

**FINAL ENVIRONMENTAL ASSESSMENT
COHEN SINGLE FAMILY DWELLING AND
ASSOCIATED IMPROVEMENTS IN THE
CONSERVATION DISTRICT**

February 2006

TMK (3rd) 5-7-01:05
Pāo'o, Kohala District, Island of Hawai'i, State of Hawai'i

APPLICANT:

Jonathan Cohen,
Aloha Properties, LLC
18 Baker Bridge Road
Lincoln, MA 01773

DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

2006 FEB 13 A 8:30

RECEIVED
OFFICE OF CONSERVATION
AND COASTAL LANDS

ACCEPTING
AUTHORITY:

Hawai'i State Department of Land and Natural Resources
P.O. Box 621
Honolulu HI 96809

CONSULTANT:

Ron Terry Ph.D.
HC 2 Box 9575
Keaau, Hawai'i 96749

DEPT. OF ENVIRONMENTAL
QUALITY CONTROL

06 FEB 24 P 2:33

RECEIVED

CLASS OF ACTION:

Use of Land in Conservation District
Use of State Land

This document is prepared pursuant to:
the Hawai'i Environmental Protection Act,
Chapter 343, Hawai'i Revised Statutes (HRS), and
Title 11, Chapter 200, Hawai'i Department of Health Administrative Rules (HAR).

FINAL ENVIRONMENTAL ASSESSMENT
COHEN SINGLE FAMILY DWELLING AND
ASSOCIATED IMPROVEMENTS IN THE
CONSERVATION DISTRICT

February 2006

TMK (3rd) 5-7-01:05
Pāo'o, Kohala District, Island of Hawai'i, State of Hawai'i

APPLICANT:

Jonathan Cohen,
Aloha Properties, LLC
18 Baker Bridge Road
Lincoln, MA 01773

**ACCEPTING
AUTHORITY:**

Hawai'i State Department of Land and Natural Resources
P.O. Box 621
Honolulu HI 96809

CONSULTANT:

Ron Terry Ph.D.
HC 2 Box 9575
Keaau, Hawai'i 96749

CLASS OF ACTION:

Use of Land in Conservation District
Use of State Land

This document is prepared pursuant to:
the Hawai'i Environmental Protection Act,
Chapter 343, Hawai'i Revised Statutes (HRS), and
Title 11, Chapter 200, Hawai'i Department of Health Administrative Rules (HAR).

TABLE OF CONTENTS

SUMMARY		ii
PART 1: PROJECT DESCRIPTION		1
1.1 Project Description and Location		1
1.2 Summary of Environmental Assessment Process		2
1.3 Public Involvement and Agency Coordination		3
PART 2: ALTERNATIVES		4
2.1 Proposed Project		4
2.2 No Action		4
PART 3: ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION		5
3.1 Basic Geographic Setting		5
3.2 Physical Environment.....		5
3.2.1 Drainage, Floods and Hazards.....		5
3.2.2 Flora and Fauna		6
3.2.3 Air Quality, Noise and Scenic Resources.....		8
3.2.4 Hazardous Substances, Toxic Waste and Hazardous Conditions.....		9
3.3 Socioeconomic and Cultural.....		9
3.3.1 Land Ownership and Land Use, Designations and Controls.....		9
3.3.2 Socioeconomic Characteristics and Recreation.....		10
3.3.3 Cultural Setting		12
3.3.4 Archaeology and Historic Sites		16
3.4 Public Facilities and Utilities		20
3.4.1 Vehicular Access		20
3.4.2 Other Public Facilities and Utilities		20
3.5 Secondary and Cumulative Impacts		20
3.6 Required Permits and Approvals.....		22
3.7 Consistency With Government Plans and Policies		22
3.7.1 Hawai'i County General Plan		22
3.7.2 Chapter 205A		27
3.7.3 SMA Guidelines		28
3.7.4 Conservation District Rules		28
PART 4: DETERMINATION		29
PART 5: FINDINGS AND REASONS		30
REFERENCES		33
APPENDIX 1A	Preconsultation Letters	
APPENDIX 1B	Comments to Draft EA and Responses	
APPENDIX 2	Figures	
1.	Project Location (USGS Map)	2. Tax Map
4a.	Building Site Plan	4b. Detailed Architectural Plan
4d.	Elevations	5. Landscape Plan
7.	Airphoto with Simulation of Residence	3. Project Site Photographs
APPENDIX 3	Archaeological and Cultural Reports	4c. Property Site Plan
		6. Road Easement Map
		8. Archaeological Features

SUMMARY OF PROJECT, ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Project Summary

Jonathan Cohen proposes to build a single-family residence and related improvements on a 10.61-acre property in Kohala in the *ahupua'a* of Pāo'o that lies mainly within the Conservation District. The project would also improve the access road on the applicant's easement across State property, and would re-route a portion of a lateral jeep road onto State property, both of which actions would occur in the Agricultural district. The proposed residence would consist of a densely landscaped compound of detached structures totaling 4,065 square feet (sf); pools and decks would occupy another 878 sf. This design minimizes visual impacts and maximizes natural light and ventilation. Other improvements include an Individual Wastewater System, utilities, a paved access road, and landscape features such as vegetation, trails, and rock walls. Various support facilities would be built mauka on the Agricultural-zoned portion of the property. All structures would be set a minimum of 50 feet inland from the certified shoreline. The design involves leaving about 90 percent of the site basically as-is and minimal disturbance of any natural or man-made features on the property. All funding is private (no public funds are involved) and work would begin as soon as permits were obtained. A number of archaeological features are found on the property. The construction will affect only one site, which has already been extensively disturbed and has been subject to data recovery. The area currently provides shoreline access for hikers and fishermen via a jeep road that traverses the southern section of the property, and such access would be maintained through the rerouted jeep road.

Short Term Impacts

Construction Impacts: Landclearing and construction activities would produce minor short-term impacts to noise, air quality, access and scenery. In order to ensure that construction-related damage to air and water quality and adjacent archaeological resources avoided or minimized, the following mitigation measures are proposed as conditions to the Special Management Area permit.

1. Construction activities with the potential to produce polluted runoff will be limited to periods of low rainfall; cleared areas will be replanted or otherwise stabilized as soon as possible; fuel storage and use will be conducted to prevent leaks, spills or fires; and construction materials, petroleum products, wastes, debris, and landscaping substances (herbicides, pesticides, and fertilizers) will be prevented from blowing, falling, flowing, washing or leaching into the ocean. Watering of the site during construction will be used to reduce dust, and construction will be limited to daytime hours.

2. The limits of the development envelope will be marked with construction fencing in order to reduce the possibility of inadvertently impacting any of the known archaeological sites. Prior to any development activity the project archaeologist will meet on site with the construction crew to orient them to the preservation sites. If any previously unidentified sites, or remains such as artifacts, shell, bone or charcoal deposits, human burials, rock or coral alignments, pavings, or walls are encountered, work will stop immediately and SHPD will be consulted to determine the appropriate mitigation. Care will be taken during ground preparation to ensure that, in the unlikely event that human burials are present, they are recognized and dealt with appropriately.

Long Term Impacts

Visual: Implementation of the landscaping plan, which includes native and Polynesian-introduced shrubs and trees of various masses and textures scattered around the building site and shielding the mauka side of all structures, will soften views from the Akoni Pule Highway.

Fire: Firebreaks will be established around the building site, to the extent consistent with preservation of archaeological features, to help contain fire, reduce dust, and preserve water quality. If DLNR plans to intensify use of its adjacent property, it is recommended that they install signs warning of the possibility of fire, and consider firebreaks.

PART 1: PROJECT DESCRIPTION

1.1 Project Description and Location

Jonathan Cohen proposes to build a single-family residence and related improvements on a 10.61-acre property in Kohala in the *ahupua'a* of Pāo'o that lies mainly within the Conservation District (see Fig. 1, USGS Location Map; Fig. 2, TMK Map; Fig. 3, Project Site Photographs; and Figs 4a-4d, Site Plans, which include plan views at three scales and elevations from two aspects).

The proposed residence would consist of a compound of detached pavilion structures totaling 4,065 square feet. Pools and decks would occupy another 878 square feet. The applicant is proposing a segmented design integrated by extensive native landscaping in order to mitigate the visual impact of the dwelling in this remote area and to achieve energy efficiency. One large structure would be less desirable, as it would have a higher and more massive roof, producing greater visual impact from the shoreline and the highway. This segmented configuration supports the sustainable building guidelines of the Office of Environmental Quality Control, because it ensures natural cooling from the trade winds, creates shade in the covered lanais and walls recessed behind overhanging roofs, and provides maximum natural interior light. The mauka sides of the pavilions would be composed of lava rock, weathered wood and natural colored thatch roof, and there would be no reflective surface facing the highway. All of the pavilions are single-story and would be surrounded by existing or newly planted trees (see Fig. 5, landscape plan).

The small cluster of thatched roofs among existing trees will be harmonious with the historic character of the property. The footprint of the separated pavilions is similar in scale to the archaeological features. The segmented plan echoes the customary design of single-family residences in many tropical regions, which involves separation of living quarters into discrete functional units. The traditional Hawaiian *kauhale* comprised sleeping houses, eating houses separated by gender, cooking houses, menstruation houses and various work houses (see Mary Kawena Pukui's *Polynesian Family System in Ka'u* for description).

Other improvements associated with the residence include an Individual Wastewater System, a swimming pool, utilities, a paved access road, and landscape features such as vegetation, trails, and rock walls. The environmentally advanced pool purification system would use salt and an electrolysis system to purify the water with no need for chemical chlorine. Outbuildings including a diesel or propane tank storage facility, a water tank, and an agricultural building and with a diesel or propane generator, an open shed, a utility control room and a storage loft will be built mauka of the residence on the Agricultural-

zoned portion of the property. Although outside of the Conservation District and thus not subject to an Environmental Assessment, these features are discussed here and illustrated in Figure 4a to provide context. A full-time caretaker employee will be responsible for the utilities maintenance, gardening and general security, with an office in the agricultural building. All structures would be set a minimum of 50 feet inland from the certified shoreline (see Fig. 4a). The design involves leaving about 90 percent of the site basically as-is and minimal disturbance of any natural or man-made features on the property. All funding is private (no public funds are involved) and work would begin as soon as permits were obtained.

A number of archaeological features are found on the property. The construction would affect only one degraded archaeological site, which was already extensively disturbed prior to Mr. Cohen's ownership of the property and has been subject to data recovery.

The area currently has shoreline access for hikers and fishermen via a jeep road that traverses the southern section of the property, and such access would be maintained through the rerouted jeep road. The applicant has proposed to improve and maintain the lateral shoreline pedestrian path for use by the public.

The project would also include light grading and chip-sealing of a 10 to 12-foot width of road along the applicant's existing unpaved easement across State property in the Agricultural District (Fig. 6). It would also reroute a segment of a lateral jeep road on the southern end of the parcel, which currently cuts through the building site, to State land in the Agricultural District outside the property, for the convenience of the public.

1.2 Summary of Environmental Assessment Process

This Environmental Assessment (EA) process was conducted in accordance with Chapter 343 of the Hawai'i Revised Statutes (HRS). This law, along with its implementing regulations, Title 11, Chapter 200, of the Hawai'i Administrative Rules (HAR), is the basis for the environmental impact process in the State of Hawai'i. *An EA is necessary because the proposed single-family home project involves activity within the Conservation District and the Department of Land and Natural Resources does not consider the project an exempt activity, and other aspects of the project involve use of State land in the Agricultural District.*

According to Chapter 343, an EA is prepared to determine impacts associated with an action, to develop mitigation measures for adverse impacts, and to determine whether any of the impacts are significant according to thirteen specific criteria. If a study concludes that no significant impacts would occur from implementation of the proposed action, a Finding of No Significant Impact (FONSI) will be prepared and an action will be

PART 2: ALTERNATIVES

2.1 Proposed Project

The proposed project is described in Section 1.1 above and its locations and features illustrated in Figures 1-4.

2.2 No Action

Under the No Action Alternative, the single-family residence and related improvements would not be built. This EA considers the No Action Alternative as the baseline by which to compare environmental effects from the project. No other alternatives uses for the property are desired by Mr. Cohen or addressed in this EA.

PART 3: ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION

3.1 Basic Geographic Setting

The property, which is presently vacant and unused, is a long, narrow parcel stretching along the Kohala coast. It is bounded by the ocean and on its other sides by unencumbered State of Hawai'i lands. About 4,000 feet north, beyond the State land and two private parcels, is Lapakahi State Historical Park (Figs. 1-3). Elevations in the southern end of the Cohen property vary from sea level to about 50 feet above sea level. The surface geology consists of basaltic lava flows from Kohala volcano dated from at least 250,000 years ago (Wolfe and Morris 1996). Soil is classified as Kawaihae extremely stony very fine sandy loam. The ground is moderately permeable, runoff is medium and soil erosion hazard is moderate. This soil type is widely distributed in Kohala and is not well adapted to farming, though it often supports pasture (U.S. Soil Conservation Service 1973). The climate is generally hot and semi-arid, averaging between 10 and 20 inches of rain annually, with a mean annual temperature of approximately 80 degrees Fahrenheit (U.H. Hilo-Geography 1998:57).

3.2 Physical Environment

3.2.1 Drainage, Flooding and Hazards

Environmental Setting

Floodplain status for many areas of the island of Hawai'i has been determined by the Federal Emergency Management Agency (FEMA), which produces the National Flood Insurance Program's Flood Insurance Rate Maps (FIRM). The area of the property where the house is to be located is designated as Zone X on the FIRM maps – i.e., outside the floodplain. The building site varies between 18 and 40 feet above sea level.

The entire Big Island is subject to geologic hazards, especially lava flows and earthquakes. The area is not subject to mass wasting. The United States Geological Survey (USGS) classifies all of North Kohala, which is on the slopes of the dormant volcano Hualalai, as Lava Flow Hazard Zone 9, on a scale of ascending risk 9 to 1 (Heliker 1990). Kohala volcano is extinct and therefore the probability of lava flow inundation in the North Kohala district is negligible.

In terms of seismic risk, the entire Island of Hawai'i is rated Zone 4 Seismic Probability Rating (Uniform Building Code, Appendix Chapter 25, Section 2518). Zone 4 areas are at risk from major earthquake damage, especially to structures that are poorly designed or built.

Impacts and Mitigation Measures

Geologic conditions impose no substantial constraints on the project. All structures would conform to seismic standards of the Uniform Building Code. The building footprint is not within any designated flood zone, and the elevation of the proposed structures above sea level is sufficient to prevent damage from high surf. There is no evidence of tsunami damage in the proposed building area, but there is always the possibility in coastal areas of Hawai'i that extreme tsunami may cause damage. With regard to earthquakes and high surf, the project presents no additional hazard to the public.

3.2.2 Flora and Fauna

Flora and Fauna

The site was inspected for biological resources in November 2004. The savanna-like vegetation (see Fig. 3a) is dominated by alien species, especially kiawe (*Prosopis pallida*) and buffelgrass (*Cenchrus ciliaris*). A few common natives such as 'uhaloa (*Waltheria indica*) are present. The area provides very poor habitat for native birds, insects, or mammals (i.e., Hawaiian hoary bats).

Table 1
Plant Species on Project Site

Scientific Name	Family	Common Name	Life Form	Status
<i>Abutilon grandifolium</i>	Malvaceae	Hairy abutilon	Herb	A
<i>Alternanthera</i> sp.	Amaranthaceae	Chaff flower	Herb	A
<i>Atriplex semibaccata</i>	Chenopodiaceae	Australian saltbush	Herb	A
<i>Cenchrus ciliaris</i>	Poaceae	Buffelgrass	Grass	A
<i>Chamaesyce hirta</i>	Euphorbiaceae	Hairy spurge	Herb	A
<i>Chenopodium murale</i>	Chenopodiaceae	Goosefoot	Herb	A
<i>Cucumis dipsaceus</i>	Cucurbitaceae	Hedgehog gourd	Vine	A
<i>Desmanthus virgatus</i>	Fabaceae	Slender mimosa	Shrub	A
<i>Leonotis nepetifolia</i>	Lamiaceae	Lion's ear	Herb	A
<i>Leucaena leucocephala</i>	Fabaceae	Haole koa	Tree	A
<i>Medicago polymorpha</i>	Fabaceae	Bur clover	Herb	A
<i>Pennisetum setaceum</i>	Poaceae	Fountain grass	Grass	A
<i>Pluchea symphatifolia</i>	Asteraceae	Sourbush	Herb	A
<i>Prosopis pallida</i>	Fabaceae	Kiawe	Tree	A
<i>Ricinus communis</i>	Euphorbiaceae	Castor bean	Shrub	A
<i>Sida fallax</i>	Malvaceae	Ilima	Herb	I
<i>Waltheria indica</i>	Sterculiaceae	Uhaloa	Herb	I

* A = alien; I = indigenous; E = endemic

A gulch depicted as intermittent on USGS maps traverses the property several hundred feet north of the building area. No wetlands or special aquatic sites (e.g., anchialine ponds) are present on the property.

Impacts and Mitigation Measures

Because of the relatively minor nature of the project and the lack of native terrestrial ecosystems and threatened or endangered plant species, construction and use of the property is not likely to cause adverse biological impacts. The applicant is planning to landscape the property (see Fig. 5), working primarily with native plants that are adapted to the dry, warm climate of the area and do not require excessive watering or maintenance. The precautions for preventing any effects to water quality during construction listed below in Section 3.2.4 should prevent any adverse impact on aquatic biological resources in coastal waters.

Wildfire is an important concern in this part of North Kohala, which has burned on a number of occasions owing to arson, car exhaust, campfires and firecrackers, among other causes. Fires started on this property may harm not only the owner's property but nearby property as well, including Lapakahi State Historical Park and other State land.

A firebreak will be established around the building site, and the landowner plans to clear dead kiawe and brush away from historic features and trails on the entire site, to the extent consistent with preservation of archaeological features, to help contain fire, reduce dust, and preserve water quality. The presence of a water source will assist in fighting fires that could originate from this or other properties.

Indirectly, the project may have the effect of encouraging additional public access, by improving a coastal lateral access trail that is slated to become part of the Ala Kahakai (see Section 3.3.2). While this is, in fact, a public benefit of the project that has been negotiated between the owner and DLNR, increased access will also have the effect of exposing the area to a greater risk of wildfire. If DLNR plans to intensify use of its nearby property, it is recommended that the agency install signs warning of the possibility of fire, and also that it consider firebreaks. This recommendation is extended to any plans to encourage public use of trails along the North Kohala coastline; wildfire is a significant issue faced by the Ala Kahakai trail.

3.2.3 Air Quality, Noise, and Scenic Resources

Environmental Setting

Air pollution in North Kohala is mainly derived from volcanic emissions of sulfur dioxide, which convert into particulate sulfate and produce a volcanic haze (vog) that very occasionally blankets the district, although this is not a common phenomenon because of the large distance from Kilauea volcano. Drier areas experience blowing dust, especially during construction in high wind episodes.

Noise on the site is low to moderate, and is derived from natural sources (such as surf and wind) as well as faint noise from Akoni Pule Highway.

The area shares the quality of scenic beauty along with most of the Kohala coastline. Very few homes or structures are present, and there are sweeping views of the dry, scrubby foothills, the green pu'u of the Kohala Mountains, and the wind-swept sea over a foreground of a kiawe and buffelgrass savanna (see Fig. 3).

The Hawai'i County General Plan contains Goals, Policies and Standards intended to preserve areas of natural beauty and scenic vistas from encroachment. Several views in the area are specifically cited in the *Hawai'i County General Plan Support Document* (Hawai'i County Planning Department 1989):

- Coastline viewplane from Akoni Pule Highway
- Coastline viewplane from Kohala Mountain Road

Also important to consider are views from Lapakahi State Historical Park, the southern boundary of which lies about 4,000 feet north of the proposed building area.

Impacts and Mitigation Measures

The project would not affect air quality or noise levels in any substantial ways. Brief and minor adverse effects would occur during construction, but there are no sensitive receptors for noise or dust within 1,500 feet. Watering of the site during construction will be used to reduce dust. Chip-sealing the access road would reduce the amount of dust generated. There are virtually no sensitive noise receptors in the vicinity, and given the small scale of the project, noise mitigation will likely not be necessary. It is recommended that Conservation District Use Permit conditions require preparation of a dust control plan, as well as consultation with the Department of Health's Noise, Radiation and Indoor Air Quality Branch, pursuant to the Title 11, Chapter 46, Hawai'i Administrative Rules (Community Noise Control).

The construction of the home and associated improvements will introduce modern structures in an area currently lacking any such structures. Due to a distance of more than four miles, the home will barely be visible or not visible at all from the Kohala Mountain Road. Although the residence will be nearly a half-mile from the Akoni Pule Highway (Fig. 7), it could be highlighted against the backdrop of the sea and intermittently visible along about a mile and a half stretch of the highway, at least in spots where coastal views are not blocked by roadcuts or topography. Outside of this mile and a half stretch, the building site is not visible from the highway. It should be recognized that a single-family home is an identified use in the Conservation District, and that any single-family home will have some visual impact. Implementation of the landscaping plan (see Fig. 5), which includes native and Polynesian-introduced shrubs and trees of various masses and textures scattered around the building site and shielding the mauka side of all structures, will soften views from the Akoni Pule Highway.

The building site is over 4,000 feet south of the southern boundary of Lapakahi State Historical Park, separated by other State land and two private parcels. A heavily forested point prevents views from the park to the property, and it is unlikely that the low buildings proposed for the Cohen property would be intrude on viewplanes from the park.

3.2.4 Hazardous Substances, Toxic Waste and Hazardous Conditions

Based on onsite inspection, it appears that the site contains no hazardous or toxic substances and exhibits no other hazardous conditions. In order to ensure that construction-related damage is avoided or minimized, the following will be implemented:

Mitigation Measure: Construction activities with the potential to produce polluted runoff will be limited to periods of low rainfall; cleared areas will be replanted or otherwise stabilized as soon as possible; fuel storage and use will be conducted to prevent leaks, spills or fires; and construction materials, petroleum products, wastes, debris, and landscaping substances (herbicides, pesticides, and fertilizers) will be prevented from blowing, falling, flowing, washing or leaching into the ocean.

3.3 Socioeconomic and Cultural

3.3.1 Land Ownership and Land Use, Designations and Controls

Existing Environment

The property is owned by Jonathan Cohen through Aloha Properties LLC. It is bordered by the coast and by State land on the northern, southern and mauka (eastern) sides.

The State Land Use District for 10.26 acres of the 10.61-acre property is Conservation, subzone Resource, with the remaining 0.35 acres in the Agricultural district, with County zoning A-5a (Agricultural, Minimum lot size 5 acres). The Land Use Pattern Allocation Guide Maps identify the area as Conservation (near the coast) and Extensive Agriculture. The site, along with all lands makai of Akoni Pule Highway in this area, is within the Special Management Area. No structures are proposed to be located within the Shoreline Setback Area.

Construction of a single-family home and associated improvements is not prohibited within these land use designations, conditional upon a Conservation District Use Permit (CDUP) and Special Management Area Permit or exemption therefrom. The consistency of the project with the regulations and policies of the Conservation District and the Special Management Area are discussed in Section 3.7.2 and 3.7.3.

3.3.2 Socioeconomic Characteristics and Recreation

Existing Environment: Social Characteristics and Recreation

The project site is within the *ahupua'a* of Pāo'o in the Kohala District of the island of Hawai'i. Many parts of West Hawai'i have experienced high rates of growth associated with the booming visitor industry. Since 1970, population has grown rapidly in most of Hawai'i County and particularly in North Kohala, where the number of inhabitants increased from 3,249 in 1980 to 6,038 in 2000, an increase of 86%, while the Hawai'i County population increased from 92,053 in 1980 to 148,677 in 2000, an increase of 62% (U.S. Census of Population 2000). The subject property is fairly isolated from other residences in the area. The nearest residential area is the currently ten-lot Kaiholena subdivision a few miles south. The largest community nearby is Kohala Ranch and associated properties, located about seven miles south of the subject parcel. The harbor town of Kaiwaihae is ten miles south. Nine miles to the north are the old sugar plantation communities of Kohala, including Hawi and Kapa'au. The nearest structures are located at Lapakahi State Historical Park, 4,000 feet to the north, although no permanent residences exist at this location.

Lapakahi State Historical Park is a 262-acre facility that features re-enactment of the early Hawaiian life of the common people through cultural demonstrations of daily activities, story telling, and a self-guided walk through the partially restored remains of this ancient Hawaiian coastal settlement. Nearby ocean waters comprise a marine preserve in which with various activities are regulated.

The shoreline and nearshore waters at Pāo'o are currently used by fishermen, divers, surfers, and hikers. Access to the Cohen property is currently gained by walking or

driving from Akoni Pule Highway to the coast along either of two mauka/makai jeep roads. Both roads first cross State-owned property (TMK 5-7-01:21) before reaching the Cohen property. The mauka/makai jeep roads are in extremely bad condition and can currently be traversed only by high-clearance four-wheel-drive vehicles. Consequently, many recreational users park their vehicles near Akoni Pule Highway and walk along the jeep trails to the coast. Some people drive down to the coastline and park on the State land or Pāo'ō property closer to the shoreline. Lateral access along the coastline is provided by a jeep road, which is located primarily on the State-owned parcel mauka of the Pāo'ō property but which crosses the south/mauka corner of the subject property. The mauka edge of the lateral jeep trail is the boundary between the State land use Conservation and Agricultural districts. The lateral jeep trail is in such poor condition at the southern portion of the Pāo'ō property that vehicular access is virtually impossible.

Impacts and Mitigation Measures

No adverse socioeconomic impacts are expected to result from the project. The residence and associated improvements will not adversely affect neighbors, who live at a significant distance from the property.

Mr. Cohen intends to provide public pedestrian access to and along the Pāo'ō shoreline. His representatives have met with staff from the Na Ala Hele Division of DLNR and representatives of the National Park Service's Ala Kahakai Trail project in order to arrive at a mutually beneficial public access plan. As a result, Mr. Cohen intends to provide lateral coastal pedestrian access via a trail located on his property just mauka of the certified shoreline. A proposed trail alignment (see Figs. 4a&b) has been delineated by Mr. Cohen and the project archaeologist, and this alignment has been presented to the Na Ala Hele Division and various shoreline access groups, including Public Access Shoreline Hawai'i (PASH). The coastal trail will provide access to the shoreline along the entire length of the Pāo'ō property, and specifically will provide access to the points where surfers and divers enter the ocean.

Mr. Cohen is proposing a realignment of the coastal lateral jeep trail to run mauka of archaeological sites (including burial sites) located near the mauka/south corner of the subject property. The trail would be realigned to State-owned land just mauka of the buffer zone of the archaeological sites and then rejoin the coastal jeep road just south of the Cohen property.

The agreements for access and trail improvements will provide a significant benefit to public access and use of the shoreline in this and adjacent areas. There will be no adverse effect on recreational use of the shoreline or the adjacent Lapakahi State Historical Park, which is 4,000 feet to the north of the proposed building area.

3.3.3 Cultural Setting

An archaeological data recovery report for one site, a preservation plan for other sites, and a cultural impact assessment were performed for the proposed project by Rechtman Consulting, which also engaged in extensive consultation with local residents. The reports are attached as Appendix 3 and provided much of the information for this section. The archaeological reports are summarized in Section 3.3.4, below.

Existing Resources

The cultural value of the project site was assessed as part of this EA. The purpose of this investigation was to determine whether the property supported any traditional gathering uses, was vital for access to traditional cultural sites, or had other important symbolic associations for native Hawaiians. Sources for the information included archaeological work, documents and maps, and extensive discussion with native Hawaiians knowledgeable about the Pāo‘o *ahupua‘a*.

A cultural impact assessment should identify “cultural resources, practices and beliefs” of a particular ethnic group. This implies that the resources, practices, and beliefs are “traditional” in the sense that they are part of an ethnic group’s identity. In the Hawai‘i Revised Statutes Chapter 6E, and in the Hawai‘i Administrative Rules 13-275-2, that would govern the State Historic Preservation Division, a definition of Traditional Cultural Property is provided.

“Traditional cultural property” means any historic property associated with the traditional practices and beliefs of an ethnic community or members of that community for more than fifty years. These traditions shall be founded in an ethnic community’s history and contribute to maintaining the ethnic community’s cultural identity. Traditional associations are those demonstrating a continuity of practice or belief until present or those documented in historical source materials, or both. “Traditional” as it is used, implies a time depth of at least 50 years, and a generalized mode of transmission of information from one generation to the next, either orally or by act. “Cultural” refers to the beliefs, practices, lifeways, and social institutions of a given community. The use of the term “Property” defines this category of resource as an identifiable place. Traditional Cultural Properties are not intangible, must have some kind of boundary; and are subject to the same kind of evaluation as any other historic resource, with one very important exception. By definition, the significance of Traditional Cultural Properties should be determined by the community that values them. To be significant, the potential Traditional Cultural Property must possess integrity of location, design, setting, materials, workmanship, feeling, and association and meet one or more of the following criteria:

- A** Be associated with events that have made an important contribution to the broad patterns of our history;
- B** Be associated with the lives of persons important in our past;
- C** Embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; or possess high artistic value;
- D** Have yielded, or be likely to yield, information important for research on prehistory or history;
- E** Have an important value to the native Hawaiian people or to another ethnic group of the state due to associations with 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.

Clearly, Traditional Cultural Properties are significant under Criteria E, and may be significant under multiple criteria.

A further analytical framework for addressing the preservation and protection of customary and traditional native Hawaiian practices resulted from the *Ka Pa'akai O Ka'āina v Land Use Commission* court case. The court decision established a three-part process relative to evaluating such potential impacts: (1) identify whether any valued cultural, historical, or natural resources are present; and identify the extent to which any traditional and customary native Hawaiian rights are exercised; (2) identify the extent to which those resources and rights will be affected or impaired; and (3) specify any mitigative actions to be taken to reasonably protect native Hawaiian rights if they are found to exist.

The archaeology and history of settlement in Kohala reflects massive shifts in population and resource use over time. Evidence for early occupation of Kohala has been collected from Kapa'anui. Dunn and Rosendahl (1989) recovered radiocarbon samples that potentially date to as early as A.D. 461 (Site 12444). This early date may be related to the establishment of small, short-term camps to exploit seasonal, coastal resources. The earliest date for permanent settlement in Kohala (A.D. 1300) was obtained from Koai'e, a coastal settlement where subsistence primarily derived from marine resources. According to Tomonari-Tuggle (1988:13), these resources were probably supplemented by small-scale agriculture.

The District of Kohala features prominently in the pre-history and history of Hawai'i. During the Expansion Period (A.D. 1100–1650), characterized by great social stratification, major socioeconomic changes, and intensive land modification, a second major migration settled in Hawai'i, this time from Tahiti in the Society Islands.

According to Kamakau (1976), the *kahuna* Pa'ao settled in the islands during the 13th century. Prior to this time, the Island of Hawai'i had had no ali'i of royal descent. After arriving in the Puna District, he settled in Kohala, where he constructed the Mo'okini *luakini* heiau.

Kamehameha I's homeland is in Kohala, having been born at *ahupua'a* of Kokoiki, North Kohala, near the Mo'okini Heiau (Kamakau 1992). Kamehameha's ancestral homeland was in Halawa, North Kohala (Williams 1919) and he farmed his lands in Kohala before launching his conquest of the Hawaiian chain.

By the time of contact, numerous coastal villages and extensive dryland agricultural systems were in place in North Kohala. The *ahupua'a* system of social organization was also firmly established by this time, with wedge-shaped land units extending from the mountains to the sea. The *ahupua'a* were controlled by local chiefs, and were integrated at the district level. Districts were ruled by paramount chiefs through a system of taxation and redistribution. Social stratification was defined by a class separation between the ruling *ali'i* (chiefs) at one end, and the *maka'ainana* (commoners) at the other. Kamehameha I eventually united the Island of Hawai'i, and ultimately all of the Hawaiian Islands, and freely participated in the European-introduced market economy.

Traditional land use patterns saw a rapid shift after the *Mahele* in 1848. At this time, land ownership was defined by grants and awards by the king (Kamehameha III) to the chiefs and other retainers. By 1850 laws were enacted under which commoners could also own land (*kuleana*) if they could prove that they actually occupied those lands. The *Mahele* paved the way for land to be sold to foreigners. The entire *ahupua'a* of Pāo'o (1-6) was retained as Government land during the *Māhele* of 1848. In 1856 the current study parcel (TMK: 3-5-7-01:5) was sold as a 16-acre fee-simple land grant (Grant No. 1997) to Kauwe (Figure 15). Unfortunately, no record exists as to Kauwe's use of the land. In 1862, the Boundary Commission was established in the Kingdom of Hawai'i to set the boundaries of the *ahupua'a* awarded during the *Māhele*.

It is likely, at this point, that the land was used for cattle pasture, being too dry for sugar cane. This would have been typical for the area as much of the coastal land in leeward North Kohala was used as cattle pasture. Walled complexes became the dominant residential structure for those remaining leeward settlements as families enclosed their holdings to protect them from feral cattle and to clearly define their *kuleana* boundaries.

In 1862, Pāo'o *Ahupua'a*, along with much of its neighboring Government lands, was leased to the Waimea Grazing and Agricultural Company for horse and cattle ranching purposes (Dye and Maly 2000). This lease did not include Grant No. 1997 (i.e., the

project parcel) to Kauwe, and it is unclear if cattle were grazed on the current study parcel during this period.

The lands of Pāo‘o were purchased by Parker Ranch in 1932 and used for grazing purposes until relatively recent times. The cattle were grazed at the shore seasonally, usually following rains, when the *makai* pastures produced rich feed supplemented with *kiawe* beans. During the ranching years few people visited the coastline (Dye and Maly 2000: 63).

Examination of the sites, including the archaeological investigations described below (Section 3.3.4), show that this site has been the focus of modern recreational activity for at least 50 years. Interviews with informants showed that the coastline has been used for fishing for some time. It appears that the trail that accesses the coastline through the property may have cultural value, although it is not known if this vehicle route is coincident with prior, traditional, mauka-makai routes to the coast.

Consulted Parties

Consultation for the current study focused on individuals and families with genealogical ties to the Pāo‘o area. Arthur Mahi (Papa Mahi) and his cousin Isabella Mahi Medeiros (Auntie Bella) were the primary consultants along with members of the Luhiau ‘Ohana (represented by Valerie Luhiau Ako and Anthony Ching Ako). Several sites visits were made with these parties between May of 2003 and December of 2004. All consultations were unstructured and informal in nature; they were not tape recorded and transcribed. All of those consulted shared common concerns: that the archaeological sites (particularly the burial sites) be protected, that Mr. Cohen and his family comprehend the stewardship responsibility that comes with “ownership” of this land, and that the Cohen family continue to work with the consulted parties to ensure an appropriate level of cultural sensitivity.

It is clear from the archaeological and historical record that the property was used during precontact and possibly early historic times for the entire range of traditional Hawaiian cultural activities and practices (residential, burial, ceremonial, subsistence production and procurement, etc.). However, none of those consulted had knowledge of any specific traditional cultural practices currently being exercised on the property, although there was a recognition that the shoreline is actively being accessed for fishing and surfing.

Impacts and Mitigation Measures

All of those consulted were shown a conceptual plan of the proposed single-family residence and its relative location within the property. Their collective *mana ‘o* was

incorporated into the burial treatment plan (Rechtman 2003) and helped to establish the minimal preservation buffers for the archaeological sites in the vicinity of the proposed single-family residence. While, the Luhiau 'Ohana expressed some concern that the area gave them "spooky" feelings, Papa Mahi explained that for him and his ancestors the location and design of the proposed single-family residence (as well as the Cohen family) were "maika'i."

The proposed construction and habitation of the residence should not appear to impact any Traditional Cultural Properties, specifically any culturally valued natural, cultural or historical resources or cultural practices. Execution of the above described mitigation measures will help to ensure that no cultural practices and beliefs or associated cultural resources will be adversely affected by the proposed development of the Cohen's single-family residence.

3.3.4 Archaeology and Historic Sites

An archaeological data recovery report for the archaeological site that has the potential to be impacted by the proposed project was performed by Rechtman Consulting, which also prepared a preservation plan for the additional sites on the property. The reports are attached as the first sections of Appendix 3 and are summarized in this section and referenced in Section 3.3.3, above.

Environmental Setting

The cultural setting and history of the area is covered above in Section 3.3.3. Early archaeological work included a Bishop Museum reconnaissance survey of Parker Ranch coastal lands (Soehren 1967), as well as a coastal survey of North and South Kohala, conducted on behalf of the Division of State Parks (Bonk 1968). Hammatt and Folk (1980) conducted an archaeological surface survey with subsurface testing of the entire property, recording a total of 27 sites, which are mapped in Figure 2 of Appendix 3. These sites include seventeen habitations, five canoe sheds, one shrine, three burials, and numerous terraced areas (Table 2; Figure 6). In their words, there are "numerous terraces... situated around the habitation structures and canoe sheds are best interpreted as areas used for various domestic activities such as fish net making and drying, fish drying, mat making, etc." (1980: 8).

Overview of Impacts

One site (Site 2382), which had been extensively disturbed previously, has been the subject of a data recovery approved by Department of Land and Natural Resources-State Historic Preservation Division (DLNR-SHPD). The house construction area involves a

Table 2
Archaeological Sites in TMK:3-5-7-01:5

<i>Site #</i>	Site Function	<i>Site #</i>	Site Function
2348	Habitation	2381	Possible Canoe Shed
2350	Habitation	2382	Probable Habitation
2366	Habitation	2383	Probable Shrine (<i>ko'a</i>)
2367	Canoe Shed	4596	Habitation
2369	Habitation	4597	Possible Habitation
2371	Habitation	4598	Possible Habitation
2372	Habitation	4599	Probable Habitation
2373	Habitation	6438	Habitation
2375	Habitation	6440	Probable Burial
2376	Canoe Shed	6441	Burial
2377	Canoe Shed	6442	Possible burial
2378	Canoe Shed	6443	Probable Burial
2379	Probable Habitation	6444	Probable Habitation
2380	Probable Habitation		

portion of this site, which is no longer significant for preservation. With the exception of this site, the landowner plans to preserve all the archaeological features on the parcel, including an extensive array on the northern part of the property that has been the subject of a preservation plan that is under review by DLNR-SHPD. Also preserved will be an area of burials (Sites 6440, 6441, 6442, and 6443) that exists in the extreme southeast corner of the parcel and extends off the parcel to the south and east. A burial treatment plan for these sites has been approved by the DLNR-SHPD Burials Program and the Hawai'i Island Burial Council.

Direct Impacts: Site 2382

When the previous property owners were looking for an appropriate house site, Hammatt and Folk recommended the vicinity of Site 2382 as one of two areas on the property "in which house construction would have minimal impacts on archaeological resources" (1980:11), because it had been previously disturbed by bulldozing resources" (1980: 11). In 1980, Site 2382 (see Figure 3 of first section of Appendix 3) was described as follows:

Probable habitation feature, mostly destroyed by bulldozing; low retaining wall on *makai* (west) side of large irregular boundaries, possibly historic in origin; east (*mauka*) of this low wall is a small area of *'ili 'ili* "paving" and midden scatter. (Hammatt and Folk 1980:39)

Under previous owners, disturbance in and around Site 2382 increased, and the paved surface of the site underwent further bulldozing. The area is currently used by local residents for parking and camping. The southern and eastern rock alignments that are

shown on Figure 3 of the first section of Appendix 3 are no longer present, and much of the western and northern walls/faces have collapsed. Furthermore, a wooden tenting platform (6 meters by 3 meters) and a modern fire hearth have been erected on the surface of the site along its northern edge. Also, a large *kiawe* tree is growing out of the site's northwest corner.

In order to mitigate any adverse effects to Site 2382 from the proposed development of a single-family residence, Rechtman Consulting prepared archaeological data recovery plan (Rechtman 2001), which was approved by the SHPD. The focus of the data recovery plan was to collect information and generate data relative to the function and age of the site. As Hammatt and Folk noted, "selective salvage excavations of certain sites would add much to our knowledge of Hawaiian prehistory, particularly maritime exploration and adaptation, residence patterns and cultural development (1980: 12)." Based on the Hammatt and Folk (1980) study, Site 2382, which had already been "mostly destroyed by bulldozing," was assigned a habitation function and a Precontact age with the possibility of Historic Period modifications.

The effort described in the first section of Appendix 3 implemented the archaeological data recovery plan. Data recovery excavations revealed that all but a very small portion of the site had been destroyed by past recreational use. What was recovered from the small intact portion of the sites seems to suggest that the site once functioned as a habitation-related feature; if it was not the location of a residence, perhaps that of a household activity (e.g., food preparation and consumption). A very small portion of the original 'ili'ili surface pavement was encountered, and yielded a collection of what is best described as a mixture of habitation debris and wave-deposited shell. During periods of violent surf, the site is vulnerable to inundation. The only radiocarbon sample that came from what was thought to be "good context" returned a modern date; further documenting the almost thorough destruction of the site. The current mapping and excavation project documented in this data recovery report has served to completely mitigate any future impacts to SIHP Site 2382.

The State Historic Preservation Division approved the data recovery effort in a letter of July 2, 2003, determining that impacts to Site 2382 had been adequately mitigated.

Direct Impacts to Other Sites on the Property

As discussed in Section 1.1, the project will also involve improving the existing access road, and rerouting a segment of a lateral jeep road that cuts through the building site to State land outside the property. These areas have been disturbed and/or have been thoroughly checked for archaeological resources, and no direct impact (i.e., impact from building the Cohen home and accessory facilities) is expected.

Indirect Impacts to Other Sites on the Property

The improvement of public access may increase, at least minimally, use of the State property, as well as portions of the Cohen property. Such access is a substantial public benefit, but it brings along with it potential adverse impacts in the form of inappropriate re-use of stones from archaeological features for campfires or shelters. Although the very presence of a responsible family on the land will encourage preservation of archaeological features and appropriate treatment of camping and fishing areas, residents have expressed concerns about potential indirect impacts.

In order to minimize the possibility of indirect impacts to the remaining archaeological sites on the property from residents, guests or public visitors, an archaeological preservation plan was prepared and has been submitted to DLNR-SHPD for approval. The plan involves installation of signs (in both English and Hawaiian) that will inform users about the cultural and historical significance of the area and the penalties for disturbing historic properties, and will caution them to restrict their use of the area to the developed footpath and immediate shoreline.

Summary of Mitigation Measures

Archaeological mitigation measures are expected to be incorporated in CDUP conditions. As discussed above, impacts to the already badly-disturbed Site 2382 have been mitigated through data recovery. Other archaeological sites on the property will be preserved in their entirety and protected from disturbance during construction by installation of protective fencing and orientation of construction personnel to the sites and the need to protect them. In order to mitigate any impacts to a burial site outside the footprint of development on the extreme corner of this and adjacent property, a burial treatment plan has been completed and will be implemented prior to the commencement of any development activities. To mitigate for potential indirect impacts to historic sites as a result of increased public access, an archaeological preservation plan specifies informational and cautionary signage to use a coastal footpath that will be created at the same time as the single-family home is built and will guide foot traffic safely along the shore. As a further precaution against inadvertent archaeological or burial finds, the following additional mitigation measure will be implemented:

Mitigation Measure: If any previously unidentified sites, or remains such as artifacts, shell, bone or charcoal deposits, human burials, rock or coral alignments, pavings, or walls are encountered during excavation, work will stop immediately and SHPD will be consulted to determine the appropriate mitigation. Care will be taken during ground preparation to ensure that, in the unlikely event that human burials are present, they are recognized and dealt with appropriately.

3.4 Public Facilities and Utilities

3.4.1 Vehicular Access

Existing Environment, Impacts and Mitigation Measures

The Cohen property is accessed by via Akoni Pule Highway, SR 270. Two unpaved jeep roads cross State property (TMK 5-7-01:21) and enter the Cohen property. The public generally uses the northern jeep road to access fishing and surfing sites. The southern road follows a 30-foot wide non-exclusive easement totaling 14.68 acres, Land Office Deed 28,562, dated 9/25/2003 (see Fig. 5 and letter from DLNR-Land Division in App. 1a). This road will be lightly graded and a 10 to 12-foot wide chip-sealed road will be built. No sensitive resources are present or would be affected by upgrading this existing access. As discussed in Section 3.3.2, public access will be improved via provision of a lateral trail and rerouting and improvement of the jeep road at the south of the property.

3.4.2 Other Public Facilities and Utilities

Environmental Setting

Potable water will be supplied to the residence from an existing brackish well located in the Agricultural District portion of the property. The water will be desalinated by reverse osmosis. Solar water heaters will be installed. Electric power will be through a combination of photovoltaic solar and a propane-fueled generator. Island Utility Services, Inc., a firm with licensed technicians, has been contracted to perform all maintenance work on the utility and reverse-osmosis system. Wastewater disposal, including periodic pool flushing, will be through an Individual Wastewater Treatment System. The expected treatment for the wastewater is an aeration-type treatment plant that treats water to the secondary level. It would then be chlorinated and discharged for beneficial re-use in irrigation or to a drain field of crushed rock. Similar single-family home plants are successfully operating in Puako and Kapoho.

Impacts and Mitigation Measures

No adverse impact to public facilities or utilities will occur.

3.5 Secondary and Cumulative Impacts

The small scale of the proposed project will not produce any major secondary impacts, such as population changes or effects on public facilities. The improvement of public access may increase use of the shoreline area. Although this brings along with it

potential adverse impacts in the form of inappropriate re-use of stones from archaeological features for campfires or shelters, increased risk of wildfire, and litter, these are inevitable consequences of any public use of shorelines, which is a substantial benefit. The presence of a responsible family on the land will encourage preservation of archaeological features and appropriate treatment of camping and fishing areas.

Cumulative impacts result when implementation of several projects that individually have limited impacts combine to produce more severe impacts or conflicts in mitigation measures. Various single-family homes are in construction in the area makai and just mauka of the Akoni Pule Highway in North and South Kohala. The adverse effects of constructing single-family residence are very minor and temporary disturbance to air quality, noise, and visual quality during construction. It should once again be noted that this area is isolated from other residences, and no accumulation of adverse construction effects would be expected. Other than the precautions for preventing any effects to water quality during construction listed above in Section 3.2.4, no special mitigation measures should be required to counteract the small adverse cumulative effect.

The coastline from Mahukona to Kohala Ranch, a distance of about eight miles, currently has a quasi-wilderness character. Very few homes or structures are present and there are sweeping views of the dry, scrubby foothills, the green pu'u of the Kohala Mountains, and the wind-swept sea over a foreground of a kiawe and buffelgrass savanna. It is not a true wilderness for a number of reasons – it was once inhabited, the vegetation is entirely alien, and grazing by cattle and feral ungulates along with wildfire have denuded the land and led to soil erosion. Furthermore, the presence of a modern road within a half-mile of the coast has tended to attract steady visits by fishermen, divers and hikers. Cumulatively, the emergence of residences here and there along this coastline will gradually lessen the “wilderness” character. Development conditions imposed on those who build these residences bring more public access, which may be viewed as beneficial – for hikers, fishermen, surfers who would otherwise have a difficult time accessing the area – but also as deleterious, for those who wish to preserve the isolation of the area for its cultural or scenic values. Such impacts, both beneficial and otherwise, could be avoided through large-scale government purchase of the private parcels in the area and careful management to restrict entry. This is unlikely, considering the long list of properties around the island that various groups desire the government to acquire, and the pressure to use this area for rugged recreational pursuits. In terms of protecting resources while promoting at least some access, it is more practical to ensure through case-by-case development conditions that important archaeological resources are protected and that knowledgeable native Hawaiian residents are consulted to assist in their protection. This appears to have been the case during the planning of the Cohen residence, and its contribution to cumulative adverse impacts to cultural resources and scenic viewplanes has been reasonably mitigated.

3.6 Required Permits and Approvals

County of Hawai'i:

Special Management Area Permit or Exemption
Plan Approval and Building Permits

State of Hawai'i:

Conservation District Use Permit

3.7 Consistency With Government Plans and Policies

3.7.1 Hawai'i County General Plan

The *General Plan* for the County of Hawai'i is the document expressing the broad goals and policies for the long-range development of the Island of Hawai'i. The plan was adopted by ordinance in 2005. The *General Plan* is organized into thirteen elements, with policies, objectives, standards, and principles for each. There are also discussions of the specific applicability of each element to the nine judicial districts comprising the County of Hawai'i. Below are pertinent sections followed by a discussion of conformance.

ECONOMIC GOALS

Provide residents with opportunities to improve their quality of life through economic development that enhances the County's natural and social environments.

Economic development and improvement shall be in balance with the physical, social, and cultural environments of the island of Hawaii.

Strive for diversity and stability in the economic system.

Provide an economic environment that allows new, expanded, or improved economic opportunities that are compatible with the County's cultural, natural and social environment.

Discussion: The proposed project is in balance with the natural, cultural and social environment of the County, and it would create temporary construction jobs for local residents and indirectly affect the economy through construction industry purchases from local suppliers. A multiplier effect takes place when these employees spend their income for food, housing, and other living expenses in the retail sector of the economy. Such activities are in keeping with the overall economic development of the island.

ENVIRONMENTAL QUALITY GOALS

Define the most desirable use of land within the County that achieves an ecological balance providing residents and visitors the quality of life and an environment in which the natural resources of the island are viable and sustainable.

Maintain and, if feasible, improve the existing environmental quality of the island.

ENVIRONMENTAL QUALITY POLICIES

Take positive action to further maintain the quality of the environment.

ENVIRONMENTAL QUALITY STANDARDS

Pollution shall be prevented, abated, and controlled at levels that will protect and preserve the public health and well being, through the enforcement of appropriate Federal, State and County standards.

Incorporate environmental quality controls [are to be incorporated] either as standards in appropriate ordinances or as conditions of approval.

Discussion: The proposed project would not have a substantial adverse effect on the environment and would not diminish the valuable natural resources of the region. Given the extreme low density of the use (one home on more than 10 acres), the residence and associated improvements would be compatible with the existing undeveloped coastal area and recreational and historic site uses in the area.

HISTORIC SITES GOALS

Protect, restore, and enhance the sites, buildings, and objects of significant historical and cultural importance to Hawaii.

Appropriate access to significant historic sites, buildings, and objects of public interest should be made available.

HISTORIC SITES POLICIES

Agencies and organizations, either public or private, pursuing knowledge about historic sites should keep the public apprised of projects.

Require both public and private developers of land to provide historical and archaeological surveys and cultural assessments, where appropriate, prior to the clearing or development of land when there are indications that the land under consideration has historical significance.

Public access to significant historic sites and objects shall be acquired, where appropriate.

Discussion: Archaeological resources have been protected through inventory survey, as well as the formulation and implementation of burial treatment, data recovery and preservation plans, which have been reviewed and approved by the State Historic Preservation Division.

FLOOD CONTROL AND DRAINAGE GOALS

Conserve scenic and natural resources.

Protect human life.

Prevent damage to man-made improvements.

Control pollution.

Prevent damage from inundation.

Reduce surface water and sediment runoff

FLOOD CONTROL AND DRAINAGE POLICIES

Enact restrictive land use and building structure regulations in areas vulnerable to severe damage due to the impact of wave action. Only uses that cannot be located elsewhere due to public necessity and character, such as maritime activities and the necessary public facilities and utilities, shall be allowed in these areas.

Development-generated runoff shall be disposed of in a manner acceptable to the Department of Public Works in compliance with all State and Federal laws.

FLOOD CONTROL AND DRAINAGE STANDARDS

Applicable standards and regulations of Chapter 27, "Flood Control," of the Hawaii County Code.

Applicable standards and regulations of the Federal Emergency Management Agency (FEMA).

Applicable standards and regulations of Chapter 10, "Erosion and Sedimentation Control" of the Hawaii County Code.

Applicable standards and regulations of the Natural Resources Conservation Service and the Soil and Water Conservation Districts.

Discussion: The property is within the Zone X, or areas outside the 100-year floodplain, according to the Flood Insurance Rate Maps (FIRM). The improvements are subject to review by the Hawai'i County Department of Public Works to ensure that all relevant standards of Chapter 27 and Chapter 10 are addressed.

NATURAL BEAUTY GOALS

Protect, preserve and enhance the quality of areas endowed with natural beauty, including the quality of coastal scenic resources.

Protect scenic vistas and view planes from becoming obstructed.

Maximize opportunities for present and future generations to appreciate and enjoy natural and scenic beauty.

NATURAL BEAUTY POLICIES

Increase public pedestrian access opportunities to scenic places and vistas.

Protect the views of areas endowed with natural beauty by carefully considering the effects of proposed construction during all land use reviews.

Do not allow incompatible construction in areas of natural beauty.

Discussion: The construction of the home and associated improvements will bring modern structures to an area currently without them. Although the structures will be nearly a ½-mile from the Akoni Pule Highway (viewsheds from which are important to preserve per the General Plan), they will be highlighted against the backdrop of the sea and may be prominently visible from the highway. It should be recognized that a single-family home is an identified use in the Conservation District, and that any single-family home will have some visual impact. In order to minimize such impact, a landscaping plan is recommended for inclusion in Conservation District Use Permit conditions. The

plan should include native or Polynesian-introduced trees of various masses and textures, on the mauka side of structures (to soften views from the Akoni Pule Highway). Because of distance and intervening topography and vegetation, no visual impact upon Lapakahi State Historical Park, 4,000 feet to the north, is expected.

NATURAL RESOURCES AND SHORELINES GOALS

Protect and conserve the natural resources of the County of Hawaii from undue exploitation, encroachment and damage.

Provide opportunities for the public to fulfill recreational, economic, and educational needs without despoiling or endangering natural resources.

Protect and promote the prudent use of Hawaii's unique, fragile, and significant environmental and natural resources.

Ensure that alterations to existing landforms and vegetation, except crops, and construction of structures cause minimum adverse effect to water resources, and scenic and recreational amenities and minimum danger of floods, landslides, erosion, siltation, or failure in the event of earthquake.

NATURAL RESOURCES AND SHORELINES POLICIES

The County of Hawaii should require users of natural resources to conduct their activities in a manner that avoids or minimizes adverse effects on the environment.

Encourage the use of native plants for screening and landscaping.

