

Appendix J

**Cultural Impact Assessment for Kaloko Makai
Cultural Surveys Hawaii, Inc.
May 2008**

Draft

**Cultural Impact Assessment for a
1,150-Acre Parcel within portions of
Kohanaiki and Kaloko Ahupua'a,
North Kona District, Hawai'i Island
TMK: [3] 7-3-009:017, 025, 026, 028**

Prepared for
Stanford Carr Development LLC

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Management Summary

Reference	Cultural Impact Assessment for a 1,150-Acre Parcel within Portions of Kaloko and Kohanaiki Ahupua'a, North Kona District, Island of Hawai'i, TMK: [3] 7-3-009:017, 025, 026, 028 (Magat et al. 2008)
Date	May 2008
Project Number (s)	Cultural Surveys Hawai'i Inc. (CSH) Job Code: KOHANAIIKI 1
Agencies	State of Hawai'i Department of Land and Natural Resources / State Historic Preservation Division (SHPD)
Project Location	The project area is comprised of TMK: [3] 7-3-009:017, 025, 026, 028. The project area is located in portions of Kaloko Ahupua'a and Kohanaiki Ahupua'a, and the west boundary is approximately 1300 meters east from the western coast of Hawai'i. The project area is bound by Queen Ka'ahumanu Highway to the west, by undeveloped parcels to the east, 'O'oma 2 nd Ahupua'a to the north with Huliko'a Drive north of the <i>makai</i> portion, and "Kaloko Industrial" or "New Industrial" south of the <i>makai</i> portion. The surrounding parcels are largely undeveloped. Hina Lani Street runs <i>mauka/makai</i> through the project area. This area is depicted on the 1996 USGS 7.5-Minute Series Topographic Map, Keahole Point and Kailua Quadrangles (Figure 1).
Land Ownership	Private, Stanford Carr Development Kaloko Makai, LLC
Project Description	The proposed project comprises the development of a residential subdivision with limited retail establishments near Queen Ka'ahumanu Highway. Associated ground disturbance will include grading and excavation related to the project area's development, to include engineering topography, placement of structural footings, utility installation, roadway, parking area installation, and landscaping. Importation of substantial construction gravel and fill dirt will also likely accompany much of the construction.
Project Acreage	The CSH project area consists of approximately 1,150 acres.
Area of Potential Effect (APE)	For the purposes of this cultural impact assessment (CIA), the APE is defined as the approximately 1,150-acre project area footprint. While this investigation focused on the project APE, the study area also included portions of the <i>ahupua'a</i> of Kohanaiki and Kaloko.
Document Purpose	The project requires compliance with the State of Hawai'i environmental review process [Hawai'i Revised Statutes (HRS) Chapter 343], which requires consideration of a proposed project's effect on cultural practices. At the request of Stanford Carr Development, LLC, CSH undertook this CIA. Through document

	research and cultural consultation efforts, this document provides information pertinent to the assessment of the proposed project's impacts to cultural practices (per the OEQC's Guidelines for Assessing Cultural Impacts). The document is intended to support the project's environmental review and may also serve to support the project's historic preservation review under HRS Chapter 6E-42 and Hawai'i Administrative Rules (HAR) Chapter 13-284.
Consultation Effort	<p>Hawaiian organizations, agencies and community members were contacted in order to identify potentially knowledgeable individuals with cultural expertise and/or knowledge of the project area and the vicinity. The organizations consulted included the State Historic Preservation Division (SHPD), the Office of Hawaiian Affairs (OHA), the Hawai'i Island Burial Council (HIBC), and community and cultural organizations in the North Kona area.</p> <p>A total of twenty-five people were contacted for the purposes of this CIA; 18 people responded; and 12 <i>kūpuna</i> and/or <i>kama'āina</i> were interviewed for more in-depth contributions. At this writing, a total of nine of these individuals have consented to have their testimonies included in this report. Efforts to obtain permission to include the testimonies of the remaining three individuals who were interviewed for this CIA are ongoing.</p>
Results	<p>Background research conducted for this project yields the following results:</p> <ol style="list-style-type: none"> 1. The project area is part of the traditional region known as Kekaha, extending from Honokōhau to 'Anaeho'omalu in North Kona. Despite being a dry place, the project area contains many unique resources—including dozens of subterranean lava tubes and caverns used to collect water; the project area included an extensive pre-Contact Hawaiian settlement that continued to support a subsistence-based lifestyle into the early historic era. 2. Archaeological research shows the project area contains hundreds of culturally and historically significant sites and thousands of individual features within these sites. Sites in the project area include permanent and temporary habitation structures—many of which incorporate natural features of subterranean lava tubes into their design, agricultural features (including extensive rock mounds used to plant sweet potatoes), at least 65 burials located in approximately two dozen burial sites, <i>ahu</i> (stone markers), trails, petroglyphs, <i>ahupua'a</i> boundary walls, <i>papamū</i> (traditional gaming site), and others. 3. Radiocarbon dating from nearby sites definitively shows the general area has been utilized by humans for at least 1,000 years.

	<ol style="list-style-type: none"> 4. The project area is likely to contain substantial additional subsurface deposits—as yet undiscovered and undocumented—associated with lava tubes and subterranean chambers, including burials and other highly sacred materials. 5. The project area is also associated with the unique history of Hawaiian-style ranching and <i>pānīolo</i> ("Hawaiian cowboys"), including the well-documented Hu'e'ehu'e Ranch. 6. The project area is associated with specific <i>mo'olelo</i> (oral history) about (a) the sixteenth or seventeenth century ruler of Hawai'i Island, Lono-i-ka-makahiki, who was involved in several famous battles with the chiefs of Maui (including Kama-lala-walu) and other parts of Hawai'i, (b) Kamehameha I, whose remains were reportedly interred near Kaloko Fishpond, (c) 'Umi-a-Liloa, who frequented the famous fisheries of Kaloko and Kohanaiki, and (d) the Nahulu chiefs (including Ka-me'e-ia-moku and Ka-manawa). The project area is also associated with legendary references to Ka-Miki, various <i>mo'o</i> (water spirits) that resided at fishponds at and near the seashore, and Hualālai; and more general references to water-collection lava tubes and the unique environmental conditions of the region. <p>Community consultation conducted for this project yields the following results:</p> <ol style="list-style-type: none"> 1. Several participants voiced negative feelings and opinions about the overall cumulative impacts of ongoing and future developments in Kona District and the project area environs pointing out such factors as a diminished quality of life for locals, dwindling resources, prices beyond the reach of most <i>kama'āina</i> and overtaxed infrastructure as contributing to a loss of what is authentic and traditional about Kona. 2. Several participants talked about subsistence resources that were previously available to, and enjoyed by, locals—such as various <i>limu</i> (seaweeds), crabs and fish—but that are no longer available or easily accessed due to the cumulative impacts of development in Kona. 3. Most participants talked about the presence of burials and <i>iwi kūpuna</i> (ancestral remains) throughout the project area. It is clear from some of the interviews that there are many lineal and/or cultural descendents to some of these burials that should be consulted during the proposed development, since some historic-era family burial sites, in particular, may be impacted by the subject project. 4. A few participants talked specifically about changing patterns of vegetation and plant life, highlighting the loss of native and
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	<p>Polynesian-introduced species as well as useful historic introductions such as mango trees. In particular, there is a remnant area of lowland forest in the project area containing several endangered and threatened native species, including <i>ko'oko'olau</i> (<i>Bidens spp.</i>). It is important to understand that such natural resources are significant cultural and historical resources to many native Hawaiians.</p> <p>5. A few participants talked about drinking from water collection caves in historic times, as they moved around the landscape (e.g., as ranchers), and of brackish pools used by their animals (e.g., cattle and horses).</p> <p>6. Several individuals discussed trails in the project area, including a historic trail running from the ocean to the mountains (this is the so-called "Road to the Sea") along the <i>ahupua'a</i> boundary between Kaloko and Kohanaiki, that were used in the recent memories of some participants to gather resources from the sea and the uplands. Given many changes and modern developments, most of the trails in the project area have not been used by many people for several decades.</p>
Recommendations	<p>The following recommendations are based on a synthesis of all the information gathered during preparation of this CIA. Faithful attention to these recommendations, and efforts to develop appropriate measures to address these concerns, will help mitigate the adverse impacts of the proposed action on Hawaiian cultural beliefs, practices and resources by the project:</p> <p>1. Most of the people who voiced negative feelings and opinions about the overall cumulative impacts of ongoing and future developments in Kona District stopped short of saying they were entirely opposed to the proposed project; however, some participants recommended the project proponent prepare a draft Master Plan for review and comment by the public so that the various short- and long-term cumulative impacts, both negative and positive (e.g., the construction of recreational facilities and/or parks and other "green spaces"), can be assessed by the community.</p> <p>2. Several participants, including the Office of Hawaiian Affairs (OHA), recommend the project proponents work together with the local community in order to develop plans that are <i>pono</i> (i.e., harmonious with the local environment), culturally sensitive and fair and balanced with respect to the <i>'āina</i> and its natural and cultural resources.</p> <p>3. Efforts should be made to protect and preserve brackish water pools and water collection lava tubes.</p>

