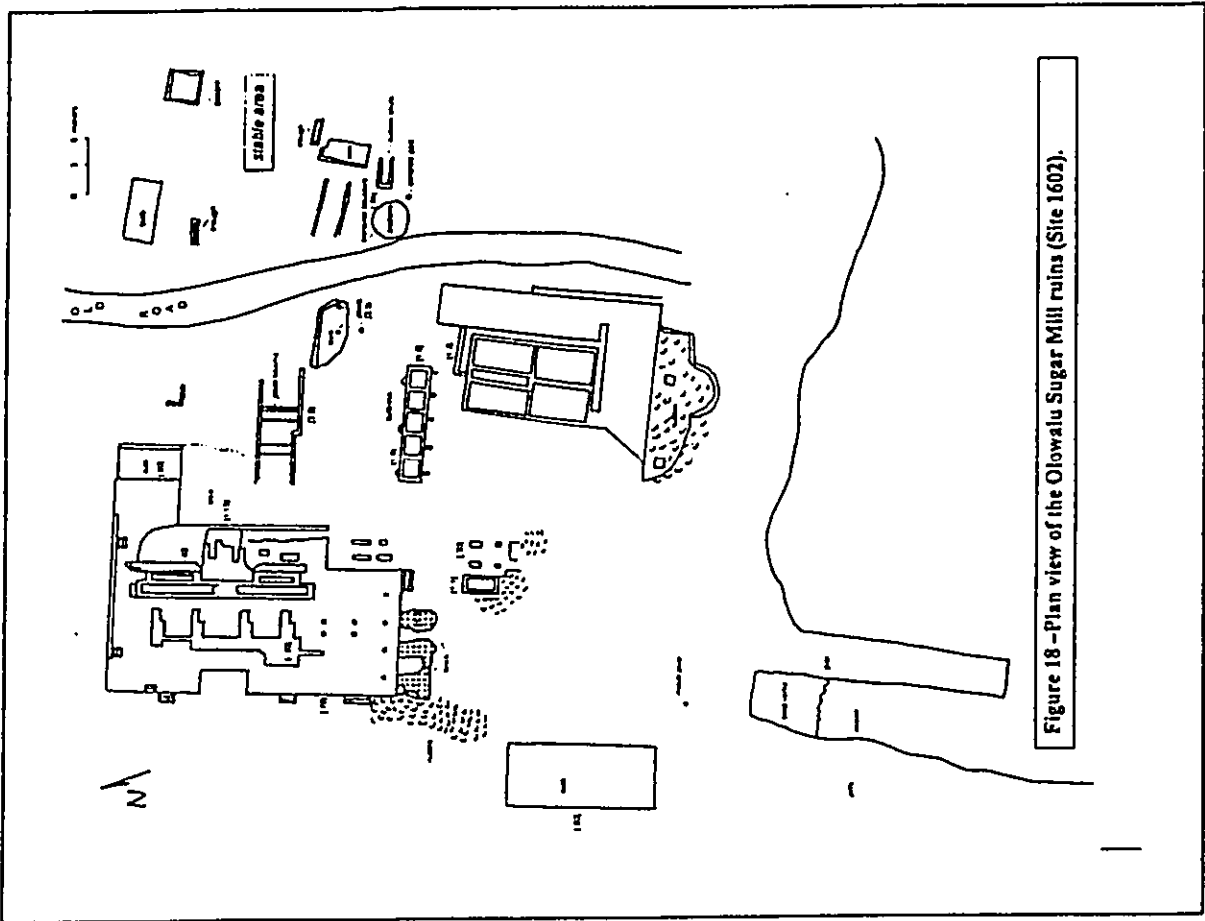
The foundations of the mill are overgrown with alien vegetation. A large opiuma tree is growing out of an area between two brick walls at the *makai* end of a large cement slab (Photos 19 and 20). This may have been a boiler area, where sorghum was reduced to sugar in the refinement process. Other areas are completely covered with *kiawe* and opiuma trees and debris (Photo 18). The stable area is located on the east side of the site. Mules were kept for working in the fields, and hauling cars along the railroad tracks around the turn of the century.

The historic photo on page 50 (Figure 18a) shows the Mill in the latter part of the 19th century. A boardwalk appears to be extending onto the jetty. Directly behind is the smokestack that would have extended from the brick structures that made up the boiling room at the *makai* end of the large concrete slab. We were not able to find anyone who had knowledge about the specific designation of the various parts of the remaining ruins. It is hoped that this information will be forthcoming with Ms. Bartholomew's continuing research.



The Olowalu Sugar Company mill between 1870 and 1890.

(Bartholomew and Bailey, 1994, p. 45)



Backhoe Trenches

A total of 97 backhoe trenches were excavated on the *makai* portion of the Olowalu project area (Figure 3). Trenches were excavated past the ground water table, except in locations where subsurface conditions proved to be too unstable or where human skeletal remains were encountered (BT 8 and BT 13). The majority of the backhoe trenches were c. 5 meters in length by c. 0.9 meters (the width of the backhoe bucket) in width. In general, depths ranged from 1 to 3.5 meters. The bulk of the trenches were closely inspected. It was not possible, however, to inspect several of the trench profiles due to unstable subsurface stream deposits. Refer to Table 8 for subsurface results for each of the backhoe trenches.

The scope of our sampling methodology was broadened after the Site 4693 burial ground was located to the northeast of Hekii Point. The area near the burial ground was more extensively sampled, in order to obtain a clearer understanding of the extent of the burials, and the subsurface marine sand deposit and apparent marsh deposit.

After the initial discovery of human remains in the sandy area, it was deemed prudent to systematically test areas where sand was either observed on the surface, or suspected to occur in subsurface deposits. It remains possible that additional burials might be present in these sandy areas along the coast of the study property. No additional human burials were located elsewhere in our inventory survey. The backhoe trenches did, however, provide valuable information on subsurface cultural deposits (Sites 4697 and 4698), and on the geology of the project area.

Subsurface results indicate that the former bed of the Olowalu Stream entered the ocean near Hekii Point on the eastern portion of the project area.²¹ An extensive and coarse sand deposit was located to the east of the former stream bed. This sand was determined to be a marine deposit and was found to extend across much of the eastern project area and onto the portions of the *mauka* study area.²² The marine sand deposit was exposed at the surface in the vicinity of the Site 4693 burial ground and was capped by up to 1 meter of alluvium elsewhere on the eastern portion of the study area (refer to Figure 3).

Further testing to the west of Site 4693 yielded thinner marine sand deposits and thicker gley soil deposits. In addition, stream deposits were noted in several trenches (BT 16, 17, 20) in this area as well. The presence of stream deposits in several test trenches indicates that the old Olowalu stream bed crossed this part of the project area before it was channelized to its present location, sometime around the turn of the century.

Saturated gley soil deposits were located in numbers of backhoe trenches. These gley soil deposits were high in organic content and are interpreted as former marsh

²¹ These findings are corroborated by a 1906 survey map of Olowalu Sugar Plantation, drawn by A. C. Alexander. This map shows the former stream bed and the new channelized stream.

²² Human remains were found associated with this marine deposit (Site 4693). This marine sand was probably deposited within the last 2000 years.

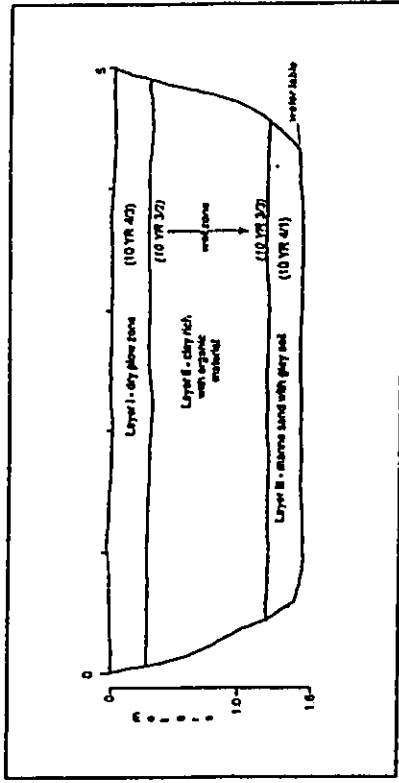


Figure 19 - West face profile of Backhoe Trench 21.

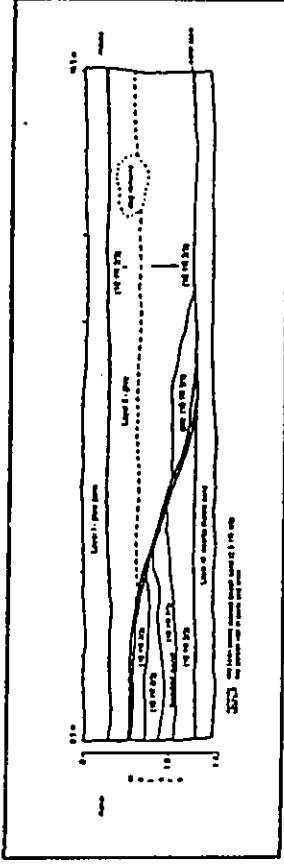


Figure 20 - West face profile of Backhoe Trench 23.

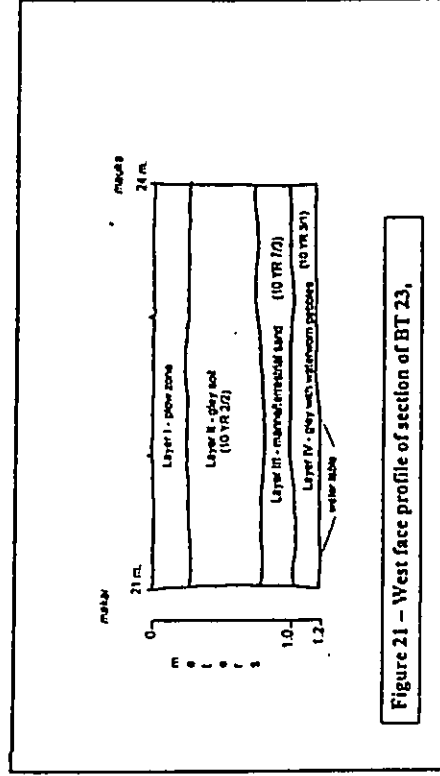


Figure 21 - West face profile of section of BT 23.

deposits. It appears plausible that a coastal berm of the previously noted marine sand partially dammed the Olowalu stream flow sometime in the past 2000 to 5000 years, when the sea level was higher than at the present time. Direct evidence of such a berm and the resultant marsh deposits that would have formed behind it, was exposed in BT 23.²³ We did not attempt to date the marsh deposits, as this was beyond the scope of our inventory survey.

Backhoe Trench 23 was 30 meters long and was excavated in an effort to locate the extent of the Site 4693 burial ground, and determine the edge of a possible marsh and a marine sand berm, if possible. Trench orientation was essentially N-S. Trench stratigraphy included the common brown (10 YR 4/3) plow zone which was underlain by alluvial deposits and what is interpreted as marsh deposits. Examination of the trench profile revealed a marine sand deposit that appears to have built up in the area where the former mouth of Olowalu Stream was likely located. This deposit of very pale brown (10 YR 8/2) marine sand was impacted by the plow zone in the southern most portion of BT 23. A sand berm which slopes down into alluvium and the underlying very dark gray (10 YR 3/1) gley soil deposit, was visible in the 7 to 10 meter section of the 30 meter long trench. The rest of BT 23 running mauka or north of this sand berm area did not contain any marine sand deposits. Rather, this subsurface test yielded gley soil and stream deposits which indicate a coastal lagoon marsh environmental setting.

Stream deposits became more common in the stratigraphy west of Hekili Point, and continued to the western end of the project area. In the coastal area particularly, mixing of beach sand with terrestrial sand was noted in several trenches excavated between Hekili Point and the old Olowalu Mill. Trenches within this zone of mixing included BTs 41, 43, 54 and 58). Stream deposits were present in nearly all of the trenches west of the former manager's house (BTs 62 through 97). However, 3 trenches in the vicinity of the existing shoreline in that area yielded more recent beach deposits (BTs 63, 66 and 67). Backhoe Trench 83 contained what appeared to be a storm wave beach sand deposit (Figure 23). All other trenches in this area yielded stream deposits of various grades from fine terrestrial sands through waterworm gravels, pebbles, cobbles and small boulders. Backhoe Trench 71 provides a representative profile for the bulk of the trenches with stream deposits.

Briefly touching on the results from other backhoe testing, we note that BT 21 (Figure 19) shows shallow, low turbidity deposit relationship going from stream deposit to marine and terrestrial sand mixing with clay and gley soil. In BT 32 and 33, large chunks of coral were found mixed with soil, which may indicate storm surge deposits as

²³ These types of marsh deposits can be seen along Honoapiʻiani Highway between Ukunehame and Olowalu today. The combination of being at sea level and behind a beach sand berm which blocks drainage, causes water to pool in low areas after heavy rains. As the stagnant water evaporates, salt crystals form on the surface. Such conditions would not have been conducive to the cultivation of taro. However, according to Dr. Ross Cordy (SHPD Doc. No: 0001RC11, January 11, 2000). "...stream fed 'coastal lagoon marsh' lands could be used for fishponds and could have paleoenvironmental information on Hawaiian history (e.g., pollen record showing clearing of trees as signs of human settlement and charcoal dating that period). It is clear that these marsh soils must be studied further in the mitigation phase of this project—with trenching/coring, pollen studies, and dating."

appeared to be the case in BT 83. Backhoe Trench 59 (Figure 22) revealed a thin cultural layer, while BT 60 uncovered 19th century historic debris. Backhoe Trench 75 indicated a heavy water-flow area, by the presence of a high density of waterworm pebbles and cobbles. Backhoe Trench 97 had a 50%-50% marine and terrestrial sand deposit at the very bottom of the trench, which may indicate another possible tributary section, where during high tide, the marine-terrestrial sand mixing occurred.

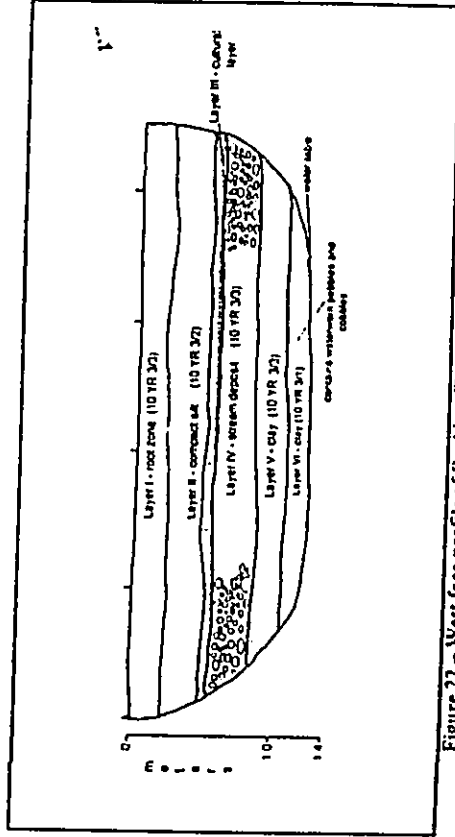


Figure 22 - West face profile of Backhoe Trench 59.

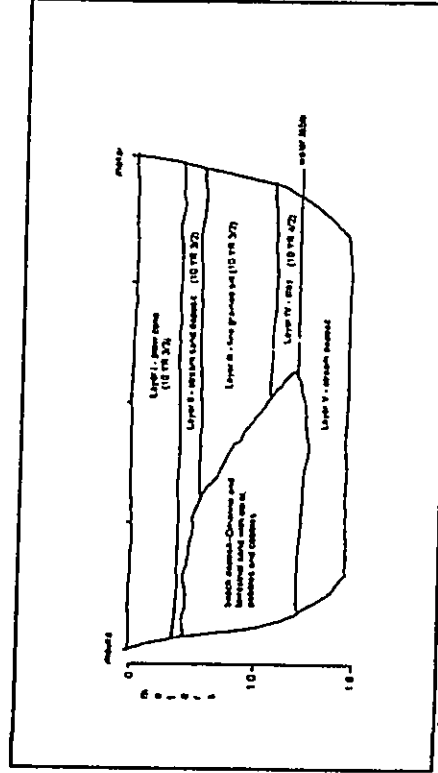


Figure 23 - East face profile of Backhoe Trench 83.

SUMMARY AND CONCLUSIONS

A total of 6 previously unrecorded archaeological sites were identified during this inventory level survey of the *makai* c. 73 acre study area. In addition, the Olowalu Mill ruins (Site 50-50-08-1602) were mapped. The previously unidentified sites were assigned SHP numbers 50-50-08-4693 through 4698.

Site 4694 appears to be the remnants of a habitation site with what remains of a rock wall around it. Sites 4695 and 4696 lie near the western boundary of the *makai* project area. Site 4695 seems to represent a coastal retaining wall of post-contact construction. Site 4696 consists of a segment of the Old Government Road that was constructed in 19th century and probably followed a traditional coastal trail. Both Sites 4697 and 4698 consist of fairly localized subsurface occupation deposits. Site 4697 probably represents post-contact habitation activity, possibly associated with one of the houselots present in the area. The last site (Site 4698) is interpreted as a temporary habitation area.

Precontact to 1850s

The 2 precontact sites (Sites 4694 and 4698) are consistent with the expected settlement patterns previously discussed in this report—that is, permanent coastal habitation. Expected features such as walled enclosures, subsurface cultural deposits, and associated burials might be expected. While it was not possible to directly date the Site 4693 burial ground, it is considered to be a precontact burial area probably associated with house sites that go back to c. AD 1500. There was no evidence of habitation sites in the western portion of the property. Those we found are on the eastern side of the property, near the mouth of Olowalu Stream in earlier times. Activities associated with the sugar plantation have directly impacted all of the precontact cultural resources located in the inventory survey, and very well may have eliminated others.

Marine sand deposits around the former mouth of the stream on the eastern portion of the study parcel are older than the stream deposited materials that dominate the western portion of the property. The most significant cultural finds were located within these marine sand deposits. White gley soils were present in a few of the backhoe trenches, we were not able to ascertain if they were associated with taro pondfields or fishponds. However, because none of the LCAs stipulated taro lands or fish ponds in the *makai* study area—only houselots—it seems more likely that the soils are associated with seasonal lagoonal features. However, these soils may contain important paleoenvironmental information on Hawaiian history in the area, and are considered to be significant finds.

In general all of the backhoe tests were dug to the water table, which occurred as shallow as 70 cms. in some areas. The average depth at which the water table occurred was between 1 and 2 meters, however. Marine sand was distinguished from terrestrial sand from the nature of its color and content. Marine sand was typically lighter in color, and mixed with bits of waterworn shell, coral and pebbles. Terrestrial sand was generally darker and made up of basalt and olivine crystals. The action of tidal fluctuations, bringing sea water laden with marine sand into an area of sand deposited by stream erosion, would cause the kind of mixing that was observed in many of the backhoe tests.

Only 4 backhoe trenches located cultural materials. Backhoe Trenches 8 and 13 uncovered human remains, while BTs 23 (Figures 20 and 21) and 59 (Figure 22) indicated cultural layers. The only radiocarbon dates from the inventory level subsurface survey, were obtained in test units which examined the cultural layers found in BTs 23 and 59.

Radiometric Dates

There were 2 radiometric dates obtained during our inventory survey on the *makai* portion of the Olowalu project area. One was from subsurface Feature 1.1 in Site 4697. It yielded a conventional radiocarbon age of 120 +/- 70 RCYBP. The calibrated result at 2 sigma (95% probability) is AD 1650 to 1950. A series of intercepts of the radiocarbon age with the calibration curve fell at AD 1695, AD 1725, AD 1815, and AD 1920. Cultural material in this feature was not definitive—there were no indigenous artifacts found. However, there was marine shell fish midden present. A few sherds of ceramic ware were found on the surface of the feature. These factors appear to suggest an early post-contact date. There were several LCA parcels located to the west, which indicate that there were *Auleana* homesteads in this coastal area well into post-contact times.

The second radiometric date was obtained from a sample recovered from a subsurface feature at Site 4698, located in the vicinity of the old sugar mill. A subsurface cultural deposit was exposed in BT 59 in this area. When this deposit was explored further in a 1 x 1 meter square test unit, a concentration of carbon was collected and sent to Beta Analytic, Inc. for analysis. This sample returned a conventional radiocarbon age of 230 +/- 70 RCYBP. The calibrated results (2 sigma, 95% probability) provided a date range from AD 1495 to 1950. The intercept of the radiocarbon age and calibration curve fell at AD 1665. There were no historic materials found in the cultural layer, which tends to corroborate a late precontact time frame.

No direct archaeological evidence was found associated with the Mahele period. The Site 4697 post-contact subsurface cultural deposit could possibly be associated with activity during time period, given the range of radiocarbon dates, however.

Plantation Era

The Olowalu Mill Complex remains are remnants from the Plantation era, as are the series of cane fields and associated roads, and the water delivery system. As stated before, the activity of the Plantation era has heavily impacted and/or obliterated remains of precontact and Mahele times.

Site Significance Evaluations

All of the above sites, including the Olowalu Mill (Site 1602) are deemed significant under Criterion D of the Federal and State historic preservation guidelines. These sites are considered to be important for the information content they have yielded or are likely to yield. Further, Site 1602 is considered significant under Criterion A as well—associated with events that have made important contributions to the broad patterns of Hawaiian history.

Site 4693 also qualifies for significance under Criterion E for its cultural value. It appears to be a precontact burial ground that has been extensively impacted by sugar cane cultivation. The remains of at least 5 individuals were found, and it is very probable that additional burials are present in this area of marine sand deposits.

Site 4694 consists of a remnant of a relatively large rock structure. A portion of the site has been impacted by sugar cane cultivation. The overall integrity of the site is altered, although the remaining portion of it is in generally fair condition. It lies in the Beach Reserve area.

Both Sites 4695 and 4696 lie in the Beach Reserve of the western portion of the project area. Site 4695 appears to have been built in post-contact times, and is tentatively identified as a shoreline erosion wall that may have been associated with Site 4696. The site is in generally fair condition. Site 4696 is in poor condition and is part of the Old Government Road that is shown on an 1881 map (Map 4). This Government road was probably built in the mid-1800s, and followed the route of the traditional trail that encircled the island of Maui.

Site 4697 is interpreted as a post-contact habitation area. Site 4698 represents a late-precontact habitation area.

It is also noted that the gleyed soils located near the former mouth of the Olowalu Stream are considered to be important under Criterion "D"—for their information content.

Mitigation Recommendations

We are recommending that 5 sites be preserved—Site 4693 (Burial ground), 4694 (coastal habitation site), and 1602 (Olowalu Mill), habitation sites 4697 and 4698. The gleyed soils are recommended to undergo archaeological data recovery. Two sites—Sites 4695 and 4696—are considered to be "no longer significant" and do not require further work.

Site 4693 is the most significant site in the study area for its traditional cultural value. Permanent preservation is the recommended mitigation for this site.

Site 4694 lies on Hekili Point to the southwest of Site 4693. This structure is within the Beach Reserve. Preservation is the recommended mitigation for this cultural resource.

Site 4697 seems to represent an early post-contact habitation area. Since its location near the Burial Preserve will not allow future development, preservation will take place.

Site 4698 is interpreted as a precontact temporary habitation area. This site also lies in an area that is not planned for development. The owners have agreed to place it into passive preservation.

The area of gleyed soils should undergo data recovery at some point in the future, in order to gather information relating to climate and ecology, and a chronology of human settlement in Olowalu.

The Olowalu Mill complex (Site 1602) is recommended for interpretive preservation.

The discovery of the Site 4693 burial ground has heightened the cultural sensitivity of the *makai* portion of the development project. In an effort of alleviate concerns within the Hawaiian community, archaeological monitoring appears to be appropriate mitigation during any ground altering activities between Hekili Point and the former manager's home. Sand deposits are present, and while no burials were found in

this area during our inventory level testing, the possibility exists that human remains may be located in the area near the Beach Reserve boundary.

No commercial or residential development of any kind is recommended for the area that contains the Site 4693 burial ground and the marine sand deposits on the eastern portion of the *maka'i* project area. Passive preservation, such as a park is deemed the most appropriate mitigation for this portion of the project area.

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Table 2
 Inventory Level Significance Evaluations

SHPD Site # 50-50-08	Significance Criterion	Components /Features	Status	Condition	Age	Proposed Mitigation
4693	D and E	Burials (5 minimum)	A	G-P	I	Preservation
4694	D	Structure and deposit	A	F	I	Preservation (in Beach Reserve)
4695	D	Wall / terrace	A	F-P	H	No longer significant (in Beach Reserve) No further work
4696	D	Old Gov't. Road	A	P	H	No longer significant (in Beach Reserve) No further work
4697	D	Cultural deposit	A	F-P	H	Preservation
4698	D	Cultural deposit	A	F	I	Preservation
1602	A, D	Olowalu Mill complex	A	F	H	Interpretive preservation
Gleyed soils	D	Subsurface			I	Data recovery

A=unaltered
 G=good; F=fair; P=poor
 I=indigenous; H=historic
 P=No longer significant because adequate information has been collected.

TABLE 3

Summary of Subsurface Results at Site 4694 -- Test Unit 1

LAYER/LEVEL	I/1	I/2	II	III/1	III/2	III/3	IV/1
GASTROPODA							
Cellana sp.			0.5				
Conus sp.			0.6		2.2		
Cypraea sp.			1.6	2.4	0.5		
Nerita picea	0.1		0.7	0.2	0.2		
Planaxis			0.5				
Operculum			5.5	2.3			
Strombus sp.			2.8	0.5	1.7	0.5	
Vermidae							
TOTALS							
BIVALVIA							
Isapomon sp.							
Brachidontes sp.			0.4	0.1		0.1	
Unidentified					0.5	0.6	0.2
TOTALS							
ECHINOIDEA							
Pencil urchin			0.3	0.5	1.0		
Sea urchin							
TOTALS							
CRUSTACEA							
Crab			0.7	1.3	0.1		0.1
BONE							
Dog tooth							
Fish							
Unidentified				2.4			
TOTALS							
FLORAL							
Charcoal	7.9	5.2	2.0				
Kukui nut					3.7		
Volcanic Glass debris	(1)0.1		(3)3.6				
UNWORKED BASALT FLAKES (pieces)			(2)4.3				
UNWORKED CORAL (pieces)	(1)0.1		(3)4.9				
WATERWORN PEBBLES (pieces)	(1)1220		(1)71.3				
MauI "Diamond"			(1)0.1				

Weight in grams

TABLE 4

Summary of Subsurface Results at Site 4694 -- Test Unit 2

LAYER/LEVEL	I/1	I/2	II/1	II/2	III/1	III/2
GASTROPODA						
Cellana sp.					0.6	1.1
Conus sp.						0.7
Cypraea sp.						2.3
Grenoule		0.1				
sandwicensis						
Nerita picea	0.5		0.5	0.7	1.7	
Nerita sandwicensis						
Operculum	0.1		0.1			
Unidentified						
TOTALS						
BIVALVIA						
Isapomon sp.						
Brachidontes						0.1
Unidentified	2.7		2.7	0.2	0.2	
TOTALS						
ECHINOIDEA						
Pencil urchin						
Sea urchin					0.4	0.2
TOTALS						
CRUSTACEA						
Crab						0.4
BONE						
Dog tooth						
Fish						
Unidentified						
TOTALS						
FLORAL						
Charcoal	3.2	12.0	2.7			0.9
Kukui nut shell					2.8	
UNWORKED BASALT FLAKES (pieces)						
UNWORKED CORAL (pieces)	(1)0.2		(1)0.2			
WATERWORN PEBBLES (pieces)						
Historic artifact						
Lead pellet					(1)1.0	

Weight in grams

TABLE 5

Summary of Subsurface Results at Site 4694 - Test Unit 3

LAYER/LEVEL	I/1	II/1	II/2	III/1	III/2	III/3
GASTROPODA						
Cellana sp.		0.1				
Cypraea sp.	3.9	22.0				
Granula sandwicensis	10.8				1.7	
Nerita picea	0.1	0.5	1.6	3.2	0.7	
Nerita sandwicensis						
Operculum	0.4	1.8			1.1	
Planaxis		0.2				
Strombus sp.				1.5	0.5	
Turbo sandwicensis		1.5	0.8			
Unidentified	0.8				0.2	
BIVALVIA						
Isognomon sp.					0.5	
Brachidontes		0.1				
Periglypta reticulata		0.2				
Unidentified		0.1				0.2
ECHINOIDEA						
Pencil urchin						
Sea urchin		0.1				
CRUSTACEA						
Crab		0.3	0.5			0.1
BONE						
Dog tooth						
Fish						
Unidentified					0.5	
FLORAL						
Charcoal	0.7	1.4	0.2	0.4		0.2
Kukui nut shell		7.9		8.7	10.8	3.2
UNWORKED BASALT FLAKES	(2) 6.7	(1) 0.1	(2) 0.9			
UNWORKED CORAL	(24) 4.3	(1) 0.1	(19) 6.1	(2) 0.9		
WATERWORN PEBBLES (pieces)						
Historic artifacts						
Flashed iron spike				(1) 0.3		

Weight in grams

TABLE 6
Summary of Subsurface Results - Site 4697

	TU1 Layer 1 ^a	TU1 Layer 1 ^b	TU1 Layer 1 ^c	TU1 & 2 February 11	TU2 11/1	TU2 11/2
GASTROPODA						
Cellana				0.2		
Cypraea sp.	1.6	8.8		10.2	0.7	2.9
Cypraea sp.	0.8	2.7		41.6	2.0	18.5
Nerita picea	0.6	2.9	1.1	2.1	1.7	3.5
Planaxis		0.3		0.1	0.2	0.4
Strombus sp.			3.7			
Turbo sandwicensis					0.8	11.5
Venerididae						
Unidentified			0.2		3.2	2.3
TOTALS						
BIVALVIA				0.3		
Isognomon sp.						
Tridacna						3.3
Unidentified		0.4	0.2			0.1
TOTALS						
ECHINOIDEA	5.0	33.8	14.3	36.5	14.6	50.7
Pencil urchin	0.3	2.2	0.3	11.8	1.3	2.5
Sea urchin					3.7	0.1
TOTALS						
CRUSTACEA		0.8		0.2		
Crab						
BONE						
Dog tooth		1.2				0.5
Dog						
Fish		0.4		0.5		0.4
Pig						
Unidentified		1.1		0.2		15.4
TOTALS						
FLORAL		10.7		(1) 12.3	(1) 2.7	13.4
Charcoal						
UNWORKED BASALT FLAKES (pieces)				(4) 20.7	(3) 1.8	
UNWORKED CORAL (pieces)						
WATERWORN PEBBLES (pieces)		(1) 2.2				
Historic artifacts		(1) 0.4		0.3		1.9
Ceramics		(2) white 12.0		(1) yellow 0.2	(1) white 1.9	(1) green 1.9
Other						
Flashed iron spike					(1) 0.2	5.4
Alfred						

^a 0 to 15 cmbs.
^b 15-40 cmbs.
^c 40 to 50 cmbs.
^d 0-25 cmbs.

TABLE 7
Summary of Subsurface Results – Site 4698

Test Unit / Layer/Level	I/1	I/2	I/3	II	III/1	III/2	III/3
GASTROPODA							
Cellana sp.		3.8	0.2	0.3			
Conus sp.	5.1			0.5	7.1	0.4	7.0
Granula sandwicensis	0.2						
Littorina pinnaudo							
Nerita picea	0.4	1.8	0.3	0.3	2.8	0.6	0.4
Nerita sandwichterensis							
Planaxis	0.2				2.1	0.1	
Operculum							
Strombus sp.					0.8		
Trochus nitentus							
Turbo sandwicensis					27.4		
Unidentified	0.8			1.1	0.6	0.2	1.1
TOTALS							
BIVALVIA							
Isognomon sp.							
Periglypta reticulata						9.1	
Unidentified							
TOTALS							
ECHINOIDEA							
Penell urchin	2.7	3.2	4.4	4.3	16.4	1.5	1.5
Sea urchin				5.1	7.3	1.7	1.7
TOTALS							
CRUSTACEA							
Crab			0.2				
BONE							
Mammal tooth				0.4			
Fish			1.1				
Bovine	66.4	76.4					
Unidentified mammal bone	14.9						
TOTALS							
FLORAL							
Charcoal	6.5	0.1	0.1	0.1	1.2	15.9	
Kukui nut							
UNWORKED BASALT FLAKES (pieces)					(1) 10.5		(1) 8.4
VOLCANIC GLASS DEBRIS (pieces)					(2) 2.9		

TABLE 8
Summary of portable remains from inventory survey
Subsurface testing (Makai portion)

	BT 15 Site 4698	BT 29	BT 30	BT 31	BT 33	BT 41	BT 63
GASTROPODA							
Cellana sp.							3.6
Conus sp.	21.9		8.1	2.0			54.2
Cypraea sp.							10.0
Granula sandwicensis							
Littorina pinnaudo							
Nerita picea							3.3
Periglypta reticulata	31.6						
Strombus sp.		126.2 ¹⁴					
Unidentified	0.7						12.7
TOTALS							
BIVALVIA							
Isognomon sp.							
Unidentified							2.8
TOTALS							
ECHINOIDEA							
Penell urchin		12.0					
Sea urchin							
TOTALS							
CRUSTACEA							
Crab							
BONE							
Deer							
Fish							
Unidentified mammal					62.4	11.5	2.6
TOTALS							
FLORAL							
Charcoal							(1) 23.6
UNWORKED BASALT FLAKES (pieces)							
UNWORKED CORAL (pieces)							
WATERWORN PEBBLES (pieces)							

¹⁴ This could possibly be a portion of a conch-shell trumpet, although no signs of alteration were visible on this large fragment.

TABLE 9
Indigenous Artifacts Recovered

TEST UNIT	LAYER/LEVEL FEATURE	ARTIFACT NUMBER	ARTIFACTS	L x W x H (mm)	WEIGHT (g)
BT 23 Site 4696	TU 1-Layer II	1	Fish bone pick	29.5 x 30.0 x 2.0	0.1
		2	Shark tooth	16.5 x 16.5 x 4.0	0.5
	TU 2-HF 2 Level 1	3	Basalt fishing sinker	35.0 x 24.5 x 13.5	18.3
		4	Worked basalt flake	70.5 x 35.0 x 8.5	30.1
Site 4694	TU 2-HF 2 Level 3	5	Coral abrader	37.0 x 14.5 x 12.0	3.0
		6	Coral abrader	53.0 x 41.0 x 14.5	28.5
	TU 1-Layer II	7	/buka shell ornament	17.0 x 14.5 x 7.0	1.0
BT 59 Site 4697	TU 1-Layer III, Level 3	8	Fish bone awl	28.5 x 4.0 x 4.0	0.2

TABLE 10
Summary of Backhoe Trenches

BT #	Dimensions	Orientation	Stratigraphy	cmbs ^a	Remarks
1	3 m. x 0.9 m. 1.0 m. deep	345	Layer I-reddish cinder pavement Layer II-medium brown mottled sandy loam Layer III-black sand Same as for BT 1	0-20 20-90 90-100	Water table at 1.0 m. Layer I is recently deposited fill in the cleared area.
2	3.0 m. x 0.9 m. 1.0 m. deep	345	Layer I-med. brown sandy loam Layer II-black sand	0-30 30-120	Water table at 1.2 m. Surface 10 to 15 cm. recently disturbed. Water table increases with depth in Layer II.
3	3.5 m. x 0.9 m. 1.2 m. deep	340	Layer I-med. brown sandy loam Layer II-black sand	0-40 40-100 100-120	Water table at 1.0 m. Surface to 20 cm. recently disturbed. Water table at 1.5 m.
4	4.5 m. x 0.9 m. 1.1 m. deep	344	Layer I-med. brown sandy loam Layer II-med. brown sandy loam Layer III-black sand	0-30 30-110	Water table at 1.1 m.
5	3.0 m. x 0.9 m. 1.2 m. deep	355	Layer I-med. brown sandy loam Layer II-black sand	0-20 20-60 60-100	Water table at 1.0 m.
6	4.5 m. x 0.9 m. 1.1 m. deep	30	Layer I-compact med. dark brown loam Layer II-compact med. brown loam Layer III-stream deposit	0-20 20-60 60-100	Water table at 1.0 m.
7	3.0 m. x 0.9 m. 1.0 m. deep	345	Layer I-compact med. brown loam Layer II-compact med. brown loam Layer III-stream deposit	0-20 20-60 60-100	Water table at 1.0 m.
8	3.0 m. x 0.9 m. 0.9 m. deep	346	Refer to Figures 4 and 5	0-90	Water table encountered at 0.9 m. Pit extended below the water table. Water table at 1.0 m.
9	4.0 m. x 0.9 m. 1.0 m. deep	30	Layer I-med. brown loam Layer II-med. brown loam Layer III-possibly, cobbly ct. brown loam	0-40 40-60 60-100	Water table at 1.0 m.
10	4.6 m. x 0.9 m. 0.9 m. deep	310	Layer I-med. brown loam Layer II-compact med. brown loam Layer III-stream deposit	0-20 20-60 60-100	Water table at 0.95 m.
11	3.4 m. x 0.9 m. 1.0 m. deep	354	Layer I-med. brown loam Layer II-compact med. brown loam Layer III-stream deposit	0-20 20-60 60-100	Water table at 1.0 m.
12	4.8 m. x 0.9 m. 1.2 m. deep	310	Layer I-med. brown loam Layer II-compact med. brown loam Layer III-stream deposit	0-20 20-60 60-100	Water table at 1.1 m.
13	3.0 m. x 0.9 m. 0.9 m. deep	311	Agricultural post-holes with marine sand (10 YR 4/3)	0-35	Water table at 1.0 m. 2cm. shell band at 35 cm. Water table at 1.1 m.
14	4.3 m. x 0.9 m. 1.0 m. deep	311	Layer I-med. brown loam Layer II-compact med. brown loam Layer III-stream deposit	0-30 30-100	Water table at 1.0 m.
15	3.5 m. x 0.9 m. 1.2 m. deep	350	Layer I-med. brown loam Layer II-compact med. brown loam Layer III-stream deposit	0-50 50-100 100-150	Water table at 1.1 m.
16	3.0 m. x 0.9 m. 1.25 m. deep	34	Layer I-med. brown loam Layer II-compact med. brown loam Layer III-stream deposit	0-30 30-100 100-150	Water table at 1.15 m. Scattered layers are fine grained. Layer I is dry and friable.

^a Given as compass bearing in degrees—magnetic.
^b Centimeters below surface.

17	3.0 m x 0.9 m 1.3 m deep	180	Layer I-olive zone (10 YR 2/2) Layer II-stream deposit (10 YR 5/2 to 3/2)	0-50 50-130	Stream deposit with high density of water-worn cobbles and pebbles. Water table at 1.3 m.
18	3.0 m x 0.9 m 1.45 m deep	175	Layer I-st. zone (10 YR 2/1) Layer II-steady loam (10 YR 6/1) Layer III-steady clay loam (10 YR 5/4) Layer IV-marine sand (10 YR 6/3 to 5/3) Layer V-white marine sand (10 YR 6/2)	0-30 30-60 60-78 78-137 137-145	Water table at 1.4 m. Layer V contains scattered water-worn shell and coral.
19	3.0 m x 0.9 m 1.5 m deep	160	Layer I-olive zone (10 YR 2/2) Layer II-olive zone (10 YR 2/1) Layer III-coarse marine sand (10 YR 6/2)	0-30 30-40 40-140	Water table at 1.4 m.
20	3.0 m x 0.9 m 1.6 m deep	15	Layer I-olive zone (10 YR 2/2) Layer II-olive zone (10 YR 2/1) Layer III-olive zone (10 YR 2/2) Layer IV-olive zone (10 YR 2/2 to 4/2)	0-30 30-40 40-90 90-160	Water table at 1.6 m. Layer II has shrimps (fine coarse sand and shell deposits). Layer III contains water-worn pebbles. Layer IV grading to coarse marine sand in water table.
21	3.0 m x 0.9 m 1.7 m deep	140	Layer I-olive zone (10 YR 2/2) Layer II-olive zone (10 YR 2/1) Layer III-olive zone (10 YR 2/2) Layer IV-olive zone (10 YR 2/2 to 4/2)	0-30 30-40 40-125 125-150	Water table at 1.7 m. Layer II becomes more organic with depth. Water table at 1.7 m.
22	4.5 m x 0.9 m 1.3 m deep	130	Layer I-olive zone (10 YR 2/2) Layer II-olive zone (10 YR 2/1) Layer III-olive zone (10 YR 2/2) Layer IV-olive zone (10 YR 2/2 to 4/2)	0-30 30-40 40-130	Water table at 1.3 m. Marine sand under water table.
23	3.0 m x 0.9 m 1.3 m deep	4	Layer I-olive zone Layer II-olive zone (10 YR 2/2) Layer III-olive zone (10 YR 2/1) Layer IV-olive zone (10 YR 2/2) Layer V-olive zone (10 YR 2/2)	0-30 30-40 40-90 90-130	Water table at 1.6 m.
24	4.5 m x 0.9 m 1.6 m deep	290	Layer I-olive zone Layer II-olive zone (10 YR 2/2) Layer III-olive zone (10 YR 2/1) Layer IV-olive zone (10 YR 2/2) Layer V-olive zone (10 YR 2/2)	0-30 30-40 40-90 90-130	Water table at 1.6 m.
25	4.0 m x 0.9 m 1.4 m deep	280	Layer I-olive zone Layer II-olive zone (10 YR 2/2) Layer III-olive zone (10 YR 2/1) Layer IV-olive zone (10 YR 2/2) Layer V-olive zone (10 YR 2/2)	0-30 30-40 40-90 90-130	Water table at 1.4 m.
26	4.5 m x 0.9 m 1.1 m deep	335	Layer I-olive zone Layer II-olive zone (10 YR 2/2) Layer III-olive zone (10 YR 2/1) Layer IV-olive zone (10 YR 2/2) Layer V-olive zone (10 YR 2/2)	0-30 30-40 40-90 90-130	Water table at 1.1 m.
27	4.0 m x 0.9 m 1.2 m deep	325	Layer I-olive zone Layer II-olive zone (10 YR 2/2) Layer III-olive zone (10 YR 2/1) Layer IV-olive zone (10 YR 2/2) Layer V-olive zone (10 YR 2/2)	0-30 30-40 40-90 90-130	Water table at 1.2 m.
28	4.0 m x 0.9 m 1.0 m deep	240	Layer I-olive zone Layer II-olive zone (10 YR 2/2) Layer III-olive zone (10 YR 2/1) Layer IV-olive zone (10 YR 2/2) Layer V-olive zone (10 YR 2/2)	0-30 30-40 40-90 90-130	Water table at 1.0 m.
29	3.0 m x 0.9 m 1.6 m	300	Layer I-olive zone Layer II-olive zone (10 YR 2/2) Layer III-olive zone (10 YR 2/1) Layer IV-olive zone (10 YR 2/2) Layer V-olive zone (10 YR 2/2)	0-30 30-40 40-90 90-130	Water table at 1.6 m. Surface not level.
30	4.0 m x 0.9 m 1.1 m deep	315	Layer I-olive zone Layer II-olive zone (10 YR 2/2) Layer III-olive zone (10 YR 2/1) Layer IV-olive zone (10 YR 2/2) Layer V-olive zone (10 YR 2/2)	0-30 30-40 40-90 90-130	Water table at 1.1 m.
31	4.0 m x 0.9 m 1.2 m deep	40	Layer I-olive zone Layer II-olive zone (10 YR 2/2) Layer III-olive zone (10 YR 2/1) Layer IV-olive zone (10 YR 2/2) Layer V-olive zone (10 YR 2/2)	0-30 30-40 40-90 90-130	Water table at 1.2 m. (One at right angle to BT 30 to investigate human remains final.)
32	3.0 m x 0.9 m 1.3 m deep	60	Layer I-olive zone Layer II-olive zone (10 YR 2/2) Layer III-olive zone (10 YR 2/1) Layer IV-olive zone (10 YR 2/2) Layer V-olive zone (10 YR 2/2)	0-30 30-40 40-90 90-130	Water table at 1.3 m. Layer IV has some coral and shell concentrations.

33	4.5 m x 0.9 m 1.5 m deep	94	Layer I-olive zone (10 YR 2/2) Layer II-olive zone (10 YR 2/1) Layer III-olive zone (10 YR 2/2) Layer IV-olive zone (10 YR 2/2) Layer V-olive zone (10 YR 2/2)	0-40 40-90 90-130 130-150 150-210	Water table at 1.5 m. Layer I is representative of a coastal lagoon.
34	3.0 m x 0.9 m 1.4 m deep	100	Layer I-olive zone (10 YR 2/2) Layer II-olive zone (10 YR 2/1) Layer III-olive zone (10 YR 2/2) Layer IV-olive zone (10 YR 2/2) Layer V-olive zone (10 YR 2/2)	0-30 30-40 40-90 90-130	Water table at 1.4 m.
35	4.0 m x 0.9 m 1.1 m deep	345	Layer I-olive zone (10 YR 2/2) Layer II-olive zone (10 YR 2/1) Layer III-olive zone (10 YR 2/2) Layer IV-olive zone (10 YR 2/2) Layer V-olive zone (10 YR 2/2)	0-30 30-40 40-90 90-130	Water table at 1.1 m.
36	3.0 m x 0.9 m 1.1 m deep	110	Layer I-olive zone (10 YR 2/2) Layer II-olive zone (10 YR 2/1) Layer III-olive zone (10 YR 2/2) Layer IV-olive zone (10 YR 2/2) Layer V-olive zone (10 YR 2/2)	0-30 30-40 40-90 90-130	Water table at 1.1 m. Layer II very coarse shell and coral-rich sand deposit.
37	4.0 m x 0.9 m 2.4 m deep	3	Layer I-olive zone (10 YR 2/2) Layer II-olive zone (10 YR 2/1) Layer III-olive zone (10 YR 2/2) Layer IV-olive zone (10 YR 2/2) Layer V-olive zone (10 YR 2/2)	0-30 30-40 40-90 90-130	Water table at 2.4 m. Layer II contains c. 80% water-worn cobbles and 20% silt, with heavy materials at bottom.
38	4.0 m x 0.9 m 2.5 m deep	3	Layer I-olive zone (10 YR 2/2) Layer II-olive zone (10 YR 2/1) Layer III-olive zone (10 YR 2/2) Layer IV-olive zone (10 YR 2/2) Layer V-olive zone (10 YR 2/2)	0-30 30-40 40-90 90-130	Water table at 2.5 m. Layer II contains high density of small cobbles and pebbles. Layer IV is a 50-50 mix of land and marine sand.
39	3.0 m x 0.9 m 2.2 m deep	3	Layer I-olive zone (10 YR 2/2) Layer II-olive zone (10 YR 2/1) Layer III-olive zone (10 YR 2/2) Layer IV-olive zone (10 YR 2/2) Layer V-olive zone (10 YR 2/2)	0-30 30-40 40-90 90-130	Water table at 2.2 m. Layer IV is c. 35% marine sand.
40	3.0 m x 0.9 m 2.9 m deep	10	Layer I-olive zone (10 YR 2/2) Layer II-olive zone (10 YR 2/1) Layer III-olive zone (10 YR 2/2) Layer IV-olive zone (10 YR 2/2) Layer V-olive zone (10 YR 2/2)	0-30 30-40 40-90 90-130	Water table at 2.9 m.
41	3.0 m x 0.9 m 2.9 m deep	10	Layer I-olive zone (10 YR 2/2) Layer II-olive zone (10 YR 2/1) Layer III-olive zone (10 YR 2/2) Layer IV-olive zone (10 YR 2/2) Layer V-olive zone (10 YR 2/2)	0-30 30-40 40-90 90-130	Water table at 2.9 m.
42	4.0 m x 0.9 m 1.4 m deep	325	Layer I-olive zone (10 YR 2/2) Layer II-olive zone (10 YR 2/1) Layer III-olive zone (10 YR 2/2) Layer IV-olive zone (10 YR 2/2) Layer V-olive zone (10 YR 2/2)	0-30 30-40 40-90 90-130	Water table at 1.4 m. Layer II becomes more compact and contains more organic material with depth. Material is very wet 23 cm. above water table.
43	4.5 m x 0.9 m 1.1 m deep	20	Layer I-olive zone (10 YR 2/2) Layer II-olive zone (10 YR 2/1) Layer III-olive zone (10 YR 2/2) Layer IV-olive zone (10 YR 2/2) Layer V-olive zone (10 YR 2/2)	0-30 30-40 40-90 90-130	Water table at 1.1 m.
44	4.2 m x 0.9 m 0.9 m deep	35	Layer I-olive zone (10 YR 2/2) Layer II-olive zone (10 YR 2/1) Layer III-olive zone (10 YR 2/2) Layer IV-olive zone (10 YR 2/2) Layer V-olive zone (10 YR 2/2)	0-40 40-60 60-90	Water table at 0.9 m. Layer II is water-worn cobbles and pebbles at bottom of layer, above with grey material. Layer III is 25% organic and 75% terrestrial sand.
45	4.0 m x 0.9 m 1.1 m deep	31	Layer I-olive zone (10 YR 2/2) Layer II-olive zone (10 YR 2/1) Layer III-olive zone (10 YR 2/2) Layer IV-olive zone (10 YR 2/2) Layer V-olive zone (10 YR 2/2)	0-30 30-40 40-90 90-130	Water table at 1.1 m. Layer II contains cylindrical shells—lower portion has water-worn pebbles and cobbles.
46	3.0 m x 0.9 m 1.4 m deep	20	Layer I-olive zone (10 YR 2/2) Layer II-olive zone (10 YR 2/1) Layer III-olive zone (10 YR 2/2) Layer IV-olive zone (10 YR 2/2) Layer V-olive zone (10 YR 2/2)	0-30 30-40 40-90 90-130	Water table at 1.4 m. Layer II contains shells—lower portion has water-worn pebbles and cobbles. Also contains debris. Also contains water-worn pebbles and coral.
47	4.0 m x 0.9 m 1.2 m deep	25	Layer I-olive zone (10 YR 2/2) Layer II-olive zone (10 YR 2/1) Layer III-olive zone (10 YR 2/2) Layer IV-olive zone (10 YR 2/2) Layer V-olive zone (10 YR 2/2)	0-30 30-40 40-90 90-130	Water table at 1.2 m. Layer II is fine- grained olive-bank sand. Layer III is coarse grained, pebbly olive-bank sand.
48	4.5 m x 0.9 m 2.1 m deep	16	Layer I-olive zone (10 YR 2/2) Layer II-olive zone (10 YR 2/1) Layer III-olive zone (10 YR 2/2) Layer IV-olive zone (10 YR 2/2) Layer V-olive zone (10 YR 2/2)	0-30 30-40 40-90 90-130	Water table at 1 m.
49	4.5 m x 0.9 m 0.7 m deep	40	Layer I-olive zone (10 YR 2/2) Layer II-olive zone (10 YR 2/1) Layer III-olive zone (10 YR 2/2) Layer IV-olive zone (10 YR 2/2) Layer V-olive zone (10 YR 2/2)	0-40 40-70	Water table not reached.
50	3.0 m x 0.9 m 2.2 m deep	18	Layer I-olive zone (10 YR 2/2) Layer II-olive zone (10 YR 2/1) Layer III-olive zone (10 YR 2/2) Layer IV-olive zone (10 YR 2/2) Layer V-olive zone (10 YR 2/2)	0-30 30-40 40-90 90-130	Water table at 2.2 m. Layer II is relatively compact, with more pebbles low and bottom of layer.

31	4.0 m x 0.9 m 0.9 m deep	3	Layer I-pow zone (10 YR 4/1) Layer II-sandy clay (10 YR 5/1)	Water table at 1.5 m. Pebbles and cobbles occur at water table level. Water table at 0.9 m.	0-40 40-50
32	4.0 m x 0.9 m 0.65 m deep	3	Layer I-pow zone (10 YR 4/1) Layer II-sandy clay (10 YR 5/1)	Water table at 1.5 m. Layer I was 50% clay, 25% sand and 25% pebbles. No siltstone material recorded.	0-50 50-60
33	4.3 m x 0.9 m 1.8 m deep	130	Layer I-siltstone (10 YR 5/1) Layer II-siltstone (10 YR 5/1) Layer III-siltstone (10 YR 5/1)	Water table at 1.5 m. Layer I was 50% clay, 25% sand and 25% pebbles. No siltstone material recorded.	0-60 60-70 70-100
34	4.0 m x 0.9 m 1.2 m deep	17	Layer I-siltstone (10 YR 5/1) Layer II-siltstone (10 YR 5/1)	Water table at 1.5 m. Layer I was 50% clay, 25% sand and 25% pebbles. No siltstone material recorded.	0-60 60-70
35	4.0 m x 0.9 m 1.4 m deep	7	Layer I-siltstone (10 YR 5/1) Layer II-siltstone (10 YR 5/1)	Water table at 1.5 m. Layer I was 50% clay, 25% sand and 25% pebbles. No siltstone material recorded.	0-60 60-70
36	4.0 m x 0.9 m 1.5 m deep	33	Layer I-siltstone (10 YR 5/1) Layer II-siltstone (10 YR 5/1)	Water table at 1.5 m. Layer I was 50% clay, 25% sand and 25% pebbles. No siltstone material recorded.	0-60 60-70
37	4.0 m x 0.9 m 1.6 m deep	3	Layer I-siltstone (10 YR 5/1) Layer II-siltstone (10 YR 5/1)	Water table at 1.5 m. Layer I was 50% clay, 25% sand and 25% pebbles. No siltstone material recorded.	0-60 60-70
38	4.3 m x 0.9 m 2.5 m deep	12	Layer I-siltstone (10 YR 5/1) Layer II-siltstone (10 YR 5/1)	Water table at 1.5 m. Layer I was 50% clay, 25% sand and 25% pebbles. No siltstone material recorded.	0-60 60-70
39	4.5 m x 0.9 m 1.3 m deep	30	Layer I-siltstone (10 YR 5/1) Layer II-siltstone (10 YR 5/1)	Water table at 1.5 m. Layer I was 50% clay, 25% sand and 25% pebbles. No siltstone material recorded.	0-60 60-70
40	3.0 m x 0.9 m 1.2 m deep	20	Layer I-siltstone (10 YR 5/1) Layer II-siltstone (10 YR 5/1)	Water table at 1.5 m. Layer I was 50% clay, 25% sand and 25% pebbles. No siltstone material recorded.	0-60 60-70
41	3.0 m x 0.9 m 1.3 m deep	20	Layer I-siltstone (10 YR 5/1) Layer II-siltstone (10 YR 5/1)	Water table at 1.5 m. Layer I was 50% clay, 25% sand and 25% pebbles. No siltstone material recorded.	0-60 60-70
42	4.3 m x 0.9 m 3.3 m deep	37	Layer I-siltstone (10 YR 5/1) Layer II-siltstone (10 YR 5/1)	Water table at 1.5 m. Layer I was 50% clay, 25% sand and 25% pebbles. No siltstone material recorded.	0-60 60-70
43	3.0 m x 0.9 m 1.6 m deep	340	Layer I-siltstone (10 YR 5/1) Layer II-siltstone (10 YR 5/1)	Water table at 1.5 m. Layer I was 50% clay, 25% sand and 25% pebbles. No siltstone material recorded.	0-60 60-70
44	4.3 m x 0.9 m 1.2 m deep	8	Layer I-siltstone (10 YR 5/1) Layer II-siltstone (10 YR 5/1)	Water table at 1.5 m. Layer I was 50% clay, 25% sand and 25% pebbles. No siltstone material recorded.	0-60 60-70
45	4.0 m x 0.9 m 1.6 m deep	27	Layer I-siltstone (10 YR 5/1) Layer II-siltstone (10 YR 5/1)	Water table at 1.5 m. Layer I was 50% clay, 25% sand and 25% pebbles. No siltstone material recorded.	0-60 60-70
46	4.0 m x 0.9 m 1.6 m deep	27	Layer I-siltstone (10 YR 5/1) Layer II-siltstone (10 YR 5/1)	Water table at 1.5 m. Layer I was 50% clay, 25% sand and 25% pebbles. No siltstone material recorded.	0-60 60-70
47	4.3 m x 0.9 m 1.6 m deep	39	Layer I-siltstone (10 YR 5/1) Layer II-siltstone (10 YR 5/1)	Water table at 1.5 m. Layer I was 50% clay, 25% sand and 25% pebbles. No siltstone material recorded.	0-60 60-70
48	4.3 m x 0.9 m 2.1 m deep	26	Layer I-siltstone (10 YR 5/1) Layer II-siltstone (10 YR 5/1)	Water table at 1.5 m. Layer I was 50% clay, 25% sand and 25% pebbles. No siltstone material recorded.	0-60 60-70
49	3.0 m x 0.9 m 2.0 m deep	33	Layer I-siltstone (10 YR 5/1) Layer II-siltstone (10 YR 5/1)	Water table at 1.5 m. Layer I was 50% clay, 25% sand and 25% pebbles. No siltstone material recorded.	0-60 60-70
50	4.3 m x 0.9 m 1.7 m deep	36	Layer I-siltstone (10 YR 5/1) Layer II-siltstone (10 YR 5/1)	Water table at 1.5 m. Layer I was 50% clay, 25% sand and 25% pebbles. No siltstone material recorded.	0-60 60-70

51	4.3 m x 0.9 m 1.5 m deep	33	Layer I-pow zone (10 YR 5/1) Layer II-sandy clay (10 YR 5/1)	Water table at 1.5 m.	0-50 50-70 70-90 90-150
52	4.0 m x 0.9 m 1.6 m deep	42	Layer I-pow zone (10 YR 5/1) Layer II-siltstone (10 YR 5/1)	Water table at 1.6 m.	0-60 60-100 100-160
53	4.0 m x 0.9 m 1.1 m deep	36	Layer I-pow zone (10 YR 5/1) Layer II-siltstone (10 YR 5/1)	Water table at 1.1 m.	0-60 60-100
54	4.3 m x 0.9 m 2.1 m deep	35	Layer I-pow zone (10 YR 5/1) Layer II-siltstone (10 YR 5/1)	Water table at 2.1 m.	0-60 60-100 100-170 170-240 240-320
55	4.0 m x 0.9 m 2.4 m deep	31	Layer I-pow zone (10 YR 5/1) Layer II-siltstone (10 YR 5/1)	Water table not reached. Layer I is extremely rocky. Layer II grades from fine to coarse—70% rock density.	0-60 60-240
56	3.0 m x 0.9 m 3.4 m deep	40	Layer I-pow zone (10 YR 5/1) Layer II-siltstone (10 YR 5/1)	Water table at 3.4 m. Section uncut, graded by stream, with pebbles and cobbles at bottom.	0-70 70-140 140-190 190-240
57	3.0 m x 0.9 m 2.4 m deep	30	Layer I-pow zone (10 YR 5/1) Layer II-siltstone (10 YR 5/1)	Water table at 2.4 m.	0-30 30-60 60-100 100-170 170-240
58	4.0 m x 0.9 m 1.0 m deep	30	Layer I-pow zone (10 YR 5/1) Layer II-siltstone (10 YR 5/1)	Water table at 1.0 m.	0-60 60-100
59	4.0 m x 0.9 m 1.4 m deep	30	Layer I-pow zone (10 YR 5/1) Layer II-siltstone (10 YR 5/1)	Water table at 1.4 m.	0-60 60-100
60	4.3 m x 0.9 m 1.8 m deep	33	Layer I-pow zone (10 YR 5/1) Layer II-siltstone (10 YR 5/1)	Water table at 1.8 m.	0-60 60-100 100-170
61	3.0 m x 0.9 m 2.0 m deep	34	Layer I-pow zone (10 YR 5/1) Layer II-siltstone (10 YR 5/1)	Water table at 2.0 m.	0-60 60-100
62	4.0 m x 0.9 m 1.8 m deep	33	Layer I-pow zone (10 YR 5/1) Layer II-siltstone (10 YR 5/1)	Water table at 1.8 m.	0-60 60-100
63	4.0 m x 0.9 m 1.7 m deep	33	Layer I-pow zone (10 YR 5/1) Layer II-siltstone (10 YR 5/1)	Water table at 1.7 m.	0-60 60-100 100-170
64	4.0 m x 0.9 m 1.9 m deep	33	Layer I-pow zone (10 YR 5/1) Layer II-siltstone (10 YR 5/1)	Water table at 1.9 m.	0-60 60-100 100-170
65	4.0 m x 0.9 m 2.3 m deep	60	Layer I-pow zone (10 YR 5/1) Layer II-siltstone (10 YR 5/1)	Water table at 2.3 m. French was too unstable to show for detailed profiling.	0-40 40-100 100-190
66	4.0 m x 0.9 m 1.6 m deep	34	Layer I-pow zone (10 YR 5/1) Layer II-siltstone (10 YR 5/1)	Water table at 1.6 m. Bottom of Layer I contains an ash band with charcoal flecking—probably from camp burning.	0-40 40-85 85-170
67	4.0 m x 0.9 m 2.0 m deep	74	Layer I-pow zone (10 YR 5/1) Layer II-siltstone (10 YR 5/1)	Water table at 2.0 m.	0-60 60-100 100-170
68	4.0 m x 0.9 m 2.3 m deep	60	Layer I-pow zone (10 YR 5/1) Layer II-siltstone (10 YR 5/1)	Water table at 2.3 m.	0-60 60-100 100-170
69	4.0 m x 0.9 m 1.8 m deep	30	Layer I-pow zone (10 YR 5/1) Layer II-siltstone (10 YR 5/1)	Water table at 1.8 m.	0-60 60-100
70	4.0 m x 0.9 m 1.5 m deep	33	Layer I-pow zone (10 YR 5/1) Layer II-siltstone (10 YR 5/1)	Water table at 1.5 m.	0-60 60-100
71	4.0 m x 0.9 m 1.5 m deep	33	Layer I-pow zone (10 YR 5/1) Layer II-siltstone (10 YR 5/1)	Water table at 1.5 m. Layer I is very rocky.	0-70 70-150

VJ	4.0 m x 0.9 m, 3.0 m. deep	55	Layer I: glow zone (10 YR 4/3 to 2/3) Layer II: stream deposit (rocky) Layer III: stream bed	0-50 40-110 210-250	Water table at 1.0 m. Layer I is extremely rocky.
VI	4.0 m x 0.9 3.5 m. deep	60	Layer I: glow zone (10 YR 4/3 to 2/3) Layer II: stream sand Layer III: silty loam	0-70 70-130	Water table was not reached.
VJ	4.0 m x 0.9 m, 2.7 m. deep	30	Layer I: glow zone 4/3 to 2/3 Layer II: stream deposit Layer III: silty clay loam (10 YR 4/3)	0-40 40-130 130-270	Water table at 2.5 m.
VI	4.0 m x 0.9 m, 2.3 m. deep	30	Layer I: glow zone in clay (10 YR 4/4) Layer II: stream deposit Layer III: silty clay loam (10 YR 2/3)	0-40 60-100 200-230	Water table at 2.3 m.
VJ	4.0 m x 0.9 m, 2.9 m. deep	30	Layer I: glow zone (10 YR 4/4) Layer II: stream deposit	0-40 40-190	Water table at 2.3 m.

APPENDIX A

Radiometric data from
Beta Analytic, Inc.

BETA ANALYTIC INC.
 DR. M.A. TAMERS and MR. D.G. HOOD

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REPORT OF RADIOCARBON DATING ANALYSES

Dr. Walter Fredericksen

Xamanek Researches

February 22, 1999

March 2, 1999

Sample Data	Measured C14 Age	C13/C12 Ratio	Conventional C14 Age (*)
Beta-128107	270 +/- 70 BP	-27.6 o/oo	230 +/- 70 BP

SAMPLE #: OLOWALU SAMPLE #2
 ANALYSIS: radiometric-PRIORITY
 MATERIAL/PRETREATMENT: (charred material); acid/alkali:acid
 COMMENT: the small sample was given extended counting time

NOTE: It is important to read the calendar calibration information and to use the calendar calibrated results (reported separately) when interpreting these results in AD/BC terms.

NOTE: Sample "LOWALU SAMPLE #1" was submitted but not analyzed.

Dates are reported as RCYBP (radiocarbon years before present, "present" = 1950 A.D.). By international convention, the modern reference standard was 95% of the C14 content of the National Bureau of Standards' Oxalic Acid & 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 -25.0 per mil. If the ratio and age are accompanied by an (C), then the C13/C12 value was estimated, based on values typical of the material type. The quoted results are NOT calibrated to calendar years. Calibration to calendar years should be calculated using the Conventional C14 age.

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12 = -27.6; lab mult. = 1)

Laboratory Number: Beta-128107

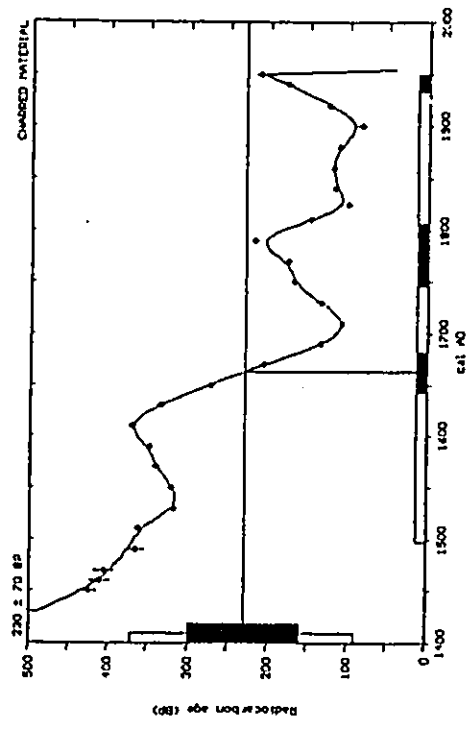
Conventional radiocarbon age: 230 ± 70 BP

Calibrated results: cal AD 1495 to 1950 (2 sigma, 95% probability)

Intercept data:

Intercept of radiocarbon age with calibration curve: cal AD 1665

1 sigma calibrated results: cal AD 1640 to 1680 and cal AD 1745 to 1805 and cal AD 1935 to 1950 (68% probability)



References:
 Stuiver, M. and Reimer, P. M., 1993, Radiocarbon 33(1), p.3-26
 Stuiver, M., Reimer, P. M., and Stuiver, M., 1993, Radiocarbon 33(1), p.3-26
 Stuiver, M., Reimer, P. M., and Stuiver, M., 1993, Radiocarbon 33(1), p.3-26
 Stuiver, M., Reimer, P. M., and Stuiver, M., 1993, Radiocarbon 33(1), p.3-26

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REPORT OF RADIOCARBON DATING ANALYSES

Dr. Walter Friederichsen
 Xamanek Researches

March 1, 1999
 March 9, 1999

Sample Data	Measured C14 Age	C13/C12 Ratio	Conventional C14 Age (±)
Beta-128396	160 ± 70 BP	-27.3 ‰	120 ± 70 BP

SAMPLE #: OLOWALU SAMPLE #3
 ANALYSIS: radiometric-PRIORITY
 MATERIAL/PRETREATMENT: (charred material); acid/alkali/acid

NOTE: It is important to read the calendar calibration information 1 to use the calendar calibrated results (reported separately) when interpreting these results in AD/BC terms.

Dates are reported as RCYBP (radiocarbon years before present, "present" = 1950 A.D.). By international convention, the modern reference standard was 95% of the C14 content of the National Bureau of Standards' Oxalic Acid & 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 permil. 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. Calibration to calendar years should be calculated using the Conventional C14 age.

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12 = -27.3; lab mult. = 1)

Laboratory Number: Beta-128396

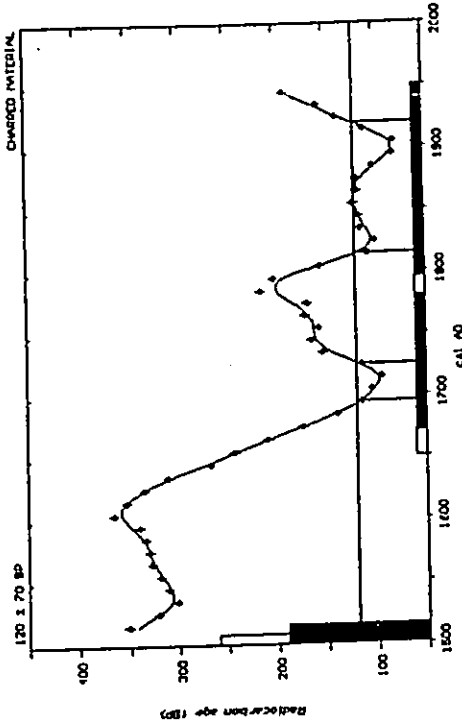
Conventional radiocarbon age: 120 ± 70 BP

Calibrated results: cal AD 1650 to 1950 (Cal BP 300 to 0)
 (2 sigma, 95% probability)

Intercept data:

Intercepts of radiocarbon age with calibration curve:
 cal AD 1695 (Cal BP 255) and
 cal AD 1725 (Cal BP 225) and
 cal AD 1815 (Cal BP 135) and
 cal AD 1920 (Cal BP 30)

1 sigma calibrated results: cal AD 1670 to 1780 (Cal BP 280 to 170) and
 (68% probability) cal AD 1795 to 1950 (Cal BP 155 to 0)



References:
 Calibration Database
 Editorial Comment
 Stuiver, M., von der Pligk, H., 1998, Radiocarbon 40(1), p21-31
 INCA (13) Radiocarbon Age Calibration
 Stuiver, M., et al., 1998, Radiocarbon 40(1), p1041-1053
 Mathematics
 A Simplified Approach to Calibrating C14 Dates
 Talbot, A. S., Page, J. C., 1983, Radiocarbon 31(2), p117-122

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APPENDIX B

LAND COMMISSION AWARDS IN OLOWALU

Following the Mahele in 1848, there were 42 individual Land Commission awards granted in the *ahupua'a* of Olowalu, between the years 1852 and 1855. The majority are in the upper reaches of the property, along Olowalu stream. The distribution of land awards,¹ and the present route of the stream suggest that the stream was channeled in a general, straighter north-south direction sometime after the Mahele. This was probably done to control flooding of agricultural fields. The award plots run across the alluvial fan in a northwesterly-southeasterly direction. A 1906 map of the Olowalu Plantation, made by A. C. Alexander, shows the new, straighter route of the stream (Map 6).

There are 36 land grant awards listed in the *mauka* portion of the property. Refer to Table 1 for detailed information on the awards. Thirty-three of the grants are *kuleana* located along Olowalu Stream, and were taro lands and houselots. Only 3 grants were for other purposes—the 17.592-acre award granted to Nahaolelua by Kamehameha IV in 1858, the .924-acre parcel granted to the Board of Education for a school at Olowalu 2, and the 16.5-acre Land Patent Grant (Grant 11073) to Pioneer Mill in 1942.

There are 9 awards on the *makai* portion of the property, and it should be noted that several *tarakulea kuleana* awards in the *mauka* area correspond to houselot awards on the *makai* property. These include LCA 6728 to Mahulu; LCA 5952 to Minamina; LCA 8817 to Kanakaoie; and LCA 1742 to Z. Kaauwai (See Table 1).

¹ Please refer to Maps 4 and 5 for the approximate locations and distribution of LCAs within Olowalu *ahupua'a*, and to historic maps in Figures 1 and 1a.

TABLE 1

Land Commission Awards— <i>mauka</i> parcel ¹						
TMK	Size in acres	Royal Patent	LCA Number	Year conveyed	Awardee	Nature of use
4-8-03: 11	1.787	7989	5829-E: 1, 2	9/22/1853	Kawehena	Hawaikeke & Kamani
4-8-03: 50	7.5	6367	4376: 1	3/6/1855	Keahi	Puukoihohilo
4-8-03: 51	.638	6285	3772: 3	9/24/1853	Alapai	Puukoihohilo
4-8-03: 52	.919	6285	3772: 2	9/24/1853	Alapai	Kula land
4-8-03: 53	2.704	6946	9906	9/24/1853	Pikao	Kula land
4-8-03: 54	.525	3810	8573: 2		Kaliula	Houselot and taro patches
4-8-03: 55	7.0	4041	10128: 3	3/6/1855	E. Maui	Taro land
4-8-03: 56	.924	N/A	R.P.G.R. 15:2	9/20/1882	Board of Ed.	Kula and taro
4-8-03: 57	4.5	5183	5829: 2	9/22/1853	Hoole	School lot at Olowalu 2
4-8-03: 58	1.75	4041	10128: 4		Hoole	Taro and kula land
4-8-03: 59	4.938	3776	5113	11/1/1852	E. Maui	Kula
4-8-03: 60	2.975	2154	1742: 1	9/26/1853	Kaifaa	Kula
4-8-03: 61	1.655	7989	5829-E: 1, 2, 3	9/22/1853	Z. Kaauwai	Kamahi 1
4-8-03: 62	1.813	5468	6038: 3	9/22/1853	Kewehena	Hawaikeke & Kamani
4-8-03: 63	8.638	4041	10128: 5	3/6/1855	Peekauai	Houselot and taro land (apuna 3-kula land)
4-8-03: 64	5.5	7102	5829-D: 1, 2, 3	9/22/1933	E. Maui	Kula land
4-8-03: 65	6.5	6267	4376: 2	3/6/1855	Kaaoanema	Houselot and taro patches
4-8-03: 66	.863	6611	10714	11/1/1852	Keahi	Puukoihohilo
4-8-03: 67	.583	N/A	6547	11/1/1852	Pohakamui	Taro and kula
4-8-03: 68	.625	4041	10128: 2	3/6/1855	Hale	Taro and kula
4-8-03: 69	3.456	6881	8657	9/24/1853	E. Maui	Taro land
4-8-03: 70	2.063	3344/3811	8668	3/6/1855	Kikau	Kula, taro land and houselot
4-8-03: 71	.581	5183	5829-F: 1	9/22/1853	Kaiwi	Taro and kula
4-8-03: 72	.456	5187	10392: 2	11/1/1852	Hoole	Taro land
					Paia	Taro land

¹ This information was provided by Mr. Robert Horcjo, Project Manager for Olowalu Elua, Associates, LLC, and came from the Bureau of Conveyances archives through Title Guarantee of Hawaii. It was determined in July 1999 that 2 *kuleana*—LCA 3888, and LCA 3772, Apuna 1—located on the *mauka* project area were not part of Olowalu Elua Associates, LLC property (Letter from Title Guaranty of Hawaii to Mr. Robert L. Horcjo, July 14, 1999).

Lot No.	Area (Acres)	Patent No.	Year Conveyed	Awardee	Nature of Use
14300-73	31.0	5464	9-22-1855	Peckham	Other
14300-74	5.6	926	1-30-1855	Kaui	Kaui Land
14300-75	3.4	5181	9-24-1855	Mimantua	Portion of Crown Land of Olowalu
14300-76	10.5	N.A.	1-31-1902	Pomerset Mill	Portion of Crown Land of Olowalu
14300-77	2.32	1041	1-0-1855	E. Maui	Nela
14300-78	2.92	N.A.	5-2-1855	Nahaulehua	Nela
14300-79	4.6	5463	9-22-1855	Peckham	Kaui Land
14300-80	2.40	4982	9-23-1855	Mamala	Kaui Land
14300-81	0.7	552	9-24-1855	Saukaole	Kaui Land
14300-82	0.0	582	9-24-1855	Saukaole	Kaui Land
14300-83	0.0	583	9-24-1855	Alapa	Paukolehale
14300-84	0.0	584	9-24-1855	Panohi	Household

Lot No.	Area (Acres)	Patent No.	Year Conveyed	Awardee	Nature of Use
14300-85	2.09	519	9-22-1855	Hana	Household
14300-86	1.39	520	11-1-1855	Kalahele	Household
14300-87	1.34	521	9-26-1855	Z. Saamoa	Household
14300-88	1.34	522	9-26-1855	Kahele	Household
14300-89	1.34	523	9-22-1855	Kahele	Household
14300-90	1.34	524	9-22-1855	Malahele	Household
14300-91	1.34	525	9-22-1855	Malahele	Household
14300-92	1.34	526	9-22-1855	Malahele	Household
14300-93	1.34	527	9-22-1855	Malahele	Household
14300-94	1.34	528	9-22-1855	Malahele	Household
14300-95	1.34	529	9-22-1855	Malahele	Household
14300-96	1.34	530	9-22-1855	Malahele	Household
14300-97	1.34	531	9-22-1855	Malahele	Household
14300-98	1.34	532	9-22-1855	Malahele	Household
14300-99	1.34	533	9-22-1855	Malahele	Household
14300-100	1.34	534	9-22-1855	Malahele	Household

The remainder of the *amupua* was crown land, that was originally granted to Kamehameha III. Crown lands became government lands after the annexation of the Hawaiian Islands in 1897.

A deed provided by Mr. Horace, of Olowalu Elna Associates, L.L.C., states that in conformity with the Land Act of 1895, all of the land "situate at Olowalu and Uluhame in the District of Lohiana, Island of Maui" was "granted and confirmed unto Walter M. Corford for the consideration of thirty-seven thousand seven hundred and fifty dollars (\$37,750.00). This was identified as Land Patent No. 4973, and was a cash purchase at public auction, which took place on July 9, 1906. Title was granted on July 23, 1906. The land area in Olowalu was 0.827 acres, exclusive of 1.035 acres school for and land sold by Kamehameha IV to Kahauleoha, all of which amounted to 0.4 acres.

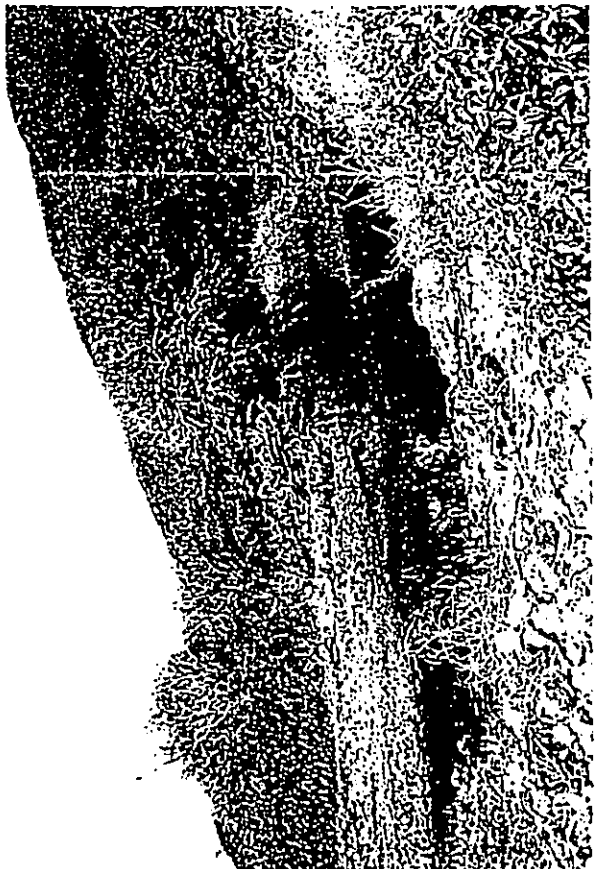


Photo 1 - Mouth of Olowalu Stream.



Photo 2 - General *mana* view of eastern portion of study area. Monkeypod Trees line Honouapihuni Highway (Highway 30).



Photo 3 - Mitigation of Burial find #1 in access road.



Photo 5 - Backhoe Trench 3, containing Burial #2. View to the northwest.



Photo 4 - Excavation of Backhoe Trench 14—BT 13 in foreground—Burial find #1 to the left.



Photo 6 - Burial mitigation in process—view to the northwest.

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Photo 12 - Backhoe Trench 8 with burial find covered with blue tarp, showing the proximity of the burials to the ocean.



Photo 13 - Backhoe Trench 78, located on the west side of Olowalu Stream. Note the shallow water table.



Photo 11 - Test Unit 1 in Site 4094 rock structure.

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Photo 20 - Large tree growing within the brick structure.



Photo 21 - Iron post with rigging and eye on top. Ruins of the mill are behind thick vegetation.



Photo 18 - View of eastern portion of ruins, in the vicinity of the mule pen.



Photo 19 - Ruins of brick feature on *makai* end of large building foundation.

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APPENDIX F-2.

**Archaeological Inventory
Survey of Mauka Olowalu
Lands**

ARCHAEOLOGICAL INVENTORY
SURVEY OF MAUKA PORTION OF
OLOWALU DEVELOPMENT PARCEL
PHASE 2
OLOWALU AHUPUA'A, LAHAINA
DISTRICT, MAUI ISLAND
(TMK 4-8-3: 10)

ABSTRACT

Xamanek Researches carried out an archaeological reconnaissance survey of the overall project area during October 1998. Phase 1 of inventory level work was undertaken on the 73-acre *mauka* portion of the project area parcel during December 1998 and January 1999, and a draft report on this portion of the inventory survey was submitted in March 1999. The c. 660-acre *mauka* portion of the property was surveyed in March through May 1999, and comprises Phase 2 of the project. While sugarcane has been actively cultivated on much of the subject parcel, a total of 30 archaeological sites are present on the property. Six of these are known sites, while 24 had previously not been recorded.

The known cultural resources include Kawaihoa *heiau* (Site 50-50-08-04), the Olowalu Petroglyph Complex (Site 1200), the Olowalu Petroglyph Rock Shelter (Site 1201), the Hawaiian Protestant Church (Site 1603), an *ahupua'a* boundary wall (Site 3180), and a plantation era irrigation ditch (Site 3172).

The 28 previously unidentified sites include precontact and post-contact cultural resources, and were assigned SIHP numbers 50-50-08-4699 through 4721, 4758, and 4820-4823. Precontact sites include rock overhang shelters, platforms, terraces, a petroglyph panel, possible burial mounds, a burial cave, Pu'u Kilea burial ground, 2 *heiau*, a possible *ko'a*, permanent habitation features, remnant *laro lo'i*, other agricultural features, boundary walls, surface scatters of human remains, a fishpond and subsurface marsh soils. Post-contact sites include a coffin burial associated with the Site 1603 stone church cemetery, a Japanese cemetery, retaining walls, property markers, an old hydro-generation facility, and a house platform. All of the cultural resources on the project area are deemed significant under Criterion "D" of the Federal and State historic preservation guidelines. In addition, several sites qualify for significance under multiple criteria. Recommended mitigation measures range from no further work for a few post-contact sites, to data recovery and preservation.

Prepared for:
Olowalu Elua Associates
Kahului, Maui

Prepared by:
Xamanek Researches
Pukalani, Hawaii

Demaris L. Fredericksen
Erik M. Fredericksen

July 23, 1999
(Revised February 2, 2000)

TABLE OF CONTENTS

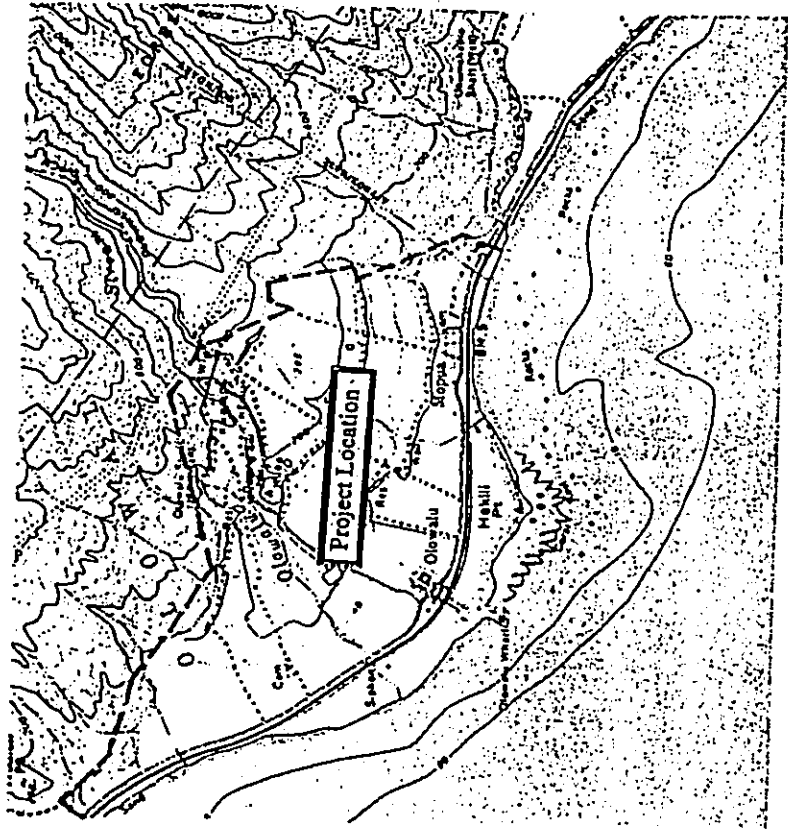
Site 50-50-08-4699	41
Site 50-50-08-4700	42
Sites 50-50-08-4701, 4702, 4703	46
Sites 50-50-08-3180, 4704	47
Sites 50-50-08-4705, 4706	48
Site 50-50-08-4708	49
Sites 50-50-08-4709, 4710	50
Sites 50-50-08-4711, 4712, 4713	52
Sites 50-50-08-4714, 4715, 4716, 4717	53
Sites 50-50-08-4718, 4719, 4720	54
Sites 50-50-08-04, 4721, 4758	55
Figures 7 - Plan view of Site 4758—Japanese Cemetery	56
Sites 50-50-08-1603, 4820, 4821, 4822	57
Site 50-50-08-4823 and Backhoe Trenches	58
Artifacts	61
Radiocarbon dates	62
Map 7 - Distribution of precontact sites and LCA swaths	63
Map 8 - Schematic map showing land usage during the Plantation era and the historic sites identified in the present inventory survey	64
Summary and Conclusions	65
Site Significance Evaluations	66
Site and Feature Mitigation Recommendations	68
TABLE 2 - Radiometric Dating Results	70
TABLE 3 - Site Function and Age	71
TABLE 4 - Significance Evaluations—Proposed Mitigation	73
REFERENCES	74
Photo 67 - View to east—Backhoe Trench 146	76
Photo 68 - View to northwest—Backhoe Trench 99	76
Photo 69 - View to east—Backhoe Trench 112	77
Photo 70 - View to northeast—Backhoe Trench 121	77
Photo 71 - Two views of sample of <i>lauhala</i> matting from Site 4699, Feature D ...	78
Photo 72 - Volcanic glass artifacts from Site 4700. Top row—left to right: # 10, #11, #12, #15; Bottom row—left to right: #16, #17, and #18.	79
Photo 73 - Worked shell (#23) and Maui "diamond" utilized flake (#21)	79
[Site 4710]	80
Photo 74 - Adze fragment (#19) and basalt chisel fragment (#14). [Site 4700]	80
Photo 75 - Worked basalt flake (#13) [Site 4700] and basalt chopper core (#28) [Site 4710]	81
Photo 76 - Basalt chopper/abrader (#26) [Site 4710]	81
Photo 77 - Basalt chopper (#27) [Site 4710]	81
TABLE 5 - Summary of Subsurface Results at Site 4700	82
TABLE 6 - Summary of Subsurface Results at Site 4704—Feature B	83
TABLE 7 - Summary of Subsurface Results at Site 4706—Test Unit 1	84
TABLE 8 - Summary of Subsurface Results at Site 4710—Feature B	85
TABLE 9 - Summary of Subsurface Results at Site 4710—Feature C	86
TABLE 10 - Indigenous Artifacts Recovered from Olowalu <i>mauka</i>	87

Map 1 - U.S.G.S. Topographic Map, Olowalu Quadrangle, 1983	vi
Map 2 - State of Hawaii Tax Map, Zone 4, Section 8, Plat 3	vii
Map 3 - State of Hawaii Tax Map, Zone 4, Section 8, Plat 4	viii
Map 4 - Project map, showing location of sites	ix
Map 5 - Project map: Topographic map with locations of sites and backhoe trench locations	back cover
INTRODUCTION	1
STUDY AREA: Natural History	3
Photo 1 - General view to the south—from Pu'u Kilea—East Maui in distance	6
Photo 2 - General view of Olowalu Stream to southwest—from Pu'u Kilea	6
Photo 3 - General view to west with Lanai in background—from Pu'u Kilea	7
Photo 4 - General view to the east—from Pu'u Kilea	7
Photo 5 - View of piggery, leased from John Ka'aea by Cabanilla family—north of Pu'u Kilea	8
Photo 6 - Olowalu well shaft— <i>mauka</i> of piggery	8
BACKGROUND RESEARCH	9
Precontact to 1850s	15
Table 1 - Land Commission Awards	17
Map 6 - Mahele award lands and land use patterns	18
Plantation Era	21
Figure 1 - Map of Olowalu Plantation in 1881	22
Figure 1a - Olowalu Plantation in 1906—Alexander map	23
Oral History Interviews	23
Figure 2 - Sketch map of Olowalu Village provided by Mr. Manny DeMello	26
Figure 3 - Sketch map of Olowalu Village provided by Ms. Adeline Rodrigues	27
PREVIOUS ARCHAEOLOGICAL STUDIES	28
Figure 4 - 1973 map of the Olowalu Petroglyph Complex (Site 1200)	29
Figure 5 - Plan view of Site 1603—Olowalu Stone Church ruins and cemetery (1999)	32
Maui Electric Company's Lahaina to Maalaea Transmission Line	33
Olowalu <i>Makai</i> (Phase I)	33
Figure 6 - MECO Transmission Line monitoring—Sites in Olowalu	34
Launiupoko	35
Ukumehame	36
Settlement Patterns and Expectation of Findings	36
ARCHAEOLOGICAL FIELD METHODS	40
ARCHAEOLOGICAL FINDINGS	41

Photo 32 – Site 4704—Petroglyph image.....	42
Figure A17 – East wall profile of Test Unit 1—Feature B.....	42
Figure A18 – Plan view of Feature A—Site 4705.....	46
Figure A19 – Plan view of Feature B—Site 4705.....	47
Figure A20 – West wall profile—Test Unit 1—Site 4706.....	48
Figure A21 – Plan view of Site 4706.....	49
Figure A22 – Plan view of Site 4707.....	51
Figure A23 – Plan view of Site 4708.....	53
Photo 33 – Site 4708—Feature A—west face.....	54
Photo 34 – Site 4708—Site 4708—Feature B—looking east.....	54
Figure A24 – Petroglyph images on boulder lying on Feature A—Site 4708.....	55
Figure A25 – Plan view of Site 4709.....	57
Photo 35 – Site 4709—Feature C—view to west.....	58
Photo 36 – Site 4709—Feature B.....	58
Figure A26 – Plan view of portion of Site 4709.....	60
Photo 37 – Site 4709—Feature A with water tank enclosure in background.....	61
Photo 38 – Site 4710—Feature C—looking northwest.....	61
Figure A27 – Plan view of Site 4710.....	63
Figure A28 – Southeast/northwest profile of TU 1—Site 4710.....	65
Figure A29 – West wall profile of TU 2—Site 4710.....	65
Photo 39 – Site 4710—Feature D to left—Feature C to right of PVC pipe.....	66
Photo 40 – Site 4710—Feature E—looking south.....	66
Figure A30 – Plan view of Site 4711.....	69
Figure A31 – Plan view of Site 4712.....	71
Figure A32 – Plan view of Site 4713.....	72
Photo 41 – Site 4713—rock shelter.....	74
Photo 42 – Site 4714—rock shelter.....	74
Figure A33 – Plan view of Site 4714.....	76
Figure A34 – Plan view of Site 4715—Pu'u Kilea cemetery.....	77
Photo 43 – Site 4715—Pu'u Kilea burial ground—looking north.....	78
Photo 44 – Site 4715—burial mound nearest parking area.....	78
Photo 45 – Site 4715—burial mound with coral offering.....	79
Photo 46 – Site 4715— <i>mauka</i> terraces/platforms on southeastern side.....	79
Photo 47 – Site 4715—view of terrace with coral and pebble pavement.....	80
Photo 48 – Site 4715—rock mound with dried <i>maile lei</i> offering.....	80
Figure A35 – Plan view of Site 4716.....	82
Figure A36 – Plan view of Feature C—Site 4717.....	85
Photo 49 – Site 4717—Feature A—plantation era retaining wall segment.....	86
Photo 50 – Site 4718—Walker's unnamed <i>heiau</i> prior to clearing.....	86
Figure A37 – Plan view of Site 4718— <i>heiau</i> remnant.....	88
Photo 51 – Site 4718— <i>heiau</i> remnant after vegetation was cleared away.....	89
Photo 52 – Site 4718—view of <i>heiau</i> —looking east.....	89
Photo 53 – Site 4718 in foreground—Olowalu Valley in background.....	90
Photo 54 – Site 4719—historic boundary marker.....	90
Figure A38 – Plan view of Site 4719.....	92
Figure A39 – Plan view of Site 4720.....	93

TABLE 11 – Historic Artifacts Recovered.....	88
TABLE 12 – Summary of backhoe trenches.....	89
APPENDIX A – Site Descriptions	
Figure A1 – Plan view of Site 4699.....	1
Photo 7 – View into Olowalu Valley.....	2
Photo 8 – Site 4699—Feature D—burial cave.....	5
Photo 9 – Site 4699—Feature A—rock shelter.....	6
Photo 10 – Site 4699—Feature B—rock shelter.....	6
Photo 11 – Site 4699—Feature C—rock shelter.....	8
Photo 12 – Site 4699—Feature I—looking north.....	8
Figure A2 – Plan view of Feature I—Site 4699.....	9
Photo 13 – Site 4699—Feature I—looking south.....	10
Photo 14 – Site 4699—Feature I—east end of feature.....	10
Figure A3 – Plan view of Site 4700.....	12
Figure A4 – Plan view of Feature A—rock shelter with possible windbreak.....	14
Figure A5 – Plan view of Feature B—C-shape rock wall—Site 4700.....	15
Photo 15 – Site 4700—Feature B—C-shape enclosure.....	16
Photo 16 – Site 4700—Feature B—view to north.....	17
Figure A6 – Plan view of Feature C—rock shelter—Site 4700.....	17
Figure A7 – Plan view of Site 4700, Features E and F, showing TUs 2 and 3.....	18
Photo 17 – Site 4700—Feature E—rock shelter.....	20
Photo 18 – Site 4700—Feature F—rock shelter.....	20
Figure A8 – Profiles of Feature E and Test Unit 2—Site 4700.....	21
Figure A9 – Profiles of Feature F and Test Unit 3—Site 4700.....	22
Photo 19 – Test Unit 3—hearth feature—Site 4700, Feature F.....	23
Photo 20 – Test Unit 4—Site 4700—Feature G.....	26
Figure A10 – Plan view of Site 4701.....	27
Figure A11 – Plan view of Site 4702.....	28
Photo 21 – South face of Site 4702, showing irrigation ditch in foreground.....	28
Photo 22 – Looking westward along south face of Site 4702.....	29
Figure A12 – Plan view of Site 4703.....	30
Figure A13 – Plan view of Site 3180.....	33
Photo 23 – South face of boundary wall—Site 3180.....	34
Photo 24 – Looking westward along Site 3180—MECO power pole on right.....	34
Photo 25 – Looking westward along north side of Site 3180.....	35
Photo 26 – Break in wall—Site 3180.....	35
Figure A14 – Plan view of Site 4704.....	36
Photo 27 – Site 4704—Feature B—portion of petroglyph panel in rear (Feature A).....	37
Photo 28 – Site 4704—Feature D in foreground—Feature B in rear.....	37
Figure A15 – Feature A—petroglyph panel number 2—Site 4704.....	38
Figure A16 – Feature A—petroglyph panel number 6—Site 4704.....	39
Photo 29 – Site 4704—Feature A—pictographs in area 2.....	40
Photo 30 – Site 4704—Feature A—pictograph—closer view.....	40
Photo 31 – Site 4704—Petroglyph images.....	41

LOWALU QUADRANGLE
HAWAII-MAUI CO.
ISLAND OF MAUI
7.5 MINUTE SERIES (TOPOGRAPHIC)



TRUE NORTH
MAGNETIC NORTH
APPROXIMATE MEAN
DECLINATION 1980

1 MILE
1000 2000 3000 4000 5000 6000 7000 FEET

CONTOUR INTERVAL 40 FEET
DOTTED LINES REPRESENT 20-FOOT CONTOURS
DATUM IS MEAN SEA LEVEL
DEPTH CURVES AND SOUNDINGS IN FEET—DATUM IS MEAN LOWER LOW WATER
SPOTTED DASHES REPRESENTS THE APPROXIMATE USE OF MEAN HIGH WATER

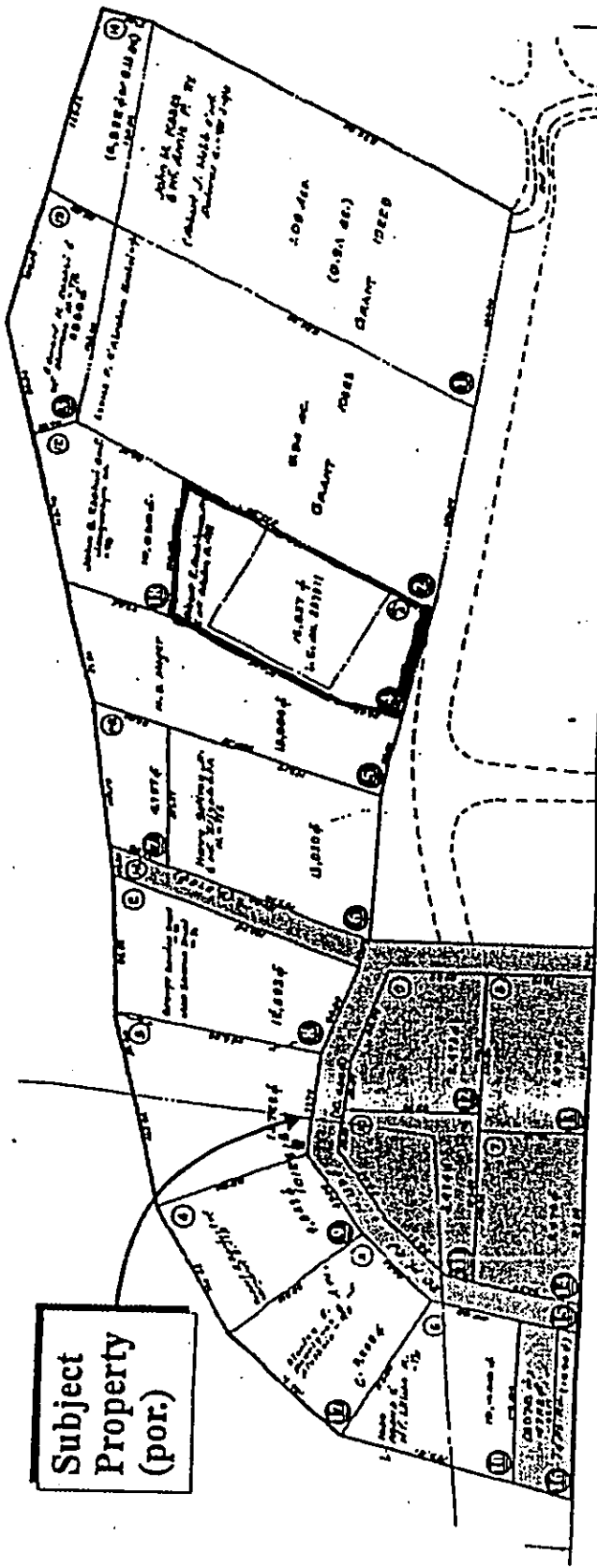
Map 1 - U.S.G.S. Topographic Map, Olowalu Quadrangle, 1983.

Photo 55 - Site 4720—historic road remnant.....94
 Photo 56 - Site 4758—Japanese cemetery—following burning.....94
 Photo 57 - Site 4758—gravestones prior to burning.....96
 Photo 58 - Site 4758—cemetery following burning of underbrush.....96
 Photo 59 - Site 4758—engraved headstone.....97
 Photo 60 - Site 4758—charred wooden grave marker.....97
 Figure A 40 - Plan view of Site 04—Kawaihoa Heiau.....99
 Photo 61 - Site 04—Kawaihoa Heiau—east wall.....100
 Photo 62 - Site 04—west wall.....100
 Photo 63 - Site 04—south side of east wall.....101
 Photo 64 - Site 04—north wall.....101
 Photo 65 - Site 04—interior view of structure.....102
 Photo 66 - Site 04—interior view of south wall.....102
 Figure A41 - Plan view of Site 4721.....103
 Figure A42 - Map of Olowalu Church lands—original LCA and modern.....106
 Sites 50-50-08-4820, 4821, 4822.....107
 Site 50-50-0804823.....108

APPENDIX B - Radiometric Data from Beta Analytic, Inc.....109

APPENDIX C - Historic documents relating to the Plantation Era.....117
 1878 Census.....117
 Olowalu Sugar Company Chronology.....118
 Olowalu School Chronology.....119
 Honolulu Trades and Labor Council Committee Report—1904.....128
 1906 map showing former and present Olowalu Stream beds and Olowalu
 Mill community.....133
 Photo of Olowalu School in 1916—located mauka of Site 4822 pond.....137
 Undated photo of Olowalu Mill taken from the government road.....138
 Undated photo of Olowalu Mill taken from sea.....139
 Undated photo of Olowalu, showing cane fields extending up valley above
 Pu'u Kilea.....140
 Map of Olowalu Village (Sheet 1 - 1936).....141
 Map of Olowalu Village (Sheet 2 - 1936).....142
 Floor plan of Manager's house.....143
 Floor plan of Water Luna's house.....144
 Floor plan of Luna's house.....145
 Floor plan of Water Luna's house.....146
 Floor plan of plantation laborer's house.....147
 Photo showing water systems, cane fields and road patterns and clear piles.....148
 Photo showing water systems, cane fields and road patterns and clear piles.....149

PLAT 03



← To Lahaina Honoapilani Highway To Wailuku →

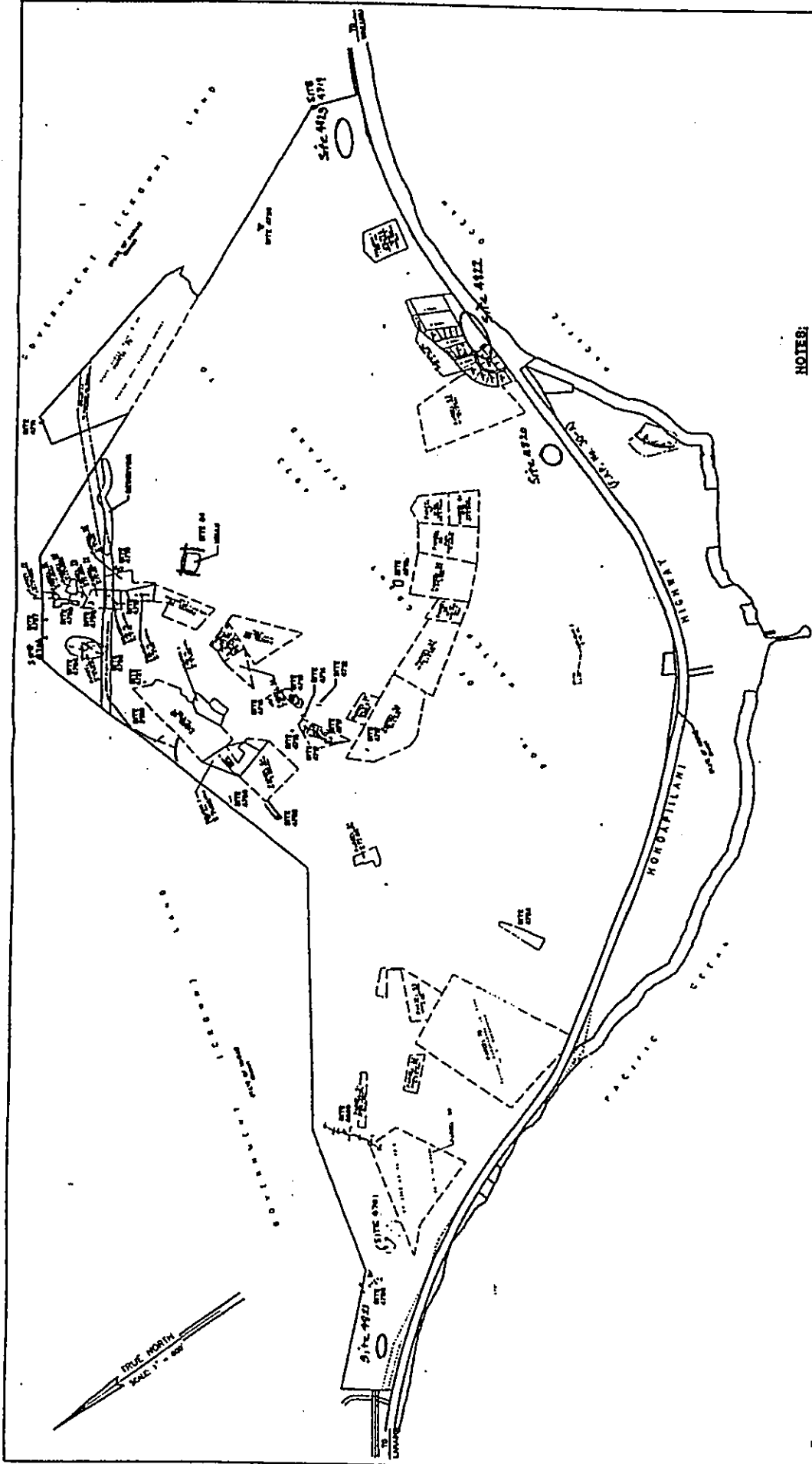
PROPERTY OF THE COUNTY			
TAXATION MAPS BUREAU			
TERRITORY OF HAWAII			
TAX MAP			
AREA	AC.	PERCH.	PLAT
4	8	0	4
SECTION			

PLAT 03

Notes: All lots owned by Pioneer
Map Co., Ltd. unless
otherwise noted.

