

# OEQC BULLETIN PUBLICATION FORM

1 Project Name: **Royal Ali'i Planned Unit Development**  
Type of Document (**bolded**): **Draft EA** Final EA EIS prep notice draft EIS final EIS  
Check if applicable (**bolded**): Revised Document Supplemental Document  
Legal Authority: **Chapter 343, HRS**  
Agency determination: **Anticipated FONSI**

Applicable sections:

use of state or county lands or funds     use of land in the Waikiki district  
 use of conservation district lands     amendment to county general plan  
 use of shoreline area     reclassification of conservation lands  
 use of historic site or district     construction or modification of  
helicopter facilities

2 Island: **Hawai'i**  
District: **North Kona**  
Tax Map Key Number: (**3rd**): **7-7-04:57 & 58**

3 Applicant or Applicant Agency:  
**Royal Ali'i LLC**  
Address: **220 S. King Street**  
**Suite 2170**  
**Honolulu, Hawai'i 96740**  
Contact: **c/o Ron Terry** Phone: **969-7090**

4 Approving Agency (EAs) or Accepting Authority (EISs):  
**Hawai'i County Planning Department**  
Address: **101 Aupuni Street, Suite 103**  
**Hilo HI 96720**  
Contact: **Daryn Arai** Phone: **961-8288x204**

5 Consultant: **Geometrician Associates**  
Address: **PO Box 396**  
**Hilo HI 96721**  
Contact: **Ron Terry** Phone: **969-7090**

6 Public Comment Deadline: **not yet ascertained**

7 Permits required prior to implementation: **State Department of Health, National Pollutant Discharge Elimination System Permit County of Hawai'i, Department of Public Works, Engineering Division, Grading Permit County of Hawai'i, Planning Department, Final Subdivision Approval, Approval for Work Within County Roadway Right-of-Way**

8 Project Summary (*name of file on disk*): [Provided on attached CD]

9 Public Library Copy: **Kailua-Kona (will be deposited date of publication)**

10 This form was prepared by: **Ron Terry** Phone: **969-7090**

Signature: \_\_\_\_\_

Date: 6/18/08

**Draft Environmental Assessment Summary**  
**Royal Ali'i Planned Unit Development**

Royal Ali'i LLC (the applicant) plans to develop a 19-lot, gated subdivision on Ali'i Drive, south of Kailua-Kona, on 5.943 acres of land zoned for single-family residential use. The lots would vary in size from 5,246 to 10,177 square feet under the approval of a Planned Unit Development (PUD). A Special Management Area Permit has been approved, with conditions, for the project. The project site has residential zoning and similar developments are nearby. Road access would be from a single driveway on Ali'i Drive. The lots would be provided with electricity, telephone, water and sewage service from existing lines located along Ali'i Drive.

The property, which has been previously impacted by various historic and prehistoric uses, including grazing, does not contain any sensitive biological resources. Archaeological sites identified through surveys, including two burials, will be protected through temporary construction buffer zones followed by the establishment of a permanent archaeological easement that takes up about a third of the property, on the Ali'i Drive frontage. In the unlikely event that additional archaeological resources or human remains are encountered during landclearing activities, which will have an archaeological monitor, work in the immediate area of the discovery will be halted. The applicant will prepare a metes and bounds survey of the Judd Trail near the project site, and subject to the approval of the State, will stabilize the stone walls on the existing remnants of the Judd Trail and remove invasive plants. Upon request of the State, the applicant will quitclaim to the State any portions of the Judd Trail that are within its property boundaries.

The project matches surrounding development and would have negligible impacts on views both toward and from the shoreline. The project site is separated from the shoreline at its closest point by a distance of 100 feet and a major County road, and the project would not adversely affect shoreline resources. All construction will be done in accordance with County, State and federal regulations.

## **Distribution List for Royal Ali'i Planned Unit Development Environmental Assessment**

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Honolulu HI 96813

(2 hardcopies; 1 pdf file)

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75-140 Hualalai Road  
Kailua-Kona HI 96740

**Dear Participant:**

Attached for your review is a Draft Environmental Assessment (DEA) prepared pursuant to the EIS law (Hawai'i Revised Statutes, Chapter 343) and the EIS rules (Administrative Rules, Title 11, Chapter 200).

Project Name: **Royal Alii Planned Unit Development**

Location: Island: **Hawai'i** District: **North Kona**

Tax Map Key Number: **(3rd): 7-7-04:57 & 58**

Your comments must be received or postmarked by: **Fill in at appropriate time**

Please send original comments to the:

Consultant: **Geometrician Associates**

Address: **PO Box 396  
Hilo HI 96721**

Contact: **Ron Terry** Phone: **969-7090**

Copies of the comments should be sent to:

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

and the following:

Approving Agency: **Hawai'i County Planning Department**

Address: **101 Aupuni Street, Suite 103  
Hilo HI 96720**

Contact: **Daryn Arai** Phone: **961-8288x204**

If you no longer need the Draft EA, please recycle it. Thank you for your participation in the Environmental Assessment process.

# **DRAFT ENVIRONMENTAL ASSESSMENT**

## **Royal Ali'i Planned Unit Development**

TMK: (3rd) 7-7-04:57 & 58  
Kaunalumalu, North Kona District, Hawai'i Island, State of Hawai'i

May 2008

Prepared for:  
County of Hawai'i  
Planning Department  
Aupuni Center, Suite 3  
101 Pauahi Street  
Hilo, HI 96720

# **DRAFT ENVIRONMENTAL ASSESSMENT**

## **Royal Ali‘i Planned Unit Development**

TMK: (3rd) 7-7-04:57 & 58  
Kaunalumalu, North Kona District, Hawai‘i Island, State of Hawai‘i

May 2008

### **APPLICANT:**

Royal Ali‘i LLC  
220 S. King Street  
Suite 2170  
Honolulu, Hawai‘i 96740

### **APPROVING AGENCY:**

County of Hawai‘i  
Planning Department  
101 Pauahi Street, Suite 3  
Hilo HI 96720

### **CONSULTANT:**

Geometrician Associates LLC  
PO Box 396  
Hilo HI 96721

### **CLASS OF ACTION:**

Use of County Land

This document is prepared pursuant to:

The Hawai‘i Environmental Policy Act,  
Chapter 343, Hawai‘i Revised Statutes (HRS), and  
Title 11, Chapter 200, Hawai‘i Department of Health Administrative Rules (HAR).

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## **SUMMARY OF THE PROPOSED ACTION, ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES**

Royal Ali'i LLC (the applicant) plans to develop a 19-lot, gated subdivision on Ali'i Drive, south of Kailua-Kona, on 5.943 acres of land zoned for single-family residential use. The lots would vary in size from 5,246 to 10,177 square feet under the approval of a Planned Unit Development (PUD). A Special Management Area Permit has been approved, with conditions, for the project. The project site has residential zoning and similar developments are nearby. Road access would be from a single driveway on Ali'i Drive. The lots would be provided with electricity, telephone, water and sewage service from existing lines located along Ali'i Drive.

The property, which has been previously impacted by various historic and prehistoric uses, including grazing, does not contain any sensitive biological resources. Archaeological sites identified through surveys, including two burials, will be protected through temporary construction buffer zones followed by the establishment of a permanent archaeological easement that takes up about a third of the property, on the Ali'i Drive frontage. In the unlikely event that additional archaeological resources or human remains are encountered during landclearing activities, which will have an archaeological monitor, work in the immediate area of the discovery will be halted. The applicant will prepare a metes and bounds survey of the Judd Trail near the project site, and subject to the approval of the State, will stabilize the stone walls on the existing remnants of the Judd Trail and remove invasive plants. Upon request of the State, the applicant will quitclaim to the State any portions of the Judd Trail that are within its property boundaries.

The project matches surrounding development and would have negligible impacts on views both toward and from the shoreline. The project site is separated from the shoreline at its closest point by a distance of 100 feet and a major County road, and the project would not adversely affect shoreline resources. All construction will be done in accordance with County, State and federal regulations.

## **PART 1: PROJECT DESCRIPTION, LOCATION, AND ENVIRONMENTAL ASSESSMENT PROCESS**

### **1.1 Project Description, Location and Property Ownership**

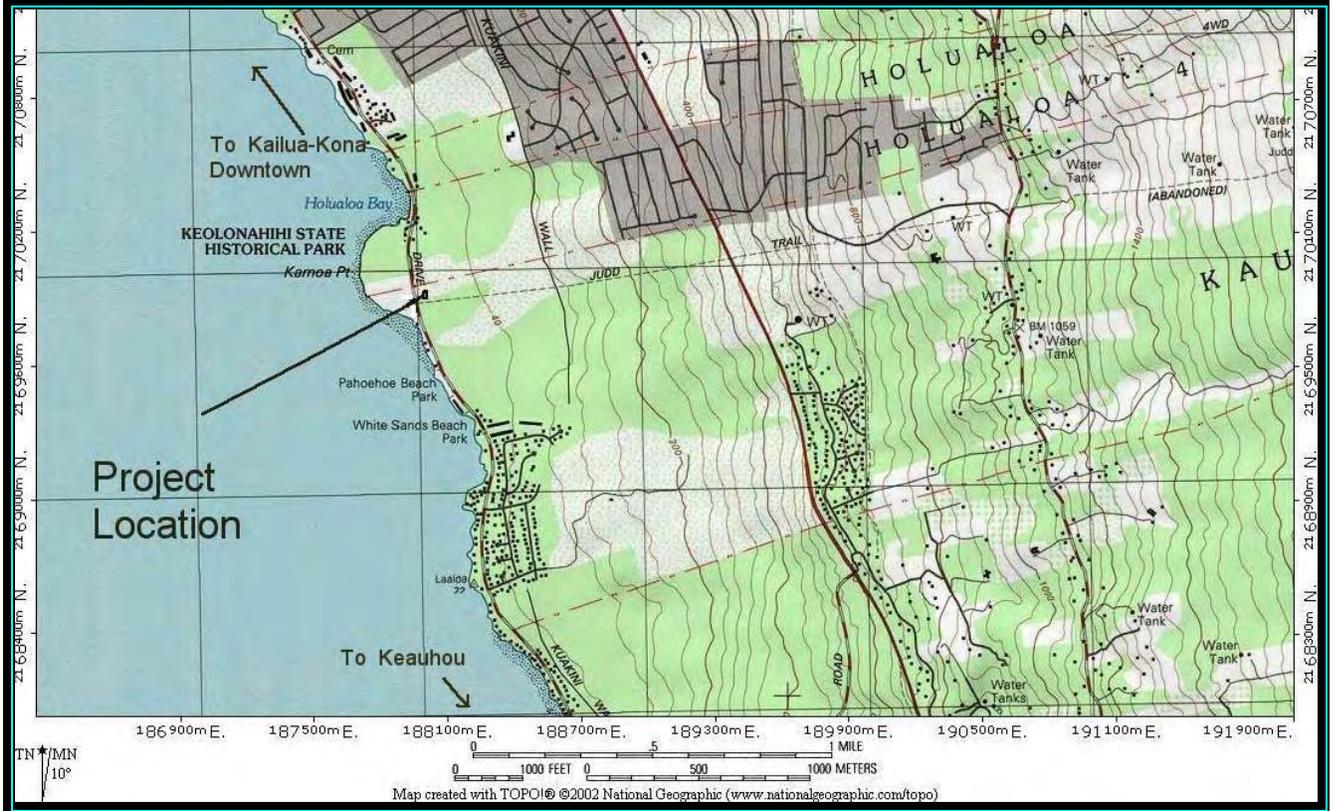
Royal Ali‘i LLC proposes to create a 19-lot, gated, subdivision on urban-designated land on the mauka side of Ali‘i Drive near Kamo‘a Point south of Kailua-Kona (Figures 1-3). The subdivision, which will be developed on two adjacent parcels of land totaling 5.493 acres and carrying RS-7.5 zoning, will have a 100-foot plus wide archaeological preserve easement that takes up about a third of the property, located between Ali‘i Drive and the nearest lots. The project, which will include underground utilities, would be provided with electrical and telephone service from existing overhead lines located within the right-of-way on Ali‘i Drive. Water and sewage service would be provided by underground lines also in the County right-of-way. Landscaping, which will be installed along the subdivision’s internal roadways, will be subject on residents’ lots to Covenants, Conditions and Restrictions (CC&Rs). The development also includes stabilization and clearing improvements to a historic trail.

Royal Ali‘i LLC has been granted a Special Management Area permit (Permit No. SMA-05-000007, see Appendix 1 for copy of approval letter) for the project. Royal Ali‘i LLC now seeks County approval for consolidation of the two existing lots and resubdivision to create 19 housing lots, two archaeological preserve lots and a road lot. The housing lots would vary in size from 5,246 to 10,177 square feet under the approval of a Planned Unit Development, which allows for diversification of lot sizes. Because of the location within the County right-of-way of the proposed utility connections, the Planning Department has informed the applicant that these connections and any associated non-exempt development would be subject to Chapter 343, HRS, Hawai‘i’s Environmental Impact Statement law. As the development of a subdivision is not an exempt action, an Environmental Assessment (EA) is required. It should be noted that prior to the County’s institution of this policy in June 2007 in response to a revised interpretation of Chapter 343, once an SMA Permit was obtained, a subdivision project in the State of Hawai‘i generally needed only Subdivision Plan Approval and various building permits to be developed.

### **1.2 Environmental Assessment Process**

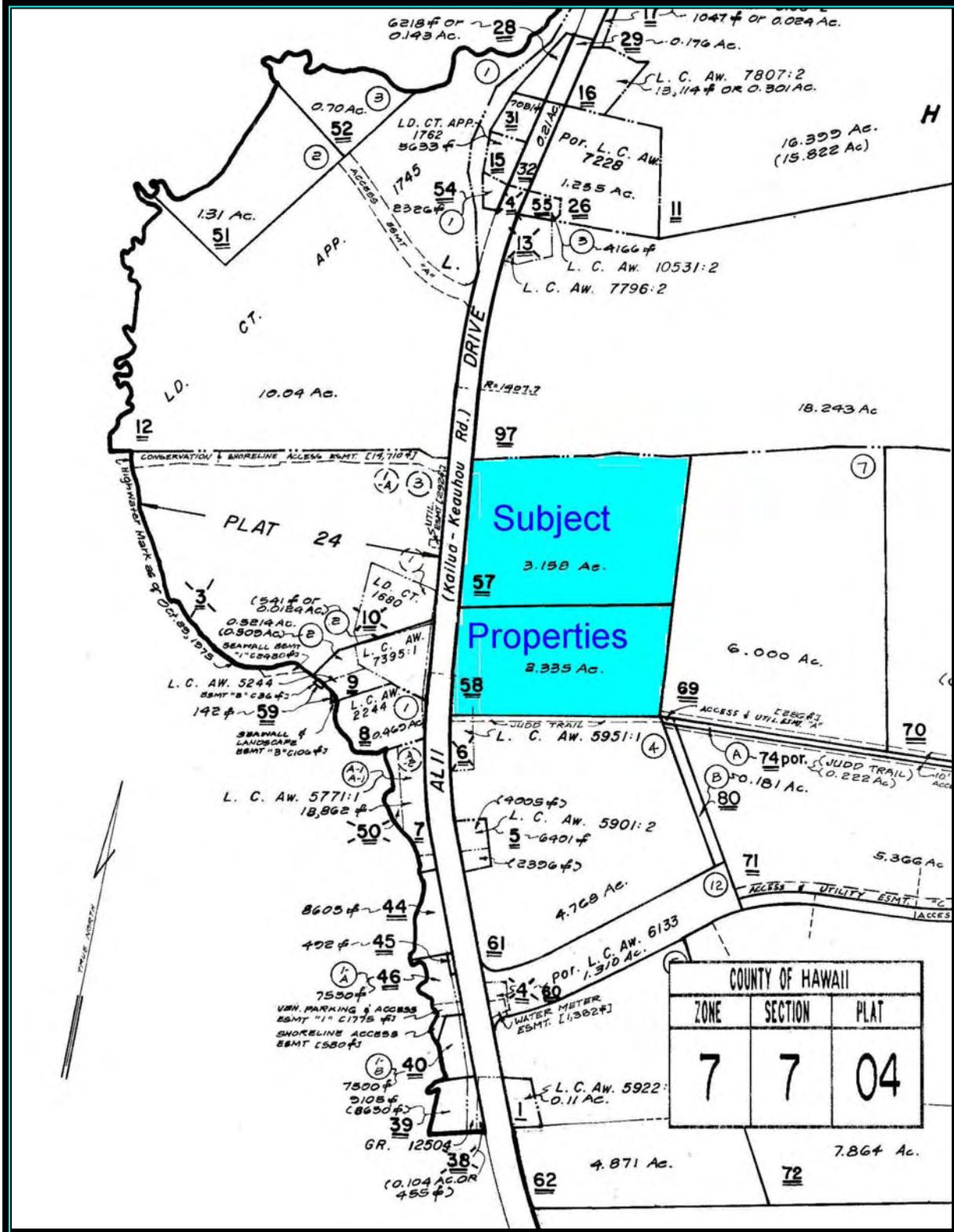
This Environmental Assessment (EA) process is being conducted in accordance with Chapter 343 of the Hawai‘i Revised Statutes (HRS). This law, along with its implementing regulations, Title 11, Chapter 200, of the Hawai‘i Administrative Rules (HAR), is the basis for the environmental impact process in the State of Hawai‘i. 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. The EA document states the finding regarding whether significant

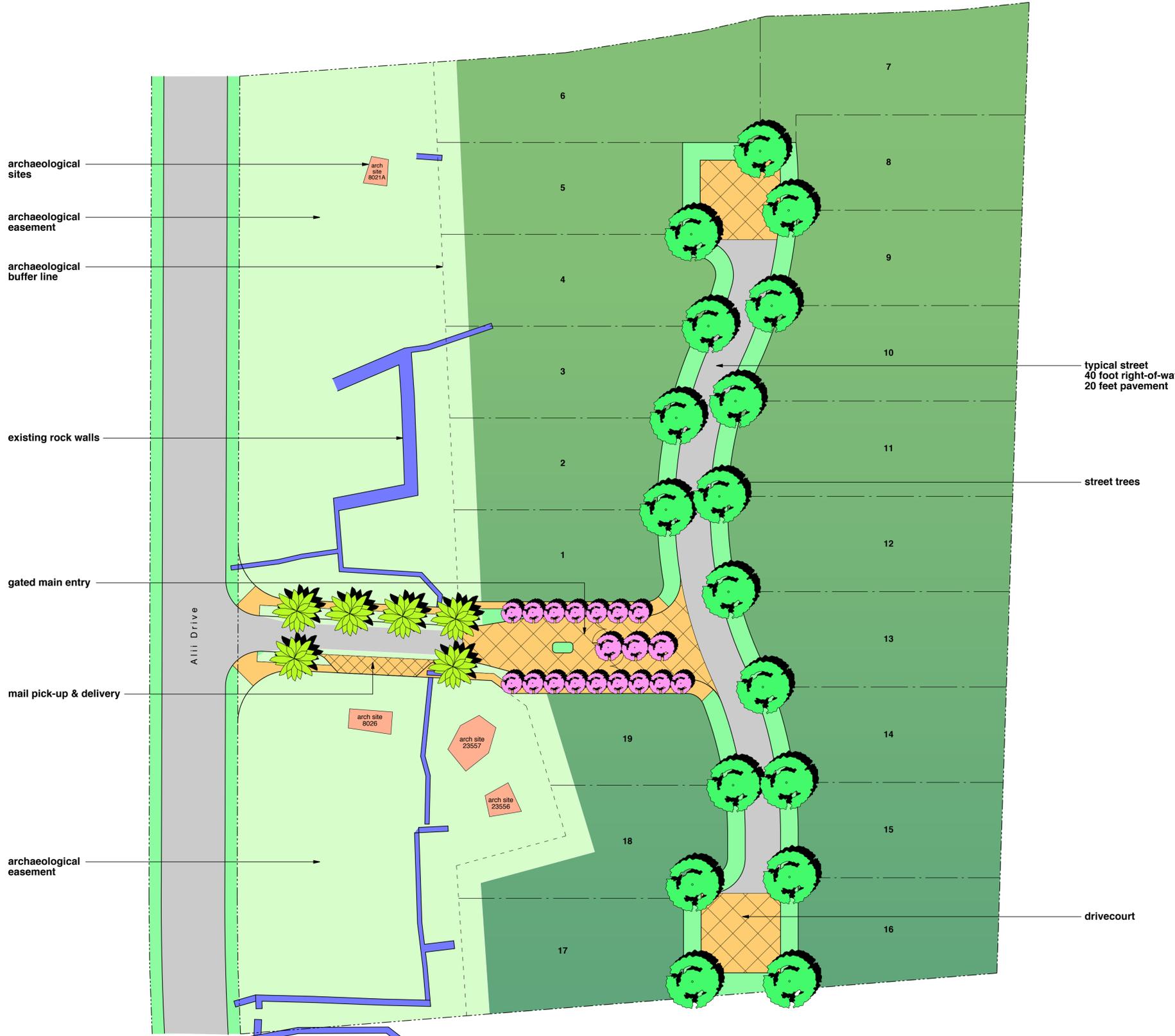
**FIGURE 1 General Location Map**



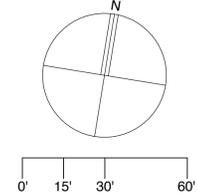
impacts are expected to occur, listing each of the thirteen criteria and presenting and explaining the findings related to them made by the approving agency. If, after considering comments to the Draft EA, the approving agency concludes that, as anticipated, no significant impacts would be expected to occur, then the agency will issue a Finding of No Significant Impact (FONSI), and the action will be permitted to occur. If the agency concludes that significant impacts are expected to occur as a result of the proposed action, then an Environmental Impact Statement (EIS) will be prepared. The determination, findings and supporting reasons are presented in Part 4 of this EA.

FIGURE 2 TMK Map





Master Plan



Scale 1" = 30' - 0" 10.1.05

ROYAL ALII - A PLANNED UNIT DEVELOPMENT  
Kailua-Kona, Island & County of Hawaii

PROJECT INFORMATION

PROJECT TMK	TMK: (3) 7-7-004: 57 & 58
AREA OF SITE	5.50 ACRES
COUNTY ZONING	RS-7.5
NUMBER OF LOTS	19 LOTS
DENSITY	3.45 LOTS PER ACRE

*Riehm Owensby*  
PLANNERS  
ARCHITECTS

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P.O. BOX 390747 KAILUA-KONA HAWAII TEL. 808-322-6115

Sheet No:

A - 1

### **1.3 Public Involvement and Agency Coordination**

The following agencies and organizations were consulted in development of the environmental assessment:

State:

Department of Land and Natural Resources  
State Historic Preservation Division  
Department of Health  
Office of Hawaiian Affairs  
Na Ala Hele Program

County:

Department of Public Works  
Department of Environmental Management  
Police Department  
Fire Department

Private:

Sierra Club  
Kona Outdoor Circle  
Kona Hawaiian Civic Club  
Neighboring Property Owners

Copies of communications received during early consultation are contained in Appendix 1.

A public hearing on the SMA application was held in Kailua-Kona on July 21, 2006, at which the Hawai'i County Planning Commission approved the application and granted Permit No. SMA-05-000007.

## **PART 2: ALTERNATIVES**

### **2.1 Proposed Action**

The action under consideration is development of a 19-lot, gated subdivision with vehicular access and utility connections to Ali‘i Drive, which will be called the *proposed action* in this document.

### **2.2 No Action**

Under the No Action Alternative, the approval for work in the County-owned Ali‘i Drive right-of-way would not occur, and the applicant would be denied the use of the right-of-way for utility and vehicular access to the development already approved in the SMA permit process. This would provide no benefit to any public or private party, and the applicant considers the No Action Alternative undesirable and inequitable.

### **2.3 Alternate Uses of the Property**

The applicant does not envision any other uses for this private property that would be acceptable to the applicant and therefore will not be advancing or evaluating any other alternatives in this EA.

## **PART 3: ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES**

### *Basic Geographic Setting*

The Royal Ali‘i Planned Unit Development area is referred to throughout this EA as the *project site*. The term *project area* is used to describe the general environs in this area of Kailua-Kona.

The project site consists of two adjacent properties totaling 5.493 acres located at an elevation of approximately 10 to 30 above sea level near Kamoia Point and mauka of the County-owned Ali‘i Drive south of Kailua-Kona (Figure 4). Adjacent land is primarily residential, with scattered undeveloped properties and a few commercial uses. The vegetation of the project area has been previously disturbed by construction activities and ranching.

County tax records indicate that the two parcels making up the project site were once part of a larger parcel, TMK 7-7-04:02, owned in 1951 by Frank Greenwell. At that time consisting of 142.2 acres, the parcel was reduced to 127.5 acres in 1954 through the establishment of a roadway lot and the redrawing of boundary lines through a quitclaim deed. Beginning in 1965, the ownership of TMK 7-7-04:02 went through various ownership changes involving the establishment by the Greenwell family of the Palani Land Trust. In 1978 the property was sold to Lanihau Corporation, and sold again in 1980 to DH Realty Inc., with another ownership change later that year to Siegfried Kagawa and Farms & Ranches Inc. In 1981 the property was subdivided into three lots that were sold that year to Mauna Loa Cattle Company and sold again in 1982 to Kaumalumu Property Venture. In 1983 the property was purchased by the Karl and Tina Rodi Family Trust, which resubdivided a portion of lot 2 to create the existing parcels 7-7-04:57 and 58, which make up the current project site. The Karl and Tina Rodi Family Trust sold the property to Kaumalumu Property Venture, a Hawai‘i general partnership, by deed dated August 24, 1983. Royal Ali‘i LLC, a Hawai‘i limited liability company, purchased the property from Kaumalumu Property Venture, by warranty deed dated July 16, 2004.

### **3.1 Physical Environment**

#### **3.1.1 Climate, Geology, Soils and Geologic Hazards**

##### *Environmental Setting*

The climate in the area is mild and semi-arid, with median annual rainfall of approximately 40 inches (U.H. Hilo-Geography 1998:57). The mean annual temperature is 75 degrees F (Armstrong 1983). Geologically, the project site is located on the flanks of Hualālai Volcano, and the surface consists of basalt lava dated more than 10,000 years before the present (Wolfe and Morris 1996). The soil on the project site is classified by the U.S. Natural Resources Conservation Service (formerly Soil Conservation Service) as Kaimu extremely stony peat (rKED), which is characterized by permeable, well-drained soil on 7-25 percent slopes. In a representative profile, the surface layer is black peat up to three inches thick underlain by extremely cobbly material. Roughly eight percent of the surface area is covered with cobbles, stones or boulders, including numerous pahoehoe

**FIGURE 4 Project Site Photos**



outcrops. The capability subclass is VIIIs, which means that this soil has very severe limitations that make it unsuitable for cultivation and restrict its use to mainly pasture and woodland or wildlife (U.S. Soil Conservation Service 1973).

The entire Big Island is subject to geologic hazards, especially lava flows and earthquakes. Volcanic hazard as assessed by the United States Geological Survey in this area of North Kona is zone 4, on a scale of ascending risk from 9 to 1 (Heliker 1990:23). The hazard risk is based on the fact that Hualālai volcano has steep slopes and has been historically active. In terms of seismic risk, the entire island of Hawai‘i is rated Zone 4 Seismic Hazard (*Uniform Building Code, 1997 Edition*, Figure 16-2). Zone 4 areas are at risk from major earthquake damage, especially to structures that are poorly designed or built, as the 6.7-magnitude (Richter) quake of October 15, 2006, demonstrated. The project site does not appear to be subject to subsidence, landslides or other forms of mass wasting.

#### *Impacts and Mitigation Measures*

In general, geologic conditions impose no constraints on the area, and the proposed action is not imprudent to construct. This level of volcanic hazard is shared by most of the Big Island. Appropriate seismic standards would be followed for building construction, per building codes.

### **3.1.2 Drainage, Water Features and Water Quality**

#### *Existing Environment*

The project area has no streams, ponds, lakes, wetlands or other surface water bodies that would qualify as waters of the U.S. The Flood Insurance Rate Maps (FIRM) show that the project site is in Flood Zone X, outside the 100-year floodplain. No known areas of local (non-stream related) flooding are present.

#### *Impacts and Mitigation Measure*

The infrastructure and home-building that depend on use of the County right-of-way would be required to follow applicable County regulations and policies related to drainage. In particular, the project would be required to comply with the following SMA Conditions.

- All development-generated runoff will be disposed of on-site and will not be directed toward any adjacent properties.
- The project will comply with Chapter 11-55, Water Pollution Control, Hawai‘i Administrative Rules, Department of Health, which requires an NPDES permit for certain construction activity.
- During construction, measures shall be taken to minimize the potential of both fugitive dust and runoff sedimentation. Such measures will comply with construction industry standards and practices utilized during construction projects of the State of Hawai‘i.
- All earthwork and grading shall conform to Chapter 10, Erosion and Sediment Control of the Hawai‘i County Code.

### 3.1.3 Flora, Fauna and Ecosystems

#### *Existing Environment*

Given the rainfall, geologic substrate and existing vegetation, prior to human disturbance the general area probably supported a Coastal Dry-Mesic Forest (Gagne and Cuddihy 1990), consisting of an open canopy forest of with various trees, shrubs, herbs, vines and ferns. The general landscape of the Kailua-Kona area has been radically altered by centuries of settlements, more than a century of grazing, and particularly by the development of hotels, condominiums, resort homes and associated infrastructure and commercial activity since 1960. The vegetation has also been fundamentally altered by alien species invasion to the point that in many locations native species are few to none.

As is typical of the region, the vegetation on the site is almost completely alien, as indicated by a botanical survey conducted by Ron Terry, Ph.D. on March 5, 2004, and confirmed in April 2007. The site is mostly dominated by a low forest of scattered kiawe (*Prosopis pallida*) with an understory of koa haole (*Leucaena leucocephala*), with the latter dominating in portions where kiawe was absent. Most of the ground cover consists of pigweed (*Portulaca oleracea*). A total of 32 plant species were identified. Only two of them, the common roadside plants ilima (*Sida fallax*) and 'uhaloa (*Waltheria indica*), are indigenous to the Hawaiian Islands. All plant species observed during the survey are listed in Table 1 below.

#### *Fauna*

Although no formal zoological survey was conducted, a number of alien birds were noted during the botanical survey, including Common Myna (*Acridotheres tristis*), Northern Cardinal (*Cardinalis cardinalis*), Yellow-billed Cardinal (*Paroaria capitata*), Yellow-fronted Canary (*Serinus mozambicus*), Spotted Dove (*Streptopelia chinensis*), Japanese White-eye (*Zosterops japonicus*) and House Finch (*Carpodacus mexicanus*). No native Hawaiian birds were identified during the survey, and it is unlikely that many native forest birds would be expected to use the project site due to its low elevation and lack of adequate forest resources.

In addition to cats and dogs, the mammalian fauna of the project area is composed of mainly introduced species, including small Indian mongooses (*Herpestes a. auropunctatus*), roof rats (*Rattus r. rattus*), Norway rats (*Rattus norvegicus*), European house mice (*Mus domesticus*) and possibly Polynesian rats (*Rattus exulans hawaiiensis*). None are of conservation concern and all are deleterious to native flora and fauna.

The only native Hawaiian land mammal, the Hawaiian Hoary Bat (*Lasiurus cinereus semotus*), may also be present in the area, as it is present in many areas on the island of Hawai'i. Observation took place in daylight, and therefore the lack of bat observations does not signify an actual absence of bats. Although the weedy vegetation of the site would not be expected to represent essential habitat for this endangered species, the bats have been observed in kiawe scrub vegetation in other parts of Ali'i Drive. The endangered native Hawaiian Hawk or 'Io

**Table 1**  
**Plant Species on Project Site**

<b>Scientific Name</b>	<b>Family</b>	<b>Common Name</b>	<b>Life Form</b>	<b>Status</b>
<i>Abutilon grandifolium</i>	Malvaceae	Hairy abutilon	Herb	A
<i>Amaranthus viridis</i>	Amaranthaceae	Slender amaranth	Herb	A
<i>Asystasia gangetica</i>	Acanthaceae	Chinese violet	Herb	A
<i>Bidens pilosa</i>	Asteraceae	Beggar's tick	Herb	A
<i>Chamaesyce hirta</i>	Euphorbiaceae	Garden spurge	Herb	A
<i>Cleome gynandra</i>	Capparaceae	Spider flower	Herb	A
<i>Coccinea grandis</i>	Cucurbitaceae	Ivy gourd	Vine	A
<i>Cyperus rotundus</i>	Cyperaceae	Nut sedge	Grass	A
<i>Desmanthus virgatus</i>	Fabaceae	Slender mimosa	Shrub	A
<i>Murraya paniculata</i>	Rutaceae	Mock orange	Shrub	A
<i>Eleusine indica</i>	Poaceae	Goose grass	Grass	A
<i>Ficus microcarpa</i>	Moraceae	Chinese banyan	Tree	A
<i>Ficus macryophylla</i>	Moraceae	Moreton Bay fig	Tree	A
<i>Hylocereus undatus</i>	Cactaceae	Night blooming cereus	Shrub	A
<i>Indigofera suffruticosa</i>	Fabaceae	Indigo	Shrub	A
<i>Kalanchoe pinnata</i>	Crassulaceae	Air plant	Herb	A
<i>Leonotis nepetifolia</i>	Lamiaceae	Lion's ear	Herb	A
<i>Leucaena leucocephala</i>	Fabaceae	Haole koa	Tree	A
<i>Malvastrum coromandelianum</i>	Malvaceae	False mallow	Herb	A
<i>Mangifera indica</i>	Anacardiaceae	Mango	Tree	A
<i>Mimosa pudica</i>	Fabaceae	Sensitive plant	Herb	A
<i>Panicum maximum</i>	Poaceae	Guinea grass	Grass	A
<i>Pennisetum setaceum</i>	Poaceae	Fountain grass	Grass	A
<i>Pithecellobium dulce</i>	Fabaceae	Opiuma	Tree	A
<i>Portulaca oleracea</i>	Portulacaceae	Pig weed	Herb	A
<i>Prosopis pallida</i>	Fabaceae	Kiawe	Tree	A
<i>Ricinus communis</i>	Euphorbiaceae	Castor bean	Shrub	A
<i>Rivina humilis</i>	Phytolaccaceae	Coral berry	Shrub	A
<i>Senna occidentalis</i>	Fabaceae	Coffee senna	Tree	A
<i>Sida fallax</i>	Malvaceae	Ilima	Shrub	I
<i>Sida rhombifolia</i>	Malvaceae	Broom weed	Herb	A
<i>Waltheria indica</i>	Sterculiaceae	'Uhaloa	Herb	I

\* A = alien; I = indigenous; botanical names follow Wagner, Herbst and Sohmer 1990.

*(Buteo solitarius)* possibly makes some use of this urban area for hunting. It is also possible that certain native seabirds fly over the site, but it is unlikely that any with threatened or endangered status would find the site suitable habitat.

### *Impacts and Mitigation Measures*

In order to frame impacts to flora and fauna, it is important to remember that the project site has been altered through the introduction of alien plant species as well as prehistoric and historic uses of various kinds, including grazing, and is now zoned for urban use. From this perspective, the development will produce almost no impacts to any species of flora and fauna other than the introduced species already present.

### **3.1.4 Air Quality, Noise, and Scenic Resources**

#### *Environmental Setting*

Air pollution in West Hawai‘i is mainly derived from volcanic emissions of sulfur dioxide, which convert into particulate sulfate and produce a volcanic haze (vog) that persistently blankets North and South Kona.

Noise on the project site is low to moderate and is derived from several sources. The principal source is road noise, as the project site lies along Ali‘i Drive. Another permanent source is residences; construction in the area is a temporary source of noise. Moderate levels of noise mainly affect those lots fronting the roadway.

A Visual Impact Assessment conducted for the project site, attached as Appendix 2, determined that the total visual impacts of the project would be minor. The views toward the shoreline from the ground level of the property are already mostly blocked by existing developments on the makai side of Ali‘i Drive. Mauka views from the shoreline and Ali‘i Drive will be essentially unchanged by the project because of the wide archaeological easement, which is recommended to be landscaped with native and Polynesian plants consistent with protection of archaeological resources. The Hawai‘i County General Plan identifies areas of natural beauty and important viewplanes for various places in Hawai‘i County. The Plan mentions shoreline views from Kuakini Highway as scenic, although no specific scenic views are identified in the Holualoa-Kamalumu area. In this area, Kuakini Highway is about 4,000 feet mauka of the shoreline and existing development and vegetation, along with topography, result in very intermittent views of the shoreline from the highway.

#### *Impacts and Mitigation Measures*

The proposed action would not measurably affect air quality, noise levels, or scenic sites recognized in the Hawai‘i County General Plan.

Development of the driveway access, road, house pads, and utility poles will involve excavation, grading, compressors, vehicle and equipment engine operation, and construction of new infrastructure and buildings. These activities have the potential to generate noise exceeding 95 decibels at times, impacting nearby sensitive noise receptors on the margins of the subdivision. Whenever construction noise is expected to exceed the Department of Health’s (DOH) “maximum permissible” property-line noise levels, contractors will be required to consult with DOH per Title 11, Chapter 46, HAR (Community Noise Control) prior to construction. DOH would then review the proposed activity, location, equipment, project purpose and timetable in order to decide whether a permit is necessary and what conditions and mitigation measures, such as restriction of equipment type, maintenance requirements, restricted hours, and portable noise barriers, will be necessary. The contractor would consult with DOH to determine whether permit restrictions would consist of construction being limited to daylight hours. After this, subsequent noise-generating construction will consist of normal home building, which is not expected to

generate any substantial noise or to require a permit. Future legal uses of the project site for the homes and associated landscaped areas will also generate noise consistent with expectations and allowable limits in areas zoned for single-family residences, which is thus not considered an impact.

### **3.1.5 Hazardous Substances, Toxic Waste and Hazardous Conditions**

#### *Environmental Setting, Impacts and Mitigation Measures*

The land ownership history of the project, discussed at the beginning of this chapter, does not indicate use for industry, modern intensive farming or as a dumping ground. This site history does not suggest the presence of hazardous materials in general or any problems associated with exposure to the public during development of the subdivision.

## **3.2 Socioeconomic and Cultural**

### **3.2.1 Socioeconomic Characteristics**

The proposed action would most directly affect the communities along Ali‘i Drive and, in a wider sense, the entire North Kona District. Table 2 provides information on the socioeconomic characteristics of North Kona and Kailua-Kona along with those of Hawai‘i County as a whole for comparison, from the United States 2000 Census of Population.

#### *Impacts*

Population increase as a result of an additional 19 house lots is likely to be minor. Based on the Kailua-Kona average household size and vacancy rates, an increase of about 43 residents would occur. This would not lead to significant shifts in demographic characteristics, unemployment rates, or demands on public services (see Section 3.3, below). Importantly, the population increase is consistent with the expectations of RS-7.5 zoning and medium-density urban LUPAG designation.

**Table 2**  
**Selected Socioeconomic Characteristics**

Characteristic	Hawai'i County	North Kona	Kailua-Kona	Characteristic	Hawai'i County	North Kona	Kailua-Kona
Total Population	148,677	28,543	9,870	21 to 64 Years, Disabled (%)	19.2	17.4	18.7
Median Age	38.6	39.4	35.5	Employed and Disabled, 21 to 64 Years, (%)	51.8	64.1	67.0
Older Than 65 Years (%)	13.5	11.8	10.0	65 Years or Older, Disabled (%)	40.3	38.1	38.3
Race (%)				Employment in:			
White	31.5	47.1	38.7	Management and professional	30.2	26.6	20.3
Asian	26.7	16.3	18.3	Service	22.2	24.3	27.7
Hawaiian	9.7	8.9	10.8	Sales and offices	25.1	27.8	31.2
Other Pacific Islander	1.5	1.8	2.4	Construction	9.9	10.4	9.4
Two or More Races	28.4	23.5	27.1	Farming, Fishing and Forestry	3.8	2.2	2.3
Hispanic (Any Race)	9.5	7.9	10.2	Production and Transportation	8.9	8.8	9.1
Family Households (%)	69.6	68.6	68.7	Families Below Poverty Line (%)	11.0	5.6	6.5
Households with Female Householder, no Husband, With Children (%)	7.7	6.7	8.8	Households with Female Householder, no Husband, With Children, Below Poverty Line (%)	28.1	22.0	26.3
Householder Lives Alone (%)	23.1	22.2	22.6	Individuals Below Poverty Line (%)	15.7	9.7	10.8
Average Household Size	2.75	2.70	2.78	65 and Over Below Poverty Line	7.2	5.3	3.9
Average Family Size	3.24	3.13	3.26	Median Household Income (\$)	39,805	47,610	40,874
Over 25 Years Old With High School Diploma (%)	84.6	87.7	84.5	Housing Owner-Occupied (%)	64.5	58.5	51.3
Married Now (%)	52.0	53.9	48.7	Housing Rented (%)	35.5	41.5	48.7
Widowed (%)	6.3	4.9	5.2	Housing Vacant (%)	15.5	19.7	18.2
Divorced Now (%)	10.7	11.4	11.9	Median Home Value, 1999 (\$)	153,700	233,900	190,900
Veterans (%)	14.5	14.8	13.2	Median Rent, 1999 (\$)	645	745	686
Over 16 in Labor Market (%)	61.7	69.2	69.5	Rent is Greater Than 25% of Income (%)	46.0	47.2	51.8
Residence 5 Years Ago (%)				Poverty by Race:			
Same Home	57.7	49.9	46.2	White	14.5	8.8	9.9
Different Home, Same County	26.5	28.8	34.9	Asian	7.3	6.2	5.3
Different County in Hawai'i	4.8	3.5	4.1	Native Hawaiian/Pacific Islander	26.4	15.8	12.4
Different State/Country	11.0	17.8	14.8	Two or More Races	20.4	10.3	12.8

Source: U.S. Bureau of the Census May 2001. *Profiles of General Demographic Characteristics, 2000 Census of Population and Housing, Hawai'i*. (U.S. Census Bureau Web Page).

### 3.2.2 Archaeological Resources

#### *Overview*

In overview, an archaeological inventory survey of the project site found 21 archaeological sites (Table 3), most on the makai third of the property (Figure 5). Some sites were significant for information content only, but fifteen were determined to be important for preservation, including a trail, a ceremonial site, habitations, historic cattle structures and two burials. As approved by the State Historic Preservation Division (SHPD), an archaeological easement area taking up about a third of the property has been included as part of the development plan (see Figure 3), which protects all the preserve sites. Treatment of the burials has undergone further review and approval by the Burial Council. Furthermore, a monitoring plan has been developed to ensure full compliance with the terms of preservation during construction and proper treatment of any resources that might be found during construction. Further details on the archaeology of the site are found below.

#### *Archaeological Research and Resources*

A number of archaeological reports have been prepared for the project site during the last ten years:

- Haun & Associates (2002): Archaeological Inventory Survey
- Archaeological Consultants of the Pacific (2004): Archaeological Burial Treatment Plan
- Archaeological Consultants of the Pacific (2004): Archaeological Preservation Plan
- Archaeological Consultants of the Pacific (2004): Archaeological Monitoring Plan
- Archaeological Consultants of the Pacific (2005): Archaeological Data Recovery Plan
- Archaeological Consultants of the Pacific (2007): Archaeological Monitoring Plan

Appendix 3 contains the summary and conclusions from the archaeological inventory survey, the complete preservation plan, the complete updated (2007) monitoring plan, and relevant correspondence from the State Historic Preservation Division (SHPD). The discussion below includes information, maps and tables generated from the data they contained.

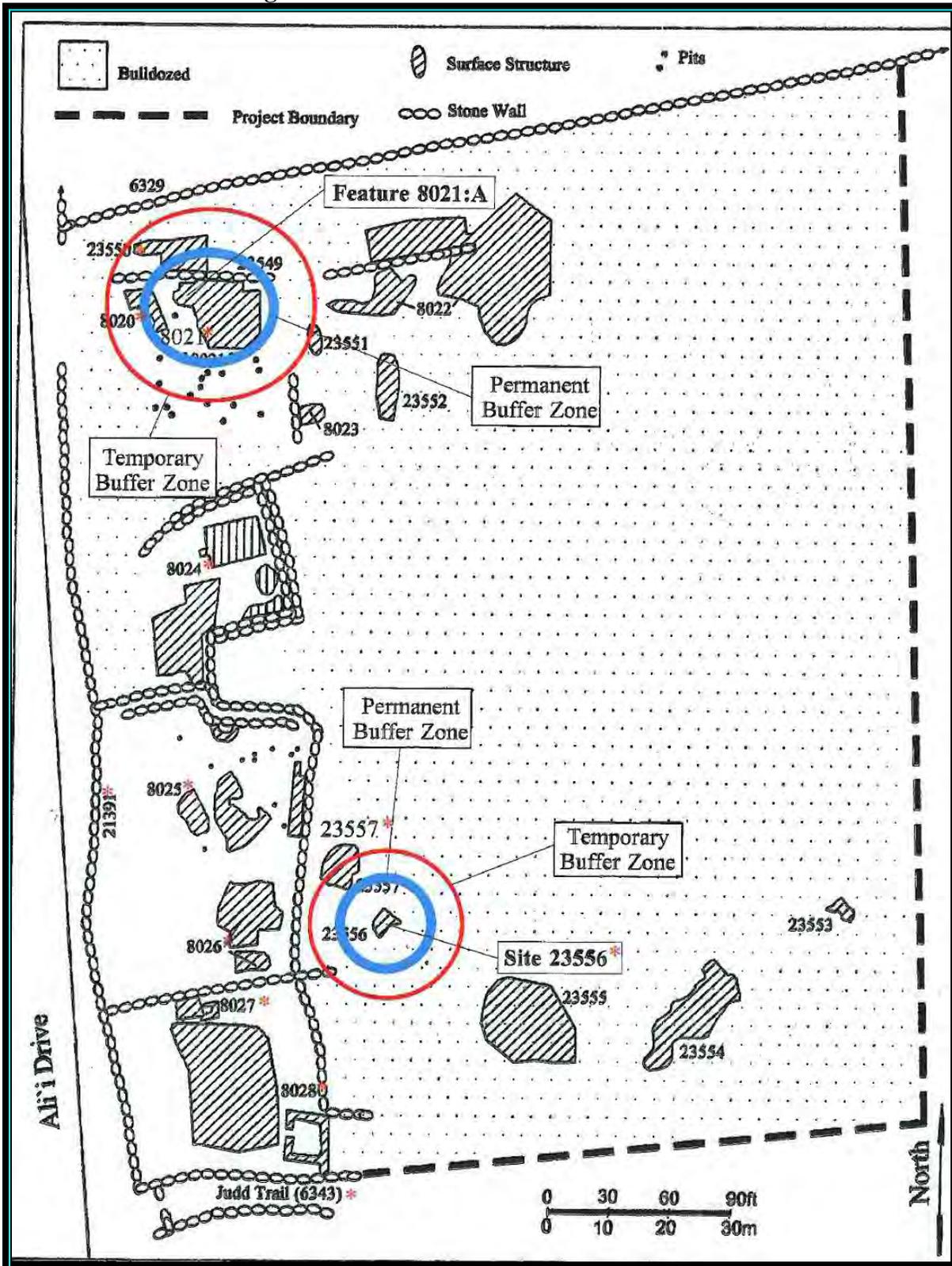
**Table 3**  
**Site Significance and Recommended Treatment**

<b>SIHP Site No.</b>	<b>No. of Features</b>	<b>Type</b>	<b>Function</b>	<b>Significance Criteria</b>	<b>Recommended Treatment</b>
6329	1	Wall	Livestock Control	D	NFW
6343	1	Trail	Transportation/Livestock Control	A, B, C, D	PR
8020	1	Platform	Permanent Habitation	D	PR
8021	21	Complex	Permanent Habitation/ Burial/Agriculture	D, E	PR
8022	7	Complex	Permanent Habitation	D	DR
8023	2	Complex	Permanent Habitation	D	DR
8024	5	Complex	Ceremonial	C, D, E	PR
8025	17	Complex	Permanent Habitation	C, D	PR
8026	2	Complex	Permanent Habitation	C, D	PR
8027	4	Complex	Permanent Habitation	C, D	PR
8028	4	Complex	Permanent Habitation	C, D	PR
21391	1	Wall	Livestock Control	D	PR (portion)
23549	1	Wall	Livestock Control	D	NFW
23550	1	Terrace	Permanent Habitation	D	PR
23551	1	Modified Depression	Agriculture	D	NFW
23552	1	Terrace	Indeterminate	D	DR
23553	1	Platform	Indeterminate Habitation	D	DR
23554	1	Pavement	Permanent Habitation	D	DR
23555	1	Platform	Possible Permanent Habitation/Ceremonial	D	DR
23556	1	Platform	Burial	D, E	PR
23557	1	Platform	Permanent Habitation	D	PR

Significance Criteria: **A** - Associated with events that have made an important contribution to the broad patterns of our history; **B** - 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.