	<p>4. Most participants strongly urged that no burials or <i>iwi kūpuna</i> (ancestral remains) should be relocated or moved to make way for the proposed project.</p> <p>5. One participant who worked as a <i>paniolo</i> for many years recommended preservation and protection of "holding corrals" (<i>puakini</i>) in order to educate present and future generations about the unique Hawaiian-style "cowboys" that flourished in and around the subject project area in historic times.</p> <p>6. Efforts should be made to preserve and protect all trails in the project area, including designing around trails to maintain an authentic sense of place that is unique to Kona.</p> <p>7. Efforts should be made to preserve and protect the remnant lowland forest and any other native and Polynesian-introduced plants species in the project area, including <i>ko'oko'olau</i> plants and other endangered and threatened species. Preparation of a "vegetation master plan," which could be combined with the next item (below), would help guide plans and commitments to preserve and protect these unique resources.</p> <p>8. Several participants stated that, if the proposed development goes forward, it should use environmentally-appropriate landscaping that enhances the sense of place, including native and Polynesian-introduced species. Preparation of a "vegetation master plan," which could be combined with the previous item (above), would help guide plans and commitments to preserve and protect these unique resources.</p> <p>9. OHA, in particular, recommends the project proponents faithfully follow all applicable laws with respect to the treatment of all historic properties located within the subject project area.</p> <p>10. Cultural monitoring should be conducted during all phases of development, including all significant ground disturbances, to ensure that significant cultural and historical resources are protected and preserved in accordance with appropriate mitigation plans.</p> <p>11. Community members and groups responsible for the long-term care of the Kohanaiki and Kaloko Ahupua'a, as well as cultural practitioners who utilize the area for gathering and for cultural and educational activities, should be further consulted regarding the above issues and other concerns throughout the planning, development and operation of the proposed housing development. This consultation should include all interested community groups and individuals who have a stake in the project area.</p>
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Section 1 Introduction

1.1 Project Background

At the request of Stanford Carr Development, LLC, Cultural Surveys Hawai'i, Inc. (CSH) conducted a cultural impact assessment (CIA) of a 1,150-acre parcel within portions of Kaloko Ahupua'a and Kohanaiki Ahupua'a, North Kona District, Hawai'i Island, TMK: [3] 7-3-009:017, 025, 026, 028. The project area's west boundary is 1300 m east of the western coastline of Hawai'i. The project area is bound by Queen Ka'ahumanu Highway to the west, by undeveloped parcels to the east, 'O'oma 2nd Ahupua'a to the north with Huliko'a Drive north of the *makai* portion, and "Kaloko Industrial" or "New Industrial" south of the *makai* portion (Figures 1-4).

The 1,150-acre is privately owned by Stanford Carr Development Kaloko Makai, LLC. The proposed project comprises the development of a residential subdivision. Associated ground disturbance will include excavation related to the project area's development, to include structural footings, utility installation, roadway, parking area installation, and landscaping.

The purpose of the CIA is to consider the effects that the proposed project may have on the culture of Hawai'i, and traditional and customary rights. The Hawai'i State Constitution, Article XII, Section 7 protects "all rights" of native Hawaiians that are "customarily and traditionally exercised for subsistence, cultural and religious purposes." Act 50 (SLH 2000) was passed as an attempt to balance the scale between traditional lifestyles and development and economic growth. Act 50 provides that environmental impact statements: (1) Include the disclosure of the effects of a proposed action on the cultural practices of the community and State; and (2) Amend the definition of "significant effect" to include adverse effects on cultural practices.

The scope of work was designed to meet the Guidelines For Assessing Cultural Impacts as adopted by the Office of Environmental and Quality Control (OEQC) (1997), as well as the requirement of any other State and County agencies involved in the review process for the proposed project. The "Guidelines for Assessing Cultural Impacts" issued by the OEQC discuss the types of cultural resources, practices and beliefs that might be assessed. The Guidelines state:

The type of cultural practices and beliefs subject to assessment may include subsistence, commercial, residential, agricultural, access-related, recreational, and religious and spiritual customs. The types of cultural resources subject to assessment may include traditional cultural properties or other types of historic sites, both man-made and natural, including submerged cultural resources, which support such cultural practices and beliefs.

The assessment also considers cultural resources, practices and beliefs within the broader context of Kaloko Ahupua'a and Kohanaiki Ahupua'a that are relevant to assessing the role of the project area.

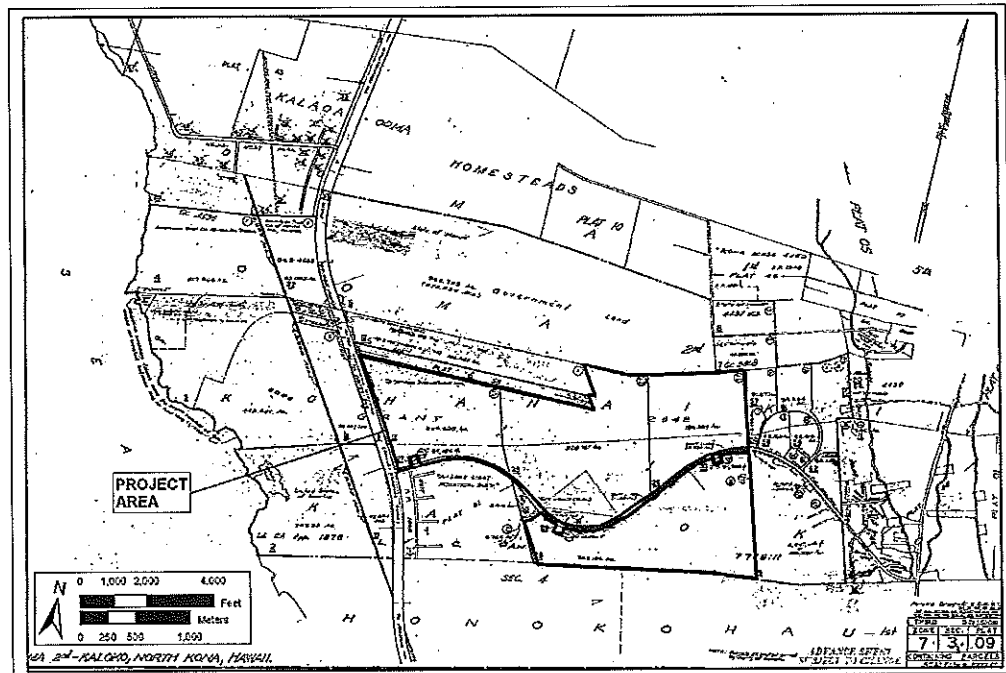


Figure 2. Tax Map Key (TMK) showing project area

Cultural Impact Assessment for a 1,150-Acre Parcel in Kohanaiki and Kaloko Ahupua'a