Map 3 - State of Hawaii Tax Map, Zone 4, Section 8, Plat 4.

OLENAHU SUBDIVISION, OLENAHU, LANAI, MAUI.



NOTES:

1. THE ARCHAEOLOGICAL SITES SHOWN ON THIS EXHIBIT WERE IDENTIFIED BY THE EXISTING RECORDS OF THE BUREAU OF LAND AND NATURAL RESOURCES ON THE GROUND DURING THE MONTH OF APRIL 1993.
2. MEASUREMENTS AS SHOWN ARE APPROXIMATE.

ARCHAEOLOGICAL SITES LOCATION
LOWALU MAUKA AND MAKAI PROPERTIES
AT OLOWALU, LAHAINA, MAUI, HAWAII

Prepared for: OLOWALU ELUA ASSOCIATES, L.L.C.
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GRAPHIC SCALE IN FEET
 Tax Map Key (2) 4-8-03
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R. T. TANAKA ENGINEERS, INC.
 LAND SURVEYING, CIVIL & STRUCTURAL ENGINEERS

INTRODUCTION

We were contacted in September 1998 by Mr. Robert Horcajo, Project Manager, Olowalu Elua Associates, Kahului, Maui about conducting an archaeological inventory survey on a c. 730-acre portion of land in Olowalu, Maui. This large area consists of lands formerly owned by Pioneer Mill Company, Ltd., a subsidiary of AmFac/JMB Hawaii, Inc.

The bulk of the overall project area is comprised of lands in the Olowalu *ahupua'a*, while a c. 5-acre portion at the southeastern end of the study area lies within the *ahupua'a* of Ukumehame. We were contracted to perform the inventory survey for the overall project in October 1998. Subsequently, we were asked to conduct the inventory survey for the 730-acre project area in 2 phases. Phase 1 was to consist of an inventory survey of the land *mukai* (south) of Honoapi'iiani Highway. A draft report for the survey was completed in March of 1999. The second phase—Phase 2—includes the land *mauka* (north) of the highway. The subject property is located approximately 14.5 miles from Wailuku and 5.5 miles from Lahaina.

This report presents the inventory survey level results for Phase 2—the *mauka* portion of the overall project area (TMK 4-8-3; 10).

Parcels within the *ahupua'a* which were excluded from the study

There are several parcels within the boundaries of the subject property, which were not owned by Pioneer Mill, and therefore were not included in the purchase made by Olowalu Elua Associates, LLC. In all, these amount to 4.877 acres in total area.

Exclusion 1 (1.996 acres) is Grant 9820 to the Board of the Hawaiian Evangelical Association for the Olowalu Hawaiian Protestant Church, which is located in the eastern portion of the property. Site 50-50-08-1603, the ruins of the old church is located on this parcel.

Exclusion 2 (0.110 acre) is the residence of the Nahooikaika family, which lies *mauka* of Olowalu Store along the dirt access road. Exclusion 3 (1.787 acres) is the property of John Ka'aea in the northwestern section of the property. Exclusion 4 (0.982 acres) comprises the Ka'auoana property. The total remaining acreage in the *mauka* portion of the study property is 661.955 acres.

ACKNOWLEDGEMENTS

Xarmanek Researches wishes to acknowledge the following individuals for their dedication and cooperation in working towards the successful completion of this project. First of all, thanks to the owners of Olowalu Elua Associates, LLC—including Mr. Peter Martin and Mr. Jim Riley for allowing us to pursue the archaeological objectives of this inventory survey. Secondly, thanks to Mr. Robert Horcajo, project manager for Olowalu Elua Associates, LLC, who not only provided us with information which he had gathered, but generally provided moral support and encouragement as well. We also want to thank the members of the Maui and Lana'i Islands Burial Council—most especially Ms. Dana Naone Hall, Mr. Leslie Kulololo and Mr. Charles Maxwell, for their counsel and guidance in dealing with burial issues. Also, thanks to Mr. Brian Ramos, former Maui archaeologist for the State Historic Preservation Division, for his contribution to and participation in the decision-making process. Dr. Ross Cordy, SHPD Archaeological Branch Chief, offered several suggestions in his review, which have been incorporated into this report.

Finally, we wish to extend our thanks to members of the Olowalu community for sharing their knowledge and pointing out areas of interest in the project area—their help and *aloha* were invaluable to us.



STUDY AREA

The Olowalu project lies along the flank of the West Maui Mountains. West Maui is geologically a single volcano, with rift and fracture zones that radiate north to southeast from the caldera. One ridge separates Lahaina District from the Waiuku District. Erosion of the volcanic basaltic lava flows that came from the ancient volcano, has formed alluvial soils, which are the predominant soils on the property. There is a small cinder cone, roughly in the middle of the property that rests on the alluvial deposits. Kilea Cinder Cone contains microscopic nephelinite—similar to features produced in late stage volcanic activity of Oahu and Kauai (Macdonald, Abbott and Peterson, 1983).

The mauka portion of the property extends from Honoapiʻilani Highway northeastward into Olowalu Valley to an elevation of c. 400 feet, and encompasses the large alluvial fan created by Olowalu Stream.

Natural History

Botanical

A botanical study was undertaken for the project (Char, March 1999). Ms. Char describes 5 general vegetation types—coastal vegetation, sugar cane fields, irrigation system vegetation, gulch vegetation, and the kiawe/buffelgrass community (ibid., p. 3). The four latter types are found on the mauka portion of the study area. The sugarcane fields occur on level to moderately sloping, well-drained soils on a large alluvial fan and stream

terrace, and belong predominantly to the Pulehu and Waieae soil series (see discussion below). Various grasses and weeds thrive on the edges of the fields (ibid., pp. 4-5).

Along the walls and ditches of the irrigation system are found mosses and ferns, while the reservoirs support clusters of *koa haole*, castor beans, Java plum, opiuma, grasses and various weeds. Also the reservoirs provide feeding and nesting habitat for the endemic Hawaiian Coot, or *ulua ke'oke'o* (ibid., pp. 5-6).

The Olowalu Stream gulch supports a dense growth of trees. The presence of numbers of *kukui* nut trees in the valley indicates that the area was utilized in precontact times.

Finally, around the edges of the property, and in any area not cultivated by sugar cane, there occurs the kiawe/buffelgrass community. In areas where soil is relatively deep, the trees reach a height of 20 to 30 feet, while in rocky areas the *kiawe* are limited to 5 to 20 feet in height. Buffelgrass makes up the predominant understory species, and occurs as a dense cover 2 to 3 feet tall beneath the trees. This type of cover tends to obscure archaeological features, and must be cleared in order to investigate possibly significant areas.

Soils

Soils on the mauka property consist of *lalasolo*, which are well-drained, low

humic, and humic ferruginous varieties in low to moderate rainfall regions. The soil depth is typically 30 inches where slopes are less than 35 percent, and very thin or absent in steeper areas (Footie, et al., 1972).

Several soil types are present on the study area. The largest group consists of Waieae extremely stony silty clay (WyC), which is moderately sloping and occurs on smooth, alluvial fans. Gravel, cobblestones, and stones make up 30 to 80 percent of the volume. Permeability is moderately rapid, runoff is slow to medium, and the erosion hazard is slight to moderate.

Pulehu cobbly clay loam (PcA) is found in the central and western areas of the property, on 0-3 percent slopes. Pulehu cobbly clay loam (PcB) is found along the northwestern boundary on 3 to 7 percent slopes. Pulehu clay loam (PcA), a series of well-drained soils (on 0 to 3 percent slopes), are found in the northwestern area of the property. Pulehu silt loam (PpA) is similar to Pulehu clay loam (0 to 3 percent slopes), but with a somewhat coarser texture, is found on the east side of the property along Honoapiʻilani Highway. Ewa silty clay loam (EwA), 0 to 3 percent slopes is found in the eastern part of the property. A strip of land along Olowalu Stream is composed of Stony Alluvial Land (sSM), which contains stones, boulders, and soil deposited by streams, in places where the slope is 3 to 15 percent. Adjacent to the stony alluvial land, along the mauka portion of the stream lies Rough Broken and Stony Land (rRS), which has very steep, stony gulches.

Finally, in the eastern portion of the property, just north the Honoapiʻilani Highway, is an area of Kealia silt loam (KMW), which is poorly drained, and has a high salt content. When the water ponds after a heavy rain, salt crystals appear on the surface as the water evaporates. This area was the location of a precontact fish pond.¹

¹ Refer to Figure A-92, p. 106 of Appendix A for location in 1906.

according to local informants, which was utilized into the 20th century before it was filled in.

Rainfall in the project area averages less than 20 inches per year, with the greatest amount occurring between November and March. The average annual temperature in Lahaina—5.5 miles to the north—ranges from 71.5 to 78 degrees Fahrenheit (Atlas of Hawaii, 1998).

The entire project area occupies the large alluvial fan spreading from the mouth of Olowalu Valley to the ocean. It is bisected by Olowalu Stream, which took a more north-west-southeast path in the past.² Olowalu Stream is one of 4 major waterways in the Lahaina District—the others being Ukumehame, Launiupoko, and Kaua ʻula—that provided water for the agricultural activity necessary to support a considerable precontact population.

E.S. Craighill and Elizabeth Handy (1972, p. 492) note:

"Lahaina District was a favorable place for the high chiefs of Maui and their entourage for a number of reasons: the abundance of food from both land and sea; its equable climate and its attractiveness as a place of residence; it had probably the largest concentration of population, with its adjoining areas of habitation; easy communication with the other heavily populated areas of eastern and northern West Maui, 'The Four Streams'; and with the people living on the western, southwestern and southern slopes of Haleakala; and its proximity to Lamai and Molokai."

Concerning Olowalu, they continue (Handy and Handy, 1972, p. 492):

"Olowalu, the largest and deepest valley on southwest Maui, had even more

² This stream was channelized by the sugar plantation in the late 1800s.

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contributed to a substantial population, and placed West Maui in a position of prominence throughout the island.

extensive *lo'i* lands both in the valley and below. Just at the mouth of the valley we found in 1934 a little settlement of five *kaubale* (family homes) surrounded by their flourishing *lo'i*. There are said to be abandoned *lo'i* far up in the valley. In and below the next valley, *Lauunipiko* (sic), there were no evidences of *lo'i* and the people of Olowalu said there had never been any. But we think there must have been a few, although the land is, in general, dry and rough.

While these observations were made in the earlier part of the 20th century, there is no doubt that Olowalu was an important agricultural area in precontact times. As long as water was available, the hot climate was ideal for producing *taro*. It was the ability to produce quantities of *taro* that



Photo 1.—General view to the south—from Pu'u Kilea—East Maui in distance.



Photo 2.—General view of Olowalu Stream to southwest—from Pu'u Kilea.

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Photo 3 - General view to west with Lana'i in background—from Pu'u Kilea.

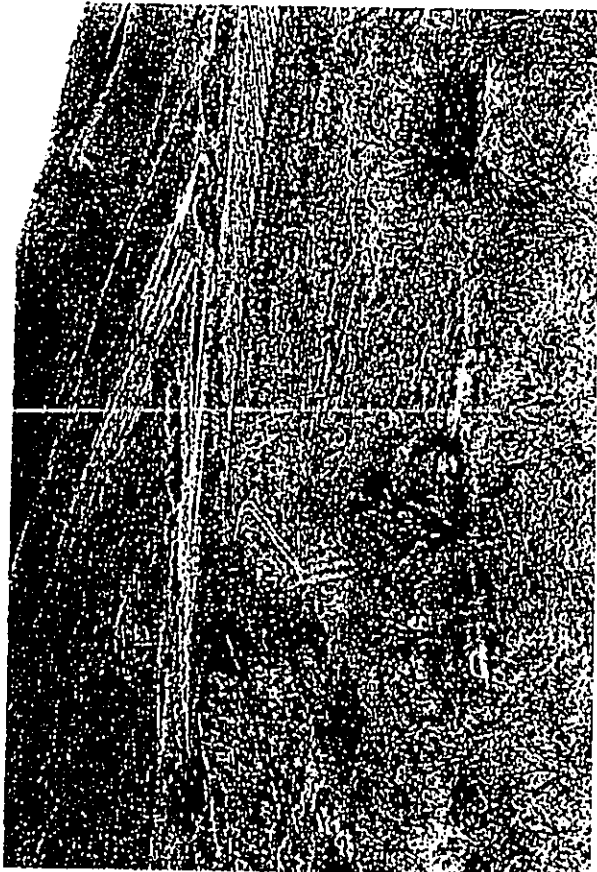


Photo 4 - General view to the east—from Pu'u Kilea.

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Photo 5 - View of piggery, leased from John Kū'āra by Cabanilla family—north of Pu'u Kilea.



Photo 6 - Olowalu shaft—manuka of piggery.

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BACKGROUND RESEARCH

Precontact to 1850 Times

In precontact times, the largely self-sufficient *ahupua'a* was made up of economic units that provided the necessary food and other resources for the community. These units clustered in the ecological zones within the pie-shaped land division. Internal trails linked the ecological zones. Also necessary was a coastal-island trail for transportation and communication between *ahupua'a*s. The important *makahiki* (annual ritual of tribute collection) involved a clockwise procession around each island (Yonkovich, 1988, pp. A-7 to A-8). According to David Malo (1951, p. 146)— "...during the progress of the Makahiki god, the country on its left, i.e. towards the ocean, was tabu." Yonkovich, p. A-8) notes: "Since the *makahiki* is an ancient tradition connected with chiefly power and control, each island's encircling trail must have originally been constructed about the time of the development of the ranked chieflydom social system." Further discussion concludes that this trail was an ancient and apparently a commonplace feature. It was probably maintained for centuries during precontact times—realigned in places as needed, moved around settlements and generally adapted to a changing cultural landscape. It was usually not mentioned in traditional or post-contact accounts—unless to note unusually bad conditions or major improvements (Ibid.).

On Maui the most noted trail improvements were in the 16th century—attributed in traditional accounts to paramount chief Kihapi'ilani. It is often referred to as the "Pi'ilani Trail", but Pi'ilani

was the father of Kihapi'ilani and not associated with the trail building in traditional literature (Ibid.). The precise alignment and nature of the trail in Olowalu is not known. According Handy and Handy (1972, p. 489), "Travelers were sometimes ferried across streams by canoe or along shore, as between Olowalu and Ma'alaea, around the rough southern tip of West Maui."—suggesting that the trail did not continue beyond Olowalu. It is generally felt that the 19th century *Aupuni* Road or Government Road followed the trail into Olowalu, as it did in other areas of Maui.

An overland trail from Olowalu Valley crossed the top of Mauna Kukui, the highest point in the West Maui Mountains. It ran along a knife-edge ridge and down a precipitous path into Waiehu. An account of crossing the *pali* on this trail is related in Handy and Handy, pp. 490-491).

"One of these trips, via Olowalu, was made by the wife of Dr. Gerrit Judd in 1828 (Fleming, 1933, pp. 17-18). Mrs. Judd was carried and helped by a company of twenty-five athletic men, trained to bird-catching on the breeding crags of these mountains.... Their ice and finger nails never cut, grow like claws. Their sole business is to catch the little black birds called the o'u, each producing a few yellow feathers under the wings.... From Kukui to Waiehu the descent was almost perpendicular, and we swung down from branch to branch among the trees, our only security being the faithful bird-catchers.

who placed our feet for us and guarded each step...."

Late Precontact Struggle for Power

Lahaina District became a focal point in the struggle for power between important chiefs, because it had ample resources that supported a large population. While Olowalu is not specifically mentioned, it seems unlikely that it would not have been touched by these episodes of warfare. One of the fiercest battles was between Maui chief Ka-uhi, and the chief of Hawaii, Alapa'i in the mid-18th century. Concerning this war, Samuel Kamakau relates the following:

A whole year Alapa'i spent in preparation for the war with Maui. It was in 1738 that he set out for the war in which he swept the country. What was his war like? It employed the usual method in warfare of drying up the streams of Kana'ua, Kanaha, and Mahoma (which is the stream near Lahainalua). 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, Ukahehame, Wailuk, and Honokawai. When Pele-lo-halani heard that Alapa'i was at Lahaina he gathered all his forces at Honokahua and at Honohua. 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-lo-halani 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-lo-halani had but 640 men against Alapa'i's 8,440 from the six districts of Hawaii, there were among them some famous warriors.... Pele-lo-halani intended to unite his forces with those of Ka-uhi, but

³ Pele-lo-halani was the ruling chief of Oahu. Maui chief Ka-uhi sent a present to him and requested his help in defending Maui (Kamakau, p. 74).

Alapa'i's men held Lahaina from Ukahehame to Mala on the north, and in attempting to aid Ka-uhi, Pele-lo-halani became involved with the difficulty. The hardest fighting, even compared with that at Napili and at Honokahua in Ka'anapali, took place on the day of the attack at Pu'u'ene. Pele-lo-halani was surrounded on all sides, mauka and makai, by the forces of Alapa'i, led by Ka-lani-opu'u and Keoua. 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...." (Kamakau, 1992, p. 74).

At the end of this period of warring, Kamehameha-nui became the ruling chief of Maui. Alapa'i returned to Hawaii. There, following the death of Keoua, in 1752, relations between Alapa'i and Ka-lani-opu'u began to sour, because the latter felt that Alapa'i had some part in causing Keoua's death. Battles were fought between the two rivals, and eventually Ka-lani-opu'u succeeded in establishing his rule over the entire island of Hawaii in 1754, after he "seized and cruelly put to death and baked" (Ibid., p. 78) the son of Alapa'i, Keawe-opala.

In the years from 1775 to 1779 there was constant warfare between Ka-lani-opu'u and Kahakili, the younger brother of Kamehameha-nui. Ka-lani-opu'u engaged Waikapu, he was defeated and routed by the forces of Kahakili in 1776. Still nursing a fierce hatred for Kahakili for his defeat, Ka-lani-opu'u launched another series of attacks—sailing to Keupo, Lahaina, and on to Lanai, where his forces ravaged and slaughtered the citizens. When food ran out on Lanai, he moved on to Maui where food was abundant, and fed his soldiers on taro from Honokahua. After this he headed around West Maui for Ko'olau. Upon landing at Hamakua, he engaged in battle with Kahakili's forces, who put up such a fierce fight that Ka-lani-opu'u fled in his canoes. When Ka-lani-opu'u made

landfall at Ko'olau "he slew the common people and maltreated the captives by urinating into their eyes" (Kamakau, p. 91).

Arrival of Europeans

It was toward the last part of this 4-year period of warfare, in January of 1778, that Captain James Cook sailed into the islands—and set in motion a wave of changes that would engulf the Hawaiian people in years to come.

Ka-lani-'opu'u returned to Hawaii from Maui in January of 1779, during Cook's visit in Kealahou. When he saw how many women were prostituting themselves on board Cook's ship, he forbade the women from continuing to visit the vessel. He treated Cook hospitably, however, "giving him hogs, taro, potatoes, bananas, and other provisions, as well as feather capes, helmets, kahiki, feather leis, wooden bowls beautifully shaped, lapa cloths of every variety, finely-woven mats of Puna, and some especially fine mats made of pandanus blossoms" (Kamakau, p. 101). The most desired trade items, as far as the Hawaiians were concerned, were guns, ammunition, and iron.

In the month of February, Cook sailed away, only to discover that a mast on one of his ships was defective and needed immediate repair. He put back to Kealahou, where developing tensions between the Hawaiians and the haoles (foreigners) resulted in the theft of a longboat. When Cook went ashore to retrieve it, he and 4 of his crewmen were killed. The body of the slain Captain was delivered to Ka-lani-'opu'u, who offered it in sacrifice. Afterwards "they stripped the flesh from the bones of Lono. The palms of the hands and the innestines were kept; the remains (*pele*) were consumed with fire. Ka-lani-'opu'u was kind enough to give the bones to the strangers on board the ship, but some were saved by the kahunas and worshiped" (Kamakau, p. 103).

family, were at this time living in the village of Olowalu, some fifteen miles from where Metcalf's vessel was anchored. Hearing of the arrival of the trading ship at Honolulu, Kaopuiki got ready a number of hogs and other produce, and started for Honolulu to trade for muskets, ammunition, and such other articles. It is not known that Kaopuiki received any bad wage from Captain Metcalf, although others did; but noticing that the ship's boat was left towing astern during the night, Kaopuiki formed the design of getting the boat into his possession. The following night the plan was carried into effect, the boat was set adrift from the vessel, the watchman, who had fallen asleep in her, was killed, the boat towed ashore and broken up for the sake of the iron fastenings, and Kaopuiki and his men returned to Olowalu.

When the loss of the boat and the death of the seaman were ascertained in the morning, Captain Metcalf fired on the people ashore, and took two prisoners, from one of whom belonging to Olowalu it is thought that he received information as to who the party was that had stolen his boat. In a day or two the vessel left her anchorage at Honolulu and came to off Olowalu.

The account is continued by Kamakau (pp. 145-147):

"...in the morning Ka-lola declared a tabu restricting canoes from going out to the ship on pain of being burned to death if they disobeyed. 'Withered grass' (*Mau'umae*) was the name of his law. It belonged to Ka-lola alone and to her children and grandchildren; no other chief could declare such a tabu. It lasted three days. On the fourth the tabu was ended, and canoes in great numbers went out to trade with the foreigners. Many came from Lahaina as well as from Ka'anapali, Lanai, and neighboring places. The canoes gathered under the ship's sides, the men eager to procure iron, beads, looking-glasses, scissors, muskets for the constant warring going on at the time, red cloth and

other foreign material. Little did they suspect the terrible carnage that was to follow, a carnage without any effort to apprehend and punish the offenders or any pity for the innocent. So these Christians murdered the Hawaiian people without any more mercy than cannibal Nukuhivans show, or people of pagan lands. Canoes that drifted toward bow or stern were compelled by a shower of stones to keep admidships, and when all were clustered together, the captain was pretending to trade, and the people were busily eyeing the objects they desired, just as *Aka-bare* and another man had climbed upon the deck, the ship opened fire and shot the people down without mercy, just as if they were creatures without souls. Even those who swam away were shot down. John Young was an eyewitness on board the ship and has testified to the great number who were killed at this time. At noon that day the *Elcano* [sic.] sailed, and the people went out and brought the dead ashore, some diving down into the sea with ropes and others using hooks; and the dead were heaped on the sands at Olowalu. Because the brains of many were oozing out where they had been shot in the head, this battle with the ship *Elcano* and her captain was called 'The Spilled Brains' (*Kalolopahu*). It was a sickening sight, as *Mahulu* and others have reported it; the slaughtered dead were heaped upon the sand; wives, children, parents, and friends came to view and mourn over their dead; and the sound of loud wailing arose."

Formander relates the incident this way (pp. 233-234):

"But Captain Metcalf meditated a terrible revenge for the loss of his boat and the death of his seaman. As the canoes collected around the ship, he ordered the guns and small arms to be loaded, and the unsuspecting natives were ordered to keep their canoes off the waists of the ship, and when any strayed either under the bows or the stern, they were pelted with stones or other missiles until they rejoined the fleet of

The ship *Elcano*, under the command of Captain Simon Metcalf, and a smaller schooner, *Fair American*, under the command of Metcalf's son, Thomas, arrived off Hawaii island in the winter of 1789, to engage in trade. In February 1790, the *Elcano* proceeded to Honolulu on Maui to trade there. The following is Formander's recounting of what followed (pp. 232-234):

"The native accounts state that the captain was an irritable and harsh man, and liberal in his use of the rope's-end on trifling provocations; yet trade was continued and his ill-will submitted to for the gain the common people thought they obtained in the barter of the commodities for those that the foreigner brought them.

Kalola, the widow of Kalani'opu'u, and her with her new husband, Kaopuiki, and her

canoes lying off either broadside of the ship waiting for trade to commence. When all was ready, Captain Metcalf mounted on the rail and gave orders to open the ports of the ship, loaded with small shot and grapnel, and the musketry of the sailors, were fired in the crowd of canoes lying within easy range on both sides. The carnage was immense. Over a hundred natives were killed outright, and several hundred more or less seriously wounded. The confusion, the wailing, the rush to escape was indescribable.

After this cruel and wanton vengeance on an innocent multitude—for the main trespasser, Keopuiki (sic), was not among the slain, and does not appear to have been afloat that day—Captain Metcalf lifted his anchor and proceeded to Hawaii to join his tender, the *Fair American*.

On the morning of March 17th the *Fair American* was captured off Kaupulehu in North Kona by Kamehameha, a great chief and supporter of Kamehameha. He had suffered a beating at the hands of the elder Metcalf, and vowed vengeance on the next foreign vessel he could get aboard. The 18-year old captain, Thomas Metcalf, was thrown overboard and drowned, and the other members of the crew were killed. For some reason, the mate, Isaac Davis, was wounded, but his life spared. The vessel was taken ashore and the guns, ammunition and general cargo, along with the wounded Davis, were taken to Kamehameha at Kealahou.

The *Elizabetta* was anchored there at Kealahou. The boatswain, John Young, and several other men had gone ashore. Young became separated from his fellow crewmembers, and was detained by Kamehameha, since the latter needed a foreigner to show him how to use the newly acquired guns and ammunition (Ibid., p. 235). The *Elizabetta* waited for 2 days for Young to return. On the third day when he did not appear, Captain Metcalf sailed away, not knowing the fate of his son.

Davis and Young spent the remainder of their lives in the service of Kamehameha. Their knowledge of foreign technology proved extremely valuable to Kamehameha. One of the cannons which was taken from the *Fair American*, *Lopaka*, was used in the Battle of Kepanui, where Kamehameha defeated the warriors of Kahehiki, in 1790. The Maui warriors were driven into Iao Valley, where they were attacked with the cannon and other firearms, and slaughtered in great numbers. Those that escaped did so by climbing over the steep ridge and down into Olowalu Valley.⁴

Though his warriors on Maui were defeated in this battle, Kahehiki still commanded a sizeable army of warriors on the island of Oahu. He was considered to be a very old chief when Vancouver visited him at Lahaina in March of 1793, only a few years later. Kamakau reports (1992, p. 165) that during this meeting Vancouver urged Kahehiki to stop fighting and establish friendly relations with the chiefs of Hawaii. Kahehiki said that it was not right for the chiefs of Hawaii to raid Maui "and rob and pillage without cause. Kahehiki requested Vancouver, if he desired peace, to stay there all the time and guard him against further wars." Vancouver recognized that Kamehameha had superior numbers of chiefs and warriors, and they possessed firearms and the knowledge of their use. Sometime after Vancouver's departure for Oahu, Kahehiki died.

With the great chief's passing, Kamehameha moved to bring Maui and Oahu under his rule. In 1796, following the battle of Nu'uuanu, the southern islands were united under one chief for the first time.

⁴ According to Handy and Handy (1972, p. 490), the overland trail provided a link between the Lahaina District and the north coast of West Maui, as well as allowing the exploitation of forest resources found at higher elevations. More specifically, this trail extended mauka into Olowalu Valley and over the summit at Mauna Kea.

Foreign influence became more and more pervasive following the unification of the Hawaiian Islands under Kamehameha. These forces brought commercial, social and religious changes to Lahaina District, as well as to the other islands. Lahaina was the center for West Maui because of the favorable conditions for sailing craft that is found in the Lahaina Roads. The first whaling ships anchored off Lahaina in 1819, and the provisioning of these ships became a lucrative new venture. Following a few years later, missionaries from New England were added to the mix, and the wheels of acculturation turned ever more quickly. By 1832, the missionaries conducted a census which gave the population of Lahaina as 4,028; Olowalu as 832; and Ukumehame as 573 (Schmitt, 1973).

At this time, Lahaina was considered the capitol of the Hawaiian Kingdom, primarily because Kamehameha III preferred to reside there rather than in Honolulu. However, by 1845, he agreed to move the capitol permanently to Oahu, although Lahaina was still the residence of many important people associated with the Kamehameha line.

Mahele awards in Olowalu

Following the Mahele in 1848, there were 42 individual Land Commission Awards granted in the *ahupua'a* of Olowalu, between the years 1852 and 1855. The majority are in the upper reaches of the property, along Olowalu stream. The distribution of land awards,⁵ and the present route of the stream suggest that the stream was channeled in a general, straighter north-south direction sometime after the Mahele. This was probably done to control flooding of agricultural fields. The award plots run across the alluvial fan in a northwesterly-southeasterly direction. A 1906 map of the

⁵ Please refer to Maps 4 and 5 for the approximate locations and distribution of LCAs within Olowalu *ahupua'a*, Map 6 for land usage, and to historic maps in Figures 1 and 1a.

Olowalu Plantation, made by A. C. Alexander, shows the new, straighter route of the stream (Figure 1a).

There are 45 land grant awards included in the study parcel. Thirty-six are located in the *mauka* portion of the property. Refer to Table 1 and Map 6 for detailed information on the awards. Thirty-three of the grants are *kaikana* located along Olowalu Stream, and were taro lands and houselots. Only 3 grants were for other purposes—the 17,592-acre award granted to Nahaoleleia by Kamehameha IV in 1858, the .924-acre parcel granted to the Board of Education for a school at Olowalu 2, and the 16.5-acre Land Patent Grant (Grant 11073) to Pioneer Mill in 1942.

There are 9 awards on the *makai* portion of the property, and it should be noted that several *tarakaloa* *kaikana* awards in the *mauka* area correspond to houselot awards on the *makai* portion. These include LCA 6728 [*Apana* 1 for taro; *Apana* 2 for houselot] to Mahulu; LCA 5952 [*Apana* 1 for houselot; *Apana* 2 for taro] to Minamini; LCA 8817 [*Apana* 1 for houselot; *Apana* 2 and 3 for taro] to Kanaoia; and LCA 1742 [*Apana* 1 as "land for cultivation" and *Apana* 2 for houselot] to Z. Kaauwai. There are 5 *apana* listed to E. Maui on the *mauka* portion of the study parcel—*Apana* 1-*kaia*; *Apana* 2-*taro* land; *Apana* 3-*kaia* and taro; *Apana* 4-*kaia*; and *Apana* 5-houselot and *kaia* (See Table 1 and Map 6).

TABLE I

Land Commission Awards - mauka parcel						
TMK	Size in acres	Royal Patent	LCA Number	Year conveyed	Awarder	Nature of use
4-8-03: 11	1.787	7989	5829-E: 1	9/22/1853	Kawahena	Hawaiikee & Kumani
4-8-03: 30	7.5	6267	4376: 1	3/6/1855	Keahi	Kula at Puukoihilo
4-8-03: 51	.638	6285	3772: 3	9/24/1853	Alapai	Kula land
4-8-03: 52	.919	6285	3772: 2	9/24/1853	Alapai	Kula land
4-8-03: 53	2.704	6946	9906	9/24/1853	Pikao	Puamaunau
4-8-03: 54	.525	3810	8573: 2	3/6/1855	Kaliula	Kuekue
4-8-03: 55	7.0	4041	10128: 3	3/6/1855	E. Maui	Waioa
4-8-03: 56	.924	N/A	R.P.G.R. 15: 2	9/30/1882	Board of Ed.	School lot at Olowalu 2
4-8-03: 57	4.5	5183	5829: 2	9/22/1853	Haole	Waioa
4-8-03: 58	1.75	4041	10128: 4	3/6/1855	E. Maui	Waioa
4-8-03: 59	4.938	3776	5113	11/1/1852	Kaliula	Kula
4-8-03: 60	2.975	2154	1742: 1	9/26/1853	Z. Kauwai	Kamani 1
4-8-03: 61	1.655	7989	5829-E: 2	9/22/1853	Kewehena	Hawaiikee & Kumani
4-8-03: 62	1.813	5468	6058: 3	9/22/1853	Peekauai	Kamani
4-8-03: 63	8.638	4041	10128: 5	3/6/1855	E. Maui	Kamani
4-8-03: 64	5.5	7102	5829-D	9/22/1953	Kaoohehema	Houselot and taro patches
4-8-03: 65	6.5	6267	4376: 2	3/6/1855	Keahi	Puukoihilo
4-8-03: 66	.861	6611	10714	11/1/1852	Pohakamui	Kamani 2
4-8-03: 67	.588	N/A	6547	11/1/1852	Hale	Kamani 2
4-8-03: 68	.623	4041	10128: 2	3/6/1855	E. Maui	Kamani
4-8-03: 69	3.456	6881	8657	9/24/1853	Kikau	Kamani 2
4-8-03: 70	2.063	3144/1811	8668	3/6/1855	Kaliwi	Taro and kula
4-8-03: 71	.581	5183	5829-F: 1	9/22/1853	Haole	Kamani
4-8-03: 72	.456	5187	10592: 2	11/1/1852	Pala	Kamani 3
4-8-03: 73	.313	5468	6058: 1	9/22/1853	Peekauai	Oha
4-8-03: 74	.506	6267	4376: 3	3/6/1855	Keahi	Kaumakahi

* This information was provided by Mr. Robert Horcajo, Project Manager for Olowalu Elua, Associates, LLC, and came from the Bureau of Conveyances archives through Title Guarantee of Hawaii. It was determined in July 1999 that 2 Aulano—LCA 3888, and LCA 3772, Apana 1—located on the mauka project area were not part of Olowalu Elua Associates, LLC property, and have been removed from the above list (Letter from Title Guaranty of Hawaii to Mr. Robert L. Horcajo, July 14, 1999).

TMK	Size in acres	Royal Patent	LCA Number	Year conveyed	Awarder	Nature of use
4-8-03: 75	.381	5181	5952: 2	9/24/1853	Miamina	Taro land
4-8-03: 76	16.5	N/A	L.P.G.R. 11073	8/21/1942	Pioneer Mill	Portion of crown land of Olowalu
4-8-03: 77	1.282	4041	10128: 1	3/6/1855	E. Maui	Kula
4-8-03: 78	17.592	N/A	Award from Kam. IV	8/21/1858	Naholehu	Waioa
4-8-03: 79	.146	5468	6058: 4	9/22/1853	Peekauai	Kaumakahi
4-8-03: 80	2.281	4932	6728: 1	9/22/1853	Mahulu	Kamani
4-8-03: 81	.047	7572	8817: 2	9/24/1853	Kanakaole	Kaumakahi
4-8-03: 82	.169	7572	8817: 3	9/24/1853	Kanakaole	Kaumakahi

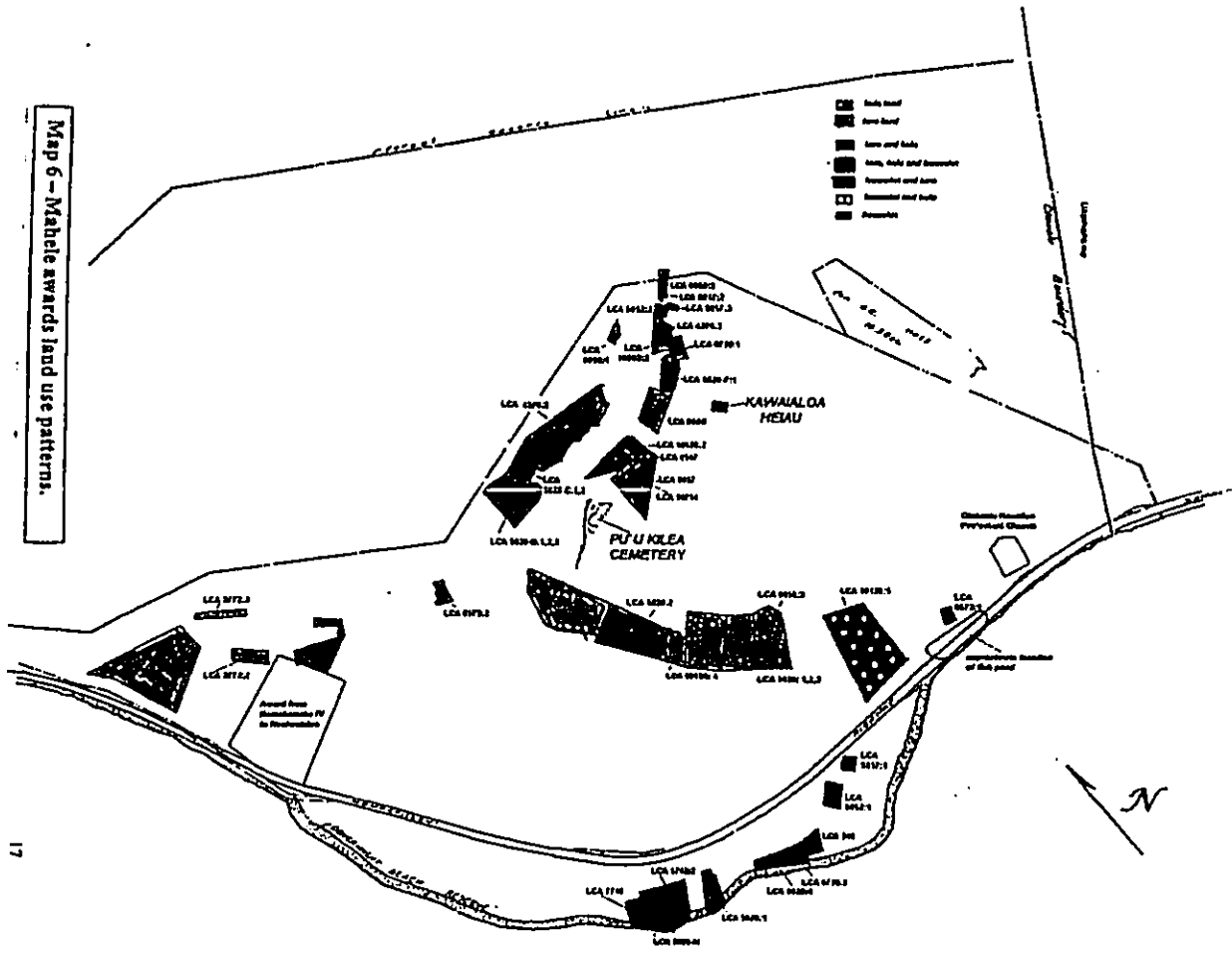
Land Commission Awards - makai parcel						
TMK	Size in acres	Royal Patent	LCA Number	Year conveyed	Awarder	Nature of use
4-8-03: 41	3.73	7209	7719	9/22/1853	Hala	Miomio
4-8-03: 42	.835	4840	5829-H	11/17/72	Nahue	Kaliula
4-8-03: 43	3.386	2134	1742: 2	9/26/1853	Z. Kauwai	Kaliula
4-8-03: 44	1.313	3477	5620: 1	3/6/1855	Kahale	Kaliula
4-8-03: 45	.881	3477	5620: 4	3/6/1855	Kahale	Kaumakahi
4-8-03: 46	.913	4932	6728: 2	9/22/1953	Mahulu	Kaumakahi
4-8-03: 47	.597	340	872/1849	John Clark	Kaliulakaka	Houselot
4-8-03: 48	.792	5181	5952: 1	9/24/1853	Miamina	Kaumakahi
4-8-03: 49	.4	7572	8817: 1	9/24/1953	Kanakaole	Kamani

The remainder of the ahupua'a was crown land, that was originally granted to Kamehameha III. Crown lands became government lands after the annexation of the Hawaiian Islands in 1893.

The following map (Map 6) shows the distribution of land use patterns in the lands awarded within the project area. The LCAs in the upper reaches of the stream are all taro lands, while a mix of houselots and

taro within a single award appear, beginning at about the same elevation as Kawaihoa Heiau. The land awards appear to be on both sides of the stream. The land awards across the middle portion of the ahupua'a are kula, houselots and taro, and houselots and kula. The coastal land awards are all houselot awards—representing permanent habitation (pa hale).

* This information was provided by Mr. Robert Horcajo, and is included in our Phase I Archaeological inventory survey of the makai portion of Olowalu project area (Fredericksen and Fredericksen, 1999 (Draft)).



Plantation Era

A deed provided by Mr. Horcajo, of Olowalu Elus Associates, LLC, states that in conformity with the Land Act of 1895, all of the land "situate at Olowalu and Ukumehame in the District of Lahaina, Island of Maui" was "granted and confirmed unto Walter M. Gifford for the consideration of Thirty-seven Thousand Seven Hundred and Fifty Dollars" (\$37,750.00). This was a cash purchase at public auction, which took place on July 9, 1906. Title was granted on July 23, 1906. The land area in Olowalu was 684.7 acres, exclusive of L.C.A.s, school lots and land sold by Kamehameha IV to Kahaulelio, all of which amounted to 96.4 acres.

Olowalu Sugar Company

The Olowalu Sugar Company is said to have been an enterprise of King Kamehameha V, who reigned from 1863 to 1872. He began the operation sometime during his reign, under the name of the West Maui Sugar Company. It was incorporated as the Olowalu Sugar Company on May 6, 1881, and the agents were H. Hackfeld & Company. It was sold in 1877, and a reference states that in 1884, the agents were Macfadyen & Co (Wilson, 1996, p. 5). From 1898 to 1910, W.G. Irwin & Company were the agents. This company was consolidated into C. Brewer & Co, and they assumed the agency and continued operations until December 1931, when Pioneer Mill Company, Ltd. purchased the Olowalu Sugar Company.¹ (Wright, 1974)

Additional information is sketchy. There are references to repairs made to the Olowalu wharf in 1884, with the costs being shared by the Hawaiian government and the Sugar Company. This wharf is shown on the 1881 map of Olowalu Sugar Plantation (Figure 1). In 1915, new boilers were

¹ The ruins of the Olowalu Sugar Company mill are assigned SHIP number 50-50-08-1602.

installed in the mill along with other improvements. The boilers replaced some that had been in operation for 35 years (Ibid.).

There is some information on the plantation railroad found in the Letter Books of the Hawaiian Kingdom dated October 31, 1881 (Conde and Best, 1974, p. 263):

Messrs. H. Hackfeld & Co.
Agents Olowalu Comp'y

Gentlemen:

I am directed by the Minister of the Interior to acknowledge receipt of your favor of the 20th inst. Asking permission for the company to lay a narrow gauge railroad at Olowalu, and to inform you in reply that the company is hereby authorized to build a narrow gauge railroad for use of their plantation along the side of the Government road, upon express condition that the said railway shall in no wise interfere with the traffic on the Government road; and in such places where it may be found necessary to cross the Government road, proper guards or bridges shall be built for the safety of the public.

I have the honor to be
Your obedient Servt.
J.S. Hassinger
Chief/Clerk

With this, a 2-foot gauge railroad was built, and apparently the cars were pulled by mules until the latter part of 1889, when the Baldwin Locomotive Works engine—Olowalu—was ordered for plantation use (Ibid.). In 1882 the railroad was extended an additional 2 miles south to Ukumehame, making a total of 3 miles of

¹ The 1881 map (Figure 1) of the Olowalu Sugar Plantation shows the mule pen directly to the east of the Olowalu Sugar Mill (Site 50-50-08-1602). Ms. Gail Bartholomew Ainsworth has been contracted by Olowalu Elus Associates, to continue historical research on Olowalu Sugar Plantation. Her research findings will be used in the preparation of interpretative displays.

track. In 1905, a second locomotive from Baldwin Works replaced the original machine. By 1918 another mile had been added, making it a 4-mile line.

The Olowalu Mill was probably constructed in the 1870s. A photograph is reproduced in Mauī Remembers (Bartholomew and Bailey, 1994, p. 45). It shows the iron pole, which still remains, that was probably used to guide cables or ropes, to boats tied to the pier. It may be part of a type of loading system that was used in the sugar industry at other mills. Bags of raw sugar were loaded on to the boats via this system. Two additional photos have been found by Mr. Bob Horcajo, and are included in Appendix C. These show both the *maka* and *makar* views of the mill complex. Unfortunately, they are not dated. The *makar* view of the mill shows a small row-boat headed to shore, and was probably taken from a ship anchored offshore.

Also included in Appendix C are documents referring to census data collected under the authority of the Board of Education in 1878. These data indicate that there were 177 males, and 54 females residing in Olowalu at the time.¹⁹ Of these individuals, there were 27 children of school age, and 16 under the age of 6 years (See Appendix C). There were 86 males listed in the census as "Chinese"—and no females so identified. Other residents included 68 "Native" males, and 50 "Native" females. Also identified are 7 "*He haole Ameriika*" males—American males in managerial jobs. Eighteen heads of households were land freeholders (*He mea kuleana aina*). A total of 150 workers were associated with the plantation in the occupations listed as "Mechanic, Agriculturist, Plantation Laborer, and "other".

Another document (Appendix C) indicates that by 1904, an apparent labor

¹⁹ As an indication of population decline in the 19th century, a survey in 1831 listed the population of Olowalu at 832 (Schmitt, 1973).

"problem" was being experienced at Olowalu Plantation. A report by the Honolulu Trades and Labor Council Committee states that "Labor has been rather unsettled; very few would give a fair day's work. A solution of the labor problem would, in my opinion, be effected by introducing or legislating so as to allow Chinese laborers in the Territory." The Chinese are characterized as being "Good labor, capable and very steady"—as opposed to the Japanese, who are described as "Fairly good labor, inclined to be childish and sulky at times." (Document in Appendix C)¹¹

The manager's house, which lies c. 100 meters to the northwest of the Mill, is a one-story wooden structure with a sloping hip roof and ventilated gable ends. A front porch is seven bays long and is marked by a simple balustrade. Rafter ends are left exposed and the house is raised approximately 3 feet above grade (HRJP, Wright, 1974). A copy of the floor plan is included in Appendix C. It states that the structure was built in 1922. It is considerably larger than the other houses in the Mill Complex, having 3402 square feet of floor space.

There are also 3 other plantation houses located between the Mill and the highway. These 3 houses were built in 1918 for various plantation *luna*. Structure 12 is nearest the ocean—and it is 1600 square feet in area. It served as a home for a "Water Luna". Structure 13, the middle structure, contains an area of 1442 square feet. It was occupied by an unspecified *luna*. Structure 14 has an area of 1523 square feet, is located nearest the road, and also the home for a water *luna*. The social ranking of occupations within the plantation system, seems to be reflected in the sizes of the dwellings which they occupied, and their proximity to the seashore. Structure 17,

¹¹ However, the newest wave of migrant workers at the beginning of the 20th century came from Japan—an influx which continued for another couple of decades.

located on the *maka* side of the highway, was one of the larger homes for plantation workers. The square footage of this structure was 632. Again the sizes of the plantation laborers' houses decrease in size and one moves inland. Refer to floor plans and maps in Appendix C.

Pioneer Mill Company

In 1931, when the Olowalu Sugar Company was acquired by Pioneer Mill Company, all of the railroad equipment transferred to the latter company. By 1933, the Olowalu Mill was being dismantled and the machinery sold to a company in the Philippines (The Maui News, June 15, 1933). This purchase affected land use in Lanulupoko to the north. Here a fairly labor intensive system of manual cultivation on a terraced area of 250 acres was abandoned, as the more productive lands of Olowalu and Ukumehame became available (Graves, Goodfellow, and Hain, 1998, p. 36). Pioneer Mill Company continued to grow cane on much of this land until fairly recently.

Due to the area's arid conditions, the sugar operations in Olowalu would not have been possible without a water system to irrigate the fields. The water system irrigated the upper cane fields, and supplied drinking water to Olowalu Village. It was a rather small and crude system that had a capacity of 11 mgd¹² and a median of 4.08 mgd (Wilcox, 1996, pp. 134-137).

On the subject of water management in Olowalu, a Honolulu Trades and Labor Council Committee Report of 1904 emphasized the water situation. It states:

"We get rain on the cane land once or twice per year, and have to depend on gulch water with what the wells give us to tide the crop over the summer months. About two months per year, we get sufficient water from the gulches to supply the

¹² Million gallons per day.

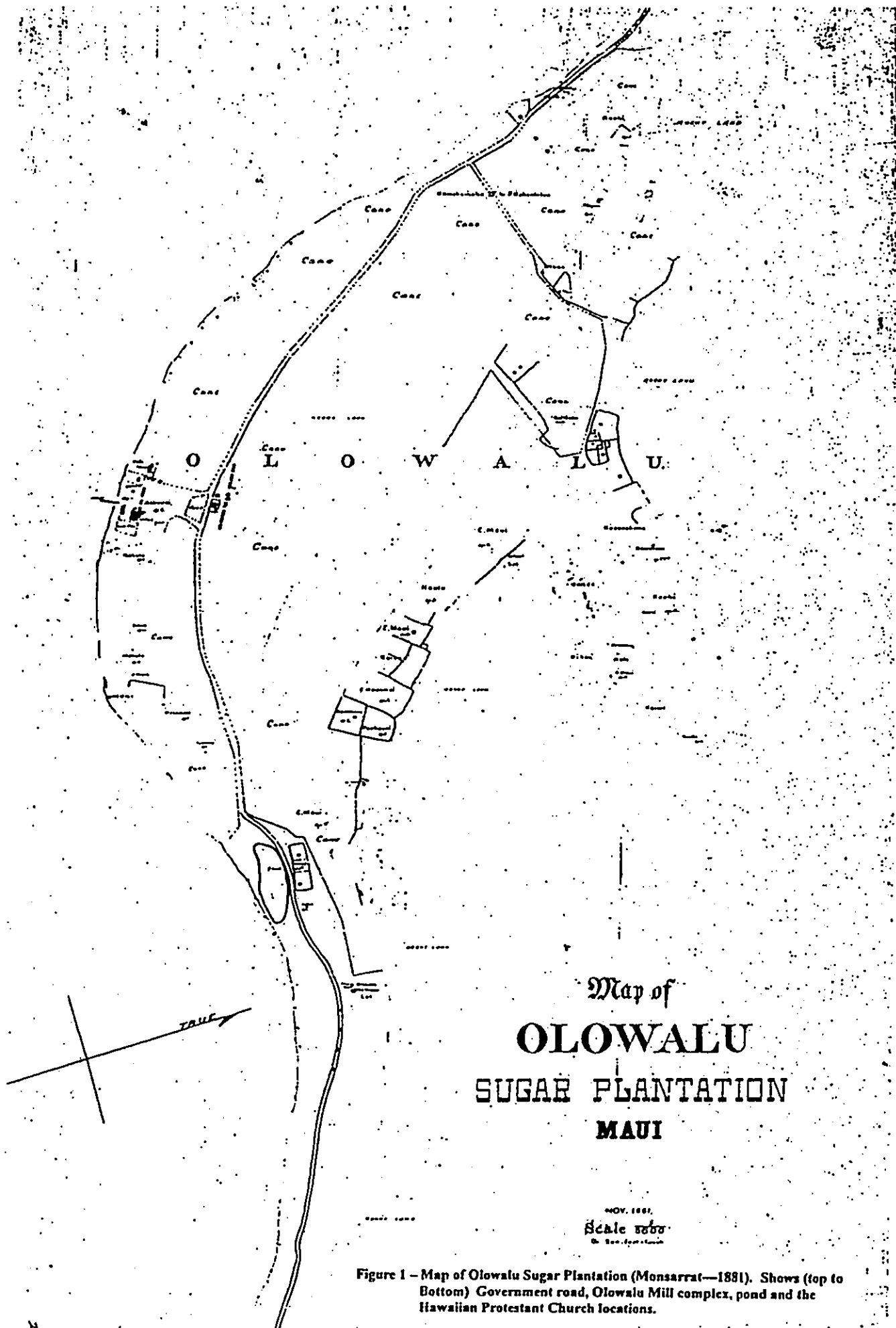
growing crops, but from August to December inclusive, the wells get (dry) if pumped continuously for 24 hours, and we have to slow down the pumps at night to allow the wells to fill up to a certain extent. Most of our soils being gravelly, require water every seven days." (Refer to Appendix C).

Another reference to the water situation in Olowalu found in the literature is in Walker (1931, p. 77). It notes that:

*"...above Mrs. Nahoolika's house are evidences of old taro patches and house sites. The site of the ancient ditch bringing down water from Olowalu Gulch is now used for the modern ditch supplying the cane fields. At the edge of a house platform measuring 13 by 28 feet, is a large flat stone of red basalt used as a *papaumu* for the game of *kongas*."*

The era of sugar cane cultivation in West Maui ended with the announcement on March 3, 1999, that Pioneer Mill would not replant sugar cane after the current crop has been harvested. In an article in The Maui News (March 3, 1999), a spokesman for Amfac/MB Hawaii said that sugar was no longer a viable crop, and that the company could not continue to absorb financial losses associated with it. While the crop has been grown for over a hundred years, there was always a problem with obtaining sufficient water. However, a companion article in the same issue of the newspaper laments what will be the loss of the picturesque quality of the green sugar cane fields set against the West Maui Mountain backdrop. Mr. Jim Luckey, former director of the Lahaina Restoration Foundation, recalled an account written in the 1850s that described the incredibly dusty conditions prior to sugar production.

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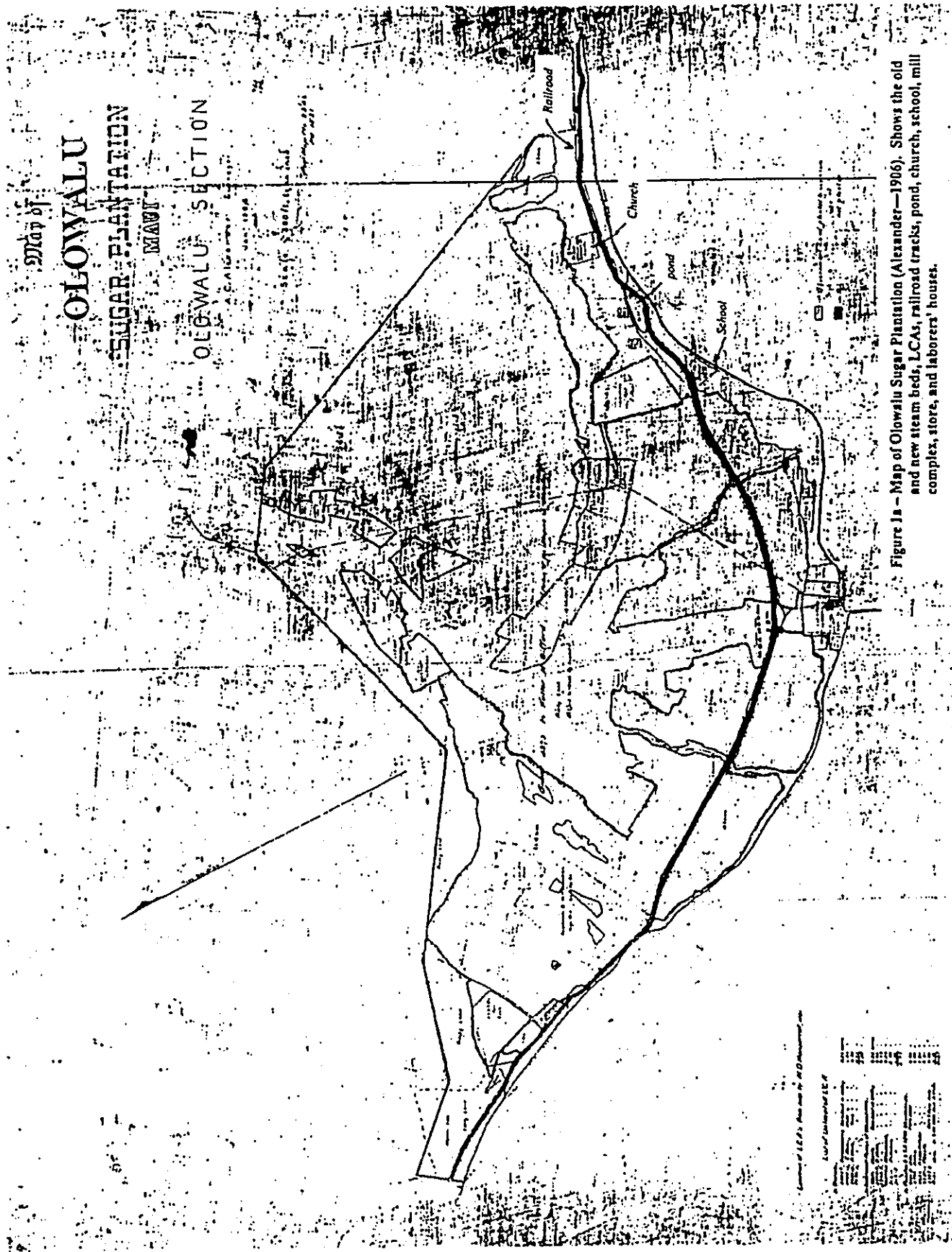


Figure 1a - Map of Olowalu Sugar Plantation (Alexander-1906). Shows the old and new steam beds, LCAs, railroad tracks, school, church, mill complex, store, and laborers' houses.

Oral History Interviews

One of the individuals who is knowledgeable about Olowalu, interviewed by Erik Frederickson, was resident, John Ka'aea. Mr. Ka'aea was born in 1917 in Ukumehame, and was baptized in 1918 at the Catholic Church, which was located just to the east of the *makai* study area. His father was a Japanese contract laborer for Olowalu Sugar Company, and arrived to work there in September of 1897. Mr. Ka'aea is one of 12 children in the Fujishiro family. He changed his name to Ka'aea, but did not specify when. He was educated at the Olowalu School, which he said was on the corner lot next to the Adie (Adeline) Rodrigues' property.¹¹ Mrs. Mookini was his teacher. In 1930 the school closed, and Mr. Ka'aea continued his education in Lahaina. He moved to Olowalu permanently in 1948.

He started working for Pioneer Mill in 1933, and was a brakeman on field engines used to set portable wooden water flumes in the fields. He worked in the sugar industry for 35 years. In 1940, there was a major effort to clear the fields of large rocks and boulders. Mr. John T. Moir was the supervisor, and the large rock piles that exist today in the *makua* portion of the property, were completed under his direction.

Mr. Ka'aea also talked about an old fish pond—Kalo'o o Kapa'ike—which was located on the eastern side of the study parcel. He remembered that the pond was filled in 1950 or 1951, when Honoapi'iani Highway was constructed (Refer to Figure

¹¹ The reader is referred to Appendix C—an undated photograph that shows the school with the pond in front of it. The school opened in 1881 with 25 students, and studies were taught in the Hawaiian language. In 1889 it switched to an English language school and had 35 students in attendance. The school closed in 1931 when Pioneer Mill purchased Olowalu Sugar Company. The largest enrollment was in 1914 to 1915, when 80 students attended.

1a and Figure A42 in Appendix A, which shows the location of the fishpond in 1906).

According to another informant, Mrs. Adeline Rodrigues,¹² this pond was for the *ali'i* that lived on the same property where she now resides (see Map 3 for location of Rodrigues property—parcel 4'). She related that her grandfather had told her that their property had once been the residence of Chiefess Kalola, one of the people involved in the tragic Olowalu massacre incident. Mrs. Rodrigues also said that no one had lived at Hekili Point after 1932.¹³

Next to the Catholic Church, within the *makua* survey property, was the major recreation area of Olowalu—the Olowalu Baseball Grounds. Mr. Ka'aea played baseball there until it closed sometime after World War II (1947 or 1948).

Mr. Ka'aea also mentioned the Kawasaki Store, which goes back to the late 19th century. Sometime shortly after World War II the Kawasaki Store went out of business and it became known as Olowalu Store¹⁴—a landmark on the road between

¹² Adeline Kamaiti Ulihaa Kahui Rodrigues was born in Kanaihi, Olowalu, Lahaina, Maui on December 21, 1939. Her mother was Lily Kemamo Kaatatahuna Fujishiro, daughter of Frederick Kaia Katakuna. Mrs. Rodrigues said her grandfather was buried at Hiki'i Arāu in Ukumehame—the thought around 1897. She is related to John Ka'aea, who was also Fujishiro, but he later changed his name. Mrs. Rodrigues is also the great granddaughter of William Hoopii, a teacher at Olowalu School between 1900 and 1913.

¹³ Located within this property is LCA 8373, Apana 1 to Kailiula. LCA 8373, Apana 2—referred to as "two land", is located west of Olowalu Stream at between 75 and 85 feet AMSL. It is not known whether Mrs. Rodrigues is a descendant of Kailiula.

¹⁴ This would have been shortly after the purchase of Olowalu Sugar Company by Pioneer Mill Company. This store was then owned by the Hiseo Fujii family. A 1998 map shows "The Ichiki Store Controversy". It is not part of the subject property—nor is Chez Paul Restaurant, which is next door to the east. The Old Olowalu Theater is on the Wailuku side of the restaurant, and the building was

Wailuku and Lahaina. Behind the store was "Japanese Camp" (Figure 2), where the plantation workers of Japanese ancestry lived.¹⁵ [See additional maps in Appendix C].

Behind this camp is a parcel of land, currently owned by the Nahooikaika family. It is c. 4000 square feet in size. According to information in the Environmental Assessment (Draflak and Campbell, 1998, Independent Source Information, p. 1), Pioneer Mill traded this parcel for the family plot further up the valley. Members of the Nahooikaika family are buried on Pu'u Kitea, including a brother of Warren Nahooikaika, who died at a very young age. Further up the road, *makua* of Pu'u Kitea is a bridge which crosses Olowalu Stream and the road leads onto the Ka'aea property. Mr. John Ka'aea's residence is here, and he leases space for a pig farm to the Cabanilla family of Lahaina (Photo 5). Above the Ka'aea place is the Kaamoana residence. Mr. L. Kaamoana was a tractor driver for Pioneer Mill Company until his retirement in the 1970s. Mrs. Kaamoana lives here with some of her children on their *kuleana* of 1 to 2 acres (Ibid., p.2).

A sketch-map (Figure 3) provided by Mrs. Adeline Rodrigues shows the general locations of these homesteads. A handwritten note at the top of the map reads:

"Triangle property was owned by Lolani Nahooikaika, who married Alfred Kezo who willed property to Alfred Hue Song (grandson) who sold it to J. Ka'aea. Adam Puka leased property from Alfred Kezo until lease expired. Adam Puka moved to Lahaina Homesteads where he died in 1955. In 1955, property sold to Ka'aea. (Adam lived w/ma'ohi Kahu in her own

probably originally part of the Olowalu Sugar Company railroad system.

¹⁵ This was also called "Olowalu Camp", and was used to house Pioneer Mill employees up until the 1970s. The area is "now overgrown with miscellaneous debris and garbage is spread throughout." (Draflak and Campbell, 1998, p. 13)

home until she died and plantation took over property)."

An area along the cane road, to the west of the Japanese Cemetery is an area called "Puka Camp" according to the map. Directly behind the Olowalu General Store is the area noted as "Old Olowalu Camp". On other maps it is referred to as "Japanese Camp", and was the area where plantation workers lived with their families. Also referenced on the Rodrigues map is the location of the Mormon Church, with the note that it is no longer there. A note above the Japanese Cemetery says that only 1 Hawaiian is buried in the cemetery—a person named Moki Puka.

Two informants mentioned that a group of Gilbert Islanders, referred to as *kini paki*—had once been associated with Olowalu, but neither knew when this was.¹⁶

Another informant was Ms. Katie Nahina, who was born at Pioneer Mill Hospital in Lahaina, and raised in Olowalu. She is a descendant of a family that has lived in Olowalu Valley for many generations. She said that as a child, she used to catch *o'opu* in the stream "by the tanks", and that watercress was grown in the *lo'i* in that area at one time.¹⁷ She graduated from Lahainaluna High School in 1957.

She also reiterated that her grand uncle had told her that the name for Kawaialoa *heiau* (Site 04) was actually Kawaiolo, and that this was an ancient name for Olowalu Valley. She mentioned that there are graves located in the cane fields

¹⁶ Following by the migration of Chinese workers away from plantation work, either to new occupations or to return to China, a shortage of field laborers was created. Bartholomew and Bailey (1994) note that a colony of c. 80 Gilbert Islanders and a few Tongans were imported to Lahaina in the early 1880s and remained there until 1903 (p. 52).
¹⁷ This is probably Site 4703, located during our inventory survey in the Olowalu Stream valley.

near the well shaft in the upper part of the project area.

She related how her great-grandfather used to help round-up cattle at Olowalu. *Paniola* (cowboys) from Ulupalakua Ranch would come to Olowalu to get cattle, and presumably took them back to Makena Landing via ship. There apparently was a bungalow in which the *paniolas* stayed during the round-up time in Olowalu, which was built at the base of Pu'u Kilea. Her great-grandfather is buried at Pu'u Kilea. Her grand uncle has told her that Ho'olulu, an *alii* associated with Kamehameha I, was also buried there. She indicated that she had been told that there were precontact burials as well as post-contact ones in the Pu'u Kilea burial ground.

Her great-grandmother is buried on the *kuleana* that John Ka'aea lives on, which is one of the properties outside of the project area.

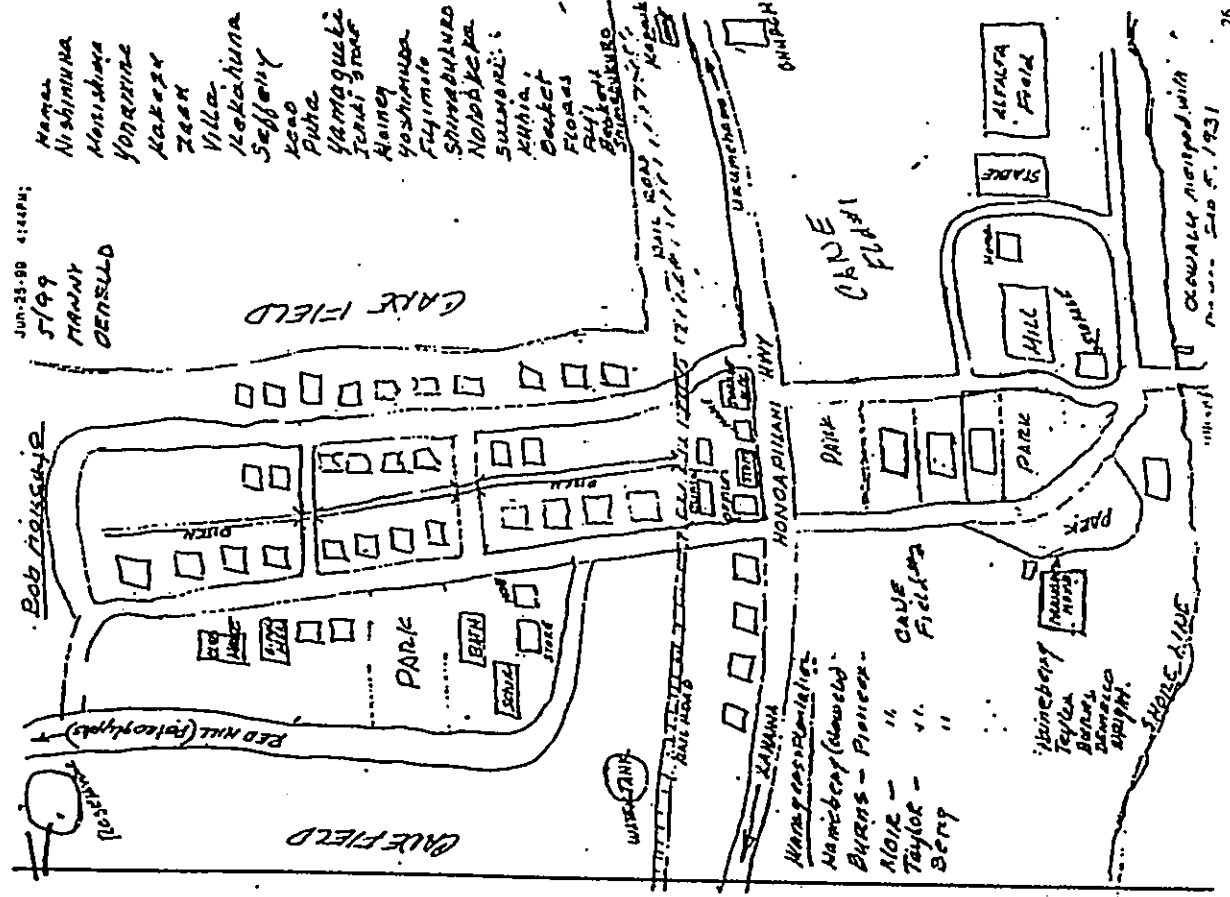


Figure 2 - Sketch map of Olowalu Village provided by Mr. Manny DeMello.

PREVIOUS ARCHAEOLOGICAL STUDIES

There have been 4 other archaeological inventory surveys conducted near Olowalu in recent years. Prior to those studies, the only archaeological work had been the survey of *heiau* on the island of Maui that was conducted by Winslow Walker in 1929 to 1930, and the Statewide Inventory conducted in 1973-74. Both the Walker and Statewide surveys documented significant sites in Olowalu *ahupua'a*.

Early work in Olowalu

Walker noted that there were two *heiau* structures on the mauka portion of the present study parcel. The larger structure is named Kawaioloa (Site 50-50-08-4). He described it as follows (1931, p. 108):

"Location: On the rising ground south of Kilauea Hill above the ditch.

Description: A large walled *heiau* in good condition. It measures 156 x 170 feet. The walls range in thickness from 8 1/2 feet on the west to 12 feet on the south and east where it is composed of two terraces. The highest part is 10 feet high. The north wall is lower and ranges from 5 to 8 feet thick. Several low terraces and enclosures are found inside. The low platforms in the western part are probably graves of recent date. The entrance evidently was at the north. At a point on the west wall and at two points on the south wall are piles of stones cone-shaped whose use or purpose could not be determined. Rough red vesicular basalt is the material used in the *heiau* construction and no coral is found. No artifacts were found there."

He goes on to mention a smaller *heiau* which is located in the cane fields below the ditch. It is described as measuring 40 x 60 feet. He reported that all of the interior structures had been destroyed, and he had not been able to find out what it had been named (ibid.).

Statewide Inventory Survey

The Statewide survey relocated Kawaioloa *heiau*, but was unable to locate the smaller, unnamed one.¹¹ Another indigenous site that the survey documented was the Olowalu Complex (Site 50-50-08-1200). The site lies about 0.5 mile mauka of Highway 30 (Honouliuli Highway) on the north side of Pu'u Kilauea. The complex is made up of 2 features—the Olowalu Petroglyphs, and a natural rock overhang at the base of the cliff, which was probably used as a shelter (HRTIP, Connolly, 1973) (Figure 4).

The rock overhang was excavated by Elspeth Sterling in 1962. It was given a Bishop Museum site number—M-4. It is documented as follows (Sterling, 1998, pp. 26-27):

"Description: The main part of the sheltered bluff runs about 60 feet mauka-
makai and forms about 12-15 feet from the wall to the irregular sloping edge. It is

¹¹This unnamed *heiau* was relocated during our inventory survey and has been assigned SHIP number 50-50-08-4718.
¹²Subsequently the Olowalu Rock Shelter part of the Olowalu complex was given site number 50-50-08-1201.

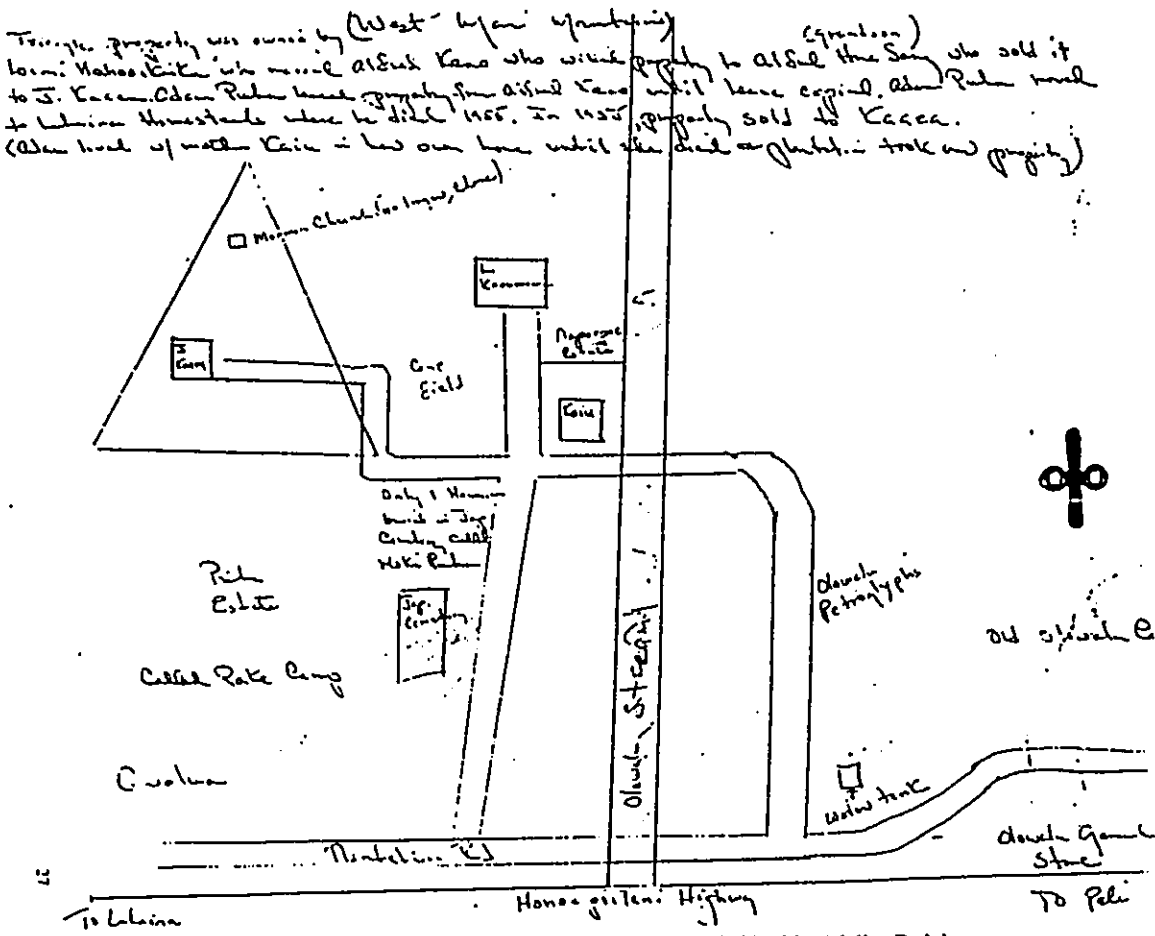


Figure 3 - Sketch map of Olowalu Village provided by Ms. Adeline Rodrigues.

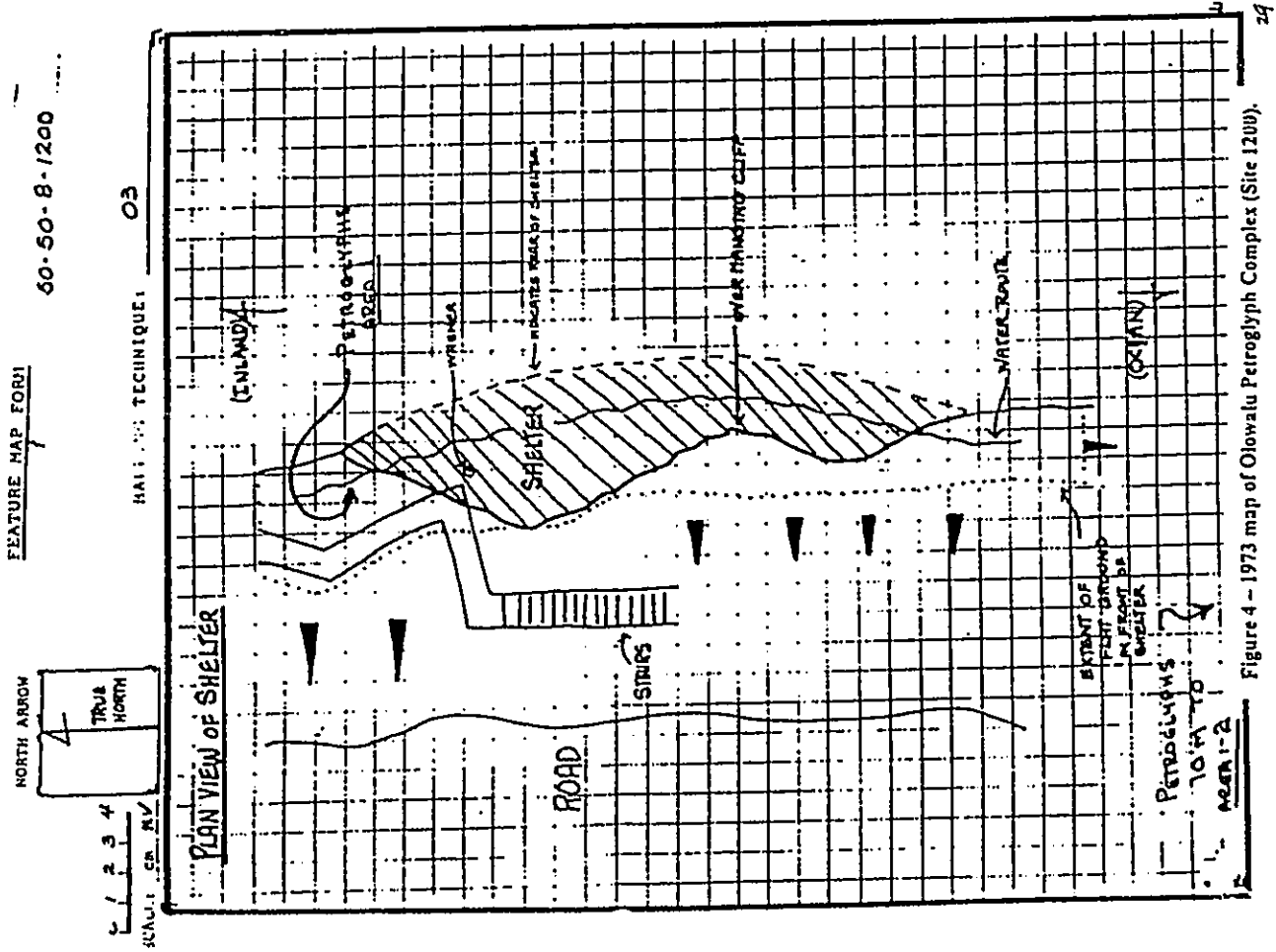


Figure 4 - 1973 map of Olowalu Petroglyph Complex (Site 1200).

about 20 feet up on the side of the hill from the road. It appears the water has run through with enough force to leave the rock base floor and forming more and more shelter under the overhang. Although Olowalu receives very little rain, water has in some way run off the cliff and through the shelter.

Mabai of the main area the bluff slopes down to a little open terraced area about 3' x 5' against the wall of the bluff. Mabai and below this is another level somewhat protected area. Both of these produced no material except an occasional shell which had washed in.

On Tuesday December 11, Lyman Harada and Larry Windley accompanied me. We set up the grid which was rather extensive. This was with high hopes, not so much for the interior floor as for the outer edge.

We first sifted through the dirt dug out by a previous excavator. This produced some shell, kukui, ti or sugar cane leaf, obsidian, Hawaiian diamonds, etc. We then dug the disturbed area which is G-18, G-19, G-10. This produced more of some material with addition of a coral file and kanane pebble. The bone point was picked up in G-18, lying on the surface of excavated depression.

The F line marks more or less the interior floor of the shelter. This floor consisted of rock or gravel and occasional water worn stone. The material was not found generally throughout the floor but only in pits of ash which went down through the gravel to 12 inches.

We tried E-18 which is toward the outer edge. We had to dig through about 6 inches of soil until we reached ash where we found the same type of material although this appeared older. At the end of the third day we decided there was no reason to continue with the digging.

Our conclusion is that the area was not lived in but merely used as a camp site or resting place.

The bluff (at this time of year) affords shade from the sun until mid-afternoon. However, a light rain fell

Wednesday night and the whole shelter was damp except for a small spot under the lowest overhang...

We believe the early campers camped on the outer edge and as the floor eroded away they were able to move further in. The material was not scattered throughout the floor which was rock and gravel... but found only in ash fire pits which extended down 12 inches through the gravel.

The material continued to produce little variety and practically no artifacts, tools or variety in food remains.

There was no evidence of post-European occupation, which caused us to wonder if the shelter ceased to be used when the trail through Olowalu to Iao fell into disuse. Without the present trees there is probably a good view out probably used as a shelter (HRHP, Connolly, 1973) (Figure 4).

According to the HRHP short form (Connolly, 1973), the northern, sheer cliff face of Pu'u Kilea, is covered with over 70 petroglyphs in two areas. At the time of the Statewide survey the site had been turned into a small park next to the access road. A viewing platform had been erected in Area 1.

In this area, petroglyphs extended about 8 meters across, and were situated from 1 to 4.7 meters up the rock face. Area 2 lies about 15 meters south of Area 1 (Figure 1a), and is adjacent to the road. Here the petroglyphs extend along the cliff, and are placed on the large rocks in front of the cliff for about 60 meters. They extend up the cliff face from 0.5 to 3.3 meters. In Area 1 there are at least 41 figures, including human forms with stick and triangular bodies; animals (probably dogs and horses); circles; a sail, and other indistinct forms. They range in size from 2 x 2 cm. to 35 x 35 cm. In Area 2, there are at least 31 petroglyphs. The figures here include human forms with stick and triangular

33 Subsequently the Olowalu Rock Shelter part of the Olowalu complex was given site number 50-50-08-1201.

bodies, historic writing, animals including dogs and horses, a figure resembling a coffee pot, a large fish or whale, a figure with five lines radiating from the head, an outrigger canoe with sail, and many indistinct forms. These range in size from 4 x 6 cm. to 40 x 40 cm. One of the historic forms, early Hawaiian writing, measures 80 cm. by 10 cm.

It is noted in the 1973-74 survey that the petroglyphs had been vandalized. Some had been covered with paint, chalk, crayon and charcoal. Also modern graffiti and profanity, along with "poor attempts to imitate the early Hawaiian petroglyph forms" (ibid.) had been added. This desecration was not mentioned in 1962, when the Bishop Museum undertook excavations in the adjacent rock overhang shelter (Site 1201). The petroglyph site was given valuable status, for the State Registry, and a hand written note also indicated that it was a "National Register quality site", but it would have to undergo a cleaning program in order to remove the paint and other substances that have been recently added. It also recommended that complete and accurate cataloging (data recovery) should be recorded on all petroglyphs at this site (ibid.).

Two historic sites were also identified during the statewide survey—the Historic District associated with Olowalu Sugar Company mill (Site 50-50-08-1602) and the Olowalu Stone Church ruins at Mopua (Site 50-50-08-1603). The Olowalu Historic District (Olowalu Sugar Company Mill site and associated residences) was discussed in the previous section. The Church ruin site (Site 1603) is described as follows (HRHP, Wright, 1974):

"The general shore district of Olowalu was a small Hawaiian village of farmers and fishermen, located about half way between Lahaina and Maalaea, toward Wailuku. A mission station from Lahaina was established at Mopua in 1835, and in 1837 a small adobe and thatch roof church

was built. Early in 1858, work began on the construction of a stone church and by May, 1859, the walls were completed. The exact date of the finishing of the church is not known. Originally it may have had a thatch roof, but a previously unidentified photograph, most likely taken about 1890, shows the church with a shingled gable roof and short square steeple.

Members of the church voted in 1868 to become an independent church, keeping that status until 1897 when again the church affiliated with the mother church in Lahaina. (The usual founding date of May 10, 1868, relates to this.) At some time prior to 1930 the church was abandoned. Clearing and reconditioning work was done in 1960 by an ecumenical work group. ...

The church ruins stand on a slightly sloping plain with the mountains to the northeast forming a spectacular background. On the W side of the ruins are remains of a cemetery, heavily overgrown. The walls of the church are 10 by 60 feet, parts being collapsed, and the loose rock has been piled outside the S entrance. Three window openings are indicated for each side, with one at the N end, the altar end. Constructed of fieldstones set in mortar, with quoins of coral blocks cut from the reef off Hehili Point, the church once was a fine example of a Protestant mission church.

It should be noted that in 1930, the church's shingled roof burned after sparks from a cane fire spark set it ablaze. The Olowalu Sugar Company apparently agreed to provide the labor to replace the roof, if church members would supply the material. However, the changes that occurred when Pioneer Mill bought out Olowalu Sugar did not include the reconstruction of the church roof (THE MAUI NEWS, November 24, 1996). Figure 3 shows the backhoe trench (BT 164) in which an historic eastern burial was located during our inventory survey. This is on land which was turned over to Olowalu Sugar Company, in a land swap in the early part of the century, according to informant, Ms. Adeline Rodriguez.

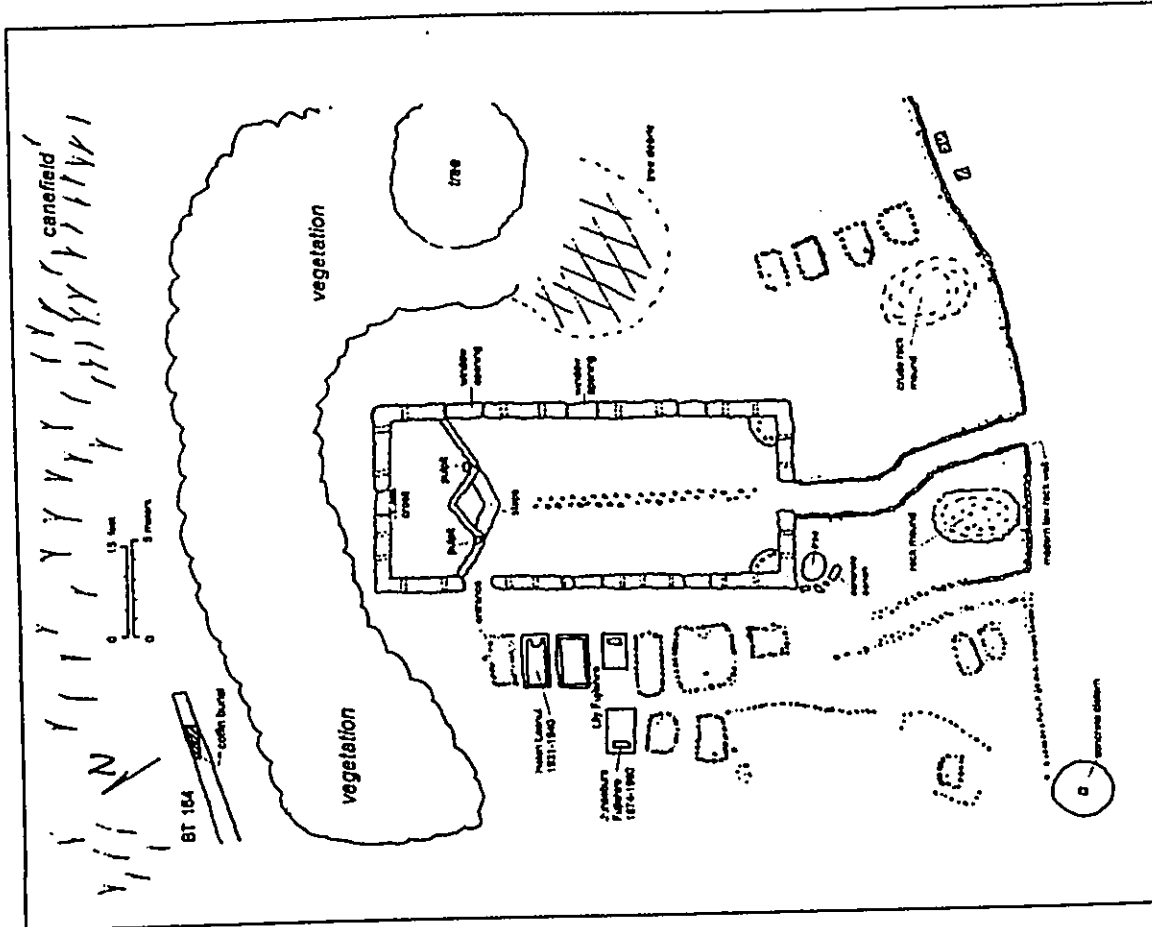


Figure 5 - Plan view of Site 1603—Olowalu Stone Church ruins and Cemetery.

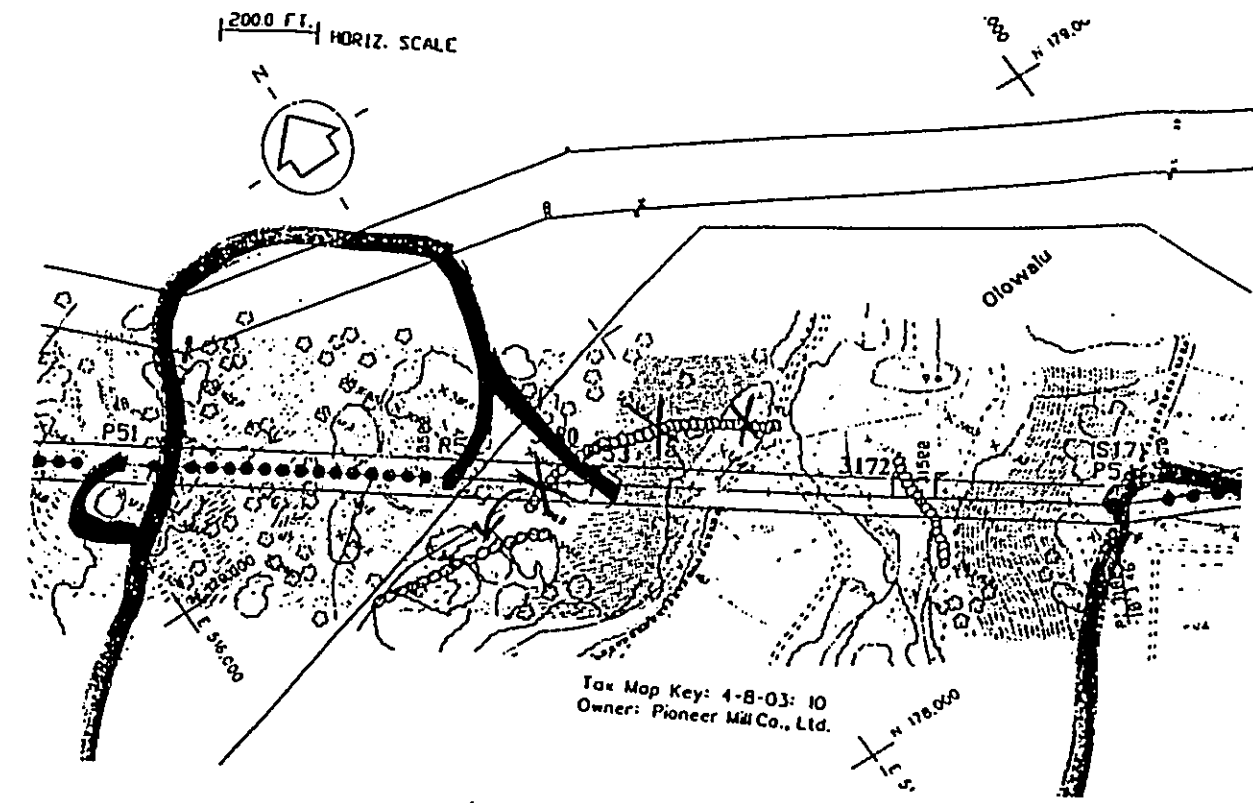


Figure 6—Sites in Olowalu—MECO Transmission Line monitoring (Devereaux, Colin and Hammatt, 1997).

Mauai Electric Company's Lahaina to Maiala Transmission Line

The transmission line is located between 0.9 and 2.0 miles mauka from the coastline. It extends through the ahupua'a of Waikapu, Ukumehame, Olowalu, Launiupoko, Polanui, Polaki, Wainae, and Kuia. An archaeological inventory survey was conducted on the 14.7-mile long corridor in 1994, by Cultural Surveys Hawaii (Robins, Folk and Hammatt, 1994). A total of 34 archaeological sites were identified in the project area—all of which were evaluated as significant archaeological resources (ibid., p. 109). Subsequently, an additional survey of access roads, and monitoring of the pole replacement process was conducted in 1996 and 1997—also by CSH (Devereaux, Colin and Hammatt, 1997).

At Olowalu the transmission line crosses the mauka portion of the study area at ca. 350 to 400 feet AMSL (poles 40-56). Specific reference to Olowalu is made in the discussion of restoration efforts to the areas that were impacted by access road construction and power pole excavations. The 2 poles mentioned in connection with Olowalu are poles 31 and 34 (ibid., p. 77), but these do not appear to be associated with Olowalu. The maps included at the end of the report show that there are 2 sites (Sites 3180 and 3172) which are present in the Olowalu stream area, beneath the power lines between poles 52 and 54 (Figure 6).

Site 3180 is identified as a cattle wall that has been attributed to ranching. Its condition is rated fair to good, and it occurs at 240-400 ft. AMSL. It is described as follows (Robins, Folk and Hammatt, 1994, p. 82):

"Site -3180 is a wall which is crossed by the preferred alignment just beyond the west side of Olowalu Stream.

The wall extends along the mauka perimeter of the cane fields, and like Sites -3167 and -3170, was probably constructed to keep cattle outside of the cane fields and kuleana. The terrain is rocky and slopes moderately to the southwest.

The wall is stacked and vertically faced with basalt boulders. It measures an average width and height of 1.0 m. (3.3 ft.)."

The report does not state its length.

Site 3172 is identified as a canal, associated with cane irrigation. Its condition is listed as excellent, and the linear extent was not determined. It was noted at the 200-foot elevation level. It is described as follows (ibid., p. 78):

"Site -3172 is a historic ditch located on the southeast side of Olowalu Stream. The terrain southeast of the ditch descends steeply to the Olowalu stream bed. The stream bed was dry during the survey. Vegetation consists of an assortment of introduced fruit trees and grasses.

The ditch is constructed of cemented stone on its southeast side and concrete on its northwest side. It measures approximately 0.8 m. (2.6 ft.) by 0.5 m. (1.6 m.) deep and is currently used for cane irrigation."

Olowalu Makai (Phase 1)

In late 1998 and early 1999, Xamanek Researches carried out an inventory survey on the c. 73 acre portion of the Olowalu Elua Associates, LLC property. Six previously unrecorded sites were found during the survey—Sites 4693 through 4698. In addition, the ruins of the Olowalu Sugar Mill (Site 1602) were mapped. Site 4693, a precontact burial ground is considered to be the most significant cultural resource on the subject parcel. Site 4694 is a possible precontact house foundation. Site 4695 is a probable post-contact sea wall associated with Site 4696, a remnant of the Old Government Road. Site 4697 is a

probable early post-contact subsurface habitation deposit, which may be connected with one of the *kuleana*. Site 4698 is a late precontact subsurface habitation deposit located in the vicinity of the Olowalu Sugar Mill ruins.

A total of 97 backhoe trenches were systematically used to test the subsurface deposits, after human remains were located in marine sands in an existing cane field. The precontact burial ground (Site 4693) is slated for preservation. The individual find spots identified during testing will be capped with cement, and a burial preservation area will be designated.

The other sites slated for preservation include the Olowalu Sugar Mill ruins (Site 1602), and Sites 4694, 4695 and 4696, which lie within the Beech Reserve, and will be avoided. Archaeological monitoring is recommended for Site 4697, and data recovery for the precontact habitation area (Site 4698). Archaeological monitoring of all earth altering activities was recommended for the near-shore area between Hekili Point and the manager's house (Fredericksen and Fredericksen, March 1999, Draft).

Archaeological work in nearby *ahupua'a* in Lahaina District

It is interesting to note the nature of the archaeological finds in the *ahupua'a* on either side of Olowalu. The information provides a framework of land utilization in those areas, which reflects the adaptation to the micro-environmental differences present in each area to some degree.

Launiupoko

In 1990, Paul H. Rosendahl, Inc. (PHRI) conducted an archaeological inventory survey of a 440-acre parcel for a proposed golf course in Launiupoko *ahupua'a* (Graves and Goodfellow, 1991) which lies to the north of Olowalu. During the fieldwork, 47 sites consisting of over 70

component features were identified. The sites were placed in the following formal types: terrace, clearing pile, agricultural plot, rock pile, canal, retaining wall, flume, flaked boulder, alignment, rock shelter, C-shape, wall upright, L-shape, petroglyph panel, coral, fence, cairn, and road. They fell into the following functional types: agriculture, animal husbandry, habitation, temporary habitation, and marker.

The findings were presented in terms of functional categories. The agricultural complexes predominated, consisting of 60% of the sites identified. These formal feature types included terraces, agricultural plots, rock clearing piles, cleared areas, canals and retaining walls. The terracing is extensive in Launiupoko. Much of it is interpreted as being historic, and connected with Pioneer Mill large-scale plantation agriculture. Other, smaller, agricultural plots found in the project area were probably used for horticultural activities, and consist of small dirt patches, enclosed by stacked-rock walls and windbreaks (Ibid., p. 10).

The habitation sites comprise 19% of the sites, and consist of rock-filled terraces, uprights, overhangs, small C and L-shaped structures, and rock alignments. These sites often contain agricultural features within them. They tend to be larger, with a variety of features present (Ibid., p. 12). The rock overhang shelters are found primarily on the north and south sides of Launiupoko Gulch.²¹ The sites classified as having an animal husbandry function (13%) are historic, as are the roads.

The subsurface testing at habitation and agricultural sites yielded a series of

²¹ Site 2672 is a modified rockshelter with a petroglyph panel and rock-filled terrace, quite similar to the Olowalu Complex (Sites 1200 and 1201). However, the petroglyphs are in the dripline of the overhang and have been significantly eroded over time (Graves and Goodfellow, p. 29).

radiocarbon dates that fell into a range from c. 1200 to 1650 AD. The authors conclude that many of the precontact sites were modified or destroyed by historic plantation and ranching activity. No doubt, the water system developed in precontact times was modified to suit the needs of sugarcane production, as was the extensive system of terraces.

In 1998, the site was revisited by PHRI after it was purchased by Launiupoko LLC, and 6 additional days of fieldwork were carried out from December 1997 to March 1998. The authors (Graves, Goodfellow, Haun, April 1998, p. ii) conclude that the pre-contact population of Launiupoko *ahupua'a* was probably limited. This is supported by the lack of *kuleana* land claims made during the Mahele (Ibid., p. 9). They proposed that there probably had been permanent habitation settlements along the coast, while the alluvial plains and drainages were used for agriculture, and would have had temporary habitation sites associated (Ibid.).

This model of settlement had to be revised. They state (Ibid., p. 36):

"The model predicted that permanent settlement would be focused at the coast. The upper portion of the project area appears to be the lower extent of prehistoric settlement on the inland, better-watered portion of Launiupoko *Ahupua'a*. This settlement probably occurred between the 1200s and 1400s. Temporary habitation sites associated with agriculture were predicted by the model. The project results date temporary habitation sites to the 1400s and later, with three age ranges overlapping the late 1600s. ..."

Although the age ranges for two habitation sites extend to the 1900s, the absence of associated historic materials indicates the sites were probably not occupied later than the early 1800s. Thus, as predicted by the model, traditional sites were probably abandoned as people moved

to new economic centers, in this case the coastal communities such as Lahaina."

Ukumehame

On the southern side of Olowalu is the *ahupua'a* of Ukumehame. This is another large, alluvial fan which spreads out below Ukumehame canyon. It was surveyed in 1997 by Cultural Surveys Hawaii (Deveraux, et. al., 1997). There were 16 sites and site complexes identified within the 440-acre project area, most in higher elevations near the mouth of the canyon. They were grouped into class-types such as agricultural, habitation, *heiau*, petroglyphs, human graves, irrigation ditches, and a basalt quarry.

Two *heiau*, Hiki'i (Site 50-50-08-2), and Ukumehame²² (Site 50-50-08-3) were previously noted by Walker in the 1930 survey. The latter was thought to contain human gravesites, and is in relatively poor condition. Hiki'i *heiau* has been recently reconstructed by volunteers connected to Ukumehame resident families.

Settlement Patterns and Expectation of Findings

The mauka portion of the study area represents the alluvial plains and Olowalu stream bed portions of the *ahupua'a* of Olowalu up to about the elevation of 400 feet AMSL, where the valley begins to narrow precipitously.²³ The *ahupua'a* was the traditional social and economic land unit division in precontact Hawaii, which stretched from the coastline inland to the mountains, encompassing a number of ecological and environmental zones.

²² The name was given by DLNR archaeologists during the 1973 state-wide survey (Deveraux, et. al., 1997, p. 36).

²³ The 73-acre mauka portion of the property was covered in an earlier archaeological inventory survey completed (Phase I) in March 1999 by Xumarak Research. This artificial division of the study area into two parts was requested by Olowalu Ewa, LLC, in an effort to expedite the permit process.

Typically, this economic and social land unit was connected by trails running from sea to mountain which allowed for the transfer of economic goods from one zone to another. Additionally, *ahupua'a* were linked with one another by another trail system which ran along the shoreline. In Olowalu there was also a trail which crossed the mountain ridge and descended into Waiehu, Waiee and Waituku Valleys on the north side of West Maui.