Recommended Treatment: PR = Preservation, DR = Data Recovery, NFW = No Further Work

FIGURE 5 Archaeological Sites



The archaeological inventory by Haun (2002) first examined other work in the general project area of Kaumalumu, which has been the subject of at least 12 archaeological survey and excavation projects. Reinecke's West Hawai'i survey (1930) described two house sites along a ridge in Kaumalumu as well as "three modern house platforms, a palm grove, and a canoe landing and platform for canoe storage." He also noted a brackish water well next to a pile of stones known as Pu'u Hinihini. Other major studies looked at parcels on the makai side of Ali'i Drive (Rosendahl 1974 and Hommon 1982). Studies of larger areas that included some of the project site itself (Hammatt 1980 and Hommon 1982) identified nine sites with 14 features including habitations and two possible burial platforms.

Much of the project site has been disturbed by 20<sup>th</sup> century land clearing, including the inland 75 percent as well as the northwestern portion of the parcel. The Haun survey (2002) documented 21 remaining sites with 75 features, including excavated pits, mounds, platforms, terraces, walls, pavements, enclosures, trails, a modified depression, soil area and utilized knoll. Corresponding activities included agriculture, permanent habitation, ceremonial, livestock control, burial, indeterminate habitation and transportation. All of the identified habitation features are located within 650 feet of the shoreline, as is typical of the kula zone. According to the inventory survey, the dense concentration of permanent habitation features, a possible high-status residence and a possible heiau in the western portion of the project site may indicate that the area was associated with the royal center in Holualoa 4<sup>th</sup>, as descendants of the area believe. All 21 sites were assessed in the inventory survey as significant under criterion "D" of the Rules Governing Procedures for Historic Preservation (DLNR 1998: Chap. 275), which means they have yielded, or are likely to yield, information important for research on prehistory or history. Many of the sites were also significant under other criteria (see Table 3). Fifteen sites were important for preservation.

The inventory survey set the stage for further archaeological work to protect the significant preservation sites on the property. Because of the need to preserve sites, an Archaeological Preservation Plan was developed by a consultant and approved by SHPD in a letter of June 22, 2005. The preservation plans include establishment of 33-foot temporary buffer zones during development involving the operation of heavy equipment and 20-foot permanent buffer zones for long-term protection. The permanent buffer zones will be landscaped with indigenous plants after clearing of invasive vegetation and detailed mapping is completed. In addition, an Archaeological Monitoring Plan was prepared by a consultant and was approved by SHPD by letter dated April 5, 2005. It concerned portions of the subject area with culturally deposited materials that may be encountered during grubbing and grading activities during construction of the subdivision. The presence of two burials, which are to be preserved in place, required development of a Burial Treatment Plan, which was developed by a consultant and approved by the Hawai'i Island Burial Council in a letter of October 21, 2004 (see Appendix 3 for copies of these plans and approving letters).

In addition, an Archaeological Data Recovery Plan prepared by ACP in October 2005 was submitted by letter to SHPD on November 9, 2005.

Subsequent to the inventory survey, it was discovered that the Judd Trail is partially located on the subject property. This historic trail is included in the State's inventory of historic places, according to a May 4, 1990 letter from the Hawai'i Department of the Attorney General to the County Planning Director (see sub-appendix B of Appendix 4). The Judd Trail, which is shown on a 1928 USGS quadrangle map extending along the boundary between the Kaumalumu and Pahoehoe 1<sup>st</sup> ahupua'a, was initially believed to be off the property. However, subsequent detailed mapping found a corner pin, the location of which indicates that approximately 75 percent of the remaining rock walls that border the trail remnant are within the boundaries of the project site. Royal Ali'i LLC acknowledges the State of Hawai'i's ownership of this trail.

### *Impacts and Mitigation Measures*

All the sites determined to be significant for preservation in place will be protected in an archaeological preserve, per the preservation plan cited above (see Figure 3 for preservation area). A condition of Special Management Area permit SMA-05-000007 is that the archaeological features in the preserve area shall be preserved and made a part of the project's open space buffer from Ali'i Drive.

In order to ensure proper data recovery, a condition of the Special Management Area permit is that an Archaeological Data Recovery Report shall be submitted for the review and approval of SHPD. A copy of the approved final report shall be submitted to the Planning Director prior to the submittal of plans for subdivision review or the issuance of any land alteration permits, whichever occurs first.

Concerning the Judd Trail, a condition of the Special Management Area permit is that prior to Final Subdivision Approval, a metes and bounds survey of the Judd Trail shall be prepared by a licensed surveyor to locate the Judd Trail in the vicinity of the subject property from Ali'i Drive to a point near the southeast corner of the applicant's property. The survey shall be submitted to the Planning Director. Subject to the approval of the State, the applicant shall stabilize the existing remnants of the Judd Trail, which shall consist of stabilizing the stone walls and removing invasive plants. Upon request of the State, the applicant shall quitclaim to the State any portions of the Judd Trail that are within its property boundaries. A 10-foot wide buffer easement shall be established along the southern boundary of that part of the property not in the preservation area as a "no build" buffer zone.

Monitoring will be conducted during project construction in accordance with the Archaeological Monitoring Plan. In the unlikely event that additional archaeological resources are encountered during future development activities, work in the immediate area of the discovery will be halted and DLNR-SHPD contacted as outlined in Hawai'i Administrative Rules 13§13-275-12.

### 3.2.3 Cultural Resources

A Cultural Impact Assessment was prepared for the project by Elizabeth Gregg and Joseph Kennedy in 2005 and revised in 2006. The revised report is attached as Appendix 4 and is summarized in the discussion below, which also includes additional information.

#### *Background*

The project site is located in the ahupua‘a of Kaumalumu in the district of North Kona. Kaumalumu, in the Hawaiian language, is literally translated “to place shade” (Pukui and Elbert 1986), with the poetic meaning “to overlook the faults of others.” Legendary references to Kaumalumu recorded by Fornander (1973) and cited by Hommon (1980) include the “Legend of Hiku and Kawelu,” a journey to the underworld that took place in the uplands of the ahupua‘a. In the “Legend of Kaulanapokii,” Kaumalumu is the father of a woman named Kaulanapokii.

According to radiocarbon dating studies, agricultural and habitation use of the general area began in the 13<sup>th</sup> century (Schilt 1984, Haun et al 1998, O’Hare and Wolforth 1998, Haun and Henry 2001). These four studies indicate that Native Hawaiian activities slowly became prominent there during the 15<sup>th</sup> and 16<sup>th</sup> centuries and then more intensive from the 17<sup>th</sup> century to the early historic period.

The project site is located immediately south of the Keakealaniwahine and Kamoia Point complexes, which make up the Holualoa Royal Center in the ahupua‘a of Holualoa 4<sup>th</sup>, one of several such centers in Kona (McEldowney 1980, Cordy 1995, Haun et al. 1998). Holualoa ahupua‘a has a particularly interesting and important history, having served as a royal center during the reign of many generations of paramount ali‘i in the dynastic line of Hawai‘i Island. It is celebrated for its association with various chiefesses, including Keolonahihi, who is said to have built the first important complex in Holualoa around A.D. 1300. Keakamahana and her daughter Keakealaniwahine, who were the highest ranking ali‘i of their dynastic line and generation, are associated with the royal center from the period between A.D. 1600-1800, when six other such centers were developed along the Kona coast: Kamakahonu near the present day Kailua Pier, Kahalu‘u, Keauhou, Ka‘awaloa, Kealakekua and Honaunau. Ali‘i would travel between these royal centers throughout the year for resources and recreation. Areas with good surfing and canoe landings such as Holualoa were favored by the ali‘i as royal centers. Kamehameha became adept at board and canoe surfing at Holualoa Bay.

The National Park Service recently listed the Holualoa 4 Archaeological District on the National Register of Historic Places (<http://www.state.hi.us/dlnr/chair/pio/HtmlNR/05-N79.htm>.) The site consists of Keolonahihi State Historical Park, which has two parts: Keolonahihi Complex, encompassing 12 acres on the makai side of Ali‘i Drive; and the Keakealaniwahine Complex, encompassing 16 acres on the mauka side. The district contains a total of eight heiau structures that were constructed and dedicated for a range of religious functions representative of the Hawaiian culture, including surfing (Hale ‘A‘ama), warrior training (Kanekeheilani Heiau),

medicine and healing (Hualani Heiau), fertility (Mo‘ipe Heiau), and preparation of ali‘i for burial. The State is also in the process of possibly acquiring a 1.25-acre parcel that will link the Keakealaniwahine Complex to Ali‘i Drive.

In contrast with Holualoa to the north, there has been relatively little mention in historical accounts of royal activities at Kaumalumu, the ahupua‘a for the project site. The archaeological evidence of fairly dense agriculture and habitation found there is believed by descendants of the area to be related to the activities at Holualoa 4<sup>th</sup>; e.g., as habitation sites for those serving ali‘i living in the adjacent ahupua‘a.

Some of the earliest events documented in the Kona regional traditional history are associated with ‘Umi-a-Liloa, whose father was the first to unify rule there. Kona was a popular dwelling place of chiefs (Kamakau 1961), and traditional Hawaiian political authority was centered in the area from Kailua to Keauhou from at least the 15<sup>th</sup> century to the reign of Kamehameha I, who spent time in the Holualoa Royal Center as a child. According to the Haun & Associates archaeological inventory survey (2002), Kamehameha was said to have visited two heiau at Kamoia Point for religious purposes. The complex was visited by missionary William Ellis in 1823:

After traveling some time, we came to Kanekaheilani, a large heiau more than two hundred feet square. In the midst of it was a clear pool of brackish water, which natives told us was the favorite bathing place of Tamehameha, and which he allowed no other person to use. A rude figure, carved in stone, standing on one side of the gateway by which we entered, was the only image we saw here (Ellis 1969:118).

William Stokes described the same area in 1919, giving the heiau a different name:

Heiau of Keolonahihi, land of Holualoa 4<sup>th</sup>, North Kona: at Kamoia Point, on the south side of the bay; bears 153° 30’, 7100 feet. An enclosure containing two compartments, and an approximately octagonal pool of fresh water in the portion on the west. On the north is what remains of a platform nearly destroyed by the sea. There was nothing in the size of construction which suggested a heiau of any importance. Outside to the east was a long platform suggesting a canoe house, and nearby a pit containing a spring of fresh water. There is little doubt of the identity of this place with that described by Ellis ... (Stokes quoted in Hammatt 1980:19).

Kamehameha embraced foreign trade, including the provisioning of whaling vessels and sandalwood traders (Schilt 1984). Missionaries first arrived in Kailua in 1820 but stayed only a few months. Upon returning three years later they were allotted land for missions and schools. About this time and continuing into the 1840s, subsistence farming began to give way to a market economy with the introduction of coffee, corn, pumpkins, cotton, pineapple and Irish potatoes. Other crops introduced in the Kailua portion of the kula zone of the Kona Field System (SIHP 6601) (Newman 1970, Kelly 1983, Schilt 1984, Cordy 1995), which extended from the shoreline to the 500-foot elevation and in which the project site lies, included melons, cabbage,

onions, oranges and tobacco. Cattle ranching and commercial coffee production, which also began in the mid-1800s, brought further changes to traditional agricultural practices including construction of rock walls to control the movement of livestock. One of the better-known examples is the Great Wall of Kuakini, which runs roughly parallel to the coastline in this area of Kona and is found mauka of the project site at about the 80-foot elevation. Construction of the wall began in the early 1800s and was completed in the 1850s under the direction of Governor Kuakini.

During the Mahele, Kaumalumu was awarded to William P. Leleiohoku (Land Commission Award 9971H), a high chief and son of Kalanimoku who was born in 1921. The adopted son and heir to John Adams Kuakini, Leleiohoku briefly served as governor of Hawai‘i following Kuakini’s death (Hommon 1980). According to Hommon, Leleiohoku may have owned a lumber shed in Kaumalumu.

When studying the cultural setting in Hawai‘i, it is important to focus on the ahupua‘a. These land units generally extended from the mountain to the sea and contained most of the resources that a settlement would require for its subsistence, distributed at various elevations. As historian Marion Kelly has said, the ahupua‘a “was the basic land unit, most common and most closely related to the religious and economic life of the people.” (Kelly 1996:iv).

The Waihona ‘Aina (2000) Mahele Database lists 21 LCA claims for 57 parcels within the Kaumalumu ahupua‘a. Eighteen parcels were awarded to 13 claimants, with the kuleana parcels ranging in size from 0.12 to 3.6 acres with an average of 1.82 acres. The awarded parcels were concentrated in two areas, one with seven parcels near the coast and the remaining eight parcels located between the 1,200- and 1,650-foot elevations. According to testimonies for Kaumalumu given to the Boundary Commission in 1873 (Volume 1-a:324), the coastal parcels were used for house lots while the mauka parcels contained homes and agriculture for such crops as sweet potato, taro and coffee. According to Emerson’s 1880s map of Kailua, the forest at that time reached down to about the 800-foot elevation.

As previously mentioned, the project area is located in the kula zone of the Kona Field System. The kula zone, which extended north to Kau Ahupua‘a, south to Honaunau and up to the forested slopes of Hualālai, reached from sea level to the 500-foot elevation, although Cordy (1995) argues that the zone may have extended as high as the 700-foot elevation. Typically used for the cultivation of sweet potatoes, paper mulberry (wauke) and gourds, this zone is often marked by mounds from clearing and planting, modified outcrops and planting terraces and depressions (Hammatt and Clark 1980, Hammatt and Folk 1980, Schilt 1984). Habitation areas are scattered through the kula zone but are more typically found along the shoreline (Cordy 1995) along with burial, canoe storage, rituals and marine exploitation activities. The shoreline area was also the typical location for homes for royalty and their supporting activities including heiau, holua slides and pu‘uhonua, or places of refuge.

The area immediately above the kula zone is the kalu'ulu zone, which extends up to about 1,000 feet in elevation and was used for growing primarily breadfruit as well as sweet potatoes and paper mulberry. From an archaeological standpoint, the kalu'ulu zone is similar to the 'apa'a zone rising above it (Cordy 1995) to the 2,500-foot elevation. Examples of permanent habitation are found in the 'apa'a zone but were not common there (Cordy 1995, Newman 1970) as the zone was usually used to grow dryland taro, sugar cane, sweet potato and ti. Habitation there was more likely temporary to aid in the pursuit of agriculture, bird hunting and the collection of plant resources. According to Kawachi (1989), burials and ritual sites are rare in the higher elevation zones. Temporary habitation is also associated with the 'ama'u zone, which extends upward to the 4,000-foot elevation and included banana and plantain cultivation. Prominent agricultural features of the kalu'ulu and 'apa'a zones include kua'iwi (Cordy 1995, Newman 1970), broad linear piles of rocks cleared from nearby slopes that also served as field boundaries. Kua'iwi are oriented in a mauka-makai direction, often connected with perpendicular, soil-retaining walls and terraces to form rectangular field grids, which also helped control rainfall runoff (Kirch 1985). This field layout differed from informal garden areas scattered among very rocky areas, including recent lava flows, in much of the kula zone.

Settlement and agriculture development in the kula zone has been categorized in five phases as a result of research stemming from the Kuakini Highway Realignment Corridor survey (Schilt 1984). They include:

**Phase I – Pioneer Settlement** c. A.D. 1050-1400

Very limited, sporadic use of lowland slopes and cave shelters just above the Kailua Bay area. Probably contemporaneous with pioneer settlements along the coast. Development of one or more of the mauka sub-zones of the Kona Field System may have commenced in the later portion of this phase.

**Phase II – Garden Development** c. A.D. 1400-1600/1650

Initial use of the kula sub-zone for small gardens and of caves for temporary shelter. Erosional deposition, resulting from development of the upland sub-zones, began to bury an old ground surface and gradually created deepening soil deposits on kula land.

**Phase III – Refuge, Habitation and Intensive/Extensive Gardening**

c. A.D. 1600/1650-1779

Extensive development of at least the mauka portion of the kula sub-zone, for sweet potatoes, wauke and probably also gourds. This development was accompanied rarely by permanent habitation and more often by temporary and seasonal habitation along the kula gardens. Animal enclosures, probably for pigs, may date to this phase. The upland zones were under complete development by this time. Suitable caves were modified for refuge during times of warfare or social conflict. Caves located in the midst of garden features were intensively used for temporary shelter and work spaces.

**Phase IV – Historic Habitation and Gardening** c. A.D. 1779-1850

The cultivation of kula lands gradually decreased in extent and intensity, nevertheless remaining important to a decreasing population. Permanent habitations on the kula during this phase occurred primarily on the makai side of the Great Wall of Kuakini. In 1848, Hawaiians were claiming an undetermined portion of kula lands, but none of these kula claims were honored by the Board of Land Commissioners (Kelly 1983). Some kula lands were being converted to grazing beginning in the 1840s.

**Phase V – Historic Ranching** c. A.D. 1850-Modern Times

Land use shifted completely to grazing, following the awards of kula lands to chiefs, missionaries and others (Kelly 1983). Isolated permanent habitations on upland slopes of the kula were oriented to ranching. Today ranching is not as extensive as it once was. Kailua in recent years has been rapidly developing as a tourist and urban hub for leeward Hawai‘i Island (Schilt 1984:284).

The Kona Sugar Company was established in 1898 (Conde and Best 1973). The West Hawai‘i Railway Company in 1901 began construction of a railroad to transport sugar to the Kona Sugar Co. mill in Waiaha, but the railroad had ceased operating by the end of 1926 when attempts to cultivate the crop in the Kailua area were abandoned. Cattle ranching and coffee production continued into the 1900s, with ranching conducted in Kaumalumu by Tommy White (Maly in Rosendahl 1999). Maly’s oral histories include mention of cattle drives to Frank Greenwell’s Kaumalumu ranch where the livestock was loaded onto ships for transport to Honolulu. According to another Maly interview (Haun et al. 1998), the Judd Trail (Site 6343), which forms the southern boundary of the project site, was used by ranchers on return trips from cattle drives on the eastern slopes of Hualālai. The Judd Trail was built under the direction of Garrit Parmely Judd and Kinimaka. Intended as a roadway between West and East Hawai‘i, construction was begun in 1849 with prison labor but after being extended about 16 miles inland progress was halted in 1859 by a lava flow from Mauna Loa. Still, the trail was used to herd cattle between the coast and mauka ranches during the late 1800s (Bryan 1960).

According to a 1928 USGS quadrangle map, the Judd Trail extends along the boundary between the Kaumalumu and Pahoehoe 1<sup>st</sup> ahupua‘a. As discussed in the preceding section, the Judd Trail itself was initially believed to be off the property, but detailed mapping for the Cultural Impact Assessment determined that about 75 percent of the remaining rock walls that border the trail remnant are within the boundaries of the project site.

*Summary of Existing Resources*

Cultural resources present on the property include the burial sites and the archaeological sites slated for preservation, which will be preserved, as discussed in the section above.

The Judd Trail, which is apparently located partially within the subject properties, is included in the State's inventory of historic places, according to a May 4, 1990 letter from the Hawai'i Department of the Attorney General to then-County Planning Director Duane Kanuha and contained in Appendix B of the Cultural Impact Assessment.

Keolonahihi State Historical Park, which consists of the Keolonahihi Complex, encompassing 12 acres on the makai side of Ali'i Drive; and the Keakealaniwahine Complex, encompassing 16 acres on the mauka side, is an important cultural resource. The park contains a total of eight heiau structures that were constructed and dedicated for a range of religious functions representative of the Hawaiian culture.

Those descendants and members of the community interviewed for the Cultural Impact Assessment said they were not aware of any current cultural practices ongoing on the project site.

### *Impacts and Mitigation Measures*

All archaeological sites that have been determined to be significant for preservation by the State Historic Preservation Division and the Hawai'i Island Burial Council will be preserved. Furthermore, a condition of Special Management Area Permit SMA-05-000007 requires that access to the burial sites by lineal descendants shall be allowed, consistent with the requirements of the Archaeological Burial Treatment Plan approved by SHPD. Thus, individuals and/or organizations recognized as having lineal ties to the area will have the right to access the property to perform traditional and customary practices if desired.

The remaining segments of the Judd Trail, which have historical and cultural importance, will be preserved in two ways: within both a proposed preservation area on the makai part of the property and a setback zone on the mauka part of the property's southern boundary.

Dan Quinn, State Parks Administrator, responded to a request for early consultation for this EA with a letter stating concerns about impacts on Keolonahihi State Historical Park (see App. 1a). Although acknowledging that the proposed development did not abut the park, he listed concerns about visual impacts, traffic, and landscaping buffers, particularly for the Kamoia Point section of the park, which is nearby. The 100-foot wide archaeological easement shown in Figure 3 will effectively separate the Kamoia Point section from the proposed development and provide a substantial buffer for visual and noise purposes. It should be emphasized that the primary source of noise and visual impacts to the Kamoia Point section of the park, Ali'i Drive, lies between Royal Ali'i and the park.

### **3.3 Infrastructure**

#### **3.3.1 Utilities, Public Facilities and Public Services**

##### *Existing Utilities, Impacts and Mitigation Measures*

The proposed subdivision would include underground utilities. Electrical power would be supplied to the project area by Hawai'i Electric Light Company (HELCO), a privately owned utility company regulated by the State Public Utilities Commission, via its island-wide distribution network through overhead lines along Ali'i Drive. Telephone service is available from Hawaiian Telcom, also through overhead lines. Water would be provided by the County Department of Water Supply. Wastewater will be managed by an 8-inch sewer line along Ali'i Drive connected to the County's wastewater treatment plant in Kealakehe. The proposed action would not have any adverse impact on existing utilities.

##### *Existing Public Services and Facilities, Impacts and Mitigation Measures*

The Kailua Police Station is located in Kealakehe and the Kailua Fire Station is located on Palani Road, both within reasonable distances of the property. Emergency medical services are provided by the Hawai'i County Fire Department. Acute care services are available at Kona Hospital, approximately eight miles away.

Schools include Kahakai Elementary, Kealakehe Intermediate and Kealakehe High. Recreational facilities in the Kailua area include an Olympic swimming pool, ballfields and a community center. Numerous State and County beach parks are located within 10 miles of Kailua, including White Sands, Kahalu'u, and Pahoe County Beach Parks within three miles of the project site. Keolonahihi State Historical Park, which is largely undeveloped, is located across Ali'i Drive, north of the project site, and is discussed in Section 3.2.3, above.

Due to the modest size of the 19-lot subdivision, no effects on police, fire, emergency medical services, County recreational facilities, or schools are expected. A 2003 economic study of resort-residential housing (Decision Analysts Hawai'i, Inc. 2003) in West Hawai'i determined that on balance it provides substantial economic benefits to the Big Island. Construction and occupant expenditures are important for employment and economic growth, and the support services required by those occupying the homes and condominiums cost far less to the County and State than the large amount of property taxes they pay. Revenues are high and steady because of the large numbers of very high value units, the low percentage of homeowners who qualify for homeowner exemptions, and the high property tax rate for properties that are not occupied by homeowners. Costs are low because developers fund most or all of the infrastructure and amenity construction costs, and often much of the operating costs. Also, low occupancy rates mean lower demand for County services, and as most residents are well-off, they require little if any government assistance. According to the report:

“Thus, property-tax revenues from resort-residential projects exceed support expenditures by \$20.8 million per year for existing projects (\$22.2 million – \$1.4 million) and \$25 million per year for planned projects (\$26.7 million – \$1.7 million). In effect, resort-residential projects provide substantial tax revenues to subsidize support services to other Big Island residents and visitors” (Ibid: 6).

In summary, real property and other tax contributions would more than compensate for extra costs of public services and would also enable agencies to improve and expand their services.

### **3.3.2 Roadways**

#### *Existing Facilities*

The project site is located along Ali‘i Drive, a two-lane coastal roadway owned and maintained by the County.

#### *Impacts and Mitigation Measures*

Access to the project site would be from a single driveway off Ali‘i Drive (see Figure 3), which is a two-lane collector street with an approximately 22-foot wide pavement and 8-foot wide shoulders within an approximately 50-foot right-of-way. Roadways in the subdivision will be private and improved with curbs, gutters and sidewalks.

A traffic impact assessment report (TIAR) was performed for the project by Phillip Rowell and Associates. It is included as Appendix 5 and is summarized below.

Based on input from the County Department of Public Works, and because of the small number of units proposed for the project, the traffic study analyzed the nearest intersection, which is located to the south at Makolea Drive and the entrance to Kahalu‘u Beach Park. Existing traffic counts were completed on March 1, 2005. Using standardized methods, based on historical data from 2000 to 2004 that showed traffic along Ali‘i Drive growing at 4 percent annually, the study projected background traffic conditions for 2010. The peak-hour traffic that would be generated by the project, based on its size and anticipated density, was then superimposed on the 2010 background levels.

The TIAR predicted the project will generate four inbound and 11 outbound trips during the morning peak hour and 12 inbound and seven outbound trips during the afternoon peak hour. The report concluded that the project would increase traffic volumes at the project site by 2.8 percent and 2.6 percent during the morning and afternoon peak hours, respectively. This would be added to increases of 22.3 percent and 21.6 percent that would be expected as a result of background growth and traffic from related projects. The study concluded that both absolutely and relatively, the project would have a minimal impact on traffic operations along Ali‘i Drive.

In addition, the TIAR analysis showed that both with and without the project, the intersection for southbound traffic in 2010 would carry a Level-of-Service classification of A, which according

to the *2000 Highway Capacity Manual* constitutes “little or no delay” for vehicles. For westbound traffic the level would be classified as C, signifying “average traffic delays.” Level-of-Service D is generally considered to be the minimum acceptable peak hour level-of-service for urban intersections. The study also concluded that the low traffic levels to be generated are considerably below those that would warrant construction of a separate left-turn lane for the project. According to the study, the number of trips to be generated by the project also is well below the criterion of 100 peak trips established by the Institute of Transportation Engineers to warrant a traffic impact analysis.

Upon review of the project, the Department of Public Works (DPW) recommended that Ali‘i Drive be widened to a 60-foot right of way, as indicated in the General Plan. The DPW further recommended that the applicant provide a widened shoulder along the Ali‘i Drive frontage extending to the right-of-way property line in the interest of providing parking for the shoreline public access makai of the project and pedestrian and bicyclist safety.

The following mitigation measures were required as a condition of Special Management Area Permit SMA-05-000007 and will be undertaken as part of the project:

- The applicant will provide a 5-foot wide road widening setback along the Ali‘i Drive frontage and dedicate it to the county at no cost upon request by the Department of Public Works, in order to meet concerns related to pedestrian and bicycle safety.
- The applicant shall provide a widened shoulder along the Ali‘i Drive frontage, extending to the right-of-way property line, if required by, and meeting with the approval of, the Department of Public Works.
- The applicant will provide pavement widening, transitions, signs and markings, drainage improvements and relocation of utilities, as required by the Department of Public Works.
- The applicant will install street lights, signs and markings meeting with the approval of the Department of Public Works, Traffic Division.
- Access to Ali‘i Drive, including the provision of adequate sight distances, shall meet with the approval of the Department of Public Works.
- Any vehicular security gate shall be installed more than 40 feet from the Ali‘i Drive right-of-way with a turnaround on the Ali‘i Drive side of the gate.

It should be noted that notwithstanding the County approval, with conditions, that resulted from the SMA process, the Police Department recommended in response to early consultation on the EA against any further development on Ali‘i Drive until the Kahului to Keauhou Parkway has been completed and is open for traffic (see Appendix 1a for letter).

### **3.4 Secondary and Cumulative Impacts**

Cumulative impacts result when implementation of several projects that individually have limited impacts combine to produce more severe impacts or conflicts in mitigation measures.

The fast-growing North Kona District is the center of the visitor industry and real-estate development that power the economy of the island. There are many public and private projects being planned at any given time, the details of which often change daily in response to market conditions and the regulatory process. The descriptions below are meant to provide some context for development occurring in the area south of Kailua-Kona.

A variety of large-scale market housing projects, some with an affordable housing component, are underway here, including a condominium project planned for immediately south of the Royal Ali'i project. The County Planning Commission in 2007 granted developer D-Bar Ranch a Special Management Area permit for 108 units to be located mauka of the Kona Magic Sands subdivision.

Further to the south, Kona Heights LLC has proposed to build two subdivisions with a total of 267 lots. The development, announced to the public in January 2008, would include Laipala Makai, which would be located above Ali'i Drive along the proposed route of the Ali'i Parkway, and Laipala Heights, which would be mauka of Laipala Makai and abutting Kuakini Highway.

Further yet to the south, the Kamehameha Investment Corporation, the development arm of Kamehameha Schools, is planning 1,700 more housing units in its Keauhou Resort.

About 1.6 miles north of the project, Sunstone Kona LLC is planning a 46-acre condominium project on the mauka side of Ali'i Drive that will contain 289 housing units and 45,765 square feet of commercial space. The Kona Sea Crest project includes construction of another mauka-makai connector road between Ali'i Drive and Kuakini Highway.

Closer to Kailua, a 67-unit condominium project is planned on Ali'i Drive next to the Coconut Grove Market Place. The KPC Villages project, which received rezoning approval in 2006, will include a 13,000 sq. ft. commercial area.

Planned new development includes several roadway infrastructure projects. The County is carrying out several road improvements in the area of the Royal Ali'i project, including an extension of the existing La'aloa Avenue, which intersects with Ali'i Drive about 0.6 miles to the south. The project would extend La'aloa Avenue 1,500 feet mauka to connect with Kuakini Highway, making it the first mauka-makai connector in the approximately 3.5-mile stretch between Royal Poinciana Drive to the north and King Kamehameha III Road to the south. Planning and design for the project are continuing.

At the same time, the County is preparing to extend Lako Street, which already intersects with Kuakini Highway, down to Ali'i Drive in order to create another mauka-makai connector within the same area. The project, initiated in 2000, has been delayed by litigation which resulted in a ruling in favor of the County. While that ruling is being appealed, an advisory group continues to meet and is currently considering several possible routes for the extension.

A long time in the planning but moving closer to fruition is the proposed Kahului to Keauhou Parkway project, which would create a limited-access roadway located mauka of Ali'i Drive and

below Kuakini Highway. Planning and design are well underway with construction expected to begin in the 2011 fiscal year.

Another long-term project would extend the four lanes of Kuakini Highway another 1.5 miles south from Hualalai Road to an intersection with the proposed Kahului to Keauhou Parkway, increasing the capacity of an important alternate to Ali'i Drive.

The County is also preparing to make improvements to Ali'i Drive along Oneo Bay, 2.6 miles north of the project. The design phase is scheduled for 2009 with construction, estimated at \$5 million, set for 2011.

Another road improvement in the general area was still in limbo in late April 2008. The Mamalahoa Bypass, which will extend south from near the end of Ali'i Drive to Captain Cook in South Kona, was built as a condition of the development of the upscale Hokulia subdivision but its completion was delayed by legal issues. Pending court action, the County was considering opening up the northern section as far as Kealakekua for limited use to ease traffic congestion on Mamalahoa Highway.

Although it is difficult if not impossible to systematically determine the complex interaction of environmental impacts in this fast-growing region, the Royal Ali'i project has rather discrete and limited impacts that will not tend to accumulate with those of other projects. Impacts to natural resources are limited because of the basically disturbed, alien nature of the vegetation that is found on the property. Archaeological resources were properly inventoried and preservation plans have been approved for two burials and other significant sites, adding to a very large number of preserved sites in Kona. The low density and design guidelines of the subdivision will prevent a loss of scenic character or interference with viewplanes, even considering the development going on around the area. Traffic impacts have been assessed with a cumulative perspective and impacts are not substantial and will be mitigated.

### **3.5 Required Permits and Approvals**

The following additional permits and approvals would be required:

- State Department of Health, National Pollutant Discharge Elimination System Permit
- County of Hawai‘i, Department of Public Works, Engineering Division, Grading Permit
- County of Hawai‘i, Planning Department, Final Subdivision Approval
- Approval for Work Within County Roadway Right-of-Way

### **3.6 Consistency With Government Plans and Policies**

#### **3.6.1 Hawai‘i State Plan**

Adopted in 1978 and last revised in 1991 (Hawai‘i Revised Statutes, Chapter 226, as amended), the Plan establishes a set of themes, goals, objectives and policies that are meant to guide the State’s long-run growth and development activities. The three themes that express the basic purpose of the *Hawai‘i State Plan* are individual and family self-sufficiency, social and economic mobility and community or social well-being. The proposed project would promote these goals by adding housing opportunities for the North Kona district, thereby enhancing quality-of-life and community and social well-being.

#### **3.6.2 Hawai‘i County SMA, Zoning and General Plan**

*Special Management Area.* The property is situated within the County’s Special Management Area (SMA). The Hawai‘i County Planning Commission has issued SMA Permit No. SMA-05-000007 for the project (see Appendix 1 for copy of approval letter). Various conditions from this approval are cited in parts of this document.

*Hawai‘i County Zoning.* The project site is zoned RS-7.5 (single-family residential, minimum lot size 7,500 square feet). The proposed action is consistent with this designation as amended under a Planned Unit Development.

The *Hawai‘i County General Plan Land Use Pattern Allocation Guide (LUPAG)*. The LUPAG map component of the *General Plan* is a graphic representation of the Plan’s goals, policies, and standards as well as of the physical relationship between land uses. It also establishes the basic urban and non-urban form for areas within the planned public and cultural facilities, public utilities and safety features, and transportation corridors. The project site is classified as Medium Density Urban in the LUPAG. The proposed action is consistent with this designation.

The *General Plan* for the County of Hawai‘i is a policy 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 1989 and revised in 2005 (Hawai‘i County Planning Department). The General Plan itself 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. Most relevant to the proposed action are the following Goal and Policies, and Courses of Action of particular chapters of the General Plan:

#### 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 action is in balance with the natural, cultural and social environment of the County, and it will 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 either as standards in appropriate ordinances or as conditions of approval.

*Discussion:* The proposed action, which occurs in a designated urban development area that has been largely disturbed by modern ranching and construction activities, would not have a substantial adverse effect on the environment and would not diminish the valuable natural resources of the region. The project will obtain permits and follow the conditions designed to reduce or eliminate pollution and environmental degradation.

## 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 are being protected through archaeological inventory survey, monitoring and preservation plans, as well as the formulation and implementation of a burial treatment plan, all of which have been or are being reviewed 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 project will occur in an area with similar residential uses. No adverse visual impacts are 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 action is located mauka of the coastal roadway, and more than 100 feet from the shoreline. Impacts to existing natural landforms and vegetation will be mitigated through permit-regulated Best Management Practices to avoid any impacts related to flooding, landslides, sedimentation or other similar impacts.

## 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 subdivision project on urban-designated property is in keeping with County and State land use plans and does not detract from important open space.

### **3.6.3 Hawai'i State Land Use Law**

All land in the State of Hawai'i is classified into one of four land use categories – Urban, Rural, Agricultural, or Conservation – by the State Land Use Commission, pursuant to Chapter 205, HRS. The property is in the State Land Use Urban District. The proposed use is consistent with intended uses for this land use district.

## **PART 4: DETERMINATION, FINDINGS AND REASONS**

### **4.1 Determination**

The applicant expects that the Hawai'i County Planning Department will determine that the proposed action will not significantly alter the environment, as impacts will be minimal, and that this agency will accordingly issue a Finding of No Significant Impact (FONSI). This determination will be reviewed based on comments to the Draft EA, and the Final EA will present the final determination.

## 4.2 Findings and Supporting Reasons

Chapter 11-200-12, Hawai'i Administrative Rules, outlines those factors agencies must consider when determining whether an Action 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 resources would be committed or lost. The project site and surrounding areas support primarily residential uses and will not be affected by the proposed action. Natural and cultural resources were properly inventoried and significant resources will be responsibly protected.
2. *The proposed project will not curtail the range of beneficial uses of the environment.* The proposed project in no way curtails beneficial uses of the environment in this area and preserves uses of the resources such as the Judd Trail and archaeological sites for future enjoyment.
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 proposed action provides housing and commercial opportunities in an appropriate area for residents of Hawai'i County, fulfilling needed County and State goals while avoiding significant impacts to the environment. 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 major effects are beneficial, providing housing and jobs. Although considering the cumulative deficiency of infrastructure, and that any population increase in Kona involves potentially adverse effects to traffic, the location of the project in the vicinity of similar developments will minimize the effects of traffic on that roadway system.
5. *The proposed project does not substantially affect public health in any detrimental way.* No effects to public health are anticipated.
6. *The proposed project will not involve substantial secondary impacts, such as population changes or effects on public facilities.* Only modest secondary effects are expected to result from the subdivision project, which, at 19 units, is not large enough to directly or indirectly tax public infrastructure or facilities.
7. *The proposed project will not involve a substantial degradation of environmental quality.* The proposed action is taking place in an area already impacted by ranching and construction activities, and is being regulated by permits to avoid environmental degradation and thus would 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 project site supports overwhelmingly alien vegetation. Impacts to rare, threatened or endangered species of flora or fauna will not occur.
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.* The 19-lot subdivision is not related to other activities in the region in such a way as to produce

adverse cumulative effects or involve a commitment for larger actions. Cumulative traffic impacts have been properly assessed and addressed.

10. *The proposed project will not detrimentally affect air or water quality or ambient noise levels.* Due to the character of the proposed action, no adverse effects on these resources would occur.
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.* Although the proposed action is located in an area with volcanic and seismic risk, the entire Island of Hawai‘i shares this risk, and the proposed action is not imprudent to construct. No floodplains are involved.
12. *The project will not substantially affect scenic vistas and viewplanes identified in county or state plans or studies.* The project site is not noted for its natural beauty in the Hawai‘i County General Plan, and a systematic visual impact assessment determined that no aspect of the proposed action would adversely impact scenic resources or viewplanes. A large archaeological easement that will be landscaped with native plants will provide an attractive buffer between Ali‘i Drive and the development.
13. *The project will not require substantial energy consumption.* Although the project’s infrastructure construction will require the use of energy, as will construction of homes, the development’s electrical requirements are within HELCO’s capacity and no major adverse effects to energy consumption would be expected, and there is no feasible way to provide housing without energy consumption.

For the reasons above, the proposed action 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 Rules.

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# **ENVIRONMENTAL ASSESSMENT**

## **Royal Ali‘i Planned Unit Development**

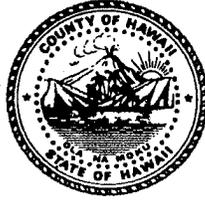
TMK: (3rd) 7-7-04:57 & 58

Kaunamalulu, North Kona District, Hawai‘i Island, State of Hawai‘i

### **Appendix 1a**

#### **Comments in Response to Pre-Consultation And Selected Pre-EA Correspondence**

Harry Kim  
Mayor



Lawrence K. Mahuna  
Police Chief

Harry S. Kubojiri  
Deputy Police Chief

## County of Hawaii

### POLICE DEPARTMENT

349 Kapiolani Street • Hilo, Hawaii 96720-3998  
(808) 935-3311 • Fax (808) 961-2389

March 11, 2008

Mr. Ron Terry  
Principal  
Geometrician Associates  
P.O. Box 396  
Hilo, Hawaii 96721

Dear Mr. Terry:

SUBJECT: Environmental Assessment for Royal Ali'i Planned Unit Development,  
Kaunalumalu, North Kona, Island of Hawaii  
TMK: 7-7-04:57 & 58

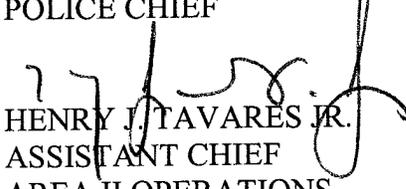
Staff has reviewed the above referenced document and submits the following comments:

- Any additional development/project utilizing Ali'i Drive as its exclusive access will adversely impact traffic conditions throughout Ali'i Drive, particularly during peak traffic hours or during an emergency condition.
- Recommends against any further development/project in this area until such time as the proposed Kahului-Keauhou Parkway has been completed and is open to traffic.
- Recommend plan to include improvements at access intersections to the subdivision consisting of turning and acceleration lanes.

Should you have any questions, please contact Acting Captain Chad Basque, Commander of Kona Patrol, at 326-4646 extension 249.

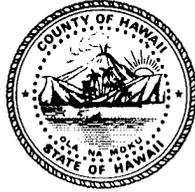
Mahalo,

LAWRENCE K. MAHUNA  
POLICE CHIEF

  
HENRY J. TAVARES JR.  
ASSISTANT CHIEF  
AREA II OPERATIONS

CB

Harry Kim  
Mayor



Bobby Jean Leithead-Todd  
Director

Nelson Ho  
Deputy Director

**County of Hawaii**  
**DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**  
25 Aupuni Street • Hilo, Hawai'i 96720-4252  
(808) 961-8083 • Fax (808) 961-8086  
[http://co.hawaii.hi.us/directory/dir\\_envmng.htm](http://co.hawaii.hi.us/directory/dir_envmng.htm)

March 5, 2008

Mr. Ron Terry  
Principal  
Geometrician Associates, LLC  
P O Box 396  
Hilo, HI 96721

Subject: Early Consultation on Environmental Assessment for Royal Ali'i Planned Unit Development, TMK 7-7-04:57 & 58, Kaunalumalu, North Kona, Island of Hawai'i

Dear Mr. Terry,

We offer the following comments:

Wastewater Division

Lot 57 is accessible to County sewer system and must connect.

Thank you for allowing us the opportunity to review and comment on this project. If you need additional information, please contact Bert Saito, P.E., Wastewater Division Chief.

Sincerely,

Bobby Jean Leithead Todd  
DIRECTOR

cc: Bert Saito, WWD Chief

LINDA LINGLE  
GOVERNOR OF HAWAII



Laura H. Thielen  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT



**STATE OF HAWAII**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
**LAND DIVISION**

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

March 19, 2008

Geometrician  
Box 396  
Hilo, Hawaii 96721

Attention: Mr. Ron Terry

Gentlemen:

Subject: Early consultation on Environmental Assessment for Royal Ali'I Planned Unit Development, North Kona, Hawaii, Tax Map Key: (3) 7-7-4:57, 58

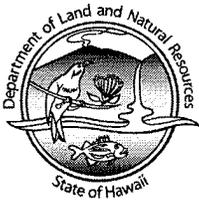
Thank you for the opportunity to review and comment on the subject matter. The Department of Land and Natural Resources' (DLNR) Land Division distributed or made available a copy of your report pertaining to the subject matter to DLNR Divisions for their review and comment.

Other than the comments from Division of State Parks, the Department of Land and Natural Resources has no other comments to offer on the subject matter. Should you have any questions, please feel free to call our office at 587-0433. Thank you.

Sincerely,

  
for Morris M. Atta  
Administrator

LINDA LINGLE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

DIVISION OF STATE PARKS  
POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

March 13, 2008

LAURA H. THIELEN  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

RUSSELL Y. TSUJI  
FIRST DEPUTY

KEN C. KAWAHARA  
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

DEPARTMENT OF LAND AND NATURAL RESOURCES  
STATE OF HAWAII

2008 MAR 17 P 3:07

RECEIVED  
LAND DIVISION

MEMORANDUM:

TO: Morris M. Atta, Administrator  
Land Division

FROM: Daniel Quinn, State Parks Administrator 

SUBJECT: Consultation on Environmental Assessment for Royal Ali'i Planned Unit Development, Kaumalumu, North Kona, Hawai'i Island TMK: 7-7-4: 57, 58

The project area consists of approximately 5.5 acres on the *mauka* side of Ali'i Drive to the south of Keolonahihi State Historical Park. The project area does not abut the park, but is in very close proximity to both of the archaeological complexes that comprise the park - the Keolonahihi Complex on the *makai* side of Ali'i Drive and the Keakealaniwahine Complex on the *mauka* side of Ali'i Drive. The Keolonahihi Complex is adjacent to the Kaumalumu boundary at Kamo Point.