Discussion: The proposed project avoids impact on shoreline resources by remaining located well inland from the shoreline, and by providing the location for a shoreline public trail.

LAND USE GOALS

Designate and allocate land uses in appropriate proportions and mix and in keeping with the social, cultural, and physical environments of the County.

LAND USE POLICIES

Allocate appropriate requested zoning in accordance with the existing or projected needs of neighborhood, community, region and County.

LAND USE, OPEN SPACE GOALS

Provide and protect open space for the social, environmental, and economic well-being of the County of Hawaii and its residents.

Protect designated natural areas.

LAND USE, OPEN SPACE POLICIES

Open space shall reflect and be in keeping with the goals, policies, and standards set forth in the other elements of the General Plan.

Discussion: The proposed construction of a residence and associated improvements detracts only minimally from the open space in the area, and over 95 percent of the property will remain completely undeveloped. Lateral coastal access will be preserved.

3.7.2 Chapter 205A

The proposed land use complies with provisions and guidelines contained in Chapter 205A, Hawai'i Revised Statutes (HRS), entitled *Coastal Zone Management*. The proposed use would be consistent with Chapter 205A because it would not affect public access to recreational areas, historic resources, scenic and open space resources, coastal ecosystems, economic uses, or coastal hazards.

The proposed improvements are not likely to result in any substantial adverse impact on the surrounding environment. The building site is set back from the shoreline and will not restrict any shoreline uses such as hiking, fishing or water sports; in fact, a lateral coastal trail is proposed makai of the residence. The formalization of adequate lateral public access, which will include parking, signage and formal trail designation, in cooperation with Na Ala Hele, will benefit public access. Furthermore, with proper mitigation, the viewplanes to and along the shoreline towards the property will not be adversely impacted, as the building site is relatively distant from the highway and the improvements will not be unduly visually imposing or out of character. Historic sites have been properly inventoried. The proposed building area was proposed for data recovery and this work has been accomplished and approved by the State Historic Preservation Division. Appropriate preservation plans for other historic sites on the property, which will not be affected by the proposed project, have been completed or are in preparation. It is expected that the project will not result in any impact on the biological or economic aspects of the coastal ecosystem. The project site is not situated over any major natural drainage system or water feature that would flow into the nearby

coastal system. The property contains few native plants and none that are not extremely common. Flood Insurance Rate Maps (FIRM) delineate the areas of the property in which construction would occur as Zone X, outside the floodplain. The construction will comply with Chapter 27 of the Hawai'i County Code, which regulates development within the floodplain. In terms of beach protection, construction is mauka of the shoreline setback area and would not affect any beaches nor adversely affect public use and recreation of the shoreline in this area. No effects on marine or groundwater will occur, and no impacts to marine resources are expected.

3.7.3 Special Management Area

The site lies within the Special Management Area of the coastal zone. The County Planning Director has determined that the proposed use is exempt from the requirements of the SMA permit process, by his letter dated June 23, 2005.

3.7.4 Conservation District Rules

The property is in the State Land Use Conservation District, Resource subzone. It should be noted that a previous CDUP was granted for construction of a single-family home. Any proposed use must undergo an examination for its consistency with the goals and rules of this district and subzone. The applicant has concurrently prepared a Conservation District Use Application (CDUA), to which this EA is an Appendix. The CDUA includes a detailed evaluation of the consistency of the project with the criteria of the Conservation District permit process. Briefly, the following individual consistency criteria should be noted:

- The development of the single-family residence is an identified land use within the Resource subzone and is consistent with the purpose of the district as defined in Chapter 13-5, HAR. The objective of the Resource subzone is to develop, with proper management, areas to ensure sustained use of the natural resources of those areas. The proposed action is a permitted use in the Resource subzone and will not negatively impact the natural resources of the State or be detrimental to the public health, safety or welfare. All construction on the subject property will be consistent with the Building Code requirements of the County of Hawai'i. The proposed land use complies with provisions and guidelines contained in Chapter 205A, Hawai'i Revised Statutes (HRS), entitled *Coastal Zone Management*. Single-family residences may be determined to be an exempt action under the County's Special Management Area (SMA) guidelines. The proposed use would be consistent with Chapter 205A because it would not affect public access to recreational areas, historic resources, scenic and open space resources, coastal ecosystems, economic uses, or coastal hazards. The Hawai'i County Planning Department has confirmed that the proposed action is exempt from SMA Rules.

- The proposed land use, including buildings, structures and facilities are compatible with the locality and surrounding areas, appropriate to the physical conditions and capabilities of the specific parcel or parcels. This site has been previously used as a village with habitation and ocean-related uses by Hawaiians. The Inventory Survey, Cultural Assessment and Preservation Plan submitted clearly identify these previous and on-going uses. The segmented design of the structures and the landscaping were done to insure maximum compatibility with the current and previous uses of this important site. The proposed residence, or kauhale, will be used exclusively by the Cohen family as their home.
- The existing physical and environmental aspects of the land, such as natural beauty and open space characteristics, will be preserved. The construction activities of this single-family residence will be confined to the owner's lot and will not have any adverse impact on the natural resources of the area, community or region. The physical beauty of the lot will not be affected materially by the home construction and landscaping, and open space will be preserved. The area of the subject property that is proposed for the site of the residence was previously graded and is now vacant and overgrown with alien plants. The applicant proposes to landscape using native and Polynesian species. This will soften any visual impact of the residence and provide landscape material to beautify the area where little or no vegetation is currently seen. The applicant will be managing the entire site to keep unwanted vegetation (particularly kiawe) from destroying the important open spaces and historic features. All recommendations and requirements from the State Historic Preservation Division will be complied with.
- The proposed use of the subject property for a single-family residence and commitment to management of the site will conserve, protect and preserve the natural and historic features on the subject property. The proposed use with realigned jeep access road and lateral shoreline trail, which is being proposed by the applicant to become part of the Ala Kahakai Trail, will improve and enhance public access to this area.
- Subdivision of land will not be utilized to increase the intensity of land uses in the Conservation District. The proposed action will not subdivide the property and will not lead to any increase in intensity of use beyond the permitted single-family residence.

PART 4: DETERMINATION

Based on evaluation of the environmental setting and impacts, including consideration of the comment letters on the Draft EA, the Hawai'i State Department of Land and Natural Resources is expected to determine that the proposed action will not have a significant effect upon the environment and is thus expected to issue a Finding of No Significant Impact (FONSI).

PART 5: FINDINGS AND REASONS

Chapter 11-200-12, Hawai'i Administrative Rules, outlines those factors agencies must consider when determining whether a project has significant effects:

1. *The proposed project will not involve an irrevocable commitment or loss or destruction of any natural or cultural resources.* No valuable natural or cultural resource would be committed or lost, as archaeological resources have been protected through inventory survey, as well as the formulation and implementation of burial treatment, data recovery and preservation plans, which have been reviewed and approved by the State Historic Preservation Division. Caretaking of these sites by the landowner and cooperating local organizations will help preserve them. No native terrestrial ecosystems are present, and marine ecosystems will be protected through proper construction practices and the 50-foot building setback.
2. *The proposed project will not curtail the range of beneficial uses of the environment.* No restriction of beneficial uses would occur.
3. *The proposed project will not conflict with the State's long-term environmental policies.* The State's long-term environmental policies are set forth in Chapter 344, HRS. The broad goals of this policy are to conserve natural resources and enhance the quality of life. The project is minor and basically environmentally benign, and it is thus consistent with all elements of the State's long-term environmental policies.
4. *The proposed project will not substantially affect the economic or social welfare of the community or State.* The project will not have any substantial effect on the economic or social welfare of the Kohala community or State.
5. *The proposed project does not substantially affect public health in any detrimental way.* The project will not affect public health and safety in any way.
6. *The proposed project will not involve substantial secondary impacts, such as population changes or effects on public facilities.* The small scale of the proposed project will not produce any major secondary impacts, such as population changes or effects on public facilities. The improvement of public access may increase use of the State property, as well as portions of the Cohen property. Although this brings along with it potential adverse impacts in the form of inappropriate re-use of stones from archaeological features for campfires or shelters, increased risk of wildfire, and litter, these are inevitable consequences of any public use of shorelines, which is a substantial benefit. The presence of a responsible family on the land will encourage preservation of archaeological features and appropriate treatment of camping and fishing areas.

7. *The proposed project will not involve a substantial degradation of environmental quality.* The project is minor and environmentally benign, and it would thus not contribute to environmental degradation.
8. *The proposed project will not substantially affect any rare, threatened or endangered species of flora or fauna or habitat.* The site supports mostly alien vegetation and represents poor habitat for native animals. No rare, threatened or endangered species of flora or fauna are known to exist on the project site, and none would be affected by any project activities.
9. *The proposed project is not one which is individually limited but cumulatively may have considerable effect upon the environment or involves a commitment for larger actions.* Cumulatively, the emergence of scattered residences along this coastline will gradually transform its character to less of a seeming wilderness. Development conditions imposed on those who build these residences bring more public access, which may be viewed as beneficial – for hikers, fishermen, surfers who would otherwise have a difficult time accessing the area – but also as deleterious, for those who wish to preserve the isolation of the area for its cultural or scenic values. The planning of the Cohen residence has involved protection of important archaeological resources and consultation with knowledgeable native Hawaiian residents, and resources have been protected while promoting both access by the public and use by the Cohens. This project's contribution to cumulative adverse impacts to cultural resources and scenic viewplanes has been reasonably mitigated.
10. *The proposed project will not detrimentally affect air or water quality or ambient noise levels.* No substantial effects to air, water, or ambient noise would occur. Brief, temporary effects would occur during construction and will be mitigated.
11. *The project does not affect nor would it likely to be damaged as a result of being located in environmentally sensitive area such as a flood plain, tsunami zone, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal area.* The project is not located within a flood zone. All improvements will conform to appropriate regulations guiding development within such zones. Although the proposed project is located in a zone exposed to earthquake hazard, there are no reasonable alternatives that would avoid such exposure, the project presents no additional hazard to the public, and the project is not imprudent for the landowner.
12. *The project will not substantially affect scenic vistas and viewplanes identified in county or state plans or studies.* Although the residence will be nearly a half-mile from the Akoni Pule Highway (viewplanes from which are identified as important to preserve

in the General Plan), it could be highlighted against the backdrop of the sea and may be intermittently visible along a mile and a half stretch of this highway. Implementation of the landscaping plan, which includes native and Polynesian-introduced shrubs and trees of various masses and textures scattered around the building site and shielding the mauka side of all structures, will soften views from the Akoni Pule Highway. Because of distance and intervening topography and vegetation, no visual impact upon Lapakahi State Historical Park, 4,000 feet to the north, is expected.

13. *The project will not require substantial energy consumption.* Negligible amounts of energy input will be required for construction. Through a photo-voltaic system, the residence will be self-sufficient except for a minor amount of propane used for cooking and some use of diesel for the backup generator.

For the reasons above, the proposed project will not have any significant effect in the context of Chapter 343, Hawai'i Revised Statutes and section 11-200-12 of the State Administrative Rule.

REFERENCES

- Bonk, W. J. 1968. "The Archaeology of North and South Kohala - from the Ahupua'a of Kawaihae to the Ahupua'a of Upolu: Coastal Archaeology Surface Survey." *Hawaii State Archaeological Journal*, 68-3. Division of State Parks, Department of Land and Natural Resources.
- Dunn, A. E., and P. H. Rosendahl. 1989. *Archaeological Inventory Survey, Kapaanui Agricultural Subdivision, Lands of Kapaanui and Kou, North Kohala District, Island of Hawaii*. PHRI Report 568-100289. Prepared for Ahualoa Development, Inc.
- Dye, T. S. and Maly, K. 2000. "Archaeological Inventory Survey of the Coastal Portion of Kaiholena Ahupua'a, North Kohala, Hawai'i". IARII Report prepared for Pohaku Kea LLC, Menlo Park.
- Gagne, W., and L. Cuddihy. 1990. "Vegetation," pp. 45-114 in W.L. Wagner, D.R. Herbst, and S.H. Sohmer, eds., *Manual of the Flowering Plants of Hawai'i*. 2 vols. Honolulu: University of Hawai'i Press.
- Hawai'i State Department of Business Economic Development and Tourism (DBEDT). 1997. *State of Hawai'i Data Book*. Honolulu: DBEDT.
- Heliker, C. 1990. *Volcanic and Seismic Hazards on the Island of Hawai'i*. Washington: U.S. GPO.
- Kamakau, S.M. 1976. *The Works of the People of Old, Na hana a ka Po'e Kahiko*. B.P. Bishop Museum Special Publication 61. Bishop Museum Press, Honolulu.
- Kamakau, S.M. 1992. "Ruling Chiefs of Hawaii". The Kamehameha Schools Press, Honolulu (revised edition).
- Rechtman, R. B. 2001. "A Plan for Archaeological Data Recovery at SIHP Site 2382 Pāo'o Ahupua'a, North Kohala District, Island of Hawai'i". Report RC-0019. Prepared for Mr. Jonathan Cohen.
- Soehren, L. J. 1967. *Archaeological Reconnaissance of Parker Ranch Coastal Lands, North Kohala*. Hawai'i Island. B.P. Bishop Museum Manuscript, Honolulu.

Tomonari-Tuggle, M. J. 1988. *North Kohala: Perception of a Changing Community. A Cultural Resource Management Study*. Prep. for Division of State Parks, Outdoor Recreation, and Historic Sites, Department of Land and Natural Resources, State of Hawai'i.

U.S. Dept. of Commerce, Economics and Statistics Administration, Bureau of the Census, 2001, <http://factfinder.census.gov/>.

U.S. Soil Conservation Service. 1973. *Soil Survey of Island of Hawai'i, State of Hawai'i*. Washington: U.S.D.A. Soil Conservation Service.

University of Hawai'i at Hilo, Dept. of Geography. 1998. *Atlas of Hawai'i*. 3rd ed. Honolulu: University of Hawai'i Press.

Williams, J. N. S. 1919. "A Little Known Engineering Work in Hawaii." IN *Thrum's Hawaiian Almanac and Annual for 1919*. Thos. G. Thrum, Honolulu.

Wolfe, E.W., and J. Morris. 1996. *Geologic Map of the Island of Hawai'i*. USGS Misc Investigations Series Map i-2524-A. Washington, D.C.: U.S. Geological Survey.

**COHEN SINGLE FAMILY DWELLING AND
ASSOCIATED IMPROVEMENTS IN THE
CONSERVATION DISTRICT**

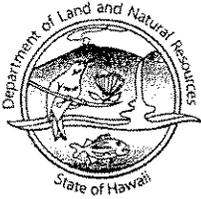
ENVIRONMENTAL ASSESSMENT

APPENDIX 1B

COMMENT LETTERS IN RESPONSE TO DRAFT EA

AND RESPONSES

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

75 Aupuni Street, Room 204
Hilo, Hawaii 96720
PHONE: (808) 974-6203
FAX: (808) 974-6222

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

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

YVONNE Y. IZU
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

December 9, 2004

Mr. Ron Terry
Geometrician Associates, LLC
HC 2, Box 9575
Keaau, Hawaii 96749

Subject: Pre-Consultation on Environmental Assessment
TMK: 3rd/ 5-7-01: 05, North Kohala, Island of Hawaii

Dear Ron:

The access to the subject parcel is by way of a Grant of Non-Exclusive Easement, Land Office Deed No. 28,562 dated September 25, 2003 (Copy Enclosed). Pursuant to Paragraph 24 of that agreement, a Conservation District Use Permit should be obtained prior to any construction or grading of a road beyond what existed at the time of the issuance of the easement and consistent with the terms and conditions of the subject easement agreement. Additionally, the grantee should be compliance with the agreement including the requirement for general liability insurance. Any non-compliance on the part of the grantee may result in objection to the grantee's request for a Conservation District Use Permit.

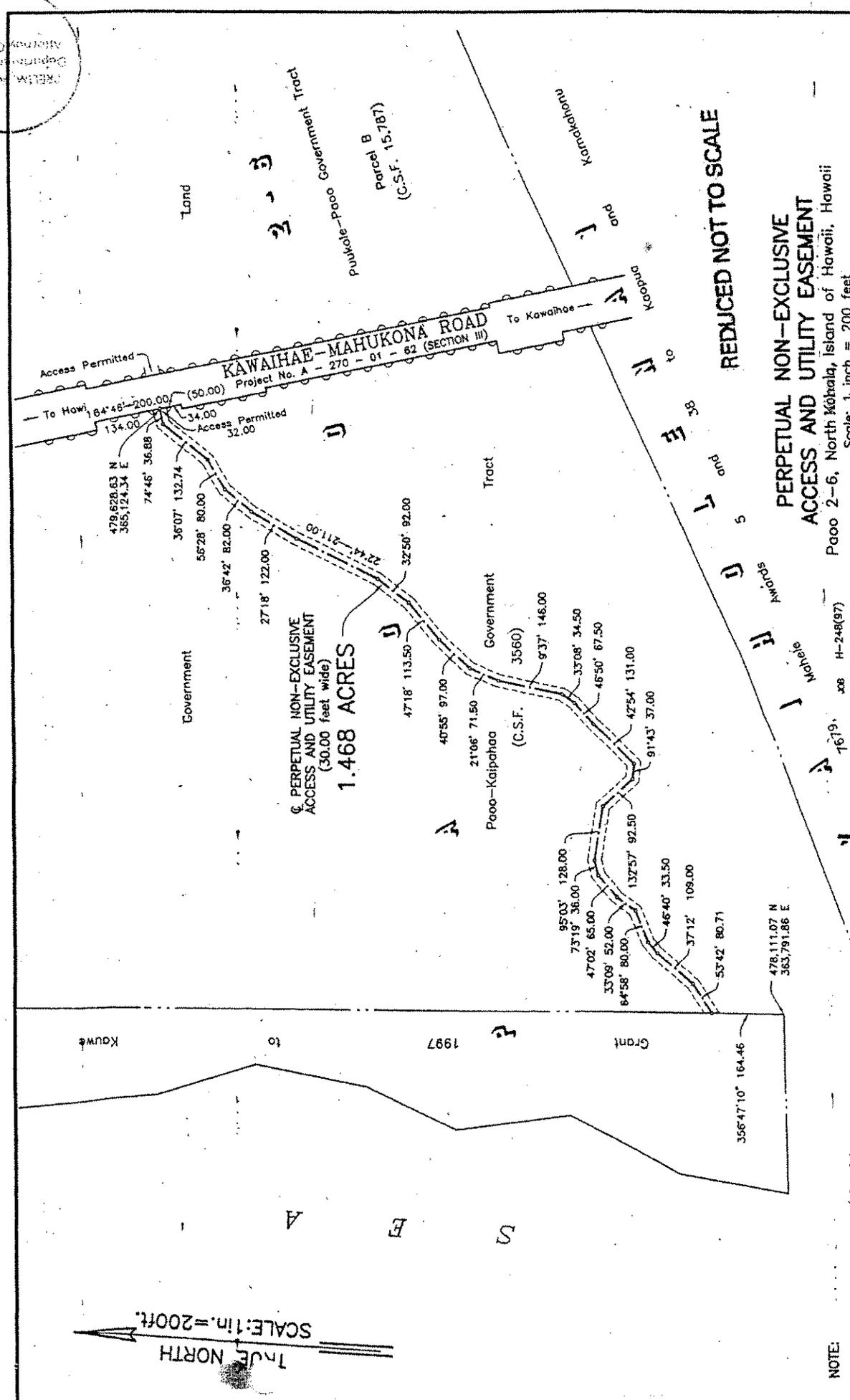
Should you have any questions, please feel free to contact myself at the Land Division, Hawaii District Branch Office at 974-6203.

Sincerely,

A handwritten signature in black ink, appearing to read "Harry M. Yada", is written over the typed name.

Harry M. Yada
District Land Agent

PERM. APPRD.
Department of the
Attorney General



TRUE NORTH
SCALE: 1 in. = 200 ft.

REDUCED NOT TO SCALE

PERPETUAL NON-EXCLUSIVE ACCESS AND UTILITY EASEMENT
Paoo 2-6, North Kihala, Island of Hawaii, Hawaii

SURVEY DIVISION
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
STATE OF HAWAII

TAX MAP 5-7-01: Por. 21
JOB H-248(97)
C. BK.

C.S.F. NO. 23,153

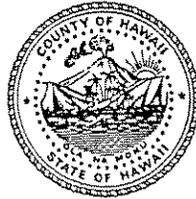
NOTE:
Azimuths and coordinates referred to Hawaiian Plane Coordinate Grid System* (Zone 1).
— denotes access permitted
— denotes no vehicle access permitted

EXHIBIT "B"

11" x 17" - 1,30 SF

52, September 14, 2001

Harry Kim
Mayor



Christopher J. Yuen
Director

Roy R. Takemoto
Deputy Director

County of Hawaii

PLANNING DEPARTMENT

101 Pauahi Street, Suite 3 • Hilo, Hawaii 96720-3043
(808) 961-8288 • Fax (808) 961-8742

December 8, 2004

Mr. Ron Terry
Geometrician Associates, LLC
HC2 Box 9575
Keaau, Hawaii 96749

Dear Mr. Terry:

Subject: Pre-Consultation on Environmental Assessment
Applicant: Jonathan Cohen
Project: Construction of a Single-Family Dwelling and Related Improvements
Tax Map Key: (3) 5-7-001:005, Paoo 2-6, North Kohala, Hawaii

This is in response to your letter, dated November 20, 2004, requesting our comments regarding the Environmental Assessment (EA) being prepared for the subject project. We understand that the applicant intends to construct a single-family residence composed of several detached structures. Associated related improvements will include an individual wastewater system, utilities, a driveway, a propane tank storage facility, an agricultural/storage building with an attached open shed, and landscaping improvements. According to your letter, the applicant intends to set all structures a minimum of 60 feet inland from the certified shoreline.

The subject 10.61-acre shoreline property is primarily situated in the State Land Use (SLU) Conservation district. Therefore, as noted in your letter, the proposed project requires the issuance of a Conservation District Use Permit and triggers the requirement for environmental review pursuant to Chapter 343, Hawaii Revised Statutes (HRS).

Our files contain a January 21, 1987 district boundary determination map showing the SLU Conservation/Agricultural district boundary to follow a jeep trail traversing across the southeast corner of the subject lot. This creates a triangular shaped corner of the property of approximately 13,500 square feet in area being in the SLU Agricultural district. This portion of the property is zoned Agricultural (A-5a). The Zoning Code allows one single-family dwelling on a lot in the A district as permitted under Chapter 205, HRS. Pursuant to §205-4.5(b), HRS, the construction of a single-family dwelling on lots existing before June 4, 1976 is permitted in the SLU Agricultural district. The subject lot, being Grant1997, was in existence prior to June 4, 1976.

Mr. Ron Terry
Geometrician Associates, LLC
Page 2
December 8, 2004

The entire property is in the Hawaii County Special Management Area (SMA).
We concur with the areas of investigation to be covered by the EA that are outlined in your letter.
With regards to permitting requirements under the jurisdiction of the Planning Department for the proposed project, we offer the following comments.

Rule 9 of the Planning Department Rules of Practice and Procedure deals with development within the SMA. Although §9-4(10)B(i) allows the Planning Director to exempt the construction of a single-family residence that is not part of a larger development from the definition of development, it is the policy of the Department to require a Special Management Area Assessment (SMAA) application for all proposed uses, activities or operations on properties that abut the shoreline. The applicant's complete SMAA shall include a copy of the referenced certified shoreline survey.

The EA should also address the ongoing efforts of the Planning Department to create a continuous lateral public shoreline access along this coastal area. It will be the recommendation of the Planning Department that any Conservation District Use Permit issued for the subject property include a condition that contributes towards the implementation of this goal.

The proposed project should also be examined in view of the structures and activities that are prohibited and those that are permitted within the shoreline setback area, which are discussed in §11-6 and 11-7 of Rule 11, Planning Department Rules of Practice and Procedure.

We would appreciate the opportunity to review and comment on the anticipated EA. Should you have questions, please feel welcome to contact Larry Brown or Esther Imamura of my staff at 961-8288.

Sincerely,



CHRISTOPHER J. YUEN
Planning Director

LMB:cd:lmb

P:\WPWIN60\Larry\EA-EIS Comments\Geometrician-Cohen5-7-1-5 PreEAcmnts.doc

LINDA LINGLE
GOVERNOR OF HAWAII



December 9, 2004
LD-NAV

Geometrician Associates, LLC
Ron Terry
HC 2 Box 9575
Keaau, Hawaii 96749

Dear Mr. Terry:

Subject: Pre-Assessment Consultation for Draft Environmental for Construction of a Single-Family Dwelling at TMK: (3) 5-7-001: 005, North Kohala, Island of Hawaii, Hawaii

Thank you for the opportunity to review and comment on the subject matter.

A copy of your letter dated November 20, 2004 pertaining to the subject matter was made available to the following Department of Land and Natural Resources' Divisions for their review and comment:

- Engineering Division
- Na Ala Hele Trails
- Division of State Parks
- Commission on Water Resource Management
- Office of Conservation and Coastal Lands
- Land-Oahu District Land Office
- Division of Forestry and Wildlife

Enclosed please find a copy of the Engineering Division and Office of Conservation and Coastal Lands comments.

Based on the attached responses, the Department of Land and Natural Resources has no other comment to offer on the subject matter at this time.

Should you have any questions, please contact Nicholas A. Vaccaro of the Land Division Support Services Branch at (808) 587-0384.

Very truly yours,

A handwritten signature in black ink, appearing to read "Dierdre S. Mamiya".

DIERDRE S. MAMIYA
Administrator



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

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

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

YVONNE Y. IZU
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

COHEN3-5-7-1-5.RCM

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

November 23, 2004

LD/NAV
Ref.: COHEN3-5-7-1-5.GEO.CMT

Suspense Date: 12/6/04

MEMORANDUM:

- TO: XXX Division of Forestry & Wildlife
 XXX Na Ala Hele Trails
 XXX Division of State Parks
 XXX Historic Preservation
 XXX Commission on Water Resource Management
 XXX Engineering Division
 XXX Office of Conservation and Coastal Lands
 XXX Hawaii District Land Office

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: Pre-Assessment Consultation for Construction of a
Single-Family Dwelling at TMK: (3) 5-7=01: 05, North
Kohala, Island Of Hawaii COHEN

Please review the attached letter dated November 20, 2004 pertaining to the subject matter and submit your comments (if any) on Division letterhead signed and dated by the suspense date.

Should you need more time to review the subject matter, please contact Nick Vaccaro at 587-0384.

If this office does not receive your comments by the suspense date, we will assume there are no comments.

() We have no comments.

Comments attached.

Division: DULL

Signed: [Signature]

Date: _____

Name: 12-9-04

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
OFFICE OF CONSERVATION AND COASTAL LANDS
DAN DAVIDSON
DEPUTY DIRECTOR - LAND

2004 NOV 24 2 27
YVONNEY IZU
DEPUTY DIRECTOR - WATER

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

17A-05
17A-107

LINDA LINGZEE
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

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

YVONNE Y. IZU
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:TM

Correspondence: HA 05-127

MEMORANDUM

TO: Dierdre S. Mamiya, Administrator
Land Division

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

SUBJECT: Pre-Assessment Consultation for the Preparation of a Draft Environmental Assessment for the Proposed Single Family Residence (SFR) Located at North Kohala, Island of Hawaii, TMK: (3) 5-7-001:005

DEC - 8 2004

The Office of Conservation and Coastal Lands (OCCL) has reviewed the pre-assessment consultation for the preparation of a draft environmental assessment for the proposed Single Family Residence (SFR).

The OCCL notes that the subject parcel is located in the State Land Use Conservation District, Resource Subzone. A SFR is an identified land use in the Resource subzone, pursuant to Chapter 13-5, Hawaii Administrative Rules (HAR), § 13-5-24, R-8, (D-1) " a single family residence that conforms to design standards as outlined in this chapter." To approve, modify or deny a SFR within the Conservation District would be at the discretion of the Board of Land and Natural Resources. Therefore the proposed action requires a Board Permit.

OCCL notes the proposed SFR must comply with Chapter 13-5, HAR § 13-5-41, SINGLE FAMILY RESIDENCES; STANDARDS (a), "single family residential uses approved by the Board shall comply with the design standards contained in Exhibit 4, entitled "Single Family Residential Standards, dated September 6, 1994."

In addition, OCCL notes, the subject area is undeveloped and appears to contain a significant number of archaeological sites. Community discussions should take place as the proposal could affect view plains and cultural uses. Please assure that these matters are addressed in the Draft Environmental Assessment.

Should you have any questions, please contact Tiger Mills of our Office of Conservation and Coastal Lands staff at 587-0382.

LINDA LINGLE
GOVERNOR OF HAWAII

RECEIVED
LAND DIVISION



2004 NOV 30 3:40

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

November 23, 2004

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

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

YVONNE Y. IZU
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



LD/NAV

Ref.: COHEN3-5-7-1-5.GEO.CMT

Suspense Date 12/6/04

MEMORANDUM:

TO: XXX Division of Forestry & Wildlife
XXX Na Ala Hele Trails
XXX Division of State Parks
XXX Historic Preservation
XXX Commission on Water Resource Management
XXX Engineering Division
XXX Office of Conservation and Coastal Lands
XXX Hawaii District Land Office

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: Pre-Assessment Consultation for Construction of a
Single-Family Dwelling at TMK: (3) 5-7=01: 05, North
Kohala, Island Of Hawaii COHEN

Please review the attached letter dated November 20, 2004 pertaining to the subject matter and submit your comments (if any) on Division letterhead signed and dated by the suspense date.

Should you need more time to review the subject matter, please contact Nick Vaccaro at 587-0384.

If this office does not receive your comments by the suspense date, we will assume there are no comments.

() We have no comments.

Comments attached.

Division: Engineering

Signed: Andrew M. Mordon

Date: 11/30/04

Name: Andrew M. Mordon

2004 NOV 30 PM 2:16

RECEIVED
LAND DIVISION
04 NOV 25 PM 11:30 ENGINEERING

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/NAV

Ref.: COHEN3-5-7-1-5.GEO.CMT

COMMENTS

- () We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Zone.
- (X) **Please take note that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Zone X. The Flood Insurance Program does not have any regulations for development within Zone X.**
- () Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is _____.
- () Please note that the project must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR), whenever development within a Special Flood Hazard Area is undertaken. If there are any questions, please contact the State NFIP Coordinator, Ms. Carol Tyau-Beam, of the Department of Land and Natural Resources, Engineering Division at (808) 587-0267.

Please be advised that 44CFR indicates the minimum standards set forth by the NFIP. Your Community's local flood ordinance may prove to be more restrictive and thus take precedence over the minimum NFIP standards. If there are questions regarding the local flood ordinances, please contact the applicable County NFIP Coordinators below:

- () Mr. Robert Sumimoto at (808) 523-4254 or Mr. Mario Siu Li at (808) 523-4247 of the City and County of Honolulu, Department of Planning and Permitting.
 - () Mr. Kelly Gomes at (808) 961-8327 (Hilo) or Mr. Kiran Emler at (808) 327-3530 (Kona) of the County of Hawaii, Department of Public Works.
 - () Mr. Francis Cerizo at (808) 270-7771 of the County of Maui, Department of Planning.
 - () Mr. Mario Antonio at (808) 241-6620 of the County of Kauai, Department of Public Works.
- () The applicant should include project water demands and infrastructure required to meet water demands. Please note that the implementation of any State-sponsored projects requiring water service from the Honolulu Board of Water Supply system must first obtain water allocation credits from the Engineering Division before it can receive a building permit and/or water meter.
 - () The applicant should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update.

- () Additional Comments: _____
- () Other: _____

Should you have any questions, please call Mr. Andrew Monden of the Planning Branch at 587-0229.

Signed: Andrew M. Monden
For ERIC T. HIRANO, CHIEF ENGINEER

Date: 11/30/04

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

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

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

YVONNE Y. IZU
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

November 23, 2004

LD/NAV

Ref.: COHEN3-5-7-1-5.GEO.CMT

Suspense Date: 12/6/04

MEMORANDUM:

TO: XXX Division of Forestry & Wildlife
XXX Na Ala Hele Trails
XXX Division of State Parks
XXX Historic Preservation
XXX Commission on Water Resource Management
XXX Engineering Division
XXX Office of Conservation and Coastal Lands
XXX Hawaii District Land Office

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: Pre-Assessment Consultation for Construction of a
Single-Family Dwelling at TMK: (3) 5-7=01: 05, North
Kohala, Island Of Hawaii COHEN

Please review the attached letter dated November 20, 2004 pertaining to the subject matter and submit your comments (if any) on Division letterhead signed and dated by the suspense date.

Should you need more time to review the subject matter, please contact Nick Vaccaro at 587-0384.

If this office does not receive your comments by the suspense date, we will assume there are no comments.

We have no comments.

Comments attached.

Division: _____

Signed: _____

Date: NOV 30 2004

Name: _____

Paul J Conry
**PAUL J. CONRY, ADMINISTRATOR
DIVISION OF FORESTRY AND WILDLIFE**

LINDA LINGLE
GOVERNOR OF HAWAII

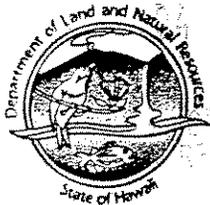


RECEIVED
LAND DIVISION

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

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

YVONNE Y. IZU
DEPUTY DIRECTOR - WATER



NOV 20 09:12

2004 NOV 30 A 10:05

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

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

November 23, 2004

LD/NAV
Ref.: COHEN3-5-7-1-5.GEO.CMT

Suspense Date: 12/6/04

MEMORANDUM:

TO: XXX Division of Forestry & Wildlife
XXX Na Ala Hele Trails
XXX Division of State Parks
XXX Historic Preservation
XXX Commission on Water Resource Management
XXX Engineering Division
XXX Office of Conservation and Coastal Lands
XXX Hawaii District Land Office

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: Pre-Assessment Consultation for Construction of a
Single-Family Dwelling at TMK: (3) 5-7=01: 05, North
Kohala, Island Of Hawaii COHEN

Please review the attached letter dated November 20, 2004 pertaining to the subject matter and submit your comments (if any) on Division letterhead signed and dated by the suspense date.

Should you need more time to review the subject matter, please contact Nick Vaccaro at 587-0384.

If this office does not receive your comments by the suspense date, we will assume there are no comments.

We have no comments.

Comments attached.

Division: CWRM

Signed: Edwin T. Sakoda

Date: 11/29/04

Name: Edwin T. Sakoda

LINDA INGLES
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

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

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

YVONNE Y. IZU
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

November 23, 2004

LD/NAV

Ref.: COHEN3-5-7-1-5.GEO.CMT

Suspense Date: 12/6/04

MEMORANDUM:

TO: XXX Division of Forestry & Wildlife
XXX Na Ala Hele Trails
XXX Division of State Parks
XXX Historic Preservation
XXX Commission on Water Resource Management
XXX Engineering Division
XXX Office of Conservation and Coastal Lands
XXX Hawaii District Land Office

FROM: Dierdre S. Mamiya, Administrator
Land Division

Nick - 12.6.04
NA ALA HELE
needs more
time to
research trail.
MURK
☺

SUBJECT: Pre-Assessment Consultation for Construction of a
Single-Family Dwelling at TMK: (3) 5-7-01: 05, North
Kohala, Island Of Hawaii COHEN

Please review the attached letter dated November 20, 2004 pertaining to the subject matter and submit your comments (if any) on Division letterhead signed and dated by the suspense date.

Should you need more time to review the subject matter, please contact Nick Vaccaro at 587-0384.

If this office does not receive your comments by the suspense date, we will assume there are no comments.

We have no comments.

Comments attached.

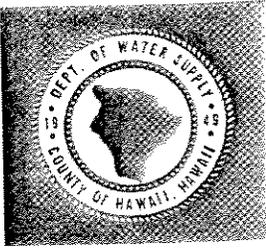
Division: _____

Signed: _____

Date: NOV 30 2004

Name: **PAUL J. CONRY, ADMINISTRATOR**
DIVISION OF FORESTRY AND WILDLIFE

Rcvd 12.1.04 DMR
HO4: 17 Paoo 6



DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAII

345 KEKŪANAO'A STREET, SUITE 20 • HILO, HAWAII 96720

TELEPHONE (808) 961-8050 • FAX (808) 961-8657

December 28, 2004

Mr. Ron Terry
Geometrician Associates, LLC
HC 2, Box 9575
Keaau, HI 96749

**PRE-CONSULTATION ON ENVIRONMENTAL ASSESSMENT
FOR CONSTRUCTION OF SINGLE-FAMILY DWELLING
TAX MAP KEY 5-7-001:005**

We have reviewed your request for comments, and the subject parcel does not have water service with the Department. The nearest point of adequacy to the Department's waterline is approximately 2,000 feet away in Akoni Pule Highway.

Should there be any questions, please contact Ms. Shari Komata of our Water Resources and Planning Branch at 961-8070, extension 252.

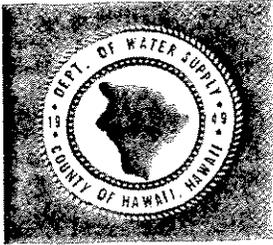
Sincerely yours,

A handwritten signature in black ink, appearing to read "M. Pavao", with a long horizontal flourish extending to the right.

Milton D. Pavao, P.E.
Manager

SHK:dms

... Water brings progress...



DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAII
345 KEKŪANAŌ'A STREET, SUITE 20 • HILO, HAWAII 96720
TELEPHONE (808) 961-8050 • FAX (808) 961-8657

January 7, 2005

Mr. Ron Terry
Geometrician Associates, LLC
HC 2, Box 9575
Keaau, HI 96749

**PRE-CONSULTATION ON ENVIRONMENTAL ASSESSMENT
FOR CONSTRUCTION OF SINGLE-FAMILY DWELLING
TAX MAP KEY 5-7-001:005**

This letter supersedes our letter dated December 28, 2004, to you.

We have reviewed your request for comments, and the subject parcel does not have water service with the Department. The nearest point of adequacy to the Department's waterline is approximately 6 miles away in Akoni Pule Highway.

Should there be any questions, please contact Ms. Shari Komata of our Water Resources and Planning Branch at 961-8070, extension 252.

Sincerely yours,

Milton D. Pavao, P.E.
Manager

SHK:sco

... Water brings progress...

**COHEN SINGLE FAMILY DWELLING AND
ASSOCIATED IMPROVEMENTS IN THE
CONSERVATION DISTRICT
ENVIRONMENTAL ASSESSMENT**

APPENDIX 1A

**COMMENT LETTERS
FROM AGENCIES AND ORGANIZATIONS
IN RESPONSE TO PRE-CONSULTATION**

LINDA LINGLE
GOVERNOR OF HAWAII



GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186
E-mail: oeqc@health.state.hi.us

January 5, 2006

Mr. Peter Young, Chair
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawai'i 96809

Dear Mr. Young:

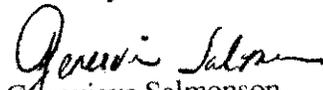
Subject: Draft Environmental Assessment for the Cohen Single Family Dwelling, Island of
Hawai'i

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

1. How do the proposed 6 separate detached structures meet DLNR's rules for a single family dwelling in the conservation district?

Should you have any questions, please call Jeyan Thirugnanam at 586-4185.

Sincerely,


Genevieve Salmonson
Director

c: Terry
Cohen

geometrician

ASSOCIATES, LLC

integrating geographic science and planning

phone: (808) 982-5831 fax: (808) 966-7593 HC 2 Box 9575 Kea'au Hawai'i 96749
ronterry@verizon.net

January 26, 2006

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

Dear Ms. Salmonson:

**Subject: Comment Letter to Draft EA/CDUA, Cohen Single-Family Dwelling
in the Conservation District TMK (3rd): 5-7-1:5**

Thank you for your comment letter dated January 5, 2006, on the Draft EA. Although your comment letter concerning the interpretation of DLNR rules is addressed to BLNR Chairman Peter Young, I would like to answer your question from the perspective of the applicant. Exhibit 4 of HAR 13-5 states in the "Compatibility Provisions" the following specification: *All structures connected or best alternative.* The proposed segmented design is a better alternative than a connected structure because one large structure would have a higher and more massive roof, producing greater visual impact from the shoreline and the highway. This segmented configuration supports the sustainable building guidelines of the Office of Environmental Quality Control, because it ensures natural cooling from the trade winds, creates shade in the covered lanais and walls recessed behind overhanging roofs, and provides maximum natural interior light.

Again, thank you for your comment. If you have any questions about the EA, please contact me at 982-5831. For information or questions about the project, please contact Greg Mooers at 880-1455.

Sincerely,



Ron Terry, Principal
Geometrician Associates

This lateral trail alignment is indicated on the exhibits included in the Draft EA and the CDUA. The application identifies and supports the use of this lateral trail for coastal trail access.

Na Ala Hele recommends that the applicant conduct a metes and bounds description for the coastal trail as depicted on the map. As there is no evidence on the ground of any trail and the alignment depicted on the map is almost certainly erroneous, this would not be possible. The applicant can provide a metes and bounds description of the trail that was identified and flagged in cooperation with the Ala Kahakai development team. This trail will provide adequate coastal access along shoreline area of the property.

The applicant's planner and attorney look forward to receiving documentation indicating that the trails mentioned in the comment letter existed before 1892, as well as to working with Na Ala Hele to provide a thoughtful coastal access plan for the project site.

Again, thank you for your comment. If you have any questions about the EA, please contact me at 982-5831. For information or questions about the project, please contact Greg Mooers at 880-1455.

Sincerely,

A handwritten signature in black ink that reads "Ron Terry". The signature is written in a cursive style with a large, sweeping flourish at the end.

Ron Terry, Principal
Geometrician Associates

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 RESOURCES MANAGEMENT

ROBERT K. MASUDA
DEPUTY DIRECTOR - LAND

- DEAN NAKANO
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF COMPLIANCE
COMMISSION ON WATER RESOURCES MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES IMPROVEMENT
ENGINEERING
HISTORY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

REF:OCCL:TM

CDUA: HA-3269

Acceptance Date: November 10, 2005
180-Day Exp. Date: May 09, 2006

Mr. Gregory R. Mooers, President
Mooers Enterprises, LLC
P.O. Box 1101
Kamuela, Hawaii 96743

FEB - 1 2006

Dear Mr. Mooers,

SUBJECT: Conservation District Use Application (CDUA) HA-3269 for the Cohen Single Family Residence (SFR) located at Pao'o, North Kohala island of Hawaii, TMK: (3) 5-7-001:005

At the conclusion of the Public Hearing of January 24, 2006 for CDUA HA-3269, discussion took place regarding a caretaker at the proposed SFR site. Pursuant to the Hawaii Administrative Rules (HAR) §13-5-41, single family residences, standards, (b) Not more than one single-family residence shall be authorized within the conservation district on a legal lot of record. Please clarify the role of the caretaker and where this person will be residing, if at all, on the proposed site.

Should you have any questions regarding this matter, please contact Tiger Mills of our Office of Conservation and Coastal Lands at 587-0382.

Sincerely,

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

c: Chairperson
HDLO
County of Hawaii, Department of Planning

Post-It* Fax Note	7671	Date	# of Pages
To	RDN	From	AK
Co./Dept.		Co.	
Phone #		Phone #	
Fax #	966-7593	Fax #	

P.O. Box 621
Honolulu, Hawaii 96809

RECEIVED
CONSERVATION
LANDS
JAN 10 A 11:12

DEPT. OF LAND &
NATURAL RESOURCES

Anthony Ching Ako
P.O. Box 943
Kapaau, HI 96755
(808) 640-1717 c
889-5309 H
January 5th, 2006

Dear Sirs:

This is a letter on behalf of my family and Papa Arthur Mahi family regarding the proposed "Cohen Single-Family Dwelling at the site of Pao'o, Kohala Akau. The reason we are filing this letter to list several serious problems with the "Cohen project" evolving to where it is presently at in regard to: size, nature and scope and added developments that were never addressed within the framework of the written language of the project pertaining to, but not limited to the on-site visits to Pao'o by myself, Papa Mahi, Mr. Cohen, Mr. Rechtmann and Mr. Vitousek; the issues and sensitivity of the sites on the site; the oral agreements regarding [the protection of the sites, the boundaries of the sites and no lateral access to the sites due to the sacred and sensitivity of said sites; and, all other mitigating circumstances connected to the area of Pao'o,] what was discussed by Papa Mahi, myself and Mr. Cohen, Mr. Rechtmann and Mr. Vitousek were never put into a written agreement that would become part of the land deed of the Pao'o area for perpetuity to protect the sites that are of extreme sensitivity from public access due to the lateral access being pushed by various groups that are not connected to the burials, sacred sites, etc. of said area known as Pao'o.

We are against public access due to the sensitivity of our ancestral sites. Only a manka-makai access road will be built according to our plans with Mr. Cohen and his

* This letter is not intended for public disclosure as it is an on-going process still being finalized with Mr. Cohen and his attorney, Mr. Vitousek.

2/
 attorney Mr. Vitousek. The notion of lateral access for the public is condemned by our families as it will cause a desecration to the sacredness of the sites in the Pao'o area that we are committed to protect. It is our understanding that there are certain groups that are trying to exploit the area through their demand for public access which they will not get through any type of lateral paths, roads, etc at Pao'o. We are in the process of working with Mr. Cohen and Mr. Vitousek to provide a mauka-makai access path for the public, but it will not allow access to go anywhere the public chooses. This is all in accordance to the Kapu of Ka'poe, our ancestors beliefs and traditions.

As this is an on-going process, we are continuing to work with Mr. Cohen and will present a plan that addresses the Kapu that is required, what Mr. Cohen wishes to complete and the issue(s) of allowing the public access only to areas not of a sensitive nature, namely family ancestral burials (iwi Tupuna), house sites and sacred ohana worship sites. It is our belief that with Mr. Cohen, Mr. Vitousek and our Ohana, we will present a workable plan that resolves all of the issues regarding the site of Pao'o [and the situate area connected to the sacred family sites]. Thank You, Mahalo.... Papa Arthur Mahi, Anthony Ching Ake for Papa Mahi: *Anthony Ching Ake*

geometrician

ASSOCIATES, LLC
integrating geographic science and planning

phone: (808) 982-5831 fax: (808) 966-7593 HC 2 Box 9575 Kea'au Hawai'i 96749
ronterry@verizon.net

January 26, 2006

Anthony Ching Ako
P.O. Box 943
Kapa'au HI 96755

Dear Mr. Ako:

**Subject: Comment Letter to Draft EA/CDUA, Cohen Single-Family Dwelling
in the Conservation District TMK (3rd): 5-7-1:5**

Thank you for your comment letter dated January 5, 2006, on the Draft EA. As the author of the EA and a representative of the applicant for the CDUA, I will try to respond to your concerns.

You mention that you have concerns with the size, scope and nature of the project. If I understand your concerns correctly, the design presented in the EA does not conform to your understanding of the project based on discussions and field visits with Papa Mahi, Jonathan Cohen, Randy Vitousek, and Bob Rechtman. Without commenting on any potential discrepancies, I can only state that analysis presented in the EA and CDUA was based on the designs given to myself (EA) and Greg Mooers (CDUA) by Mr. Cohen. It has been my understanding that these are the same designs that were shared on the field visit. I suggest that you contact Mr. Vitousek concerning this problem.

I also acknowledge your concern about the sensitivity of the sites and the impacts not only to their physical but also their cultural values that could result from increased public access. This subject was indeed discussed in Section 3.3.4 of the EA. Although mitigation measures are proposed - a preservation plan involving signs in Hawaiian and English discussing the value of the sites, requesting the public to respect them, and listing the penalties for harming archaeological sites - it is acknowledged that this may not be sufficient to fully prevent harm. Your concern is genuine and there is indeed throughout Hawai'i a growing problem of the tradeoff between providing more public access and protecting sensitive sites. It is important to remember that Mr. Cohen is not proposing to facilitate public pedestrian lateral access as part of his home construction, but that agencies concerned with expanding and improving public access are requesting that he do so as a condition of his permit to build a single-family home.

I further acknowledge the commitment you express to refining a plan in consultation with Mr. Cohen and DLNR that provides appropriate public access yet protects sensitive sites. I understand from the applicant and his representatives that the involvement of you and your family has already resulted in a significantly greater understanding of the meaning of the sites and is the basis for the plan to protect them. Your continued involvement will contribute to the refinement and ultimate success of a plan that can balance public access and protection of the sites.

Again, thank you for your comment. If you have any further questions, I would request you to contact Bob Rechtman at 966-7636 or Greg Mooers at 880-1455.

Sincerely,

A handwritten signature in black ink that reads "Ron Terry". The signature is written in a cursive style with a large, sweeping underline.

Ron Terry, Principal
Geometrician Associates

UNIVERSITY OF HAWAII

Environmental Center

January 7, 2005

RE:0324

Jonathan Cohen
c/o Greg Moores
P.O.Box 1101
Kamuela, Hawai'i 96743

Dear Mr. Cohen:

Draft Environmental Assessment
Cohen Single Family Dwelling
North Kohala, Hawai'i

Jonathan Cohen proposes to build a single-family residence and related improvements on a 10.61-acre property in North Kohala that lies mainly within the Conservation District. The project would also improve the access road on Cohen's easement across State property, and would re-route a portion of a lateral jeep road onto State property, both of which actions would occur in the Agricultural District. The proposed residence would consist of a densely landscaped compound of detached structures, in a design that minimizes visual impact and maximizes natural light ventilation, along with a pool, decks, an Individual Wastewater System, utilities, a paved access road, and landscape features such as vegetation, trails, and rock walls. All structures would be set a minimum of 50 feet inland from the certified shoreline. The design involves leaving about 90 percent of the site basically as-is and minimal disturbance of any natural or man-made features on the property. The construction will affect only one archaeological site, which has already been extensively disturbed and has been subject to data recovery per an approved plan. Additional sites will be protected through measures specified in preservation plans. The area currently provides shoreline access for hikers and fishermen via a jeep road that traverses the southern section of the property, and such access would be maintained through the rerouted jeep road. A number of proposed mitigation measures will protect sound levels, air quality, scenery, and water quality.

This review was conducted with the assistance of James Bayman and Robert Bollt of the Department of Anthropology and Scott Burch of the Environmental Center.

Mr. Jonathan Cohen

January 7, 2006

Page 2 of 3

General Comments

With the ever increasing need for housing and pressures of development on the social and ecological environment, the need for sustainable and responsible development is increasingly important. Our reviewers find that the draft Environmental Assessment (draft EA) for the Cohen Single Family Residence is generally well planned and gives sufficient consideration to the potential environmental and social impacts the project will bring. There are many important issues associated with this project, and the proponent has done a good job of mitigating many of the impacts and seems to be sensitive to the delicate nature of the area. Our reviewers, however, do have a number of observations and suggestions. Specific issues will be addressed below.

We note that, as with other proposed construction in shoreline areas, exposure to wave and storm hazards is an issue in this proposal. Although the County of Hawai'i has a setback provision, we urge planners and environmental managers to take particular note of the historically based setback provisions adopted by the County of Maui in addressing siting of proposed construction in the coastal area. Adoption of comparable provisions more generally would have a salutary effect with regard to avoiding losses and protecting public health and welfare. Evidence such as the wave deposited shell found on the site, noted on page 18 of the draft EA, is valuable for evaluating site specific shoreline setbacks.

Specific Comments

Archaeology and Historic Sites (§ 3.3.4, page 16-19).

A major issue with this project is the proximity of the dwelling to archaeological sites. In reviewing the archaeological sections of the draft EA, our reviewers have concluded that the appropriate procedures have been followed with respect to the documentation and evaluation of the archaeological remains on the surface of the 10.61-acre property. No less than two archaeological surveys have been performed on the property since the mid-1960's, a burial treatment plan was produced, a cultural impact assessment was conducted, a site preservation plan was written, and a mitigation program through data recovery was completed for the only archaeological site (site 2382) that is likely to be directly impacted by construction at the property. It appears that all these efforts have been reviewed and approved by the State Historic Preservation Division.

The draft EA correctly notes that indirect impacts may still be incurred by the archaeological remains on the property, but that the procedures (e.g. fencing and signage) that are outlined in the site preservation plan should minimize such impacts. We concur with this conclusion. We do, however, offer one suggestion that could be followed to further minimize the risk of inadvertently disturbing any heretofore undocumented human remains or archaeological features at the site.

Page *iii* of the draft EA specifies that an archaeologist should be present to orient the construction crew before the work is conducted. However, this statement does not

Mr. Jonathan Cohen

January 7, 2006

Page 3 of 3

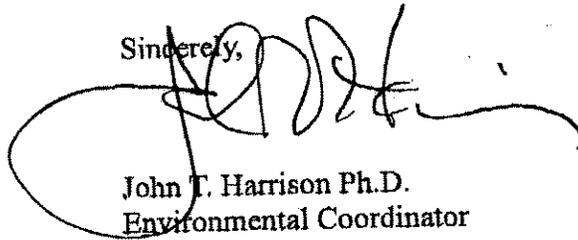
make it clear that an archaeologist will, in fact, be present during the construction. We suggest that a professional archaeologist be present to monitor construction when earth moving activity is undertaken at the 10.61-acre parcel. Ground disturbance during such activity could possibly reveal and disturb undocumented sub-surface remains, unless, of course, the area is largely comprised of exposed bedrock. Having an archaeologist present during earth-moving activities would guard against the danger of disturbance – if and when – such remains are discovered.

Other Public Facilities and Utilities (§3.4.2, page 20), Individual Wastewater Treatment System.

Considering the proximity of a fragile ocean ecosystem, wastewater from an individual family dwelling could have harmful impacts to the environment in certain conditions. Our reviewers feel that a more comprehensive discussion of wastewater management practices would be appropriate in the final EA of this project. Specific topics for discussion should include the depth of soil in the proposed location of the septic tank and leach field, drainage characteristics of the soil and topography in that area and potential for runoff from that area to contaminate the coastal and ocean ecosystems.

Thank you for the opportunity to review this draft EA.