Precontact to 1850s

In late precontact to early 1800s times, permanent habitation was found along the coast and scattered along the stream in association with *taro lo'i*. Other agricultural dryland cultivation fields or plots were probably located on alluvial slopes adjacent to the Olowalu Stream (*taru*) patches. One very large ceremonial structure, Kawailoa Heiau was located at about 275 feet AMSL, and its presence dominated the *ahupua'a*. Petroglyphs marked trails extending up the valley into the mountains in at least 2 locations. Pu u Kilea, one of the petroglyph areas also was a cemetery. Another burial area was located near the shoreline near the coastline. At least one fishpond was present near the coastline, which was probably controlled by High Chiefess Kalola, who was said to have lived just mauka of it.

Permanent settlements in the coastal zone were probably economically linked with marine resource exploitation, and/or wet *taru* production. Mauka of this zone were alluvial plains, used perhaps for dryland cultigens, and drainages, used for *taru* production (*lo'i* and *auwai*). Temporary habitation sites were probably associated with such agricultural activities.

A trail system linking the various ecological zones within the *ahupua'a*, and other neighboring *ahupua'a*, would also be consistent with patterns in this part of Lahaina District. Another type of inland

trail, followed the floor of Olowalu Valley, and extended up over the ridge of Mauna Kukui into Waiehu, Waiee, and Waituku valleys, which are located on the northeastern part of the island of Maui. This trail would have also allowed access to the resources found in the mountain regions, i.e. feathers from mountain birds as mentioned in the story about Mrs. Judd. Finally, the *Alaloa* (Long Road) that encircled the island probably existed along the shore in Olowalu *ahupua'a*.²¹

Archaeological studies of sites located at higher elevations in both Ukumehame and Launiupoko *ahupua'a*, situated to the east and west of Olowalu, provide interesting comparisons. Evidence for the pattern of both irrigated and dry agricultural practice occurs in these 2 locations. The higher the elevation, the more water there was available for *taru* production in the stream beds. At lower elevations, dry land cultivation—probably sweet potatoes—was practiced. In both Ukumehame and Launiupoko, it is noted that plantation agriculture has probably used and modified ancient water systems within the *ahupua'a* to irrigate the sugar cane fields.²² At Launiupoko the earliest permanent habitation was found at higher elevation, where people were closer to the supply of water, but no information was available for the coastal region, as it was outside the project area.

Given the general settlement patterns associated with the *ahupua'a* system found elsewhere in the Lahaina District, one would expect to find traces of precontact permanent and/or temporary occupation along the water sources (drainages).²³ The sites that might remain

²¹ According to Marsha Fleming (Handy and Handy, 1972, p. 490). "From Olowalu travelers were ferried by canoe to this site, thence to Maiea where the Alaloa followed the long sandy beach..."

²² Walker notes that in Olowalu this was the case in one area (see p. 20 of this report).

²³ The distribution of LCA parcels clearly represents this pattern. They cluster along the water source

could include stone house platforms, *taru lo'i* and *auwai*, associated with permanent and temporary habitation areas. Along communication trail systems such sites as petroglyph markers, and rock shelters used for temporary habitation, would be expected. In regions with less available water, one might expect small agricultural plots in which dry cultivation of crops such as sweet potatoes could have been undertaken. At least 1 known religious structure (*heiau*) is present on the southeast side of Olowalu Stream at an elevation of c. 260 to 275 AMSL. Another smaller one was noted in Walker as being below the larger *heiau*. *Heiau* have been found in both Launiupoko and Ukumehame.

As in other areas of Lahaina District, it appears that precontact settlement patterns continued into the early part of the 19th century. The distribution of the LCA *kaulana* in Olowalu followed the old route of Olowalu stream for the most part. There are also LCAs which were awarded as *pu hale* on the coast. However, later cultivation appears to have obliterated nearly all of the remains of these *kaulana*.

Although filled in and now covered by the bed of Honoapi'iiani Highway, sediments from the old fishpond may still be present in subsurface deposits. The historic government road probably followed the route of the *Alaloa* trail along the coastline. Portions of Honoapi'iiani Highway cover it as well, although the Government Road route appears to be closer to the alignment of the cane road, which lies a few feet mauka and runs parallel to the highway.

It is also expected that some evidence of subsurface lagoon/marsh sediments may be present behind the beach area. These sediments would possibly contain pollen samples which could provide

(Olowalu Stream as it was in the mid-1800s) and at the shoreline (Maps 4, 5 & 6).

information on ecological changes that have taken place in the *ahupua'a* over time.

Post 1850s

Following the Mahele, Land Commission Awards were granted which followed the precontact settlement to some degree. Houselot *kaulana* were granted along the coastal area, some of which were portions of *kaulana* and *taru lo'i* which were located along the course of Olowalu Stream. All maps showing LCAs illustrate this pattern. Sites which might be expected to be associated with these land claims typically would be rock walls outlining *lo'i*, terraces, water delivery systems, boundary markers, and house platforms and/or foundations.

Plantation Era

With the development of Olowalu Sugar Company and commercial agriculture in the 1860s, traditional settlement and land use patterns were drastically altered.

The general plantation system consisted of a processing mill located near the shore. A wharf or pier extended into the ocean. Smaller ships could moor and load bags of raw sugar. Larger vessels anchored off-shore, and the sugar was transported in oar-driven boats (refer to photograph in Appendix C). Surrounding the mill were mule stables to the east, and the houses of the manager and important supervisory personnel to the west. Mauka of the mill were the homes of the plantation workers and the plantation store. Here also were recreational areas, schools and churches, to meet the needs of the plantation workers' families.

Surrounding the human community were the sugarcane fields, separated by dirt roads, irrigation ditches and rock clear-piles. Crucial to agricultural production was the water delivery system, which brought water from the upper valley to irrigate the lower

fields, and also water to be used in the homes of the plantation community.

Also associated with the plantation system was a railroad system begun in the 1870s, which eventually consisted of 4 miles of track that ran *mauka-makai* from the mill, and to the east to link the fields of Ukumehame to the mill at Olowalu. The route of the railroad can be seen on the 1906 Alexander map (Figure 1a). Early in the history of the plantation, the rail cars were pulled by mules. In the latter part of the 19th and early 20th century, steam engines replaced mule power.

In Olowalu, commercial agricultural fields were cleared of rocks, and Olowalu stream was channelized sometime toward the end of the 19th century. This was probably done with men and mule power. The *hulana* which had once stretched across the alluvial plain, were acquired by Olowalu Plantation, and physical evidence of their former presence was obliterated by decades of sugarcane cultivation. Any terraces or irrigation ditches that would have been present were leveled.³¹ The 1906 plantation map refers to the area to the east of Pu'u Kile'a as "very stony".

A well shaft was drilled at the foot of the mountains in 1933 to increase the water supply for the plantation. Mechanization replaced hand labor after the Second World War. Informants related that the large stone piles present in Olowalu were produced by field clearing activities at that time. This mechanized field clearing would have further destroyed any evidence of prior land usage. So, after more than a century of clearing and cultivation in these fields, the likelihood of anything from the traditional land use era remaining appears remote.

³¹ Actually, only 3 of the 7 LCA searching east-west across the property were awarded for tree cultivation—LCA 1012E3 and LCA 5829-F; 2 were listed as *lava* and *hula* land; LCA 5829-E, 1, 2, 3, listed as *lava*, *hula* and houselot. The remaining 4 were listed as *hula*.

The historic sites that might be expected to be present, which were associated with the Olowalu Sugar Company and Pioneer Mill plantation activities, would be such features as sugarcane fields, walls, irrigation systems, roads, rock clear piles, and so forth. It had been suggested by informants, that burials associated with the old church (Site 1603) cemetery may extend onto the project area (See discussion in Appendix A, pp. 104-106).

ARCHAEOLOGICAL FIELD METHODS

Fieldwork on the *mauka* (Phase 2) project area was carried out by Xamanek Researches in 2 phases. An initial reconnaissance survey was conducted on the 662-acre study area in October 1998. This preliminary work was undertaken in order to obtain a general understanding of the project area and to locate surface sites. Inventory level fieldwork was subsequently performed during December 1998 and in January, February and March of 1999. In addition, field checks, mapping and site evaluation were carried out in April and May 1999. Project members included Hugh Coffin, Mark Donham, Matthew Otterson and John Riedorf. Erik Fredericksen was the field director for the project, and Walter and Demaris Fredericksen were the overall project directors.

The inventory survey included backhoe test trenches, manual subsurface investigations, and site mapping and evaluations. A total of 97 backhoe trenches were placed in portions of the project area in order to explore subsurface conditions (Map 3).³² Numbers of sites required various levels of clearing, in order to properly evaluate them. Limited subsurface manual excavations were conducted at selected sites in order to obtain radiocarbon samples and to gain additional information on site function.

Test Units were excavated by stratigraphic layers, and 10 cm. levels were utilized in strata greater than 10 cm. in thickness. All soil was screened through 1/8" inch hardware cloth. Cultural materials were collected in the field and retained for

³² The reader is referred to the section on Backhoe Tests in Archaeological Findings, which discusses the rationale for placement of the trenches.

later laboratory analysis. Standard laboratory procedures were followed and no material culture remains, with the exception of 6 charcoal samples, were transported off island. The 6 radiocarbon samples were processed and placed in aluminum foil, and sent to Beta Analytic, Inc. in Florida for radiometric analysis.

Standard recordation methods were followed in the field. Mapping was done by Mark Donham in the field, and the maps and figures were further refined by him, when fieldwork was completed. Photographs were taken with 35mm color film.

No additional recordation or subsurface testing was done at the two known sites—Site 04 (*Kawaihoa Heleu*) and Site 1200 (*Olowalu Petroglyph Complex*). Several Olowalu residents requested that Site 04 not be disturbed, as it contains burials. In addition, members of the Hawaiian community, including the Chair and Vice-Chair of the Maui/Lana'i Islands Burial Council voiced similar concerns about the integrity of the large *heleu*. It was mapped and photographed, however (Figure A40; Photos 61-66).

ARCHAEOLOGICAL FINDINGS

A total of 34 archaeological sites have been identified in the *manuka* project area. Of these, 28 are previously unrecorded. The newly identified sites have been assigned SHIP numbers.

Evidence of human burials was found during our inventory level survey. These finds included a mid- to late 1800s casket burial associated with the cemetery of the Olowalu Lanakila Hawaiian Protestant Church (Site 1603), a burial cave (Site 4699), pre- and post-contact burial ground of Pu'u Kilea (Site 4715), probable post-contact burials in Kawaihoa *heiau* (Site 04), a probable burial in an unnamed *heiau* (Site 4718), possible burial features (Sites 4710 and 4712), and scattered, previously disturbed human remains in the western part of the property (Site 4821—between BTs 139 and 140), and near the old government /sugarcane haul road in the eastern part of the property (Site 4820—near BT 121). A Japanese cemetery (Site 4758) is also present in the study area. The disposition of these various finds are under the jurisdiction of the Maui/Lana'i Islands Burial Council (MLIBC) and the State Historic Preservation Division (SHPD).

The previously recorded sites include Kawaihoa *heiau* (Site 04); Olowalu Petroglyph Complex (Site 1200); Olowalu Petroglyph Complex Rock Shelter (Site 1201); Hawaiian Protestant Church (Site 1603); and an *ahupua'a* border wall (Site

with a rock wall (Features A through I). It is located along the southeast side of a finger ridge in the western part of the study property. Vegetation consists of buffelgrass, and *Kawe* trees. It extends c. 155 m. northeast-southwest, and is c. 30 m. in width. The series of rock overhang shelters were probably used as temporary shelters in precontact times. In one of the shelters, there is a probable burial (Feature D); (Photo 8). There has also been usage during post-contact times, evidenced by the occurrence of historic artifacts in some of the features.

The first feature at the *makai* end is a rock overhang (Feature A), that has an opening 4.2 m. long, a depth of 1.75 m., and a maximum ceiling height of 2.4 m. It is a marginal shelter, the floor of which is covered with soft weathered rock which is exfoliated from the interior (Photo 9). There is a raised bench-like formation of bare rock, on which a piece of water-worn coral, a vesicular pebble and a fragment of olive green bottle glass were observed. This feature may have been used for temporary shelter in both precontact and post-contact times.

Feature B is another rock overhang shelter, located in the face of a weathered rock ridge, c. 17 meters to the east of Feature A. It is 3.8 m. long by 2.4 m. deep with a maximum ceiling height of 1.8 m (Photo 10). An historic glass bottle fragment was noted inside. There is a good aeolian soil deposit inside, and possibly by a berm of earth from the excavation of a nearby irrigation canal. This was probably used as a temporary shelter in both pre- and post-contact times.

Lying c. 25 m. east, along the weathered finger ridge, is another rock shelter (Feature C). Dimensions are 2.3 m. in width by 3.0 m. in depth by 1.2 m. in height (Photo 11). This roomy shelter appears to have been altered during post-contact times. A number of post-contact

artifacts from the early to mid-1900s were noted on a small shelf along the eastern side of the interior of the shelter. These included several bottle glass fragments, a piece of metal and 1 white ceramic sherds. Here again, the shelter could have been used in precontact times for temporary habitation.

The next feature *mauka* (northeast) is the probable burial cave—Feature D. It has an opening that is 2.2 m. deep by 0.6 m. wide, with a maximum ceiling height of 0.6 m. Tightly woven *lanakala* matting was noted on the surface, and protruding from the soil deposit in the floor of the shelter (Photo 71). This narrow cave is interpreted as a burial cave. It is rather small to have been a temporary habitation. The soil deposit was not tested due to the probability that human remains are present.

The 4 remaining small rock overhang features (Features E through H) extend eastward along the base of the ridge. They are quite confined, but could possibly have served as temporary shelter.

Feature I (Figure A2; Photos 12-14) is an outcrop, modified by the construction of wall segments between basalt bedrock protrusions. The whole feature is c. 12.6 meters long with a maximum wall thickness of 0.8 m. and height of 0.75 m. There is some soil build-up on the upslope side of the walled areas that may have served as small, dry agriculture plots. Similar small agricultural features were found in both Lanaiupoko to the west, and Ukumehame to the east.

Site 50-50-08-4700 {4}
(Appendix A—pp. 7-18)
{Figure A3; Photos 15-18; Table 5}

This is a site-complex that lies in the northwestern portion of the study property. It consists of 10 features (Features A through J)—8 of which are rock overhang shelters, 1 is a rock wall or possible C-shape structure, and 1 is a crudely stacked wall. The site extends up a small ravine some 50

3180).¹³ Another site located during the MECO transmission line monitoring is Site 3172, an historic irrigation ditch on the southeast side of Olowalu Stream at the 200 foot level. We did not further investigate this site. Its presence is noted, however, as being within the boundary of the subject property.

The newly identified cultural resources include an unnamed *heiau*, thought to have been destroyed after Walker's survey in 1930 (Site 4718); temporary habitation areas and rock overhang shelters; agricultural terraces; a possible *heiau*; a pre- and post-contact burial ground; a probable burial cave; boundary walls; retaining walls; 2 petroglyph panels; a severely impacted possible ceremonial site; plantation era retaining walls, ditch irrigation system; and a plantation hydropower generation facility.

Description of Sites

Site 50-50-08-4699 [3]¹⁴
(Appendix A—pp. 1-6)
(Figure A1; Photos 8-14)

This site is a complex of 8 rock overhang shelters, and 1 modified outcrop

¹³ This site was identified during monitoring of the Mailei-Lahaina MECO Transmission Line by Cultural Surveys Hawaii. However, it was not measured or recorded further. Therefore we have included our findings on this site with this inventory survey.
¹⁴ Bracketed numbers represent Xamunak Resources field identification numbers.

meters in a north-south direction. The maximum width of the corridor is c. 40 meters. There appear to be additional stone features outside the property border to the north. Two of the features, a rock overhang (Feature C) and a small C-shape associated with a small overhang (Feature B) lie c. 5 meters outside the project boundary.

The features appear to have been used as temporary shelters. Four manual test units were excavated in various features and are discussed below.

Feature A (Figure A4) lies directly on the property boundary. It consists of a small overhang shelter, 1.8 meters long by 0.8 meters in width, with a ceiling height of only 0.6 meters. Directly in front of the opening is a crude pile of boulders and cobbles, 3 courses high (c. 0.65 meter) that perhaps acted as a windbreak or barrier. A basalt flake and a waterworn pebble were noted near the entrance, along with waterworn coral and pebbles in the surrounding area. This feature is interpreted as a precontact, rock overhang temporary shelter, with minimum accommodation for a single person.

Feature B (Figure A5; Photos 15 & 16) lies just beyond the property boundary and consists of a semi-circular, low rock wall built on an outcrop that wraps around the *maka'i* side of a small, level area. A marginal rock overhang is found directly to the west. The wall measures 2.3 m. in length by 0.4 m. in width by c. 0.4 m. tall. The angular basalt cobbles are stacked 2 or 3 courses high. The function of this feature is not clear. Given the location, it possibly could have acted as a precontact observation point. No indigenous artifacts or manuapora were observed, nor were there any post-contact objects present.

Although Feature C (Figure A6) lies just north of the boundary, this rock overhang shelter was tested anyway, because of the portable remains that were present on the surface of the floor of the

shelter. It measures 8.0 m. in length by 2.7 m. in depth with a ceiling maximum height of 3.0 m. A level area of c. 5 square meters inside has a good deposition of soil. There is also a good deposition of soil outside the dripline. There is some evidence to suggest that the shelter has been vandalized in recent times—cobbles have been piled in one corner, near a depression in the rear of the shelter.

This feature is interpreted as a rock overhang shelter, probably used in precontact times as a temporary habitation shelter.

Test Unit 1

This 0.5 by 0.5-meter unit was placed just inside the dripline in the central portion of the shelter. The surface is made up of loose, powdery, scoria soil. Only one distinguishable layer was identified—a very loose light brown (7.5 YR 6/3) silt with about a 10% occurrence of semi-rounded pebbles and gravel. It extends to bedrock at a depth of c. 18 cm. in the northeast part of the unit, and 1 to 5 cm. in the southwest half. Marine shell consists of 7.4 g. *Nerita* piece, 7.2 g. *Pilaxasis*, 1.7 g. *Conus* and a trace of other species. Six basalt flakes, 1 piece of coral, and 1 waterworn pebble were also recovered, along with 2.5 g. of *kukui* nut shell. One artifact (Artifact #9)—a volcanic glass core was recovered (Photo 72).

A carbon sample was recovered and submitted to Beta Analytic, Inc. for analysis. The measured carbon 14 age is 150 +/- 70 BP. The calibrated result at 2 sigma returned a date range of AD 1640 to 1955. Intercepts of the radiocarbon age with the calibration curve fell at AD 1680, AD 1740, AD 1805, AD 1930, and AD 1950. Because there were no historic artifacts found in the TU 1, we feel that a precontact date bracket is appropriate for this feature.

Feature D is also a rock overhang, and was probably used in precontact times

as a temporary shelter. It is about 5.5 meters to the southwest. It is 4 m. in length by 1.3 m. deep, and has a maximum ceiling height of 2 m. While there is a small level area in the shelter, there is only a very thin soil deposit. Most of the shelter floor is covered with weathering rock from the escarpment.

Feature E (Figures A7; Photo 17), another rock overhang, located c. 7 meters southwest of Feature D, has a 2 x 2 m. area in the central part of the shelter which is level and has a good soil deposit. This rock overhang shelter is c. 4.6 m. long by 3.9 m. deep, with a maximum ceiling height of 2.6 m. A series of 5 vesicular pebbles, cracked by exposure to heat were visible on the surface, along with a waterworn cobble. Because of the subsurface potential, a test unit was excavated. This feature is interpreted as a precontact temporary habitation feature.

Test Unit 2 (Figure A8)

Test Unit 2 dimensions were 0.5 by 1.0 m. and it was placed in the central portion of the shelter. The surface is made up of very loose and powdery soil. Layer 1 (0-10 cm.) is a light brown (7.5 YR 6/4), very loose silt, with little or no rock inclusions. There is an abundant amount of organic material that appears to be dead grass, layered into the soil. The layer was very thin in the eastern part of the unit, but grades into Layer II in the west part. Marine shell in Layer I consists of 13.6 g. of *Nerita* piece, 8.5 g. of *Pilaxasis*, 6.4 g. of *Callina*, 3.4 g. of *Conus*, and 4.9 g. of *Cypraea*. Other portable remains include 3 basalt flakes, 6 volcanic glass flakes, 1 piece of coral, 2 waterworn pebbles, 3 "Maui diamonds", 9.7 g. of *kukui* nut shell, and 0.8 g. of fish bone. Three utilized volcanic glass flakes (Artifacts 10-12) and a relatively large worked basalt flake (Artifact 9) were recovered for this layer. It measures 63 x 50 x 25 mm., and weighs 90.1 g.

Layer II consisted of a slightly darker, medium brown silt (7.5 YR 5/2)

with no rock inclusions. It was excavated to bedrock at c. 10 to 18 cmbs. Portable remains recovered include 1.7 g. of *Callina*, 2.0 g. of *Cypraea*, 6.2 g. *Nerita* piece, 8.5 g. *Pilaxasis*, 2.3 g. *kukui* nut shell, 1 volcanic glass flake, and 3 waterworn pebbles. A basalt chisel fragment, measuring 24.5 x 17 x 11 mm., and weighing 7.8 g. was recovered (Artifact 14).

A charcoal sample was collected and submitted to Beta Analytic, Inc. for analysis. At 2 sigma, 95% probability, it returned a conventional radiocarbon age of 420 +/- 50 BP, and a calibrated date of AD 1420 to 1525 and AD 1560 to 1630, with an intercept of the radiocarbon age and calibration curve falling at AD 1450.

Feature F (Photo 18) is another rock overhang shelter, lying c. 4 meters to the southwest, which measures 6.3 m. long by 3.0 m. deep, and has a maximum ceiling height of 2.9 m. There is patchy, thin soil within the shelter, but a good soil deposit exists outside the dripline of this feature.

One subsurface test (TU 3) was excavated just inside the dripline. Unit dimensions were 50 by 50 by 19 cm. deep.

This is a fairly roomy shelter, with a good amount of level area within and outside. A large boulder with a niche beneath it contained a basalt abrader and a coral chunk. Feature F is interpreted as a precontact temporary shelter.

Test Unit 3 (Figure A9; Photo 19)

The surface soil is a light brownish gray silt (10 YR 6/2) with some organic material. Three waterworn basalt rocks were present on the surface of the test unit. Layer I (0-17 cmbs.) consisted of 2 levels. Level 1 (*Pilaxasis*, 3.0 g. of *Nerita* piece, 10.6 g. of *Cypraea*, 5.5 g. of *Conus*, and 1.3 g. of *Callina*). Other portable remains included a trace of gabbene, one complete *kukui* nut (9.8 g.), 5 basalt

flakes, 4 pieces of volcanic glass, 4 small and 1 large waterworn pebbles. Level 2 (10-17 cmbs.) revealed what appeared to be a hearth feature in the southwest corner of the unit. Several fire-cracked rocks were noted. The layer contained 1.5 g. of Planaxil, 2 basalt flakes, 4 pieces of volcanic glass, 1 piece of coral, and 1 waterworn pebble. Two artifacts—worked volcanic glass flakes—were also recovered (Artifacts 15 & 16).

A radiocarbon sample was recovered from the hearth (Layer 1, Level 2). The sample returned a conventional radiocarbon age of 200 ± 60 BP, with the calibrated results being AD 1525 to 1560 and AD 1630 to 1950 (at 2 sigma, 95% probability). The intercept of the radiocarbon age with the calibration curve falls at AD 1665. The lack of historic artifacts would lead us to favor the earlier date range as the correct one.

Layer II (10-19 cmbs.) consisted of a light yellowish brown powdery silt (10 YR 6/4) that rests on the rock floor. It is shallower on the north side. The hearth was dug into this stratum from Layer I. Portable remains that were found include 8 pieces of volcanic glass, 1 basalt flake, 2 waterworn pebbles, along with small amounts of marine shell. Three artifacts were recovered, 2 utilized volcanic glass flakes (Artifacts 17 & 18), and an adze fragment, measuring 41.5 x 21.5 x 10.5 mm, and weighing 17.2 g. (Artifact 19).

Feature G—another rock overhang shelter c. 8.5 meters east of Feature F, is 5.2 m. long by 2.2 m. deep and has a maximum ceiling height of 1.5 m. While the interior of the shelter has a thin soil deposit, there is a fairly good soil deposit directly outside of the dripline. The interior of the shelter is broken into 3 small shelf areas, with the level area just outside. A heavily weathered *opitii* shell, along with a vesicular cobble, a fire-cracked rock, 2 waterworn pebbles, and a battered cobble were noted eroding out of

the edge of the level area outside the shelter. The function of this feature was probably temporary habitation, in precontact times.

A 0.5 m. by 0.5 m. test unit was placed just beneath the dripline of the rock shelter.

Test Unit 4 (Photo 20)

This unit contained 2 soil layers. Layer I (0-6 cmbs.) consisted of a light brown silt (7.5 YR 6/5) with abundant organic debris mixed in it. It contained c. 40% rock spall from the roof of the shelter, and was sterile. Layer II (3-13 cmbs.) is a very pale brown silt (10 YR 7/3) that contained 1 waterworn pebble. Excavation was terminated at uneven bedrock that ranged from 6 to 13 cmbs.

Features H and I are both rock overhang features. The former one measures 4.5 m. long by 3.8 m. deep, and has a maximum ceiling height of 1.7 m. Most of the interior is bare rock. A large cleft in the ceiling has probably allowed water to wash away any soil periodically, which might be deposited on the floor. Further evidence of this erosion is the occurrence of waterworn coral deposited below the opening, about 3 m. downslope from the dripline. Feature H was probably used as a temporary shelter in precontact times.

Feature I is 2.6 m. long by 2.1 m. deep with a maximum ceiling height of 1.2 m. While there is some soil deposited on the shelter floor, much of the deposition appears to be rock exfoliation and slope wash. This feature could have been used as a temporary shelter in precontact times. A waterworn cobble was noted outside the opening.

The last feature in this site-complex (Feature J) consists of a crudely stacked wall that runs 2.3 m. in an east-west direction. It is c. 0.8 m. wide, and up to 0.7 m. in height. The rocks are unsorted and are piled on top of weathered bedrock that extends off the

acre parcel awarded to Kasoohiema on September 22, 1853. The nature of the land use is listed as "household and taro patches" in the LCA. The outline on the map does not coincide precisely with the site, although the orientation is very close. However, it is stated in the legend that the LCA locations are "approximate"—not plotted (See Map 5).

Site 50-50-08-4703
(Appendix A—pp. 21-23)
(Figure A12) [17]

This is a site complex with 3 features, located beneath the old power transmission line corridor, near the western border of the property. This corridor leads to a transformer and the water tunnel shaft opening in the northwestern portion of the project area. Site 4703 lies quite close to the border. The 3 features extend some 30 m. northwest-southeast, and cover c. 8 m. in width.

The western-most feature (Feature A) is a crude U-shaped rock enclosure. Although not well constructed, it appears to have some boulders placed in an upright position, leaning against one another. Its function is not clear, but it may be a boundary marker, given its location on the *chupua'a* boundary.

Feature B is a linear arrangement of rock, stacked 3 to 4 courses high. It has been heavily impacted by earthmoving activities associated with the placement of the power transmission line. Consequently, its function remains unclear.

Feature C is a modified outcrop, which may have functioned as a windbreak. Three to 4 courses of rock are stacked next to a protruding boulder, providing a sheltered space behind. It appears possible that Site 4703 dates from precontact times, and that the 3 features were part of a larger structure that has been destroyed by post-contact activities.

base of a low escarpment. It ranges from 2 to 4 courses high, and is collapsing downslope. Feature J may be a precontact boundary marker of some sort.

Site 50-50-08-4701
(Appendix A—pp. 18-19)
(Figure A10) [5]

This is a single component site that appears to be the remnant of a platform, measuring 33 by 27 m. It is a leveled area, located on a small, broad finger ridge in the western part of the project area, between Sites 4699 and 4700.

The primary feature is a roughly rectangular area paved with angular basalt cobbles, intermixed with numerous waterworn pebbles, cobbles and numerous pieces of coral. The eastern part of it has been severely impacted by a bulldozer. Scattered surface portable remains noted included lithic debitage, marine shell, and a single hammerstone. The feature appears as a leveled area on an undulating ridge. An intermittent streambed lies about 10 meters west of the site. The presence of quantities of branch and waterworn coral suggests that this site may represent a remnant of a possible precontact ceremonial structure.

Site 50-50-08-4702
(Appendix A—pp. 20-21)
(Figure A11; Photos 21 & 22) [6]

Site 4702 is another single component site. It consists of an L-shaped stacked, faced rock wall running c. 47 m. long in an east-west direction, with a 6 m. long north-south leg at the *mouka* side. The average width of this wall is c. 0.75 m. with a maximum height of 9 courses of rock measuring 1.2 m. It has been impacted by the construction of an irrigation ditch and cane field operations. It also appears that rocks have been pilfered from both ends of the wall. The east end terminates in collapsed rubble. This feature is possibly a historic boundary marker, which may have delineated a portion of the *mouka* and Lahaina side border of LCA 5829-D, a 5.5

Site 50-50-08-3180 [8]
(Appendix A—pp. 24-25)
[Figure A13; Photos 23-26]

A single component site, Site 3180 is a rock wall that stretches 234 m. in a roughly east-west direction, from c. 240 to 400 ft. AMSL. Although it does not exactly align with the boundary line indicated on the map, it is close enough to the project border to suggest that it was made, probably in historic times, to mark that boundary. It is built as close to the boundary as the terrain would allow. It has an average width of 0.85 m., with a height of 1.2 m. on the downslope side, and 0.6 m. on the upslope side. The maximum height is 1.45 m. It is faced with 6 to 10 courses of angular boulders and cobbles, with core-filled sections. Walls of this type were constructed along boundaries in the 1880s-1890s, to manage cattle movement.

This is considered to be the site identified during the MECO transmission corridor inventory survey as Site 3180 (Robins, Folk and Hamman, 1994, p. 82). They interpret it as a cattle wall, "constructed to keep cattle outside of the cane fields and kuleana." They did not state its length, but described it as a "wall...stacked and vertically faced with basalt boulders. It measures an average width and height of 1.0 m. (3.3 ft.)."

Site 50-50-08-4704 [9]
(Appendix A—pp. 24-31)
[Figure A14; Photos 27-30; Table 6]

This is a petroglyph complex, located inside the mouth of the Olowalu Stream valley. It consists of 7 features—Features A through G.

Feature A is a vertical basalt face that has over 27 petroglyph images on it (Figures A15 & A16).³³ Feature B is a

³³ The petroglyphs were not individually analyzed at this level of study. Data recovery is recommended to undertake this task.

terrace that abuts this basalt face. It is formed by a stacked, faced retaining wall, 5 to 13 courses high, built parallel to the basalt face. A 0.5 by 0.5 m. test unit was placed in the level area between this wall and the petroglyph panel.

Test Unit 1 (Figure A17)

This unit was placed 1.7 m. out from the base of the petroglyph panel on the small terraced area. Unit dimensions were 50 by 50 by 60 cm deep. Layer 1 (0-40 cmbs.) consists of brown clay loam (7.5 YR 5/3), with a 15 to 20% mix of angular pebbles and gravel. Some historic bottle glass and a square nail were recovered from the surface level. Recovered marine midden included 9.4 g. of *Nerita* shells, 3 g. of *Planorbis*, 2.7 g. of *Cellana*, trace amounts of sea urchin and crab, 0.3 g. of fish bone. Also recovered was a human deciduous tooth—an upper incisor. *Kakui* nut shell was found in the uppermost level. Other portable remains included 4 basalt flakes, 17 pieces of coral, and 1 large water-worn pebble (98.4 g.). Small amounts of charcoal were present, but not enough was available to obtain a radiocarbon sample.

Layer II was brown, very compact clay loam (7.5 YR 4/3), made up of 80% weathering bedrock and contained only a sparse amount of marine shell. Excavation was terminated at bedrock at 60 cmbs.

Feature C was composed of a natural terrace which was extended by a stacked rock retaining wall. A hammerstone was found directly below a petroglyph image at the base of a basalt face.

Feature D is a smaller terrace with a crude retaining wall that may have served as an agricultural plot. A utilized basalt flake and a battered cobble were noted on the surface. This feature is c. 8 m. southeast of Feature B. Feature E, F and G are probably other agricultural terraces, created by a

retaining walls of stacked boulders. Feature F was very nearly impacted by the pump station construction.

This site complex is interpreted as a precontact habitation/agriculture site (*to'i*), with a ceremonial or symbolic component in the form of petroglyphs or petroglyphs carved on the basalt cliff face.

Site 10^A

This is a lumber scatter representing what remains of the previous marker for the northernmost boundary corner, probably built in the late 19th or early 20th centuries.

Site 50-50-08-4705 [11]
(Appendix A—pp. 32-34)
[Figures A18 and A19]

This is a site complex, made up of 2 rock overhang shelters (Features A and B) which are located on the west side of Olowalu Valley downslope from Site 4704. They are found about 1/3 of the way up from the base of the slope, and are c. 42 meters apart. They appear to have been used in precontact times for temporary shelter.

Site 50-50-08-4706 [12]
(Appendix A—pp. 35-36)
[Figures A20, A21; Table 7]

Site 4706 is another rock overhang, on the west side of the mouth of Olowalu Stream valley, in a weathered basalt cliff face. It measures 4.25 m. wide by 2.35 m. deep, with a maximum ceiling height of 1.25 m. A test unit was utilized in this rock shelter in order to investigate subsurface conditions.

Test Unit 1

This unit was placed within the shelter near the west corner. It

³⁴ This site was only given a field number and was not considered significant enough to assign a SHIP number.

measured 0.5 by 0.5 m. by 0.3 mbs. Layer I (0-5 cmbs.) was a light brown loose, very dry silty loam (7.5 YR 6/3), with 50% angular gravel or pebbles present. Small amounts of marine shell were recovered, along with 22.5 g. of *Lutrinut* shell, 38.1 g. of charcoal, and nine basalt flakes.

Layer II occurred at an abrupt color change. This gray silty loam (7.5 YR 6/1) contained 50% angular gravel. Bedrock encroached on the north, east and south sides. Layer II extends from 5 to 30 cmbs. and overlaid bedrock. There is a considerable amount of charcoal (over 100 g.) suggesting that this may have been the edge of a hearth. Material remains included 8.9 g. of marine shell, 1.6 g. of fish bone (including a parrot fish jaw), 25.4 g. of *Lutrinut* shell, and a piece of volcanic glass. A volcanic glass core, 22.5 x 14.5 x 10.5 (4.9 g.) was also recovered at about 28 cmbs. (Artifact 13).

A charcoal sample (Sample #3) from Layer II was submitted to Beta Analytic, Inc. for analysis. Its conventional radiocarbon age was 290 +/- 50 BP, with the date calibrated to be AD 1470 to 1670 and AD 1780 to 1795 at 2 sigma, 95% probability. The intercept of the radiocarbon age with the calibration curve falls at AD 1640.

The radiocarbon date establishes the site as late-precontact, and the portable remains suggest a temporary habitation function for the shelter.

Site 50-50-08-4707 [13]
(Appendix A—pp. 37-38)
[Figure A22]

This is a site complex made up of 2 features. Feature A is a rock wall that runs in a northeast-southwest direction for c. 26 meters inside the property boundary, and another 31 meters beyond. It lies on the floor of Olowalu Stream valley, c. 17 meters east of the stream. It is up to 5.5 meters wide. Feature A may be a boundary

marker. A fence line passes over the western edge.

Feature B is a mound of rocks c. 5 by 2.7 m. lying just inside the project boundary. This feature is interpreted as a possible burial.

Site 50-50-08-4708 [14]
(Appendix A—pp. 39-42)
(Figure A23; Photos 33 & 34)

This is a site complex with 2 features—a large platform with a nearly vertical, faced retaining wall on the stream side (Feature A); and a terrace system, which lies to the northeast (Feature B). It is situated within the mouth of Olowalu Stream valley, c. 25 meters east of the streambed. The site appears to border 2 LCA parcels—8817, Ap. 2 to Kanakaole to the east, and 5952, 2 to Minomina, on the south.

Feature A (Photo 31) has been impacted on the southwest side by the construction of 2 water tanks and a perimeter fence associated with the tanks. A large boulder, which appears to have been fairly recently displaced bears 2 petroglyph images (Figure A24).

Feature B (Photo 34) is made up of a series of stacked, faced rock retaining walls that were agricultural features—probably taro *lo'i*. A 3 inch in diameter iron pipe was noted connecting the *lo'i*. Two test units were placed in Feature B to investigate the subsurface deposits.

Test Unit 1

This test unit measured 0.5 by 0.5 meters, and was up to 0.62 m. deep. There were 3 layers present. Layer I (0 to 6 cmbs.) was a dark brown loam (7.5 YR 3/3), with abundant organic material. A single waterworn pebble was recovered.

Layer II (6 to 22 cmbs.), a brown silt loam (7.5 YR 4/2) contained

no rock inclusions. Flecks of an orangish substance were noted, as well as a few bits of charcoal. No portable remains were found.

Layer III (22 to 42 cmbs.) consisted of a light brown silty loam (7.5 YR 6/5) with sparse weathering bedrock, increasing in occurrence toward the bottom of the excavation. A probe revealed another 10 cm. of rocky soil before reaching bedrock. Such stratigraphy would be consistent with agricultural activity.

Test Unit 2

Another 0.5 by 0.5 meter test unit produced similar results to those of Test Unit 1. There were 3 layers. Layer I (0 to 6 cmbs.) was composed of brown sterile loam (7.5 YR 4/3). Layer II (6 to 20 cmbs.) consisted of brown silty clay (7.5 YR 4/2), with a cut nail and 1 piece of historic glass in the upper 10 cm. In the lower 10 cm., a basalt flake was recovered. There were very few angular pebbles (5%) in the soil. Layer III was made up of brown compact clay (7.5 YR 5/4), with weathered rock becoming more common as depth increased. Excavation was halted at 40 cmbs.

Feature A is interpreted as a possible precontact religious structure, which has undergone modification in post-contact times. The size of the substantial platform and its proximity to Olowalu Stream and the Feature B taro *lo'i* suggest that this structure may be a *heiau* connected with agricultural activity. There were no soil deposits associated with this large rock platform. The amount of labor needed to construct the platform would have been considerable. While it might be a post-contact house platform, none of the nearby LCAs were awarded as houselots—only taro lands. No subsurface testing was conducted on this feature because of its possible religious significance. It would have been necessary to dismantle a portion

of the feature in order to investigate it further.

Feature B is interpreted as a series of *lo'i* that were probably utilized for wet-taro production in precontact times, and continued to be used into the 20th century. The subsurface silty loam soils within the terraced features were nearly devoid of rocks, which are abundant in the surrounding soils. There is an iron pipe between 2 of the *lo'i*, indicating later modification and usage. An informant, Ms. Katie Nahina, recalled that watercress was grown in these former taro *lo'i* in the time before she graduated from high school in 1957.

Site 50-50-08-4709 [15]
(Appendix A—pp. 42-46)
(Figures A25 & A26; Photos 35-37)

This is a complex made up of concrete foundations (Features A and B), a stacked rock wall/terrace area (Feature C), and irrigation ditches (Feature D). This post-contact feature probably dates from the early 20th century. Features A, B and D are related to plantation activities, while the wall feature and associated artifacts appear to have been part of a habitation area. Feature A (Photo 37) once supported hydroelectric generation equipment. Water was transported to the hydro-generator via a flume. This water subsequently flowed into various irrigation ditches.

Feature B (Photo 36) is a concrete vault or cistern lying to the south, the function of which is uncertain. Feature D consists of the irrigation ditches that intersect at Feature A, which carry water to the south and west, and are part of the current sugarcane irrigation system.

Feature C (Photo 35) is a terrace c. 60 square meters in area, which is formed by a stacked, faced retaining wall on the northwest side. A stacked, freestanding wall encloses another terrace on the upslope. A large boulder at the center of this wall has a

small niche at the bottom of it, in which a ceramic bowl has been placed, possibly as an offering. The presence of old kerosene stove, a cooking pan, pane glass and corrugated roofing suggest that Feature C may have been the foundation for a house.

Site 50-50-08-4710 [16]
(Appendix A—pp. 46-51)
(Figure A27; Photos 38-40; Tables 8 & 9)

This site is considered to be a habitation complex, and is located above the mouth of Olowalu Stream Valley on the eastern side at c. 310 feet AMSL. It is comprised of 7 features (Features A-G). The central element is a rectangular rock wall enclosure that is built on a terrace created by a boulder alignment (Feature A). Two other boulder alignments create a pair of terraces 3 meters to the east (Feature B). A pair of small enclosures (Features C and D) are adjacent at the north corner of the site (Photos 38 & 39). Feature E, a probable burial marker, is a small, roughly oval-shaped rock alignment directly adjacent to the northwest side of Feature A (Photo 40). It appears to be on the eastern edge of LCA 6728, Ap. 1—a 2.281 acre parcel granted as taro land to Mahulu in 1853.

The site has been impacted by a large pile of boulders and pieces of concrete that have been pushed from the adjacent cantfield on the south side of the complex. It was not possible to tell how much of the site has been covered by the cane field push. Two test units were excavated at this site.

Test Unit 1 (Figure A28)

This unit was placed at the northwest corner of the uppermost terrace—Feature B. It measured 1.0 by 0.5 m., and was 0.5 m. deep. It contained 5 soil layers, and a hearth feature.

Layer I (0 to 10 cmbs) was a brown loam (7.5 YR 4/2) with c. 30% organic debris. This layer was shallower in the south end of the unit.

Portable remains recovered included 6 basalt flakes, a volcanic glass flake, a piece of coral and 1 waterworn pebble. No marine shell or other food midden was present in this uppermost stratum. A worked flake of quartz (Maui "diamond"—Artifact 21) weighed 0.8 g., and measured 18 x 8 x 4.5 mm. was recovered from Layer I.

Layer II (c. 3 to 18 embd.) was a yellowish-brown clay loam (10 YR 5/8) with angular gravel occurring at about 10% by volume. This layer contained considerably more cultural remains, including 38 basalt flakes, 2 volcanic glass flakes, 13 pieces of coral, as well as a ceramic shard, a piece of green bottle glass, and a small bronze fragment. Marine shellfish remains included 7.2 grams of *Comus*, 4.8 grams of *Cypraea*, and 1.7 grams of *Turbo sandwicensis*. Also recovered were 5.7 g. of mammal bone, and 26.2 g. of *Kukui* nut shell.

Layer III (c. 15 to 32) consisted of a grayish brown (10 YR 5/2) ashy silt loam, which appears to be on the edge of a hearth. At c. 20 embd. the outline of the hearth feature became clear in the south part of the unit. It was a very ashy concentration in which many fire-cracked rocks were present. Portable remains recovered from Layer III include 5.2 g. *Comus*, 7.2 g. *Cypraea*, 0.7 g. *Nerita bisea*, 1.4 g. *Planaxis*, 11.1 g. of mammal bone, 0.5 g. fish bone, 20.8 g. *Kukui* nut shell, 83 basalt flakes, 22 pieces of coral, and 1 volcanic glass flake. Those remains recovered from the hearth feature include 2.6 g. *Comus*, 6.9 g. *Cypraea*, traces of *Nerita* and *Planaxis*, 2.3 g. of sea urchin, 11.4 g. of mammal bone, 2.3 g. of *Kukui* nut shell, 24 basalt flakes, 17 pieces of coral and 3 waterworn pebbles. Four formed artifacts were recovered, including a coral abrader fragment (Artifact 22); a piece of worked shell (Artifact 23); a hammerstone (Artifact 24); and a ground basalt abrader (Artifact 25).

Layer IV (c. 17-30 to 50) was composed of a medium yellowish brown clay loam (10 YR 5/6), through

which the hearth feature had been dug. Small amounts of marine shell, fish bone and charcoal were recovered, along with 40 basalt flakes, 1 piece of volcanic glass, 16 coral pieces, and 2 waterworn pebbles. Four artifacts were found—2 basalt choppers (Artifacts 26 and 27); a basalt chopperscore (Artifact 28); and a large polished basalt adze fragment (Artifact 29). At the bottom of this layer, the amount of cultural material dropped off markedly.

Layer V lay under the hearth and was composed of a sterile, reddish brown clay (5 YR 5/4) with weathered rock. Excavation of the unit was halted at c. 30 embd.

A radiocarbon sample was taken from the hearth and sent to Beta Analytic, Inc. for analysis. The results returned a conventional radiocarbon age of 200 +/- 50 BP, with calibrated date brackets at 2 sigma, 95% probability falling at AD 1635 to 1705 and AD 1715 to 1885, and AD 1910 to 1950. The intercept of the radiocarbon age with the calibration curve is at AD 1665.

Test Unit 2 (Figure A29)

This second unit was excavated in Feature C, a small rectangular enclosure. The unit was 1.0 by 0.5 meters, and was excavated to a depth of c. 0.40 mbd. Four layers were present.¹⁷

Layer I (0-8 embd.) was composed of mostly decomposing organic material. It contained 2 basalt flakes, and a piece of coral. Layer II (6-12 embd.) was a medium brown ashy silt (7.5 YR 4/4), which yielded 27 basalt flakes, 14 pieces of coral, and a single fragment of clear bottle glass. About 10 g. of marine shell, 5.9 g. of which was not identifiable, and some charcoal and *Kukui* nut shell were also found.

¹⁷ A hearth feature was found in the central portion of the excavation unit, but did not show on the profiles. It showed up in Layer II, underneath the decayed vegetation of Layer I.

Layer III (12 to 40 embd.) is made up of gray ashy silt (10 YR 6/1) that contained many fire-cracked rocks, 265 basalt flakes, 56 pieces of coral, 4 waterworn pebbles and a large amount of charcoal. Marine shell remains were more abundant—2.9 g. of *Callinax*, 30.6 g. of *Comus*, 28 g. of *Cypraea*, 7.8 g. of *Nerita bisea*, and 13.7 g. of *Planaxis*. A small piece of worked bone (Artifact 30), and a tiny coral abrader fragment (Artifact 31), were the only formed artifacts recovered. Layer IV was a sterile layer of compacted silt (7.5 YR 4/6).

A charcoal sample was submitted to Beta Analytic, Inc. for analysis. It returned a modern radiocarbon age of 60 +/- 50 BP, indicating that this feature was used in historic times, as a temporary camp. The hearth appears to have been dug into precontact deposits with cultural materials such as basalt flakes, marine shell, etc.

Although the radiometric date from a hearth feature in Feature C is modern, the general appearance and construction of Site 4710 strongly suggests that it was built in late-precontact times. It appears likely, however, that this habitation area was utilized in post-contact times as well, probably as part of a *kulama*. As noted earlier, the southern portion of the site has been buried by a pile of boulders pushed off of the adjacent cane field. A 4-inch black PVC pipe crosses the site in an east west direction, separating Features C and D.

Site 50-50-08-4711
(Appendix A—pp. 51-53)
[Figure A30]

This site, composed of 2 features, lies in the northeastern corner of the project area. Feature A lies a few meters within the property boundary, while Feature B is just outside. The latter feature is a small terrace that may have been an agricultural feature. Feature A consists of a linear pile of basalt rocks, the function of which remains

unclear. Both are presumed to be precontact. A piece of *Comus* shell and a piece of coral were noted in the immediate vicinity.

Site 50-50-08-4712
(Appendix A—pp. 53-56)
[Figure A31]

Located on the southwest slope of Pu'u Kilea, this site consists of 2 features—Feature A, a narrow terrace constructed of cinder cobbles and gravel, that modifies a low outcrop; and Feature B, a small oval-shaped pile of cinder rocks. Lithic debris cobbles. A single waterworn cobbles sits on top of Feature B, which may be a burial feature. The overall site appears to be precontact, but the function of Feature A was not determined.

Site 50-50-08-4713
(Appendix A—pp. 56-57)
[Figure A32; Photo 41]

This is a single component site located on the northeast slope of Pu'u Kilea, c. 85 meters down from the summit. Site 4713 is interpreted as a rock overhang shelter, and 6.0 m. wide by 3.5 m. deep with a maximum ceiling height of 2.4 m. It appears to have been used for temporary habitation in both precontact and post-contact times. Historic items such as a bottle cap and old (non-synthetic) cordage were found inside, as well as a few waterworn pebbles. A possible hammerstone was noted c. 9 m. downslope of the shelter entrance. A small stacked wall with 4 to 6 courses of rock, blocks the lowest portion of the mouth. This wall is c. 0.6 meters high on the outside, and 0.85 meters above the interior floor. Charcoal is scattered on the shelter floor. Cordage similar to that found in this shelter was observed at Kawaihoa Aelau (Site 04).

Site 50-50-08-4714 [20]
(Appendix A—pp. 57-58)
{Figure A31; Photo 42}

This small rock overhang is located on the northwestern flank of Pu'u Kilea, c. 30 meters downslope from the summit. It has a restricted entrance, and a relatively limited space inside. The maximum ceiling height is 0.7 meters, while the entrance is 2 meters wide and the depth is 2.4 meters. A single, cracked waterworn pebble lies just inside the entrance. Site 4714 is c. 5.5 meters southeast of and above the cliff face on which many petroglyphs, associated with Site 1200, are found.

Site 50-50-08-4715 [21]
(Appendix A—pp. 57 and 59)
{Figure A34; Photos 43-48}

This site is a burial ground located on the summit of Pu'u Kilea. It is a complex of rock mounds, platforms, terraces, *'i'i 'i'i* pavings, stone markers, and depressions. The exact number of burials is unknown, but judging from the number of features, it is felt that as many as 34 individuals may be buried here. Local residents report that they have relatives buried there.¹⁵ The area was formerly enclosed with a wire fence that was attached to upright railroad rails. Many of these rails remain in place, but most of the wire fencing has collapsed. A gateway occurs at the northwest side. On one of our visits to the area, a dried *maile lei* was observed on the largest of the mounds on the north end of the cemetery.

Indigenous material culture remains noted on the surface included a basalt chopper, pieces of marine shellfish, and waterworn coral. None of these items were collected from this burial area. It is highly probable that both pre- and post-contact

¹⁵ Members of the Nahuikaika family reported that a brother of Warren Nahuikaika, who died as a child, is buried there. Mr. Kaie Nuhina reported that her great grandfather is buried there.

is a retaining wall, 15 meters long, which creates a terrace area behind. A concrete ditch runs along the back side of the wall. Feature B is another wall feature built of dry-laid rock, which curves along the stream's cut bank for 25 meters. Feature C (Figure A36) consists of a stacked rock wall section across from the Pu'u Kilea petroglyph panel (Site 1200). It lies on the east side of the stream, along the cut edge. Feature D is a 51-meter section of wall, which is well-built, faced on the stream side, and with a slope of c. 15%. Rubble and earth form a somewhat leveled area behind the wall. This feature has been undercut to some degree, by water action. It was likely longer, but has collapsed into Olowalu Stream.

Site 50-50-08-4718 [24]
(Appendix A—pp. 65-67)
{Figure A37; Photos 50-53}

This site is a complex of 3 features, and is interpreted as the remnant of a *heiau*. It is located in the middle of a cane field in the central portion of the study area, at c. 80 feet AMSL. The original shape and extent of this site could not be determined accurately, because it has been covered with dirt and field stones from the surrounding cane fields. The probable dimensions of this site are essentially the same as the small *heiau* that Walker referred to, which measured 40 by 60 feet. Identified as Site 5, Walker goes on to note that "all interior structures have been destroyed", and that no name was learned for this *heiau* (Walker, 1931, p. 108). However, at the time of our survey, 3 interior features were identifiable.

Feature A consists of an enclosure that measures c. 12 meters in length by c. 6 meters in width, and is c. 0.7 meters high. Although damaged and partially covered, the intact portions are still visible, and are in fair condition. The interior is divided by linear rock alignments, retaining walls with paved and slightly raised areas, and separating pathways. One path leads in

from a possible entrance on the southwest side.

Features B and C appear to be burials. They are rectangular arrangements of semi-rounded cobbles and boulders, with an inner pavement of smaller cobbles and *'i'i 'i'i* pebbles, and are quite reminiscent of the known burials found on Pu'u Kilea. A concentration of surface cultural materials, including volcanic glass flakes (4), basalt debris (5), coral pieces (6) and a number of marine shells, occurs between these features. None of these cultural materials were collected and no subsurface testing was undertaken.

Informants reported that human remains, disturbed during field plowing operations elsewhere on the property, had been reinterred at the site. The precise location and time of reinterment was not determined. However, a portion of Feature C appeared to have been partially dismantled and reconstructed at sometime in the past.

Site 50-50-08-4719 [25]
(Appendix A—pp. 67-68)
{Figure A38; Photo 54}

Site 4719 is a boundary marker, which consists of a short section of dry-laid rock wall, which has been tied into the property corner monument, marking the eastern-most corner of the property. The later is constructed of rounded rocks, and is mortared together. The wall segment may predate the monument. It was partially buried by a large pile of burned cane, so it was not possible to establish its total length. This pushed cane remains piled on the site at the writing of this report.

Site 50-50-08-4720 [26]
(Appendix A—pp. 69-70)
{Figure A39; Photo 55}

This is a single component post-contact site, associated with plantation activity. It consists of a retaining wall

across a small drainage gully, which is filled-in behind with earth, forming a level road crossing. The retaining wall is 5 to 6 courses high and dry laid, except for the top course, which is mortared together.

Site 50-50-08-04 [27]
(Appendix A—pp. 70-72)
[Figure A40; Photos 61-66]

This is Kawailoa *Heiau*—Walker's Site 4, which was described as a large, walled *heiau*, in good condition in 1930. Remarkably, it remains in good condition today.³⁷ The structure was mapped by Mark Doonham in January 1999. No subsurface testing was undertaken during this inventory survey, because of the cultural significance of this large *heiau*.

An informant, Ms. Katie Nahina, has told Erik Fredericksen, that her great uncle says the name of the *heiau* is Kawailoa, which is in reference to an old name for Olowalu. However, this name is not used in any of the literature sources consulted by the present authors.

Site 50-50-08-4721 [28]
(Appendix A—pp. 72-730)
[Figure A41]

This site consists of a single component site, and is located c. 183 meters west of Olowalu Stream bed directly above the northern-most cane field. It is a small rectangular platform with a level area formed by a faced, retaining wall on the west side. It is built on a gradual slope, c. 7 meters up from the existing cane field. Post-contact artifacts such as an earthenware plate fragment, a piece of olive green glass and a piece of milled lumber were noted. This is interpreted as a possible, post-contact habitation site.

³⁷ Refer also to Photo 4. Site 04 is visible in the middle of the photograph.

Site 50-50-08-4758
(Appendix A—p. 70)
[Figure 7; Photos 56-60]

This is an historic cemetery, in which predominantly people of Japanese ancestry were buried. According to informant, Mrs. Adeline Rodriguez, only one person of Hawaiian ancestry is buried here. It is impossible to ascertain exactly how many graves are present. Some of the markers are made of concrete with engraved characters, while others are a simple basalt rock placed upright—some with inscriptions. A few are wooden upright posts, some are mounds of stone, and others are rectangular alignments that mark the burial plot.

Only one modern granite gravestone was noted, near the eastern edge. Fresh flowers at the gravesite on June 10, 1999, indicated that it had been visited recently. The inscription on the tombstone reads: Ralph H. Fujishiro, May 29, 1925 to January 31, 1938. This is a family name that is common in Olowalu, as well as in nearby Ukumehame. Two other Fujishiro graves are located in the Olowalu Stone Church cemetery (Site 1603).

The cemetery stretches for about 37 meters in a roughly east-west direction, and is c. 10 meters in width at the western end. It lies between 2 sugarcane fields, and along a cane road that runs *marka-makal*.

As our inventory survey was nearing its completion, a cane fire swept across the cemetery and burned off the vegetation, and charred many of the wooden grave markers (Photos 56-60). It appears that 60 or more burials are contained in Site 4758.

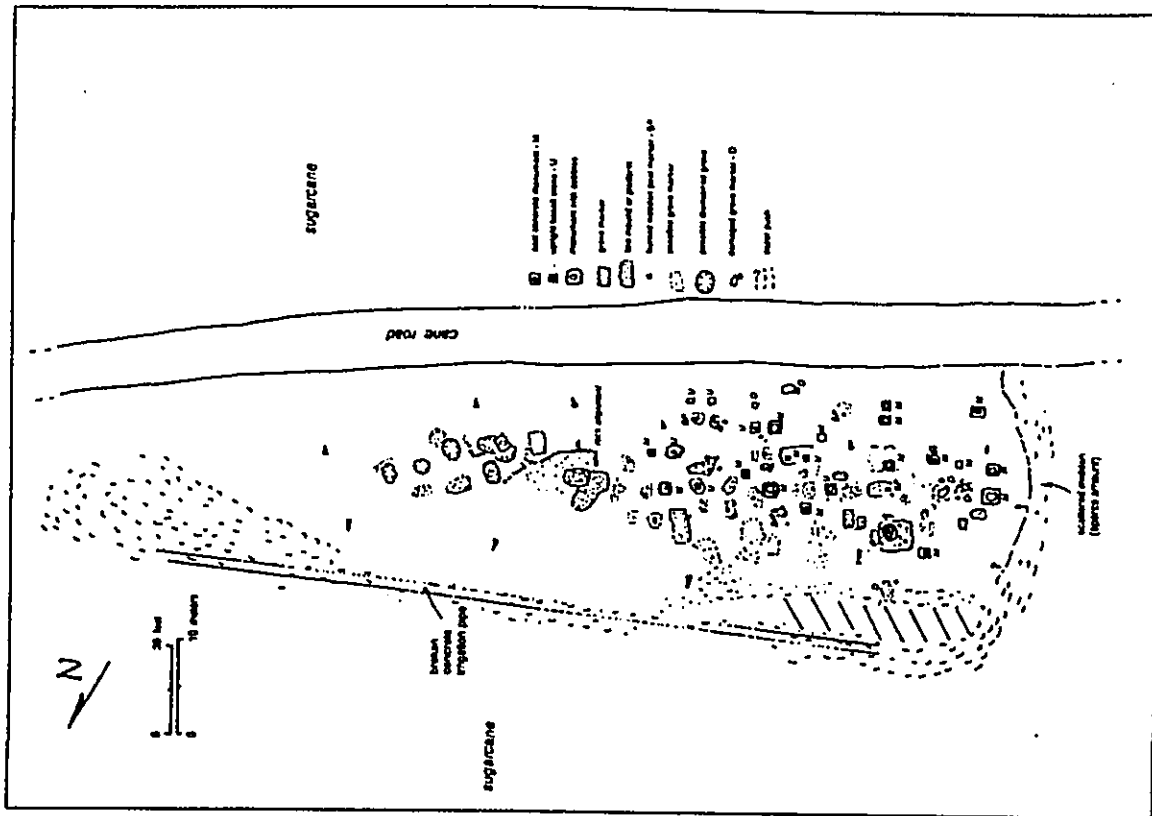


Figure 7—Plan view of Site 4758—Japanese cemetery.

Site 50-50-08-1603
(Appendix A—pp. 74-76)
[Figure 5]

This is the Olowalu Lanakila Hawaiian Protestant Church site that was numbered during the statewide inventory of historic places in 1973. While excluded from the project area, one casket burial was located during backhoe testing in the area north of the stone church ruins. During ongoing discussions with informants about the project area, Ms. Adeline Rodrigues indicated to Erik Fredericksen that the church cemetery extended into the adjacent cane field. Ms. Rodrigues recalled that her maternal grandmother had told her not to forget that there were "old" graves behind the church. Our preliminary testing located one coffin burial below the existing sugarcane field.⁴⁹ Further testing was not attempted, since the property owners, Olowalu Elus Associates, LLC, have agreed to create a preservation area, which includes the former church property now covered by sugar cane.

Site 50-50-08-4820
(Appendix A—p. 107)

This site consists of a surface scatter of weathered, fragmented human remains, made up of a few long bone shaft fragments primarily. The remains were located on the surface, near BT 121, and were scattered in an area roughly covering 100 square meters. Backhoe Trench 121 was excavated to determine whether subsurface evidence of a burial could be found. The subsurface layers consisted of a 40 cm-thick plow zone on top of 5 layers of silty clay deposits extending to a depth of 2 meters. No subsurface cultural materials or deposits were found. The stratigraphy suggests that the surface layer with the remains in it may

⁴⁹ Another informant, who wishes to remain anonymous, indicated that in the early part of the 20th century, the plantation bulldozed the headstones and grave markers away before planting sugar cane.

have originated from somewhere else. Two informants reported that human skeletal remains have been recovered from this location for years, and that they were reburied at the small *heiau*, Site 4718.

Site 50-50-08-4821
(Appendix A—p. 107)

This site represents another surface scatter of fragmented human remains (a skull fragment, a phalange, and a few long bone fragments) that were located on the surface of the plow zone between BTs 139 and 140 in the western-most portion of the study area. The remains were scattered in about a 50- to 60-square meter area. Additional remains were not found in subsurface deposits tested by the backhoe. Subsurface layers of both BT 139 and 140 indicate that this area has undergone at least 2 episodes of localized flooding, suggesting that the surface deposits may have resulted from an eroded burial originating elsewhere.

Site 50-50-08-4822
(Appendix A—p. 107)

This is the site of a pond identified on early maps as a "Pond" (Refer to Figure 1 and 1a). This pond existed into the mid-20th century. A 1916 photograph of the school, situated on the edge of the pond is included in Appendix C. Informants have noted that the pond survived from precontact times. Mr. John Ka'ea gave the name of the pond as *Kaloko o Kapa'iki*. It was also mentioned by another informant, Mrs. Adeline Rodrigues, and she said that High Chiefess Kalola lived just *mauka* of this pond, and it was probably associated with her. The site's possible precontact origin is based solely on this oral testimony, since we have not found reference to the pond elsewhere.

Much of the area of the former pond lies outside the boundary of the study parcel. A narrow strip exists on the survey property, between the Highway and the existing cane-

haul road. A portion of the site lies within the Olowalu Subdivision boundary, on private property outside the project area. The pond was filled with boulders and debris during the construction of Honoapi'iani Highway, according to informants. Because of the nature of the fill on OEA property, no subsurface testing has been done at the site. In addition, the pond lies within the 80-foot wide State Department of Transportation highway setback. Finally, Site 4822 has been designated as part of the "greenway" system in the overall development plan for Olowalu, and therefore will be placed in passive preservation.

Site 50-50-08-4823
(Appendix A—p. 108)

This site is located in the easternmost sector of the project area. It consists of subsurface gleyed soil deposits that are the result of marsh conditions created by water collected behind a beach sand berm. These soils are considered significant because they may contain pollen and charcoal deposits from the period of the first human settlement in Olowalu. These soils showed up in two backhoe trenches (BT 106 and 107), which are located about 75 meters apart. The trenches were dug about 30 to 80 meters *mauka* of Honoapi'iani Highway. It appears that these soils may be fairly extensive in this part of the study area. On the 1906 map

Backhoe Trenches
(Photos 67-70; Table 12)

We utilized a number of backhoe trenches in order to gain information on the stratigraphy at various portions of the survey area. Many areas of the study parcel were not readily accessible for backhoe testing. The rationale for selection of test locations is included with the discussion below. A total of 82 backhoe tests were excavated in

(Figure 1a) the area to the west of the trenches is referenced as "salty land".

This area of the leeward coast from Olowalu to Ukumeheame is known for marshy conditions that occur after heavy rainfall. A salty residue is present on the surface when the water evaporates.

this process. Refer to Table 9 for details of stratigraphy of each trench, and significant findings, if any. The numbering system begins with BT 98, following the sequence begun on the *makai* portion of the study property (Fredericksen and Fredericksen, March 1999, Draft).

Trenches 98 to 102, 104 and 105 were located on the western part of the mauka project area, along the north side of and parallel to Honoapiʻilani Highway. These subsurface tests were excavated in order to ascertain if there remained any evidence of precontact coastal habitation areas. The trenches were dug to ground water in all instances, which was reached at anywhere from 1.8 to 2.0 meters below surface. All of these trenches, except BT 101 and 105 yielded shoreline deposits of beach sand mixed with terrestrial based (i.e., basalt) sand. BT 103 was excavated near Site 4699, in the cane field. Only the cultivated surface layer and subsurface clay loam alluvium were encountered. No significant material culture remains were found.

Backhoe trenches 106 and 107 were located at the easternmost end of the subject property. Here the water table was reached at 0.6 and 1.2 mbs., respectively. The presence of gley soils suggests that this area may have been a marsh area in the past. These soils are identified as Site 4823. It is east of the old mouth of Olowalu stream, and it is indicated as "salty land" on the 1906 map. Similar marshy areas exist all along the coastline to Ukumehame, where surface water collects behind the beach sand berm following rainy weather.

Trenches 108 to 123 were excavated fairly close to the old Government Road (cane haul road), in the cane fields just mauka of the Honoapiʻilani Highway. The backhoe trenches extended from Camp Pecua to about 500 meters west. The water table, when encountered, occurred at about 1.0 to 2.2 mbs. The water table was not reached in several trenches where the excavated depth exceeded 2 meters. These test trenches were dug to examine precontact coastal permanent habitation areas. The area is mauka of the burial preserve area on the makai portion of Olowalu (Site 4693).

Marine sand deposits similar to those found during the makai inventory survey were located in BT 108. Backhoe Trenches 109 through 112 are located in an area shown on the map as LCA 10128, S to E. Maui. This land was awarded for *kula* and houselot. The stratigraphy of these trenches beneath the plow zone consists mainly of silty clay above the marine beach sand deposit. One trench (BT 110) has a very thin layer of gley soil. In all 4 of these trenches, the water table was reached at 1.3 to 1.4 meters below surface. No clear evidence of wet-lava cultivation was apparent. In BT 112, stratigraphy showed the marine sand berm and terrestrial sand interface.

The marine sand deposits were found to extend to the east behind the existing Olowalu Subdivision, the Old Stone Church (Site 1603) and into the eastern cane field (Refer to Map 5).

A few scattered, human skeletal fragments were found on the surface near BT 121. However, no additional remains were encountered in the subsurface backhoe testing. This surface scatter of human remains fragments has been designated as Site 4820.

The next series of trenches was placed in the westernmost former cane fields of the property, west of Site 4700. Trenches 124 to 135 were located closest to Honoapiʻilani Highway, again in an effort to determine whether coastal habitation sites were present in the subsurface deposits. The highway runs along the shore in this area, and probably followed the precontact coastal trail. The subsurface findings in several of these trenches consisted of mostly water-worn cobbles and boulders, that might be expected near the shoreline. It is interesting to note that beach and terrestrial sand deposits were located in several of the trenches, indicating a former shoreline zone. The water table fluctuates between 1.2 and 2.0 mbs. in these tests.

Backhoe trenches 136 through 141 were located farther inland. Between BT 139 and 140 human skeletal fragments were found on the surface—a skull fragment and a phalanx. The area was further investigated, but no additional surface finds were made. Some testing was done, but the source of the skeletal fragments could not be determined. This second surface scatter of fragmented human remains was designated as Site 4821.

Backhoe trenches 142 through 146 were excavated on the north side of Olowalu Stream, in the cane fields southwest of Puʻu Kilea. Subsurface conditions in these trenches were extremely rocky, indicating that this area may have been crossed by the stream in earlier times. The next series of trenches was located on the south side of the stream, southeast of Puʻu Kilea (BTs 147 to 150). Again subsurface conditions were very rocky. Backhoe Trench 147 was placed in LCA 10128, Apana 3 to E. Maui in an effort to determine if agricultural soils might remain that were undisturbed.⁴¹ This was not the case. Backhoe Trench 150 was located just southwest of Site 4718—Walker's unnamed *herua*. The lowest layer in BT 150 consisted of water deposited materials, indicating that the stream once flowed through this area.

Backhoe Trenches 151 to 158 were dug to further investigate the area mauka of the first series of trenches—BT 98 to 102. The latter tests indicated that the shoreline had extended inland, and precontact coastal settlement remnants might be located farther from the present shoreline. A fragment of what appeared to be a grinding stone was located on the surface, and it was felt that a subsurface, coastal occupation area might be present. There was no subsurface evidence of a cultural deposit found during testing, however.

⁴¹ LCA 10128, Apana 3 to E. Maui is located behind Olowalu Subdivision near the shore.

The next series of trenches concentrated in the cane fields around the old Hawaiian Lanakila Church ruins (Site 1603). Backhoe trenches 159 through 165 encountered the water table at between 1.15 to 1.5 mbs.

BT 164 was a 38-meter long excavation, which profiled a possible old lagoon area behind a marine sand barrier berm. A casket burial was located in the section of the trench nearest the old church (Site 1603). The grave was found at a depth of c. 0.6 mbs. It was subsequently determined that this burial was associated with the cemetery that extended mauka from the Old Stone Church.

Following discussions between Erik Frederickzen and several informants, it was deemed best to create a burial preservation area based on the original church property configuration (refer to Figure A42). The old boundaries were surveyed and we conducted backhoe testing along the perimeter to help ensure that the preservation area was adequate. Backhoe trenches 165 through 174 were utilized to test the perimeter of the proposed preservation area to determine if additional burials might be present.

The remainder of the trenches (BT 175 to 180) were placed to the southwest of the existing churchyard, in a heavily overgrown area. No intact cultural deposits were found. The water table was reached at between 1.0 and 1.35 meters below surface. A probable lagoon area was located relatively near the existing cane haul road. A marine sand berm and clay soil deposits were found in BTs 175 and 177.

Discussion

Marine sand deposits were found to extend onto the mauka (Phase 2) portion of the project area from the makai (Phase 1) portion of the study area (See Map 5). Site 4693, the precontact burial ground, was located, in our earlier Phase 1 inventory

survey (Fredericksen and Fredericksen, 1999, Draft). The human remains within this site were buried in marine sand deposits on the *makai* study area. Further testing revealed that these sand deposits extended to Honopi'ilani Highway, and across to the *mauka* project area north of the highway. Here they continued to the east behind the existing Olowalu residential area, the Old Stone Church (Site 1603), and onto the eastern portion of the project area near the Old Government Road (now the cane-haul road).

While no human remains were found directly associated with the marine sand deposits on the *mauka* study area, it is important to note that previously disturbed human remains were located on the surface within an immature sugarcane field to the east of Olowalu Village (Site 4820). In addition to this finding, an anonymous Pioneer Mill employee and Mrs. Adeline Rodrigues recalled that human remains had been disturbed in the past during field clearing activities in this area. Hence, it is possible that additional surface human skeletal materials are present in this part of the project area.

One trench, BT 147, was excavated in one of the LCA 10128—A-pans 3 to E. *Mau*—in very rocky terrain. No evidence of traditional agricultural cultivation was found—in fact Layer I consisted of a thin, rocky (30% to 40% concentration of rocks by volume) soil, and Layer II was made up of weathered bedrock. This very rocky portion of the project area had previously been covered by a pedestrian survey. No significant material culture remains were noted on the surface at that time. We subsequently reinspected the area seeking possible locations for backhoe testing. This reinspection of the abandoned cane field revealed thin, rocky soil, and exposed, weathered bedrock. Given the negative findings in BT 147, and the fact that this extremely rocky area had been under cultivation for over a century, we did not

conduct further testing in this section of the study parcel.

Artifacts (Table 10; Photos 71-77)

The most notable artifact found during our inventory survey was tightly woven *hala* matting, located in Feature D, Site 4699. A small sample found on the surface was collected (Photo 71).

A total of 31 stone, bone, coral and shell artifacts were recovered during our limited subsurface testing during this inventory survey. Nine artifacts were formed from volcanic glass—two cores and 7 utilized flakes. All of the worked flakes were recovered from rock shelter features in Site 4700. Other artifacts from Site 4700 included an adze fragment, a worked basalt flake and a small basalt chisel fragment.

The other site which yielded several artifacts from subsurface testing was Site 4710. These items ranged from a worked quartz (Maui "diamond") flake, 2 coral abrader fragments, and a piece of worked bone, to larger basalt implements such as choppers, an abrader, a polishing stone and a hammerstone. Finally, 4 large basalt artifacts (Artifacts 32-35) were located and collected from the surface. They may represent tools that were intentionally left in place, rather than transported from one work area to another.

A few historic bottles and crockery sherds were collected from the area near the well site.⁴¹ These are catalogued on Table 11. Other historic items were noted on the surface in other areas and left in place. One ceramic jar was recovered from Backhoe Trench 164, in the vicinity of the casket burial (Burial 1). We were not able to determine if it was associated with that burial or not.

⁴¹ This is near Site 4704.

Radiocarbon dates (Table 2) (Appendix B)

Six carbon samples were submitted to Beta Analytic, Inc. for radiometric analysis. Of these, 5 returned precontact dates, while 1 was modern.

A total of 3 samples (Samples #1, #2 and #6) were from subsurface testing in features that were part of Site 4700. This site is located in the western part of the study area. Sample #1, obtained from the Feature E rock shelter, yielded a radiocarbon age of 420 +/- 50 BP, and calibrated date brackets (at 2 sigma, 95% probability) of AD 1420 to 1525 and AD 1560 to 1630. The intercept date is AD 1450. This is the earliest date obtained during our inventory survey.

Sample #2 came from Feature F—another rock shelter, which appeared to have an intact hearth. The radiocarbon age of this hearth was 200 +/- 60 BP, yielding calibrated date brackets (2 sigma, 95% probability) of AD 1525 to 1560 and AD 1630 to 1950. The intercept date is AD 1665.

Sample #6 is a sample collected from Feature C, and returned a radiocarbon age of 150 +/- 70 BP. The calibrated date range is AD 1640 to 1955. There were 5 intercept dates—AD 1680, AD 1740, AD 1805, AD 1930 and AD 1950. Because there were no historic artifacts recovered in the subsurface excavations, we interpret the 2 precontact dates as the appropriate ones.

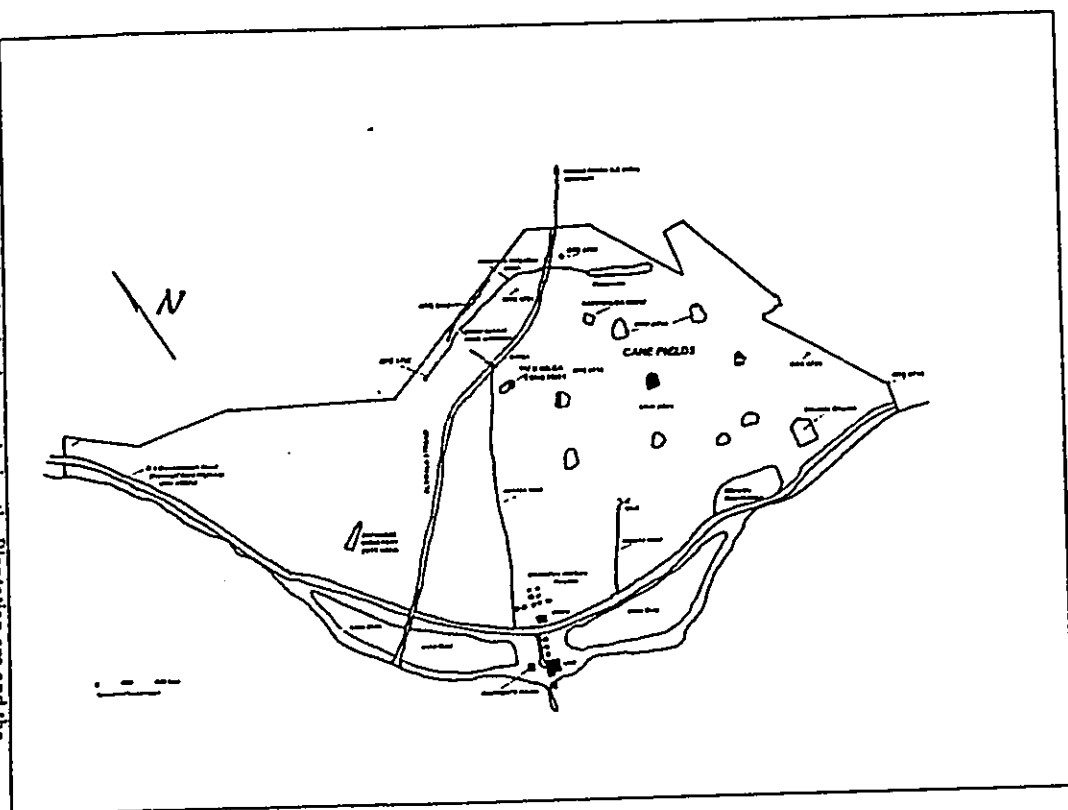
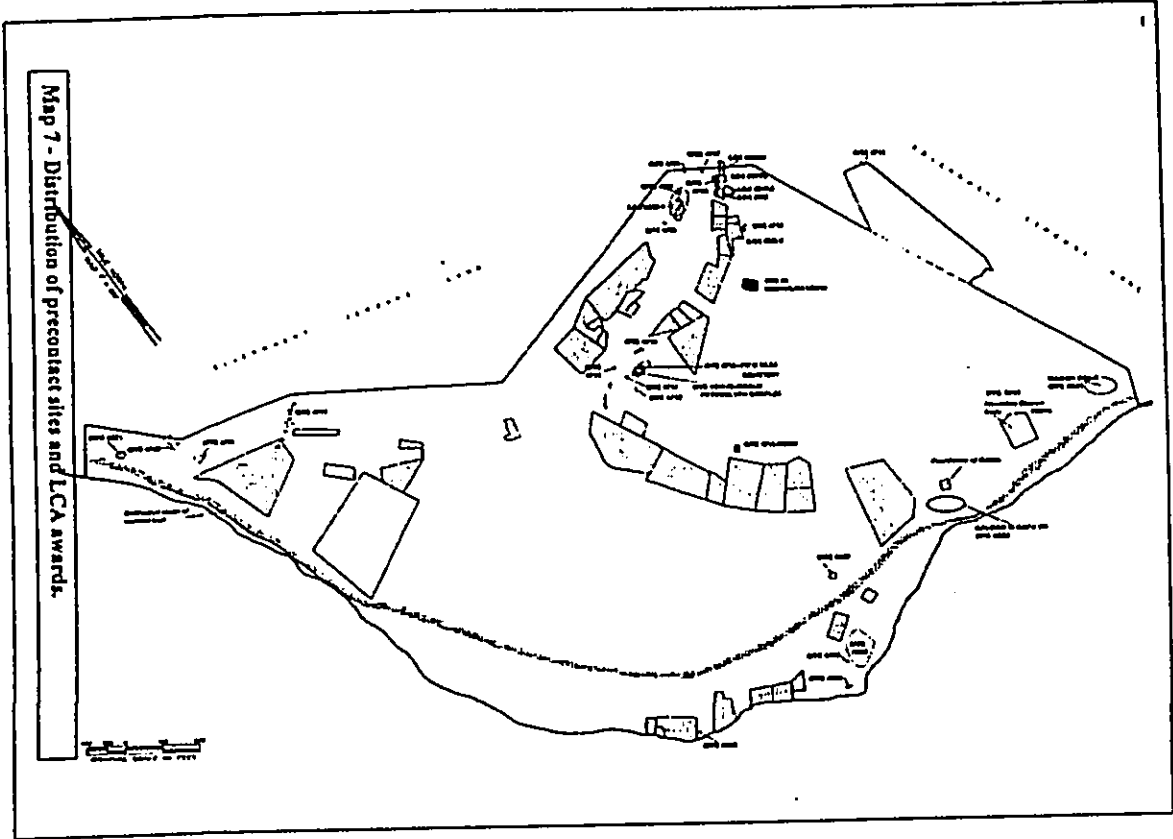
This series of dates suggests that these rock shelter features were used intermittently for a 300 year time span from the mid-15th century to the mid-18th century, and possibly later.

Another rock shelter (Site 4706) is located near the mouth of Olowalu Stream valley. Sample #3 returned a radiocarbon age of 290 +/- 50 BP, and calibrated date brackets (2 sigma, 95% probability) of AD 1470 to 1670 and AD 1780 to 1795. The use of this rock shelter may have been contemporaneous with activity associated with Site 4700.

The third site tested was Site 4710. This site is a permanent habitation area located on the east side of Olowalu Stream. Sample #4 was obtained from what appeared to be a hearth in Feature B—a terrace. It returned a radiocarbon age of 200 +/- 50 BP, with date brackets (2 sigma, 95 % probability) of AD 1635 to 1705, AD 1715 to 1885, and AD 1910 to 1950. The intercept date is AD 1665. A piece of bottle glass, a ceramic blue on white sherd, and a small amorphous piece of bronze were recovered from Layer II. The site is located near the eastern boundary of LCA 6728, A-p1 to Mahulu, the plotted approximate location of which is shown on Map 3. It seems probable that Site 4710 is a precontact habitation/agricultural site that continued to be used well into the 19th century.

The second date from Feature C at Site 4710 (Sample #5) yielded a modern age (60 +/- 50 BP), indicating that the site was used intermittently until quite recently.

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SUMMARY AND CONCLUSIONS

The types of sites that were located and described in this report are consistent with those that we had expected to be present on this property. We had predicted that the precontact to 1850s settlement pattern would include:

- permanent habitation areas and associated agricultural *lo'i*, in areas along Olowalu Stream which were afforded a consistent water source;
- temporary habitation shelters, and possibly trail markers (in the form of petroglyphs) associated with *mauka-makai* trails;
- dryland agricultural features in alluvial plain areas with less rainfall;
- religious structures such as *heiau*;
- permanent habitation along the coastline;

Some of these sites were already identified—Kawaialoa *heiau* and the Olowalu Petroglyph Complex.

We had expected the distribution of land commission awards to roughly follow the precontact settlement pattern. We had also expected that habitation areas and boundary markers might be associated with LCA *kaieana*. Lands were awarded for taro

production on both sides of Olowalu Stream—some with houseleis included.

The types of sites which we expected to be associated with the Plantation Era were features associated with agricultural activities—water delivery systems, road and railroad systems, cane fields. Also we expected to find remnants of the Olowalu Plantation community. The Olowalu Mill and associated manager's dwellings are situated in the *makai* portion of the study property.

A total of 34 sites are included in this report. Of these, 6 had previously been recorded and numbered (Sites 04, 1200, 1201, 1603, 3172, 3180). The only sites not additionally described here are Site 3172, a plantation-era concrete irrigation ditch; and Sites 1200 and 1201, which were recorded in the 1973 survey, and are discussed in the Previous Archaeology section of this report. Refer to Table 11 for additional details concerning interpretations of function and age.

Precontact to 1850s Sites (Map 7)

Twenty-one of the sites are interpreted as precontact cultural resources. There are 52 recognizable features associated with these 21 sites. Six sites contain features that are considered to have been structures or areas for ceremonial usage—2 are *heiau*—Sites 04 and 4718,

while 3 contain petroglyphs (Sites 1200, 4704 and 4708). Site 4701, while heavily disturbed, is interpreted as a possible ceremonial structure.

Six features contain burials, or are suspected of containing burials. These features are found in Sites 04, 4699, 4710, 4712, 4718 (2 features). Two sites are surface scatters of human skeletal fragments (Sites 4820 and 4821).

Twenty-two features are interpreted as temporary habitation shelters, in the form of rock overhang shelters (Sites 1201, 4699 (8), 4700 (9), 4705, 4706, 4713, and 4714). Eight features are interpreted as agricultural and/or habitation features (Sites 4699, 4704 (4), 4708, 4710, 4711 and 4716). Three features have functions that could not be established (in Sites 4710 [Feature G], 4711 [Feature A], 4712 [Feature A]).

Two of the sites located during our survey are considered to be possible precontact sites (Sites 4703 and 4707). Two other sites (Sites 4700 and 4716) have features that are interpreted as possible precontact ones. Altogether these sites include 6 possible precontact features. One feature is a rock alignment/temporary shelter (Site 4703 [Feature C]); 1 is a possible burial (Site 4707 [Feature B]); 3 are possible boundary markers (Sites 4700 [Feature J], 4703 [Feature B], 4716 [Feature B]); 1 is a possible observation point (Site 4700 [Feature B]); and 2 have functions which could not be determined at the inventory survey level (Site 4703 [Features A and C]).

One site is a boundary marker, that appears to be associated with an LCA (Site 4702). Additionally, the precontact fishpond reported by informants and shown on late 19th-early 20th century maps, is given a site number (Site 4822).

Three radiocarbon dates were obtained from subsurface testing in features that were part of Site 4700. This site is located in the western part of the study area,

and is a series of rock overhang shelters. They ranged from 420 +/- 50 BP (AD 1420 to 1525 and AD 1560 to 1630) to 200 +/- 60 BP (AD 1525 to 1560 and AD 1630 to 1950), to 150 +/- 70 BP (AD 1640 to 1955). This series of dates suggests that these rock shelter features were used intermittently for a 300-year time span from the mid-15th century to the mid-18th century, and possibly later.

Another rock shelter (Site 4706) is located near the mouth of Olowalu Stream valley yielded a radiocarbon age of 290 +/- 50 BP (AD 1470 to 1670 and AD 1780 to 1795). The use of this rock shelter may have been contemporaneous with activity associated with Site 4700.

Site 4710 is a habitation area located on the east side of Olowalu Stream. One charcoal sample was obtained from what appeared to be a hearth in Feature B—a terrace. It returned a radiocarbon age of 200 +/- 50 BP (AD 1635 to 1705, AD 1715 to 1885, and AD 1910 to 1950). The second date from Feature C at Site 4710 yielded a modern age (60 +/- 50 BP), indicating that the site was used intermittently until quite recently. It appears that this site was occupied in precontact times and was used intermittently well into the 20th century.

It is possible Olowalu was settled earlier than any of these dates reflect. One would expect early settlement to have taken place near the coastline, and all of the dates obtained by this inventory survey came from sites located away from the coast—rock shelters on ridges and within Olowalu Valley, and a habitation site also in Olowalu Valley. All of these sites are situated well away from the shore. Theoretically, settlement could go back to AD 1000-1200, and the marsh/lagoon soil deposit (Site 4823) may provide this information.

⁴⁷ According to Dr. Ross Corey, (SHPD Doc. No. 9912RC11), December 14, 1999.

Plantation Era Sites (Map 8)

Nine of the *mauka* Olowalu sites covered in this report are interpreted as historic sites associated with the plantation era. One is a boundary marker associated with the plantation era (Site 4719); 1 is an historic house platform (Site 4721). Site 3180 is interpreted as a boundary/cattle wall, probably dating from the late 1800s.

Four sites are associated with sugarcane cultivation activities (i.e., irrigation, flood control, cane-haul roads, etc.) [Sites 3172, 4709, 4717, 4720]; and 3 sites are burial areas or cemeteries (Site 1603, 4715, and 4758).

These are the kinds of finds that we had anticipated from the plantation era.

Site Significance Evaluations

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 to 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—these associations being important to the group's history and cultural identity.

Sites can be considered no longer significant when they are significant only under criterion "D" and sufficient information has been collected from them during inventory survey level investigation. Refer to Table 4 for the significance evaluations and proposed mitigation of the 34 sites included in this inventory survey.

Eighteen sites (Sites 3172, 3180, 4700, 4702, 4703, 4705, 4706, 4709, 4711-4714, 4716, 4717, 4719-4721, and 1201) are considered significant only under Criterion "D" of the Federal and State historic preservation guidelines. Most of these sites are temporary habitation rock shelters. Several sites were tested and 4 of the 6 radiocarbon dates came from excavations in these rock shelters. The dates ranged from the mid-fifteenth century to c. mid- to later eighteenth century. The other sites consist of historic features related to plantation activities. Site 1201 is a rockshelter associated within the Olowalu Petroglyph Complex that was excavated in the 1960s.

Of these sites, 8 are considered no longer significant, in that adequate information has been gathered (Sites 4702, 4703, 4711, 4717, 4719, 4720, 4721, and 3180). No further archaeological work is needed on these historic properties.

Two more sites are noted for their potential informational content (Criterion D). One is the old pond that is noted on historic maps, and said by informants to date from precontact times—Site 4822.

Remnants of pond sediments may be present on properties adjoining the present study parcel, which could reveal information on ecological or land use changes through time. The other site consists of subsurface lagoon/marsh deposits located in BTs 106 and 107 (Site 4823). These may contain pollen which can yield similar information about the climatic changes that have taken place in Olowalu over the centuries, that may be attributable to human activity.

Nine sites are considered to be significant under both Criteria "D" and "E" (Sites 4699, 4701, 4707, 4710, 4715, 4758, 4820, 4821, and 1603). Most are either sites in which known human burials or remains exist, or in which human burials are suspected. Site 4701 is significant under Criterion "E" because it may be a ceremonial structure.

Four sites are considered to be significant under Criteria "C," "D" and "E". These include Site 04—Kawaihoa *heiau*; Site 4704—the petroglyph panel and associated terraces; Site 4718—*heiau* remnant; and Site 1200—petroglyphs at Pu'u Kilea—the Olowalu Petroglyph complex.

Site and Feature Mitigation Recommendations

The site significance and proposed mitigation recommendations for the 34 sites identified on the property are shown of Table 4. Eight are considered no longer significant, either having been severely impacted or largely destroyed, or they have provided adequate information.

Twenty-six sites are still considered to be significant. Eleven are recommended

for preservation, 1 is recommended for both data recovery and preservation, 9 are recommended to undergo data recovery, 2 are recommended to be monitored, and the remainder require no further archaeological work.

Preservation is the recommended mitigation treatment for Site 04—Kawaihoa *heiau*; the Feature D burial cave at Site 4699; the petroglyph panel and associated terraces of Site 4704; Site 4708—possible religious structure and *laro lo'i*; Site 4710—habitation complex with possible burial; Site 4715—burial ground/cemetery on summit of Pu'u Kilea; Site 4718—*heiau* remnant with burials; Site 4758—the Japanese cemetery, and Sites 1200 and 1201—the Olowalu Petroglyph Complex. In addition the burial associated with Site 1603 located on the subject property will be preserved in a large preservation area.

Data recovery is the recommended mitigation for several sites, and/or site features that need to have more information, to make age and function determinations. These would include Features B and J of Site 4700, Site 4701, Site 4707, Site 4712—Feature B, and Site 4716—Feature B. Data recovery is recommended for Site 4704, if it is going to be impacted by future development.

Data recovery, in the form of a complete inventory of the petroglyph images at Site 1200, was recommended by archaeologists conducting the statewide inventory of historic places survey in 1973. The developers are committed to preservation of the site. If the site is to be used for interpretive exhibit, data recovery on the images should be undertaken.

Two sites that are in the eastern part of the project area, represent the pond (Site 4822) and lagoon/marsh lands (Site 4823)

If data recovery reveals that burials are present in any of these features, they would then be considered significant under Criterion "E" as well as "D".

TABLE 2
Radiometric Dating Results

	Provenience	Age	Calibrated date	
1	Site 4700, Feature E, TU 2, Layer II	420 +/- 50 BP	AD 1420 to 1525	AD 1450 Temporary habitation
2	Site 4700, Feature F, TU 3, hearth	200 +/- 60 BP	AD 1360 to 1630	AD 1663 Temporary habitation
3	Site 4706, rock shelter, TU 1, Layer II	290 +/- 50 BP	AD 1630 to 1950	AD 1640 Temporary habitation
4	Site 4710, Feature B, TU 1, hearth	200 +/- 50 BP	AD 1470 to 1630	AD 1663 Habitation
5	Site 4710, Feature C, TU 2, Layer III	60 +/- 50 BP	AD 1633 to 1703 AD 1715 to 1885 AD 1910 to 1950 Modern	Habitation with later use
6	Site 4700, Feature C, TU 1, Layer I	130 +/- 70 BP	AD 1640 to 1935	AD 1640 AD 1740 AD 1805 AD 1910 AD 1950

There were two areas in which human remains were found on the surface during backhoe testing. One area was in the western portion of the study area, between Backhoe Trenches 139 and 140 (Site 482f). The other area was in the cane field east of Olowalu Village near Backhoe Trench 121 (Site 4820). Because of the presence of human remains, monitoring should accompany any earthmoving activities that are undertaken in these areas, in an effort to recover other skeletal materials that may be present.

Monitoring is also the recommended mitigation treatment for portions of land in the vicinity of significant sites. It is recommended that a master monitoring plan be formulated for the mauka project region, identifying the culturally sensitive areas that need to be afforded special attention during development. Again, input should be sought from native Hawaiian groups and concerned individuals in identifying these culturally sensitive areas. An ongoing oral history project is being undertaken by Olowalu Elua Associates, in which this kind of information will be forthcoming.

subsurface deposits. These may contain information on chronology relating to climatic and vegetation changes that have taken place in Olowalu, and should undergo data recovery in the form of subsurface testing. Site 4822 is located in an area of the property that has been designated as "open space".

Interpretative preservation is further recommended for Kawailoa Heiau (Site 04), the Heiau remnant (Site 4718) and, possibly, the ceremonial platform and agricultural complex (Site 4708). Interpretative preservation is also considered appropriate for the Olowalu Petroglyphs—Site 1200, and possibly the other petroglyph panel and terrace complex of Site 4704. The Native Hawaiian community should be consulted about the appropriateness of interpretative preservation for any of these latter sites.

Site 3172 is an operating water delivery system and it is suggested that continued usage would be an appropriate mitigation for this site. No further archaeological work is needed, however.

¹ Beta Analytic, Inc., Miami, Florida.
² Calibrated at 2 sigma, 95% probability

TABLE 3

Site Function and Age

ID	Area	Description	Function	Age	Notes
04	Many	Kawailoa Heiau	Ceremonial	Precontact	Structure in very good condition
1200	Area 1	Petroglyph panel	Ceremonial	Precontact	Located on sheer face of Pu'u Kilea
	Area 2	Petroglyphs on large rocks	Ceremonial	Precontact	Kilea—dozens of pictographs boulders made of Pu'u Kilea
1201	I	Rock overhang	Temporary habitation	Precontact	Associated with petroglyph panel in Area 1
1603	I	Old stone church	Religious/cemetery	Plantation era	Church not located on property, but casket burial located on project
3173	I	Concrete ditch	Irrigation	Plantation era	Located during MECO transmission line monitoring
3180		Rock wall	boundary marker	Plantation era	Located during MECO transmission line monitoring
4699	A-H	Rock shelters	Temporary habitation	Precontact	
	D	Rock shelter	Probable burial	Precontact	Laukaha matting recovered
	I	Modified outcrop	Agricultural	Precontact	Possibly a dry-land plot
4700	A, C-I	Rock shelters	Temporary habitation	Precontact	Feature C—150 +/- 70 BP Feature E—450 +/- 50 BP Feature F—200 +/- 60 BP
	B	Rock wall, C-shape	Observation point (?)	Precontact(?)	
	J	Rock wall	Boundary marker (?)	Precontact(?)	
4701		Platform	Ceremonial/Habitation	Precontact	Impacted by bulldozer.
4702		Rock wall	Boundary marker	Early post-contact to 1850s	Possibly associated with and LCA <i>hikana</i>
4703	A	Rock enclosure	Unknown	Precontact (?)	Function and age are not certain
	B	Wall remnant	Unknown	Precontact (?)	Function and age are not certain
	C	Rock alignment	Temporary habitation (?)	Precontact (?)	
4704	A	Petroglyph panel	Ceremonial	Precontact	Over 27 separated images present
	B-C	Terraces	Ceremonial/Habitation	Precontact	Terraces directly below petroglyph panel
	D-G	Terraces	Agricultural/Habitation	Precontact	
4705	A-B	Rock shelters	Temporary habitation	Precontact	
4706		Rock shelter	Temporary habitation	Precontact	Radiocarbon date—390 +/- 50 BP
4707	A	Wall alignment	Boundary marker (?)	Precontact (?)	Features A and B appear to be associated.
	B	Rock mound	Possible burial	Precontact (?)	Needs data recovery work.

ID	Area	Platform	Ceremonial	Precontact	Notes
4708	A	Platform	Ceremonial	Precontact	Large boulder has petroglyphs on it. With later historic usage
	B	Terrace complex	Agricultural	Precontact	
4709	A-D	Concrete structures	Irrigation system	Plantation era	
4710	A	Terrace w/enclosure	Habitation	Precontact	Portion of site impacted by field clearing
	B	Terraces	Habitation	Precontact	Radiocarbon date—200 +/- 30 BP
	C	Enclosure	Habitation	Precontact w/historic use	Radiocarbon date—60 +/- 50 BP
	D	Enclosure remnant	Part of complex	Precontact	
	E	Oval alignment	Possible burial	Precontact	
	F	Terrace	Part of complex	Precontact	
	G	Terrace	Undetermined	Precontact	
4711	A	Rock alignment	Undetermined	Precontact	
	B	Terrace	Possibly agriculture	Precontact	
	A	Terrace	Unknown	Precontact	
	B	Rock pile	Possible burial	Precontact	
4713	I	Rock shelter	Temporary habitation	Precontact	
4714	I	Rock shelter	Temporary habitation	Precontact	
4715	I	Complex of burial mounds, platforms and markers	Cemetery	Pre-to post-contact	Located on the summit of Pu'u Kilea, above the petroglyph panel
4716	A	Terrace	Habitation	Precontact	
	B	Rock wall	Boundary marker (?)	Precontact (?)	
4717	A-E	Retaining walls	Flood control	Plantation era	
4718	A	Heiau remnant wall alignment	Ceremonial	Precontact	This is the unnamed heiau mentioned by Walker
	B	Rectangular stone outline w/pavement	Burial marker	Precontact	
	C	Rectangular stone outline w/pavement	Burial marker	Precontact	
4719	I	Rock wall	Boundary marker	Plantation era	
4720	I	Retaining wall	Road crossing	Plantation era	
4721	I	Platform	Habitation	Plantation era	
4738	I	Tomb stones, stone outlines, wooden grave markers	Japanese Cemetery	Plantation era	
4830	I	Surface scatter or human remains		precontact	Secondary deposit of human skeletal material
4831	I	Surface scatter of human remains		precontact	Secondary deposit of human skeletal material
4832	I	Pond	Fishpond	Precontact into historic times	Identified as Kaloa o Kapa like by informant
4833	I	Marsh/ligoonal soils	Gleyed soils	Precontact	May contain pollen and charcoal dating from early human settlements

TABLE 4
Significance Evaluations—Proposed Mitigation

SHIP	Significance	Component	Status	Condition	Proposed Mitigation
04	C, D, E	Kula	U	Very good	Interpretive preservation ⁴⁷
3180	D	1	A	G	NLS ⁴⁸
4699	D and E	9	varies	G	Preservation
4700	D	9	U	G	Preservation—DR on Features B, J
4701	D	1	A	F	DR to determine function
4702	D	1	A	G	NLS
4703	D	3	A	varies	NLS
4704	C, D, E	7	U	G	Preservation—DR if impacted
4705	D	2	U	G	Passive preservation
4706	D	1	U	G	Passive preservation
4707	D, E	2	A	F, P	DR to ascertain age and function
4708	D	2	A	G	Interpretive preservation
4709	C, D	4	A	G	NLS
4710	D, E	7	A	G, F	Preservation
4711	D	2	U	G, P	NLS
4712	D	2	A	G	DR to ascertain if burial present
4713	D	1	U	G	Passive preservation
4714	D	1	U	G	Passive preservation
4715	D, E	cemetery	U	G	Preservation
4716	D	2	A	F	DR to determine function and age
4717	D	3	U	G, P	NLS
4718	C, D, E	3 (Heiau)	A	P	Preservation
4719	D	1	A	P	NLS
4720	D	1	A	G	NLS
4721	D	1	A	F	NLS
4758	D, E	cemetery	U	F	Preservation
1200	C, D, E	petroglyphs	A	F	Preservation
1201	D	1	A	F	Preservation as part of complex
1603	D, E	burial	A	F	Preservation ⁴⁹
3172	D	Wair delivery system	U	G	Preservation as an operating water system
4820	D, E	Surface remains of human remains	A	P	Monitoring to recover remains
4821	D, E	Surface remains of human remains	A	P	Monitoring to recover remains
4822	D	Food remains	A	P	DR: pollen samples, C14 dates
4823	D	Marsh deposits	U	G	DR: pollen samples, C14 dates

⁴⁷ A=altered; U=unaltered
⁴⁸ G=good; F=fair; P=poor
⁴⁹ I=indigenous; H=historic
⁵⁰ Consultation with Native Hawaiian community recommended prior to implementation.
⁵¹ No longer significant—sufficient information has been collected.
⁵² Although the parcel on which this church is located is outside the property boundary, the portion in which at least one burial was found is within the project area. This will be preserved.

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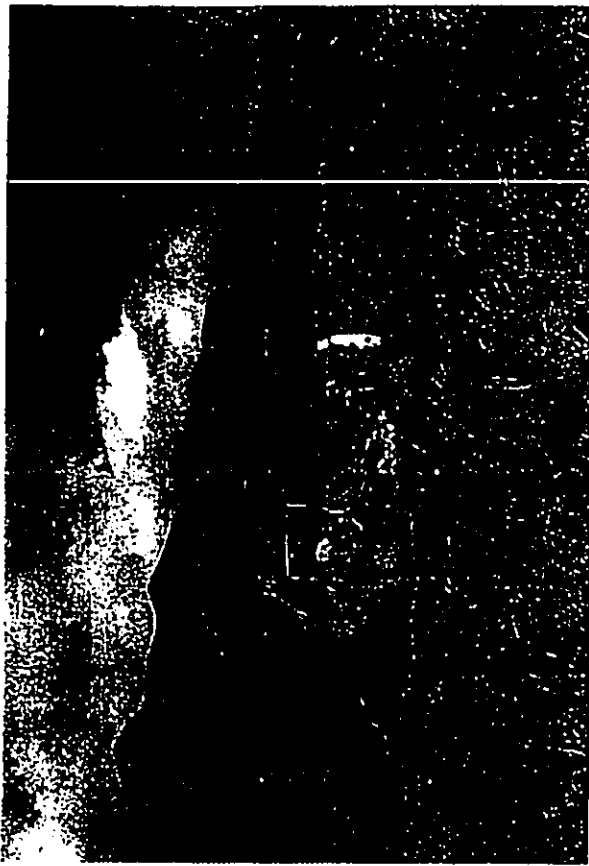


Photo 67 - View to east---Backhoe Trench 146.



Photo 68 - View to northwest---Backhoe Trench 99.