There are potential indirect impacts on the cultural landscape and historical setting of the park from the proposed project. This would include visual impacts based on the density and height of the housing, noise, traffic, and landscaping. To address these potential impacts, we would like to recommend that careful consideration be given to the design of the buildings and landscape buffers around the perimeter of the property.

State Parks would like to request a copy of Environmental Assessment for review and comment when available.

Harry Kim  
Mayor



Darryl J. Oliveira  
Fire Chief

Glen P.I. Honda  
Deputy Fire Chief

**County of Hawai'i**  
**HAWAII FIRE DEPARTMENT**  
25 Aupuni Street • Suite 103 • Hilo, Hawai'i 96720  
(808) 981-8394 • Fax (808) 981-2037

March 13, 2008

Mr. Ron Terry  
Geometrician Associates, LLC  
PO Box 396  
Hilo, Hawaii 96721

SUBJECT: EARLY CONSULTATION FOR ENVIRONMENTAL ASSESSMENT  
ROYAL ALI'I PLANNED UNIT DEVELOPMENT  
TAX MAP KEY: 7-7-04:57 & 58, Kaunalumalu, North Kona,

---

We have no comments to offer at this time in reference to the above-mentioned Early Consultation for Environmental Assessment.

  
DARRYL OLIVEIRA  
Fire Chief

PBW:lpc



PHONE (808) 594-1888

FAX (808) 594-1865



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

HRD08/3551

April 10, 2008

Ron Terry  
Geometrician Associates  
P.O. Box 396  
Hilo, HI 96721

**RE: Early consultation on Draft Environmental Assessment for Royal Ali'i Planned Unit Development, Kona, Hawai'i Island, TMK: 7-7-04: 57 & 58.**

Dear Ron Terry,

The Office of Hawaiian Affairs (OHA) is in receipt of the above-referenced pre-consultation request. Royal Ali'i LLC is planning to develop a 19-lot, gated subdivision.

OHA requests that a comprehensive archaeological inventory survey for the project area be conducted and submitted to the Department of Land and Natural Resources- Historic Preservation Division for review and approval. OHA should be allowed the opportunity to comment on the criteria assigned to any cultural or archaeological sites identified within the archaeological inventory survey. Consideration should also be afforded to any individuals accessing the project area for constitutionally protected traditional and customary purposes. We also request that the applicant complete a Cultural Impact Statement for the proposed project.

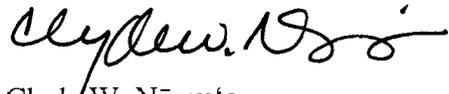
In addition, OHA asks for the applicant's assurances that should iwi kūpuna or Native Hawaiian cultural or traditional deposits be found during the construction of the project, work will cease, and the appropriate agencies will be contacted pursuant to applicable law.

OHA also recommends that the applicant use native vegetation in its landscaping plan for subject parcel. Landscaping with native plants furthers the traditional Hawaiian concept of mālama 'āina and creates a more Hawaiian sense of place.

Ron Terry  
Geometrician Associates  
April 10, 2008  
Page 2

Thank you for the opportunity to comment. If you have additional questions, please contact Sterling Wong (808) 594-0248 or e-mail him at [sterlingw@oha.org](mailto:sterlingw@oha.org).

Sincerely,

A handwritten signature in black ink, appearing to read "Clyde W. Nāmu'o". The signature is fluid and cursive, with a prominent flourish at the end.

Clyde W. Nāmu'o  
Administrator

LINDA LINGLE  
GOVERNOR OF HAWAII



**STATE OF HAWAII**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**

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

**LAURA H. THIELEN**  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

**RUSSELL Y. TSUJI**  
FIRST DEPUTY

**KEN C. KAWAHARA**  
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ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

May 5, 2008

Mr. Ron Terry, Principal  
Geometrician Associates, LLC  
P.O. Box 396  
Hilo, Hawai'i 96721

LOG NO: 2008.0776  
DOC NO: 0805TD03  
Archaeology

Dear Mr. Terry:

**Subject: Chapter 6E Consultation Preceding an Environmental Assessment  
for the Royal Ali'i Planned Unit Development  
Kaumalumu Ahupua'a, North Kona District, Island of Hawai'i  
TMK: (3) 7-7-04: 57 and 58**

Thank you for your letter dated February 27, 2008 requesting pre-assessment consultation for a proposed 19-lot development on approximately 5.5 acres of urban-zoned land along the *mauka* side of Ali'i Drive in Kailua-Kona. We apologize for the delay in responding to this request for comments and information.

Our records indicate that an archaeological inventory survey was conducted of TMK parcels 7-7-04: 57 and 58, and was approved by our office in 2003 [P. Holly McEldowney letter to Alan Haun, June 10, 2003 (Log No. 2003.0768, Doc No. 0306PM01)]. During project review and Chapter 6E compliance at that time, twenty-one sites comprised of 75 features were identified within the project area. A data recovery plan, a preservation plan, a monitoring plan, a burial treatment plan, and a data recovery report were subsequently submitted to our office and approved (P. Holly McEldowney letter the James Moore, August 4, 2004; Melanie Chinen letter to James Moore, June 22, 2005; Melanie Chinen letter to Joseph Kennedy, April 5, 2005; Melanie Chinene letter to James Moore, May 12, 2006).

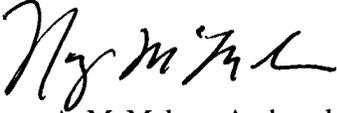
We note that your letter describes a single archaeological easement approximately 100 feet wide between Ali'i Drive and the subdivision lots. After a period of consultation between our office and the property owner in 2003-2004, two archaeological preserves were established along Ali'i Drive, in the western portion of both parcels. These two preserves were the result of consultation with our office to allow for an access road from Ali'i Drive into the project area (P. Holly McEldowney letter to James Moore, May 24, 2004 (Log no. 2004.1477, Doc No. 0405PM03)). The northern preserve is roughly rectangular in shape and includes Sites 8021A (a burial), 8024 (a possible heiau complex) and 21391 (a wall). The southern preserve is a polygon (up to c. 165 feet wide) and includes Sites 23557, 23556 (a burial), habitation sites 8026, 8027, 8028; and the Site 21391 wall. A plat map showing the metes and bounds of these preserves (Wes Thomas Associates 2005) is on file at our office, should you require a copy for the EA.

In February 2006, our office commented on the Special Management Area Use Permit (SMA) Application for this project (Melanie Chinen letter to Christopher Yuen, February 23, 2006, Log No. 2006.0437, Doc No. 0602MM25). In that letter, we requested that approval of the SMA be conditioned on implementation of the approved Preservation Plan, Burial Treatment Plan, and Monitoring Plan.

We also note that the Hawaii County Planning Department considered issues surrounding the Judd Trail, located along the southern boundary of the project area (C. Kimo Alameda letter to Christopher La, June 16, 2006). The outcome of these hearings, conducted in July 2006, should be included in the EA, and a clear indication of the relationship between the Judd Trail and this project should be addressed.

We look forward to reviewing your EA. Please direct any questions or comments regarding this correspondence to Theresa K. Donham 808-987-5001 or email [Theresa.K.Donham@hawaii.gov](mailto:Theresa.K.Donham@hawaii.gov).

Aloha,

A handwritten signature in black ink, appearing to read "Nancy McMahon". The signature is fluid and cursive, with the first name "Nancy" being the most prominent part.

Nancy A. McMahon, Archaeology and Historic Preservation Manager  
State Historic Preservation Division



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

REPLY TO  
ATTENTION OF:

May 27, 2008

Regulatory Branch

File Number POH-2008-115

Geometrician Associates, LLC  
Mr. Ron Terry  
Post Office Box 396  
Hilo, Hawaii 96721

Dear Mr. Terry:

This letter responds to your April 17, 2008 request for a Department of the Army (DA) jurisdictional determination for the proposed Royal Alii Planned Unit Development. The project site is located within TMK 7-7-04:57 and 7-7-04:58, at Latitude 19.599° N. and Longitude 155.973° W., near Kailua-Kona, Hawaii. It has been assigned number POH-2008-115, which should be referred to in all correspondence with us.

Based on our review of the information you provided and available to this office, we have determined the subject area does not contain waters of the United States (U.S.) under Corps jurisdiction (see enclosure titled, Jurisdictional Determination). Therefore, a Department of the Army (DA) permit is not required. Please contact us if you decide to alter the method, scope, or location of your proposed activity.

Section 404 of the Clean Water Act requires that a DA permit be obtained for the discharge of dredged and/or fill material into waters of the U.S., including jurisdictional wetlands (33 U.S.C. 1344). The Corps defines wetlands as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Section 10 of the Rivers and Harbors Act of 1899 requires that a DA permit be obtained for structures or work in or affecting navigable waters of the U.S. (33 U.S.C. 403). Section 10 waters are those waters subject to the ebb and flow of the tide extending shoreward to the mean high water mark.

This approved jurisdictional determination is valid for a period of five (5) years from the date of this letter, unless new information supporting a revision is provided to us before the expiration date. Also, enclosed is a Notification of Administrative Appeal Options and Process and Request for Appeal form regarding this approved jurisdictional determination (see section labeled "Approved Jurisdictional Determination").

Nothing in this letter excuses you from compliance with other Federal, State, or local statutes, ordinances, or regulations.

You may contact Mr. Benjamin Soiseth of my staff via email at [Benjamin.N.Soiseth@usace.army.mil](mailto:Benjamin.N.Soiseth@usace.army.mil) , or by mail to Regulatory Branch (CEPOH-EC-R/B.Soiseth); U.S. Army Engineer District, Honolulu; Building 230; Fort Shafter, Hawaii 96858 or by phone at (808) 438-2039, if you have questions. For additional information about our Regulatory Program, visit our web site at <http://www.poh.usace.army.mil/EC-R/EC-R.htm>.

Sincerely,

A handwritten signature in black ink, appearing to read "George P. Young". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

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

Enclosures

**APPROVED JURISDICTIONAL DETERMINATION FORM  
U.S. Army Corps of Engineers**

**SECTION I: BACKGROUND INFORMATION**

---

**A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):** 23-May-2008

**B. DISTRICT OFFICE, FILE NAME, AND NUMBER:** Honolulu District, POH-2008-00115-BNS-JD1

**C. PROJECT LOCATION AND BACKGROUND INFORMATION:**

State : HI - Hawaii  
 County/parish/borough: Hawaii  
 City: Kailua-Kona  
 Lat: 19.5997  
 Long: -155.9737  
 Universal Transverse Mercator: []  
 Name of nearest waterbody: Pacific Ocean  
 Name of nearest Traditional Navigable Water (TNW):  
 Name of watershed or Hydrologic Unit Code (HUC):



Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.



Check if other sites (e.g., offsite mitigation sites, disposal sites, etc.) are associated with the action and are recorded on a different JD form.

**D. REVIEW PERFORMED FOR SITE EVALUATION:**



Office Determination Date: 19-May-2008



Field Determination Date  
(s):

**SECTION II: SUMMARY OF FINDINGS**

---

**A. RHA SECTION 10 DETERMINATION OF JURISDICTION**

There  "navigable waters of the U.S." within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area.



Waters subject to the ebb and flow of the tide.



Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.

Explain:

**B. CWA SECTION 404 DETERMINATION OF JURISDICTION.**

There  "waters of the U.S." within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area.

**1. Waters of the U.S.**

**a. Indicate presence of waters of U.S. in review area:<sup>1</sup>**

Water Name	Water Type(s) Present
Royal Alii Uplands	Uplands

**b. Identify (estimate) size of waters of the U.S. in the review area:**

Area: (m<sup>2</sup>)

Linear: (m)

**c. Limits (boundaries) of jurisdiction:**

based on: []

OHWM Elevation: (if known)

**2. Non-regulated waters/wetlands:<sup>3</sup>**

Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: Based on the National Wetland Inventory Map and the Island of Hawaii Soil Survey, the review area is entirely uplands.

**SECTION III: CWA ANALYSIS**

**A. TNWs AND WETLANDS ADJACENT TO TNWs**

**1. TNW**

Not Applicable.

**2. Wetland Adjacent to TNW**

Not Applicable.

**B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):**

**1. Characteristics of non-TNWs that flow directly or indirectly into TNW**

**(i) General Area Conditions:**

Watershed size: []

Drainage area: []

Average annual rainfall: inches

Average annual snowfall: inches

**(ii) Physical Characteristics**

**(a) Relationship with TNW:**

Tributary flows directly into TNW.

Tributary flows through [] tributaries before entering TNW.

:Number of tributaries

Project waters are [] river miles from TNW.

Project waters are [] river miles from RPW.

Project Waters are [] aerial (straight) miles from TNW.

Project waters are [] aerial(straight) miles from RPW.

Project waters cross or serve as state boundaries.

Explain:

Identify flow route to TNW:<sup>5</sup>

**Tributary Stream Order, if known:**

Not Applicable.

**(b) General Tributary Characteristics:**

**Tributary is:**

Not Applicable.

**Tributary properties with respect to top of bank (estimate):**

Not Applicable.

**Primary tributary substrate composition:**

Not Applicable.

**Tributary (conditions, stability, presence, geometry, gradient):**

Not Applicable.

**(c) Flow:**

Not Applicable.

**Surface Flow is:**

Not Applicable.

**Subsurface Flow:**

Not Applicable.

**Tributary has:**

Not Applicable.

**If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction:**

**High Tide Line indicated by:**

Not Applicable.

**Mean High Water Mark indicated by:**

Not Applicable.

**(iii) Chemical Characteristics:**

**Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).**

Not Applicable.

**(iv) Biological Characteristics. Channel supports:**

Not Applicable.

**2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW**

**(i) Physical Characteristics:**

**(a) General Wetland Characteristics:**

**Properties:**

Not Applicable.

**(b) General Flow Relationship with Non-TNW:**

**Flow is:**

Not Applicable.

**Surface flow is:**

Not Applicable.

**Subsurface flow:**

Not Applicable.

**(c) Wetland Adjacency Determination with Non-TNW:**

Not Applicable.

**(d) Proximity (Relationship) to TNW:**

Not Applicable.

**(ii) Chemical Characteristics:**

**Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).**  
Not Applicable.

**(iii) Biological Characteristics. Wetland supports:**  
Not Applicable.

**3. Characteristics of all wetlands adjacent to the tributary (if any):**  
**All wetlands being considered in the cumulative analysis:**  
Not Applicable.

**Summarize overall biological, chemical and physical functions being performed:**  
Not Applicable.

**C. SIGNIFICANT NEXUS DETERMINATION**

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**A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.**

**Significant Nexus:** Not Applicable

**D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/  
WETLANDS ARE:**

---

**1. TNWs and Adjacent Wetlands:**  
Not Applicable.

**2. RPWs that flow directly or indirectly into TNWs:**  
Not Applicable.

**Provide estimates for jurisdictional waters in the review area:**  
Not Applicable.

**3. Non-RPWs that flow directly or indirectly into TNWs:<sup>8</sup>**  
Not Applicable.

**Provide estimates for jurisdictional waters in the review area:**  
Not Applicable.

**4. Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**  
Not Applicable.

**Provide acreage estimates for jurisdictional wetlands in the review area:**  
Not Applicable.

**5. Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs:**  
Not Applicable.

**Provide acreage estimates for jurisdictional wetlands in the review area:**  
Not Applicable.

**6. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs:**

Not Applicable.

**Provide estimates for jurisdictional wetlands in the review area:**

Not Applicable.

**7. Impoundments of jurisdictional waters:<sup>9</sup>**

Not Applicable.

**E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS:<sup>10</sup>**

Not Applicable.

**Identify water body and summarize rationale supporting determination:**

Not Applicable.

**Provide estimates for jurisdictional waters in the review area:**

Not Applicable.

**F. NON-JURISDICTIONAL WATERS. INCLUDING WETLANDS**

If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements:

Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce:

Prior to the Jan 2001 Supreme Court decision in "SWANCC," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR):

Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (Explain):

Other (Explain):

**Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (ie., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment:**

Not Applicable.

**Provide acreage estimates for non-jurisdictional waters in the review area, that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction.**

Not Applicable.

**SECTION IV: DATA SOURCES.**

**A. SUPPORTING DATA. Data reviewed for JD**

(listed items shall be included in case file and, where checked and requested, appropriately reference below):

Data Reviewed	Source Label	Source Description
--Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant	Location Map	-
--U.S. Geological Survey map(s).	Topo Map (automated eGIS)	-
--USDA Natural Resources Conservation Service Soil Survey.	Island of Hawaii Soil Survey	-
--National wetlands inventory map(s).	US Fish and Wildlife Service Wetland Online Mapper	wetlandsfws.er.usgs.gov
--Photographs	-	-
----Other	Satellite Imagery (2003-2006)	-
----Other	DOQQ Imagery (2000-2003)	-

**B. ADDITIONAL COMMENTS TO SUPPORT JD:**

Not Applicable.

- 
- 1-Boxes checked below shall be supported by completing the appropriate sections in Section III below.
  - 2-For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
  - 3-Supporting documentation is presented in Section III.F.
  - 4-Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.
  - 5-Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.
  - 6-A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
  - 7-Ibid.
  - 8-See Footnote #3.
  - 9 -To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
  - 10-Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA Memorandum Regarding CWA Act Jurisdiction Following Rapanos.



## County of Hawai'i

### PLANNING COMMISSION

Aupuni Center • 101 Pauahi Street, Suite 3 • Hilo, Hawai'i 96720  
Phone (808) 961-8288 • Fax (808) 961-8742

August 1, 2006

Christopher L. Lau, President  
Royal Alii, LLC  
Towne Development of Hawaii, Inc.  
220 S. King Street, Suite 2170  
Honolulu, HI 96813

Dear Mr. Lau:

Special Management Area Use Permit Application (SMA 05-000007)  
Request: 19 Single Family Residential Units and Related Uses  
Applicant: Royal Alii, LLC  
Tax Map Key: 7-7-4:57 and 58

The Planning Commission at its duly held public hearing on July 21, 2006, voted to approve the above-referenced application to allow the development of a 19-unit single family residential development and related uses. The property is located on the east (mauka) side of Alii Drive, across from the Alohi Kai Subdivision and Kamoia Point, Kaunamalu, North Kona, Hawaii.

Approval of this request is based on the following:

The applicant proposes to develop a 19-unit single-family residential development and related uses. The site plan indicates the following:

- Lot sizes ranging from approximately 5,246 to 10,177 square feet.
- House sizes ranging from 1,500 square feet to 2,400 square feet in one and two-story dwellings.
- One-story dwellings approximately 18 feet 8 inches in height.
- Two-story dwellings approximately 27 feet 2 inches in height.
- Two parking spaces per lot.
- Underground utilities.
- Private roadways.
- Curb, gutters and sidewalks.
- Gated entry.

*Hawai'i County is an Equal Opportunity Provider and Employer.*

- An approximately 120 to 180-foot wide archaeological easement mauka of Alii Drive to preserve the existing archaeological sites on the project site.
- One driveway access from Alii Drive.

In addition to the proposed 19 single-family residential lots, three (3) additional lots will contain the archaeological preservation areas and roadways. The applicant has filed a Planned Unit Development (PUD) application to allow the development. The PUD application requests variances from Chapter 25 (Zoning Code) and Chapter 23 (Subdivision Code). As the SMA Use Permit application must be approved first, the PUD application will be processed administratively after action is taken on this SMA Use Permit.

The purpose of Chapter 205A, Hawaii Revised Statutes (HRS), and Special Management Area Rules and Regulations of the County of Hawaii, is to preserve, protect, and where possible, to restore the natural resources of the coastal zone areas. Therefore, special controls on development within an area along the shoreline are necessary to avoid permanent loss of valuable resources and the foreclosure of management options.

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

The proposed project will not create significant adverse impacts upon nearby and immediately adjacent properties as the area is developed with single-family and multiple-family residences, and other urban uses. Surrounding properties to the north, east and south are zoned Agricultural (A-5a), and properties to the west across Alii Drive are zoned Resort (V-1.25). A small portion of TMK: 7-7-4: 61 (the parcel adjacent to the property to the south) is zoned RS-7.5. The Alohi Kai Subdivision, composed of single-family lots, is located across or makai of Alii Drive. The Hoomalu Subdivision is located to the east and south of the project area.

While the proposed development will not have a direct impact upon coastal recreational resources, review of developments within the Special Management Area must also consider the cumulative impacts of such developments upon these resources. The proposed development will not substantially affect scenic vistas or viewplanes of nearby residents nor have an adverse impact on coastal recreational or visual resources to the shoreline and coastal ecosystems. The property is located mauka of Alii Drive and will not restrict access to coastal recreational resources along the shoreline nor will it

restrict existing visual viewplanes from Alii Drive. The applicant states that the project site is sufficiently distant from the shoreline to interfere with any views of the coastal areas from Kuakini Highway. In the supplemental information (Visual Impact Assessment) included with the application, the applicant states that the visual impact to views of the shoreline from Kuakini Highway is minor due to "the many existing and planned structures interposed between the proposed structures and the shoreline." The assessment also states that the proposed project "would have no effect on views from the Alii Drive to the shoreline, and because of the archaeological buffer, there would be negligible to beneficial (if native landscaping is installed in the archaeological area) effects on views mauka from Alii Drive."

Air quality in the area is predominantly affected by emissions from natural and vehicular sources. Both short-term air and noise quality impacts associated with the construction of the proposed improvements are expected during construction, especially during grubbing and grading activities. These impacts can be mitigated through the utilization of best management practices. Given the limited nature of the improvements, no significant long-term air and noise quality impacts are anticipated.

The proposed project is consistent with the objectives and policies as provided by Chapter 205A, HRS, and Special Management Area guidelines contained in Rule No. 9 of the Planning Commission Rules of Practice and Procedure. There are no identified recreational resources or public access to the shoreline or mountain areas, scenic and open space preserves, coastal ecosystems, marine resources or other natural and environmental resources in the area. The property is located on the mauka side of Alii Drive and will not be impacted by coastal hazard and beach erosion. No scenic or open space resources to the shoreline or coastal view plane or coastal ecosystem will be negatively impacted by the proposed action. There is no evidence of any traditional and customary Native Hawaiian rights being practiced on the site.

County water is available to the site. The project will connect to the County sewer system. Any potential runoff or discharge that could reach ocean waters can be handled by on-site improvements consistent with the requirements of the Department of Public Works. Any impacts from soil erosion and runoff during site preparation and construction phases can be adequately mitigated through compliance with existing regulations and proper construction practices. Air emissions generated during the construction phase for the proposed project can be mitigated by existing construction regulations. With these precautionary measures in place, the proposed development is not anticipated to have any substantial adverse effects upon nearby coastal resources or the surrounding environment. Conditions of approval will be included relating to wastewater, solid waste and public safety to ensure that impacts on coastal resources are minimized.

According to the applicant, an Archaeological Inventory Survey conducted by Haun & Henry (2002) documented a total of 21 sites comprised of 75 individual features. Two burial sites were identified on the site. The applicant has concurred with the Hawaii Island Burial Council's determination to preserve in place the burials within these sites. An Archaeological Burial Treatment Plan (August 2004) was prepared by Archaeological Consultants of the Pacific, Inc. By letter dated November 10, 2004, the State Historic Preservation Division (SHPD) acknowledged the Hawaii Island Burial Council's determination to preserve in place the burials within the project site. Both the Archaeological Preservation Plan (revised December 2004) and Archaeological Monitoring Plan (revised December 2004) by Archaeological Consultants of the Pacific, Inc. were accepted by the SHPD. According to the applicant, an Archaeological Data Recovery Report prepared by Archaeological Consultants of the Pacific, Inc. dated October 2005 has been transmitted to the SHPD. According to the site plan submitted by the applicant, an approximately 120 to 180-foot wide archaeological easement on the property is proposed to preserve the archaeological sites on the project site.

According to the applicant, there are no known cultural resources associated with the property. The Archaeological Preservation Plan and Mitigation Plan conducted by Archaeological Consultants of the Pacific, Inc. (revised December 2004) states that "it is believed that the Judd Trail [Site 6343] is actually off the subject property."

A Flora and Fauna Report was prepared by Ron Terry, Ph. D. in December 2004. A total of 32 plant species were identified, of which only two, the ilima and uhaloa, are indigenous to the Hawaiian Islands. No native birds were identified during the survey. The study concluded that no threatened or endangered plant or animal species are present or would be expected to be present on the project site.

The proposed development is consistent with the County General Plan and the Zoning Code. The General Plan Land Use Pattern Allocation Guide (LUPAG) Map establishes the basic urban and non-urban form for areas within the County. The project area is designated Medium Density Urban by the LUPAG map. The Medium Density Urban designation includes village and neighborhood commercial and single family and multiple family residential and related functions. Thus, the proposed development would be consistent with the LUPAG Map designation. The property is presently zoned Single-Family Residential 7,500 square feet (RS-7.5) by the County.

This proposed development would complement, among others, the goals, policies and standards of the Land Use and Housing Elements of the General Plan. The project will add to the variety of housing inventory for the district of North Kona, and provide housing in areas that are appropriately located and serviced. The proposed project will be in harmony with the character of the surrounding neighborhood and result in an intensity

of land utilization no higher than as permitted or as otherwise specified for the district in which this proposed development occurs. The Kona Regional Plan adopted by the Hawaii County Planning Commission by Resolution No. 1-84 identifies the project site as R-6 (residential uses) with a density of six units per acre.

One access is proposed from Alii Drive, a two-lane collector street with an approximately 22-foot wide pavement and 8-foot wide shoulders within an approximately 50-foot right-of-way. The Department of Public Works (DPW) recommends that Alii Drive be widened to a 60-foot right-of-way as indicated in the General Plan, in addition to a 5-foot wide future road widening setback along the Alii Drive frontage of the properties. The DPW further recommends that the applicant provide a widened shoulder along the Alii Drive frontage extending to the right-of-way property line in the interest of providing parking for the shoreline public access makai of the project and pedestrian and bicyclist safety.

In view of the recent Hawaii State Supreme Court's "PASH" and "*Ka Pa'akai O Ka'Aina*" decisions, the issue relative to native Hawaiian gathering and fishing rights must be addressed. These rights must be addressed in terms of the cultural, historical, and natural resources and the associated traditional and customary practices of the site.

Investigation of valued resources: An Archaeological Preservation Plan (revised December 2004) and Archaeological Monitoring Plan (revised December 2004) by Archaeological Consultants of the Pacific, Inc. were accepted by the HPD. An Archaeological Data Recovery Report dated October 2005 has been transmitted to the HPD. The two burials on the site will be preserved in place.

A Flora and Fauna Report was prepared by Ron Terry, Ph.D. in December 2004. A total of 32 plant species were identified, of which only two, the ilima and uhaloa, are indigenous to the Hawaiian Islands. No native birds were identified during the survey. The study concluded that no threatened or endangered plant or animal species are present or would be expected to be present on the project site.

The valuable cultural, historical, and natural resources found in the area: The DLNR-HPD has acknowledged the Hawaii Island Burial Council's determination to preserve in place the burials within the project site. The applicant will be required to notify the DLNR-HPD should any undiscovered remains of historic sites, such as rock walls, terraces, platforms, marine shell concentrations or human burials be encountered on the site. Subsequent work shall be allowed to proceed upon an archaeological clearance from the DLNR-HPD when it finds that sufficient mitigation measures have been taken. An Archaeological Preservation Plan and Mitigation Plan conducted by Archaeological Consultants of the Pacific, Inc. (revised December 2004) states that "it is

believed that the Judd Trail [Site 6343] is actually off the subject property."

Possible adverse effects or impairment of valued resources: Native vegetation may be destroyed by ground alteration. There is no evidence that the flora in the area are particularly desired or used for cultural practices.

Feasible actions to protect native Hawaiian rights: The property is located mauka of Alii Drive, and will not be impacted by coastal hazard and beach erosion. There are no identified recreational resources or public access to the shoreline or mountain areas, scenic and open space preserves, coastal ecosystems, marine resources or other natural and environmental resources in the area. Thus, to the extent to which traditional and customary native Hawaiian rights are exercised, the proposed action will not affect traditional Hawaiian rights; therefore, no action is necessary to protect these rights.

Based on the above findings, it is determined that the proposed development and related improvements will not have any substantial adverse impacts on the surrounding area, nor will its approval be contrary to the objectives and policies of Chapter 205A, HRS, relating to Coastal Zone Management and Rule No. 9 of the Planning Commission relating to the Special Management Area.

Approval of this request is subject to the following conditions:

1. The applicant, its successor or assigns shall be responsible for complying with all stated conditions of approval of this permit.
2. Final Subdivision Approval shall be secured within five (5) years from the effective date of this permit.
3. The applicant shall provide a 5-foot wide road widening setback along the Alii Drive frontage and dedicate it to the county at no cost upon request by the Department of Public Works. The applicant shall provide a widened shoulder along the Alii Drive frontage, extending to the right-of-way property line, if required by and meeting with the approval of the Department of Public Works. Provide pavement widening, transitions, signs and markings, drainage improvements and relocation of utilities, as required by the Department of Public Works.
4. Install street lights, signs and markings, meeting with the approval of the Department of Public Works, Traffic Division.

5. Access to Alii Drive, including the provision of adequate sight distances, shall meet with the approval of the Department of Public Works.
6. Any vehicular security gate shall be installed more than 40 feet from the Alii Drive right-of-way with a turnaround on the Alii Drive side of the gate.
7. All development-generated runoff shall be disposed of on-site and shall not be directed toward any adjacent properties.
8. The proposed development shall connect to the County sewer system.
9. Comply with Chapter 11-55, Water Pollution Control, Hawaii Administrative Rules, Department of Health, which requires an NPDES permit for certain construction activity.
10. During construction, measures shall be taken to minimize the potential of both fugitive dust and runoff sedimentation. Such measures shall be in compliance with construction industry standards and practices utilized during construction projects of the State of Hawaii.
11. All earthwork and grading shall conform to Chapter 10, Erosion and Sediment Control of the Hawaii County Code.
12. An Archaeological Data Recovery Report shall be submitted for the review and approval of the Department of Land and Natural Resources - State Historic Preservation Division (DLNR-HPD). A copy of the approved final report shall be submitted to the Planning Director prior to the submittal of plans for subdivision review or the issuance of any land alteration permits, whichever occurs first.
13. Prior to Final Subdivision Approval, a metes and bounds survey of the Judd Trail shall be prepared by a licensed surveyor to locate the Judd Trail in the vicinity of the subject property from Alii Drive to a point near the southeast corner of the applicant's property. The survey shall be submitted to the Planning Director. Subject to the approval of the State, the applicant shall stabilize the existing remnants of the Judd Trail, which shall consist of stabilizing the stone walls and removing invasive plants. Upon request of the State, the applicant shall quitclaim to the State any portions of the Judd Trail that are within their property boundaries. A 10-foot wide buffer easement shall be established along the southern boundary of the property not in the preservation area as a "no build" buffer zone.

14. The archaeological features on the western or makai portion of the project site, as identified in the approved preservation plan, shall be preserved and made a part of the project's open space buffer from Alii Drive. The open space buffer shall be a 10-foot buffer easement for no building purposes, other than for the reconstruction and restoration of the Judd Trail wall. The two burial sites (Feature 8021: A and Site 23556) shall be preserved "as is." A landscaping buffer shall be placed surrounding the burial sites, and the burial sites shall be incorporated into the project's landscaping/open space feature. Access to the burial sites' descendants shall be allowed, consistent with the requirements of the Archaeological Burial Treatment Plan approved by the DLNR-HPD.
15. Should any undiscovered remains of historic sites, such as rock walls, terraces, platforms, marine shell concentrations or human burials be encountered, work in the immediate area shall cease and the Department of Land and Natural Resources-Historic Preservation Division (DLNR-HPD) shall be immediately notified. Subsequent work shall proceed upon an archaeological clearance from the DLNR-HPD when it finds that sufficient mitigation measures have been taken.
16. The U.S. Department of Army Corps of Engineers shall be contacted to identify whether a Federal Permit (including a Department of Army permit) is required for this project. The Planning Director shall be notified in writing as to whether such permit is required for the development of the project.
17. The applicant shall comply with all applicable County, State and Federal laws, rules, regulations and requirements.
18. An annual progress report shall be submitted to the Planning Director prior to the anniversary date of this permit. The report shall include, but not be limited to, the status of the development and extent to which the conditions of approval are being satisfied. This condition shall remain in effect until all of the conditions of approval have been satisfied and the Planning Director acknowledges that further reports are not required.
19. An initial extension of time for the performance of conditions within this permit may be granted by the Planning Director upon the following circumstances:
  - A. The non-performance is the result of conditions that could not have been foreseen or are beyond the control of the applicant, successors or assigns, and that are not the result of their fault or negligence.

Christopher L. Lau, President  
Royal Alii, LLC  
Page 9

- B. Granting of the time extension would not be contrary to the General Plan or Zoning Code.
- C. Granting of the time extension would not be contrary to the original reasons for the granting of this permit.
- D. The time extension granted shall be for a period not to exceed the period originally granted for performance (i.e., a condition to be performed within one year may be extended for up to one additional year).
- E. If the applicant should require an additional extension of time, the Planning Department shall submit the applicant's request to the Planning Commission for appropriate action.

Should any of the conditions not be met or substantially complied with in a timely fashion, the Planning Director may initiate procedures to revoke the permit.

This approval does not, however, sanction the specific plans submitted with the application as they may be subject to change given specific code and regulatory requirements of the affected agencies.

Should you have any questions, please contact Norman Hayashi of the Planning Department at 961-8288.

Sincerely,



C. Kimo Alameda, Chairman  
Planning Commission

Lroyalaliisma05-007PC

cc: Department of Public Works  
Department of Water Supply  
County Real Property Tax Division  
Planning Department - Kona  
Department of Land and Natural Resources/HPD-Kona  
Ms. Alice Kawaha  
Subdivision Section  
Stephen J. Menezes, Esq.

# **ENVIRONMENTAL ASSESSMENT**

## **Royal Ali‘i Planned Unit Development**

TMK: (3rd) 7-7-04:57 & 58  
Kaumalumu, North Kona District, Hawai‘i Island, State of Hawai‘i

### **Appendix 2**

#### **Visual Impact Assessment**

**Visual Impact Assessment  
Royal Ali‘i Planned Unit Development  
TMK 7-7-04:57 & 58  
Kaunalumalu, North Kona, Island of Hawai‘i  
2005**

## **Introduction**

This analysis was developed to accompany an application for a Special Management Area permit for the proposed 19-lot Planned Unit Development called Royal Ali‘i on Ali‘i Drive in Kailua-Kona, Island of Hawai‘i.

The purpose is to describe the impacts that the project will have on the visual resources in the area and propose mitigation to minimize any adverse impacts. To accomplish these objectives, the following steps have been undertaken:

- Photographic depiction of the project sites and environs, including views of the existing area from key vantage points;
- Review of the Special Management Area’s policies for scenic resources, including scenic views and resources listed as important in the Hawai‘i County General Plan, as well as other scenic views, and their relationship to the site and proposed project;
- Discussion of elements of proposed project that could impact scenery and viewplanes;
- Mauka-makai profiles that include the existing topography and buildings along with the development’s proposed structures along key view corridors; and
- Analysis that integrates the above and makes conclusions about the total visual impact, including proposed mitigation measures, where appropriate.

Map figures referenced in this report are contained in **Attachment 1**, photographic figures are contained in **Attachment 2**, reduced architectural sheets are contained in **Attachment 3**, and profiles are contained in **Attachment 4**.

## **Property Location and Existing Appearance**

The surface and vegetation of the 5.493 acres (**Map Figures 1-2; Photo Figures 1-4**) comprising the property appear to have been altered through prehistoric and historic use of various kinds, followed by growth of alien, weedy vegetation. Most of the site dominated by a low forest of scattered kiawe with an understory of koa haole. In a portion of the site, kiawe is absent or uncommon, and koa haole dominates, with pigweed making up most of the ground cover. No structures or other land uses are currently apparent on the property.

Between the properties and the shoreline are, on the makai side of Ali‘i Drive from north to south (see **Map Figures 1-2**), are

- The 15-lot Ke Alohi Kai Planned Unit Development, which currently has only a few two-story homes.
- Three small residential properties with homes on the makai side of Ali‘i Drive.

Views toward the shoreline from the ground level of property are thus mostly blocked (**Photo Figures 6**). Views north-makai will become more blocked as the Ke Alohi Kai project progresses.

The view mauka is of the Ho‘omaluku Subdivision and the mixed land uses on the slopes of Hualalai (**Photo Figure 5** – taken prior to construction of homes directly mauka).

### **Scenic Resources and Viewplanes in Project Area**

At present, the scenic values of the general area are derived from onshore and offshore views of the ocean and shoreline. Chapter 205A, Hawai‘i Revised Statutes, expresses the intent of the State’s Coastal Zone Management program to protect, preserve, and where desirable, restore or improve the quality of scenic and open space resources. The guidelines contained in Rule 9 of the Hawai‘i County Planning Commission Rules (which govern County-regulated development in the Special Management Area or SMA) seek to minimize development that would substantially interfere with or detract from the line of sight toward the sea from the State Highway nearest the coast or from other scenic areas identified in the *General Plan*. The discussion below identifies and evaluates scenic resources in the context of these regulations and guidelines.

The Hawai‘i County General Plan identifies areas of natural beauty and important viewplanes for various places in Hawai‘i County. Although no specific scenic views are identified in the Holualoa-Kamalumu area, views of the shoreline from motorists going mauka or makai on Kuakini Highway (the State highway nearest the coast) in TMK 7-7 is noted as important in the General Plan. In this area, Kuakini Highway is about 4,000 feet mauka of the shoreline (see **Map Figure 1**). Existing development and vegetation along with topography result in very intermittent views of the shoreline from Kuakini Highway. **Photo Figure 1** illustrates the viewplane from Kuakini Highway to the project site as seen from above. **Photo Figures 7-9** show the Kailua-Keauhou shoreline observed from three points on Kuakini Highway that offer views of the coastal area. The photos illustrate the fact that although views of the ocean are present, the shoreline itself is generally not visible. A combination of structures and dense tree cover obscure the lava shoreline. It is also worth noting how landscaping on developed parcels and kiawe scrub on undeveloped parcels overtop the roof lines of most structures less than three stories in height.

## Proposed Project

The Site Plan for the proposed project is shown in **Architectural Sheet A-1**. The applicant proposes to create a 19-lot, gated subdivision, with an archaeological easement about 100 feet wide between Ali'i Drive and the nearest lots. Landscaping along the internal roads is planned, and residents' landscaping will be subject to Covenants, Conditions and Restrictions (CC&Rs). All plans will be reviewed and approved by the Planning Department through the Plan Approval process.

Sample elevation views of the proposed building types are shown in **Architectural Sheet A-2**. One-story structure rooftops would be approximately 18 feet above grade, and two-story rooftops about 27 feet above grade.

The general area contains many one- to three-story resort and residential developments with similar mass, density and roof lines. Basically, the proposed units would insert a moderate-density, moderate-height development in a neighborhood of uses that are of roughly the same density and height.

## Mauka-Makai Profiles Through Project Site

**Profiles A, B and C** illustrate the position and height of the ground surface as well as existing and proposed structures along three lines extending between Kuakini Highway and the shoreline. The future path of Ali'i Parkway is also shown. The location of the project structures are shown in their correct positions; adjacent structures are conservative approximations based on field and airphoto analysis. Although considerable development is planned in surrounding areas, none of it is shown on the profiles. The locations of the profiles are illustrated on a USGS topographic map (**Map Figure 1**). For each profile, elevations were derived from 5-foot/10-foot topographic data from a survey performed in the 1970s as part of a wastewater infrastructure study, contours were digitized, and profiles were generated using an ARC-VIEW © Geographic Information System (GIS) routine.

The purpose of the profiles is to illustrate the elevations of the land surface, Kuakini Highway, and certain structures in order to determine direct lines of sight. It is important to note that for ease of interpretation, these profiles incorporate *significant vertical exaggeration*. Slopes are not as steep and structures are not as tall and narrow in reality as they appear on the profile. Sightlines, however, are not distorted by vertical exaggeration.

## **Impact of Project on Scenic Resources and Viewplanes and Proposed Mitigation**

*View from shoreline and Ali'i Drive mauka.* For the most part, other lots with structures and dense landscaping are present between the shoreline and Ali'i Drive. The shoreline is here is not commonly accessed by the public, but in any case, the project would not interfere with views mauka. Motorists, pedestrians and bicyclists on Ali'i Drive will have their current view of kiawe scrub vegetation essentially unchanged, because of the wide archaeological easement. It is recommended that management of the archaeological easement include landscaping with native and Polynesian plants, if consistent with protection of archaeological resources. Visual impacts here would be negligible, or even beneficial, with native landscaping.

*Views of the shoreline from Kuakini Highway.* As illustrated in the **Profiles A, B and C**, topography, buildings and vegetation block views of the shoreline or nearshore area from Kuakini Highway. As illustrated in **Photo Figures 6-8**, this is not only at these profiles but along most of the highway, even where there open views towards the ocean. In total, little visual impact for the viewplanes from Kuakini Highway to the shoreline is expected.

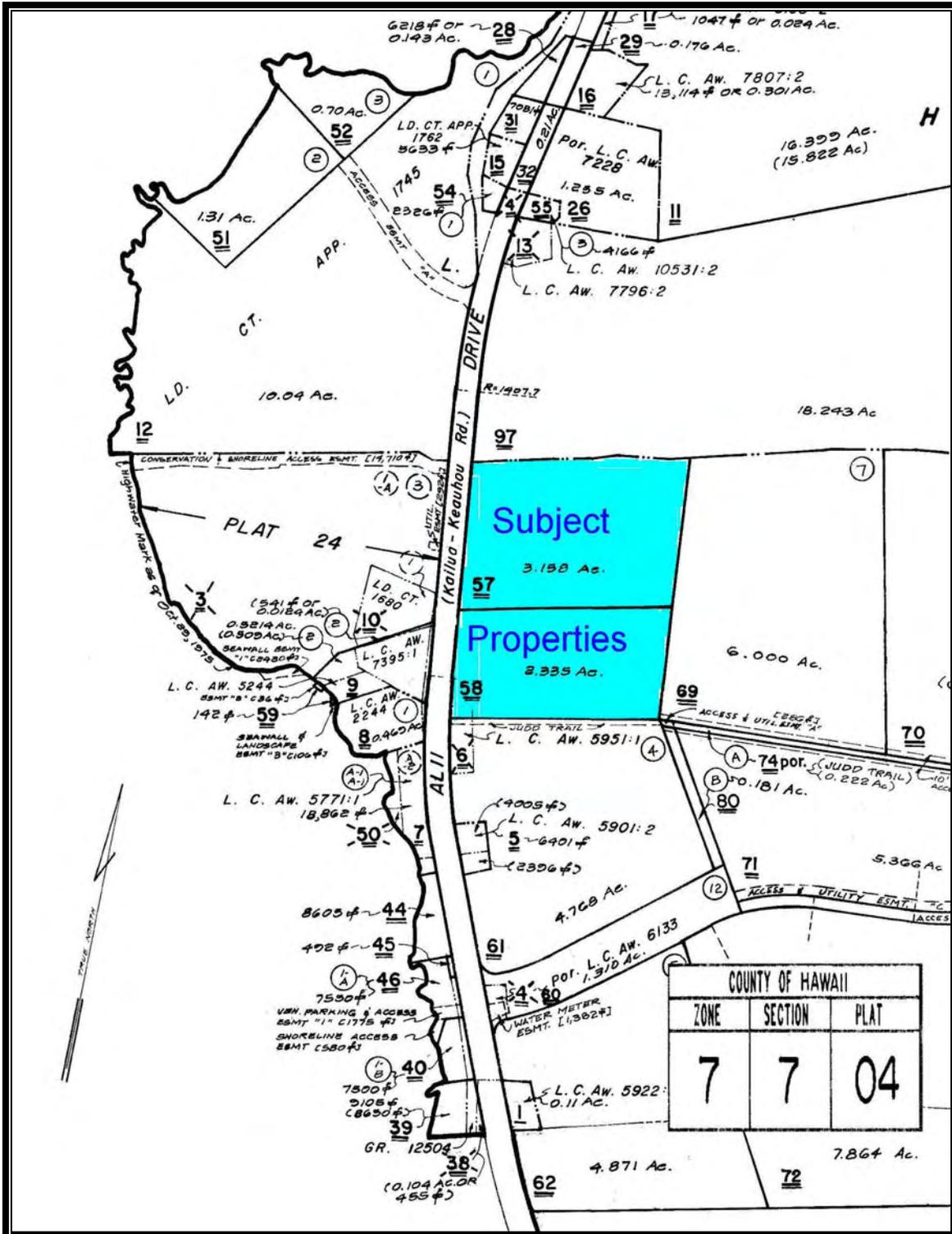
### **Summary**

The proposed Royal Ali'i Development would have no effect on views from Ali'i Drive to the shoreline, and because of the archaeological buffer, there would be negligible to beneficial (if native landscaping is installed in the archaeological area) effects on views mauka from Ali'i Drive. Because of its context of many existing and planned buildings interposed between the proposed structures and the shoreline, there will be little visual impact to views of the shoreline from the Kuakini Highway. The total visual impacts of the projects are minor. Landscaping, particularly if done with native plants, could improve the scenic character of the property, which now supports weedy, if natural looking, vegetation, and is thus recommended.