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TMK [3] 7-3-009:017, 025, 026, 028

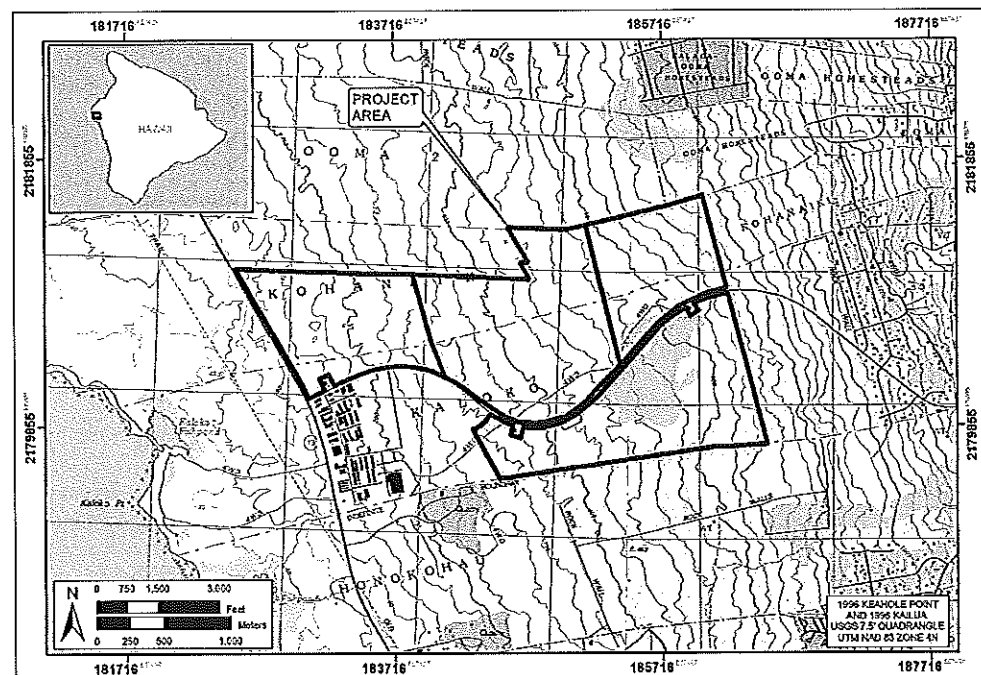


Figure 1. U. S. Geological Survey Quad Map showing project area

Cultural Impact Assessment for a 1,150-Acre Parcel in Kohanaiki and Kaloko Ahupua'a

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TMK [3] 7-3-009:017, 025, 026, 028

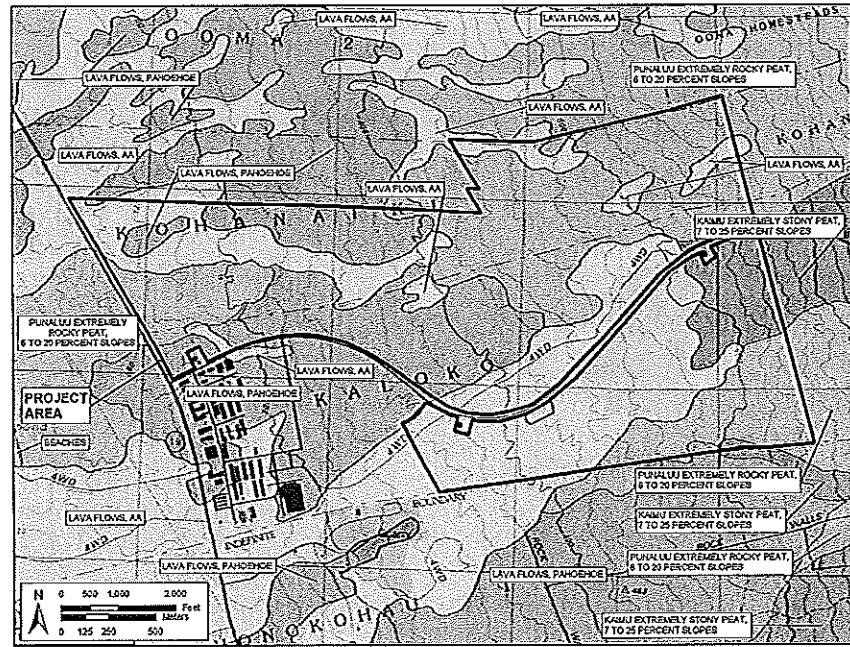


Figure 4. Soil map of the project area and vicinity

Cultural Impact Assessment for a 1,150-Acre Parcel in Kohanaiki and Kaloko Ahupua'a

TMK [3] 7-3-009:017, 025, 026, 028

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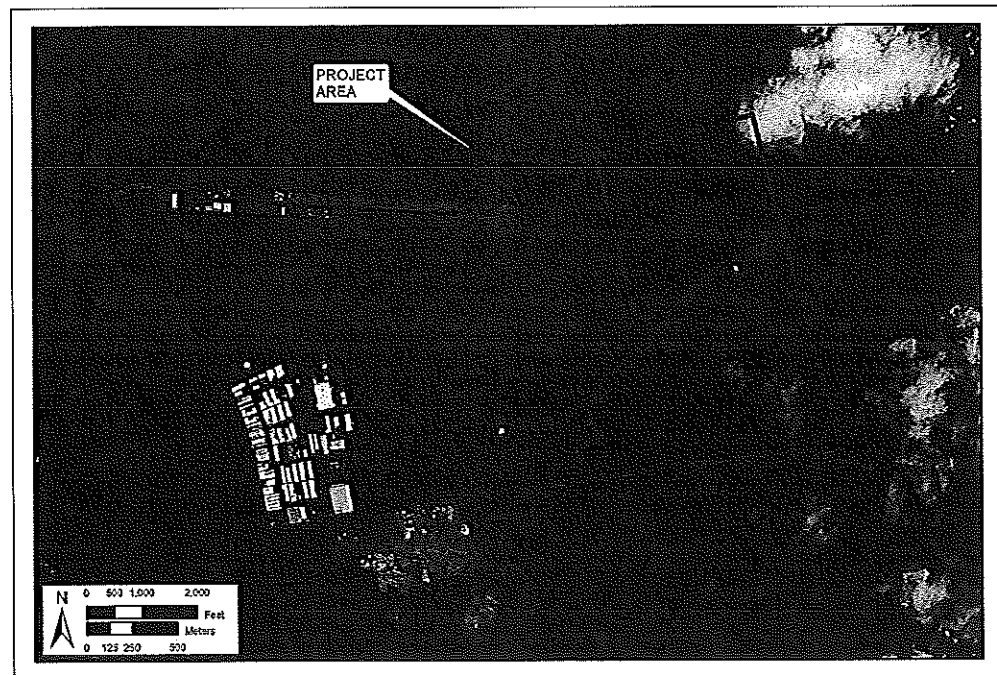


Figure 3. Aerial view of project area (source: USGS Orthoimagery 2005)

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1.1.1 Archaeological Inventory Survey

An archaeological inventory survey including a surface survey, subsurface testing, and laboratory analysis of cultural and radiocarbon-dating materials was conducted for the project area. Given the large size of the project area, a decision was made to split the archaeological inventory survey reports by individual TMK parcel, producing a total of four reports.