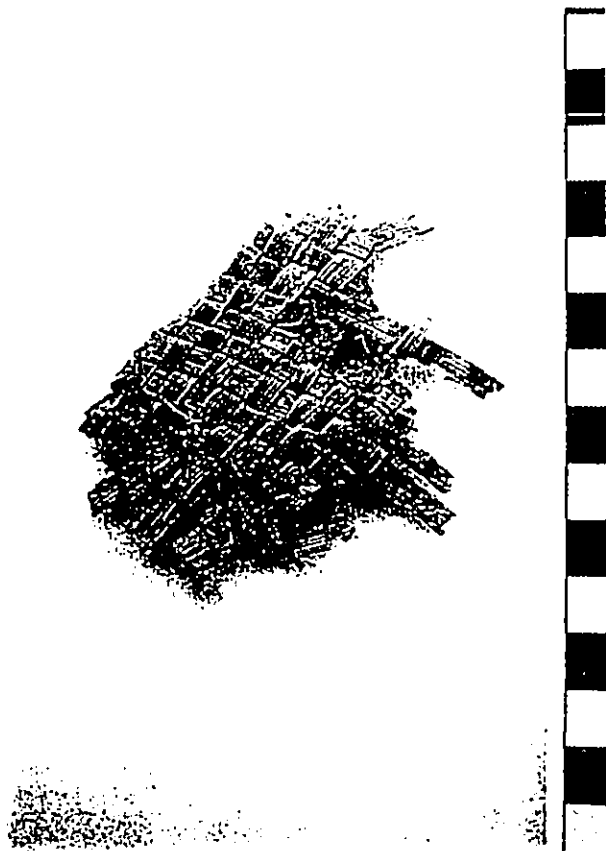


Photo 71 - Two views of sample of lauhala matting from Site 4699, Feature D.

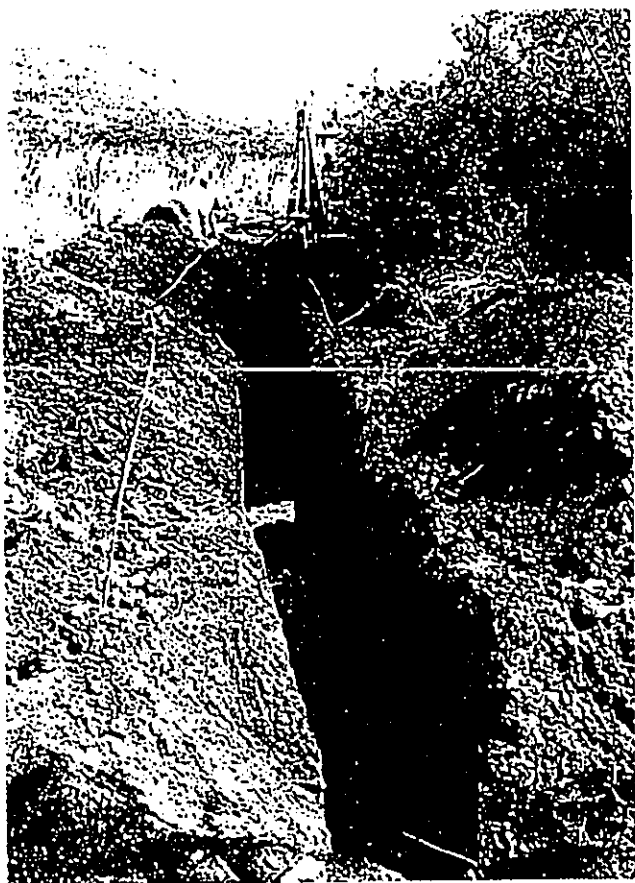
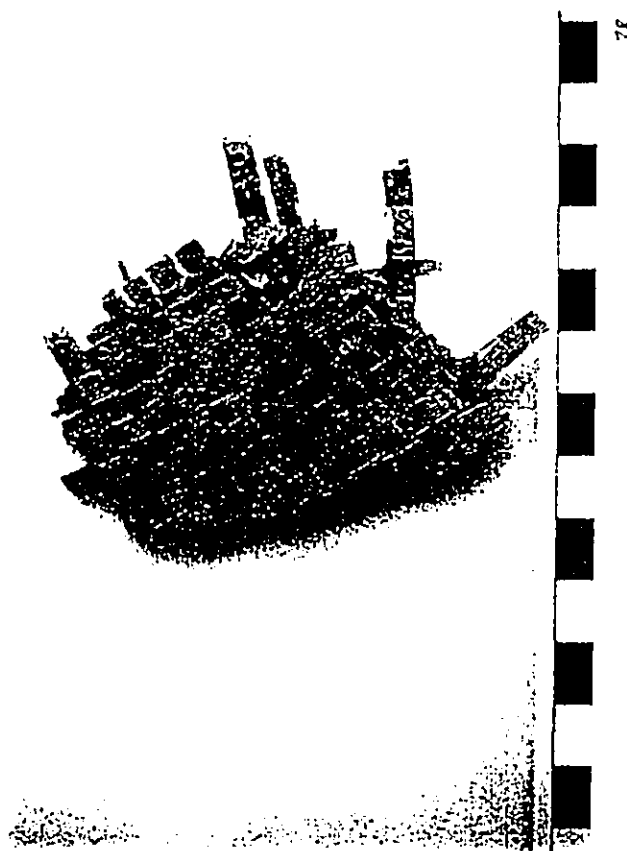


Photo 69 - View to east—Backhoe Trench 112.

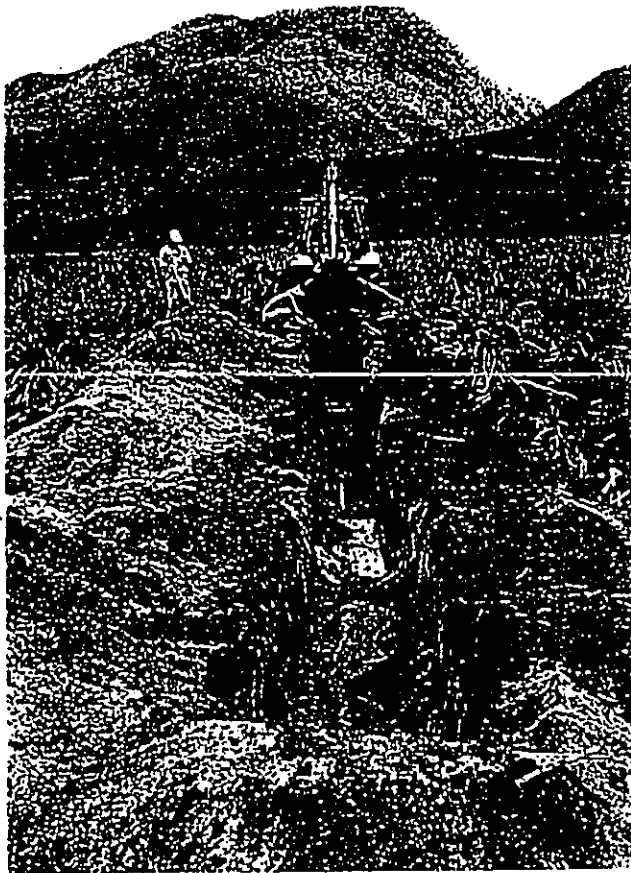


Photo 70 - View to northeast—Backhoe Trench 121.

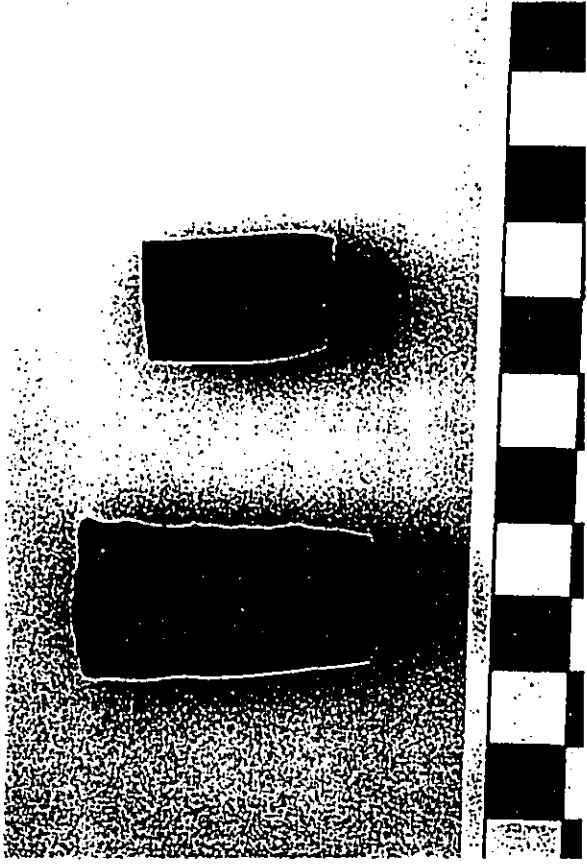


Photo 74 - Adze fragment (#19) and basalt chisel fragment (#14). [Site 4700]

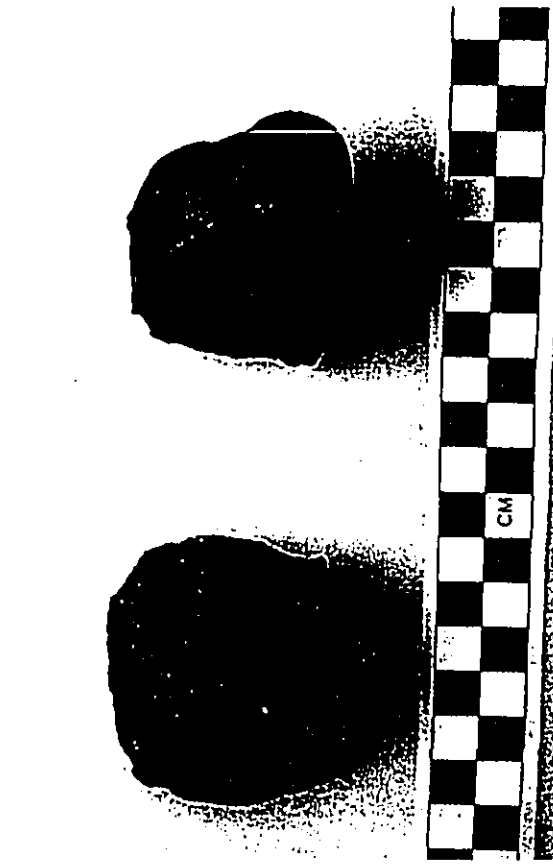


Photo 75 - Worked basalt flake (#13) [Site 4700] and basalt chopper core (#28) [Site 4710].

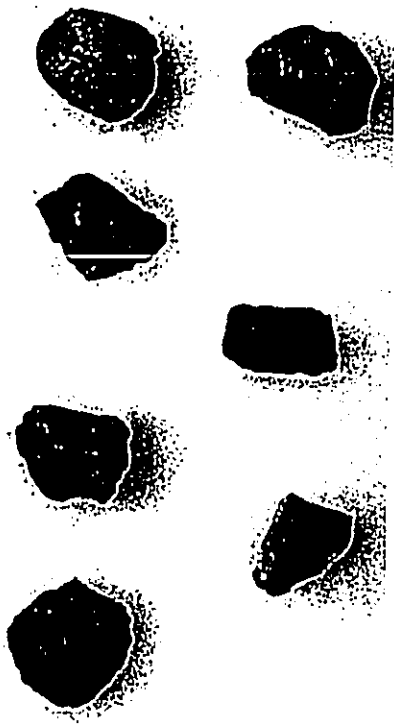


Photo 72 - Volcanic glass artifacts from Site 4700. Top row--left to right: # 10, #11, #12, #15; Bottom row--left to right: #16, #17, and #18.



Photo 73 - Worked shell (#23) and Maui "diamond" utilized flake (#21). [Site 4710]

TABLE 6

Summary of Subsurface Results at Site 4704 -- Feature B

Category	Weight (g)	Count	Weight (g)
Cellular sp.	1.3	1.4	0.1
Cypraea sp.			
Granula sandwicensis			
Littorina pinisido	4.8	3.8	0.8
Nerita pices	3.2	2.2	0.4
Planorbis sp.	0.1	0.1	0.1
Unidentified			
Leptomonon sp. unidentified			
Pencil urchin			0.1
Sea urchin			
Crab		0.2	
Dog tooth			
Human tooth		0.1*	
Fish		0.1	0.1
unidentified		0.1	
Kukui nut shell	16.1		
Charcoal	0.7	3.0	1.7
UNWORKED BASALT FLAKES (pieces)	(2) 0.3	(7) 0.6	
UNWORKED CORAL (pieces)	(12) 49.3	(2) 0.8	(9) 2.0
WATERWORN PEBBLES (pieces)	(1) 98.4		
HISTORIC ARTIFACTS			
Bottle glass - clear	(1)		
Bottle glass - green	(2)		(1)
Metal	Square nail-8.4		

Weight in grams

* This is a deciduous tooth--upper incisor.

TABLE 7

Summary of Subsurface Results at Site 4706 -- Test Unit 1

Category	Weight (g)	Count	Weight (g)
Cellular sp.	0.4	0.4	0.8
Cypraea sp.	0.3	0.4	0.3
Nerita pices sandwicensis	0.2	2.9	1.1
Planorbis sp.	0.4		
Tellina palam		1.0	0.5
Unidentified			
Leptomonon sp. unidentified			
Pencil urchin	0.1	0.9	1.0
Sea urchin			
Crab		0.3	0.3
Dog tooth			1.4
Fish			
unidentified	0.4		
Kukui nut shell	22.5	23.3	2.1
Charcoal	30.1	92.3	20.1*
UNWORKED BASALT FLAKES (pieces)	(9) 23.6		
UNWORKED VOLCANIC GLASS FLAKES (pieces)			(1) 0.1
UNWORKED CORAL (pieces)			
WATERWORN PEBBLES (pieces)			

Weight in grams

* Sample #3 - 290 +/- 30 BP

TABLE 8

Summary of Subsurface Results at Site 4710 - Feature B

Category	Sample #	Weight (g)	Count	Weight (g)	Count	Weight (g)	Count
Cellana sp.	23	3.2	2.9	1.1	0.9	2.6	
Cypraea sp.	0.4	3.3	7.2	0.6		6.9	
Nerita sp.		1.2	0.7	0.5		0.3	
Parasita sp.		1.4	1.2	0.3	0.1	0.4	
Strombus sp.							
Thalidita sp.							
Turbo maculirostris	17			0.7	0.8		
Undeidentified	0.2	2.6	2.7	3.8	2.7	2.0	4.9
Pencil urchin							
Sea urchin							
Crab							
Dog tooth							
Mammal	57	11.1					11.4
Fish		0.5					0.3*
Undeidentified	0.2		3.8	0.7	0.3		
Kuku nut shell	3.6	2.7	20.8	2.2		2.3	48.0
Charcoal	3.2	4.4	5.5	5.4		2.3	22.3*
UNWORKED BASALT FLAKES (pieces)	(1) 11.1	(2) 7.62	(3) 35.20	(5) 20.74	(1) 25.54		(24) 130.4
UNWORKED VOLCANIC GLASS FLAKES (pieces)	(1) 1.3	(2) 1.2	(1) 0.3	(1) 0.2			
UNWORKED CORAL (pieces)	(1) 0.3	(2) 0.41	(2) 0.25	(3) 0.03	(1) 1.4		(1) 3.7
WATERWORN PEBBLES (pieces)	(1) 0.10			(1) 0.44	(1) 14.8		(1) 65.1
HISTORIC ARTIFACTS							
Bottle glass - green							
Ceramic - blue on white							
Nickel							
Bronze frag. 10.3							

Weight in grams

* 21-32 cmbs.

** Perforated teeth

*** in situ from hearth - Sample #4 - 200 +/- 50 BP

TABLE 9

Summary of Subsurface Results at Site 4710 - Feature C

Category	Sample #	Weight (g)	Count	Weight (g)	Count	Weight (g)	Count
Cellana sp.		0.1	2.5	0.3	1.0		
Cypraea sp.		3.1	23.1	5.4	2.1		
Nerita sp.		1.6	3.7	4.0	8.2		
Parasita sp.		0.3	6.5	6.1	1.1		
Undeidentified	5.5	7.3	3.7	1.6			
Pencil urchin		0.4	1.3	0.4			
Sea urchin		4.1	7.5				
Crab							
Dog tooth							
Mammal							
Fish							
Undeidentified	0.3	2.3	0.8				
Kuku nut shell	0.1	8.2	8.7				
Charcoal	5.7	7.3	23.2*	12.3			
UNWORKED BASALT FLAKES (pieces)	(2) 7.3	(1) 6.4	(1) 17.59	(3) 4.0			
UNWORKED VOLCANIC GLASS FLAKES (pieces)			(2) 0.3	(1) 0.2			
UNWORKED CORAL (pieces)	(1) 0.1	(1) 3.57	(1) 4.4	(7) 17.5			
WATERWORN PEBBLES (pieces)				(3) 10.9	(1) 1.0		
HISTORIC ARTIFACTS							
Bottle glass - clear							
Ceramic - blue on white							
Nickel							
7 shard							

Weight in grams

* Sample #3 - 60 +/- 50 BP

TABLE 11
Historic Artifacts Recovered

ARTIFACT	PROVENIENCE	DESCRIPTION	DIMENSIONS	REMARKS
H-1	Cemetery behind church	Ceramic jar	11.3 tall x 8.5 dia. Lip - 5.7 dia.	Light tan color, with dark brown top. From BT 164 - near where Burial 1 was located.
H-2		Pale bluish glass bottle	17.7 tall x 6.45 dia.	Embossed: GEO. C. McLEAN (slug plate c. 1872); 2 piece applied rounded blob top.
H-3	Near well site	Ceramic jug base	c. 10.35 dia.	Min. glaze. Dot within circle on bottom.
H-4		Flat porcelain bowl	17.0 dia. x 6.0 high base is 1.4 thick	6 pieces of same bowl. Blue on white ornamental design.
H-5		White ceramic plate with decorations on edge	7.5 mm. thick	Brown on white painted flowers along edges of plate. Black border along rim and bottom of design. 2 sherds.
H-6		Ceramic plate sherd	c. 4 to 7 mm. thick	Yellow flowers with green leaves on white. Black stripe on lip edge.
H-7		Dark blue medicine bottle	12.75 tall x 3.2 dia.	Top missing. Seam visible down both sides.
H-8		Beer bottle top 1/3	13.0 tall x 7.5 dia.	Applied top; early 1880s; MacFarlane & Co., Hul. Ill.
H-9		Case gun bottle base	5.2 x 4.9 base x 8.1 tall	Amethyst color; probably 1885-1915 date range.
H-10		Beer bottle top half	12.9 tall x 4.0 dia. at neck	Pale greenish color; 2 piece looked; probably around 1910.
H-11		Beer bottle top and neck		Same type as above.
H-12		Bottle neck and top	7.0 tall x 2.7 dia.	Probably part of a condiment bottle.
H-13		Complete bottle	28.7 tall	Olive green color, applied top, 3-piece mold marks, kick-up base.
H-14		Soda bottle top and seal		Clear, LAHAINA ICE CO. LTD. 4-piece looked crown top.
H-15		Complete bottle	29.0 tall x 7.5 dia.	Probable liquor bottle, 2-piece looked, brown color.
H-16		Bottle bottom	7.9 dia.	Olive green color, champagne-style kick-up.
H-17		Bottle bottom	7.3 dia.	Dark red amber, champagne-style kick-up.
H-18		Bottle bottom	7.8 dia.	Medium amber, champagne-style kick-up.
H-19		Bottle bottom	7.7 dia.	Light green, champagne-style kick-up.
H-20		Bottle bottom	7.7 dia.	Brown color, shallow concave base.
H-21		Bottle bottom	6.7 dia.	Olive brown, slightly concave base.
H-22		Neck portion of bottle	2.7 dia.	Pale aqua color, vinegar bottle w/ indentations to hold cap.

TABLE 10
Indigenous Artifacts Recovered from Olowalu Mauka

ARTIFACT	PROVENIENCE	DESCRIPTION	DIMENSIONS	WEIGHT		
4699	LII/LI	9	Volcanic glass core	18.0 x 11.0 x 10.2	3.4	
4700	LII/LI, F-E	10	Utilized volcanic glass flake	15.0 x 16.1 x 5.0	1.0	
	LII/LI, F-E	11	Utilized volcanic glass flake	15.0 x 12.0 x 5.0	1.1	
	LII/LI, F-E	12	Utilized volcanic glass flake	16.0 x 11.0 x 3.0	0.5	
	LII/LI, F-E	13	Worked basalt flake	63.0 x 50.0 x 25.0	90.1	
	LII/LI, F-E	14	Basalt chisel fragment	24.5 x 17.0 x 11.0	7.8	
	LII/LI, F-F	15	Utilized volcanic glass flake	14.0 x 12.0 x 4.5	1.0	
	LII/LI, F-F	16	Utilized volcanic glass flake	13.0 x 10.5 x 3.2	0.4	
	LII/LI, F-F	17	Utilized volcanic glass flake	14.0 x 8.5 x 3.0	0.4	
	LII/LI, F-F	18	Utilized volcanic glass flake	16.0 x 13.0 x 6.0	0.8	
	LII/LI, F-F	19	Adze fragment	41.5 x 21.5 x 10.5	17.2	
	4707	LII/LI	20	Volcanic glass core	22.5 x 14.5 x 14.0	4.9
	4710	LII/LI, F-B	21	Maul "diamond" flake	18.0 x 8.0 x 4.5	0.8
		LII/LI, F-B	22	Coral abrader fragment	15.0 x 8.5 x 8.0	0.7
			23	Worked shell	10.0 x 8.5 x 4.0	0.6
		(in situ)	24	Hammerstone	132.0 x 106.0 x 71.0	1247.0
		(in situ)	25	Ground basalt abrader	87.0 x 81.5 x 25.0	295.2
		LIV/LI, F-B	26	Basalt chopper	110.5 x 93.0 x 45.5	467.0
		(in situ)	27	Basalt chopper	120.0 x 78.0 x 31.0	340.2
	(in situ)	28	Basalt chopper core	55.0 x 45.0 x 31.5	110.3	
	LIV/LI, F-B	29	Polished basalt	82.0 x 78.0 x 47.5	340.0	
	LIII/LI, F-C	30	Worked bone	10.0 x 4.0 x 3.0	0.1	
		31	Coral abrader fragment	6.0 x 4.0 x 3.5	0.1	
	Near BT 102	32	Hammerstone	151.0 x 64.5 x 59.5	884.0	
		33	Ground basalt	86.0 x 80.5 x 53.5	633.0	
	At 200 foot level near petroglyphs	34	Possible adze preform	157.0 x 105.0 x 42.0	759.0	
Surface Find		35	Large basalt cobble, very smooth on one side	397.0 x 235.5 x 121.5	18.23 kg.	

121	1.6 m. deep	100-110 100-120 120-140	Layer I - rocky sandy silt (10 YR 2/3) Layer II - fine beach/terrestrial sand (10 YR 6/1) Layer III - loose beach/terrestrial sand (10 YR 6/2) Layer IV - loess beach/terrestrial sand (10 YR 6/2) Layer V - silty clay (10 YR 4/2)	60-70% waterlain and angular boulders, cobbles and pebbles
122	4 m. x 0.9 m. 1.4 m. deep	80-90 90-100 100-110 110-120	Layer I - silty clay (10 YR 4/2) Layer II - beach/terrestrial sand (10 YR 4/4) Layer III - beach/terrestrial sand (10 YR 4/4) Layer IV - beach/terrestrial sand (10 YR 4/4) Layer V - compact silt (10 YR 4/4)	Water table reached at 1.3 m.
123	1.5 m. x 0.9 m. 1.2 m. deep	80-90 90-100 100-110 110-120 120-130	Layer I - silty clay (10 YR 4/2) Layer II - silty clay (10 YR 4/2) Layer III - silty clay (10 YR 4/2) Layer IV - silty clay (10 YR 4/2) Layer V - silty clay (10 YR 4/2)	Water table reached at 1.2 m.
124	4 m. x 0.9 m. 1.6 m. deep	40-50-110 50-100 100-110 110-120 120-130	Layer I - silty clay (10 YR 4/2) Layer II - beach/terrestrial sand (10 YR 4/4) Layer III - beach/terrestrial sand (10 YR 4/4) Layer IV - beach/terrestrial sand (10 YR 4/4) Layer V - beach/terrestrial sand (10 YR 4/4)	Water table reached at 1.8 m. Layer II contains loose, conoidal fine roots and charcoal flecks.
125	4 m. x 0.9 m. 2.0 m. deep	80-90 90-100 100-110 110-120 120-130	Layer I - silty clay (10 YR 4/2) Layer II - silty clay (10 YR 4/2) Layer III - silty clay (10 YR 4/2) Layer IV - silty clay (10 YR 4/2) Layer V - silty clay (10 YR 4/2)	Water table reached at 2.9 m. Layer II contains 60-70% waterlain and angular boulders, cobbles and pebbles.
126	4 m. x 0.9 m. 2.0 m. deep	80-90 90-100 100-110 110-120 120-130	Layer I - silty clay (10 YR 4/2) Layer II - silty clay (10 YR 4/2) Layer III - silty clay (10 YR 4/2) Layer IV - silty clay (10 YR 4/2) Layer V - silty clay (10 YR 4/2)	Water table not reached. Layer II contains 50% waterlain and angular cobbles and pebbles, along with fine roots.
127	4.5 m. x 0.9 m. 2.5 m. deep	80-90 90-100 100-110 110-120 120-130	Layer I - silty clay (10 YR 4/2) Layer II - silty clay (10 YR 4/2) Layer III - silty clay (10 YR 4/2) Layer IV - silty clay (10 YR 4/2) Layer V - silty clay (10 YR 4/2)	Water table not reached. Waterlain silt and coral found on surface.
128	3 m. x 0.9 m. 2.0 m. deep	80-90 90-100 100-110 110-120 120-130	Layer I - silty clay (10 YR 4/2) Layer II - silty clay (10 YR 4/2) Layer III - silty clay (10 YR 4/2) Layer IV - silty clay (10 YR 4/2) Layer V - silty clay (10 YR 4/2)	Water table not reached. Appear to represent 3 episodes of localized flooding.
129	3 m. x 0.9 m. 1.5 m. deep	80-90 90-100 100-110 110-120 120-130	Layer I - silty clay (10 YR 4/2) Layer II - silty clay (10 YR 4/2) Layer III - silty clay (10 YR 4/2) Layer IV - silty clay (10 YR 4/2) Layer V - silty clay (10 YR 4/2)	Water table not reached. This long trench runs parallel to Nipsey. It runs between, and connects to BT 29 and BT 30.
130	4 m. x 0.9 m. 1.4 m. deep	80-90 90-100 100-110 110-120 120-130	Layer I - silty clay (10 YR 4/2) Layer II - silty clay (10 YR 4/2) Layer III - silty clay (10 YR 4/2) Layer IV - silty clay (10 YR 4/2) Layer V - silty clay (10 YR 4/2)	Water table reached at 1.4 m.
131	4 m. x 0.9 m. 1.7 m. deep	80-90 90-100 100-110 110-120 120-130	Layer I - silty clay (10 YR 4/2) Layer II - silty clay (10 YR 4/2) Layer III - silty clay (10 YR 4/2) Layer IV - silty clay (10 YR 4/2) Layer V - silty clay (10 YR 4/2)	Water table reached at 1.7 m. Sand is terrestrial sand of volcanic origin.
132	3 m. x 0.9 m. 2.6 m. deep	80-90 90-100 100-110 110-120 120-130	Layer I - silty clay (10 YR 4/2) Layer II - silty clay (10 YR 4/2) Layer III - silty clay (10 YR 4/2) Layer IV - silty clay (10 YR 4/2) Layer V - silty clay (10 YR 4/2)	Water table at 2.6 m.
133	3 m. x 0.9 m. 2.4 m. deep	80-90 90-100 100-110 110-120 120-130	Layer I - silty clay (10 YR 4/2) Layer II - silty clay (10 YR 4/2) Layer III - silty clay (10 YR 4/2) Layer IV - silty clay (10 YR 4/2) Layer V - silty clay (10 YR 4/2)	Water table not reached. Layer II contains 60% waterlain and angular cobbles and pebbles, along with fine roots. A few human skeletal remains were found on the surface between BT 119 and BT 140.
134	3 m. x 0.9 m. 1.1 m. deep	80-90 90-100 100-110 110-120 120-130	Layer I - silty clay (10 YR 4/2) Layer II - silty clay (10 YR 4/2) Layer III - silty clay (10 YR 4/2) Layer IV - silty clay (10 YR 4/2) Layer V - silty clay (10 YR 4/2)	No human remains were found in subsurface layer. Water table not reached. Appear to represent 2 episodes of localized flooding.

141	4.5 m. x 0.9 m. 2.0 m. deep	100-115 115-120 120-130 130-140 140-150 150-160 160-170 170-180 180-190 190-200	Layer V - stream deposit (10 YR 6/1) Layer IV - silty clay (10 YR 4/2) Layer III - silty clay (10 YR 4/4) Layer II - silty clay (10 YR 4/4) Layer I - silty clay (10 YR 4/4)	Water table reached at 2.0 m. Layer III contains localized sand cobbles.
142	4 m. x 0.9 m. 1.0 m. deep	80-90 90-100 100-110 110-120 120-130	Layer I - silty clay (10 YR 4/2) Layer II - compact silt (10 YR 4/4) Layer III - beach/terrestrial sand (10 YR 4/4)	W.S.W. at 7% below peak pile.
143	4.5 m. x 0.9 m. 1.5 m. deep	80-90 90-100 100-110 110-120 120-130	Layer I - silty clay (10 YR 4/2) Layer II - silty clay (10 YR 4/2) Layer III - silty clay (10 YR 4/2)	S.W. of 7.5. Layer II contains 40 to 50% waterlain and angular beach/terrestrial cobbles and pebbles.
144	4 m. x 0.9 m. 0.8 m. deep	80-90 90-100 100-110 110-120 120-130	Layer I - silty clay (10 YR 4/2) Layer II - silty clay (10 YR 4/2) Layer III - silty clay (10 YR 4/2)	
145	4 m. x 0.9 m. 1.8 m. deep	80-90 90-100 100-110 110-120 120-130	Layer I - silty clay (10 YR 4/2) Layer II - silty clay (10 YR 4/2) Layer III - silty clay (10 YR 4/2)	Both layers contain c. 75% waterlain and angular beach/terrestrial cobbles and pebbles.
146	3 m. x 0.9 m. 0.8 m. deep	80-90 90-100 100-110 110-120 120-130	Layer I - silty clay (10 YR 4/2) Layer II - silty clay (10 YR 4/2) Layer III - silty clay (10 YR 4/2)	Extremely rocky - 21% waterlain and angular beach/terrestrial cobbles and pebbles.
147	4 m. x 0.9 m. 1.4 m. deep	80-90 90-100 100-110 110-120 120-130	Layer I - silty clay (10 YR 4/2) Layer II - silty clay (10 YR 4/2) Layer III - silty clay (10 YR 4/2)	Layer I contains 30 to 40% waterlain and angular cobbles and pebbles.
148	4 m. x 0.9 m. 1.4 m. deep	80-90 90-100 100-110 110-120 120-130	Layer I - silty clay (10 YR 4/2) Layer II - silty clay (10 YR 4/2) Layer III - silty clay (10 YR 4/2)	
149	4 m. x 0.9 m. 1.4 m. deep	80-90 90-100 100-110 110-120 120-130	Layer I - silty clay (10 YR 4/2) Layer II - silty clay (10 YR 4/2) Layer III - silty clay (10 YR 4/2)	Layer I contains 30 to 40% waterlain and angular cobbles and pebbles.
150	4 m. x 0.9 m. 1.8 m. deep	80-90 90-100 100-110 110-120 120-130	Layer I - silty clay (10 YR 4/2) Layer II - silty clay (10 YR 4/2) Layer III - silty clay (10 YR 4/2)	Located south of Kamulon to me.
151	4.5 m. x 0.9 m. 2.5 m. deep	80-90 90-100 100-110 110-120 120-130	Layer I - silty clay (10 YR 4/2) Layer II - silty clay (10 YR 4/2) Layer III - silty clay (10 YR 4/2)	Water table reached at 2.3 m.
152	4 m. x 0.9 m. 2.3 m. deep	80-90 90-100 100-110 110-120 120-130	Layer I - silty clay (10 YR 4/2) Layer II - silty clay (10 YR 4/2) Layer III - silty clay (10 YR 4/2)	Water table reached at 2.3 m.
153	3 m. x 0.9 m. 2.2 m. deep	80-90 90-100 100-110 110-120 120-130	Layer I - silty clay (10 YR 4/2) Layer II - silty clay (10 YR 4/2) Layer III - silty clay (10 YR 4/2)	Water table reached at 2.2 m.
154	4.5 m. x 0.9 m. 2.0 m. deep	80-90 90-100 100-110 110-120 120-130	Layer I - silty clay (10 YR 4/2) Layer II - silty clay (10 YR 4/2) Layer III - silty clay (10 YR 4/2)	Water table reached at 2.0 m.
155	4.5 m. x 0.9 m. 2.0 m. deep	80-90 90-100 100-110 110-120 120-130	Layer I - silty clay (10 YR 4/2) Layer II - silty clay (10 YR 4/2) Layer III - silty clay (10 YR 4/2)	Water table not reached. Layer II contains fine roots, 3% coral cobbles and pebbles.
156	4.5 m. x 0.9 m. 2.9 m. deep	80-90 90-100 100-110 110-120 120-130	Layer I - silty clay (10 YR 4/2) Layer II - silty clay (10 YR 4/2) Layer III - silty clay (10 YR 4/2)	Water table not reached. Layer II as in BT 155.
157	4.5 m. x 0.9 m. 2.3 m. deep	80-90 90-100 100-110 110-120 120-130	Layer I - silty clay (10 YR 4/2) Layer II - silty clay (10 YR 4/2) Layer III - silty clay (10 YR 4/2)	Water table not reached.
158	4.5 m. x 0.9 m. 2.3 m. deep	80-90 90-100 100-110 110-120 120-130	Layer I - silty clay (10 YR 4/2) Layer II - silty clay (10 YR 4/2) Layer III - silty clay (10 YR 4/2)	Water table not reached. Layer II contains more gravel with depth.
159	4 m. x 0.9 m. 1.4 m. deep	80-90 90-100 100-110 110-120 120-130	Layer I - silty clay (10 YR 4/2) Layer II - silty clay (10 YR 4/2) Layer III - silty clay (10 YR 4/2)	Water table at 1.4 m. Located west of historic church (Site 160). The remainder of the beach/terrestrial sands are located around the church yard.
160	4 m. x 0.9 m. 1.3 m. deep	80-90 90-100 100-110 110-120 120-130	Layer I - silty clay (10 YR 4/2) Layer II - silty clay (10 YR 4/2) Layer III - silty clay (10 YR 4/2)	Water table at 1.35 m. Lower part of flow zone waterlain mixed with shell, coral, sand etc.
161	4 m. x 0.9 m. 1.3 m. deep	80-90 90-100 100-110 110-120 120-130	Layer I - silty clay (10 YR 4/2) Layer II - silty clay (10 YR 4/2) Layer III - silty clay (10 YR 4/2)	Water table at 1.3 m.
162	4 m. x 0.9 m. 1.3 m. deep	80-90 90-100 100-110 110-120 120-130	Layer I - silty clay (10 YR 4/2) Layer II - silty clay (10 YR 4/2) Layer III - silty clay (10 YR 4/2)	Water table at 1.3 m.
163	6 m. x 0.9 m.	80-90 90-100 100-110 110-120 120-130	Layer I - silty clay (10 YR 4/2) Layer II - silty clay (10 YR 4/2) Layer III - silty clay (10 YR 4/2)	Water table at 1.3 m. Layer II beach sand.

APPENDIX A SITE DESCRIPTIONS

Site [3] 50-50-08-4699

Features A-1

Site type: Complex of 8 rock shelters, with 1 rock wall with modified outcrops.
Environmental setting: Located along the SSE side of a prominent finger ridge of heavily weathered basalt in the western portion of the project area. Primary vegetation is mature *koahe* with buffelgrass covering most of the ground surface along the base of the ridge. The site ranges from 20 - 80 feet AMSL.

Dimensions: 155 meters NE-SW by 30 meters NW-SE

Function: Temporary habitation, possible burial area, possible boundary marker.

Subsurface potential: good

Tested: No

Site integrity: varied

Physical condition: good

Estimated age: precontact and post-contact

Portable remains: Woven matting (Feature D), sparse coral and waterworn rocks, battered cobble (Feature E). Historic artifacts include copper button, cut nail, bottle glass (Feature C).

Comments: The rock shelters (Features A-H) exist along a broken low escarpment on the SSE side of a prominent finger ridge. They range in size—the largest is Feature B, with 8 square meters of covered area and an average ceiling height of 0.9 meters, and the smallest is Feature D, having 1 square meter area with a 0.6 meter high ceiling.

In general, the portable remains count is low, ranging from historic to modern glass fragments and cut nails in Feature C to coral and waterworn cobbles in Feature E. Notably, Feature D has a woven mat material protruding from the deposit within. Feature I is a stacked rock wall with modified outcrops 10 meters downslope from the Feature D shelter.

An irrigation ditch parallels the ridge and runs close to the escarpment base near the *maka'i* (SE) end of the site. Here the backdirt berm created during the excavation of the ditch partially fills the Feature B shelter. A series of historic fence posts run SW from the northwestern (*maka'a*) shelter—Feature H, which is near the project boundary.

164	1.4 m. deep		Layer II - beach sand (10 YR 7/6) Layer III - silty clay (7.5 YR 5/4) Layer IV - silty clay (7.5 YR 5/4) Layer V - sandy clay root zone (7.5 YR 5/4) Layer VI - beach sand (10 YR 7/6) Layer VII - sandy clay (7.5 YR 5/2) Layer VIII - sandy clay (7.5 YR 5/2)	50-100 50-100 60-100 100-140 120-140	found in makai side. Layer III silty clay in middle 2 meters of trench. Water table at 1.3 m. Layer IV present in eastern 2 meters of trench. Layer II drops to a depth of 120 cm. BTs 163 and 164 appear to represent a deposit of a lagoon behind a beach berm. Water table at 1.3 m. This portion of the trench is in the lagoon area. A 3/4 m. dia. outline of a basket was revealed and extended to 34.3 m. It was found at c. 0.8 m. (Batholith 1)
165	1 m. x 0.9 m. 1.4 to 1.5 m. deep	1	Layer I - plow zone (10 YR 5/1) Layer II - sandy clay root zone (7.5 YR 5/4) Layer III - silty clay (7.5 YR 5/4) Layer IV - sandy clay (7.5 YR 5/2)	60-90 60-90 90-120 120-150	Water table not reached. Water table at 1.9 m.
166	1 m. x 0.9 m. 1.6 m. deep	2	Layer I - plow zone (10 YR 5/1) Layer II - clay loam (7.5 YR 4/4) Layer III - moist clay (7.5 YR 3/2) Layer IV - sandy clay (7.5 YR 5/2) Layer V - sandy clay (7.5 YR 5/2)	60-90 60-90 90-120 120-150	Water table at 1.9 m.
167	4 m. x 0.9 m. 1.9 m. deep		Layer I - plow zone (10 YR 5/1) Layer II - sandy clay (7.5 YR 5/2) Layer III - sandy clay (7.5 YR 5/2) Layer IV - sandy clay (7.5 YR 5/2) Layer V - sandy clay (7.5 YR 5/2)	60-90 60-90 90-120 120-150	Water table not reached
168	3 m. x 0.9 m. 3.0 m. deep	360	Layer I - plow zone (10 YR 5/1) Layer II - sandy clay (7.5 YR 5/2) Layer III - sandy clay (7.5 YR 5/2) Layer IV - sandy clay (7.5 YR 5/2) Layer V - sandy clay (7.5 YR 5/2)	60-90 60-90 90-120 120-150	Water table not reached
169	3 m. x 0.9 m. 2.6 m. deep	360	Layer I - plow zone (10 YR 5/1) Layer II - sandy clay (7.5 YR 5/2) Layer III - sandy clay (7.5 YR 5/2) Layer IV - sandy clay (7.5 YR 5/2) Layer V - sandy clay (7.5 YR 5/2)	60-90 60-90 90-120 120-150	Water table at 2.6 m.
170	10 m. x 0.9 m. 2.2 m. deep	160	Layer I - plow zone (10 YR 5/1) Layer II - sandy clay (7.5 YR 5/2) Layer III - stream deposit (10 YR 5/1) Layer IV - sandy clay (7.5 YR 5/2) Layer V - moist clay (7.5 YR 4/2)	60-90 60-90 90-120 120-150 120-150	Water table at 2.2 m.
171	1 m. x 0.9 m. 2.0 m. deep	360	Layer I - plow zone (10 YR 5/1) Layer II - sandy clay (7.5 YR 5/2) Layer III - sandy clay (7.5 YR 5/2) Layer IV - sandy clay (7.5 YR 5/2) Layer V - sandy clay (7.5 YR 5/2)	60-90 60-90 90-120 120-150	Water table at 2.0 m.
172	3.3 m. x 0.9 m. 2.0 m. deep	3	Layer I - plow zone (10 YR 5/1) Layer II - sandy clay (7.5 YR 5/2) Layer III - compact sandy clay (5 YR 4/4) Layer IV - silty soil (10 YR 3/1)	60-90 60-90 90-120 120-150	Water table not reached
173	3 m. x 0.9 m. 2.0 m. deep	3	Layer I - plow zone (10 YR 5/1) Layer II - sandy clay (7.5 YR 5/2) Layer III - clay (10 YR 4/2) Layer IV - clay (10 YR 4/2)	60-90 60-90 90-120 120-150	Water table at 2.0 m.
174	10 m. x 0.9 m. 1.8 m. deep	3	Layer I - plow zone (10 YR 5/1) Layer II - clay (10 YR 4/2) Layer III - clay (10 YR 4/2) Layer IV - clay (10 YR 4/2)	60-90 60-90 90-120 120-150	Water table at 1.8 m.
175	10 m. x 0.9 m. 1.4 m. deep	3	Layer I - plow zone (10 YR 5/1) Layer II - sandy clay (7.5 YR 5/2) Layer III - beach sand (10 YR 6/2) Layer IV - sandy clay (7.5 YR 5/2) Layer V - sandy clay (7.5 YR 5/2)	60-90 60-90 90-120 120-150 120-150	Water table at 1.4 m.
176	3 m. x 0.9 m. 1.0 m. deep	160	Layer I - silty loam root zone (10 YR 4/4) Layer II - loose beach sand (10 YR 5/4) Layer III - beach sand (10 YR 5/4) Layer IV - silty root zone (10 YR 5/2 to 5 YR 4/2)	60-90 60-90 90-120 120-150	Water table at 1.0 m.
177	3 m. x 0.9 m. 1.3 m. deep	188	Layer I - silty loam root zone (10 YR 4/4) Layer II - loose beach sand (10 YR 5/4) Layer III - beach sand (10 YR 5/4) Layer IV - silty root zone (10 YR 5/2 to 5 YR 4/2)	60-90 60-90 90-120 120-150	Water table at 1.3 m. A 3 cm. clay deposit is present at the bottom of Layer II.
178	3 m. x 0.9 m. 1.2 m. deep	140	Layer I - silty loam root zone (10 YR 4/4) Layer II - loose beach sand (10 YR 5/4) Layer III - beach sand (10 YR 5/4) Layer IV - silty root zone (10 YR 5/2 to 5 YR 4/2)	60-90 60-90 90-120 120-150	Water table at 1.2 m. Charcoal flecks present at 25 cm. level of Layer II.
179	3 m. x 0.9 m. 1.1 m. deep	103	Layer I - silty loam root zone (10 YR 4/4) Layer II - loose beach sand (10 YR 5/4) Layer III - beach sand (10 YR 5/4) Layer IV - silty root zone (10 YR 5/2 to 5 YR 4/2)	60-90 60-90 90-120 120-150	Water table reached at 1.1 m.
180	3 m. x 0.9 m. 1.1 m. deep	355	Layer I - silty loam root zone (10 YR 4/4) Layer II - loose beach sand (10 YR 5/4) Layer III - beach sand (10 YR 5/4) Layer IV - silty root zone (10 YR 5/2 to 5 YR 4/2)	60-90 60-90 90-120 120-150	Water table reached at 1.1 m.

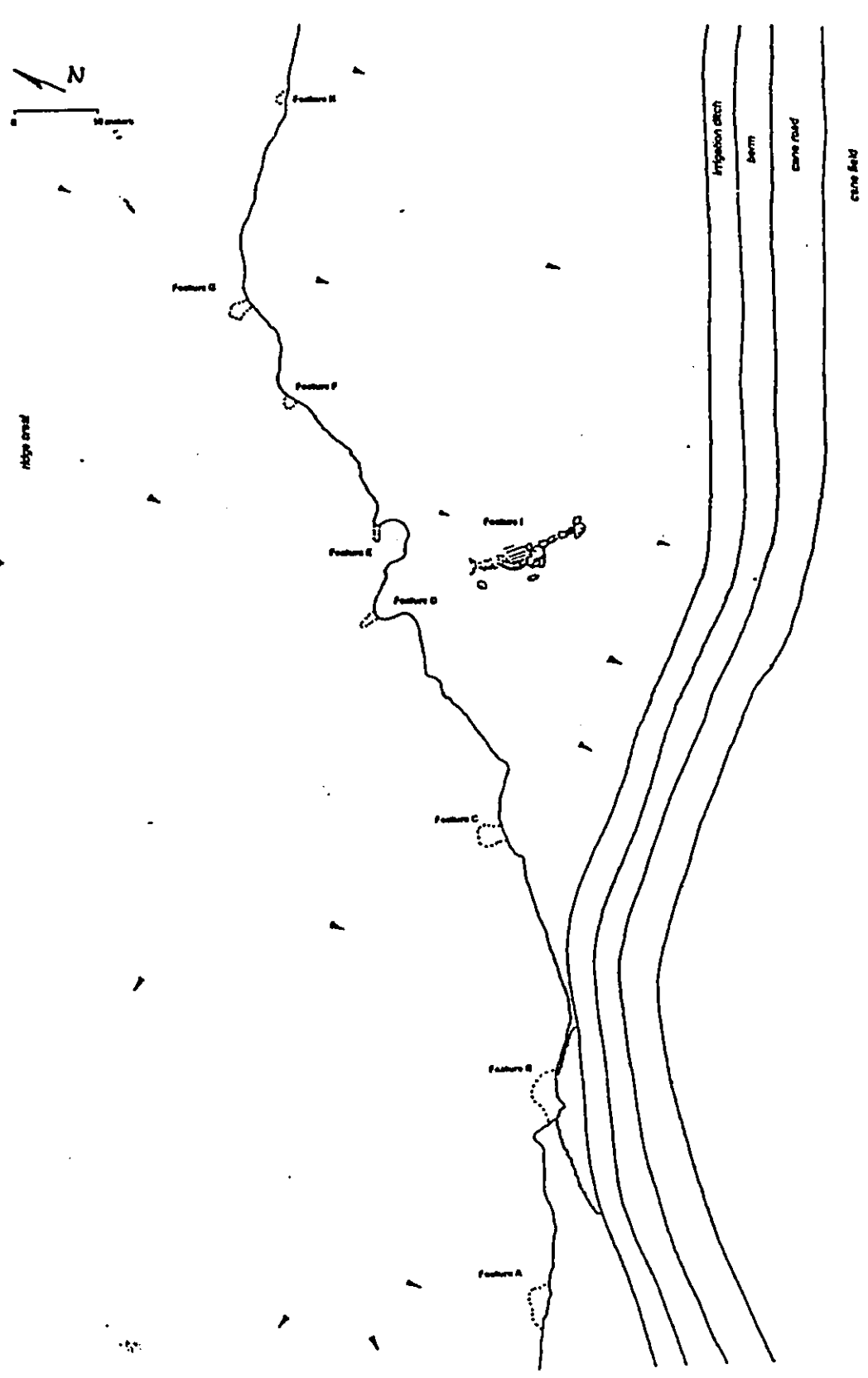


Figure A1 – Plan view of Site 4699.

Feature A
Type: Rock Shelter—marginal
Dimensions: 4.2 meters E-W by 1.75 meters in depth (N-S), by 2.4 meters max. height.
Function: Possible temporary habitation
Subsurface potential: moderate
Integrity: unaltered
Condition: good
Tested: no
Estimated age: precontact to post-contact
Portable remains: 1 piece waterworn coral, 1 waterworn pebble, 1 olive green glass fragment.

Comments: Most of the deposit on the surface inside the dripline appears to have accumulated from exfoliation of the soft weathered rock of the cliff-line. There are 2 raised bench-like formations of bare rock within the shelter. The portable remains were observed on the 2 formations.

Feature B
Type: Rock shelter
Dimensions: 3.8 meters E-W by 2.4 meters deep (N-S) by 1.8 meters maximum height.
Function: temporary habitation
Subsurface potential: moderate
Integrity: altered
Condition: fair to good
Tested: no
Estimated age: possibly precontact with post-contact usage
Portable remains: bottle glass fragments on surface

Comments: The cliff face consists of weathered, crumbling rock. The floor of this shelter has a thick powder-like silty deposit that may represent a buried cultural deposit. An earthen berm, created by the excavation of the adjacent irrigation channel, is below the dripline, and partially fills the shelter.

Feature C
Type: Rock shelter
Dimensions: 2.3 meters wide E-W by 3.0 meters deep (N-S) by 1.2 maximum height.
Function: temporary habitation
Subsurface potential: good
Integrity: questionable
Condition: fair
Tested: no
Estimated age: possibly precontact, with post-contact usage (late 1800s).
Portable remains: vesicular cobble, 1 copper button, 1 rusted metal button, 1 small bucket, 2 cut nails, 1 battered cobble, olive green glass fragments.

Comments: There is good deposition on the nearly level floor of this relatively roomy shelter. The matrix appears to have been disturbed, possibly by bottle hunters. Most of the artifacts noted above were located on a small shelf of rock near the dripline.

Feature D
Type: Rock shelter with probable burial
Dimensions: 2.2 meters in depth (E-W) by 0.6 meters N-S by 0.6 meters ceiling height.
Function: Temporary shelter, probable burial cave
Subsurface potential: excellent
Integrity: unaltered
Condition: good
Tested: no

Estimated age: precontact
Portable remains: fragments of woven matting visible on the surface—*halala*, tight weave.
Comments: There is little habitable space within this shelter due to the low ceiling height. However there is good deposition. There is another small, restricted chamber directly above, which has no deposition. The presence of the *halala* matting which is covered by soil, strongly suggests that this is a burial cave.

Feature E
Type: Small rock shelter (niche)
Dimensions: 2.0 meters deep (NE-SW) by 0.5 meters NW-SE by 0.8 ceiling height
Function: possibly temporary habitation
Subsurface potential: excellent
Integrity: unaltered
Condition: good
Tested: no

Estimated age: probable precontact
Portable remains: 3 chunks of waterworn coral (average 9 cm.), 1 waterworn basalt cobble (10 cm.)
Comments: Good deposit within the confined space. Very little shelter—level area 0.5 by 1.5 meters just inside dripline. There is a small shelf in the rear. One waterworn piece of coral found 3 meters outside of the shelter.

Feature F
Type: Rock shelter—marginal
Dimensions: 1.0 meters N-S by 1.9 meters deep (E-W) by 1.3 meters ceiling height
Function: possible temporary shelter
Subsurface potential: minimal
Integrity: unaltered
Condition: good
Tested: no
Estimated age: possible precontact
Portable remains: none
Comments: No deposit within this marginal shelter.



Photo 9 - Site 4699—Feature A—rock shelter.

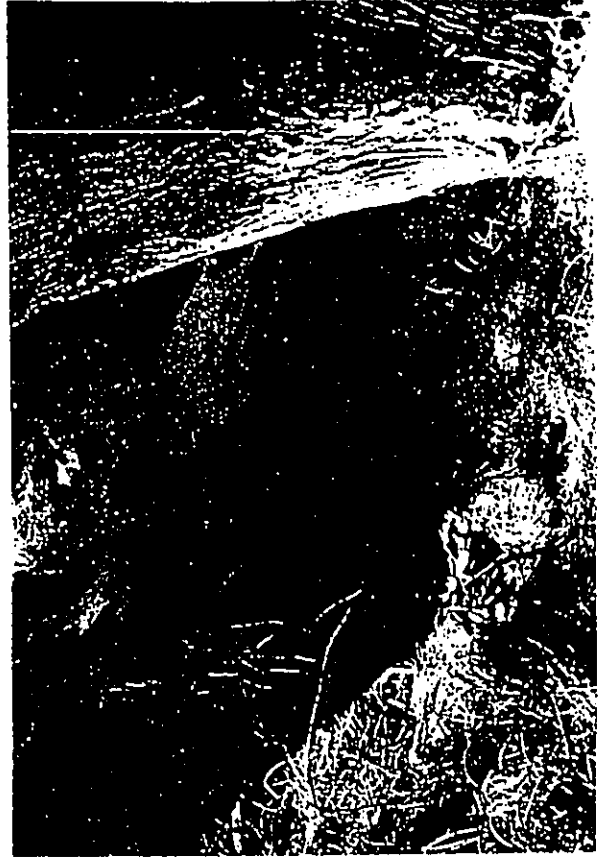


Photo 10 - Site 4699—Feature B—rock shelter.

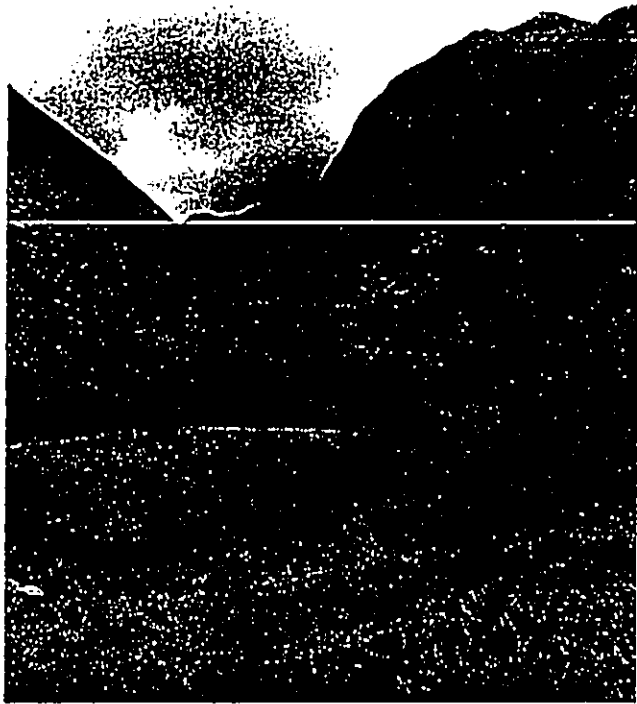


Photo 7 - View into Olowalu Valley. Bright green vegetation on left is taro field.



Photo 8 - Site 4799—Feature D—burial cave.

Feature G
Type: Rock shelter
Dimensions: 1.9 meters E-W by 3.2 meters deep (NW-SE) by 1.5 meters ceiling height
Function: possible temporary shelter
Subsurface potential: low
Integrity: unaltered
Condition: good
Estimated age: possible precontact
Portable remains: none observed on surface

Comments: Shallow deposit in lowest portion of the uneven floor.

Feature H
Type: Rock shelter
Dimensions: 2.0 meters E-W by 1.6 meter deep (N-S) by 1.2 meter ceiling height
Function: possible temporary habitation
Subsurface potential: moderate
Integrity: unaltered
Condition: good
Tested: no
Estimated age: probable precontact
Portable remains: 2 basalt flakes (debitage)

Comments: There is an old wooden fence post jammed into the outcrop face adjacent to the shelter area. There is at least 10 cm. of deposit on floor of shelter.

Feature I
Type: Rock wall with modified outcrops
Dimensions: 12.6 meters NW-SE by 0.8 maximum wall thickness by 0.75 maximum wall height.
Function: undetermined, possibly agricultural
Subsurface potential: good
Integrity: unaltered
Condition: good
Tested: no
Estimated age: probable precontact
Portable remains: none observed

Comments: This feature consists of a short curved section of a faced, stacked wall incorporated in existing outcrops. It partially encloses an area c. 2.5 x 2.5 meters. The short wall section is 2.0 meters in length (NW-SE), curving around the west side of the feature and is 0.75 meters high, consisting of 4 to 5 courses of rock. An additional line of



Photo 11 - Site 4699 - Feature C - rock shelter.



Photo 12 - Site 4699 - Feature I - looking north.

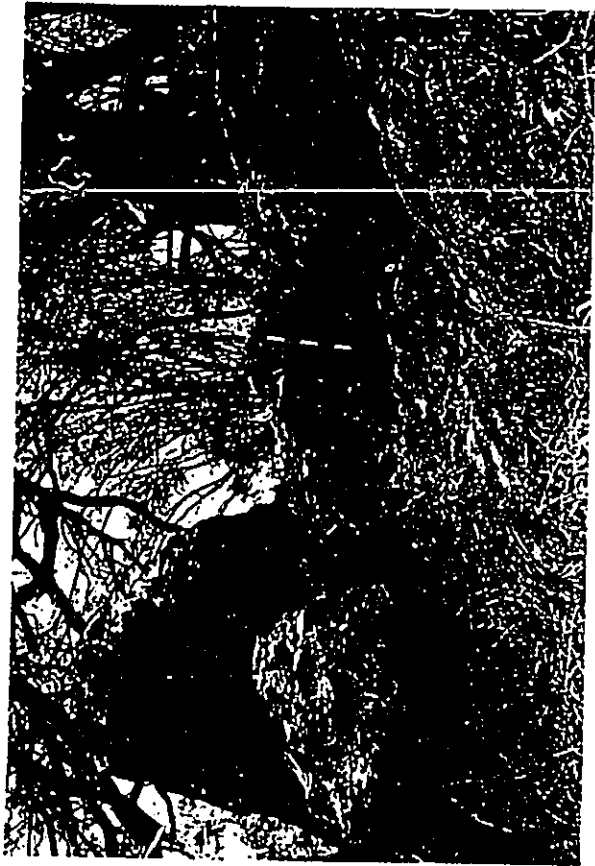


Photo 13 - Site 4699—Feature I—looking south.



Photo 14 - Site 4699—Feature I—east end of feature.

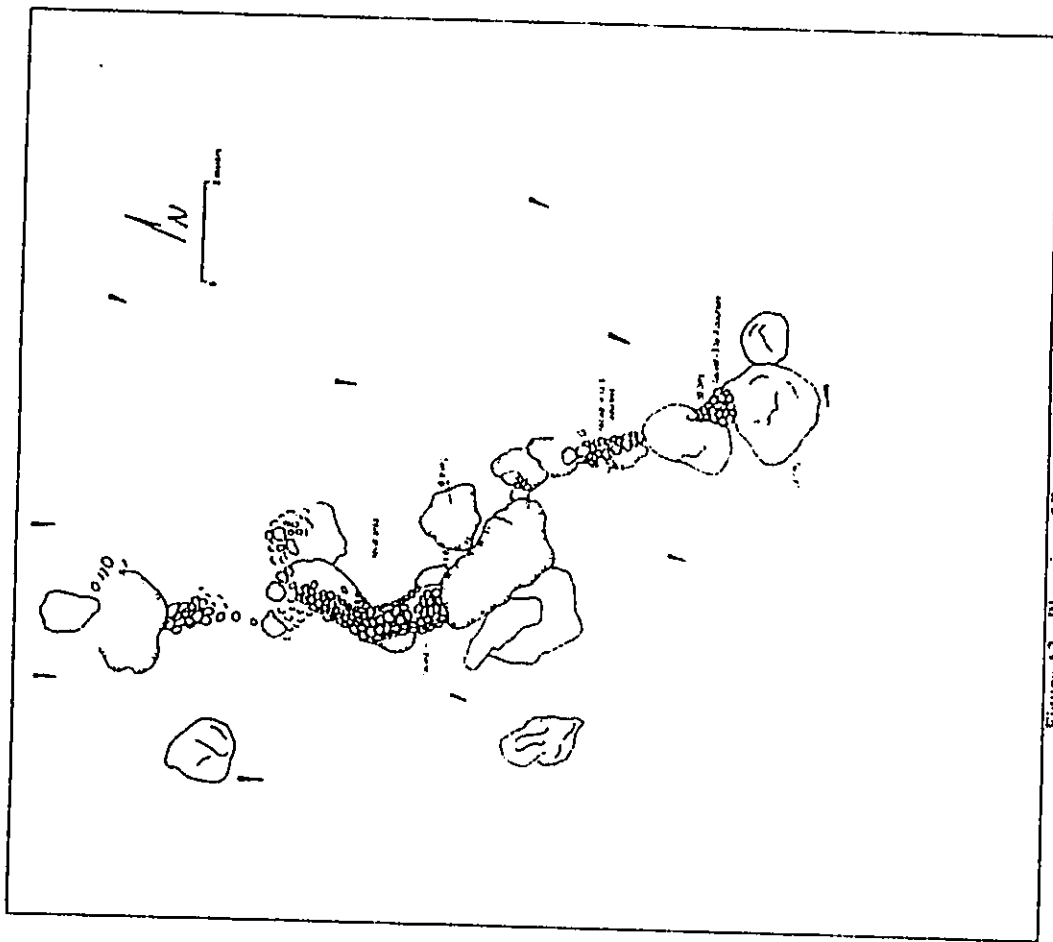


Figure A3 - Plan view of Feature I—Site 4699.

modified outcrops extend off to the SE for c. 4.5 meters, where angular cobbles or boulders are stacked atop and between outcrops creating a crude retaining wall. A collapsing section of stacked rock wall continues NW upslope for c. 2.8 meters, and is also tied into an existing outcrop.

A rocky soil matrix exists within the level partially enclosed area. Potential deposit may exist adjacent to the modified outcrop SE of the central element. This feature is located c. 13 meters SE downslope from the Feature D rock shelter.

Site [4] 50-50-08-4700

Features A-I

Site type: Complex with rock shelters and rock walls.

Environmental setting: This site is located along the crest and western face of a ridge near far western corner of project area. It is adjacent to one of the surveyed property corner markers. The landform consists of weathered basalt. Flora consists of sparse buffelgrass on ridge of the crest, with mature and shrub *Kiawa* along the base of the ridge.

Dimensions: 55 meters NS by 40 meters E-W

Function: temporary habitation

Subsurface potential: good

Tested: yes--Test Unit 1, Feature D; TU 2, Feature E; TU 3, Feature F; TU 4, Feature

G.

Integrity: unaltered

Condition: good

Estimated age: precontact

Portable remains: lithic debitage, hammerstone, marine shell, waterworn pebbles and cobbles.

Comments: The site consists of 7 rock shelters (Features C-I) that are along the exposed rock escarpment on the steep western face of a ridge near the far western project corner. One small modified outcrop with shelter potential is near the crest of the same ridge (Feature A). Numerous waterworn pebbles, cobbles and coral, along with several pieces of lithic debitage and 1 basalt hammerstone are scattered across the top of the ridge which extends to the north outside the project area. Other features exist along the ridge outside the project area as well.

Test units contained shallow deposits. Matrix was primarily very loose silt with a powdery consistency (aeolian deposit). Marine shell counts were high in Features C, E, and F. Lithic and volcanic glass debitage was common, as well as fire-cracked rocks. One potential hearth remnant (HF 1) was present in TU 3, Feature F.

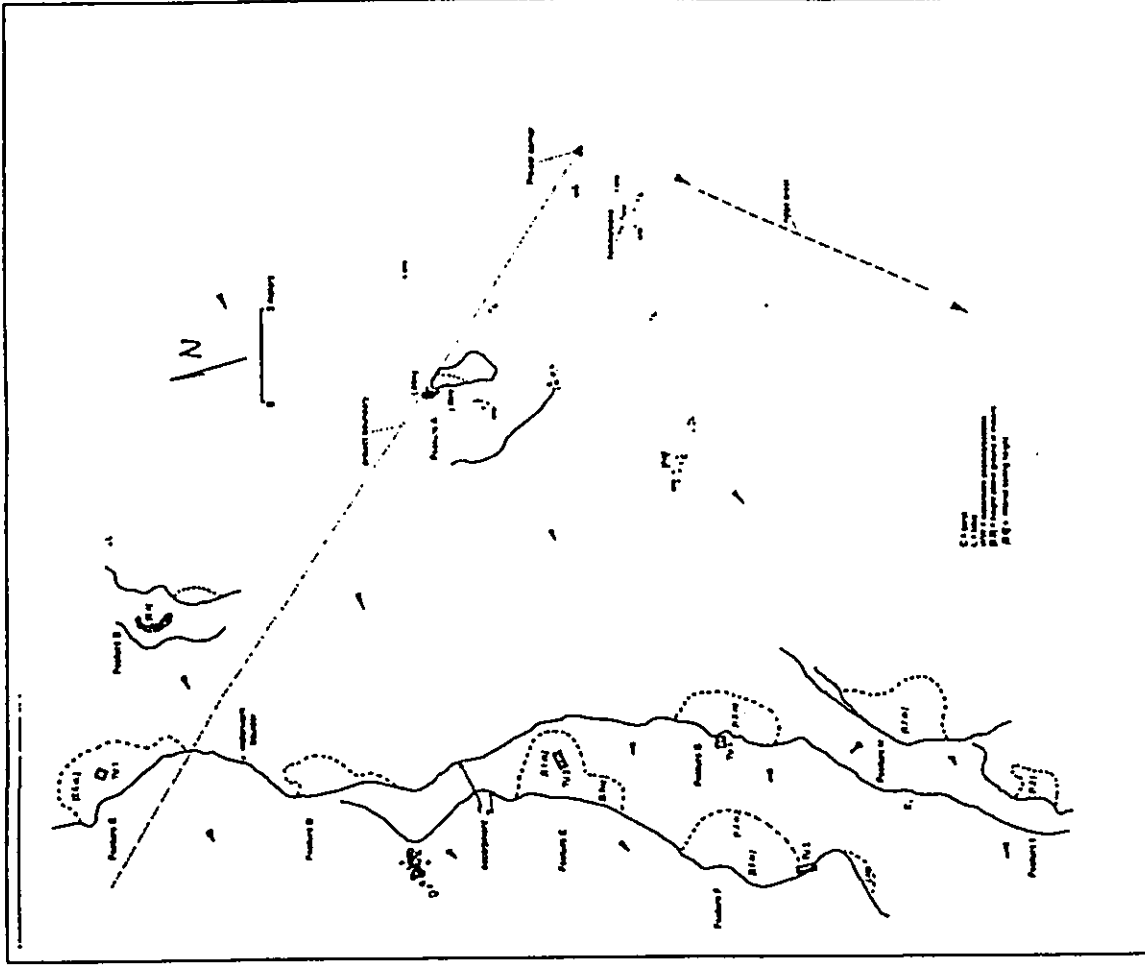


Figure A3 -- Plan view of Site 4700.

Feature A
 Type: rock shelter
 Dimensions: 1.8 meters N-S by 0.8 meters deep (N-S) with 0.6 meter ceiling height
 Function: temporary shelter
 Subsurface potential: low
 Integrity: unaltered
 Condition: good
 Tested: no
 Estimated age: probable precontact
 Portable remains: 1 basalt flake, 1 waterworn pebble within 1 meter area. Sparse waterworn coral and pebbles in surrounding area.
 Comments: This is a small overhang in a low outcrop just large enough for an adult to lie in. A crude pile of angular boulders/cobbles is piled at the north end of the overhang. It measures 1.5 m. long x 0.8 m. wide x 0.6 m. high and has 1-3 courses.

Feature B
 Type: rock wall, C-shape
 Dimensions: 1.7 meters E-W by 2.0 meters N-S by 0.5 meters high
 Function: undetermined—possibly an observation point
 Subsurface potential: low
 Integrity: unaltered
 Condition: good
 Tested: no
 Estimated age: possible precontact
 Portable remains: none observed
 Comments: This feature consists of a semi-circular wall built on an outcrop which wraps around the *makaf* side of a small level area c. 1 meter square. The wall measures a total of 2.3 meters in length by 0.4 meters wide by 0.4 meters high (2-5 courses). A shallow soil deposit exists in the center of the area. A marginal overhang is adjacent directly to the west.

Feature C
 Type: rock shelter
 Dimensions: 8.0 meters N-S by 2.7 meters deep (E-W) by 3.0 meters maximum ceiling height
 Function: temporary habitation
 Subsurface potential: good
 Integrity: altered
 Condition: good
 Tested: yes—Test Unit 1, 0.5 x 0.5 meters—Radiocarbon date—150 +/- 70 BP.
 Estimated age: probable precontact
 Portable remains: 2 *opihī*, 2 *pipipi*, 1 cowrie fragment; lithic debitage, vesicular cobbles, 2 waterworn pebbles, 2 aluminum soda cans.
 Comments: A level area 2.5 x 2.0 meters exists in the center of the shelter with good soil deposition. Another exists partially outside the dripline. The shelter appears to have been vandalized by bottle hunters, judging from the pile of cobbles in one corner.

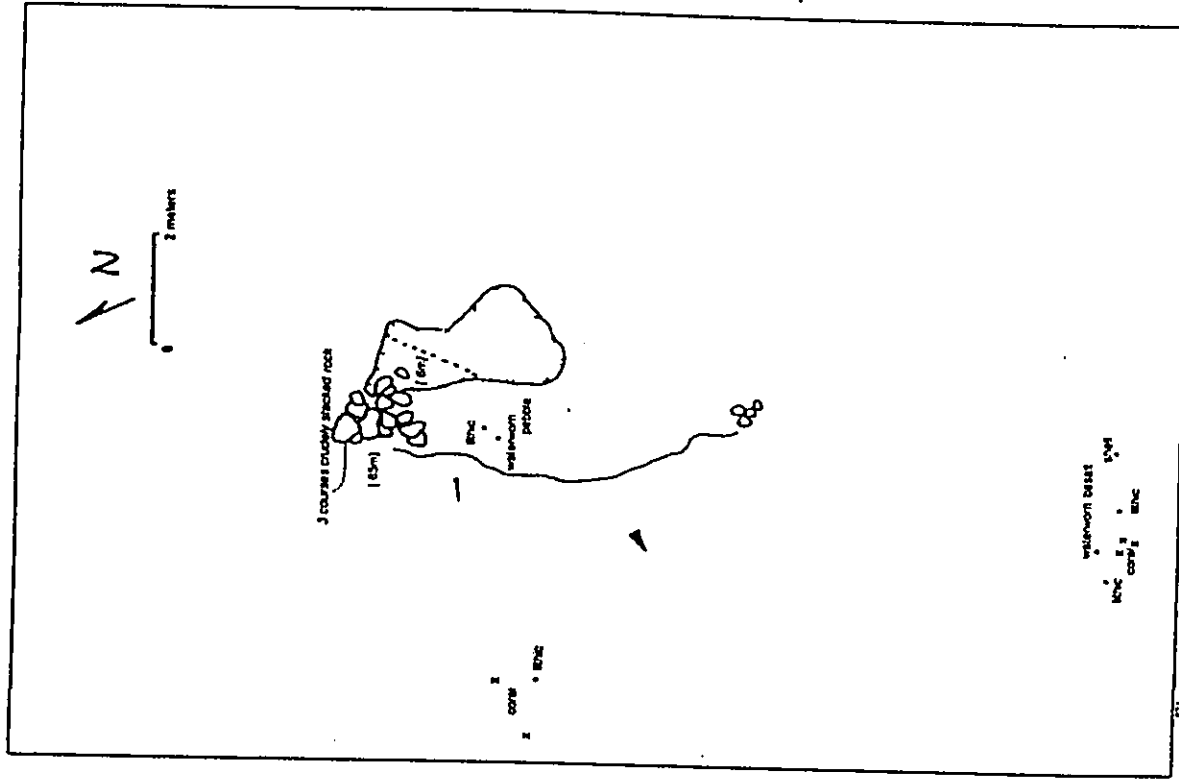


Figure A4 - Plan view of Feature A—a rock shelter with possible windbreak.



Photo 15 - Site 4700 - Feature B - C-shape enclosure.



Photo 16 - Site 4700 - Feature B - view to north.

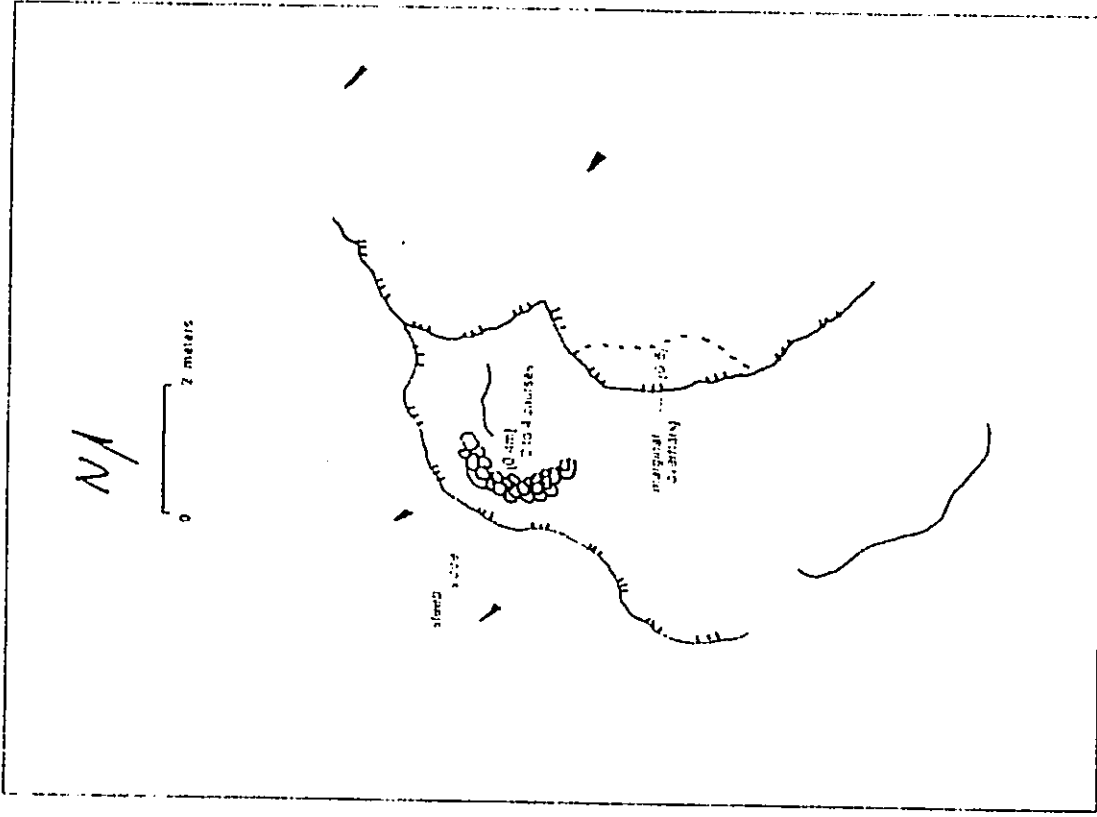


Figure A5 - Plan view of Feature B - C-shape rock wall - Site 4700.

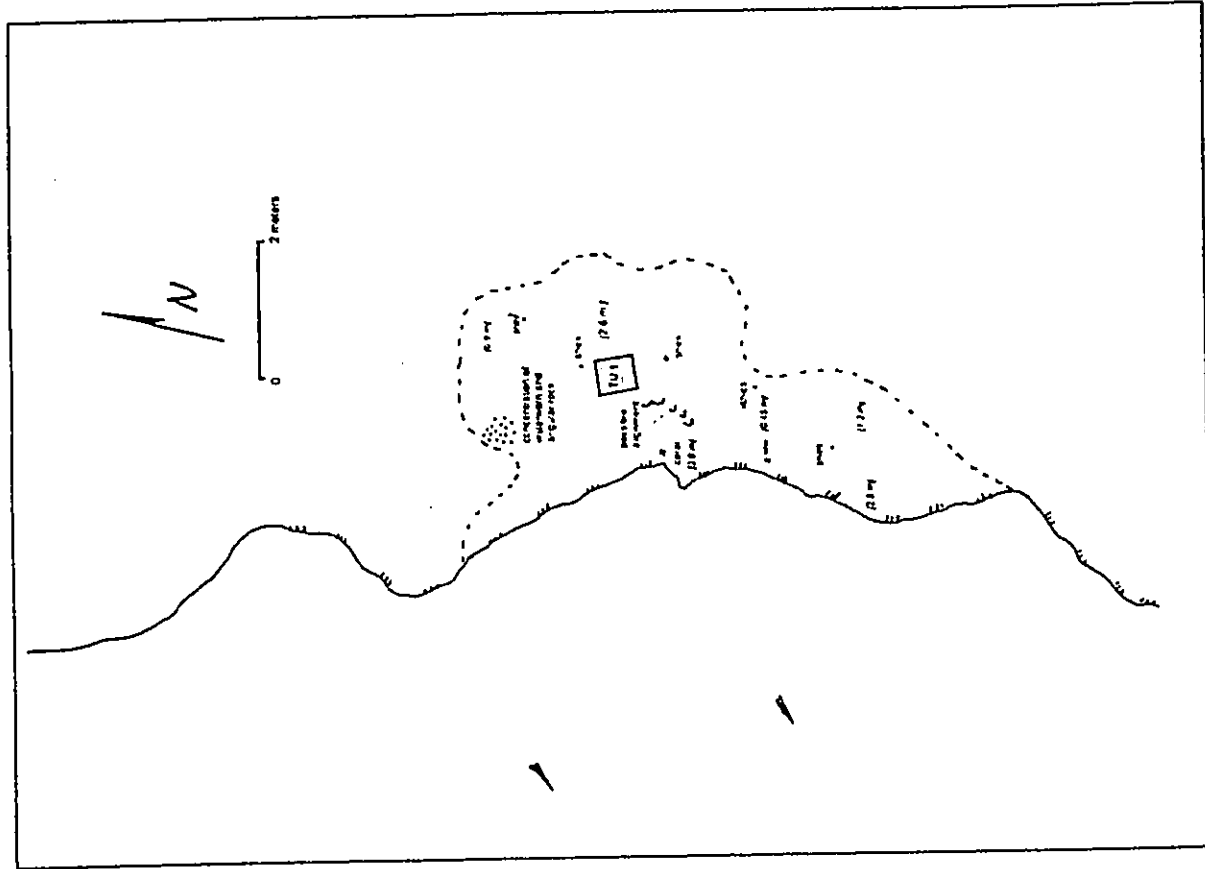


Figure A6 — Plan view of Feature C—rock shelter—Site 4700.

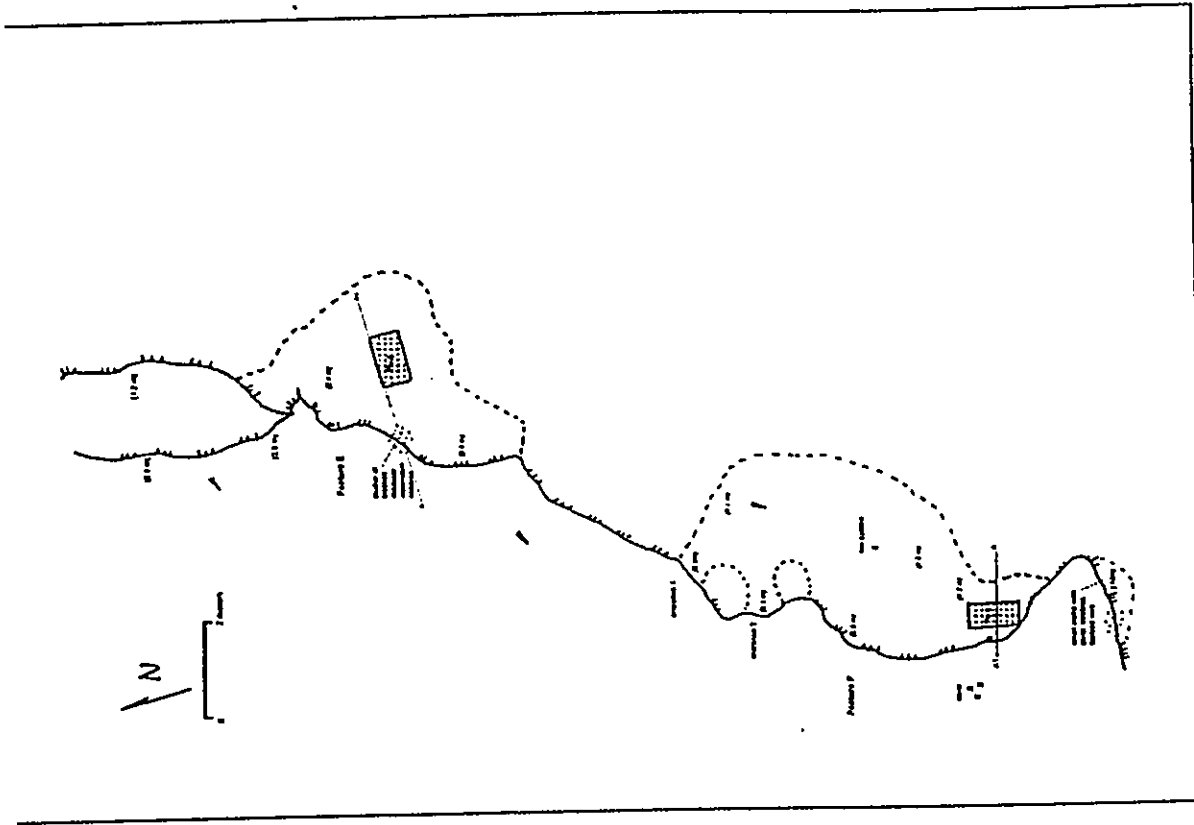


Figure A7 — Plan view of Site 4700, Features E and F, showing Test Units 2 and 3.

Feature D
 Type: rock shelter
 Dimensions: 4.0 meters N-S by 1.3 meters deep (E-W) by 2.0 maximum ceiling height
 Function: temporary habitation
 Subsurface potential: moderate
 Integrity: unaltered
 Condition: good
 Tested: no
 Estimated age: probable precontact
 Portable remains: none observed

Comments: A 2.0 by 1.0 meter level area exists in the central part of the shelter, with some soil deposition, most of which is from the weathering rock of the escarpment.

Feature E
 Type: rock shelter
 Dimensions: 4.0 meters N-S by 3.9 meters deep (E-W) by 2.0 meters maximum ceiling height
 Function: temporary habitation
 Subsurface potential: good
 Integrity: unaltered
 Condition: good
 Tested: yes -- Test Unit 2, 0.5 x 1.0 meter -- Radiocarbon date—120 ± 50 BP
 Estimated age: precontact
 Portable remains: 5 cracked vesicular cobbles, 1 waterworn cobble.

Comments: a 2.0 by 2.0 meter level area exists in the central part of the shelter, with good soil deposition where a few potential fire-cracked rocks are cradling out

Feature F
 Type: rock shelter
 Dimensions: 6.3 meters N-S by 3.0 meters deep (E-W) by 2.8 maximum ceiling height
 Function: temporary habitation
 Subsurface potential: low to moderate -- thin soil inside shelter, good soil deposit outside shelter
 Integrity: unaltered
 Condition: good
 Tested: yes -- Test Unit 3, 0.5 x 0.5 meter -- Radiocarbon date—200 ± 60 BP
 Estimated age: precontact
 Portable remains: 3 waterworn cobbles inside shelter, 1 probable coral abrader and a piece of coral in small niche outside, 3 coral chunks in root ball just outside shelter.

Comments: This is a roomy shelter with a fair amount of level space inside. A large boulder with a niche beneath it has an abrader and a coral chunk. A level area exists outside the shelter as well.



Photo 17 - Site 4700—Feature E—rock shelter.



Photo 18 - Site 4700—Feature F—rock shelter.

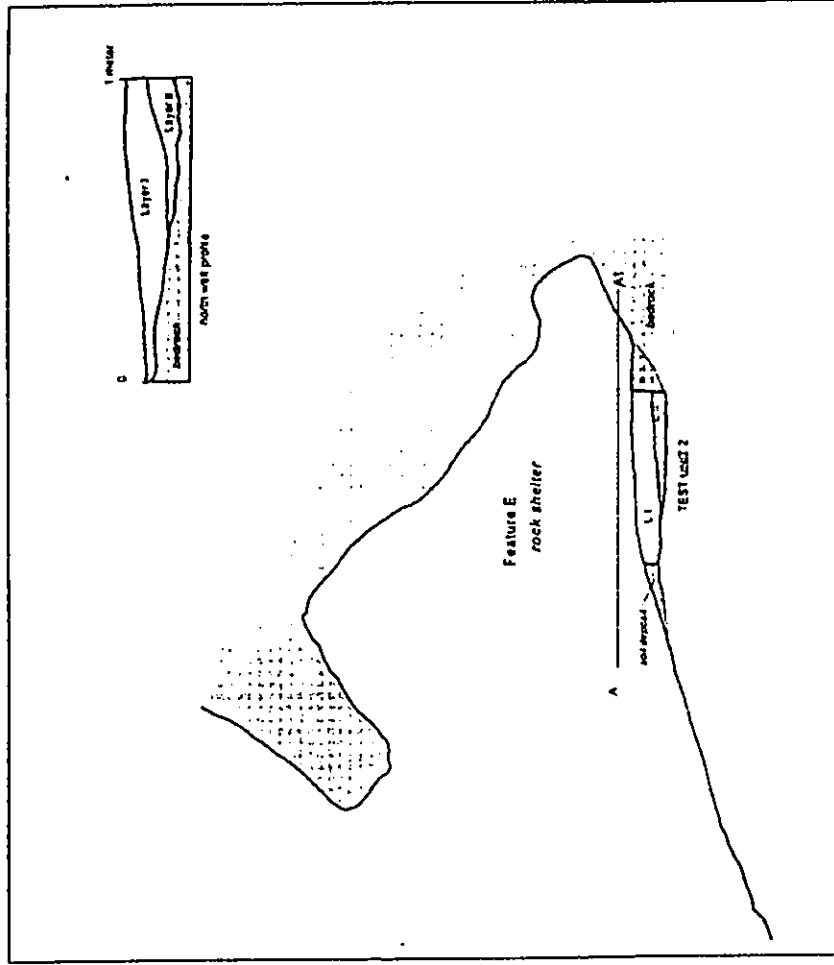


Figure A8 – Profiles of Feature E and Test Unit 2—Site 4700.

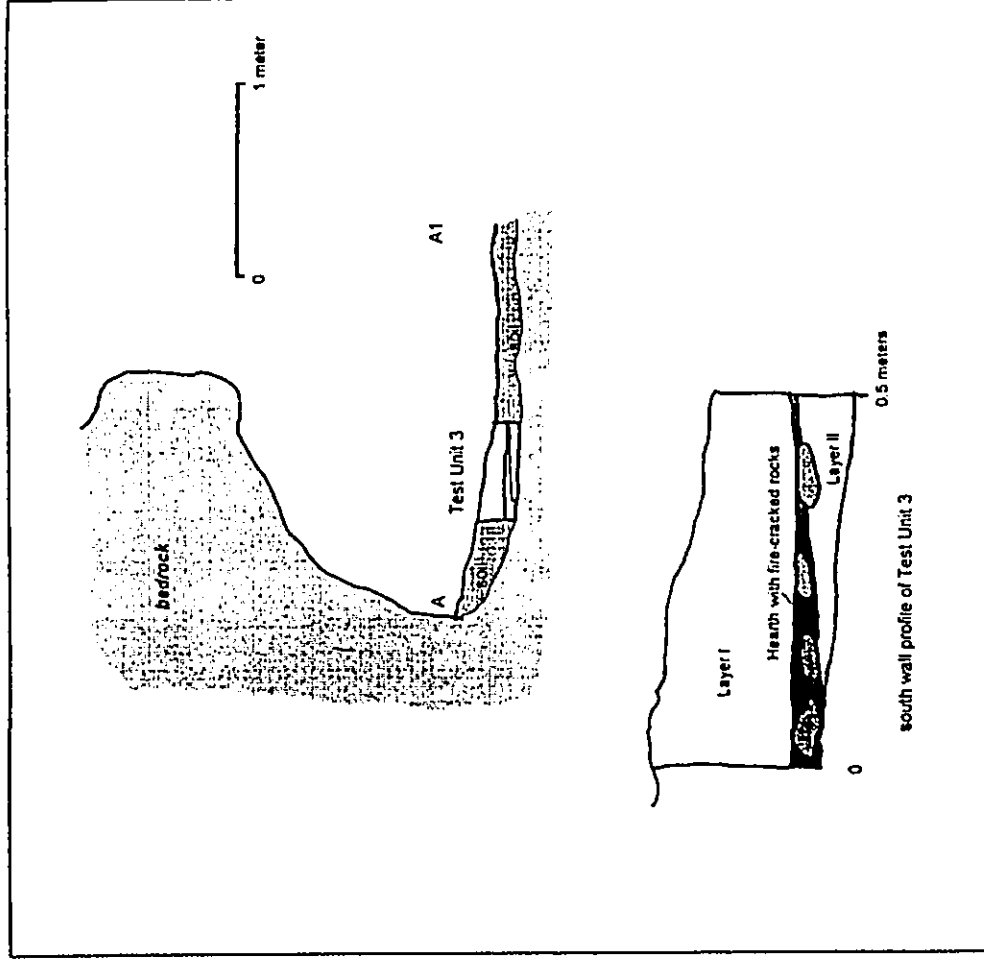


Figure A9 – Profiles of Feature F and Test Unit 3—Site 4700.

Feature G
 Type: rock shelter
 Dimensions: 5.2 meters N-S by 2.2 meters deep by 1.5 meters maximum ceiling height
 Function: temporary habitation
 Subsurface potential: moderate inside shelter - paucity soil deposit, good directly outside of drip-line
 Integrity: unaltered
 Condition: good
 Tested: yes—Test Unit 4, 9, 5, 9, 5 meters
 Estimated age: precontact
 Portable remains: 1 *opon* (heavily eroded), 1 vesicular cobble, 1 fire-stacked rock, 2 waterworn pebbles, and 1 battered cobble outside
 Comments: The interior of the shelter is broken into 3 small shell areas with a level area just outside the drip-line. A few waterworn pebbles, a battered cobble and a FCR appear to be eroding out of the edge of the level area

Feature H
 Type: rock shelter
 Dimensions: 4.5 meters N-S by 3.8 meters deep by 1.7 meters maximum ceiling height
 Function: temporary habitation
 Subsurface potential: low—this paucity soil deposit, exposed rock over most of floor area
 Integrity: unaltered
 Condition: good
 Tested: no
 Estimated age: precontact
 Portable remains: 1 waterworn oval cobble 3 meters downslope outside of drip-line
 Comments: This shelter is spacious. A large opening or cleft exists in the ceiling

Feature I
 Type: rock shelter
 Dimensions: 2.6 meters N-S by 2.1 meters deep by 1.2 meters maximum ceiling height
 Function: temporary habitation
 Subsurface potential: moderate
 Integrity: unaltered
 Condition: good
 Tested: no
 Estimated age: probable precontact
 Portable remains: waterworn cobble outside of shelter
 Comments: There is some soil deposit on the shelter's floor, much of which is from rock exfoliation and slope wash from above

Feature J
 Type: rock wall

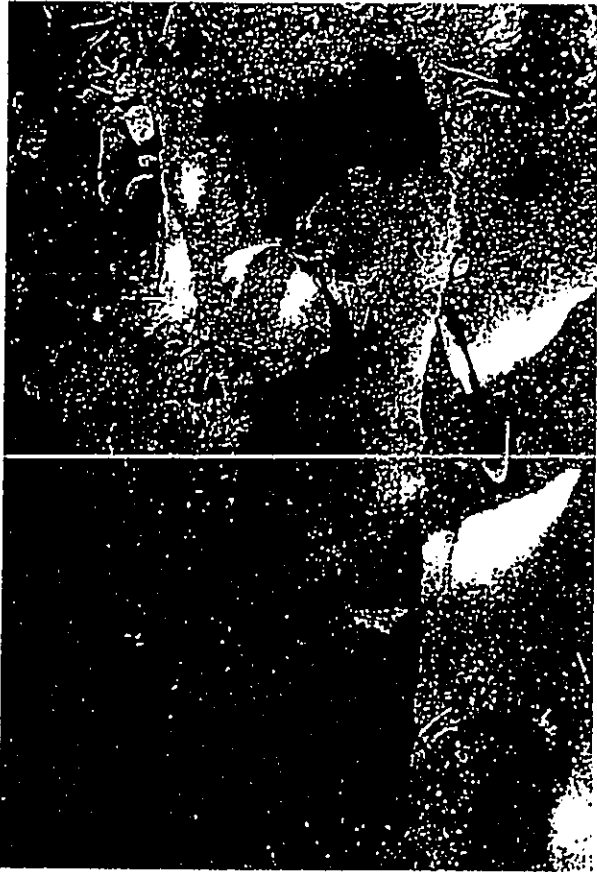
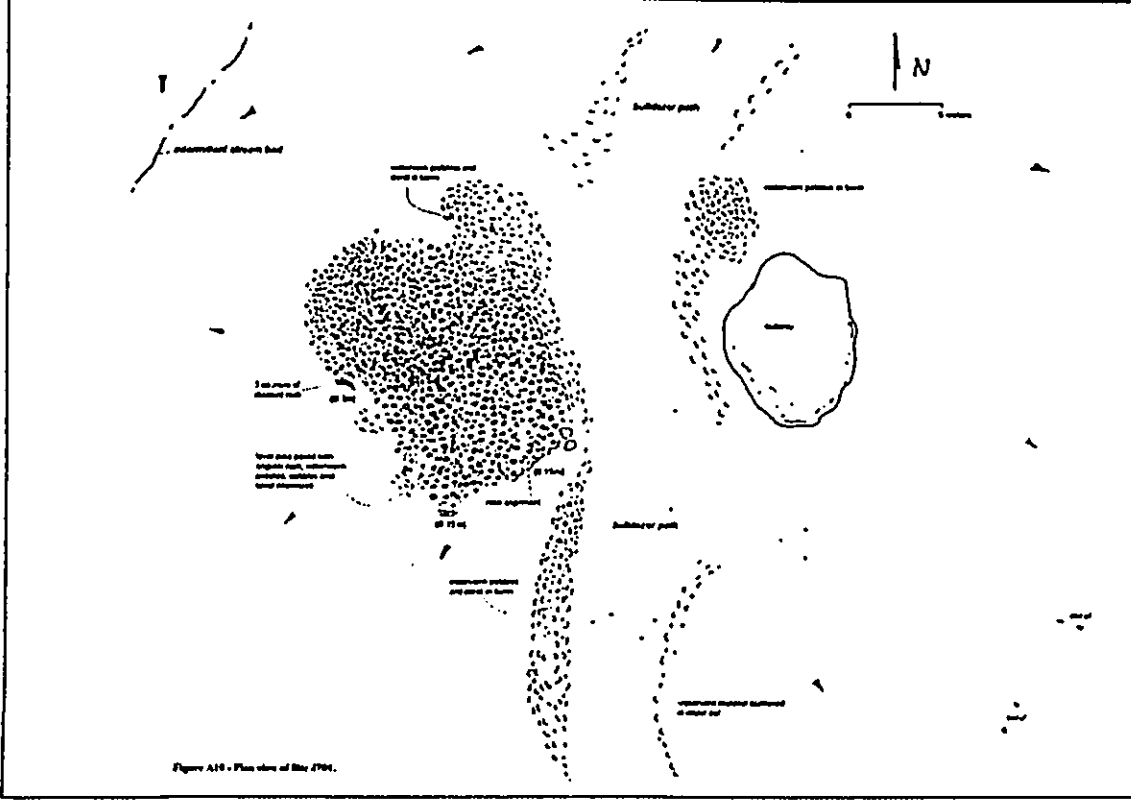


Photo 19 - Test Unit 3—hearth feature—Site 4700, Feature F.



Photo 20 - Test Unit 4—Site 4700—Feature G.



Dimensions: 2.3 meters E-W by 0.8 meters wide and 0.7 meters high

Function: boundary marker

Subsurface potential: low

Integrity: unaltered

Condition: fair

Tested: no

Estimated age: possible precontact

Portable remains: none observed

Comments: This is an extremely crude linear stacking of unsorted rock, 2 to 4 courses high. The rocks are piled on top of weathered bedrock which is extending off the base of a low escarpment. The rock shelter Feature D is 5.5 meters northeast. The wall is collapsing downslope.

SITE [5] 50-50-08-4701

Site type: single component, platform remnant

Environmental setting: This site is located on a small broad finger ridge in the western portion of the project area. Flora is primarily mature *klawe* trees with patches of buffgrass.

Dimensions: 33 meters N-S by 27 meters E-W

Function: ceremonial

Subsurface potential: good

Tested: no

Integrity: altered by bulldozer activity

Condition: poor

Estimated age: precontact

Portable remains: waterworn pebbles, cobbles and coral is abundant. Marine shell, lithic debitage are common. One hammerstone.

Comments: This site sits on a ridge crest 30 meters upslope from the canefield. The primary element here is roughly rectangular level area that is paved with angular cobbles. Mixed in among the angular rock are numerous waterworn pebbles, cobbles, and a considerable number of coral chunks. A short alignment of small boulders exists along the SE side of the feature with 2 small stacked rock sections 2 to 3 courses along the SW side. The feature has been severely impacted by a dozer cut that has cut away the eastern side, spreading waterworn material over a large area.

The platform remnant itself consists of a rectangular level area with a distinct concentration of angular cobbles mixed with a high concentration of waterworn pebbles and coral chunks. It measures 15 meters NW-SE by 11 meters NE-SW and 0.3 meters above ground surface. It is interpreted as a possible ceremonial structure.

A bulldozer path cuts through the east side of the feature. There are push piles in the area surrounding the feature that contain high concentrations of waterworn pebbles and coral. More waterworn material as well as marine shell fragments are to be found in the dozer path. One boulder alignment occurs at the SE end and some stacking is evident along the SW side. High concentrations of waterworn coral and pebbles are buried beneath the angular cobbles on the surface of the feature. The feature is located on top of the end of a finger ridge, and appears as a level area on the otherwise undulating ridge crest.

SITE [6] 50-50-08-4702

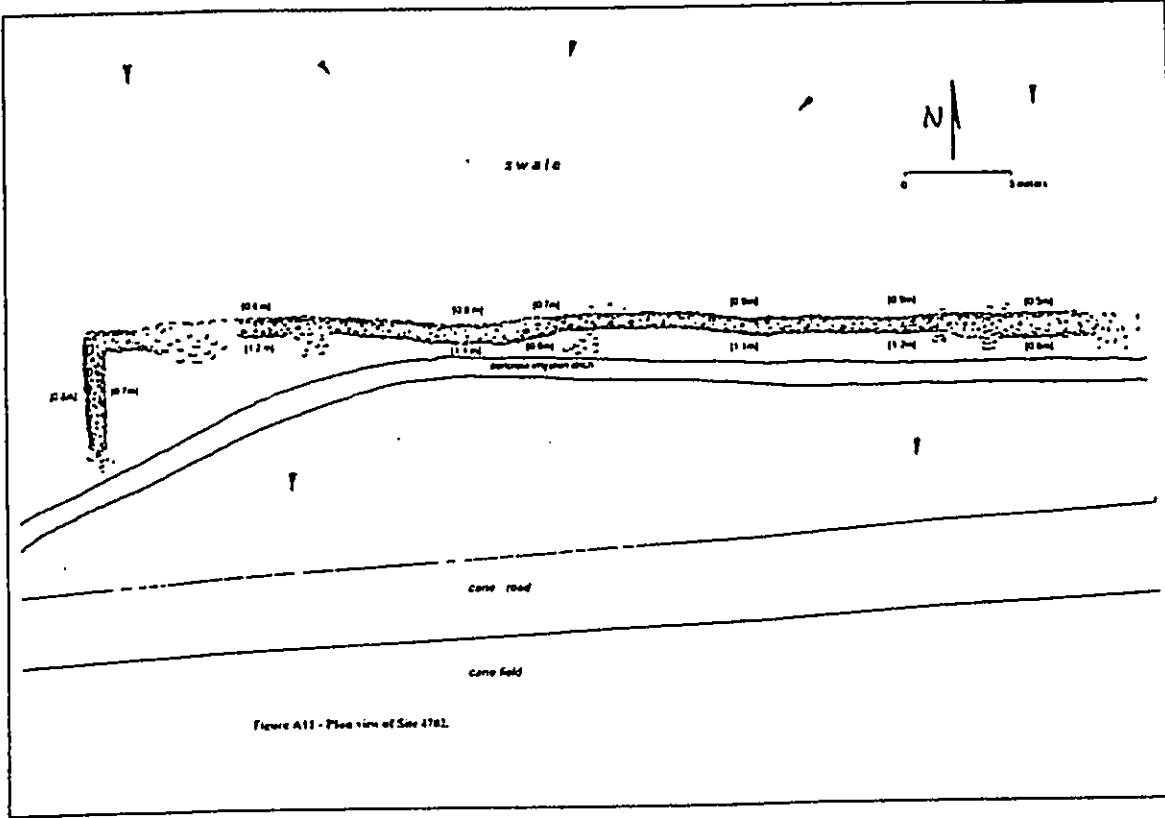
Site type: single component, rock wall
Environmental setting: This wall is located near the base of a gradual sloping landscape that is c. 500 feet westnorthwest of the Olowalu stream bridge, directly adjacent to a cane field. Primary flora is *Kiawe* shrub and thick buffelgrass. The wall spans a shallow swale.
Dimensions: 47 meters E-W by 6 meters N-S in length; 0.75 meters wide with maximum height of 9 courses or 1.2 meters.
Function: boundary marker
Subsurface potential: limited
Tested: no
Integrity: altered, both ends have had rocks removed
Condition: good
Estimated age: undetermined
Portable remains: none

Comments: This well built, stacked, faced wall is at the base of a gradual slope and spans a shallow swale. The long axis is in an east-west orientation. A 90 degree corner exists at the west end where a 6 meter long section is cut off at a now inactive concrete irrigation ditch. The east end of the long axis terminates as collapsed rubble. This is possibly a portion of a larger enclosure destroyed by cane field operations. Possibly associated with an LCA *kuleana*.

SITE [7] 50-50-08-4703

Features A through C
Site type: complex consisting of rock alignment, rock wall and rock enclosure
Environmental setting: located on a moderate slope with subangular basalt boulders. This is just inside the northern project boundary north of *kuleana* properties not included in project area.
Dimensions: 30 meters NW-SE by 8 meters NE-SW
Function: indeterminate, possibly boundary markers
Subsurface potential: limited
Tested: no
Integrity: altered (electric transmission line installation)
Condition: varied
Estimated age: unknown
Portable remains: none observed

Comments: This site is located near the northern project boundary within the easement of the old transmission line with concrete poles. The site consists of 3 small rock features. All rock is of the type within the immediate vicinity.