**Attachment 1**  
**Map Figures**



## Map Figure 2 Tax Map



**Attachment 2**  
**Photographic Figures**

# Photo Figures

1. Oblique Aerial View of Property from Kuakini Hwy



## Photo Figures, cont'd

### 2. Aerial View of Property Showing Relation to Surroundings



### 3. Property Viewed from Ali'i Drive



Photo Figures, cont'd

4. Interior of Property



5. View from Back of Property



Photo Figures, cont'd

6. View Makai Across Ali'i Drive



7. View from Kuakini Highway Makai, I



Photo Figures, cont'd

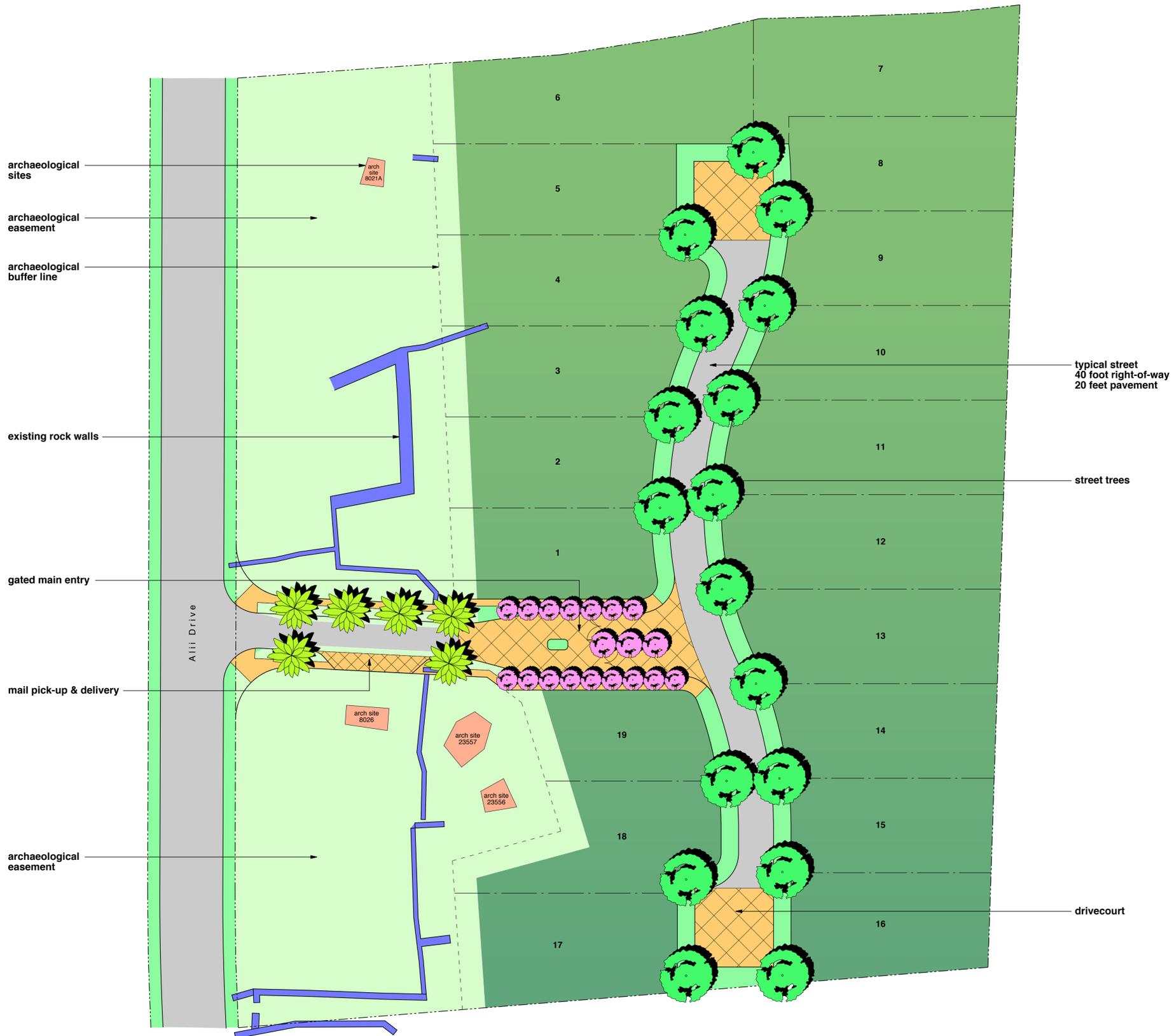
8. View from Kuakini Highway Makai, II



9. View from Kuakini Highway Makai, III



**Attachment 3**  
**Architectural Sheets**



archaeological sites

archaeological easement

archaeological buffer line

existing rock walls

gated main entry

mail pick-up & delivery

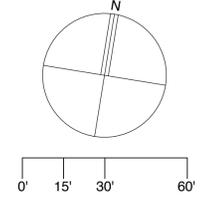
archaeological easement

typical street  
40 foot right-of-way  
20 feet pavement

street trees

drivecourt

Master Plan



Scale 1" = 30' - 0" 10.1.05

ROYAL ALII - A PLANNED UNIT DEVELOPMENT  
Kailua-Kona, Island & County of Hawaii

PROJECT INFORMATION

PROJECT TMK	TMK: (3) 7-7-004: 57 & 58
AREA OF SITE	5.50 ACRES
COUNTY ZONING	RS-7.5
NUMBER OF LOTS	19 LOTS
DENSITY	3.45 LOTS PER ACRE

*Riehm Owensby*  
PLANNERS  
ARCHITECTS

© 2005, RIEHM OWENSBY  
P.O. BOX 390747 KAILUA-KONA HAWAII TEL. 808-322-6115

Sheet No:

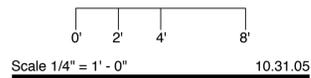
A - 1



One Story Home

Two Story Home

Typical Housing



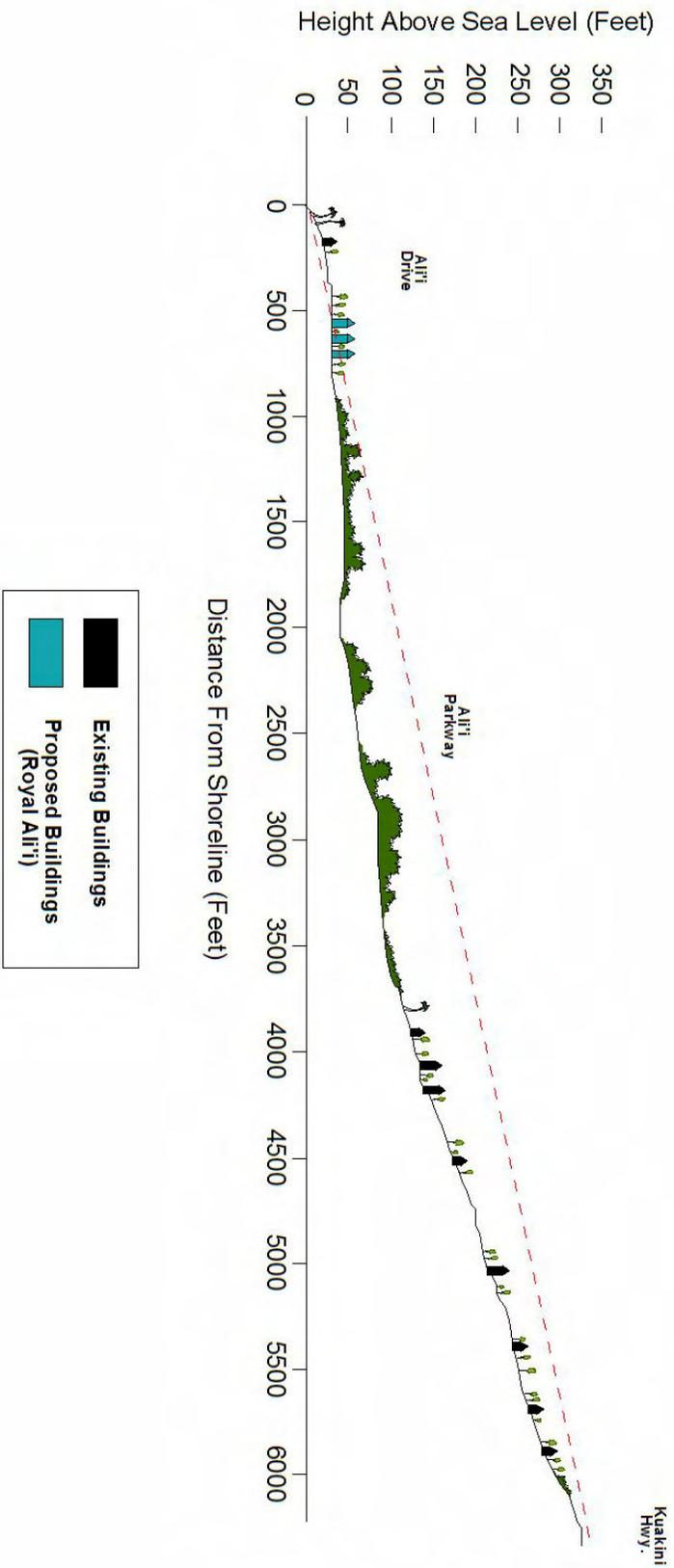
ROYAL ALII - A PLANNED UNIT DEVELOPMENT  
 Kailua-Kona, Island & County of Hawaii

*Riehm Owensby*  
 PLANNERS  
 ARCHITECTS

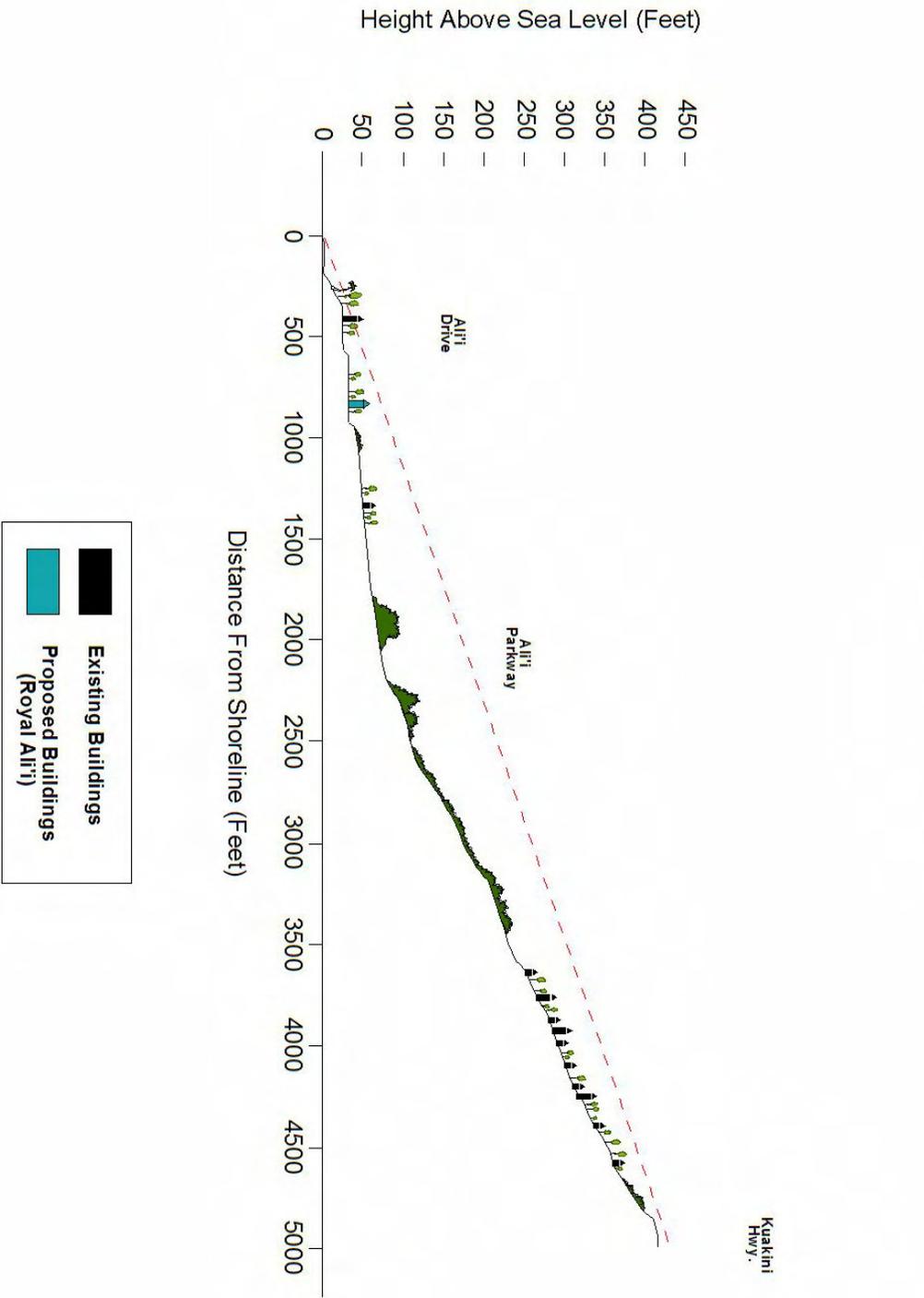
© 2005, RIEHM OWENSBY  
 P.O. BOX 390747 KAILUA-KONA HAWAII TEL. 808-322-6115

**Attachment 4**  
**Profiles**

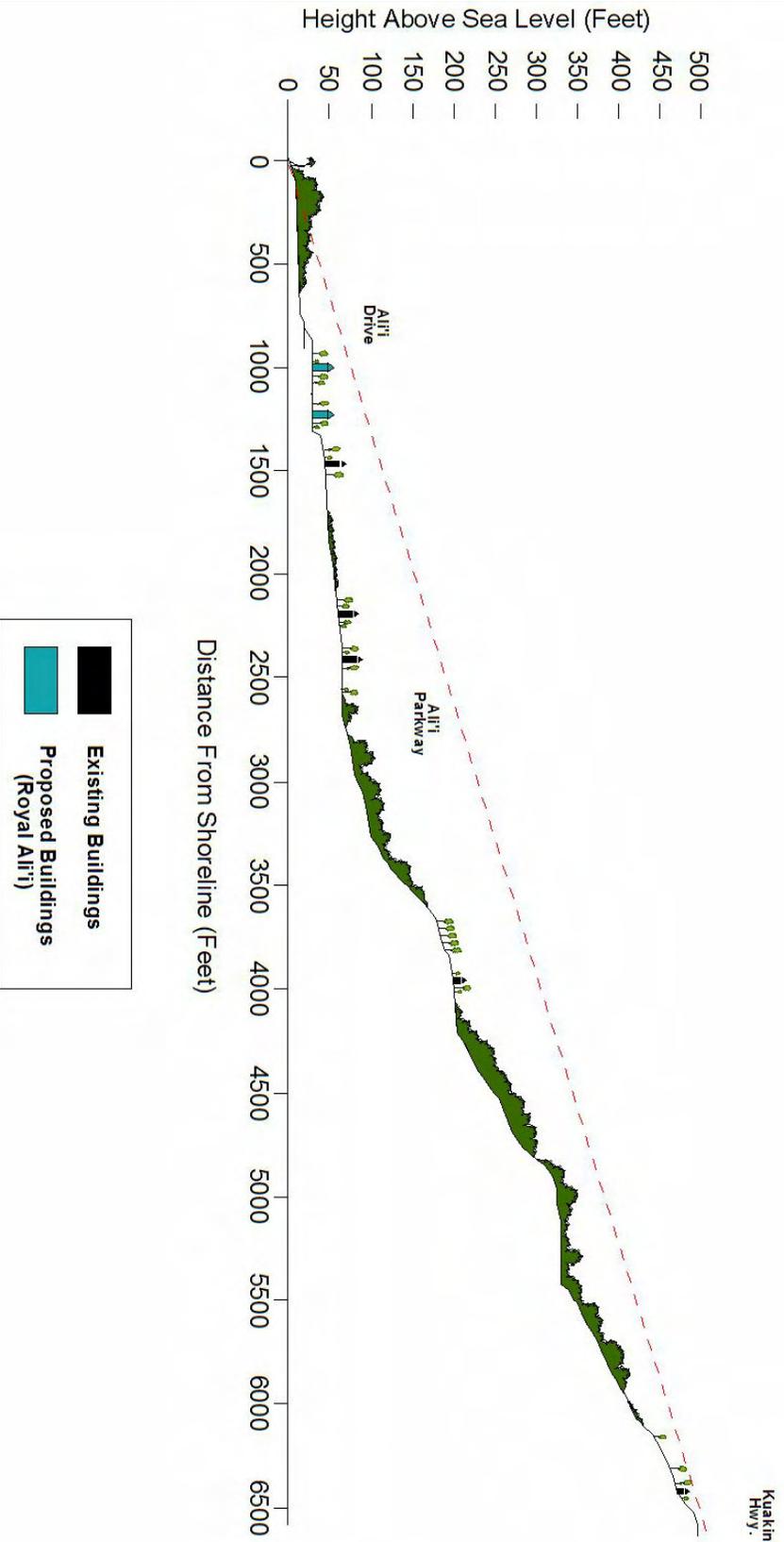
# Profile A



# Profile B



# Profile C



# **ENVIRONMENTAL ASSESSMENT**

## **Royal Ali‘i Planned Unit Development**

TMK: (3rd) 7-7-04:57 & 58  
Kaumalumu, North Kona District, Hawai‘i Island, State of Hawai‘i

### **Appendix 3**

#### **Archaeological Studies and SHPD Correspondence**

# **ENVIRONMENTAL ASSESSMENT**

## **Royal Ali‘i Planned Unit Development**

TMK: (3rd) 7-7-04:57 & 58

Kaunalumalu, North Kona District, Hawai‘i Island, State of Hawai‘i

### **Appendix 3**

#### **Archaeological Studies and SHPD Correspondence**

##### **Part A – Archaeological Inventory Survey Summary and Conclusions**

**ARCHAEOLOGICAL INVENTORY SURVEY**

**TMK: 3-7-7-004:57, 58**

**LAND OF KAUMALUMALU,**

**NORTH KONA DISTRICT**

**ISLAND OF HAWAI'I**

October 2002

**Haun & Associates**

Archaeological, Cultural, and Historical Resource Management Services  
HCR 1 Box 4730, Keaau, Hawaii 96749 Phone: 982-7755 Fax: 982-6343

**ARCHAEOLOGICAL INVENTORY SURVEY**

**TMK: 3-7-7-004:57, 58**

**LAND OF KAUMALUMALU, NORTH KONA DISTRICT**

**ISLAND OF HAWAI'I**

By:

Alan E. Haun, Ph.D.

and

Dave Henry, B.S.

Prepared for:

Mr. James P. Gannon  
Old Hawaii Realty  
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Kailua-Kona, Hawaii 96740

October 2002

**Haun & Associates**

Archaeological, Cultural, and Historical Resource Management Services  
HCR 1 Box 4730, Keaau, Hawaii 96749 Phone: 982-7755 Fax: 982-6343

# SUMMARY

At the request of Mr. James Gannon, Haun & Associates conducted an archaeological inventory survey of a 5.5-parcel located in the Land of Kaunalualu, North Kona District, Island of Hawaii (TMK: 3-7-7-004: 57, 58). The objective of the survey was to satisfy current historic preservation regulatory review inventory requirements of the Department of Land and Natural Resources-State Historic Preservation Division (DLNR-SHPD), as contained within Hawaii Administrative Rules, Title 13, DLNR, Subtitle 13, State Historic Preservation Rules.

The archaeological survey documented 21 sites and 75 features. The identified features are comprised of excavated pits, mounds, platforms, terraces, walls, pavements, enclosures, trails, modified depression, soil area, and utilized knoll. Feature function includes agriculture, permanent habitation, permanent habitation/possible ceremonial, ceremonial, livestock control, transportation/livestock control, burial, indeterminate habitation, transportation, and indeterminate.

The identified sites and features conform to the site and feature types expected in the *kula* zone of the Kona Field System based on previous archaeological work and historic documentary research. Probable prehistoric to early historic agricultural features consist of mounds and pits concentrated in the vicinity of habitation features. Habitation sites are concentrated in the undisturbed portions of the project area. These sites include twenty-seven permanent habitation features and a temporary habitation feature. Burials are present beneath platforms at two sites.

The sites form at least five site complexes. All of the habitation features are situated less than 200 m of the shoreline. This coastal band was the focus of habitation in the lower *kula* zone. The sites are situated a short distance (less than 350 m) south of the Keakealaniwahine and Kamoia Point Complexes, which were part of a royal center in Holualoa. The dense concentration of permanent habitation features, possible high status residence, and possible *heiau* in the western portion of the project area may indicate that it was associated with the royal center in the adjacent *ahupua'a* of Holualoa 4.

Based upon radiocarbon dates from previously investigated sites in the vicinity, traditional Hawaiian use of the area probably began as early as the 1200s with the most intensive use occurring between the 1400s and early 1800s. Portable remains from test excavations conducted during the current project indicate that the sites probably were initially occupied in late prehistory. The walled residential yards at two complexes indicate that the sites probably were occupied until at least the late 1700s. Later historic use of the project area is evidenced by the Judd Trail constructed in the mid-1800s. Several walls are all relatively high, core-filled walls probably associated with cattle ranching. These walls may have been initially constructed in the mid- to late 1800s, and probably were used and maintained until at least the mid-1900s.

All twenty-one sites are assessed as significant under Criterion "d". The sites have yielded information important for understanding late prehistoric to historic land use in the project area. Seven sites are also assessed as significant under Criterion "c" as well-preserved site type examples of a possible *heiau* and walled permanent habitation complexes. Three sites are additionally assessed as significant under Criterion "e". These two sites are culturally significant because probable traditional Hawaiian burials are present. The Judd Trail is additionally assessed as significant under Criterion "a" as an example of historic transportation system development in Hawaii, Criterion "b" because of its association with Dr. G.P. Judd, and under Criterion "c" as an excellent site type example.

The mapping, written descriptions, photography, and test excavations at three sites adequately documents them and no further work or preservation is recommended. Eighteen sites retain the potential to yield information important for understanding prehistoric and historic land use. Nine of these sites consist of habitation and agricultural features that can be mitigated through data recovery. The landowner will preserve two of these sites because the sites are situated adjacent to a burial, and another site because of its proximity to a burial and to other sites recommended for preservation. The other six sites are recommended for data recovery. The remaining nine sites are recommended for preservation. The plans for preservation of sites and data recovery would be detailed in a Mitigation Plan prepared for DLNR-SHPD review and approval. The specific plans for preservation and maintenance of the sites with burials would be detailed in a Burial Treatment Plan prepared for DLNR-SHPD and the Hawaii Island Burial Council (HIBC) review and approval.

# CONCLUSION

## Discussion

The identified sites and features conform to the site and feature types expected in the *kula* zone of the Kona Field System based on previous archaeological work and historic documentary research. Probable prehistoric to early historic agricultural features consist of mounds and pits concentrated in the vicinity of habitation features. The *kula* zone was traditionally used for cultivating sweet potatoes, paper mulberry, and gourds. Early historic crops may have included the traditional ones and introduced cultigens such as melons, beans, cabbage, coffee, onions, oranges, corn, pumpkins, cotton, tobacco, pineapple, and Irish potatoes.

Habitation sites are concentrated in the undisturbed portions of the project area. These sites include twenty-seven permanent habitation features (*Table 7*) at twelve sites and one temporary habitation feature. Burials are present beneath platforms at Site 8021 (Feature A) and Site 23556. More than half of the site designations presented in this report were assigned during a previous archaeological investigation by Hammatt (1980). The distribution of these sites indicates that most of the previously designated sites comprise five site complexes.

The first complex is situated in the northwest corner of the parcel. The complex consists of three permanent habitation residential structures; a terrace (Site 23550), pavement (Site 8021, Feature B), and a platform (Site 8020). A burial platform is associated with the pavement. The size of the pavement and presence of branch coral may indicate it functioned as a men's house. As discussed previously, the Site 25549 wall separates the habitation features in this complex suggesting that either the wall is a later, post-occupation modification, or, if the wall is part of a residential yard enclosure, then occupation of the residential features north or south of the wall may not be contemporaneous. Nineteen pits interpreted as agricultural features are situated immediately south of the complex.

A second complex consists of seven features at Site 8022. Probable residential structure foundations consist of two terraces (Features A and G) and a pavement (Feature C). A small terrace (Feature B) is interpreted to be an ancillary feature or special purpose structure foundation. A modified knoll (Feature E) and a level soil area (Feature F) are interpreted to be activity areas that may have been partially roofed. Two features, a pavement (Site 8023, Feature B) and a disturbed terrace remnant (Site 23552) are situated a short distance south of the above two site complexes and may have been associated with one or both of the complexes.

A third complex consists of a portion of Site 21391 and features of Sites 8025 and 8026. The complex is situated within a walled enclosure formed by Features P and Q of Site 8025, Site 21391, and Feature D of Site 8027. As discussed previously, a walled trail along the north side of the enclosure may be a pedestrian corridor that pre-dates the complex, or a ranch-related feature. Probable residential structure foundations in this complex consist of three platforms (Site 8025 Feature A and Site 8026 Features A and B) and a terrace (Site 8025 Feature O). As discussed previously, Feature A at Site 8026 may be a high status residence or a men's house. Also present within the complex are twelve mounds and a small enclosure that are interpreted to be agricultural features. Site 23557, a permanent habitation platform, and a burial platform containing habitation debris (Site 23556) are situated immediately inland of the complex and may have once been part of the complex.

The fourth complex consists of portion of Site 21391 and Sites 8027 and 8028. The complex is situated within a walled enclosure formed by Feature D of Site 8027, Feature C of Site 8028, Site 21391, and Site 6343. An enclosure and a large pavement (Site 8028, Features A and B) probably are foundations for roofed structures, although it is unlikely that the entire pavement was roofed. Three features, an adjoining terrace, platform and enclosure (Site 8027, Features A-C), are situated against the north wall of the yard enclosure. Individually these features are interpreted as permanent habitation ancillary features; however, it is possible the all three features are part of a foundation for a single roofed structure.

**Table 7. Summary of Permanent Habitation Sites**

Site	Feature	Formal Type	Shape	Substantial Construction	Area (sq m)	Comments
8020	-	Platform	Rectangular	Faced side	42.20	Foundation for roofed structure - Adjacent to Site 8021 permanent habitation and burial feature
8021	B	Pavement	Rectangular	Paved surface, Post holes	98.40	Foundation for roofed structure, possible men's house
8022	A	Terrace	Rectangular	Faced side, Paved surface	21.20	Foundation for roofed structure
8022	B	Terrace	Rectangular	Faced side, Paved surface	5.50	Special purpose structure, or ancillary feature (site furniture)
8022	C	Pavement	Oval	Faced side, Paved surface	26.30	Foundation for roofed structure
8022	D	Terrace	Irregular	None	47.60	Foundation or ancillary feature
8022	E	Utilized knoll	Irregular	None	109.50	Ancillary feature (activity area) and/or foundation for roofed structure
8022	F	Soil area	Oval	None	25.20	Ancillary feature (activity area) and/or foundation for roofed structure
8022	G	Terrace	Rectangular	Multiple tiers	48.10	Foundation for roofed structure
8023	B	Pavement	Oval	Paved surface	11.20	Special purpose structure, or ancillary feature (activity area)
8025	A	Platform	Irregular	Faced side, Paved surface	48.20	Foundation for roofed structure
8025	O	Terrace	Rectangular	Paved surface	32.40	Foundation for roofed structure
8025	Q	Wall	Linear	None	41.0 m long	Ancillary feature - yard
8026	A	Platform with adjoining terrace	Rectangular	Faced side, Paved surface, Internal features	92.40	Foundation for roofed structure, Possible men's house or high status residence
8026	B	Platform	Rectangular	Faced side, Paved surface	22.80	Foundation for roofed structure
8027	A	Platform	Rectangular	Basal course of boulders	8.30	Special purpose structure, or ancillary feature (site furniture)
8027	B	Enclosure	Rectangular	None	6.80	Special purpose structure, or ancillary feature (site furniture)
8027	C	Terrace	Rectangular	Paved surface	5.70	Special purpose structure, or ancillary feature (site furniture)
8027	D	Wall	Linear	None	38.5 m long	Ancillary feature - yard
8028	A	Enclosure	Rectangular	Faced side, Paved surface	46.00	Foundation for roofed structure
8028	B	Pavement	Oval	Paved surface, Possible post holes	298.20	Ancillary feature - yard - Possible foundation for roofed structure
8028	C	Wall	Linear	None	23.5 m long	Ancillary feature - yard
8028	D	Wall	Linear	None	9.4 m long	Ancillary feature - yard
23550	-	Terrace	Rectangular	Paved surface	56.30	Foundation for roofed structure
23554	-	Pavement	Irregular	Paved surface	113.40	Damaged - Possible foundation for roofed structure
23555	-	Platform	Oval	None	207.50	Damaged - Possible foundation for roofed structure, possible ceremonial feature/men's house
23557	-	Platform	Oval	Faced side	40.50	Foundation for roofed structure

A final complex consists of the features of Site 8024 that is interpreted to be a possible *heiau* based on the massive enclosure wall (Feature A) and large platform (Feature B) with branch coral, pits, and areas of paving on the surface. Feature D is a stone terrace built against the south wall of Feature A that resembles an altar. The specific function of Feature C, a low platform; and Feature E, a terrace, is undetermined; however, the features potentially are foundations for specialized structures within the complex.

Three disturbed platforms (Sites 23553-5) are situated in a bulldozed area in the southeastern portion of the project area. One, Site 23553, is interpreted to be a temporary habitation feature based on its small area. The other two sites are interpreted to be the remnants of permanent habitation residential features. The large area of Site 23555 and presence of branch coral potentially indicate it may have been a men's house. The interpretation of all three sites is very tentative because of disturbance to the sites and the surrounding area.

All of the habitation features are situated less than 200 m of the shoreline. This coastal band was the focus of habitation in the lower *kula* zone (Cordy 1995). The sites are situated a short distance (less than 350 m) south of the Keakealaniwahine and Kamoia Point Complexes, which were part of the royal center in Holualoa. The area was used by at least five generations of high-ranking chiefs including Kamehameha I (McEldowny 1986). The dense concentration of permanent habitation features, possible high status residence, and possible *heiau* in the western portion of the project area may indicate that it was associated with the royal center in the adjacent *ahupua'a* of Holualoa 4.

Based upon radiocarbon dates from previously investigated sites in the vicinity (Haun et al. 1998), traditional Hawaiian use of the area probably began as early as the 1200s with the most intensive use occurring between the 1400s and early 1800s. Portable remains from test excavations in ten permanent habitation features, two burial features, and one temporary habitation during the current project included food remains and artifacts. Non-artifactual materials consisted of marine shell, bone (fish, bird, and mammal), *kukui* nut, sea urchin remains, crustacean shell, and waterworn basalt and coral. Artifacts included volcanic glass cores and flakes, basalt flakes, a bone awl, coral and stone abraders. With the exception of cow bone from Site 23557, all of the food remains and artifacts are typical traditional Hawaiian types, indicating that the sites probably were initially occupied in late prehistory. The walled residential yards at the two complexes in the southwest corner of the project area indicate that the sites probably were occupied until at least the late 1700s when free-ranging cattle became a problem. The absence of historic artifacts at these sites indicates that the sites were probably abandoned before these artifacts were widely distributed.

Later historic use of the project area is evidenced by the Judd Trail constructed in the mid-1800s when Dr. G.P. Judd served as the Minister of the Interior for the Hawaiian government. Several walls, including Site 6329, Site 21391, portions of Feature A at Site 8024, and the wall on the north side of the Judd Trail, are all relatively high, core-filled walls probably associated with cattle ranching. These walls may have been initially constructed in the mid- to late 1800s, and probably were used and maintained until at least the mid-1900s.

## Significance Assessments

Pursuant to DLNR (1998) Chapter 275-6 (d), the initial significance assessments provided herein are not final until concurrence from the DLNR has been obtained. Sites documented during the survey are assessed for significance based on the criteria outlined in the Rules Governing Procedures for Historic Preservation Review (DLNR 1998:Chap 275). According to these rules, a site must possess integrity of location, design, setting, materials, workmanship, feeling, and association and shall meet one or more of the following criteria:

1. Criterion "a". Be associated with events that have made an important contribution to the broad patterns of our history;
2. Criterion "b". Be associated with the lives of persons important in our past;

3. Criterion “c”. Embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; or possess high artistic value;
4. Criterion “d”. Have yielded, or is likely to yield, information important for research on prehistory or history; and
5. Criterion “e”. Have an important traditional cultural value to the native Hawaiian people or to another ethnic group of the state due to associations with traditional cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts--these associations being important to the group’s history and cultural identity.

Based on the above criteria, all twenty-one sites are assessed as significant under Criterion “d” (*Table 8*). The sites have yielded information important for understanding late prehistoric to historic land use in the project area. Sites 8024-8 and the southern portion of Site 21369 are also assessed as significant under Criterion “c” as well-preserved site type examples of a possible *heiau* and walled permanent habitation complexes. Sites 8024, 8021, and 23556 are additionally assessed as significant under Criterion “e”. Site 8024 is assessed as culturally significant because of its possible ritual significance to Hawaiian people and the later two sites are culturally significant because probable traditional Hawaiian burials are present. The Judd Trail, Site 6343, is additionally assessed as significant under Criterion “a” as an example of historic transportation system development in Hawaii, Criterion “b” because of its association with Dr. G.P. Judd, and under Criterion “c” as an excellent site type example.

## Recommended Treatments

The mapping, written descriptions, photography, and test excavations at three sites adequately documents them and no further work or preservation is recommended (see *Table 8*). Eighteen sites retain the potential to yield information important for understanding prehistoric and historic land use. Nine of these sites consist of habitation and agricultural features that can be mitigated through data recovery. The landowner will preserve two of these sites (Site 8020 and 23550) because the sites are situated adjacent to a burial at Site 8021, and Site 23557 because of its proximity to the burial at Site 23556 and other sites recommended for preservation. The other six sites are recommended for data recovery. The remaining nine sites are recommended for preservation. The plans for preservation of sites and data recovery would be detailed in a Mitigation Plan prepared for DLNR-SHPD review and approval. The specific plans for preservation and maintenance of Sites 8021 and 23556 would be detailed in a Burial Treatment Plan prepared for DLNR-SHPD and the Hawaii Island Burial Council (HIBC) review and approval.

**Table 8. Site Significance and Recommended Treatment**

SIHP No.	No. of Features	Type	Function	Significance Criteria	Recommended Treatment
6329	1	Wall	Livestock control	d	NFW*
6343	1	Trail	Transporation/Livestock control	a, b,c, d	Preservation
8020	1	Platform	Permanent Habitation	d	Preservation
8021	21	Complex	Permanent Habitation/ Burial/Agriculture	d, e	Preservation
8022	7	Complex	Permanent Habitation	d	Data Recovery
8023	2	Complex	Permanent Habitation	d	Data Recovery
8024	5	Complex	Ceremonial	d, c, e	Preservation
8025	17	Complex	Permanent Habitation/ Agriculture/Transportation	d, c	Preservation
8026	2	Complex	Permanent Habitation	d, c	Preservation
8027	4	Complex	Permanent Habitation	d, c	Preservation
8028	4	Complex	Permanent Habitation	d, c	Preservation
21391	1	Wall	Livestock control	d, c	Preservation (portion)
23549	1	Wall	Livestock control	d	NFW
23550	1	Terrace	Permanent Habitation	d	Preservation
23551	1	Modified Depression	Agriculture	d	NFW
23552	1	Terrace	Indeterminate	d	Data Recovery
23553	1	Platform	Indeterminate Habitation	d	Data Recovery
23554	1	Pavement	Permanent Habitation	d	Data Recovery
23555	1	Platform	Possible Permanent Habitation/Ceremonial	d	Data Recovery
23556	1	Platform	Burial	d, e	Preservation
23557	1	Platform	Permanent Habitation	d	Preservation

\*NFW=No further work or preservation

# **ENVIRONMENTAL ASSESSMENT**

## **Royal Ali‘i Planned Unit Development**

TMK: (3rd) 7-7-04:57 & 58

Kaunalumalu, North Kona District, Hawai‘i Island, State of Hawai‘i

### **Appendix 3**

#### **Archaeological Studies and SHPD Correspondence**

##### **Part B – Archaeological Preservation Plan**

**AN ARCHAEOLOGICAL PRESERVATION PLAN  
FOR A PROPERTY LOCATED AT TMK: 7-7-04: 57 & 58  
IN KAUMALUMALU AHUPUA'A, NORTH KONA DISTRICT,  
ISLAND OF HAWAII  
REVISED DECEMBER 2004**

**Prepared for: Mr. Larry Smith  
Larry R. Smith Construction, Inc.  
77-6393 Ali'i Dr.  
Kailua-Kona, Hawaii 96740**

**Prepared by: Archaeological Consultants of the Pacific, Inc.  
James R. Moore, B.S.  
Joseph Kennedy, M.A.  
59-624 Pupukea Road  
Haleiwa, Hawaii 96712**



*Inventory Reports • Data Recovery Reports • Research Design Documents • Monitoring • Due Diligence Work • Historical Studies • Cultural Studies • Burial Treatment Plans • Preservation Plans • Interpretive Reconstructions • Restorations • Qualified Expert Witness Testimony*

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**An Archaeological Preservation Plan for a Property  
Located at TMK: 7-7-04: 57 & 58  
in Kaumalumu Ahupua‘a, North Kona District,  
Island of Hawai‘i**

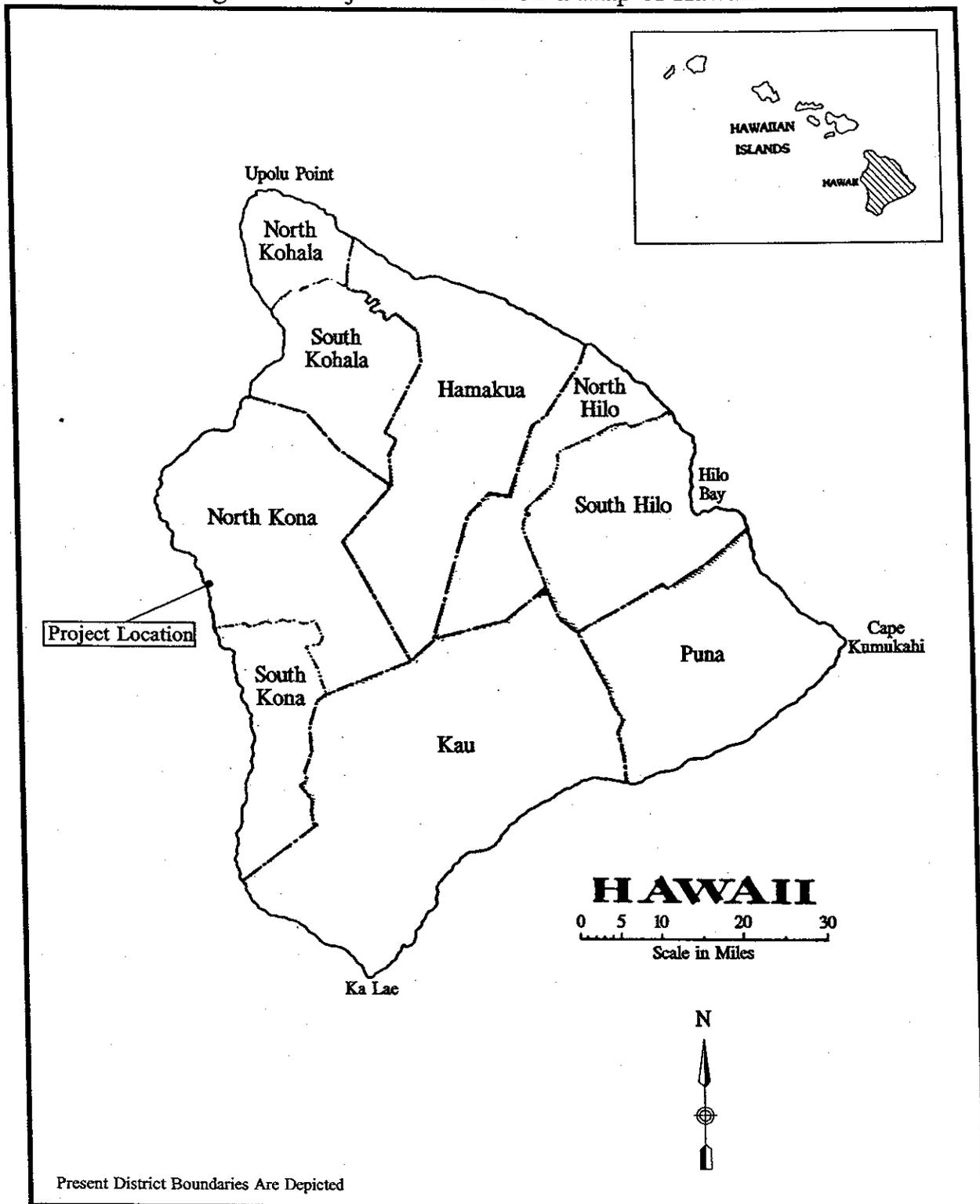
**Section 1: Introduction**

At the request of the landowner, Mr. Larry Smith, Archaeological Consultants of the Pacific, Inc. (ACP) has prepared this preservation plan for a property located on Ali‘i Drive in Kaumalumu Ahupua‘a, North Kona District on the Island of Hawai‘i (see Figure 1). Previous archaeological investigations conducted on the subject property have documented the presence of 21 sites considered significant to the interests of historic preservation (Haun & Henry 2002). Sites on the property include a probable *heiau*, permanent and temporary habitation structures, agricultural features, ranching walls and human burials.

Recommendations have been made for the preservation of several permanent habitation site complexes as well as the probable *heiau* and two burials (along with adjacent structures). Preservation will take the form of the detailed mapping of portions of the preserved areas as well as the avoidance and protection of the sites to be preserved by establishing temporary buffer zones during developments involving the operation of heavy equipment and permanent buffer zones for long-term protection. Several of the remaining sites have been the subject of data recovery investigations thus mitigating the effects of development on those sites. The remainder of the remaining sites are on portions of the subject property that have been disturbed by previous bulldozing and the treatment of those sites is the subject of a separate archaeological monitoring plan (Moore & Kennedy 2004). The preservation of the recommended sites will ensure the protection of significant historic properties that are known to exist on the subject property and help mitigate the effects of development on those sites.

This plan briefly summarizes the information available concerning the archaeological sites known to exist on the subject property. In addition, the details concerning additional mapping, buffer zones and the permanent preservation of sites are described. Recommendations concerning the monitoring of proposed grubbing and grading of portions of the property and the burial treatment of the sites containing human remains will be presented in separate documents.

Figure 1: Project Location on a Map of Hawaii



Kaunalumalu Preservation Plan TMK: 7-7-04: 57 & 58

after: Spriggs and Tanaka 1988

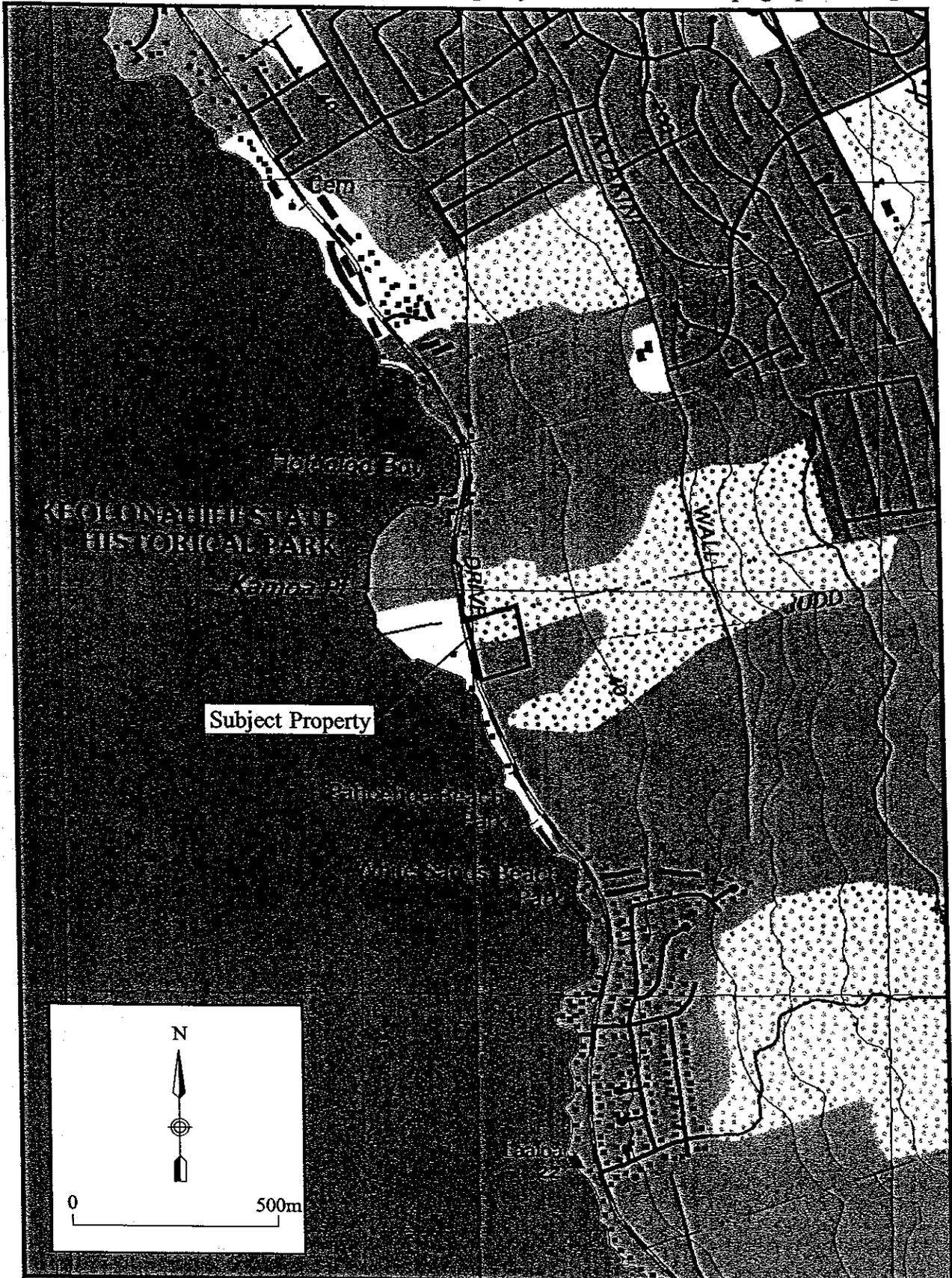
## Section 2: Physical Setting

The current subject property (TMK: 7-7-04: 57 & 58) consists of a roughly rectangular parcel located on Ali'i Drive near Kamoia Point and along the boundary between Kaumalumalu and Holualoa 4<sup>th</sup> Ahupua'a (see Figures 2 & 3). The parcel measures approximately 163 meters (m) in length (north to south) by 134m in width (east to west) covering an area of 5.49 acres. Elevation of the subject property ranges from 10 to 20 feet (ft) above mean sea level (AMSL). The southwestern corner of the parcel is located less than 50m from the coast while the northeastern corner is just over 250m from the coast.