Sincerely,



John T. Harrison Ph.D.
Environmental Coordinator

cc. Ron Terry
Sam Lemmo, DLNR
OEQC
James Moncur, WRRRC
Scott Burch

geometrician

ASSOCIATES, LLC
integrating geographic science and planning

phone: (808) 982-5831 fax: (808) 966-7593 HC 2 Box 9575 Kea'au Hawai'i 96749
ronterry@verizon.net

January 26, 2006

John T. Harrison, Ph.D., Environmental Coordinator
University of Hawaii Environmental Center
2500 Dole Street, Krauss Annex 19
Honolulu HI 96822

Dear Dr. Harrison:

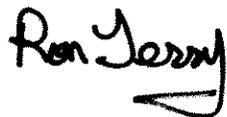
**Subject: Comment Letter to Draft EA/CDUA, Cohen Single-Family Dwelling
in the Conservation District TMK (3rd): 5-7-1:5**

Thank you for your comment letter dated January 7, 2006, on the Draft EA. In answer to your specific comments:

1. *Shoreline erosion and wave hazard.* The applicant agrees with the idea that appropriate shoreline setbacks are important for avoiding losses and protecting public health and welfare. The shoreline in this particular site is rocky and not subject to rapid erosion on human time scales. Although this coast is to some degree sheltered from extreme north swells by Maui, there are seasonal episodes of high waves; however, the building site itself appears to be outside of the zone that would be impacted by waves. There are several archaeological features along the shoreline near the proposed residence – some at lower elevation (closer to the shore) – that are relatively intact, indicating that a major catastrophic storm event has not occurred in the past several hundred years.
2. *Archaeological monitoring.* In deference to the concerns expressed by your organization and the Office of Hawaiian Affairs, the applicant is willing to contract for an archaeological monitor during ground-altering activities.
3. *Wastewater treatment.* The expected treatment for the wastewater is an aeration-type treatment plant that treats water to the secondary level. It is then chlorinated and discharged for beneficial re-use in irrigation or to a drain field of crushed rock. Similar single-family home plants are successfully operating in Puako and Kapoho. This information has been added to the EA. We would also note that the Division of Aquatic Resources, which is familiar with similar situations on the Big Island, has reviewed that application and has stated that the proposed single-family dwelling and related improvements are not expected to have a significant adverse long-term impact on aquatic resource values.

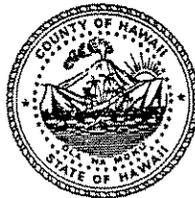
Again, thank you for your thorough and thoughtful review of the document. If you have any further questions about the EA, please contact me at 982-5831. For information or questions about the project, please contact Greg Mooers at 880-1455.

Sincerely,

A handwritten signature in black ink that reads "Ron Terry". The signature is written in a cursive, slightly slanted style. The "R" is large and loops back under the "o". The "T" is also large and loops back under the "e".

Ron Terry, Principal
Geometrician Associates

Harry Kim
Mayor



Christopher J. Yuen
Director

Roy R. Takemoto
Deputy Director

County of Hawaii

PLANNING DEPARTMENT

101 Pauahi Street, Suite 3 • Hilo, Hawaii 96720-3043
(808) 961-8288 • Fax (808) 961-8742

December 29, 2005

Mr. Ron Terry
Geometrician Associates, LLC
HC2 Box 9575
Keaau, Hawaii 96749

Dear Mr. Terry:

Subject: Draft Environmental Assessment (DEA)
Applicant: Jonathan Cohen
Project: Construction of a Single-Family Dwelling and Related Improvements
Tax Map Key: (3) 5-7-001:005, Paoo 2-6, North Kohala, Hawaii

We are in receipt of the subject DEA, which we received on December 9, 2005. After reviewing the document we have no comments beyond our pre-consultation comments provided in our December 8, 2004 letter and our Special Management Area Use Permit Assessment Application letter of determination dated June 23, 2005.

Thank you for the opportunity to review and comment on the proposed project and its environmental assessment. Should you have questions, please feel welcome to contact Larry Brown or Esther Imamura of my staff at 961-8288.

Sincerely,

CHRISTOPHER J. YUEN
Planning Director

LMB:cd

P:\Wpwin60\Larry\EA-EIS Comments\geometrician-cohen5-7-1-5 DEA.doc

xc: Mr. Sam Lemmo, DLNR-OCCL

geometrician

ASSOCIATES, LLC
integrating geographic science and planning

phone: (808) 982-5831 fax: (808) 966-7593 HC 2 Box 9575 Kea'au Hawai'i 96749
ronterry@verizon.net

January 26, 2006

Christopher J. Yuen, Director
Hawai'i County Planning Department
101 Aupuni Street, Suite 3
Hilo HI 96720

Dear Yuen:

**Subject: Comment Letter to Draft EA/CDUA, Cohen Single-Family Dwelling
in the Conservation District TMK (3rd): 5-7-1:5**

Thank you for your comment letter dated December 29, 2005, on the Draft EA, in which you stated that you had no comments other than those provided during early consultation and in response to the Special Management Area application. We appreciate your review of the document. If you have any further questions about the EA, please contact me at 982-5831. For information or questions about the project, please contact Greg Mooers at 880-1455.

Sincerely,



Ron Terry, Principal
Geometrician Associates

PHONE (808) 594-1888

FAX (808) 594-1886



RECEIVED
OFFICE OF HAWAIIAN AFFAIRS

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

2005 DEC -9 A 9:35

2005 DEC -9 A 9:35

RECEIVED
OFFICE OF HAWAIIAN AFFAIRS
HRD05/2136

December 5, 2005

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

RE: Conservation District Use Application and Draft Environmental Assessment for the Proposed Construction of a Single Family Residence, Pao'ou, Hawai'i Island, TMK (3) 5-7-001: 005.

Dear Mr. Lemmo,

The Office of Hawaiian Affairs (OHA) is in receipt of your November 18, 2005 request for comment on the above listed proposed project, TMK (3) 5-7-001: 005. OHA offers the following comments:

OHA asks that an Archaeological Monitoring Plan be drafted in support of the proposed project. Because the proposed project intends to demolish a state recognized site (SIHP #2382), and due to the proposed project's proximity to known burial grounds, all ground altering activities should be monitored by a professional archaeologist.

Our office commends the applicant for choosing to replant the area using native flora. This will undoubtedly have a positive impact on the ecology of North Kohala and will make the area more conducive to native animals, namely avian species.

OHA further requests your assurances that if the project goes forward, should iwi or Native Hawaiian cultural or traditional deposits be found during ground disturbance, 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 Jesse Yorck at (808) 594-0239 or jessey@oha.org.

'O wau iho nō,

Clyde W. Nāmu'o
Administrator

CC: Ruby McDonald
OHA Community Affairs Coordinator (Kailua-Kona)
75-5706 Hanama Pl., Suite 107
Kailua-Kona, HI 96740

geometrician

ASSOCIATES, LLC
integrating geographic science and planning

phone: (808) 982-5831 fax: (808) 966-7593 HC 2 Box 9575 Kea'au Hawai'i 96749
ronterry@verizon.net

January 26, 2006

Clyde W. Namu'o, Administrator
Office of Hawaiian Affairs
711 Kapiolani Blvd., Suite 1250
Honolulu HI 96813

Dear Namu'o:

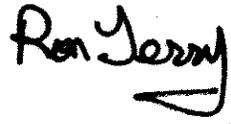
**Subject: Comment Letter to Draft EA/CDUA, Cohen Single-Family Dwelling
in the Conservation District TMK (3rd): 5-7-1:5**

Thank you for your comment letter dated December 5, 2005, on the Draft EA/CDUA. In answer to your specific comments:

1. *Archaeological monitoring.* In deference to the concerns expressed by your agency and the University of Hawaii's Environmental Center, the applicant is willing to contract for an archaeological monitor during ground-altering activities.
2. *Native and Polynesian landscaping.* We acknowledge your support of the landscaping plan and we agree that such efforts can help restore the ecology of North Kohala, which has been so greatly impacted by grazing animals, alien plants and fire.
3. *Inadvertent discoveries of burials or cultural features.* We agree with your statement, and in fact specify in the EA, that "If any previously unidentified sites, or remains such as artifacts, shell, bone or charcoal deposits, human burials, rock or coral alignments, pavings, or walls are encountered, work will stop immediately and SHPD will be consulted to determine the appropriate mitigation. Care will be taken during ground preparation to ensure that, in the unlikely event that human burials are present, they are recognized and dealt with appropriately."

Again, thank you for your comment. If you have any questions about the EA, please contact me at 982-5831. For information or questions about the project, please contact Greg Mooers at 880-1455.

Sincerely,

A handwritten signature in black ink that reads "Ron Terry". The signature is written in a cursive style with a large, sweeping "R" and a distinct "y" at the end.

Ron Terry, Principal
Geometrician Associates

*DLNR Division
Comments -
treated as one
7-page letter*

HA06-570

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

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

REF:OCCL:TM

File No.: HA-3269
Acceptance Date: November 10, 2005
180-Day Expiration Date: May 09, 2006
SUSPENSE DATE: 21 Days from
stamped date NOV 18 2005

MEMORANDUM:

TO: Aquatic Resources, Conservation and Resources Enforcement, Forestry and Wildlife, Historic Preservation, Engineering, Hawaii District Land Office

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

SUBJECT: REQUEST FOR COMMENTS
Conservation District Use Application HA-3269
BOARD PERMIT
Single Family Residence

APPLICANT: Greg Mooers for
Jonathan Cohen, Aloha Properties, LLC

TMKs: See Materials

LOCATION: See Acceptance Letter and attachments

PUBLIC HEARING: YES X NO

Please contact Tiger Mills at 587-0382, should you have any questions on this matter.

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

() Comments Attached

(x) No Comments

Attachment(s)

Signature

RECEIVED
NOV 20 4 32

NOV 10 10 21 AM 2005

DOCARE-18 3269-HA

DONATHAN COHEN, ALOHA PROPERTIES, LLC RECEIVED

ROY VITOUSEK III, 329-5811 HILO, HAWAII

TMK: (3) 5-7-001-005, PAO'O, NORTH KOHALA, HAWAII 2005 NOV 28 P 12:01

SINGLE FAMILY RESIDENCE

APPLICANT IS PROPOSING TO BUILD A SINGLE FAMILY RESIDENCE AND RELATED IMPROVEMENTS ON A 10.61 ACRE PROPERTY IN KOHALA. THE PROPOSED RESIDENCE WOULD CONSIST OF A COMPOUND OF DETACHED STRUCTURES TOTALING 4,065 SQUARE FEET. POOLS AND DECKS OCCUPY ANOTHER 878 SQ. FT. OTHER IMPROVEMENTS INCLUDE A WASTEWATER SYSTEM, UTILITIES, A PAVED ACCESS ROAD, AND LANDSCAPE FEATURES.

HAWAII 11/21/2005 12/7/2005

REVIEW THE ATTACHED APPLICATION AND COMMENT WITH RESPECT TO DOCARE'S CURRENT AND FUTURE PROGRAMS. NO SITE INSPECTION IS NEEDED. IF NO RESPONSE IS RECEIVED, LAND DIVISION WILL ASSUME THAT THERE ARE NO COMMENTS

HA-05-570

12-03-05 None

No inspection made. Officer is familiar with the area.

none

No Comments

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 - LAND

DEAN MAKANO
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
KAMOLELE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

2005 NOV 21 A 11:48

RECEIVED
LAND DIVISION
HILO, HAWAII

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

File No.: HA-3269

Acceptance Date: November 10, 2005
180-Day Expiration Date: May 09, 2006
SUSPENSE DATE: 21 Days from
stamped date NOV 18 2005

REF:OCCL:TM

MEMORANDUM:

TO: Aquatic Resources, Conservation and Resources Enforcement, Forestry and Wildlife, Historic Preservation, Engineering, Hawaii District Land Office

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

SUBJECT: REQUEST FOR COMMENTS
Conservation District Use Application HA-3269
BOARD PERMIT
Single Family Residence

APPLICANT: Greg Mooers for
Jonathan Cohen, Aloha Properties, LLC

TMKs: See Materials

LOCATION: See Acceptance Letter and attachments

PUBLIC HEARING: YES X NO

Please contact Tiger Mills at 587-0382, should you have any questions on this matter.

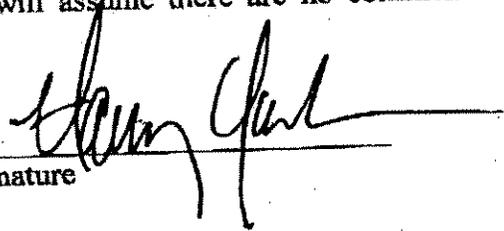
If no response is received by the suspense date, we will assume there are no comments. The suspense date starts from the date stamp.

() Comments Attached

(x) No Comments

Attachment(s)

Signature



RECEIVED
OFFICE OF CONSERVATION
AND COASTAL LANDS
2005 NOV 28 A 8:42

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 - LAND
DEAN MAKANO
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
KAOIOLAWS ISLAND RESERVE COMMISSION
LAND
STATE PARKS

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

REF:OCCL:TM

File No.: HA-3269
Acceptance Date: November 10, 2005
180-Day Expiration Date: May 09, 2006
SUSPENSE DATE: 21 Days from
stamped date NOV 18 2005

MEMORANDUM:

TO: Aquatic Resources, Conservation and Resources Enforcement, Forestry and Wildlife, Historic Preservation, Engineering, Hawaii District Land Office

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

SUBJECT: REQUEST FOR COMMENTS
Conservation District Use Application HA-3269
BOARD PERMIT
Single Family Residence

APPLICANT: Greg Mooers for
Jonathan Cohen, Aloha Properties, LLC

TMKs: See Materials

LOCATION: See Acceptance Letter and attachments

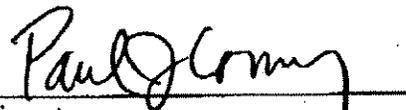
PUBLIC HEARING: YES X NO

RECEIVED
OFFICE OF CONSERVATION AND COASTAL LANDS
2005 NOV 29 A 7:51
PROJECT: HA-3269
SUBJECT: BOARD PERMIT

Please contact Tiger Mills at 587-0382, should you have any questions on this matter.

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

- Comments Attached
- No Comments
- Attachment(s)


Signature
PAUL J. CONRY, ADMINISTRATOR
DIVISION OF FORESTRY AND WILDLIFE
NOV 22 2005

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 - LAND

DEAN MAKANO
ACTING DEPUTY DIRECTOR - WATER

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

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

REF:OCCL:TM

File No.: HA-3269
Acceptance Date: November 10, 2005
180-Day Expiration Date: May 09, 2006
SUSPENSE DATE: 21 Days from
stamped date NOV 18 2005

MEMORANDUM:

TO: Aquatic Resources, Conservation and Resources Enforcement, Forestry and
Wildlife, Historic Preservation, Engineering, Hawaii District Land Office

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

SUBJECT: REQUEST FOR COMMENTS
Conservation District Use Application HA-3269
BOARD PERMIT
Single Family Residence

APPLICANT: Greg Mooers for
Jonathan Cohen, Aloha Properties, LLC

TMKs: See Materials

LOCATION: See Acceptance Letter and attachments

PUBLIC HEARING: YES X NO

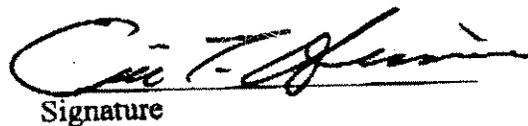
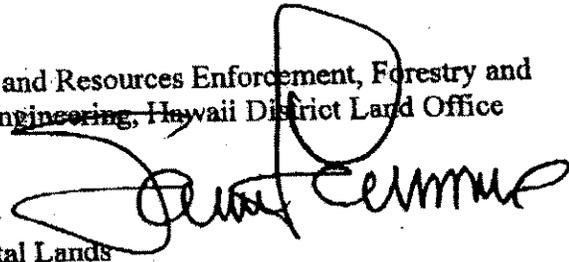
Please contact Tiger Mills at 587-0382, should you have any questions on this matter.

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

() Comments Attached

No Comments

Attachment(s)


Signature

RECEIVED
OFFICE OF CONSERVATION
AND COASTAL LANDS
2005 NOV 23 P 2:37

05 NOV 21 PM 04:11 ENGINEERING

05-664

RS
FO
DP

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 - LAND

DEAN NAKANO
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
WHALE WATCHING
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAWAHAU INLAND RESERVE COMMISSION
LAND
STATE PARKS

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

REF:OCCL:TM

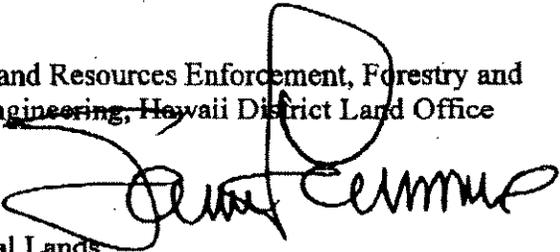
File No.: HA-3269
Acceptance Date: November 10, 2005
180-Day Expiration Date: May 09, 2006
SUSPENSE DATE: 21 Days from
stamped date NOV 18 2005

12/5

MEMORANDUM:

TO: Aquatic Resources, Conservation and Resources Enforcement, Forestry and
Wildlife, Historic Preservation, Engineering, Hawaii District Land Office

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



SUBJECT: REQUEST FOR COMMENTS
Conservation District Use Application HA-3269
BOARD PERMIT
Single Family Residence

APPLICANT: Greg Mooers for
Jonathan Cohen, Aloha Properties, LLC

TMKs: See Materials

LOCATION: See Acceptance Letter and attachments

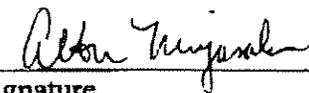
PUBLIC HEARING: YES X NO

Please contact Tiger Mills at 587-0382, should you have any questions on this matter.

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

Comments Attached

No Comments


Signature

Attachment(s)

12/5/05

SUSPENSE DATE: December 5, 2005

STATE OF HAWAII
Department of Land and Natural Resources
Division of Aquatic Resources

MEMORANDUM

To: Dan Polhemus, Administrator
From: Richard Sixberry, Aquatic Biologist *RS*
Subject: Comments on Conservation District Use Application HA-3269

Comments Requested By: Dean Uchida - Land Division

Date of Request: 6/10/97

Date Received: 6/12/97

Summary of Project

Title: Single Family Residence & Associated Improvements
Proj. By: Jonathan Cohen
Location: Pao'o, N. Kohala, Hawaii

Brief Description:

The applicant proposes to construct a residence compound of detached structures consisting of five bedrooms, six bathrooms, a storage room, living room, study room and kitchen of approximately 4,065 square feet. Pools and decks would occupy another 678 square feet plus other improvements. The site, bordering the shoreline is located at Pao'o, North Kohala, Hawaii

Comments:

Significant long-term impacts adverse to aquatic resource values are not expected from the proposed single family dwelling and improvements. Any traditional or existing public access to and along the shoreline should be maintained. However, any additional or undescribed construction or landscape modifications within the Conservation District should be submitted to the Department for review.

Precautions shall be taken during construction to prevent debris, landscaping chemicals, eroded soil, petroleum products and other potential contaminants from flowing blowing or leaching into coastal waters.

Richard Sixberry
Aquatic Biologist

geometrician

ASSOCIATES, LLC
integrating geographic science and planning

phone: (808) 982-5831 fax: (808) 966-7593 HC 2 Box 9575 Kea'au Hawai'i 96749
ronterry@verizon.net

January 26, 2006

Sam Lemmo, Administrator
Office of Conservation and Coastal Lands
Hawai'i State Department of Land and Natural Resources
P.O. Box 621
Honolulu HI 96809

Dear Mr. Lemmo:

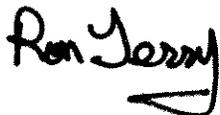
**Subject: Comment Letter to Draft EA/CDUA, Cohen Single-Family Dwelling
in the Conservation District TMK (3rd): 5-7-1:5**

Thank you for circulating and compiling the comments from the various divisions of DLNR. First of all, in the interest of a complete record on comment letters, I would like to acknowledge receipt from your office of form memos with various dates checked "no-comments" from DOCARE, the Hawai'i Island Land Division, DOFAW, and Engineering.

In regard to the comment from the Division of Aquatic Resources, we acknowledge the statement that the proposed single-family dwelling and related improvements are not expected to have a significant adverse long-term impact on aquatic resource values. We agree with the precautionary mitigation measures listed, and in fact the EA specifies them in Section 3.2.4.

Again, thank you for your comment. If you have any questions about the EA, please contact me at 982-5831. For information or questions about the project, please contact Greg Mooers at 880-1455.

Sincerely,



Ron Terry, Principal
Geometrician Associates



NA ALA HELE
Hawaii Trail & Access System

January 9, 2006

Ref: H04:18 Pao 6

TO: Kimberly Tiger Mills, OCCL Planner

FROM: Doris Moana Rowland, Abstractor *DMR*

THROUGH: Curt Cottrell, Program Manager *CAC*

SUBJECT: Cohen Single-Family Dwelling CDUP Draft EA
Pao'o, North Kohala, Tax Map Key: 5-7-1-5

RECEIVED
 OFFICE OF CONSERVATION
 2006 JAN 20 P 12: 54
 DIVISION OF FORESTRY & WILDLIFE

The Office of Conservation and Coastal Lands has requested comments on a Draft EA submitted by the applicant Jonathan Cohen. Cohen is the owner of a 16-acre parcel originally sold in 1856 in Land Grant No. 1997 to Kauwe. Situate in the ahupuaa of Pao'o 6 in the district of North Kohala, this land was part of an extensive coastal settlement with fishing villages along the coast and agricultural systems in the uplands.

Examination of map data and other historical documents NAH has found evidence of a mauka-makai trail and an ancient lateral coastal trail that crosses a portion of the subject property (Exhibit A). This is believed to be a segment of the coastal trail that ran from Mahukona to Kawaihae and is sometimes referred to on maps as the "Ala Loa."

Based on the map and historical document data, it has been determined the coastal trail alignment is owned by the State of Hawaii through its Board of Land and Natural Resources pursuant to §264-1(b) Hawaii Revised Statutes. Furthermore, due to its coastal location, this trail section may be considered a potential alignment by the National Park Service for the Ala Kahakai National Historic Trail designated by Congress on November 13, 2000.

The mauka-makai trail has evolved into an easement for access and utility purposes from the Kawaihae-Mahukona Road to the subject property. The Board of Land and Natural Resources granted this easement that passes over government land to Cohen in 2003.

It is recommended that a modern metes and bounds survey of the coastal trail be completed and all adjoining landowners and affected agencies be notified of any future management plans of this ancient trail.

c: Irving Kawashima, NAH
Melanie Chinen, HP
Aric Arakaki, NPS
Gregory Mooers

geometrician

ASSOCIATES, LLC
integrating geographic science and planning

phone: (808) 982-5831 fax: (808) 966-7593 HC 2 Box 9575 Kea'au Hawai'i 96749
ronterry@verizon.net

January 26, 2006

Curt Cottrell, Program Manager
Na Ala Hele Program
Hawaii DLNR
1151 Punchbowl Street, Room 224
Honolulu HI 96720

Dear Mr Cottrel:

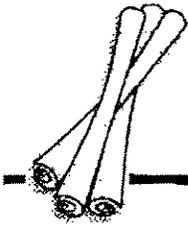
**Subject: Comment Letter to Draft EA/CDUA, Cohen Single-Family Dwelling
in the Conservation District TMK (3rd): 5-7-1:5**

Thank you for your comment letter dated January 9, 2006 (logged in by DLNR on January 20), on the Draft EA, in which you discuss a mauka-makai and a coastal trail that appear on maps and other historical documents in your possession.

The location of the mauka-makai trail appears to coincide with a non-exclusive easement over State land that was granted to Mr. Cohen in 2003. The applicant has proposed the realignment of the makai area of this easement as part of the proposed action. The applicant is not opposed to the public's continued use of this realigned easement that terminates at the lateral jeep trail. It should be noted that citizens who testified at the CDUA public hearing on January 24, 2006, expressed concern that open vehicular access could threaten cultural and archaeological resources in the area; as a responsible steward of these resources, Mr. Cohen shares their concerns.

Site inspections by our archaeologist, planner, environmental scientist, surveyor, owners representative and officials from the federal trails group developing the Ala Kahakai trail discovered no physical evidence of any lateral trails on the project site. The location of the trail on the exhibit you provide appears to have it going directly through a number of ancient, well-preserved archaeological features. This calls into some question the validity of the placement of the trail on the exhibit, which is not surprising given the scale and level of detail.

The applicant met with representatives of the Ala Kahakai development team and traversed the site. An alignment for a coastal lateral trail that could be constructed on the ground and used without harming archaeological sites was flagged and later surveyed by Wes Thomas Associates.



MOOERS
ENTERPRISES, LLC
Land Use Alternatives

Post Office Box 1101
Kamuela, Hawaii 96743
Phone (808) 880-1455
Fax (808) 880-1456
gmooers@hawaii.rr.com

February 2, 2006

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

Re: Conservation District Use Application (HA-3269)
TMK: (3)5-7-001:005
Applicant: Jonathan Cohen, Aloha Properties, LLC

Dear Mr. Lemmo:

Your letter of February 1, 2006, requested additional information about a caretaker on the subject property. As discussed in our application, the applicant is going to be generating his own power and providing his own potable water by having a desal plant next to his well in the Ag district. The intention is to have a building in the agricultural district housing the propane generator, well head, desal plant, water tank and to store equipment. The caretaker will be a full-time employee who will be responsible for all of the utilities services, gardening and general security. His office will be in the ag building.

The applicant is well aware that the rules governing the conservation district (HAR 13-5) prohibit more than one dwelling in the conservation district and this rule will be complied with. It is not proposed that the caretaker be a resident at the project. The only time it is anticipated that the caretaker would spend the night would be on occasion when the family is away and there is a particular need for someone to be present on the site. In that case he would spend the night in the proposed single-family residence. There will not be more than one residence in the conservation district.

If you or your staff has any further questions, or if you require additional information, please contact me. Thank you for your prompt processing of this application.

Sincerely,


Gregory R. Mooers
President

GRM:jy

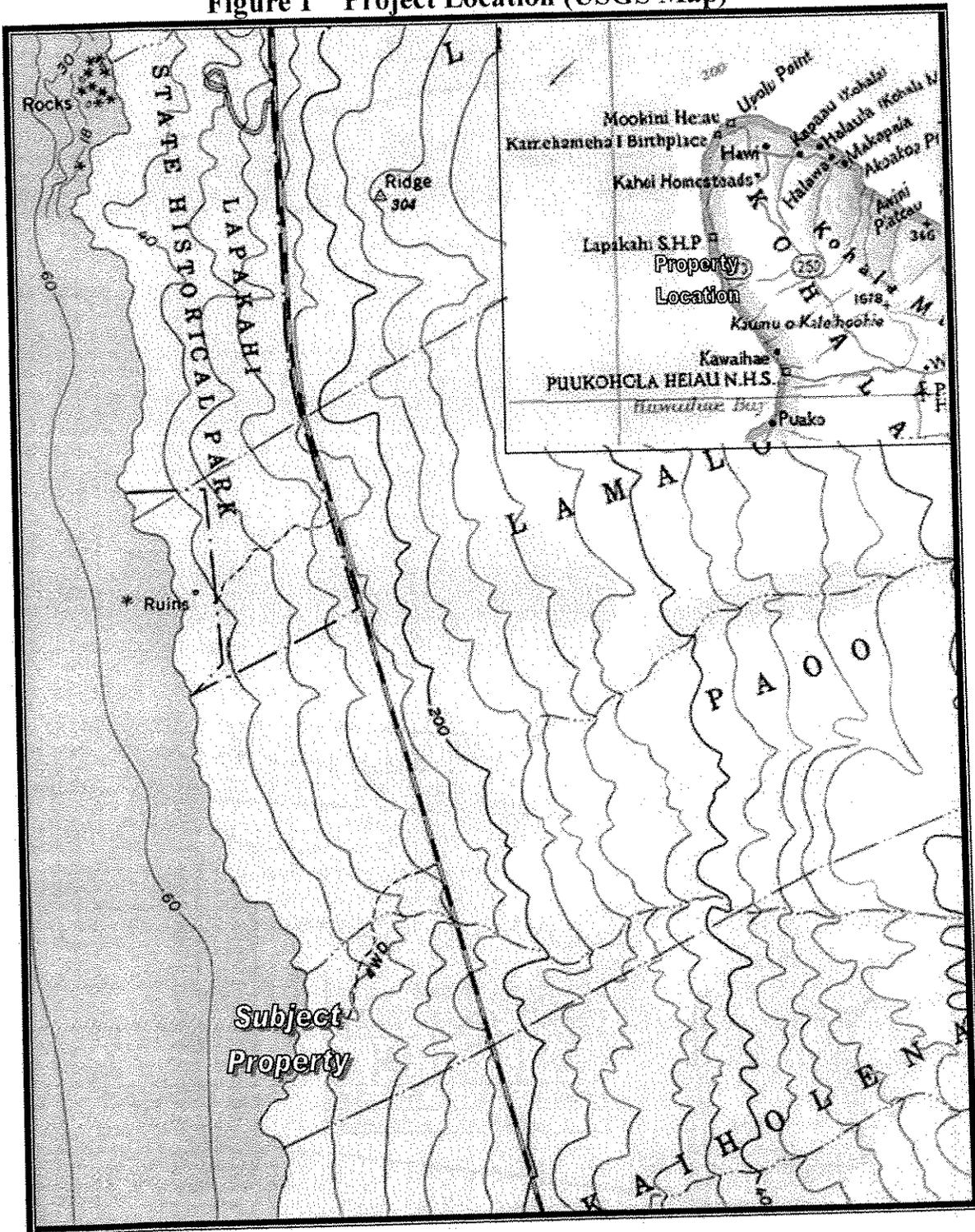
Copy: Chairperson
Hawaii District Land Office
County of Hawaii Planning Department

**COHEN SINGLE FAMILY DWELLING AND
ASSOCIATED IMPROVEMENTS IN THE
CONSERVATION DISTRICT
ENVIRONMENTAL ASSESSMENT**

APPENDIX 2

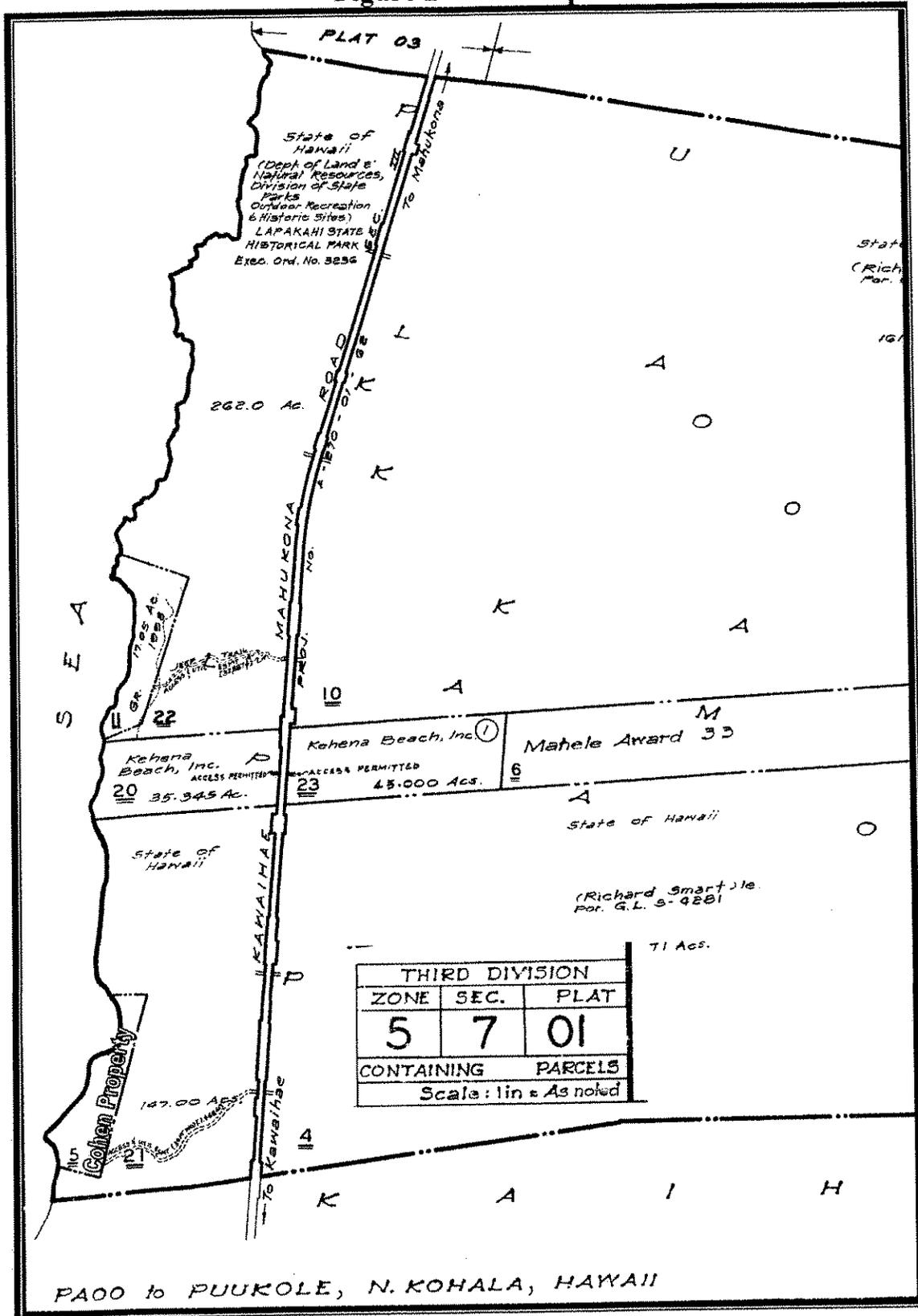
FIGURES

Figure 1 Project Location (USGS Map)



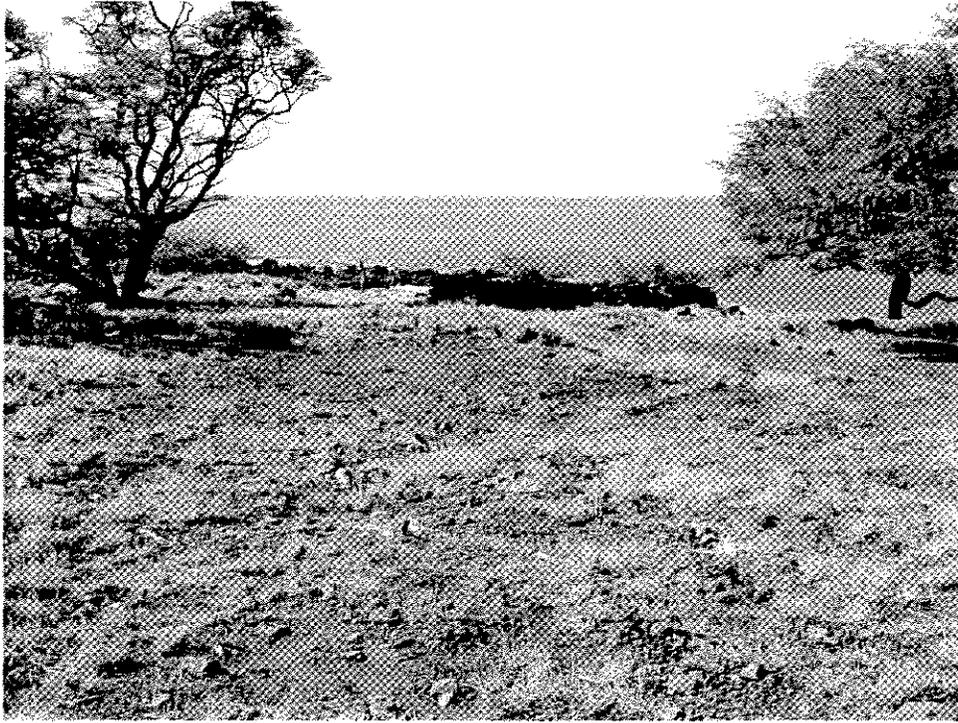
North Scale: 1 inch = 0.3 miles

Figure 2 Tax Map

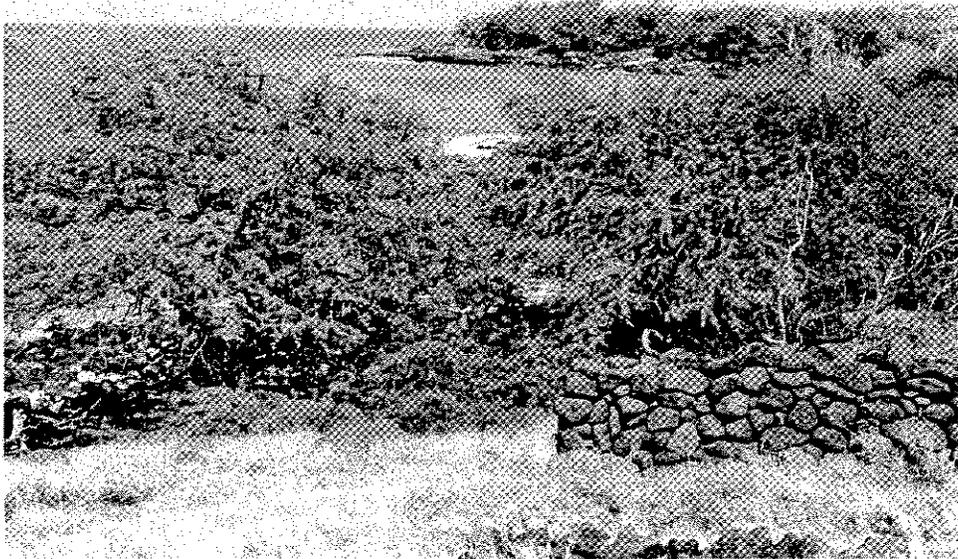


Scale: 1 inch = 0.35 miles

Figure 3 Project Site Photographs



3a. Proposed Building Site



3b. View to north from proposed building site.

Figure 3 Project Site Photographs, cont'd



3c. View from north (public) jeep access road – building site between car and lava point, about a half-mile away

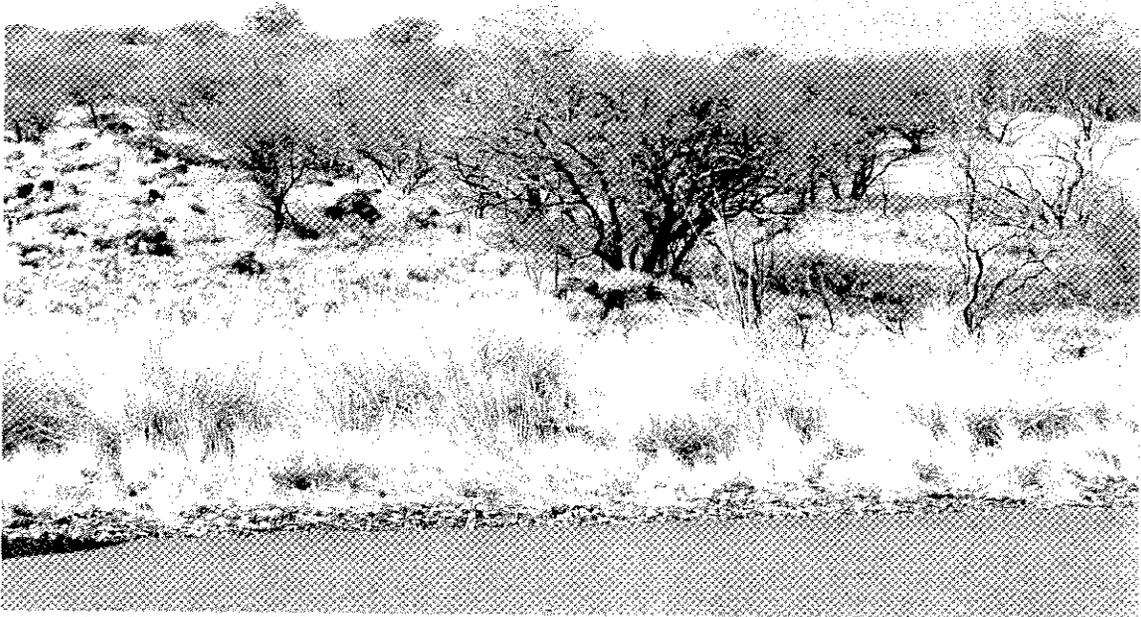


3d. View from 100 m further south from 3c

Figure 3 Project Site Photographs, cont'd

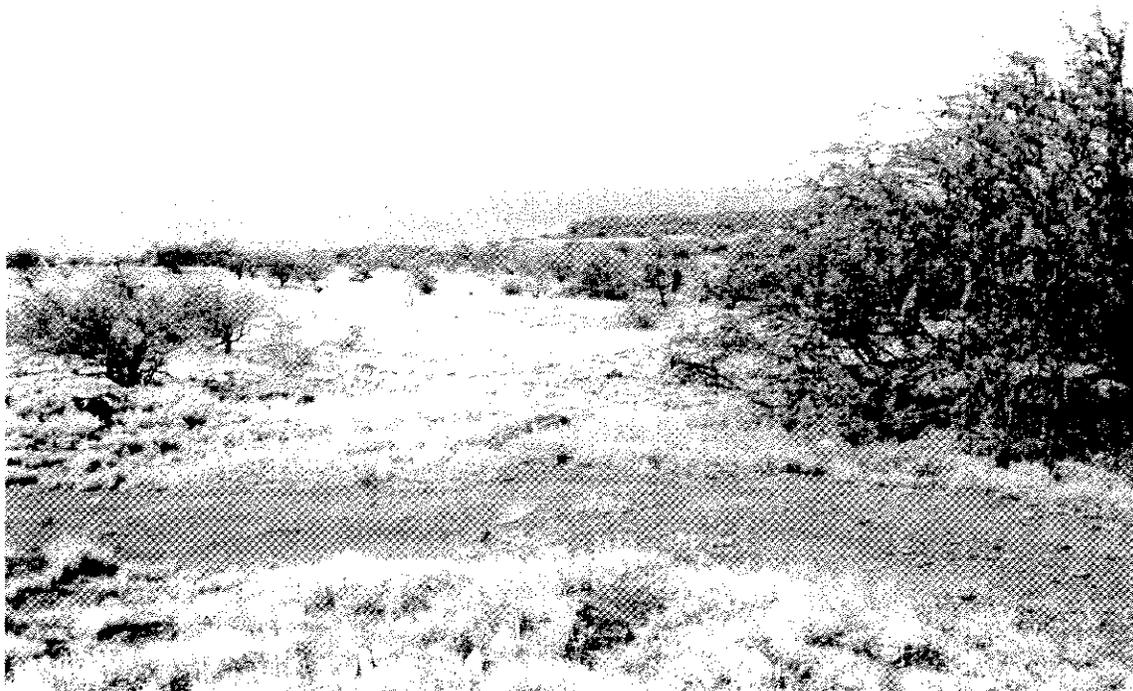


3e. View from Cohen access road. Building site not visible, near large coastal tree clump



3f. View from a half-mile south of Cohen access road. Building site not visible.

Figure 3 Project Site Photographs, cont'd



3g. View from a mile south of Cohen access road. Building site is beyond coastal forest on right and is not visible from here or points further south.

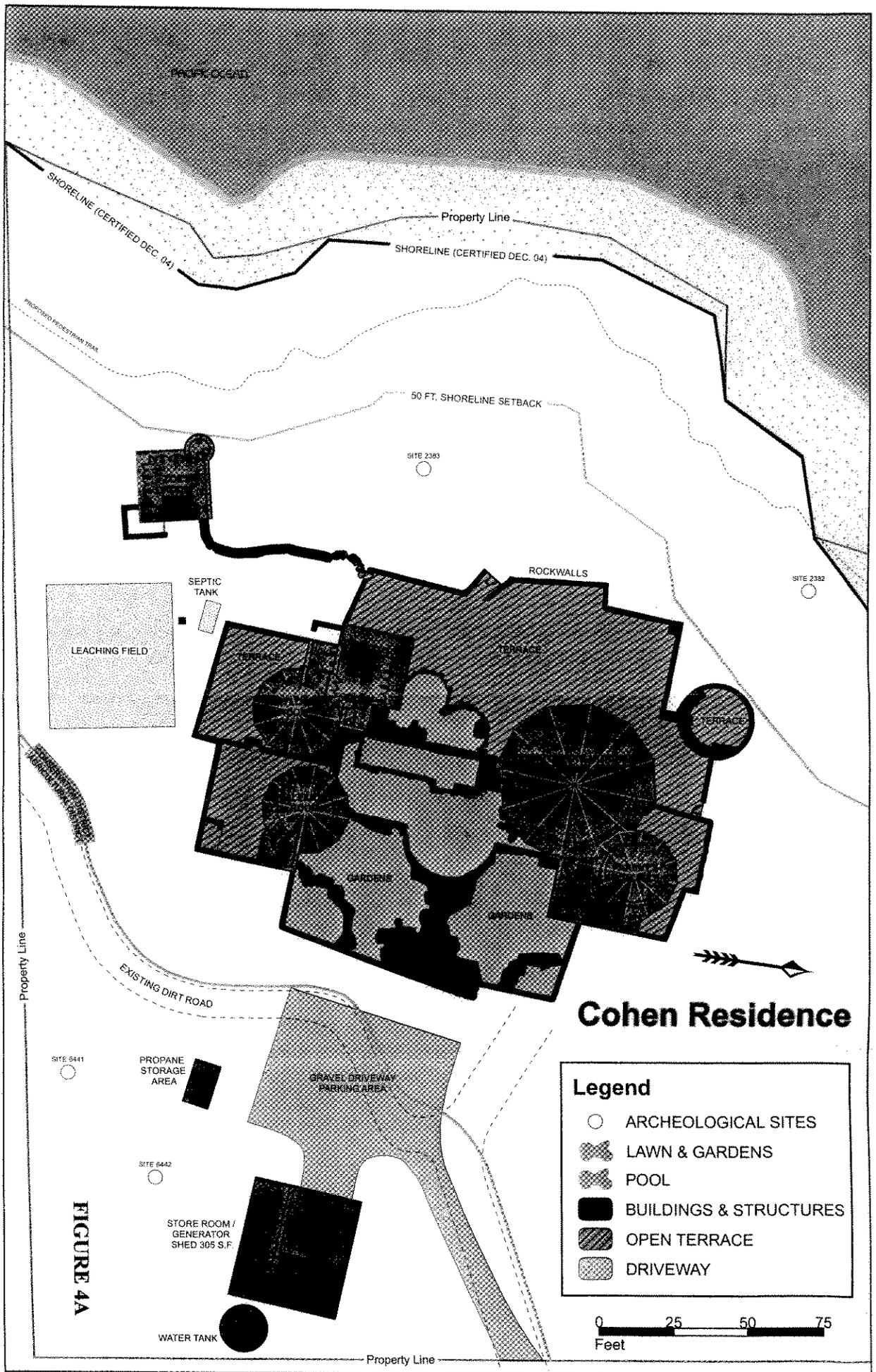


FIGURE 4A

Cohen Residence

Legend

- ARCHEOLOGICAL SITES
- ▨ LAWN & GARDENS
- ▩ POOL
- BUILDINGS & STRUCTURES
- ▨ OPEN TERRACE
- ▨ DRIVEWAY



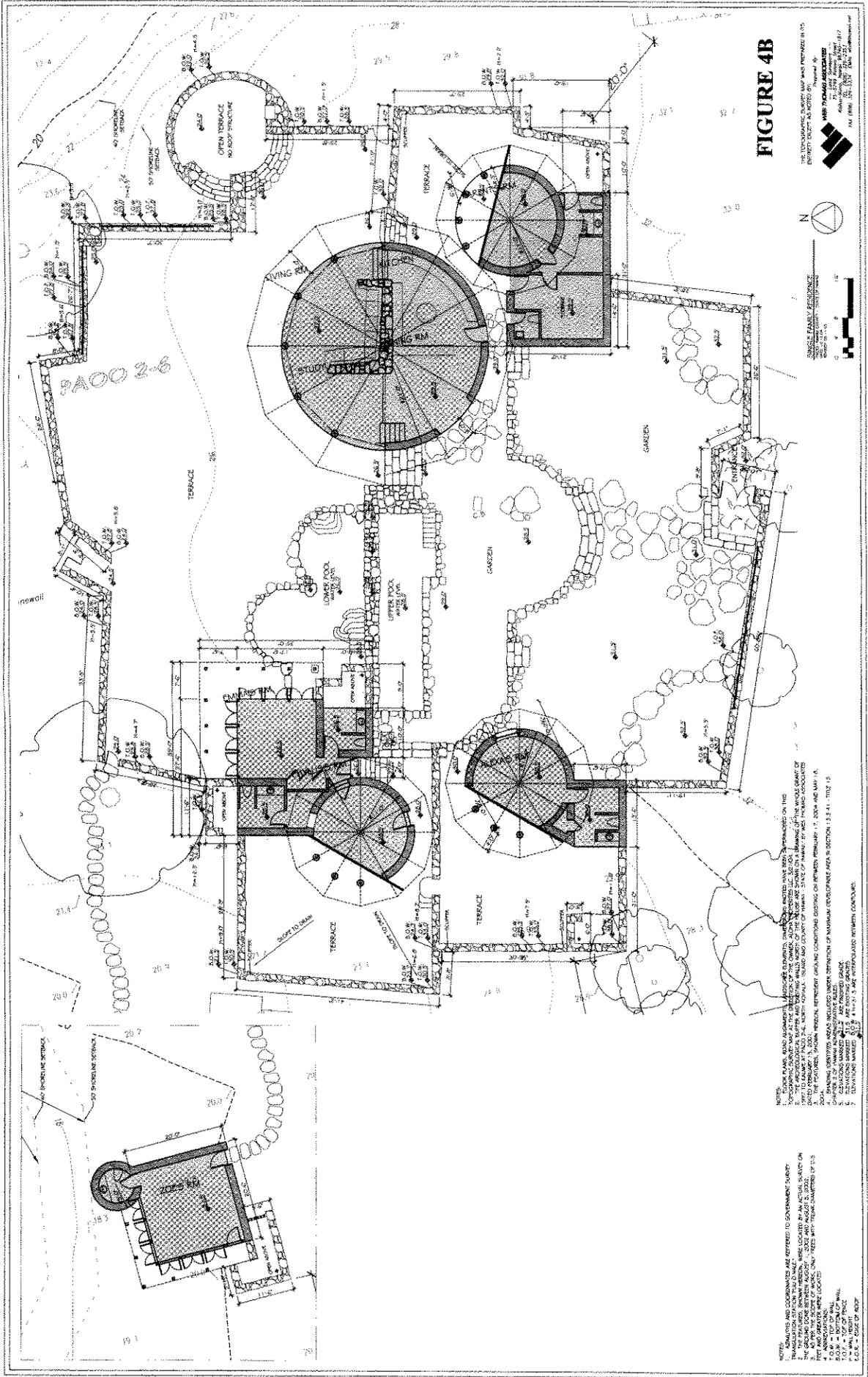


FIGURE 4B

THE INFORMATION SHOWN ON THIS MAP WAS PREPARED BY THE ENGINEER SHOWN ON THE TITLE SHEET AND IS NOT TO BE USED FOR ANY OTHER PURPOSE WITHOUT THE WRITTEN CONSENT OF THE ENGINEER.

WSP PLANNING ASSOCIATES
 10000 15th Avenue, Suite 217
 Denver, Colorado 80202
 Tel: (303) 733-7777 Fax: (303) 733-7778

SCALE: 1/4" = 10'
 0 5 10
 1" = 10'

NOTES:
 1. ALL DIMENSIONS ARE UNLESS OTHERWISE NOTED.
 2. THE SHADING INDICATES THE EXISTING CONSTRUCTION OF THE PROPERTY.
 3. THE SHADING INDICATES THE EXISTING CONSTRUCTION OF THE PROPERTY.
 4. THE SHADING INDICATES THE EXISTING CONSTRUCTION OF THE PROPERTY.
 5. THE SHADING INDICATES THE EXISTING CONSTRUCTION OF THE PROPERTY.
 6. THE SHADING INDICATES THE EXISTING CONSTRUCTION OF THE PROPERTY.
 7. THE SHADING INDICATES THE EXISTING CONSTRUCTION OF THE PROPERTY.

NOTES:
 1. ALL DIMENSIONS ARE UNLESS OTHERWISE NOTED.
 2. THE SHADING INDICATES THE EXISTING CONSTRUCTION OF THE PROPERTY.
 3. THE SHADING INDICATES THE EXISTING CONSTRUCTION OF THE PROPERTY.
 4. THE SHADING INDICATES THE EXISTING CONSTRUCTION OF THE PROPERTY.
 5. THE SHADING INDICATES THE EXISTING CONSTRUCTION OF THE PROPERTY.
 6. THE SHADING INDICATES THE EXISTING CONSTRUCTION OF THE PROPERTY.
 7. THE SHADING INDICATES THE EXISTING CONSTRUCTION OF THE PROPERTY.