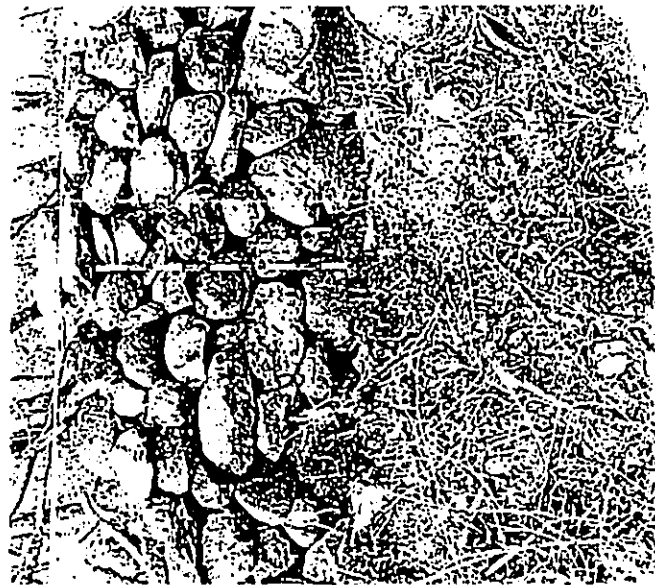
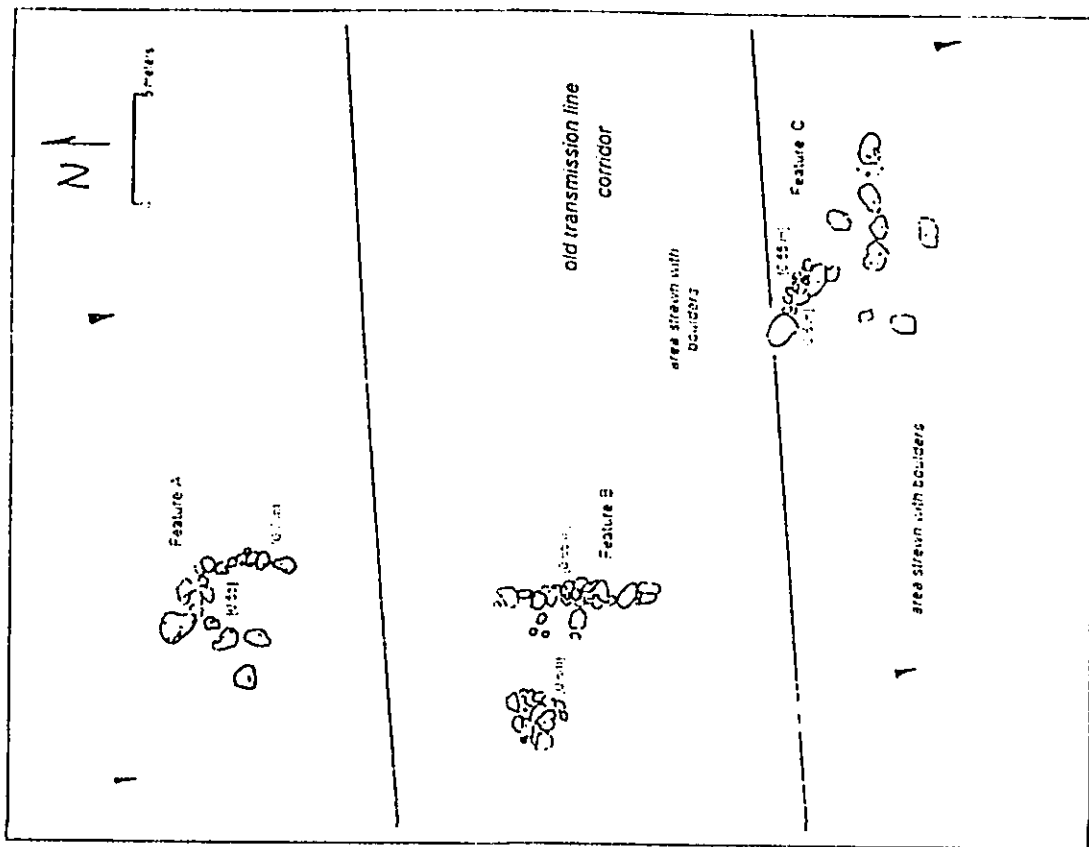


Photo 21 - South face of Site 4702, showing irrigation ditch in foreground.



Photo 22 - Looking westward along south face of Site 4702.



Feature A12 - Plan view of Site 4703.

Site [8] 50-50-08-3180
Site type: single component rock wall
Environmental setting: Located on a moderate slope with thick buffelgrass cover and sparse *kinwe*.
Dimensions: 234 meters long by average width of 0.85 meters, with an average height of 1.2 meters on downslope side and 0.6 meters on upslope side. Maximum height is 1.45 meters.
Function: probable boundary marker/cattle wall
Subsurface potential: limited
Integrity: altered—western end of wall terminates at a cane field, and the east end at the transmission line easement.
Condition: good
Estimated age: post-contact—Plantation era.
Portable remains: barbed wire, a single waterworm cobble observed.

Comments: This well-built wall zig-zags diagonally up the slope in a basically E-W direction paralleling the north project boundary. The wall terminates abruptly at either end. Overall condition of the wall is varied but much of it is in good condition. It is vertically faced with 6 to 10 courses of angular boulders and cobbles with core-filled sections occurring along its length. The eastern (*mauka*) portion of the wall is in generally better condition.

Site [9] 50-50-08-4704
Features A through G
Site type: complex of 7 features of petroglyph panels and rock terraces
Environmental setting: Located inside the mouth of the Olowalu stream valley on the west side. The principle features are along the vertical basalt escarpment at the base of the steep valley walls. Primary flora consists of mature *kinwe* trees and thick buffelgrass.
Dimensions: 61 meters NE-SW by 23 meters NW-SE
Function: ceremonial, habitation
Subsurface potential: good
Integrity: unaltered
Condition: good
Tested: yes—Test Unit 1, 0.5 by 0.5 meters
Estimated age: precontact
Portable remains: sparse marine shell, *kukui* nut fragments basalt abraders, hammerstone, utilized basalt flake, volcanic glass debitage, battered cobble. Historic ceramic shard, cut nail.

Comments: The principle features of this site, a large petroglyph panel and 2 large terraces are located at the base of the steep valley wall. A vertical basalt face has over 27 petroglyph images upon it (Feature A). Two terraces about this basalt face (Features B and C). Four smaller terraces are downslope to the south and southwest.

Feature A
Type: rock enclosure
Dimensions: 4 meters N-S by 3 meters E-W by 0.7 meters maximum height
Function: indeterminate
Subsurface potential: low
Integrity: unaltered
Condition: good
Tested: no
Estimated age: possibly precontact
Portable remains: none

Comments: This is a rough alignment of boulders, some of which have been placed in an upright position and leaning on each other. The boulders occur along the east side of the feature. Additional boulders (average size of 0.6 meters in diameter) are placed in a single course alignment so as to create a small U-shaped partial enclosure. The immediate vicinity is strewn with naturally occurring boulders.

Feature B
Type: wall remnant
Dimensions: 5.5 meters N-S by 0.65 meters wide by 0.65 meters maximum height
Function: possible boundary marker
Subsurface potential: low
Integrity: altered during power pole installation
Condition: poor
Tested: no
Estimated age: possibly precontact
Portable remains: none

Comments: This is crudely stacked linear arrangement of boulders, 3 to 4 courses high, forming a short wall section. The feature appears to have been impacted by the installation of the old concrete-pole power line.

Feature C
Type: rock alignment
Dimensions: 3 meters NW-SE by 1 meter NE-SW by 0.6 meters maximum height
Function: possible temporary shelter
Subsurface potential: low
Integrity: unaltered
Condition: good
Estimated age: probably precontact
Portable remains: none

Comments: This is a crudely stacked roughly linear arrangement of boulders, 3 to 4 courses high. Boulders averaging 0.4 meters in size are incorporated with an immovable boulder. This creates a potential shelter from the prevailing wind.



Photo 23 - South face of boundary wall—Site 3180.



Photo 24 - Looking westward along Site 3180—MECO power pole in upper right.

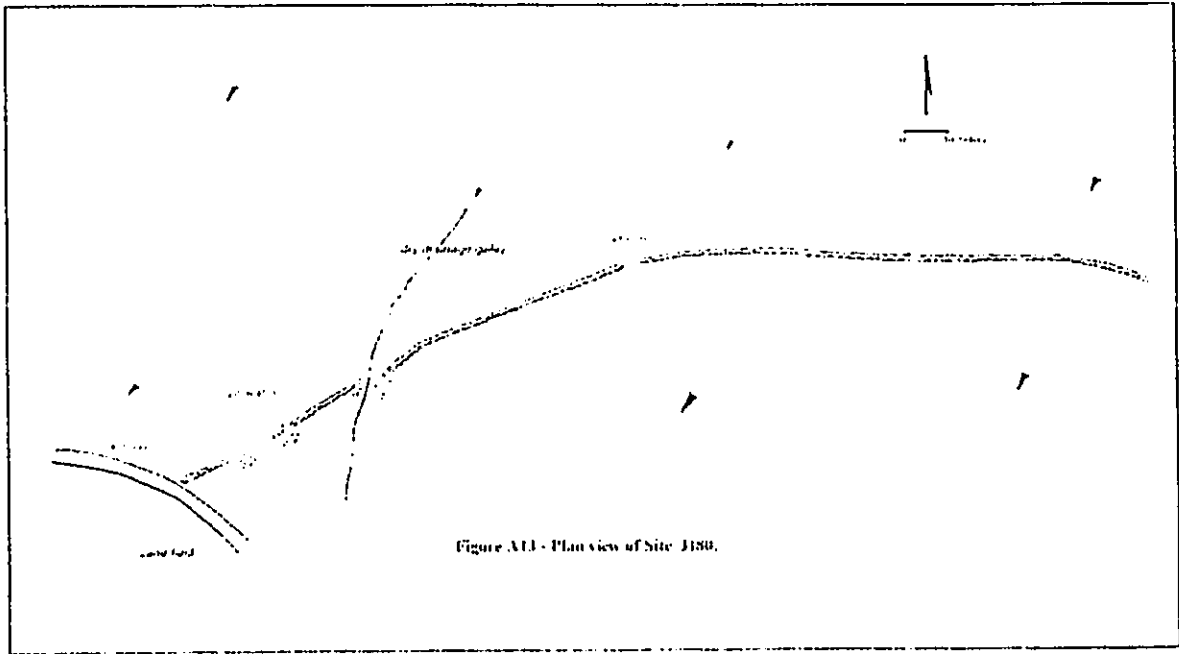


Figure A11 - Plan view of Site 3180.



Photo 25 - Looking westward along north side of Site 3180.



Photo 26 - Break in wall—Site 3180.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

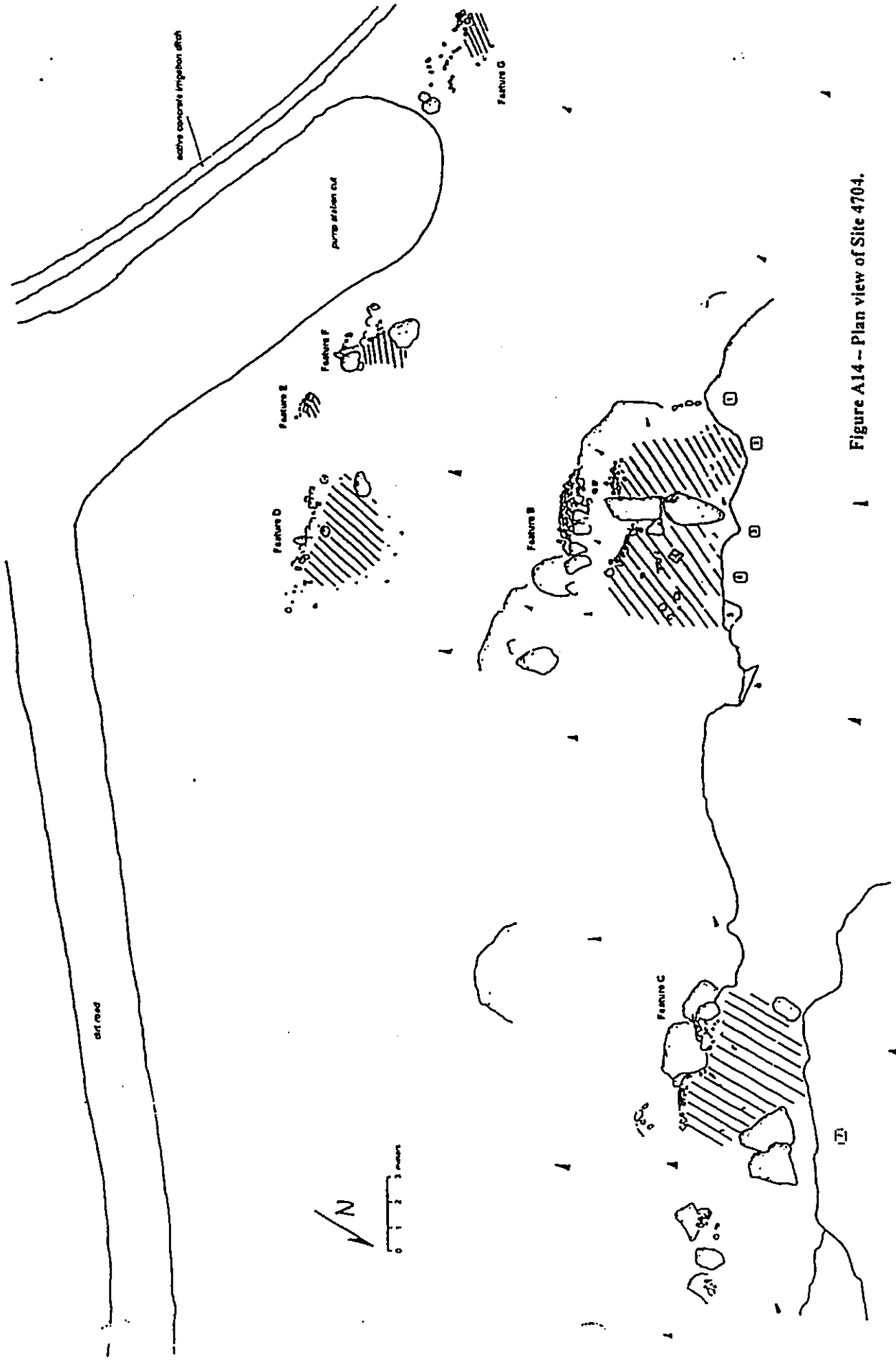


Figure A14 -- Plan view of Site 4704.



Photo 27 - Site 4704—Feature B—portion of petroglyph panel in rear (feature A).

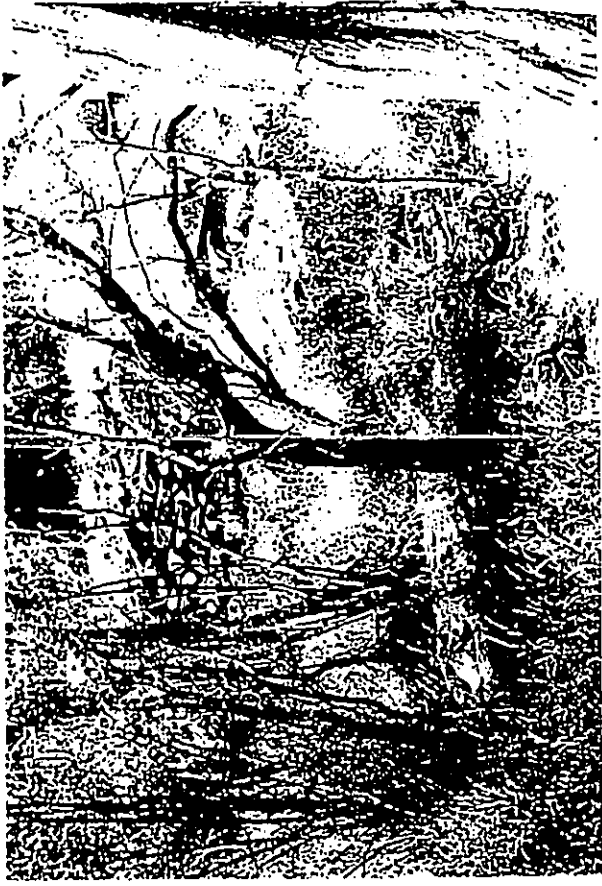


Photo 28 - Site 4704—Feature D in foreground—Feature B in rear.

Feature A

Type: petroglyph panel
Dimensions: 14 meters NE-SW by 3.6 meters maximum height of highest image
Function: ceremonial
Subsurface potential: good at base of panel
Integrity: unaltered
Condition: good

Comments: At least 27 separate images occur on this panel.

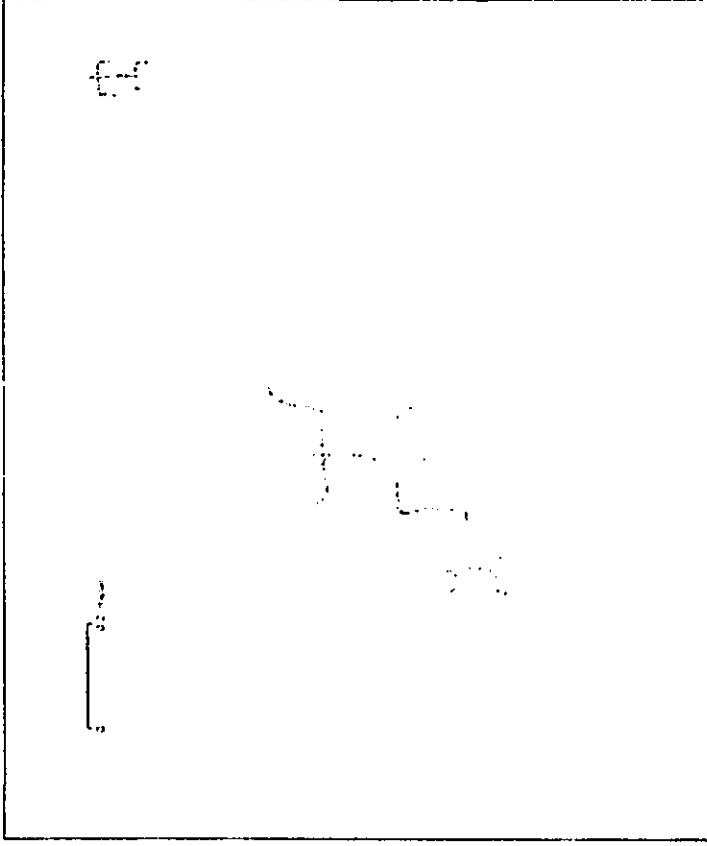


Figure A15 - Feature A—petroglyph panel number 2—Site 4704.



Photo 29 - Site 4704 - Feature A - pictographs in area 2.



Photo 30 - Site 4704 - Feature A - pictograph - closer view.

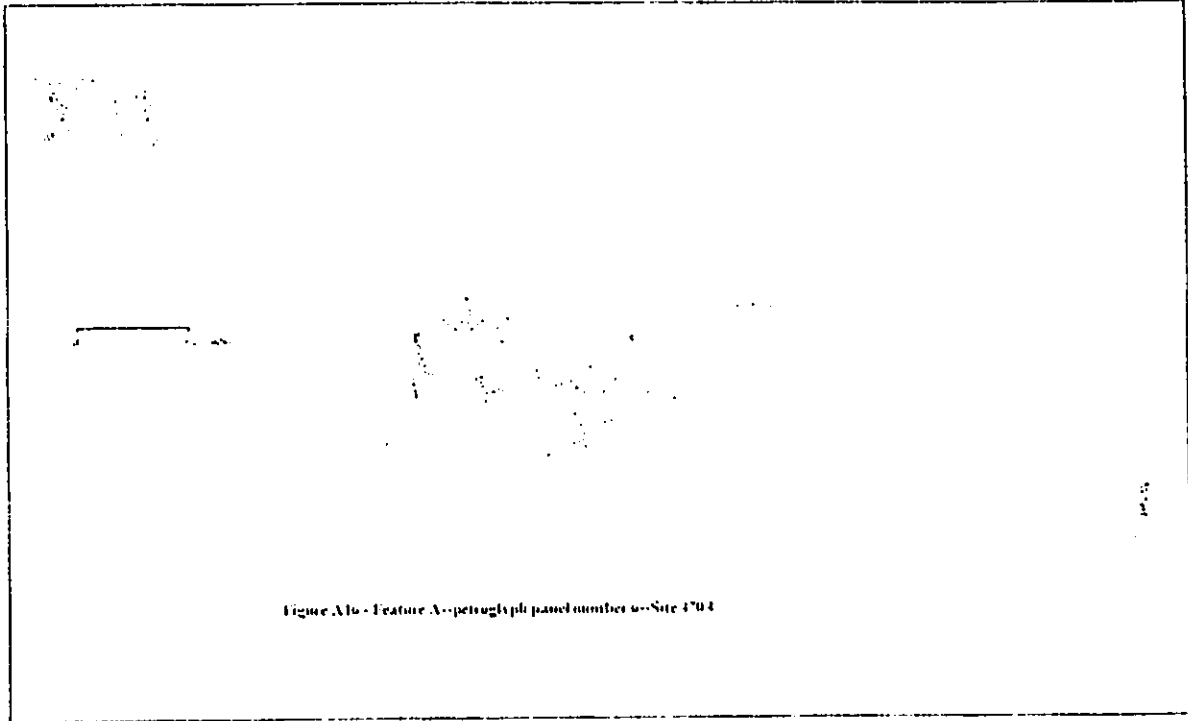


Figure A16 - Feature A - petroglyph panel number 6 - Site 4704

30

Feature B
 Type: terrace
 Dimensions: 8.0 meters NE-SW by 8.0 meters NW-SE by 2.7 meters maximum wall height
 Function: ceremonial/habitat
 Subsurface potential: good
 Integrity: unaltered
 Condition: good
 Tested: yes-- Test Unit 1
 Estimated age: precontact
 Portable remains: sparse marine shell, kukui nut fragments, basalt abrader

Comments: This terrace consists of a stacked, faced retaining wall of angular basalt boulders 3 to 13 courses high that is constructed parallel to the vertical basalt face with petroglyphs on it. Two small retaining walls of 1 to 3 courses create 2 level areas of 9 square meters and 25 square meters on top of the terrace. These level areas are separated by large boulders that have fallen from the basalt face

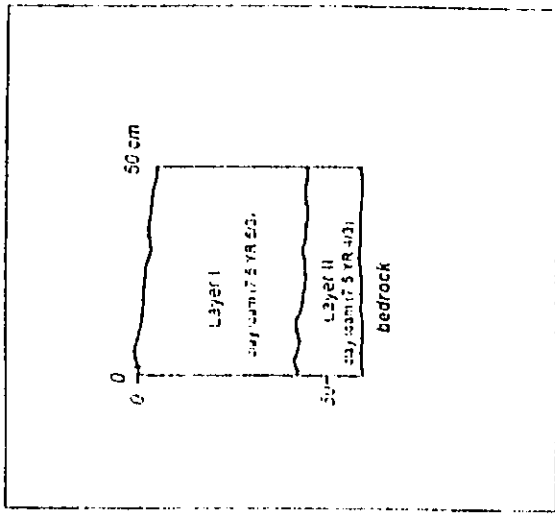


Figure A 17 - East wall profile of Test Unit 1 - Feature B.

Feature C
 Type: terrace
 Dimensions: 6.0 meters NE-SW by 5.5 meters NW-SE by 0.9 meters maximum wall height
 Function: ceremonial/habitat
 Subsurface potential: good
 Integrity: unaltered
 Condition: good
 Tested: no
 Estimated age: precontact
 Portable remains: hammerstone

Comments: A natural terrace created by a basalt outcrop has been broadened by extending a stacked rock retaining wall off to one side and by filling a cleft in the existing bedrock. This retaining wall is 5.0 meters SW of a vertical basalt face c. 0.0 meters high



Photo 31 - Site 4702 - Petroglyph images.



Photo 32 - Site 4704 - Petroglyph image.

on which at least 2 petrograph images exist. The level area at the terrace is c. 30 square meters, extending back to the base of the basalt face. Two small modified outcrops are within 8.0 meters to the NE. A third is directly below the retaining wall. A hammerstone is directly below the petrograph image at the base of the basalt face. This feature is located 12 meters NE of the NE edge of the Feature A petroglyph panel.

Feature D

Type: terrace
Dimensions: 4.5 meters NE-SW by 4.5 meters NW-SE
Function: habitation/agriculture
Subsurface potential: good
Integrity: unaltered
Condition: fair
Tested: no
Estimated age: precontact
Portable remains: 1 utilized basalt flake, 1 battered cobble

Comments: This feature consists of a crude retaining wall of angular basalt boulders and cobbles 2 to 3 courses high. The wall is collapsed along most of its length. A few waterworn cobbles and pebbles are included in the wall. The terraced, relatively level area is c. 18 square meters. This feature is located 8.0 meters SE of the larger retaining wall of Feature B.

Feature E

Type: terrace
Dimensions: 2.3 meters E-W by 2.4 meters wide by 08 meters maximum wall height
Function: agricultural/habitation
Subsurface potential: moderate
Integrity: unaltered
Condition: good
Tested: no
Estimated age: precontact
Portable remains: none observed

Comments: This feature consists of a retaining wall constructed of stacked cobbles and boulders of 5 courses, with 2 larger boulders (80 to 90 cm. in diameter) set on top. A small level section, c. 4 square meters in area, is created by the wall. The boulders rise up 0.4 meters on the inside of the wall at the leading edge of the terraced area.

Feature F

Type: terrace
Dimensions: 5 meters E-W by 3.5 meters wide by 0.55 maximum wall height
Function: agricultural
Subsurface potential: moderate
Integrity: unaltered
Condition: good

Tested: no
Estimated age: precontact
Portable remains: none

Comments: This feature consists of 5 to 7 courses of boulders, averaging 40 cm. across, placed in an alignment so as to create a retaining wall. Crudely stacked or collapsed cobbles are at the west end of the terrace area. The terrace area is approximately 6.5 square meters in area. A large boulder c. 2.0 meters across sits at the NW corner of the terrace. Another boulder is at the east end of the alignment.

Feature G

Type: terrace
Dimensions: 8.5 meters E-W by 4.0 meters wide by 0.75 meters maximum wall height
Function: agriculture
Subsurface potential: moderate
Integrity: unaltered
Condition: good
Tested: no
Estimated age: precontact
Portable remains: 1 waterworn pebble

Comments: This feature consists of a short section of retaining wall of stacked, faced cobbles with an additional boulder alignment forming the leading edge along the length of the terrace. The level area created is c. 4 square meters.

Site 10¹

Site type: single component—lumber scatter
Environmental setting: Located on the steep slope on the west side of the Olowalu Valley mouth, directly adjacent to the northern-most property corner.
Dimensions: 5 meters N-S by 3.0 meters E-W
Function: possible historic property corner marker
Subsurface potential: limited
Condition: poor
Tested: no
Estimated age: post-contact—late 19th/early 20th century
Portable remains: milled lumber, five 2x4 lengths, several cut nails, 1 broken bottle.

Comments: Due to the proximity of the current project corner boundary, the lumber concentration is likely associated with an earlier marker.

¹ This site was only given a field number, and is not considered significant enough to be assigned a SHIP number.

Site [11] 50-50-08-4705

Features A and B

Site type: complex of 2 rock shelters

Environmental setting: Located on the steep slope on the west side of the Olowalu Valley mouth. Primary flora is bulfgrass.

Dimensions: c. 45 meters NE-SW

Function: temporary habitation

Subsurface potential: good

Tested: no

Integrity: unaltered

Condition: good

Estimated age: precontact

Portable remains: 2 waterworn cobbles, 2 waterworn pebbles, 1 basalt flake

Comments: This site consists of two small rock shelters on the SE facing slope at the mouth of the Olowalu Stream valley, above Site 9. Numerous basalt outcrops occur along the slope. These 2 rock shelters are c. 1/3 of the way up from the base of the slope. A series of RR rail posts run up the slope in an alignment approximately 30 meters apart. These have been driven into the ground and extend 50 to 60 meters with steel cable attached to some. This post alignment runs upslope to the NE of Feature B.

Feature A

Type: rock shelter

Dimensions: 4.5 meters NNE-SSW wide by 1.75 meters deep by 2.0 meters maximum ceiling height

Function: temporary habitation

Subsurface potential: good soil deposit present

Integrity: unaltered

Condition: good

Tested: no

Estimated age: probable precontact

Portable remains: waterworn cobble, 1 waterworn pebble, 1 basalt flake

Comments: Average height of ceiling is 0.55 meters. There is narrow deep niche in the back of the shelter where a waterworn cobble has been placed on top of some partially burned stalk-like plant material. The south half of this shelter has a level soil deposit, while the north half is uneven bare rock. Feature B is 43 meters to the northeast.

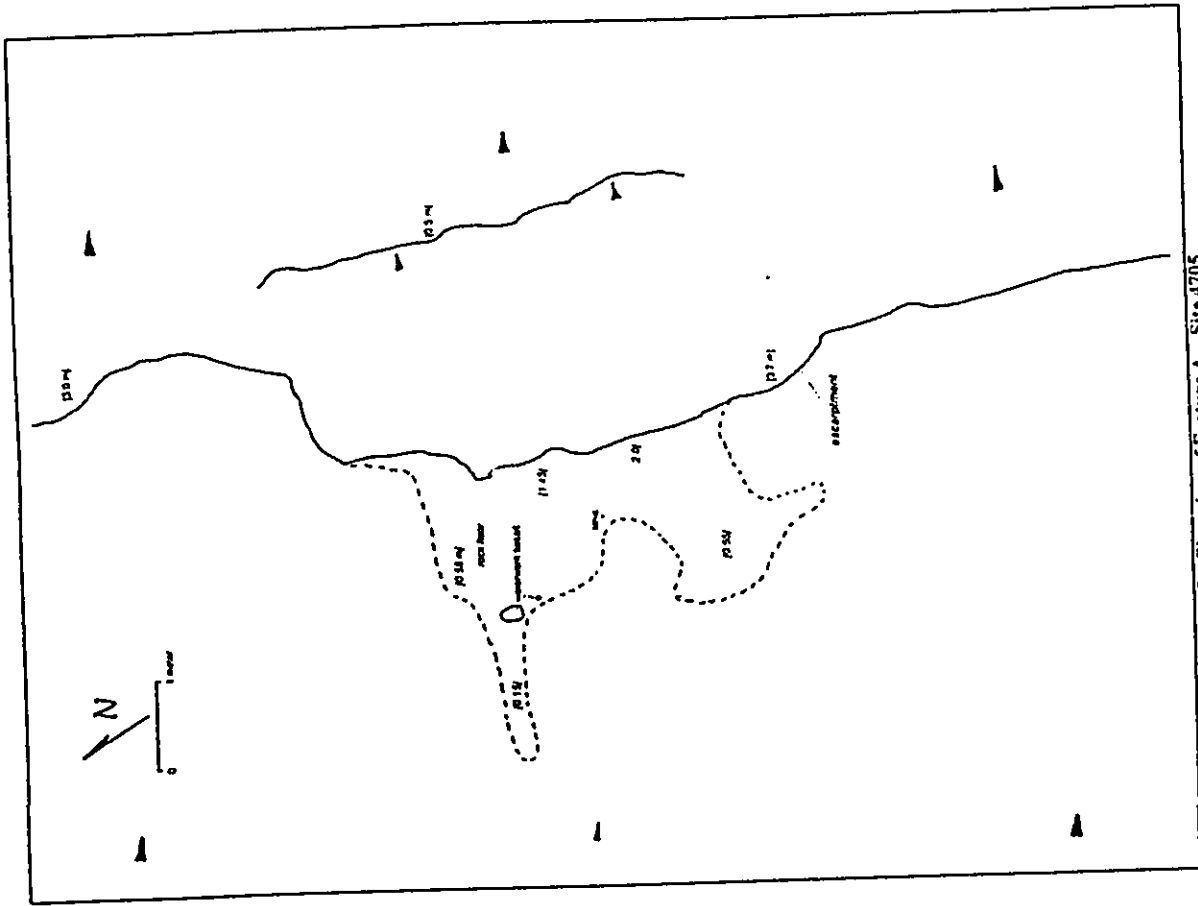


Figure A18 - Plan view of Feature A—Site 4705.

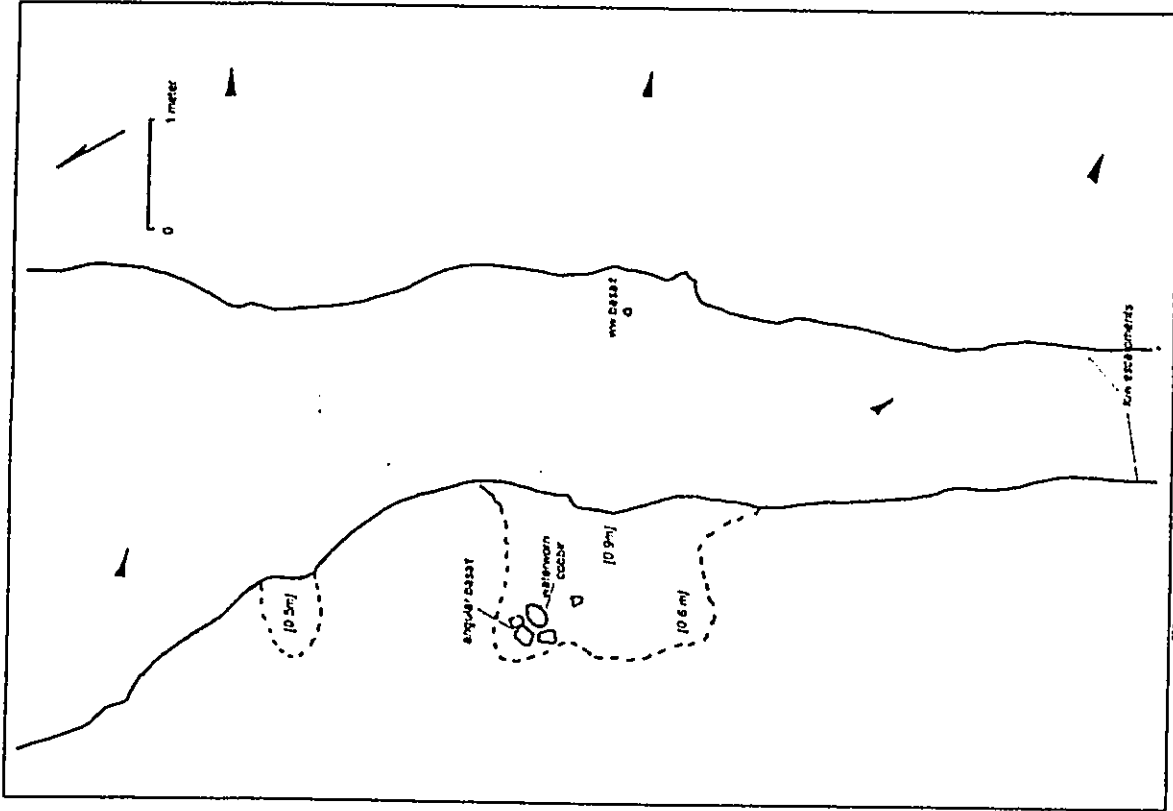


Figure A19 - Plan view of Feature B—Site 4705.

Feature B
Type: rock shelter
Dimensions: 2.5 meters NNE length by 1.25 meters maximum ceiling height
Function: rock shelter
Subsurface potential: good soil deposit present
Integrity: unaltered
Condition: good
Tested: no
Estimated age: precontact
Portable remains: 1 water-worn cobble, 1 water-worn pebble

Comments: average ceiling height is 0.6 meters. A single water-worn cobble was noted near the back of the small shelter in a cluster of angular cobbles. One water-worn pebble is located directly outside the shelter.

Site [12] 50-50-08-4706

Site type: single component—rock shelter
Environmental setting: Located on the west side of the mouth of the Olowalu Stream valley in a crumbling basalt cliff face. Primary vegetation is mature and scrub *klawe*, with some buffelgrass.

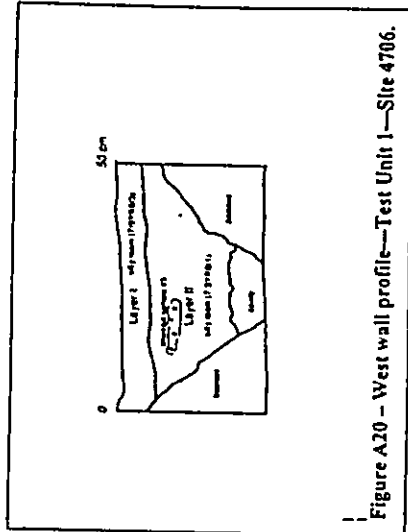


Figure A20 - West wall profile—Test Unit 1—Site 4706.

Dimensions: 4.25 meters NE-SW by 2.25 meters deep by 1.25 maximum ceiling height
Function: temporary habitation
Subsurface potential: good
Tested: yes—Test Unit 1, 0.5 by 0.5 meters. Radio-carbon date—270±50 BP.
Integrity: unaltered
Condition: good
Estimated age: precontact
Portable remains: 1 parrotfish jaw, 4 basalt flakes, 1 water-worn pebble, 3 *kukui* nut fragments

Comments: This shelter floor is c. 6.5 meters above the base of the escarpment and a near vertical ascent is required. There is c. 4 square meters of area within the shelter.

Site [13] 50-50-08-4707

Features A and B

Site type: complex with rock wall and rock mound
 Environmental setting: Located on the floor of the Olowalu Stream valley, 17 meters east of the stream. Primary flora is *kiawe* and *ku* trees, with buffelgrass ground cover.

Dimensions: 77 meters NE-SW by 5.5 meters E-W (includes portion outside project area). 26 meters NE-SW by 5.5 meters E-W (portion within project area)

Function: boundary marker; possible burial

Subsurface potential: moderate

Tested: no

Estimated age: possible precontact

Comments: This site consists of a stacked rock wall remnant and an oval-shaped rock mound. These are located at the northern project boundary on the floor of the stream valley. The wall, Feature A, appears as a linear berm of rubble within the project area, and extends 51 meters beyond the property boundary. The rock mound, Feature B, is just inside the property boundary and abuts the rubble berm, which appears to curve around the west edge of the feature.

Feature A

Type: wall alignment

Dimensions: 77 meters in length by a maximum width of 3.5 meters by 0.8 meters high

Function: possible boundary wall

Subsurface potential: limited

Integrity: altered—impacted by bulldozer activity

Condition: poor

Estimated age: indeterminate—possibly precontact

Portable remains: none observed

Comments: Wall remnant extends outside project area where it is faced and fairly intact. The intact, faced section is 5 courses high. Within the project area it has collapsed and appears to be a line of rubble. Bulldozer action has further altered the feature.

Feature B

Type: rock mound

Dimensions: 5.0 meters N-S by 2.7 meters E-W by 0.85 meters maximum height

Function: possible burial mound

Subsurface potential: moderate to high

Integrity: altered (fence-line passes over western edge)

Condition: fair

Tested: no

Estimated age: possible precontact

Portable remains: 1 basalt core, 14 cm. in diameter, barbed wire lying across the surface

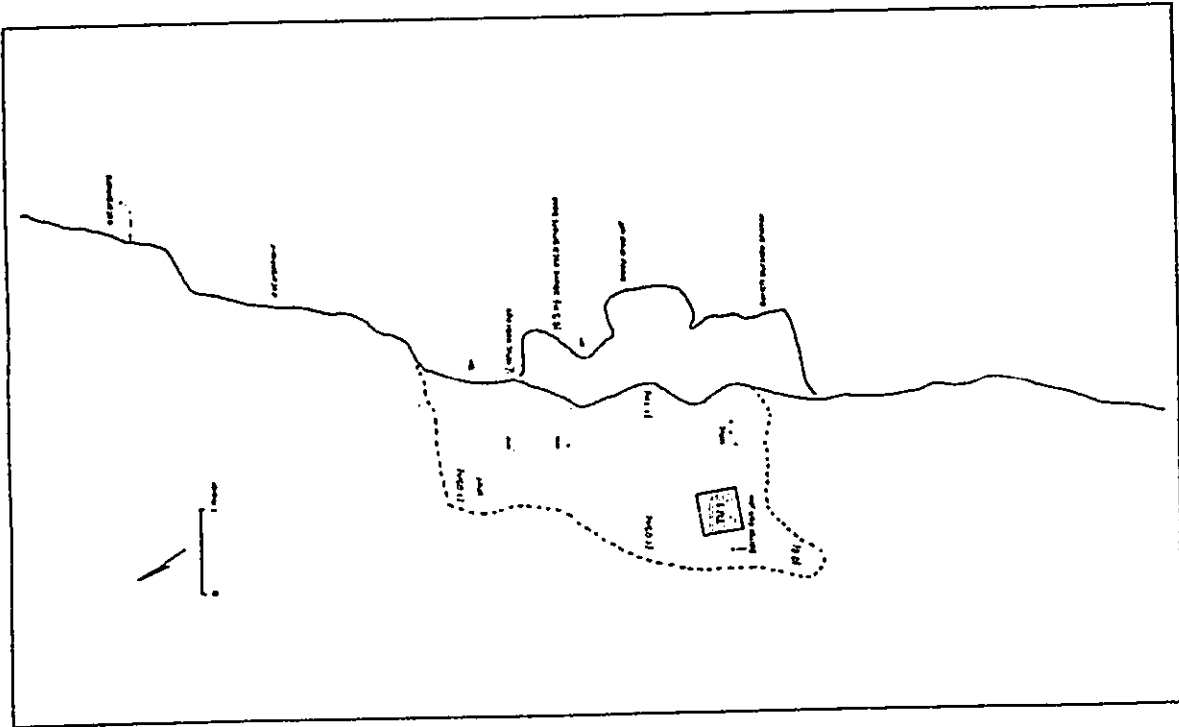


Figure A21 - Plan view of Site 4706.

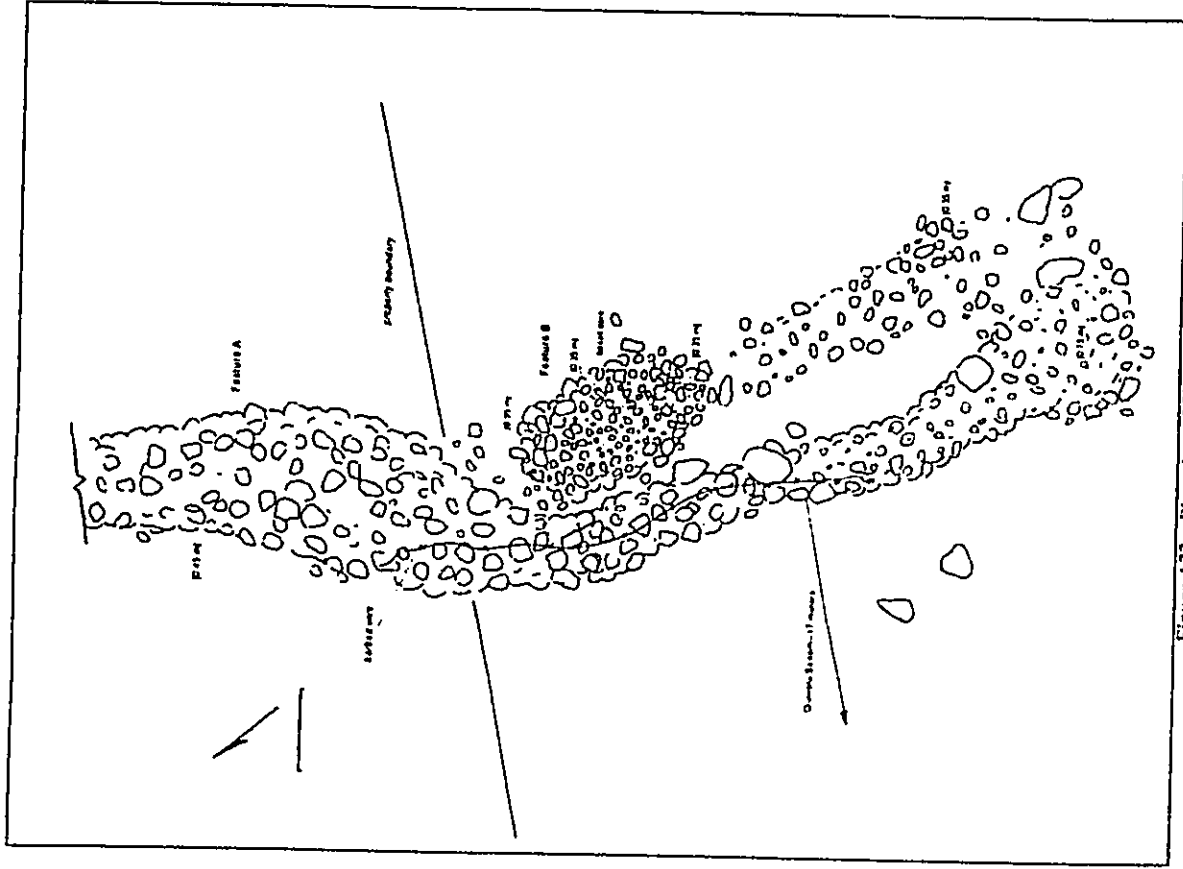


Figure A22 - Plan view of Site 4707.

Comments: This mound has a distinct oval shape with a somewhat flattened mound appearance. The wall remnant (Feature A) appears to wrap around the mound along its west side. This feature might also be an historic agricultural clear pile—only subsurface testing would resolve the question as to its function.

Site [14] 50-50-08-4708

Features A and B

Site type: complex—platform and terrace complex
Environmental setting: Located within the mouth of the Olowalu Stream valley c. 25 meters east of the stream. Flora consists of thick buffelgrass, *Koa haole* and klu trees and mature monkeypod trees.
Dimensions: 62 meters NE-SW by 23 meters NW-SE
Function: ceremonial, agricultural
Subsurface potential: poor to good
Tested: yes—Test Units 1 and 2
Integrity: altered during installation of water tanks
Condition: good
Estimated age: precontact - post-contact
Portable remains: Early 20th century metal hardware, milled lumber, cut nail, boulder with petroglyphs.

Comments: The dominant feature at this site is a large terrace platform (Feature A). The installation of two steel water tanks at the SW end of the feature have altered its integrity. Older metal bars with buckles are evidence that an older wood tank may have been installed here in the past. A complex of low, level terraces (Feature B) extends to the NW from Feature A.

Feature A

Type: terrace/platform
Dimensions: 19 meters NE-SW by 8 meters NW-SE by 2.6 meters high.
Function: ceremonial—probably *heiau*
Subsurface potential: poor to good
Integrity: altered
Condition: good to varied
Tested: no
Estimated age: precontact
Portable remains: 7 steel straps with buckles (used to hold wooden stove tanks together), recent milled lumber, steel cable, 1 large boulder with petroglyphs on it.

Comments: This large terrace/platform is created by a near vertical faced retaining wall 8 to 12 courses high on the NW or stream side of the feature. Rubble slopes down to the original grade at the NW and SW ends. The back, SE side, appears to meet natural grade. The top of the feature has limited level areas and is largely strewn with boulders. There is one potential sub-feature in the form of a short rock alignment in the center of the top of the feature.

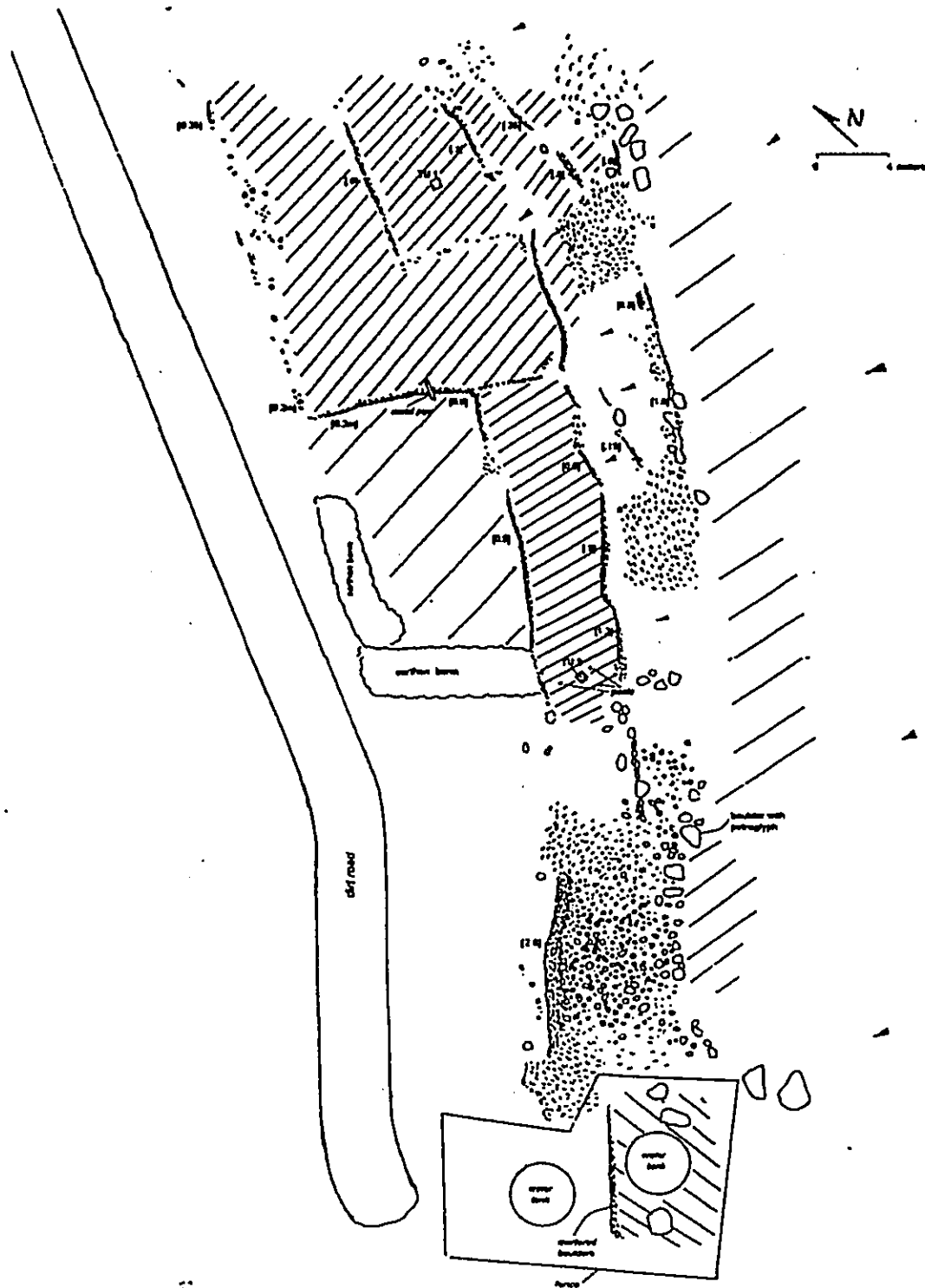


Figure A23 - Plan view of Site 4708.



Photo 33 - Site 4708 - Feature A - west face.



Photo 34 - Site 4708 - Feature B - looking east.

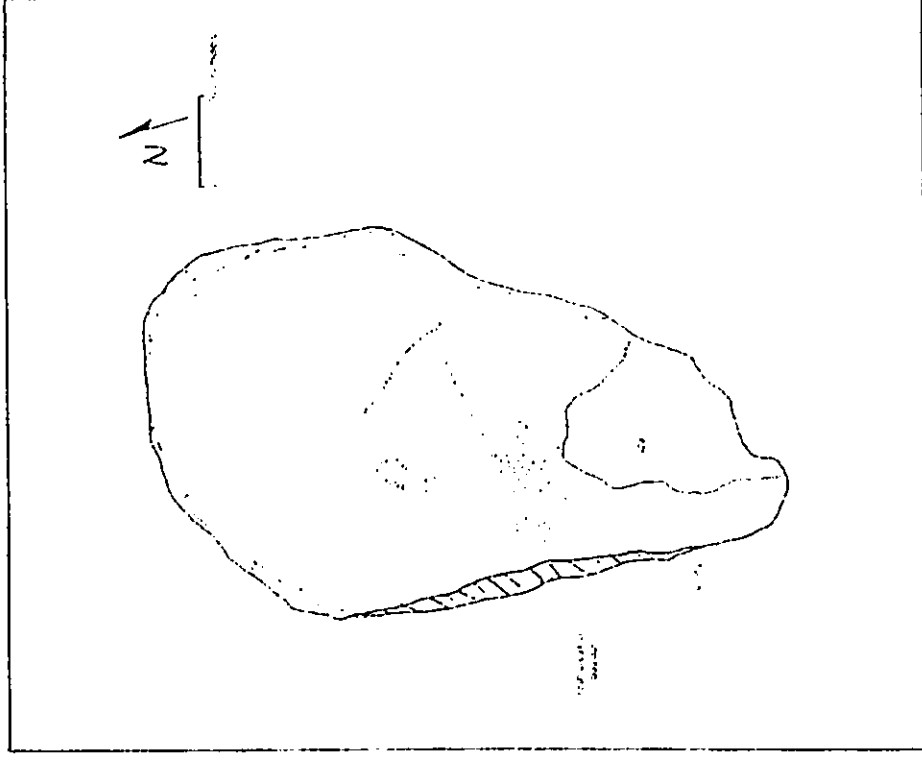


Figure A24 - Petroglyph images on boulder lying on Feature A - Site 4708.

Two large water tanks sit 2 to 3 meters off the SW end. A platform of rock supports one of the tanks. Some of this rock was likely taken from Feature A. A large boulder, 0.8 by 1.3 meters sits at the east corner of the platform. An apparent fresh break is on one edge, which appears to pass through the image. The boulder may have been pushed to its present location by a bulldozer.

Feature B
Type: terrace complex
Dimensions: 40 meters NE-SE by 22 meters NE-SE
Function: agricultural
Subsurface potential: good
Integrity: possibly unaltered
Condition: good
Tested: yes—Test Unit 1 (0.5 by 0.5 meter) near north end; Test Unit 2 (0.5 by 0.5 meter) near south end
Estimated age: precontact — post contact
Portable remains: 8" pipe section, 3 milled lumber posts with 1 cut nail, large metal angle iron

Comments: This is a complex of level terraces with stacked, faced rock retaining walls, most likely associated with Feature A, 5 meters to the south. The largest terraced area (c. 225 square meters) stretches the length of the feature in a zig-zag form and has a maximum width of 7.0 meters and is the lowest terrace of the complex. The associated retaining wall is varied in condition, but is stacked and faced 3 to 5 courses with basalt cobbles and boulders (0.4 to 0.7 meter in diameter) along most of its length. A second retaining wall runs along the back of this terraced area; stacked and faced and up to 1.3 meters high. Three smaller terraces occur at the northern end of the complex. These become smaller toward the top. The area of these ranges from c. 12 to 66 square meters.

Another intermittent retaining wall runs along the eastern upslope edge of the complex. It has an average height of 0.6 meters, and is 3 to 5 courses high. Two large rubble piles occur along its length. Three milled lumber posts protrude from the lowest terrace near the south end. A single cut nail is driven into one of the posts. These 4x4 posts have been cut off, and project and average of 15 cm. above the surface. They are set to create a rectangular arrangement that measures 1.8 meters by 1.2 meters. Test Unit 2 was placed between 2 of these posts.

The pipe section sits in the lowest terrace wall and likely aided irrigation of more recent agricultural activity.

Site [15] 50-50-08-4709

Features A through D

Site type: complex—concrete foundations, stacked rock wall, irrigation ditches
Environmental setting: Located within the mouth of the Olowalu Stream valley, c. 30 meters east of the stream. Flora is buffelgrass with *kiawe* and *klu* trees interspersed
Dimensions: 29 meters N-S by 23 meters E-W
Function: historic hydro-electric plant
Subsurface potential: good
Tested: no
Integrity: altered by salvage of equipment

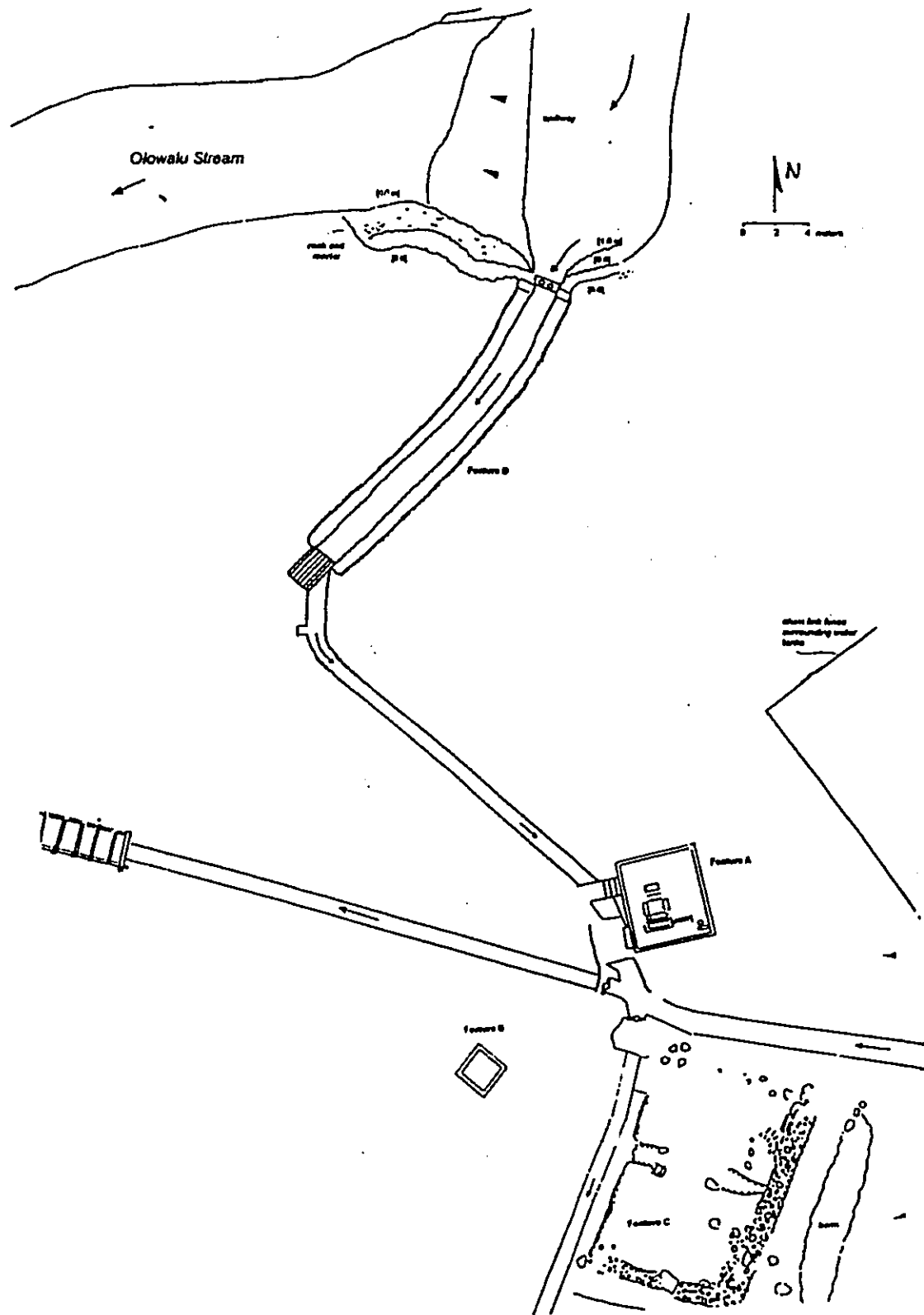


Figure A25 - Plan view of Site 4709.

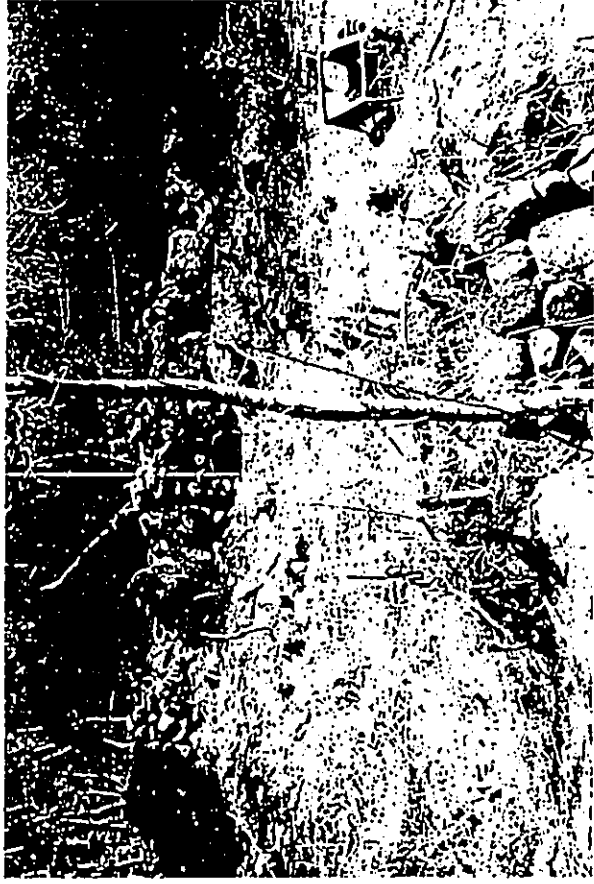


Photo 35 - Site 4709—Feature C—view to west.



Photo 36 - Site 4709—Feature B.

Condition: good
 Estimated age: probable 1930s
 Portable remains: iron, steel hardware, ketoware stove, ceramic sherds, pane glass window pieces

Comments: This site consists of a concrete foundation that formerly supported a hydroelectric power plant semi-subterranean concrete vault or cistern (Feature B), a stacked rock wall partial enclosure (Feature C), and a system of concrete water ditches (Feature D). A small dam on Olowaha Stream, c. 58 meters north of Feature A, diverts water toward the site complex.

Feature A

Type: concrete foundation
 Dimensions: 5.5 meters SSE-NNW by 4.9 meters ENE-WSW
 Function: foundation for hydro-electric plant
 Integrity: altered
 Estimated age: probably 1930s
 Portable remains: electric plant hardware

Comments: The raised platform foundation is trapezoidal, sloping inward from the base. The lip at the tops edge of the foundation is 15 cm wide and has 1/2" plate bolts protruding every 3" along its length. The power plant's cast iron turbine housing and water nozzle valve are on the SSE side of the foundation. The base or mount for the generator is directly adjacent.

Four concrete-lined water ditches converge at the foundation. One flows down slope from the east; one brings water from the stream to the NW. Another carries water to the south while the last carries water back over the stream via a large pipe. A semi-subterranean concrete vault or cistern is c. 10 meters to the SSW (Feature B).

Feature B

Type: semi-subterranean poured concrete vault or cistern
 Dimensions: 2.26 by 2.26 meters outside diameter—1.83 by 1.83 meters inside diameter
 Function: water retention
 Integrity: unaltered
 Condition: good
 Estimated age: early 20th century

Comments: Poured concrete walls are 8" thick and rise 40 cm above ground surface. A 6" entrance pipe is 1 meter below the NE inside wall. A 4" exit pipe is 1.7 meters below the SE wall.

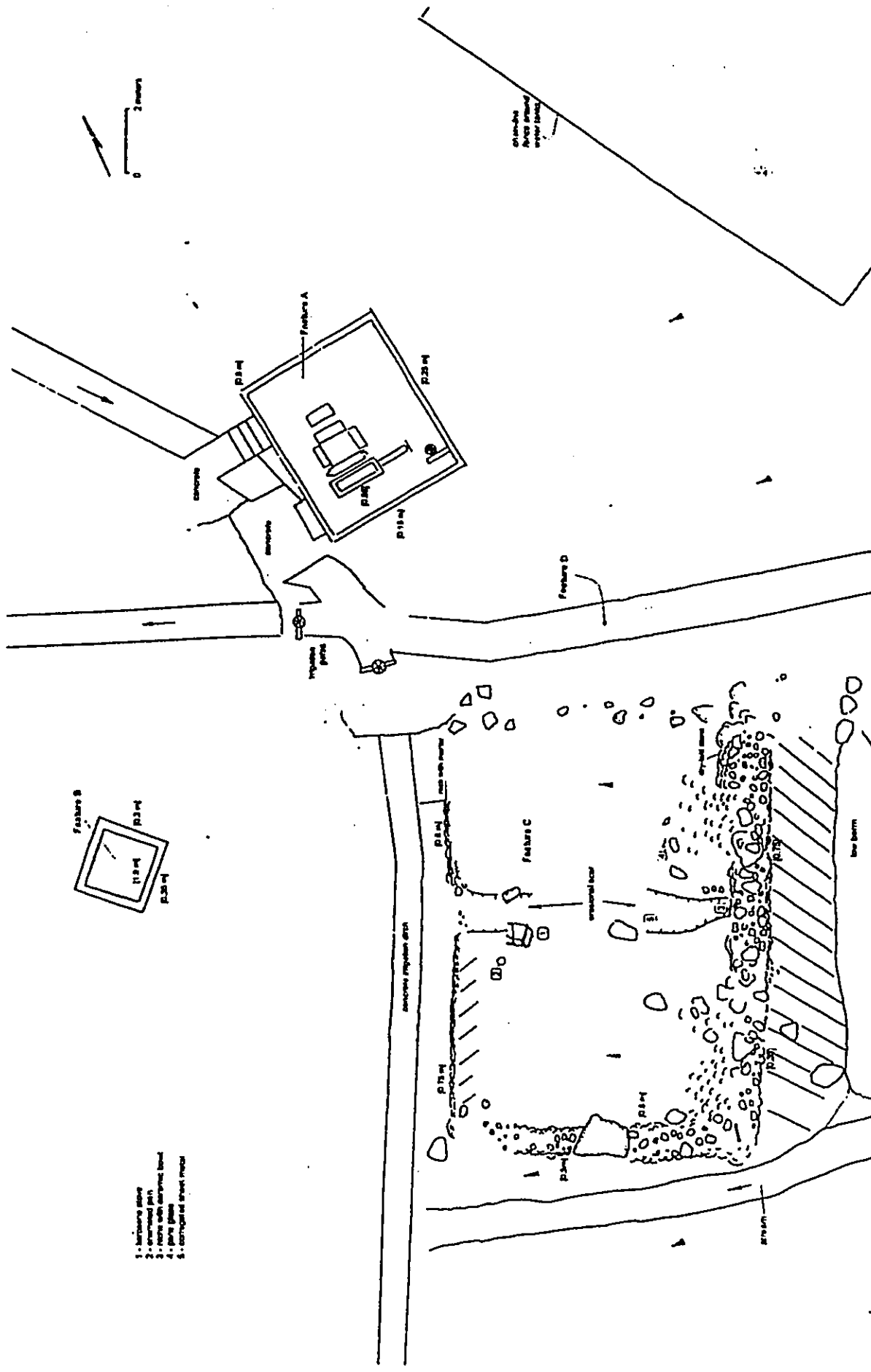


Figure A26 - Plan view of Features A, B, and C—Site 4709.



Photo 37 - Site 4709—Feature A with water tank enclosure in background.



Photo 38 - Site 4710—Feature C—looking northwest.

Feature C

Type: terrace with partial enclosure
 Dimensions: 15 meters NNE-SSW by 10 meters ESE-WNW by 1.4 meters maximum wall height
 Function: agricultural/habitation
 Subsurface potential: good
 Integrity: altered
 Condition: fair
 Tested: no
 Estimated age: post-contact
 Portable remains: kerosene stove, window pane glass, ceramic bowl shards, corrugated metal

Comments: This feature consists of c. 60 square meter terrace created by a stacked, faced retaining wall, 0.6 meters thick, and 3 to 4 courses high. A stacked, free-standing wall encloses the terrace on the up ESE and SSW sides. The upslope section of wall is stacked and faced, utilizing some very large boulders, 1.0 to 1.5 meters in diameter. This wall is collapsing in places. At the center of this wall, at its base, is a large curved angular boulder with a niche beneath it, measuring 0.4 meters high by 1.0 meter deep. A broken ceramic bowl sits on the back of the niche, nearly covered with rubble from above. The wall on the SSW side is low and erode. The kerosene stove sits near the center of the terraced area. A concrete ditch runs parallel to the retaining wall along its base.

Feature D

Type: irrigation ditches
 Dimensions: extensive
 Function: agricultural irrigation
 Integrity: unaltered
 Condition: good
 Estimated age: early 20th century
 Portable remains: none observed

Comments: The irrigation ditches leave the intersection at the hydro-plant foundation and direct water to the south and west and are apparently an active part of the current sugarcane irrigation system.

Site [16] 50-50-08-4710

Features A through G

Site type: complex—terraces, enclosures, possible burial
 Environmental setting: Located overlooking the mouth of Olowalu Stream valley on the eastern side at c. 350 feet elevation AMSL. Primary flora are mature *lumnice* trees with built-up grass ground cover. The site gradually slopes toward the west.
 Dimensions: 27 meters WSW-ESE by 21 meters NNW-SSE
 Function: habitation, possible ceremonial, possible burial
 Subsurface potential: good

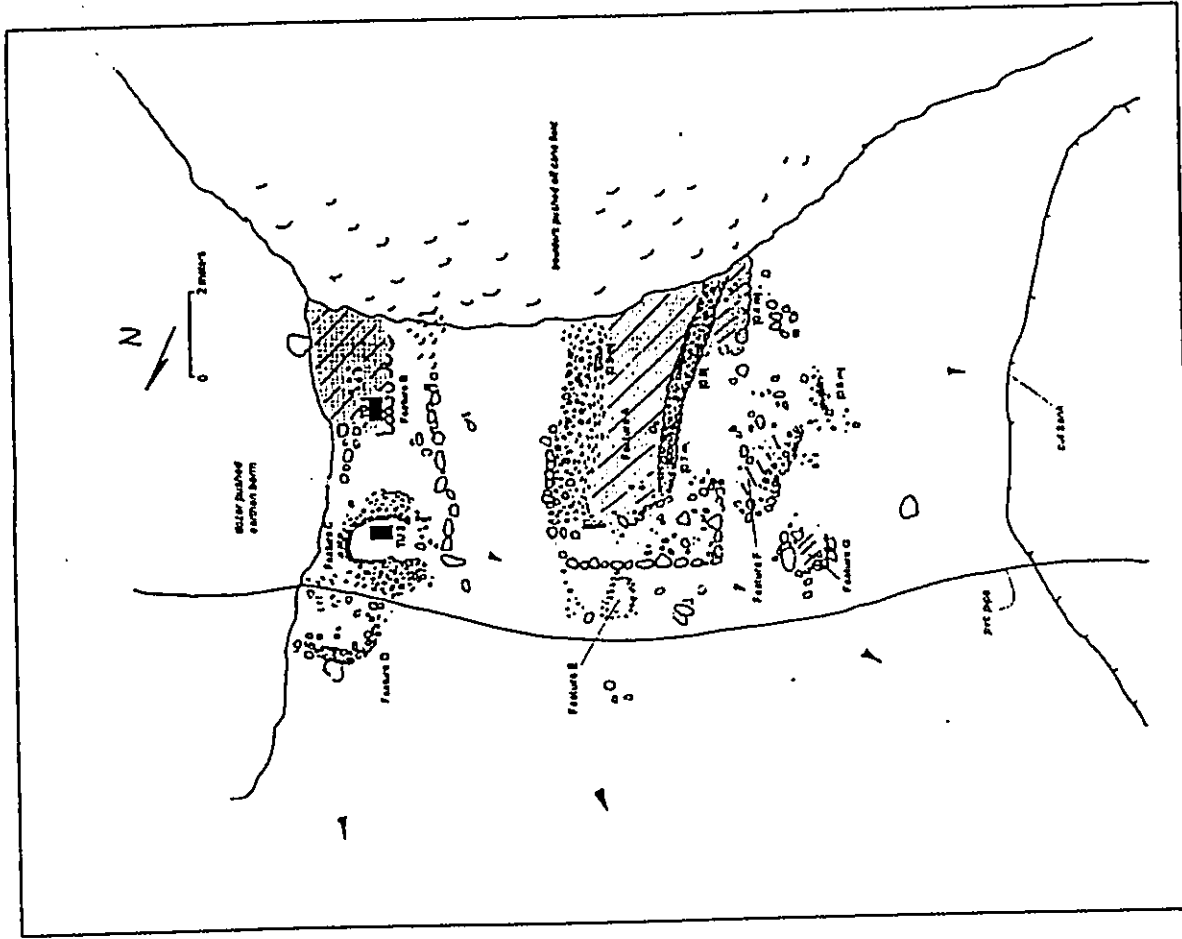


Figure A27 - Plan view of Site 4710.

Tested: yes—Test Unit 1 (Feature B); Test Unit 2 (Feature C)

Integrity: altered by bulldozer activity

Condition: fair to good

Estimated age: precontact

Portable remains: 1 battered cobble, coral chunk, waterworn pebbles

Comments: This site is on the eastern edge of the Olowalu Stream valley mouth at the top of a steep slope. Bulldozer push from adjacent cane field has covered an unknown percentage of the site.

The central element at this site is a rectangular rock wall enclosure which has been built on a terrace created by a boulder alignment (Feature A). Two other boulder alignments create a pair of terraces 3 meters to the east (Feature B). A pair of small oval shaped enclosures (Features C and D) are adjacent at the north corner of the site. Two other small terraces are west of Feature A. Feature E is a potential burial marker.

Feature A

Type: terrace with enclosure

Dimensions: 14.5 meter NNW by 9.0 meters ENE-WSW by 0.9 maximum wall height

Function: ceremonial

Subsurface potential: good

Integrity: altered and covered by cane field operations

Condition: varied

Estimated age: precontact

Portable remains: 1 battered cobble

Comments: This feature consists of a rectangular terrace created by an alignment of large boulders ranging from 0.6 to 0.8 meters in size. The alignment is L-shaped occurring on the NNW and WSW downslope sides, and forms a 90 degree corner. The terrace alignment wall averages 0.5 meters high on the outside. The alignment is broken or collapsed on the WSW sides and disappears under the dozer push at the SSE end.

A partial enclosure sits on the terrace, 11.5 meters in length NNW-SSE by 6.5 meters ENE-WSW by 0.9 meters wall height. The two parallel walls run the long axis and average 0.7 meters in height. The wall section along the WSW side is stacked and faced up to 3 to 5 courses. The other section is primarily collapsed rubble. The wall sections also disappear under dozer push at the SSE end.

Feature B

Type: terraces

Dimensions: 10.0 meters NNW by 7.0 meter ENE by 0.5 meter maximum height

Function: habitation, possible ceremonial

Subsurface potential: good

Integrity: altered

Condition: fair

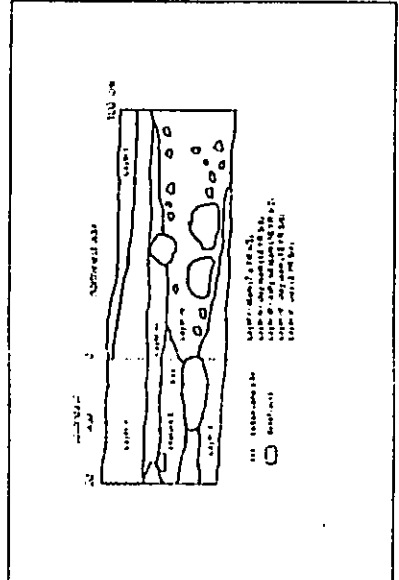


Figure A28 - Southeast/northwest profile of TU 1.

Tested: yes - Test Unit 1
 C14 Date - 200 +/- 50 BP.
 Portable remains: 1 coral chunk, 1 waterworn pebble
 Comments: The upper terraced area is created by a straight alignment of large boulders averaging 0.55 meters in size, forming a retaining wall. The terrace area is c. 24 square meters. A crude arrangement of boulders and cobbles, roughly oval in shape, occurs centrally in the terrace where a single piece of eroded coral sits, along with a single waterworn pebble.

A bulldozer beam encroaches on the east side, and buries an unknown portion of the feature on the SSE side.
 A second terrace (Feature C) is adjacent downslope. A less organized alignment of boulders 10 meters in length creates the retaining wall for a narrow 2.0 meter wide terrace. The alignment passes directly in front of the opening to the Features C enclosure.

Feature C

Type: enclosure
 Dimensions: 5.0 meters ENE by 4.0 meters NNW by 0.95 meters maximum wall height
 Function: part of possible ceremonial complex
 Subsurface potential: good
 Integrity: altered during cane field operations
 Condition: fair

Tested: yes - Test Unit 2
 C14 Date - 60 +/- 50 BP.
 Estimated age: precontact
 Portable remains: none observed

Comments: This is a small roughly rectangular enclosure. Overall construction is of crudely stacked rocks, but faced in some places and collapsed in others. The opening is at the WSW end. The wide NNW wall is shared by a crude, more disturbed enclosure (Feature D).

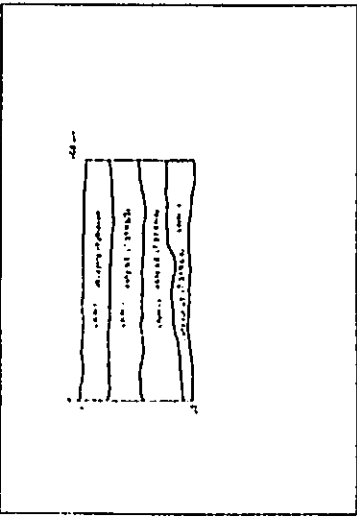


Figure A29 - West wall profile of TU 2.



Photo 39 - Site 4710 - Feature D to left - Feature C to right of PVC pipe.



Photo 40 - Site 4710 - Feature E - looking south.

Feature D

Type: enclosure remnant
Dimensions: 4.6 meters in length
Function: part of possible ceremonial complex
Subsurface potential: moderate
Integrity: altered by cane field activity
Condition: fair
Tested: no
Estimated age: precontact
Portable remains: none observed

Comments: This small oval-shaped enclosure has crudely stacked and collapsing walls made up of boulders averaging 0.4 meters in size. The SSE wall is apparently shared with Feature C. A 4" plastic water pipe passes directly over this central wall. The ENE end of the enclosure is filled with dirt from the dozer push.

Feature E

Type: rock alignment
Dimensions: 2.1 meters in length by 1.5 meters wide by 0.3 meters maximum height
Function: possible burial
Subsurface potential: good
Integrity: unaltered
Condition: good
Tested: no
Estimated age: precontact
Portable remains: none observed

Comments: This is a small, roughly oval-shaped rock ring alignment of cobbles and pebbles. This feature is located directly adjacent to the NNW side of Feature A.

Feature F

Type: terrace
Dimensions: 4.0 meters N-S by 1.7 meters E-W by 0.6 meters maximum wall height
Function: habitation, agriculture
Subsurface potential: moderate
Integrity: unaltered
Condition: fair
Tested: no
Estimated age: precontact
Portable remains: none observed

Comments: This is a crude terrace created by a stacked retaining wall, 2 to 4 courses high. The terraced level area is strewn with boulders and cobbles. This terrace appears to be connected to the boulder alignment on the WSW side of Feature A. A less defined small rock pile is 2.0 meters off the south end of the retaining wall.

Feature G

Type: terrace
Dimensions: 2.0 meters N-S by 2.4 meters E-W by 0.35 meters maximum height
Function: possible agriculture
Subsurface potential: moderate
Integrity: unaltered
Condition: good
Tested: no
Estimated age: precontact
Portable remains: none observed

Comments: This is a small, circular terrace created by a boulder alignment which curves around the front (west side) of the feature forming the retaining wall. The terraces are c. 2.5 square meters in area, and level. A crude rock pile and a large boulder form the east or upslope edge of the feature.

Site [17] 50-50-08-4711

Features A and B

Site type: complex with rock alignment and terrace
Environmental setting: Located on a gradually sloping rock terrain in the northeastern-most corner of the property. Primary flora is *Kiawe* scrub with patchy buffelgrass.
Dimensions: 16 meters N-S by 6 meters E-W
Subsurface potential: good
Integrity: unaltered
Condition: good
Tested: no
Estimated age: possible precontact
Portable remains: 1 piece coral, 1 cone shell

Comments: This site is located in the northwestern-most corner of the project area. It consists of a linear rock pile with a piece of coral on Feature A. This feature lies c. 5 meters inside the property boundary. Feature B, a small terrace, is c. 9 meters north of Feature A, just outside the project boundary. A possible section of modified outcrop is located between the features.

Feature A

Type: linear rock alignment
Dimensions: 5.5 meters by 2.0 meters by 0.6 meters maximum height
Function: undetermined
Subsurface potential: low
Integrity: unaltered
Condition: poor
Estimated age: probable precontact

Portable remains: 1 conus shell found 18 meters SW of feature; 1 coral chunk on middle of feature.

Comments: This rock alignment is made up of boulders and cobbles, and runs in a NW-SE direction. There are 2 possibly modified outcrops on the mauka side.

Feature B

Type: terrace
 Dimensions: 3.2 meters by 3.5 meters by 0.5 meters high
 Function: possibly agriculture
 Subsurface potential: good
 Integrity: unaltered
 Condition: moderate to good
 Estimated age: precontact
 Portable remains: none observed

Comments: This is a poorly constructed, boulder faced and cobble filled feature. A flattened level area is about 6 square meters in area. A fair amount of soil is present, suggesting the possibility that this was a dry agriculture feature.

Site [18] 50-50-08-4712

Features A and B

Site type: terrace and rock pile

Environmental setting: Located on the SW slope of Pu'u Kilea, 35 meters SW of the summit benchmark. Flora is buffelgrass.

Dimensions: 30 meters NE-SW x 6 meters NW-SE

Function: unknown

Subsurface potential: moderate

Tested: no

Integrity: altered—dozer-cut road leading to summit of Pu'u Kilea may have destroyed related features.

Condition: fair

Estimated age: possible precontact

Portable remains: 2 basalt flakes, a few waterworn pebbles, 1 waterworn boulder and 1 cobble

Comments: The site consists of a terrace-like feature, with a crude retaining wall which runs downslope (Feature A). Feature B is a crude rock pile directly below. Above this site, at the edge of the dozer cut road that ascends Pu'u Kilea, is a concentration of cinder rubble with numerous waterworn pebbles, cobbles and coral pieces. It appears that another feature was extensively disturbed during road construction.

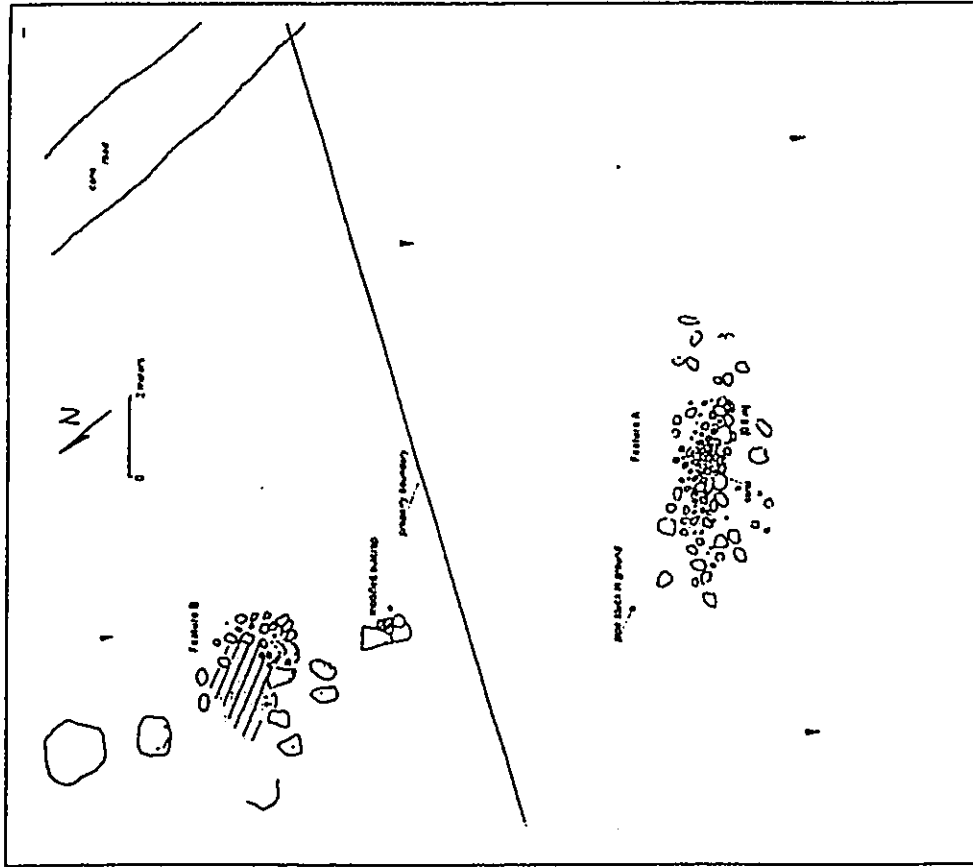
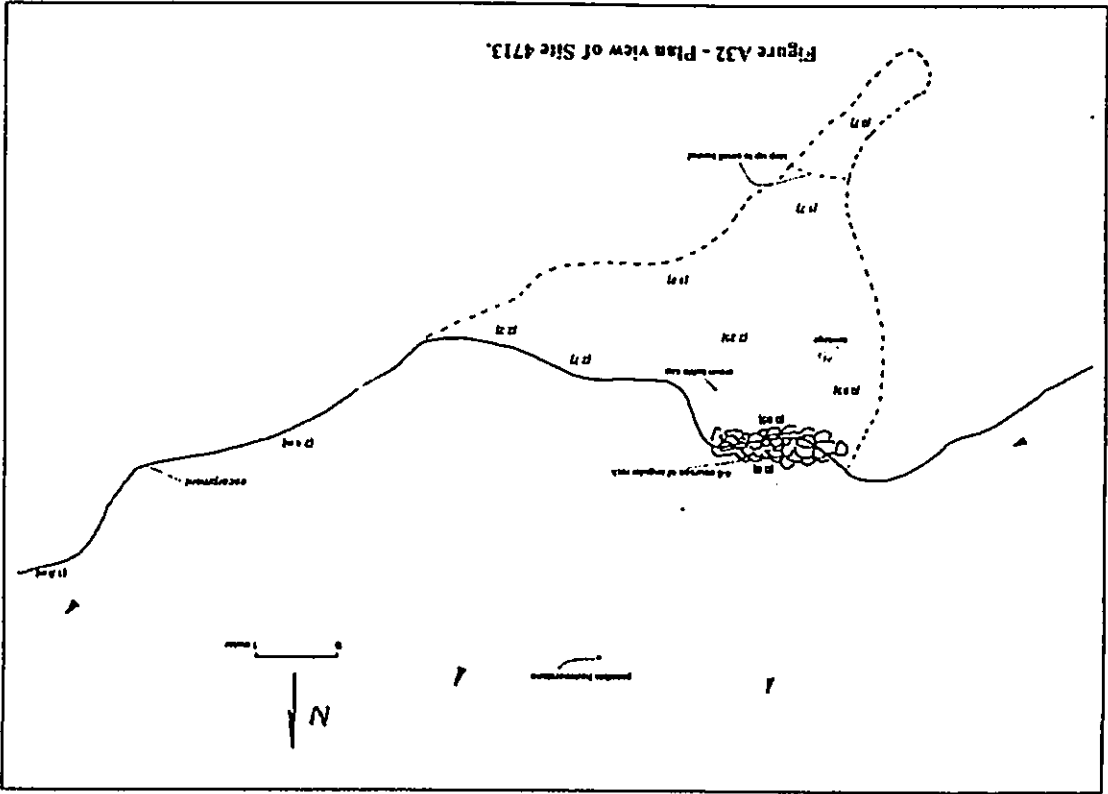
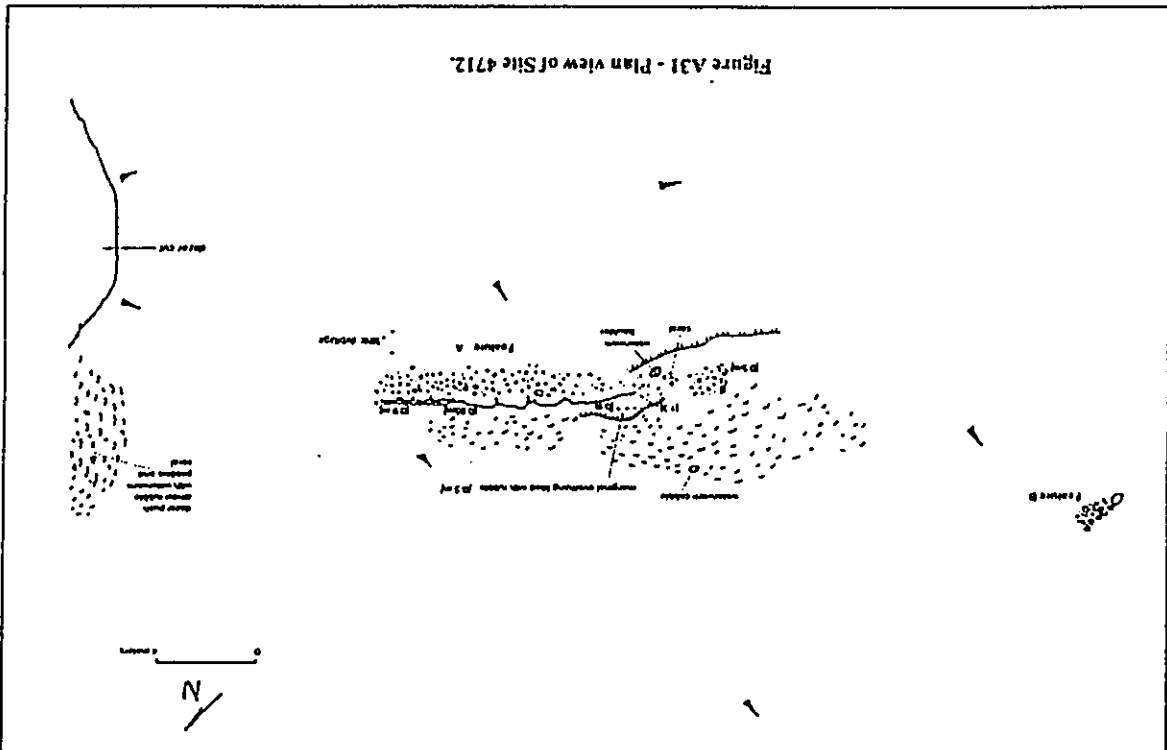


Figure A30 — Plan view of Site 4711.



72



71

Feature A
 Type: modified outcrop/terrace
 Dimensions: 14 meters NE-SW by 3.0 meters NW-SE by 1.3 meters high.
 Function: unknown
 Subsurface potential: good
 Integrity: unaltered
 Condition: good
 Estimated age: precontact
 Portable remains: lithic debris, waterworn pebbles and cobbles

Comments: This feature consists of a low linear outcrop of weathered cinder that has apparently been modified by piling cinder cobbles and gravel along with several waterworn pebbles and cobbles on top of it. The outcrop runs diagonally down the west flank of Pu'u Kilea. A small paved cinder and gravel area c. 1 by 1 meter square, occurs at the SW end of the feature. A small overhang is adjacent at the base of the outcrop. The overhang is nearly completely filled with cinder cobbles. It was not possible to determine if it was intentionally filled.

Feature B
 Type: rock pile
 Dimensions: 1.8 meters N-S by 0.8 meters E-W by 0.6 meters high
 Function: possible burial
 Subsurface potential: moderate to high
 Integrity: unaltered
 Condition: good
 Estimated age: possible precontact
 Portable remains: 1 waterworn cobble

Comments: This is a crude, low pile of cinder rock, roughly oval in shape. A single waterworn cobble sits on top.

Site [19] 50-50-08-4713
 Site type: single component—rock shelter
 Environmental setting: Located on the NE slope of Pu'u Kilea, approximately 85 meters NE of the summit. Primary flora is bulielgrass.
 Dimensions: 6.0 meters in length by 3.5 meters deep with 2.4 maximum ceiling height
 Function: temporary habitation
 Subsurface potential: good to excellent
 Integrity: unaltered
 Condition: good
 Tested: no
 Estimated age: precontact, with later post-contact use
 Portable remains: 1 crown bottle cap (rusted), small amount of old cordage, 1 hammerstone and 1 waterworn pebble. Charcoal is common on the floor.



Photo 41 - Site 4713—rock shelter.

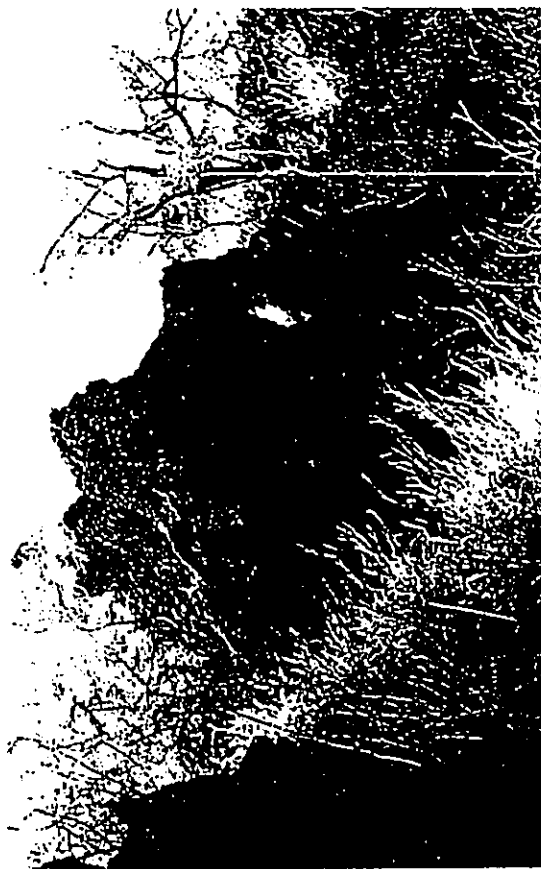


Photo 42 - Site 4714—rock shelter.

Comments: This roomy shelter has a small stacked rock wall blocking the lowest portion of the dripline opening. The wall measures 1.65 meters in length by 0.5 meters wide by 0.85 meters high (from floor to dripline), and has 4-6 courses of rock. The possible hammerstone sits 3.6 meters downslope from the shelter entrance. The shelter is located on the NE side of Pu'u Kilea, half-way up the slope. A narrow tunnel-like niche extends back an additional 2.2 meters from the back of the shelter.

Site [20] 50-50-08-4714

Site type: single component—rock shelter

Environmental setting: Located on the NW slope of Pu'u Kilea, 30 meters downslope NW of the summit. Primary flora is buffelgrass.

Dimensions: 2.0 meters NE-SW by 2.4 meters deep by 0.7 meters maximum ceiling height

Function: possible temporary habitation.

Subsurface potential: limited

Tested: no

Integrity: unaltered

Condition: good

Estimated age: probable precontact

Portable remains: 1 cracked waterworn pebble

Comments: The entrance to this shelter is very restricted as is the space within. The potential shelter is located the vertical escarpment on the NW side of Pu'u Kilea, c. 30 meters NW of the summit.

Site [21] 50-50-08-4715

Site type: Pu'u Kilea complex—burial mounds, platforms and markers

Environmental setting: This complex lies at the summit of Pu'u Kilea, and gradually slopes off to the east. Primary flora is buffelgrass dotted with *Kiawe* scrub.

Dimensions: 38 meters NE-SW by 20 meters NW-SE

Function: cemetery—burial ground

Tested: no

Integrity: unaltered

Condition: good

Estimated age: precontact and post-contact

Portable remains: broken glass, milled lumber, lithics, metal cans. *Iel* offerings, waterworn pebbles, cobbles and boulders, coral.

Comments: This burial area lies to the east of the graded and leveled parking area, on the summit of Pu'u Kilea. Some of the features are simply oval-shaped depressions, indicating a probable coffin burial. Other are small terraces or oval-shaped rock arrangements. It appears that as many as 33 separate graves may be present, judging from the number of terraced plots, oval rock arrangements, and depressions. It is also possible that some of the burials may contain more than one individual. The western-most rock pile is roughly rectangular in shape and 1.2 meters in height, and has a waterworn boulder on top. The summit is enclosed by a smooth-wire fence attached to old railroad ties which are used as posts. This fence crosses the Kilea benchmark near the southwest corner.

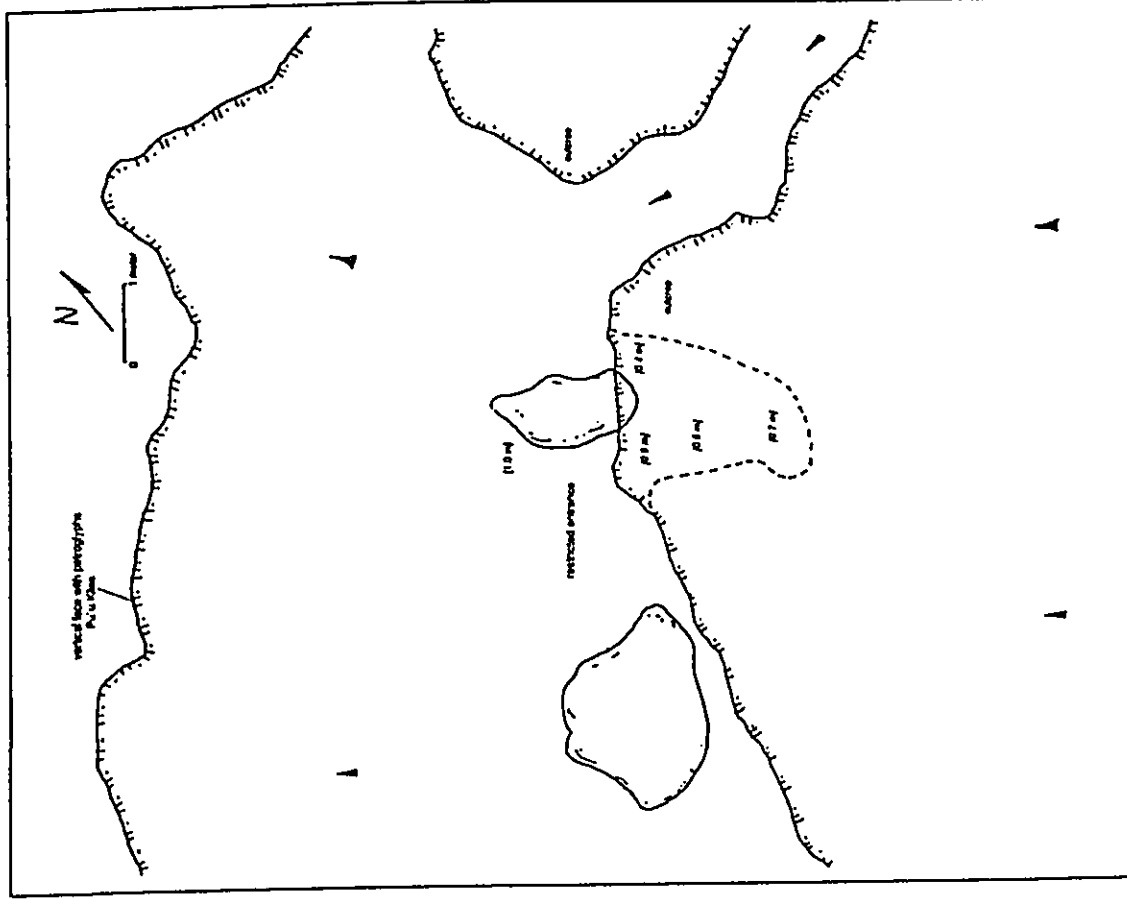


Figure A33 - Plan view of Site 4714.



Photo 43 - Site 4715—Pu'u Kileu burial ground—looking north.



Photo 44 - Site 4715—burial mound nearest parking area.

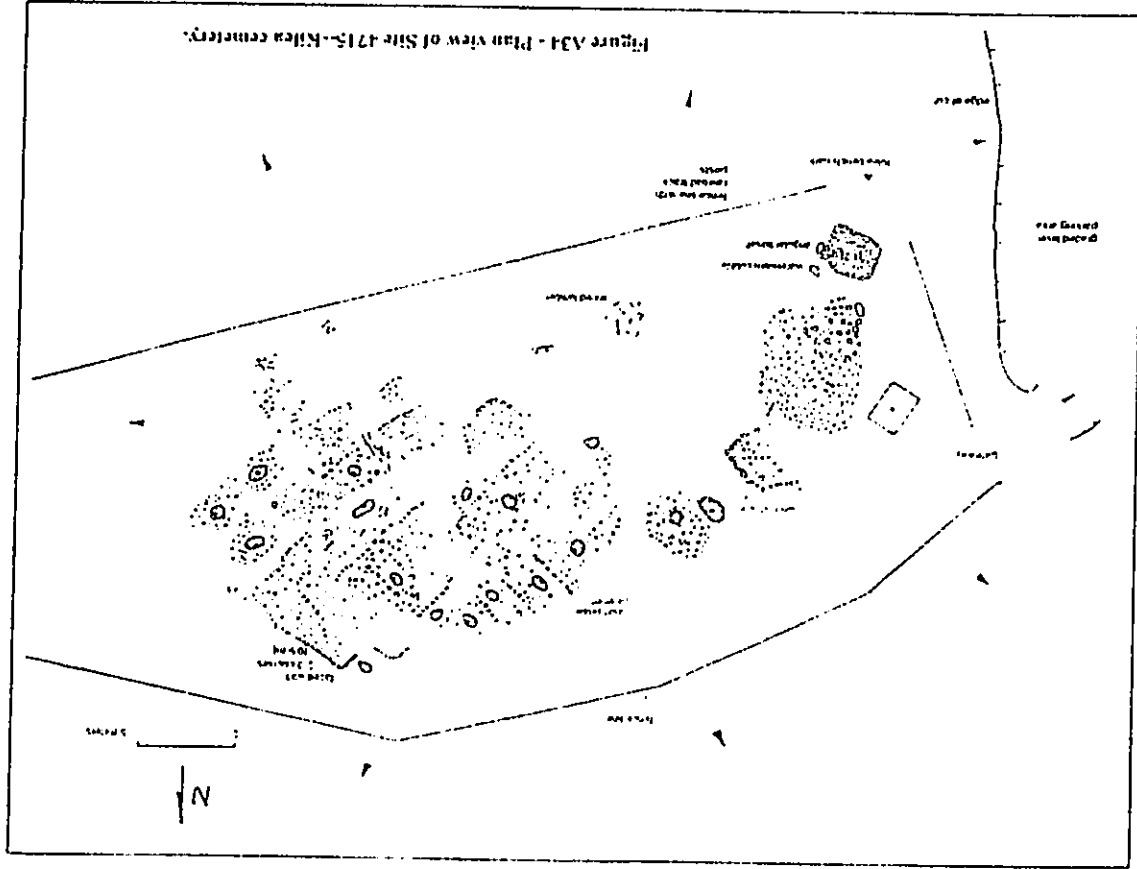


Figure A34 - Plan view of Site 4715—Kileu cemetery.



Photo 47 - Site 4715—view of terrace which coral and pebble pavement.



Photo 48 - Site 4715—rock mound with dried mangle leaf offering.



Photo 45 - Site 4715—burial mound with coral offering.



Photo 46 - Site 4715—manka terraces/platforms on southeastern side.

Site [22] 50-50-08-4716

Features A and B

Site type: complex—terrace and rock wall
Environmental setting: Located on the steep slope of the Olowalu Stream drainage system, 30 meters NE of the base of Pu'u Kilea, and 25 meters south of Olowalu Stream. Flora is buffelgrass and *kiawe*.