Much of the subject property has reportedly been disturbed by modern bulldozer activity (see Figure 4). According to Haun and Henry (2002:1), vegetation in the disturbed areas of the subject property consists of *haole koa* (*Leucaena leucocephala*) with assorted grasses and vines. Vegetation in the undisturbed portions of the subject parcel was said to consist of *kiawe* (*Prosopis pallida*), *panini* cactus (*Opuntia ficus-indica*), *haole koa* and vines.

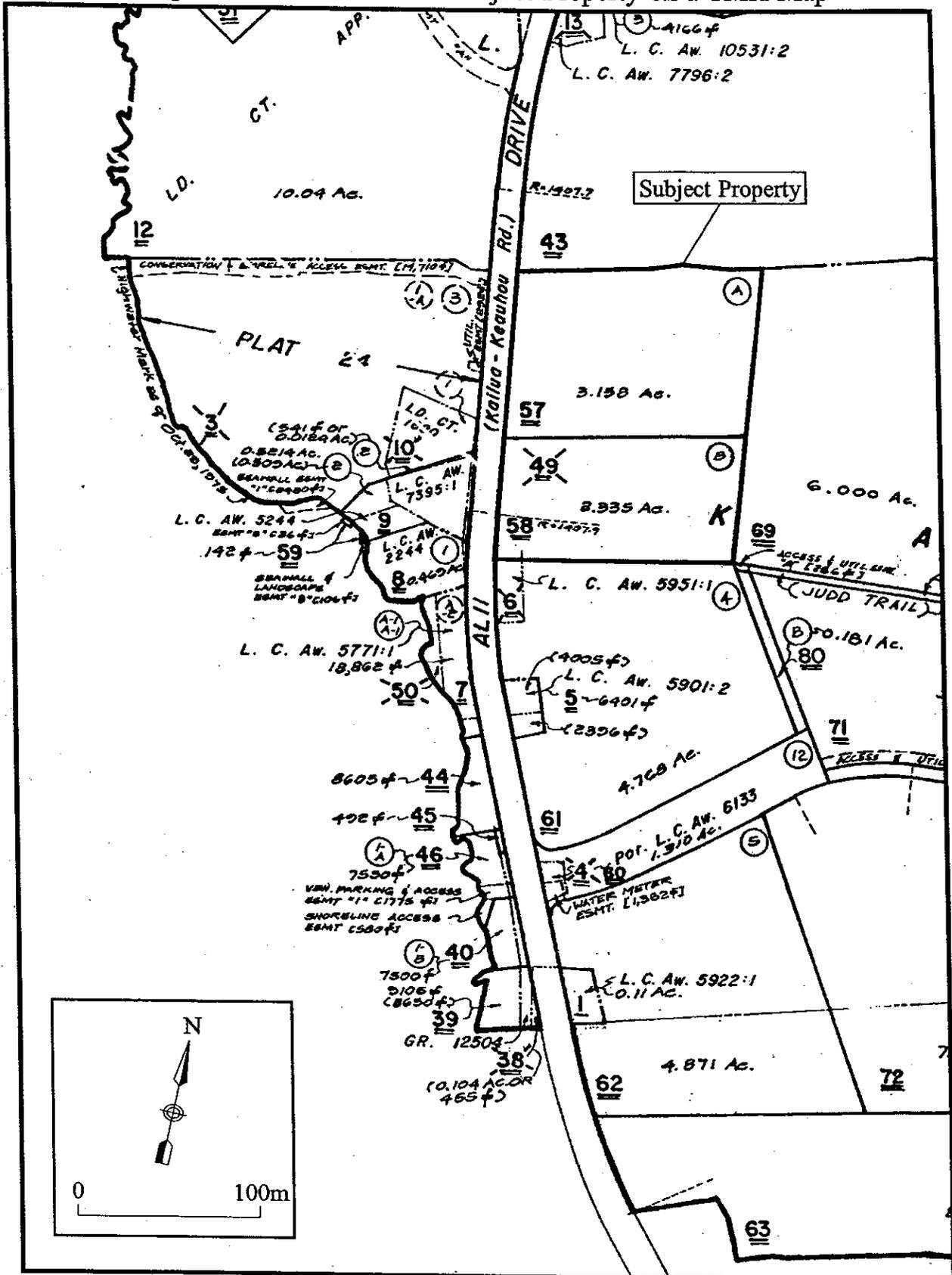
According to the *Soil Survey of the Island of Hawaii*, soils on the subject property consist of the Kaimu Series of extremely stony peat (Sato, Ikeda, Paeth, Smythe & Takehiro 1973). Soils actually encountered on the subject property during the inventory survey investigations differed somewhat from those expected consisting of silts or silty loams (Haun & Henry 2002). Located in a dry leeward climate, rainfall on the subject property averages between 30 and 40 inches a year and the mean annual temperature is approximately 75° Fahrenheit (Armstrong 1973). There are no streams or intermittent water channels passing through this portion of Kaumalumalu.

Figure 2: Location of the Subject Property on a U.S.G.S. Topographic Map



Kaumalumu Preservation Plan TMK: 7-7-04: 57 & 58 source: U.S.G.S. 7.5 Minute Series (Topographic) Kealakekua Quadrangle 1996

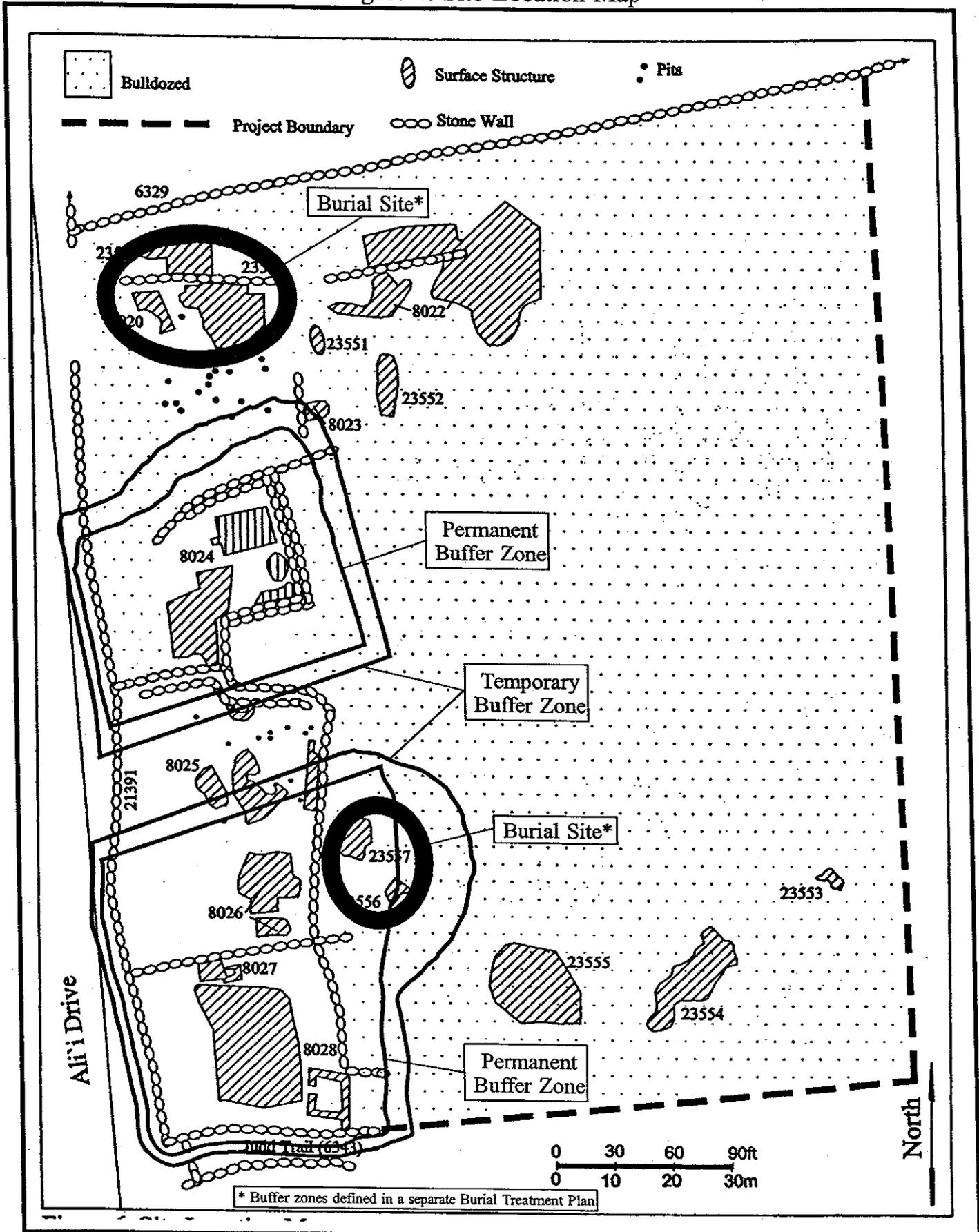
Figure 3: Location of the Subject Property on a TMK Map



Kaunalaumu Preservation Plan TMK: 7-7-04: 57 & 58

source: Department of Taxation, Tax Maps Bureau 1938 (Revised 1998)

Figure 4: Site Location Map



\* Buffer zones defined in a separate Burial Treatment Plan

### Section 3: Summary of the Sites Located on the Subject Property

Several previous archaeological surveys have taken place on or included portions of the current subject property (Hammatt 1980, Hommon 1982, Barrera 1991 and Haun & Henry 2002). Those investigations documented a total of 21 sites comprised of 75 individual features (please note; because the wall forming the southern boundary of Site 8028 is on the property boundary, it is believed that the Judd Trail [Site 6343] is actually off the subject property. It will not be discussed further in this document). Rather than quote the descriptions of the sites from previous documents, a summary of the sites identified is presented in Table 1 (a reproduction of the summary originally prepared by Haun & Henry). The reader is referred to Haun and Henry (2002) for the complete site descriptions as well as the inventory survey excavation results.

Haun and Henry assessed all 21 sites as significant under criterion "D" (site has yielded, or is likely to yield, information important in prehistory or history) of the National Register of Historic Places criteria. In addition, four habitation complexes (Sites 8025, 8026, 8027 & 8028; including a portion of Site 21391 which helps enclose these sites) and the probable *heiau* (Site 8024) were considered significant under criterion "C" as good examples of site types. The probable *heiau* (Site 8024) and two burial sites (Sites 8021 & 23556) were also assessed as significant under criterion "E" (having cultural significance) of the Hawaii Register of Historic Places criteria.

The inventory survey report had originally made recommendations for the preservation of the two burial sites along with adjoining/adjacent sites (Sites 8020, 8021, a portion of 23549, 23550, 23556 & 23557), the probable *heiau* (Site 8024) and several walled habitation sites (Sites 8025, 8026, 8027 & 8028)(Haun & Henry 2002). In addition, data recovery was originally recommended for Sites 8022, 8023, 23552, 23553, 23554 and 23555. No further work was recommended for the remaining sites (Sites 6329, 23549 & 23551).

Following the submission of the inventory survey report, discussions were held between the landowners and the DLNR-SHPD and the recommended mitigation treatments were revised. It was originally proposed that in exchange for the preservation of the walled habitation sites located along Ali'i Drive, the data recovery of Sites 8022, 8023, 23552, 23553, 23554 and 23555 would no longer be required (DLNR-SHPD correspondence dated June 10, 2003; LOG NO: 2003.0768; DOC NO: 0306PM01).

These mitigation treatments allowed for a narrow easement to pass between two highly significant sites located along Ali'i Dr. which would provide access to the *mauka* (eastern) portions of the property. This access easement passed between Sites 8021 and 8024, a burial and the probable *heiau*. In late 2003, however, during a field visit conducted by Mr. James Gannon (at the time the landowners representative), DLNR-SHPD representative, MaryAnne Maignet and ACP representative, James R. Moore, it was observed that the distance between these two sites did not appear to allow for buffer zones of sufficient width to be established in order to ensure the protection of the sites.



Also, during the field visit, several additional features outside of the preservation area were observed which were not recorded in the inventory survey.

As a result of the field inspection and on behalf of interested land buyers, ACP formally requested that changes be made to the approved mitigation measures. Rather than attempting to thread a thin access easement corridor between two highly sensitive sites, ACP requested that a 50 foot (15m) wide access easement be established passing through Site 8025 which was considered to be of relatively lesser significance (see Figure 4). The placement of this easement allows for temporary buffer zones approximately 10m in width between the corridor and Site 8024 on the north and Sites 8026 and 23557 on the south.

In order to mitigate the adverse effects of the corridor passing through Site 8025, it was recommended that data recovery take place at the site. In addition, because ACP requested that changes be made to the approved mitigation treatments, the DLNR-SHPD determined that data recovery should be conducted at Sites 8022, 23552, 23554 and 23555 as originally proposed and that mapping and testing should take place at the previously undocumented sites observed during the field visit. The details of data recovery were presented in a separate data recovery plan and approved by the DLNR-SHPD in correspondence dated August 4<sup>th</sup>, 2004 (LOG NO: 2004.2427; DOC NO: 0408MM04).

#### ***Sites Recommended for Preservation***

As summarized above, original recommendations were made for the preservation of the walled habitation complexes (Sites 8025, 8026, 8027, 8028 including a portion of 21391), the probable *heiau* (Site 8024) and the two burials (Feature 8021:A & Site 23556) along with adjacent structures (Sites 8020, 23550 & 23557 and a portion of Site 23549). Since then, the recommendation for Site 8025 has changed from preservation to data recovery. Therefore, this document concerns the preservation of Sites 8024, 8026, 8027, 8028 and a portion of 21391 while the preservation of the burials and their adjacent structures will be the subject of a separate burial treatment plan.

Sites 8024, 8026, 8027, 8028 (along with 8025) form three adjoining complexes located along Ali'i Dr. and the western boundary of the subject property (see Figure 4). Two of the three adjoining complexes were determined to have been permanent habitation sites (including Sites 8026, 8027 & 8028 as well as 8025) while the third was determined to be a probable *heiau* (Site 8024). All three complexes were once believed to have been partially enclosed by Site 21391, although, there is some evidence which indicates that portions of the wall may have been disturbed at some time in the relatively recent past.

## **Section 4: Recommended Preservation Measures**

The preservation of Sites 8024, 8026, 8027, 8028 and a portion of 21391 will have three aspects; detailed mapping of the sites to be preserved, interim protection measures during the operation of heavy equipment on the subject property and long-term protection measures for the future. Detailed mapping will take place prior to any developments in order to document the current condition of the sites. Interim protection methods will include the establishment of a temporary buffer zone and having an archaeological monitor on hand during grubbing and grading activities while long term protection measures will include the establishment of a permanent buffer zone and the landscaping and maintenance of that permanent buffer.

### ***Detailed Mapping Procedures***

In response to the prior landowners request for the DLNR-SHPD's approval of grubbing and grading permits, the SHPD commented that while the inventory survey maps were sufficient to show the general outline of the sites and features located on the subject property, they would not be "particularly useful in monitoring the long-term integrity and condition of these sites" (LOG NO: 2003.2461; DOC NO: 312MM08). It was therefore recommended that more detailed mapping take place at sites to be preserved in order to "supply a baseline set of observations" to be used in monitoring the condition of the sites over time. Therefore, detailed mapping will be conducted at Sites 8024, 8026, 8027 and 8028 (including portions of Site 21391). In order to obtain the requisite detail each individual site will be mapped at a scale of a minimum of one inch being equal to two meters and when possible at a scale of one inch being equal to one meter.

### ***Interim Protection Methods***

As stated above, Sites 8024, 8026, 8027, 8028 are located along the western boundary of the subject property and each is partially enclosed by Site 21391 (or remnants of that site). In order to ensure the protection of these sites during the operation of heavy equipment in the early stages of development, prior to the commencement of any ground disturbing activities, temporary construction fencing will be erected surrounding the area in which these sites are located. A buffer zone measuring 10m in width will be established surrounding the sites and construction fencing will be placed around the perimeter of that zone (see Figure 4). Because the western side of these sites is immediately adjacent to Ali'i Dr., it will be impossible to establish a 10m buffer along this side. Therefore, along Ali'i Dr., construction fencing will be placed along the western side of Site 21391 (or its remnants) between the roadway and the sites.

A qualified archaeologist will then conduct an on site pre-construction briefing with the construction crew in order to make the locations of the recommended preservation zones known to the construction crew. Recommendations have also been made for an archaeological monitor to be on site during all grubbing and grading activities (Moore & Kennedy 2004).

### ***Long Term Preservation Measures***

Following the operation of heavy equipment on the subject property, permanent buffer zones measuring 20ft (6.1m) in width will be established surrounding the preserved sites. Within the preserved areas including the permanent buffer zones, all non-indigenous vegetation will be cleared by hand. Ground alteration within the interim buffer zones will be allowed only after the invasive vegetation is cleared from the preserved areas and the detailed mapping is completed. The permanent buffer zones will then be landscaped with indigenous flora such as *ti* (*Cordyline terminalis*), *noni* (*Morinda citrifolia*), *hala* (*Pandanus odoratissimus*) and *naupaka* (*Scaevola sericea*). In order to maintain the protection of the preserved sites, it will be necessary to implement several provisions.

- Provisions will be made for the routine maintenance of the preserved areas and the landscaped buffer zones.
- Provisions shall be made for the routine stabilization of the portions of Site 21391 that run along Ali'i Drive.
- Provisions shall be made for a yearly inspection of the preserved sites. A photographic record of the current condition of the sites shall be prepared in association with the proposed detailed mapping which, together, will serve as a baseline for the yearly inspections. The landowner shall keep and maintain records of these inspections.
- Provisions shall be made to allow access to the preserved sites for recognized ethnic organizations and/or individuals for whom the historic properties are of significance.

## Conclusion

Archaeological Consultants of the Pacific, Inc. has prepared this preservation plan for a property located on Ali'i Drive in Kaunalumalu Ahupua'a, North Kona District on the Island of Hawai'i. Previous archaeological investigations conducted on the subject property have documented the presence of 21 sites considered significant to the interests of historic preservation (Haun & Henry 2002). Recommendations have been made for the preservation of several permanent habitation site complexes as well as the probable *heiau* and two burials (along with adjacent structures). Preservation will take the form of the detailed mapping of portions of the preserved areas as well as the avoidance and protection of the sites to be preserved by establishing temporary buffer zones during developments involving the operation of heavy equipment and permanent buffer zones for long-term protection. The preservation of the recommended sites will ensure the protection of significant historic properties that are known to exist on the subject property and help mitigate the effects of development on those sites.

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# **ENVIRONMENTAL ASSESSMENT**

## **Royal Ali‘i Planned Unit Development**

TMK: (3rd) 7-7-04:57 & 58

Kaunalumalu, North Kona District, Hawai‘i Island, State of Hawai‘i

### **Appendix 3**

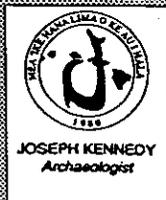
#### **Archaeological Studies and SHPD Correspondence**

#### **Part C – Archaeological Monitoring Plan**

**AN ARCHAEOLOGICAL MONITORING PLAN  
FOR A PROPERTY LOCATED AT TMK: 7-7-04: 57 & 58  
IN KAUMALUMALU AHUPUA'A, NORTH KONA DISTRICT,  
ISLAND OF HAWAII  
REVISED DECEMBER 2004**

**Prepared for: Mr. Larry Smith  
Larry R. Smith Construction, Inc.  
77-6393 Ali'i Dr.  
Kailua-Kona, Hawaii 96740**

**Prepared by: Archaeological Consultants of the Pacific, Inc.  
James R. Moore, B.S.  
Joseph Kennedy, M.A.  
59-624 Pupukea Road  
Haleiwa, Hawaii 96712**



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**An Archaeological Monitoring Plan  
for a Property Located at TMK: 7-7-04: 57 & 58  
in Kaunalumalu Ahupua'a, North Kona District,  
Island of Hawai'i**

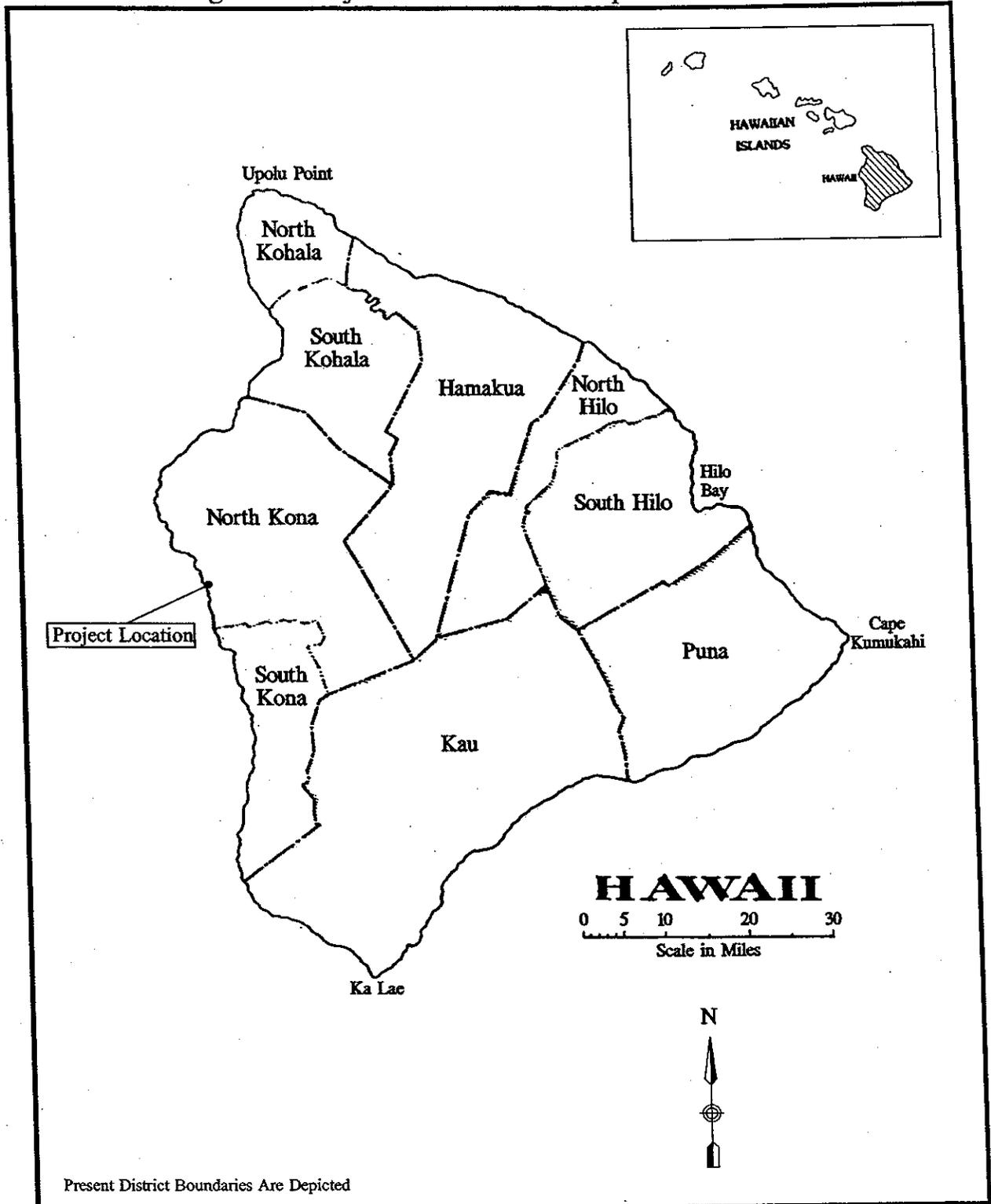
**Section 1: Introduction**

At the request of the landowner, Mr. Larry Smith, Archaeological Consultants of the Pacific, Inc. (ACP) has prepared this plan for the archaeological monitoring of all grubbing, grading and below grade construction activities associated with the development of a private property located on Ali'i Drive in Kaunalumalu Ahupua'a, North Kona District on the island of Hawai'i (see Figure 1). Previous archaeological investigations conducted on the subject property have documented the presence of 21 sites considered significant to the interests of historic preservation (Haun & Henry 2002). Sites on the property include a probable *heiau*, permanent and temporary habitation structures, agricultural features, ranching walls and human burials.

Recommendations have been made for the preservation of several of the permanent habitation site complexes as well as the probable *heiau* and the two burials (along with adjacent structures). The remaining sites will be directly or indirectly impacted by future improvements to the property and will be the subject of archaeological monitoring during all ground disturbing activities. The archaeological monitoring of all ground disturbing activities will help mitigate the effects of those activities on cultural properties that are known to exist as well as those that may be encountered during development.

This plan briefly summarizes the information available concerning the archaeological sites known to exist on the property. In addition, the methodology of archaeological monitoring is described. Recommendations are also made regarding the treatment of significant historic properties and/or cultural deposits that may be encountered during archaeological monitoring. Details concerning the preservation and the burial treatment of the sites to be preserved will be presented in separate documents.

Figure 1: Project Location on a Map of Hawaii



Present District Boundaries Are Depicted

Kaunalumalu Monitoring Plan TMK: 7-7-04: 57 & 58

after: Spriggs and Tanaka 1988

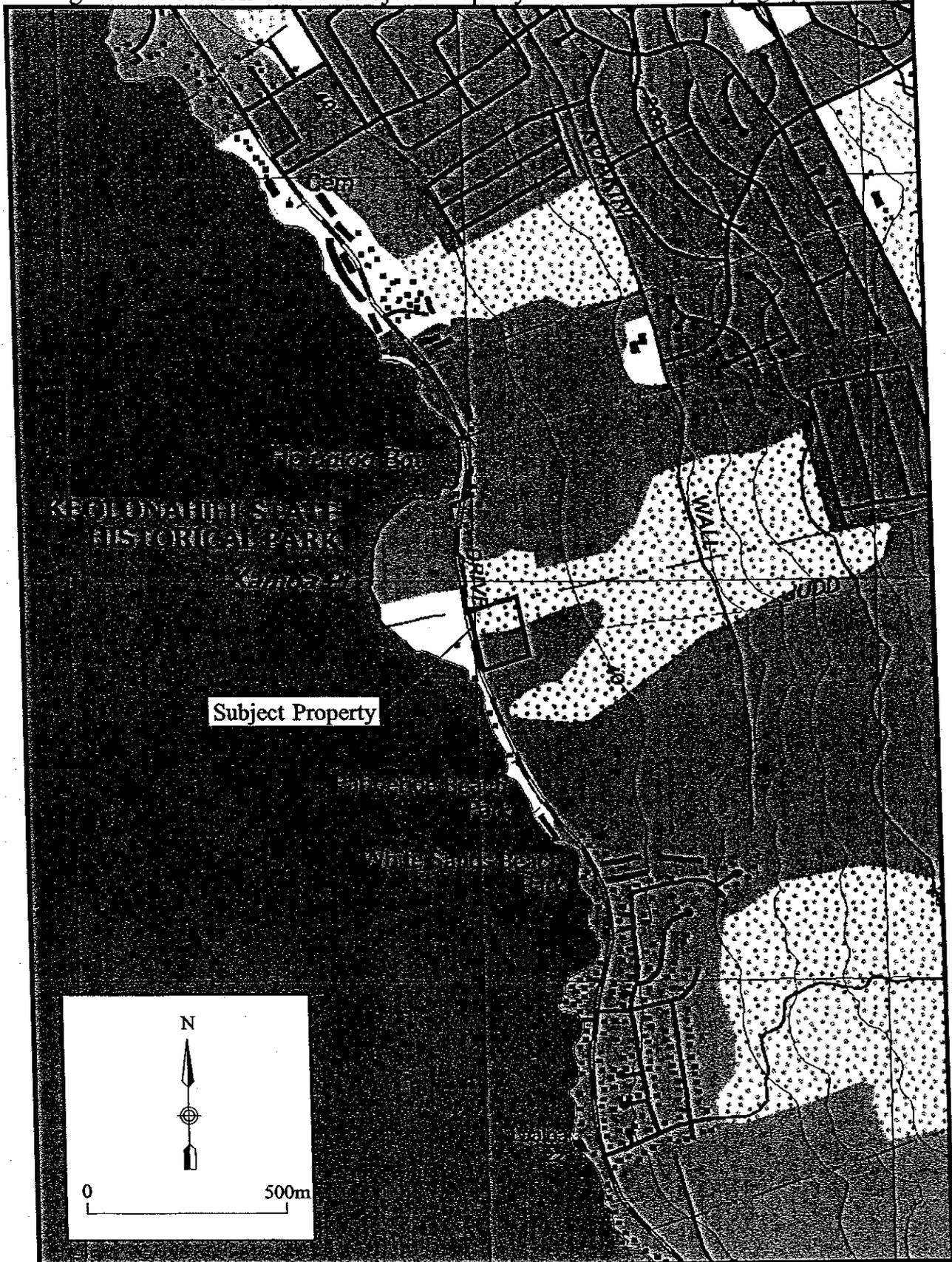
## Section 2: Physical Setting

The current subject property (TMK: 7-7-04: 57 & 58) consists of a roughly rectangular parcel located on Ali'i Drive near Kamoia Point and along the boundary between Kaumalumu and Holualoa 4<sup>th</sup> Ahupua'a (see Figures 2 & 3). The parcel measures approximately 163 meters (m) in length (north to south) by 134m in width (east to west) covering an area of 5.49 acres. Elevation of the subject property ranges from 10 to 20 feet (ft) above mean sea level (AMSL). The southwestern corner of the parcel is located less than 50m from the coast while the northeastern corner is just over 250m from the coast.

Much of the subject property is reported to have been disturbed by modern bulldozer activity (see Figure 4). According to Haun and Henry (2002:1), vegetation in the disturbed areas of the subject property consists of *haole koa* (*Leucaena leucocephala*) with assorted grasses and vines. Vegetation in the undisturbed portions of the subject parcel was said to consist of *kiawe* (*Prosopis pallida*), *panini* cactus (*Opuntia ficus-indica*), *haole koa* and vines.

According to the *Soil Survey of the Island of Hawaii*, soils on the subject property consist of the Kaimu Series of extremely stony peat (Sato, Ikeda, Paeth, Smythe & Takehiro 1973). Soils actually encountered on the subject property during the inventory survey investigations differed somewhat from those expected consisting of silts or silty loams (Haun & Henry 2002). Located in a dry leeward climate, rainfall on the subject property averages between 30 and 40 inches a year and the mean annual temperature is approximately 75° Fahrenheit (Armstrong 1973). There are no streams or intermittent water channels passing through this portion of Kaumalumu.

Figure 2: Location of the Subject Property on a U.S.G.S. Topographic Map

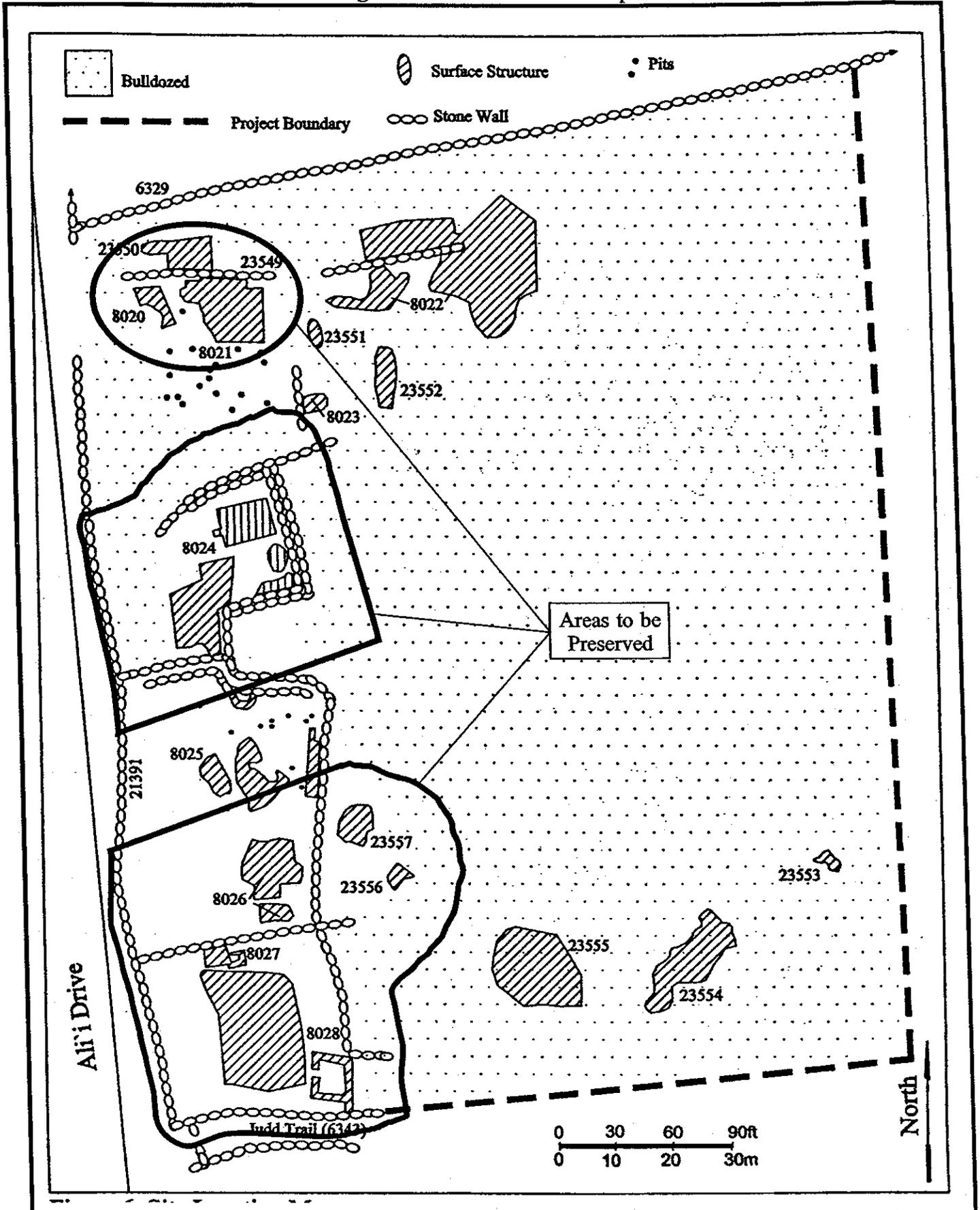


Kaunamalumu Monitoring Plan TMK: 7-7-04: 57 & 58

source: U.S.G.S. 7.5 Minute Series (Topographic)  
Kealakekua Quadrangle 1996



Figure 4: Site Location Map



### Section 3: Summary of the Sites Located on the Subject Property

Several previous archaeological surveys have taken place on or included portions of the current subject property (Hammatt 1980, Hommon 1982, Barrera 1991 and Haun & Henry 2002). Those investigations documented a total of 21 sites comprised of 75 individual features (please note; because the wall forming the southern boundary of Site 8028 is on the property boundary, it is believed that the Judd Trail [Site 6343] is actually off the subject property. It will not be discussed further in this document). Rather than quote the descriptions of the sites from previous documents, a summary of the sites identified is presented in Table 1 (a reproduction of the summary originally prepared by Haun & Henry). The reader is referred to Haun and Henry (2002) for the complete site descriptions as well as the inventory survey excavation results.

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The inventory survey report had originally made recommendations for the preservation of the two burial sites along with adjoining/adjacent sites (Sites 8020, 8021, a portion of 23549, 23550, 23556 & 23557), the probable *heiau* (Site 8024) and several walled habitation sites (Sites 8025, 8026, 8027 & 8028)(Haun & Henry 2002). In addition, data recovery was originally recommended for Sites 8022, 8023, 23552, 23553, 23554 and 23555. No further work was recommended for the remaining sites (Sites 6329, 23549 & 23551).

Following the submission of the inventory survey report, ownership of the subject property has changed hands and a series of discussions have been held between the various landowners, the DLNR-SHPD and ACP (acting on the behalf of landowners). As a result of these negotiations, the recommended mitigation treatments were revised.

One facet of the discussions was the placement of an access easement onto the subject parcel. In order to provide reasonable access to the *mauka* portion of the property, it was determined that a corridor passing through Site 8025 would have the least adverse effect on the significant cultural resources located on the property. Therefore, the recommended treatment of Site 8025 was changed from preservation to data recovery (Moore & Kennedy 2004). As a result, sites which will be impacted (either directly or indirectly) by the proposed developments include Sites 6329, 8022, 8023, 8025, 23551, 23552, 23553, 23554, 23555, a portion of Site 8021, a portion of Site 21391 and a portion of Site 23549.



## Section 4: Expected Finds

It has been determined that twelve of the sites previously identified on the subject property will be directly or indirectly impacted by grubbing, grading and below grade construction activities. Subsurface testing at several of these sites yielded a variety of culturally deposited materials. Based upon the types of sites present on the subject parcel and the results of previous subsurface testing, the types of cultural materials which may be encountered during development can be summarized.

Sites 6329, 21391 and 23549 consist of bi-faced core filled walls which are believed to have been associated with post-Contact ranching activities. It is unlikely that significant cultural materials would be encountered in the event that construction activities directly impacted these structures. Sites 8022, 8023 and 8025 consist of permanent habitation complexes. Subsurface testing at Sites 8022 and 8025 yielded a relatively small but diverse assemblage of culturally deposited materials. Therefore, it is likely that construction activities will disturb additional cultural materials at these sites. Sites 23551, 23552, 23553, 23554 and 23555 consist of single feature sites interpreted as having agricultural, habitation and/or indeterminate functions. Each of these sites is located in areas previously disturbed by bulldozing activities. Prior excavations at Sites 23553 and 23555 yielded a diverse assemblage of culturally deposited materials. Therefore, it is likely that construction activities will disturb additional cultural materials at these sites. Finally, Site 8021 consists of a habitation complex including a human burial and 19 excavated agricultural pits/depressions. Only the excavated depressions will be impacted by construction activities with the burial and habitation features scheduled for preservation. Because the excavated depressions are believed to have been agricultural in nature, it is unlikely that significant cultural materials would be encountered during construction activities.

As summarized above, it is known that culturally deposited materials exist at sites which will be impacted by proposed improvements. Therefore, it is expected that additional cultural materials will be encountered during construction activities. The types of materials which could be encountered include marine shell midden, faunal remains and artifacts of both traditional and historic manufacture. Because several of the sites are believed to have been permanent habitations, the density of these materials could be substantial in places. In addition, because human remains have been encountered at sites located on the subject property, it is also possible that burials may be encountered during construction activities.

## **Section 5: Methodology of Archaeological Monitoring**

Archaeological monitoring of the subject property will be under the supervision of the Principle Investigator Joseph Kennedy, M.A.. Fieldwork is expected to commence following the approval of this monitoring plan as well as the approval of a separate preservation plan and the issuance of grubbing and grading permits.

Prior to the commencement of ground disturbing activities, temporary construction fencing will be erected surrounding the areas recommended for preservation. In order to protect the sites recommended for preservation, three areas will be delineated by the construction fencing as prescribed in the preservation plan. The first is a small area in the northwestern corner of the subject property which will enclose Site 8020, a portion of Site 8021, a portion of Site 23549 and Site 23550 (see Figure 4). The second is located along the western boundary of the project area enclosing Site 8024 and a portion of 21391 while the third and final area is located in the southwestern corner of the property enclosing Sites 8026, 8027, 8028, 23556 and 23557 as well as a portion of 21391 (see Figure 4).

The monitoring archaeologist will then conduct a coordination meeting with the construction crew in order to brief the team on the expected finds and plans for monitoring. The monitoring archaeologist will make the locations of the recommended preservation zones known to the construction crew as well as informing the crew on the need for care when impacting previously identified surface structures.

In the event that significant historic sites are encountered, the monitoring archaeologist has the authority to halt construction in the immediate vicinity of the find until the proper authorities are notified and/or proper mitigation measures are undertaken. Construction activities may shift to other areas of the subject property in this event.

The treatment of possible sites encountered is dependent upon the feature type. Previous investigations have demonstrated that cultural deposits are likely to be present at a number of the features which will be directly impacted by construction activities. During the archaeological monitoring of development activities on the subject property including those areas at which the previously disturbed structures are located, the field monitor will visually inspect all ground disturbing activities and rake through excavated materials in order to identify any possible culturally deposited materials.

Because the sites present have already been properly documented, if small amounts of marine shell midden or vertebrate faunal remains are observed they will be noted but not collected. If traditionally manufactured artifacts are recovered, they will be collected, bagged and labeled with the appropriate excavation information. If artifacts of traditional manufacture are collected, the provenience of the find will be documented and, if appropriate, stratigraphic profiles will be recorded and soil samples collected from each stratum identified.

In the event that deposits are encountered containing significant amounts of midden and artifactual materials, ground disturbing activities will cease at that location and archaeological salvage excavations will be conducted. These excavations will be limited to a single 1m by 1m test unit at any individual deposit containing significant cultural materials.

If archaeological salvage excavations are warranted, all sampling will be conducted using standard archaeological methods including the screening of soils using one eighth inch mesh in order to retrieve significant cultural deposits. Profiles of the stratigraphy encountered will be documented and soil samples will be collected from all layers and features encountered, placed in resealable plastic bags and labeled with the appropriate provenience information for use in laboratory analyses. Similarly, all cultural materials will be collected, placed in resealable plastic bags and labeled with the appropriate provenience information for use in laboratory analyses. Carbon samples will be removed *in situ*, when possible, for the purpose of radiocarbon testing. The samples will be collected with trowel or tweezers without coming into contact with human skin, carefully wrapped in aluminum foil in order to prevent the carbon from being exposed to sunlight and to avoid contact with other carbon based materials which would also adversely affect the sample, placed in resealable plastic bags and labeled with the appropriate provenience information.

Laboratory analyses will include a range of diagnostic endeavors. All analyses will be conducted according to standard scientific and archaeological methods and recorded on standardized analysis forms. Soils will be analyzed according to USDA standards in order to obtain a scientific determination of their composition and color. Artifacts will be sorted by type, described in detail, weighed, measured and tabulated with the results presented by provenience in a detailed accession list. Invertebrate faunal remains will be identified to the genus level as possible. Vertebrate faunal remains will be analyzed by ACP personnel with the samples identified to the class level, as possible. The results of all faunal analyses will be prepared by being tabulated and presented by provenience and weight. Ultimately, these analyses will provide information which will help determine the age of utilization and range of activities that likely took place at the sites at which salvage investigations take place.

In the event that human burials are encountered during archaeological monitoring they will be considered inadvertent finds and will be treated in accordance with Chapter 6E-43.6, Hawaii Revised Statutes. The proper personnel at the Department of Land and Natural Resources, State Historic Preservation Division and State Burials Program will be notified and their recommendations implemented.

All materials collected during the monitoring of below grade construction activities on the current subject property will be bagged and labeled appropriately, placed in labeled and inventoried boxes, and curated at ACP facilities located at 59-624 Pupukea Road, Haleiwa, Hawaii.

## **Conclusion**

Archaeological Consultants of the Pacific, Inc. (ACP) has prepared this plan for the archaeological monitoring of the grubbing, grading and below grade construction activities associated with the development of a private property located on Ali'i Drive in Kaunalumalu Ahupua'a, North Kona District on the Island of Hawai'i. Previous archaeological investigations conducted on the subject property have documented the presence of 21 sites considered significant to the interests of historic preservation.

This plan briefly summarizes the information available concerning the archaeological sites known to exist on the property. In addition, the methodology of archaeological monitoring is described. Recommendations are also made regarding the treatment of significant historic properties and/or cultural deposits that may be encountered during archaeological monitoring. The archaeological monitoring of proposed construction activities on the subject property will help mitigate the effects of those activities on cultural properties that are known to exist as well as those that may be encountered during the clearing. Details concerning the treatment of the sites which are recommended for preservation will be presented in separate documents.

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# **ENVIRONMENTAL ASSESSMENT**

## **Royal Ali‘i Planned Unit Development**

TMK: (3rd) 7-7-04:57 & 58

Kaunalumalu, North Kona District, Hawai‘i Island, State of Hawai‘i

### **Appendix 3**

#### **Archaeological Studies and SHPD Correspondence**

##### **Part D – Relevant SHPD Correspondence**

LINDA LINGLE  
GOVERNOR OF HAWAII



**STATE OF HAWAII**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**

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

PETER T. YOUNG  
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August 4, 2004

James Moore  
Archaeological Consultants of the Pacific, Inc.  
59-624 Pupukea Road  
Haleiwa, Hawaii 96720

Log No: 2004.2427  
Doc. No: 0408MM04

Dear Mr. Moore:

**SUBJECT: Chapter 6E-42 Historic Preservation Review, "An Archaeological Data Recovery Plan for a Property Located at TMK: 7-7-04:57, 58 in Kaunalumalu, North Kona District, Island of Hawaii" (June 2004) Kaunalumalu, North Kona, Hawaii Island TMK: (3) 7-7-004:057, 058**

Thank you for your cover letter dated June 3, 2004 and a copy of the above mentioned data recovery plan for our review and comments.

The plan describes data recovery proposals for five sites within the subject property. Sites 8022 and 23552 are situated in the northwest portion of the property. Sites 23554 and 23555, situated close to the Judd Trail in the southwestern portion of the property, and Site 8025, a habitation site situated within a walled complex along the western portion of the property along Alii Drive.

Preservation rather than data recovery was the originally accepted treatment recommendation for Site 8025, as it is part of a contiguous walled complex, one of the last remaining examples of this site type in Kona. However, field visits by your firm and our Kona staff subsequent to the approval of the inventory led to our agreement to allow data recovery of a portion of this site to allow an access route into the property. Planning an access route into the property without impacting any archaeological features has been a vexing challenge, - prior to our inspection it was thought that a previously bulldozed track dating from the 1980's which passes between Sites 8021 and 8024 (a confirmed burial and a possible *heiau*) might present a possible route - however, at this point we agree with your suggestion that it is not acceptable to thread an access drive between these highly significant sites. Therefore, given no viable alternative, we will approve the data recovery of a portion of Site 8025 to allow the landowner to access the property. We greatly appreciate your client's willingness to reduce the access roadway path width from the originally planned 65 feet to 50 feet in width to further lessen the overall impact on this site complex.