1.2 Scope of Work

The scope of work for the CIA includes:

1. Examination of historical documents, Land Commission Awards, and historic maps with the specific purpose of identifying traditional Hawaiian activities including gathering of plant, animal and other resources or agricultural pursuits as may be indicated in the historic record.
2. A review of the existing archaeological information pertaining to the sites on the property as they may allow us to reconstruct traditional land use activities and identify and describe the cultural resources, practices and beliefs associated with the parcel and identify present uses, if appropriate.
3. Conduct oral interviews with persons knowledgeable about the historic and traditional practices in the project area and region.
4. Preparation of a report on items 1-3 summarizing the information gathered related to traditional practices and land use. The report will assess the impact of the proposed action on the cultural practices and features identified.

1.3 Environmental Setting

1.3.1 Natural Environment

The project area comprises approximately 1,150 acres in the *ahupua'a* of Kaloko and Kohanaiki. The lands are located on the leeward coast of Hawai'i Island within the district of North Kona on the lower west slope of Hualalai Volcano. The project area is bounded by Queen Ka'ahumanu Highway to the west, Hina Lani Street to the south, TMK [3] 7-3-009:032 to the east, and 'O'oma 2nd Ahupua'a to the north. Elevation within the project area ranges from 80 ft. above mean annual sea level (a.m.s.l.) at the western boundary to 760 ft. a.m.s.l. along the eastern boundary.

Kona weather is typified by afternoon showers brought on by warm air that has been moved inland by light sea breezes. The humid air gradually condenses over higher altitudes throughout the day. At night, the land cools resulting in breezes which send warm air back out to sea. Rainfall in the project area averages 10 inches per year (Cordy et al. 1991). There are no natural springs or perennial streams within the project area, but dozens of subterranean water-collection lava tubes have been identified during archaeological survey by CSH.

The land surface is comprised of a large 'a'u flow running *mauka/makai* through the project area with several smaller flows to the northeast and a large flow in the northwest portion of the

project area (see Figure 4). The surface of the 'a'u lava ranges from roughly level expanses to rough fractured ridges.

Pāhoehoe lava covers the west-central and north-central sections of the project area. The surface ranges from level expanses to highly fractured tumultuous areas and is characterized by numerous tumuli and pressure ridges with depressions or undulations in the *pāhoehoe* containing thin soil pockets. Collapsed portions of lava tubes also contribute to the uneven surface of the *pāhoehoe* flows.

Punaluu extremely rocky peat is the dominant soil type in the project area (see Figure 4). Punaluu soils consist of well-drained, thin organic soils over *pāhoehoe* lava bedrock. The soils are gently sloping to moderately steep. The natural vegetation associated with this soil type consists of *koa haole* (*Leucaena glauca*), Christmasberry (*Schinus terebinthifolius*), guinea grass (*Panicum maximum*), natal reedtop (*Rhynchelytrum repens*), and sand bur (*Cenchrus echinatus*). These soils are used for pasture (Sato et al. 1973). Both slope and soil development increase considerably with elevation.

In general, vegetation (especially ground cover) is dense throughout most of the project area and obscures ground visibility. The non-native *koa haole* tree dominates the project area vegetation along with the non-native air plant (*Kalanchoe pinnata*), non-native Christmasberry trees and grasses (predominately non-native fountain grass, *Pennisetum sectacacum*). The native *pili* grass, *Heteropogon contortus*, may also be present. At higher elevations, Christmasberry becomes more dominant, often growing in dense thickets that seriously impede pedestrian passage and greatly decrease ground visibility. Other non-native plants observed include *lantana* (*Lantana camara*) and *liliko'i* (*Passiflora edulis*). Native plants present include: *'ilima* (*Sida fallax*) in scattered numbers, *noni* (*Morinda citrifolia*), *'ōhi'a* trees (*Metrosideros polymorpha*), *laua'e* (*Phymatosorus scolopendria*), *'ohe* trees (*Reynoldsia sandwicensis*), *alaha'e* (*Psychrax odorata*), *kuku'i* (*Aleurites moluccana*), *ki* (*Cordyline fruticosa*; also often referred to as *ii*) and *halapepe* (*Pleomele* spp.). Native plants observed at higher elevations include: *naio* (*Myoporum sandwicense*), *'a'ali'i* (*Dodonaea* sp.) and *'ūlei* (*Osteomeles anthyllidifolia*).

1.3.2 Built Environment

Although much of the land around the project area remains rural, the built environment is distinct on the north and west sides of the parcel (see Figure 3 above). The built environment is distinct near the Queen Ka'ahumanu Highway, *makai* of the project area. To the north of the project area is a light industrial area bordering Huliko'a Drive built after the Colin et al. (1996) study. This area is marked by the Matsuyama Market and Pine Tree Cafe near the intersection of Huliko'a Drive and the highway. The area is marked by a stone sign "Kohanaiki." Today the industrial area is nearly complete, although some construction continues.

Hina Lani Street, a major coastal/inland (*makai/mauka*) connector road, runs through the center of the project lands. Two 1-million-gallon water tanks and a fairly large base yard have been developed along Hina Lani Street and are convenient points of reference. South of the *makai* (west) portion of the project area is a large industrial area often referred to as "Kaloko Industrial" or "New Industrial" (in reference to an older industrial area near the old Kona airport). This area features numerous large warehouses, light industrial and commercial buildings

(Home Depot and Costco, among others). As of the writing of this report, construction has commenced on additions to this commercial/industrial area *mauka* of the existing warehouses.

The project lands themselves are generally undeveloped, and appear not to have been dramatically impacted by modern activity other than bulldozing. Some modern cattle ranching has apparently taken place intermittently within the project area, with some barbed-wire fencing and a wooden trough present; the historic *ahupua'a* wall that runs through portions of the project area is also a good indication that historic animal husbandry occurred in the area. Modern trash and occasional transient camps were found near some historic properties, but generally this type of modern disturbance is concentrated near Hina Lani Street. However, portions of the 'a'ā and *pāhoehoe* flows throughout the project area have been bulldozed, and bulldozer roads and intermittent bulldozing activity are present. A large portion of the bulldozing on *pāhoehoe* areas is probably related to the ranching activities. There are additional swaths of bulldozing on the 'a'ā around the water tanks located on Hina Lani Street and at the large base yard off of Hina Lani Street. Most bulldozer activity tends to be concentrated either near Hina Lani Street, near the southern *ahupua'a* wall, or near barbed-wire fences within the central portion of the project area. There are a few distinct bulldozer roads in the project area, but less distinct signs such as bulldozer tread scars on bedrock were also noted in various locations.

A jeep road present since mid-century runs more or less *mauka/makai* just north of Hina Lani Street and is visible on the aerial view (see Figure 3). A bulldozer road, also visible on the aerial view, extends from Hina Lani Street north to the end of Huliko'a Drive.

Section 2 Methods

Historical documents, maps and existing archaeological information pertaining to the sites in the vicinity of this project were researched at the State Historic Preservation Division library, CSH Library, the University of Hawai'i's Hamilton Library, the Hawai'i State Archives, the State Land Survey Division, the Mission Houses Museum Library, the Hawai'i Public Library, the Archives of the Bishop Museum, and the Kona Historical Society. Previous archaeological reports for the area were reviewed, as were historic maps and primary and secondary historical sources. Information on Land Commission Awards was accessed through Waihona 'Aina Corporation's Māhele Data Base (<www.waihona.com>)

The Office of Hawaiian Affairs, Hawai'i Island Burial Council, and members of other community organizations were contacted in order to identify potentially knowledgeable individuals with cultural expertise and/or knowledge of the study area and the surrounding vicinity. The names for potential community contacts were also provided by colleagues at CSH and from the researchers' familiarity of the families who frequent the area. Some of the prospective community contacts were not available to be interviewed as part of this project. A discussion of the consultation process can be found in Section 5 (Community Consultation Effort). Please refer to Table 2 for a complete list of individuals and organizations contacted.