Dimensions: 22 meters N-S by 22.5 meters E-W

Function: boundary marker, habitation

Subsurface potential: good

Tested: no

Integrity: altered, possibly by cane field operations

Condition: fair

Estimated age: precontact to post-contact

Portable remains: marine shell, *kuku*, lithic debris, unidentified, non-human skeletal fragments, glass fragments, milled lumber, hoe blade

Comments: This site is located on the steep slope of the Olowalu Stream drainage system with the wall (Feature B) descending N-S straight down the slope. Feature A is a potential habitation terrace that sits halfway down the slope, 14 meters west of the middle of the wall.

Feature A

Type: terrace/platform

Dimensions: 5 meters E-W by 3.5 meters N-S by 2.3 meters maximum wall height

Function: habitation

Subsurface potential: good

Integrity: unaltered

Condition: good

Estimated age: precontact

Portable remains: *kuku* nut fragment, 1 weathered mammal long bone, 2 small basalt flakes, 1 marine shell fragment—all associated with terrace/platform. Historic materials include a tin can, bottle glass fragment, timber, metal—which may be attributed to slope wash onto feature.

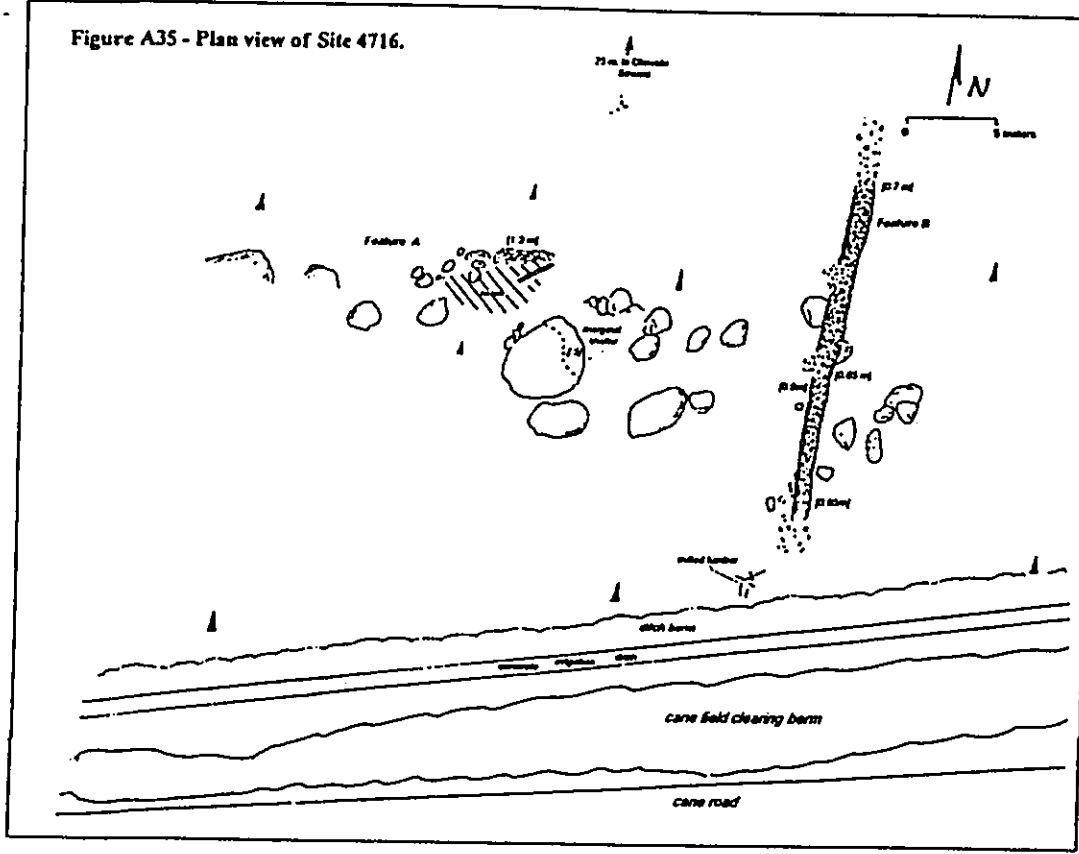
Comments: This is a small terrace with a stacked, faced retaining wall built of boulders averaging c. 0.75 meters in size. The level area created is c. 10 square meters, and is likely diminished in size due to erosion. Angular pebbles and cobbles are scattered across the surface. The artifacts noted are all eroding out of and at the base of the retaining wall. There is a large boulder with marginal overhang beneath it, adjacent to the SE. Olowalu Stream lies c. 32 meters to the north.

Feature B

Type: rock wall

Dimensions: 22.0 meters by 1.0 meter by 1.0 meter in height

Function: boundary marker/land divider



Subsurface potential: low
Integrity: altered
Condition: fair to good—some collapse
Estimated age: possible precontact
Portable remains: metal can, hoe, fist-sized chunk of weathered coral

Comments: The upper portion of this wall is disturbed by irrigation ditch construction along a steep incline of 30 degrees or so. The lower portion of the wall is core-filled. Feature A lies c. 14 meters to the west and may be contemporaneous.

Site [23] 50-50-08-4717

Features A through E

Site type: complex of retaining walls
Environmental setting: These features are located along the Olowalu Stream bank. Vegetation includes *Kiwi* and *Kiawe* trees, *koa haole*, and buffelgrass.
Function: flood protection, stream diversion
Subsurface potential: limited
Tested: no
Integrity: unaltered
Condition: good to poor
Estimated age: early 20th century
Portable remains: post-contact materials

Feature A

Type: retaining wall
Dimensions: 15 meters NE-SW by 2.6 meters high, with 4.0 meter wide level area on top
Function: flood control
Subsurface potential: minimal
Integrity: unaltered
Condition: good
Estimated age: post-contact—plantation era

Comments: At either end of this wall is evidence of dozer push and sloping rubble. The retaining wall is made up of 5 to 6 courses of rock, and creates a terrace area 3-4 meters wide. A concrete ditch runs along the back edge of the terrace area. The ditch emerges from the ground and water flows in it at this point.

Feature B

Type: retaining wall
Dimensions: 25 meters E-W by 2.9 meters maximum height, by 2.5 meters terrace width
Function: flood control
Subsurface potential: minimal
Integrity: altered
Condition: fair

Estimated age: post-contact—plantation era
Portable remains: milled lumber

Comments: This is a well-built dry laid rock retaining wall within the Olowalu Stream drainage system. The wall curves along the stream's cut bank and was undermined at the west end where it has collapsed. A level terrace area 2.5 meters wide is created by the retaining wall, which is made up of 10 to 12 courses of rock. The eastern end of the feature disappears beneath a huge dozer push pile that was evidently created sometime after this wall was made. The push pile parallels the stream bed, also along the length of the terrace areas-north edge.

Feature C

Type: retaining wall
Dimensions: 20.5 meters NE-SW by 2.7 meters NW-SE by 0.9 meters maximum height
Function: flood control
Subsurface potential: limited
Integrity: altered
Condition: fair
Estimated age: probable post-contact
Portable remains: recent galvanized barbed wire (not incorporated into wall)

Comments: This is a stacked rock wall section near the edge of the Olowalu Stream cut bank, directly across (NW) from the Pu'u Kilea petroglyph panel. The wall is faced, 3 to 5 courses along most of its length on the stream side only. It is crudely piled or collapsed at either end and along the entire length on the other side. There are large *kiu* trees, mixed with *koa haole*.

Feature D

Type: retaining wall
Dimensions: 51.0 meters NE-SW by 3.3 meters wide by 1.3 meters maximum height
Function: flood control
Subsurface potential: low
Integrity: unaltered
Condition: good
Estimated age: post-contact—plantation era

Comments: This is well-built section of wall, 3 to 5 courses high, running along the SE side of Olowalu Stream. It is faced on the stream side only. The face slopes back c. 15 degrees. The opposite side of the wall is sloping rubble. The top is somewhat level and has a higher concentration of cobbles. The retaining wall face utilizes boulders up to 1.2 meters across, with the average size being 0.4 meters in diameter. The wall has been undermined and disappears at the stream's cut bank at either end.



Photo 49 - Site 4717—Feature A—plantation era retaining wall segment.

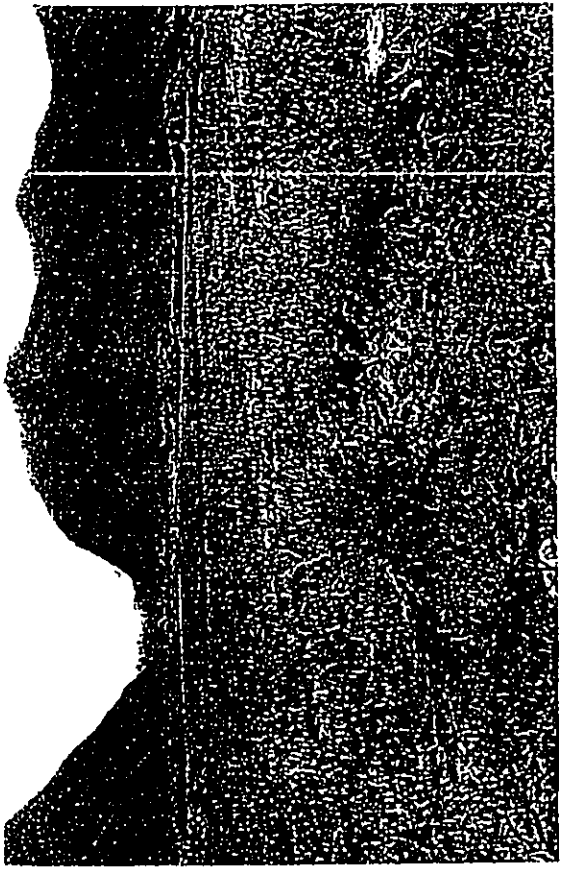


Photo 50 - Site 4718—Walker's unnamed feature prior to clearing.

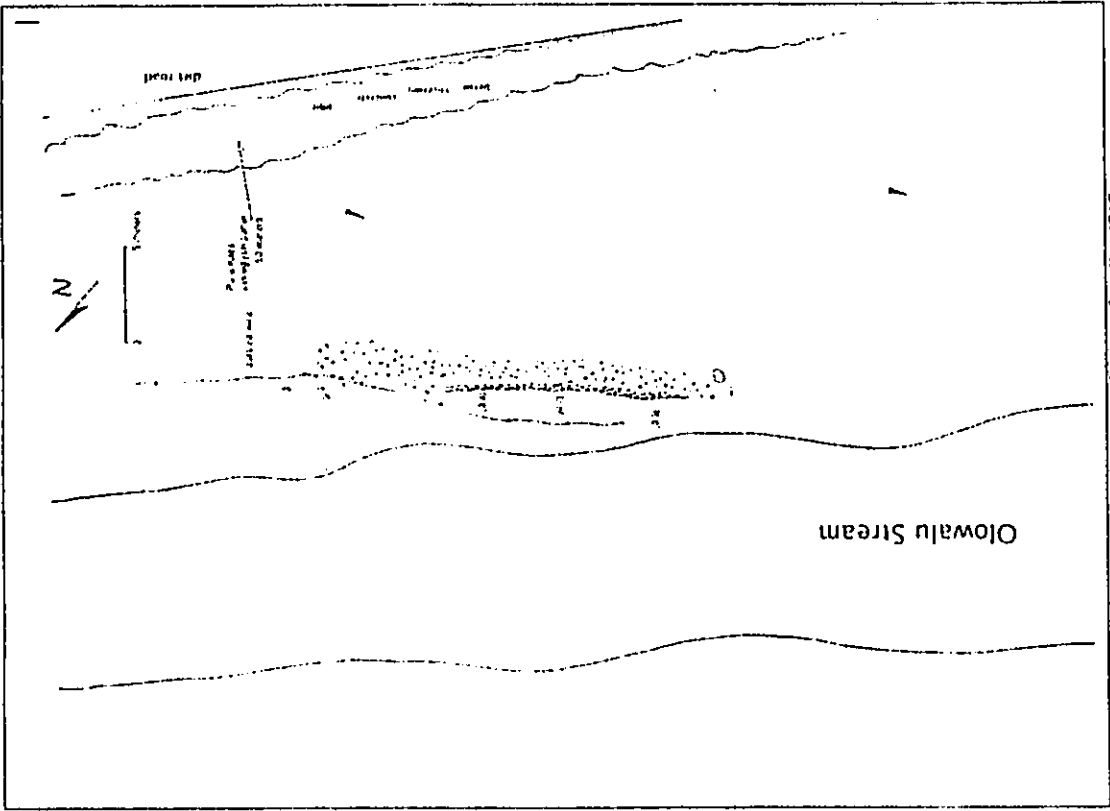


Figure A36 - Plan view of Feature C—Site 4717.

Feature E
 Type: retaining wall
 Dimensions: 12.0 meters E-W by 1.8 meters maximum height by 3.0 meters terraced area
 Function: flood control
 Subsurface potential: low
 Integrity: altered
 Condition: fair
 Estimated age: post-contact—plantation era

Comments: This is a short section of retaining wall which parallels Olowalu Stream on the SE side. The wall appears to have been impacted by water diversion on the east end and by stream undercutting on the west end. There is a probable bulldozer pushed berm of large boulders between the stream and the retaining wall. This feature may have been part of Features C and D, which would have formed a continuous retaining wall.

Site [24] 50-50-08-4718

Features A through C

Site type: complex—*heiau* remnant

Environmental setting: This site is located in a cane field, in the central portion of the project area. The feature sits at 80 feet elevation AMSL, directly adjacent to and upslope (NE), of a large field rock clear pile.

Dimensions: 21 meters NE-SW by 12 meters NW-SE by 0.7 meters maximum wall height.

Function: ceremonial/burial area/recent burial reinterment site

Subsurface potential: excellent

Tested: no

Integrity: altered—partly covered by cane field operations

Condition: fair to poor

Estimated age: precontact with post-contact activity

Portable remains: marine shell, volcanic glass flakes, basalt debris, coral chunks

Comments: The original shape and size of this feature could not be ascertained due to the extensive damage from cane field operations. Most of the outside edges of the feature are either covered with bulldozed push-piles of earth and boulders, or have been partially displaced. Intact portions include 1 stacked, faced inner wall section, 0.7 meters high. The interior is divided by linear rock alignment retaining walls with paved, slightly raised areas leaving pathways devoid of rock. One such pathway leads in from a possibly intact entrance on the SW side. A room, of sorts, exists in the NE end of the feature with 2 small, roughly rectangular rock alignments with inner pavement, 2 to 3 meters in length. These subfeatures are similar to those observed on the summit of Pu'u Kilea, that are known burial features. An artifact concentration exists in this northeastern enclosure, a 5 square meter area that has most of the portable remains mentioned above.

This site is interpreted to be the unnamed *heiau* mentioned by Walker in his discussion of the larger *heiau*, Kawai'aloa (Site 4), which was said to have been located in the cane fields below. The unnamed *heiau* was not relocated during the 1973 survey, possibly because it is partially covered by a large pile of boulders and cobbles, and was likely heavily vegetated.

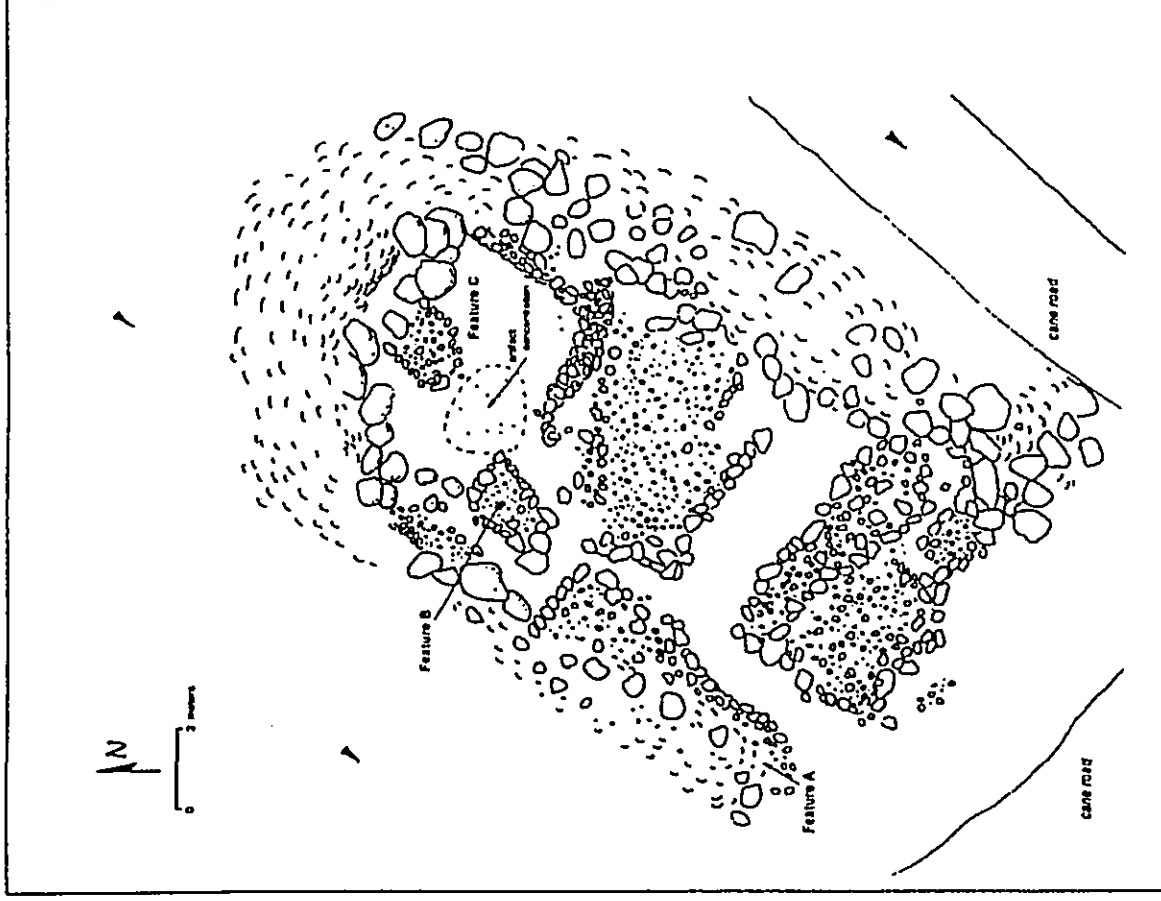


Figure A37 - Plan view of Site 4718—*heiau* remnant.



Photo 53 - Site 4718 in foreground—Olowalu Valley in background.



Photo 54 - Site 4719—historic boundary marker.

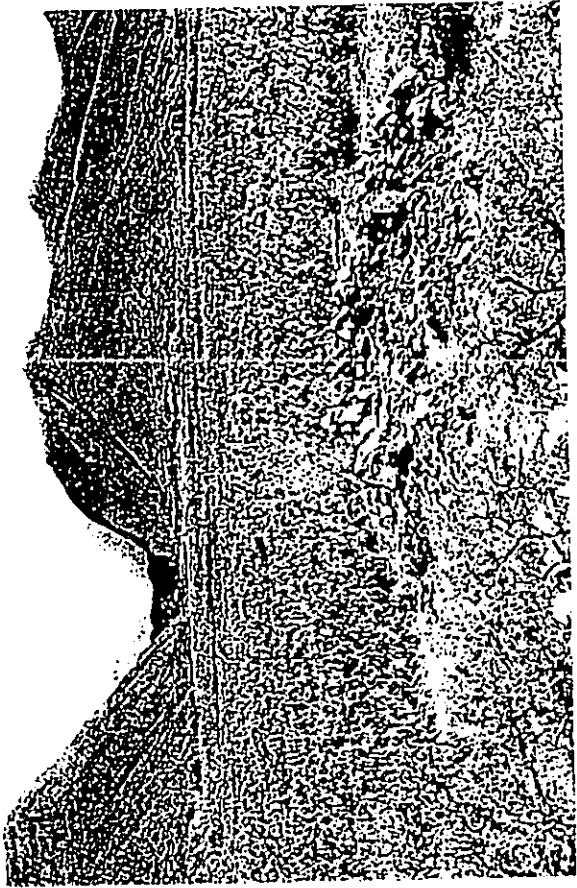


Photo 51 - Site 4718—*heiau* remnant after vegetation was cleared away.



Photo 52 - Site 4718—view of *heiau*—looking east.

Feature A
 Type: *heiau* remnant—wall alignment
 Dimensions: 21.0 meters NE-SW by 12.0 meters NW-SE by 0.7 meters maximum wall height

Function: ceremonial/burial area
 Subsurface potential: excellent
 Integrity: altered
 Condition: poor
 Portable remains: marine shell, volcanic glass, basalt debris and coral

Feature B

Type: probable burial
 Dimensions: 3.0 meters NE-SW by 1.6 meters NW-SE by 0.35 meters maximum height
 Function: burial marker
 Subsurface potential: excellent
 Integrity: unaltered
 Condition: good
 Estimated age: precontact

Comments: This small subfeature sits in the northeastern section of Feature A. The feature consists of a rectangular arrangement of semi-rounded cobbles and boulders, with an inner pavement of smaller cobbles and pebbles. The long axis is in the same orientation as Feature C.

Feature C

Type: probable burial
 Dimensions: 2.0 meters NE-SW by 1.75 meters NW-SE by 0.3 meters maximum height
 Function: probable burial marker
 Subsurface potential: excellent
 Integrity: altered—cane field rocks cover the NE end of feature
 Condition: good
 Estimated age: precontact, with post-contact modification

Comments: This small feature sits at the northeastern end of the interior of the *heiau* remnant—Feature A. The feature consists of a roughly rectangular alignment of semi-rounded cobbles and boulders with inner pavement of cobbles and pebbles.

Site [25] 50-50-08-4719

Site type: single component—rock wall

Environmental setting: Located at the far eastern corner of the project area at the northern extent of the cane field. Flora consists of mature *kiawe* trees and buffelgrass.

Dimensions: 8.0 meters NW-SE by 0.8 meters wide by 0.9 meters maximum height
 Function: boundary marker
 Subsurface potential: minimal
 Tested: no
 Integrity: altered by cane field operations

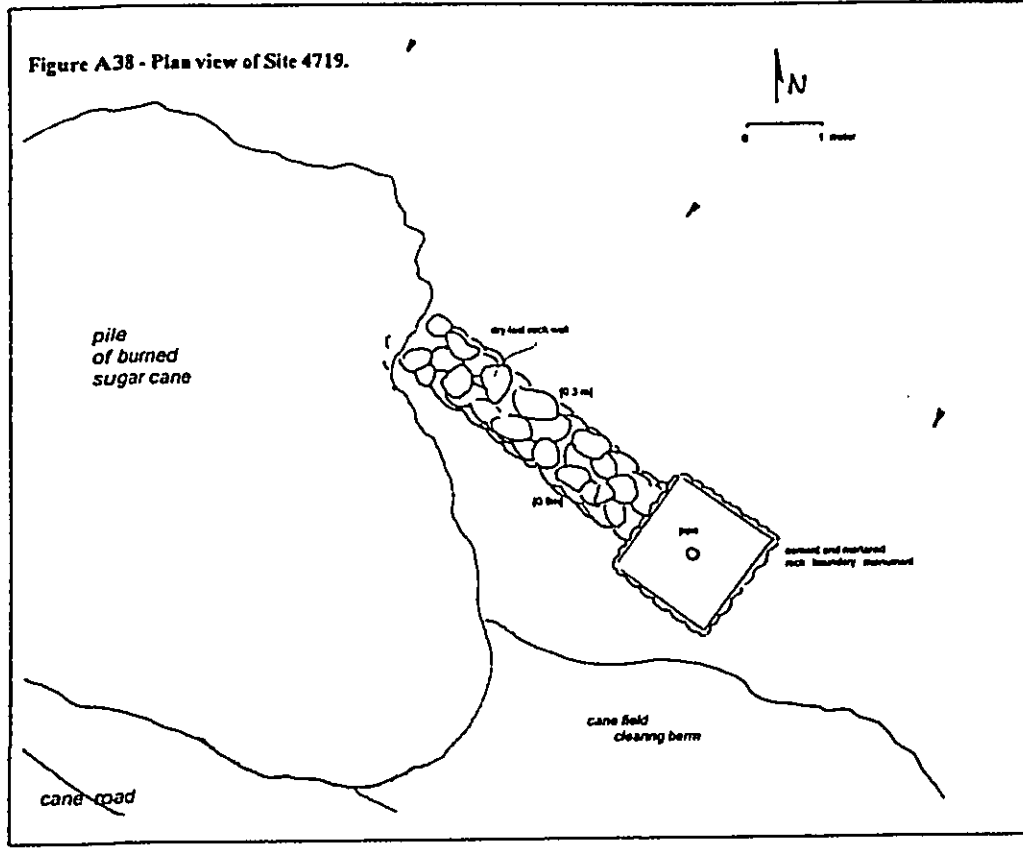




Photo 55 - Site 4720—historic road remnant.



Photo 56 - Site 4755—Japanese cemetery—following burning.

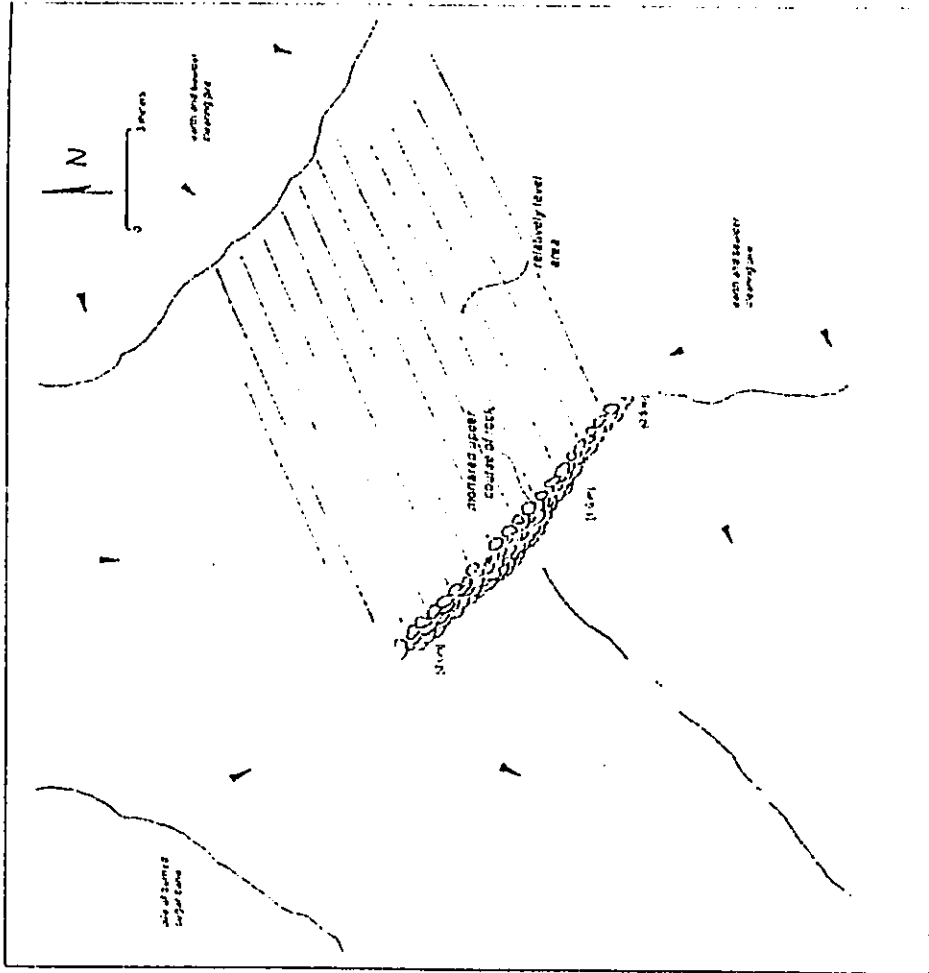


Figure A39 - Plan view of Site 4720.



Photo 57 - Site 4758—gravestones prior to burning.

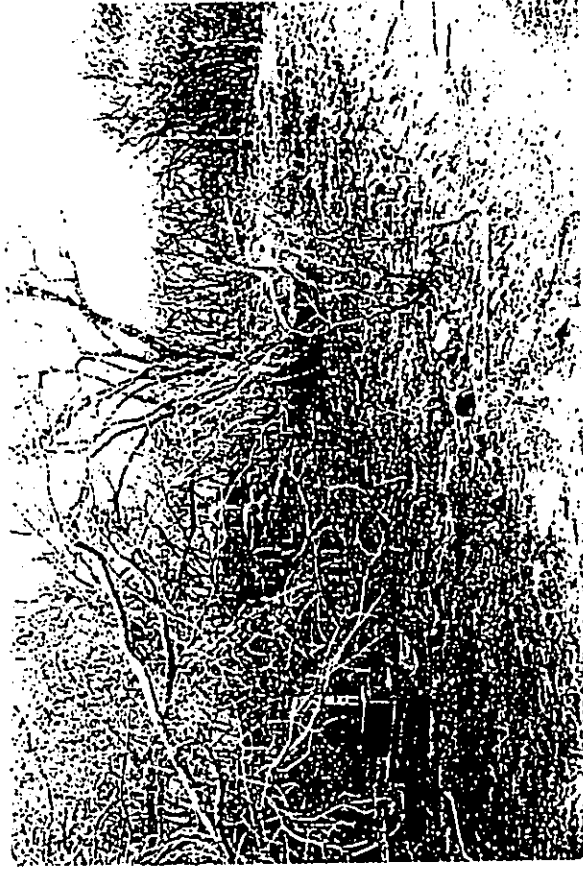


Photo 58 - Site 4758—cemetery following burning of underbrush.

Condition: poor
 Estimated age: post-contact—plantation era
 Portable remains: none observed

Comments: This short section of wall has been tied into the property corner monument which is made of boulders and mortar. The wall is dry-laid, stacked and faced, and has 2 to 3 courses of boulders averaging 0.4 cm. in diameter. The wall runs c. 315 degrees off the monument. The wall section may predate the monument. This site is partially covered by a burned cane pile.

Site [26] 50-50-08-4720

Site type: single component—retaining wall
 Environmental setting: Located in the eastern portion of the project area in a small drainage system at the NE boundary of the property, on the northern edge of a cane field.
 The flora consists of mature *katia* trees and buffelgrass
 Dimensions: 9.0 meters long by 9.5 meters wide by 1.6 meters maximum height
 Function: road grade across drainage area
 Subsurface potential: minimal

Tested: no
 Integrity: altered by cane operations
 Condition: good
 Estimated age: post-contact—plantation era
 Portable remains: none

Comments: This is a well-built retaining wall, made of waterworn boulders that are dry-laid, 5 to 6 courses high. The upper course is mortared with waterworn pebbles and coral for aggregate. The retaining wall crosses an intermittent stream and creates a relatively level area that extends 9 meters back to a large clearing berm that post-dates the feature.

Site 50-50-08-4758

Site Type: Historic cemetery
 Environmental setting: Located on the edge of a cane field. Overstory of *katia* trees, with buffelgrass ground cover mixed with *katia*.
 Dimensions: c. 80 meters east-west by 30 meters north-south
 Condition: Fair—recent burn-over charred wooden markers. Some head stones have been displaced in the past—others remain upright. One grave appears to be visited regularly, as fresh flowers were present.

Estimated age: Early 1900s to c. 1938
 Portable remains: scattered bottles, metal cans, vases—which probably held flowers or offerings at one time

Comments: With the exception of the attention being given to the grave of Ralph H. Fujishiro (May 29, 1925 - January 31, 1938), the other graves did not appear to be visited. The cemetery was overgrown with buffelgrass and *katia* trees. Fire from the adjacent sugarcane field burn swept over the cemetery sometime in early May 1999, exposing the tombstones, and damaging some of the wooden markers.

Site [27] 50-50-10-04

Site type: known *heiau*—Kawaihoa
 Environmental setting: On rising ground south of Pu'u Kilea at c. 250 feet elevation AMSL. Flora consists of buffelgrass, young *kiawe* trees, and common *koa haole*.
 Dimensions: 51 meters long by 32 meters in width
 Function: ceremonial
 Subsurface potential: excellent
 Tested: no
 Integrity: unaltered for the most part
 Condition: good to very good
 Estimated age: precontact

Comments: This is a large walled *heiau* in remarkably good condition, considering it is surrounded on 3 sides by cane roads, and an active cane field on the *makai* side. The walls range in thickness from 2.6 meters on the west side to 3.8 meters on the south and east, where it is composed of 2 terraces. The north wall is lower and ranges from 1.5 to 2.5 meters thick. Several low terraces and enclosures are identifiable inside. The low platforms in the western part are probably graves. The *heiau* is constructed of rough red vesicular rock.

This site was recorded by Winakow Walker during his 1929-1930 inventory of ceremonial structures on Maui. It is considered to be the most culturally significant indigenous site on the survey property.

Site [28] 50-50-08-4721

Site type: single component—platform
 Environmental setting: Located 600 feet west of Olowatu Stream, directly above the northern extend of the cane field. Flora consists of *kiawe* and *koa* trees, buffelgrass, and various alien vines.
 Dimensions: 7.25 meters N-S by 4.75 meters E-W
 Function: probable habitation
 Subsurface potential: good
 Tested: no
 Integrity: altered
 Condition: fair
 Estimated age: post-contact
 Portable remains: 1 white earthenware plate fragment, 1 olive green glass fragment, 1 piece of milled lumber

Comments: This is a small rectangular platform with a level area of c. 31 square meters. A faced retaining wall runs along the west side. The south and east sides are made of earth. The north edge meets the base of an earth berm created during the excavation of a currently active concrete lined water ditch up the slope. The platform is built on a gradual sloping area 7 meters up from the edge of a cane field. Large boulders and an earthen berm are at the south edge of the feature. A small rubble pile occurs at the SE corner of the platform.

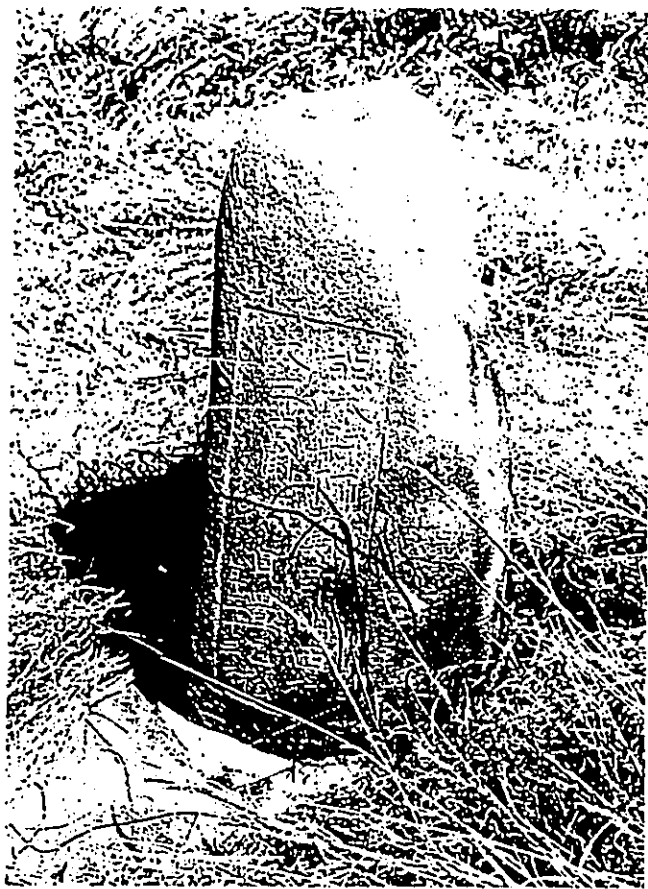


Photo 59 - Site 4758—engraved headstone.



Photo 60 - Site 4758—charred wooden grave marker.

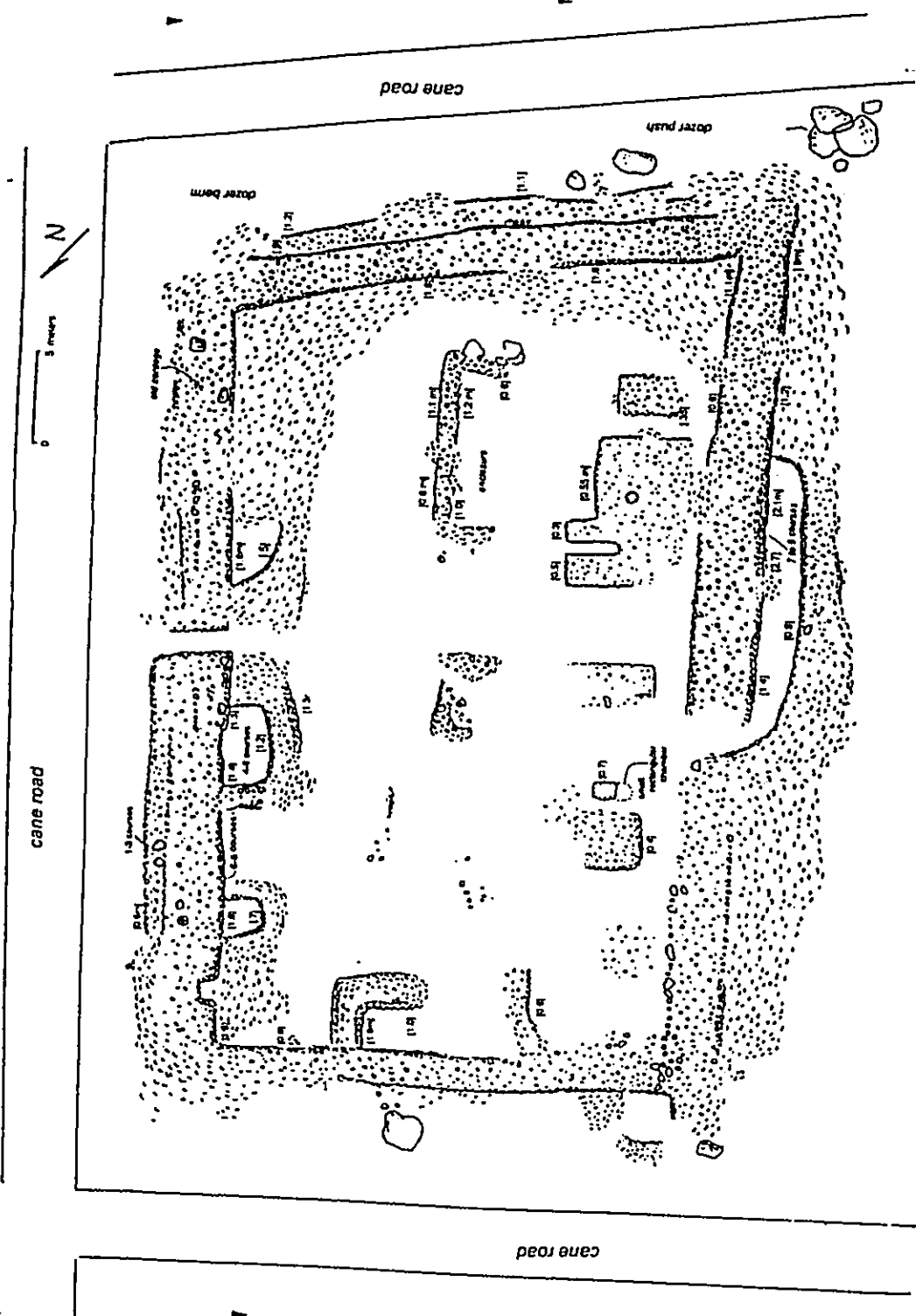


Figure A40 - Plan view of Site 04—Kawalaha Heiau.

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Photo 63 - Site 04—south side of east wall.



Photo 64 - Site 04—north wall.



Photo 61 - Site 04—Kawaialoa heiau—east wall.

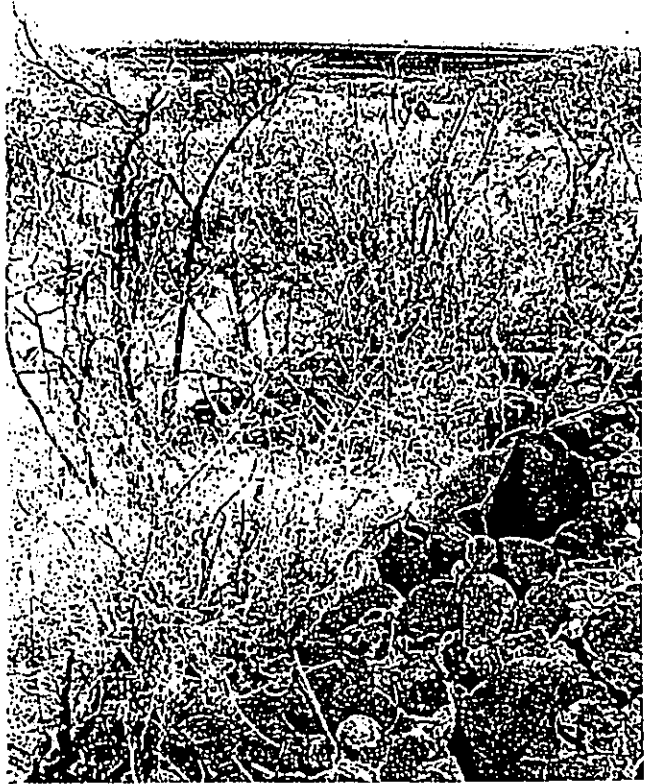


Photo 62 - Site 04—Kawaialoa heiau—west wall.

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Site 50-50-08-1603

While this site is technically excluded from study parcel, informants indicated that the church property had been more extensive in the past. There was concern that graves of church members might be present in the adjacent cane fields. For this reason, we undertook a series of backhoe trench tests in this area. Backhoe Trench 164 located an unmarked casket burial quite near the old church ruins (Figure 5), which vindicated their concern.

The following excerpts are from letters archived in the Mission Houses Museum Library, Honolulu, copies of which were present in the Olowalu Church files, which provide information on the church property. They were provided to Xamanek Researches by Ms. Adeline Rodrigues.

1) From E. E. Pleasant to H. P. Judd, February 4, 1929:

"I am inclosing [sic.] a map of the Olowalu district showing the church lot. We suspect that this lot is still owned by the government in the same way as was the Kaupaa Church lot. I spoke to Garcia, our local land man here about it and he suggested that I take it up with you and proceed as in the case of the Kaupaa Church. Will you look up the title and see if they have any sort of description from which a deed could be drawn? We are looking up the historical data, to show that this property has been used all along for church purposes. They continue to use the old church building although it is almost entirely minus a roof now. We want to get the deed to the land, and then the people there will consider the repair of the old building or removal to some other site and the making of an exchange.

2) From E. E. Pleasant to H. P. Judd, April 19, 1929.

"I saw Mr. Garcia of the Land office here yesterday. He was over at Olowalu two days ago and secured from Mr. Wm. Hoopii the data about the use of the old church and its past history. He also talked with Hanneberg, Manager of the Plantation and learned that he seems to have it in for Mr. Hoopii. He says that the plantation has always, at least for quite a number of years, used probably half or more of this church lot for cane. It is in cane now. Mr. Hanneberg said that their deed calls for all this land except two acres of the church land and he wants the church to take their two acres from the church out to the road in front. This would not include any of the land where they have cane.

Now it seems to me that the church is entitled to a deed to the two acres as laid out in the map for this was the exact boundary of the lot as originally set aside long ago under the Hawaiian government 'for Church and school land.' We have used the house of worship continuously, as the history will show. Let the deed issue to the church (or to the Board as trustee) according to the map and

then we can negotiate an exchange with the plantation or make an agreement for rental.

I told the church that we ought to get our title to the land first in the shape of a deed and then we could take up the matter of deciding whether to repair the old church or build a new one nearer to the center...."

3) From E. E. Pleasant to H. P. Judd, January 11, 1933.

"What we wish to avoid is the repairing of that old church. It would cost at least \$2000.00 to do it with new material and more if we add the cost of tearing down an old building to provide the lumber.

The school lot is a better location although we would not need all of it. It seems to me that the better way would be for us to buy the building at whatever price we would have to pay when the auction takes place and the government give the Board a trust deed for the amount of land needed there.

It may be objected that the government has already give that church a plot of land in the form of a trust deed. This is true but I think it was a mistake. That deed should have been an out and out deed with no conditions. For 70 years or more the church has been in possession of that plot of land where the old church stands and many are buried there. But no deed or writing was ever given. It belonged to the classification 'Church and School land' under the monarchy i.e. land set apart for that purpose. It has been the policy for the government to give title where it can be established that the church has been in possession for so long and has used the land for that purpose un-interruptedly. A plain deed or patent was secured by Mr. Lake for the church lot at Hana which the church had used for nearly a hundred years but never had a deed. I think the Kaupaa church lot was recently deeded in the same way. But at Olowalu the deed recently made was put in the form of a trust deed and the land reverts to the government if not used by the church...."

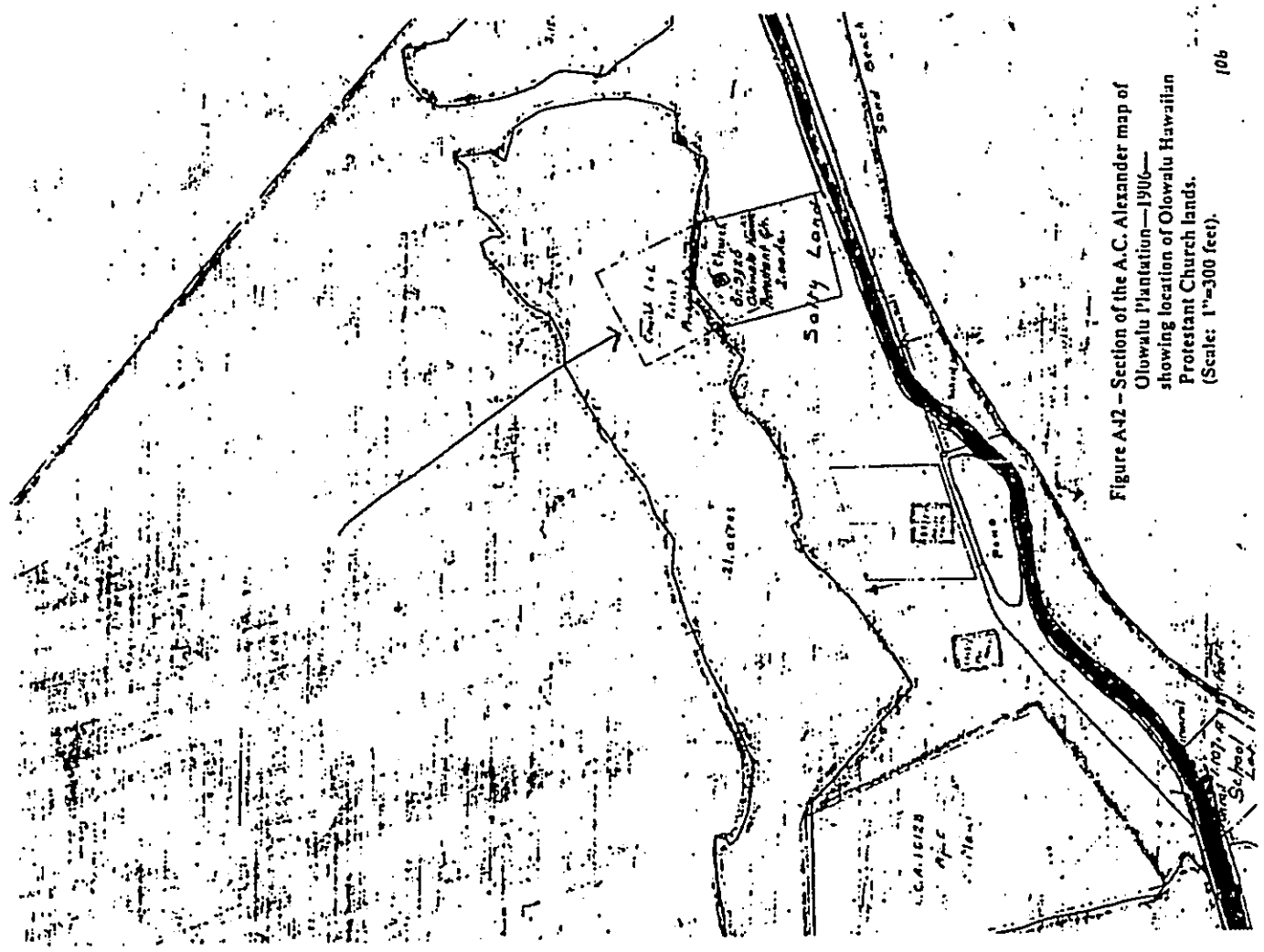


Figure A-42 - Section of the A.C. Alexander map of Olowalu Plantation—1906—showing location of Olowalu Hawaiian Protestant Church lands. (Scale: 1"=300 feet).

Site 50-50-08-4820

Site type: Surface scatter of human remains
Environmental setting: Located in a cane field, c. 30-35 meters northeast of Honoapi'iiani Highway, and c. 250 meters west of Olowalu Subdivision.
Dimensions: Covers c. 100 square meters—located between BT 120 and 121.
Subsurface potential: Subsurface evidence of an *in situ* burial was not found in the 2 backhoe trenches.
Integrity: Altered. Secondary deposition of human remains—additional surface skeletal material is expected from this displaced burial.
Condition: human remains are fragmented and weathered.
Estimated age: precontact

Comments: Find consisted of a few fragmented long bone shafts. Informants reported that human skeletal remains have been recovered from this location for years, and that they were reinterred in Site 4718—*heiau*. Site 4820 lies about 180-200 meters *mauka* of the Site 4693 burial preserve.

Site 50-50-08-4821

Site type: Surface scatter of human remains
Environmental setting: Located in a cane field, in the westernmost section of the study parcel, about 100 to 120 meters *mauka* of Honoapi'iiani Highway.
Dimensions: Covers c. 50 to 60 square meters—located between BT 139 and BT 140.
Subsurface potential: Subsurface evidence of an *in situ* burial was not found in the 2 backhoe trenches.
Integrity: Altered. Secondary deposition of human remains—additional surface scattered skeletal material may be present.
Condition: skeletal remains fragmented and weathered.
Estimated age: precontact

Comments: Find consisted of a skull fragment, a phalange, and a few long bone fragments.

Site 50-50-08-4822

Site type: Location of historic pond.
Environmental setting: Located between the shoreline and Olowalu Subdivision, in the eastern sector of the subject property. Only a narrow strip between Honoapi'iiani Highway and the cane road is on the study parcel, and is designated as a greenway area in development plans.
Dimensions: unknown
Subsurface potential: good—pond sediments are probably still present.
Integrity: Altered—pond was filled in the 1950s when Honoapi'iiani Highway was constructed.

Estimated age: Reported by informants to date from precontact times. Existed into 20th century.

Comments: This pond was reported to have been called *Keloko o Kapa'iki* by informant John Ka'ea. Mrs. Adeline Rodrigues said that High Chiefess Kalola lived just *mauka* of it, and that it was probably associated with her. It is shown on maps from the 19th and early 20th centuries (Figures 1 and 1a).

Site 50-50-08-4823

Site type: Subsurface gleyed marsh/lagoonal soils.

Environmental setting: Located in the eastern portion of the study property, 30 to 80 meters *mauka* of Honapi'ilani Highway in BTs 106 and 107. Soils are found inland of a sand beach berm which traps rain water behind it, creating marsh conditions.

Dimensions: unknown

Subsurface potential: good—these soils may contain pollen and charcoal deposits from the period of the first human settlement in Olowalu.

Estimated age: dates from precontact times.

Comments: These subsurface marsh/lagoonal soils may be fairly extensive. On the 1906 map (Figure 1a) the area to the west of the backhoe trenches is referenced as "salty land". The leeward coast of Maui between Olowalu and Ukumehame is known for marshy conditions that occur after heavy rainfall.

APPENDIX B

**Radiometric Data Sheets
Beta Analytic, Inc.**



BETA ANALYTIC INC.
DR. M.A. TAMERS and MR. D.G. HOOD

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REPORT OF RADIOCARBON DATING ANALYSES

Dr. Walter Fredericksen

April 22, 1999

Xamanek Researches

April 29, 1999

Sample Data	Measured C14 Age	C13/C12 Ratio	Conventional C14 Age (*)
Beta-130025 SAMPLE #: OLOWALU MAUKA SAMPLE 1 ANALYSIS: radiometric-PRIORITY MATERIAL/PRETREATMENT:(charred material): acid/alkali/acid	400 +/- 50 BP	-23.7 ‰	420 +/- 50 BP
Beta-130026 SAMPLE #: OLOWALU MAUKA SAMPLE 2 ANALYSIS: radiometric-PRIORITY MATERIAL/PRETREATMENT:(charred material): acid/alkali/acid	200 +/- 60 BP	-24.8 ‰	200 +/- 60 BP
Beta-130027 SAMPLE #: OLOWALU MAUKA SAMPLE 3 ANALYSIS: radiometric-PRIORITY MATERIAL/PRETREATMENT:(charred material): acid/alkali/acid	290 +/- 50 BP	-25.3 ‰	290 +/- 50 BP
Beta-130028 SAMPLE #: OLOWALU MAUKA SAMPLE 4 ANALYSIS: radiometric-PRIORITY MATERIAL/PRETREATMENT:(charred material): acid/alkali/acid	180 +/- 50 BP	-23.8 ‰	200 +/- 50 BP
Beta-130029 SAMPLE #: OLOWALU MAUKA SAMPLE 5 ANALYSIS: radiometric-PRIORITY MATERIAL/PRETREATMENT:(charred material): acid/alkali/acid	80 +/- 50 BP	-26.1 ‰	60 +/- 50 BP

NOTE: It is important to read the calendar calibration information and to use the calendar calibrated results (reported separately) when interpreting these results in AD/BC terms.

Dates are reported as RCYBP (radiocarbon years before present, International standard and the RCTBP ages were normalized to "present" = 1950 A.D.). By international convention, the modern reference standard was 95% of the C14 content of the National Bureau of Standards' Oxalic Acid & 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. Calibration to calendar years should be calculated using the Conventional C14 age.



BETA ANALYTIC INC.
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REPORT OF RADIOCARBON DATING ANALYSES

Dr. Walter Fredericksen

May 3, 1999

Xamanek Researches

May 11, 1999

Sample Data	Measured C14 Age	C13/C12 Ratio	Conventional C14 Age (*)
Beta-130034 SAMPLE #: OLOWALU SAMPLE #6 ANALYSIS: radiometric-PRIORITY MATERIAL/PRETREATMENT:(charred material): acid/alkali/acid	160 +/- 70 BP	-25.5 ‰	150 +/- 70 BP

NOTE: It is important to read the calendar calibration information and to use the calendar calibrated results (reported separately) when interpreting these results in AD/BC terms.

Dates are reported as RCYBP (radiocarbon years before present, International standard and the RCTBP ages were normalized to "present" = 1950 A.D.). By international convention, the modern reference standard was 95% of the C14 content of the National Bureau of Standards' Oxalic Acid & 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. Calibration to calendar years should be calculated using the Conventional C14 age.

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=23.7;lab, mult=1)

Laboratory Number: Beta-130025

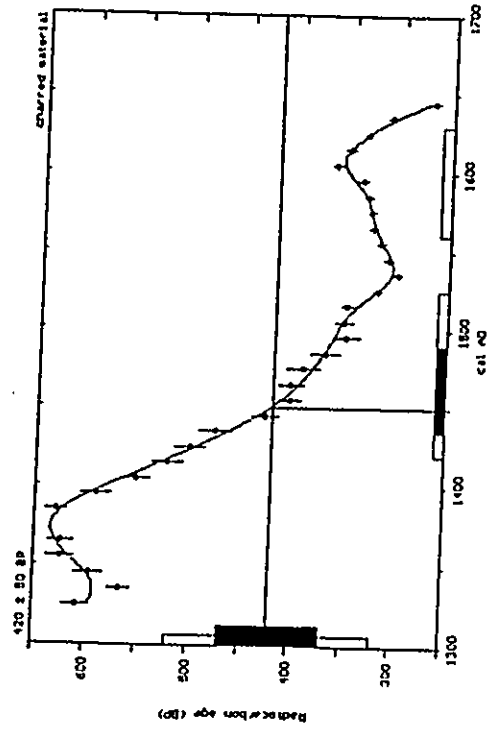
Conventional radiocarbon age: 420 ± 50 BP

Calibrated results: cal AD 1420 to 1525 (Cal BP 530 to 425) and
(2 sigma, 95% probability) cal AD 1560 to 1630 (Cal BP 390 to 320)

Intercept data:

Intercept of radiocarbon age
with calibration curve: cal AD 1450 (Cal BP 500)

1 sigma calibrated results:
(68% probability) cal AD 1435 to 1490 (Cal BP 515 to 460)



References:
 Calibration Database
 Editorial Comment
 Stuiver, M., van der Plicht, H., 1993, Radiocarbon 46(1), p11-14
 INTCAL98 Radiocarbon Age Calibration
 Stuiver, M., et al., 1998, Radiocarbon 40(3), p1031-1033
 Mook, W.G.
 A Simple Approach to Calibrating C14 Dates
 Taylor, T.W., Vogel, J.C., 1991, Radiocarbon 33(2), p117-122

Beta Analytic Radiocarbon Dating Laboratory

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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=24.8;lab, mult=1)

Laboratory Number: Beta-130926

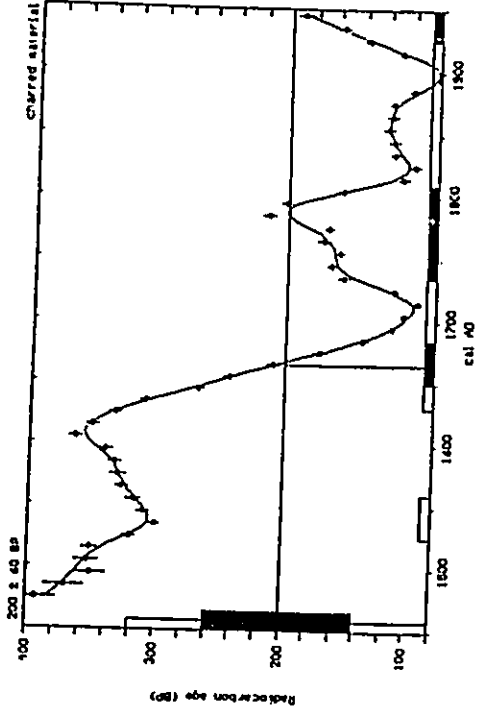
Conventional radiocarbon age: 200 ± 60 BP

Calibrated results: cal AD 1525 to 1560 (Cal BP 425 to 390) and
(2 sigma, 95% probability) cal AD 1630 to 1950 (Cal BP 320 to 0)

Intercept data:

Intercept of radiocarbon age
with calibration curve: cal AD 1665 (Cal BP 285)

1 sigma calibrated results:
(68% probability) cal AD 1650 to 1685 (Cal BP 300 to 265) and
cal AD 1735 to 1810 (Cal BP 215 to 140) and
cal AD 1925 to 1950 (Cal BP 25 to 0)



References:
 Calibration Database
 Editorial Comment
 Stuiver, M., van der Plicht, H., 1993, Radiocarbon 46(2), p11-14
 INTCAL98 Radiocarbon Age Calibration
 Stuiver, M., et al., 1998, Radiocarbon 40(3), p1031-1033
 Mook, W.G.
 A Simple Approach to Calibrating C14 Dates
 Taylor, T.W., Vogel, J.C., 1991, Radiocarbon 33(2), p117-122

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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=25.3;lab. mult=1)

Laboratory Number: Beta-130027

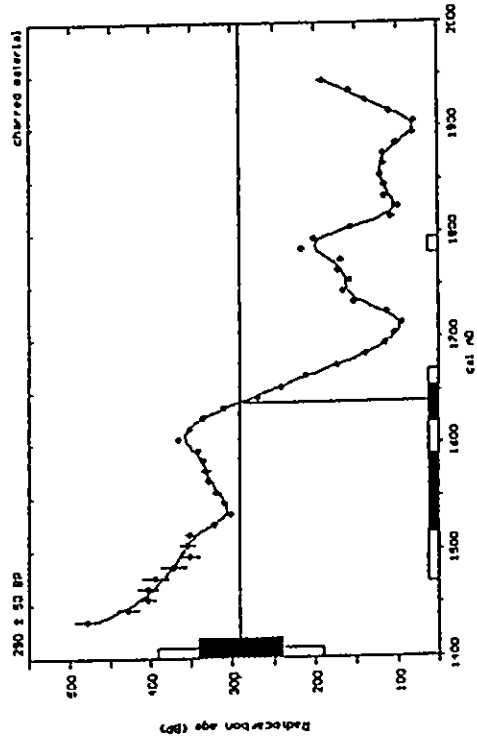
Conventional radiocarbon age: 290 ± 50 BP

Calibrated results: cal AD 1470 to 1670 (Cal BP 480 to 280) and
(2 sigma, 95% probability) cal AD 1780 to 1795 (Cal BP 170 to 155)

Intercept data:

Intercept of radiocarbon age with calibration curve: cal AD 1640 (Cal BP 310)

1 sigma calibrated results: cal AD 1515 to 1590 (Cal BP 435 to 360) and
(68% probability) cal AD 1620 to 1655 (Cal BP 330 to 295)



References:
Calibration Database
Editorial Comment
Stuiver, M., van der Plicht, H., 1998, Radiocarbon 40(2), p16-31
INTCAL98 Radiocarbon Age Calibration
Stuiver, M., et al., 1998, Radiocarbon 40(1), p101-103
Mathematics
A Simplified Approach to Calibrating C14 Data
Taylor, A. S., Tropea, J. C., 1993, Radiocarbon 35(2), p117-122

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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=23.8;lab. mult=1)

Laboratory Number: Beta-130028

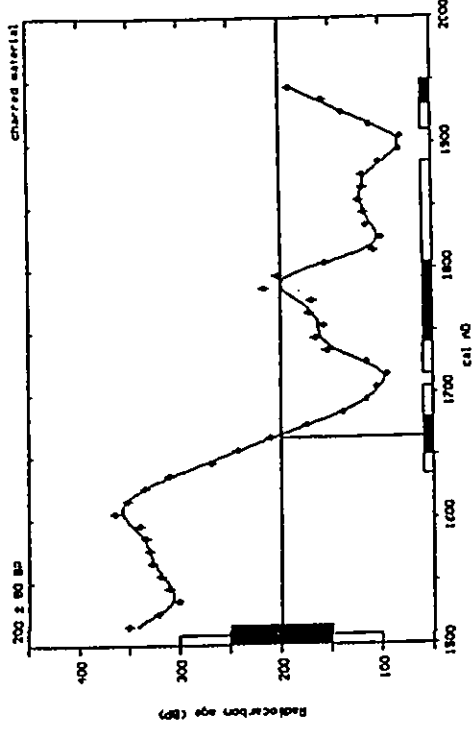
Conventional radiocarbon age: 200 ± 50 BP

Calibrated results: cal AD 1635 to 1705 (Cal BP 315 to 245) and
(2 sigma, 95% probability) cal AD 1715 to 1885 (Cal BP 235 to 65) and
cal AD 1910 to 1950 (Cal BP 40 to 0)

Intercept data:

Intercept of radiocarbon age with calibration curve: cal AD 1665 (Cal BP 285)

1 sigma calibrated results: cal AD 1650 to 1680 (Cal BP 300 to 270) and
(68% probability) cal AD 1740 to 1805 (Cal BP 210 to 145) and
cal AD 1930 to 1950 (Cal BP 20 to 0)



References:
Calibration Database
Editorial Comment
Stuiver, M., van der Plicht, H., 1998, Radiocarbon 40(2), p16-31
INTCAL98 Radiocarbon Age Calibration
Stuiver, M., et al., 1998, Radiocarbon 40(1), p101-103
Mathematics
A Simplified Approach to Calibrating C14 Data
Taylor, A. S., Tropea, J. C., 1993, Radiocarbon 35(2), p117-122

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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: est. C13/C12=25;lab. mult=1)

Laboratory number: Beta-130334

Conventional radiocarbon age: 150±70 BP

2 Sigma calibrated result: Cal AD 1640 to 1955 (Cal BP 310 to 5)

1σ/2σ *est. 95% probability*

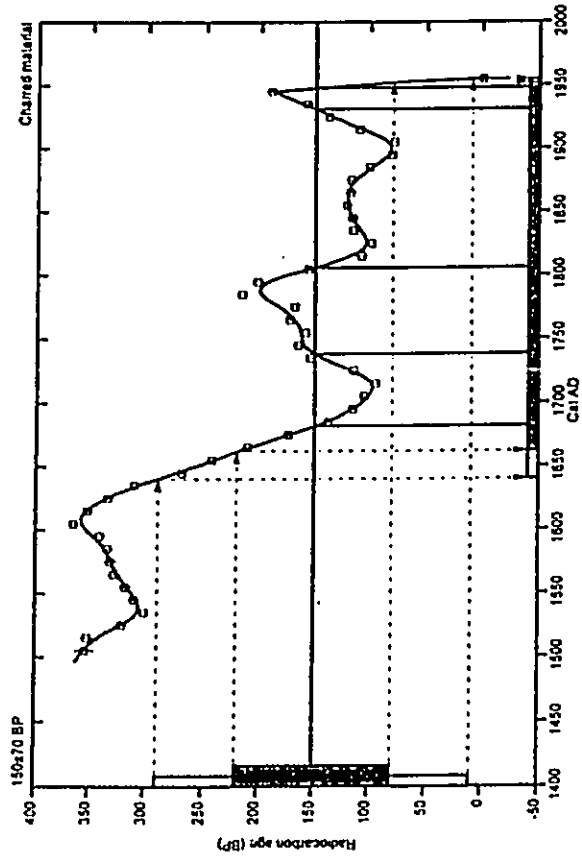
Intercept data

Intercepts of radiocarbon age
with calibration curve:

Cal AD 1680 (Cal BP 270) and
Cal AD 1740 (Cal BP 210) and
Cal AD 1805 (Cal BP 145) and
Cal AD 1930 (Cal BP 20) and
Cal AD 1950 (Cal BP 0)

1 Sigma calibrated result:
Cal AD 1660 to 1950 (Cal BP 290 to 0)

(68% probability)



References:

Calibration Database
Editorial Comment
Stuiver, M., van der Plicht, H., 1998, Radiocarbon 40(3), p111-111
INTCAL98 Radiocarbon Age Calibration
Stuiver, M., et al., 1998, Radiocarbon 40(2), p1031-1033
Aukemaite
A Simplified Approach to Calibrating C14 Dates
Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2), p317-322

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APPENDIX C

Historic documents relating to the Plantation Era

Mr. Robert Horcajo has been collecting historic information on Olowalu since the property was acquired by Olowalu Elua Associates in 1998. Olowalu Elua Associates has also contracted Ms. Gail Ainsworth to conduct archival research on the Olowalu Sugar Company. The documents included in this appendix were supplied by Mr. Horcajo, and are arranged in chronological order. These include census information from 1878; chronology of the Olowalu Sugar Company and school; the Honolulu Trades and Labor Council Committee report of 1904; an enlargement of the Alexander map of 1906, showing the former and new courses of Olowalu Stream; a 1916 photograph of the pond and school; two additional photos of the mill (date unknown); an aerial view of Olowalu Valley and mauka lands, showing the extent of cane cultivation into the valley; and maps of the plantation community in 1936, along with the floor plans of selected plantation houses. Also included is an aerial photograph which shows the water systems, cane field and road patterns, and the agricultural clear piles that were begun in the 1940s and 1950s.

1881 Olowalu Plantation/ Olowalu Company	Franklin S. Pratt/ Inc. by F. Pratt, Hermann A. Widemann, Wm. F. Sharratt		G. W. McFarlane	Inc. May 5 \$150,00 1,500 shares Pratt sells 30.9 acres to O.C. May 12 for \$1,500 2-foot gauge rr authorized.
1882 Olowalu Plantation	Corporation		Hermann A. Widemann	rr track completed to Uku. - 3 miles (prob. mule driven)
1883 Olowalu Plantation	30.6% Brit. 37.5% Germ. 10/83 31.9% Hawn Heine M, Conradt M late 83 Haneberg M, Widemann 1/4	Conradt & Heine	G. W. McFarlane	600 est/ Value: \$160,000 Port. immigrants 40 adults, 26 ch
1884 Olowalu Sugar Company	Corporation		W. G. Irwin	6 Port. immigrants 5 M, 1 W
1885 Olowalu Sugar Company	Corporation	(AK on Kaula)	W. G. Irwin	4 Port. immigr. men
1886 Olowalu Sugar Company	Corporation C.O. Berger, Esq. Secy.		W. G. Irwin	

120

1887 Olowalu Sugar Company	Corporation	August W. Haneberg	W. G. Irwin	149 laborers Hawn 10% Portuguese 13% Chinese 67% South Sea Islanders 7% Other 3% (not Jpn) Preferred labor: Jpnse & Chinese Value: \$150,000 155 laborers W. Fecola-Overseer F. E. Hartman-Bkpr W. Heine-Eng/Boller
1888 Olowalu Sugar Company	48.3% American 16% British 28% German 3.3% Chinese 4.3% Chilean	A. Haneberg	W. G. Irwin	155 laborers Same staff 1 st steam locomotive Olowalu ordered
1889 Olowalu Sugar Company	48.3% American 16% British 28% German 3.3% Chinese 4.3% Chilean	A. Haneberg	W. G. Irwin	155 laborers Same staff 1 st steam locomotive Olowalu ordered
1890 Olowalu Sugar Company	48.3% American 16% British 28% German 3.3% Chinese 4.3% Chilean	A. Haneberg	W. G. Irwin	950/ Value: \$150,000

121

1891 Olowalu Sugar Company	Corporation C. Bosse Secy	A. Haneberg	W. G. Irwin	760/	138 laborers F. Kohler-Bkpr H. McCann-Eng J. Schwarting-Blr Chas. Davidson-Phys J. Dow-Overseer
1892 Olowalu Sugar Company	Corporation	A. Haneberg	W. G. Irwin	859/	107 hands - 16 men plus few women operate mill Clear \$30,000
1893 Olowalu Sugar Company	34.3% American* 27.2% British* 32.3% German* 4% Other C. Bosse Secy	A. Haneberg	W. G. Irwin	702/	Ownership to ?? *Not Hawaiian born
1894 Olowalu Sugar Company	Corporation	A. Haneberg	W. G. Irwin	937/	
1895 Olowalu Sugar Company	Corporation	A. Haneberg	W. G. Irwin	905/227	
1896 Olowalu Sugar Company	Corporation	A. Haneberg	W. G. Irwin	1,163/229	147 laborers 5% Hawaiian 74% Jpns(61%w, 12%w) 21% Chinese

121

1897 Olowalu Sugar Company	Corporation	A. Haneberg	Irwin & Co.	1,112/217	148 laborers 4% Hawaiian 77% Jpns(71%w, 6%w) 1% Other
1898 Olowalu Sugar Company	Corporation	A. Haneberg	Irwin & Co.	1,425/220	1 of 9 Maui plots
1899 Olowalu Sugar Company	Corporation	A. Haneberg	Irwin & Co.	1,502/270	
1900 Olowalu Company	Corporation	A. Haneberg	Irwin & Co.	1,480/282	
1901 Olowalu Company	Corporation	Emil Kruse	Irwin & Co.	1,240/260	ground cane for the Maunalei Sugar Co. of Lana'i
1902 Olowalu Company	Corporation	George Gibb	Irwin & Co.	1,055/276	
1903 Olowalu Company	Corporation	George Gibb	Irwin & Co.	843/240	Crop short due to inefficiency of labor

123

1904 Olowalu Company	Corporation	George Gibb	Irwin & Co.	1,125/270	Acres owned-98 Acres leased-7702 Acres in cane-400 4-mile track, 1 locomotive, 60 cars, 27 bldgs. Laborers: 120 Americans-2 Portuguese-1 Other Euro.-1 Havns.-6 Puerto Ricans-22 Jpns-82 Chinese-6 Labor needed: 45
1905 Olowalu Company	Corporation	George Gibb	Irwin & Co.	1652/285	2 nd replacemt loco- motive ordered.
1906 Olowalu Company	Corporation	George Gibb	Irwin & Co.	1,635/320	
1907 Olowalu Company	Corporation	George Gibb	Irwin & Co.	1,448/335	
1908 Olowalu Company	Corporation	George Gibb	Irwin & Co.	1,765/365	
1909 Olowalu Company	W. G. Irwin	George Gibb	Irwin & Co.	1,829/380	

124

1910 Olowalu Company	C. Brewer	George Gibb	C. Brewer	1796/372	W. G. Irwin merges with C. Brewer. Controls 900 acres of land. 2 locomotives, 50 cars, 6 miles of track, 9-roller mill.
1911 Olowalu Company	C. Brewer, pres. W. G. Irwin	George Gibb	C. Brewer	1,693/395	Paid 2 nd dividend
1912 Olowalu Company	C. Brewer, pres. W. G. Irwin	George Gibb	C. Brewer	1,707/355	
1913 Olowalu Company	C. Brewer, pres. W. G. Irwin	James Campsie	C. Brewer	1,738/353	
1914 Olowalu Company	C. Brewer, pres. Richard Ivers	James Campsie	C. Brewer	2,026/345	
1915 Olowalu Company	C. Brewer, pres. Richard Ivers	Alexander Valentine	C. Brewer	2,173/329	Drought
1916 Olowalu Company	Pres. R. Ivers	A. Valentine	C. Brewer	1,850/365	
1917 Olowalu Company	Pres. R. Ivers	A. Valentine	C. Brewer	1,974/356	Drought

125

1918 Olowalu Company	Pres. Ivers/ Edward Irwin Spalding	A. Valentine	C. Brewer	1,999/354	W. Giffard sells 153 acrs to Brewer. Completes 12-roller mill. Acqs 13 acres. Blds new warehouse. Extends rr to 4mils.
1919 Olowalu Company	Pres. E. Spalding	A. Valentine	C. Brewer	1705/364	New mill grinds.
1920 Olowalu Company	Pres. E. Spalding	A. Valentine	C. Brewer	2,090/365	Main camp laid out in street lines. Drought
1921 Olowalu Company	Pres. E. Spalding	A. Valentine	C. Brewer	1,884/370	Affected by drought. C. Brewer sells to O. C. 615 acres in cultivation. 13,000 acres under lease. E. Haneberg bkpr/chem Fred Walker-engr David Kinney blr Joe Botelho/Joe Rickard -lunas
1922 Olowalu Company	Pres. E. Spalding	A. Valentine	C. Brewer	1,739/363	
1923 Olowalu Company	Pres. E. Spalding	A. Valentine	C. Brewer	1,883/364	
1924 Olowalu Company	Pres. E. Spalding	A. Valentine	C. Brewer	2,289/367	
1925 Olowalu Company	Pres. E. Spalding	A. Valentine	C. Brewer	2,065/371	
1926 Olowalu Company	Pres. E. Spalding	A. Valentine/ Eugene Haneberg	C. Brewer	2,262/370	
1927 Olowalu Company	Pres. E. Spalding	E. Haneberg	C. Brewer	2,437/369	
1928 Olowalu Company	Pres. E. Spalding	E. Haneberg	C. Brewer	2,588/375	
1929 Olowalu Company	Pres. E. Spalding	E. Haneberg	C. Brewer	2,728/408	1 of 6 haul pits.
1930 Olowalu Company	Pres. E. Spalding	E. Haneberg	C. Brewer	2,967/373	replaced steam locomotive with gasoline
1931 Olowalu Company	Pres. Allen W. T. Bottomley	E. Haneberg	C. Brewer		sold to Pioneer Mill

**OLOHALU SCHOOL CHRONOLOGY
1881-1932
Draft 8/13/99**

YEAR	TEACHERS/SALARY/ NATIONALITY	STUDENTS M/F TOTAL	GRADES	FACILITIES	MISCELLANEOUS
1881-1882	S. Kamakahiki	17/8 25			Common school-Hawaiian speaking
1882-1883	S. Kamakahiki	less than 25			Hawaiian speaking
1883-1884	S. Kamakahiki	less than 25			Hawaiian speaking
1884-1885	S. Kamakahiki				Hawaiian speaking
1885-1886	S. Kamakahiki	9/7 16		\$200 expended on bidg	Hawaiian speaking
1886-1887	S. Kamakahiki				Hawaiian speaking
1887-1888	S. Kamakahiki	14/10 24			Hawaiian speaking
1888-1889					Hawaiian speaking
1889-1890	Mrs. Robt Newton	17/18 35		Building enlarged	Converted into English language school, causes increases in enrollment
1890-1891					Budget: \$416.50 (for 1890-1892)
1891-1892	M. Hallworth/ \$500/British	13/13 26		"chiefly very young"	Budget: \$416.50 (for 1890-1892)
1892-1893	M. Hallworth/ \$500/British				Budget: \$626.66 (for 1892-1894)

127

School Chronology - page 2

1893-1894	M. Hallworth/ \$500/British	14/12 26		Building in good condition. Lot is neat & tidy.	Budget: \$626.66 (for 1892-1894)
1894-1895					
1895-1896	D. Kanewanui	14/17 31			
1896-1897	M. K. Maipo/ \$480/Hawn				
1897-1898	M. K. Maipo/ \$480/Hawn	15/14 29			99% Attendance, \$16.55 cost of tuition per capita
1899-1900	Miss Laura R. Pall/\$300/Hawn	13/18 31			\$9.68 cost of tuition per capita
1900-1901	William Hoopii/ \$300/Hawn	9/14 23			
1901-1902	William Hoopii/ Hawn/\$360				
1902-1903	William Hoopii/ Hawn/\$360	24/20 44			81% Attendance
1903-1904	William Hoopii/ Hawn/\$360			Combined school house & cottage to come out of Loan Fund for 2 years ending 6/30/07	
1904-1905	William Hoopii/ Hawn/\$360	21/23 44			73% Attendance

129

School Chronology - page 1

1905-1906	William Hoopli/ Hawn/\$368				
1906-1907	Ms. K. Hoopli/ Hawn/\$360	29/19 42		New bidg needed	Daily average attendance - 39
1907-1908	Ms. K. Hoopli			Secured title for new site	
1908-1909	Ms. K. Hoopli/ Hawn/\$480	26/21 47	1/4th grade or more	New building	Average daily attendance-40
1909-1910	Ms. K. Hoopli/ Hawn/\$480			1 framed room	
1910-1911	Ms. K. Hoopli Hawn/\$480 One additional teacher proposed	35/27 62	Rec'g 1,2,3,4	1 framed room, 1 additional framed room & cottage needed (\$800 each)	Average daily attendance - 54
1911-1912	Ms. K. Hoopli/ Hawn/\$600				
1912-1913	Ms. K. Hoopli/ Hawn/\$600 Frank K. Hoopli/ Hawn/\$600	45/46 91			Average daily attendance - 77
1913-1914					

130

School Chronology - page 2

1914-1915	Miss Annie P. Chung/Part Hawn/ \$1,000 Mrs. Lillian P. Hiran	42/48 90			Average daily attendance - 80
1915-1916					
1916-1917	Miss Olive T. Siple/Aw/\$720 Miss Bertha McCracken/Aw/\$720	29/36 65			Average daily attendance - 59
1917-1918					
1918-1919	Miss Taulan V. Choy/\$1,056 Miss Kiou (Kimu?) Toshimi/\$480	25/30 55			Average daily attendance - 55
1919-1920					
1920-1921	Miss Shiquya Macamoto (act'ing) Mrs. Margaret Valentine	37/29 66			Average daily attendance - 66
1921-1922					
1922-1923	Nellie R. Waller Louis Camara	37/36 73 37 (PC, Recg. 1,2) 36 (3,4,6)			

School Chronology - page 3

131

1923-1924	Samuel K. Mookini, principal Second teacher		
1924-1925	Samuel K. Mookini Second teacher	67	1-6
1925-1926			
1926-1927			1.96 acres worth \$200 Bldg worth \$4,140
1927-1928			
1928-1929		55	Land worth \$200 Bldg worth \$4,400 Equipmt & Furn worth \$1,213. 1 main bldg, 2 class- rooms 23"x33", 1 tchrs cottage
1929-1930			
1930-1931		32/27 53	Play space, drinking fountains, etc. rated very good per capita. Value of real estate, etc. same.
1931-1932	Mrs. Rosina C. Crone	37	

Closed on January 4, 1932.
Students attend Kamehameha
HS School in Lahaina

132

Plantation continued.

Q. I. G. T. A. L. S.

Q. How do you estimate the number of persons who have been employed on your plantation?
A. 120

Q. How do you estimate the number of persons who have been employed on your plantation?
A. 72

Q. How do you estimate the number of persons who have been employed on your plantation?
A. Labor worked steadily previous to January.

Q. How do you estimate the number of persons who have been employed on your plantation?
A. No. Labor has been rather unsettled; very few could give a fair day's work.

Q. How do you estimate the number of persons who have been employed on your plantation?
A. A solution of the labor problem would, in my opinion, be effected by introducing or legislating so as to allow Chinese laborers in the Territory.

Q. How do you estimate the number of persons who have been employed on your plantation?
A. We get rain on the cane lands once or twice per year, and have to depend on gulch water with what the wells give us to tide the crop over the summer months. About two months per year, we get sufficient water from the gulches to supply the growing crops, but from August to December inclusive, the wells get dry if pumped continuously for 24 hours, and we have to give down the pumps at night to allow the wells to fill up to a certain extent.

Q. How do you estimate the number of persons who have been employed on your plantation?
A. Most of our wells being gravelly, require water every seven days.

Done this 1st day of December 1931 at Oahu, Hawaii.

In witness whereof (Signed) George Gibb.

We the undersigned, members appointed by the Honorable Charles and Leland Grinnell and the Honorable and Honorable Members of the Territory of Hawaii, to investigate the labor and industrial situation, hereby certify that on the 10th day of October 1931 we have heard the oral statements and that we have made a summary therefrom, and that the written statements have been properly answered, although the Committee, by this certification, does not bind itself as endorsing the views expressed in these individual reports.

HONOLULU TRADES AND LABOR COUNCIL COMMITTEE
 Thomas K. Kahanui
 William H. Hoffman

THE BUILDERS AND TRADERS EXCHANGE COMMITTEE
 [Signatures]

133

Report of **SIOWALS**

Plantation situated at **DELRIS, HAITI.**

Serial 602 vol. 1

LANDS AND SURVEY INFORMATION

CLASSIFICATION OF INVESTMENT AND DECEPTION

Category	Value	Category	Value
Land (1,000 acres)	1,000	Buildings	10,000
Plantation	500	Equipment	5,000
Infrastructure	500	Other	4,000
Total	7,000		

Category	Value	Category	Value
Investment	10,000	Deception	10,000
Plantation	5,000	Land	5,000
Infrastructure	5,000	Other	5,000
Total	20,000		

Over \$10,000 has been paid for the product of skilled white labor for machinery, railroad and equipment or almost two-thirds of the investment.

Major Pains, P. S. Houle, E. Loo, Cathelin Mouton, G. Samblon, Soudain Hiale, John Kabin, Russian Government.

Investment of 100,000,000

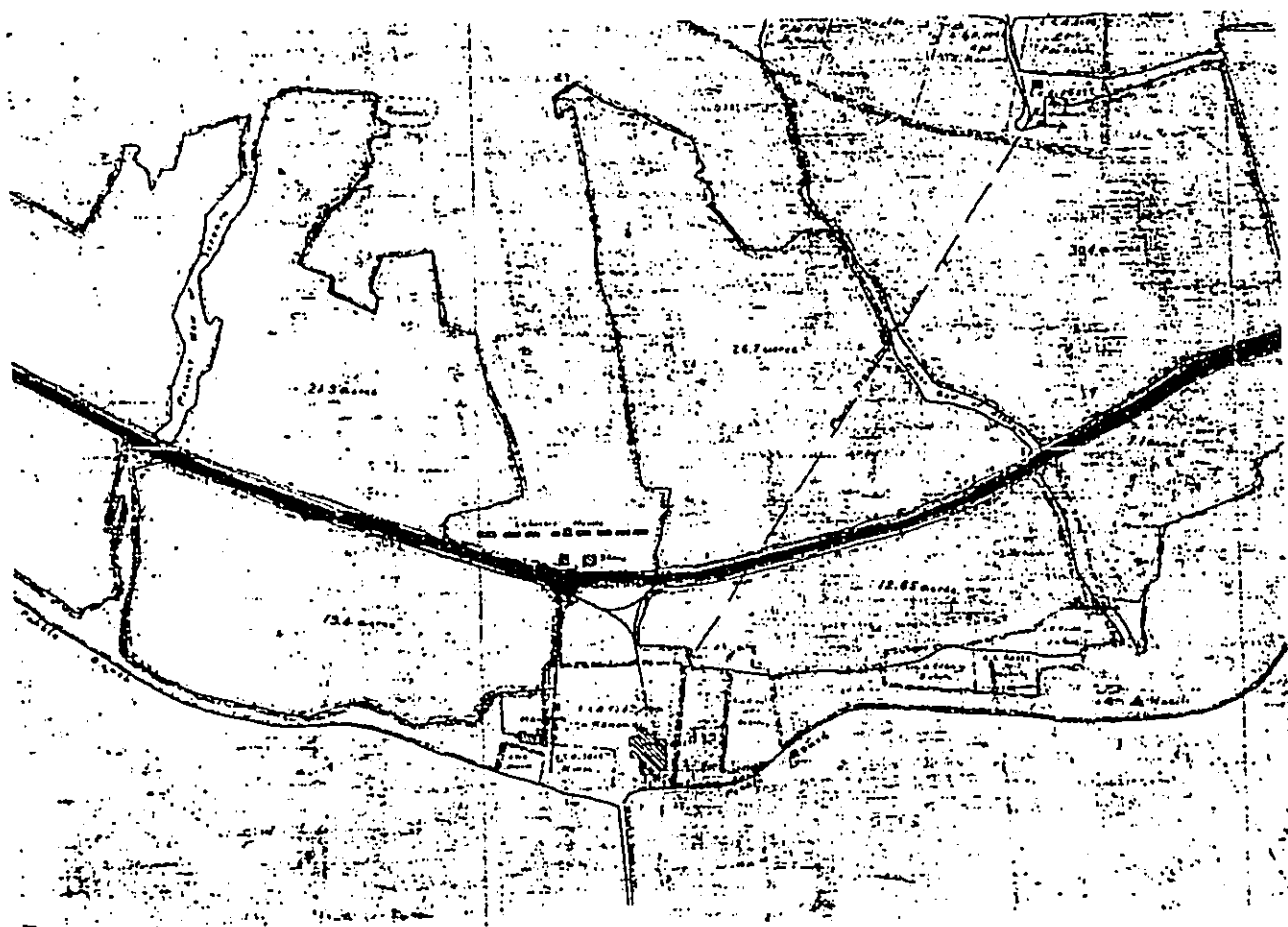
April 1st, 1870.

Year	1842	1900	1876	1868	1851	1843	1830
Production

1903 crop shortage caused by inefficiency of labor during the previous year.

Category	Value	Category	Value
Plantation	10,000	Land	10,000
Infrastructure	5,000	Other	5,000
Total	20,000		

Category	Value	Category	Value
Plantation	10,000	Land	10,000
Infrastructure	5,000	Other	5,000
Total	20,000		

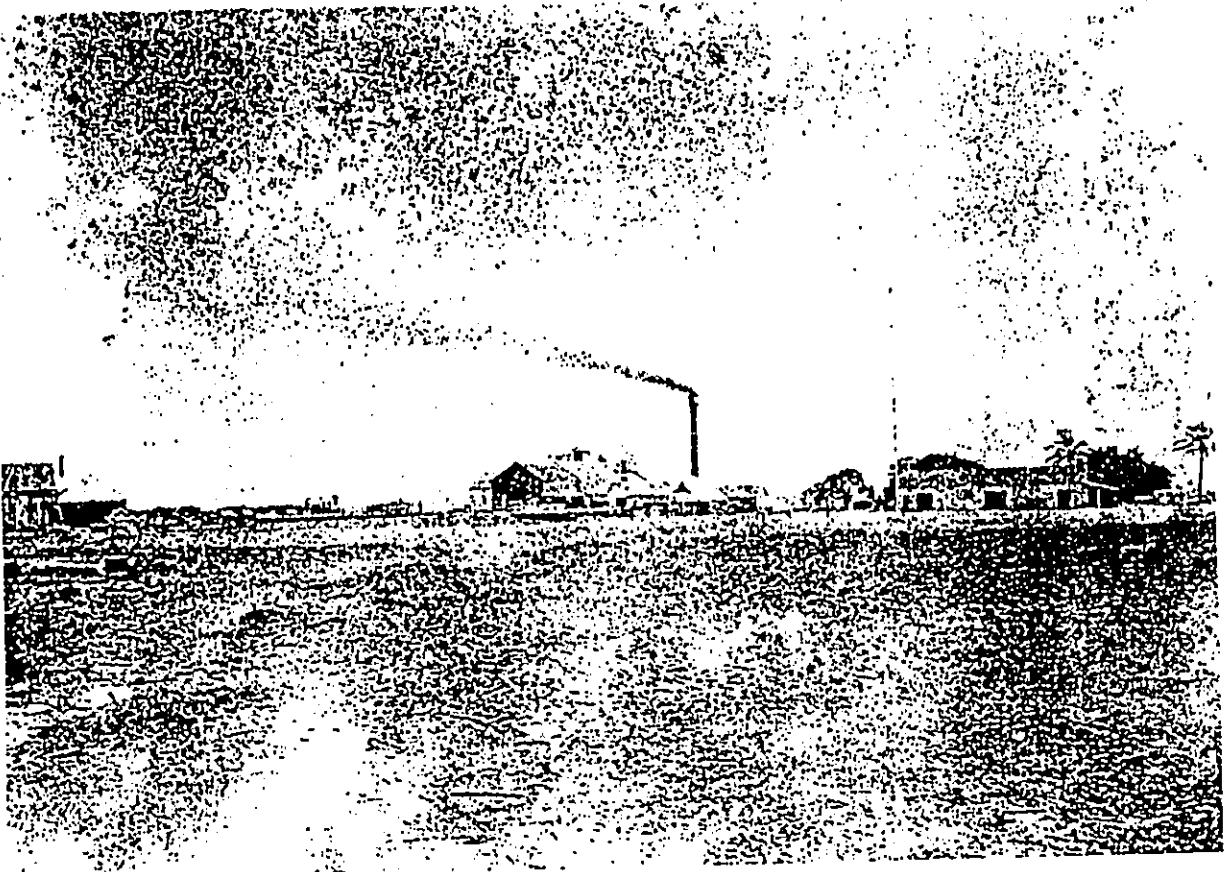


DOCUMENT CAPTURED AS RECEIVED



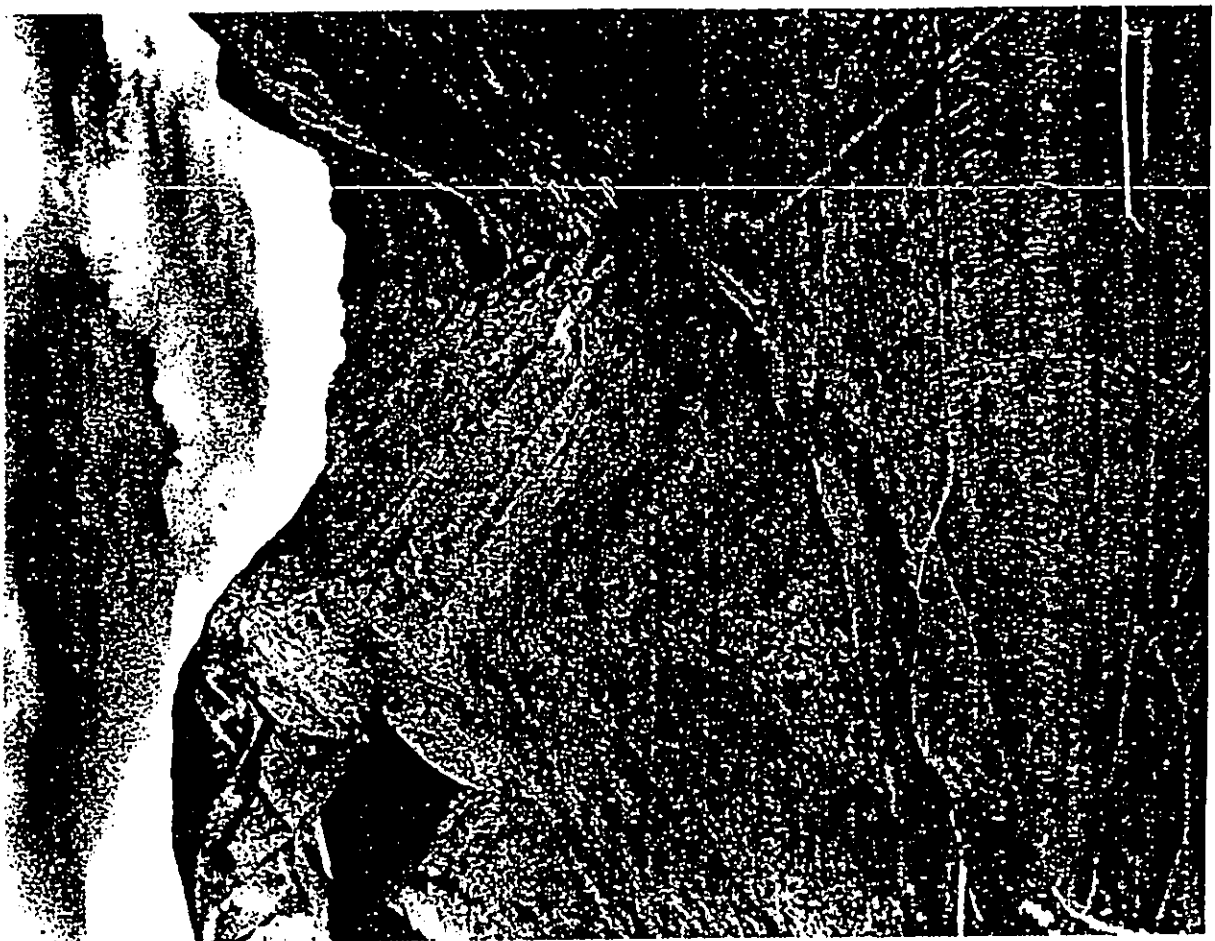
138

1916 - Old Mill



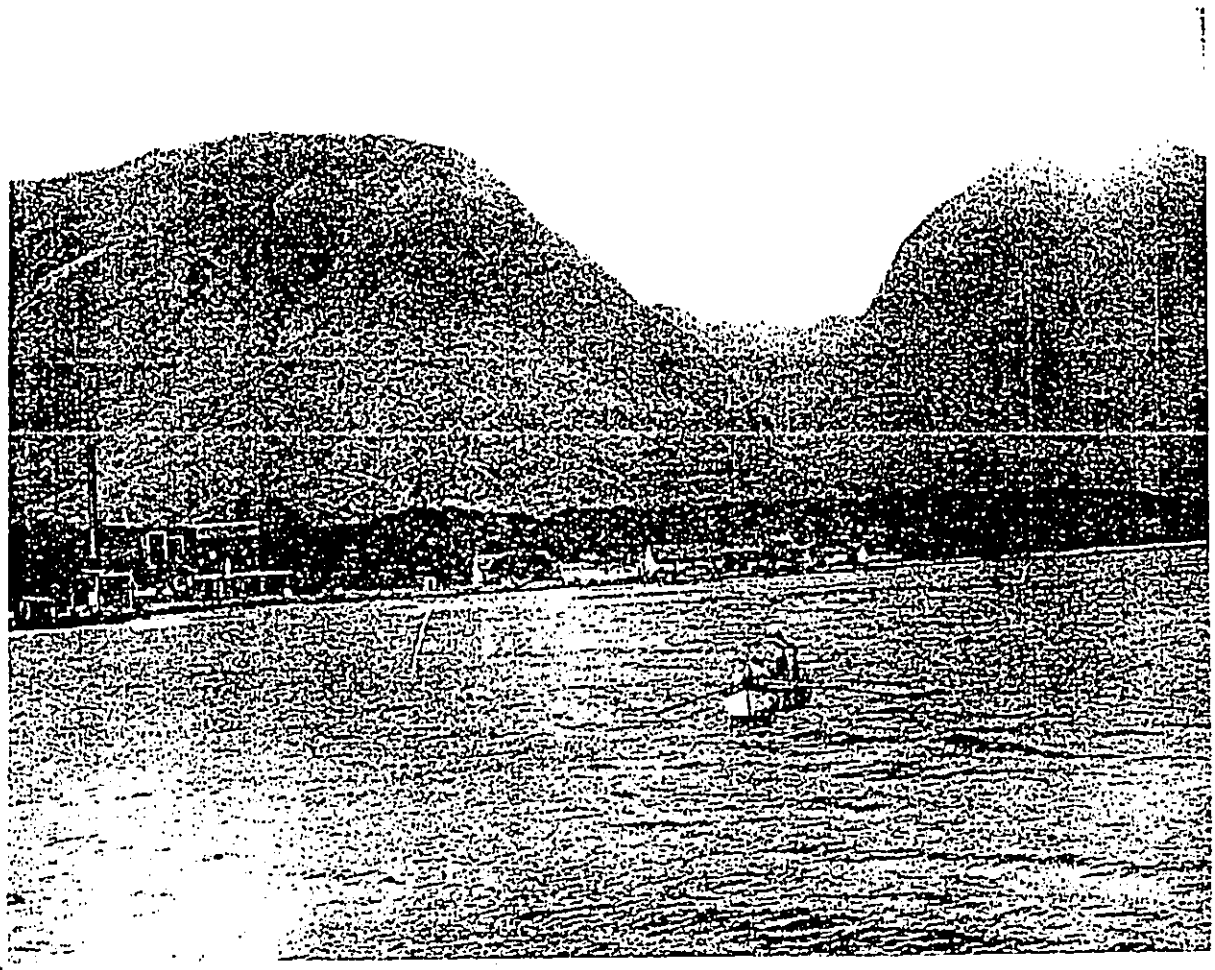
139

OLD MILL FROM HIGHWAY



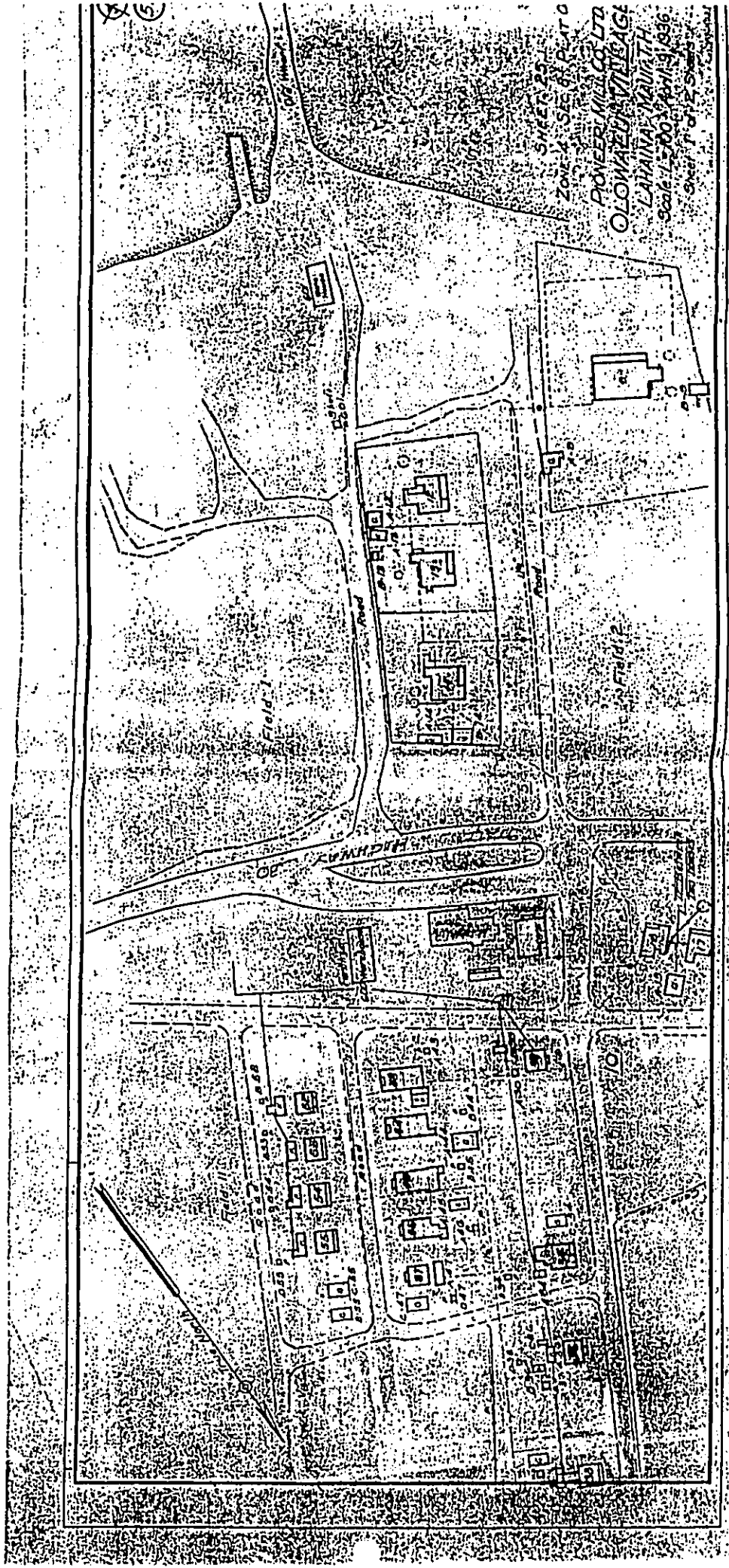
141

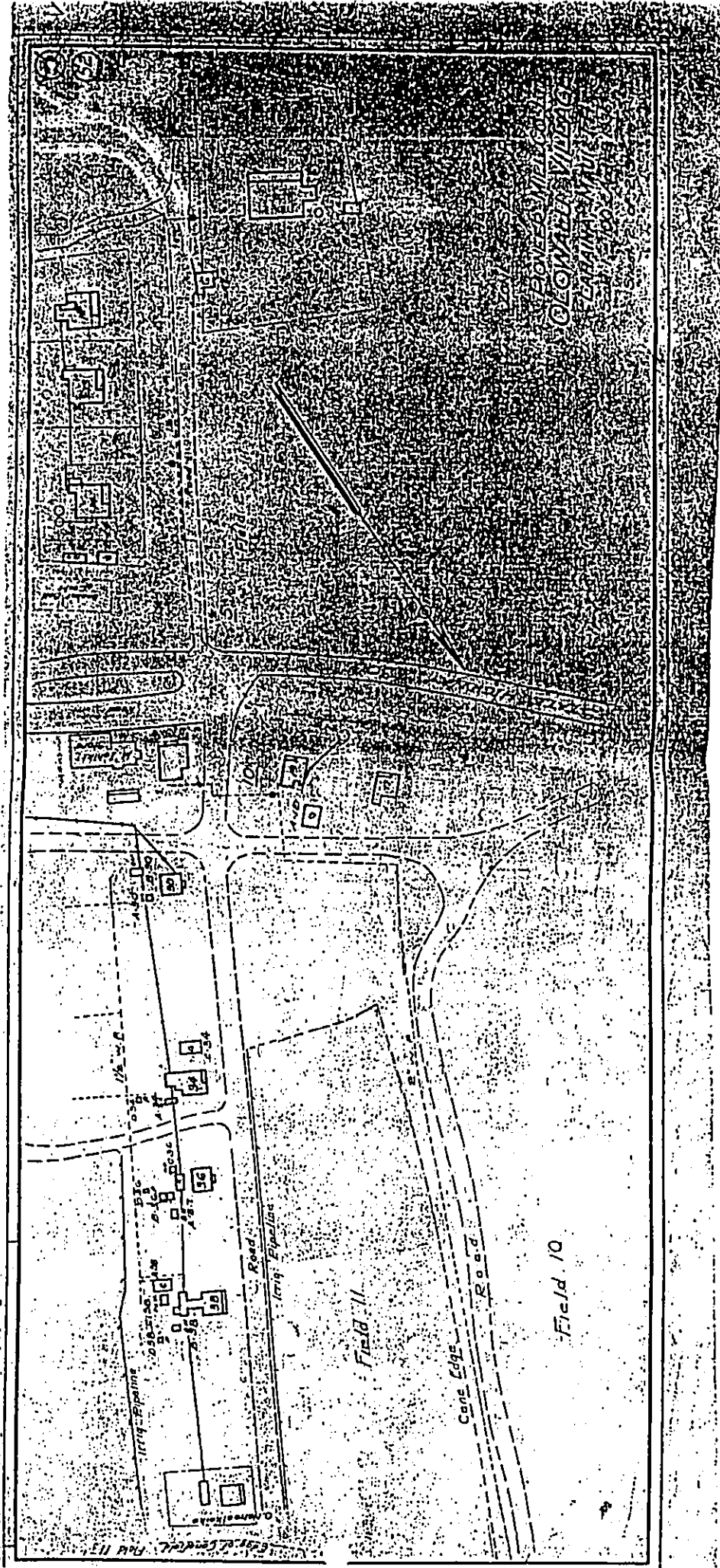
VALLEY + TERRAIN



DOCUMENT CAPTURED AS RECEIVED

DOCUMENT CAPTURED AS RECEIVED

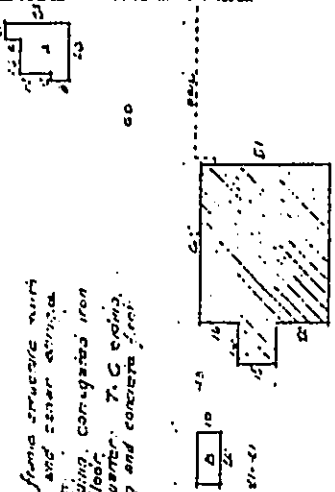




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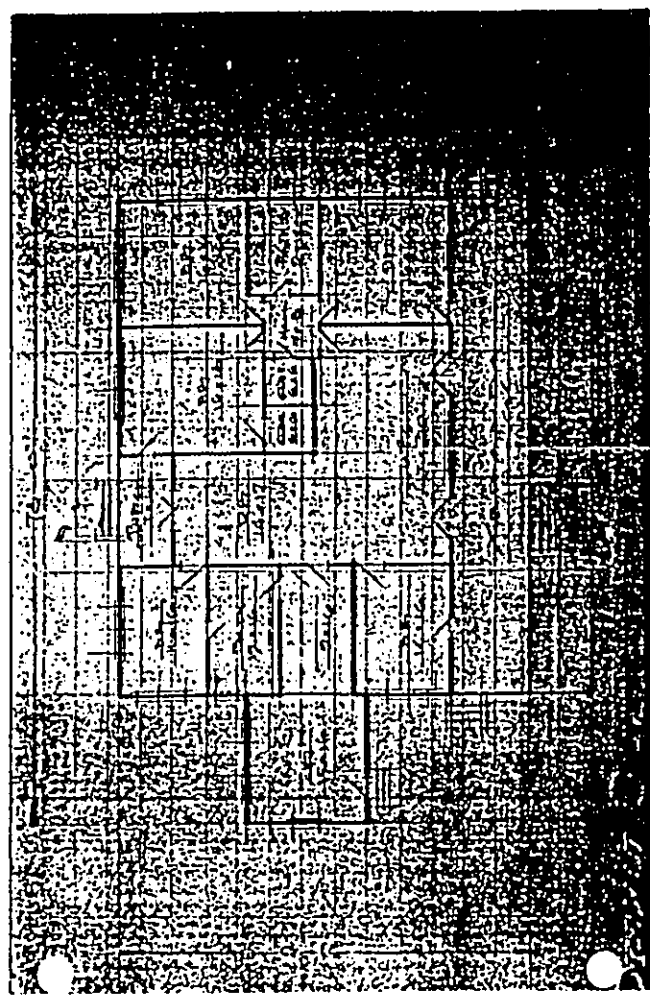
OLKAMU 9 2402 f 40 \$750
 Date of Construction: 1944
 4-6-43 - 05
 4-11-43
 M-42

Walls with wood frame structure with
 7/8" C siding and flooring and corner studs
 ready for casing. Etern.
 A. Casing: 7/8" C siding, corrugated iron
 roofing and concrete floor.
 B. Laundry - Servant Quarters: 7/8" C siding,
 composition paper roofing and concrete floor.