EXHIBIT "C"

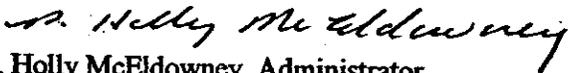
James Moore  
Page 2

Your plan provides a research design for the data recovery of Features A, B, D and G of Site 8022, Features A, B, C, G, H, L, N, O, P, and Q of Site 8025, Site 23552, 23554, and 23555. We believe the specific tasks outlined in your proposal will provide the necessary data to address the research questions. In addition, data recovery will be undertaken at three features we believe were not investigated during the inventory survey, in proximity to Sites 23554 and 23555. These data recovery tasks will be undertaken in accordance with HAR 13 §13-280.

In addition to your Data Recovery Report, we anticipate reviewing a Preservation Plan for non-burial sites, a Burial Treatment Plan for those burials identified during the inventory, and a Monitoring Plan.

If you have any questions please contact MaryAnne Maigret in our Kona office, 327-3690 or Dr. Patrick McCoy, Hawaii Island Archaeologist on Oahu, 692-8029.

Aloha,

  
P. Holly McEldowney, Administrator  
Historic Preservation Division

MM: sky

c: ~~M. Larry Smith, 777 S. Alii Dr., Kailua-Kona, Hawaii 96740~~  
Chair, Hawaii Island Burial Council  
Recognized Descendants

LINDA LINGLE  
GOVERNOR OF HAWAII



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HISTORIC PRESERVATION DIVISION  
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KAPOLEI, HAWAII 96707

November 10, 2004

Mina Ellison  
Archaeological Consultants of the Pacific, Inc.  
59-624 Pupukea Road  
Haleiwa, Hawaii 96712

LOG NO: 2004.3334  
DOC NO: 0410KL06

Dear Ms. Ellison

**SUBJECT: Notice of Council Determination- Site 8021 (feature A), and Site 23556  
Kaumalumu Ahupua'a, North Kona District, Hawai'i Island  
TMK (3) 7-7-04: 57 and 58**

On October 21, 2004, at a duly noticed meeting of the Hawai'i Island Burial Council (HIBC) with a quorum of council members present, the HIBC voted to preserve in place the burials within Sites 8021 (feature A), and 23556 located on the above mentioned property.

Should the landowner disagree with the Council's determination, Section 6E-43(c) of the Hawai'i Revised Statutes provides that Council determinations may be administratively appealed as a contested case. As set forth in the applicable administrative rules, any appeal pursuant to 6E-43(c) must be brought within 45 days of this determination. The landowner may also request reconsideration of the Council's determination. Any request for reconsideration must be in writing and must be submitted within 10 days of this determination letter.

Should the landowner accept the Council's determination as final, the Department of Land and Natural Resources (DLNR) would like to proceed with final approval on a preservation plan for the subject burial sites. The DLNR has 90 days from the date of the Council's determination to approve a preservation plan. The HIBC has requested that when development plans for this parcel are finalized, the developer or a representative come back before the Council to discuss issues such as signage and access for lineal and/or cultural descendants. The DLNR concurs with this request, and will wait for development plans to be finalized prior to approving a preservation plan.

Thank you for your cooperation in this most important matter, and for arranging a site visit for the HIBC to the property to view the sites. If you have any questions or concerns please contact Keola Lindsey of our Burial Sites Program at 327-3692.

Aloha,

  
Melanie Chinen, Administrator  
State Historic Preservation Division

KL:jen

c: Members, Hawai'i Island Burial Council  
Mary Carney, Burial Sites Program

EXHIBIT "D"

LINDA LINGLE  
GOVERNOR OF HAWAII

APR 07 2005



PETER T. YOUNG  
CHAIRPERSON  
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COMMISSION ON WATER RESOURCE MANAGEMENT



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**STATE OF HAWAII**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**

HISTORIC PRESERVATION DIVISION  
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KAPOLEI, HAWAII 96707

April 5, 2005

Joseph Kennedy  
Archaeological Consultants of the Pacific, Inc.  
59-624 Pupukea Road  
Haleiwa, Hawaii 96720

LOG NO: 2005.0649  
DOC NO: 0504MM02

Dear Mr. Kennedy:

**SUBJECT: Chapter 6E-42 Historic Preservation Review, "A Monitoring Plan of a Property Located at TMK: 7-7-04: 57 & 58 in Kaunalumalu" (Moore and Kennedy, 2004) Kaunalumalu Ahupuaa, North Kona District, Island of Hawai'i TMK: (3) 7-7-004:057, 058**

Thank you for your letter dated December 3, 2004 and a copy of this plan for our review comments. The plan was prepared for Mr. Larry Smith.

The 5.49 acre subject property contains sites identified in an approved archaeological inventory survey of the 5.49 acre parcel (*Archaeological Inventory Survey, TMK 3-7-7-004: 57, 58, Land of Kaunalumalu, North Kona District, Island of Hawai'i, Haun and Henry 2002*). Five sites which comprise a complex of features along the seaward portion of the property, in addition to two burial sites, are being preserved and will be subject to the provisions of a separate Preservation Plan and Burial Treatment Plan.

This plan presents your expectations and methodology for archaeological monitoring within the portion of the subject property where twelve of the recorded sites will be directly or indirectly impacted by future construction activities. Three of these sites are bi-faced, core filled walls where your expectations for culturally deposited materials are low. However, for the remaining nine sites, culturally deposited material is known to exist and the potential exists for recovery of a diverse assemblage of cultural material.

The methodology you propose for collection, salvage excavation, and documentation of cultural deposits you may encounter is acceptable and fully compliant with the terms of HAR Chapter 13-279. The monitor will also be responsible for briefing construction crews as to the significance of the interim protective measures on the subject and for halting all ground disturbing activity in proximity to recoverable cultural deposits, or human skeletal remains, should such an event occur.

The plan is considered adequate to meet the requirements of 13-§13-279 and meets with our approval. A Monitoring Report shall be submitted following implementation of this plan.

If you have any questions please contact MaryAnne Maigret in our Kona office, 327-3690.

Aloha,

  
Melanie A. Chinen, Administrator  
State Historic Preservation Division

EXHIBIT "H"

MM:jen

LINDA LINGLE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION  
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June 22, 2005

James Moore  
Archaeological Consultants of the Pacific, Inc.  
59-624 Pupukea Road  
Haleiwa, Hawaii 96720

LOG NO: 2005.1287  
DOC NO: 0506MM14

Dear Mr. Moore:

**SUBJECT: Chapter 6E-42 Historic Preservation Review, "An Archaeological Preservation Plan of a Property Located at TMK: 7-7-04: 57 & 58" (Moore and Kennedy, 2004), Replacement Pages Kaunalumalu Ahupuaa, North Kona District, Island of Hawai'i TMK: (3) 7-7-004:057, 058**

Thank you for your cover letter dated April 25, 2005 and the attached two replacement pages (pp. 6 and 11), which were submitted in response to our review comments on the first draft (Log No. 2005.0651, Doc No. 0504MM01).

The revised pages have satisfactorily addressed our review comments. The buffer around the preserved sites has been increased to twenty feet. Provisions have been added for routine stabilization of Site 21391, annual inspection and maintenance of records by the landowner, and access.

We now consider the plan adequate to satisfy the requirements of HAR 13-278 and accept it as final.

If you have any questions please contact MaryAnne Maigret in our Kona office, 327-3690.

Aloha,

Melanie A. Chinen, Administrator  
State Historic Preservation Division

MM:jen

EXHIBIT "F"

# **ENVIRONMENTAL ASSESSMENT**

## **Royal Ali‘i Planned Unit Development**

TMK: (3rd) 7-7-04:57 & 58  
Kaumalumu, North Kona District, Hawai‘i Island, State of Hawai‘i

### **Appendix 4**

#### **Cultural Impact Assessment**

**A CULTURAL IMPACT ASSESSMENT FOR A  
PROPERTY LOCATED AT TMK: 7-7-04: 57 & 58  
IN KAUMALUMALU AHUPUA'A, NORTH KONA DISTRICT,  
ISLAND OF HAWAII  
TOGETHER WITH REQUESTED INFORMATION  
REGARDING THE LOCATION OF THE JUDD TRAIL  
REVISED JULY 2006**

**Prepared for: Mr. Chris Lau  
Towne Realty, Inc.  
220 S. King St., Suite 2170  
Honolulu, HI 96813-4509**

**Prepared by: Archaeological Consultants of the Pacific, Inc.  
Elizabeth Gregg, B.A.  
Joseph Kennedy, M.A.  
59-624 Pupukea Road  
Haleiwa, Hawaii 96712**



*Inventory Reports \* Data Recovery Reports \* Research Design Documents \* Monitoring \* Due Diligence Work \* Historical Studies \* Cultural Studies \* Burial Treatment Plans \* Preservation Plans \* Interpretive Reconstructions \* Restorations \* Qualified Expert Witness Testimony*

**59-624 Pupukea Road Haleiwa, Hawaii 96712 Phone: 638-7442/Fax: 638-0703  
email: [ACP@hawaii.rr.com](mailto:ACP@hawaii.rr.com) or [Kennedy@lava.net](mailto:Kennedy@lava.net)**

## Abstract

A Cultural Impact Assessment has been conducted for a property located at TMK: 7-7-04: 57 & 58 on Ali'i Drive in Kaunalumalu Ahupua'a, North Kona District on the Island of Hawai'i. The purpose of these investigations was to gather information about cultural practices and cultural features that may be affected by actions subject to Chapter 343, HRS, and to promote responsible decision making. In addition, the County of Hawaii Planning Commission, as part of its review of a Special Management Area Use Permit Application, requested specific information regarding the relationship of the current subject parcel to the nearby Keolonahihi and Keakealaniwahine Complexes as well as information concerning the ownership, location and condition of the Judd Trail. Specifically, the Commission requested that four points be addressed. The information requested and a summary of the findings are presented below.

- **A discussion of this parcel within the context of Kaunalumalu Ahupua'a and also its relationship, if any, to the Keolonahihi and Keakealaniwahine Complexes.**

Archaeological investigations conducted on the subject property have documented the presence of a number of significant historic properties. Being located near the coast in Kaunalumalu Ahupua'a, the property is in a location which would typically be used for habitation and, indeed, several of the structures identified were determined to have likely been house sites. In addition, burials, a probable *heiau* and structures believed to have been agricultural in nature are also present in the project area. Utilization likely occurred over an extended period of time with initial use taking the form of temporary shelters occupied by those visiting the area for the purpose of gathering littoral resources. Over time, permanent habitation sites would have become established near the coast and inland portions of the *ahupua'a* would have been utilized for dryland agriculture. By the 1700's, when the Keolonahihi and Keakealaniwahine Complexes had become established, the Kamoia Point area had become an integrated community covered with a contiguous complex of religious sites, habitations, recreational areas and garden plots. The proximity of the project area to the Keolonahihi and Keakealaniwahine Complexes, the morphological similarities of the features present on the subject property to those found in the nearby complexes and the similarities of the material cultural remains recovered from tested features at these sites indicates that it is highly likely that these sites were intimately related to one another. Several of the significant sites within the project area are to be preserved.

- **The identification of any past or ongoing traditional and customary practices.**

A number of individuals with connections to the Kaunalumalu area were consulted as part of this cultural impact assessment. These individuals are not aware of any ongoing traditional practices currently taking place on the subject property. However, the archaeological evidence indicates that in the past traditional practices such as interring the deceased did take place in the project area and the presence of the probable *heiau* indicates that it is likely that ritualistic activities also occurred on the property. Because the burials and probable *heiau* are within the approved preservation area, in the future recognized individuals and/or organizations will have the right to access the property to perform traditional and customary practices if desired.

- **A description of how the Judd Trail appears on the subject property, an assessment of the ownership of the trail and recommendations concerning potential public access.**

The Judd Trail (State Site # 50-10-37-6343) was constructed between 1849 and 1859 and was intended to link the Kona area with Hilo by the most direct route possible. Its construction was abandoned when portions of the trail were covered by a lava flow in 1859. Only a short segment of the trail remains extant along the southern boundary of the current subject property. The remains of the Judd Trail currently consist of a pair of bi-faced core filled walls running parallel to one another beginning near the edge of Ali'i Drive and extending approximately 30m *mauka* (see Appendices A, C & D). Along the boundary of the project area, there is no evidence of the remains of the trail further *mauka* of the existing remnants. The walls are constructed of angular basalt stones generally measuring between 15 and 30cm in diameter although some larger and smaller stone are incorporated into the structures. The walls vary from 75 to 125cm in width and stand up to 120cm above ground level in height. The walls are spaced between 4 and 5m apart. At the *makai* end of the trail (at Ali'i Dr.) there is a dilapidated wooden gate situated between two short L-shaped extensions of the stone walls.

Regarding the ownership and location of the Judd Trail, the original inventory survey of the subject property claimed that the northern wall of the Judd Trail was situated on the southern boundary of the project area (Haun & Henry 2002:21). Documentation provided by the Department of the Attorney General indicates that the trail is considered "a public trail owned in fee simple by the State of Hawaii" (see Appendix B, page B3) and the Right-of-Way easement for the Judd Trail as depicted on the TMK map of the area runs along the southern side of the southern boundary of the parcel placing the easement off the current subject property (see Appendix C). Subsequent detailed mapping conducted by ACP in association with the approved preservation plan, however, located a corner pin that places the majority (approximately 75%) of the extant remains within the boundaries of the current subject property (see Appendix A). If these walls do in fact represent the true boundaries of the Judd Trail, then this remaining portion of the trail is contained within both a preservation area as well as the southern property boundaries setback zone and is therefore protected and preserved in two ways.

With regards to the public access to the trail, representatives of Na Ala Hele have recommended that an interpretive sign be placed at the trailhead along Ali'i Drive as well as a sign restricting public access due to safety concerns. The Judd Family agreed and has requested that the walls along the first 30m of the trail be restored. It was also recommended that the trail easement be subject to survey and possible realignment to include the remnants of the Judd Trail which are currently located within the preservation zone of the subject property.

- **The development of ethnographic evidence concerning the project area.**

The current assessment took the form of a historic background study and community consultations. The historic background research addresses traditional accounts, land uses and previous archaeological investigations for the area in the vicinity of the current subject property and are discussed in the body of the following text. Community consultations addressed concerns of community members regarding the affect of the proposed construction on places of cultural or traditional importance.

As a result of the current study, recommendations regarding the impact of development on cultural practices and features associated with the project area have been made. Based upon the preservation measures delineated in the approved preservation plan (Moore & Kennedy 2004a) and an absence of objections by the cultural informants, no obstructions to the implementation of the proposed construction project are present with regards to any areas of known cultural or traditional importance. Access to the existing burials and probable *heiau* for the purpose of conducting traditional and customary cultural practices is provided for in the approved preservation plan.

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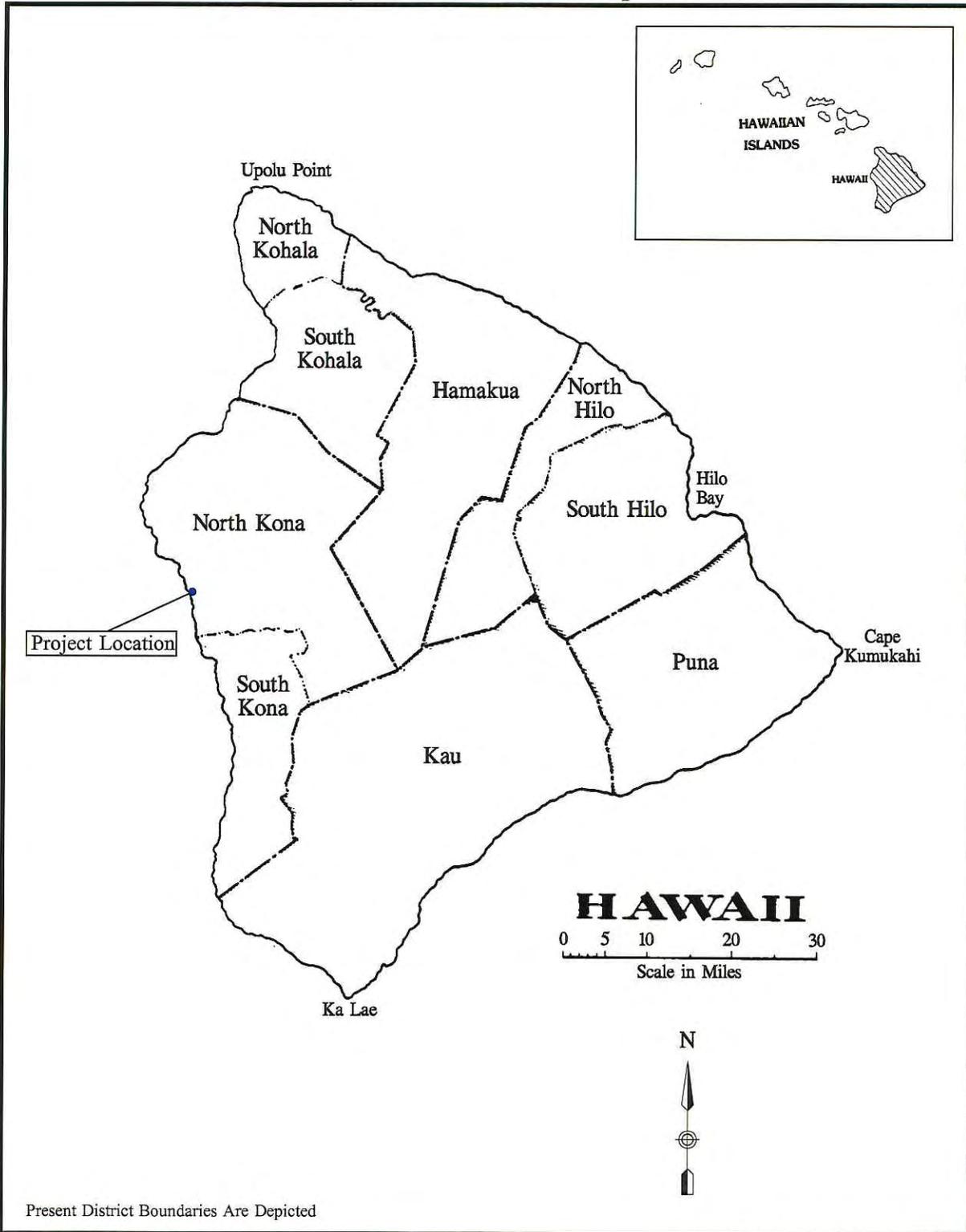
**A Cultural Impact Assessment for a Property  
Located at TMK: 7-7-04: 57 & 58  
in Kaunalumalu Ahupua‘a, North Kona District,  
Island of Hawai‘i  
Together with Requested Information  
Regarding the Location of the Judd Trail**

**Section 1: Introduction**

At the request of Mr. Chris Lau of Towne Hawai‘i Realty and the landowner, Mr. Larry Smith, Archaeological Consultants of the Pacific, Inc. (ACP) has prepared this cultural impact assessment for a property located on Ali‘i Drive in Kaunalumalu Ahupua‘a, North Kona District on the Island of Hawai‘i (see Figure 1). Previous archaeological investigations conducted by Haun and Associates (H & A) on the subject property have documented the presence of 21 sites considered significant to the interests of historic preservation (Haun & Henry 2002). Sites on the property include a probable *heiau*, permanent and temporary habitation features, agricultural features, ranching walls, a portion of the Judd Trail and human burials.

The purpose of these investigations was to perform the tasks and meet the requirements specified by Hawaii Revised Statutes Chapter 343 as administered by the Office of Environmental Quality Control and as a part of the Environmental Assessment process. These investigations were conducted in an effort to promote and preserve the cultural beliefs, practices and resources of native Hawaiians and other ethnic groups.

Figure 1: Project Location on a Map of Hawaii



Kaunalumalu CIA TMK: 7-7-04: 57 & 58

after: Spriggs and Tanaka 1988

## Section 2: Physical Setting

The current subject property (TMK: 7-7-04: 57 & 58) consists of a roughly rectangular parcel located on Ali'i Drive near Kamoia Point and along the boundary between Kaunalumalu and Holualoa 4<sup>th</sup> Ahupua'a (see Figures 2 & 3). The parcel measures approximately 163 meters (m) in length (north to south) by 134m in width (east to west) covering an area of 5.49 acres. Elevation of the subject property ranges from 10 to 20 feet (ft) above mean sea level (AMSL). The southwestern corner of the parcel is located less than 50m from the coast while the northeastern corner is just over 250m from the coast.

Much of the subject property was reported by H & A to have been disturbed by modern bulldozer activity. During field visits prior to the current investigations and during data recovery investigations conducted by ACP, the extent of these disturbances was observed. The *mauka* portions of the subject property displayed evidence of disturbance in the form of chatter marks on a significant number of individual stones and upon small areas of exposed bedrock. While there was no evidence of large push piles of stone or floral debris, nor was there evidence of the blade of a bulldozer having scraped large areas of the ground clean, it does appear that some type tracked vehicle rolled over much of the terrain. In the areas in which archaeological sites were present, this had the effect of smashing individual features and merging the structural components of the sites with the surrounding terrain.

In addition, it should be noted that in the *makai* portion of the subject property in the area between Sites 8021 and 8024 (refer to Appendix A for site locations), one small track was observed which displayed evidence of a bulldozer using its blade. The track extended along the exterior of the northern wall of Site 8024 for a distance of approximately 25m. The track appears to be one blade in width and to have lightly scrapped the ground surface leaving a low drift line (10-15cm in height) along its northern edge and a low push pile of angular basalt stone the width of one blade and about 25cm above ground level (AGL) in height at the tracks' *mauka* terminus.

Vegetation on the subject property remains largely as described by H & A (Haun & Henry 2002:1). While slight differences were observable between the *mauka* and the *makai* portions of the project area, the floral assemblage across the entire property was dominated by *haole koa* (*Leucaena leucocephala*) with scattered mature *kiawe* (*Prosopis pallida*), occasional *panini* cactus (*Opuntia ficus-indica*), at least one thicket of night-blooming cereus (*Hylocereus undatus*) and assorted grasses and vines.

According to the *Soil Survey of the Island of Hawaii, State of Hawaii*, soils on the subject property consist of the Kaimu Series of extremely stony peat (Sato, Ikeda, Smythe & Takehiro 1973). Soils actually encountered on the subject property during the inventory survey and the current investigations differed somewhat from those expected, consisting of silts and silty loams (Haun & Henry 2002 and refer to Section 6). Located in a dry leeward climate, rainfall on the subject property averages between 30 and 40 inches a year and the mean annual temperature is approximately 75° Fahrenheit (Armstrong 1973). There are no streams or intermittent water channels passing through this portion of Kaunalumalu.

Figure 2: Location of the Subject Property on a U.S.G.S. Topographic Map



Kaunalumalu CIA TMK: 7-7-04: 57 & 58

source: U.S.G.S. 7.5 Minute Series (Topographic)  
Kealakekua Quadrangle 1996



### Section 3: Methodology

The current study was conducted in March and April of 2006, under the direction of the Principal Investigator, Joseph Kennedy, M.A.. Community consultations were conducted by Elizabeth Gregg, B.A.. Report preparation was completed by Elizabeth Gregg, B.A. and Joseph Kennedy, M.A..

Research of the historic background of Kaumalualu and Holualoa 4<sup>th</sup> Ahupua'a was conducted including an examination of traditional accounts, land use from earliest occupation to present day, archaeological investigations and a summary of settlement patterns. This research was conducted by means of researching texts and documents including (but not limited to), *Native Planters in Old Hawaii: Their Life, Lore, and Environment* (Handy & Handy 1972); *na mala o kona: Gardens of Kona: A History of Land Use In Kona, Hawaii* (Kelly 1983); *Ruling Chiefs of Hawaii* (Kamakau 1992). Research relating to previous archaeological investigations was conducted at the Department of Land and Natural Resources, State Historic Preservation Division (DLNR-SHPD) library in Kapolei.

Individuals and organizations with expertise concerning cultural resources, practices and beliefs in Kaumalualu, as well as those knowledgeable of the area potentially affected by the proposed construction were identified and contacted, and willing individuals were consulted. Mr. Irving Kawashima of *Na Ala Hele* was contacted via phone and email concerning the Judd Trail and interviewed with Mr. Clement Chang on March 16<sup>th</sup>, 2006. Ms. Ruby McDonald and Curtis Tyler were contacted via phone and email as well as interviewed in person on March 17<sup>th</sup>, 2006 at the Office of Hawaiian Affairs. Mr. Clarence A. Medeiros, Jr., a recognized descendant of the Kaumalualu area was interviewed in person on April 1<sup>st</sup>, 2006. Mr. Jerome Judd and Ms. Jennifer Ching, descendents of the Judd Family, were interviewed on April 2<sup>nd</sup>, 2006. This interview was not recorded as it occurred on site at the trailhead on Ali'i Drive and traffic hindered the use of a tape recorder. Their input and recommendations are summarized in Section 5.5.

A list of interview questions was compiled for the cultural consultations. These included the informant's full name, address, birth date, birthplace, ethnicity, historical and geographical associations with the place in question, and finally, how the proposed construction would affect or physically alter any place of cultural/traditional importance, or access to any such place. Cultural consultations were conducted in person, and most of the interviews were recorded by audio-cassette. This report provides complete transcriptions of all recorded cultural consultations.

## Section 4: Traditional Accounts and Land Use

The subject property is located in Kaumalumu Ahupua‘a near the Royal Center of Holualoa and the Keolonahihi and Keakealaniwahine Complexes. Literally translated, the name Kaumalumu means, “to place shade” but the term also has the meaning “to overlook the faults of others” (Pukui & Elbert 1986). Kaumalumu is bordered on the north by Holualoa 4<sup>th</sup> Ahupua‘a with the *makai* end of the boundary between the two *ahupua‘a* passing across Kamoia Point, an area rich in cultural history. Previous archaeological investigations have revealed that, while the southern portion of Kamoia Point in Kaumalumu Ahupua‘a has been heavily bulldozed, the remains of culturally significant sites are still present across the undeveloped portions of both Holualoa 4<sup>th</sup> and Kaumalumu Ahupua‘a in the vicinity of the current subject property (Hammatt 1980; Hammatt, Borthwick & Chiogioji 1990). Therefore, information concerning the history of both *ahupua‘a* will be reviewed below.

The subject parcel is located immediately southeast of Kamoia Point and the Keolonahihi Complex and south of the Keakealaniwahine Complex which are components of the Holualoa Royal Center. For an in-depth analysis of the Kamoia Point State Historic Park the reader is referred to the 1980 State Parks report entitled “A Narrative Summarizing and Analyzing Historical and Archaeological Documents Gathered on the Kamoia Point State Park” (McEldowney 1980)). The Keakealaniwahine complex is said to have been the residence of the Chiefess Keakealaniwahine, the great-great-great granddaughter of ‘Umi-a-Liloa (I‘i 1959). As a *kapu* chiefess, she was kept apart from commoners and resided in a walled complex located on a small topographic rise just *mauka* of Kamoia Point in Holualoa.

Keakealaniwahine was once the ruler of all Hawaii, and was succeeded by her son Keawe i Kekahialiokamoku. Keakealaniwahine was brought up with the *kapu moe*. As there was no other chiefess her equal, she was kept apart with the chiefs who had the right to the prostrating *kapu [kapu moe]*, and away from places where people were numerous. Her houses, surrounded by a stone wall, stood on an elevation above Keolonahihi in Holualoa, North Kona. She was thought to be a chiefess who would care for the welfare of the people and for the kingdom, and would understand how to benefit it and bring it prosperity. Later, when she became the ruler, she was in charge of all the heiaus on Hawaii (I‘i quoted in Haun & Henry 2002).

Her mother, Keakamahana, was a *kapu* chiefess as well and of the *pi‘o* rank because her parents were brother and sister. She despised the first daughter and mother of her husband, Iwi‘kauikaua, and had them killed which infuriated him. He abandoned his wife and daughter, Keakealaniwahine, and moved to O‘ahu where he remarried and bore a son, Kaneikauaiwilani (Kamakau 1992:62). When Kaneikauaiwilani was grown, he moved to the island of Hawai‘i to marry his half sister Keakealaniwahine. From this union a son, Keawe, and daughter, Kalanikauleleiaiwi, were born and became chief and chiefess of Kona and Kohala, succeeding their mother.

At some point during the reign of Keakealaniwahine she was exiled for two years in Kaunakakai, Moloka‘i as punishment for her attempted murder of the Hilo chief Kua‘ana-a-‘I. On a religious tour of the island she was accompanied by the Hilo chief ‘I and his son, Kua‘ana, ‘I fell ill and died, and fearing that the defilement of his father’s death would disrupt the ceremonies, Kua‘ana left the tour. Thinking that he had deserted the tour, Keakealaniwahine

ordered him to Kawaihae to be drowned. The Kohala chiefs sympathized with Kua‘ana and allowed him to escape. As revenge, he went with his army to Honua‘ula in Waipi‘o where Keakealaniwahine was residing and captured her and her court sending them all into exile on Moloka‘i (Kamakau 1992).

According to Kalakaua in *The Legends and Myths of Hawai‘i* (1972:31), Keakealaniwahine’s rule lasted from approximately 1655 to 1685 and her son and daughter’s joint reign lasted from 1685 to 1720. Keawe, her son, was a ruler known for his love of travel and for fathering many children, “he had many [children] by cheifesses (of high rank), those of lesser rank, those without (rank), and by commoners” (Kamakau 1992:64). Another noteworthy action of Keawe was the construction of Hale-o-Keawe, which was built at Honaunau to house the remains of chiefs (Kamakau 1992:64).

It is supposed that the earliest use of Holualoa as a Royal Center was in the 17<sup>th</sup> century and continued through to the time of Kamehameha I who spent time there during his childhood. Two *heiau* at Kamoia Point are said to have been utilized by Kamehameha for various religious purposes (Haun & Henry 2002). The complex at Kamoia Point was first noted by William Ellis in his 1823 explorations of the Kona coast.

After traveling some time, we came to Kanekaheilani, a large heiau more than two hundred feet square. In the midst of it was a clear pool of brackish water, which natives told us was the favorite bathing place of Tamehameha, and which he allowed no other person to use. A rude figure, carved in stone, standing on one side of the gateway by which we entered, was the only image we saw here (Ellis 1969:118).

Though the name of the *heiau* differs, in 1919 William Stokes described the same area.

Heiau of Keolonahihi, land of Holualoa 4<sup>th</sup>, North Kona: at Kamoia Point, on the south side of the bay; bears 153° 30’, 7100 feet. An enclosure containing two compartments, and an approximately octagonal pool of fresh water in the portion on the west. On the north is what remains of a platform nearly destroyed by the sea. There was nothing in the size or construction which suggested a heiau of any importance. Outside to the east was a long platform suggesting a canoe house, and nearby a pit containing a spring of fresh water. There is little doubt of the identity of this place with that described by Ellis ... Stokes quoted in Hammatt 1980:19).

Just north of Kamoia Point was a favored surf spot of the *ali‘i* around the time of Kamehameha I, and parts of this ceremonial complex have since been interpreted as a surfing *heiau* (Hammatt 1980:19).

The Kamoia Point complex extends *mauka* in Holualoa Ahupua‘a including a large stone structure and enclosure described as a *pu‘uhonua* or place of refuge. Through interviewing Ruby McDonald, it was found that Keakealaniwahine herself was the *pu‘uhonua* and had the power to absolve people of their wrongs. John Papa I‘i refers to this structure as “Keakealaniwahine’s dwelling place, for her parents, Ke‘akamahana and Iwi‘kauikaua, resided there” (I‘i 1959:6). While there are traditional accounts of the significance of Holualoa as a royal center, little has been said of possible royal usage of Kaumalumu Ahupua‘a. However, including sites documented on the subject property, there is significant archaeological evidence of fairly dense agricultural and habitation structures. Interviews with descendants of the area indicate that the

structures of Holualoa 4<sup>th</sup> and Kaumalumu are all believed to be contiguous. It is a possibility that these habitation sites were occupied by the retainers serving the *ali'i* who resided nearby.

The Keolonahihi Complex is believed to have housed a women's *heiau*. McEldowney (1980) cites the Board of Genealogy as describing Keolonahihi as being the site where Keakealaniwahine performed the *oki piko* (naval cord cutting ceremony) and bestowed the *kapu wahi* on her grandson, Ke'eumokunui. This was said to have happened when he was 10 years of age and so the *oki piko* may have simply served as a reenactment to reaffirm the rank of the child when he was bestowed with the high honor of the *kapu wahi*. However, due to the geographic proximity of Keakealaniwahine's residence it is plausible that as an infant, Ke'eumokunui's naval cord was cut at Keolonahihi (McEldowney 1980:31).

Other *heiau* noted in the Keolonahihi Complex were recorded by Ellis. He attributes the use and/or construction of Kanekaheilani and Hale o Ka'ili Heiau to Kamehameha. Hale o Ka'ili was the structure in which Kamehameha's war god, Ka'ili, who is also referred to in some texts as Kuka'ilimoku ("Ku-island-snatcher"), was kept. His image was traditionally represented by a figure with a wicker base covered in red feathers, and could easily accompany a *kahu* or *ali'i* into battle (McEldowney 1980:45). McEldowney further states that:

Judging from the few Hale o Ka'ili that have been recorded and the general function of this god, they were probably located in the proximity of major chiefly residences or near major *heiau* at which the periodic rituals specific to Kuka'ilimoku could be performed (1980:46).

Ellis noted that the actual place where the image stood was distinct from the *heiau* itself, though still contained within the Keolonahihi Complex (1969:119).

During the Great Mahele, Kaumalumu was given to William P. Leleiohoku (LCA 9971H) a high chief. He was the son of Kalanimoku and the adopted son and heir to John Adams Kuakini. In 1850, immediately following the Great Mahele of 1848, the government allowed foreigners to own land, and all parties including government, chiefs, and commoners sold and bought lands the result being a concentration of land in the hands of foreigners. To protect the interest of former tenants (*hoa'aina*) or commoner farmers who worked for chiefs and landlords (*konoiki*), such tenants were allowed to claim and register their *kuleana*; i.e., lands they actually cultivated for the purpose of providing food for themselves and their families, excluding land they farmed for the purpose of selling the produce (Kelly 1983:47). For a detailed account of LCA's the reader is referred to Haun & Henry (2002).

Between 1849 and 1859, the Judd Trail was constructed beginning at the Government Beach Trail (Ali'i Drive) and extending approximately 16 miles *mauka* terminating approximately two miles above the Ahu-a-Umi between Mt. Hualalai and Mauna Loa. Initially the trail was intended to connect the government center of Kailua-Kona and the port of Hilo but was interrupted by a lava flow from Mauna Loa in 1859. Construction of the trail was overseen by Garrit Parmely Judd and Kinimaka and carried out using prison laborers (Haun & Henry 2002). The Judd Trail was used for cattle transport, as well as access to upland farming and littoral resources.

At least 12 archaeological studies have taken place in Kaumalumu Ahupua‘a and there has been an extensive amount of research done in the adjacent *ahupua‘a* of Holualoa 4<sup>th</sup> including the Keakealaniwahine and Keolonahihi Complexes. One of the earliest investigations was by Reinecke in 1930 who conducted a coastal survey of the Kona area. From the northern boundary of Pahoehe Ahupua‘a to Kamoia Point he noted several modern house sites and enclosures, a possible fishing shrine, a well and a habitation site. On a ridge crest in Kaumalumu he described three modern house platforms, a palm grove, a canoe landing and a platform for canoe storage.

Rosendahl (1974) and Hommon (1980) conducted surveys and excavation on a six acre parcel on the *makai* side of Ali‘i Drive adjacent to the subject property. They located a complex of enclosures and platforms interpreted as a post-Contact habitation complex. Excavation revealed a re-deposited pre-Contact layer.

Hammatt (1980) and Hommon (1982) surveyed a parcel in which nine sites with 14 features were identified. These sites were clustered along the north and western portions of the subject property as the remainder of the parcel had been bulldozed. Two of the features were identified as possible burial platforms while the rest were interpreted as habitation features.

Finally, in 2002, H & A conducted an Inventory Survey of the current subject property and documented 21 sites of interest to historic preservation, some with dual functions. The sites included 3 ranching walls, a portion of the Judd Trail, one probable *heiau*, 2 burials, 13 habitation sites, 3 agricultural sites, and one indeterminate terrace (Haun & Henry 2002). The subsequent Data Recovery by ACP, Inc. documented an additional site containing 3 features.

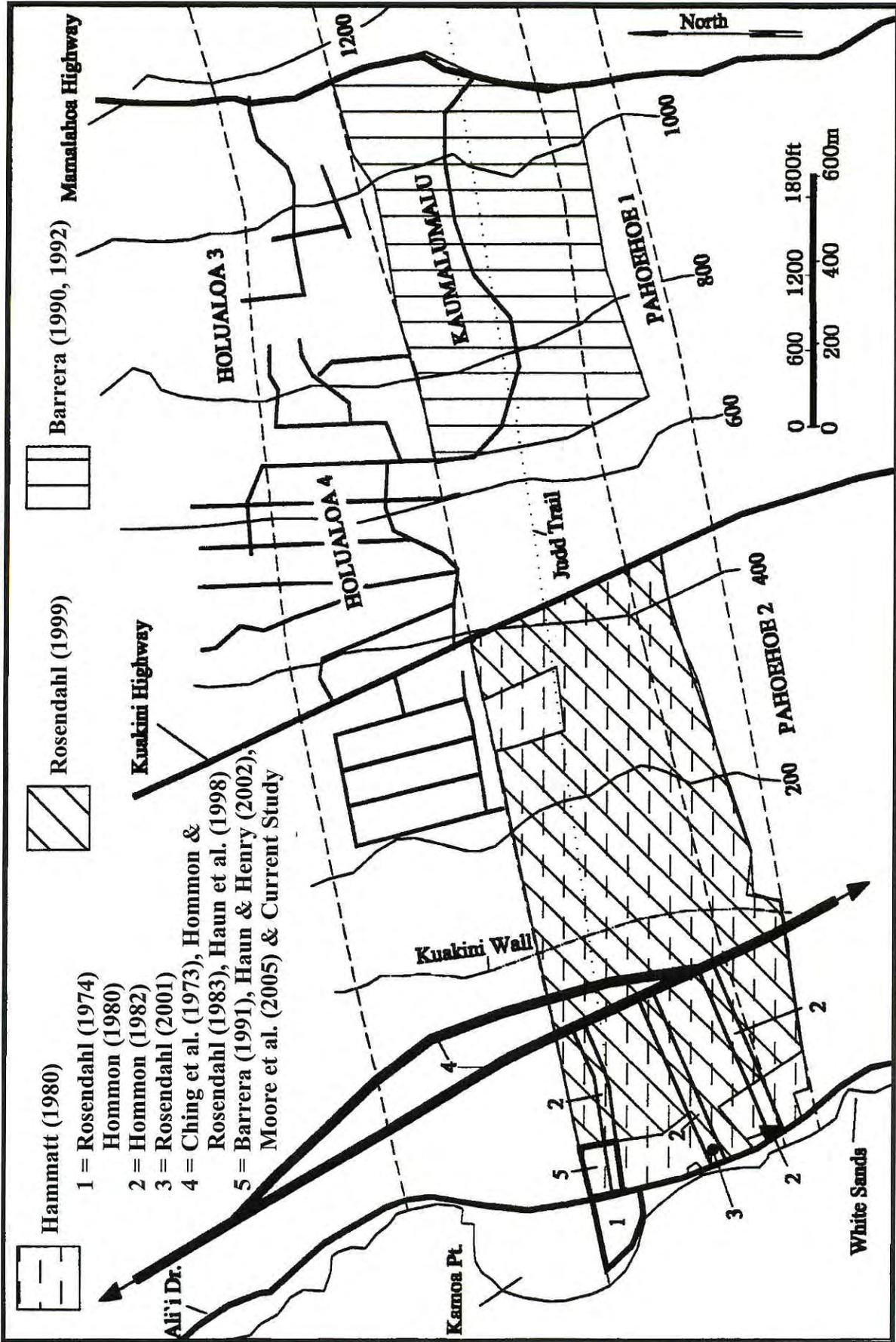
The remaining studies are included in Table 1 adapted from the inventory survey of the subject property by H & A (2002). The locations and geographical extent of these studies is depicted in Figure 4, which was also adapted from H & A (Haun & Henry 2002).

**Table 1: Previous Archaeological Studies**

Study	Study Type*	# of Sites	# of Feas.	Hab. Feas.	Ag Feas.	Burial Feas.	Ritual Feas.	Trail	Historic Feas.	Misc Feas.
Rosendahl (1974) Hommon (1980)	RN/EX/ AS/IN	1	24	23		1				
Ching et al. (1973) Hammatt (1980) Hommon (1982) Barrera (1991) Rosendahl (1999 & 2001) Haun et al. (1998)	RN/IN/ DR/AS	88	543	59	449	5	1	2	25	7
Barrera (1990 &1992)	IN/DR	5	163	3	126				2	
Haun & Henry (2002) Moore et al. (2005)	IN/DR	21	68	27	38	2	5	1		

\* RN = Reconnaissance, EX = Excavation, AS = Assessment, IN = Inventory Survey, DR = Data Recovery

Figure 4: Location of Previous Archaeological Studies



Kaumalualu Cultural Impact Assessment TMK: 7-7-04: 57 & 58

adapted from: Haun & Henry 2002

## Section 5: Community Consultations

Seven knowledgeable individuals were consulted regarding their concerns about the affect of the proposed construction on places of cultural or traditional importance. Four groups were represented by these individuals including Na Ala Hele, descendants of the Judd Family as well as cultural and lineal descendants of Kaumalumu and Holualoa 4<sup>th</sup> Ahupua'a. Interviews with these individuals were conducted in person. Prior to the interviews, detailed mapping of sites and features included in the preservation area was performed and is presented in Appendix A. Maps were presented to the informants depicting the limits of the project area and features within the preservation area. The concerns of the individuals are discussed below. A complete transcription of each interview follows a brief summary.

### Section 5.1: Mr. Clarence A. Medeiros, Jr.

Mr. Clarence A. Medeiros, Jr. expressed his knowledge of and association with the project area and Kaumalumu Ahupua'a. Mr. Medeiros, a native Hawaiian, is a lineal descendent of Keakealaniwahine, recognized by the DLNR-SHPD and the Hawai'i Island Burial Council. He spent time in the area in the 1960's and 1970's working with his father and uncle for the Dillingham Ranch which ran cattle near the subject property. Mr. Medeiros has an extensive genealogy of his family lineage as well as that of the *ali'i* of the island. He states that while the amount of time which Kamehameha lived in Holualoa was probably limited, it likely remained one of his favored locations for surfing. Mr. Medeiros also expressed a knowledge of two caves located *mauka* of the subject property. The largest, which is located northeast above the Keakealaniwahine complex, was indicated by his father to contain burials as well as a large population of Hoary bats (*Lasiurus cinereus*).

Mr. Medeiros expressed a concern that mechanical clearing of the subject property may have an impact on the bats food source and recommended that some of the vegetation be left in place to mitigate this. Concerning the preservation of the Judd Trail, he recommended that developers with portions of the Judd Trail adjacent to their properties be required to help restore and maintain those sections thus alleviating some of the burden which would fall upon the State.

#### *Interview with Mr. Clarence A. Medeiros, Jr.*

**Name:** Clarence Medeiros, Jr.

**Address:** not available

**Birth date:** not available

**Birthplace:** Kona

**Ethnicity:** Part Hawaiian

**Historical and Geographical Association with the area:**

CM: "I am a direct descendent of Keakealaniwahine, besides that the person who actually got the land commission for the Holualoa section, Loe, is also a relative. The parcels adjoining to the south of this in the Kaumalumu area, I descend or I am a lineal and collateral descendent to

the people who lived in this Kaumalumu area, which I submitted to the Historic Preservation. So not only in the Holualoa but the Kaumalumu and Pahoe area. And I can explain to you the relationships of these *ahupua'a*."

EG: "Right along Ali'i Drive in the makai portion of the subject property there is an approved preservation area shown here on the map. This is the intact portion of the Judd Trail [in the southwest corner]. Have you ever seen the trail construction extending all the way across the subject property?"

CM: "I may have seen it, but let me explain how I had been in this area. In the mid-sixties and in the early seventies, my dad and my uncle was the manager, first the foreman and then the manager for the Dillingham Ranch. They ran cattle in here. Sometimes the cattle would jump over the fence and I would help them. We would rope them, *kuni ole* (lit. without brand - wild cattle), we would call them *kuni ole*, and we would catch them sometimes right over here on the road. So I may have jumped that wall once or twice or came across the trail once or twice, but there were walls at certain points."

EG: "Was there anyone living in this area, on the subject property?"

CM: "No, not that I know of, when we were there. Only to the north of it ... So it's real important to preserve this trail. It was there [on the subject property] I heard my uncles, they're all deceased, and my dad, he is deceased, and they all talked about this trail. The people that built this Judd Trail, Kinimaka, who oversaw the project, is a lineal descendent of mine."

EG: "Were you born and raised in this area or just employed there?"

CM: "No, I wasn't employed by Dillingham, but I would come home on leave when I was in Vietnam and stuff and I would take R&R and I would go on my days that I was home to help them drive cattle and stuff. Or in high school time in the sixties I would go and help them on the weekends ..."

When it [the burial announcement for the subject property] appeared in the newspaper for the descendancy of the burials, this guy John Kaelemakule, born in Kaumalumu 1854, was the son of Henry Clark. So apparently they were there, his parents were there, pre-Mahele time. And I come from this guy Henry Clark, so this is my great-great-great uncle, his sister is who I descend from. But my side of the family was born in the South Kona area. Henry Clark was from England and his wife Ka'akaona'ali'i, she comes from the Kinimaka lineage, the ones who oversaw the Judd Trail. And her relative was the one named Loe who was awarded the *ahupua'a* during the Mahele. She was the awardee for the Holualoa area and that encompasses the Keakealaniwahine complex, 600 some acres. So we are really all tied up in this web of family that comes from there. This is the female/sister that I come from [Kaehamalaole], they were brother and sister, same father different mothers.

We can look at the charts, make it simpler. I have the genealogy of the chiefs, you can find this in the state archives or the Bishop Museum and it would be the same from Liloa all the way down to Keakealaniwahine. Anyway, keep coming down here, this is Kalakaua's grandfather,

Aikanaka, and he had several wives. So he is a descendant of Keakealaniwahine also. And I come from Aikanaka's second wife, her name is Aukai (Keliiaukai). Kalakaua's line comes from this one Kama'e, she's the one who is buried down at the Hokuli'a project on the *pu'u*. But I come from the second wife and they had one son and one daughter and the daughter had a son, and you can follow that line all the way to my family. And that is my connection to Keakealaniwahine."