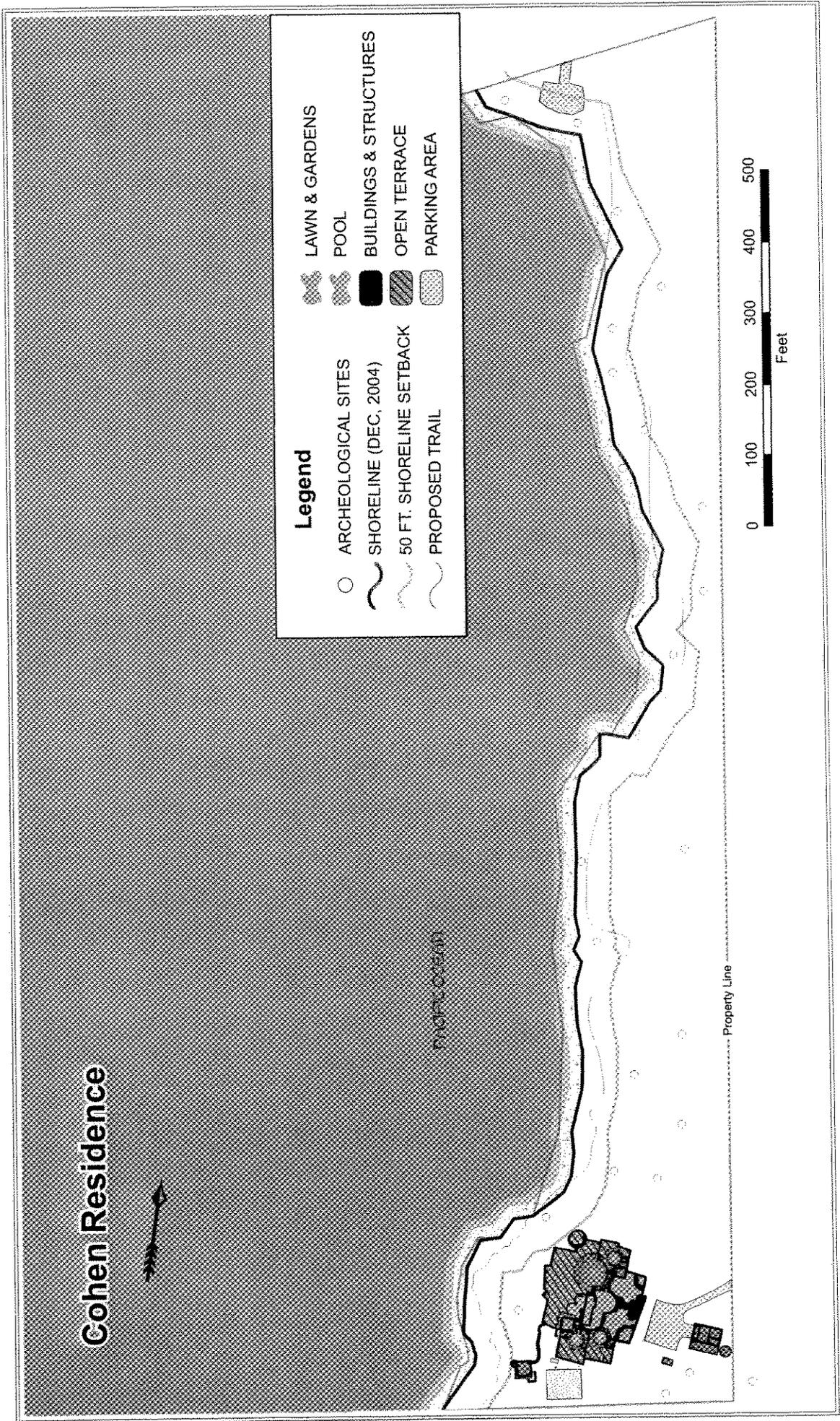


FIGURE 4C

EXISTING TREES

-  Kiawe to be Removed
-  Kiawe to be Retained

NEW VEGETATION

-  Palms
-  Other Trees

For Species List See Palette Below

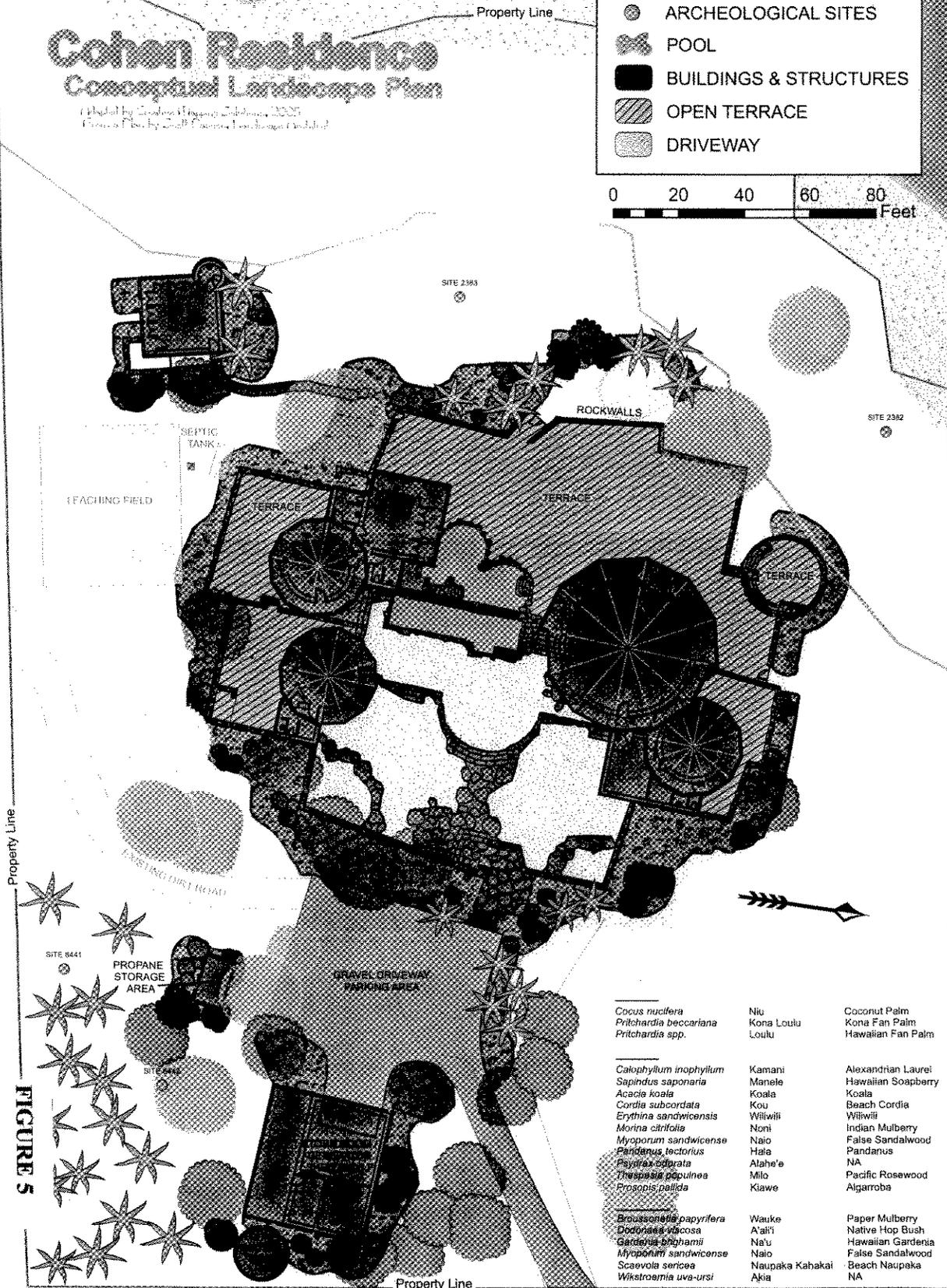
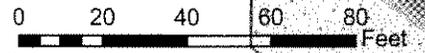
-  Small Shrubs
-  Large Shrubs
-  Planting Beds
-  Open Space

Cohan Residence

Conceptual Landscape Plan

Prepared by Caroline Whang, L.A.S., 2/20/05
 Project No. 05-017, Conceptual Landscape Plan

-  ARCHEOLOGICAL SITES
-  POOL
-  BUILDINGS & STRUCTURES
-  OPEN TERRACE
-  DRIVEWAY



Property Line

Property Line

FIGURE 5

<i>Cocos nucifera</i>	Niu	Coconut Palm
<i>Pritchardia beccariana</i>	Kona Loui	Kona Fan Palm
<i>Pritchardia spp.</i>	Loulu	Hawaiian Fan Palm
<i>Calophyllum inophyllum</i>	Kamani	Alexandrian Laurel
<i>Sapindus saponaria</i>	Manele	Hawaiian Soapberry
<i>Acacia koala</i>	Koala	Koala
<i>Cordia subcordata</i>	Kou	Beach Cordia
<i>Erythrina sandwicensis</i>	Wiliwili	Wiliwili
<i>Morinda citrifolia</i>	Noni	Indian Mulberry
<i>Myoporum sandwicense</i>	Nai'o	False Sandalwood
<i>Pandanus toctoricus</i>	Hala	Pandanus
<i>Psychotria colorata</i>	Alahe'e	NA
<i>Theophrasta papilionea</i>	Milo	Pacific Rosewood
<i>Prosopis pallida</i>	Kiawe	Algarroba
<i>Broussonetia papyrifera</i>	Wauke	Paper Mulberry
<i>Dodonaea viscosa</i>	A'ali'i	Native Hop Bush
<i>Gardenia bighamii</i>	Na'u	Hawaiian Gardenia
<i>Myoporum sandwicense</i>	Nai'o	False Sandalwood
<i>Scaevola sericea</i>	Naupaka Kahakai	Beach Naupaka
<i>Wikstroemia uva-ursi</i>	Akia	NA

Figure 6 Road Easement Map

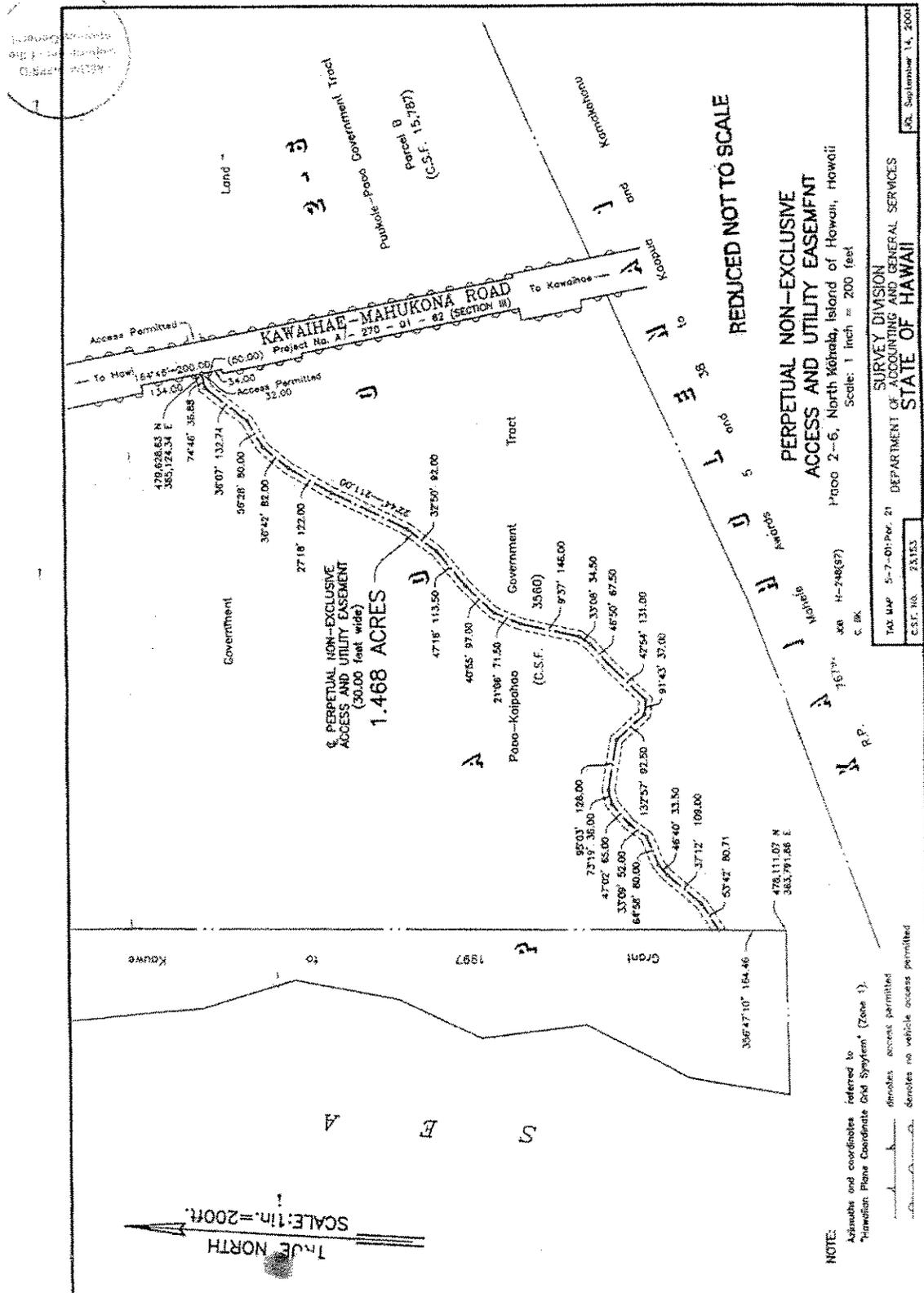


Figure 7

Highway 270

View from Road

View angle 2

Building Site

1,850'

View angle 1

View from Road

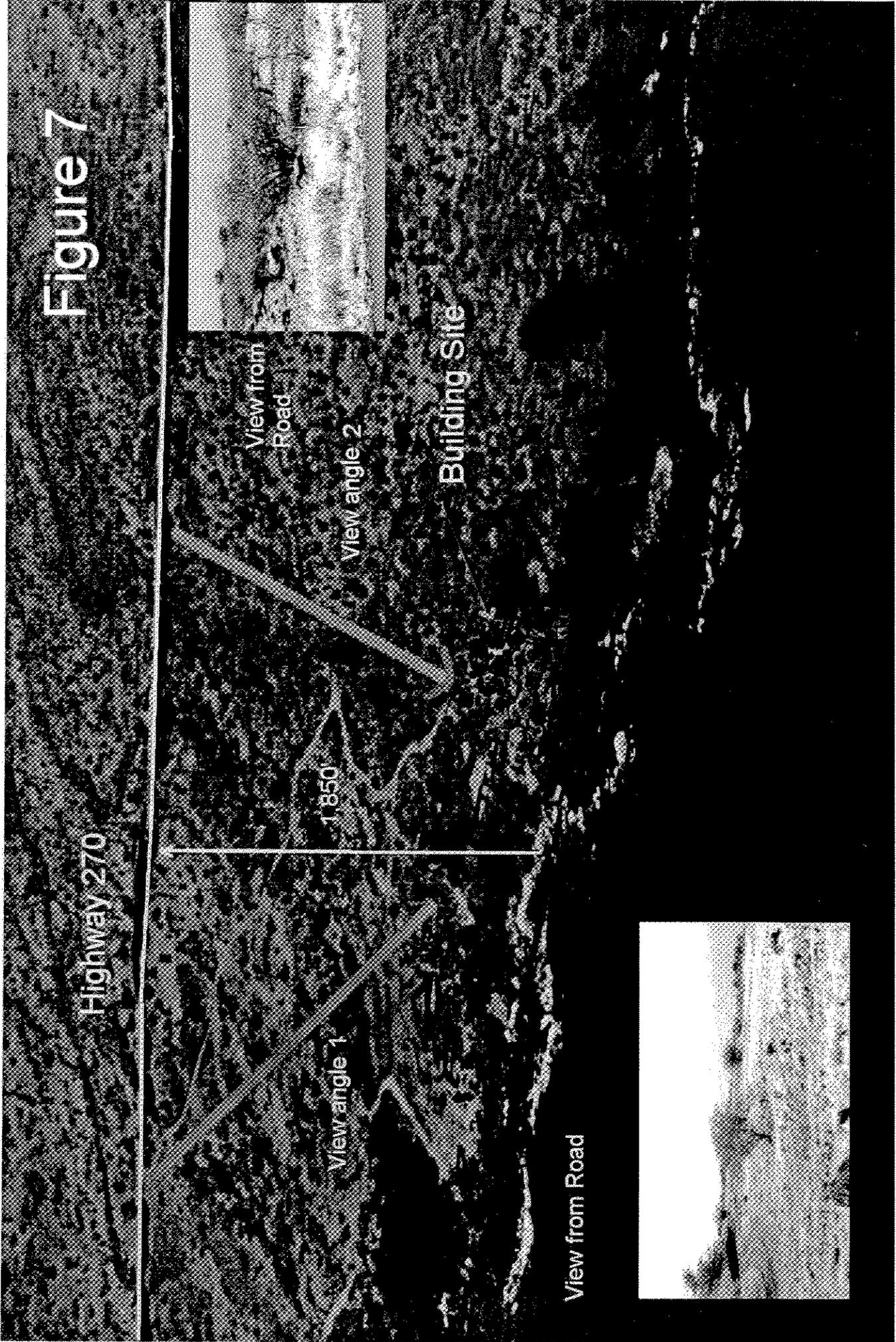
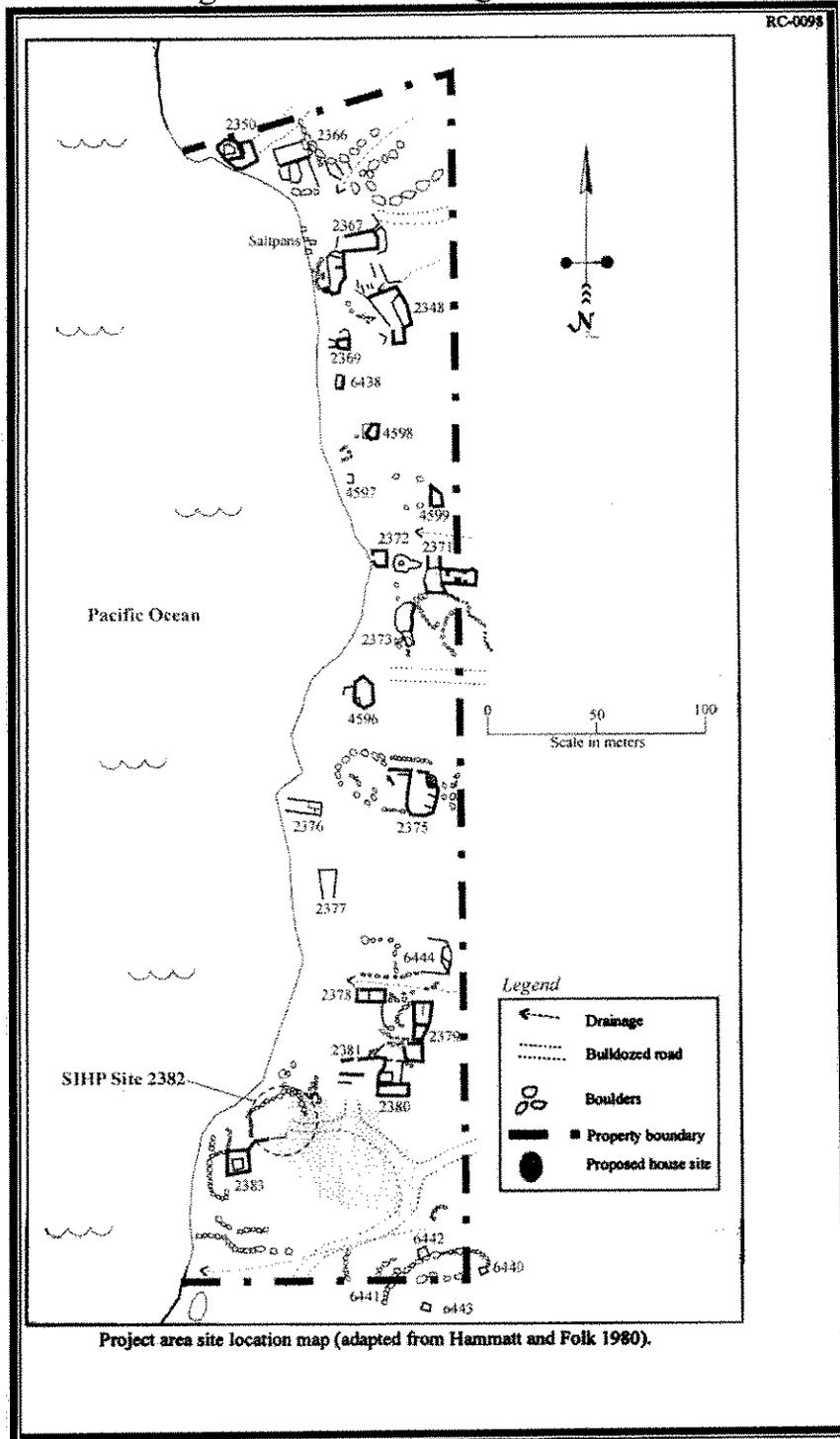


Figure 8 Archaeological Features



Source: Rechtman Consulting

**COHEN SINGLE FAMILY DWELLING AND
ASSOCIATED IMPROVEMENTS IN THE
CONSERVATION DISTRICT
ENVIRONMENTAL ASSESSMENT**

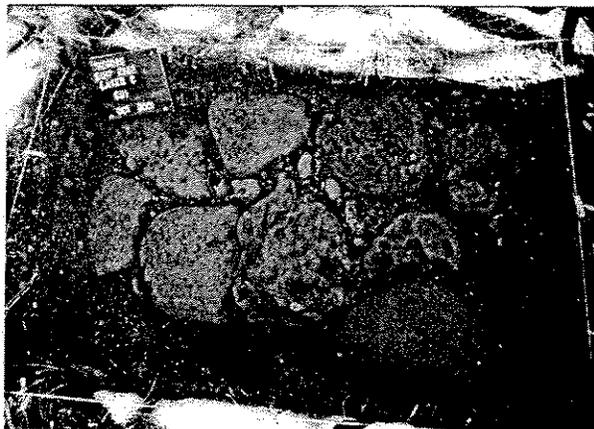
APPENDIX 3

ARCHAEOLOGICAL AND CULTURAL REPORTS

Archaeological Data Recovery at SIHP Site 2382

TMK:3-5-7-01:5

Pāo'o Ahupua'a
North Kohala District
Island of Hawai'i



PREPARED BY:

Matthew R. Clark, B.A.
and
Robert B. Rechtman, Ph.D.

PREPARED FOR:

Jonathan Cohen
Baker Bridge Road
Lincoln, MA 01773

April 2003



RECHTMAN CONSULTING

HC 1 Box 4149 • Kea'au, Hawai'i 96749
phone: (808) 966-7636 • FAX (800) 406-2665
e-mail: rechtmanconsult@aol.com

Archaeological Data Recovery at
SIHP Site 2382
TMK:3-5-7-01:5

Pāo‘o Ahupua‘a
North Kohala District
Island of Hawai‘i

Contents

INTRODUCTION	1
RESEARCH OBJECTIVES	1
SITE DESCRIPTION	4
THE DATA RECOVERY EFFORT	7
Archaeological Fieldwork	7
DISCUSSION	19
CONCLUSION	28
REFERENCES CITED	28
APPENDIXA	31

Figures

1. Project area location.	2
2. Project area site location map (adapted from Hammatt and Folk 1980).	3
3. Plan view of SIHP Site 2382 (from Hammatt and Folk 1980).	5
4. SIHP Site 2382 view to northwest.	6
5. SIHP Site 2382 plan view and Excavation Unit (EU) placement.	8
6. SIHP Site 2382 Excavation Unit 1 (EU-1) west wall profile.	11
7. SIHP Site 2382 Excavation Unit 1, surface of Layer III plan view.	11
8. SIHP Site 2382 Excavation Unit 1 base of Layer II view to east.	12
9. SIHP Site 2382 Excavation Unit 2 northeast wall profile.	14
10. SIHP Site 2382 Excavation Unit 2 view to northeast.	14
11. SIHP Site 2383 Excavation Unit 3 west wall profile.	15
12. SIHP Site 2382 Excavation Unit 3 view to west.	15
13. SIHP Site 2382 Excavation Unit 4 south wall profile.	17
14. SIHP Site 2382 Excavation Unit 4 view to south.	17
15. SIHP Site 2382 Excavation Unit 5 west wall profile.	18
16. SIHP Site 2382 Excavation Unit 5 view to west.	18

Tables

Table 1. Archaeological sites located within TMK:3-5-7-01:5.	6
Table 2. Recovered remains from SIHP Site 2382, EU-1.	9
Table 3. Recovered remains from SIHP Site 2382, EU-3.	13
Table 4. Recovered remains from SIHP Site 2382, EU-5.	19

INTRODUCTION

At the request of Mr. Jonathan Cohen, in conjunction with the development of a single-family residence on approximately 10.61 acres (TMK: 3-5-7-01:5) within in Pāo'o Ahupua'a, North Kohala District, Island of Hawai'i (Figure 1), Rechtman Consulting, LLC undertook an archaeological data recovery effort at SIHP Site 2382. This site, a habitation terrace, was originally recorded by the B.P. Bishop Museum during a reconnaissance survey of Parker Ranch coastal lands and designated as site number HA-F8-35 (Soehren 1967). It was later reclassified during a coastal survey of North and South Kohala, conducted on behalf of the Department of Land and Natural Resources (DLNR), Division of State Parks, as part of a large site complex (SIHP Site 4153) containing 18 archaeological features (Bonk 1968). Site 2382 then received its current designation as the result of an archaeological surface survey with subsurface testing conducted by Archaeological Research Centers Hawaii, Inc. over the entire 10.61-acre parcel (TMK: 3-5-7-01:5), which recorded a total of 27 sites (Hammatt and Folk 1980) (Figure 2).

Hammatt and Folk recommended the vicinity of Site 2382, because it had been previously disturbed by bulldozing, as one of two areas on the property "in which house construction would have minimal impacts on archaeological resources (1980: 11)." With the exception of this site, the current landowner plans to preserve all of the archaeological features on the parcel, including one area of burials (SIHP Sites 6440, 6441, 6442, and 6443) that exists in the extreme southeast corner of the parcel and extends off the parcel to the south and east. A Burial Treatment Plan is currently being prepared for these sites and will be submitted to the Department of Land and Natural Resources-State Historic Preservation Division (DLNR-SHPD) Burials Program and the Hawai'i Island Burial Council for approval. An Archaeological Preservation Plan for the remaining sites and features is also under preparation and will be submitted to DLNR-SHPD for approval.

The data recovery plan (Rechtman 2001) for Site 2382 was drafted in compliance with *Draft* Hawaii Administrative Rules §13-278-3 and submitted to DLNR-SHPD for approval. Archaeological data recovery was decided upon as the appropriate mitigation for Site 2382 so as to exhaust its learning potential and forego the need for preservation. The plan was approved and Rechtman Consulting, LLC completed the fieldwork in October of 2001; this report details the results of that effort.

RESEARCH OBJECTIVES

This archaeological data recovery project was designed to mitigate any potential impacts to SIHP Site 2382 from the proposed development of a single-family residential complex in Conservation District-zoned land. The focus of the data recovery effort was to collect information and generate data relative to the function and age of the site. As Hammatt and Folk note, "selective salvage excavations of certain sites would add much to our knowledge of Hawaiian prehistory, particularly maritime exploration and adaptation, residence patterns and cultural development (1980: 12)." Based on the Hammatt and Folk (1980) study, Site 2382, which had already been "mostly destroyed by bulldozing," was assigned a habitation function and a Precontact age with the possibility of Historic Period modifications. A combination of erosion and recreational use of the area over the last 20 years, however, has resulted in widespread degradation and loss of site integrity. Thus, the proposed data recovery effort will serve to document what remains of this former presumably habitation site.

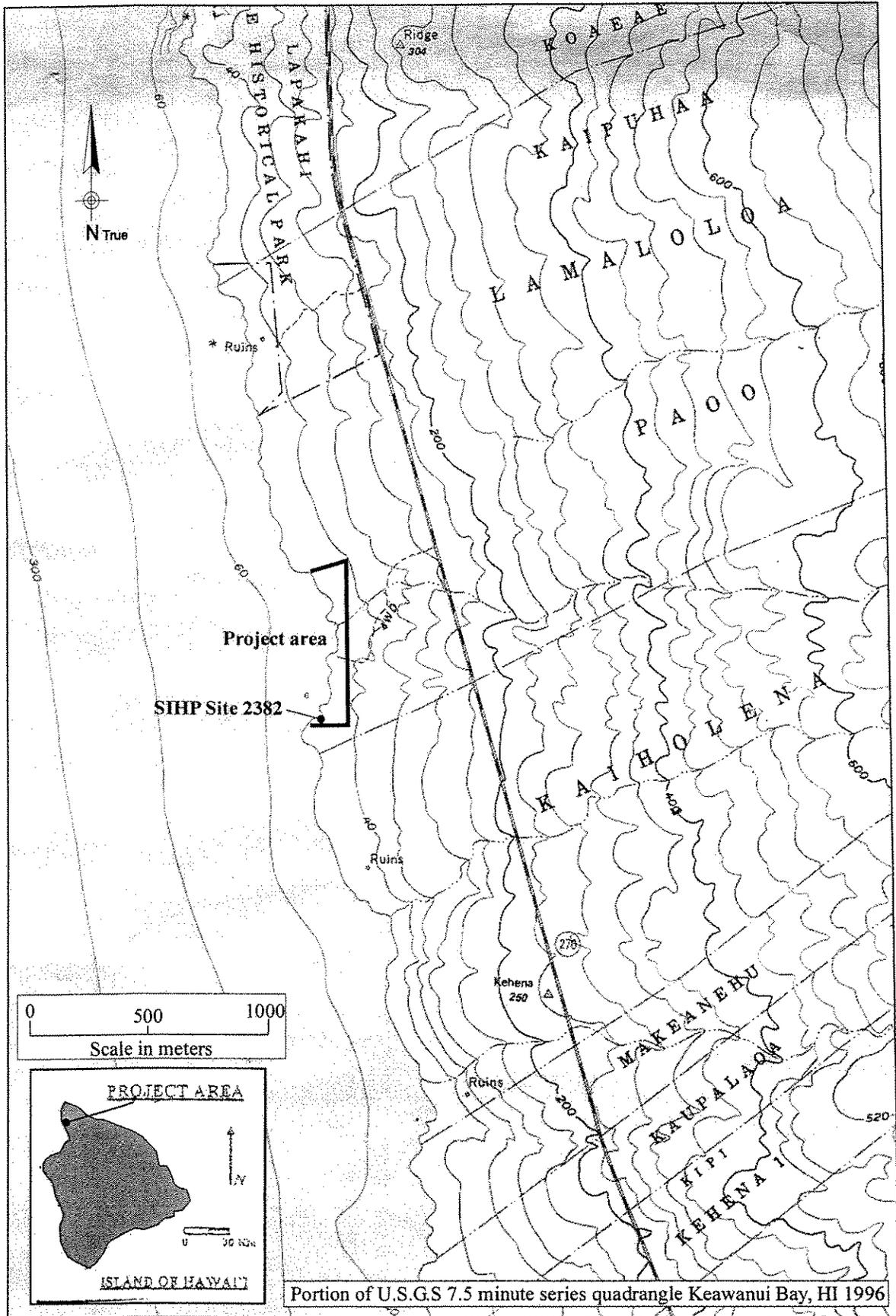


Figure 1. Project area location.

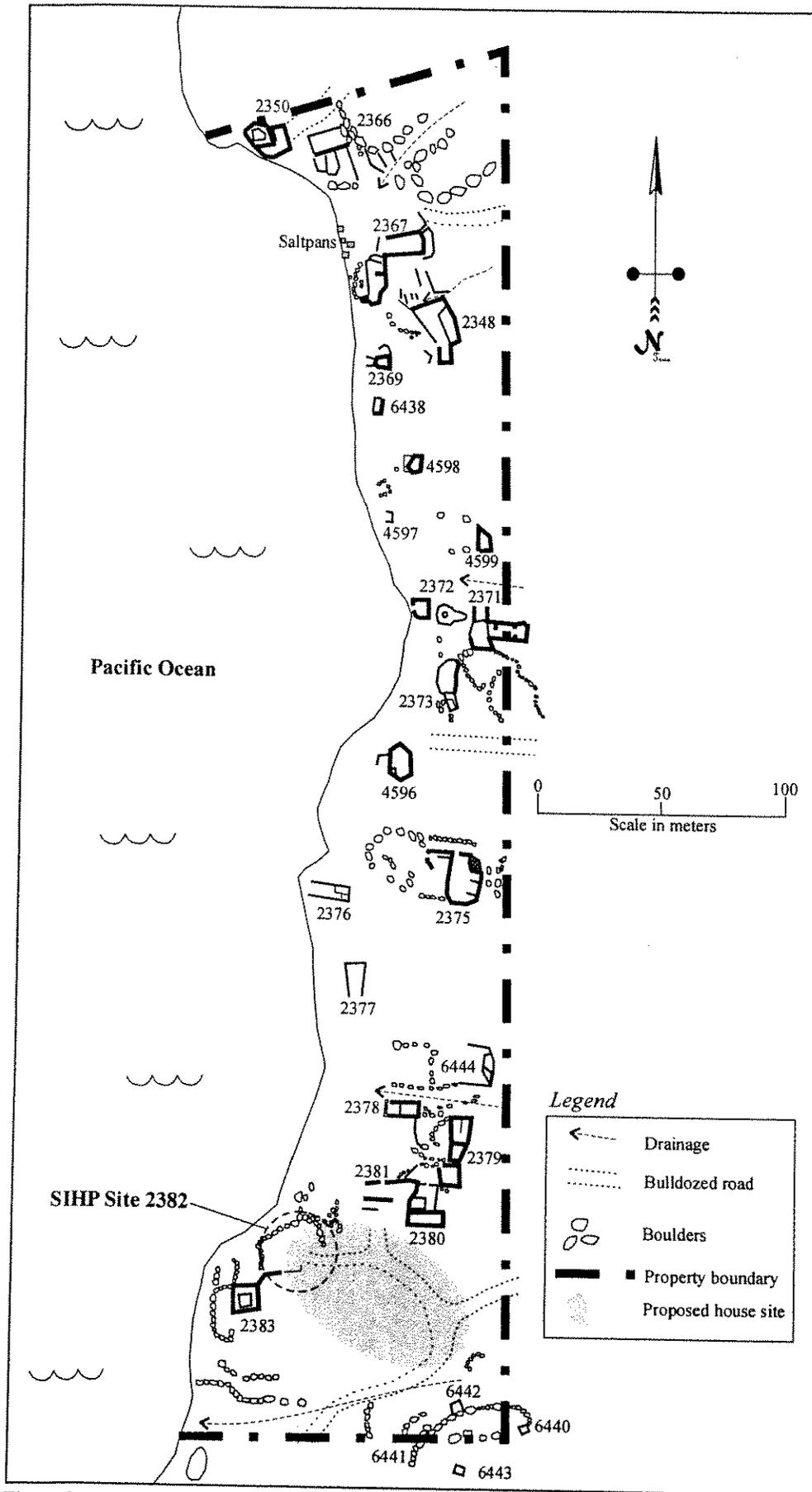


Figure 2. Project area site location map (adapted from Hammatt and Folk 1980).

SITE DESCRIPTION

SIHP Site 2382 is located on a roughly seven-acre parcel (TMK:3-5-7-01:5) of coastal land that is currently accessed via an unimproved dirt road trending west from Highway 270 along an easement through state land. The parcel sits on a coastal bluff in the middle of a small bay roughly one kilometer south of Lapakahi State Historical Park (see Figure 1). Ground surface in the area slopes 0 to 20 percent with steeper inclusions (7-28 percent) where stream erosion has occurred. The soil is classified as belonging to the Kawaihae series. It is moderately deep to deep, of medium texture, dark brown in color, rocky and very well drained (Hammatt and Folk 1980). However, throughout most of the parcel soil has eroded leaving a deflated ground surface dominated by rocks. The area receives a mean annual rainfall of 10 to 20 inches a year, with a mean annual temperature well in excess of 76° Fahrenheit (Hammatt and Folk 1980). Vegetation at the site consists of scattered *Kiawe* (*Prosopis pallidia*) and various drought resistant grasses along with annual herbs and weeds.

In 1980 Site 2382 (Figure 3) was described as follows:

Probable habitation feature, mostly destroyed by bulldozing; low retaining wall on *makai* (west) side of large irregular boundaries, possibly historic in origin; east (*mauka*) of this low wall is a small area of 'ili'ili "paving" and midden scatter. (Hammatt and Folk 1980:39)

Hammatt and Folk also excavated six test pits in and around the site with varying results (see Figure 3); however, all indicated a high level of prior site disturbance.

Test pit 3: 50 by 50 centimeter trench showing 5 to 10 centimeters of reworked water rounded pebbles and a few broken shells; disturbed by slopewash and grading. This overlies noncultural windblown silt loam over bedrock at 20 centimeters depth. (Hammatt and Folk 1980:45)

Test Pit 5: 25 by 25 centimeter trench in center of enclosure [Site 2382] showing boulder rubble with water rounded pebble matrix extending to a depth of one meter. Thinly scattered midden and cultural material. Coral abrader at 18 centimeters depth below the surface. Site is disturbed by grading. (Hammatt and Folk 1980:45)

Test Pit 6: 25 by 25 centimeter trench with 5 centimeters surface layer of water rounded pebbles, reworked by slopewash and grading. Bedrock is 14 centimeters. (Hammatt and Folk 1980:45)

Test Pit 8: This 50 by 50 centimeter trench yielded one piece of basaltic glass on the surface. Uniform strata of silt mixed with 'ili extends to bedrock at 27 centimeters. Disturbed by slopewash and grading. (Hammatt and Folk 1980:46)

Test Pit 9: This 25 by 25 centimeter trench showed two strata; 0 to 10 centimeters depth is mixed water rounded pebbles disturbed by slopewash and grading. The loose underlying strata extending to 25 centimeters depth contained a metal spark plug ring at the base above a sterile silt loam. Bedrock appears at 30 centimeters. (Hammatt and Folk 1980:46)

Test Pit 14: In center of small circular alignment, this 25 by 25 centimeters trench showed a thin scatter of water rounded pebbles resulting from slopewash rock extending to bedrock 5 centimeters below the surface. The circular alignment is a modern structure built by fisherman. (Hammatt and Folk 1980:47)

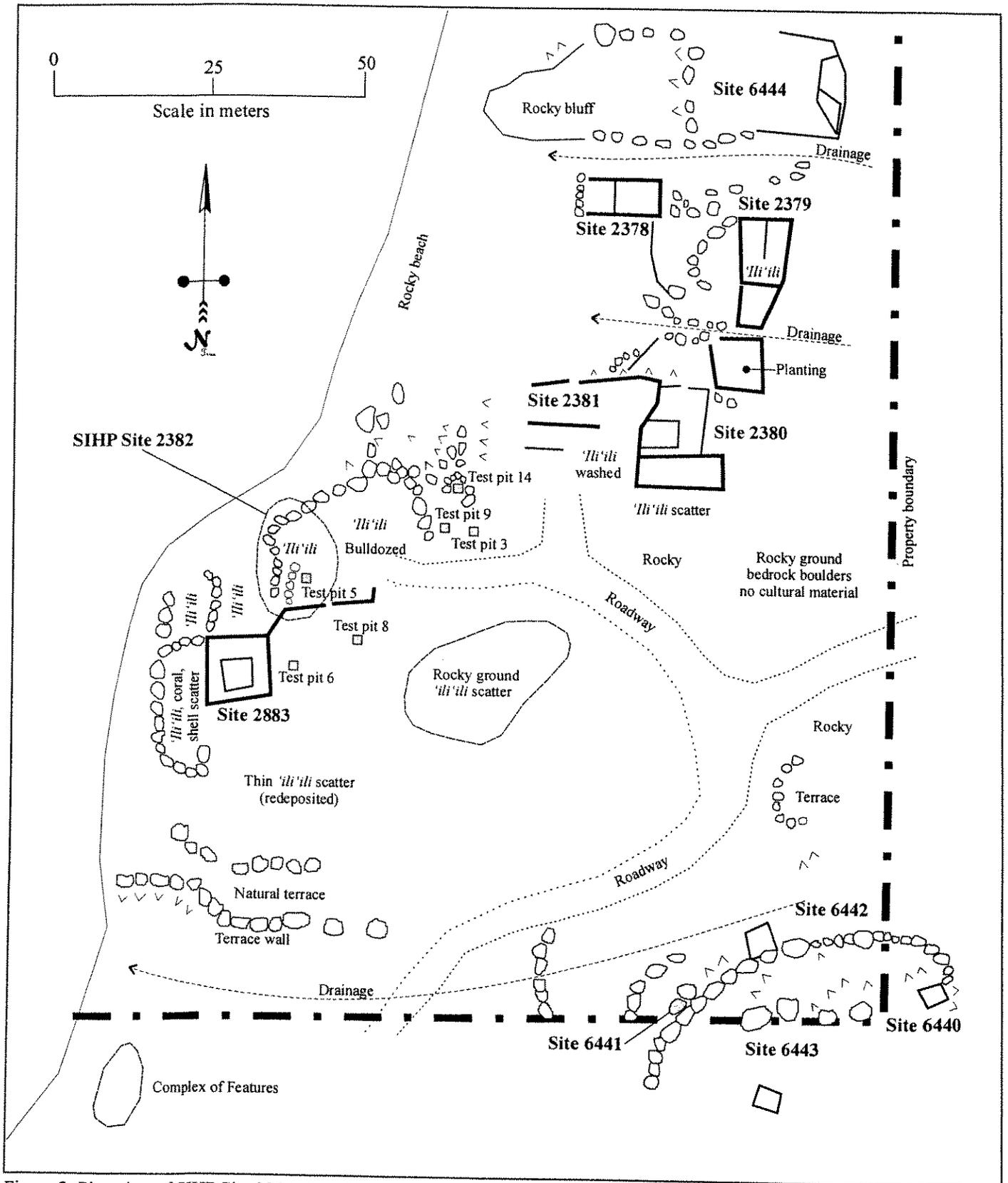


Figure 3. Plan view of SIHP Site 2382 (from Hammatt and Folk 1980).

By the time of this data recovery effort, the level of disturbance to Site 2382 reported in 1980 had increased. The paved surface of the site had undergone further bulldozing and is currently used for parking and camping. The southern and eastern rock alignments that are shown on Figure 3 possibly delineating the feature are no longer present, and much of the western and northern walls/faces have collapsed. Furthermore, a wooden tenting platform (6 meters by 3 meters) and a modern fire hearth have been erected on the surface of the site along its northern edge. Also, a large *kiawe* (*Prosopis pallida*) is growing out of the site's northwest corner (Figure 4).

As previously mentioned, twenty-seven total sites, grouped in five main clusters, were recorded on the study parcel (TMK:3-5-7-01:5) as a result of the Hammatt and Folk (1980) investigation (see Figure 2). These sites include seventeen habitations, five canoe sheds, one shrine, three burials, and numerous terraced areas. A complete listing of the sites located within TMK:3-5-7-01:5 can be seen in Table 1.



Figure 4. SIHP Site 2382 view to north west.

Table 1. Archaeological sites located within TMK:3-5-7-01:5.*

Site #	Site Function	Site #	Site Function
2348	Habitation	2381	Possible Canoe Shed
2350	Habitation	2382	Probable Habitation
2366	Habitation	2383	Probable Shrine (<i>ko'a</i>)
2367	Canoe Shed	4596	Habitation
2369	Habitation	4597	Possible Habitation
2371	Habitation	4598	Possible Habitation
2372	Habitation	4599	Probable Habitation
2373	Habitation	6438	Habitation
2375	Habitation	6440	Probable Burial
2376	Canoe Shed	6441	Burial
2377	Canoe Shed	6442	Possible burial
2378	Canoe Shed	6443	Probable Burial
2379	Probable Habitation	6444	Probable Habitation
2380	Probable Habitation		

* For a complete site descriptions see Hammatt and Folk (1980).

THE DATA RECOVERY EFFORT

Archaeological Fieldwork

The archaeological data recovery effort at SIHP Site 2382 took place on October 24, 25, and 26, 2001 under the direction of Robert B. Rechtman Ph.D., with the assistance of Matthew R. Clark, B.A., Dennis S. Dougherty, B.A., and Richard C Ruldolph, B.A. Fieldwork strategies followed the guidelines laid out in the data recovery plan drafted by Rechtman (2001) and approved by DLNR-SHPD. The primary research objective was to collect information and generate data relative to the function and age of the site. As the data recovery plan called for, the remains of Site 2382 were mapped in detail, photographs were taken, and five excavation units (EUs) were strategically placed on the site's surface in an effort to maximize the likelihood of recovering carbon samples and to augment the information already collected relative to the site's function and construction. The lack of intact cultural deposits at the site, however, owing to its deteriorated nature and further bulldozing since the Hammatt and Folk (1980) study, required that the size and placement of the excavation units called for in the data recovery plan be altered to reflect the field conditions.

The data recovery plan called for the following configuration of excavation units:

One 1 x 1 meter unit at the northwest interior corner of the feature to expose the construction details of the adjoining west and north walls. This will be done in an effort to assess the contemporaneity of the walls.

Two 1 x 2 meter units, one along the west wall and one along the north wall, to expose the interior of the wall face revealing the depth of the construction relative to bedrock. This will aid in interpreting the temporal relationship of the cultural deposit with the construction of the feature. In other words, does any part of the cultural deposit predate the construction of the formal stone feature? This is an on-going research question for such sites in the North Kohala area (see Dye and Maly 2000; Rechtman et al. 2001).

Two 2 x 2 meter units will be excavated on top of the feature area to recover as much cultural material as possible to aid in the interpretation of site function. (Rechtman 2001:4-5)

In actuality, one 1 x 1 meter unit was excavated in the northwest corner, two 1 x 1.5 meter units were excavated along the west wall, one 1 x 1.5 meter unit was excavated along the north wall, and one 1 x 1 meter unit was excavated on top of the feature (Figure 5). As will be demonstrated below, this configuration of excavation units sufficiently covered intact sections of Site 2382 and adequately served to mitigate any potential impacts to the site resulting from the construction of a single-family residence.

Excavation of the units proceeded following natural stratigraphic layers. All excavated soils were passed through ¼ inch mesh screen, and all recovered cultural material was remanded to the laboratory for detailed analyses. Record level forms, that include soil descriptions, munsell color notations, and listings of cultural constituents collected, were filled out for each level of each unit. Upon completion of a unit, a profile drawing was prepared and photographs taken. The excavation units were then backfilled and returned as close to their original state as possible. The results of the excavations are as follows:

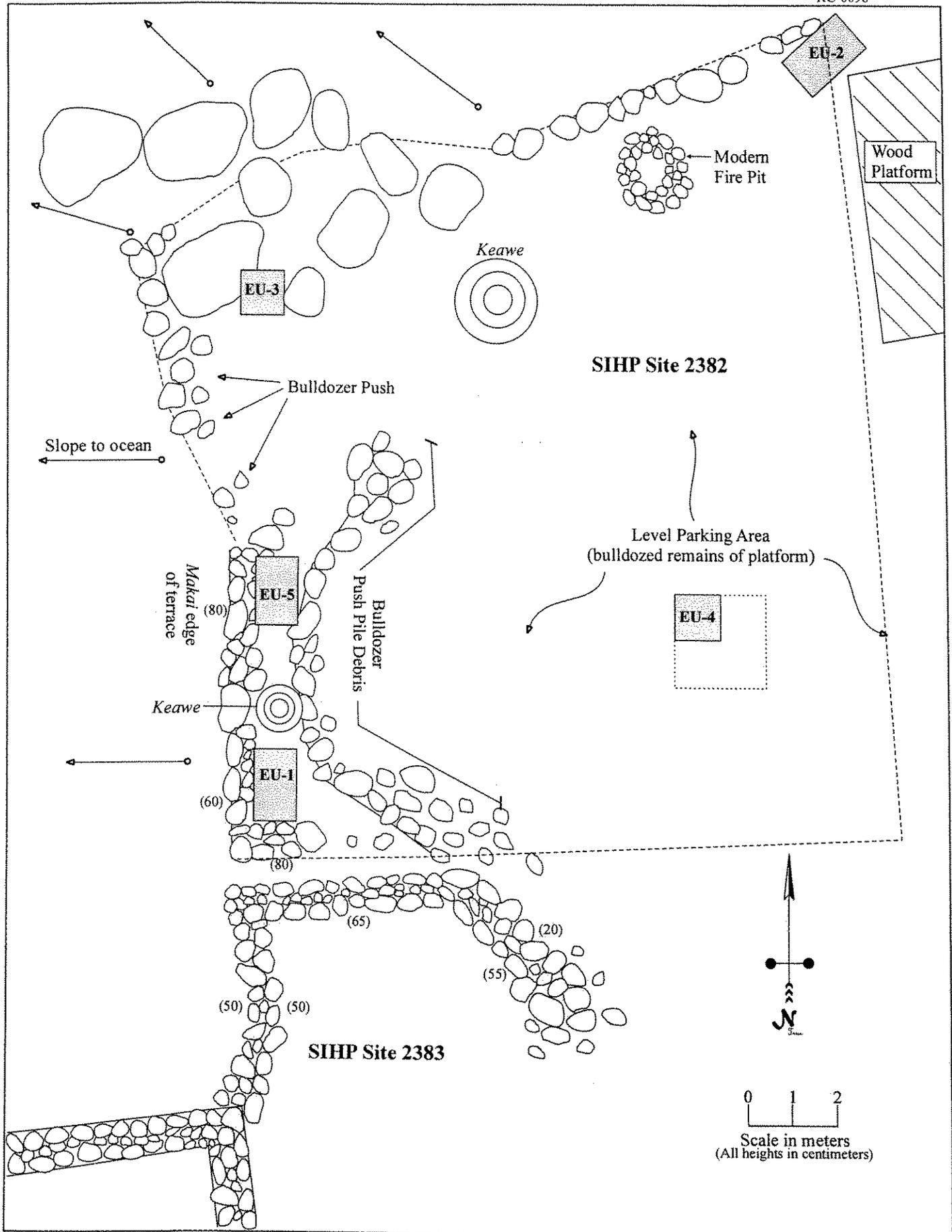


Figure 5. SIHP Site 2382 plan view and Excavation Unit (EU) placement..

Excavation Unit 1 (EU-1)

EU-1 was excavated within the extreme southwestern corner of Site 2382 (see Figure 5). The 1 x 1.5 meter unit was orientated along cardinal directions parallel with and adjacent to the western wall of the terrace. Excavation of EU-1 revealed a four-layer stratigraphic sequence and uncovered two distinct architectural layers within the terrace's interior (Figure 6).

Layer I, the uppermost layer, consisted of very dark grayish brown (10YR 3/2) silty loam integrated with roots and water worn gravels ('*ili'ili*). Layer I extended from 5-10 centimeters below ground surface and terminated at a leveled '*ili'ili* surface (Layer II). Cultural material recovered from this top layer included various marine shell fragments and fish bone, along with modern glass and plastic fragments (Table 2).

Layer II, positioned directly beneath Layer I, consisted of a heavily compacted very dark grayish brown (10YR 3/2) silty loam integrated with a high concentration of '*ili'ili*. Layer II extended between 5-10 centimeters below the base of Layer I and was observable throughout the entire unit. This '*ili'ili* pavement rested on large water worn cobbles (Layer III) and, along the west wall, discolored ashen soil (Subfeature A), possibly the remains of a hearth feature. Cultural material recovered from Layer II included marine shell fragments, fish bone, *kukui* nut fragments, and modern glass.

Subfeature A, located along the western edge of EU-1 at a depth of 12 to 28 centimeters below ground surface, consisted of reddish brown (5YR 4/4) clayey loam mixed with ash. Sub-feature A may represent the remains of a fire pit. Unfortunately, only a small amount of charcoal could be identified within the soil, not nearly enough for dating. Cultural material recovered from the subfeature included marine shell fragments, *kukui* nut fragments, and one metal nail (see Table 2). Of the total marine shell recovered from the sub-feature (130.8 grams) 15.6 grams (12 %) were water worn and not considered food remains.

Layer III (Figure 7), situated directly beneath Layer II and Subfeature A, consisted of compacted yellowish red (5YR 4/6) clayey silt integrated with large paving stones (Figure 8), roots and rootlets. Layer III extended between 20-35 centimeters below ground surface. The large rounded water worn cobbles (35-50 centimeters in diameter) were arranged in a leveled manner and may have served as a "sub-flooring" for the overlying '*ili'ili* pavement (Layer II) (Figure 7). Cultural material recovered from Layer III included marine shell fragments, fish bone, and *kukui* nut fragments (see Table 2). This layer rested on Layer IV.

Layer IV consisted of culturally sterile yellowish red (5YR 4/6) compacted clayey silt mixed with decomposing bedrock. Layer IV extended 10 centimeters below the base of Layer III to a depth of 45 centimeters below ground surface, where it terminated at relatively level bedrock. Excavation of EU-1 terminated upon reaching bedrock.

Table 2. Recovered remains from SIHP Site 2382, EU-1.

ACC. No.	Layer	Material	Type/Species	NISP/count	MNI	Weight (g.)
1	I	Shell	<i>Nerita</i>	34	30	7.6
2	I	Shell	<i>Cypraea</i>	121	6	123.0
3	I	Shell	<i>Cellana</i>	70	20	29.6
4	I	Shell	<i>Drupa</i>	44	12	39.4
5	I	Shell	<i>Conus</i>	14	10	11.6
6	I	Shell	<i>Echinodia</i>	8	1	1.4
7	I	Glass	Bottle	32	-	31.5
8	I	Plastic	Miscellaneous	29	-	4.0
9	I	Shell	<i>Nassarius</i>	1	1	0.9
10	I	Shell	<i>Littorina</i>	1	1	0.2
11	I	Shell	Water worn	34	3	8.4
12	I	Shell	<i>Hipponicidae</i>	4	4	1.0
13	I	Shell	<i>Bursa</i>	2	2	2.0

Table 2 Continued.