2.1 Previous Cultural Impact Assessment

A CIA (Hammatt and Shideler 1996) was conducted for a portion of the project area in 1996 as a companion study to the Collin et al. (1996) study of TMK 7-3-009:017. Informants knowledgeable of the project area were interviewed. These consultations focused on identifying traditional cultural practices conducted within the project area as well as addressing community concerns regarding probable burial sites.

This summary of the CIA focuses on the probable burial sites located within that portion of the project area. The reader is referred to the CIA (Hammatt and Shideler 1996) for a detailed discussion and analysis of the traditional cultural practices documented within the project area.

On March 16, 1996, CSH staff interviewed the Reverend Norman Keanaaina, a *kama'āina* (native-born, one born in a place) of Kohalaiki since the 1940s. Reverend Keanaaina stated his belief that there were indeed burials within the TMK parcel 17 portion of the project area. He stated that interment within the TMK parcel 17 portion of the project area continued into the 1930s or 1940s, when his "grandmother's husband," the Kapaa family, was buried. Reverend Norman Keanaaina made a site visit with CSH personnel and was taken to three sites (SIHP No. -20702, -20717, and -20720) in the south central portion of TMK parcel 17, which had been previously identified by CSH as probable burials. The reverend agreed that the filled-in cracks at these sites were probable burials. He stated that the common practice was to wrap the body in a mat or a horse blanket, then inter it in a sufficiently large crack which would subsequently be filled with stones.

In 1996, eight possible burial sites (SIHP Nos. -20702, -20705, -20716, -20717, -20720, -20731, -20743, and -20749) had not been tested to determine the presence or absence of human skeletal remains, and testing was deferred to data recovery. Because the current CSH

archaeological inventory survey sought to re-evaluate and improve records for all of these sites, many of these sites were tested. The focus of this effort was to improve decision-making that now depends more heavily on findings of the archaeological inventory survey. The result of this testing was a reduction of eight possible burial sites to two probable burial sites. A third possible burial site (SIHP No. -20720) was determined to have been destroyed and is therefore no longer a current possible burial site.

Section 3 Traditional and Historic Background

3.1 Mythological and Traditional Accounts

3.1.1 Kekaha

The *ahupua'a* of Kohanaiki and Kaloko lie at the southern end of Kekaha, the portion of North Kona extending from Honokōhau to 'Anaeho'omalu. The character of Kekaha - as it had been established in the Hawaiian consciousness - is represented in a traditional saying recorded by Mary Kawena Pukui and in a brief description by John Papa 'Ī'i. The saying, "*Kekaha wai 'ole na Kona*", translates to "waterless Kekaha of the Kona district." Pukui states that "Kekaha in Kona, Hawai'i, is known for its scarcity of water but is dearly loved by its inhabitants" (Pukui 1983:184).

Pukui (1983:271) also relates the importance of fishing in the following:

Ola aku la ka aina kaha, ua pua ka lehua i kai.

Life has come to the *kaha* lands for the *lehua* blooms are seen at sea.

Pukui (1983:271) further explains this saying: "Kaha lands refers to Kekaha. When the season for deep-sea fishing arrived, expert fishermen and their canoes headed for the ocean."

Samuel Kamakau, the native historian, relates that in the 15th century, High Chief 'Umi-a-Liloa fished for *aku* along the Kekaha coast, and around 1810, Kamehameha I also fished the shores of Kekaha (Kamakau 1961:20, 203).

Pukui et al. (1974:77-78) also relate that Kaloko is well known for the fishpond with the same name, and Kamehameha's bones are rumored to have been secretly buried here.

Kohanaiki means "small barrenness" (Pukui et al. 1974:115).

'Ī'i describes the winds of Kekaha:

...a cold wind from Kekaha, the Hooehua. Because of the calm of that land, people often slept outside of [sic] the tapa drying sites at night. It is said to be a land that grows cold with a dew-laden breeze, but perhaps not so cold as in Hilo when the Alahonua blows. ('Ī'i 1959:122)

These passages suggest that Kekaha was firmly identified with its austere physical environment. A legend told in Maguire (1966) reveals the importance of water resources in this general area (see also Wolforth 2005:8-9). The story takes place at the Cave of Mākālei, which is located outside of the current project area near 'Akahipu'u (a nearby mountain). The story focuses on a man named Ko'amokumokuohe'eia, who moved to this area and was told by the current residents that water was very scarce. Water, he was told, could be obtained in "celebrated" caves, but these caves were *kapu* (forbidden), and if caught, trespassers would be killed by the owner of the cave. However, Ko'amokumokuohe'eia discovered a very small cave entrance that no else knew about. The cave had water dripping from its roof (Maguire 1966:30). Ko'amokumokuohe'eia and his father used carved 'ōhi'a and wiliwili trees to capture the dripping water, and his family was thus able to survive during dry spells. This legend clearly

demonstrates the importance of water as a resource that is difficult to procure, and it highlights the importance of water collection caves.

John Ka'elemakule Sr., a Kekaha native, wrote newspaper articles between 1928 and 1930 that provide details about life and customs in the last half of the nineteenth century. Kepā Maly (Maly and Maly 2003) translated these serial accounts that appeared in *Ka Hoku o Hawai'i*. The two following excerpts provide additional details related to water collection.

...There were not many water holes, and the water that accumulated from rain dried up quickly. Also there would be weeks in which no rain fell... The water which the people who lived in the uplands of Kekaha drank, was found in caves. There are many caves from which the people of the uplands got water... [September 17, 1929:3] (Maly and Maly 2003:42)

...The *kūpuna* had very strict *kapu* (restrictions) on these water caves. A woman who had her menstrual cycle could not enter the caves. The ancient people kept this as a sacred *kapu* from past generations. If a woman did not know that her time was coming and she entered the water cave, the water would die, that is, it would dry up. The water would stop dripping. This was a sign that the *kapu* of Kāne-of-the-water-of-life (Kaneikawaiola) had been desecrated. Through this, we learn that the ancient people of Kekaha believed that Kāne was the one who made the water drip from within the earth, even the water that entered the sea from the caves. This is what the ancient people of Kekaha wai 'ole believed, and there were people who were *kia'i* (guardians) who watched over and cleaned the caves, the house of Kāne... [September 24, 1929:3] (Maly and Maly 2003:42)

Kekaha was, however, "valued by ruling chiefs, inhabited by attendant chiefs, and upon occasion abused by warring chiefs" (Kamakau 1979:31). Describing the apportioning of land by the *ali'i* (royalty) before the ascendancy of Kamehameha, Kamakau records this information about the lands of Kekaha:

Waimea [he is referring in this case to Waimea, O'ahu] was given to the Pa'ao kahuna class in perpetuity and was held by them up to the time of Kamehameha III when titles had to be obtained. But there was one land title held by the kahuna class for many years and that was Puuēpa in Kohala. In the same way the land of Kekaha was held by the kahuna class of Ka-uahi and Nahulu. (Kamakau 1961:231)

Kamakau further records that during the 1770s, "Kekaha and the lands of that section" were held by descendants of the Nahulu line, the Ka-me'e-ia-moku and Ka-manawa, the twin half brothers of Ke'e-au-moku, the Hawai'i island chief (Kamakau 1961:310). The Great Seal of the State of Hawai'i depicts Kame'eiamoku and Kamanawa (Springer 1989:23).

Kamakau mentions Kaloko in an episode that suggests its significance within the pre-Contact Kekaha landscape. Kamakau recounts an extraordinary day's reconnaissance of the west coast of Hawai'i Island by the spy Ka-uhi-o-ka-lani, sent to the island by Kama-lala-walu, chief of Maui. Having reached Kawaihae by canoe at night, Ka-uhi-o-ka-lani "ran about that same evening [reaching as far south as Ka'awaloa] and returned before the canoes were dismantled..." Ka-uhi-o-ka-lani, describing his journey and the landmarks he observed, relates: "I went on to the long

stretch of sand, to the small bay with a point on that side and one on this side. There are large inland ponds." He is told that the "sandy stretch is 'Ohiki, and the walled-in ponds are Kaloko and Honokōhau" (Kamakau 1961:56). This event unfolds during the time of the sixteenth-century Hawai'i Island *ali'i* Lono-i-ka-makahiki, suggesting that by the 1500s, Kaloko and its fishpond were well-known features in the Kekaha landscape.