EG: "So did Kamehameha live in the Holualoa area?"

CM: "Kamehameha was ... he lived there for a while-but that's where he learned how to surf. There is a surfing *heiau* there. Holualoa was probably one of his favorite places, but it depends who you talk to. One thing I am concerned about is the parcel to the north and the cave there right on the boundary of adjoining parcel 57. My father and my uncle and me used to watch the bats come out of the cave. And somewhere up here above the Keakealani-wahine there is another cave, bigger, that the Hoary bat comes from. So the vegetation in here [the subject property] is their food source. Maybe *ekoa* (*haole koa*) or whatever kind of fruit they have."

EG: "Did you ever go inside the caves up here?"

CM: "No, I never did go in the caves. Only my dad and uncle, cause I heard them talk about it with the bats and some burials inside there. I never been in there but I've seen the bats because we used to go hunt in the evenings just when the sun go down and getting dark you see the bats coming out. Wild pigs used to come and hang out in this area. People started to illegally hunt in this area up here."

EG: "Do you know of any cultural practices that are still going on here on the subject property?"

CM: "Since I never lived there I cannot tell you if people still use it. The only cultural practice for us was mostly hunting and then I guess people went to cut *kiawe* wood for fires for *imu*. Some people don't have it in their yard so they go to open spaces to collect and this place has been undeveloped for a long time. The older people may have had other uses but they all have left already."

EG: "Do you have any further recommendations for the preservation of this area and the Judd Trail?"

CM: "The buffer zone is good, we don't want anybody building right up to the sites. I think for the Judd Trail, the developers even the one above this property, their contribution for the culture would be to restore the trail and have the walls put back into place. Since they're not going to be adding to the highway like putting a stop light or a left turn. Their contribution to the community where it effects them is to restore, put back, maybe put signs up so the state may not have to spend the money, just oversee the process. And consider the bats in the two caves. If there is fruit trees there that the bats feed off of, whether it be *kiawe* or guava or maybe some other plant, it's best not to destroy that. Whatever it is, to either put back or not destroy their food source."

## Section 5.2: Ms. Ruby McDonald

Ms. Ruby McDonald also expressed her knowledge of and association with the project area and Kaumalumu Ahupua'a. Ms. McDonald, a native Hawaiian, works with the Office of Hawaiian Affairs and was raised in Kona. Her direct familiarity with the Kaumalumu and Holualoa 4<sup>th</sup> Ahupua'a comes from the time she spent with aunts and uncles who lived on the southern part of Kamo Point, though she has extensive knowledge of previously documented traditional and historical accounts as well.

She attested that the area of Kaumalumu *makai* of Ali'i Drive was bulldozed prior to her immediate experience with the area but likely housed features similar to those in Holualoa 4<sup>th</sup> Ahupua'a in the pre-Contact era. This area is a contiguous settlement with great cultural importance. She described several uses for the *heiau* located in Keolonahihi State Park. One was designated primarily as a surfing *heiau* while the other, located closer to the *ahupua'a* of Kaumalumu, was used to house Kamehameha's war god, Ka'ili, for training warriors and for the *hoau* marriage ceremony which insured paternity. The name Kamo literally means "the chicken" and it has been hypothesized that this area derived its name from the cocks-comb shape of the warrior's hats. However, Ms. McDonald speculates that the name may actually refer to the shape of the breaking waves rather than the warriors that are said to have trained there.

The testimony of Ms. McDonald corroborated the documentation that the Kamo Point area was used as a residence and/or recreation area for *ali'i* throughout different periods of Hawaiian history. The *heiau* in the northern portion of the Keolonahihi Complex was indeed a surfing *heiau* and was used by Kamehameha who often surfed at Kamo Point. She suggests that the *kapu* bathing pool located there may have been the place where they washed Kamehameha's remains upon his death.

With regards to the proposed construction having adverse effects on places of traditional or cultural importance, Ms. McDonald was unaware of any cultural practices taking place on the subject property at this time, but requested that the preservation area be made available to cultural practitioners and any other groups which may have a cultural interest in the features present. She also requested that the *loulou* trees located in the southwestern portion of the subject property be left undisturbed. Plants suggested for native landscaping in addition to those noted in the preservation plan include *loulou* and *hau*.

### Section 5.3: Mr. Irving Kawashima and Mr. Clement Chang

Mr. Irving Kawashima and Mr. Clement Chang are representatives of Na Ala Hele and expressed an interest in the subject property as it contains a segment of the historic Judd Trail. They stated that the entire trail all the way to Ali'i Drive is preserved with a 10ft buffer in a fee-simple agreement with the state. Mr. Chang stated that at one time the trail extended all the way to the sea though no formal construction is extant on the *makai* side of the road. The upper portions of the Judd Trail are technically closed to the public due to safety concerns.

Mr. Kawashima confirmed historic accounts that the trail was built primarily for cattle though it was used by farmers and fishermen as well for *mauka/makai* access of agricultural and littoral resources. Initially the trail was supposed to connect Kailua-Kona to Hilo passing between Mt. Hualalai and Mauna Loa, but construction was halted by a lava flow and the trail was never completed. There is speculation that construction also began on the Hilo side with the intent of joining up, though Mr. Kawashima is not aware of any archaeological remnants of this portion of the trail.

Mr. Kawashima suggested that an interpretive sign be placed along Ali'i Drive, as this segment of the trail is a good, intact example of the Judd Trail construction and easily accessible to the public. One concern however, is the impact that this may have on traffic flow. He suggested that a possible one or two car pull off be placed in the area.

#### *Interview with Irving Kawashima & Clement Chang*

**Names:** Irving Kawashima & Clement Chang

**Address:** 19 East Kawili St.  
Hilo, HI

**Historical and Geographical Association with the area:** Representatives of Na Ala Hele trail preservation group

*EG: "The TMK shows other portions of the Judd Trail mauka of the subject area, are those in preservation ...?"*

*IK: "Yeah, there's a 10ft buffer, yeah a no-build buffer all along the length of it. It's actually 14 miles. And we would prefer the same down in here too."*

*EG: "Are these portions in active or passive preservation?"*

*IK: "It is a public trail, but it is preferred that the public not go on the trail until we go in and do a safety hazard check and put in signs. Some of the conditions of the trail up here is not good to walk on because of debris from the land owners and other plantings were put in there that could be hazardous for the people walking."*

*EG: "So the landscaping isn't currently maintained on that portion?"*

CC: "This is the pictures ... It's not so good, see how it was planted in there, it looks like they were throwing all their rubbish from the palm trees inside, so that's something we are going to have to deal with. And then to make it even more complicated they are growing something that is poisonous [oleander] right next to the trail. That has its own concerns. There have been stipulations set on those parcels in the 10ft no-build buffer but people haven't been adhering to it."

EG: *"Within the preservation areas on the subject property, including the Judd Trail, it is going to be required that the land owner clear all non-native vegetation by hand and landscape using native plants ... ."*

CC: "Yes, we do prefer hand clearing, no machinery. We would like to have that 10ft buffer protection for the trail. Any type of landscapings with native plants should not be the type that would eventually encroach onto the trail."

IK: "So the trail is actually in his property?"

EG: *"Yeah, and there is a small portion of it on the south that goes into the next parcel which belongs to Mr. Smith as well. Another question we need to address is to determine who should have ownership of the trail. This upper portion, is that under the ownership of the adjacent land owners?"*

IK: "This whole thing is under fee simple with the State. The State does own the whole length of the Judd Trail in fee-simple."

EG: *"Do you know if the fee-simple area stops at this bulldozed portion at the top of Mr. Smith's property?"*

IK: "No, the whole 14 miles. Here's the abstract that you can have, and some guidelines for treating historic trails. Here in the guidelines, there is the Highways Act of 1892. What this act says, if a trail appears on a map or a deed before 1892 it belongs to the public. And that will confirm that it was prior to 1892. One thing about opening up this trail is you are going to have people walking on it even though we're not ready for the public to go on it. Once this thing gets developed, they're gonna see these rock walls, there are people that recognize these historic trails and they are going to go there regardless. What is really needed down here on Ali'i Drive, is a turn off, because it so close to the traffic zipping by. It needs a small parking area like one or two cars, so people can get off the road and not be in danger of Ali'i Drive. If Mr. Smith could provide that, it would be a great benefit."

EG: *"I was also curious if you would recommend placing any interpretive material such as a sign at this location?"*

IK: "Um, I would like to have an interpretive sign there saying that it is the Judd Trail and some history of why the trail was built. And then underneath that sign we can put something up that says trail closed beyond this point due to hazardous conditions."

EG: *“Could you talk a little bit about the history of the trail?”*

IK: “Okay, um, from what I remember the governor at that time wanted a road or trail connecting Kailua to Hilo, and they set aside funds to build this Judd Trail. And I don’t know how Judd got involved with it but his name is on the trail today. They started to build it and it continued *mauka* between Hualalai and Mauna Loa and they went past ‘Umi’s temple higher up, I think about a couple of miles past ‘Umi’s temple and figured out that there were live lava flows that were coming down through that region up there. So they stopped the project because of the continual eruptions that were going on. For some reason 14 miles sticks in my mind because there was approximately 14 miles of construction. And also, there was talk of people on the Hilo side starting that way in hopes of joining up. I don’t know how firm that is, how true that is.”

EG: *“So there aren’t any physical, archaeological remnants of the trail having been started on the Hilo side as well?”*

IK: “I haven’t seen any remnants on the ground pertaining to the Judd Trail, but I have talked to people over maps, they claim that that’s the Judd Trail. According to the maps of the preservation area on the subject property, I would say that this section is probably the best example of the trail.”

CC: “I’ve also heard that at one time it used to go all the way to the ocean.”

IK: “Oh yeah, across Ali‘i, probably. You know it was used by the cattle drives.”

EG: *“Was that the main purpose of it’s construction?”*

IK: “I don’t know. I’m not sure. You know back in those days Ali‘i Drive was probably a dirt road and the walls kept the cattle in a corridor straight down to the ocean onto the ships. It’s one use of the trail. And, you know, *mauka/makai* access for fishermen and farmers *mauka* would be other uses.”

EG: *“Do you know if this route was used prior to the actual construction of the Judd Trail?”*

IK: “No, I don’t know, could be. It starts off with people walking *mauka/makai*, then they ride horses, and drive carts. So the trail becomes a foot to a horse to a cart trail and for this matter a cattle drive corridor.”

CC: “I think according to the abstract, the abstract would say ... what was found by the abstract as far as why they determined that the trail came under that category.”

IK: “I bet if you went back in those grants it probably mentions some type of use by early Hawaiians.”

## Section 5.4: Mr. Curtis Tyler

Mr. Curtis Tyler was born on O‘ahu, raised in the Kona area and is a lineal descendent of Pahoehoe 3<sup>rd</sup> Ahupua‘a. He has served on the county council for eight years representing a district to the north of the current subject property, and has been active in the community preserving Hawaiian culture for most of his life. He first became familiar with the *makai* portions of Holualoa 4<sup>th</sup> and Kaumalumu Ahupua‘a at the age of eight through spending time exploring with a friend who lived in the area. He claimed that in recent years (5-6 years ago) he was on the Judd Trail, and the parallel walls of the Judd Trail along the southern boundary of the subject property actually continued all the way up to the southeastern property corner. The inventory survey and subsequent mapping associated with site preservation have documented that the surface remains of the Judd Trail terminate approximately 35m east of the southwestern property corner.

Mr. Tyler reaffirmed the historical and cultural importance of this area and that the structures of Holualoa 4<sup>th</sup> and Kaumalumu were at one time contiguous. The two primary reasons he cited were; first that Kamoia Point is a strategic vantage point because the coastal lines of site extend as far north as Kailua Bay and as far south as Kahalu‘u, if not beyond to He‘ia kaupau(?). Second, during times of *ali‘i* residential use there were probably a large group of retainers who needed to live near the *ali‘i* whom they served. This may explain the function of the habitation features located within the preservation area. The close proximity of these features to the old beach road would have allowed easier access to both Kamoia Point and the Keakealaniwahine Complex.

When asked what he thought the impact of development may be in relation to the sites in the current preservation area he stated that he could not make an assessment without knowing the exact development plans. He suggested that the height and number of structures be kept to a minimum so as not to overshadow the important cultural resources. He also recommended that the structures be placed as far back from the edge of the preservation area as possible. He did not mention any ongoing cultural practices occurring on the subject property.

### *Interview with Curtis Tyler*

**Name:** Curtis Tyler

**Address:** not available

**Birthplace:** O‘ahu

**Ethnicity:** Hawaiian

**Historical and Geographical Association with the area:**

EG: *“OK, I’ll just give you a little bit of a history of it. There’s already an approved preservation plan for these two areas. This one here is a probable heiau. This is mostly habitation plus some burial sites and a small portion of the Judd Trail at the bottom ... .”*

CT: *“What do you mean a small portion?”*

EG: *“Everything from this side back is pretty much bulldozed.”*

CT: "When did that occur? It wasn't like that before."

EG: "*Quite a while ago.*"

CT: "Well, uh, there's a beautiful wall up in here, and it's back in here where the highway right of way is ... the parkway ... yeah, it's bulldozed there, but it wasn't bulldozed in here. No, last time I went up there, which was, you know, when you say a long time ago, I was up there in the last maybe, five or six years, and it was all intact in there. And you're saying it's no more in here?"

EG: "*No, it's not.*"

CT: "That's terrible. I'm sorry to hear that."

EG: "*Yes, it's very unfortunate.*"

CT: "Well, it's still there. It's a public road."

EG: "*Yeah, this is county ... no, state ...*"

CT: "It's covered by The Highways Act of 1892. It's a very ancient trail and it was a trail that, well, the reason that it has the name Judd Trail on it is because Derek Parmelli Judd who was the Minister of the Interior, I think, under Kamehameha Kauikeaouli, and it's attributed to him as I recall. Over the years I've been told that he was the one who built this trail, but it was built over a much more ancient trail. Yeah, and Uncle Mauna Roy, God rest his soul, talked about this a number of times when we were talking about Kaumalumu, Holualoa, Keolonahihi, and Keakealaniwahine Complex. I'm surprised that's all there is. There's nothing in here? There are no features in here?"

EG: "*There may be a few ... this is just the map for the preservation plan ...*"

CT: "Yeah, how is that decided?"

EG: "*It went through the DLNR.*"

CT: "There are no burials in here?"

EG: "*Not back there. The only burials are these little areas here. The inventory survey documented that a lot of this area here had been previously disturbed, probably by bulldozing ...*"

CT: "Not in recent time."

EG: "*OK.*"

CT: "Nope, the only bulldozing was in here that I recall. I mean I didn't walk all of this. I walked above this, I've been through part of this, I've walked the Judd Trail all the way up to Kuakini Highway and then on parts of it *mauka* of that, but ... "

EG: "*Previously, last time you were there, the walls continued ...* "

CT: "Well, there's a gate here, there's *loulou* trees right here, and I'm told that those Loli trees were planted by Dr. Judd and who told me that? It must be his great, great grandson who works for the state ... he works in DOCARE. And Mr. Smith actually had some dozing done the other night ... he knocked over some of those *loulou* trees and when I was on the council, the county council, I had some of my constituents call me, even though this wasn't my area, I had people call me, and they said that the trees were knocked down. Well, that's a historic area, so a complaint was put into DOCARE and they wrote up a report and Mr. Jerome Judd was involved and really concerned about that.

Yeah, and so this trail actually went down to ... you see the gate that's still there; unless someone's come in the middle of the night and taken it away, and notice that the trail, and this map that you just showed me, this TMK map, it doesn't show the trail there. Yeah, well, that's wrong. That's wrong, the trail is there. There's no adverse possession against the sovereign. Who is the sovereign is the State of Hawaii and because it's covered under the Trails and Highway Act of 1892, this thing was built way before 1892. I know in some areas they realigned the trail, but certainly this is not one of them. That would be criminal if that was done."

EG: "*There's clear evidence of it at the base of the property ...* "

CT: "Yeah, well, if they're claiming that there's no more trail here, believe me, I'm not going along with that, and I'm going to call up Na Ala Hele and I'm going to speak with him about it, because it's not on here."

EG: "*Yeah, I met with Irving Kawashima yesterday ...*"

CT: "Yeah? And what did he say?"

EG: "*He didn't really have any specific knowledge as to whether or not this was intact but the survey documented that the only portion on the subject property that's still present is that ...* "

CT: "Who did the survey?"

EG: "*The inventory survey was initially done by Haun and Henry, and then our company, ACP, did the data recovery, the burial treatment plan and the preservation plan.*"

CT: "OK, but the burial treatment plans have not come up, right ... burial council?"

EG: "*I think they have already been approved.*"

CT: "They have? Well there was something in today's paper ... yesterday's paper ... "

EG: *"They may still be on the table waiting for approval but I am pretty sure they have passed."*

CT: "Yeah, Mr. Smith's property. Yeah, that's wrong. I don't know who drew that map, but that's wrong. The County drew that map."

EG: *"Yes, Mr. Kawashima told me that the state owns all the way down to Ali'i."*

CT: "Yeah, good. You know, I think I mentioned this to him at one point; we were looking for a trail someplace, oh yeah, we were looking for a trail in Pahoehoe over here, and I printed it out and showed them that, 'oh by the way guys, the Judd Trail is not shown here.' And anyway ... OK ... (Murmuring) ... OK, so *makai* portion ... OK, I'll call him or send him an email ... OK, I'm sorry, I didn't mean to get off into the weeds on that one, but it's very important."

EG: *"So most of your knowledge about this area comes from your work or histories or ... "*

CT: "Yeah, well, I was born and raised here."

EG: *"Born in Kona?"*

CT: "Oh yeah, I lived in Kailua Village for about sixteen years ... well, not quite sixteen. But from age four to about age sixteen. Ruby and I ... her sister was a classmate of mine at Kailua School. So I've lived here about sixty years. And also I've taken an interest in this area because of the Keolonahihi and Keakealaniwahine Complex, and also, I was a councilman. I was on the county council for four terms, from 1994 ... yeah. Eight years."

EG: *"Representing this area?"*

CT: "Represented North Kona ... but, well yeah, I represented the area that came along in here. Very strange how the line went (when) I represented this area in here."

EG: *"OK, so mostly along Ali'i."*

CT: "Yeah, and I came down here, stayed with a ... I had a friend when I was about eight years old who had lived in this house right here ... sorry, not that house, yeah, um this one right here. And we hiked around in here when we were small kids."

EG: *"Do you remember seeing any archaeological features?"*

CT: "Oh yeah, a lot of them. All over the place. And this area right here is very rich. Kaumalumu was ... I was involved with providing public testimony, not while I was a councilman, but just as a private citizen when there was ... when this parcel, which is parcel number 10. Well, parcel number three which is now something else, I can't see it here, but it use to be three ... see this one right here? It wanted to be zoned for multi-family condominiums, and there was a group of individuals in Kona called the Friends of Kamoia Point who were very involved in a contested case in this property regarding rezoning this property. It went to court as I recall and there were significant differences of opinion about the significance of Kaumalumu

and whether Kaumalumu had any relationship to Keolonahihi or Keakealaniwahine and there were archaeologists from, not from Kona, but Dr. Sinoto was one of them who did the work here for the then owner Barbara Greenwell Fitzgivens and he claimed as I recall that there was no connection whatsoever between these two.”

EG: “*But this area has been disturbed, hasn't it?*”

CT: “Oh, greatly disturbed. And I'm just giving this as background, because all the testimony I've heard from native Hawaiians clearly stated that this property, that the Kaumalumu had a direct relationship to ... I think this is Holualoa 4<sup>th</sup> in which the Keakealaniwahine Complex and also Keolonahihi are located, and *nu(?)* is right here ... this is the place where Kamehameha was trained in surfing. This area where it's cut through here. *nu'u* is this area where he ... he lived out there and it's now been cut through. You see the old road come through like this? It went around this place like this. In any case, yeah, the Ako family used to live in parcel ten here, Mabel Ako and her husband, and they had a little store there, and I used to go down there when I was five years old, something like that, six years old, my father had an ice cream factory here and I used to go with the delivery men, riding with them and eat ice cream all day long. But at any case there was at least one burial find here, and then it subsequently got further disturbed, so there was lot of *pilikia(?)*, involved. But there were archaeologists who claimed that there was no connection here and some of us at the time said ‘well all you have to do is look at the *mauka* side of the road.’ Well if it was raining and it was green with *ekoa*, you couldn't see this, OK, but those of us who knew that this whole place was just loaded in here.”

EG: “*With the construction very similar to everything.*”

CT: “Well, furthermore, it makes absolutely no sense whatsoever, from a Hawaiian perspective, to have this sacred significant spot, Ho'o'maukeiki and the *lua* grounds, and the *lua* training that's all in here, plus the Keakealaniwahine Complex ... *kahuna la'au lapa'au* ... and not have any retaining, you know, any retainers around there to serve this? These people don't live inside of there, they have to be around here, and there's quite a bit of cultural resources on this property which is parcel 43 in Holualoa 4<sup>th</sup> I think it is. And that's why I ask you, when I saw the preserve areas and I see these other two parcels where they're going to build these houses, I guess that's part of what it is, and I don't believe they're blank. Maybe this is what SHPD did agree to and stuff, but it just doesn't end like that. It's just not the way it works and the fact that this major, excuse me, this major *alanui* which I'm told, but I have not traveled it in its entire distance, I've traveled a good portion of it, but it goes all the way to Hilo, and so, as you well know, there were *alaele* all over the place. This happened to be one of the *mauka-makai* ones, there were a few north-south, but this in at our call, this Judd Trail went down to a landing which is down ... the trail comes down here and it went along, right next to parcel 10, and it came down here to this little beach down here. See this little cove here? [Kaumalumu *makai*] The other thing that one needs to look at, and you can see it pretty well from here is that this is a very strategic point along the coast line and if you ... you don't notice it when you drive along here, but if you swim out here or if you paddle out here or if you go out to the points ... go to the shoreline out here ... what's very striking and immediately striking, is the panoramic view of the areas *hema*, the areas south of here, and the areas north of here, and there's a clear picture. There's going to be nobody that's coming from sea and going to attack this place without being

seen from a long distance, a long distance, because when you get out here, you guaranteed see Kailua Bay, you get over here and can see way down the coast, I think to Kahalu'u if not beyond to He'ia kaupau(?), if not maybe further south. So, this is a very, very, very important point. From a Hawaiian perspective, at least the perspective that I've learned over the years is, yes, indeed, we did have *ahupua'a*, we continued to have *ahupua'a* and we should pay more attention to it, but there's no way that Kaumalumu would not have a connection to Holualoa 4<sup>th</sup> in my mind, because of the strategic importance of, number one this landing right here, the connection with the trail, the fact that there was all this habitation over here, and actually there's a whole bunch more up here. I didn't find the AIS of this parcel 10, sorry, this parcel 43, but there's lots of stuff in here, but clearly the major portion of this property, of Keakealani is contained in parcel 11, but again, these things don't operate in a vacuum."

EG: "*They are continuous?*"

CT: "Yeah, exactly. And I think the other thing to keep in mind is Hawaiians were, the people of old, were very practical and pragmatic people. They also had a very strong belief system in their relationship with the environment, all of which is a cultural resource. So, you really have to look at this from a practical standpoint and say, when you're considering, what are the cultural impacts if you're accessing this. This land here as I recall, this, the road bed has been raised right in here and part of this was, when they cut through *nu'u* here, it goes up steeply right here, and *nu'u* comes down here like this ... I have to use this big one ... it goes up like this. This goes up like this, right over here."

EG: "*So there's kind of a ridge going up ...*"

CT: "Yeah, it starts to go up like this, a separate flow. It's like a whole flow came down here, and *nu'u* is right here. And this is more of a low area, in here [Kaumalumu]. And so, when this cut was made, and I don't recall when that was, but the *ala ka'akai*, or the *ala nui* ... in this case it wasn't the *ka'akai*, the *ka'akai* is over here, here ... but if you go back and look, there's a picture in the 1880's, I think it was the 1880's, maybe the 1890's, taken from over here in Holualoa, it's taken from right over here, and the picture looks across this area, and there's a house up here on *nu'u*, and you can see the road way, this roadway, coming through with double walls, and you see all these trees in here, the *loulu*, and I think there's some *niu* in there, but it's all cleared, it all open and well maintained, and I think you see some palms in here, but you can see it, you can see the *nu'u*, but anyway, it comes down here, so what I started to say was, this parcel, that is now single family, whatever it is, 10,000 square feet, a couple large houses in Kaumalumu across the wall, concern that I heard from the community is that these homes are going to overshadow this important cultural resource, and I have said it before publicly, I'll say it again, is that my understanding, my knowledge of Keolonahiki, of which *nu'u* is part, and Keakealaniwahine Complex and as well as, see this *heiau* right here?"

EG: "*Yeah, do you recall the name?*"

CT: "I don't recall right off, but I do have it; if I don't have to remember anything at my age, if I can look it up, I'll look it up. All this is like the pyramids of Hawaii. I regard them as the pyramids of Hawaii. Not that's it's a burial type site, but it's of such great significance from a

history and cultural standpoint from its longstanding significance in the Ho‘omauekeiki, in the continuation of the Ali‘i line, also the *lua* training and also the Kahunalaulapa‘au, is not something to be regarded lightly, this whole area should have, should’ve, would’ve, could’ve, but it should have been set aside and funds are limited, the government is limited in funds because of what the people give them or don’t give them or how they use their money, but in any case, what is the plan for this lot A and lot B?”

EG: *“I think he’s putting two, maybe three houses single family residence.”*

CT: “What’s the zoning in here?”

EG: *“I don’t know for certain off hand.”*

CT: “Well it must be agricultural zoning. He used to run cattle in there.”

EG: *“I think it probably is.”*

CT: “Well, it depends on what the zoning is, but it’s going to have an impact on, obviously the road through here has an impact, obviously the large multi-story home over here has an impact. Any homes here, anything, should be set as far away from the preserve areas as possible, I mean as far away. I guess from the owner’s perspective, and the homeowner’s perspective or residents perspective, they want to be as far away from the parkway as possible, which this is the parkway right of way. Forget that, strike that, that’s not true. The parkway is way up here. Yeah, as I recall, there was no disturbance until we got here; until we got to the parkway right of way. There was no disturbance, I mean the rocks fall down, but this whole thing was beautiful all the way along in here, and if there has been bulldozed, three guesses who did it, and of course we don’t count. There was a double wall trail, and if I go back there and find that it’s gone, well I know what happened because there were all kinds of enclosures in here, not just the double wall trail, there were all kinds of sites in here.”

EG: *“Adjacent to the walls?”*

CT: “Absolutely. All along in here.”

EG: *“For cattle ranching purposes?”*

CT: “No, pre-contact. Well I can’t say pre-contact, all I can say is that they, they’re, they were ...”

EG: *“Older than the construction?”*

CT: “Oh yeah, well, they were in connection with it, they were tied in with it. Yeah.”

EG: *“Yeah, the inventory survey, and this is the mapping that they did in accordance with the preservation plan and it doesn’t document those.”*

CT: “No surprise. One of my former colleagues on the council used to say ‘death by a thousand cuts.’ Yup, and that’s what’s happening. There’s a different perspective today by people who really look at land as a commodity; a commodity to generate wealth (I’m speaking of financial wealth), and a commodity to change one’s position in life perhaps, and Hawaiians had a whole different perspective about land. And you’re an archaeologist are you? So you understand what I’m talking about, and it’s very difficult to explain this to people who have no connection to the land other than what it provides them in the bank account. And I’m not being critical to Mr. Smith, he’s come down here and taken advantage, and I’m not saying that in a negative sense, taken advantage of opportunities and he’s done very well for himself, in term of these five acre parcels in here and from a Western perspective, he’s been very successful, and I think he’s done what is sort of the American dream for a lot of people. And from a Hawaiian perspective, when there’s something on your land of old, whether it be *meakanu* or *mea Hawaii, pa*, you know, *pa pohaku*, or whatever, you respect that, and you just don’t bulldoze it down, and I’m pleased, I have to say and should have said it from the beginning, I’m pleased to see that there is a preservation plan here and I know this property was for sale, but owned by different people over the years, and it was for sale quite a few times by different companies. Part of the, I guess from a sales perspective, would be a liability were these resources that are here, and I have, as I said, stated publicly, my position on this, and that is that if you have the good fortune to be this steward of some property in Hawaii, and the property contains cultural resource of some significance, and I don’t mean every stone and every rock and every nook and cranny, what I’m talking about is ... ”

EG: “*A place like this area?*”

CT: “Yeah, because of the significance of this area, not only to the past generations, but also to the present and future generations to have an understanding of the advanced nature of the Hawaiian culture, contrary to what some people might believe or have believed in the past, those are blessings. They should not be regarded as a liability on your property but as a blessing. When you have a blessing, you then have an asset, not a liability, and you find a way to make it happen, to make it so its significance be perpetuated so that not only the present, but the future generations be involved. The state is one of the worst stewards, the government in general, one of the worst stewards of this area. They refuse to take care of this, the lands that they were able to acquire with our money, or to get from in the case of Keakealaniwahine, and that’s unfortunate, there’s a lot of finger pointing to go around. Any how ... ”

EG: “*Do you happen to know off-hand who’s doing the restoration and preservation of this area?*”

CT: “Yeah, that’s a private ... they’re citizens.”

EG: “*OK, do you think they would like to be contacted?*”

CT: “Absolutely.”

EG: “*Could you give me their names?*”

CT: “Well, the one person you should contact is Junior Konuha. I see his name right there. Are you meeting with him?”

EG: “*No, I haven’t contacted him yet, but I will be coming back over to do some more interviews.*”

CT: “I know he’s quite involved with this. When I was a little bit younger I was anxious to get involved in helping to clear that area of alien species of which there’s a Morton Fig in there, a giant rubber tree that’s just destroying.”

EG: “*Invasive.*”

CT: “Yeah, it’s terrible. There’s so many invasive in there, and so there are a number of people who have come from all over the island, and Junior as I recall, along with his brother, uh, Jerome, both of whom I’ve known all my life, I’m told have worked on this; I understand the Kanahele’s, Edith Kanakaole Foundation in Hilo has been active in this, and Pua Kanahele has done quite a bit of work here in terms of cultural resources, and she’s done research for the state which I’m sure you’ve seen the studies of this area.”

EG: “*Yes.*”

CT: “They’re very substantial and I’m sure you’ve seen the maps done by John Kekahuna and Nalu Hinikapa’ua, both of whom I knew of this area, this area and this area. Actually there are two giant maps that have been done. If you haven’t seen them you should look at them to see. I reviewed my files this morning earlier to see what I might have, in particular Kaumalumu and this area here, and what I’ve found is I have substantial files Keolonahini and Keakealaniwahine Complex. I have lots and lots of files.”

EG: “*But there’s not many ...*”

CT: “There isn’t much here. My files on Kaumalumu, I was unable to find this morning. Mikahala Roy claims descendency from this area and I’m a direct lineal descendant from Pahoehe three. I’m told I’m a descendant from Kaumalumu and Holualoa four, but I haven’t been able to substantiate that and I guess one can be a descendant from every *ahupua’a*, and take care of so many *iwi kupuna*. But this is clearly, because of this trail, because of the proximity to Keolonahihi, Keakealaniwahine and this entire *lae*.”

EG: “*The whole point.*”

CT: “The whole point and it’s strategic viewpoints to the *kai*, to the ocean, both, obviously to the west, to the north and to the south. Unobstructed viewpoints make it an important area. But these lots that were divide up in 5-acre minimum ... they’re five-acre agricultural lots, is what they are. I don’t know, this one is a little over five as you can see ... 3, 2, yeah, I don’t know how they got this divided up, but maybe there were pre-existing lots. I don’t know, because I think it’s Ag-5 in here, and it’s anything but Ag-5 ... at least in some cases, if you can get in there.”

EG: *"It looks very residential."*

CT: "Very high-end residential. It is. It's also unfortunate that it's a gated community. I'm not a fan of gated communities. We have enough problems with subdivisions that sub-divide communities by its very nature. We should gage further ... further do that. But anyway that's a different ... so why don't you ask me more questions, if you have any."

EG: *"I'm mostly curious on your opinion of the cultural impact that will be felt on the cultural resources that we have here. Do you know of any cultural practices that are ongoing in this area?"*

CT: "Well, I think partly because of the burials here, and I know there is a large number of descendants involved here, the building of any modern structures here, in any proximity, especially if they're more than one story, or the land is graded such that it's raised up, because it's lower back here as I recall, it's kind of flat, if they fill this area up here, that these things are going to overshadow, it's going to overshadow these burials. Now-a-days because people can have easy access to D-10's and D-11's and things like that they can completely alter, you just have to look across the street over here at the great ugly wall of Lowe's, that's what I call it, completely overshadows the *pa* of Kuakini, which is a historic site, and very poorly taken care of. The fact that you tell me there's no trail right here, quite frankly, and I'll just say it in the best French I can think of, really pisses me off, because it was there, it's always been there, and I'll have to speak to Mr. Judd about that, or classmates, high school classmates, so I'll have to ask him if he knows about that because someone needs to be cited for that. That's a recent development, it may have happened in conjunction with the trees over here; with the *loulu*. In any case, that trail has been, for some, continues to be, and for the future generations, will be, a very important resource, and so to the extent that the traditional, customary use of that trail or any of this area is compromised by any development here, I'm not in agreement with that. I think there has to be some kind of mitigation to that, and maybe the mitigation is that if this is five-acre zoning, that no additional building besides one are permitted to be built and there's certain autonomies that come with the land, and if it's Ag-5, I'm not sure if it is, but if it is Ag-5 then you can build one farm dwelling, and it has to be done in connection with agriculture, and as you can see there's not going to be a lot of agriculture being done down there, so I would say there that there should be no second building allowed in here, unless there's some kind of further entitlement, but I'm not aware that there is right now. Do you know if there's a plan for a subdivision in here?"

EG: *"I'm not sure exactly what Mr. Smith's plans are ... "*

CT: "Well, I'm sorry to interrupt you, but what that does is, you don't know, so you can't tell me exactly what's going to happen, so I can't respond to you by saying what the effects are going to be, because I don't know, because I don't know what it is, but if there's going to be a further subdivision ... you know ... this whole area because it's divided up in these five acre lots, none of this went through the LUC, it's still in the Ag-list, I think ... I'm not positive about this, it might be in state-line use Ag. If it is then, you know...if it's under 15 acres or under, then the county council can re-classify the land use designation to make it urban. I don't remember what it is. I have to look at my general plan here. It must be; the fact that there's a cultural

impact assessment being done on this, it's required because they have to get a SMA permit, right?"

EG: *"I'm not exactly sure why ... "*

CT: "Yeah, well it's below Kuakini Highway, and that's all SMA area. And under the SMA rules, rule number nine of the planning commission, you can't do anything in the SMA without getting the SMA permit."

EG: *"And that requires the cultural impact assessment."*

CT: "Yes, it does. Very specific, and if you haven't see rule nine, you better look at it, because it's very specific about what it is that you have to talk about. But some of those folks I mentioned I think will get you some further perspective on this. I'm trying to think ... I think that you will find when talking with Mr. Konohe and also Mr. Medeiros, and also Mikahala Roy, all of whom I think are direct descendants of this land, that they will perhaps give you some additional names of people to talk to whose families may have lived on this land. My family, as far as I am aware, did not live directly on this land, so I can't speak to, directly, ongoing traditional practices. I think that when you ask a question which is part of OEQC guidelines about cultural impact assessment, when you ask the question about any known existing, past or existing, traditional or customary gatherings or any traditional cultural properties that are located here, you have to keep in mind that just because the practice isn't existing, or being done right now, doesn't mean that it can't or won't be done in the future, so that's something that, in my life as an elected official and legislator for eight years, there was a lot of land use changes that took place before I was council, I was the vice-chair of the planning committee for eight years, and we would hear about this thing, 'oh there's nothing there'.

EG: *"That's what we here from all our clients, 'Oh, there's nothing there.'"*

CT: "There's nothing there so you know, there's nothing we have to worry about. Or the classic today: oh it's not there anymore. Well, someone came in the dead of the night or on the weekend or when no one was looking and bulldozed that down, and that doesn't mean that there's nothing underneath there. That doesn't mean that there was adverse possession against the sovereign, in terms of that and Irv made the point to you very well that that's state property. I think often times when people like yourself come and talk to native Hawaiians like myself or Mr. Konohe or whoever you talk it's ... we have a certain perspective and we also have certain knowledge that may not be as encompassing as the area dictates or warrants, and part of that is our beliefs in history, where these things were not regarded as significant, and I'll give you an example of that: In the early 50's, when I was growing up here, there was a number of *kupuna* who spoke Hawaiian, fluent Hawaiian among themselves, and when I asked one of them who came to help my mom around the house or take care of me and my sister when we were young, to teach me to speak Hawaiian, she told me that it was against the law; couldn't do that. In fact, up until 1978 at the Constitutional Convention, teaching Hawaiian was outlawed as I understand it, and in 1978 the elected of the state overwhelming adopted Hawaiian as the official language, as you know. I knew about the significance of this place because of my own visit, as I told you, when I was about eight years old. I went to this *heiau*, and I went up to the Keakealaniwahine

Complex up in this area right here, and I'll just never forget it because I remember having goose bumps, chicken skin, whatever you want to call, *kakala*, and I never went back there afterwards. We were told in small kid days that don't go in caves, if you happen to find yourself in a cave don't take anything out of it, whatever you do, don't fool around with any burials, don't walk on any graves and stay off of *heiaus*. Eight years old, seven years old, *maha oi*, and go around. That was my only ... well, I made one other visit to Keakealani with some lineal descendants from Keakealaniwahine and they asked me to accompany them because of their concern about possible development. This was before it came back into the public domain. And also there's a small property right here. This property has a house on it, I think it's parcel 26 ... this looks too big for ... well, there's a small parcel here that has a house on it, a very steep driveway, I think it's parcel 26. Right here, there use to be a graveyard up in here, and you had to go up some steps that were cut into the rock, and there was a flat area up there that had a *loulu* tree, at least one *loulu* tree and a little pavilion and had a bunch of graves up in there."

EG: "*But the burials have been moved since then?*"

CT: "Well, I'm told they've been moved. Actually, the house is right over here in this parcel, it's somewhere down here. But this parcel, which I guess is parcel 26, that parcel has recently been purchased by Mr. Blasman to be part of this. And again, as an example, I was very involved in that and Dr. Rechtman did the archaeology here and I was concerned that they missed the graveyard because there was no discussion of it and, as you can see, there's been some parcels ... it's probably parcel 55 ... There's been some parcels that have been lumped in, see 13 has been dropped in over here. And, in any case, I was concerned the burials were still there, and I was told, I tried to make a site visit there, that the burials had been moved. I guess some of the burials were moved, I don't know if all of them were moved, I can't tell you, but I was told that all of the burials had been moved. Anyhow, I remember that. As I said, the Ako Family lived over here and they had a little store."

EG: "*You said your dad had an ice cream factory?*"

CT: "No, not there. He used to deliver to the Ako Store. They had a tamarind tree here and a mango tree that were sort of land marks along there. But anyhow, that's pretty much what I know at this point. This area was clearly, it was a very inhabited area. There were many chiefs, and lesser chiefs, the *kaukauali 'i*, that lived as the retainers to support the *ali 'i amoku*, the *ali 'i nui*, when *ali 'i nui* came here so all between Ka'awaloa, maybe even further south, but certainly between Keauhou, well, no further south than that, between Ka'awaloa and Keaho'olu in the north, it was a very highly populated area and one really needs to look and say, well where's the Pa Kuakini located, the Great Wall of Kuakini, and the Great Wall of Kuakini goes from Keaho'olu, if I recall correctly, in the north to Ka'awaloa in the south. And I've been told it's also know as the *pa pipi*. The *pa pipi*, which is a cattle wall, it means cattle wall, and apparently after Vancouver, who brought the cattle over here. Vancouver brought the cattle over here, and they were *kapu* for a while and ran amuck and were wiping out people's gardens, etc., so that's why the wall was built, but I wasn't around, so I don't know, but that's what I was told. And I think it's clear from the kinds of remains that are seen today, that there was quite a population."

EG: *“And especially from having the trailhead right here, it’s a serious mauka-makai trail it would ... ”*

CT: “Well, the trailhead, but also these areas right here, OK. It’s a very significant area, and I can’t stress that enough, and with the significance of the area, the more high rises or modern development that occurs in proximity to this area, the greater the impacts are, to short-term and long-term impacts whether it be noise or practitioners, and there are practitioners involved in what’s happening here, and here, whether it be noise and dust or significant cuts and fills, which are really nothing to perform today, that’s a concern that I have. So, when you received your marching orders to do this, what did they tell you? What did they say? Why?”

EG: *“As far as the plans for development?”*

CT: “What did they say? Why are you doing this?”

EG: *“As far as I know, it’s to follow the preservation plan. The Planning Commission wanted me to follow ... ”*

CT: “Oh, the Planning Commission.”

EG: *“Yes, it’s from the Planning Commission ... ”*

CT: “Well what did they say? Do you have something?”

EG: *“Yes, I have the email ... this was the email, from Chris Lau, the man who’s handling the development for Mr. Smith. He sent this to my boss, Joe, and these are the main points they want us to focus on; specifically the Judd Trail because when the preservation plan was initially written it was believed that the Judd Trail was off the subject property on the parcel to the south. Since then, detailed mapping has been done and it was determined that it is actually within the preservation area.”*

CT: “Must have been a blind person doing the ground truthing on that.”

EG: *“I’m not sure if the survey pin was present at that point.”*

CT: “Yeah, Hawaiians didn’t need pins, they knew where things were and all one had to do was just go there and look and they could see with their own eyes. See, there were a number of royal centers all the way along. Exactly. (reading) Who should have ownership. Who should have ownership? You mean of these preserve.”

EG: *“No, this is specifically for the Judd trail, and the ownership is probably with the State.”*

CT: “Oh, with the sovereign. And it says either active or passive preservation ... it should be, the trail should be restored. If the trail is gone from there, it should be put back. Is that thing still running?”

EG: *"Yes, it is." (regarding tape recorder)*

CT: "Absolutely, it should be put back the way it was. Already the stones have been all scratched and maybe cracked and everything, but they should use the original stones that were there. To the extent that ... and it is an active trail and it belongs to the people, the State as a trustee, and it should not be in any way compromised, shut-off, at all. Period."

EG: *"Mr. Kawashima mentioned safety concerns stabilizing the upper regions ... "*

CT: "Because of the Kaumalumu floodway in here which comes over in here ... well, it's in this area. Again I say, for the third time, there is no adverse possession against the sovereign. So this trail exists, the trail might not be known by some, the trail may not be able to be seen by some because its been covered up, because of the flooding because it is a major flood area there, but it doesn't mean that it doesn't exist or is not of significance for the long-term perpetuation and protection."

EG: *"Mr. Kawashima recommended possibly putting in some sort of an interpretive sign down here on Ali'i Drive, just because this portion is a good intact example of what the Judd Trail possibly looked like initially. There are concerns with traffic, though, because I don't think there's a place for people to pull off in this area, but it is a possibility to put in some type of interpretive sign for educational purposes."*

CT: "There used to be signs up. Hawaii's Visitors' Bureau used to have a sign right up on Kuakini Highway for the Judd Trail with the warrior sign."

EG: *"So you feel it should be marked at the bottom as well, yeah?"*

CT: "Well, I think that ... if indeed this lower section has been destroyed ... God, this was a beautiful section of the trail. This was so easy to walk on, all this up in here. If it's been destroyed, it's difficult for people to access it, perhaps now, but it should be put back as soon as possible, under the ... there should be a plan, it should be done as soon as possible, and it should be done under the State Historic Preservation in conjunction with Native Hawaiians who have knowledge of what it looked like and who have connections to the land. If you go back and you look at Pua Kanakaole Kanahale's study, if you look at her study about what should be done with Kaumalumu, you're going to see in there what she says about having parking. Now you brought it up about no parking for the Judd Trail ... "(speaking with someone else, then leaving).

## **Section 5.5: Mr. Jerome Judd, Ms. Jennifer Ching**

This interview was not able to be recorded on tape as the meeting occurred on Ali'i Drive at the Judd Trail site and traffic noise hindered this form of recordation. Notes were taken and important points are summarized in the paragraphs below.

### ***Interview with Jerome Judd and Jennifer Ching***

**Names:** Jerome Judd and Jennifer Ching

**Address:** not available

**Birthplace:** Kona

**Ethnicity:** not available

**Historical and Geographical Association with the area:**

Mr. Jerome Judd and Ms. Jennifer Ching are the great-great grandchildren of Gerrit Parmely Judd who oversaw the construction of the Judd Trail between 1849 and 1859. They regret that many of the family stories have already been lost with the passing of their father J.R. Judd, Jr.. One story of interest concerns the straight line on which the Judd Trail is constructed. Mr. Judd stated that this was accomplished by setting out the construction line at night using a series of spot fires along the length of the trail in order to achieve the straightest path possible.

Mr. Judd and Ms. Ching expressed the strong interest of their family in taking an active part in the restoration and maintenance of this important historic resource. They recommend that at least the first 100ft of the trail *mauka* of Ali'i Drive be hand cleared and restabilized and interpretive signs be added for educational purposes. Also noted was the importance of the *loulu* trees on the adjacent parcel to the south. They stated that these trees are now under federal protection as an environmental and cultural resource. Also discussed was the need to have the boundaries of the state trail easement resurveyed and the location of the property pins confirmed as this will have an effect on who is ultimately responsible for the protection of the intact trail walls.

## Section 6: Summary and Recommendations

### *Summary*

From the traditional accounts of Kaumalumu and Holualoa 4<sup>th</sup> Ahupua‘a, it can be seen that the area contains a rich background in legendary and historic associations, particularly in association with the Keolonahihi State Historic Park and the Keakealaniwahine Complex. A diverse history has occurred in this area, beginning from its earliest use of littoral resources and its latter use as a favored recreation location of the *ali‘i*. Kamo Point was renowned for its surfing and likely as a strategic vantage point, as Mr. Curtis Tyler pointed out the coastal line of site from this point extends as far north as Kailua Bay and as far south as Kahalu‘u (and, according to Mr. Tyler, as far as an unknown location he referred to as He‘ia kaupau[?]).