ACC. No.	Layer	Material	Type/Species	NISP/count	MNI	Weight (g.)
14	I	Bone	Mammal	2	1	0.6
15	I	Bone	Fish	2	1	0.3
17	II	Shell	<i>Nerita</i>	312	289	100.3
18	II	Shell	<i>Cellana</i>	191	84	77.6
19	II	Shell	<i>Cypraea</i>	314	13	532.3
20	II	Shell	<i>Drupa</i>	162	40	146.8
21	II	Shell	<i>Hipponicidae</i>	20	20	4.9
22	II	Shell	<i>Conus</i>	52	31	79.4
23	II	Shell	<i>Fimbriidae</i>	19	3	12.0
24	II	Organic	<i>Kukui</i>	16	-	17.5
25	II	Shell	<i>Nassarius</i>	3	3	2.5
26	II	Shell	<i>Littorina</i>	10	10	1.9
27	II	Shell	<i>Echinodia</i>	98	1	24.0
28	II	Shell	<i>Bursa</i>	6	6	5.4
29	II	Shell	<i>Trochus</i>	1	1	1.2
30	II	Shell	<i>Morula</i>	1	1	2.0
31	II	Bone	Fish	1	1	1.2
32	II	Glass	Bottle	4	-	8.2
33	II	Shell	Water worn	92	-	37.1
34	II	Shell	<i>Cypraea</i>	23	3	48.2
35	II	Shell	<i>Nerita</i>	14	12	3.6
36	II	Shell	<i>Drupa</i>	9	5	16.5
37	II	Shell	<i>Conus</i>	15	5	31.7
38	II	Shell	<i>Cellana</i>	11	6	3.0
40	II	Shell	<i>Bursa</i>	2	1	1.3
41	II	Shell	<i>Nassarius</i>	1	1	1.0
44	II	Shell	<i>Echinodia</i>	64	1	14.8
45	II	Organic	<i>Kukui</i>	2	-	1.3
46	II	Metal	Nail	1	-	1.7
47	III	Shell	<i>Echinodia</i>	54	1	20.0
48	III	Shell	<i>Nerita</i>	30	28	9.1
49	III	Shell	<i>Conus</i>	23	20	27.9
50	III	Shell	<i>Drupa</i>	22	12	16.6
51	III	Shell	<i>Cypraea</i>	77	4	87.1
52	III	Shell	<i>Cellana</i>	15	13	6.0
53	III	Shell	<i>Bursa</i>	4	3	7.2
54	III	Shell	<i>Hipponicidae</i>	11	11	2.2
55	III	Shell	<i>Fimbriidae</i>	15	1	17.6
56	III	Shell	<i>Littorina</i>	3	3	1.5
57	III	Shell	<i>Trochus</i>	1	1	1.2
58	III	Organic	<i>Kukui</i>	9	-	18.5
59	III	Bone	Fish	2	1	0.5
60	III	Shell	Water worn	44	-	18.1
61	III	Shell	<i>Trivia</i>	1	1	1.9

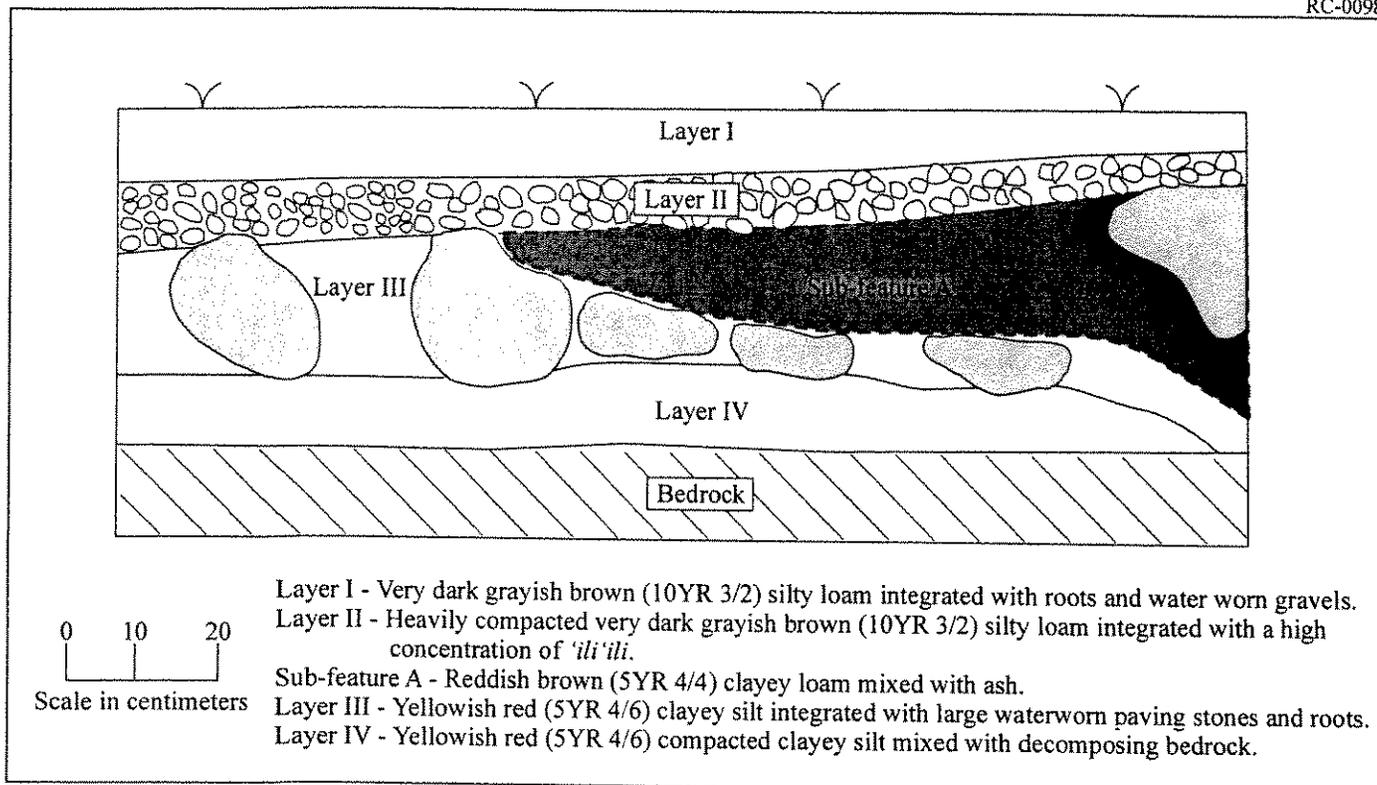


Figure 6. SIHP Site 2382 Excavation Unit 1 (EU-1) west wall profile.

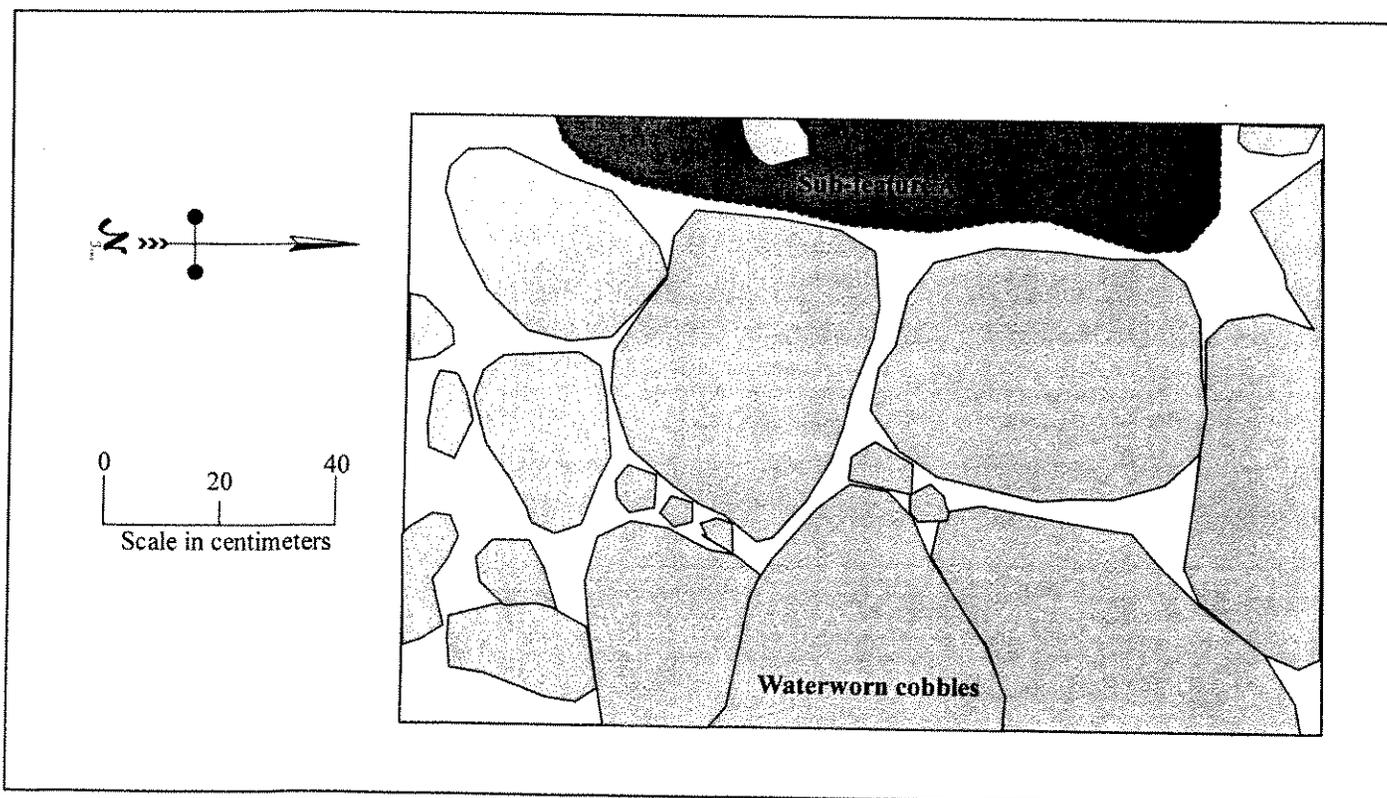


Figure 7. SIHP Site 2382 Excavation Unit 1, surface of Layer III plan view.

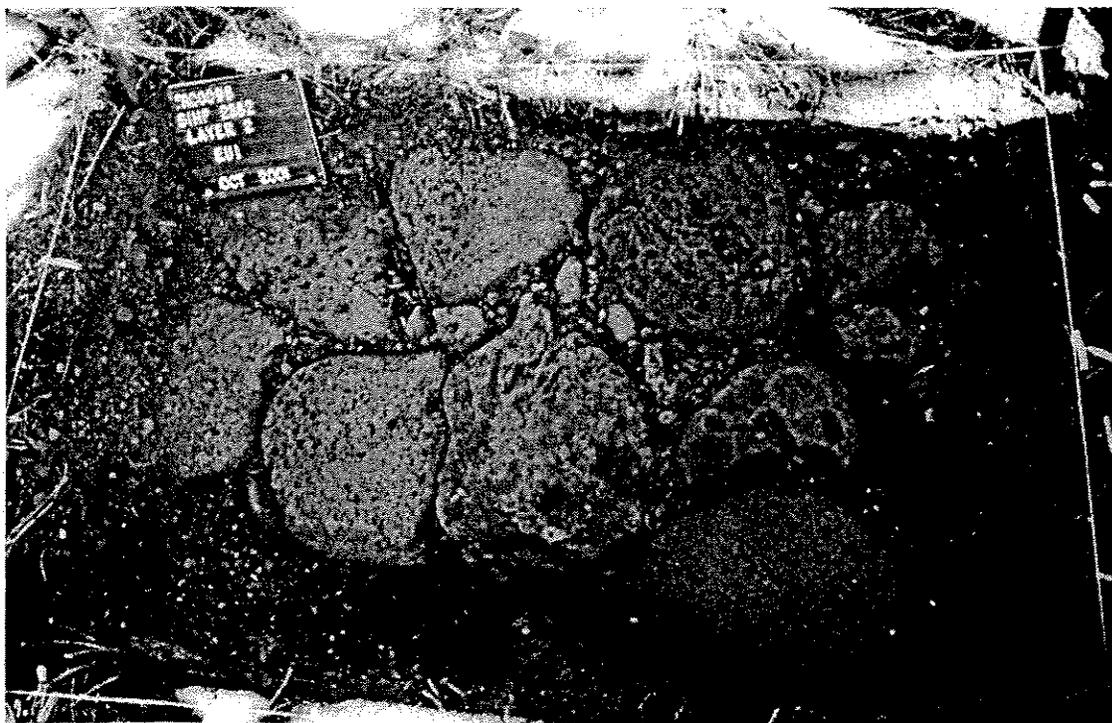


Figure 8. SIHP Site 2382 Excavation Unit 1 base of Layer II view to east.

Excavation Unit 2 (EU-2)

EU-2 was excavated in the extreme northeastern portion of Site 2382 (see Figure 5). This 1.0 x 1.5 meter unit, orientated at 48/228°, was placed along a possible northern wall remnant of the terrace. Excavation of EU-2 revealed that there was not an intact cultural deposit at this location within Site 2382. Instead, excavation revealed a highly disturbed single homogenous soil layer (Figure 9), the result of bulldozing activity in the area. Layer I, the only layer, consisted of brown (10 YR 4/3) silty loam integrated with fill/push material. The excavated matrix consisted of small gravels and cobbles with larger boulders throughout the unit. Modern rubbish and debris was identified throughout, extending from ground surface 68 centimeters to the base of Layer I at bedrock. Cultural material recovered from the unit included glass, metal, plastic, and marine shell fragments. The collected cultural material was returned to the unit upon completion of excavation because there was no intact cultural context with which to assess its significance. Large boulders, located along the northeastern edge of the unit, were most likely pushed there by a bulldozer during the construction of the current leveled parking area and do not represent a terrace wall. Excavation of EU-2 terminated upon reaching bedrock (Figure 10).

Excavation Unit 3 (EU-3)

EU-3 was excavated along the northwest interior corner of the feature to expose the construction details of the adjoining west and north walls (see Figure 5). This was done in an effort to assess the contemporaneity of the walls. The 1 x 1 meter unit, orientated along the cardinal directions, was situated within a grouping of large boulders. The boulders are located at the top of sloping area that drops off steeply to the north and west towards the coastline. Excavation of EU-3 revealed a four-layer sequence extending from ground surface to bedrock (Figure 11).

Layer I consisted of brown (10 YR 3/2) fine silty loam integrated with decaying organic material, roots, and modern rubbish that included fishing line, styrofoam, plastic, metal shell casings, pull-tabs, glass, and cut cow bones. This cultural material was not collected. Layer I extended between 10-20 centimeters below ground surface and terminated at a distinct layer of water worn gravels (*ili'ili*) (Layer II).

Layer II consisted of heavily compacted very dark grayish brown (10 YR 3/2) silty loam integrated with high concentrations of 'ili 'ili throughout. This architectural layer extended from the base of Layer I to 26 centimeters below ground surface. Cultural material recovered from the layer included marine shell fragments, fish bone, kukui nut fragments, and glass (Table 3).

Layer III, situated directly beneath Layer II, consisted of dark gray (10YR 4/1) silty loam integrated with 'ili 'ili and was differentiated from Layer II by a charcoal (ash) staining that extended throughout the unit. This layer extends to 36 centimeters below the ground surface, and a charcoal concentration was identified in the western central portion of the unit at approximately 30 centimeters below the ground surface. A carbon sample was collected and sent to Beta Analytic, Inc. for radiocarbon age determination. The sample returned a modern date indicating that the material had been living within the last fifty years (Appendix A), further attesting to the amount of disturbance at site 2382. The northern portion of the unit dropped off toward the north and extended into a space created by the large boulders. Cultural material recovered from Layer III included marine shell fragments, kukui nut fragments, and one bone fragment (mammal, unidentified).

Layer IV consisted of compacted yellowish red (5YR 4/6) clayey silt integrated with gravels, cobbles, and roots. This layer extended 45 centimeters below ground surface and appears to correspond with the culturally sterile layer identified in EU-1. No cultural material was recovered from Layer IV, and excavation of EU-3 terminated upon reaching bedrock (Figure 12).

Table 3. Recovered remains from SIHP Site 2382, EU-3.

ACC. No.	Layer	Material	Type/Species	NISP/count	MNI	Weight (g)
62	II	Shell	<i>Drupa</i>	273	96	273.3
63	II	Shell	<i>Nerita</i>	283	249	87.6
64	II	Shell	<i>Cypraea</i>	345	10	467.2
65	II	Shell	<i>Echinodia</i>	43	1	9.0
66	II	Shell	<i>Cellana</i>	82	40	59.3
67	II	Shell	<i>Conus</i>	70	38	79.0
68	II	Shell	<i>Fimbriidae</i>	24	1	19.5
69	II	Shell	<i>Hipponicidae</i>	15	15	4.1
70	II	Shell	<i>Littorina</i>	4	4	1.0
71	II	Shell	<i>Nassarius</i>	10	5	8.1
72	II	Shell	<i>Trivia</i>	2	2	4.9
73	II	Shell	<i>Terebra</i>	1	1	0.9
74	II	Shell	Water worn	175	-	84.3
75	II	Organic	<i>Kukui</i>	3	-	1.2
76	II	Glass	Bottle	1	-	0.6
77	II	Bone	Mammal	1	1	0.8
78	II	Metal	Miscellaneous	40	-	5.8
79	III	Shell	<i>Cypraea</i>	36	2	57.5
80	III	Shell	<i>Drupa</i>	25	158	39.0
81	III	Shell	<i>Nerita</i>	32	31	9.9
82	III	Shell	<i>Conus</i>	11	5	12.0
83	III	Shell	<i>Cellana</i>	8	5	9.5
84	III	Shell	<i>Echinodia</i>	28	1	19.0
85	III	Shell	<i>Littorina</i>	2	2	0.9
86	III	Shell	<i>Nassarius</i>	2	2	1.4
87	III	Shell	<i>Cypraea</i>	1	1	2.0
88	III	Shell	<i>Cypraea</i>	1	1	1.7
89	III	Shell	Water worn	5	-	4.8
90	III	Organic	<i>Kukui</i>	1	-	2.6
91	III	Bone	Mammal	1	-	1.5

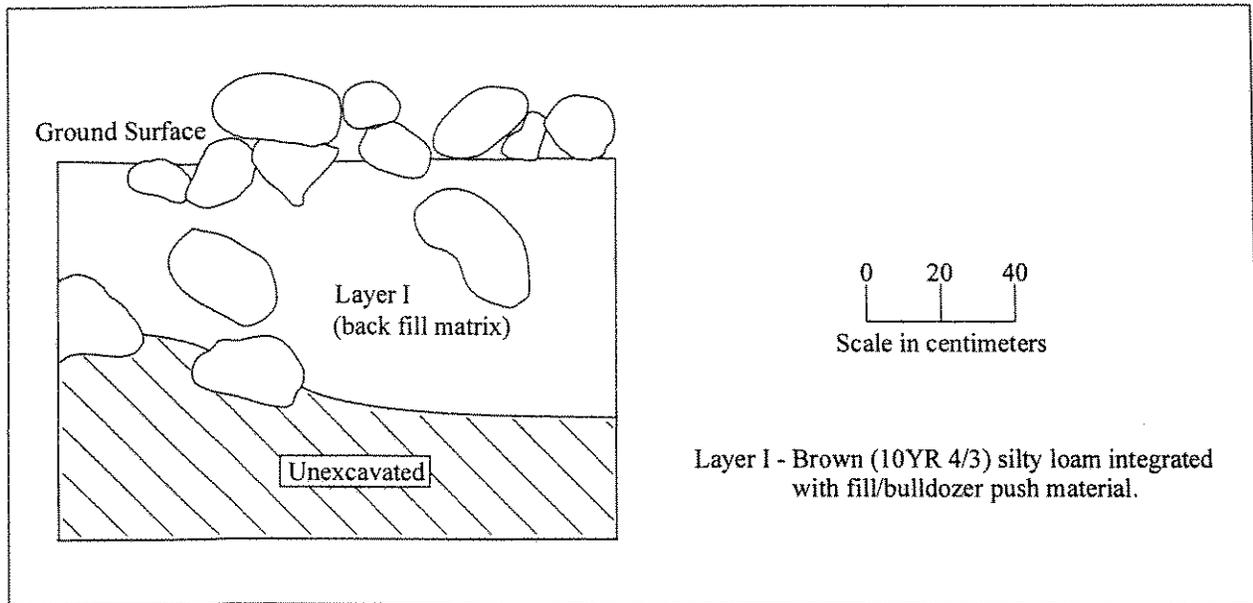


Figure 9. SIHP Site 2382 Excavation Unit 2 northeast wall profile.



Figure 10. SIHP Site 2382 Excavation Unit 2 view to northeast.

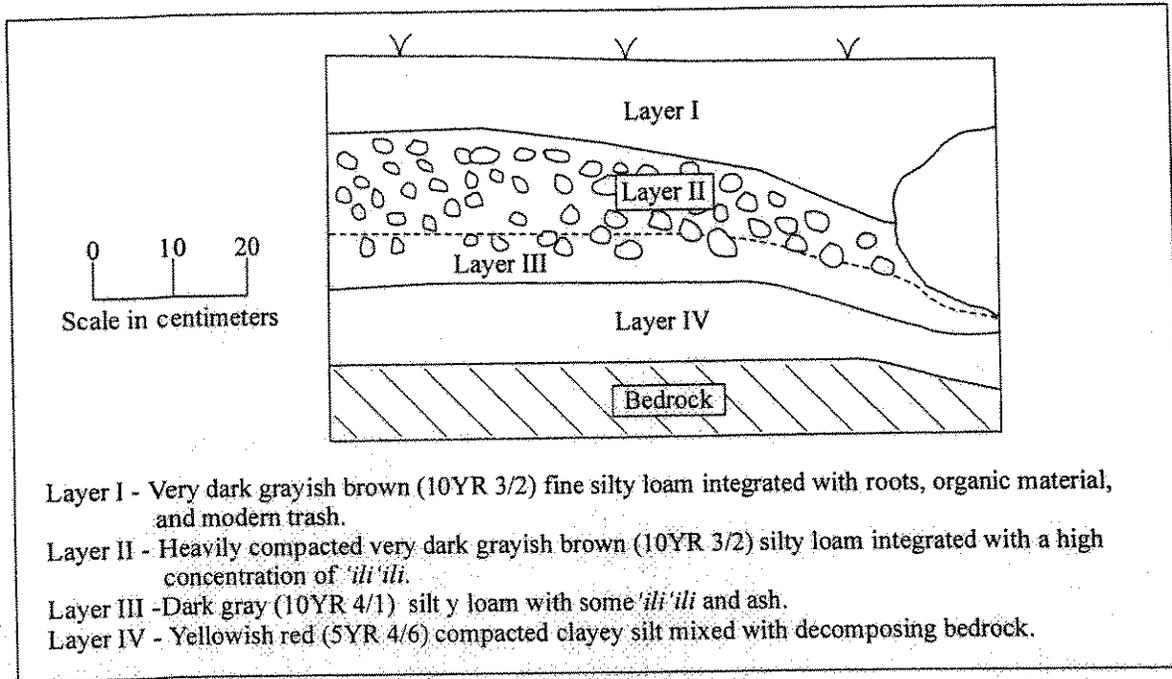


Figure 11. SIHP Site 2382 Excavation Unit 3 west wall profile.

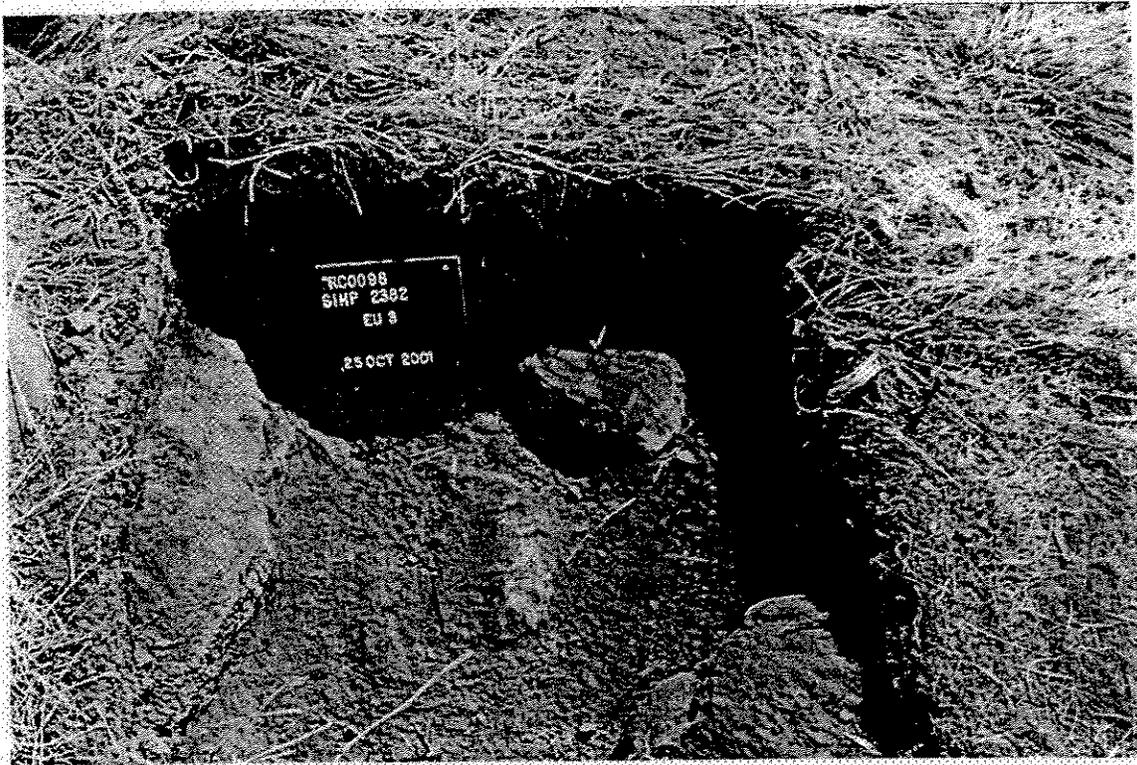


Figure 12. SIHP Site 2382 Excavation Unit 3 view to west.

Excavation Unit 4 (EU-4)

EU-4 was excavated in the central portion of Site 2382 (see Figure 5). This 1 x 1 meter unit was placed according to the cardinal directions along the western (*mauka*) edge of the terrace. Excavation of EU-4 revealed a single stratigraphic soil layer of highly compacted brown (10YR 4/3) fine silt mixed with gravels. Layer I extended as deep as 25 centimeters below ground surface where it terminated at bedrock (Figure 13). No cultural material was recovered from EU-4. The heavy compaction encountered within the unit was most likely the result of frequent vehicular traffic on this portion of the terrace, and the lack of a cultural deposit indicates that Site 2382 had been completely bulldozed away in this locale. Excavation of EU-4 terminated upon reaching bedrock (Figure 14).

The data recovery plan submitted to and accepted by DLNR (Rechtman 2001) recommended that two 2 x 2 meter units be excavated on top of the feature in order to recover as much cultural material as possible so as to aid in the interpretation of site function. However, because no cultural deposit was encountered during the excavation of EU-4 (which was originally set up as a 2 x 2 meter unit, but only one 1 x 1 meter quadrant was excavated), it was determined that further work in the area would not add to our understanding of Site 2382 and was therefore unnecessary. Consequently, the configuration of units called for in the data recovery plan was altered to reflect these findings.

Excavation Unit 5 (EU-5)

EU-5 was excavated along the *makai* edge of Site 2382 approximately 3 meters north of EU-1 (see Figure 5). The placement of this unit, in a location with a high likelihood of revealing an intact cultural deposit, was decided upon using the results of the previously excavated units. EU-5 was excavated in an area identified during the current study as the western terrace edge. It was placed down slope of all bulldozed push material and grading debris. Excavation of EU-5 revealed a two-layer stratigraphic sequence with a partially intact architectural layer present (Figure 15).

Layer I consisted of compacted very dark grayish brown (10YR 3/2) silty loam integrated with organic material and water worn gravels (*'ili'ili*). This layer extended to a maximum depth of 25 centimeters below ground surface. Cultural material identified in Layer I included marine shell fragments, fish bone, *kukui* nut fragments, rusted metal fragments and nails (Table 4). The percentage of *'ili'ili* within the layer decreased with depth. Bedrock material was exposed in both the southern portion and the northeastern portion of the unit at the base of Layer I. No paving stones, similar to those encountered in EU-1, were observed within EU-5. The base of Layer I gradually gradated to a darker grayish layer (Layer II) that may correspond with the ashy layer observed in EU-3 (see EU-3, Layer III).

Layer II consisted of dark gray (10YR 4/1) silty loam with a slight ash discoloration, which extended to a maximum depth of 41 centimeters below ground surface. Cultural material recovered from Layer II included marine shell fragments, fish and mammal bone, *kukui* nut fragments, and modern glass fragments. This layer was situated on a culturally sterile layer of decomposing bedrock and bedrock material. Excavation of EU-4 terminated upon reaching bedrock (Figure 16).

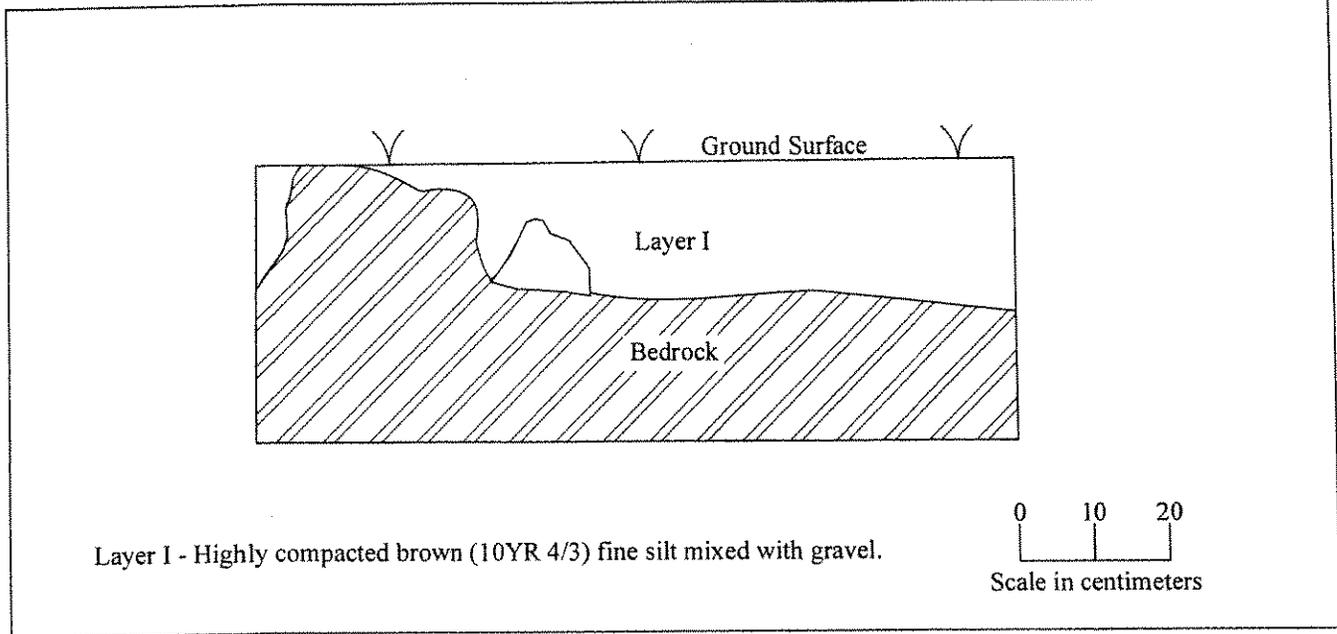


Figure 13. SIHP Site 2382 Excavation Unit 4 south wall profile.



Figure 14. SIHP Site 2382 Excavation Unit 4 view to south.

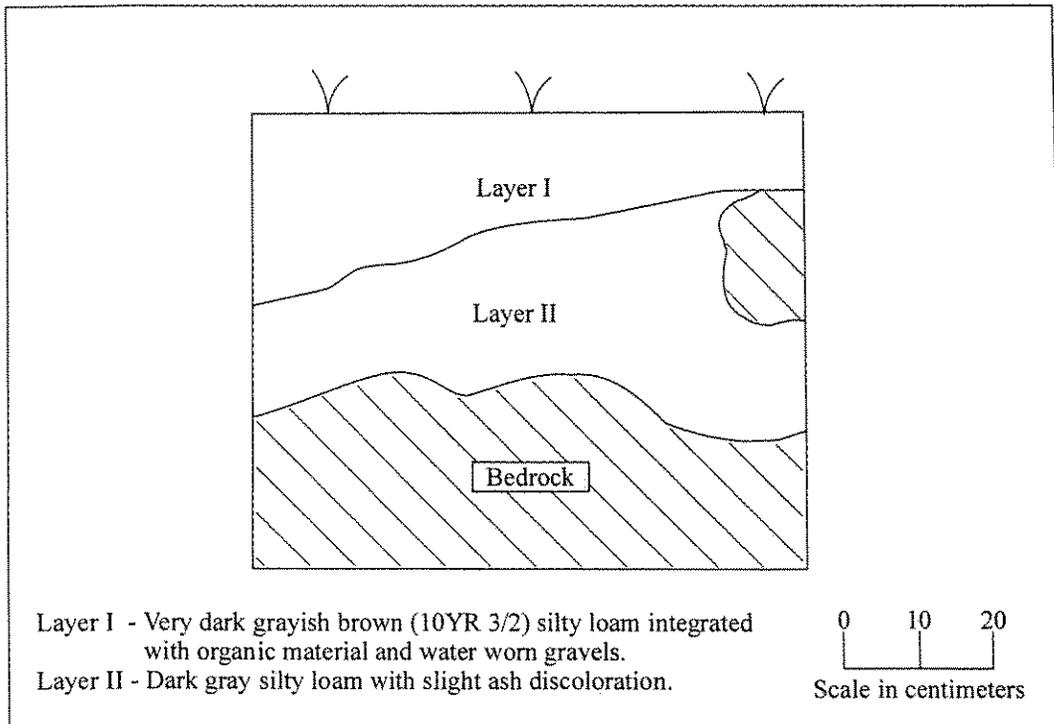


Figure 15. SIHP Site 2382 Excavation Unit 5 west wall profile.



Figure 16. SIHP Site 2382 Excavation Unit 5 view to west.

Table 4. Recovered remains from SIHP Site 2382, EU-5.

<i>ACC. No.</i>	<i>Layer</i>	<i>Material</i>	<i>Type/Species</i>	<i>NISP/count</i>	<i>MNI</i>	<i>Weight (g.)</i>
92	I	Shell	<i>Cypraea</i>	501	36	1010.9
93	I	Shell	<i>Nerita</i>	1115	1097	393.0
94	I	Shell	<i>Drupa</i>	326	152	368.4
95	I	Shell	<i>Conus</i>	184	97	220.5
96	I	Shell	<i>Cellana</i>	223	167	116.4
97	I	Shell	<i>Echinodia</i>	120	1	67.0
98	I	Shell	<i>Hipponicidae</i>	73	71	24.5
99	I	Shell	<i>Littorina</i>	12	12	3.5
100	I	Shell	<i>Nassarius</i>	6	5	8.8
101	I	Shell	<i>Bursa</i>	10	1	8.4
102	I	Shell	<i>Cypraea</i>	3	2	5.0
103	I	Shell	<i>Strombus</i>	7	5	2.8
104	I	Shell	<i>Fimbriidae</i>	31	-	37.8
105	I	Shell	Water worn	131	-	77.5
106	I	Organic	<i>Kukui</i>	35	-	17.7
107	I	Bone	Fish	17	-	2.8
108	I	Bone	<i>Sus</i>	3	-	4.9
109	I	Metal	Nail	1	-	2.2
110	I	Metal	Miscellaneous	1	-	0.2
111	II	Shell	<i>Echinodia</i>	199	1	66.2
112	II	Shell	<i>Nerita</i>	2.5	200	61.5
113	II	Shell	<i>Cellana</i>	23	23	28.7
114	II	Shell	<i>Conus</i>	12	12	31.6
115	II	Shell	<i>Drupa</i>	24	24	52.3
116	II	Shell	<i>Cypraea</i>	9	9	271.0
117	II	Shell	<i>Hipponicidae</i>	28	28	7.2
118	II	Shell	<i>Fimbriidae</i>	1	1	7.2
119	II	Shell	<i>Littorina</i>	1	1	0.2
120	II	Shell	Water worn	54	-	31.2
121	II	Organic	<i>Kukui</i>	18	-	11.7
122	II	Glass	Bottle	1	1	1.6
123	II	Bone	Fish	1	1	0.7
124	II	Bone	Mammal	1	1	2.0

DISCUSSION

A Generalized Model of Hawaiian Prehistory

The generalized cultural sequence that follows is based on Kirch's (1985) model. The Settlement or Colonization Period is believed to have occurred in Hawai'i between AD 300-600 from the southern Marquesas Islands. This was a period of great exploitation and environmental modification, when early Hawaiian farmers developed new subsistence strategies by adapting their familiar patterns and traditional tools to their new environment (Kirch 1985; Pogue 1978). Their ancient and ingrained philosophy of life tied them to their environment and kept order. Order was further assured by the conical clan principle of genealogical seniority (Kirch 1984). According to Fornander (1969), the Hawaiians brought from their homeland certain universal Polynesian customs: the major gods *Kane*, *Ku*, and *Lono*; the *kapu* system of law and order; cities of refuge; the 'aumakua concept; various superstitions; and the concept of *mana*.

The Development Period (A.D. 600–1100) brought about a uniquely Hawaiian culture. The portable artifacts found in archaeological sites of this period reflect not only an evolution of the traditional tools, but some distinctly Hawaiian inventions. The adze (*ko'i*) evolved from the typical Polynesian variations of plano-convex, trapezoidal, and reverse-triangular cross-section to a very standard Hawaiian rectangular quadrangular tanged adze. A few areas in Hawai'i produced quality basalt for adze production. Mauna Kea on the island of Hawai'i was a well-known adze quarry. The two-piece fishhook and the octopus-lure breadloaf sinker are Hawaiian inventions of this period, as are 'ulu *maika* stones and *lei niho palaoa*. The later was a status item worn by those of high rank, indicating a trend toward greater status differentiation (Kirch 1985).

The Expansion Period (A.D. 1100–1650) is characterized by the greatest social stratification, major socioeconomic changes, and intensive land modification. Most of the ecologically favorable zones of the windward and coastal regions of all major islands were settled and the more marginal leeward areas were being developed. Early dates from leeward Kohala (Kapa'anui) were reported by Dunn and Rosendahl (1989); these sites are believed to have been temporary campsites (Wulzen et al. 1995). The greatest population growth occurred during the Expansion Period. Subsistence patterns intensified as crop farming evolved into large irrigated field systems and expanded into the marginal dryland areas. The *loko* or fishpond aquaculture flourished during this period (Bellwood 1978; Kirch 1985).

It was during the Expansion Period that a second major migration settled in Hawai'i, this time from Tahiti in the Society Islands. According to Kamakau (1976) the *kahuna* Pa'ao settled in the islands during the 13th century. Pa'ao was the keeper of the god Ku'ka'ilimoku, who had fought bitterly with his older brother, the high priest Lonopele. After much tragedy on both sides, Pa'ao escaped Lonopele's wrath by fleeing in a canoe. Kamakau (1991:100–102) told the following story in 1866:

Puna on Hawai'i Island was the first land reached by Pa'ao, and here in Puna he built his first *heiau* for his god Aha'ula and named it Aha'ula [Waha'ula]. It was a *luakini*. From Puna, Pa'ao went on to land in Kohala, at Pu'uepa. He built a *heiau* there called Mo'okini, a *luakini*. It is thought that Pa'ao came to Hawai'i in the time of the *ali'i* La'au because Pili ruled as *mo'i* after La'au. You will see Pili there in the line of succession, the *mo'o kū'auhau*, of Hanala'anui. It was said that Hawai'i Island was without a chief, and so a chief was brought from Kahiki; this is according to chiefly genealogies. Hawai'i Island had been without a chief for a long time, and the chiefs of Hawai'i were *ali'i maka'āinana* or just commoners. There were seventeen generations during which Hawai'i Island was without chiefs—some eight hundred years.

There are several versions of this story that are discussed by Beckwith (1976), including the version where Mo'okini and Kaluawilinau, two *kāhuna* of Moikeha, decide to stay on at Kohala. The bones of the *kahuna* Pa'ao are said to be deposited in a burial cave in Kohala in Pu'uuepa [possibly Pu'uepa?] (Kamakau 1964:41).

The concept of the *ahupua'a* was established during the A.D. 1400s (Kirch 1985), adding another component to a then well-stratified society. This land unit became the equivalent of a local community, with its own social, economic, and political significance. *Ahupua'a* were ruled by *ali'i 'ai ahupua'a* or lesser chiefs; who, for the most part, had complete autonomy over this generally economically self-supporting piece of land, which was managed by a *konohiki*. *Ahupua'a* were usually wedge or pie-shaped, incorporating all of the eco-zones from the mountains to the sea and for several hundred yards beyond the shore, assuring a diverse subsistence resource base (Hommon 1986).

The *ali'i* and the *maka'āinana* (commoners) were not confined to the boundaries of the *ahupua'a*; when there was a perceived need, they also shared with their neighbor *ahupua'a ohana* (Hono-ko-hou 1974). The *ahupua'a* was further divided into smaller sections such as the *'ili*, *mo'o'aina*, *pauku'aina*, *kihapai*, *koele*, *hakuone*, and *kuakua* (Hommon 1986, Pogue 1978). The chiefs of these land units gave their allegiance to a territorial chief or *mo'i* (king). *Heiau* building flourished during this period as religion became more complex and embedded in a sociopolitical climate of territorial competition. Monumental architecture, such as *heiau*, "played a key role as visual markers of chiefly dominance" (Kirch 1990:206).

The Proto-Historic Period (A.D. 1650–1795) is marked by both intensification and stress. Wars occurred between intra-island and inter-island polities. Sometime between A.D. 1736 and 1758, in the reign of Kalaniopu'u, Kamehameha I was born in the *ahupua'a* of Kokoiki, North Kohala near the Mo'okini Heiau [there is some controversy about his birth year, see Kamakau 1992:66–68]. The birth event is said to have occurred on a stormy night of rain, thunder, and lightning, signified the night before by a very bright, ominous star, thought by some to be Halley's comet [this is also controversial] (Kamakau 1992). Kamehameha's ancestral homeland was in Halawa, North Kohala (Williams 1919).

This period was one of continual conquest by the reigning *ali'i*. Ke'eaumoku, son of Keawepoepoe, set up a fort at Pololu and Honokane; he was attacked there by Kalaniopu'u, so he moved to Maui. About A.D. 1759 Kalani'opu'u conquered East Maui, defeating his wife's brother, the Maui king Kamehamehanui, by using Hana's prominent Pu'u Kau'iki as his fortress. He appointed one of his Hawai'i chiefs, Puna, as governor of Hana and Kipahulu. Kahekili became king of Maui in A.D. 1766 when Kamehamehanui died following an illness. Ke'eaumoku took his widow, Namahana, a cousin of Kamehameha I, as his wife. Their daughter, Ka'ahumanu, the future favorite wife of Kamehameha I, was born in a cave at the base of Pu'u Kau'iki, Hana, Maui in A.D. 1768 (Kamakau 1992). In A.D. 1775 Kalani'opu'u and his Hana forces raided and destroyed the neighboring Kaupo district, then launched several more raids on Molokai, Lanai, Kaho'olawe, and parts of West Maui. It was at the battle of Kalaeoka'ilio that Kamehameha, a favorite of Kalaniopu'u, was first recognized as a great warrior and given the name of Pai'ea (hard-shelled crab) by the Maui chiefs and warriors (Kamakau 1992). During the battles between Kalaniopu'u and Kahekili (1777–1779), Ka'ahumanu and her parents left Maui to live on the island of Hawai'i (Kamakau 1992).

History After Contact

Captain James Cook landed in the Hawaiian Islands on January 18, 1778. Ten months later, on a return trip to Hawaiian waters, Kalaniopu'u, who was at war with Kahekili, visited Cook on board the *Resolution* off the East coast of Maui. Kamehameha observed this meeting, but chose not to participate. The following January [1779], Cook and Kalaniopu'u met again in Kealakekua Bay and exchanged gifts. In February, Cook set sail; however, a severe storm off the Kohala coast damaged a mast and they had to return to Kealakekua. Cook's return occurred at an inopportune time, and this misfortune cost him his life (Kuykendall and Day 1976).

In 1779 King of the Cook expedition explored the North Kohala country and reported:

As far as the eye could reach, seemed fruitful and well inhabited. [Three and four miles inland, plantations of taro and potatoes and *wauke*] neatly set out in rows. The walls that separate them are made of the loose burnt stone, which are got in clearing the ground; and being entirely concealed by sugar-canes planted close on each side, make the most beautiful fences that can be conceived. [The exploring party stopped six or seven miles from the sea.] To the left a continuous range of villages, interspersed with groves of coconut trees spreading along the sea-shore; a thick wood behind this; and to the right, an extent of ground laid out in regular and well-cultivated plantations . . . as they passed, they did not observe a single foot of ground, that was capable of improvement, left unplanted. (Handy and Handy 1972:528)

Around A.D. 1780 Kalaniopu'u proclaimed that his son Kiwalao would be his successor, and he gave the guardianship of the war god Ku'ka'ilimoku to Kamehameha. Kamehameha and a few other chiefs were concerned about their land claims, which Kiwalao did not seem to honor, so after usurping Kiwalao's authority with a sacrificial ritual, Kamehameha retreated to his district of Kohala. While in Kohala, Kamehameha farmed the land, growing taro and sweet potatoes (Handy and Handy 1972). After Kalani'opu'u died in A.D. 1782 civil war broke out: Kiwalao was killed. The wars between Maui and Hawaii continued until A.D. 1795 (Kuykendall and Day 1976; Handy and Handy 1972).

In A.D. 1790 two American vessels, the *Eleanora* and *Fair American*, were in Hawaiian waters. Following an altercation between his crew and natives, the Captain of the *Eleanora* massacred more than 100 natives at Olowalu [Maui], then sailed away leaving one of its crew, John Young, on land. The other vessel, the *Fair American*, was captured and its crew killed except for one member, Issac Davis. Kamehameha also observed this but did not participate, although he did prevent Young and Davis from leaving. He also kept the vessel as part of his fleet. Young eventually became governor of the island of Hawai'i. By 1796 Kamehameha had conquered all the island kingdoms except Kauai. It wasn't until 1810, when Kaumuali'i of Kauai gave his allegiance to Kamehameha, that the Hawaiian Islands were unified under one ruler (Kuykendall and Day 1976).

Demographic trends during this period indicate population reduction in some areas, due to war and disease, yet increases in others, with relatively little change in material culture. However, there was a continued trend toward craft and status specialization, intensification of agriculture, *ali'i* controlled aquaculture, upland residential sites, and the enhancement of traditional oral history. The Kū cult, *luakini heiau*, and the *kapu* system were at their peaks, although western influence was already altering the cultural fabric of the Islands (Kirch 1985; Kent 1983). Foreigners had introduced the concept of trade for profit, and by the time Kamehameha I had conquered O'ahu, Maui and Moloka'i, in 1795, the women of Hawai'i had learned the profitable concept of prostitution (Kent 1983). This marked the end of the Proto-Historic Period and the end of an era of uniquely Hawaiian culture.

Hawai'i's culture and economy continued to change drastically as capitalism and industry established a firm foothold. The sandalwood (*Santalum ellipticum*) trade, established by Euro-Americans in 1790 and turned into a viable commercial enterprise by 1805 (Oliver 1961), was flourishing by 1810. This added to the breakdown of the traditional subsistence system, as farmers and fishermen were ordered to spend most of their time logging, resulting in food shortages and famine that led to a population decline. Kamehameha did manage to maintain some control over the trade (Kuykendall and Day 1976; Kent 1983).

Kamehameha I died on May 8, 1819 in Kailua-Kona, and once again the culture of Hawaii was to change radically. Six months after his death, his son and successor, Liholiho (Kamehameha II), met with *kuhina nui*, Ka'ahumanu, and a council of chiefs and chiefesses at Kawaihae. His advisors, which included the *kahuna* Hewahewa, convinced him to abolish the *kapu* system. He signified his agreement by sitting down and eating with his mother Keopulani, breaking the '*ai kapu* (Oliver 1961; Kuykendall and Day 1976; Kamakau 1992).

Liholiho's cousin, Kekuaokalani, caretaker of the war god *Ku-Kailimoku*, disagreed and revolted. By December of 1819 the revolution was quelled. Kamehameha II sent edicts throughout the kingdom renouncing the ancient state religion, ordering the destruction of the *heiau* images, and ordering that the *heiau* structures be destroyed or abandoned and left to deteriorate. He did, however, allow the personal family religion, the '*aumakua* worship, to continue (Oliver 1961; Kamakau 1992).

In October of 1819, seventeen Protestant missionaries set sail from Boston to Hawaii. They arrived in Kailua-Kona on March 30, 1820 to a society with a religious void to fill. Many of the *ali'i*, who were already exposed to western material culture, welcomed the opportunity to become educated in a western style and adopt their dress and religion. Soon they were rewarding their teachers with land and positions in the Hawaiian government. During this period, the sandalwood trade was wreaking havoc on the commoners, who were weakening with the heavy production, exposure, and famine just to fill the coffers of the *ali'i* who were no longer under any traditional constraints (Oliver 1961; Kuykendall and Day 1976). On a stopover in the Kohala district Ellis wrote:

About eleven at night we reached Towaihae [Kawaihae], where we were kindly received by Mr. Young. . . . Before daylight on the 22nd, we were roused by vast multitudes of people passing through the district from Waimea with sandal-wood, which had been cut in the adjacent mountains for Karaimoku, by the people of Waimea, and which the people of Kohala, as far as the north point, had been ordered to bring down to his storehouse on the beach, for the purpose of its being shipped to Oahu. There were between two and three thousand men, carrying each from one to six pieces of sandal-wood, according to their size and weight. It was generally tied on their backs by bands of ti leaves, passed over the shoulders and under the arms, and fastened across their breasts. (Kuykendall and Day 1976:42, 43; Ellis 1984:397)

The lack of control of the sandalwood trade was to soon lead to the first Hawaiian national debt as promissory notes and levies were initiated by American traders and enforced by American warships (Oliver 1961). The Hawaiian culture was well on its way towards Western assimilation as industry in Hawai'i went from the sandalwood trade, to a short-lived whaling industry, to the more lucrative, but environmentally destructive sugar industry. The windward portions of North Kohala became a center of sugarcane production, although sugarcane cultivation in Kohala had its origins in prehistory.

Pukui (1983) cites two proverbs that reference both Kohala and sugarcane. She provides an explanation and notes that Hawaiian proverbs have layers of meaning that are best left to the imagination of the reader:

He pa'a kō kea no Kohala, e kole ai ka waha ke 'ai
A resistant white sugar cane of Kohala that injures the mouth when eaten.

Pukui explains this proverb as follows:

A person that one does not tamper with. This was the retort of Pupukea, a Hawai'i chief, when the Maui chief Makakuikalani made fun of his small stature. It was later used in praise of the warriors of Kohala, who were known for valor (1983:95).

I 'ike 'ia no o Kohala i ka pae kō, a o ka pae kō ia kole ai ka waha.
One can recognize Kohala by her rows of sugar cane which can make the mouth raw when chewed.

Pukui interprets this proverb as follows:

When one wanted to fight a Kohala warrior, he would have to be a very good warrior to succeed. Kohala men were vigorous, brave, and strong (1983:127).

Sugarcane (*Saccharum officinarum*) was a Polynesian introduction and served a variety of uses. The *kō kea* or white cane was the most common, usually planted near Hawaiian homes for medicinal purposes, and to counteract bad tastes (Handy and Handy 1972:185). Sugarcane was a snack, condiment, famine food; fed to nursing babies, and helped to strengthen children's teeth by chewing on it (Handy and Handy 1972:187). It was used to thatch houses when *pili* grass (*Heteropogon contortus*) or *lau hala* (*Pandanus odoratissimus*) were not abundant (Malo 1903). Sugarcane was also used in relation to taro and sweet potato. Handy and Handy (1972:186) explain:

In wet-taro farming, cane was planted along the embankments separating the flooded terraces and flats. In dry-taro and sweet-potato fields on the sloping *kula* or in the lower forest zone, cane was planted as hedges along the lines of stone and rubbish thrown up between the fields. Thus it helped the planter to utilize to the maximum his soil and water, and acted as a windbreak against the gusty breezes which blow in most valley bottoms, along the coasts, and on the uplands where taro is grown.

Sugarcane was grown on all islands, and when Cook arrived he wrote of seeing sugarcane plantations. The Chinese on Lana'i are credited with producing sugar first, as early as 1802. However, it was not until 1835 that sugar became established commercially, replacing the waning sandalwood industry (Oliver 1961, Kuykendall and Day 1976).

Kohala became a land in transition and eventually a major force in the sugar industry with the arrival of American missionary Elias Bond (KTF 1975). In her comprehensive study of North Kohala, Tomonari-Tuggle relates this transition:

The arrival in 1841 of Elias Bond, of the Protestant American Board of Commissioners for Foreign Missions, to Kohala marked the beginning of a 22-year period of transition in the district's history. In those years a new religion, a new land tenure system, and a changing economy altered the lifestyles and world view of the indigenous population of the district. The Kohala community was in flux, attempting to find a firm footing in a changing world, in a much larger network of social, political, and economic interactions than had previously existed. (Tomonari-Tuggle 1988:1-23)

When Elias Bond directed his efforts to initiating sugar as a major agricultural industry in Kohala, he could not have foreseen the incredible success of his modest venture. His primary concern was to develop a means for the Hawaiian people of the district to compete successfully in the market economy that had evolved in Hawaii. What resulted was a vigorous, stable, and competitive industry which survived over a century of changing economic situations. For the Hawaiian people, however, the impact was not what Bond anticipated. (Tomonari-Tuggle 1988:1-39)

In 1860 Rev. Bond engaged Samuel N. Castle in founding the Kohala Sugar Company on lands owned by Bond and his neighbor Dr. James Wight. The first crop was harvested in January 1865 (KTF 1975). Kohala's transition was a reflection of what was happening elsewhere in Hawai'i as the sugar industry grew. The industry brought in tens of thousands of laborers from Asia, Europe, the Americas, Oceania, and Africa to work on the many plantations and mills that were being established on all major islands (Oliver 1961). This influx not only radically changed the culture, but also drastically altered agricultural lands and destroyed traditional architectural features in the process. The drier leeward portions of Kohala were not suited for cane cultivation and thus became vast pasturelands for grazing cattle.

A Generalized Settlement Model for Leeward North Kohala

The following summary of settlement patterns for the leeward coast of North Kohala follows earlier regional models (Rosendahl 1972; Griffin et al. 1971; Tomonari-Tuggle 1988).

Evidence for early occupation of Kohala has been collected from Kapa'anui. Dunn and Rosendahl (1989) recovered radiocarbon samples that potentially date to as early as A.D. 461 (Site 12444). This early date may be related to the establishment of small, short-term camps to exploit seasonal, coastal resources. Data recovered from Mahukona suggest initial occupation there by A.D. 1280 (Burgett and Rosendahl 1993:36). The earliest date range for permanent settlement in Kohala (A.D. 1300) was obtained from Koai'e, a coastal settlement where subsistence primarily derived from marine resources. According to Tomonari-Tuggle (1988:13), these resources were probably supplemented by small-scale agriculture.