Intensive archaeological investigation during recent decades has clarified the picture of pre-Contact Hawaiian life within Kekaha and the two *ahupua'a* under study. An especially detailed study of Kaloko has resulted in the following analysis of the development of pre-Contact settlement throughout the *ahupua'a*:

Throughout its span of occupation Kaloko was but part of a larger society. Kaloko was apparently a unified community after A.D. 1200-1300. When initially occupied (A.D. 1000-1500), it may have been an outlier of another community. Nevertheless, from its initial occupation, Kaloko had 1 or more internal local residence groups containing constituent households. By A.D. 1200-1300 at least 2 residential groups were present in the community, and by contact (circa A.D. 1778) at least 4 residential groups had dwelled in the area. Each residential group performed religious functions as well as being a leisure unit. Members of the group held use rights to adjacent farm lands and probably to areas where forest and marine resources were located. Within each residential group, 1 household seems to have been dominant, being the spatial focus for its group's religious activities. It is suggested that such dominance was a function of consanguineal seniority and/or wealth. (Cordy et al. 1993:45)

While exact population figures for Kaloko were not possible, the study suggested that the "community seems to have gradually grown in size but could never have been larger than 118 and most likely was about 60-100 in size" (Cordy et al. 1993:45). The general pattern of land use and settlement suggested for Kaloko may also have existed within the similar environment of neighboring Kohalaiki.

A detailed study of Kaloko by Cordy et al. (1991) for the National Parks Service has developed a model of pre-Contact settlement throughout the *ahupua'a*. The following is a summary of this model provided by the National Parks Service (2001):

Permanent settlements in the leeward portions of Hawai'i Island began by the A.D. 900s to 1000s, and possibly earlier. These would have occurred near favorable water sources, Kaloko bay probably having been one of the most sheltered and inviting large inlets along the Kona Coast. Coastal habitations had expanded by the 1200s, utilizing inland fields as well as sea resources for subsistence. The Kekaha lands north of Kaloko and extending to Kohala are thought to have undergone initial permanent settlement beginning in the 1400s, with subsequent occupation of the coast north and south over the next few centuries.

Sometime during the period of 1580 to 1600, Lacaunikaumanamana, the *kahuna-nui* of the ruling chief, Liloa, acquired the Kekaha region. It is thought that the construction of fishponds at Kaloko and Honokahau began during this time, with

Kaloko Fishpond dating from at least the 1400s to 1500s. During the 1600s to 1700s, as the Kona Coast population grew with the establishment of the royal residence of 'Umi-a-Liloa at Kona and the consequent increased demand for food production, Kaloko also increased to probably almost 200 residents. It continually supported a higher population than other Kekaha areas because of its fishpond and extensive inland field system. (National Parks Service 2001)

3.1.2 Kaloko Fishpond

Marion Kelly relates the legend of the *mo'o* or water spirit that resided in the Kaloko fishpond. The pond, as previously mentioned, dates to pre-Contact times.

One informant explained that the pond was "Kupua" (spooky) and not like other ponds.

Two informants declared that the pond at Kaloko was kapu and that there was a "Spirit" (*Mo'o*) of the pond which, if treated badly, would retaliate, bringing bad luck to those responsible, but if this spirit was properly cared for (*malama*) she would be cooperative.

An illustration of how appropriate care was taken of the *mo'o* of Kaloko is provided by the story of Ahuna, a Chinese man married to a Hawaiian woman (Apa) and living at Kohana-Iki. Ahuna had leased the pond from Maguire (J.A. Maguire owned Hu'e-hu'e Ranch and the project area lands), but before he removed any fish from the pond, he asked his friend Henry Ha'o to roast a suckling pig, specially prepared, which he took to the pond and laid on one of the two rocks which can still be seen today near the remains of the old net shed. By this act, it was explained, he fed (*hanai*) the *mo'o* of the pond and could thereby expect its assistance in obtaining a substantial number of fish from the pond. One informant said directly, "That's why he has good luck."

Ahuna's daughter, Atati, married Henry Akona, and the house that stands today at Kohana-Iki, not far from the Kaloko-Kohana-Iki boundary, is sometimes identified as Akona's house, although he no longer owns it (Kelly 1971:27-28).

Another account of the fishpond was translated by Kepā Maly (1993:23) and relates part of the Legend of Ka-Miki (see below for additional information). Ka-Miki caught many 'anae or mullet in the pond that he prepared and distributed to his family members. Ka-uluhe, his guardian, questioned the source of the fish.

...Ka-Miki described the pond, and Ka-uluhe told him that the 'anae were from the fishpond of the ali'i Ahauahale, his wife Pukaki, and his young brother 'Owela-a-Lu'ukia. Ka-uluhe asked, "How is it that they did not see you?" Ka-Miki told her that he only saw a stout bulging-eyed man sleeping along the pond edge. Ka-uluhe told him, "That man was Kumakapu'u, a guardian of the pond who controlled the abundance of the fish, and the restrictions of their use, as well as the use of the surrounding fresh water springs. Kumakapu'u is not a real man, but is a god who also cared for the offerings to the chiefess deities of the fishpond. The goddesses were 'O'opu-po'owai-nui-a-niho, Ka-lama-i-nu'u-nui-a-

noho, and Kiha-wahine-iki-a-nanea; and they were the ali'i kapu Lono i'a (royal ones who kept the fish of Lono class restrictions).

Kapakolea is the site which divides the pond, and was the halau ali'i (royal compound) of the gods. If the pond guardians were away from Kapakolea (traveling), the fish pond water would turn blood red, thus hiding the fish; and when the gods returned, the water would become greenish and the fish could be seen, and so these signs remain to this day. (Maly 1993:23)

3.1.3 The Legend of Ka-Miki

Kepā Maly (1993) translated the "Kao Hooniua Puuwai no Ka-Miki" (The Heart stirring Story of Ka-Miki) that appeared in the newspaper *Ka Hoku o Hawai'i* between 1914 and 1917. The legend provides details about life and the environment of Kekaha as well as for the entire island of Hawai'i. Ka-Miki, the quick or adept one, and his brother Maka-'iole, rat or squinting eyes, traveled around the island to participate in competitions circa the thirteenth century when Pili-a-Ka'aiea was the chief of Kona. The boy's parents were Pōhaku-o-Kāne (male) and Kapa'ihilani (female), the *ali'i* of Kaloko and Kohanaiki. The legend relates that the supernatural brothers "were empowered by their ancestress Ka-uluhe-nui-hihi-kolo-i-uka (the great entangled growth of *uluhe* fern which spreads across the uplands), a reincarnate form of the earth-mother goddess, creative force of nature Haumea (also called Papa) who dwelt at Kalama'ula on Hualālai, in the uplands of Kohana-iki, Kona" (Maly 1993:21-22). The twins were raised by Ka-uluhe, who taught them how to use their supernatural powers.

Portions of the legend that are relevant to the current study follow. The following excerpt discusses the division of property within Ka-loko (the pond).

The wood carved for the makaha (fish pond gates) came from 'Iwa'awa'a (near a halau ali'i [royal compound] and kahua [contest arena] of the chief Pohaku-o-Kane, on the plains of Kohana-iki next to Kaloko [1/15/1914]). The lands of Kaloko and Kohana-iki were jointly governed by Pohaku-o-Kane, though the ponds were under guardianship of other god-chiefs and chiefesses (5/21/1914).