During the course of interviewing ethnographic consultants, information regarding areas of cultural and traditional importance in the vicinity of the project area and in Kaumalumu and Holualoa 4<sup>th</sup> Ahupua‘a was obtained. The Judd Family, Mr. Irving Kawashima and Mr. Clement Chang discussed issues primarily in relation to the Judd Trail, its ownership and preservation methods. Ms. Ruby McDonald, Mr. Curtis Tyler and Mr. Clarence Medeiros provided valuable information concerning the traditional history and uses of the Kamo Point area. There were no known ongoing cultural practices identified which have been directly related to the subject property by any of the informants, however this doesn’t exclude the possibility of future cultural use.

With regards to the proposed construction having any adverse effects on places of traditional or cultural importance, it is doubtless that the cultural resources will be affected. However, the designated preservation area will help to mitigate this impact. The majority of the informants contacted believe that there is some connection of the features on the subject property to the Keolonahihi and Keakealaniwahine Complexes, though none could give specific histories of royal usage of the subject property. Though the area *makai* of the subject property in Kaumalumu Ahupua‘a is devoid of archaeological features due to prior disturbance in the early 1970’s, it is illogical to assume that it never contained cultural resources similar to the Keolonahihi Complex or the sites present on the subject property. The geography alone suggests that the features of Kamo Point did not simply stop at the Kaumalumu/Holualoa 4<sup>th</sup> Ahupua‘a boundary. Similarly, features located *mauka* of Ali‘i Drive on the subject property are unlikely to have been isolated from these culturally significant areas. Historical documentation does not indicate who may have occupied the habitation sites on the subject property during the time of Keakealaniwahine and Kamehameha I but due to the concentration of *heiau* and high status residences in the area, the inhabitants likely had some connection to the *ali‘i* residing in the area.

In regards to the Judd Trail, though the intact portion is in the current preservation area, the entire length of the southern boundary of the subject property is in a fee-simply agreement with the State of Hawai‘i and subject to a 10ft no build buffer zone (see Appendix B). According to the testimony of Mr. Tyler, in the recent past the constructed walls of the trail used to extend along the entire southern boundary of this property, although, as early as 1980, archaeological investigations had documented that much of the subject property had been

bulldozed between 1973 and 1980 and that the impact of that bulldozing had effected portions of the Judd Trail (Haun & Henry 2002:10 & 21).

The representatives of Na Ala Hele have recommended that an interpretive sign be placed at the trailhead along Ali'i Drive as well as a sign restricting public access due to safety concerns. The Judd Family agreed to this and has requested that the first 100ft of the trail walls above Ali'i Drive be restored and hand cleared. They have also recommended that the extent of the State trail easement on the south property boundary be subject to survey and possible realignment if necessary to include the remnants of the Judd Trail which are currently located within the preservation zone on the subject property.

### ***Recommendations***

Based upon an absence of any known ongoing cultural practices within the subject property, Archaeological Consultants of the Pacific, Inc. deems the approved preservation plan (Moore & Kennedy 2004a) to be adequate protection for the archaeological features located within the subject property. However, given the possibility of encountering additional human remains outside of the preservation area, it is essential that the approved archaeological monitoring plan be adhered to (Moore & Kennedy 2004b). It is recommended that native *loulou* trees (*Pritchardia sp.*) be included in the native landscaping plans, as early historic accounts noted the presence of these trees and various textile manufacture occurring in Kaumalumu. It is also recommended that access be allowed to these sites for cultural practitioners, descendants of Kaumalumu and Holualoa 4<sup>th</sup> Ahupua'a and recognized ethnic organizations to whom the property has significance.

The intact archaeological remnants of the trail were mapped in accordance with the preservation plan and found to lay roughly 75% within the subject property (see Appendix A). The remaining portion is contained within the state trail easement and is protected by a 10ft no-built buffer zone. The State easement for the Judd Trail runs along the southern boundary of the subject property as depicted in an enlargement of a section of the TMK map (see Appendix C). A letter to Mr. Duane Konohe from the Deputy District Attorney states that the trail is owned in perpetuity by the State extending 16 miles *mauka* of Ali'i Drive. Archaeological Consultants of the Pacific recommends that if the State wishes to clarify its ownership and avoid future liability issues, the State easement should be resurveyed to include the entire archaeological remnants of the trail. Regardless, the trail remnants on the subject property are protected in the archaeological preservation zone and the remnants extending off the subject property are contained within the State easement. All archaeological sites within the designated preservation zone will be treated in accordance with the approved preservation plan (Moore & Kennedy 2004a).

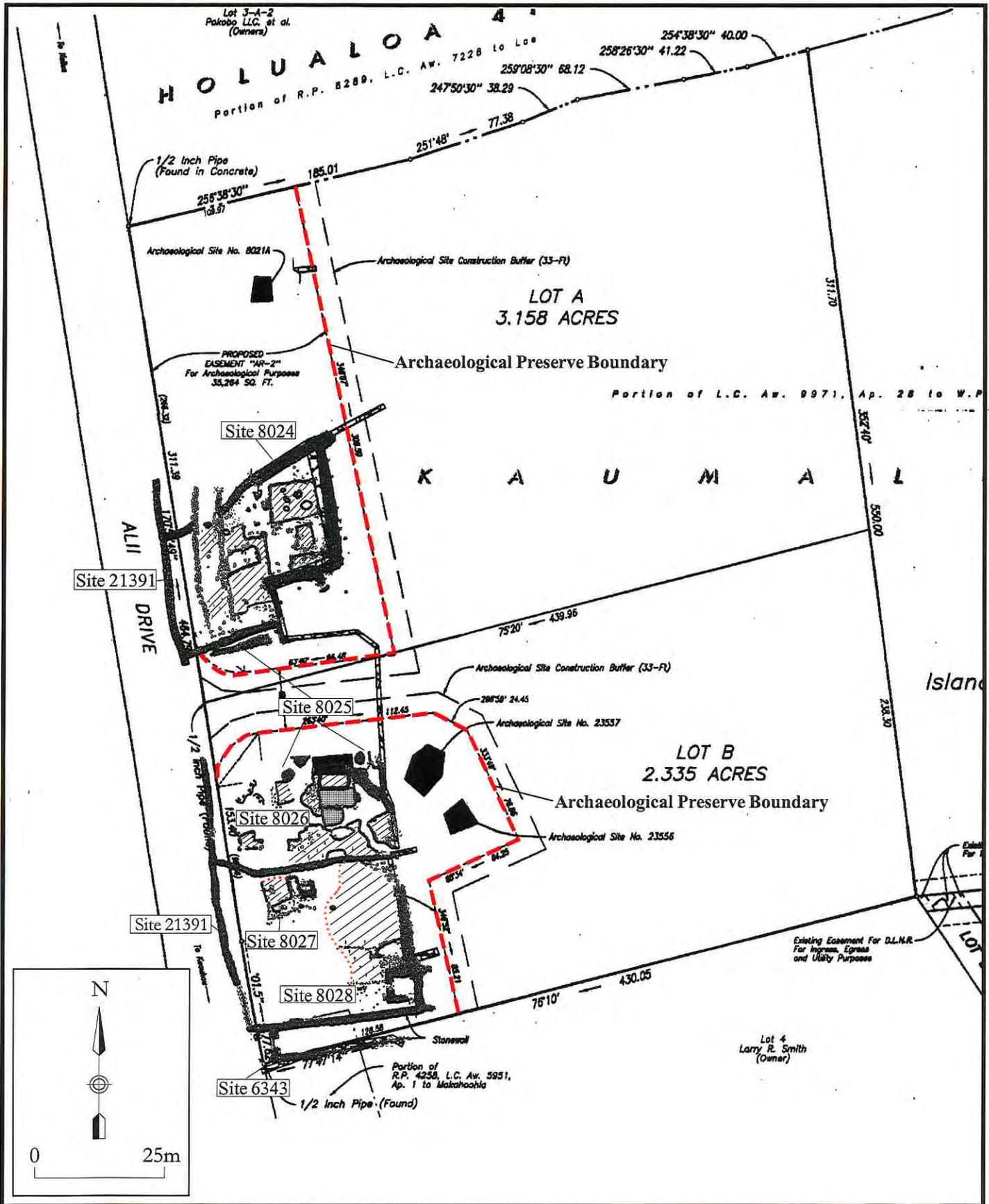
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## **Appendix A**

Archaeological Preserve at Kaumalumu  
 (with Detailed Maps of Sites 6343, 8024, 8026, 8027, 8028 & 21391)



## **Appendix B**

COPY

JOHN WAIHEE  
GOVERNOR



WARREN PRICE, III  
ATTORNEY GENERAL

CORINNE K. A. WATANABE  
FIRST DEPUTY ATTORNEY GENERAL

STATE OF HAWAII  
DEPARTMENT OF THE ATTORNEY GENERAL  
LAND/TRANSPORTATION DIVISION

ROOM 300, KEKUAHAO'A BUILDING  
465 SOUTH KING STREET  
HONOLULU, HAWAII 96813

May 4, 1990

Mr. Duane Kanuha  
Planning Director  
County of Hawaii  
25 Aupuni Street  
Room 109  
Hilo, Hawaii 96720

Dear Mr. Kanuha:

Re: State interest in "Judd Trail" over TMK 7-7-7:10,  
Situate in Kailua-Kona, Island of Hawaii, Hawaii

This is in response to your letter dated March 1, 1990 inquiring whether the State of Hawaii possesses any interest in the "Judd Trail." This inquiry was made in light of a subdivision request affecting TMK 7-7-7:10 pending before your department of which a portion of the Judd Trail is located therein.

We understand your questions to be as follows:

- (1) Is the Judd Trail a "public trail" as defined in § 264-1, Hawaii Revised Statutes?
- (2) If the Judd Trail is a public trail under § 264-1, Hawaii Revised Statutes, did the State of Hawaii quitclaim its interest in the Judd trail when it issued Land Patent No. S-8591 on a portion of Land Commission Award No. 9971, Apana 28 to William Pitt Leleiohoku?

For the reasons stated herein, we are of the opinion that the "Judd Trail" is a public trail as defined in § 264-1(b), Hawaii Revised Statutes. Further, the State did not quitclaim its interest in the Judd Trail through its issuance of Land Patent No. S-8591.

Mr. Duane Kanuha  
May 4, 1990  
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#### FACTS

The "Judd Trail" is included in the State's inventory of historic places. A title study undertaken by the Department of Land and Natural Resources reveals that in 1849, the Hawaiian Government, though its Privy Council commissioned the Judd Road to be built. The purpose for the road construction was to connect the government center of Kailua-Kona with the port town of Hilo. Construction of the Judd Road began at the government road in Kailua (i.e., what is now known as Alii Drive) and traversed through a general corridor between Hualalai and Mauna Loa. The Judd Road terminated about two miles above Ahu-a-Umi Heiau situated in Keauhou 2nd. The Judd Road extended approximately 16 miles before construction ceased around 1859.

Judd Road is delineated on Registered Map No. 1264 dated 1885-1886 and Registered Map No. 2060 dated 1901. Boundary Commission Minutes of August 1873-June 1874 for a boundary certificate to Keauhou 2nd (being Land Commission Award No. 7715, Apana 12) makes reference to the Judd Road.

Today, the Judd Road is more commonly referred to as the "Judd Trail." Portions of the Judd Trail are delineated on TMK 7, 7-7, 7-7-01 and 7-8-1. Portions of the Judd Trail were located on the ground as a result of an archaeological survey conducted this year. See (Draft) Kaumalumalu and Pahoehoe, North Kona, Hawaii Island; Archaeological Inventory Survey; prepared by Chiniago, Inc. (March 1989). Portions of the Judd Trail were also located on the ground by the State Department of Transportation as a result of the construction of Kuakini Highway. See Territory of Hawaii, Department of Public Works, Right-of-Way Map, Kailua-Keauhou Road, F.A.S.P. S-229(1) (July 20, 1957).

In 1982, the boundaries of a portion of Land Commission Award No. 9971, Apana 28 (being TMK 7-7-7:10) were certified by the Commissioner of Boundaries in accordance with Chapter 664, Hawaii Revised Statutes. See L. Radcliffe Greenwell, et al. v. State of Hawaii, et al., Civil No. 6827, (Third Circuit). In 1983, pursuant to §§ 172-12 and 664-5, Hawaii Revised Statutes, and based upon the prior boundary certification, the Board of Land and Natural Resources issued a patent on award, being Land Patent No. 8591 for the subject property.

Mr. Duane Kanuha  
May 4, 1990  
Page 3

#### DISCUSSION

1. Is the Judd Trail a "public trail" as defined in § 264-1, Hawaii Revised Statutes?

To constitute a "public trail" under section 264-1, Hawaii Revised Statutes, a trail must either:

(1) Have been opened, laid out or built by the government [See section 264-b(1), Hawaii Revised Statutes]; or

(2) Opened, laid out or built by private parties and dedicated or surrendered to the government [See section 264-1(c), Hawaii Revised Statutes].

In either of the above cases, the "public trail" would then be owned by the government in fee without restriction on the part of the adjoining landowners pursuant to the Highways Act of 1892 (predecessor to section 264-1, Hawaii Revised Statutes). See, In Re Kelley, 50 Haw. 567 (1968); In Re Hawaiian Trust Co., Ltd., 17 Haw. 523 (1906). Further, the public trail cannot be disposed of without prior governmental action under section 264-1(d), Hawaii Revised Statutes. If a trail does not qualify as a "public trail" under section 264-1(b) or (c), Hawaii Revised Statutes, it is a private trail.

Government records document the fact that the government laid out, built and opened the "Judd Road" to the public in the 1850's. By the Highways Act of 1892, the underlying fee passed to the government. Accordingly, pursuant to section 264-1(b), Hawaii Revised Statutes, the "Judd Trail" is a public trail owned in fee simple by the State of Hawaii.

2. Did the State quitclaim its interest in the Judd Trail by its issuance of Land Patent No. 8591?

A public trail once established continues until lawfully disposed of by the government. Section 264-1(d), Hawaii Revised Statutes; Highways Act of 1892, section 2.

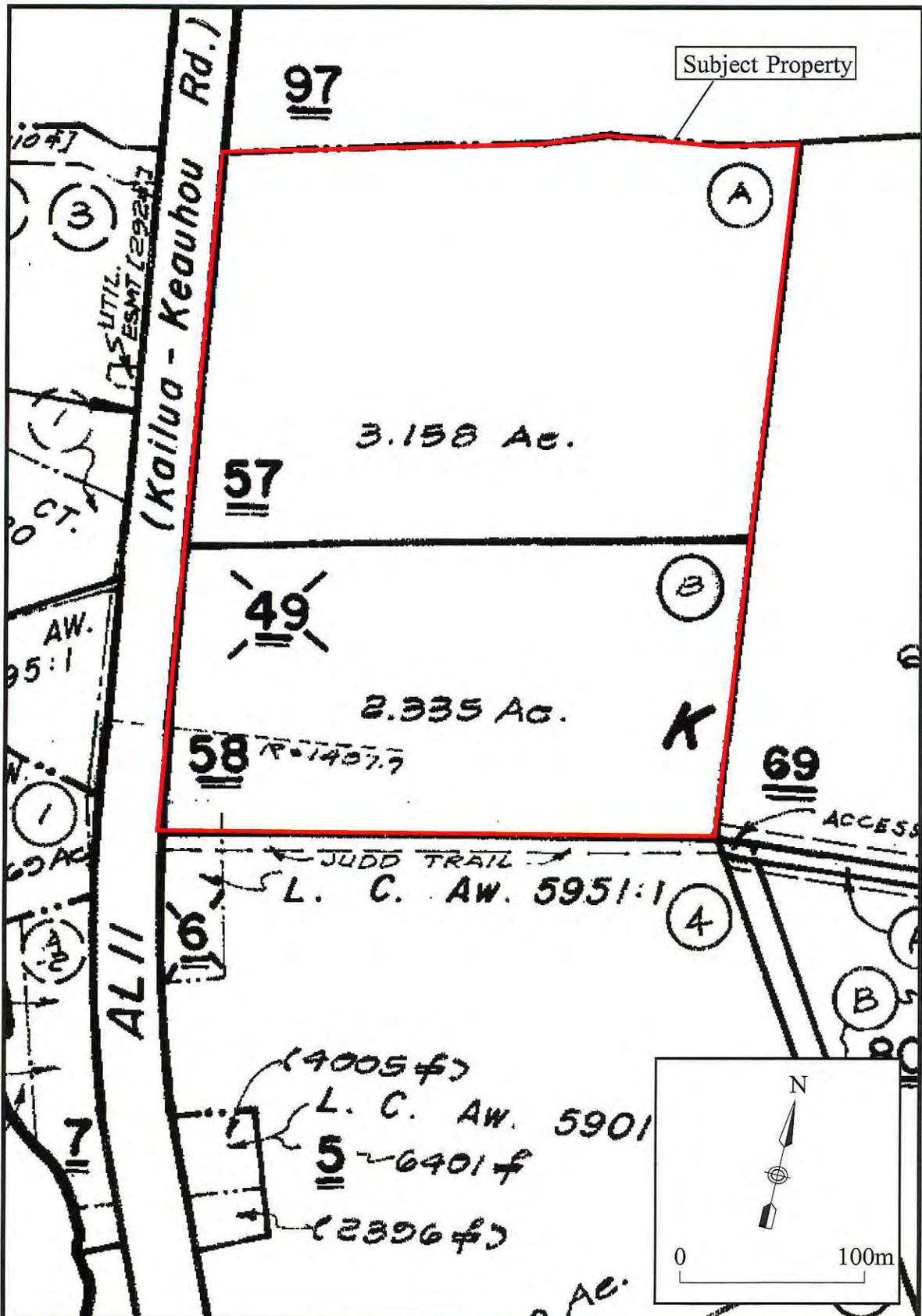
We have reviewed the minutes and materials surrounding the Board of Land and Natural Resources' decision to issue Land Patent No. S-8591. The Board of Land and Natural Resources' action was for the purpose of issuing a patent on Land Commission Award No. 9971, Apana 28, pursuant to § 172-2, Hawaii Revised Statutes. The Board of Land and Natural

Dona L. Hanaïke  
Deputy Attorney General

DLH:kk  
3304E1  
cc: Hon. William W. Paty

## **Appendix C**

Enlargement of a Portion of the TMK Map  
 Depicting the Judd Trail (Site 6343)



Kaunaulumu CIA TMK: 7-7-04: 57 & 58

source: Department of Taxation, Tax Maps Bureau 1938  
 (Revised 1998)

## **Appendix D**

Figure D1: Photograph of a Section of the Northern Wall of the Judd Trail (Site 6343)



view facing north

Figure D2: Photograph of a Section of the Northern Wall of the Judd Trail (Site 6343)



view facing north-northwest

Figure D3: Photograph of a Section of the Northern Wall of the Judd Trail (Site 6343)



view facing northeast

Figure D4: Photograph of Mauka End of the Northern Wall of the Judd Trail (Site 6343)



view facing west

Figure D5: Photograph of a Section of the Southern Wall of the Judd Trail (Site 6343)



view facing south

Figure D6: Photograph of the Exterior of the Gate at the Makai End of the Judd Trail (Site 6343)



view facing northeast

Figure D7: Photograph of the Interior of the Gate at the Makai End of the Judd Trail (Site 6343)



view facing west

# **ENVIRONMENTAL ASSESSMENT**

## **Royal Ali'i Planned Unit Development**

TMK: (3rd) 7-7-04:57 & 58  
Kaumalumu, North Kona District, Hawai'i Island, State of Hawai'i

### **Appendix 5**

#### **Traffic Impact Assessment Report**

# Phillip Rowell and Associates

47-273 'D' Hui Iwa Street

Kaneohe, Hawaii 96744

Phone: (808) 239-8206

FAX: (808) 239-4175

Email: [prowell@gte.net](mailto:prowell@gte.net)

March 23, 2006

Royal Alii LLC  
c/o Towne Development  
220 South King Street, Suite 2170  
Honolulu, HI 96813

Attn: Mr. Chris Lau

**Re: Traffic Impact Assessment Report  
Proposed Royal Alii PUD Subdivision  
Kailua-Kona, Hawaii  
TMK: 7-7-04:57&58**

Dear Chris:

Phillip Rowell and Associates have prepared the following Traffic Impact Assessment Report for the proposed Planned Unit Development (PUD) with 19 single-family units located along the east side of Alii Drive in the Kailua-Kona area on the Island of Hawaii. The report is presented in the following format:

- A. Project Location and Description
- B. Purpose and Objective of Study
- C. Methodology
- D. Description of Existing Streets and Intersection Controls
- E. Existing Peak Hour Traffic Volumes
- F. Level-of-Service Concept
- G. 2010 Background Traffic Projections
- H. Project Trip Generation
- I. 2010 Background Plus Project Traffic Projections
- J. Impact Analysis of 2010 Conditions
- K. Mitigation
- L. Other Issues
- M. Summary and Conclusions

## **A. Project Location and Description**

The proposed project is located along the mauka side of Alii Drive in the Kailua-Kona area in the vicinity of Kahaluu Beach Park on the Island of Hawaii. The project location is shown on Attachment A.

The project will consist of 19 single-family units.

Access to and egress from the project will be via one driveway that will be constructed along the east side of Alii Drive. There are no existing driveways along Alii Drive for this project.

## **B. Purpose and Objective of Study**

1. Quantify and describe the traffic related characteristics of the proposed project.
2. Determine if a Traffic Impact Analysis Report for the proposed project is warranted.
3. Identify potential deficiencies adjacent to the project that will impact traffic operations in the vicinity of the proposed project.

## **C. Methodology**

### 1. *Define the Study Area*

The intersection to be analyzed was determined based on input from the Department of Public Works during a pre-consultation meeting with the Project Architect. We were informed that, because of the small number of units proposed, the traffic study should analyze the intersection to the south of the proposed project site. Accordingly, the traffic study was limited to the intersection of Alii Drive at Makolea Drive and the entrance to the Kahaluu Beach Park. This is the nearest intersection to the proposed project location, not the proposed location of the project driveway.

### 2. *Analyze Existing Traffic Conditions.*

Existing traffic volumes at the study intersections were obtained from traffic counts completed Tuesday, March 1, 2005. The intersection configuration and right-of-way controls were determined at the time of the surveys. Existing traffic operating conditions of the study intersection were determined using the methodology described in the 2000 *Highway Capacity Manual* (HCM)<sup>1</sup>.

### 3. *Estimate Horizon Year Background Traffic Projections*

Background traffic conditions are defined as future traffic conditions without the proposed project. Background traffic volumes were estimated by superimposing traffic generated by related projects in the vicinity onto existing traffic volumes.

The year 2010 was used as the horizon year. This does not necessarily represent the project completion date. It represents a date for which future background traffic projections were estimated. The year 2010 is also consistent with recent direction from the Department of Public Works and recently completed traffic studies in the area.

### 4. *Estimate Project-Related Traffic Characteristics*

The number peak-hour traffic that the proposed project will generate was estimated. This was done using standard trip generation procedures outlined in the *Trip Generation Handbook*<sup>2</sup> and data provided in *Trip Generation*<sup>3</sup>. These trips were then distributed and assigned based on the available approach and departure routes and trip distribution data from other recently completed traffic studies in the area.

### 5. *Analyze Project Related Traffic Conditions*

The project-related traffic was then superimposed on 2010 background traffic volumes at the study intersections and driveways. The HCM methodology was used again to conduct a level-of-service analysis for background plus project conditions. The purpose of this analysis was to identify potential operational deficiencies in the vicinity of the proposed project.

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<sup>1</sup> *Highway Capacity Manual*, Institute of Transportation Engineers, Washington, D.C., 2000

<sup>2</sup> *Trip Generation Handbook*, Institute of Transportation Engineers, Washington, D.C., 1998

<sup>3</sup> *Trip Generation*, Institute of Transportation Engineers, Washington, D.C., 2003

#### D. Description of Existing Streets and Intersection Controls

In the vicinity of the project, Alii Drive is a two-lane, two-way, north-south major roadway. Alii Drive runs from Kailua-Kona to the north through Keauhou to the south. In the vicinity of the project there are no sidewalks or gutters.

#### E. Existing Peak Hour Traffic Volumes

The existing traffic volumes are based on traffic counts completed on Tuesday, March 1, 2005. The morning and afternoon peak hour traffic volumes are summarized in Attachment B

#### F. Level-of-Service Concept

The operations method described in the *2000 Highway Capacity Manual* (HCM) was used to analyze the operating efficiency of the study intersections. For an unsignalized intersection, this method involves the calculation of the average vehicle delay along the controlled movements which is related to a level-of-service.

"Level-of-Service" is a term which denotes any of an infinite number of combinations of traffic operating conditions that may occur on a given lane or roadway when it is subjected to various traffic volumes. Level-of-service (LOS) is a qualitative measure of the effect of a number of factors which include space, speed, travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience.

There are six levels-of-service, A through F, which relate to the driving conditions from best to worst, respectively. The characteristics of traffic operations for each level-of-service are summarized in Table 1. In general, LOS A represents free-flow conditions with no congestion. LOS F, on the other hand, represents severe congestion with stop-and-go conditions. Level-of-service D is typically considered acceptable for peak hour conditions in urban areas.

**Table 1 Level-of-Service Definitions for Unsignalized Intersections<sup>(1)</sup>**

Level-of-Service	Expected Delay to Minor Street Traffic	Delay (Seconds)
A	Little or no delay	<10.0
B	Short traffic delays	10.1 to 15.0
C	Average traffic delays	15.1 to 25.0
D	Long traffic delays	25.1 to 35.0
E	Very long traffic delays	35.1 to 50.0
F	See note (2) below	>50.1

Notes:

(1) Source: *Highway Capacity Manual*, 2000.

(2) When demand volume exceeds the capacity of the lane, extreme delays will be encountered with queuing which may cause severe congestion affecting other traffic movements in the intersection. This condition usually warrants improvement of the intersection.

### **G. 2010 Background Traffic Projections**

2010 background traffic projections are defined as background traffic conditions without the proposed project. Background traffic projections were estimated by expanding the existing peak hour traffic volumes by a growth factor determined from historical traffic volumes along Alii Drive adjacent to the project.

Historical traffic data used in the TIAR for the Laaloa Street Extension indicated that traffic along Alii Drive increased approximately 4% per year between 2000 and 2004. This growth rate was used to estimate the background growth between 2005 and 2010, which is the design year for this project. The growth factor was calculated to be 1.2167 using the following formula:

$$F = (1 + i)^n$$

where F = Growth Factor

i = Average annual growth rate, or 0.04

n = Growth period, or 5 years

This growth factor was applied to the northbound and southbound traffic movements along Alii Drive.

### **H. Project Trip Generation**

Future traffic volumes generated by the project were estimated using the procedures described in the *Trip Generation Handbook*.<sup>4</sup> This method used trip generation rates to estimate the number of trips that the project will generate during the peak hours of the project and along the adjacent street.

The assumptions used for the trip generation analysis are:

1. The proposed project will consist of 19 single-family units.
2. The project will have traffic characteristics comparable to single-family detached units as defined by the Institute of Transportation Engineers. This trip generation data is based on the number of proposed single-family units.

The trip generation calculations are summarized in Table 2.

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<sup>4</sup> Institute of Transportation Engineers, *Trip Generation Handbook*, Washington, D.C., 1998, p. 7-12

**Table 2 Trip Generation Calculations for Proposed Project**

Time Period	Direction	19 Single-Family units		
		Rate or % <sup>(1)</sup>	Units	Trips
AM Peak Hour	Total	0.77	19	15
	In	25%		4
	Out	75%		11
PM Peak Hour	Total	1.02		19
	In	64%		12
	Out	36%		7

NOTES:

(1) Institute of Transportation Engineers, *Trip Generation*, Seventh Edition, 2003.

As shown the proposed project will generate 4 inbound and 11 outbound trips during the morning peak hour. During the afternoon peak hour, the project will generate 12 inbound and 7 outbound trips.

The Institute of Transportation Engineers recommends that a traffic impact study should be performed if, in lieu of another locally preferred criterion, development generates an additional 100 vehicle trips in the peak direction (inbound or outbound) during the site's peak hour.<sup>5</sup> Based on the criterion, a traffic impact study is not warranted since the project will generate only 22 inbound trips per hour during the afternoon peak hour.

The project generated traffic was distributed and assigned based on the existing approach and departure pattern of traffic along the adjacent section of Alii Drive. The project trip assignments are shown in Attachment C.

**I. 2010 Background Plus Project Projections**

2010 background plus project traffic projections were estimated by superimposing the peak hourly traffic generated by the proposed project on the 2010 background (without project) peak hour traffic projections. This assumes that the peak hourly trips generated by the project coincide with the peak hour of the adjacent street. This represents a worse-case condition. The resulting 2010 background plus project peak hour traffic projections are shown in Attachment C.

**J. Impact Analysis of 2010 Conditions Impact Analysis of 2010 Conditions**

Based on criteria recommended by the Institute of Transportation Engineers, a traffic impact study is not warranted because the project will generate only 12 inbound trips per hour during the afternoon peak hour, which is less than the 100 trips per hour required to warrant a traffic impact analysis. However, an analysis of the changes in peak hourly traffic along Alii Drive adjacent to the project and a level-of-service was performed to identify potential traffic operational deficiencies adjacent to the project for 2010 background plus project conditions.

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<sup>5</sup> Institute of Transportation, *Traffic Access and Impact Studies for Site Development, A Recommended Practice*, 1991, page 5.

*Analysis of Hourly Traffic Volumes*

Analysis of the changes in total approach traffic was performed for the study intersection. This analysis is summarized in Table 3.

**Table 3 Analysis of Changes of Total Intersection Approach Volumes <sup>(1)</sup>**

Intersection	Period	Existing	Background	Change <sup>(2)</sup>		Background Plus Project	Change <sup>(3)</sup>	
				Volume	%		Volume	%
Alii Drive at Makolea Drive	AM	560	685	125	22.3%	704	19	2.8%
	PM	810	985	175	21.6%	1011	26	2.6%

Notes:

- (1) Volumes shown are total intersection approach volumes or projections.
- (2) Background versus existing.
- (3) Background plus project versus background.

At the intersection of Alii Drive at the project entrance, the traffic volume will increase 2.8% and 2.6% during the morning and afternoon peak hours, respectively. This compares to increases of 22.3% and 21.6% as a result of background growth traffic.

The conclusion of this analysis is that the changes in traffic volumes as a result of project generated traffic are significantly less than the changes as a result of background traffic growth.

*Level-of-Service Analysis*

The level-of-service analysis was performed using the following assumptions:

- (1) The project driveway is one lane inbound and one lane outbound.
- (2) The peak hour of the project generated traffic coincides with the peak hour of traffic along the adjacent streets.
- (3) All project generated traffic will use the proposed driveway. This will result in a worse-case analysis of the driveways.
- (4) There is no separate left turn or right turn deceleration lane for traffic turning into the project.

The results of the Level-of-Service analysis for 2010 conditions are summarized in Table 4. Shown in the table are average vehicle delays and the levels-of-service of the controlled movements. Volume-to-capacity ratios are shown for the signalized intersection.

**Table 4 Levels-of-Service for 2010 Conditions**

Intersection and Movement	AM Peak Hour		PM Peak Hour	
	With Project		With Project	
	Delay	LOS	Delay	LOS
<b><i>Alii Drive at Makolea Drive</i></b>				
Southbound Left & Thru	8.2	A	9.2	A
Westbound Left & Right	13.7	B	21.1	C

NOTES:

- (1) Delay in seconds per vehicle.
- (2) LOS denotes Level-of-Service calculated using the operations method described in *Highway Capacity Manual*. Level-of-Service is based on delay.
- (3) Traffic counts indicated there will be no morning peak hour traffic using this approach.

At the intersection of Alii Drive at the proposed project entrance, traffic along Alii Drive will operate at Level-of-Service A, without and with project generated traffic. This implies that project generated traffic, including left turns into the project from Alii Drive, will have a minimal impact of traffic operations along Alii Drive.

Traffic exiting the project onto Alii Drive will experience a delay of 13.7 seconds per vehicle in the morning peak hour with a Level-of-Service of B. Traffic exiting during the afternoon peak hour will experience a delay of 21.1 seconds per vehicle with a Level-of-Service of C.

#### **K. Mitigation**

Level-of-Service D is generally considered to be the minimum acceptable peak hour level-of-service for urban intersections.<sup>6</sup> Accordingly, the levels-of-service of all movements at the proposed project entrance will operate at an acceptable level-of-service and mitigation measures are not required.

#### **L. Other Traffic Issues**

##### *Regional Traffic Impacts*

As the residents of the project may be employed over a large area of Hawaii, it is reasonable to assume that project generated traffic will have an impact beyond the immediate vicinity of the project. However, the further away one is from the project, the less the impact since traffic will dissipate over distance. Since the impact in the immediate vicinity of the project is insignificant, it is also reasonable to assume that the traffic impacts of the project will also be insignificant at locations more distant from the project.

##### *Separate Left Turn Lane Assessment*

An assessment of the need for a separate left turn lane for traffic turning into the project was performed using guidelines published by the Transportation Resource Board<sup>7</sup>. This guideline is a graph and is reproduced as Attachment D. As shown on the attachment, the percentage of left turns from Alii Drive into the project would have to be approximately 15% during the morning peak hour and 5% during the afternoon peak hour to warrant a separate left turn lane. The estimated percentages are 1% and 2%, respectively. Accordingly, the conclusion of the assessment is that a separate left turn lane is not warranted during either peak period. Therefore, based on the findings of an accepted standard, a separate left turn lane is not recommended.

#### **M. Summary and Conclusions**

The conclusions of the traffic impact assessment are:

1. The proposed project will generate 4 inbound and 11 outbound trips during the morning peak hour. During the afternoon peak hour, the project will generate 12 inbound and 7 outbound trips.
2. The Institute of Transportation Engineers recommends that a traffic impact study should be performed if, in lieu of another locally preferred criterion, development generates an additional 100 vehicle trips in the peak direction (inbound or outbound) during the site's peak hour. Based on the criterion, a traffic impact analysis is not warranted.
3. An analysis of the anticipated traffic volumes at the intersection of Alii Drive at proposed project entrance concluded:
  - a. Traffic volumes will increase 2.8% and 2.6 % during the morning and afternoon peak hours, respectively. This compares to increases of 22.3% and 21.6% as a result of background growth and related projects' traffic.
  - b. The changes in traffic volumes as a result of project generated traffic are significantly

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<sup>6</sup> Institute of Traffic Engineers *Traffic Access and Impact Studies for Site Development, A Recommended Practice*, Washington, D.C. 1991, p39.

<sup>7</sup> Transportation Resource Board, NCHRP Report 457, *Evaluating Intersection Improvements: An Engineering Study Guide*, 2001, Washington, D.C. p21-22

less than the changes as a result of background traffic growth and traffic generated by related projects.

4. The level-of-service analysis for background plus project conditions concluded the following:
  - a. At the intersection of Alii Drive at the proposed project entrance, traffic along Alii Drive will operate at Level-of-Service A, without and with project generated traffic. This implies that project generated traffic, including left turns into the project from Alii Drive, will have a minimal impact of traffic operations along Alii Drive.
  - b. Traffic exiting the project onto Alii Drive will experience a delay of 13.7 seconds per vehicle in the morning peak hour with a Level-of-Service of B. Traffic exiting during the afternoon peak hour will experience a delay of 21.1 seconds per vehicle with a Level-of-Service of C.
5. Level-of-Service D is generally considered to be the minimum acceptable peak hour level-of-service for urban intersections.<sup>8</sup> Accordingly, the levels-of-service of all movements at the proposed project entrance will operate at an acceptable level-of-service and mitigation measures are not required.

Respectfully submitted,  
**PHILLIP ROWELL AND ASSOCIATES**



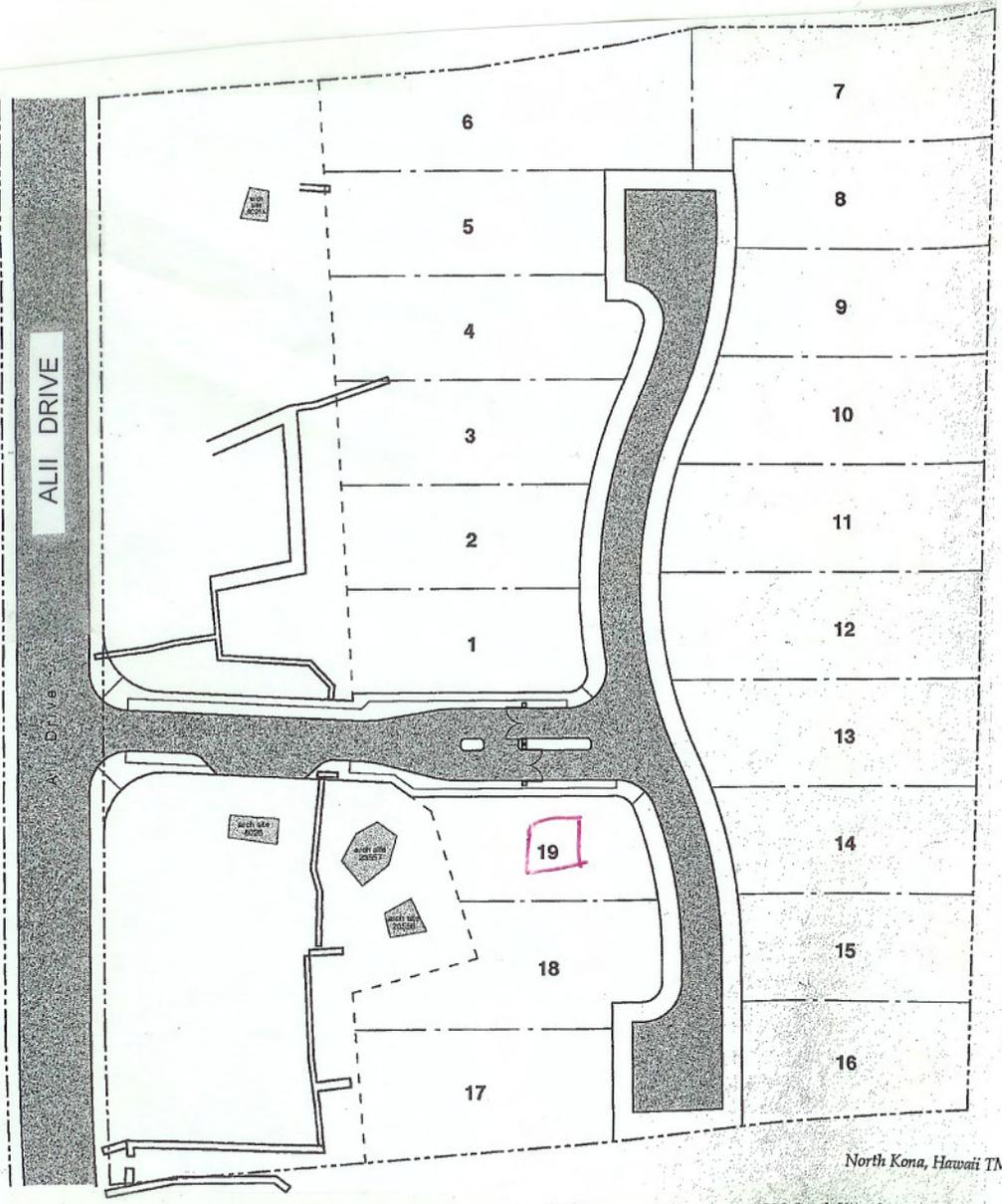
Phillip J. Rowell, P.E.  
Principal

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<sup>8</sup> Institute of Traffic Engineers *Traffic Access and Impact Studies for Site Development, A Recommended Practice*, Washington, D.C. 1991, p39.

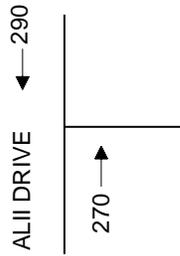
## List of Attachments

- A. Subdivision Plan
- B. Existing Peak Hour Traffic Volumes and 2010 Background Peak Hour Traffic Forecasts
- C. Project Trip Assignments and 2010 Background Plus Project Peak Hour Traffic Forecasts
- D. Assessment of Separate Left Turn Lane

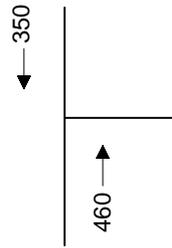


North Kona, Hawaii TMK: (3) 7-7-004: 57 & 58  
 Royal Alii LLC  
 220 South King Street, Suite 2170, Honolulu, Hawaii 96813

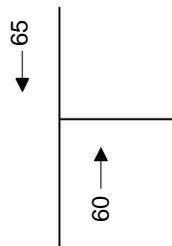
**Attachment A  
 PRELIMINARY SITE PLAN**



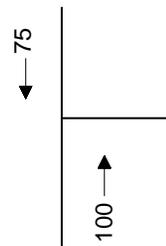
EXISTING AM PEAK HOUR  
(Tuesday, March 1, 2005)



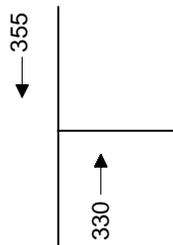
EXISTING PM PEAK HOUR  
(Tuesday, March 1, 2005)



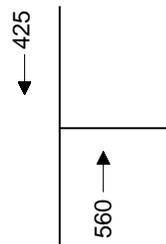
BACKGROUND GROWTH  
(2005 TO 2010)  
AM PEAK HOUR



BACKGROUND GROWTH  
(2005 TO 2010)  
PM PEAK HOUR

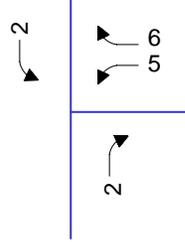


2010 BACKGROUND AM PEAK HOUR  
TRAFFIC PROJECTIONS

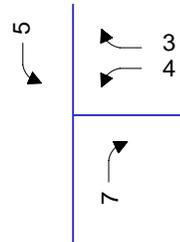


2010 BACKGROUND PM PEAK HOUR  
TRAFFIC PROJECTIONS

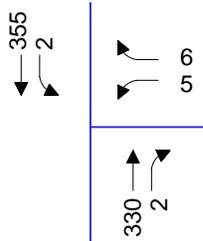
**Attachment B**  
**EXISTING PEAK HOUR VOLUMES AND**  
**2010 BACKGROUND PEAK HOUR PROJECTIONS**



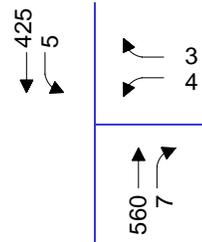
AM PROJECT  
TRIP ASSIGNMENTS



PM PROJECT  
TRIP ASSIGNMENTS

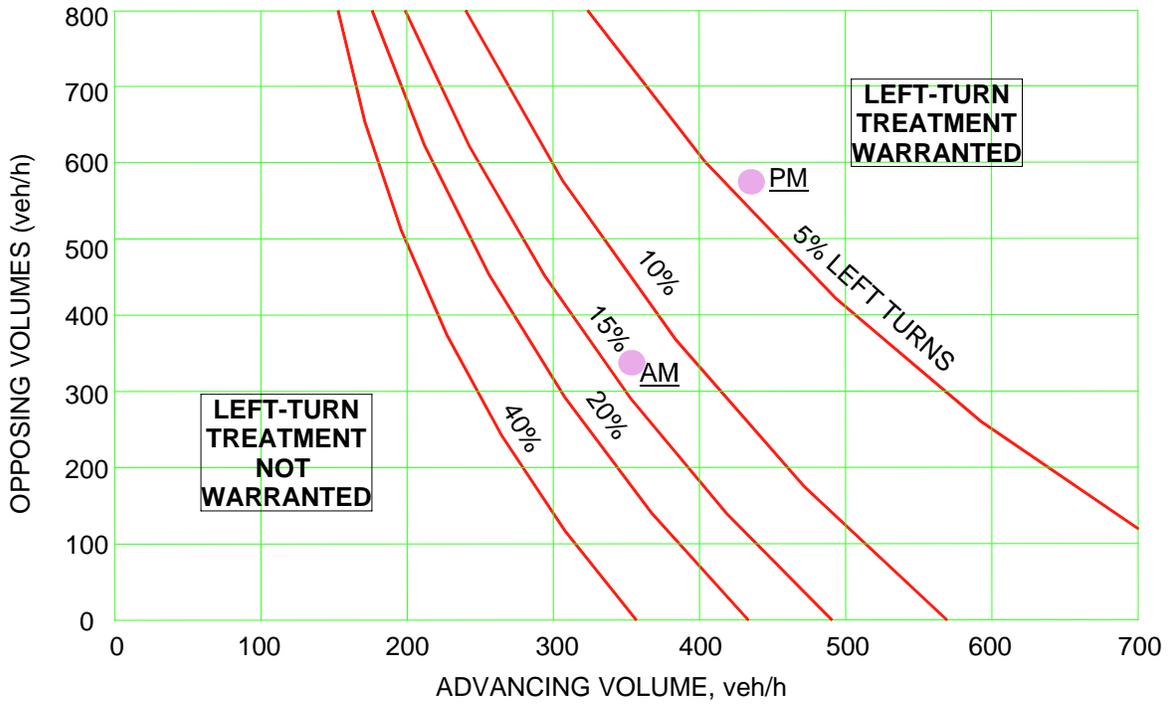


2010 BACKGROUND  
PLUS PROJECT AM PEAK HOUR  
PROJECTIONS



2010 BACKGROUND  
PLUS PROJECT PM PEAK HOUR  
PROJECTIONS

**Attachment C  
PROJECT TRIP ASSIGNMENTS AND  
2010 BACKGROUND PLUS PROJECT PEAK HOUR PROJECTIONS**



Source: NCHRP Report 457  
 Evaluating Intersection Improvements: An Engineering Study Guide  
 2001, page 22

	<u>AM</u>	<u>PM</u>
ADVANCING VOLUME (veh/h)	358	432
OPPOSING VOLUMES (veh/h)	332	570
%	1%	2%

**Attachment D**

**GUIDELINES FOR DETERMINING THE NEED FOR  
 A MAJOR ROAD LEFT-TURN BAY AT A TWO-WAY  
 STOP CONTROLLED INTERSECTION**

**TWO-LANE ROAD - 60 km/hr (40 mph)**