The period from A.D. 1300–1500 was characterized by population growth and expanded efforts to increase upland agriculture. Rosendahl (1972) has proposed that settlement at this time was related to seasonal, recurrent occupation in which coastal sites were occupied in the summer to exploit marine resources, and upland sites were occupied during the winter months, with a focus on agriculture. An increasing reliance on agricultural products may have caused a shift in social networks as well, according to Hommon (1976). Hommon argues that kinship links between coastal settlements disintegrated as those links within the *mauka-makai* settlements expanded to accommodate exchange of agricultural products for marine resources. This shift is believed to have resulted in the establishment of the *ahupua'a* system. The implications of this model include a shift in residential patterns from seasonal, temporary occupation, to permanent dispersed occupation of both coastal and upland areas.

This pattern continued to intensify from A.D. 1500 to Contact (A.D. 1778), and there is evidence that suggests that there were substantial changes to the political system as well. Within Kohala, the Great Wall complex at Koai'e is organized with platforms in the complex apart from contemporaneous features. Griffin et al. (1971) interpret this as symbolizing class stratification. By AD 1600, there is island-wide evidence to suggest that growing conflicts between independent chiefdoms were resolved through warfare, culminating in a unified political structure at the district level. It has been suggested that this unification resulted in a partial abandonment of portions of leeward Hawai'i, with people moving to more favorable agricultural areas (Barrera 1971; Schilt and Sinoto 1980).

By the time of contact, numerous coastal villages and extensive dryland agricultural systems were in place in North Kohala. The *ahupua'a* system of social organization was also firmly established by this time, with wedge-shaped land units extending from the mountains to the sea. The *ahupua'a* were controlled by local chiefs, and were integrated at the district level. Districts were ruled by paramount chiefs through a system of taxation and redistribution. Social stratification was defined by a class separation between the ruling *ali'i* (chiefs) at one end, and the *maka'ainana* (commoners) at the other. Kamehameha I eventually united the Island of Hawai'i, and ultimately all of the Hawaiian Islands, and freely participated in the European-introduced market economy.

Traditional land use patterns saw a rapid shift after the *Mahele* in 1848. At this time, land ownership was defined by grants and awards by the king (Kamehameha III) to the chiefs and other retainers. By 1850 laws were enacted under which commoners could also own land (*kuleana*) if they could prove that they actually occupied those lands. The *Mahele* paved the way for land to be sold to foreigners.

By the mid-19th century, leeward settlement shifted to the windward side of North Kohala as the leeward, agriculturally marginal, areas were abandoned in favor of more productive and wetter sugarcane lands. In addition, native populations were decimated by disease and a depressed birth rate. According to Tomonari-Tuggle (1988:37), the remnant leeward population nucleated into a few small coastal communities and dispersed upland settlements. Settlements were no longer based on traditional subsistence patterns, largely because of the loss of access to the full range of necessary resources. At this point most communities were centered on sugar mills and became part of the plantation social hierarchy. Much of the coastal land in leeward North Kohala was used as cattle pasture. Walled complexes became the dominant residential structure for those remaining leeward settlements as families enclosed their holdings to protect them from feral cattle and to clearly define their *kuleana* boundaries.

Pāo'o Ahupua'a

The entire *ahupua'a* of Pāo'o (1-6) was retained as Government land during the *Māhele* of 1848. In 1856 the current study parcel (TMK: 3-5-7-01:5), which includes Site 2382, was sold as a 16-acre fee-simple land grant (Grant No. 1997) to Kauwe (Figure 15). Unfortunately, no record exists as to Kauwe's use of the land. In 1862, the Boundary Commission was established in the Kingdom of Hawai'i to set the boundaries of the *ahupua'a* awarded during the *Māhele*. The primary informants for the boundary descriptions were old native informants (Dye and Maly 2000). Kikalaeka, the informant for the boundaries of Pāo'o 6 (located at the south end of the parcel encompassing Site 2382), testified thusly:

I was born on the land of Paoo 6 before Liholiho went to London [ca. 1823]. I am a kamaaina of Kohala and know the boundaries between Kaiholena 1st and Paoo 6. Paoo 6 bounds Kaiholena 1st on the north side...A place at the sea shore where the sea rushes in from the point and spouts up, called kepuhi, is the boundary between Kaiholena 1st and Paoo 6. Beadle [A rancher, possibly the *Kohoniki*?] used to taboo salt ground on Paoo 6 next to the shore. The north boundary of Kaiholena runs mauka along Paoo 6 to Puupili, and thence mauka to Kikiwahia a stone wall on the boundary of Beadle's land in Paoo 6. [*Boundary Commission Volume A 1 April 14, 1873*]

In 1862, Pāo'o Ahupua'a, along with much of its neighboring Government lands were leased to the Waimea Grazing and Agricultural Company for horse and cattle ranching purposes (Dye and Maly 2000). This lease did not include Grant No. 1997 to Kauwe, and it is unclear if cattle were ever grazed on the current study parcel. The lease read as follows:

June 18, 1862
Lease No. 92

Between His Majesty, Minister of Interior and the Waimea Grazing and Agricultural Company...Leasing Government Lands of:

Pahinahina; Makiola; Kalala 1 & 2; Kokio; Pohakulua 1 & 2; Kaihooa 1 & 2; Puaiki; Kehena 2nd; Kipi; Makeanehu 2, 3, 4 & 5; Paoo 1, 2, 3, 4, 5 & 6; Lamaloloa; and Kaipuhaa; an area containing together 7972 acres more or less, which tracts of land and all their present improvements and advantages (the rights of native tenants however being reserved) the said "Waimea Grazing and Agricultural Company" is to possess and enjoy without unlawful molestation for the term of Ten years from this date, with the privilege of remaining the same for the further term of at the expiration of the lease...(Hawaii State Archives; Interior Department, Lands Folder)

The lands of Pāo'o were purchased by Parker Ranch in 1932 and used for grazing purposes until relatively recent times. The cattle were grazed at the shore seasonally, usually following rains, when the *makai* pastures produced rich feed supplemented with *kiawe* beans. During the ranching years few people visited the coastline (Dye and Maly 2000: 63).

SIHP Site 2382

Hammatt and Folk, as part of their inventory survey on the subject parcel, describe the function of the "numerous terraces... situated around the habitation structures and canoe sheds," including Site 2382 as, "best interpreted as areas used for various domestic activities such as fish net making and drying, fish drying, mat making etc. (1980: 8)." They go on to write:

The habitation structures themselves occur in clusters generally of three or more separate but connected walled living areas. Each cluster probably represents the dwelling of an extended family and may have included the separate living spaces in accordance with traditional Hawaiian family structure, men's house (*hale mua*), sleeping house (*hale moi*), etc. Each cluster includes a nearby canoe shed which are located at a point along the coast with a suitable landing place (Hammatt and Folk 1980: 9).

Hammatt and Folk adopted a "splitter" approach when defining site boundaries. Separate site numbers were assigned to adjoining features within these "extended family dwellings." If Site 2382 had been grouped into a household unit, it would have been closely associated with Sites 2378, 2379, 2380, and 2381 (see Figure 3 and Table 1). These sites are situated near a suitable canoe landing area (to the northwest of Site 2382) and include two probable habitations (Sites 2379 and 2380), one canoe shed (Site 2381), and one possible canoe shed (Site 2379). Site 2382 may have been a work area associated with this household.

Interestingly, Site 2382 is most closely associated (in terms of proximity) with Site 2383 (to the southwest), a probable fishing shrine or *ko'a* (see Figure 3 and Table 1). The "shrine" consists of a rectangular paved platform surrounded by rock walls and associated with *'ili'ili*, coral, and midden scatters (similar to Site 2382) outside the enclosure to the north and west (Hammatt and Folk 1980). These two sites are located on a coastal rise near an easy access to the ocean and with an excellent view in both directions along the coast. If, as Hammatt and Folk suggest, Site 2383 is a fishing shrine, then perhaps Site 2382 is a work area associated with the shrine and fishing related activities.

Unfortunately, archaeological data recovery excavations at Site 2382 did not reveal enough information to accurately interpret the site's true function or associations. By the time of this investigation, only a small portion of Site 2382 (along the western edge) remained intact. The rest of the site had been previously removed by widespread bulldozing in the area related to years of modern recreational use (i.e. camping, fishing, etc.). The only datable radiocarbon sample recovered from the terrace resulted in a modern date (see Appendix A), making temporal assignment of Site 2382 nearly impossible.

Excavations along the western edge of the terrace area did reveal information relative to the architecture and possible uses of Site 2382. The terrace had a paved surface of *'ili'ili* as evidenced in Excavation Units 1 and 5. Furthermore, as discovered in Excavation Unit 1 (EU-1), at least a portion of this *'ili'ili* pavement was underlain by large waterworn cobbles. This layer of waterworn cobbles may represent an older, smaller terrace at the site, or (as the authors would suggest) that only a small portion of the site (found only in EU-1) remains intact. The *'ili'ili* in EU-5 may have slumped there off of the original terrace.

The amount of marine shell, mammal, and fish bone recovered at Site 2382 (see Tables 2, 3, and 4), along with the presence of ashen soils in Excavation Units 1, 3, and 5, suggest that food preparation and consumption most likely occurred there. This would hold with Hammatt and Folk's assertion that the paved terraces (like Site 2382) are work areas associated with the household chores of a family unit, but suggests that these chores were not limited solely to fishing related activities.

Although the archaeological data recovery investigation did not collect as much information as hoped — to generate data relative to the function and age of the site — it is clear that Site 2382 served, in some capacity, as a habitation feature. Judging by dates collected from nearby coastal habitations (see Dye and Maly 2000), Site 2382 was probably constructed and used during late Precontact and into early Historic times. Excavations at the site removed a high percentage of the total intact site area and, along with this report, they constitute appropriate mitigation for Site 2382 from any future impacts resulting from the construction of a single-family residence on the parcel.

CONCLUSION

Rechtman Consulting, LLC carried out data recovery excavations at SIHP Site 2382 along the immediate shoreline of Pāo'o Ahupua'a in North Kohala. The site was first recorded noted by Soehren (1967) and later recorded and tested by Hammatt and Folk (1980). Unfortunately the location of this site has been the focus of modern recreational activity for at least 50 years. This modern use of the area has resulted in major impacts to the site, including bulldozing and campfire digging. The current investigation of the site was guided by a Data Recovery Plan (Rechtman 2001) geared toward elucidating information about the function and age of the site. Data recovery excavations revealed that all but a very small portion of the site had been destroyed by past recreational use.

What was recovered from the small intact portion of the sites seems to suggest that the site once functioned as a habitation-related feature; if not the location of a residence, perhaps the location of household activity (i.e., food preparation and consumption). A very small portion of the original 'ili 'ili surface pavement was encountered, and yielded a collection of what is best described as a mixture of habitation debris and wave deposited shell. During periods of violent surf, the site is vulnerable to inundation. The only radiocarbon sample that came from what was thought to be "good context" returned a modern date; further documenting the almost thorough destruction of the site. The current mapping and excavation project documented in this data recovery report has served to completely mitigate any future impacts to SIHP Site 2382.

REFERENCES CITED

- Barrera, W. M., Jr.
1971 Anaehoomalu: A Hawaiian Oasis. Preliminary Report of Salvage Research in South Kohala, Hawaii. *Pacific Anthropological Records* No. 15. Department of Anthropology, B.P. Bishop Museum, Honolulu.
- Beckwith, M.
1976 *Hawaiian Mythology*. University of Hawai'i Press, Honolulu.
- Bellwood, P.
1978 *The Polynesians: Prehistory of an Island People*. Thames and Hudson, Ltd., London.
- Bonk, W. J.
1968 The Archaeology of North and South Kohala - from the Ahupua'a of Kawaihae to the Ahupua'a of Upolu: Coastal Archaeology Surface Survey. *Hawaii State Archaeological Journal* 68-3. Division of State Parks, Department of Land and Natural Resources.
- Burgett, B. P., and P. H. Rosendahl
1993 Summary of Archaeological Inventory Surveys, Kapaanui Agricultural Subdivision and Mahukona Property, Lands of Kapaanui, Kou, Kamano, Mahukona 1st and 2nd, Hihuu, and Kaoma, North Kohala District, Island of Hawaii. (TMK:3-5-7-02:11 and TMK:3-5-7-03:1-3,10-14,16-18). PHRI Report 743-020993. Prepared for Chalon International of Hawaii, Inc.
- Dunn, A. E., and P. H. Rosendahl
1989 Archaeological Inventory Survey, Kapaanui Agricultural Subdivision, Lands of Kapaanui and Kou, North Kohala District, Island of Hawaii. PHRI Report 568-100289. Prepared for Ahualoa Development, Inc.

- Dye, T. S. and K. Maly
2000 Archaeological Inventory Survey of the Coastal Portion of Kaiholena *Ahupua'a*, North Kohala, Hawai'i. IARII Report prepared for Pohaku Kea LLC, Menlo Park.
- Ellis, W.
1984 *Polynesian Researches, Hawaii*. Rutland, Vermont: Charles E. Tuttle Company, Inc.
- Fornander
1969 *An Account of the Polynesian Race: Its Origin and Migrations*. Tokyo: Charles E. Tuttle Co., Inc.
- Griffin, P. B., T. Riley, P. H. Rosendahl, and H. D. Tuggle
1971 Archaeology of Halawa and Lapakahi: Windward Valley and Leeward Slope. *New Zealand Archaeological Association Newsletter* 14(3):101-112.
- Hammatt, H., and W. Folk
1980 Archaeological Surface Survey and Subsurface Testing of Coastal Lands in Pāo'o, Kohala, Hawai'i Island. Prepared for Signal Properties.
- Handy, E.S.C., and E.G. Handy
1972 *Native Planters in Old Hawaii: Their Life, Lore and Environment*. B.P. Bishop Museum Bulletin 223. Bishop Museum Press, Honolulu. (with M.K. Pukui)
- Hommon, R. J.
1976 The Formation of Primitive States in Pre-Contact Hawaii. Ph.D. Dissertation (Anthropology), University of Arizona, Tucson. University Microfilms, Inc., Ann Arbor, Michigan.
1986 Social Evolution in Ancient Hawai'i. IN Kirch, P.V. (ed.), *Island Societies: Archaeological Approaches to Evolution and Transformation*: 55-88. Cambridge: University Press.
- Hono-ko-hau Study Advisory Commission
1974 *The Spirit of Ka-Loko Hono-Ko-Hau*. National Park Service, U.S. Department of the Interior.
- Kamakau, S. M.
1964 *Ka Po'e Kahiko: The People of Old*. B.P. *Bishop Museum Special Publication* 51. Bishop Museum Press, Honolulu.
1976 *The Works of the People of Old, Na hana a ka Po'e Kahiko*. B.P. *Bishop Museum Special Publication* 61. Bishop Museum Press, Honolulu.
1991 *Tales and Traditions of the People of Old*. Honolulu: Bishop Museum Press.
1992 *Ruling Chiefs of Hawaii*. The Kamehameha Schools Press, Honolulu (revised edition).
- Kent, N. J.
1983 *Hawaii: Islands Under the Influence*. University of Hawai'i Press, Honolulu.
- Kirch, P. V.
1984 *The Evolution of the Polynesian Chiefdoms*. Cambridge University Press, New York.
1985 *Feathered Gods and Fishhooks: An Introduction to Hawaiian Archaeology and Prehistory*. University of Hawaii Press, Honolulu.

- 1990 Monumental Architecture and Power in Polynesian Chiefdoms: A Comparison of Tonga and Hawaii. *World Archaeology* 22(2).
- KTF (Kohala Task Force)
1976 Kohala: A Candid View. Report of the Kohala Task Force [March].
- Kuykendall, R. S., and A. G. Day
1976 *Hawaii: A History From Polynesian Kingdom to American Statehood*. Prentice-Hall, Inc., Englewood Cliffs.
- Malo, D.
1903 Hawaiian Antiquities. *B.P. Bishop Museum Special Publication 2*. Bishop Museum Press, Honolulu.
- Oliver, D. L.
1961 *The Pacific Islands*. University of Hawaii Press, Honolulu.
- Pogue, J. F.
1978 *Mooleo Hawaii*. Hale Paipalapala Aupuni, Honolulu (Revised Edition).
- Pukui, M. K.
1983 'Olelo Noeau, Hawaiian Proverbs & Poetical Sayings. *B.P. Bishop Museum Special Publication 71*. Bishop Museum Press, Honolulu.
- Rechtman, R. B.
2001 A Plan for Archaeological Data Recovery at SIHP Site 2382 Pāo'o Ahupua'a, North Kohala District, Island of Hawai'i. Report RC-0019. Prepared for Mr. Jonathan Cohen.
- Rosendahl, P. H.
1972 Aboriginal Agriculture and Domestic Residence Patterns in Upland Lapakahi, Island of Hawaii. Ph.D. dissertation, University of Hawaii, Honolulu.
- Schilt, R., and A. Sinoto
1980 Limited Phase I Archaeological Survey of Mahukona Properties, North Kohala, Island of Hawai'i. B.P. Bishop Museum, Honolulu. Prepared for Belt, Collins and Associates.
- Soehren, L. J.
1967 Archaeological Reconnaissance of Parker Ranch Coastal Lands, North Kohala, Hawai'i Island. B.P. Bishop Museum Manuscript, Honolulu.
- Tomonari-Tuggle, M. J.
1988 North Kohala: Perception of a Changing Community. A Cultural Resource Management Study. Prepared for Division of State Parks, Outdoor Recreation, and Historic Sites, Department of Land and Natural Resources, State of Hawaii.
- Williams, J. N. S.
1919 A Little Known Engineering Work in Hawaii. IN *Thrum's Hawaiian Almanac and Annual for 1919*. Thos. G. Thrum, Honolulu.
- Wulzen, W., J. Head, and S. T. Goodfellow
1995 Final Report: Archaeological Inventory Survey, Chalon International Mahukona Mauka Parcel; Lands of Kamano, Mahukona 1st and 2nd, Hihiu and Kaoma, North Kohala District, Island of Hawaii (TMK:3-5-7-02:por.36). PHRI Report 1520-080895. Prepared for Chalon International of Hawaii, Inc.

APPENDIX A

Dr. Bob Rechtman

Report Date: 12/20/02

Rechtman Consulting

Material Received: 12/16/02

Sample Data	Measured Radiocarbon Age	$^{13}\text{C}/^{12}\text{C}$ Ratio	Conventional Radiocarbon Age(*)
Beta - 173870 SAMPLE : RC-0098-126	101.61 +/- 0.57 pMC	-24.7 ‰	101.55 +/- 0.57 pMC

ANALYSIS : Radiometric-Priority delivery (with extended counting)

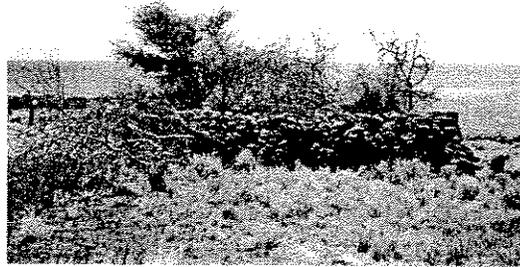
MATERIAL/PRETREATMENT : (charred material): acid/alkali/acid

2 SIGMA CALIBRATION : (result is outside of the calibration range)

COMMENT: reported result indicates an age of post 0 BP and has been reported as a % of the modern reference standard, indicating the material was living within the last 50 years.

An Archaeological Sites Preservation Plan For TMK: 3-5-7-01:5

Pāo'o Ahupua'a
North Kohala District
Island of Hawai'i



PREPARED BY:

Robert B. Rechtman, Ph.D.

PREPARED FOR:

Jonathan Cohen
Baker Bridge Road
Lincoln, MA 01773

December 2004

RECHTMAN CONSULTING, LLC

HC 1 Box 4149 Kea'au, Hawai'i 96749-9710

phone: (808) 966-7636 fax: (808) 443-0065

e-mail: bob@rechtmanconsulting.com

ARCHAEOLOGICAL, CULTURAL, AND HISTORICAL STUDIES

An Archaeological Sites Preservation Plan For
TMK: 3-5-7-01:5

Pāo‘o Ahupua‘a
North Kohala District
Island of Hawai‘i

RECHTMAN CONSULTING
RC

CONTENTS

INTRODUCTION 1

PROJECT AREA DESCRIPTION AND PROPOSED DEVELOPMENT ACTIVITIES..... 4

CULTURE-HISTORICAL BACKGROUND..... 7

 A Generalized Model of Hawaiian Prehistory 7

 A Generalized Model for Kohala Waho 11

 Pāo’o *Ahupua’a* 13

CONSULTATION 16

STEWARDSHIP APPROACHES 17

 Short-term Protection Measures..... 18

 Long-term Preservation Measures 18

REFERENCES CITED 20

Figures

1. Project area location. 2

2. Study parcel showing the locations of the previously recorded archaeological sites. 3

3. Terrain and landscape in the area of the proposed residence..... 4

4. Plan view of project area showing the location of the proposed residence..... 5

5. Detail of the proposed residence..... 6

6. 1936 Territory of Hawaii survey map showing land grants..... 15

7. Arthur Mahi (right) and Jonathan Cohen (left) sharing lifeexperiences
 along the Pāo’o shoreline..... 16

8. Residential development envelope and protective fencing 19

Table

1. Archaeological sites on TMK:3-5-7-01:5..... 1

INTRODUCTION

At the request of Mr. Jonathan Cohen, Rechtman Consulting, LLC has prepared this preservation plan for twenty-one archaeological sites that have been recorded on TMK:3-5-7-01:5 in Pāo'o Ahupua'a, North Kohala District, Hawai'i Island (Figure 1). Early archaeological work on the subject property included studies by Reinecke (n.d.), Bonk (1968), and Soehren (1969). These studies were all of a regional nature and included archaeological survey of large tracts of land of which the study area was only a small part. Archaeological Research Center Hawaii, Inc completed a more intensive surface survey and subsurface testing of the entire subject parcel in 1980 (Hammatt and Folk 1980). They recorded twenty-seven sites, the twenty-one that are the subject of the current study, one that has already been successfully data recovered, and five burial sites (Table 1; Figure 2); however, they adopted a "splitter" approach when defining site boundaries. Separate site numbers were assigned to adjoining features. In essence they recorded 27 features that perhaps could have been placed within 13 site areas. In any case, the level of recording and associated subsurface testing was comprehensive, and deemed by DLNR-SHPD to be commensurate with current inventory survey standards (McCoy Personal Communication 2000). Subsequent to that determination, archaeological data recovery was proposed (Rechtman 2000) and successfully completed at SIHP Site 2382 (Clark and Rechtman 2003); and a burial treatment plan (Rechtman 2003) was prepared and approved by the Hawai'i Island Burial Council and DLNR-SHPD for a complex of closely situated features (SIHP Sites 6440, 6441, 6442, and 6443).

Table 1. Archaeological Sites on TMK:3-5-7-01:5

<i>Site #</i>	<i>Function*</i>	<i>Significance</i>
2348	Habitation	D
2350	Habitation	D
2366	Habitation	D
2367	Canoe shed	D
2369	Habitation	D
2371	Habitation	D
2372	Habitation	D
2373	Habitation	D
2375	Habitation	D
2376	Canoe shed	D
2377	Canoe shed	D
2378	Canoe shed	D
2379	Probable habitation	D
2380	Probable habitation	D
2381	Possible canoe shed	D
2382**	Probable Habitation	D
2383	Probable Shrine (<i>ko'a</i>)	D, E
4596	Habitation	D
4597	Possible habitation	D
4598	Possible habitation	D
4599	Probable habitation	D
6438	Habitation	D
6440	Probable burial	D, E
6441	Burial	D, E
6442	Possible burial	D, E
6443	Probable burial	D, E
6444	Probable habitation	D, E

*from Hammatt and Folk (1980); **subject to data recovery (Clark and Rechtman 2003); shaded sites treated in Rechtman (2003).

This archaeological sites preservation plan is prepared in accordance with HAR 13§13-277 and is intended to guide both the short-term protection measures and the long-term stewardship commitments to the archaeological resources located on the subject parcel. Compliance with the above-cited Administrative Rule will ensure a determination of no adverse effect on historic properties with respect to the proposed development activities on the parcel.

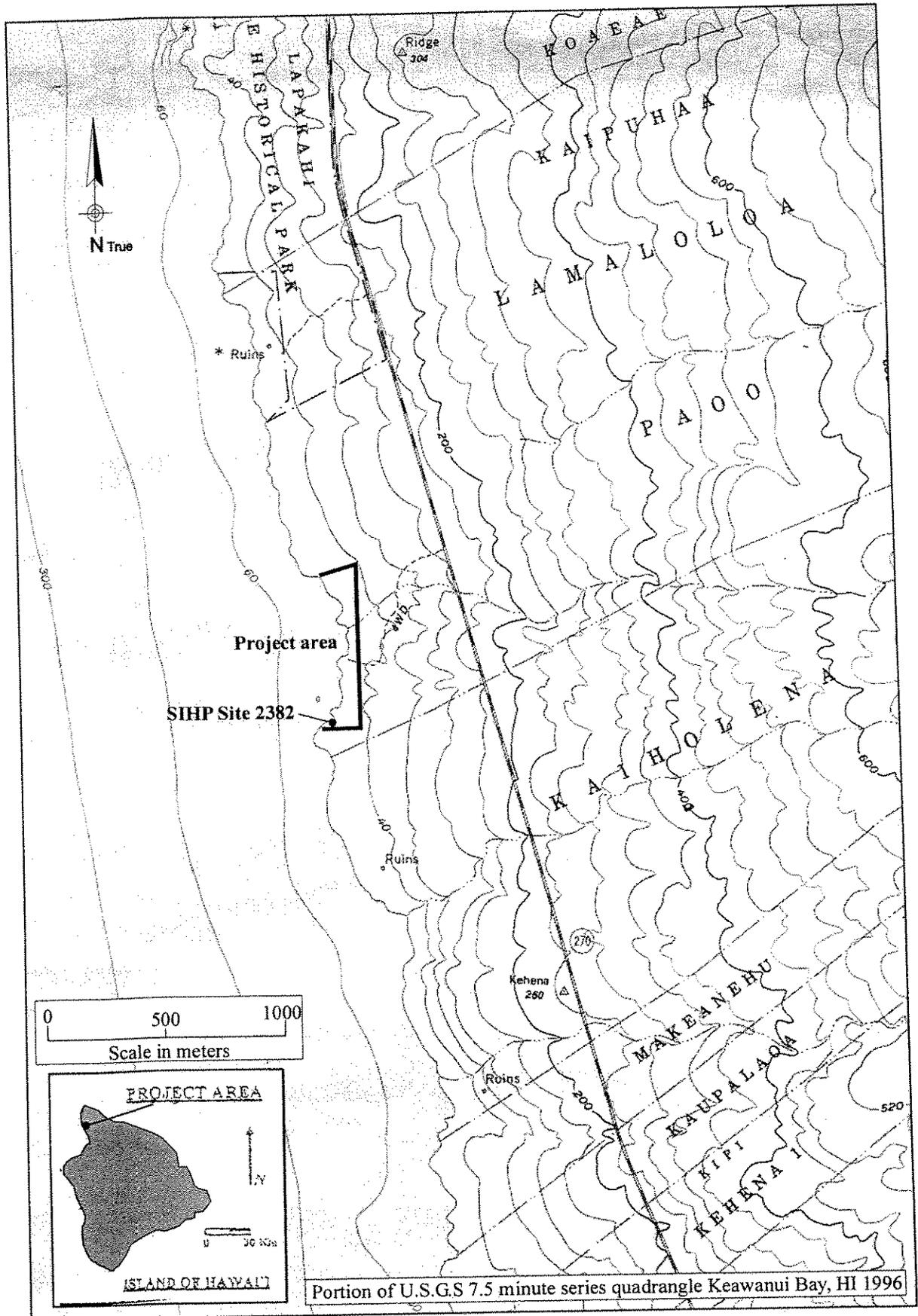


Figure 1. Project area location.

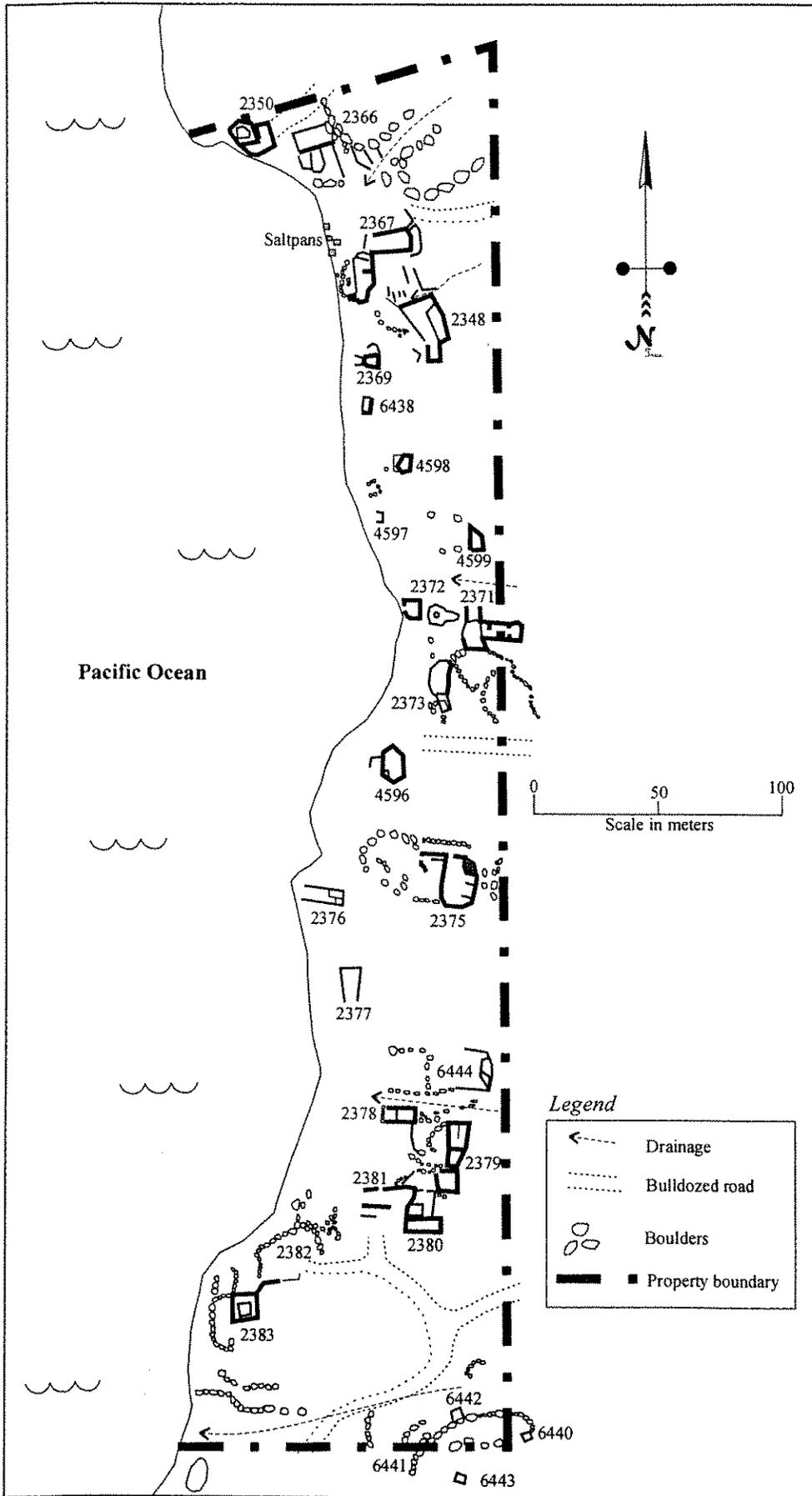


Figure 2. Study parcel showing the locations of the previously recorded archaeological sites (adapted from Hammatt and Folk 1980).

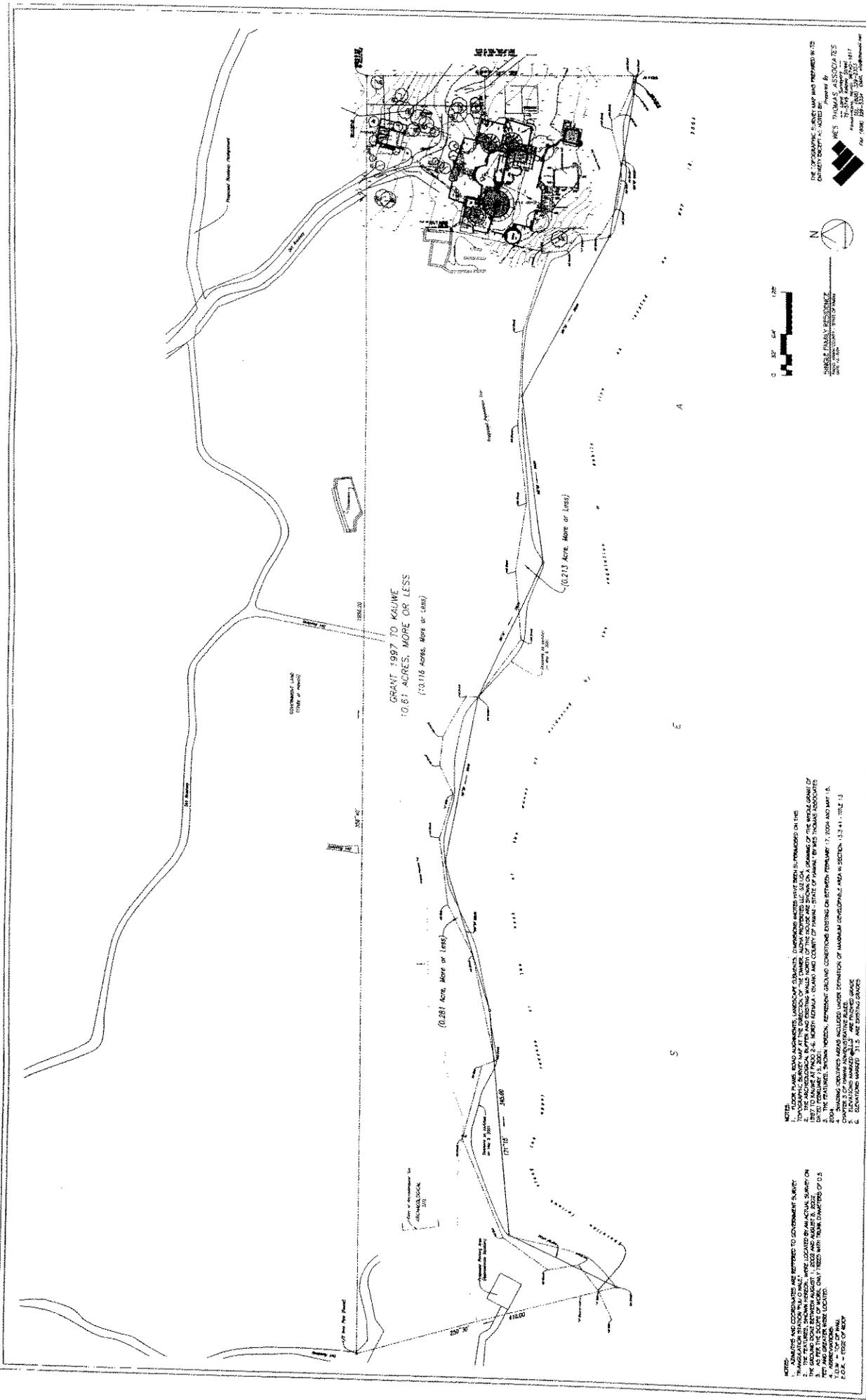
PROJECT AREA DESCRIPTION AND PROPOSED DEVELOPMENT ACTIVITIES

The subject property occupies 10.61 acres along the coast, bounded by the ocean to the west and unencumbered State of Hawai'i lands on all other sides (see Figure 1). Lapakahi State Historical Park is less than one mile distant to the north. Elevation of the property ranges from sea level to about 50 feet above sea level and the surface geology consists of basaltic lava flows from Kohala volcano dating from at least 250,000 years ago (Wolfe and Morris 1996). Soil within the study area is classified as Kawaihae extremely stony very fine sandy loam. The gently sloping terrain is dissected in a few locations by runoff channels and the vegetation is almost exclusively low grasses and *kiawe* (Figure 3).



Figure 3. Terrain and landscape in the area of the proposed residence.

The current proposal is for a single-family residence and related improvements to be developed at the southern end of the parcel (Figure 4). The property currently has no structures. The proposed residence would consist of a compound of detached structures totaling 3,750 square feet. Pools and decks will occupy another 878 square feet (Figure 5). Other improvements include an Individual Wastewater System, utilities, a driveway, and landscape features such as vegetation, trails, and rock walls. Outbuildings including a propane tank storage facility, a water tank, an agricultural building with a diesel generator, an open shed, and a utility control room with a storage loft. All structures will be set a minimum of 60 feet inland from the certified shoreline. The project also proposes to improve the existing access road, reroute a segment of a lateral jeep road away from both the proposed building site and the burial sites, improve public vehicular access in the northern part of the parcel, and establish a coastal footpath from the improved vehicular access point leading south through the parcel (see Figure 4). The design involves leaving as much of the property as-is with no disturbance to any natural or man-made features outside of the development envelope. In this vein, this preservation plan proposed an "avoidance and protection" strategy; none of the sites will be developed for public interpretation as per the wishes of the cultural consultants (see Consultation section below).



THE SURVEYING PLANS AND MAP WERE PREPARED IN THE COUNTY OF HAWAII, UNITED STATES OF AMERICA, BY

THOMAS S. THOMAS ASSOCIATES
 75-274 KALIHI ROAD
 HAWAII, HAWAII 96741
 DATE: 1998, 2001, 2002, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025

THE SURVEYING PLANS AND MAP WERE PREPARED IN THE COUNTY OF HAWAII, UNITED STATES OF AMERICA, BY

THOMAS S. THOMAS ASSOCIATES
 75-274 KALIHI ROAD
 HAWAII, HAWAII 96741
 DATE: 1998, 2001, 2002, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025

THE SURVEYING PLANS AND MAP WERE PREPARED IN THE COUNTY OF HAWAII, UNITED STATES OF AMERICA, BY

THOMAS S. THOMAS ASSOCIATES
 75-274 KALIHI ROAD
 HAWAII, HAWAII 96741
 DATE: 1998, 2001, 2002, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025

THE SURVEYING PLANS AND MAP WERE PREPARED IN THE COUNTY OF HAWAII, UNITED STATES OF AMERICA, BY

THOMAS S. THOMAS ASSOCIATES
 75-274 KALIHI ROAD
 HAWAII, HAWAII 96741
 DATE: 1998, 2001, 2002, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025

THE SURVEYING PLANS AND MAP WERE PREPARED IN THE COUNTY OF HAWAII, UNITED STATES OF AMERICA, BY

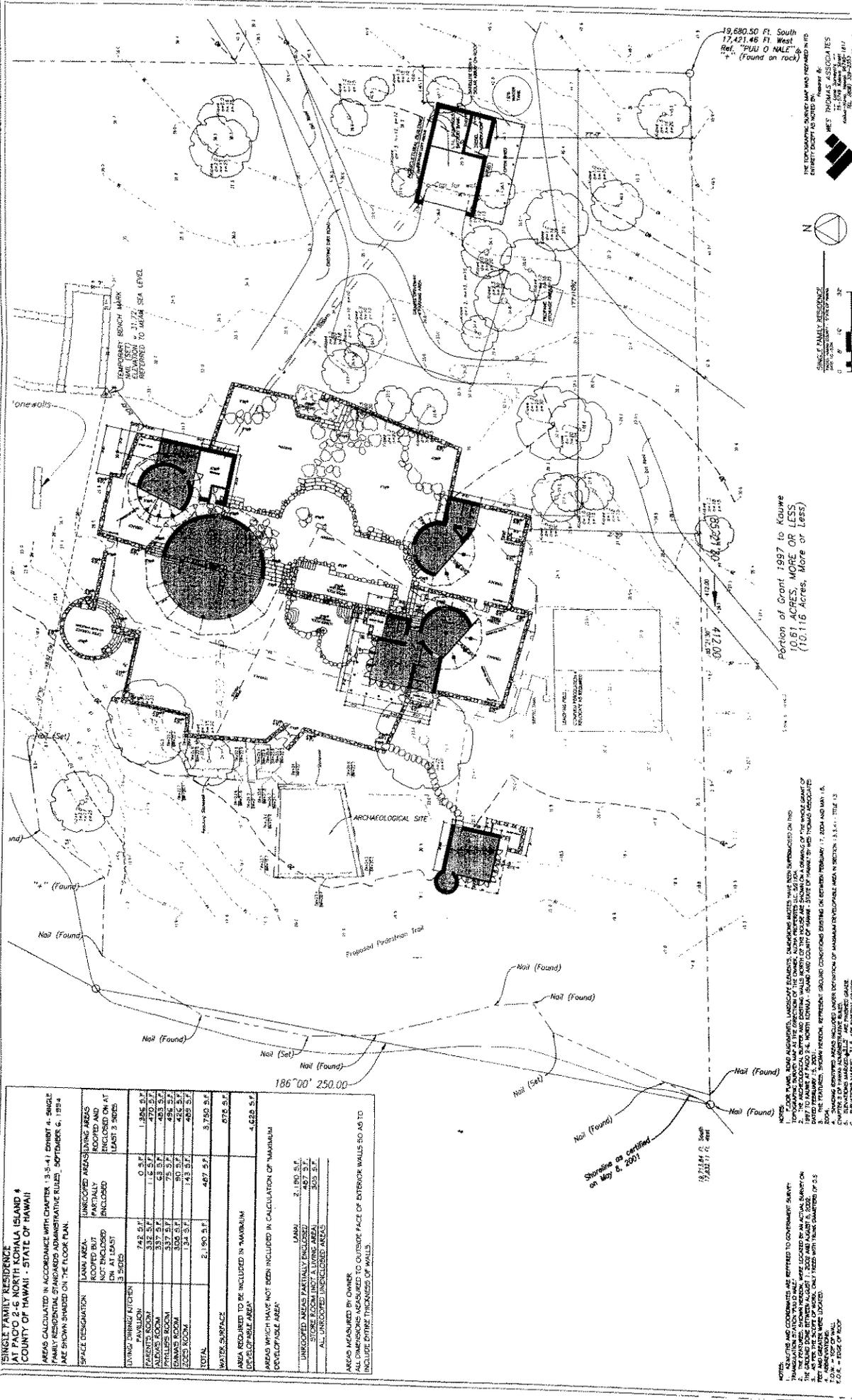
THOMAS S. THOMAS ASSOCIATES
 75-274 KALIHI ROAD
 HAWAII, HAWAII 96741
 DATE: 1998, 2001, 2002, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025

THE SURVEYING PLANS AND MAP WERE PREPARED IN THE COUNTY OF HAWAII, UNITED STATES OF AMERICA, BY

THOMAS S. THOMAS ASSOCIATES
 75-274 KALIHI ROAD
 HAWAII, HAWAII 96741
 DATE: 1998, 2001, 2002, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025

THE SURVEYING PLANS AND MAP WERE PREPARED IN THE COUNTY OF HAWAII, UNITED STATES OF AMERICA, BY

THOMAS S. THOMAS ASSOCIATES
 75-274 KALIHI ROAD
 HAWAII, HAWAII 96741
 DATE: 1998, 2001, 2002, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025



SINGLE FAMILY RESIDENCE
1000' x 200' LOT, KAUAI ISLAND
COUNTY OF HAWAII - STATE OF HAWAII

AREAS CALCULATED IN ACCORDANCE WITH CHAPTER 13-5.41, SUBCHAPTER 4, SINGLE FAMILY RESIDENTIAL STANDARDS ADMINISTRATIVE RULES, SEPTEMBER 6, 1994 AND SHOWN SHARED ON THE FLOOR PLAN.

SPACE DESIGNATION	UNDEVELOPED AREAS/ENCLOSURE AREAS	LAND AREA
LIVING DINING KITCHEN	743.5 SF	0.87
PARENTS ROOM	332.5 SF	1.26
ALWAYS ROOM	337.5 SF	1.27
PHILLIPS ROOM	337.5 SF	1.27
SWANSON ROOM	305.5 SF	1.11
2003 ROOM	134.5 SF	0.48
TOTAL	2,190.5 SF	8.26
WATER SURFACE		876.5 SF
AREA REQUIRED TO BE INCLUDED IN "MARSHLAND DEVELOPABLE AREA"		4,628.5 SF

AREAS WHICH HAVE NOT BEEN INCLUDED IN CALCULATION OF "MARSHLAND DEVELOPABLE AREA":

- UNDEVELOPED AREAS PARTIALLY ENCLOSED
- STONE FLOOR (NOT ALLOWING AREA)
- ALL UNDEVELOPED UNENCLOSED AREAS

LANDS: 2,119.0 S.F.
 487.5 S.F.
 3,750.5 S.F.

AREAS MEASURED BY OWNER
 ALL DIMENSIONS MEASURED TO OUTSIDE FACE OF EXTERIOR WALLS SO AS TO INCLUDE THE THICKNESS OF WALLS

NOTES:

1. THE FLOOR PLAN, LAND SURVEY, LANDSCAPE ELEMENTS, DIMENSIONS AND NOTES HAVE BEEN SUPERIMPOSED ON THE SURVEY.
2. THE ARCHITECTURAL WALLS AND EXTERIOR WALLS SHOWN ON THIS PLAN ARE SHOWN ON A DRAWING OF THIS PROJECT DATED FEBRUARY 1, 2001.
3. THE ARCHITECTURAL WALLS AND EXTERIOR WALLS SHOWN ON THIS PLAN ARE SHOWN ON A DRAWING OF THIS PROJECT DATED FEBRUARY 1, 2001.
4. THE ARCHITECTURAL WALLS AND EXTERIOR WALLS SHOWN ON THIS PLAN ARE SHOWN ON A DRAWING OF THIS PROJECT DATED FEBRUARY 1, 2001.
5. THE ARCHITECTURAL WALLS AND EXTERIOR WALLS SHOWN ON THIS PLAN ARE SHOWN ON A DRAWING OF THIS PROJECT DATED FEBRUARY 1, 2001.
6. THE ARCHITECTURAL WALLS AND EXTERIOR WALLS SHOWN ON THIS PLAN ARE SHOWN ON A DRAWING OF THIS PROJECT DATED FEBRUARY 1, 2001.

CONSTRUCTION NOTES:
 1. ALL DIMENSIONS MEASURED TO OUTSIDE FACE OF EXTERIOR WALLS SO AS TO INCLUDE THE THICKNESS OF WALLS.
 2. ALL DIMENSIONS MEASURED TO OUTSIDE FACE OF EXTERIOR WALLS SO AS TO INCLUDE THE THICKNESS OF WALLS.
 3. ALL DIMENSIONS MEASURED TO OUTSIDE FACE OF EXTERIOR WALLS SO AS TO INCLUDE THE THICKNESS OF WALLS.
 4. ALL DIMENSIONS MEASURED TO OUTSIDE FACE OF EXTERIOR WALLS SO AS TO INCLUDE THE THICKNESS OF WALLS.
 5. ALL DIMENSIONS MEASURED TO OUTSIDE FACE OF EXTERIOR WALLS SO AS TO INCLUDE THE THICKNESS OF WALLS.
 6. ALL DIMENSIONS MEASURED TO OUTSIDE FACE OF EXTERIOR WALLS SO AS TO INCLUDE THE THICKNESS OF WALLS.

Portion of Grant 1997 to Kauai
 10.61 ACRES, MORE OR LESS
 (10.116 Acres, More or Less)

19,680.50 Ft. South
 17,421.46 Ft. West
 Ref. "PIU O MALE"
 (Found on rock)

THE INFORMATION SHOWN ON THIS MAP HAS BEEN OBTAINED FROM THE RECORDS OF THE COUNTY OF HAWAII.

Survey & Mapping
 14,000 S. KAUAI AVENUE
 SUITE 100
 KAPAA, HAWAII 96741
 TEL: (808) 335-3377 FAX: (808) 335-3378



Figure 3. Detail of proposed residence.

CULTURE-HISTORICAL BACKGROUND

In order to understand both the general and specific contexts of the subject property and the archaeological resources located thereon, and thus to fully comprehend the stewardship responsibly, the following background information has been prepared.

A Generalized Model of Hawaiian Prehistory

The generalized cultural sequence that follows is based on Kirch's (1985) model. The Settlement or Colonization Period is believed to have occurred in Hawai'i between A.D. 300–600 from the southern Marquesas Islands. This was a period of great exploitation and environmental modification, when early Hawaiian farmers developed new subsistence strategies by adapting their familiar patterns and traditional tools to their new environment (Kirch 1985; Pogue 1978). Their ancient and ingrained philosophy of life tied them to their environment and kept order. Order was further assured by the conical clan principle of genealogical seniority (Kirch 1984). According to Fornander (1969), the Hawaiians brought from their homeland certain universal Polynesian customs: the major gods *Kane*, *Ku*, and *Lono*; the *kapu* system of law and order; cities of refuge; the *'aumakua* concept; various superstitions; and the concept of *mana*.

The Development Period (A.D. 600–1100) brought about a uniquely Hawaiian culture. The portable artifacts found in archaeological sites of this period reflect not only an evolution of the traditional tools, but some distinctly Hawaiian inventions. The adze (*ko'i*) evolved from the typical Polynesian variations of plano-convex, trapezoidal, and reverse-triangular cross-section to a very standard Hawaiian rectangular quadrangular tanged adze. A few areas in Hawai'i produced quality basalt for adze production. Mauna Kea on the island of Hawai'i was a well-known adze quarry. The two-piece fishhook and the octopus-lure breadloaf sinker are Hawaiian inventions of this period, as are *'ulu maika* stones and *lei niho palaoa*. The later was a status item worn by those of high rank, indicating a trend toward greater status differentiation (Kirch 1985).

The Expansion Period (A.D. 1100–1650) is characterized by the greatest social stratification, major socioeconomic changes, and intensive land modification. Most of the ecologically favorable zones of the windward and coastal regions of all major islands were settled and the more marginal leeward areas were being developed. Early dates from leeward Kohala (Kapa'anui) were reported by Dunn and Rosendahl (1989); these sites are believed to have been temporary campsites (Wulzen et al. 1995). The greatest population growth occurred during the Expansion Period. Subsistence patterns intensified as crop farming evolved into large irrigated field systems and expanded into the marginal dryland areas. The *loko* or fishpond aquaculture flourished during this period (Bellwood 1978; Kirch 1985).

It was during the Expansion Period that a second major migration settled in Hawai'i, this time from Tahiti in the Society Islands. According to Kamakau (1976) the *kahuna* Pa'ao settled in the islands during the 13th century. Pa'ao was the keeper of the god Ku'ka'ilimoku, who had fought bitterly with his older brother, the high priest Lonopele. After much tragedy on both sides, Pa'ao escaped Lonopele's wrath by fleeing in a canoe. Kamakau (1991:100–102) told the following story in 1866:

Puna on Hawai'i Island was the first land reached by Pa'ao, and here in Puna he built his first *heiau* for his god Aha'ula and named it Aha'ula [Waha'ula]. It was a *luakini*. From Puna, Pa'ao went on to land in Kohala, at Pu'uepa. He built a *heiau* there called Mo'okini, a *luakini*. It is thought that Pa'ao came to Hawai'i in the time of the *ali'i* La'au because Pili ruled as *mo'i* after La'au. You will see Pili there in the line of succession, the *mo'o kū'auhau*, of Hanala'anui. It was said that Hawai'i Island was without a chief, and so a chief was brought from Kahiki; this is according to chiefly genealogies. Hawai'i Island had been without a chief for a long time, and the chiefs of Hawai'i were *ali'i maka'āinana* or just commoners. There were seventeen generations during which Hawai'i Island was without chiefs—some eight hundred years.

There are several versions of this story that are discussed by Beckwith (1976), including the version where Mo'okini and Kaluawilinau, two *kāhuna* of Moikeha, decide to stay on at Kohala. The bones of the *kahuna* Pa'ao are said to be deposited in a burial cave in Kohala in Pu'uwepa [possibly Pu'uepa?] (Kamakau 1964:41).

The concept of the *ahupua'a* was established during the A.D. 1400s (Kirch 1985), adding another component to a then well-stratified society. This land unit became the equivalent of a local community, with its own social, economic, and political significance. *Ahupua'a* were ruled by *ali'i 'ai ahupua'a* or lesser chiefs; who, for the most part, had complete autonomy over this generally economically self-supporting piece of land, which was managed by a *konohiki*. *Ahupua'a* were usually wedge or pie-shaped, incorporating all of the eco-zones from the mountains to the sea and for several hundred yards beyond the shore, assuring a diverse subsistence resource base (Hommon 1986).

The *ali'i* and the *maka'āinana* (commoners) were not confined to the boundaries of the *ahupua'a*; when there was a perceived need, they also shared with their neighbor *ahupua'a ohana* (Hono-ko-hou 1974). The *ahupua'a* was further divided into smaller sections such as the *'ili, mo'o'aina, pauku'aina, kihapai, koele, hakuone, and kuakua* (Hommon 1986, Pogue 1978). The chiefs of these land units gave their allegiance to a territorial chief or *mo'i* (king). *Heiau* building flourished during this period as religion became more complex and embedded in a sociopolitical climate of territorial competition. Monumental architecture, such as *heiau*, "played a key role as visual markers of chiefly dominance" (Kirch 1990:206).

The Proto-Historic Period (A.D. 1650–1795) is marked by both intensification and stress. Wars occurred between intra-island and inter-island polities. Sometime between A.D. 1736 and 1758, in the reign of Kalaniopu'u, Kamehameha I was born in the *ahupua'a* of Kokoiki, North Kohala near the Mo'okini Heiau [there is some controversy about his birth year, see Kamakau 1992:66–68]. The birth event is said to have occurred on a stormy night of rain, thunder, and lightning, signified the night before by a very bright, ominous star, thought by some to be Halley's comet [this is also controversial] (Kamakau 1992). Kamehameha's ancestral homeland was in Halawa, North Kohala (Williams 1919).