Occupants: 9
 402 1/2 sq ft
 25' x 16' x 10'

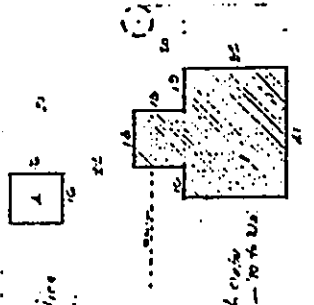
Scale: 1" = 50' 0"



144

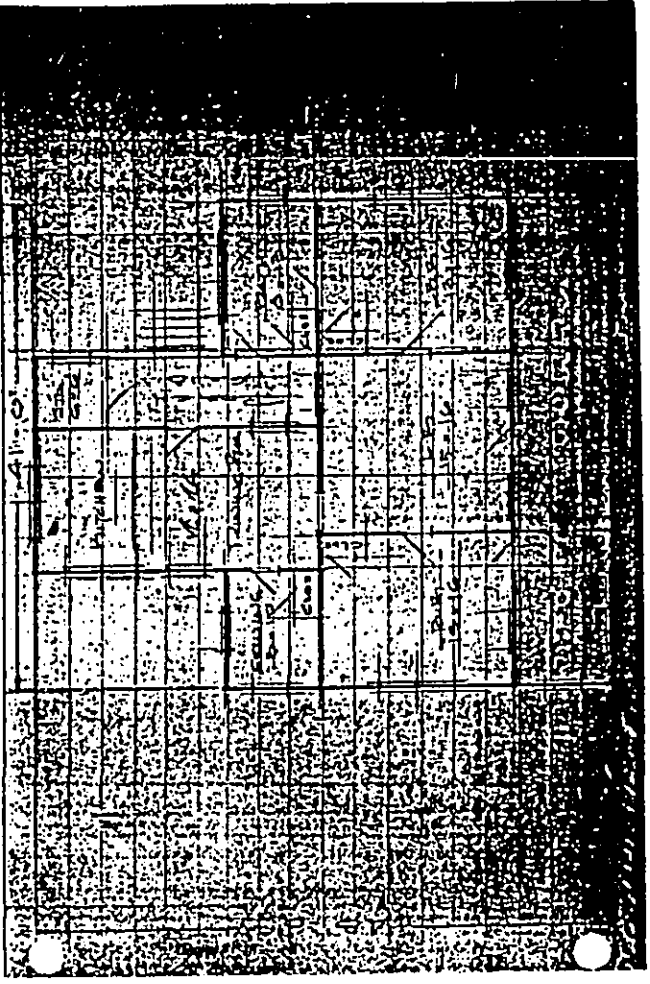
OLKAMU 12 1600 f 313 \$1300
 Date of Construction: 1945
 4-8-43 - 05
 4-11-43
 M-42

Walls with wood frame structure
 with 7/8" C siding and flooring and composition
 paper roofing. Etern. Corners - 2x4's
 A. Casing: 7/8" C siding, composition
 paper roofing and concrete floor.



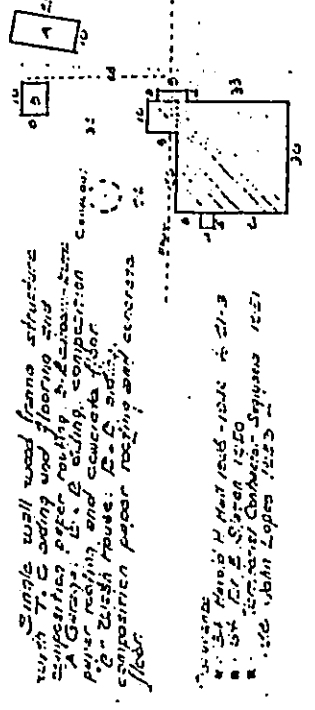
Occupants: 12
 1600 sq ft
 52'9" x 30'7" x 11'6" - 10'4" x 11'6"
 313 James Lindsay 12/20/45

Scale: 1" = 50' 0"



145

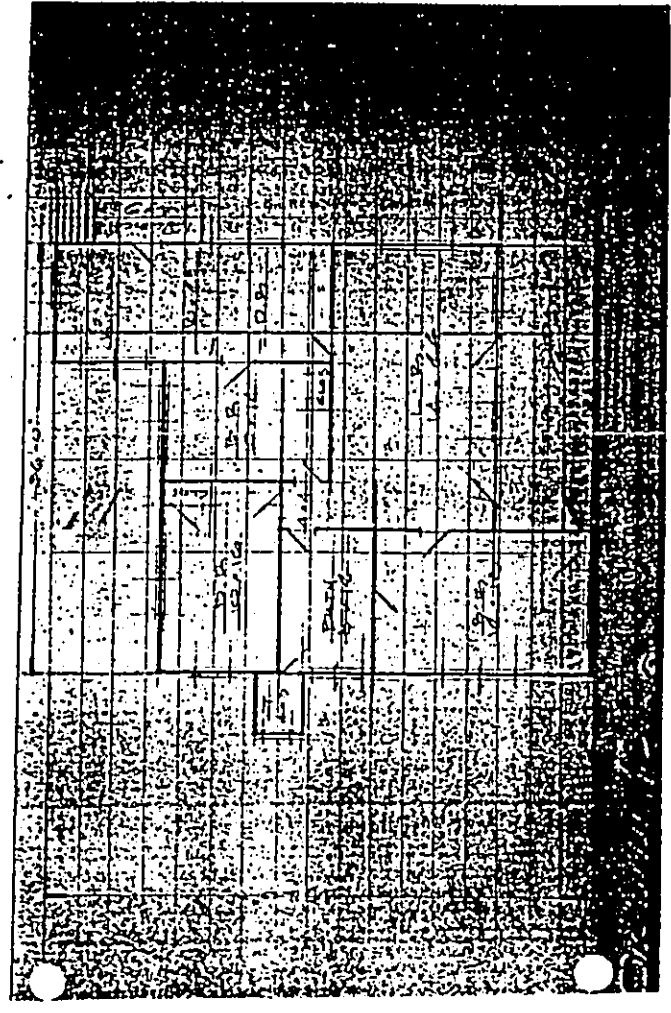
CHOWALU 13 1442 f 3.C #47-15
 Date of Construction: 1915
 11-119 11-25
 11-25



Single wall wood frame structure with T.C siding and flooring and composition paper roofing. B.B. concrete floor. A. C. wall frame structure. B.C. siding, composition paper roofing and concrete floor. B.C. siding, composition paper roofing and concrete floor.

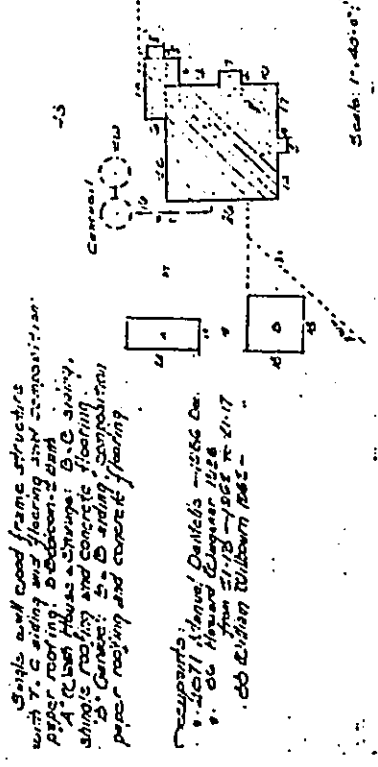
Remarks:
 1. See Report H. No. 105-1051 p. 21-3
 2. See Report H. No. 105-1050 p. 21-3
 3. See Report H. No. 105-1050 p. 21-3
 4. See Report H. No. 105-1050 p. 21-3

Scale: 1:400



141

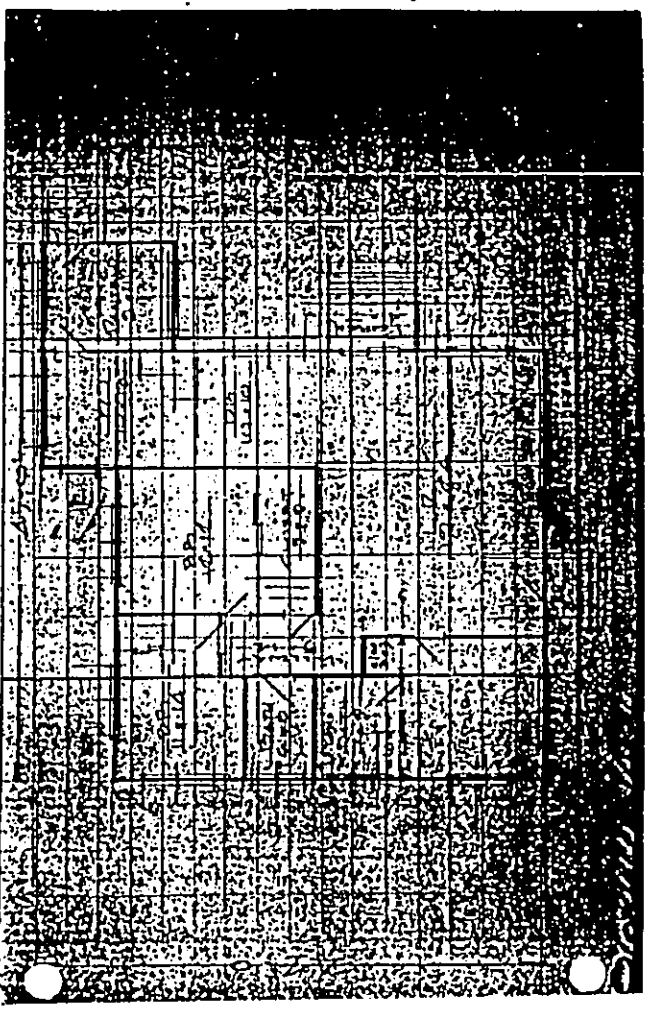
CHOWALU 14 1522 f 3.C #46-15
 Date of Construction: 1915
 11-119 11-25
 11-25



Single wall wood frame structure with T.C siding, flooring and composition paper roofing. B.B. concrete floor. A. C. wall frame structure. B.C. siding, composition paper roofing and concrete floor. B.C. siding, composition paper roofing and concrete floor.

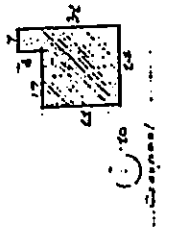
Remarks:
 1. See Report H. No. 105-1051 p. 21-3
 2. See Report H. No. 105-1050 p. 21-3
 3. See Report H. No. 105-1050 p. 21-3
 4. See Report H. No. 105-1050 p. 21-3

Scale: 1:400



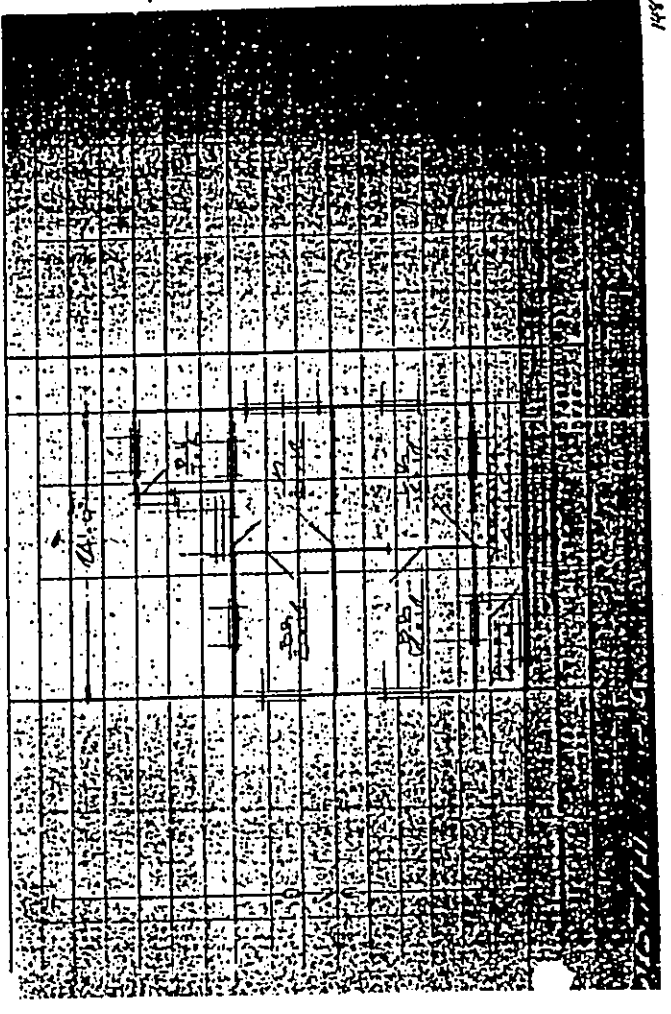
147

OICWALU 17 632 f 10 #14 5
 Date of Construction: 1210 4-6-00 19
 57.124
 11.25
 Road
 Single wall wood frame structure
 with siding and flooring and
 composition paper roofing. Concrete
 floor in kitchen.
 2 Carport - wide Tilted 2nd story



Occupants: 5113 Alfred Keeso

Scale: 1/2"=10'0"



144



Olowalu, Lahaina, Maui

Existing Potable Water System
Existing Ditch System
Appx. Boundary for Conservation District

CORRECTION

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

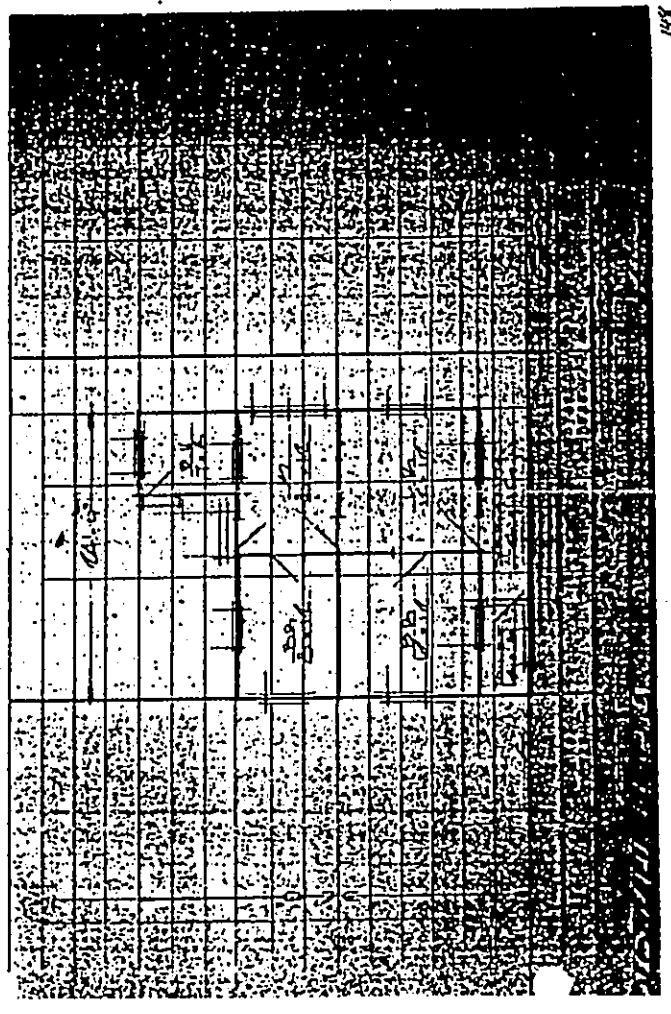
OCWUALU 17 632 # 10 #145
Date of Construction: 12/10
Dist. No. 4-0-00-19-124
M: 25

Single wall wood frame structure
with T & G siding and flooring and
composition paper roofing. Concrete
floor in bathroom.
2 Bathroom inside Transit. 5-4 additional

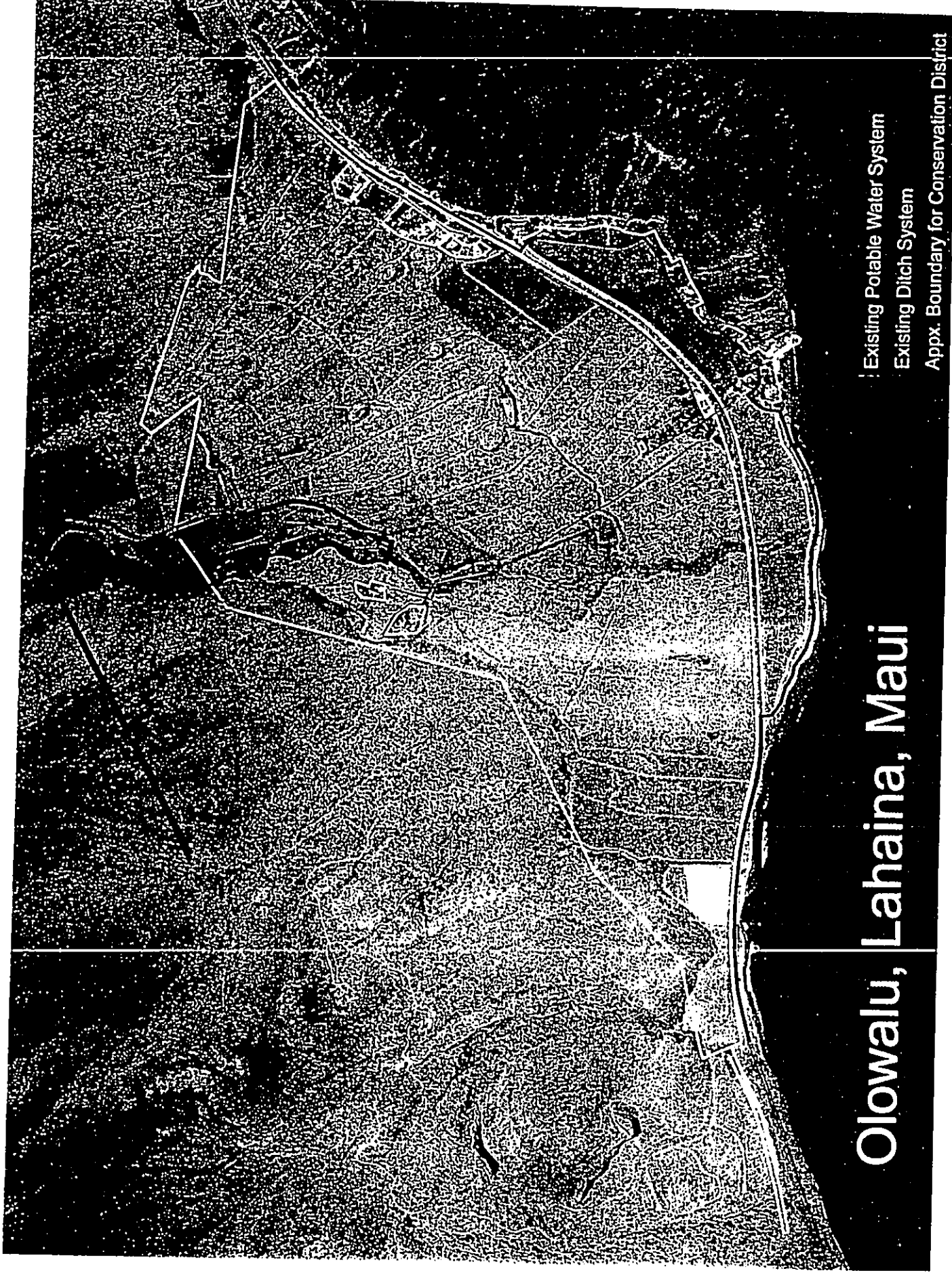
Occupants:
2113 Alfred Keso



Scale: 1"=20'0"

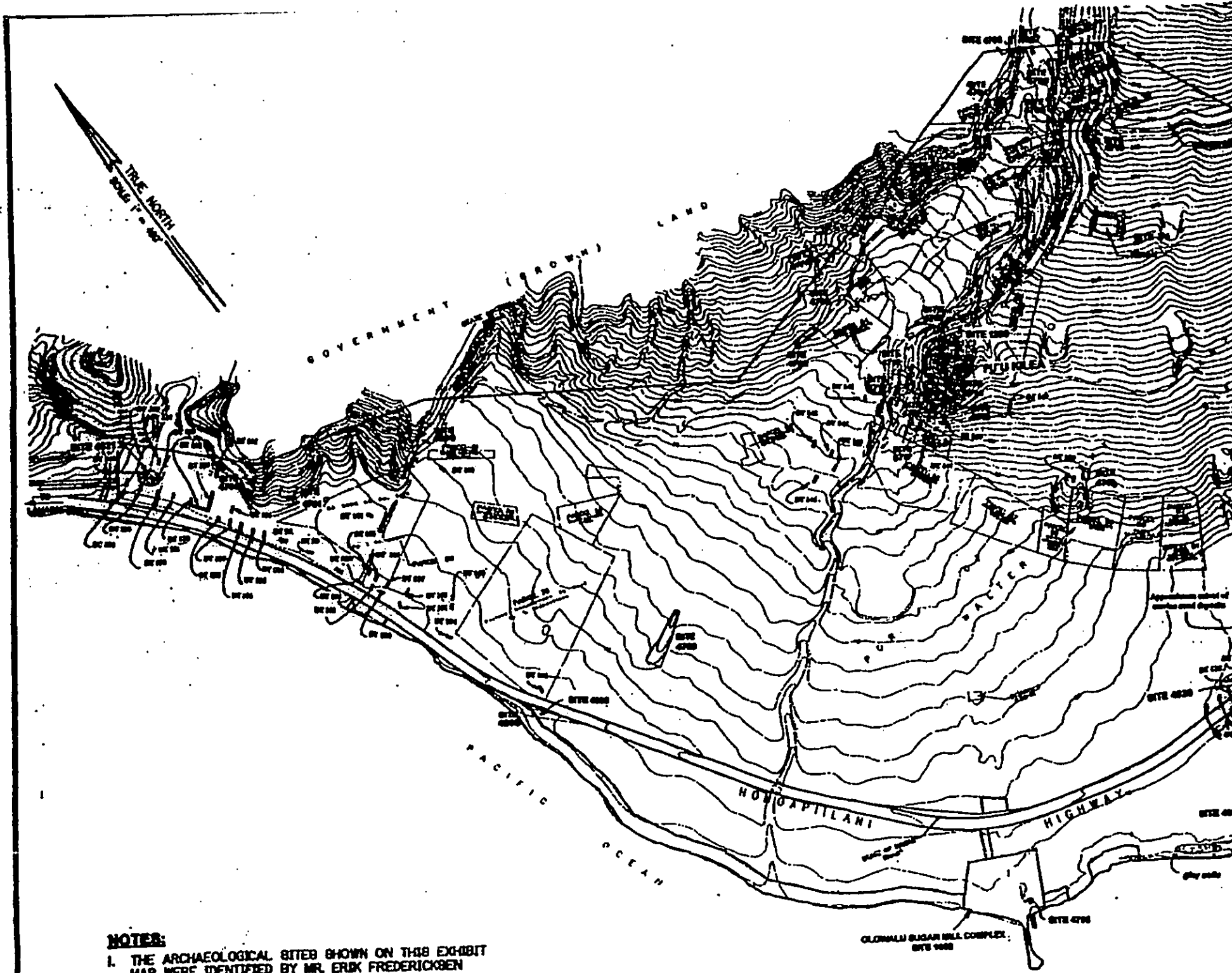


144



Olowalu, Lahaina, Maui

Existing Potable Water System
Existing Ditch System
Appx. Boundary for Conservation District



- NOTES:**
1. THE ARCHAEOLOGICAL SITES SHOWN ON THIS EXHIBIT MAP WERE IDENTIFIED BY MR. ERIK FREDERICKSEN OF XAMANEX RESEARCHER AND WERE LOCATED ON THE GROUND DURING THE MONTH OF APRIL, 1998.
 2. KULEANAS AS SHOWN ARE APPROXIMATE.

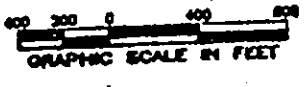
Prepared for: **OLOWALU ELUA ASSOCIATES, L.L.C.**
173 Nohana Street, Suite 201
Kahului, Hawaii 96732

ARCHAEOLOGICAL SITES LOCATION

OLOWALU MAUKA AND MAKAI PROPERTIES

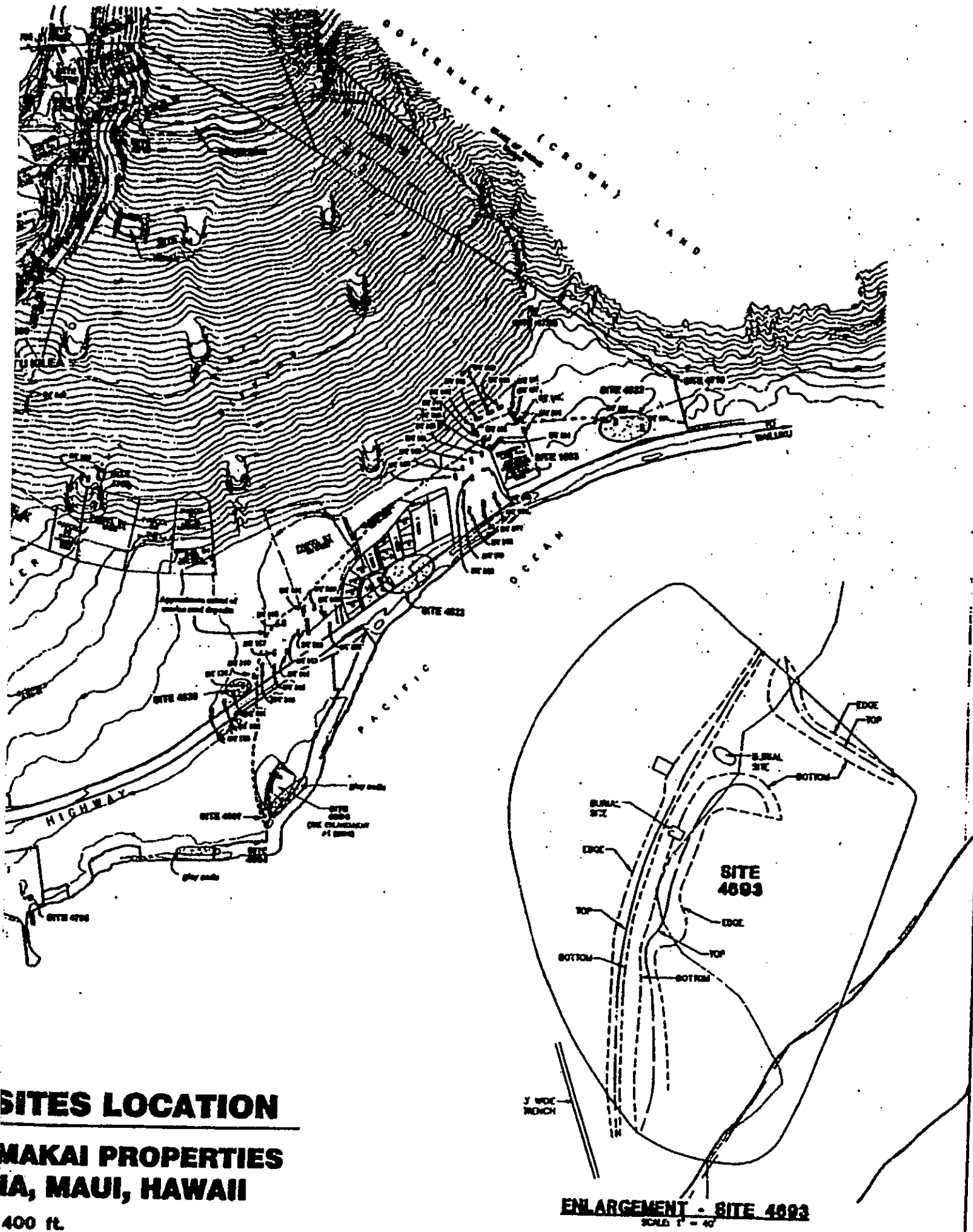
AT OLOWALU, LAHAINA, MAUI, HAWAII

SCALE: 1 in. = 400 ft.



See Map Key (X) 4-8-03
871 HOLEI STREET, SUITE 201
KAILUA, MAUI, HAWAII 96733

R. T. TANAKA ENGINEERS, INC.
LAND SURVEYORS - CIVIL & STRUCTURAL ENGINEERS



SITES LOCATION

**MAKAI PROPERTIES
IA, MAUI, HAWAII**

400 ft.

ENGINEERS, INC.
STRUCTURAL ENGINEERS

ENLARGEMENT - SITE 4093
SCALE 1" = 40'

REVISED: JULY 09, 1966
REVISED: JULY 07, 1966
APRIL 25, 1966
JOB NO. 66-79

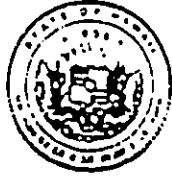
APPENDIX F-3.

**Archaeological Inventory
Survey Report Approval
Letters from Department of
Land and Natural Resources
(DLNR), State Historic
Preservation Division**

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

RECEIVED

DATE 3/10/00



TIMOTHY E. JOHNS, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTIES
JANET E. KAWALO

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
Kakuhihewa Building, Room 555
501 Kamehale Boulevard
Honolulu, Hawaii 96807

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

February 25, 2000

Mr. Robert Horcajo, Project Manager
Olowalu Elua Associates, LLC
173 Ho Ohana Street, Suite 201
Kahului, Hawaii 96732

LOG NO: 24957 ✓
DOC NO: 0002RC39

Dear Mr. Horcajo:

**SUBJECT: Review of Revised Archaeological Inventory Survey Report – Olowalu Makai
Development Parcel
Olowalu, Lahaina, Maui** **TMK: 4-8-3: portion 5**

This letter reviews the revised report which was submitted February 7, 2000 and received in our office on February 9th (D. Fredericksen & E. Fredericksen 2000. Archaeological Inventory Survey of Makai Portion (Phase 1) of Olowalu Development Parcel ... Xamanek ms.). This revision addresses our review letter of January 14, 2000 (Log: 24,721; Doc: 0001RC11).

The summary of the ahupua'a settlement pattern in the background section of the report is better, but it still does not summarize the details of all the important information that was presented in that section of the report. However, rather than ask for another revision, our staff will prepare a detailed summary which will be placed in our library along with the report.

The revision has addressed all our other concerns, particularly regarding site size, descriptions, and interpretation matters. The report is now acceptable.

Although many precontact and early 1800s habitation sites may have been along the shoreline in this project area, sugarcane cultivation has apparently destroyed most of these sites. A fishpond to the east seems to be under the highway today, and it appears not to be in the project area. Seven archaeological sites, plus gleyed marsh soils with possible historical importance, survive in the project area. These include 4 precontact to early 1800s sites (3 habitation sites – 4694, 4697, and 4698; 1 burial site – 4693) plus the gleyed marsh soils, and 3 late 1800s-1900s sites (the Olowalu Mill Complex – 1602; a road remnant – 4696; a sea wall apparently associated with a road turnout – 4695).

We agree with the report's significance evaluations. The road remnant (4696) and associated sea wall (4695) are "no longer significant" because the limited important information in these sites was recorded during the survey. The 3 precontact to early 1800s habitation sites are significant for their information content, as are the gleyed marsh soils (which may contain important pollen and charcoal material for dating initial settlement along this coast). The burial site (4693) and the Olowalu Mill Complex (1602) are significant under multiple criteria. As an aside, our review letter of January 14th contained an error in final editing. Table 2 should have "no longer significant", not D, in the significance column for 4695 and 4696 and simply "no further work" or no entry at all in the mitigation column (as only significant sites need mitigation). We apologize for this, but could you please have Table 2 revised accordingly and send a replacement page? This change will clearly show to all readers of the report that these 2 sites are not significant.

Mr. Robert Horcajo
Page 2

Last, we agree with the revised mitigation proposals for the 5 significant sites and the gleyed marsh soils. The 5 sites will be preserved, and the gleyed marsh soils will undergo archaeological data recovery. These actions will alleviate (mitigate) the adverse effects of the proposed project to these sites.

Thus, by a copy of this letter, we recommend to the County and State permitting agencies that the following standard conditions be attached to any approved permits, to ensure that the mitigation commitments to treat the significant sites are acceptably carried out:

1. Five sites shall be preserved (3 precontact to early 1800s habitations sites – 4694, 4697, 4698; 1 burial site – 4693; and the Olowalu Mill Complex – 1602). A preservation plan for all sites but the burial site must be submitted to and be approved by the State Historic Preservation Division (SHPD) (including buffer zones, as appropriate around the sites, interim protection measures, and long-term preservation measures). The preservation proposal and plan for the burial site shall be submitted to the Maui/Lana'i Islands Burial Council for vote. Minimally, the buffer zones and interim protection measures shall be in place (and verified in writing by the SHPD) prior to land alteration in the area of the sites. The SHPD shall verify in writing to the permitting agencies when the plan has been successfully completed.
2. The gleyed marsh soils shall undergo archaeological data recovery. An archaeological data recovery plan (scope of work) shall be submitted to and be approved by the State Historic Preservation Division (SHPD) prior to the beginning of the data recovery work. This scope should be completed, before a data recovery contract is negotiated. Minimally, data recovery fieldwork must be successfully concluded (and verified in writing by the SHPD) prior to land alteration in this part of the project area. The SHPD shall verify in writing to the permitting agencies when the plan has been successfully completed.
3. Archaeological monitoring of land altering construction in the sand areas along the shore shall occur, as a contingency to identify, document and treat any burials that might be found. A monitoring plan (scope of work) shall be submitted to and be approved by the State Historic Preservation Division (SHPD) prior to the beginning of the monitoring. This plan (which need only be a few pages long) must specify how any burials that are found will be documented archaeologically, notification procedures, and treatment measures that will be taken. This scope should be completed, before a monitoring contract is negotiated.

If you have any questions, please feel free to contact Dr. Cordy at 692-8025.

Aloha



Don Hibbard, Administrator
State Historic Preservation Division

RC:jen

c: Land Division, DLNR (CDUA application)
Planning Department, County of Maui
Public Works Department, County of Maui
Burials Program, DLNR
Maui/Lana'i Islands Burial Council Chair



STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
Kekuhihewa Building, Room 555
801 Kamehale Boulevard
Kapolei, Hawaii 98707

JANEY E. ADWEL

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

April 12, 2000

Mr. Robert Horcajo
Olowalu Elua Associates, LLC
173 Ho Ohana Street, Suite 201
Kahului, Hawaii 96732

LOG NO: 25237
DOC NO: 0004RC10

Dear Mr. Horcajo:

SUBJECT: *Review of Archaeological Inventory Survey - Mauka Olowalu Lands*
Olowalu, Lahaina, Maui
TMK: 4-8-3: 10

This letter reviews this revision of this report which our staff received March 20, 2000 (Dee Fredericksen & Erik Fredericksen 2000. Archaeological Inventory Survey of Mauka Portion of Olowalu Development Parcel ... Xamanek ms.). The report is now acceptable.

We can now conclude that all historic sites have been found, totaling 34 sites. It now seems clear that the irrigated kalo fields along the lower stretches of Olowalu Stream were destroyed by intensive land clearing activities of the sugarcane industry. The background section is acceptable, as are site descriptions and interpretations.

Only remnants of the precontact to early 1800s Hawaiian settlement pattern survive - notably one large heiau (site 4, Kawaialoa heiau), a medium-size heiau (4718), the burial area on Pu'u Kilea (4715), and inland of Pu'u Kilea, sites along Olowalu Stream associated with habitation and irrigated kalo farming (including two small, possible agricultural heiau in sites 4701 and 4708). Petroglyphs are also present in sites 1200, 4704, 4708. Remnants of the sugarcane era (late 1800s-1900s) include walls, canals, and a workers' cemetery. Burials are present in 9 sites - including cemeteries at Pu'u Kilea (Hawaiian), some unmarked graves extending from the Old Hawaiian Protestant Church, and a plantation era Japanese cemetery.

We agree with the significance evaluations that are proposed in Table 4 (p. 73). Eight of the 34 sites were significant solely for their information content, but they contained minimal information (being late 1800s-1900s walls, or having been severely damaged) and this information was adequately and reasonably recorded, making these sites "no longer significant". The remaining 26 sites are significant - 9 solely for their information content and 17 for multiple criteria.

We also agree with the proposed mitigation commitments for the 26 significant sites, with some clarifications. Nineteen of the sites are proposed for preservation, while 5 sites are proposed for archaeological data recovery, and 2 are proposed partly to be preserved/partly data recovered.

We are pleased to see that a number of the sites are proposed for interpretive preservation, which we believe will enhance the public's understanding of past settlement in this area of Maui. These sites include the large heiau and moderate-sized heiau on the slopes not far from the former houses and lo'i once located along Olowalu Stream, two sites with sizable numbers of petroglyphs, and an irrigated kalo field complex. This part of Maui (indeed the entire island) has very few interpreted historic sites which are accessible to the public. Some sites are to be interpreted in the Launiupoko area (habitations and some dry land agricultural features near the mouth of the upper valley and some temporary habitations – rock shelters – along the lower reaches of Launiupoko Stream), and with the addition of sites being interpreted in Olowalu, the public will be able to go to a series of historic preserves and see how Hawaiians used the landscape in the Lahaina area in the past. We hope eventually to expand this picture with sites being preserved in the upper valleys (such as upper valley lo'i and houses) and along the shore (coastal habitations in the form of subsurface deposits, ponds, and irrigated kalo fields) including important places in Lahaina which was a royal center in precontact times up to the time of Kamchameha III. Having such sites preserved improves the public's understanding of the past, enabling people to see and touch places where people once lived, farmed and worshipped in addition to seeing objects in Museums and reading about the past in books.

We are also pleased to see that one of the sites to be archaeologically data recovered is the buried marsh/lagoonal soils (site 4823). These soils may have the potential (through pollen cores) to identify when permanent settlement began along this shoreline. Often pollen shows vegetation changes reflecting human clearing of vegetation for farming. Current scientific models suggest that the Lahaina area may have been one of the earliest leeward areas settlement on Maui with its small flowing streams, perhaps as early as the A.D. 1000s. Thus, data recovery work may be able to shed light on this important subject.

Our few clarifications are:

1. The Maui Island Burial Council must vote on the burial treatment proposals, before those proposals can be considered final. Most burials are recommended for preservation in place, which is the general policy of our office and the councils. But, we note that two sites (4820 & 4821, each a scatter of human bone, evidently single burials disturbed by cane activities) are proposed for disinterment (and data recovery) and reinterment. The text on page 69 states as if this will occur. However, the Burial Council must first vote on this proposal, and it is possible that they would recommend preservation in place. (If removal were approved, then archaeological data recovery and monitoring would be a component of removal. If preservation in place were approved, then archaeological monitoring in the vicinity, to ensure all bones are recovered and placed in the preservation area, would be a component of the preservation plan.)
2. It must be understood that no preservation activities should occur without an approved preservation plan. We understand that your firm may be planning to deed over preserve areas to a local group for them to care for the sites, or possibly have a group act as curator. While this seems fine, it needs to be clear that no preservation tasks should begin without a plan approved by our office and the County. This ensures that the preservation actions will be appropriate. In cases like this when native Hawaiian sites are involved, our policy is that the local Hawaiian community be either involved in the preparation of the preservation plan or be able to comment on the plan, prior to the plan's submittal to our office for review.

Mr. Robert Horcajo
Page 3

Again, we find the survey report acceptable. Please send a copy of the final report to our Maui office also.

Clearly, the proposed development of this area will impact the significant historic sites that are present. The proposed mitigation commitments (preservation and data recovery) will help reduce the impacts of the development and should have educational benefits to the public at large. To ensure that the mitigation commitments are acceptably carried out, we recommend to the County by copy of this letter that any approved permit application contain the following standard conditions:

1. The Maui/Lana'i Islands Burial Council must vote on the mitigation proposals for all burials.
2. The survey report identifies sites which shall be preserved. The applicant shall submit a detailed preservation plan (scope of work) for these sites to the State Historic Preservation Division (SHPD) for approval. This plan will include buffer zones, interim protection measures (as needed), and long-range preservation plans. No land alteration may occur in the vicinity of these sites until minimally the buffer zones and interim protection measures are approved and the SHPD verifies the interim protection measures are in place. No preservation activities may occur in these sites until the preservation plan is approved. The SHPD shall verify in writing to the County when the plan has been successfully executed.
3. Archaeological data recovery shall occur at the sites so identified in the survey report. The applicant shall submit an archaeological data recovery (scope of work) for these sites to the State Historic Preservation Division (SHPD) for approval. The SHPD shall verify in writing to the County when the plan has been successfully executed.

If you have any questions, please feel free to contact our office. Assuming that all permits will be obtained from the County and/or State, we will await receiving the preservation and data recovery plans. Ross Cordy, our Branch Chief for Archaeology (692-8025), can be contacted on those matters. Please contact Ka'iana Markell of our Burials Program (587-0044) for placement on the Burial Council's agenda and for information that the Council will need to see.

Aloha,



Don Hibbard, Administrator
State Historic Preservation Division

RC:jen

c: Public Works Department, County of Maui
Planning Department, County of Maui
Maui Cultural Resource Commission
Ed Henry, DLNR Land Division
Chair, Maui/Lana'i Island Burial Council
Dee Fredericksen, Xamanck Researches

APPENDIX F-4.

**Archaeological Mitigation and
Preservation Plan and SHPD
Approval Letter**

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII



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

DEPUTIES
JANET E. KAWALO
LUNNEL NISHIOKA

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
Kakuhikawa 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

June 4, 2001

Mr. Robert Horcajo
Olowlu Elua Associates LLC
173 Ho Ohana Street, Suite 201
Kahului, Hawaii 96732

LOG NO: 27621
DOC NO: 0105MK20

Dear Mr. Horcajo:

Subject: *Historic Preservation Review of the Revised Archaeological Mitigation and Preservation Plan Olowlu Makai Lands Olowlu Ahupua'a, Lahaina District, Maui*

Thank you for the opportunity to review this revised plan which was sent to our office on 4 May 2001.

You have now addressed the concerns in our initial review (Log No. 27285, Doc. No. 0103MK08).

The plan is now acceptable. If you have any questions, please contact Dr. Melissa Kirkendall at 243-5169.

Aloha,

Nathan Hapua

for DON HIBBARD, Administrator
State Historic Preservation Division

MK:amk

- 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

RECEIVED
BY _____ DATE 6/6/01

Olowalu Elua Associates, LLC

ARCHAEOLOGICAL MITIGATION & PRESERVATION PLAN

Makai Portion (Phase 1)
Olowalu Ahupua'a, Lahaina District, Maui Island
TMK 4-8-3:1, 3, 4, 5, 6, 33, 41-49, 83 & 84

May 2001

Prepared by:

OLOWALU ELUA ASSOCIATES, LLC

173 Ho'ohana Street, Suite 201

Kahului, Hawai'i 96732

TABLE OF CONTENTS

INTRODUCTION.....2
BACKGROUND RESEARCH SUMMARY3
ARCHAEOLOGICAL WORK.....4
SIGNIFICANCE EVALUATIONS5
TABLE 1 (Site Identifications)6

IDENTIFICATIONS OF SITES WITH DESCRIPTIONS

• 46939
• 46949
• 469510
• 469610
• 469710
• 469811
• 160211
• Gley Soils.....12

APPENDIX A

• Mitigation RecommendationsA-1

APPENDIX B

• Monitoring Plan.....B-1

APPENDIX C

• Text for SignageC-1

EXHIBIT "A"

- MAP SHOWING EASTERN SHORELINE MONITORING AREA
- AERIAL PHOTO SHOWING SITE LOCATIONS

INTRODUCTION

Olowalu Elua Associates, LLC purchased 734 acres in the ahupua'a of Olowalu in 1998. Because the Honoapi'iiani Highway bisects the property, separate inventory surveys were conducted for the makai lands (73 acres) and the mauka lands (661 acres). The makai lands consisted of Parcel 5 and nine kuleana (Parcels 41 through 49).

This Preservation Plan describes background research and archaeological work performed on the property, identification of sites to be preserved with descriptions, locations of buffer zones, short- and long-term preservation plans, and maps and drawings relating to the sites.

BACKGROUND RESEARCH SUMMARY

Xamanek Researches conducted an archaeological inventory survey of the 73-acre makai portion of the Olowalu ahupua'a. It was also decided to conduct an inventory survey on the adjoining parcels owned by the State of Hawaii as Government Beach Reserves (TMK: 4-8-03:1, 3, 4 & 6). The fieldwork was conducted in late 1998 and early 1999 and consisted of an intensive pedestrian survey, extensive backhoe trenching along shoreline areas, and limited subsurface testing.

During the fieldwork, eight previously unrecorded sites were identified within the study area. The features comprised the following formal types: a precontact burial ground (Site #4693); a probable precontact wall remnant (Site #4694); a probable post-contact sea wall (Site #4695); a remnant of the Old Government Road which followed the route of the traditional Pi'ilani coastal trail (Site #4696); a probable early post-contact subsurface habitation deposit (Site #4697); a late precontact subsurface habitation deposit (Site #4698) and gley soils. The ruins of the Olowalu Sugar Mill (Site #1602) also lie within the study area.

It is noted that Site #4695 (probable post-contact sea wall) and portions of Site #4696 (remnant of Old Government Road) lie within the state-owned Beach Reserve. Also, Site #4694 (probable precontact wall remnant) lies predominantly within the state-owned Beach Reserve. Only a small portion of the wall (approximately five feet, or less than ten percent of the entire wall segment) lies on property owned by Olowalu Elua Associates, LLC. The two gley soils sites are located on both the state-owned Beach Reserve and property owned by Olowalu Elua Associates, LLC. Olowalu Elua Associates, LLC will propose mitigation only for sites or parts of sites lying on lands it owns.

All of the sites identified were assessed as significant under Criterion "d." The Olowalu Sugar Mill site is also deemed significant under Criterion "a," and the burial ground (Site #4693) also qualifies for significance under Criterion "e" (for its traditional cultural value).

The Maui/Lana'i Islands Burial Council accepted the Preservation Plan for Site #4693 (burial ground) at its August 26, 1999 meeting.

ARCHAEOLOGICAL WORK

The basic purpose of the inventory survey was to identify (to discover and locate on available maps) all sites and features of potential archaeological significance present within the specified area. An inventory survey is extensive rather than intensive in scope, and conducted to determine the presence or absence of archaeological resources within a specified project area. This level of survey indicates both the nature and variety of archaeological remains present, and the distribution and density of such remains. It permits a significance assessment of the archaeological resources and facilitates formulation of recommendations and estimates for any subsequent mitigation work as might be necessary or appropriate.

The inventory survey was carried out in accordance with the standards for inventory-level surveys recommended by the DLNR-HRD. The significance of all archaeological remains identified within the project area were assessed in terms of criteria outlined in the Rules Governing procedures for Historic Preservation Review (DLNR 1996;Chap275).

SIGNIFICANCE EVALUATIONS

Pursuant to DLNR (1996) Chapter 275-6 (d), the initial significance assessments provided herein are final, due to concurrence from the DLNR having been obtained. The project has been evaluated under the state rules and regulations governing cultural resource management. Consequently, sites identified and located during this survey have been assessed for significance based on criteria outlined in the Rules Governing Procedures for Historic Preservation Review (DLNR 1996:Chap 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:

- 1.) Criterion "a". Be associated with events that have made an important contribution to the broad patterns of our history.
- 2.) Criterion "b". Be associated with the lives of persons important in our past.
- 3.) 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;
- 4.) Criterion "d". Have yielded, or is likely to yield, information important for research on prehistory or history.
- 5.) 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—these associations being important to the group's history and cultural identity.
- 6.) "nls" Site is determined as no longer significant.

Table 1 shows the sites designated for preservation and the significance evaluation attributed to it.

Table 1

SHP SITE #50-50-08	SIGNIFICANCE CRITERION	COMPONENT FEATURES	STATUS	CONDITION F=Fair, P=Poor, G=Good	AGE	PROPOSED MITIGATION
4693	D & E	Burials	Altered	G-P	Indigenous	Preservation as per the Preservation Plan for Site 4693 accepted by the Maui/Lana'i Islands Burial Council at its August 26, 1999 meeting.
4694	D	Wall Structure	Altered	F	Historic	<u>Preservation Site Buffer, Short- and Long-Term Preservation</u> as per the Preservation Plan for Site 4693 accepted by the Maui/Lana'i Islands Burial Council at its August 26, 1999 meeting.
4694 (OEA Land)	D	Wall Structure	Altered	F	Historic	<u>No Mitigation</u> - Located in State Beach Reserve. <u>Preservation</u> .
						<u>Preservation Site Buffer, Ten (10) feet.</u>
						<u>Short-Term Preservation: N/A</u>
						<u>Long-Term Preservation: Signage (see Appendix C)</u>
4695	D	Sea Wall	Altered	F-P	Historic	<u>No mitigation</u> (located in State Beach Reserve); no longer significant.
4696	D	Old Gov't. Rd.	Altered	P	Historic	<u>NLS</u> (no longer significant).
4697	D	Subsurface Cultural Deposit	Altered	F-P	Historic	<u>*Preservation</u>
						<u>Preservation Site Buffer, Ten (10) feet.</u>
						<u>Short-Term Preservation: N/A</u>
						<u>Long-Term Preservation: Signage (see Appendix C).</u>

*Sites 4697, 4698, 1602 and Gley oils are intended to be preserved; however, landowners may elect to conduct data recovery in the future, at which time SHPD will be notified and an amended Archaeological Monitoring and Preservation Plan will be submitted for review and approval.

Table 1

SHP SITE #50-50-08	SIGNIFICANCE CRITERION	COMPONENT FEATURES	STATUS	CONDITION (F=Fair, P=Poor, G=Good)	AGE	PROPOSED MITIGATION
4698	D	Subsurface Cultural Deposit	Altered	F	Indigenous	*Preservation <u>Preservation Site Buffer:</u> None (currently used as beach access). <u>Short-Term Preservation:</u> N/A <u>Long-Term Preservation:</u> Signage (see Appendix C).
1602	A & D	Olowalu Mill Complex	Altered	F	Historic	*Preservation <u>Preservation Site Buffer:</u> Thirty (30) feet. <u>Short-Term Preservation:</u> N/A <u>Long-Term Preservation:</u> Signage (see Appendix C).
Gley Soils (State Land)	D	Subsurface Deposit	Unaltered	G	Historic & Indigenous	No mitigation (located in State Beach Reserve) <u>Preservation Site Buffer:</u> Ten (10) feet from site. <u>Short-Term Preservation:</u> N/A <u>Long-Term Preservation:</u> Signage (see Appendix C).
Gley Soils (OEA Land outside of Site #4693 Burial Area)	D	Subsurface Deposit	Unaltered	G	Historic & Indigenous	*Preservation <u>Preservation Site Buffer:</u> Ten (10) feet from site. <u>Short-Term Preservation:</u> N/A <u>Long-Term Preservation:</u> Signage (see Appendix C).

*Sites 4697, 4698, 1602 and Gley soils are intended to be preserved; however, landowners may elect to conduct data recovery in the future, at which time SHPD will be notified and an amended Archaeological Monitoring and Preservation Plan will be submitted for review and approval.

IDENTIFICATION OF SITES WITH DESCRIPTIONS

1. 4693

SITE TYPE: Cultural (Burials) CONDITION: Extensively impacted by sugar cultivation.

INTEGRITY: Portions Altered PROBABLE AGE: Precontact

FUNCTIONAL INTERPRETATION: Burial Grounds

DESCRIPTION: This site lies near Hekili Point, within c. 50 meters of the existing coastline. It is interpreted as a probable precontact burial ground.

On November 13, 1998, human remains were located by Mark Donham and Erik Fredericksen. On the previous day, an informant who wished to remain anonymous indicated that there was an area where he recalled seeing "bones" in the past. Careful inspection along the makai berm of the cane access road yielded three cranium fragments and one femur shaft fragment. Subsequent inspection of the area yielded a surface scatter of previously disturbed human skeletal materials. Following consultation with Maui/Lana'i Islands Burial Council members, it was decided to conduct subsurface testing to determine the presence of burials.

A series of backhoe trenches were then placed in the vicinity of the surface scatter in order to assess subsurface conditions. Two backhoe trenches exposed *in situ* human remains. In addition, a single back-blade pass along the road located a heavily impacted *in situ* burial. Given the presence of these burials, mechanical testing was halted in the immediate area. Manual investigation was undertaken on the burial in the road and on the other located remains. Subsequent investigation yielded three additional finds of human skeletal remains.

2. 4694

SITE TYPE: L-Shaped Wall CONDITION: Fair

INTEGRITY: Unaltered PROBABLE AGE: Historic

FUNCTIONAL INTERPRETATION: Habitation

DESCRIPTION: This site is located on Hekili Point. It rests c. 3-4 feet AMSL and lies within 20 m. of the existing high-water mark in the beach reserve. The site consists of an L-shaped wall of waterworn basalt cobbles and a few small boulders. In addition, several coral cobbles were noted in the structure wall.

This structure ranges from 30 to 60 cm. in height and is up to 1.2 meters wide. It is c. 10 meters E-W by c. 9.5 meters N-S on the west leg. The northern portion of this leg appears to have been impacted by past bulldozing activities likely associated with the nearby abandoned sugarcane field. The eastern end of the site did not appear to have been mechanically damaged. The overall labor expenditure for the construction of this structure was moderate to high, and its overall condition is fair. However, a portion of this structure appears to have been impacted in the past fifty years. No post-contact material culture remains were noted in the structure of the site. However, a 4" x 4" timber was apparently placed in the rock structure in

modern times. The dimensions (3.5" x 3.5") of the post and its generally good condition suggest it was put there in recent times.

A total of three test units were utilized to investigate subsurface conditions. No subsurface features were encountered in any of the one-meter square test units.

3. 4695

SITE TYPE: Post-Contact Sea Wall CONDITION: Fair-Poor

INTEGRITY: Altered PROBABLE AGE: Historic

FUNCTIONAL INTERPRETATION: Associated with Roadway (Site 4696)

DESCRIPTION: Site 4695 lies in the Beach Reserve of the western portion of the project area. It appears to have been built in post-contact times, and is tentatively identified as a shoreline erosion wall that may have been associated with Site 4696. The site is in generally fair condition.

4. 4696

SITE TYPE: Old Government Road CONDITION: Poor

INTEGRITY: Altered PROBABLE AGE: Historic

FUNCTIONAL INTERPRETATION: Roadway

DESCRIPTION: Site 4696 lies partially in the Beach Reserve and partially in lands owned by OEA along the western portion of the project area. It is in poor condition and is part of the Old Government Road. This government road was probably built in the mid-1800s, and followed the route of the traditional trail that encircled the island of Maui.

5. 4697

SITE TYPE: Subsurface Cultural Deposit CONDITION: Fair

INTEGRITY: Altered PROBABLE AGE: Historic

FUNCTIONAL INTERPRETATION: Possible Historic Habitation / Agricultural Site

DESCRIPTION: This is a subsurface site, which lies in the abandoned sugar cane field to the west of Site 4693 (burial ground). Site 4697 was encountered during the excavation of the 30-meter long BT 23. Portions of a dog skeleton were located near the 15.5-meter point of the long trench. Subsequently, charcoal flecking and a few pieces of marine shell were noted in the profile of BT 23. Two 1-meter square test units were utilized in order to evaluate subsurface conditions near the 17-meter mark in BT 23.

6. 4698

SITE TYPE: Subsurface Cultural Deposit CONDITION: Fair

INTEGRITY: Unaltered PROBABLE AGE: Indigenous

FUNCTIONAL INTERPRETATION: Habitation

DESCRIPTION: This site was located during backhoe testing near the ruins of the former Olowalu Mill (Site 1602). Backhoe Trench 59 was excavated just to the east of the landscaped area of the former manager's home. This backhoe trench lies within c. 25 m. of the existing shoreline. Charcoal flecking and scattered marine shellfish remains were noted in the profile and subsequently, a 1-meter square test unit was excavated to further investigate subsurface conditions.

7. 1602

SITE TYPE: Historic Structure CONDITION: Ruins

INTEGRITY: Unaltered PROBABLE AGE: Historic

FUNCTIONAL INTERPRETATION: Sugar Mill

DESCRIPTION: The ruins of the Olowalu Sugar Mill lie on the makai side of Honoapiʻilani Highway, approximately 20 meters from the shore. The Olowalu mill was probably constructed in the 1870's. A photograph is reproduced in *Maui Remembers* [Bartholomew (Ainsworth) and Bailey, 1994, p. 45], and is one of the few in existence. It shows the iron pole, which still remains, that was probably used to guide cables or ropes to boats tied to the pier. It may be part of a type of loading system that was used in the sugar industry at other mills.

A rough sketch map was included in the short data form completed during the 1974 statewide inventory of historic places. A map of the ruins, as they are today, was prepared by Mark Donham for the recent inventory survey. The buildings associated with the Mill include the manager's house, which was probably built around 1910. There are three other dwellings that were the residences of other managerial personnel connected with the plantation. These lie mauka between the remnants of the mill foundation and the highway. On the ocean side of the mill is the remnant of a boat-landing ramp and pier, which was used to load sugar onto cargo ships that would transfer it to market. A longer, more substantial breakwater or jetty, located on the Lahaina side of the ramp, extends c. 50 meters into the ocean, perpendicular to the shoreline. This creates a relatively calm basin leading up to the boat ramp.

The foundations of the mill are overgrown with alien vegetation. A large opiuma tree is growing between two brick walls at the makai end of a large cement slab. This may have been a boiler area, where sorghum was reduced to sugar in the refinement process. Other areas are completely covered with kiawe and opiuma trees and debris. The stable area is located on the east side of the site. Around the turn of the century, mules were kept for working in the fields and hauling cars along the railroad tracks.

Preservation Area: See map depicting preservation area on the following page.

APPENDIX A

MITIGATION RECOMMENDATIONS

Preservation Site Buffers: All buffers constitute part of the site and shall be measured from the extremities of its physical features.

Short Term Protection Measures:

For any sites where construction may occur within one hundred feet (100'), temporary fencing will be placed along the buffer edge where construction may occur. Prior to any land alteration, and once the fences are in place, SHPD will be contacted to verify in writing that interim protection measures are in place. Regarding Site #4693 (burial ground), the perimeter is currently lined with boulders and the preservation plan included the planting of a native hedge around the perimeter. It is not anticipated that temporary fencing would be necessary for this site.

Verbal and written notice will be given to all construction crews. The notice will include (i) the location of the site (ii) a description of the designated buffer zone and (iii) avoidance instructions and an emphasis of the caution needed when working near these sites.

Long Term Preservation Measures:

- **Boundary Markers:**

For sites where boundary markers will be placed, the markers will consist of stone monuments 2-foot high by approximately 1-foot in diameter. They will be placed at the outer edge of the buffer zones.

Site #4693: No boundary marker would be necessary given the existence of boulders and a future hedge around the perimeter.

Site #4694: Boundary markers will be placed as noted above.

Site #4697: Boundary markers will be placed as noted above.

Site #4698: No boundary markers will be placed but it will be noted and located on the interpretive signage for Site #1602, to which Site #4698 is immediately adjacent

Site #1602: No boundary markers will be placed given the size and breadth of the preservation area; however, interpretative signage will include a plot map of the preservation area.

8. Gley Soils

SITE TYPE: Gley Soils

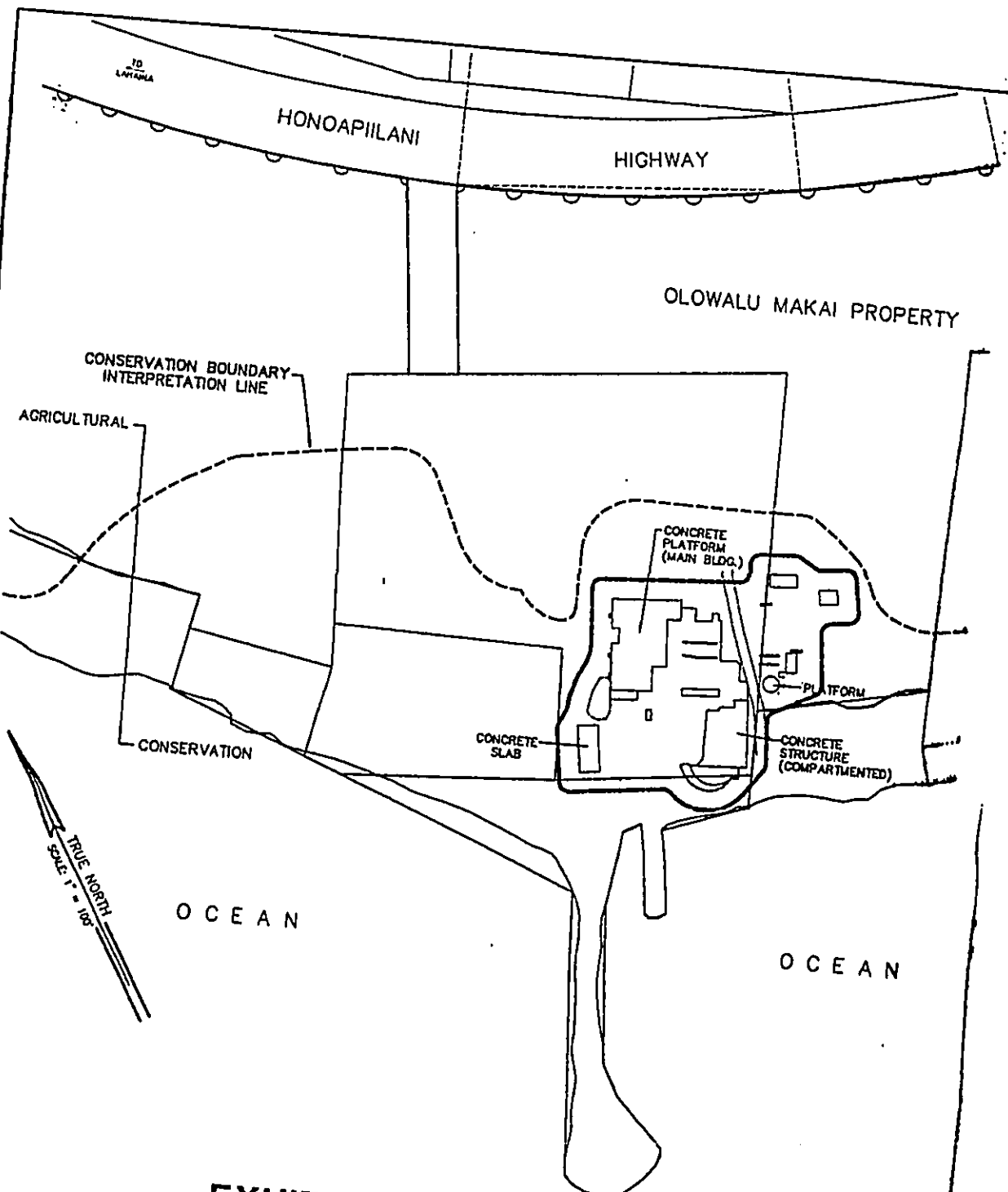
CONDITION: Unimpacted

INTEGRITY: Unaltered

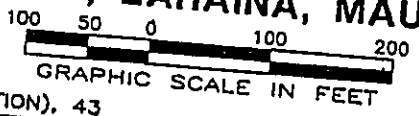
PROBABLE AGE: Pre & Post-contact

FUNCTIONAL INTERPRETATION: Organic Deposits

These gley soil deposits were high in organic content. It appears plausible that a coastal berm of the previously noted marine sand partially dammed the Olowalu stream flow sometime in the past 2000 to 5000 years, when the sea level was higher than at the present time. Direct evidence of such a berm and then resultant organic deposits that would have formed behind it were exposed during backhoe trenching. No attempt was made to date the deposits, as this was beyond the scope of the inventory survey.



**EXHIBIT MAP SHOWING
 PRESERVATION SITE BUFFER AREA FOR
 RUINS OF OLOWALU SUGAR MILL
 (SITE No. 1602)
 ON THE OLOWALU MAKAI PROPERTY
 AT OLOWALU, LAHAINA, MAUI, HAWAII**



1998\98-59\06\EXHIBIT.DWG

Tax Map Key (2) 4-8-03: 05(PORION), 43
 871 KOLU STREET, SUITE 201
 WAILUKU, MAUI, HAWAII 96793

R. T. TANAKA ENGINEERS, INC.
 LAND SURVEYORS - CIVIL & STRUCTURAL ENGINEERS

JANUARY 22, 2001
 JOB NO. 98-89

- **Public Access:**

Site #4693: The Preservation Plan approved by the Maui/Lana'i Islands Burial Council designated daylight hours, seven days per week, for access purposes. Any request for use of the site for cultural practices during a different access time would be accommodated by the landowner.

Site #4694: Access from Beach Reserve – no limitations.

Sites #4697 & 4698: N/A (subsurface deposits).

Site #1602: The access hours for the mill area will be daylight hours, seven days a week.

- **Maintenance Measures:**

Except as noted below, all sites will be maintained in "as-is" condition by the landowner or its assign. This will include the removal of any trash from all sites.

Site #4693: Maintenance of the native hedge around the perimeter and the native groundcover within the preservation area is the responsibility of the landowner or its assigns. The intent is that the native hedge will eventually make an impenetrable barrier except for designated entrances, but until such time, the landowner will maintain the placement of the existing boulders around the perimeter.

Site #1602: Within the mill itself are several kiawe and opiuma trees that continue to damage the mill structure. The current plan is to cut these trees at ground level and plant native plants, but in an area and of a type that would not damage the mill structure.

- **Signage:** See Appendix C.

Preservation Commitment:

Olowalu Elua Associates, LLC (OEA) or its assigns is the responsible party for implementation of the Preservation Plan. Should OEA wish to assign any site-specific maintenance responsibility to a homeowners association or a Hawaiian organization, SHPD will be consulted to ensure that these groups are briefed as to their stewardship responsibility.

APPENDIX B

Monitoring Plan for Eastern Shoreline Areas

Scope of Monitoring:

During the inventory survey phase, sand deposits were found next to the Beach Reserve along the eastern end of the study area. As such, archaeological monitoring of earth altering activities is recommended in the near-shore area. The location of the monitoring area is shown on the map at the end of this *Archaeological Preservation Plan* (Exhibit "A:").

Activities which would require monitoring include the following:

- A. Significant subsurface intrusion resulting from activities related to subdivision improvements.
 1. Trenching.
 2. Road work.
 3. Grading.
 4. Landscape work.

- B. Significant subsurface intrusion resulting from activities relating to the development of a private residence or related improvements.
 1. Trenching for footings.
 2. Trenching for foundation.
 3. Trenching for utilities below two feet (2') from grade.
 4. Grading below two feet (2') from grade.

Activities which would not require monitoring include the following:

1. Removal of debris.
2. Trimming of trees.
3. Fill of material where the existing grade is not cut.
4. Residential landscaping activities including (a) installation of sprinkler systems; and (b) installation of trees, shrubs and other landscaping materials.
5. Agricultural activities.

In the event of any proposed earth altering activity that requires monitoring, a meeting will be held with an archaeologist, the contractor, and the landowner of the proposed improvement before any work is performed. At this meeting, actual on-site time and specific actions to be followed in the event of inadvertent discoveries will be discussed and agreed upon by the landowner, The archaeologist and the contractor. Additional meetings may be

called if either the archaeologist or contractor believes other relevant information should be disseminated.

Monitoring Methodology:

There is a possibility that significant cultural materials may be inadvertently discovered during earthmoving activities. Since human burials and skeletal materials have been found on the subject parcel and in this area, inadvertent discovery of additional human remains in the monitoring area remains a possibility.

Close cooperation between the archaeologist and landowner is important to a successful monitoring program. Topics for discussion should include, but not necessarily be limited to, the following:

- 1) The contractor will be responsible for ensuring that each monitor is aware of scheduling plans and that a monitor is present at all earth-moving activities designated for monitoring.
- 2) Both the archaeologist and the contractor are responsible for ensuring that on-site work is halted in an area of significant findings and to protect the find from any further damage (i.e., fencing, protective covering, etc.) until mitigation of the finds are recommended by the SHPD and the Maui/Lana'i Islands Burial Council.
- 3) In the event of the discovery of human remains, work shall cease in the immediate find area. The monitoring archaeologist will be responsible for notifying the Historic Preservation Division Burials Program (UPDBP), which, in consultation with the Maui/Lana'i Islands Burial Council, will determine the appropriate mitigation measures. The notification will include providing accurate information regarding the context and composition of the find.
- 4) The archaeologist will work in compliance with Hawaii Revised Statutes Chapter 6E (Procedures Relating to Inadvertent Discoveries).
- 5) The archaeologist will have authority to close down construction activities in areas where potentially significant discoveries have been made until they have been properly evaluated. Construction activity may continue in unaffected project areas.
- 6) Field procedures to be followed for documentation of discovered cultural features or human skeletal remains include: (a) standard field methods including recording of profiles showing stratigraphy, cultural layers, etc.; (b) mapping, photographing of finds other than human remains; and (d) excavation of cultural materials and/or exposed features.
- 7) The SHPD Maui Archaeologist will be notified and consulted regarding treatment of identified features considered to be of significance under S13-279-2 (definitions), such as cultural layers, artifact or midden concentrations, structural remains, etc.
- 8) The contractor should take into account the need to mechanically excavate at a speed slow enough to allow reasonable visual inspection of the work. The

monitoring archaeologist must make a "best effort" to search for potential archaeological materials (artifacts, features, midden, skeletal materials, etc.).

- 9) Significant archaeological discoveries, if they occur, should be protected and identified by construction "caution" tape, fencing, or other reasonable means, until mitigation is decided upon by SHPD.
- 10) In most instances, one monitor will perform monitoring fieldwork. Tasks will include initial observation of surface activities associated with the removal of the existing vegetation and placement of a sand buffer over the preservation area.

Field methods utilized will include photographic recording (where appropriate), artifact excavation (recovery and recording), profile documentation of cultural layers and stratigraphy, excavation and recording of exposed features, and mapping of all pertinent features on an appropriate site map. A daily log (field notes) of activities and findings will also be kept. Gathered information will be utilized in the preparation of the monitoring report to be submitted to the SHPD.

In the event human skeletal materials are inadvertently discovered, notification of SHPD (HPDBP) and/or Maui/Lana'i Islands Burial Council will be made, and appropriate mitigation determined (Note: photographs of human skeletal materials will not be taken).

A supervisory archaeologist will regularly visit the monitoring site, or as often as is necessitated by the nature of the activities and archaeological findings. If significant discoveries are made, appropriate mitigation measures will be negotiated with SHPD.

Any cultural materials, other than human remains recovered from the monitoring project, will be curated by the monitoring organization until analysis is completed and then turned over to the appropriate parties. Long-term curation arrangements of such materials shall be approved by the SHPD.

When fieldwork for the required archaeological monitoring project has been completed, preparation and publication of a draft monitoring report will be undertaken. Within 180 days of completion of fieldwork, the draft report will be submitted to the State Historic Preservation Division for comment and approval. Approved final changes and corrections will result in the final monitoring report for the project.

APPENDIX C

TEXT FOR SIGNAGE

The Preservation Plan to include the signage for this site was approved by the Maui/Lana'i Islands Burial Council at its August 26, 2000 meeting. The approved signage is as follows:

Color of Sign (a brown background with black lettering):

Heading of Sign:

Site 50-50-08-4693

Hawaiian Cultural Area

Olowalu *ahupua'a*

Lahaina District

Island of Maui, Hawaii

The Site 4693 preservation area surrounds an important traditional Hawaiian cultural area. Please respect this area and do not enter except for traditional cultural reasons.

DAMAGE TO THIS SITE IS PUNISHABLE UNDER CHAPTER 6E-11, HAWAII REVISED STATUTES

**Historic Site 4694
Olowalu Ahupua'a
Lahaina Moku, Maui**

Habitation Site

In pre-European times, Olowalu had permanent houses located along the shoreline, scattered up along Olowalu Stream, and in the distant upper valley. When the land system was converted to private lands in the late-1840's, several house lots (kuleana) were awarded to commoner families in this area.

Given the fact that shorelines were considered prime habitation areas, and given the discovery of material cultural remains, this site is a probable pre-contact wall remnant enclosing a habitation area.

**DAMAGE TO THIS SITE IS PUNISHABLE UNDER CHAPTER 6E-11, HAWAII REVISED
STATUTES**

**Historic Site 4697
Olowalu Ahupua'a
Lahaina Moku, Maui**

Possible Historic Habitation/Agricultural Site

Historic maps indicate that prior to the late-1800's, Olowalu Stream entered the ocean just west of this immediate area. Either side of the stream would be considered a desirable area for habitation or ocean resource activity.

This is a sub-surface site that yielded post-contact material (such as bottle glass and ceramic shard). However, radiocarbon dating indicated a 1695 AD to 1950 AD bracket, which falls into the late pre-contact or early post-contact period.

**DAMAGE TO THIS SITE IS PUNISHABLE UNDER CHAPTER 6E-11, HAWAII REVISED
STATUTES**

**Historic Site 4698
Olowalu Ahupua'a
Lahaina Moku, Maui**

Habitation Site

Based on traditional settlement patterns, one would expect permanent occupation near the shoreline. For the indigenous Hawaiians, ocean resources were an important food source as was the cultivation of land crops such as kalo (taro) and uala (sweet potato).

Given its proximity to the ocean, this site is considered a permanent habitation site. A charcoal sample intercept data fell at 1665 AD. This site is also located within a kuleana (awarding of fee title to land during the late-1840's called the "Great Mahele"), where the awardee also had lands up in the valley. This would have provided the family both ocean and valley resources.

**DAMAGE TO THIS SITE IS PUNISHABLE UNDER CHAPTER 6E-11, HAWAII REVISED
STATUTES**

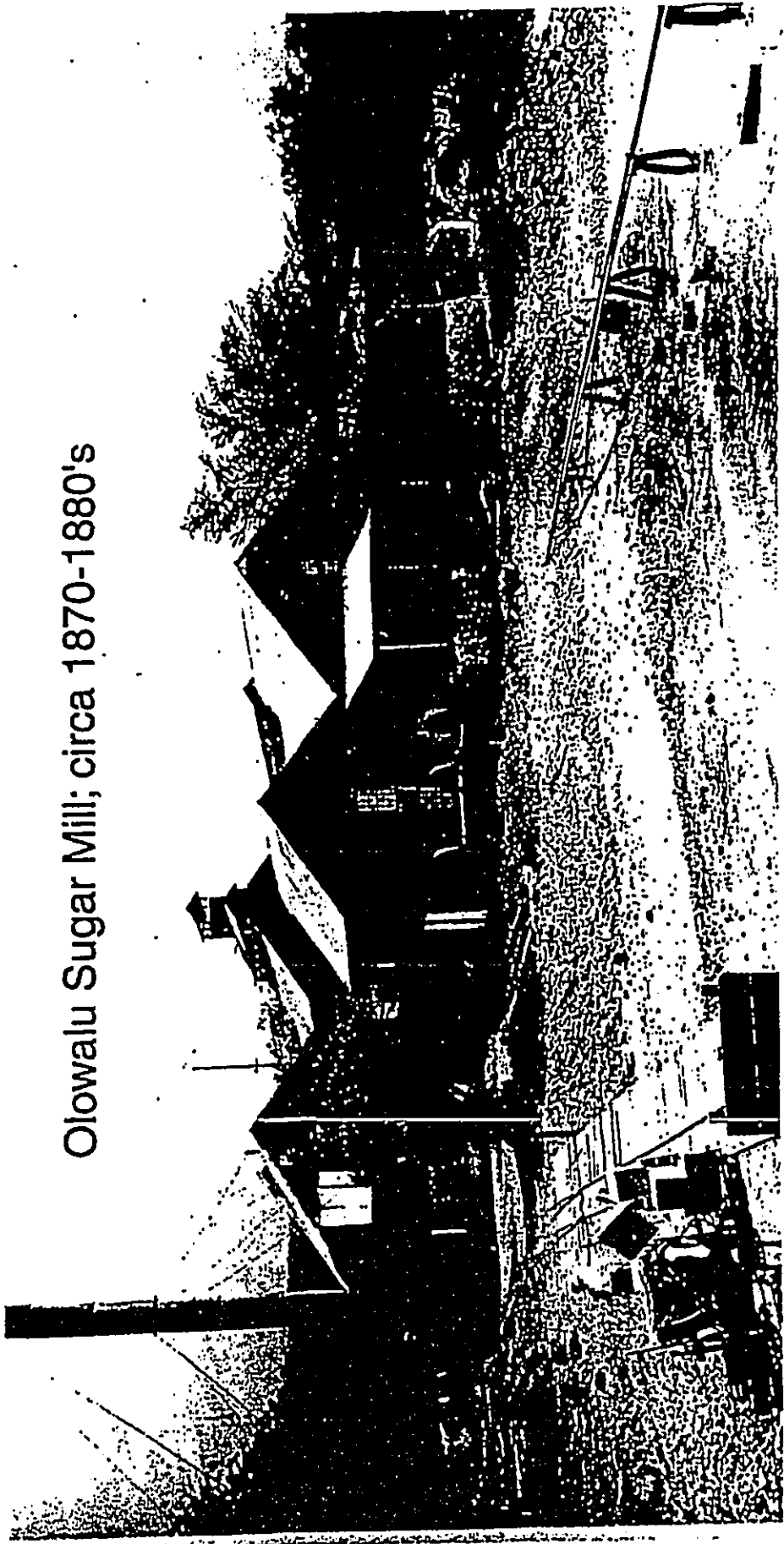
**Historic Site 1602
Olowalu Ahupua'a
Lahaina Moku, Maui**

Sugar Mill Ruins

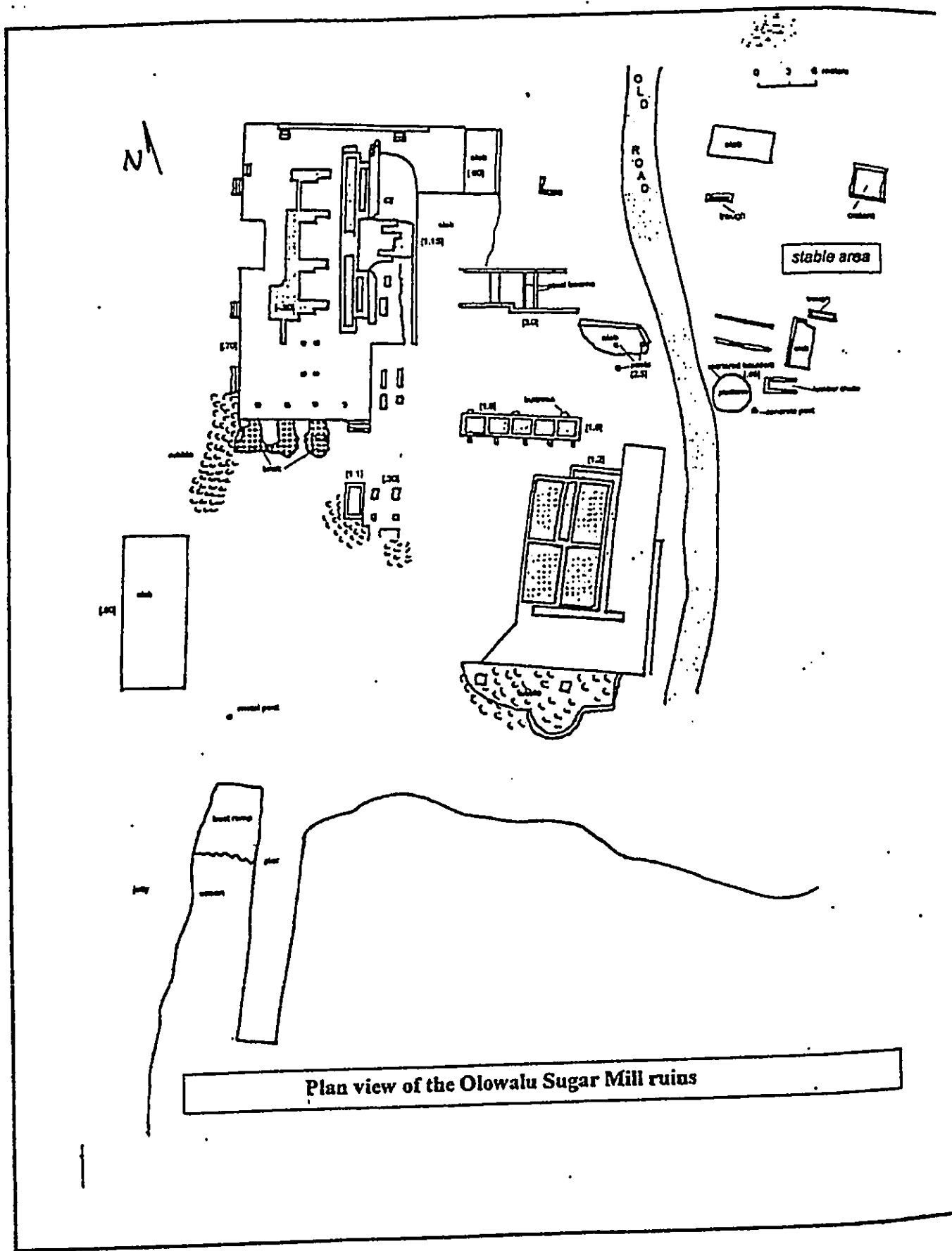
The first record of sugar cultivation in Olowalu was in 1864. It began as an enterprise of Kamehameha V along with Ferdinand W. Hutchinson and James Magee. The first mill on this site was built sometime in the 1870's. The mill was dismantled in 1933 and sent to the Philippines to be rebuilt there after Olowalu Sugar Company was sold to Pioneer Mill Company in 1931. Aside from the ruins of the Olowalu Sugar Mill, associated improvements include the boat loading ramp and pier, the wharf, the former plantation manager's house, and the three smaller plantation cane houses. Cultivated sugar cane was brought to the mill by mule driven wagons at first and then 24 gauge train cars. The processed sugar was then loaded on longboats docked at the pier and then to awaiting ships anchored off shore.

***[PLEASE SEE THE PHOTO AND PLOT MAP ON FOLLOWING PAGES. THESE WILL
BE INCLUDED ON THE SIGN, JUST BELOW THE ABOVE TEXT.]***

**DAMAGE TO THIS SITE IS PUNISHABLE UNDER CHAPTER 6E-11, HAWAII REVISED
STATUTES**



Olowalu Sugar Mill; circa 1870-1880's



Plan view of the Olowalu Sugar Mill ruins

EXHIBIT "A"

MAP SHOWING EASTERN SHORELINE MONITORING AREA

[PLEASE SEE MAP ON FOLLOWING PAGE]

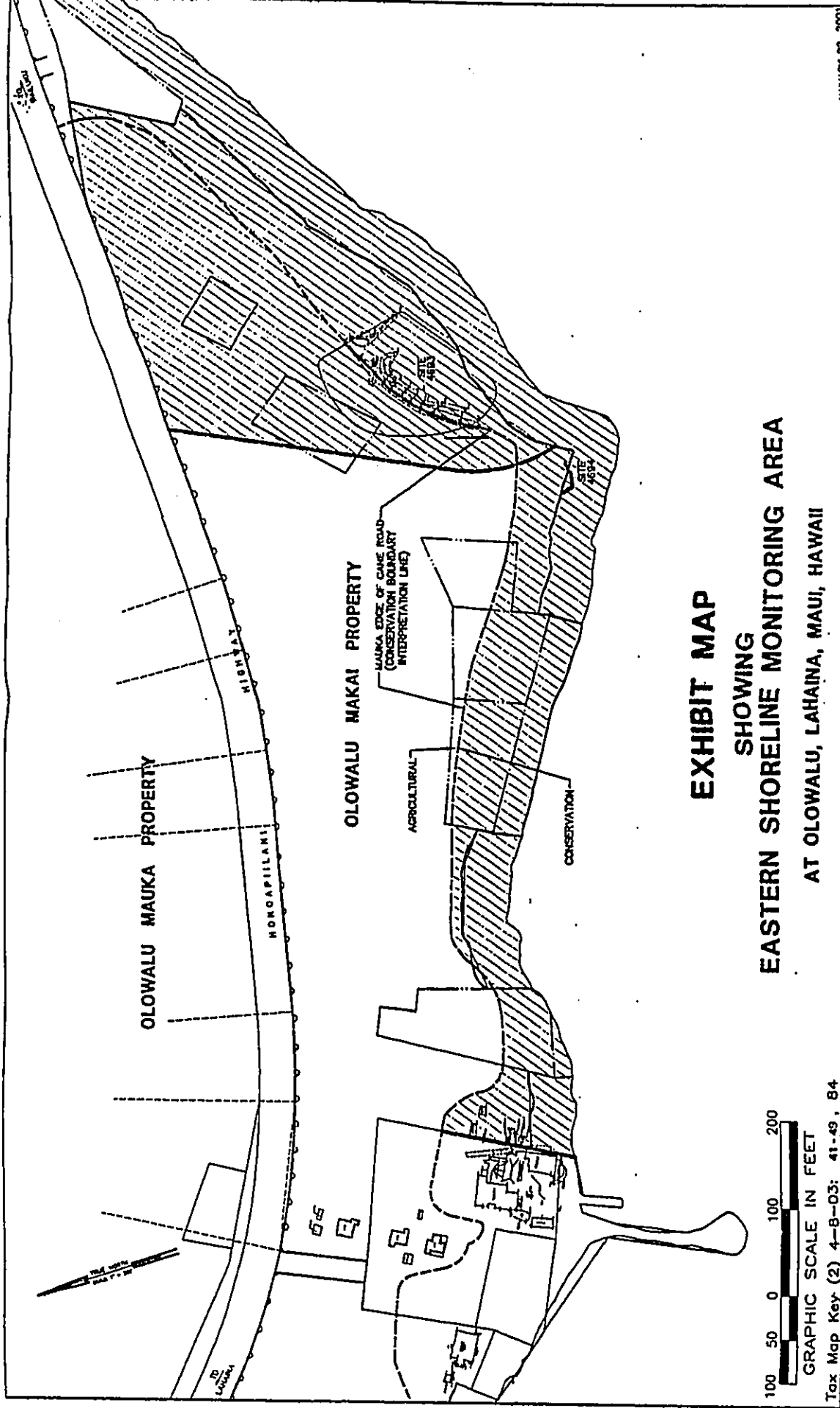


EXHIBIT MAP SHOWING EASTERN SHORELINE MONITORING AREA AT OLOWALU, LAHAINA, MAUI, HAWAII

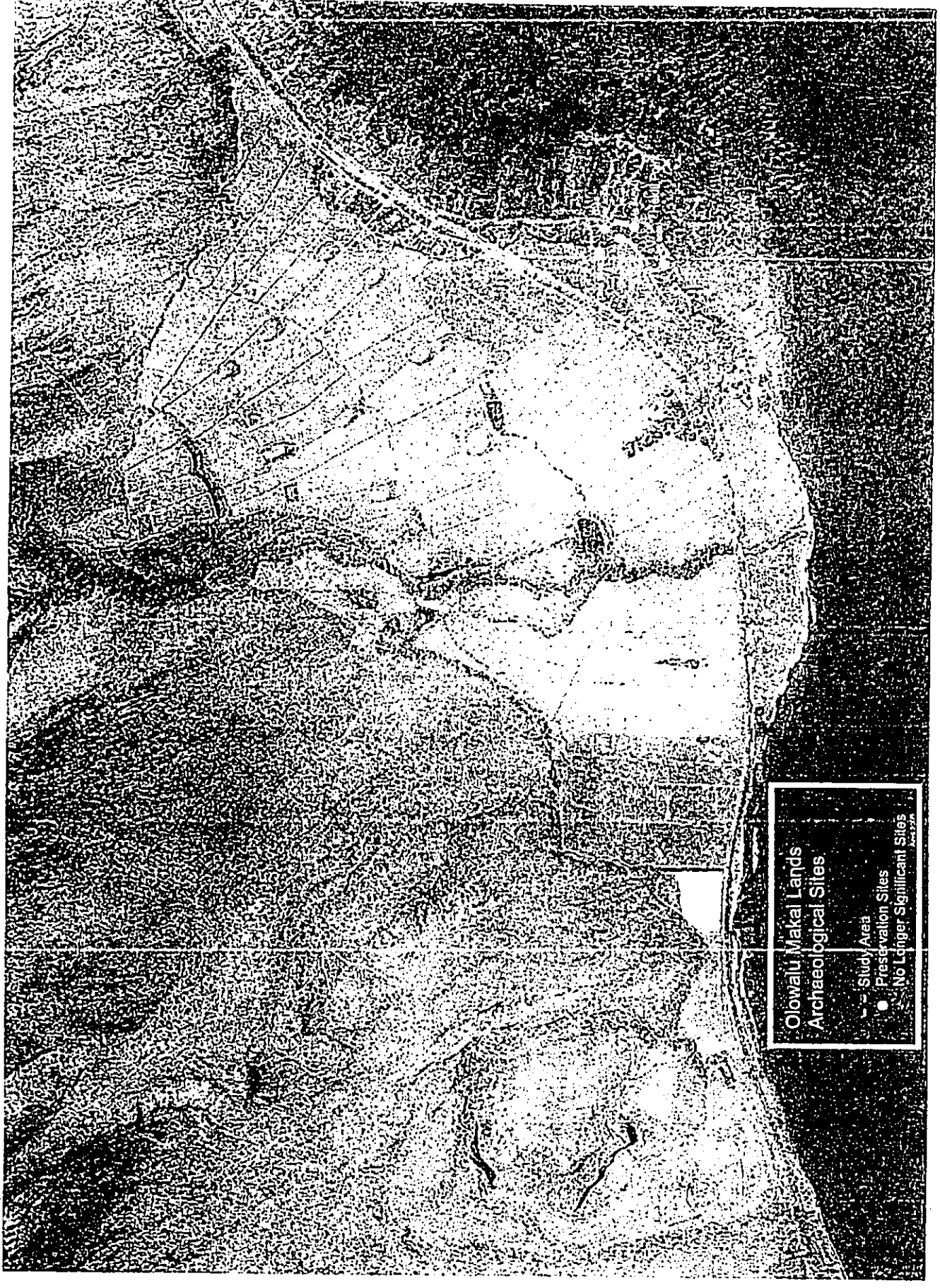
100 50 0 100 200
GRAPHIC SCALE IN FEET
Tax Map Key (2) 4-B-03: 41-49, 84

871 KOLU STREET, SUITE 201
WAILUKU, MAUI, HAWAII 96793

JANUARY 22, 2001
JOB NO. 98-38

R. T. TANAKA ENGINEERS, INC.
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APPENDIX G.

**Cultural Impact Assessment
Interview Summaries**

*Use of Former Pioneer Mill Plantation Manager's Residence and
Surrounding Botanical Gardens for Special Events and
Temporary Event-Related Structures at Olowalu, Maui*

Cultural Impact Assessment Interview

Interview with: Katherine Diolinda (DeMello) King
Interviewed by: Arlene Torricer, West Maui Land Company, Inc.

Interview Date & Location: Tuesday, May 3, 2006
Olowalu Plantation Manager's House
Olowalu, Maui

Katherine Diolinda DeMello was born, February 26, 1926 in Lahaina (Pioneer Mill Dispensary) and raised on Maui. Her mother was Laura Gouviea, a homemaker, who was born in Kealahou, Hawai'i. Katherine's father was Peter DeMello, formerly a supervisor with Olowalu Plantation / Pioneer Mill. Katherine married Arthur Leo King at the Maria Lanakila Church in Lahaina and raised three children - Edith, Mark & Stephen. Katherine still resides on Maui and is currently a resident of Kihei.

Peter DeMello was born June 29, 1888 and emigrated from the Azores, Portugal to work for Wailuku Sugar Company. In 1903, Peter went to work for the Olowalu Plantation then for Pioneer Mill and held a variety of positions until he retired after 50 years of service. Prior to Pioneer Mill's purchase of Olowalu Plantation, the Peter DeMello family, including Katherine and her siblings, Raymond, Joseph and Margaret lived at the Olowalu Plantation Manager's House for approximately 13 years.

The family originally lived in one of the Olowalu Plantation camp houses mauka of the highway. Sometime about 1925 - 1926, Mr. Hanneberg, the Plantation Manager, had another house built for himself (makai of the current manager's house and the three cane houses) and had the DeMello family move into the Manager's house to accommodate their growing family. Katherine noted that the new smaller house that Mr. Hanneberg built for himself no longer exists.

Katherine lived at the Olowalu Manager's House until she was about 12 or 13 years old. Following Pioneer Mill's purchase of the Olowalu Plantation the family moved to a Luakini Street home in Lahaina owned by Pioneer Mill. Katherine still made frequent visits to Olowalu even after moving to Lahaina as her cousins (Manual DeMello family) still lived at one of the plantation houses adjacent to the Manager's house.

Katherine has a lot of fond memories about her childhood home. Her cousins lived nearby (the 1st cane house off of the highway) and were their primary playmates. Katherine's father did not allow swimming right in front of the house "because of sharks" but the area off of the wharf was a favorite beach location. Swimming, diving, picking opihi and pipipi; fishing and catching turtles with Uncle Manuel (DeMello) – both shore fishing and off the boat; games of hopscotch, marbles, and dollhouse were some of their favorite pastimes.

The old mill adjacent to the house was no longer in operation and the cousins would cut out "houses" and setup dollhouses and tents in the brush. There was a horse corral, just past the mill site and another pastime was stopping by to visit and feed the horses. Sundays were often spent at the local park (in the area Wailuku side of the row of cane houses) in which the neighborhood gathered for baseball games, egg races, bag races and picnics with family and neighbors.

Sugar cane was planted only in the area in front of house (mauka of the house and makai of the government road); there was only brush and trees on either side. With the Olowalu winds, it was very dusty when cane was harvested (every 18 months) and for a few months until cane grew back in. The layout of the house was much as present and included a wash house on the Lahaina side of the house. Her parents had the 1st bedroom (near front door). Her father's den was located where the office currently is. Electric lights lit the house and both mauka and makai porches. The kids shared one of the bedrooms and her mother's half sister, who lived with them for awhile, used the other.

While Katherine has fond memories of living at the Olowalu House, mother Laura Gouviea, who moved to Maui from Honokaa on the Big Island of Hawaii, did not seem to enjoy living in Olowalu at that time. She found Olowalu to be very windy and dusty, especially in the afternoons. And when it rained, the area was prone to flooding with dirty, muddy water in the pipes.

Katherine recalls the three houses on the road leading towards the Manager's house and the beach and also recalls one additional home (that is no longer there) just before the beach. Uncle Manuel, aunty and cousins, Jesse, Agnes, Sonny, Peter and Thelma were in the first house. The Pontes and Lopes families occupied the second over the years, and the Yamaguchi family Hanako, Omeo, Takeo, Carol, and Mitsue, lived in the third plantation house closest to ocean. Katherine also noted that the "Christmas trees" that are currently on-site were not growing on property when she lived there. Katherine's father did not allow the kids to go across the train tracks to play at the Japanese and Filipino camps so she does not have many memories of the mauka area of Olowalu. She does remember the Yonamine, Fujii, and Silva families; Ichiki Store and the movie theater. Katherine also recalls that her brothers and cousins (secretly) went to a reservoir in the mountain to swim and catch swordtail fish.

Cultural Practices – Historical and Current:

The beach in the neighborhood was for swimming, fishing, picking opihi and white coral, catching sand crabs. Katherine also recalls as a young child, Obed Naho'oikaika throw net fishing, and night torch fishing– fish, tako (octopus), and sea cucumbers (Naho'oikaika's lived mauka of highway). The plantation camp's families used the park (behind cane houses); the neighborhood kids played in mill ruins; in the brush on both sides of homes; visited the horse stables; swam and fished at beach (near the wharf area).

In more recent years, Katherine used to bring her kids to Olowalu to go to the beach. The DeMello family also held a family reunion at the Olowalu House approximately three years ago. Approximately 200 people attended the day long event. It was a wonderful gathering and the family was very happy to have been able to use the property which had been such a big part of their history for this special event. The family was very pleased to see the property had been restored to usable condition again for community to once again enjoy and they found that the beach / wharf access (back of cane houses) is much improved, more convenient and usable for the public.

Summary:

Other than the wind in the afternoon and the dirty water when it rained, Katherine has no other negative feelings about the property. She is very sentimental about Olowalu and the Manager's House. It is her childhood home and it evokes a lot of warm memories for her and her family. She recalls friends and family around to play with at the beach, at the park, and the area surrounding home. She remembers good feelings about the property and a sense of peacefulness. She is also very pleased to see how well the property been restored and maintained as well as how much the access to the beach has been improved. Katherine feels the property is a very nice place for weddings, family gatherings, parties, and picnics near the beach and is very happy that the community now has the opportunity to use and experience the house and grounds for parties, weddings, and other special gatherings.

*Use of Former Pioneer Mill Plantation Manager's Residence and
Surrounding Botanical Gardens for Special Events and
Temporary Event-Related Structures at Olowalu, Maui*

Cultural Impact Assessment Interview

Interview with: Donald Fujii
Interviewed by: Arlene Torricer, West Maui Land Company, Inc.

Interview Date & Location: Tuesday, April 25, 2006
West Maui Land Company Conference Room
Kahului, Maui

Donald Fujii was born and raised in Olowalu. He was born in 1938 so his memories of Olowalu are from the early 1940s to present. His father, Hisao (November 12, 1912-1997), was born and raised in Ukumehame; attended school near Teen Challenge (Olowalu School) until the 5th grade, then attended grades 6 - 8 at Kam III School in Lahaina. Hisao Fujii was a tractor shop mechanic for Olowalu Plantation until the plantation's merger with Pioneer Mill in the early 1930's.

Donald's mother, Matsue (Ichiki) Fujii, was born in Honokowai and moved to Olowalu in the 1930's to work at her older brother's (Ichiki) store in Olowalu. Matsue Fujii still lives at the family home in Olowalu and the Fujii family still owns Olowalu Store. Donald moved to Wailuku in 1967 but visits Olowalu about every other day to check on his mother and their properties in the area. Matsue Fujii's house was formerly the Olowalu Plantation's office where the payroll and other administrative work for the plantation were done. The Fujii's bought that land in the early 1950's; rebuilt the house in 1955 on top of the original 1900's concrete base.