Several of the stories identify *heiau* of Kaloko and Kohanaiki. The first appeared between April 16 and 30, 1914.

The ocean at 'Ohiki was named Kauahia or Kai o Kauahia. After an 'awa ceremony with Ka-uluhe ma, Ka-Miki went to the shore of 'Ohiki to fish, in the pond waters of the chief Ahauahale. 'Ohiki was the name given for several places, including: a heiau; a cove; and an 'ili of Kaloko. The 'ili land parcel came to be known as Ki'ikahala after the punishment of the dual formed priest-shark Kalua'olapauila.

On the night of Kāne the priests, chiefs, and people were observing the kapu of silence and all was being made ready to dedicate the royal compound of Ka'aipu'a at Kohanaiki. Ka-Miki and Maka-'iole descended to the coastal region of Kaloko and Kohanaiki from Kalam'ula and beat the drums in the heiau of Pohakea, 'Ohiki, Kaukeano, 'O'unui, Honu'iwa, Pu'uhō'olelelupe, Kauki'eki'e, and Hale-o-Lono. The sound of the pahu heiau (temple drums) greatly startled the

people, and caused the priests and chiefs of Kaloko to grumble amongst themselves. The sequence of events which followed, led to the naming of Hi'ikanoholae.

A spring in the land parcel was also named 'Ohiki. The ocean of this area was named Kauahia before 'Ohiki came about, and following the death of the shark-priest Kalua'olapaula, the land section and temple of 'Ohiki came to be called Ki'ikahala.

The following appeared between January 8 and 15, 1914 and describes Hale-o-Lono, or house of Lono, a *heiau* in Kohanaiki where prayers for rain and abundant growth were offered.

Hale-o-Lono was the husband of Pipipi'apo'o, a daughter of the deified beings Kumua and Ka-uluhe. Hale-o-Lono excelled at farming, and had the plain of Nanawale, Kohaha-iki well cultivated. His plantation was marked by Nahiahu, also called Nawahiahu (the alignment of cairns) on the makai side of this feature.

Additional information about Na'wahi'ahu was published between January 8 and 29, 1914:

Na-wahi-ahu (the place [of] cairns) [or] Mahiahu is identified as a line of cairns which marked the agricultural fields of Hale-o-Lono, and the sacred plantation of Ka'aipu'a at Kohana-iki. Before Hale-o-Lono established his fields in this area this portion of Kohanaiki was called Nanawale (to look about – because of the extensive fields).

Details about why this area of Kohanaiki became important appeared between January 8 and May 28, 1914 and December 6, 1917.

Ka-uluhe-nui-hihi-kolo-i-uka a reincarnate form of Haumea (also called Papa) lived at Kalama'ula in the uplands of Kohana-iki, below Hainoa. Ka-uluhe was the wife of Kumua, and the hill site at which Kumua dwelt is also called Kumua; it is below Kalama'ula, a little above the hidden spring of Kapa'ihii. The reason that Kumua lived at this hill was because it allowed him clear view of the coastal lands of Kohana-iki, which is where his children and grand children lived. One of the children of Kumua was Pipipi'apo'o and she was married to Hale-o-Lono (an agriculturalist and temple type, coastal Kohana-iki) who was an exceptional farmer. Hale-o-Lono excelled in his trade, and the place upon which he farmed was called Nanawale, and because he marked the area with many cairns, it came to be called Nahiahu, also called Nawahiahu, the place of cairns.

Nawahi ahu appears on Emerson's RM 1449 and RM 1512, dating to 1888 and 1889 respectively. A discussion of the maps and roads that appear on the maps is presented in the "Mid- to late -1800s" section below.

A more recent translation of the legend of Ka-Miki by Maly and Maly (2003:15) includes the following additional information about Nawahiahu.

Pipipi'apo'o was another daughter of Kumua and Ka-uluhe-nui-hihi-kolo-i-uka. She married Haleolono, one who cultivated sweet potatoes upon the *'ilima* covered flat lands of Nanawale, also called Nahiahu (Nawahiahu), as it has been called from before and up to the present time. Cultivating the land was the skill of

this youth Haleolono, and because he was so good at it, he was able to marry the beauty, Pipipi'apo'o. Pipipi'apo'o skill was that of weaving pandanus mats, and there grow there many pandanus trees to this day. The grove of pandanus trees and a nearby cave, is called Pipipi'apo'o...

Maly (1993:28) notes that Hale-o-Lono, Ki'ikahala, and 'Ohiki are associated with sites and/or place names that are shared by Kaloko and Kohanaiki.

Ka-Miki completed his journey around the Big Island and

...became the foremost champion of Pili (7/26/1917). It was at this time that Ka-Miki learned about the sacred palama chiefess Pachala of Honokohau; lands also called Na-Hono-i-na-Hau-'Elua (the bays of the two deus). Pili gave Ka-Miki permission to wed Pachala if she and her family agreed, and Pachala was the foremost beauty of Kona.

When the chiefess agreed to marry Ka-Miki, Pili told Ka-Miki, that he would also, "oversee the chiefs' sacred fishponds [at Kaloko and Pa'aiea]; the schools of kala, uhu, and palani; and all the lands of Kekaha from Hikuhia which is above Napu'u u (also called Napu'upo'alu); and lands between Keahualono at Kaniku to the plain of Kanoenoe, marked by the hill of Pu'uokalea at Keahuolu" (10/18/1917). (Maly 1993:22)

The following passage is from Kihe and appeared in *Ka Hoku o Hawai'i* between January 31 and April 10, 1928. It relates the variety of agricultural crops that grew in Kohanaiki and Kaloko:

Departing from O'ahu, Makalie and his family landed at Hale 'uki, Ka'upulehu and were greeted by Ke'awalena a chief and overseer of the Kekaha region. Ka'upulehu and all Kekaha were extensively cultivated at this time. Dependent on seasons, the uplands were used for residences and farming, and the coastal lands for residence and fishing. Pao wai (dug out water catchments) on the pahoeohoe and in upland fields were a means of water catchment. Crops grown here included: taro, sweet potatoes, sugar canes, bananas, and 'awa...(Maly 1993:25)

Maly (1993:29) explains that traditional accounts of Kaloko and Kohanaiki describe a lush environment that differs from its current state due to several factors. The Hualalai lava flow in 1801 covered the former agricultural and forested lands, residential areas, and fishponds. The loss of forests began the decrease in rainfall that was exacerbated by the introduction of livestock and ranching. Goats and cattle stripped the vegetation from the lands causing water resources to dry up. Thus, over the last 150 years, the environment has been significantly altered.

3.1.4 The Pool of Wawaloli

Eliza Maguire (1966:11-17) collected and translated ten legends in 1923. Her husband, John Maguire, established Hu'ehu'e Ranch. *Paniolo* ("cowboys") working the ranch told the stories and Maguire decided they were too important to allow to fade away. "The Pool of Wawaloli" was near the coast "between Ooma and Kaloko." Although this legend takes place on the coast, it is the only one that Maguire translated that is within the vicinity of the current study area.

Malumaluiki, a beautiful maiden, leaves her parents' home to travel to the coast for shellfish and seaweed. On her way she becomes thirsty and stops to drink from a pool, where she meets a handsome young man. The two are immediately infatuated with each other and spend several hours together. Before Malumaluiki departs, the handsome man tells her to call him Wawa when they are together, but call him Loli when she approaches the pool. He also teaches Malumaluiki a chant to summon him at the pool.

After departing from her home several days in a row to meet Wawa, Malumaluiki's parents become suspicious since she never brings home any shellfish or seaweed. Her father follows her one morning and discovers that his daughter's lover has a human form and a sea-slug form. After observing the two together, he memorizes the chant to Loli and departs.