This period was one of continual conquest by the reigning *ali'i*. Ke'eaumoku, son of Keawepoepoe, set up a fort at Pololu and Honokane; he was attacked there by Kalaniopu'u, so he moved to Maui. About A.D. 1759 Kalani'opu'u conquered East Maui, defeating his wife's brother, the Maui king Kamehamehanui, by using Hana's prominent Pu'u Kau'iki as his fortress. He appointed one of his Hawai'i chiefs, Puna, as governor of Hana and Kipahulu. Kahekili became king of Maui in A.D. 1766 when Kamehamehanui died following an illness. Ke'eaumoku took his widow, Namahana, a cousin of Kamehameha I, as his wife. Their daughter, Ka'ahumanu, the future favorite wife of Kamehameha I, was born in a cave at the base of Pu'u Kau'iki, Hana, Maui in A.D. 1768 (Kamakau 1992). In A.D. 1775 Kalani'opu'u and his Hana forces raided and destroyed the neighboring Kaupo district, then launched several more raids on Molokai, Lanai, Kaho'olawe, and parts of West Maui. It was at the battle of Kalaeoka'ilio that Kamehameha, a favorite of Kalaniopu'u, was first recognized as a great warrior and given the name of Pai'ea (hard-shelled crab) by the Maui chiefs and warriors (Kamakau 1992). During the battles between Kalaniopu'u and Kahekili (1777–1779), Ka'ahumanu and her parents left Maui to live on the island of Hawai'i (Kamakau 1992).

History After Contact

Captain James Cook landed in the Hawaiian Islands on January 18, 1778. Ten months later, on a return trip to Hawaiian waters, Kalaniopu'u, who was at war with Kahekili, visited Cook on board the *Resolution* off the East coast of Maui. Kamehameha observed this meeting, but chose not to participate. The following January [1779], Cook and Kalaniopu'u met again in Kealakekua Bay and exchanged gifts. In February, Cook set sail; however, a severe storm off the Kohala coast damaged a mast and they had to return to Kealakekua. Cook's return occurred at an inopportune time, and this misfortune cost him his life (Kuykendall and Day 1976).

In 1779 King of the Cook expedition explored the North Kohala country and reported:

As far as the eye could reach, seemed fruitful and well inhabited. [Three and four miles inland, plantations of taro and potatoes and *wauke*] neatly set out in rows. The walls that separate them are made of the loose burnt stone, which are got in clearing the ground; and being entirely concealed by sugar-canes planted close on each side, make the most beautiful fences that can be conceived. [The exploring party stopped six or seven miles from the sea.] To the left a continuous range of villages, interspersed with groves of coconut trees spreading along the sea-shore; a thick wood behind this; and to the right, an extent of ground laid out in regular and well-cultivated plantations . . . as they passed, they did not observe a single foot of ground, that was capable of improvement, left unplanted. (Handy and Handy 1972:528)

Around A.D. 1780 Kalani'opu'u proclaimed that his son Kiwalao would be his successor, and he gave the guardianship of the war god Ku'ka'ilimoku to Kamehameha. Kamehameha and a few other chiefs were concerned about their land claims, which Kiwalao did not seem to honor, so after usurping Kiwalao's authority with a sacrificial ritual, Kamehameha retreated to his district of Kohala. While in Kohala, Kamehameha farmed the land, growing taro and sweet potatoes (Handy and Handy 1972). After Kalani'opu'u died in A.D. 1782 civil war broke out: Kiwalao was killed. The wars between Maui and Hawaii continued until A.D. 1795 (Kuykendall and Day 1976; Handy and Handy 1972).

In A.D. 1790 two American vessels, the *Eleanora* and *Fair American*, were in Hawaiian waters. Following an altercation between his crew and natives, the Captain of the *Eleanora* massacred more than 100 natives at Olowalu [Maui], then sailed away leaving one of its crew, John Young, on land. The other vessel, the *Fair American*, was captured and its crew killed except for one member, Issac Davis. Kamehameha also observed this but did not participate, although he did prevent Young and Davis from leaving. He also kept the vessel as part of his fleet. Young eventually became governor of the island of Hawai'i. By 1796 Kamehameha had conquered all the island kingdoms except Kauai. It wasn't until 1810, when Kaumuali'i of Kauai gave his allegiance to Kamehameha, that the Hawaiian Islands were unified under one ruler (Kuykendall and Day 1976).

Demographic trends during this period indicate population reduction in some areas, due to war and disease, yet increases in others, with relatively little change in material culture. However, there was a continued trend toward craft and status specialization, intensification of agriculture, *ali'i* controlled aquaculture, upland residential sites, and the enhancement of traditional oral history. The Kū cult, *luakini heiau*, and the *kapu* system were at their peaks, although western influence was already altering the cultural fabric of the Islands (Kirch 1985; Kent 1983). Foreigners had introduced the concept of trade for profit, and by the time Kamehameha I had conquered O'ahu, Maui and Moloka'i, in 1795, the women of Hawai'i had learned the profitable concept of prostitution (Kent 1983). This marked the end of the Proto-Historic Period and the end of an era of uniquely Hawaiian culture.

Hawai'i's culture and economy continued to change drastically as capitalism and industry established a firm foothold. The sandalwood (*Santalum ellipticum*) trade, established by Euro-Americans in 1790 and turned into a viable commercial enterprise by 1805 (Oliver 1961), was flourishing by 1810. This added to the breakdown of the traditional subsistence system, as farmers and fishermen were ordered to spend most of their time logging, resulting in food shortages and famine that led to a population decline. Kamehameha did manage to maintain some control over the trade (Kuykendall and Day 1976; Kent 1983).

Kamehameha I died on May 8, 1819 in Kailua-Kona, and once again the culture of Hawaii was to change radically. Six months after his death, his son and successor, Liholiho (Kamehameha II), met with *kuhina nui*, Ka'ahumanu, and a council of chiefs and chiefesses at Kawaihae. His advisors, which included the *kahuna* Hewahewa, convinced him to abolish the *kapu* system. He signified his agreement by sitting down and eating with his mother Keopulani, breaking the *'ai kapu* (Oliver 1961; Kuykendall and Day 1976; Kamakau 1992).

Liholiho's cousin, Kekuaokalani, caretaker of the war god *Ku-Kailimoku*, disagreed and revolted. By December of 1819 the revolution was quelled. Kamehameha II sent edicts throughout the kingdom renouncing the ancient state religion, ordering the destruction of the *heiau* images, and ordering that the *heiau* structures be destroyed or abandoned and left to deteriorate. He did, however, allow the personal family religion, the *'aumakua* worship, to continue (Oliver 1961; Kamakau 1992).

In October of 1819, seventeen Protestant missionaries set sail from Boston to Hawaii. They arrived in Kailua-Kona on March 30, 1820 to a society with a religious void to fill. Many of the *ali'i*, who were already exposed to western material culture, welcomed the opportunity to become educated in a western style and adopt their dress and religion. Soon they were rewarding their teachers with land and positions in the Hawaiian government. During this period, the sandalwood trade was wreaking havoc on the commoners, who were weakening with the heavy production, exposure, and famine just to fill the coffers of the *ali'i* who were no longer under any traditional constraints (Oliver 1961; Kuykendall and Day 1976). On a stopover in the Kohala district Ellis wrote:

About eleven at night we reached Towaihae [Kawaihae], where we were kindly received by Mr. Young. . . . Before daylight on the 22nd, we were roused by vast multitudes of people passing through the district from Waimea with sandal-wood, which had been cut in the adjacent mountains for Karaimoku, by the people of Waimea, and which the people of Kohala, as far as the north point, had been ordered to bring down to his storehouse on the beach, for the purpose of its being shipped to Oahu. There were between two and three thousand men, carrying each from one to six pieces of sandal-wood, according to their size and weight. It was generally tied on their backs by bands of ti leaves, passed over the shoulders and under the arms, and fastened across their breasts. (Kuykendall and Day 1976:42, 43; Ellis 1984:397)

The lack of control of the sandalwood trade was to soon lead to the first Hawaiian national debt as promissory notes and levies were initiated by American traders and enforced by American warships (Oliver 1961). The Hawaiian culture was well on its way towards Western assimilation as industry in Hawai'i went from the sandalwood trade, to a short-lived whaling industry, to the more lucrative, but environmentally destructive sugar industry. The windward portions of North Kohala became a center of sugarcane production, although sugarcane cultivation in Kohala had its origins in prehistory.

Pukui (1983) cites two proverbs that reference both Kohala and sugarcane. She provides an explanation and notes that Hawaiian proverbs have layers of meaning that are best left to the imagination of the reader:

He pa'a kō kea no Kohala, e kole ai ka waha ke 'ai
A resistant white sugar cane of Kohala that injures the mouth when eaten.

Pukui explains this proverb as follows:

A person that one does not tamper with. This was the retort of Pupukeya, a Hawai'i chief, when the Maui chief Makakuikalani made fun of his small stature. It was later used in praise of the warriors of Kohala, who were known for valor (1983:95).

I 'ike 'ia no o Kohala i ka pae kō, a o ka pae-kō ia kole ai ka waha.
One can recognize Kohala by her rows of sugar cane which can make the mouth raw when chewed.

Pukui interprets this proverb as follows:

When one wanted to fight a Kohala warrior, he would have to be a very good warrior to succeed. Kohala men were vigorous, brave, and strong (1983:127).

Sugarcane (*Saccharum officinarum*) was a Polynesian introduction and served a variety of uses. The *kō kea* or white cane was the most common, usually planted near Hawaiian homes for medicinal purposes, and to counteract bad tastes (Handy and Handy 1972:185). Sugarcane was a snack, condiment, famine food; fed to nursing babies, and helped to strengthen children's teeth by chewing on it (Handy and Handy 1972:187). It was used to thatch houses when *pili* grass (*Heteropogon contortus*) or *lau hala* (*Pandanus odortissimus*) were not abundant (Malo 1903). Sugarcane was also used in relation to taro and sweet potato. Handy and Handy (1972:186) explain:

In wet-taro farming, cane was planted along the embankments separating the flooded terraces and flats. In dry-taro and sweet-potato fields on the sloping *kula* or in the lower forest zone, cane was planted as hedges along the lines of stone and rubbish thrown up between the fields. Thus it helped the planter to utilize to the maximum his soil and water, and acted as a windbreak against the gusty breezes which blow in most valley bottoms, along the coasts, and on the uplands where taro is grown.

Sugarcane was grown on all islands, and when Cook arrived he wrote of seeing sugarcane plantations. The Chinese on Lana'i are credited with producing sugar first, as early as 1802. However, it was not until 1835 that sugar became established commercially, replacing the waning sandalwood industry (Oliver 1961, Kuykendall and Day 1976).

Kohala became a land in transition and eventually a major force in the sugar industry with the arrival of American missionary Elias Bond (KTF 1975). In her comprehensive study of North Kohala, Tomonari-Tuggle relates this transition:

The arrival in 1841 of Elias Bond, of the Protestant American Board of Commissioners for Foreign Missions, to Kohala marked the beginning of a 22-year period of transition in the district's history. In those years a new religion, a new land tenure system, and a changing economy altered the lifestyles and world view of the indigenous population of the district. The Kohala community was in flux, attempting to find a firm footing in a changing world, in a much larger network of social, political, and economic interactions than had previously existed. (Tomonari-Tuggle 1988:1-23)

When Elias Bond directed his efforts to initiating sugar as a major agricultural industry in Kohala, he could not have foreseen the incredible success of his modest venture. His primary concern was to develop a means for the Hawaiian people of the district to compete successfully in the market economy that had evolved in Hawaii. What resulted was a vigorous, stable, and competitive industry which survived over a century of changing economic situations. For the Hawaiian people, however, the impact was not what Bond anticipated. (Tomonari-Tuggle 1988:1-39)

In 1860 Rev. Bond engaged Samuel N. Castle in founding the Kohala Sugar Company on lands owned by Bond and his neighbor Dr. James Wight. The first crop was harvested in January 1865 (KTF 1975). Kohala's transition was a reflection of what was happening elsewhere in Hawai'i as the sugar industry grew. The industry brought in tens of thousands of laborers from Asia, Europe, the Americas, Oceania, and Africa to work on the many plantations and mills that were being established on all major islands (Oliver 1961). This influx not only radically changed the culture, but also drastically altered agricultural lands and destroyed traditional architectural features in the process. The drier leeward portions of Kohala were not suited for cane cultivation and thus became vast pasturelands for grazing cattle.

A Generalized Settlement Model for Kohala Waho

The following summary of settlement patterns for the leeward coast of North Kohala follows earlier regional models (Rosendahl 1972; Griffin et al. 1971; Tomonari-Tuggle 1988) and takes into account observations and information contained in traveler, missionary, and Kingdom records (Maly 2000).

Evidence for early occupation of Kohala has been collected from Kapa'anui. Dunn and Rosendahl (1989) recovered radiocarbon samples that potentially date to as early as A.D. 461 (Site 12444). This early date may be related to the establishment of small, short-term camps to exploit seasonal, coastal resources. Data recovered from Mahukona suggest initial occupation there by A.D. 1280 (Burgett and Rosendahl 1993:36). The earliest date range for permanent settlement in Kohala (A.D. 1300) was obtained from Koai'e, a coastal settlement where subsistence primarily derived from marine resources. According to Tomonari-Tuggle (1988:13), these resources were probably supplemented by small-scale agriculture.

The period from A.D. 1300–1500 was characterized by population growth and expanded efforts to increase upland agriculture. Rosendahl (1972) has proposed that settlement at this time was related to seasonal, recurrent occupation in which coastal sites were occupied in the summer to exploit marine resources, and upland sites were occupied during the winter months, with a focus on agriculture. An increasing reliance on agricultural products may have caused a shift in social networks as well, according to Hommon (1976). Hommon argues that kinship links between coastal settlements disintegrated as those links within the *mauka-makai* settlements expanded to accommodate exchange of agricultural products for marine resources. This shift is believed to have resulted in the establishment of the *ahupua'a* system. The implications of this model include a shift in residential patterns from seasonal, temporary occupation, to permanent dispersed occupation of both coastal and upland areas.

This pattern continued to intensify from A.D. 1500 to Contact (A.D. 1778), and there is evidence that suggests that there were substantial changes to the political system as well. Within Kohala, the Great Wall complex at Koai'e is organized with platforms in the complex apart from contemporaneous features. Griffin et al. (1971) interpret this as symbolizing class stratification. By AD 1600, there is island-wide evidence to suggest that growing conflicts between independent chiefdoms were resolved through warfare, culminating in a unified political structure at the district level. It has been suggested that this unification resulted in a partial abandonment of portions of leeward Hawai'i, with people moving to more favorable agricultural areas (Barrera 1971; Schilt and Sinoto 1980).

By the time of contact, numerous coastal villages and extensive dryland agricultural systems were in place in North Kohala. The *ahupua'a* system of social organization was also firmly established by this time, with wedge-shaped land units extending from the mountains to the sea. The *ahupua'a* were controlled by local chiefs, and were integrated at the district level. Districts were ruled by paramount chiefs through a system of taxation and redistribution. Social stratification was defined by a class separation between the ruling *ali'i* (chiefs) at one end, and the *maka'ainana* (commoners) at the other. Kamehameha I eventually united the Island of Hawai'i, and ultimately all of the Hawaiian Islands, and freely participated in the European-introduced market economy.

The earliest detailed written descriptions of the region are contained in the Journal of William Ellis (1963), an English Missionary who traveled through the area in 1823. Two of his journal entries are of particular relevance: a visit to the villages of Awalua (situated midway between Pāo'o and 'Upolu) and Hihiiu (Māhukona), and an account of the coast between Kawaihae and Māhukona related to him by one of his companions named Lorrin Thurston.

About three p.m. we reached Owawarua [Awalua], a considerable village on the north-west coast, inhabited mostly by fisherman. Here we tried to collect a congregation, but only three women and two small children remained in the place, the rest having gone to Waimea to fetch sandalwood for Karaiomoku. From Owawarua we passed on to Hihiiu [Māhukona], where we had an opportunity to speak to a small party of natives.

In these villages we was numbers of canoes and many large fishing nets, which are generally made with a native kind of flax, very strong and durable . . . In taking fish out of the sea, they commonly make use of a net, of which they have many kinds, some very large, others mere hand-nets; they occasionally employ the hook and line, but never use the spear or dart which is a favourite weapon with the southern islanders.

Quantities of fish were spread out in the sun to dry, in several places, and the inhabitants of the northern shores seem better supplied with this article than those of any other part of the island. . . . Being considerably fatigued, and unable to find any fresh water in the village [Hihii/Māhukona], we procured a canoe to take us to Towaihae [Kawaihae], from which we were distant about 20 miles. Though we had numbered, in our journey today, 600 houses, we had not seen a thing like four hundred people, almost the whole population being employed in the mountains cutting sandalwood. It was about seven o'clock in the evening when we sailed from Hihii, in a single canoe. (Ellis 1963:285-286)

On the 23d Mr. Thurston left Towaihae, and walked along the shore towards the north point ['Upolu]. About noon he reached the small village, called Kipi [South of Pāo'o], where he preached to the people; and as there was only one village between Kipi and the place where I had preached on Wednesday evening [Hihii/Māhukona], he retraced his steps to Towaihae. He preached at another four villages on his return, where the congregations, though not numerous, were attentive . . . The coast was barren; the rocks volcanic; the men were all employed in fishing; and Mr. Thurston was informed that the inhabitants of the plantations, about seven miles in the interior, were far more numerous than on the shore. In the evening he reached Towaihae. (Ellis 1963:288)

As early as the 1830s, missionaries in Kohala noting that "deaths are more numerous than births; [h]ence the population is decreasing" (Doyle 1953:72) began compiling census records by *ahupua'a*. In an 1835 census, Pāo'o is listed as having a resident population of 122 (Schmidt 1973), this number being the largest population between Kawaihae and Lapakahi. Traditional and historical accounts indicate that the residents of the *ahupua'a* in Kohala waho lived both along the coast in fishing villages and in the uplands near the agricultural systems. It is interesting that there were 122 residents recorded in 1835, because thirteen years later in 1848 there were only seven claimants during the *Māhele*, of which only one claim awarded (see discussion below).

Traditional land use patterns saw a rapid shift after the *Mahele* in 1848. By the mid-19th century, leeward settlement shifted to the windward side of North Kohala as the leeward, agriculturally marginal, areas were abandoned in favor of more productive and wetter sugarcane lands. In addition, native populations were decimated by disease and a depressed birth rate. According to Tomonari-Tuggle (1988:37), the remnant leeward population nucleated into a few small coastal communities and dispersed upland settlements. Settlements were no longer based on traditional subsistence patterns, largely because of the loss of access to the full range of necessary resources. At this point most communities were centered on sugar mills and became part of the plantation social hierarchy. Much of the coastal land in leeward North Kohala was used as cattle pasture. Walled complexes became the dominant residential structure for those remaining leeward settlements as families enclosed their holdings to protect them from feral cattle and to clearly define their *kuleana* boundaries.

Pāo'o Ahupua'a

Pāo'o was segregated from north to south into six *ahupua'a* during the *Māhele*. One half of Pāo'o 1 (the northernmost division) was awarded to Kainaina (LCAw. 33 M.A.), perhaps through Kalaipaopao (LCAw. 1436H and LCAw. 8848) while the remaining half and the other five divisions were retained as Government land. Four additional land claims were made for Pāo'o lands, including a claim for Pāo'o 6 by

Pohakeokeo (also Pokeokeo) purporting to be the *konohiki*, but none were awarded. The accompanying testimony indicates that the claims are generally for cultivated fields and associated residences in the *mauka* portions of the *ahupua'a*. There are no references to the extensive coastal settlement observed archaeologically.

As the *Māhele* was drawing to a close, the Kingdom established a program whereby more native tenants could gain access to fee-simple land through grants (Maly 2000). The land base for these grants were the lands retained by the government during the *Māhele*. In 1856 the current study parcel was sold as part of a 16-acre fee-simple land grant (Grant No. 1997) to Kauwe while four additional grants (Grant Nos. 1972, 2224, 2335, and 2725) were sold between 1856 and 1860 in more *mauka* portions of Pāo'o (Figure 6). Unfortunately, the grant records are silent with respect to Kauwe's and the other grantees uses of the land.

In 1862, the Boundary Commission was established in the Kingdom of Hawai'i to set the boundaries of the *ahupua'a* awarded during the *Māhele*. The primary informants for the boundary descriptions were old native informants. While no Boundary Commission records exist for the Pāo'o *ahupua'a*, there is testimony about neighboring Kaiholena from Kikalaeka, an informant born in Pāo'o 6:

I was born on the land of Paoo 6 before Liholiho went to London [ca. 1823]. I am a kamaaina of Kohala and know the boundaries between Kaiholena 1st and Paoo 6. Paoo 6 bounds Kaiholena 1st on the north side...A place at the sea shore where the sea rushes in from the point and spouts up, called kepuhi, is the boundary between Kaiholena 1st and Paoo 6. Beadle [A rancher, possibly the *Kohoniki*?] used to taboo salt ground on Paoo 6 next to the shore. The north boundary of Kaiholena runs mauka along Paoo 6 to Puupili, and thence mauka to Kikiwahia a stone wall on the boundary of Beadle's land in Paoo 6. [Boundary Commission Volume A 1 April 14, 1873]

In 1862, the remaining lands within the Pāo'o *ahupua'a*, along with much of the neighboring Government lands were leased to the Waimea Grazing and Agricultural Company for horse and cattle ranching purposes (Dye and Maly 2000). This lease did not include Grant No. 1997 to Kauwe, and it is unclear if cattle were ever grazed on the current study parcel. The lease read as follows:

June 18, 1862
Lease No. 92

Between His Majesty, Minister of Interior and the Waimea Grazing and Agricultural Company...Leasing Government Lands of:

Pahinahina; Makiola; Kalala 1 & 2; Kokio; Pohakulua 1 & 2; Kaihooa 1 & 2; Puaiki; Kehena 2nd; Kipi; Makeanehu 2, 3, 4 & 5; Paoo 1, 2, 3, 4, 5 & 6; Lamaloloa; and Kaipuhaa; an area containing together 7972 acres more or less, which tracts of land and all their present improvements and advantages (the rights of native tenants however being reserved) the said "Waiméa Grazing and Agricultural Company" is to possess and enjoy without unlawful molestation for the term of Ten years from this date, with the privilege of remaining the same for the further term of at the expiration of the lease...(Hawaii State Archives; Interior Department, Lands Folder)

The lands of Pāo'o were purchased by Parker Ranch in 1932 and used for grazing purposes until relatively recent times. The cattle were grazed at the shore seasonally, usually following rains, when the *makai* pastures produced rich feed supplemented with *kiawe* beans. During the ranching years few people visited the coastline (Dye and Maly 2000: 63).

CONSULTATION

Consultation for the current study focused on individuals and families with genealogical ties to the Pāo'o area. To that end, Arthur Mahi (Papa Mahi) and his cousin Isabella Mahi Medeiros (Auntie Bella) were the primary consultants along with members of the Luhiau 'Ohana (represented by Valerie Luhiau Ako and Anthony Ching Ako). Several sites visits were made with the various consultants between May of 2003 and December of 2004. Consultants were shown plans of the proposed single-family residence and its relative location with respect to the archaeological sites. All consultations were unstructured and informal in nature; they were not tape recorded and transcribed. All of the consultants shared common concerns: that the archaeological sites (particularly the burial sites) be protected, that Mr. Cohen and his family comprehend the stewardship responsibility that comes with "ownership" of this land, and that they continue to work with the consultants to ensure an appropriate level of cultural sensitivity (Figure 7).

Their collective *mana'o* was used to establish the minimal preservation buffers for the two sites (SIHP Sites 2380 and 2383) in the vicinity of the proposed single-family residence. The Luhiau 'Ohana expressed some concern about the proposed roadway improvements leading to increased and uncontrolled public access and resulting in possible vandalism to the sites on the property that are distant from the proposed single-family home. While they supported cautionary signage there were strongly opposed to public interpretation. Papa Mahi explained that for him and his ancestors the location and design of the proposed single-family residence (as well as the Cohen family) were "*maika'i*." In general the consultants supported the development proposal.

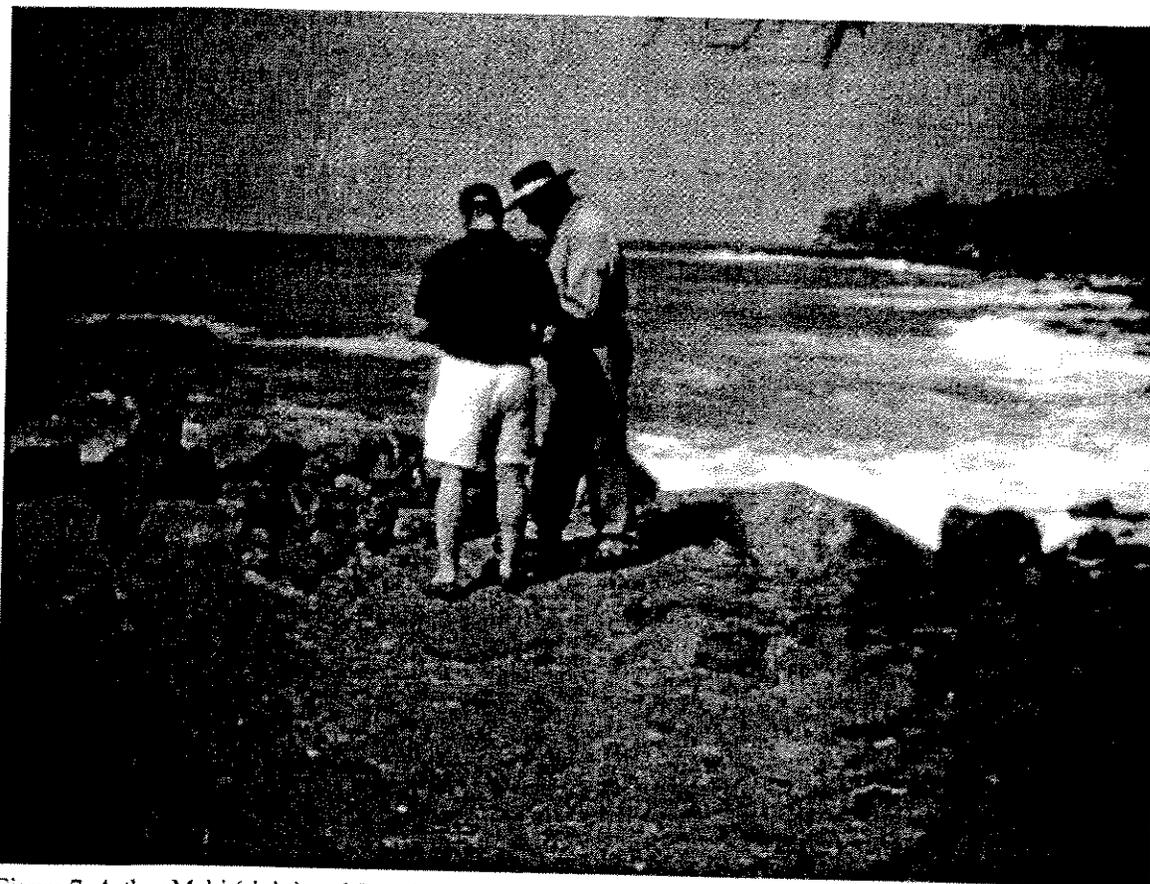


Figure 7. Arthur Mahi (right) and Jonathan Cohen (left) along the Pāo'o shoreline sharing life experiences.

STEWARDSHIP APPROACHES

As indicated, it is the landowner's intention to preserve the archaeological resources on the subject parcel through avoidance and protection. This conservation approach is consistent with the wishes of the cultural consultants who will continue to be consulted as interested parties by the Cohen family. The vast majority of the development activity will occur within a building envelope in the southern portion of the parcel (see Figure 4). Thus, short-term protection and long-term preservation measures will not be discussed on a site-by-site basis, but rather, relative to the development envelope and the general measures that will apply to all of the sites.

The only activity that will take place on the property outside of the building envelope for the single-family residence will either take place in already existing roadways and parking areas or will be restricted to the proposed coastal footpath and the jeep road realignment, the routes of which were designed by the project archaeologists to avoid directly impacting any of the archaeological features. The project archaeologists will also physically construct the coastal footpath, and an archaeological monitor will be present during all activity undertaken outside of the building envelope. Following improvements in these areas, the landowner will install signs informing potential users about the cultural and historical significance of the area, the penalties for disturbing historic properties, and cautioning them to restrict their use of the area to the developed footpath and the immediate shoreline. Signs will be prepared in both English and Hawaiian language versions and will read as follows:

Welcome to the Pāo'o shoreline

For generations people have lived, worked, and played here. And for generations, those who have come here have taken care of this land. In an effort to continue this tradition, and to respect those who have come before us, you are encouraged to either use this footpath or walk directly along the shoreline, to refrain from gathering or removing rocks or any other objects from this area, and to take your rubbish away when you leave. This area contains numerous historical sites that are protected under State Law Chapter 6E-11, Hawai'i Revised Statutes, and should not be disturbed. Thank you and enjoy your stay.

E komo mai ā ke kahakai o Pāo'o.

He nui no na hanaua i noho, a hana, a pā'ani i 'ane'i. A no kēlā mau hanauna, ua mālama 'ia ka 'āina. No ka ho'omau 'ana o kēia hana ma'amau, a no ka māhalo o lākou i holo mua ai, e hele 'oe ma ke ala hele, ai 'ole ma ka lihi kai, mai 'ohi 'oe i kekāhi pōhaku a me ka mea e a'e, a e lawe 'oe o kou 'ōpala i kou ho'i 'ana. He nui no na wahi kahiko ko kēia wahi, a e ho'omalulu 'ia lākou ma ke Kānāwai Aupuni Puke 6E-11, Ke Kānāwai Hawai'i Hou, a'ole pono e ho'opilikia 'ia. Mahalo a e hau'oli i kou ho'okipa 'ana mai.

Short-term Protection Measures

To protect the archaeological resources in the immediate vicinity of the residential development activities construction fencing will be erected at the limits of the development envelope, which will be clearly marked on all construction drawings. The proposed location of this fencing is shown on Figure 8. In the vicinity of SIHP Sites 2380 and 2383 the protective fencing will be placed at a minimum distance of 15 feet from the outer edge of the features, and as per the approved burial treatment plan (Rechtman 2003), the protective buffer in the vicinity SIHP Sites 6440, 6441, 6442, and-6443 will be a minimum of thirty feet from the edge of the features. The placement of the protective fencing will be verified in writing to DLNR-SHPD prior to any development activity and the project archaeologist will meet on site with the construction crew to orient them to the preservation sites. Following construction the protective fencing will be removed and the long-term preservation measures implemented (see Rechtman 2003 for the approved treatment of the burial features).

Long-term Preservation Measures

In an effort to stabilize the archaeological features the landowner has asked the project archaeologists to work with the identified descendant families in the removal of invasive vegetation, primarily *kiawe*, that threatens to tumble the dry-stacked stone constructions. Tumbled areas will be restacked in a manner as closely resembling the original construction as possible. The condition of the sites will be photo documented before and after vegetation clearing and any restacking. These photographs will be archived as baseline information for comparative purposes. All vegetation removal and photo documentation will be done under the direct supervision of a state-permitted archaeologist. The sites will be inspected on a yearly basis to identify the need for continued vegetation control and to assess whether any damage, either nature or manmade, has occurred. If any such damage has occurred DLNR-SHPD will be informed and new photographs will be taken. The nature of the damage will be assessed, and in consultation with descendant families and DLNR-SHPD corrective measure sought. Aside from the initial and periodic vegetation removal and associated possible restacking, the sites will be preserved in an as is condition.

Implementation of the above described stewardship practices will help to ensure that no cultural resources will be adversely affected by the proposed development of the Cohen's single-family residence and associated infrastructure.

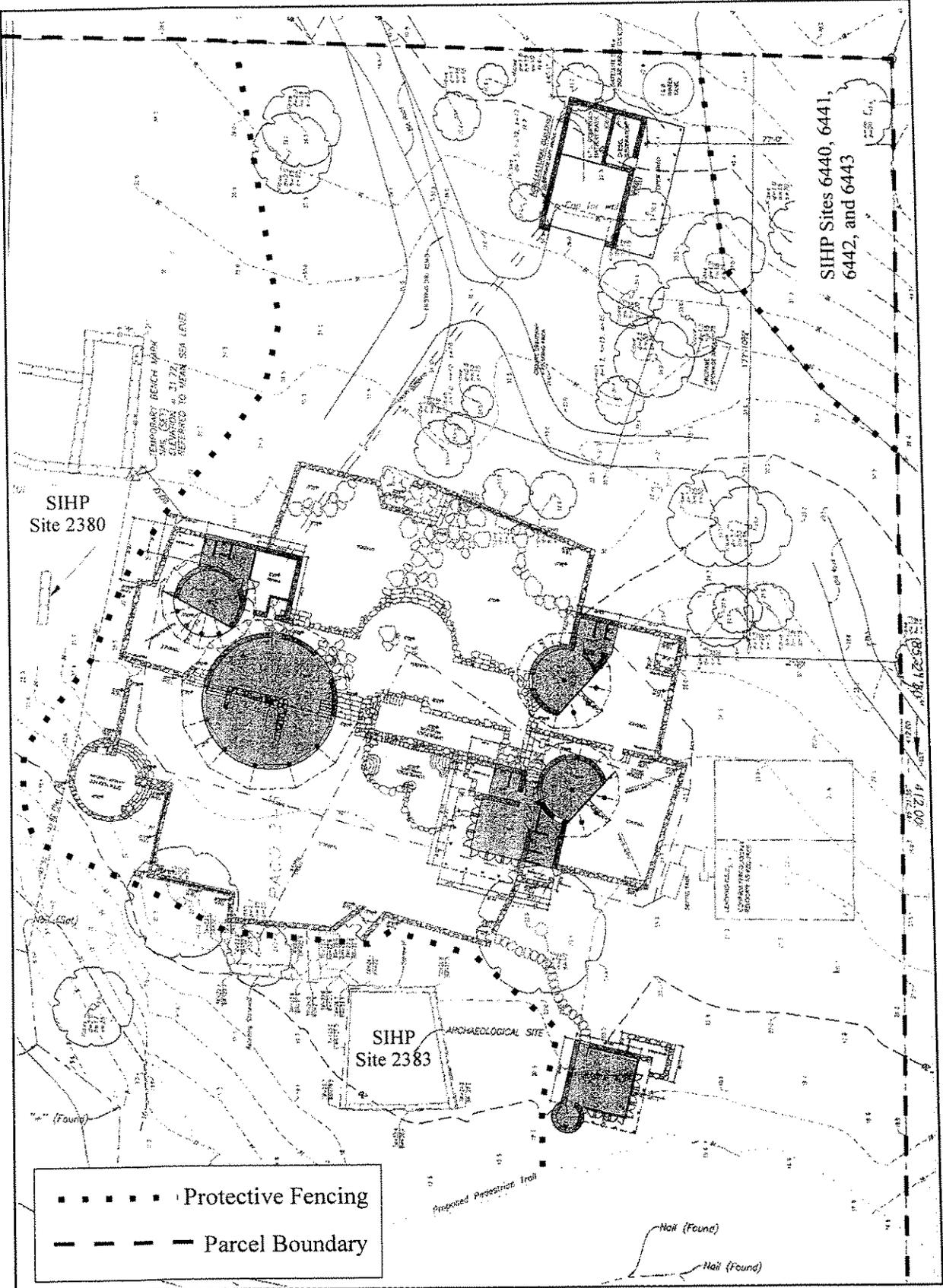


Figure 8. Residential development envelope and protective fencing.

REFERENCES CITED

- Barrera, W.
1971 Anaehoomalu: A Hawaiian Oasis. Preliminary Report of Salvage Research in South Kohala, Hawaii. *Pacific Anthropological Records* No. 15. Department of Anthropology, B.P. Bishop Museum, Honolulu.
- Beckwith, M.
1976 *Hawaiian Mythology*. University of Hawai'i Press, Honolulu.
- Bellwood, P.
1978 *The Polynesians: Prehistory of an Island People*. Thames and Hudson, Ltd, London.
- Bonk, W.
1968 The Archaeology of North and South Kohala - from the Ahupua'a of Kawaihae to the Ahupua'a of Upolu: Coastal Archaeology Surface Survey. *Hawaii State Archaeological Journal* 68-3. Division of State Parks, Department of Land and Natural Resources.
- Burgett, B. P., and P. H. Rosendahl
1993 Summary of Archaeological Inventory Surveys, Kapaanui Agricultural Subdivision and Mahukona Property, Lands of Kapaanui, Kou, Kamano, Mahukona 1st and 2nd, Hihui, and Kaoma, North Kohala District, Island of Hawaii. (TMK:3-5-7-02:11 and TMK:3-5-7-03:1-3,10-14,16-18). PHRI Report 743-020993. Prepared for Chalon International of Hawaii, Inc.
- Clark, M., and R. Rechtman
2003 Archaeological Data Recovery at SIHP Site 2382 (TMK:3-5-7-01:5), Pāo'o Ahupua'a, North Kohala District, Island of Hawai'i. Rechtman Consulting Report RC-0098. Prepared for Jonathan Cohen, Lincoln, MA.
- Doyle, E.
1953 Makua Laiana: the Story of Lorenzo Lyons. Compiled from manuscript journals 1832-1886. *Honolulu Star Bulletin*.
- Dunn, A. E., and P. H. Rosendahl
1989 Archaeological Inventory Survey, Kapaanui Agricultural Subdivision, Lands of Kapaanui and Kou, North Kohala District, Island of Hawaii. PHRI Report 568-100289. Prepared for Ahualoa Development, Inc.
- Dye, T. S. and K. Maly
2000 Archaeological Inventory Survey of the Coastal Portion of Kaiholena Ahupua'a, North Kohala, Hawai'i. IARII Report prepared for Pohaku Kea LLC, Menlo Park.
- Ellis, W.
1963 *Journal of William Ellis*. Advertiser Publishing Company Ltd., Honolulu.
1984 *Polynesian Researches, Hawaii*. Rutland, Vermont: Charles E. Tuttle Company, Inc.
- Fornander
1969 *An Account of the Polynesian Race: Its Origin and Migrations*. Tokyo: Charles E. Tuttle Co., Inc.

- Griffin, P. B., T. Riley, P. H. Rosendahl, and H. D. Tuggle
 1971 Archaeology of Halawa and Lapakahi: Windward Valley and Leeward Slope. *New Zealand Archaeological Association Newsletter* 14(3):101-112.
- Hammatt, H., and W. Folk
 1980 Archaeological Surface Survey and Subsurface Testing of Coastal Lands in Pāo'o, Kohala, Hawai'i Island. Prepared for Signal Properties.
- Handy, E.S.C., and E.G. Handy
 1972 *Native Planters in Old Hawaii: Their Life, Lore and Environment*. B.P. Bishop Museum Bulletin 223. Bishop Museum Press, Honolulu. (with M.K. Pukui)
- Hommon, R.
 1976 The Formation of Primitive States in Pre-Contact Hawaii. Ph.D. Dissertation (Anthropology), University of Arizona, Tucson. University Microfilms, Inc., Ann Arbor, Michigan.
 1986 Social Evolution in Ancient Hawai'i. IN Kirch, P.V. (ed.), *Island Societies: Archaeological Approaches to Evolution and Transformation*: 55-88. Cambridge: University Press.
- Hono-ko-hau Study Advisory Commission
 1974 The Spirit of Ka-Loko Hono-Ko-Hau. National Park Service, U.S. Department of the Interior.
- Kamakau, S.
 1964 Ka Po'e Kahiko: The People of Old. B.P. *Bishop Museum Special Publication* 51. Bishop Museum Press, Honolulu.
 1976 The Works of the People of Old, Na hana a ka Po'e Kahiko. *B.P. Bishop Museum Special Publication* 61. Bishop Museum Press, Honolulu.
 1991 *Tales and Traditions of the People of Old*. Honolulu: Bishop Museum Press.
 1992 Ruling Chiefs of Hawaii. The Kamehameha Schools Press, Honolulu (revised edition).
- Kent, N.
 1983 Hawaii: Islands Under the Influence. University of Hawai'i Press, Honolulu.
- Kirch, P.
 1984 *The Evolution of the Polynesian Chiefdoms*. Cambridge University Press, New York.
 1985 *Feathered Gods and Fishhooks: An Introduction to Hawaiian Archaeology and Prehistory*. University of Hawaii Press, Honolulu.
 1990 Monumental Architecture and Power in Polynesian Chiefdoms: A Comparison of Tonga and Hawaii. *World Archaeology* 22(2).
- KTF (Kohala Task Force)
 1975 Kohala: A Candid View. Report of the Kohala Task Force [March].
- Kuykendall, R., and A. Day
 1976 *Hawaii: A History From Polynesian Kingdom to American Statehood*. Prentice-Hall, Inc., Englewood Cliffs.

- Malo, D.
1903 Hawaiian Antiquities. *B.P. Bishop Museum Special Publication 2*. Bishop Museum Press, Honolulu.
- Maly, K.
2000 Historical Background. In: Archaeological Inventory Survey of the Coastal Portion of Kaiholena *Ahupua'a*, North Kohala, Hawai'i. IARII Report prepared for Pohaku Kea LLC, Menlo Park. Dye and Maly (2000).
- Oliver, D.
1961 *The Pacific Islands*. University of Hawaii Press, Honolulu.
- Pogue, J.
1978 *Mooleo Hawaii*. Hale Paipalapala Aupuni, Honolulu (Revised Edition).
- Pukui, M.
1983 'Olelo Noeau, Hawaiian Proverbs & Poetical Sayings. *B.P. Bishop Museum Special Publication 71*. Bishop Museum Press, Honolulu.
- Rechtman, R.
2000 A Plan for Archaeological Data Recovery at SIHP Site 2382 Pāo'o Ahupua'a, North Kohala District, Island of Hawai'i. Report RC-0019. Prepared for Mr. Jonathan Cohen.
- 2003 Burial Treatment Plan for a Coastal Parcel in Pāo'o Ahupua'a (TMK:3-5-7-01:5), Pāo'o Ahupua'a, North Kohala District, Island of Hawai'i. Rechtman Consulting Report RC-0019. Prepared for Mr. Jonathan Cohen, Lincoln, MA.
- Reinecke, J.
n.d. Survey of Sites on West Hawaii. Unpublished manuscript, Department of Anthropology, B. P. Bishop Museum, Honolulu (1930).
- Rosendahl, P.
1972 Aboriginal Agriculture and Domestic Residence Patterns in Upland Lapakahi, Island of Hawaii. Ph.D. Dissertation, University of Hawaii, Honolulu.
- Schilt, R., and A. Sinoto
1980 Limited Phase I Archaeological Survey of Mahukona Properties, North Kohala, Island of Hawai'i. B.P. Bishop Museum, Honolulu. Prepared for Belt, Collins and Associates.
- Schmidt, R.
1973 The Missionary Census of Hawaii. *Pacific Anthropological Records* No. 20, Department of Anthropology B.P. Bishop Museum, Honolulu.
- Soehren, L.
1969 Archaeological Reconnaissance of Parker Ranch Coastal Lands, North Kohala, Hawai'i Island. B.P. Bishop Museum Manuscript, Honolulu.
- Tomonari-Tuggle, M.
1988 North Kohala: Perception of a Changing Community. A Cultural Resource Management Study. Prepared for Division of State Parks, Outdoor Recreation, and Historic Sites, Department of Land and Natural Resources, State of Hawaii.

- Williams, J.
1919 A Little Known Engineering Work in Hawaii. IN *Thrum's Hawaiian Almanac and Annual for 1919*. Thos. G. Thrum, Honolulu.
- Wolfe, E., and J. Morris
1996 *Geological Map of the Island of Hawaii*. U.S. Department of the Interior, U.S. Geological Survey.
- Wulzen, W., J. Head, and S. Goodfellow
1995 Final Report: Archaeological Inventory Survey, Chalon International Mahukona Mauka Parcel; Lands of Kamano, Mahukona 1st and 2nd, Hihui and Kaoma, North Kohala District, Island of Hawaii (TMK:3-5-7-02:por.36). PHRI Report 1520-080895. Prepared for Chalon International of Hawaii, Inc.

Cultural Impact Assessment Associated with
the Proposed Development of a Single-Family
Residence in Conservation District Land

(TMK: 3-5-7-01:5)

Pāo'ō Ahupua'a
North Kohala District
Island of Hawai'i



PREPARED BY:

Robert B. Rechtman, Ph.D.

PREPARED FOR:

Jonathan Cohen
Baker Bridge Road
Lincoln, MA 01773

December 2004

RECHTMAN CONSULTING, LLC

HC 1 Box 4149 Keā'au, Hawai'i 96749-9710

phone: (808) 966-7636 fax: (808) 443-0065

e-mail: bob@rechtmanconsulting.com

ARCHAEOLOGICAL, CULTURAL, AND HISTORICAL STUDIES

Cultural Impact Assessment Associated with
the Proposed Development of a Single-Family
Residence in Conservation District Land
(TMK: 3-5-7-01:5)

Pāo'o Ahupua'a
North Kohala District
Island of Hawai'i

EXECUTIVE SUMMARY

At the request of Mr. Jonathan Cohen, Rechtman Consulting, LLC conducted a Cultural Impact Assessment for the development of a single-family residence on TMK:3-5-7-01:5 in Conservation District zoned land within Pāo'o Ahupua'a, North Kohala District, Hawai'i Island. The subject property occupies 10.61 acres along the coast, less than one mile to the south of Lapakahi State Park. The project also proposes improve the existing access road, reroute a segment of a lateral jeep road away from both the proposed building site and a series of burial sites, improve public vehicular access in the northern part of the parcel, and establish a coastal footpath from the improved vehicular access point leading south through the parcel. The design involves leaving as much of the property as-is with no disturbance to any natural or man-made features outside of the development envelope.

Background research indicates that several archaeological sites (including documented burial sites) exist on the subject parcel; and that the parcel was part of a larger property granted by the Hawaiian Government to Kauwe in 1856. No records were located that describe Kauwe's use of the land. Historical sources do indicate that this portion of coastal Kohala Waho was a rich fishery and that during the late nineteenth and early twentieth centuries much of the area was used for grazing cattle.

Consultation for the current study focused on individuals and families with genealogical ties to the Pāo'o area. Several sites visits were made with the various consultants between May of 2003 and December of 2004. All of the consultants shared common concerns: that the archaeological sites (particularly the burial sites) be protected, that Mr. Cohen and his family comprehend the stewardship responsibility that comes with "ownership" of this land, and that they continue to work with the consultants to ensure an appropriate level of cultural sensitivity. While it is abundantly clear from the archaeological and historical record that the property was used during precontact and possibly early historic times for the entire range of traditional Hawaiian cultural activities and practices (residential, burial, ceremonial, subsistence production and procurement, etc.); none of the consultants had knowledge of any specific traditional cultural practices currently being exercised on the property, although there was a recognition that the shoreline is actively being accessed for fishing and surfing. Consultants were shown a conceptual plan of the proposed single-family residence and its relative location within the property. Their collective *mana'o* is being incorporated into the stewardship plans for the property. In general the consultants supported the development proposal.

This study identified the following potential impacts to cultural resources: potential impacts to the identified burial sites (SIHP Sites 6440, 6441, 6442, and 6443), which are evaluated as significant under Criterion D and E; and potential impacts to the non-burial archaeological sites recorded on the parcel (SIHP Sites 2348, 2350, 2366, 2367, 2369, 2371, 2371, 2373, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 4596, 4597, 4598, 4599, 6438, and 6444), which are evaluated as significant under Criterion D and in the case of SIHP Site 2383 under Criterion E as well. Other potential impacts are nonspecific and related to coastal access and recreation, primarily for fishing and surfing. The locations of such activities could be considered traditional cultural properties and as such would be significant under Criterion E.

To mitigate the potential impacts to the identified burial sites the approved burial treatment plan will be implemented prior to the commencement of any development activities. To mitigate the potential impacts to the non-burial archaeological sites an archaeological sites preservation plan will be submitted to DLNR-SHPD for approval and development activities will not commence until DLNR-SHPD approval has been obtained and the site protection measures and stewardship aspects of the preservation plan are implemented. The combination of the proposed Jeep road realignment, the public access improvements in the north portion of the subject parcel, and the establishment of a coastal foot trail will serve to adequately mitigate any potential impacts to coastal access and recreational activities.

Execution of the above described mitigation measures will help to ensure that no cultural practices and beliefs or associated cultural resources will be adversely affected by the proposed development of the Cohen's single-family residence.

CONTENTS

INTRODUCTION 1

PROJECT AREA DESCRIPTION AND PROPOSED DEVELOPMENT ACTIVITIES..... 4

CULTURE-HISTORICAL BACKGROUND..... 7

 A Generalized Model of Hawaiian Prehistory 7

 A Generalized Model for Kohala Waho 11

 Pāo'o *Ahupua'a* 13

CONSULTATION 16

IDENTIFICATION AND MITIGATION OF POTENTIAL CULTURAL IMPACTS..... 17

REFERENCES CITED 19

Figures

1. Project area location. 2

2. Study parcel showing the locations of the previously recorded archaeological sites. 3

3. Terrain and landscape in the area of the proposed residence..... 4

4. Plan view of project area showing the location of the proposed residence..... 5

5. Detail of the proposed residence..... 6

6. 1936 Territory of Hawaii survey map showing land grants..... 15

7. Arthur Mahi (right) and Jonathan Cohen (left) sharing life experiences
along the Pāo'o shoreline..... 16

INTRODUCTION

At the request of Mr. Jonathan Cohen, Rechtman Consulting, LLC conducted a Cultural Impact Assessment (CIA) associated with the development of a single-family residence on TMK:3-5-7-01:5 in Conservation District zoned land within Pāo'o Ahupua'a, North Kohala District, Hawai'i Island (Figure 1). Early archaeological work on the subject property included studies by Reinecke (n.d.), Bonk (1968), and Soehren (1969). These studies were all of a regional nature and included archaeological survey of large tracts of land of which the study area was only a small part. Archaeological Research Center Hawaii, Inc completed a more intensive surface survey and subsurface testing of the entire subject parcel in 1980 (Hammatt and Folk 1980). They recorded twenty-seven sites (Figure 2); however, they adopted a "splitter" approach when defining site boundaries. Separate site numbers were assigned to adjoining features. In essence they recorded 27 features that perhaps could have been placed within 13 site areas. In any case, the level of recording and associated subsurface testing was comprehensive, and deemed by DLNR-SHPD to be commensurate with current inventory survey standards (McCoy Personal Communication 2000). Subsequent to that determination, archaeological data recovery was proposed (Rechtman 2000) and successfully completed at SIHP Site 2382 (Clark and Rechtman 2003); and a burial treatment plan (Rechtman 2003) was prepared and approved for a complex of closely situated features (SIHP Sites 6440, 6441, 6442, and 6443). Additionally, Kepā Maly prepared a detailed culture-historical background for an adjoining *ahupua'a* (Kaiholena) that included specific information about Pāo'o as well as information relative to the general region known as *Kohala waho* or Outer Kohala, of which the current study area is a part (Maly 2000). The information contained in these earlier studies, combined with additional archival research specific to Pā'o Ahupua'a and consultant interviews forms the basis for the interpretations and evaluation presented in the current study.

This report is intended to accompany an Environmental Assessment (EA) compliant with Chapter 343 HRS, as well as fulfilling the requirements of the County of Hawai'i Planning Department and the Department of Land and Natural Resources (DLNR) with respect to permit approvals for land-altering and development activities. This study has been prepared pursuant to Act 50, approved by the Governor on April 26, 2000; and in accordance with the Office of Environmental Quality Control (OEQC) *Guidelines for Assessing Cultural Impact*, adopted by the Environmental Council, State of Hawai'i, on November 19, 1997.

Below is a description of the general project area and the proposed development activities. This is followed by a detailed background section providing setting and context (cultural, historical, and regional) to facilitate a more complete understanding of the potential significance of the cultural landscape and the historic and cultural properties within that landscape. Next, the consultation process is described, which is followed by a discussion of potential cultural impacts and the appropriate actions and strategies that mitigate any potential impacts.

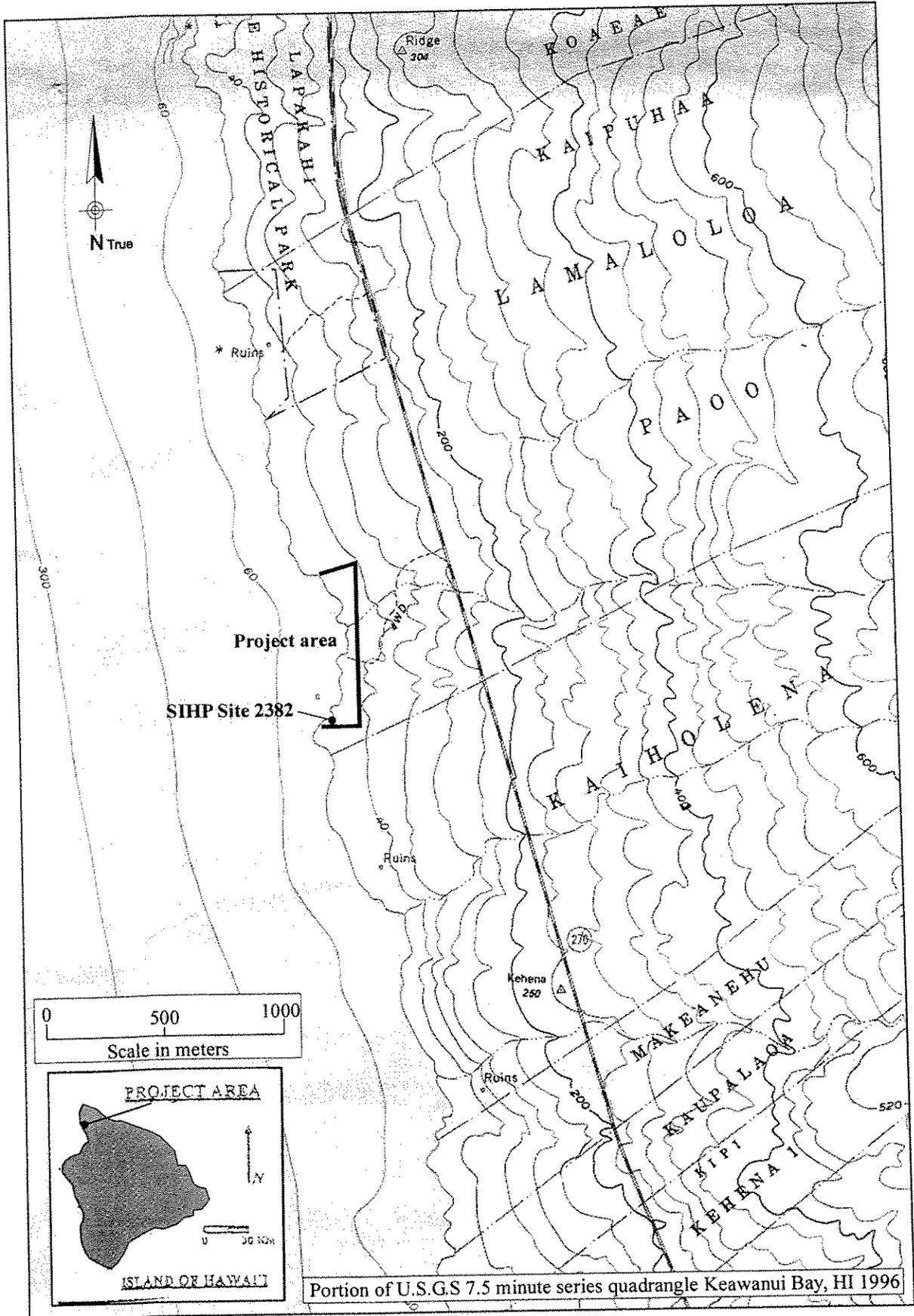


Figure 1. Project area location.