Matsue Fujii started working at the store in the early 1930's. Her older brother owned a chain of Ichiki stores on Maui and she worked for her brother at Ichiki Store in Olowalu. There were four or five Ichiki stores on Maui at the time owned by Donald's uncle; stores were located in Lahaina, Olowalu, Makawao and Wailuku (right next to Iao Theater – the empty parking lot next to the theater – where the police currently have their substation).

The Olowalu Store property was acquired by the Fujii's in 1952 from Pioneer Mill and the family ran the store until 1974 when they leased the store and the adjacent space for Chez Paul Restaurant.

Until its' purchase by Pioneer Mill in the 1930's, Olowalu Plantation owned and operated the sugar fields, the mill and employec camps in Olowalu. Olowalu Plantation was a fairly large plantation and camp prior to the early 1930's. During the "plantation days" the population in Olowalu was large enough to support two stores - the plantation or camp store and the Ichiki Store. The plantation store was located in a more centralized

proximity to the camp's residences (in the area near the existing water tank). Both stores were still in operation after Pioneer Mill took over Olowalu Plantation.

After the sale of Olowalu Plantation to Pioneer Mill, the population in Olowalu started to dwindle. People started to move into Lahaina, off-island and to other parts of the island resulting in the eventual closure of the plantation's store. The bulk of the plantation store's customers were the camp's plantation workers. The main road was located where the Olowalu Store's parking lot currently is, and traces of the old road still exist near the current fruit stand. The Ichiki's Olowalu Store benefited from their location right off of the main highway. *"We were lucky because we were on the highway. The traffic at the time was like 5-10 minutes before a vehicle passed by - not like today - you could count the cars then. Today, you blink and you lose 10-12 cars that went by."*

The 1960's started to bring business and economic changes to West Maui. Development of the Kaanapali Resort started to attract more visitors to the area. Matsue Fujii was still running the store in the early 1960's, and as business at Olowalu Store really started to pick up, the Fujii's built a new (store) building in about 1964.

Project Area

"We always called it "the Manager's House". But the only major managers I recall when I was a child was the Van Drieser family. There were other families that have lived there since - other types of supervisors - not necessarily managers... but they still call it the Manager's house." Olowalu Plantation managers occupied the house during Olowalu Plantation's tenure prior to 1931. Following Pioneer Mill's purchase, the house was home for their Assistant Managers in the early 1940's. To Donald's recollection, Olowalu Plantation's Manager was Haneberg, and he recalls a Mr. Van Drieser who was the Assistant Manager for Pioneer Mill. The only two residents of the house he remembers were Van Dreiser and the Harlow Wright family. Mr. Wright was the Irrigation Overseer for the Olowalu fields. Mr. Wright retired and moved to Lahaina in the 1960's and still lives at a Front Street address. Donald believes, Mr. Wright lived at the house from the 1940's through the 1960's and remembers Harlow Wright's daughter graduating from Lahainaluna in the 1960's. After Harlow Wright moved to Lahaina, he recalls the house being vacant most of the time and does not remember anyone permanently residing there.

Donald and his brother used to go to the manager's house all the time and still maintain a great relationship with Mr. Wright. There was no park or playground in the camp so they played in the yard at the house. Mrs. Wright was a nurse at the hospital and the Wright's two sons were also their playmates. As Mr. Wright was not a manager, Pioneer Mill employees were not available to help care for the home so Donald and his brother were hired to mow the lawn and wash the windows at *"50 cents an hour"*.

The Manager's House was built and intended as a residence for the various managers' families during the plantation days, and events at the house were primarily limited to gatherings for the families who lived there. Donald recalls the home being empty for

much of the time after the Wright family moved away in early 1960's. *"I've been to one wedding there; probably in the '80's. So, that means that Pioneer Mill was using that (house) for weddings...or Amfac...not Peter Martin folks yet in the '80's - they acquired in the late '90's right? So Amfac was renting it out."*

Donald noted that since the purchase of the property by Olowalu Elua Associates, there have been more parties there. However, as the house is out of the way and parking is contained, events there have not really had an effect on the neighborhood. *"I don't even see any overflow parking - there's still enough space there to take care of what's been happening there so personally, I don't see any negative impact to the parties being held there. Other than seeing the banner there once a year (Christmas time)...there hasn't seemed to have been any change or impact - nothing negative. Mom still lives there and there hasn't been anything. We have not felt "like the city has been coming." We still feel like its country. The restaurant closes at 10pm, so after 10pm it's quiet."*

Beach Access

When Kaanapali was being developed in the late 1950's to early 1960's, they established a tree nursery there (between the end of the driveway and the ocean) for landscaping to be used for the resort development. The house opposite the Manager's house was empty and Amfac/Pioneer Mill planted coconut/palm trees, which as they grew, "overtook" the access and closed off the road that led to the beach. Prior to that people used to be able to drive right up to the water for picnics; to spend the day at the beach.

Olowalu Elua Associates installed a gate when they first acquired the property but the gates are always open. The other ("public access") road was cleared and improved for better public access to the beach and to the wharf. Donald observed that as the store owners and residents of the area they would have heard of complaints however, *"definitely there hasn't been any bad feedback about access to the beach."*

Cultural Practices (Plantation Days)

"We've always been able to get to the beach. And the three houses there, unless you went there and tried to steal their mangoes, they had no problem with us. The supervisors there had kids too that we played with so we never felt like we couldn't go there."

Driving was not an option until they were 15, so "playtime" was mostly spent in the neighborhood. In the summertime when they were about 12 years old, the Fujii parents allowed the boys "out to play" with the rest of the kids. In the summertime, practically every night was spent down at the beach camping. Beach access was always open and available. There used to be some concrete structures in the area right above the small pier that was used to wash the cane at the mill. When the boys were about 12, 13, 14 years old, they used to sleep there during the summer - camp, fish, catch crab *"boil hot water to cook the crabs...we felt safer up there than in the sand"*. There were two roads that lead to the beach...the same two that are currently in place - one that leads to the

homes now is what they used and the road that was across the old warehouse *"the road that you let people use today to get to the beach."* The roads were never was gated and was always available to get down to the wharf or to go play at the manager's house.

During the early/mid 1950's, Hisao Fujii had a little boat which he tied to the wharf – the first fiberglass sampan on Maui which he had for about 15 years. Donald remembers his father driving his truck down to the wharf, reversing it onto the pier and loading up right into his boat – *"just like he had his own private pier."* Donald observed that traces of concrete may still be seen on the old wharf and recalls that when Kaanapali was being built, the cement trucks with extra cement would come in and dump the extra cement along and on the pier. That made it easier for his dad to be able to reverse his truck right alongside the little pier to launch, unload and pickup his truck and boat.

Camp Pecusa Area

The Camp Pecusa area was a "far away – by bicycle" area. The Rodrigues family lived in that area. Charley Lake's family owned and lived in the big house near the camp since about the 1940's. Charley Lake was a well renowned waterman who was very active with the canoe clubs. Nearby, outrigger canoes with nets for catching fish were stored up on the beach. The fishermen would bring up the canoes; right up next to the Lake's place (area is near where the kayaks now go out). Donald and his friends would ride their bikes to where the boats were being brought up to the high water mark. They would watch for the boats to start to come in and would ride over to help haul up the boats. They would always be given a coffee can of opelu for their help. *"So if we wanted opelu we always knew where to go. The fishermen there were all Hawaiians - big-heart. It was good clean activity and one of our summer activities. Plus, you go home with fish so the parents were happy."*

Historical Neighborhood

There were about a half a dozen homes on the Lahaina side of Matsue Fujii's house; a Japanese school and the Olowalu Store. Alongside the house and up the road, there were about another dozen Japanese families and the furo (community bath). There was also a banyan tree there near the furo that Donald believes was replanted in the atrium at the Hyatt (Kaanapali). He also recalls hearing that there used to be a ballpark in the area (Olowalu Plantation days) however, by his time, there were just rocks there. During the Olowalu Plantation days (when it was a separate plantation from Pioneer Mill) the population was larger so there were a lot of activities – they had their own store, their own park; enough Japanese people for a Japanese school; and a Hawaiian church.

Filipino Camp was along the road that near the old warehouse. A Hawaiian family lived where the fruit stand currently is and there was another Japanese family nearby. In the 1940's, the Japanese school was located nearby where the Olowalu Plantation Store was. And the Salvation Army would come about once a week and conduct activities for the kids.

The Naho`oikaika family used to live further up the hill above the petroglyphs. Prior to the late 1940's, the Naho`oikaika's had a fairly large parcel there. Sometime in the 1940's, Pioneer Mill proposed providing the Naho`oikaika's, a house and property in the camp in exchange for their mauka lands, so that the plantation could create small fields to plant cane. While Donald is not certain the reason for the move, he surmises they gave up the "terrific view from up there" for the convenience of having a house that was closer to "everyone and everything." *"Today, you could probably say "what a bad deal" but back in those days "we're going to give you the last plantation house" was a big deal. In the 40's, that house was at the end of the camp. So they got that one house for whatever they gave up higher up the hill. So that's how they got that house even though this area was strictly Japanese camp."* The eldest Naho`oikaika, his parents and grandparents moved into the plantation house at the end of the camp. The Puha and the Kaumoana families continued to live on their mauka land.

Ukumehame was also a part of Olowalu Plantation. Camps were located in *"where the old warehouse building is"* (in the area of West Maui Land Company's current baseyard). The plantation workers from those camps worked the fields in Ukumehame through to Olowalu. Donald's father was born and raised in Ukumehame and eventually came to live in Olowalu because he worked for Olowalu Plantation.

Along the route to the manager's house were three more houses which were always occupied by supervisors.

Challenges in the Project Area

Donald noted that Olowalu is windier than Lahaina town because of the valley. *"I remember when we were small it was so windy the pebbles on the ground used to fly around...like little bb shots."* He guesses there are about thirty really bad windy days throughout the year but for the most part it's nice and the wind picks up in the afternoon like most of the island.

The other issue during the plantation days was the water. It used to be all well and surface water so during the rainy season the water was very dirty and the biggest problem. *"We're talking the drinking water. The water has been much improved. The runoff has been taken care of. That's been the biggest improvement."* Donald remembers saving rain water in buckets during the rainy season *"because you knew if it rained you would have dirty water for at least a couple of days after. All the camp houses had Durham (tobacco) bags on the faucets (to help filter out the dirt)."*

The water for the camp was taken from about a mile and a half above the petroglyphs. In addition to sugar cane, the plantation had cattle grazing in the area of the petroglyphs. Rails were dropped and water would be diverted to where it was needed. Between the petroglyphs and for about two miles, you wouldn't see any water, unless it rained hard and there was overflow. *"That's why now the Ukumehame Stream runs because the reservoir is not taking the water."* Water was diverted via Olowalu Stream to the reservoir for the cane and for use by the camp residents.

Another pastime for Donald and his friends when we were 12 – 13 years old was to go up into the valley to catch opai. *"You know the water we were playing in was the water we were drinking - it was all surface water. We probably weren't supposed to go there but nobody enforced that back then."*

Project's Potential Impacts:

Sugar cane fields surrounded most of the areas around the manager's house and the growing cane kept the dust down *"except during harvest, every 18 months, when it was very dusty and noisy, and for the next three or so months it took for the newly planted cane to grow back in. What was nice about the cane being down, was you could see the ocean - Kaho`olawe and Lanai from my mom's house."* During development of the neighboring homes, it may also be dusty when it's windy but that should no longer be an issue once the homes and landscaping are completed. Donald noted that once the homes adjacent to the manager's house are built *"you can't even see the plantation manager's house from the highway. Right now, the events happening there have no impact to the area."*

Cultural Practices and Access - Potential Impacts

"There is an alternate route to get to the water so I see no impact with holding events at the manager's house." Olowalu Elua Associates cleared and improved an area for parking as access towards the wharf. People are able to get to the house and there is public access along the shoreline. *"We've always been able to get to the beach, and that hasn't changed. In fact the access might even be a little easier than before. I think people can still go fishing on the wharf; get to the beach. I don't think there are any restrictions. You can go gather limu, so that is still available."*

Donald shared that the only thing he recalls that Hawaiians did that no one else really did was to get wana [sea urchins]. *"They would go get the wana and smash it but on the whole when I was growing up, we probably only had about six to seven Hawaiian families here. The Hawaiian families had no organized association or gathering together. They would go fishing whenever they wanted to go."* The Kaaea family lived up near the petroglyphs. And further up was the Kaumoana family or the Puha family in the 1940's to the late 1950's when Donald was growing up. The Kaaea's used to live by the Rodrigues family in the Camp Pecusa area and they moved up mauka about the 1960's or 1970's. A couple of other Hawaiian families lived in the camp area as well. The Kaahui family lived near the Teen Challenge area. *"The Rodrigues family came to live in the Olowalu area in the 1960's. They weren't there prior to the 1960's so there were not that many Hawaiian families in the area. So, I'm sure the Kaahui family would be the family to speak up as the "Hawaiian" family from the area...they're the only ones who lived there and still are in area. The Kaaea's and Kaahui's are actually related and were neighbors at one time."*

When Donald's father, Hisao was growing up, the Ukumehame area was where taro farming etc. was done. There are two reservoirs at the top, and above the reservoir

Hawaiians used to raise taro. Because there was water there, taro was cultivated on a small scale where the pig farm currently is located. *"People didn't really go up into the valley. It was just us as kids going up there during the summertime and we probably weren't supposed to."*

Summary:

"I like the peacefulness in Olowalu. Everything in Lahaina side has changed so much but Olowalu has not changed much. We always had the store. In fact, before we put this building up, the older building had a little post office (where the Chez Paul restaurant is), and we had a coffee shop - an old Chinese guy used to run the coffee shop - nothing's changed in 60 some years other than the traffic. But the traffic (increase) has been gradual...you just accept it. After they started building Kaanapali in the early 60's that was when the traffic really started to increase."

"I'm happy to see people wanting to use the area. This is my childhood home. My son is an adult but someday I'd like to be able to take my grandkids down to the beach here and show them where my dad used have his boat tied up by the wharf."

"We haven't heard any negative impact with parties and events happening at the house. People would have come to the store and talk so we would have heard - "West Maui Land is doing this or that", but no, we have not heard any negative feedback."

"Personally, something like this (events at the Manager's House), really has no effect on the neighborhood. It's not a daily thing...there have been no parking issues. And since this whole area (leading to the house) is yours, it really doesn't make a difference."

APPENDIX H.

**Traffic Impact Assessment
Report**

USE OF FORMER PIONEER
MILL PLANTATION MANAGER'S
RESIDENCE PROJECT
TRAFFIC IMPACT
ASSESSMENT STUDY



NOVEMBER 2006

PREPARED FOR:
OLOWALU ELUA ASSOCIATES, LLC

PREPARED BY:
SSFM INTERNATIONAL INC.



**TRAFFIC IMPACT
ASSESSMENT REPORT**

FOR

**USE OF FORMER PIONEER
MILL PLANTATION MANAGER'S
RESIDENCE PROJECT**

OLOWALU, MAUI

NOVEMBER 2006

PREPARED FOR:

Olowalu Elua Associates, LLC

PREPARED BY:



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TABLE OF CONTENTS

CHAPTER	PAGE
CHAPTER 1 INTRODUCTION	1
1.1 PURPOSE AND METHODOLOGY	1
1.2 PROJECT LOCATION	1
1.3 PROJECT DESCRIPTION	3
CHAPTER 2 EXISTING CONDITIONS	7
2.1 EXISTING SITE CONDITIONS	7
2.2 SURROUNDING LAND USES	8
2.3 ROADWAY FACILITIES	9
2.4 TRAFFIC VOLUMES AND OPERATING CONDITIONS	11
CHAPTER 3 PROJECTED TRAFFIC CONDITIONS	14
3.1 FUTURE CONDITIONS	14
3.2 FUTURE TRAFFIC WITHOUT PROJECT	14
3.3 FUTURE TRAFFIC WITH PROJECT	15
CHAPTER 4 TRAFFIC ANALYSIS RESULTS	20
4.1 ANALYSIS METHODS	20
4.2 ANALYSIS RESULTS FOR EXISTING CONDITIONS	21
4.3 ANALYSIS RESULTS FOR FUTURE CONDITIONS	22
CHAPTER 5 CONCLUSIONS AND RECOMMENDATIONS	24

LISTING OF FIGURES

FIGURE		PAGE
Figure 1	Project Location Map	2
Figure 2	Project Vicinity Map	4
Figure 3	Project Site Plan	5
Figure 4	Existing Intersection Layout	10
Figure 5	Existing Traffic Counts At Study Intersection	12
Figure 6	Future 2007 Traffic Forecasts Without The Project	16
Figure 7	Future 2007 Traffic Forecasts With The Project	19

LISTING OF TABLES

TABLES		PAGE
Table 1	Trip Generation Summary	18
Table 2	Unsignalized Intersection Analysis Results For Existing Conditions (2006)	21
Table 3	Unsignalized Intersection Analysis Results For Future Conditions (2007)	22

LISTING OF APPENDICES

APPENDIX

Appendix A	Site Photographs
Appendix B	Manual Traffic Count Data

CHAPTER 1 INTRODUCTION

1.1 PURPOSE AND METHODOLOGY

SSFM International, Inc. conducted a traffic impact assessment study for the Use of Former Pioneer Mill Plantation Manager's Residence Project proposed by Olowalu Elua Associates, LLC. This project is referred to as the "Plantation Manager's Residence Project" in this report. This project is located in the Olowalu community of the Island of Maui.

The purpose for this study was to analyze the probable traffic impacts resulting from the current use of this manager's residence for hosting special events, providing guest parking, and erecting temporary event-related minor structures. No site improvements or expansion of facilities are proposed for this project. These activities are already being conducted at the site. However, the study year is 2007 which corresponds to the expected completion of entitlements being pursued. The study intersection is Honoapi'ilani Highway with the existing project driveway into the site. This report presents the findings of the traffic impact assessment.

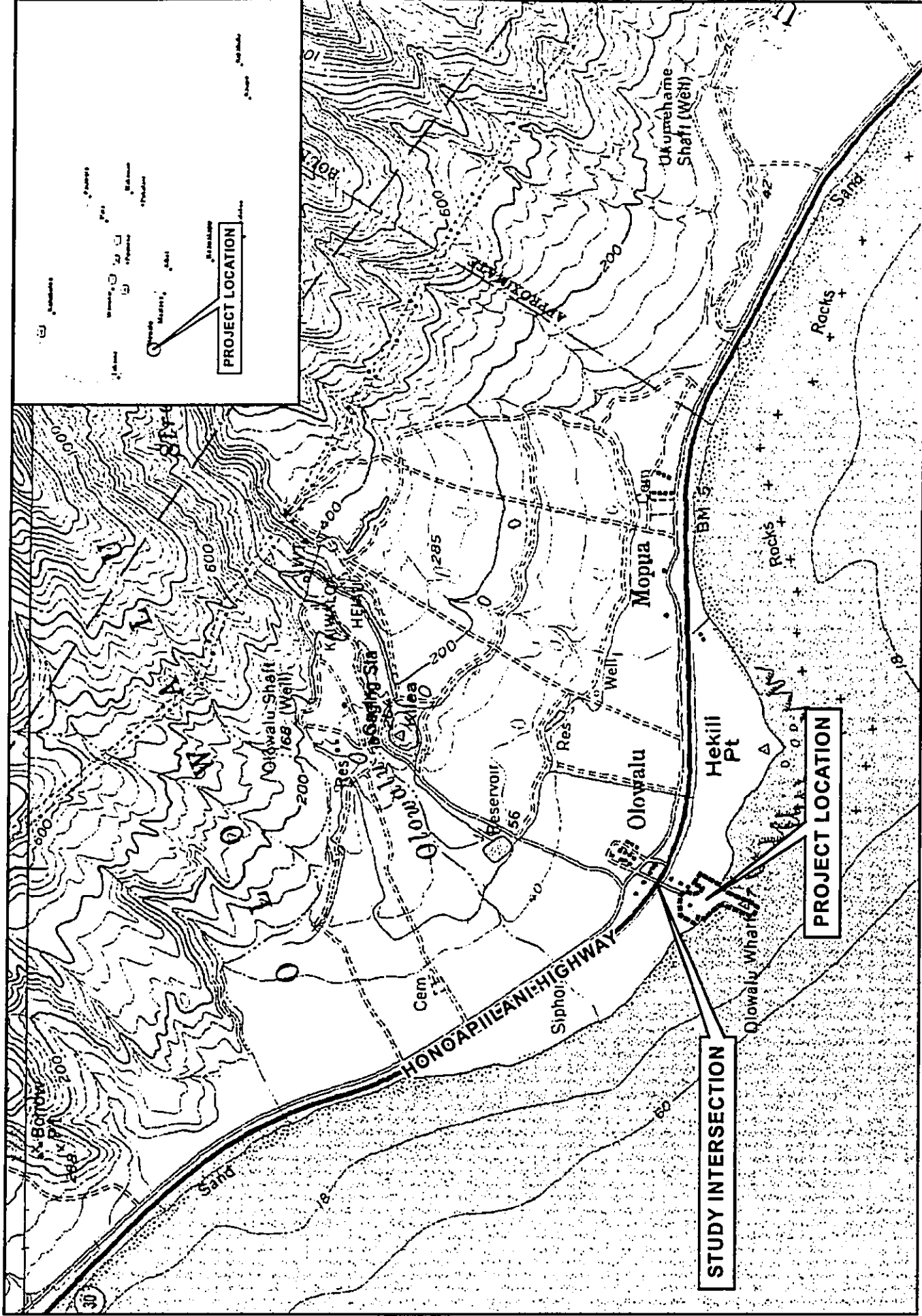
The study methodology incorporated the recommended practice and guidelines described in the Institute of Transportation Engineers (ITE) *Traffic Access and Impact Studies for Site Development* (ITE, 2005). The major tasks conducted under this study consisted of the following.

1. Conducted field survey and obtained manual traffic counts at the unsignalized intersection of Honoapi'ilani Highway with the existing manager's residence driveway into the project site to assess and evaluate existing traffic conditions.
2. Conducted analysis of existing traffic conditions. It should be noted that the project activities (ex. holding events) are already being conducted at the site.
3. Evaluated trip generation characteristics for the project for the study year, and conducted further analysis and assessment of conditions.
4. Identified mitigation measures and other recommendations, if any, to address impacts on traffic conditions.

1.2 PROJECT LOCATION

The Plantation Manager's Residence site is located in the Olowalu community of the Lahaina district of the Island of Maui. The property (Lot 4-A) consists of a shoreline parcel of about 10 acres situated along Honoapi'ilani Highway, and is identified as Tax Map Key 4-08-003: portion of 005. This parcel 005 was formerly identified as Tax Map Key 4-08-003: 041, 042, and 043 prior to January 2006¹. The property is located about 6 miles south of the town of Lahaina. Figure 1 shows the general location of this project site.

¹ Source: Munekiyo and Hiraga, Inc.



PROJECT LOCATION MAP

Figure 1

Use of Former Pioneer Mill Plantation Manager's Residence Project
Olowalu Elna Associates, LLC

Source:
Delorme 3-D Topo Quads



Surrounding land uses as well as existing roadways can be seen on a vicinity map identified as Figure 2. This property is on the makai side of Honoapi'ilani Highway, directly across of Olowalu General Store and Chez Paul Restaurant which serves as a notable feature within the Olowalu community. An existing driveway into this site from the highway is located near the center of this property.

1.3 PROJECT DESCRIPTION

This project consists of using the existing former pioneer mill plantation manager's residence and a portion of the property to host special events which are predominantly weddings. In addition, the property will be used for guest parking for these events, and erecting temporary event-related minor structures to support activities. These types of special events being hosted at this project site have already been occurring there for some time even prior to the current owner's acquisition of the property in 1998.

The actual project site for these activities only encompasses 4.7 acres of the 10 acres associated with the larger property identified as Lot 4-A. Figure 3 includes the existing project site plan showing existing structures and areas designated for various uses such as parking within these 4.7 acres. No new site improvements or expansion of existing activities conducted at the site are planned.

As shown on the existing plan, the project site includes the manager's residence and accessory structures such as a garage, and wash house. The majority of the property consists of open space and landscaped areas (ex. lawn areas). Guest parking is provided on the lawn area near (mauka) of the manager's residence as indicated on the site plan. A driveway from the highway leads into the project site.

Other existing structures situated outside of the 4.7-acre project site include three cane houses with garages and a shed. Two cane houses are owned by Olowalu Elua Associates, and used for occupation by one of their staff and for the property manager. A third cane house situated closest to the shoreline is owned by others and used as a vacation rental. A coconut garden is located in the grassed area located near the highway.

The majority of events held at the site consists of weddings (>90%) based upon booking information provided by the owner. Weddings typically start in the late afternoon about 2 hours before sunset to take advantage of the sunset views at the project site (4:00 and 6:00 p.m.). However, other types of events are held which include birthday parties or luaus, business related meetings, employee events, reunions, and cultural classes which may occur during other timeframes.



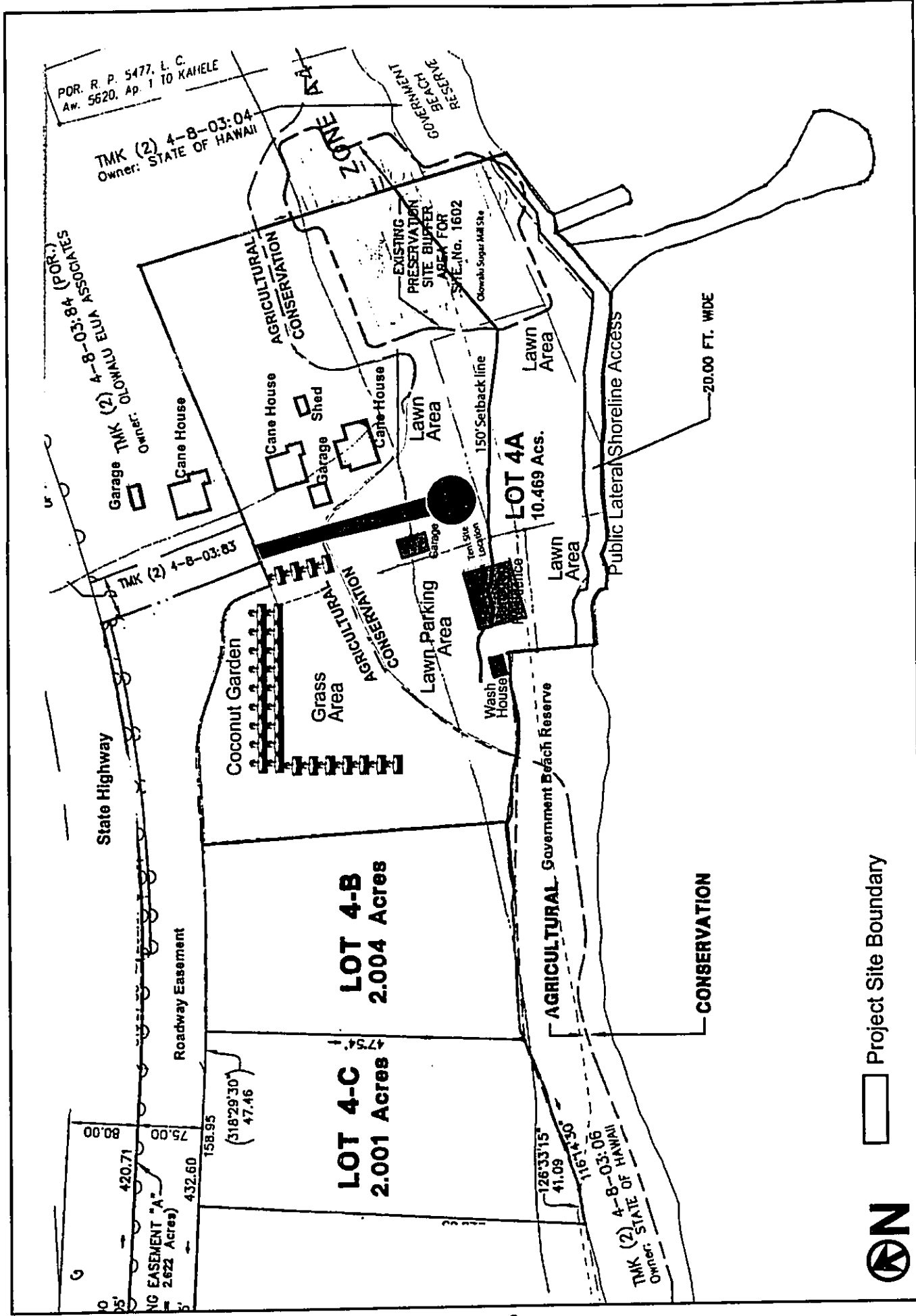
Figure 2

PROJECT VICINITY MAP



Source:
(Aerial) SDCSI

Use of Former Pioneer Mill Plantation Manager's Residence Project
Olowalu Elua Associates, LLC



PROJECT SITE PLAN

Figure 3

Source: West Maui Land Company, Inc.

ES&M

Use of Former Pioneer Mill Plantation Manager's Residence Project
Olowalu Elua Associates, LLC

Those using these facilities consist of both private and non-profit groups along with neighborhood groups. Some of the types of groups using these facilities are identified below:

- Big Brothers Big Sisters
- Boy Scouts of America
- Hale Makua
- Children's Advocacy of Maui
- Imua Rehab
- Lahainaluna High School (cultural classes)
- Previous Olowalu residents (family reunions)
- Previous mill worker retirement parties
- Maui Cancer Institute Alliance
- Maui Community Theater
- Maui Economic Opportunity
- Na Kapuna 'O Maui
- The Nature Conservancy
- Pacific Cancer Foundation
- Olowalu residents (funerals)
- Olowalu residents (baby luaus)

On the average, about 80 to 100 events are held a year or about 6 to 8 events a month based upon booking information provided. These events have generally averaged between 60 and 70 people per event (66 persons average). The majority of wedding events held have ranged between 30 and 70 people. Based upon the information provided, about 15 of these events (about 15%) had guests of 100 or more people over a 12 month period. The largest event had about 250 people which occurred only once.

It has always been the policy of the owners to: 1) help maintain the property by not overexposing it; 2) keep it available for use by owners, employees, friends, neighbors, and non-profit groups; and 3) to maintain good neighbor relations. As a result, events larger than 200 people are generally discouraged by the owners. They also try to limit the number of events to no more than approximately 8 to 10 on average per month which is reflected in the booking information provided. House rules are also established for this operation to manage activities conducted which consist of:

1. On-site parking is limited to 100 vehicles including staff & delivery.
2. Parking attendants are mandatory for groups over 75 people except when shuttles buses are provided.
3. Shuttle bus service to the site is required for events in excess of 200 people.

Necessary entitlements for this project are being pursued for this project, and are expected to be completed in 2007. No site improvements are planned for this project since existing activities have already been occurring and are planned to continue in the future in the same manner under the entitlements obtained.

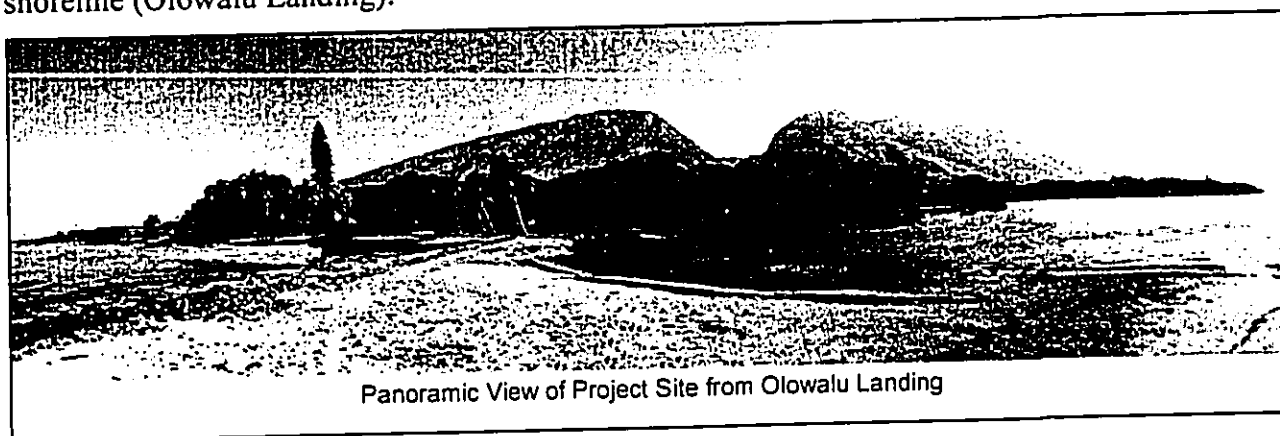
CHAPTER 2 EXISTING CONDITIONS

Field surveys were conducted of the property and roadway facilities that serve the Plantation Manager's Residence site along with surrounding land uses to assess and evaluate existing traffic conditions in the area. These conditions were used as a basis for estimating potential traffic impacts from the project. This chapter discusses these existing conditions that include surrounding land uses, roadway facilities, and traffic conditions.

2.1 EXISTING SITE CONDITIONS

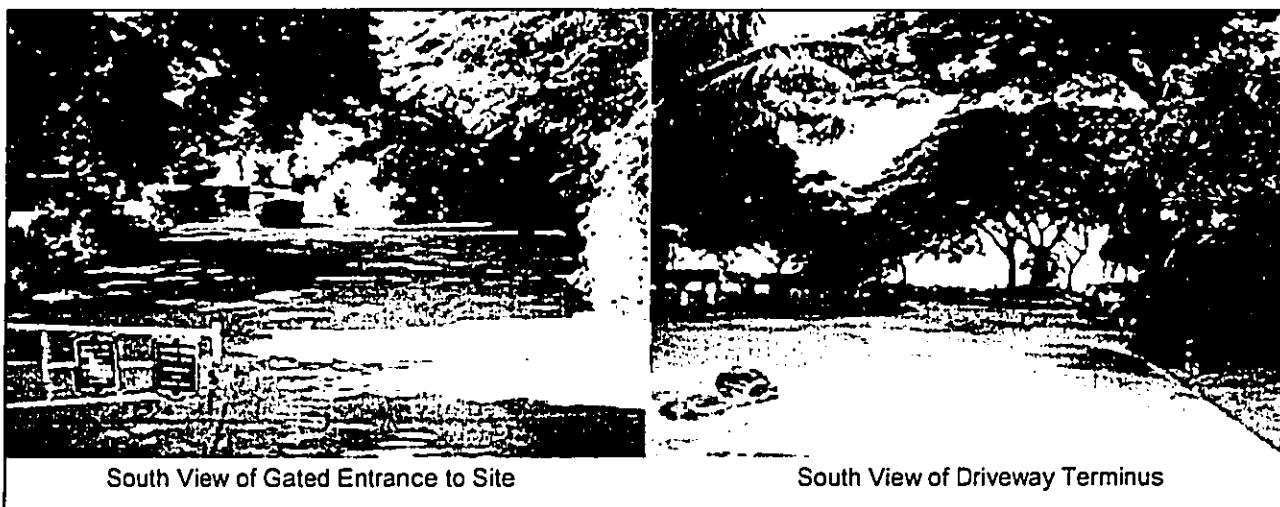
The Plantation Manager's Residence project site of 4.7 acres consists of a shoreline property identified as Tax Map Key 4-08-003: portion of 005. The 4.7-acre project site is part of a larger property of about 10 acres identified as Lot 4-A (Figure 3). The mauka (inland) side of this larger parcel is bordered by Honoapi'ilani Highway. The project site includes area which is designated as Conservation District under the State Land Use District classification.

The project site consists of the manager's residence (see photo ►) and accessory structures such as a garage and wash house as previously shown on Figure 3 and discussed in Chapter 1. The majority of this project site consists of open space and landscaped areas (ex. lawn areas) used for on-site parking. The property is generally flat with a slight slope toward the shoreline from the highway, and photos of this property are included in Appendix A. Below is a panoramic view of the property from the shoreline (Olowalu Landing).



Existing Driveway

Access into and out from the project site is through an existing paved private driveway from Honoapi'ilani Highway. A gate controlling access into the project site is situated at the entrance. This driveway extends toward the manager's residence before terminating at a cul-de-sac. Another driveway providing public access to the shoreline extends from this driveway just before the gated entrance. Photos of this project driveway are provided below.



South View of Gated Entrance to Site

South View of Driveway Terminus

2.2 SURROUNDING LAND USES

The project site is situated within the Olowalu community that is predominantly rural in character. This community is located about 4.5 miles south of the developed and more highly urbanized resort areas of Lahaina and Kapalua. The next major urban centers are either the resort areas of Kihei and Wailea on the south side of the island or the island's urban center of Kahului and Wailuku in central Maui, both of which are over 10 miles away.

There are no other highly urbanized developments located in the immediate vicinity south of Olowalu. The area is generally undeveloped and consists of former agricultural lands mauka of Honoapi'ilani Highway. Some existing residential lots are located in the area generally situated along the highway corridor. The Olowalu General Store and Chez Paul Restaurant are located across (mauka) of the project site. One of the driveways serving these uses along with a few residences is situated across the project driveway as shown on the photo exhibit.



Photo of Driveway Across Project Driveway

2.3 ROADWAY FACILITIES

The only major roadway facility providing vehicular access to and from this Olowalu community is Honoapi'ilani Highway. This highway is a State-owned and maintained highway linking the west Maui region with the central and south urban centers of the island. Within the Olowalu community, this highway primarily serves as vehicular access for persons passing through on their way traveling to and from the Lahaina and Kapalua resort areas.

In the vicinity of the project site, this highway is a two-laned rural highway generally routed in an east to west direction following the coastline. Honoapi'ilani Highway has a posted speed limit of 35 miles per hour (mph) in the area of the project site which increases to 45 mph outside of this area. This highway has 12-foot-wide lanes with paved shoulders varying in width from about 6 to 10 feet wide.

A former cane haul road is present along the mauka (inland) side of the highway generally traveling in an east to west direction as shown on Figure 2. This cane haul road is generally routed near the highway but diverts inland behind the Olowalu General Store and Chez Paul Restaurant area.

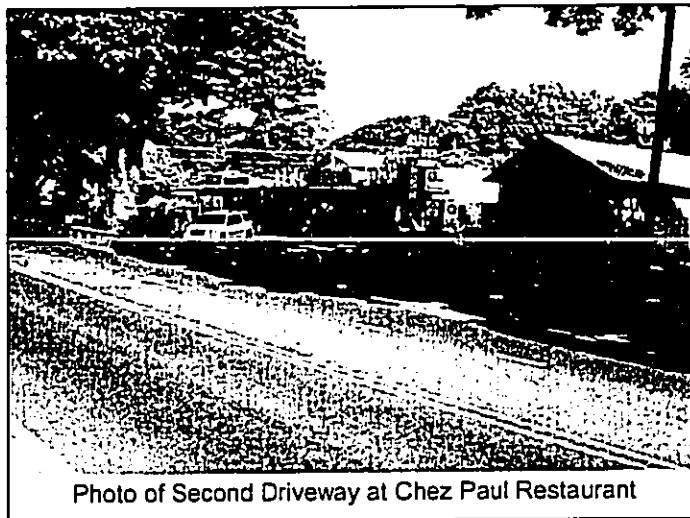
An unpaved road (identified as Olowalu Village Road on Figure 2) travels mauka from this cane haul road. There are no known existing developments within this mauka area to serve this unpaved roadway. Vehicular access to this mauka area is also restricted since it is privately-owned land leading into the agricultural lands.

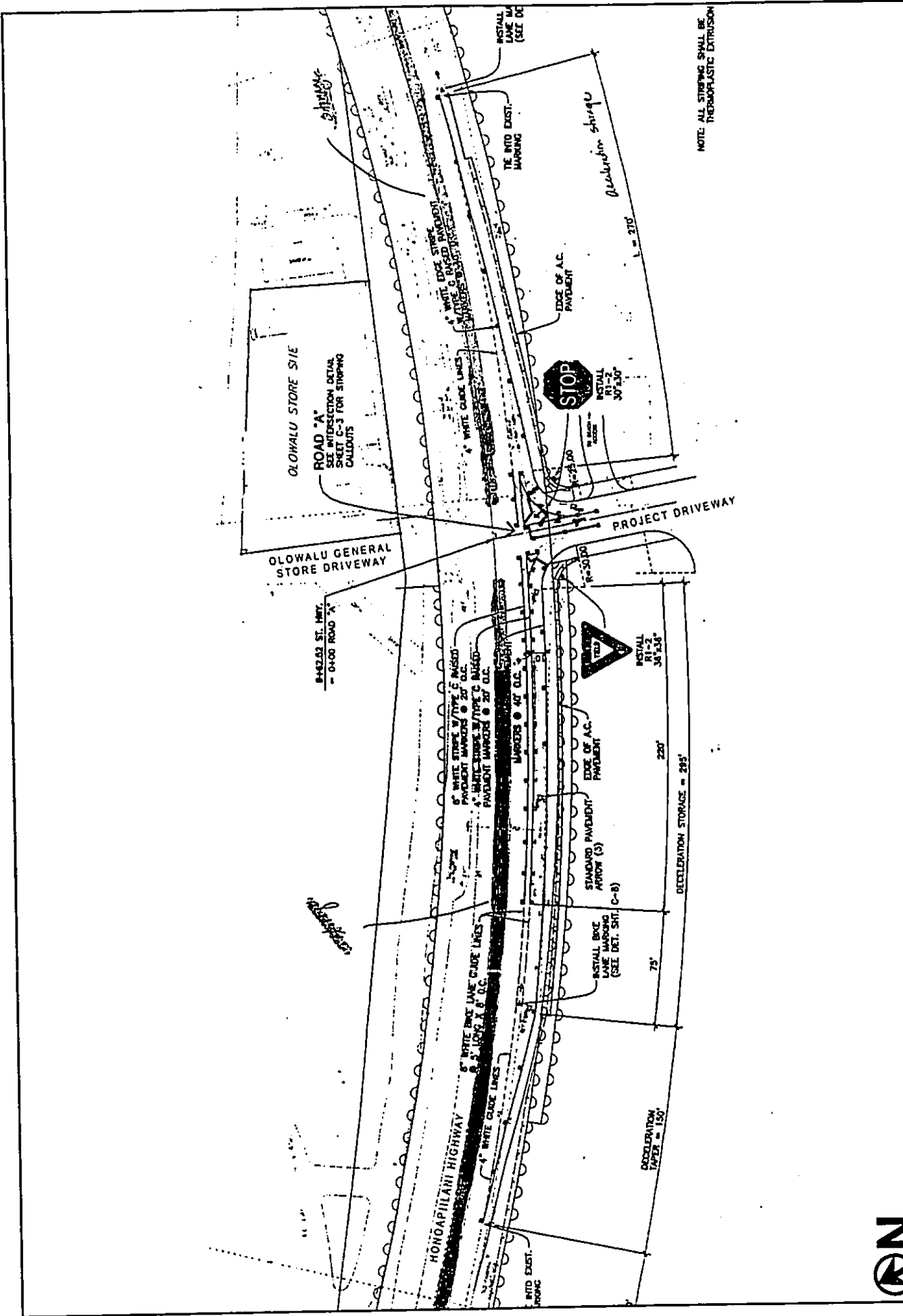
There is also an unnamed unpaved road routed in western direction extending from the parking lot serving the Olowalu General Store. This road eventually connects with the cane haul road and highway further west from this area.

Existing Driveway Intersection

The project site driveway connects to Honoapi'ilani Highway forming a four-way intersection with the driveway serving the Olowalu General Store. This intersection is designed to operate as a four-way STOP-sign controlled intersection. Figure 4 shows the existing configuration of this intersection.

The driveway across of the project site leads into a parking lot which serves both the Olowalu General Store and Chez Paul Restaurant. A second driveway entrance into this parking lot is also located about 200 feet east of this driveway as shown on the photo exhibit.






NOTE: ALL STRIPING SHALL BE THERMOPLASTIC EXTRUSION



EXISTING INTERSECTION LAYOUT

Figure 4

Source:
State of Hawaii Dept. of Transportation



Use of Former Pioneer Mill Plantation Manager's Residence Project
Olowalu Eitua Associates, LLC

Along Honoapi'ilani Highway at the intersection serving the project driveway, storage lanes are provided for various turning movements. As shown on Figure 4, a striped left-turn storage lane of about 600 feet in length is provided for vehicles traveling in the westbound direction making turns into the project site. There is also a striped median area extending several hundred feet further beyond (east direction) this storage lane.

A right-turn deceleration lane of 295 feet with another 150 feet for taper is provided for vehicles traveling eastbound and entering the project site from the highway. An acceleration lane of 270 feet is provided for vehicles making right-turns exiting the project site to merge onto the highway traveling in the eastbound direction. For vehicles traveling in the eastbound direction making left-turns into the Olowalu General Store driveway, a storage lane of over 500 feet is also provided. The STOP-sign controlled project driveway also provides a left-turn/through lane and separate right-turn lane.

2.4 TRAFFIC VOLUMES AND OPERATING CONDITIONS

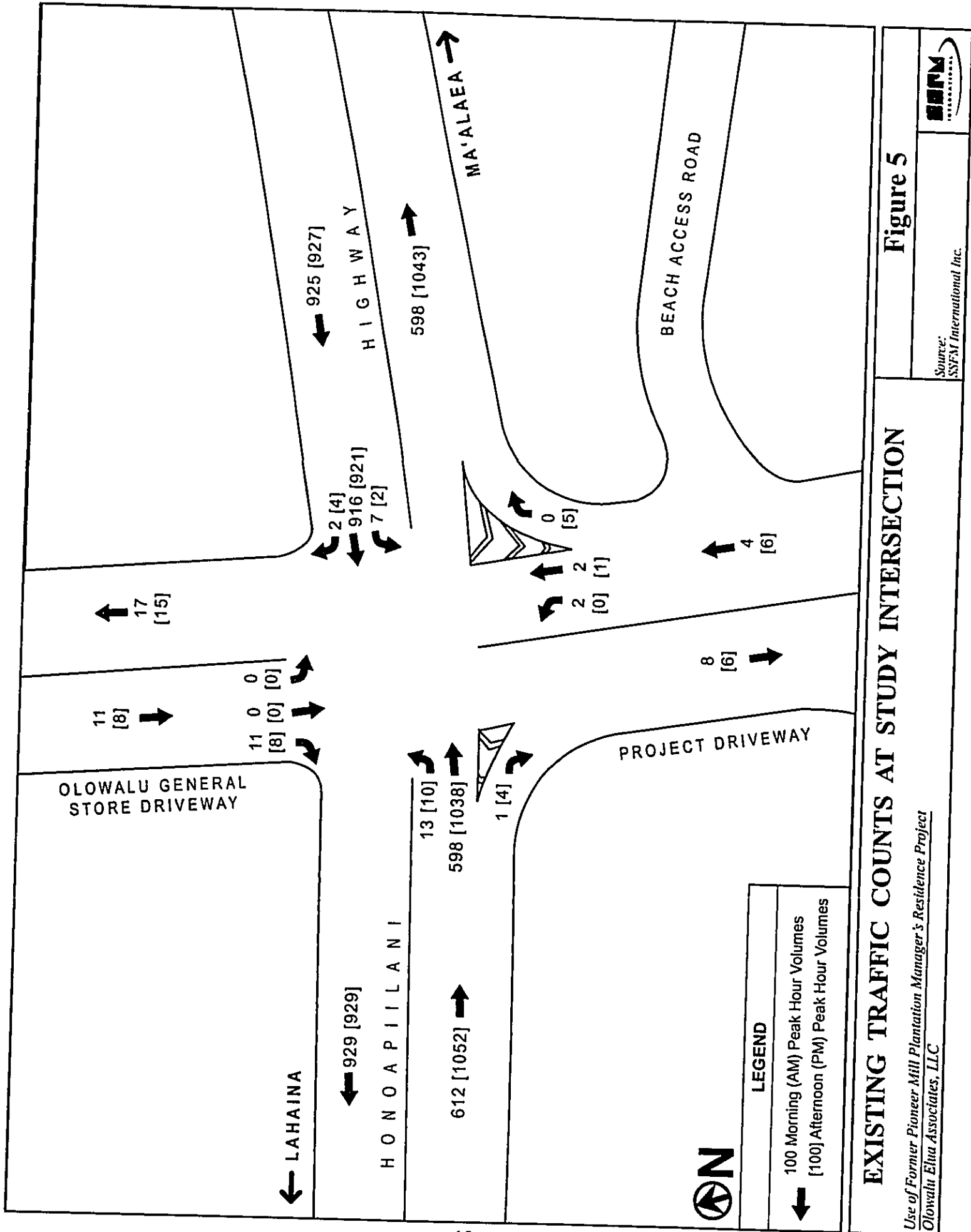
A survey of existing traffic conditions was conducted at the study intersection on Honoapi'ilani Highway serving the project site. Historic 24-hour traffic volume data available from the State Department of Transportation (DOT), Highways Division were reviewed to determine when the weekday afternoon and morning peak hours occur near the project site.

Historical traffic count data along Honoapi'ilani Highway were obtained and reviewed for count stations located east and west of the project site. These stations along Honoapi'ilani Highway were: 1) Station No. 11-B (Located at 1.07 miles west of the tunnel), and 2) Station No. 25-E (Honoapi'ilani Highway with Front Street [South Junction] intersection). This traffic count data indicated that the weekday morning and afternoon peak hours generally occurred between the time periods of 6:30 and 7:45 a.m., and between 3:30 and 4:30 p.m., respectively.

Manual traffic counts were subsequently taken at the project driveway intersection on Tuesday, October 11, 2006 during the afternoon peak period from 3:30 to 5:30 p.m., and on Wednesday, October 12 during the morning peak period from 6:30 to 8:30 a.m.

Traffic volume data at this intersection was manually collected using an electronic traffic data collector. The counts showed that the morning peak hour occurred from 6:30 to 7:30 a.m., and the afternoon peak hour occurred from 3:30 to 4:30 p.m. In general, traffic conditions during the afternoon peak period were noticeably busier than the morning peak period. The afternoon peak hour had over 400 total volumes more than the morning peak hour.

Figure 5 shows the resulting morning and afternoon peak hour traffic volumes by turning movements at the project site intersection. These traffic volumes were used as the baseline conditions upon which estimated project generated traffic volumes were added. Appendix B has a summary of the manual traffic count data for the study periods.



The following observations of traffic operations and conditions were made during the time of these surveys. There was no event occurring at the project site during these traffic counts.

Afternoon Peak Period Observations (Tuesday, October 11, 2006)

- The weather condition during the traffic counts was clear and dry.
- Two (2) joggers were observed running along highway (1 in each direction).
- Some vehicles from the Olowalu Store parking lot were observed traveling along the unnamed access road along the highway in the westbound direction to enter the highway at a location further west.

Morning Peak Period Observations (Wednesday, October 12, 2006)

- The weather condition during the traffic counts was clear and dry.
- Two (2) bicyclists were observed traveling on Honoapi'ilani Highway. One traveled westbound and entered the project driveway. One traveled eastbound towards Wailuku.

CHAPTER 3 PROJECTED TRAFFIC CONDITIONS

Future projected traffic conditions at the study intersection were forecast for the year 2007 since this would reflect completion in obtaining necessary entitlements for the project. No improvements are proposed for the project since these activities have already been occurring on the property. This chapter discusses the future traffic conditions with and without the project for the study year.

3.1 FUTURE CONDITIONS

Research was conducted to identify any major approved developments or roadway infrastructure improvements planned for completion by 2007 in the immediate vicinity of the project site. Such developments would be included in estimating future traffic conditions. There are no other major developments known to be completed by 2007 in the vicinity of the project.

There are no known improvements to Honoapi'ilani Highway planned to be completed by 2007 in the vicinity of the project. Construction of the Lahaina bypass several miles west of the project area will be occurring, but would not be completed by 2007. This new bypass road is not expected to affect future traffic volumes along the highway fronting the project site within the study timeframe.

The *Maui Long-Range Land Transportation Plan* (Kaku Associates, February 1997) identified the widening of Honoapi'ilani Highway from two to four lanes between the Lahaina bypass southeast past the project site to an area 4 miles west of Mā'alaea Harbor. This improvement was identified for the 2006 to 2020 timeframe.

However, this widening project has been replaced by a new State Department of Transportation project to realign this highway further inland between Lahaina and Mā'alaea. This project was identified in the current Statewide Transportation Improvement Program, or STIP. Planning work for this project has not started yet, and is not expected to be completed by the 2007 study timeframe.

3.2 FUTURE TRAFFIC WITHOUT PROJECT

Future traffic conditions in the year 2007 without the Plantation Manager's Residence Project were forecast by evaluating and adding the following factors: 1) existing peak hour traffic volumes, and 2) potential increase in through-traffic along Honoapi'ilani Highway.

Background Traffic Growth Along Honoapi'ilani Highway

Background traffic volumes are the result of regional growth that cannot be attributed to a specific project or related projects in the vicinity of a project site. In this case, background traffic thus refers to "through" traffic traveling along Honoapi'ilani Highway with no specific

origin or destination near the project site. Hence, this accounts for other regional development or growth such as in Lahaina and beyond that may contribute to increased traffic along the highway fronting the project site.

Through-traffic volumes were estimated based upon review and evaluation of State DOT historical traffic volumes along Honoapi'ilani Highway. State DOT 24-hour traffic count data were obtained at two stations along this highway in the general area of the project since there were no stations in the immediate vicinity. These stations were: 1) Station No. 11-B (Located at 1.07 miles west of the tunnel), and 2) Station No. 25-E (Honoapi'ilani Highway with Front Street [South Junction] intersection). Historic traffic count data were available from the years 1997 to 2003 at both stations. In addition, available 2005 24-hour counts obtained by SSFM were incorporated in the evaluation of data.

Using this historical data, a regression analysis was conducted to estimate the future growth of through traffic along Honoapi'ilani Highway for the 2007 study year. The results of the analysis predicted an average daily traffic (ADT) growth rate of 2.4 percent annually. This growth rate was similar to a background growth rate of 2.1 percent derived in the 1999 traffic study for the Olowalu area (Austin Tsutsumi & Associates, Inc., August 1999).

In addition, the West Maui Community Plan (1996) adopted the "constrained" County land use forecasts to serve as guidelines in determining future land uses and community development in the West Maui region. Therefore, this growth rate was determined to be reasonable, and utilized in forecasting future through traffic volumes.

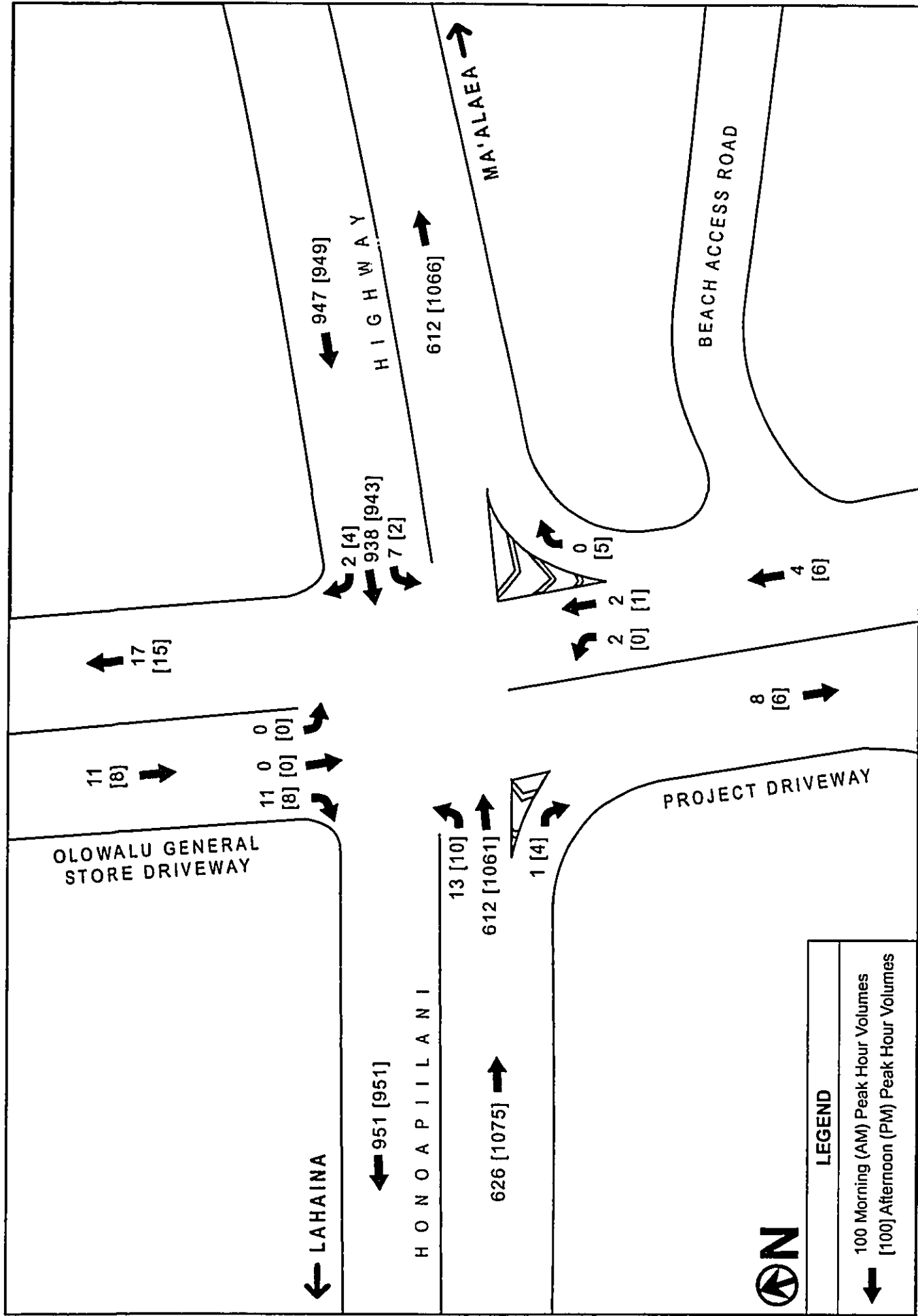
Future Traffic Without Project

Future traffic volumes along Honoapi'ilani Highway were subsequently predicted for the study year by adding the existing traffic counts with the projected background growth volumes of 2.4 percent. The resulting peak hour traffic volumes without the project in 2007 are shown on Figure 6.

3.3 FUTURE TRAFFIC WITH PROJECT

Future traffic with the project was forecast by adding the project generated traffic to the forecasted traffic without the project. The standard three-step procedure of trip generation, trip distribution, and traffic assignment was used to estimate peak hour traffic volumes for the project.

Figure 6: Future Traffic Forecasts Without the Project



FUTURE 2007 TRAFFIC FORECASTS WITHOUT THE PROJECT

Figure 6

Source: SSFM International Inc.

Use of Former Pioneer Mill Plantation Manager's Residence Project
 Olowalu Elua Associates, LLC

Trip Generation

The trip generation methodology is based upon generally accepted techniques developed by the ITE and published in the *Trip Generation Handbook*². This methodology uses trip generation rates to estimate the number of trips that a proposed project will generate during the morning and afternoon peak hours. The trip rates are developed by correlating the total vehicle trip generation data with various activity or land use characteristics such as vehicle trips per hour per dwelling unit or gross floor area.

Historical events booking information between 2005 and 2006 were provided by the owner. Thus, based upon available events data, an average rate of guests and subsequently vehicles trips could be calculated. Trips were generated using this data which should provide a reasonable indicator or probable trips occurring. The total 100 available on-site parking stalls provided within the project were also considered in projecting trips since this would generally dictate the level of vehicular traffic entering and exiting this property. Trips were subsequently estimated using the following assumptions listed below and are summarized on Table 1:

1. Morning peak hour trip rates.
 - a. The vast majority of events held at the project site are weddings which typically start in the late afternoon.
 - b. The weekday morning peak hour occurs relatively early from 6:30 to 7:30 a.m. making weddings and other events occurring at this time improbable.
2. Afternoon peak hour trip rates.
 - a. The vast majority of events held at the site are weddings which typically start in the late afternoon to take advantage of the sunset views at the site. Such events typically start about 2 hours before sunset (4:00 to 6:00 p.m.).
 - b. Some trips consisting of delivery vehicles, and others associated with event preparation would arrive prior to the peak hour, and leave after the peak hour. As a result, these trips would not be a factor in the peak hour volumes.
 - c. Trips were calculated as follows:
 - 1) A 1.8 persons per vehicle average was used.
 - 2) The average number of vehicles generated was calculated based upon historical booking events, and the standard deviation calculated.
 - 3) The standard deviation for vehicles estimated based upon these calculations was conducted.
 - 4) The average number of vehicles plus 2 standard deviations was calculated, and then the 85th percentile number calculated.
 - 5) Assumed that 85% arrive and 15% leave during the afternoon peak hour as a "worst-case" scenario.

² Institute of Transportation Engineers, *Trip Generation Handbook*, 7th Edition, Washington, D.C., 2003.

Table 1. Trip Generation Summary					
Land Use Description	Parameter	Morning Peak Hour		Afternoon Peak Hour	
		Enter	Exit	Enter	Exit
Trip Generation Rates					
Plantation Manager's Residence	Persons per Events	n/a	n/a	85%	15%
Morning Peak Hour					
Afternoon Peak Hour					
Trip Generation					
Plantation Manager's Residence	Persons per Events	0	0	60	10
Total Trips Generated					
		0 Trips		70 Trips	

As shown in the table, a large event conducted at the site will generate a relatively modest increase of vehicle trips during the afternoon peak hour. Such events would not occur during the morning peak and thus not generate trips at this site. A total of 70 vehicle trips are estimated to be generated during the weekday afternoon peak hour.

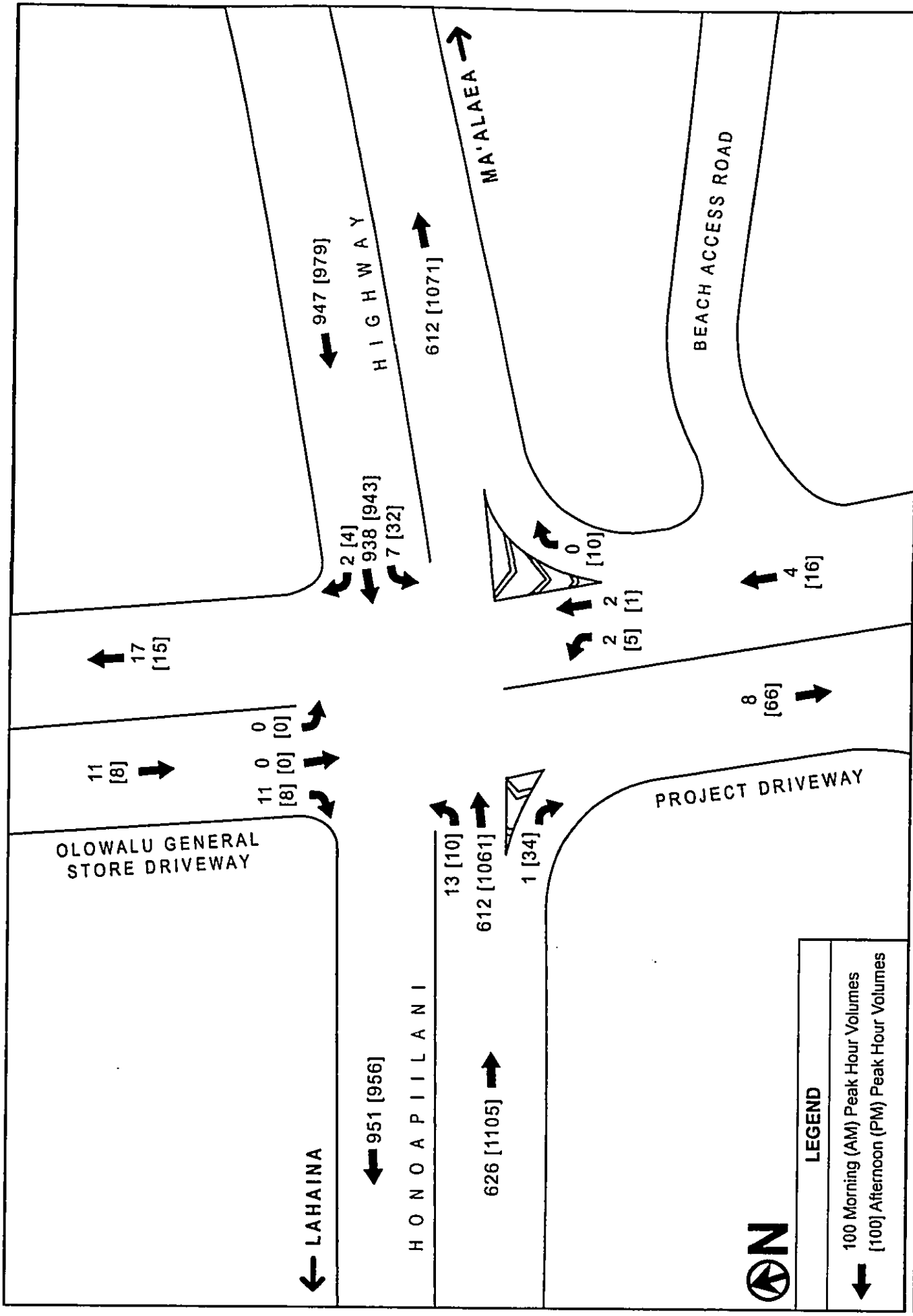
Trip Distribution and Assignment

The trip distribution step estimates the distribution of vehicle trips to their predicted origins and destinations. Finally, the traffic assignment step assigns these vehicle trips to specific routes on the roadway network by estimating probable approach and departure routes.

The distribution of project generated traffic was developed based upon review of existing and projected data on population, data from the *Maui Long-Range Land Transportation Plan* (Kaku Associates, February 1997), West Maui Community Plan, historical traffic counts, consideration of travel time or proximity to urban centers, and the 1999 traffic study already conducted for the Olowalu area (Austin Tsutsumi & Associates, Inc.).

Based upon the project site's location in Olowalu, traffic entering or exiting the site will travel in only two directions which are: 1) either northwest toward the urbanized and resort oriented areas of Lahaina and Kapalua, or 2) southeast toward the island's urban center of Wailuku/Kahului or the Kihei and Wailea resort area. Given these factors, the project generated traffic was distributed equally between these two directions (50%/50%) which were also consistent with the existing 1999 study for Olowalu.

The project traffic was subsequently assigned to the roadway network which is Honoapi'ilani Highway since it is the only highway facility connecting the project site to other areas on the island. There is only one existing driveway providing vehicular access into and out from the project site. Thus, this existing project driveway and intersection with the highway was used in the assignment of project traffic. The resulting traffic assignment with the project is shown on Figure 7.



FUTURE 2007 TRAFFIC FORECASTS WITH THE PROJECT

Source: SSFEM International Inc.

Figure 7

Use of Former Pioneer Mill Plantation Manager's Residence Project
 Olowalu Eha Associates, LLC

CHAPTER 4 TRAFFIC ANALYSIS RESULTS

This chapter discusses the results of the traffic analysis conducted for the study intersection.

4.1 ANALYSIS METHODS

The procedures outlined in the *Highway Capacity Manual* (Transportation Research Board 2000), or HCM, were used to analyze and evaluate the operating condition of the existing unsignalized intersection of Honoapi'ilani Highway with the project driveway and Olowalu General Store driveway. The Level-of-Service concept was used to describe the operational conditions of this intersection.

"Level-of-Service" is a term that denotes any of an infinite number of combinations of traffic operating conditions that may occur on a given lane or roadway when it is subjected to various traffic volumes. Level-of-Service, or LOS, is a qualitative measure of the effect of a number of factors which include space, speed, travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience.

Unsignalized Intersection Analysis

The level-of-service for unsignalized intersections is based on the use of gaps in traffic on the major street by vehicles crossing through or turning onto that stream. Specifically, the capacity of the controlled legs of an intersection is based on two factors: 1) the distribution of gaps in the major street traffic stream, and 2) driver judgment in selecting gaps through which to execute a desired maneuver. The criteria for the LOS at an unsignalized intersection are therefore based on delay of each turning movement.

There are six levels-of-service, A through F, that relate to the driving conditions from best to worst, respectively. The characteristics of traffic operations for each level-of-service are summarized below. In general, LOS "A" represents free-flow conditions with no congestion. LOS "F", on the other hand, represents severe congestion with stop-and-go conditions. Level-of-service "D" is typically considered acceptable for peak hour conditions in urban areas.

<u>LOS</u>	<u>Description of Estimated Delay to Minor Street Traffic</u>	<u>Average Delay at Unsignalized Intersection (seconds)</u>
A	Little or no delay	(≤10 seconds)
B	Short traffic delays	(>10 and ≤15 seconds)
C	Average traffic delays	(>15 and ≤25 seconds)
D	Long traffic delays	(>25 and ≤35 seconds)
E	Very long traffic delays	(>35 and ≤50 seconds)
F	Very long traffic delays	(>50 seconds)

Volume-to-capacity, or v/c ratio, is a measure indicating the relative traffic demand to the roadway's capacity. The Highway Capacity Manual defines capacity as "the maximum number of vehicles that can pass a given point during a specified period under prevailing roadway, traffic flow, and traffic control conditions." A v/c ratio of 0.50 indicates that the traffic demand is utilizing 50 percent of the roadway's capacity. A v/c ratio in excess of 1.00 indicates that the traffic demand exceeds the capacity of the roadway or highway facility.

4.2 ANALYSIS RESULTS FOR EXISTING CONDITIONS

An analysis of existing conditions at this study intersection was performed, and the results are shown on Table 2. The analysis results show that the study intersection of Honoapi'ilani Highway with the project driveway / Olowalu General Store driveway generally operates at very good levels-of-service during both morning and afternoon peak hours.

Table 2. Unsignalized Intersection Analysis Results For Existing Conditions (2006)				
Intersection and Movement	2006 Morning Peak Hour		2006 Afternoon Peak Hour	
	AVD ¹	LOS ²	AVD ¹	LOS ²
HONOAPI'ILANI HIGHWAY / PROJECT DRIVEWAY & OLOWALU GENERAL STORE DRIVEWAY				
Honoapi'ilani Highway				
Westbound Left-Turn (Into Project Driveway)	8.9	A	10.5	B
Eastbound Left-Turn (Into Olowalu Store Driveway)	10.7	B	10.4	B
Project Driveway				
Northbound Shared Left-Turn/Through	76.9	F	24.8	C
Olowalu General Store Driveway				
Southbound Shared Left-Turn/TH/Right-Turn	19.3	C	18.5	C
NOTES:				
(1) Delay is average vehicle delay per vehicle in seconds.				
(2) LOS shown for lane and for overall approach				

Morning Peak Hour Results

Vehicles along the highway making left-turns into either the project driveway or Olowalu General Store driveway operate with little or short delays (LOS A or B) during both peak hours.

Vehicles from the project driveway traveling across to the Olowalu General Store driveway or making left-turns onto the highway operate with long delays at LOS F. This is due to the number of vehicles occurring along the highway. However, there were a total of only four cars making these movements from the project driveway.

Vehicles from the Olowalu General Store driveway traveling across to the project driveway or making turns onto the highway operate with average delays at LOS C. All of the cars exiting this driveway made right-turns onto the highway heading towards Lahaina.

Afternoon Peak Hour Results

Vehicles along the highway making left-turns into either the project driveway or Olowalu General Store driveway operate with short delays (LOS B) during both peak hours.

Vehicles from the project driveway traveling across to the Olowalu General Store driveway or making left-turns onto the highway operate with average delays at LOS C. Only one vehicle traveled across the highway and five made right-turns onto the highway traveling in the eastbound direction (to Kihei).

Vehicles exiting from the Olowalu General Store driveway also operated with average delays at LOS C. All of the cars exiting this driveway made right-turns onto the highway heading towards Lahaina.

4.3 ANALYSIS RESULTS FOR FUTURE CONDITIONS

The analysis results for future traffic conditions both without and with the project in the year 2007 are summarized in Table 3.

Table 3. Unsignalized Intersection Analysis Results For Future Conditions (2007)					
Intersection and Movement	2007 Without Project		2007 With Project		Changes Delay ³
	Delay ¹	LOS ²	Delay	LOS	
HONOAPI'ILANI HIGHWAY WITH PROJECT DRIVEWAY/OLOWALU GENERAL STORE DRIVEWAY					
Morning Peak Hour					
<u>Honoapi'ilani Highway</u>					
Westbound Left-Turn (Project Driveway)	9.0	A	9.0	A	0.0
Eastbound Left-Turn (Olowalu Driveway)	10.8	B	10.8	B	0.0
<u>Project Driveway</u>					
Northbound Shared Left-Turn/Through	82.2	F	82.2	F	0.0
<u>Olowalu General Store Driveway</u>					
Southbound Shared LT/TH/RT	19.8	C	19.8	C	0.0
Afternoon Peak Hour					
<u>Honoapi'ilani Highway</u>					
Westbound Left-Turn (Project Driveway)	10.6	B	12.4	B	1.8
Eastbound Left-Turn (Olowalu Driveway)	10.6	B	10.6	B	0.0
<u>Project Driveway</u>					
Northbound Shared Left-Turn/Through	25.7	D	72.5	F	46.8
<u>Olowalu General Store Driveway</u>					
Southbound Shared LT/TH/RT	19.0	C	19.0	C	0.0
NOTES:					
(1) Delay is average vehicle delay per vehicle in seconds.					
(2) LOS denotes Level-of-Service calculated using the operations method described in Highway Capacity Manual. Level-of-Service is based on average vehicle delay for unsignalized intersections.					
(3) Additional seconds of delay per vehicle.					
n/a Not Applicable					

Future Conditions Without Project

In the year 2007 without the project, the only change in traffic conditions are associated with a slight increase in through volumes along Honoapi'ilani Highway. During the morning peak hour, the study intersection would continue to operate with the same levels of service as under current conditions. Left-turn movements from the highway would operate with little or short delays (LOS A and B). The existing left-turn storage lanes for both eastbound and westbound movements will have more than sufficient capacity to accommodate turns due to the low volumes making left-turns.

Vehicles exiting the Olowalu General Store driveway would also continue to experience average delays. Vehicles exiting the project driveway making either left-turns or crossing the highway would continue to experience very long traffic delays. However, very few of these movements occurred during the peak hour. Vehicles making right-turns would experience little delays due to the acceleration lane provided.

During the afternoon peak hour, the intersection would generally continue to operate with the same levels of service as existing afternoon conditions. Left-turn movements from the highway would operate with short delays (LOS B), and the existing left-turn storage lanes will have more than sufficient capacity to accommodate movements.

Vehicles exiting the Olowalu General Store driveway would also continue to experience average delays. Vehicles exiting the project driveway making either left-turns or crossing the highway would continue to experience long traffic delays. However, very few of these movements occurred during the peak hour. Vehicles making right-turns would experience little delays due to the acceleration lane provided.

Future Conditions With Project

In the year 2007 with the project, the only changes would occur during the afternoon peak hour since project related events would not occur during the morning peak hour (6:30 to 7:30 a.m.). As a result, the morning peak hour would continue to operate as projected without the project as shown on Table 3.

During the afternoon peak hour, the majority of trips generated would be arriving at the site making westbound left-turns from highway and eastbound right-turns. Left-turn movements from the highway would continue to operate with short delays at LOS B. The 600-foot storage lane for left-turns entering the project site would be more than sufficient to accommodate the projected volumes.

Vehicles exiting from the Olowalu General Store driveway would continue to operate with average delays at LOS C. Vehicles exiting the project site driveway would experience very long traffic delays at LOS F. However, a low number of vehicles are projected to make the left-turn from this driveway during this peak hour. Vehicles making right-turns from this project driveway should operate with little delays.

CHAPTER 5 CONCLUSIONS AND RECOMMENDATIONS

The results of the traffic analysis indicate that the existing unsignalized intersection of Honoapi'ilani Highway with the project driveway and Olowalu General Store driveway presently operates at good levels of service during the weekday morning and afternoon peak hours. Vehicular movements into and out from these driveways are relatively low. Left-turn movements from the highway into these driveways operate with short delays during both peak hours. The availability of long storage lanes for these movements minimizes delays to through traffic along the highway.

Vehicles exiting these driveways experience average to very long traffic delays trying to make left-turns or cross the highway. However, the number of cars making these movements is very low (less than 5).

Without the proposed project in the year 2007, there would be little changes to the operating conditions of this intersection. Through traffic volumes along the highway would increase slightly primarily due to background traffic growth. Left-turn movements from the highway into the driveways at this intersection would continue to operate with short delays during both peak hours. Again, the availability of sufficient storage lanes for these movements minimizes delays to through traffic along the highway.

Vehicles exiting these driveways would continue to experience average to very long traffic delays trying to make left-turns or cross the highway. However, the number of cars making these movements would continue to be very low.

With the project, traffic conditions at the intersection of Honoapi'ilani Highway with project driveway and Olowalu General Store driveway are projected to operate under similar conditions to those without the project in the year 2007 during both weekday morning and afternoon peak hours. Therefore, this project should not have a significant impact on this intersection or Honoapi'ilani Highway. The only project related effects would occur during the afternoon peak hour since no events would be occurring at the Plantation Manager's Residence during the morning peak hour.

Left-turn movements from the highway into the driveways at this intersection would continue to operate with short delays during both peak hours at LOS B. The availability of sufficient storage lanes for these movements minimizes delays to through traffic along the highway. The westbound left-turn storage lane is about 600 feet long which should be more than adequate to accommodate queues of vehicles entering the site.

Eastbound vehicles also have a deceleration lane of about 300 feet to make right-turns into the project site which should be more than adequate to accommodate projected vehicles entering this site. An eastbound acceleration lane is also provided for vehicles exiting the site which should accommodate the low number of vehicles projected making this movement.

Vehicles exiting these driveways would continue to experience average to very long traffic delays trying to make left-turns or cross the highway. However, the number of cars making these movements would continue to be very low. The majority of cars exiting the Olowalu General Store driveway generally make right-turns heading towards Lahaina. With an event conducted at the project site, the number vehicles exiting is also projected to be relatively low since the majority of traffic would be arriving to the site for the event. Cars leaving the event would typically occur after the afternoon peak hour which is to 4:30 p.m.

In summary, the project is expected to have minimal impact on traffic flow on Honoapi'ilani Highway at the project driveway. Existing improvements already provided at this intersection are adequate to accommodate projected volumes resulting from events occurring at the site. Therefore, no mitigation measures are recommended.

It should be noted that the policy of the owners is to help maintain the property by not overexposing it and to maintain good neighbor relations. Thus, events larger than 200 people are generally discouraged. Efforts are also taken to limit the number of events held to no more than approximately 8 to 10 on average per month which is reflected in the booking information provided. In addition, the house rules established for this operation to manage activities further help to minimize traffic effects, and consist of:

1. On-site parking is limited to 100 vehicles including staff & delivery.
2. Parking attendants are mandatory for groups over 75 people except when shuttles buses are provided.
3. Shuttle bus service to the site is required for events in excess of 200 people.

APPENDIX A



SITE PHOTOGRAPHS



Photo 1 - Facing South to Project Driveway



Photo 2 - Beach access road and Project Driveway

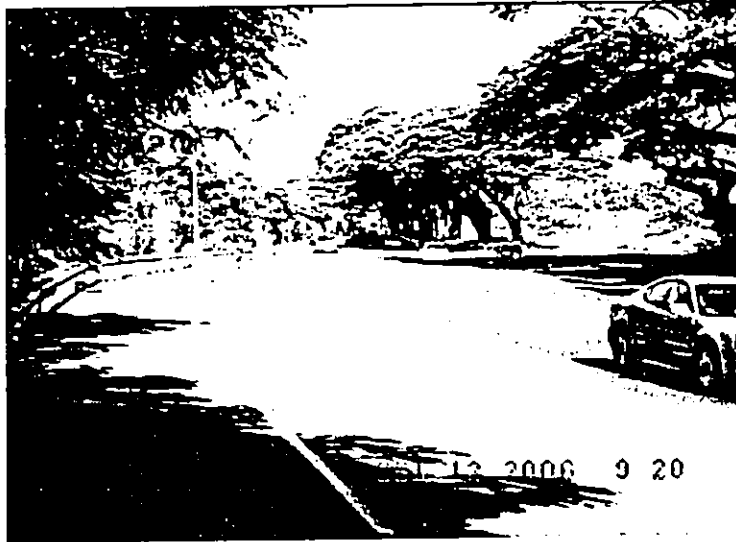


Photo 3 - Facing West on Honoapi'ilani Highway

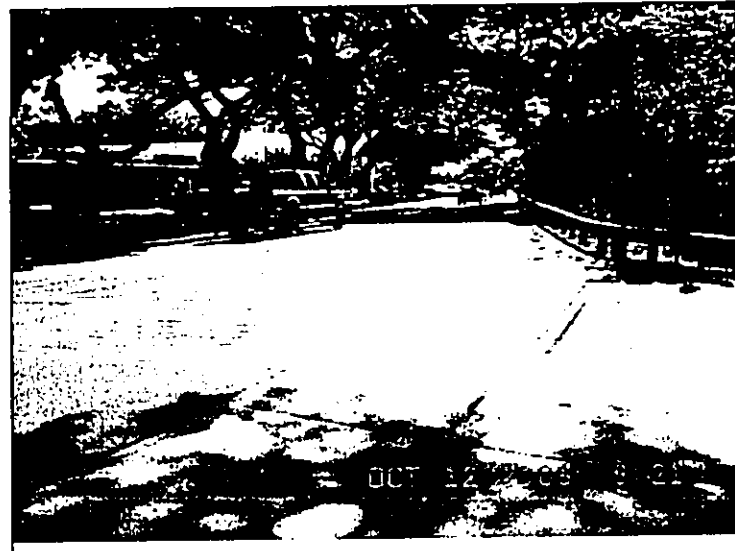


Photo 4 - Facing East on Honoapi'ilani Highway



Photo 5 - Facing North on Olowalu General Store Driveway

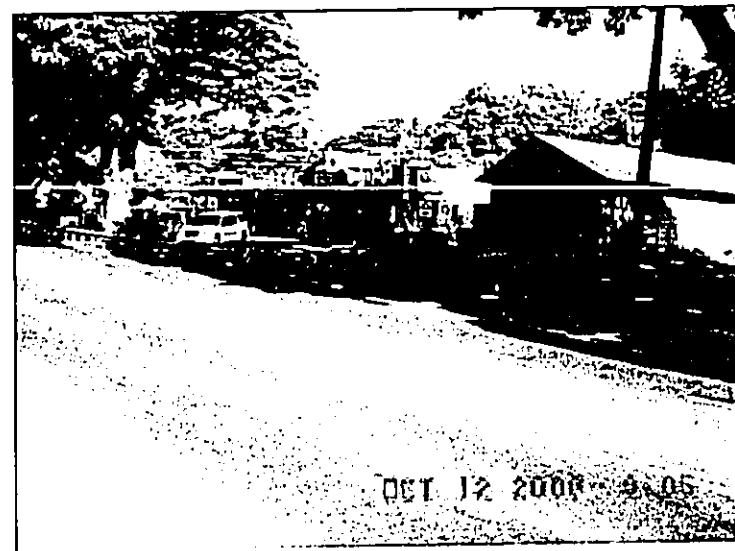


Photo 6 - Facing North to Chez Paul Restaurant Driveway

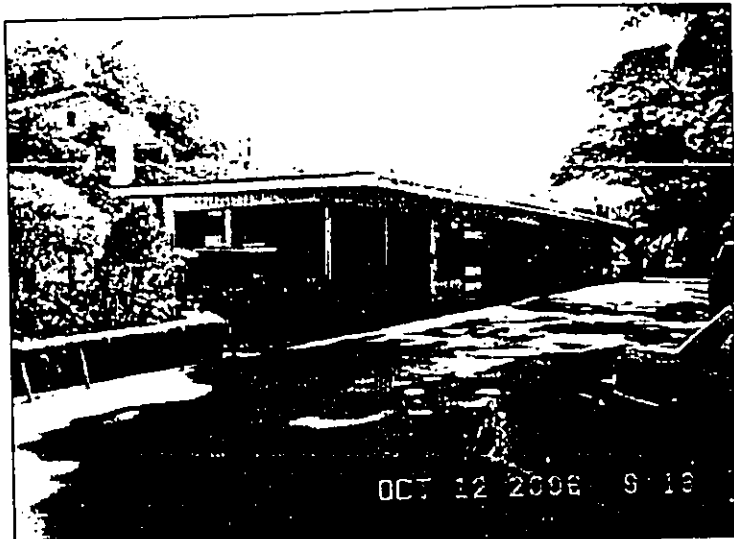


Photo 7 - Facing East on Olowalu General Store and Chez Paul Restaurant Driveway



Photo 8 - Facing West on Unnamed Access Road

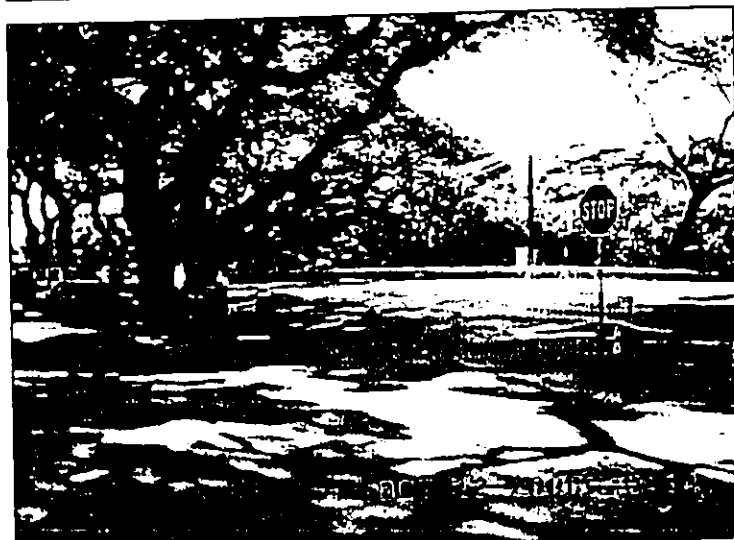


Photo 9 - Facing South to entrance of Olowalu General Store Driveway



Photo 10 - Close-up of signs at entrance of Project Driveway

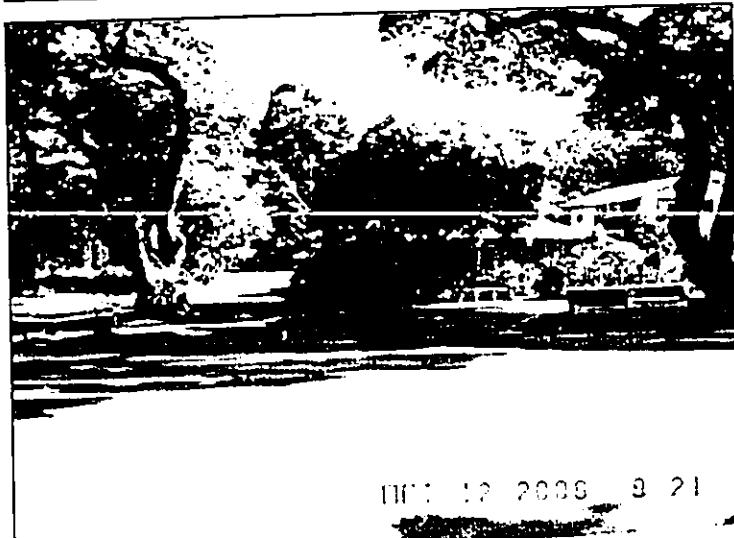


Photo 11 - Facing North to Olowalu General Store Driveway entrance



Photo 12 - Facing South on Olowalu General Store Driveway to Study Intersection

APPENDIX B

MANUAL TRAFFIC COUNT DATA

Olowalu Manager's House
Manual Traffic Count Data

Location: Olowalu Manager's House Driveway with Honoapiilani Highway
Date: Thursday, October 12, 2006

Start Time	Project Driveway North Bound			Honoapiilani Highway West Bound			Honoapiilani Highway East Bound			Unnamed Road South Bound		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
6:30 AM	0	0	0	2	268	1	2	150	0	0	0	2
6:45 AM	1	1	0	2	251	0	2	138	0	0	0	4
7:00 AM	1	0	0	2	229	1	5	144	1	0	0	1
7:15 AM	0	1	0	1	168	0	4	166	0	0	0	4
7:30 AM	1	0	0	1	170	0	9	160	1	0	0	4
7:45 AM	1	0	0	5	165	2	6	157	1	0	0	1
8:00 AM	0	0	0	0	139	0	5	143	0	0	0	1
8:15 AM	0	0	0	1	143	1	4	135	0	0	0	0
AM Peak Hour												
6:30 - 7:30	2	2	0	7	916	2	13	598	1	0	0	11

Location: Olowalu Manager's House Driveway with Honoapiilani Highway
Date: Thursday, October 11, 2006

Start Time	Project Driveway North Bound			Honoapiilani Highway West Bound			Honoapiilani Highway East Bound			Unnamed Road South Bound		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
3:15 PM	1	0	4	1	232	3	8	242	2	0	0	3
3:30 PM	0	1	1	2	223	1	3	265	1	0	0	1
3:45 PM	0	0	3	0	231	1	2	264	2	0	0	1
4:00 PM	0	0	1	0	208	2	2	247	1	0	0	2
4:15 PM	0	0	0	0	259	0	3	260	0	0	0	4
4:30 PM	0	0	1	1	210	0	7	246	2	1	0	1
4:45 PM	0	0	2	0	208	8	3	283	0	0	0	0
5:00 PM	0	0	0	0	201	1	5	263	0	0	0	0
5:15 PM	0	0	0	0	176	1	1	201	1	0	0	1
PM Peak Hour												
3:30 - 4:30	0	1	5	2	921	4	10	1036	4	0	0	8

APPENDIX I.

**Summary of February 20,
2007 CDUA Public Hearing
(Including Copies of Written
Public Testimony Submitted
to OCCL)**



MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO

KARLYNN KAWAHARA

March 7, 2007

PUBLIC HEARING MEMORANDUM

Date: February 20, 2007

From: Mark Alexander Roy, Planner

Subject: Conservation District Use Application (MA-3392) for Use of Former Pioneer Mill Plantation Manager's House and Surrounding Botanical Gardens for Special Events and Temporary Event-Related Structures, Olowalu, Maui, Hawai'i

As a requirement of the Conservation District Use Permit Application (CDUA), a public hearing was held on February 20, 2007 (6:00 p.m.) at the Lahaina Civic Center in Lahaina, Maui, Hawai'i. Office of Conservation and Coastal Lands (OCCL) representatives in attendance at the meeting included Mr. Sam Lemmo (Hearings Officer) and Mr. Michael Cain (Staff Planner). The meeting was attended by approximately 15 members of the public, including County of Maui Staff Planner, Robyn Loudermilk.

Mr. Lemmo opened the meeting at approximately 6:00 p.m. and outlined ground rules, the CDUA Process, public testimony procedures and contested case opportunities. A presentation was delivered by both Mark Roy of Munekiyo & Hiraga, Inc. (Planning Consultant) and Mr. Glenn Tremble of Olowalu Elua Associates (applicant).

Following the applicant's presentation, verbal public testimony was received from the following individuals in support of the application request:

1. Amy Kastens (Executive Director, Pacific Cancer Foundation)
2. Donald Fujii (Neighbor, Olowalu General Store)
3. Ron Bass (Wilderness Wish and Hands Across the Water)
4. Bob Kawaguchi (Retired Lahainaluna High School Athletic Director, teacher, coach)
5. John Bendon (Neighbor)
6. Theo Morrison (Individual, Former Executive Director, Lahaina Town Action Committee)
7. Betsy McClintock (Christmas House Annual Charity Fundraiser)

In addition, written testimony in support of the project were submitted to Sam Lemmo, OCCL, by those individuals not able to attend the meeting in person. No public testimony expressing concern or objections to the application were received from any individuals.

Sam Lemmo closed the public hearing at approximately 6:40 p.m.

Mark Alexander Roy

Mark Alexander Roy
Planner

MAR:tn
F:\DATA\WMLC\OlowaluHouse\022007\mtgmemo.wpd

George "Keoki" Freeland
49 Lea Lea Place
Pukalani, HI 96768

February 13, 2007

Mr. Sam Lemmo, Administrator
State of Hawaii, Dep't. of Land and Natural Resources
Office of Conservation and Costal Lands
PO Box 621
Honolulu, HI 96809

Subject: Use of Olowalu Plantation Grounds for Special Events

Dear Mr. Lemmo,

At one time, I was the Manager/Vice President of Pioneer Mill Sugar Company. Pioneer Mill Sugar previously owned this property. I am also a third generation kama-a'ina, who was born and raised in Lahaina.

The Olowalu House was utilized by the plantation for special events on a regular basis soon after it was constructed and occupied – in the 1920's.

More recently, I have attended weddings (one for my nephew and another for my son) at this location. In my opinion, the present owners have done a wonderful job of preserving this site and utilizing it in much the way it was done in the past. People can continue to experience the genuine authenticity of this location—The Manager's House at Olowalu Point.

If a permit is required to continue to utilize this location as it was in the past, it would be the proper step for preservation. Please issue the necessary permits.

Mahalo,



George "Keoki" Freeland



**Building bridges
Moving forward
Changing lives**

RECEIVED

FEB 20 2007

February 14, 2007

Mr. Sam Lemmo, Administrator
State of Hawaii, Dept. of Land and Natural Resources
Office of Conservation and Coastal Lands
P.O. Box 621
Honolulu, Hawaii 96809

(Regarding CDUA MA-3392 – Public Testimony)

Aloha Mr. Lemmo,

My name is Irene Bowie and I am the Director of Development for Imua Family Services. Imua is one of Maui County's oldest non-profit organizations, this year celebrating our 60th anniversary. We are the only organization on Maui and Lanai focused on helping children at risk for, or with, special needs in the earliest years of their lives. Each year Imua serves more than 2,100 children and their families.

Our programs include Infant and Child Development, Speech Therapy, Newborn Hearing Screening, and for over 30 years, Camp Imua. Camp Imua is a week-long overnight camping experience for school-aged children (6 to 20 years of age) with developmental delays including Down syndrome, cerebral palsy, spina bifida, sight and hearing impairments, autism, developmental and cognitive delays. This camp is held each June at Camp Maluhia in the West Maui Mountains. Camp Imua is provided free of charge to the 50 children who attend and offers a much needed week of respite to the parents and/or caregivers of these children. One hundred volunteers donate their time during this week-long event to care for the campers.

Over 70% of Camp Imua's expenses are met through in-kind donations from individuals and businesses throughout Maui County. It would not be possible to hold Camp Imua each year without the many generous contributions from our community.

One in-kind donation that Imua Family Services counts on and appreciates each year is the use of Olowalu Plantation's grounds. One day during this special week our campers and their volunteer caregivers are bused to Olowalu Plantation for an afternoon of outdoor experiences, including kayaking and other beach activities. This is provided to Imua at no charge by Olowalu Elua Associates and is a highlight of the children's week of activities. Olowalu Elua Associates is covered as an additional insured on Imua's policy for this activity.

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Speech Therapy Services

95 Mahalani St., Suite 19A
Wailuku, HI 96793

Phone: (808) 244-7467
FAX: (808) 242-4762
imuafamilyservices@hawaii.rr.com

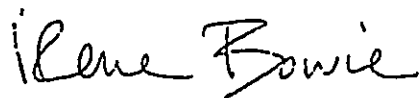


A rainbow of services that changes the lives of children and families by supporting, educating, and empowering.

Imua Family Services sincerely hopes that this year's Camp Imua, to be held June 10th to 15th will again include a day of beach activities at Olowalu Plantation for our special campers.

I ask that Olowalu Elua Associates be granted the Conservation District Use Application MA-3392. They are a valuable community partner and Imua looks forward to Olowalu Plantation being a part of the Camp Imua experience for many years to come.

Sincerely,



Irene Bowie
Director of Development
Imua Family Services
95 Mahalani Street, Suite 19A
Wailuku, Hawaii 96793
(808) 244-7467

Charles G. Jencks
75 Ka Drive
Kula, HI 96790

February 14, 2007

Mr. Samuel J. Lemmo, Administrator
Department of Land and Natural Resources
Office of Conservation and Coastal Lands
State of Hawaii
P.O. Box 621
Honolulu, HI 96809

Subject: Conservation District Use Application (CDUA) MA- 3382

Dear Mr. Lemmo:

I understand that the above referenced application will be heard before your department in a public hearing on February 20, 2007 at the Lahaina Civic Center. I hope to be able to testify personally at this hearing but given current commitments, I may not be able to attend hence this letter.

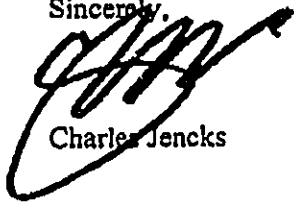
The lands and facilities that are the subject of the hearing and CDUA application are significant in Maui County given the fact there are very few similar facilities available for gatherings, weddings and or events for the many non-profit and non-governmental organizations in Maui County. Speaking as a past president of the Maui Family YMCA and the Boy Scouts of America, finding venues for fundraising or celebrations for these organizations or other non-profits such as community associations or other community benefit oriented groups is extremely difficult given the limited number of such venues. As has been my personal experience with the subject facility, access is terrific, the management staff has been flexible in accommodating the public and there has always been a strong sense of concern for those using the facility, those in the surrounding community as well as the environment of the facility.

Mr. Lemmo, I support the subject application and urge your department to do so as well so that facilities can be available to support not only our residents but visitors as well.

Mr. Samuel J. Lemmo
February 14, 2007
Page 2

Thank you for your time and if there any questions regarding this letter please feel free to contact me in my office at 879-5205, on my cell at 250-3178 or via email at Charlie@gbjmaui.com.

Sincerely,



Charles Jencks

CC: Ms. Arlene Torricer, Olowalu Elua Associates, LLC

From: Bonnie Penniman
To: quod@maui.net
Sent: Saturday, February 17, 2007 1:28 PM
Subject: Olowalu Plantation House

To Whom It May Concern

My parents, Harlow and Marion Wright lived at the Olowalu Plantation House for 25 years. I grew up there and have many fond memories of the area, especially that house.

When my husband and I were married 41 years ago we had our reception there. In the last 5 years, when our two daughters were married they also wanted their reception at the Olowalu Plantation House. The owners of the Olowalu Plantation House kindly let us use the property for both receptions which was very meaningful for our family and friends.

Bonnie (Wright) Penniman



Kama'aina Properties, Inc.

Real Estate Sales and Development
Building Relationships and Community

February 20, 2007

Mr. Sam Lemmo, Administrator
State of Hawaii, Dept of Land and Natural Resources
Office of Conservation and Coastal Lands
P.O. Box 621
Honolulu, Hawaii 96809

Subject: CDUA MA-3392; Olowalu Plantation Grounds; Olowalu, Lahaina, Maui

Dear Mr. Lemmo,

I am writing in support of the request of Olowalu Elua Associates, LLC (OEA) for use of the Olowalu Managers House for Special Events.

First of all, I was employed as the Project Manager for OEA from 1998 to 2002. I sought clarification on permissible usages and received a letter dated May 23, 2000 from Mr. Dean Uchida, former Administrator of the Land Division of the DLNR. Based on this letter, special events were conducted at the Olowalu Managers Home. During my association, many of the events involved personal activities of employees of OEA (graduations, birthday parties, family reunions, etc) as well as events by many of Maui non-profits agencies. However, I do know that weddings and photo-shoots also utilized the site, and given the scarcity of unique sites on the island, request for its use increased.

While I do not know the amount of events held since I left employment, I do know that anytime someone participates in an event at Olowalu, they come away feeling overjoyed to have that experience. While residents and visitors can get cultural and historical experiences elsewhere, very few places on Maui or within the State offer an authentic look and feel of bygone Plantation Era Days, and none that I know of, are on the ocean. The fact that OEA has created a park-like feel with open public access is a benefit to the general public. As a residence, which was its prior use with Pioneer Mill Company and would be the alternative if this permit request were denied, the general public would be the loser.

For Maui, "Kaluanui", a former Baldwin family home in Makawao is maybe the only other former residence that the general public gets to enjoy year round. On

Kama'aina Properties, Inc.

Page 2 of 2

Oahu, I can only think of the Academy of Arts as another former residence offered for public use. The bottom line is that very few landowners willingly provide opportunities like the Olowalu Managers House, so I truly believe the generational benefit to the visitors and especially the local residents outweigh any short-term issues, if any.

Please feel free to contact me if you need any further clarification.

Respectfully yours,



Robert L. Horcajo
President and Principal Broker

FEB 28 2007



PACIFIC
FOUNDATION

257 Mahalani Street
Suite 99
Wailuku, HI 96793

Tel: 808-243-2999
Fax: 808-242-2626

PacificCancerFoundation.org

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February 20, 2007

Mr. Sam Lemmo, Administrator
State of Hawaii, Dept. of Land & Natural Resources
PO Box 621
Honolulu, HI 96809

Dear Mr. Lemmo:

The Pacific Cancer Foundation is a 501(c)(3) non-profit organization created exclusively for charitable, scientific and educational purposes. The Pacific Cancer Foundation's mission is to provide patient support and community outreach and to promote access to optimal treatment, clinical trials and research for all whose lives are touched by cancer.

Over the past two years, the Foundation has provided Maui residents and visitors access, advocacy and information on their cancer diagnosis, treatment and follow-up. The Foundation provides patients and their families a comprehensive cancer resource center with guided computer access, cancer related books, periodicals and journals. The Foundation brings in cancer sub-specialists so the elderly, poor and frail can have access to the same cancer care found on Oahu and the mainland without the burden of travel. To date six cancer sub-specialists see patients on Maui every month. Through the efforts of the Foundation, clinical trials are now available to patients on Maui. Prior to the Foundations efforts, patients had to either travel to Oahu, the mainland or even worse, go without these possible life saving treatments. The Foundation sponsored the first ever Mana O'iana breast cancer survivors paddling group that gave hope and exercise to over 20 breast cancer patients.

For the Foundation to continue to help cancer patients and their families, it takes financial support. The Olowalu Plantation Manager's House allows the Pacific Cancer Foundation to be the recipient of charitable donations every year at Christmas. A substantial amount of non-profit revenue comes from community driven events. Without the donations generated from the Olowalu Christmas House event, less cancer patients and their families will have access to a cancer sub-specialist, less books will be able to be purchased, less lives may be saved through clinical trials and less programs will be available to cancer survivors.

As the Executive Director of the Pacific Cancer Foundation, I ask that the State of Hawaii, Department of Land and Natural

DOCUMENT CAPTURED AS RECEIVED

Resources and the Office of Conservation and Coastal Lands allow the Olowalu Plantation Manager's House to be utilized by the community thus allowing the Foundation to continue its mission of helping cancer patients and their families on Maui.

Sincerely,



Amy Kastens
Executive Director

Cc: Mark Roy – Munekiyo & Hiraga, Inc.
Olowalu Elua Associates LLC