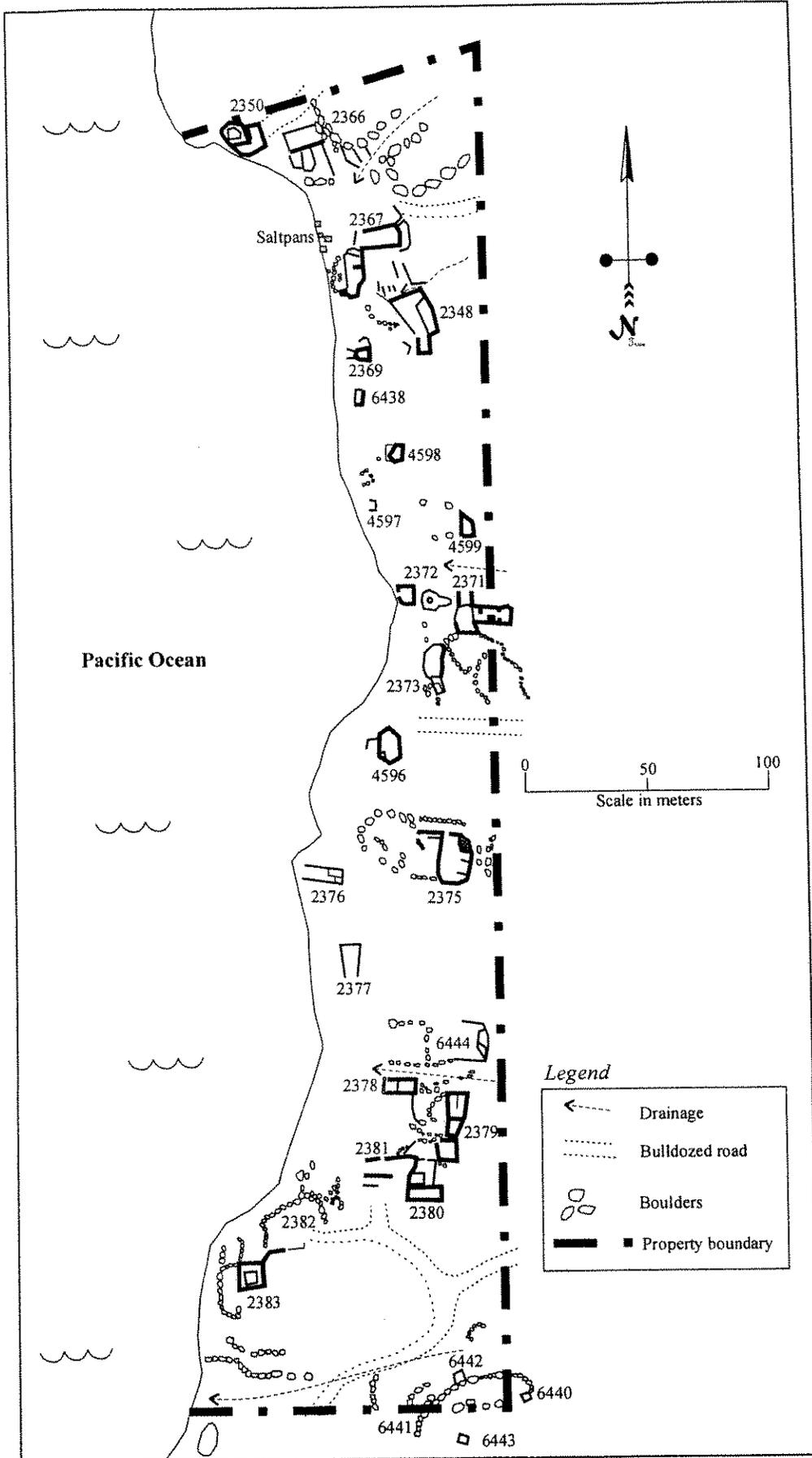


Figure 2. Study Parcel showing the locations of the previously recorded archaeological sites (adapted from Hammatt and Folk 1980).

PROJECT AREA DESCRIPTION AND PROPOSED DEVELOPMENT ACTIVITIES

The subject property occupies 10.61 acres along the coast, bounded by the ocean to the west and unencumbered State of Hawai'i lands on all other sides (see Figure 1). Lapakahi State Historical Park is less than one mile distant to the north. Elevation of the property ranges from sea level to about 50 feet above sea level and the surface geology consists of basaltic lava flows from Kohala volcano dating from at least 250,000 years ago (Wolfe and Morris 1996). Soil within the study area is classified as Kawaihae extremely stony very fine sandy loam. The gently sloping terrain is dissected in a few locations by runoff channels and the vegetation is almost exclusively low grasses and *kiawe* (Figure 3).



Figure 3. Terrain and landscape in the area of the proposed residence.

The current proposal is for a single-family residence and related improvements to be developed at the southern end of the parcel (Figure 4). The property currently has no structures. The proposed residence would consist of a compound of detached structures totaling 3,750 square feet. Pools and decks will occupy another 878 square feet (Figure 5). Other improvements include an Individual Wastewater System, utilities, a driveway, and landscape features such as vegetation, trails, and rock walls. Outbuildings including a propane tank storage facility, a water tank, an agricultural building with a diesel generator, an open shed, and a utility control room with a storage loft will be built about 100 feet *mauka* of the residence on the Agricultural-zoned portion of the property. All structures will be set a minimum of 60 feet inland from the certified shoreline. The project also proposes to improve the existing access road, reroute a segment of a lateral jeep road away from both the proposed building site and the burial sites, improve public vehicular access in the northern part of the parcel, and establish a coastal footpath from the improved vehicular access point leading south through the parcel (see Figure 4). The design involves leaving as much of the property as-is with no disturbance to any natural or man-made features outside of the development envelope.

CULTURE-HISTORICAL BACKGROUND

A Generalized Model of Hawaiian Prehistory

The generalized cultural sequence that follows is based on Kirch's (1985) model. The Settlement or Colonization Period is believed to have occurred in Hawai'i between A.D. 300–600 from the southern Marquesas Islands. This was a period of great exploitation and environmental modification, when early Hawaiian farmers developed new subsistence strategies by adapting their familiar patterns and traditional tools to their new environment (Kirch 1985; Pogue 1978). Their ancient and ingrained philosophy of life tied them to their environment and kept order. Order was further assured by the conical clan principle of genealogical seniority (Kirch 1984). According to Fornander (1969), the Hawaiians brought from their homeland certain universal Polynesian customs: the major gods *Kane*, *Ku*, and *Lono*; the *kapu* system of law and order; cities of refuge; the *'aumakua* concept; various superstitions; and the concept of *mana*.

The Development Period (A.D. 600–1100) brought about a uniquely Hawaiian culture. The portable artifacts found in archaeological sites of this period reflect not only an evolution of the traditional tools, but some distinctly Hawaiian inventions. The adze (*ko'i*) evolved from the typical Polynesian variations of plano-convex, trapezoidal, and reverse-triangular cross-section to a very standard Hawaiian rectangular quadrangular tanged adze. A few areas in Hawai'i produced quality basalt for adze production. Mauna Kea on the island of Hawai'i was a well-known adze quarry. The two-piece fishhook and the octopus-lure breadloaf sinker are Hawaiian inventions of this period, as are *'ulu maika* stones and *lei niho palaoa*. The later was a status item worn by those of high rank, indicating a trend toward greater status differentiation (Kirch 1985).

The Expansion Period (A.D. 1100–1650) is characterized by the greatest social stratification, major socioeconomic changes, and intensive land modification. Most of the ecologically favorable zones of the windward and coastal regions of all major islands were settled and the more marginal leeward areas were being developed. Early dates from leeward Kohala (Kapa'anui) were reported by Dunn and Rosendahl (1989); these sites are believed to have been temporary campsites (Wulzen et al. 1995). The greatest population growth occurred during the Expansion Period. Subsistence patterns intensified as crop farming evolved into large irrigated field systems and expanded into the marginal dryland areas. The *loko* or fishpond aquaculture flourished during this period (Bellwood 1978; Kirch 1985).

It was during the Expansion Period that a second major migration settled in Hawai'i, this time from Tahiti in the Society Islands. According to Kamakau (1976) the *kahuna* Pa'ao settled in the islands during the 13th century. Pa'ao was the keeper of the god Ku'ka'ilimoku, who had fought bitterly with his older brother, the high priest Lonopele. After much tragedy on both sides, Pa'ao escaped Lonopele's wrath by fleeing in a canoe. Kamakau (1991:100–102) told the following story in 1866:

Puna on Hawai'i Island was the first land reached by Pa'ao, and here in Puna he built his first *heiau* for his god Aha'ula and named it Aha'ula [Waha'ula]. It was a *luakini*. From Puna, Pa'ao went on to land in Kohala, at Pu'uiepa. He built a *heiau* there called Mo'okini, a *luakini*. It is thought that Pa'ao came to Hawai'i in the time of the *ali'i* La'au because Pili ruled as *mo'i* after La'au. You will see Pili there in the line of succession, the *mo'o kū'auhau*, of Hanala'anui. It was said that Hawai'i Island was without a chief, and so a chief was brought from Kahiki; this is according to chiefly genealogies. Hawai'i Island had been without a chief for a long time, and the chiefs of Hawai'i were *ali'i maka'āinana* or just commoners. There were seventeen generations during which Hawai'i Island was without chiefs—some eight hundred years.

There are several versions of this story that are discussed by Beckwith (1976), including the version where Mo'okini and Kaluawilinau, two *kāhuna* of Moikeha, decide to stay on at Kohala. The bones of the *kahuna* Pa'ao are said to be deposited in a burial cave in Kohala in Pu'uiepa [possibly Pu'uiepa?] (Kamakau 1964:41).

The concept of the *ahupua'a* was established during the A.D. 1400s (Kirch 1985), adding another component to a then well-stratified society. This land unit became the equivalent of a local community, with its own social, economic, and political significance. *Ahupua'a* were ruled by *ali'i 'ai ahupua'a* or lesser chiefs; who, for the most part, had complete autonomy over this generally economically self-supporting piece of land, which was managed by a *konohiki*. *Ahupua'a* were usually wedge or pie-shaped, incorporating all of the eco-zones from the mountains to the sea and for several hundred yards beyond the shore, assuring a diverse subsistence resource base (Hommon 1986).

The *ali'i* and the *maka'ainana* (commoners) were not confined to the boundaries of the *ahupua'a*; when there was a perceived need, they also shared with their neighbor *ahupua'a ohana* (Hono-ko-hou 1974). The *ahupua'a* was further divided into smaller sections such as the *'ili*, *mo'o'aina*, *pauku'aina*, *kihapai*, *koele*, *hakuone*, and *kuakua* (Hommon 1986, Pogue 1978). The chiefs of these land units gave their allegiance to a territorial chief or *mo'i* (king). *Heiau* building flourished during this period as religion became more complex and embedded in a sociopolitical climate of territorial competition. Monumental architecture, such as *heiau*, "played a key role as visual markers of chiefly dominance" (Kirch 1990:206).

The Proto-Historic Period (A.D. 1650–1795) is marked by both intensification and stress. Wars occurred between intra-island and inter-island polities. Sometime between A.D. 1736 and 1758, in the reign of Kalani'opu'u, Kamehameha I was born in the *ahupua'a* of Kokoiki, North Kohala near the Mo'okini Heiau [there is some controversy about his birth year, see Kamakau 1992:66–68]. The birth event is said to have occurred on a stormy night of rain, thunder, and lightning, signified the night before by a very bright, ominous star, thought by some to be Halley's comet [this is also controversial] (Kamakau 1992). Kamehameha's ancestral homeland was in Halawa, North Kohala (Williams 1919).

This period was one of continual conquest by the reigning *ali'i*. Ke'eaumoku, son of Keawepoepoe, set up a fort at Pololu and Honokane; he was attacked there by Kalani'opu'u, so he moved to Maui. About A.D. 1759 Kalani'opu'u conquered East Maui, defeating his wife's brother, the Maui king Kamehamehanui, by using Hana's prominent Pu'u Kau'iki as his fortress. He appointed one of his Hawai'i chiefs, Puna, as governor of Hana and Kipahulu. Kahekili became king of Maui in A.D. 1766 when Kamehamehanui died following an illness. Ke'eaumoku took his widow, Namahana, a cousin of Kamehameha I, as his wife. Their daughter, Ka'ahumanu, the future favorite wife of Kamehameha I, was born in a cave at the base of Pu'u Kau'iki, Hana, Maui in A.D. 1768 (Kamakau 1992). In A.D. 1775 Kalani'opu'u and his Hana forces raided and destroyed the neighboring Kaupo district, then launched several more raids on Molokai, Lanai, Kaho'olawe, and parts of West Maui. It was at the battle of Kalaeoka'ilio that Kamehameha, a favorite of Kalani'opu'u, was first recognized as a great warrior and given the name of Pai'ea (hard-shelled crab) by the Maui chiefs and warriors (Kamakau 1992). During the battles between Kalani'opu'u and Kahekili (1777–1779), Ka'ahumanu and her parents left Maui to live on the island of Hawai'i (Kamakau 1992).

History After Contact

Captain James Cook landed in the Hawaiian Islands on January 18, 1778. Ten months later, on a return trip to Hawaiian waters, Kalani'opu'u, who was at war with Kahekili, visited Cook on board the *Resolution* off the East coast of Maui. Kamehameha observed this meeting, but chose not to participate. The following January [1779], Cook and Kalani'opu'u met again in Kealakekua Bay and exchanged gifts. In February, Cook set sail; however, a severe storm off the Kohala coast damaged a mast and they had to return to Kealakekua. Cook's return occurred at an inopportune time, and this misfortune cost him his life (Kuykendall and Day 1976).

In 1779 King of the Cook expedition explored the North Kohala country and reported:

As far as the eye could reach, seemed fruitful and well inhabited. [Three and four miles inland, plantations of taro and potatoes and *wauke*] neatly set out in rows. The walls that separate them are made of the loose burnt stone, which are got in clearing the ground; and being entirely concealed by sugar-canecanes planted close on each side, make the most beautiful fences that can be conceived. [The exploring party stopped six or seven miles from the sea.] To the left a continuous range of villages,

interspersed with groves of coconut trees spreading along the sea-shore; a thick wood behind this; and to the right, an extent of ground laid out in regular and well-cultivated plantations . . . as they passed, they did not observe a single foot of ground, that was capable of improvement, left unplanted. (Handy and Handy 1972:528)

Around A.D. 1780 Kalani'opu'u proclaimed that his son Kiwalao would be his successor, and he gave the guardianship of the war god Ku'ka'ilimoku to Kamehameha. Kamehameha and a few other chiefs were concerned about their land claims, which Kiwalao did not seem to honor, so after usurping Kiwalao's authority with a sacrificial ritual, Kamehameha retreated to his district of Kohala. While in Kohala, Kamehameha farmed the land, growing taro and sweet potatoes (Handy and Handy 1972). After Kalani'opu'u died in A.D. 1782 civil war broke out: Kiwalao was killed. The wars between Maui and Hawaii continued until A.D. 1795 (Kuykendall and Day 1976; Handy and Handy 1972).

In A.D. 1790 two American vessels, the *Eleanora* and *Fair American*, were in Hawaiian waters. Following an altercation between his crew and natives, the Captain of the *Eleanora* massacred more than 100 natives at Olowalu [Maui], then sailed away leaving one of its crew, John Young, on land. The other vessel, the *Fair American*, was captured and its crew killed except for one member, Issac Davis. Kamehameha also observed this but did not participate, although he did prevent Young and Davis from leaving. He also kept the vessel as part of his fleet. Young eventually became governor of the island of Hawai'i. By 1796 Kamehameha had conquered all the island kingdoms except Kauai. It wasn't until 1810, when Kaumuali'i of Kauai gave his allegiance to Kamehameha, that the Hawaiian Islands were unified under one ruler (Kuykendall and Day 1976).

Demographic trends during this period indicate population reduction in some areas, due to war and disease, yet increases in others, with relatively little change in material culture. However, there was a continued trend toward craft and status specialization, intensification of agriculture, *ali'i* controlled aquaculture, upland residential sites, and the enhancement of traditional oral history. The Kū cult, *luakini heiau*, and the *kapu* system were at their peaks, although western influence was already altering the cultural fabric of the Islands (Kirch 1985; Kent 1983). Foreigners had introduced the concept of trade for profit, and by the time Kamehameha I had conquered O'ahu, Maui and Moloka'i, in 1795, the women of Hawai'i had learned the profitable concept of prostitution (Kent 1983). This marked the end of the Proto-Historic Period and the end of an era of uniquely Hawaiian culture.

Hawai'i's culture and economy continued to change drastically as capitalism and industry established a firm foothold. The sandalwood (*Santalum ellipticum*) trade, established by Euro-Americans in 1790 and turned into a viable commercial enterprise by 1805 (Oliver 1961), was flourishing by 1810. This added to the breakdown of the traditional subsistence system, as farmers and fishermen were ordered to spend most of their time logging, resulting in food shortages and famine that led to a population decline. Kamehameha did manage to maintain some control over the trade (Kuykendall and Day 1976; Kent 1983).

Kamehameha I died on May 8, 1819 in Kailua-Kona, and once again the culture of Hawaii was to change radically. Six months after his death, his son and successor, Liholiho (Kamehameha II), met with *kuhina nui*, Ka'ahumanu, and a council of chiefs and chiefesses at Kawaihae. His advisors, which included the *kahuna* Hewahewa, convinced him to abolish the *kapu* system. He signified his agreement by sitting down and eating with his mother Keopulani, breaking the '*ai kapu* (Oliver 1961; Kuykendall and Day 1976; Kamakau 1992).

Liholiho's cousin, Kekuaokalani, caretaker of the war god *Ku-Kailimoku*, disagreed and revolted. By December of 1819 the revolution was quelled. Kamehameha II sent edicts throughout the kingdom renouncing the ancient state religion, ordering the destruction of the *heiau* images, and ordering that the *heiau* structures be destroyed or abandoned and left to deteriorate. He did, however, allow the personal family religion, the '*aumakua* worship, to continue (Oliver 1961; Kamakau 1992).

In October of 1819, seventeen Protestant missionaries set sail from Boston to Hawaii. They arrived in Kailua-Kona on March 30, 1820 to a society with a religious void to fill. Many of the *ali'i*, who were already exposed to western material culture, welcomed the opportunity to become educated in a western style and adopt their dress and religion. Soon they were rewarding their teachers with land and positions in the Hawaiian government. During this period, the sandalwood trade was wreaking havoc on the commoners, who were weakening with the heavy production, exposure, and famine just to fill the coffers of the *ali'i* who were no longer under any traditional constraints (Oliver 1961; Kuykendall and Day 1976). On a stopover in the Kohala district Ellis wrote:

About eleven at night we reached Towaihae [Kawaihae], where we were kindly received by Mr. Young. . . . Before daylight on the 22nd, we were roused by vast multitudes of people passing through the district from Waimea with sandal-wood, which had been cut in the adjacent mountains for Karaimoku, by the people of Waimea, and which the people of Kohala, as far as the north point, had been ordered to bring down to his storehouse on the beach, for the purpose of its being shipped to Oahu. There were between two and three thousand men, carrying each from one to six pieces of sandal-wood, according to their size and weight. It was generally tied on their backs by bands of ti leaves, passed over the shoulders and under the arms, and fastened across their breasts. (Kuykendall and Day 1976:42, 43; Ellis 1984:397)

The lack of control of the sandalwood trade was to soon lead to the first Hawaiian national debt as promissory notes and levies were initiated by American traders and enforced by American warships (Oliver 1961). The Hawaiian culture was well on its way towards Western assimilation as industry in Hawai'i went from the sandalwood trade, to a short-lived whaling industry, to the more lucrative, but environmentally destructive sugar industry. The windward portions of North Kohala became a center of sugarcane production, although sugarcane cultivation in Kohala had its origins in prehistory.

Pukui (1983) cites two proverbs that reference both Kohala and sugarcane. She provides an explanation and notes that Hawaiian proverbs have layers of meaning that are best left to the imagination of the reader:

He pa'a kō kea no Kohala, e kole ai ka waha ke 'ai
A resistant white sugar cane of Kohala that injures the mouth when eaten.

Pukui explains this proverb as follows:

A person that one does not tamper with. This was the retort of Pupukeya, a Hawai'i chief, when the Maui chief Makakuikalani made fun of his small stature. It was later used in praise of the warriors of Kohala, who were known for valor (1983:95).

I 'ike 'ia no o Kohala i ka pae kō, a o ka pae kō ia kole ai ka waha.
One can recognize Kohala by her rows of sugar cane which can make the mouth raw when chewed.

Pukui interprets this proverb as follows:

When one wanted to fight a Kohala warrior, he would have to be a very good warrior to succeed. Kohala men were vigorous, brave, and strong (1983:127).

Sugarcane (*Saccharum officinarum*) was a Polynesian introduction and served a variety of uses. The *kō* kea or white cane was the most common, usually planted near Hawaiian homes for medicinal purposes, and to counteract bad tastes (Handy and Handy 1972:185). Sugarcane was a snack, condiment, famine food; fed to nursing babies, and helped to strengthen children's teeth by chewing on it (Handy and Handy 1972:187). It was used to thatch houses when *pili* grass (*Heteropogon contortus*) or *lau hala* (*Pandanus odoratissimus*)

were not abundant (Malo 1903). Sugarcane was also used in relation to taro and sweet potato. Handy and Handy (1972:186) explain:

In wet-taro farming, cane was planted along the embankments separating the flooded terraces and flats. In dry-taro and sweet-potato fields on the sloping *kula* or in the lower forest zone, cane was planted as hedges along the lines of stone and rubbish thrown up between the fields. Thus it helped the planter to utilize to the maximum his soil and water, and acted as a windbreak against the gusty breezes which blow in most valley bottoms, along the coasts, and on the uplands where taro is grown.

Sugarcane was grown on all islands, and when Cook arrived he wrote of seeing sugarcane plantations. The Chinese on Lana'i are credited with producing sugar first, as early as 1802. However, it was not until 1835 that sugar became established commercially, replacing the waning sandalwood industry (Oliver 1961, Kuykendall and Day 1976).

Kohala became a land in transition and eventually a major force in the sugar industry with the arrival of American missionary Elias Bond (KTF 1975). In her comprehensive study of North Kohala, Tomonari-Tuggle relates this transition:

The arrival in 1841 of Elias Bond, of the Protestant American Board of Commissioners for Foreign Missions, to Kohala marked the beginning of a 22-year period of transition in the district's history. In those years a new religion, a new land tenure system, and a changing economy altered the lifestyles and world view of the indigenous population of the district. The Kohala community was in flux, attempting to find a firm footing in a changing world, in a much larger network of social, political, and economic interactions than had previously existed. (Tomonari-Tuggle 1988:1-23)

When Elias Bond directed his efforts to initiating sugar as a major agricultural industry in Kohala, he could not have foreseen the incredible success of his modest venture. His primary concern was to develop a means for the Hawaiian people of the district to compete successfully in the market economy that had evolved in Hawaii. What resulted was a vigorous, stable, and competitive industry which survived over a century of changing economic situations. For the Hawaiian people, however, the impact was not what Bond anticipated. (Tomonari-Tuggle 1988:1-39)

In 1860 Rev. Bond engaged Samuel N. Castle in founding the Kohala Sugar Company on lands owned by Bond and his neighbor Dr. James Wight. The first crop was harvested in January 1865 (KTF 1975). Kohala's transition was a reflection of what was happening elsewhere in Hawai'i as the sugar industry grew. The industry brought in tens of thousands of laborers from Asia, Europe, the Americas, Oceania, and Africa to work on the many plantations and mills that were being established on all major islands (Oliver 1961). This influx not only radically changed the culture, but also drastically altered agricultural lands and destroyed traditional architectural features in the process. The drier leeward portions of Kohala were not suited for cane cultivation and thus became vast pasturelands for grazing cattle.

A Generalized Settlement Model for Kohala Waho

The following summary of settlement patterns for the leeward coast of North Kohala follows earlier regional models (Rosendahl 1972; Griffin et al. 1971; Tomonari-Tuggle 1988) and takes into account observations and information contained in traveler, missionary, and Kingdom records (Maly 2000).

Evidence for early occupation of Kohala has been collected from Kapa'anui. Dunn and Rosendahl (1989) recovered radiocarbon samples that potentially date to as early as A.D. 461 (Site 12444). This early date may be related to the establishment of small, short-term camps to exploit seasonal, coastal resources.

Data recovered from Mahukona suggest initial occupation there by A.D. 1280 (Burgett and Rosendahl 1993:36). The earliest date range for permanent settlement in Kohala (A.D. 1300) was obtained from Koai'e, a coastal settlement where subsistence primarily derived from marine resources. According to Tomonari-Tuggle (1988:13), these resources were probably supplemented by small-scale agriculture.

The period from A.D. 1300–1500 was characterized by population growth and expanded efforts to increase upland agriculture. Rosendahl (1972) has proposed that settlement at this time was related to seasonal, recurrent occupation in which coastal sites were occupied in the summer to exploit marine resources, and upland sites were occupied during the winter months, with a focus on agriculture. An increasing reliance on agricultural products may have caused a shift in social networks as well, according to Hommon (1976). Hommon argues that kinship links between coastal settlements disintegrated as those links within the *mauka-makai* settlements expanded to accommodate exchange of agricultural products for marine resources. This shift is believed to have resulted in the establishment of the *ahupua'a* system. The implications of this model include a shift in residential patterns from seasonal, temporary occupation, to permanent dispersed occupation of both coastal and upland areas.

This pattern continued to intensify from A.D. 1500 to Contact (A.D. 1778), and there is evidence that suggests that there were substantial changes to the political system as well. Within Kohala, the Great Wall complex at Koai'e is organized with platforms in the complex apart from contemporaneous features. Griffin et al. (1971) interpret this as symbolizing class stratification. By AD 1600, there is island-wide evidence to suggest that growing conflicts between independent chiefdoms were resolved through warfare, culminating in a unified political structure at the district level. It has been suggested that this unification resulted in a partial abandonment of portions of leeward Hawai'i, with people moving to more favorable agricultural areas (Barrera 1971; Schilt and Sinoto 1980).

By the time of contact, numerous coastal villages and extensive dryland agricultural systems were in place in North Kohala. The *ahupua'a* system of social organization was also firmly established by this time, with wedge-shaped land units extending from the mountains to the sea. The *ahupua'a* were controlled by local chiefs, and were integrated at the district level. Districts were ruled by paramount chiefs through a system of taxation and redistribution. Social stratification was defined by a class separation between the ruling *ali'i* (chiefs) at one end, and the *maka'ainana* (commoners) at the other. Kamehameha I eventually united the Island of Hawai'i, and ultimately all of the Hawaiian Islands, and freely participated in the European-introduced market economy.

The earliest detailed written descriptions of the region are contained in the Journal of William Ellis (1963), an English Missionary who traveled through the area in 1823. Two of his journal entries are of particular relevance: a visit to the villages of Awalua (situated midway between Pāo'o and 'Upolu) and Hihui (Māhukona), and an account of the coast between Kawaihae and Māhukona related to him by one of his companions named Lorrin Thurston.

About three p.m. we reached Owawarua [Awalua], a considerable village on the north-west coast, inhabited mostly by fisherman. Here we tried to collect a congregation, but only three women and two small children remained in the place, the rest having gone to Waimea to fetch sandalwood for Karaiomoku. From Owawarua we passed on to Hihui [Māhukona], where we had an opportunity to speak to a small party of natives.

In these villages we saw numbers of canoes and many large fishing nets, which are generally made with a native kind of flax, very strong and durable . . . In taking fish out of the sea, they commonly make use of a net, of which they have many kinds, some very large, others mere hand-nets; they occasionally employ the hook and line, but never use the spear or dart which is a favourite weapon with the southern islanders.

Quantities of fish were spread out in the sun to dry, in several places, and the inhabitants of the northern shores seem better supplied with this article than those of any other part of

the island. . . . Being considerably fatigued, and unable to find any fresh water in the village [Hihiu/Māhukona], we procured a canoe to take us to Towaihae [Kawaihae], from which we were distant about 20 miles. Though we had numbered, in our journey today, 600 houses, we had not seen a thing like four hundred people, almost the whole population being employed in the mountains cutting sandalwood. It was about seven o'clock in the evening when we sailed from Hihiu, in a single canoe. (Ellis 1963:285-286)

On the 23d Mr. Thurston left Towaihae, and walked along the shore towards the north point [Upolu]. About noon he reached the small village, called Kipi [South of Pāo'o], where he preached to the people; and as there was only one village between Kipi and the place where I had preached on Wednesday evening [Hihiu/Māhukona], he retraced his steps to Towaihae. He preached at another four villages on his return, where the congregations, though not numerous, were attentive . . . The coast was barren; the rocks volcanic; the men were all employed in fishing; and Mr. Thurston was informed that the inhabitants of the plantations, about seven miles in the interior, were far more numerous than on the shore. In the evening he reached Towaihae. (Ellis 1963:288)

As early as the 1830s, missionaries in Kohala noting that "deaths are more numerous than births; [h]ence the population is decreasing" (Doyle 1953:72) began compiling census records by *ahupua'a*. In an 1835 census, Pāo'o is listed as having a resident population of 122 (Schmidt 1973), this number being the largest population between Kawaihae and Lapakahi. Traditional and historical accounts indicate that the residents of the *ahupua'a* in Kohala waho lived both along the coast in fishing villages and in the uplands near the agricultural systems. It is interesting that there were 122 residents recorded in 1835, because thirteen years later in 1848 there were only seven claimants during the *Māhele*, of which only one claim awarded (see discussion below).

Traditional land use patterns saw a rapid shift after the *Mahele* in 1848. By the mid-19th century, leeward settlement shifted to the windward side of North Kohala as the leeward, agriculturally marginal, areas were abandoned in favor of more productive and wetter sugarcane lands. In addition, native populations were decimated by disease and a depressed birth rate. According to Tomonari-Tuggle (1988:37), the remnant leeward population nucleated into a few small coastal communities and dispersed upland settlements. Settlements were no longer based on traditional subsistence patterns, largely because of the loss of access to the full range of necessary resources. At this point most communities were centered on sugar mills and became part of the plantation social hierarchy. Much of the coastal land in leeward North Kohala was used as cattle pasture. Walled complexes became the dominant residential structure for those remaining leeward settlements as families enclosed their holdings to protect them from feral cattle and to clearly define their *kuleana* boundaries.

Pāo'o Ahupua'a

Pāo'o was segregated from north to south into six *ahupua'a* during the *Māhele*. One half of Pāo'o 1 (the northernmost division) was awarded to Kainaina (LCAw. 33 M.A.), perhaps through Kalaipaopao (LCAw. 1436H and LCAw. 8848) while the remaining half and the other five divisions were retained as Government land. Four additional land claims were made for Pāo'o lands, including a claim for Pāo'o 6 by Pohakeokeo (also Pokeokeo) purporting to be the *konohiki*, but none were awarded. The accompanying testimony indicates that the claims are generally for cultivated fields and associated residences in the *mauka* portions of the *ahupua'a*. There are no references to the extensive coastal settlement observed archaeologically.

As the *Māhele* was drawing to a close, the Kingdom established a program whereby more native tenants could gain access to fee-simple land through grants (Maly 2000). The land base for these grants were the lands retained by the government during the *Māhele*. In 1856 the current study parcel was sold as part of a 16-acre fee-simple land grant (Grant No. 1997) to Kauwe while four additional grants (Grant Nos.

1972, 2224, 2335, and 2725) were sold between 1856 and 1860 in more *mauka* portions of Pāo'o (Figure 6). Unfortunately, the grant records are silent with respect to Kauwe's and the other grantees uses of the land.

In 1862, the Boundary Commission was established in the Kingdom of Hawai'i to set the boundaries of the *ahupua'a* awarded during the *Māhele*. The primary informants for the boundary descriptions were old native informants. While no Boundary Commission records exist for the Pāo'o *ahupua'a*, there is testimony about neighboring Kaiholena from Kikalaeka, an informant born in Pāo'o 6:

I was born on the land of Paoo 6 before Liholiho went to London [ca. 1823]. I am a kamaaina of Kohala and know the boundaries between Kaiholena 1st and Paoo 6. Paoo 6 bounds Kaiholena 1st on the north side...A place at the sea shore where the sea rushes in from the point and spouts up, called kepuhi, is the boundary between Kaiholena 1st and Paoo 6. Beadle [A rancher, possibly the *Kohoniki*?] used to taboo salt ground on Paoo 6 next to the shore. The north boundary of Kaiholena runs mauka along Paoo 6 to Puupili, and thence mauka to Kikiwahia a stone wall on the boundary of Beadle's land in Paoo 6. [Boundary Commission Volume A 1 April 14, 1873]

In 1862, the remaining lands within the Pāo'o *ahupua'a*, along with much of the neighboring Government lands were leased to the Waimea Grazing and Agricultural Company for horse and cattle ranching purposes (Dye and Maly 2000). This lease did not include Grant No. 1997 to Kauwe, and it is unclear if cattle were ever grazed on the current study parcel. The lease read as follows:

June 18, 1862
Lease No. 92

Between His Majesty, Minister of Interior and the Waimea Grazing and Agricultural Company...Leasing Government Lands of:

Pahinahina; Makiola; Kalala 1 & 2; Kokio; Pohakulua 1 & 2; Kaihooa 1 & 2; Puaiki; Kehena 2nd; Kipi; Makeanehu 2, 3, 4 & 5; Paoo 1, 2, 3, 4, 5 & 6; Lamaloloa; and Kaipuhaa; an area containing together 7972 acres more or less, which tracts of land and all their present improvements and advantages (the rights of native tenants however being reserved) the said "Waimea Grazing and Agricultural Company" is to possess and enjoy without unlawful molestation for the term of Ten years from this date, with the privilege of remaining the same for the further term of at the expiration of the lease...(Hawaii State Archives; Interior Department, Lands Folder)

The lands of Pāo'o were purchased by Parker Ranch in 1932 and used for grazing purposes until relatively recent times. The cattle were grazed at the shore seasonally, usually following rains, when the *makai* pastures produced rich feed supplemented with *kiawe* beans. During the ranching years few people visited the coastline (Dye and Maly 2000: 63).

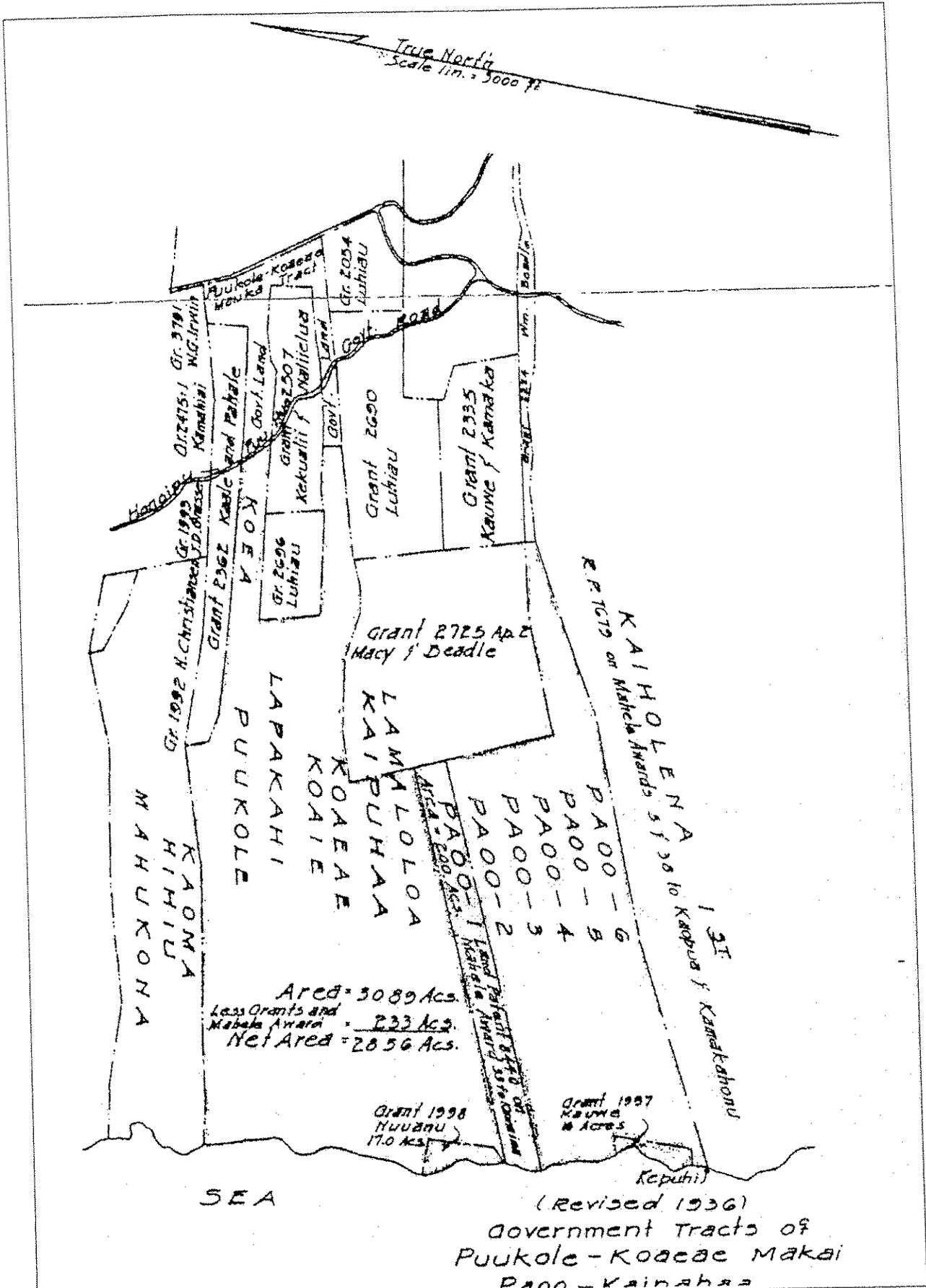


Figure 6. 1936 Territory of Hawaii survey map showing land grants.

CONSULTATION

Consultation for the current study focused on individuals and families with genealogical ties to the Pāo'o area. To that end, Arthur Mahi (Papa Mahi) and his cousin Isabella Mahi Medeiros (Auntie Bella) were the primary consultants along with members of the Luhiau 'Ohana (represented by Valerie Luhiau Ako and Anthony Ching Ako). Several sites visits were made with the various consultants between May of 2003 and December of 2004. All consultations were unstructured and informal in nature; they were not tape recorded and transcribed. All of the consultants shared common concerns: that the archaeological sites (particularly the burial sites) be protected, that Mr. Cohen and his family comprehend the stewardship responsibility that comes with "ownership" of this land, and that they continue to work with the consultants to ensure an appropriate level of cultural sensitivity (Figure 7).

While it is abundantly clear from the archaeological and historical record that the property was used during precontact and possibly early historic times for the entire range of traditional Hawaiian cultural activities and practices (residential, burial, ceremonial, subsistence production and procurement, etc.); none of the consultants had knowledge of any specific traditional cultural practices currently being exercised on the property, although there was a recognition that the shoreline is actively being accessed for fishing and surfing.

Consultants were shown a conceptual plan of the proposed single-family residence and its relative location within the property. Their collective *mana'o* was incorporated into the burial treatment plan (Rechtman 2003) and helped to establish the minimal preservation buffers for the archaeological sites in the vicinity of the proposed single-family residence. While, the Luhiau 'Ohana expressed some concern that the area gave them "spooky" feelings, Papa Mahi explained that for him and his ancestors the location and design of the proposed single-family residence (as well as the Cohen family) were "*maika'i*."



Figure 7. Arthur Mahi (right) and Jonathan Cohen (left) sharing life experiences along the Pāo'o shoreline.

IDENTIFICATION AND MITIGATION OF POTENTIAL CULTURAL IMPACTS

The OEQC guidelines identify several possible types of cultural practices and beliefs that are subject to assessment. These include subsistence, commercial, residential, agricultural, access-related, recreational, and religious and spiritual customs. The guidelines also identify the types of potential cultural resources, associated with cultural practices and beliefs that are subject to assessment. Essentially these are nature features of the landscape and historic sites, including traditional cultural properties. In the Hawai'i Revised Statutes—Chapter 6E a definition of traditional cultural property is provided.

“Traditional cultural property” means any historic property associated with the traditional practices and beliefs of an ethnic community or members of that community for more than fifty years. These traditions shall be founded in an ethnic community’s history and contribute to maintaining the ethnic community’s cultural identity. Traditional associations are those demonstrating a continuity of practice or belief until present or those documented in historical source materials, or both.

The origin of the concept of traditional cultural property is found in National Register Bulletin 38 published by the U.S. Department of Interior-National Park Service. “Traditional” as it is used, implies a time depth of at least 50 years, and a generalized mode of transmission of information from one generation to the next, either orally or by act. “Cultural” refers to the beliefs, practices, lifeways, and social institutions of a given community. The use of the term “Property” defines this category of resource as an identifiable place. Traditional cultural properties are not intangible, they must have some kind of boundary; and are subject to the same kind of evaluation as any other historic resource, with one very important exception. By definition, the significance of traditional cultural properties should be determined by the community that values them.

It is however with the definition of “Property” wherein there lies an inherent contradiction, and corresponding difficulty in the process of identification and evaluation, because it is precisely the concept of boundaries that runs counter to the traditional Hawaiian belief system. The sacredness of a particular landscape feature is often times cosmologically tied to the rest of the landscape as well as to other features on it. To limit a property to a specifically defined area may actually partition it from what makes it significant in the first place. However offensive the concept of boundaries may be, it is nonetheless the regulatory benchmark for defining and assessing traditional cultural properties. As the OEQC guidelines do not contain criteria for assessing the significance of historic properties, of which traditional cultural properties are a subset. To be significant the potential historic property or traditional cultural property must possess integrity of location, design, setting, materials, workmanship, feeling, and association and meet one or more of the following criteria:

- A Be associated with events that have made an important contribution to the broad patterns of our history;
- B Be associated with the lives of persons important in our past;
- C Embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; or possess high artistic value;
- D Have yielded, or is likely to yield, information important for research on prehistory or history;
- E Have an important value to the native Hawaiian people or to another ethnic group of the state due to associations with 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.

While it is the practice of the DLNR-SHPD to consider most historic properties significant under Criterion D at a minimum, it is clear that traditional cultural properties by definition would also be significant under Criterion E.

Potential impacts to cultural resources include: potential impacts to the identified burial sites (SIHP Sites 6440, 6441, 6442, and 6443), which are evaluated as significant under Criterion D and E; and potential impacts to the non-burial archaeological sites recorded on the parcel (SIHP Sites 2348, 2350, 2366, 2367, 2369, 2371, 2371, 2373, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 4596, 4597, 4598, 4599, 6438, and 6444), which are evaluated as significant under Criterion D and in the case of SIHP Site 2383 under Criterion E as well. Other potential impacts are nonspecific and related to coastal access and recreation, primarily for fishing and surfing. The locations of such activities could be considered traditional cultural properties and as such would be significant under Criterion E.

To mitigate the potential impacts to the identified burial sites the approved burial treatment plan will be implemented prior to the commencement of any development activities. To mitigate the potential impacts to the non-burial archaeological sites an archaeological sites preservation plan will be submitted to DLNR-SHPD for approval and development activities will not commence until DLNR-SHPD approval has been obtained and the site protection measures and stewardship aspects of the preservation plan are implemented. The combination of the proposed Jeep road realignment, the public access improvements in the north portion of the subject parcel, and the establishment of a coastal foot trail will serve to adequately mitigate any potential impacts to coastal access and recreational activities.

Execution of the above described mitigation measures will help to ensure that no cultural practices and beliefs or associated cultural resources will be adversely affected by the proposed development of the Cohen's single-family residence.

REFERENCES CITED

- Barrera, W.
1971 Anaehoomalu: A Hawaiian Oasis. Preliminary Report of Salvage Research in South Kohala, Hawaii. *Pacific Anthropological Records* No. 15. Department of Anthropology, B.P. Bishop Museum, Honolulu.
- Beckwith, M.
1976 *Hawaiian Mythology*. University of Hawai'i Press, Honolulu.
- Bellwood, P.
1978 *The Polynesians: Prehistory of an Island People*. Thames and Hudson, Ltd., London.
- Bonk, W.
1968 The Archaeology of North and South Kohala - from the Ahupua'a of Kawaihae to the Ahupua'a of Upolu: Coastal Archaeology Surface Survey. *Hawaii State Archaeological Journal* 68-3. Division of State Parks, Department of Land and Natural Resources.
- Burgett, B. P., and P. H. Rosendahl
1993 Summary of Archaeological Inventory Surveys, Kapaanui Agricultural Subdivision and Mahukona Property, Lands of Kapaanui, Kou, Kamano, Mahukona 1st and 2nd, Hihuu, and Kaoma, North Kohala District, Island of Hawaii. (TMK:3-5-7-02:11 and TMK:3-5-7-03:1-3,10-14,16-18). PHRI Report 743-020993. Prepared for Chalon International of Hawaii, Inc.
- Clark, M., and R. Rechtman
2003 Archaeological Data Recovery at SIHP Site 2382 (TMK:3-5-7-01:5), Pāo'o Ahupua'a, North Kohala District, Island of Hawai'i. Rechtman Consulting Report RC-0098. Prepared for Jonathan Cohen, Lincoln, MA.
- Doyle, E.
1953 Makua Laiana: the Story of Lorenzo Lyons. Compiled from manuscript journals 1832-1886. *Honolulu Star Bulletin*.
- Dunn, A. E., and P. H. Rosendahl
1989 Archaeological Inventory Survey, Kapaanui Agricultural Subdivision, Lands of Kapaanui and Kou, North Kohala District, Island of Hawaii. PHRI Report 568-100289. Prepared for Ahualoa Development, Inc.
- Dye, T. S. and K. Maly
2000 Archaeological Inventory Survey of the Coastal Portion of Kaiholena Ahupua'a, North Kohala, Hawai'i. IARII Report prepared for Pohaku Kea LLC, Menlo Park.
- Ellis, W.
1963 *Journal of William Ellis*. Advertiser Publishing Company Ltd., Honolulu.
- 1984 *Polynesian Researches, Hawaii*. Rutland, Vermont: Charles E. Tuttle Company, Inc.
- Fornander
1969 *An Account of the Polynesian Race: Its Origin and Migrations*. Tokyo: Charles E. Tuttle Co., Inc.

- Griffin, P. B., T. Riley, P. H. Rosendahl, and H. D. Tuggle
 1971 Archaeology of Halawa and Lapakahi: Windward Valley and Leeward Slope. *New Zealand Archaeological Association Newsletter* 14(3):101-112.
- Hammatt, H., and W. Folk
 1980 Archaeological Surface Survey and Subsurface Testing of Coastal Lands in Pāo'o, Kohala, Hawai'i Island. Prepared for Signal Properties.
- Handy, E.S.C., and E.G. Handy
 1972 *Native Planters in Old Hawaii: Their Life, Lore and Environment*. B.P. Bishop Museum Bulletin 223. Bishop Museum Press, Honolulu. (with M.K. Pukui)
- Hommon, R.
 1976 The Formation of Primitive States in Pre-Contact Hawaii. Ph.D. Dissertation (Anthropology), University of Arizona, Tucson. University Microfilms, Inc., Ann Arbor, Michigan.
 1986 Social Evolution in Ancient Hawai'i. IN Kirch, P.V. (ed.), *Island Societies: Archaeological Approaches to Evolution and Trans-formation*: 55-88. Cambridge: University Press.
- Hono-ko-hau Study Advisory Commission
 1974 The Spirit of Ka-Loko Hono-Ko-Hau. National Park Service, U.S. Department of the Interior.
- Kamakau, S.
 1964 Ka Po'e Kahiko: The People of Old. B.P. *Bishop Museum Special Publication* 51. Bishop Museum Press, Honolulu.
 1976 The Works of the People of Old, Na hana a ka Po'e Kahiko. *B.P. Bishop Museum Special Publication* 61. Bishop Museum Press, Honolulu.
 1991 *Tales and Traditions of the People of Old*. Honolulu: Bishop Museum Press.
 1992 Ruling Chiefs of Hawaii. The Kamehameha Schools Press, Honolulu (revised edition).
- Kent, N.
 1983 Hawaii: Islands Under the Influence. University of Hawai'i Press, Honolulu.
- Kirch, P.
 1984 *The Evolution of the Polynesian Chiefdoms*. Cambridge University Press, New York.
 1985 *Feathered Gods and Fishhooks: An Introduction to Hawaiian Archaeology and Prehistory*. University of Hawaii Press, Honolulu.
 1990 Monumental Architecture and Power in Polynesian Chiefdoms: A Comparison of Tonga and Hawaii. *World Archaeology* 22(2).
- KTF (Kohala Task Force)
 1975 Kohala: A Candid View. Report of the Kohala Task Force [March].
- Kuykendall, R., and A. Day
 1976 *Hawaii: A History From Polynesian Kingdom to American Statehood*. Prentice-Hall, Inc., Englewood Cliffs.

- Malo, D.
1903 Hawaiian Antiquities. *B.P. Bishop Museum Special Publication 2*. Bishop Museum Press, Honolulu.
- Maly, K.
2000 Historical Background. In: Archaeological Inventory Survey of the Coastal Portion of Kaiholena *Ahupua'a*, North Kohala, Hawai'i. IARII Report prepared for Pohaku Kea LLC, Menlo Park. Dye and Maly (2000).
- Oliver, D.
1961 *The Pacific Islands*. University of Hawaii Press, Honolulu.
- Pogue, J.
1978 *Mooleo Hawaii*. Hale Paipalapala Aupuni, Honolulu (Revised Edition).
- Pukui, M.
1983 'Olelo Noeau, Hawaiian Proverbs & Poetical Sayings. *B.P. Bishop Museum Special Publication 71*. Bishop Museum Press, Honolulu.
- Rechtman, R.
2000 A Plan for Archaeological Data Recovery at SIHP Site 2382 Pāo'o Ahupua'a, North Kohala District, Island of Hawai'i. Report RC-0019. Prepared for Mr. Jonathan Cohen.
- 2003 Burial Treatment Plan for a Coastal Parcel in Pāo'o Ahupua'a (TMK:3-5-7-01:5), Pāo'o Ahupua'a, North Kohala District, Island of Hawai'i. Rechtman Consulting Report RC-0019. Prepared for Mr. Jonathan Cohen, Lincoln, MA.
- Reinecke, J.
n.d. Survey of Sites on West Hawaii. Unpublished manuscript, Department of Anthropology, B. P. Bishop Museum, Honolulu (1930).
- Rosendahl, P.
1972 Aboriginal Agriculture and Domestic Residence Patterns in Upland Lapakahi, Island of Hawaii. Ph.D. Dissertation, University of Hawaii, Honolulu.
- Schilt, R., and A. Sinoto
1980 Limited Phase I Archaeological Survey of Mahukona Properties, North Kohala, Island of Hawai'i. B.P. Bishop Museum, Honolulu. Prepared for Belt, Collins and Associates.
- Schmidt, R.
1973 The Missionary Census of Hawaii. *Pacific Anthropological Records* No. 20, Department of Anthropology B.P. Bishop Museum, Honolulu.
- Soehren, L.
1969 Archaeological Reconnaissance of Parker Ranch Coastal Lands, North Kohala, Hawai'i Island. B.P. Bishop Museum Manuscript, Honolulu.
- Tomonari-Tuggle, M.
1988 North Kohala: Perception of a Changing Community. A Cultural Resource Management Study. Prepared for Division of State Parks, Outdoor Recreation, and Historic Sites, Department of Land and Natural Resources, State of Hawaii.

- Williams, J.
1919 *A Little Known Engineering Work in Hawaii. IN Thrum's Hawaiian Almanac and Annual for 1919.* Thos. G. Thrum, Honolulu.
- Wolfe, E., and J. Morris
1996 *Geological Map of the Island of Hawaii.* U.S. Department of the Interior, U.S. Geological Survey.
- Wulzen, W., J. Head, and S. Goodfellow
1995 Final Report: Archaeological Inventory Survey, Chalon International Mahukona Mauka Parcel; Lands of Kamano, Mahukona 1st and 2nd, Hihiu and Kaoma, North Kohala District, Island of Hawaii (TMK:3-5-7-02:por.36). PHRI Report 1520-080895. Prepared for Chalon International of Hawaii, Inc.