Malumaluiki's father consults with a *kahuna* (priest) to see how he can save his daughter. The *kahuna* tells him to trap and destroy Wawaloli which will save all the young women in the area from the lecherous evil wizard. The father returns to the pond, repeats the chant, captures Wawaloli with a net, and buries him in an *imu* (earth oven). Malumaluiki is sad to lose Wawaloli but much wiser. All that remains of Wawaloli is the pool he once occupied and still retains his name (Maguire 1926:21-26.)

3.1.5 Stillman Family Song

The following is a family song written by Rose Simerson about life on Hu'e'hu'e Ranch. The song was sang by the Kahauanu Lake Trio, "Ke Po'okela", Volume II Album. The Stillman family descends from Kipikane, the great granddaughter of Kamehameha I, who married John P. Parker, the founder of Parker Ranch (Kanoa-Martin 2007). This is their family song:

<i>Keiki mai au no Hu'e'hu'e 'eā 'eā</i>	<i>I learned to throw a lasso and crack the whip</i>
<i>Kipuka 'ili a'o kani ka uwepa</i>	<i>From childhood at Hu'e'hu'e</i>
<i>Ka waiho laulā ka'u aloha 'eā 'eā</i>	<i>The broad open plains I love</i>
<i>Ku'u lio puakea ha'a i ke kula</i>	<i>My white horse goes prancing in the high pasture land</i>
<i>Maika'i Hu'e'hu'e e waiho nei 'eā 'eā</i>	<i>Hu'e'hu'e is a fine place, lying there below</i>
<i>Ho'okahi no hewa he ulua 'ole</i>	<i>Too bad there's not even one fish (cowboy)</i>
<i>Ua ho'i ka ulua i Kahalu'u 'eā 'eā</i>	<i>The cowboys went to Kahalu'u town</i>
<i>I ke ani peahi lau o ka niu</i>	<i>Where the palm leaves beckon</i>
<i>A komo i ka malu lau kukui 'eā 'eā</i>	<i>In the kukui leaf shade</i>
<i>Ho'ola'i nā iwa oia uka</i>	<i>The birds of the upland are made still</i>
<i>Ha'ina 'ia mai ana ka puana 'eā 'eā</i>	<i>The story is told</i>
<i>Kipuka ili a'o kani ka uwepa</i>	<i>Of learning to throw a lasso and crack the whip</i>

3.2 Early Historic Period

Kamakau (1961) reports that during the war between Alapa'inui of Hawai'i and Kekaulike of Maui, Kekaulike "abused the country people of Kekaha" by destroying all the coconut groves and slaughtering "the country people." The destruction of these valuable trees was devastating.

As previously mentioned, Kekaha lands were set aside for the priestly class:

Waimea [O'ahu] was given to the Paao Kahuna class in perpetuity and was held by them up to the time of Kamehameha II when titles had to be obtained. But there was one land title held by the kahuna class of Paao for many years and that was Puuepa in Kohala. In the same way the land of Kekaha was held by the kahuna class of Ka-uahi and Nahulu. (Kamakau 1961:231)

During the last decades of the eighteenth century, following western contact, Kohanaiki and Kaloko - as elements of the larger Kekaha area - remained under the control of Ka-me'e-ia-moku, who resided to the north at Ka'upūlūhu (Kamakau 1961:147). Ka-me'e-ia-moku's son, Ulumaheiei Hoapili, "belonged to the priesthood of Nahulu and was an expert in priestly knowledge. He had been taught astronomy and all the ancient lore" (Kamakau 1961:354).

Archibald Menzies, the first foreigner to record his visit to Kekaha, accompanied Captain Vancouver in 1792. He described the land as "barren and rugged with volcanic dregs and fragments of black lava...in consequence of which the inhabitants were obliged to have recourse to fishing for their sustenance" (Menzies 1920:99).

On January 17, 1792, Menzies hiked to the top of Hualālai, and observed the following:

We commenced our march with a slow pace, exposed to the scorching heat of the meridian sun, over a dreary barren track of a gradual ascent, consisting of little else than rugged porous lava and volcanic dregs, for about three miles, when we entered the bread fruit plantations whose spreading trees with beautiful foliage were scattered about that distance from the shore along the side of the mountain as far as we could see on both sides. Here the country began to assume a pleasant and fertile appearance through which we continued our ascent for about two miles further, surrounded by plantations of the esculent roots and vegetables of the country, industriously cultivated...From this place we had a delightful view of the scattered villages and shore underneath us, and of the luxuriant plantations around us...

January 18th....We observed here and there on the path little maraes [shrines] pointed out by taboo sticks in the ground round a bush or under a tree. In passing these places the natives always muttered a prayer or hymn, and made some offering as they said, to their akua, by leaving them a little piece of fruit, vegetable or something or other at these consecrated spots. Even in this distant solitary hut, we found a corner of it consecrated by one of these taboo sticks which the natives earnestly requested us not to remove when we took possession of it, and we very strictly obeyed their injunction, conceiving that religious forms whatever they are, ought to be equally inviolable everywhere. (Menzies 1920:151-160)

Kamakau recorded that Kaloko is the site where Kamehameha's bones were cached by Hoapili after the king's death in 1819:

Kamehameha had...entrusted his bones to Ulu-maheihēi Hoa-pili with instructions to put them in a place which would never be pointed out to anyone. At midnight, therefore, when black darkness had fallen and no one was likely to be on the road and the rough lava plains of Pu'ukaloa lay hushed, Hoa-pili sent his man, Ho'olulu, to bring the container of wicker work in which the bones of Kamehameha were kept to Kaloko in Kekaha...The next morning Hoa-pili and Ke-opu-lani took canoe to Kaloko where Hoa-pili met the man who had charge of the secret cave and together they placed the bones there. (Kamakau 1961:215)

Kelly (1971:25) notes a February 16, 1837 letter to a person named Kapalu as the "overseer and keeper of the Royal Burial Ground at Kaloko, Kailua." The Interior Department of the Hawaiian Kingdom provided Kapalu with a \$20 a month stipend, for seven months. A second letter reappoints Kapalu as a caretaker although there is no payment for his services. Kelly also relates that an informant's grandfather had disclosed the location of the burial cave, and he would move the remains to protect them. Another informant stated that women are not buried at Kaloko, only men of high rank. Other informants revealed that the burial caves were inland and not in the vicinity of Kaloko Pond (Kelly 1971:25).

Kamakau's account regarding the caching of Kamehameha's remains suggests that Kaloko's population, toward the end of the nineteenth century's second decade, had diminished to such an extent that the *ahupua'a* could provide the necessary isolation and secrecy for the burial.

By the early nineteenth century, the inhabitants of Kaloko and Kohanaiki had long experienced the social pressures and consequences of western contact. "As early as 1788, Hawaiians began enlisting as seamen on the foreign ships that stopped at Island ports, and their number increased rapidly with the growth of whaling in the Pacific" (Schmitt 1973:16). As harbor facilities were developed at Kailua and Kealahakua during the early 1800s, these ports became population centers drawn from increasingly isolated (economically and socially) areas like Kaloko and Kohanaiki. Newly-introduced diseases cut the population severely.

Missionary censuses of the 1830s chart the diminishing population of Kekaha and North Kona. In 1834, the total population of Kekaha is recorded as 1,244, comprising 21% of the total North Kona population of 5,957 (Schmitt 1973:31). The North Kona figure represents a population loss of 692 since the previous census of 1831 (during which no figure specific to Kekaha was noted), which recorded 6,649 persons in the district (Schmitt 1973:9). One factor - inter-island migration - which led to the diminishing population of Kona was specifically noted by missionaries in 1832: "We have been sensible for some time that the number of inhabitants in this island is on the decrease. There is an almost constant moving of the people to the leeward islands, especially since the removal of the governor (*Kuakini*) to Oahu. Some leave by order of the chiefs, and others go on their own responsibility" (cited in Schmitt 1973:16).

Land Commission documents of the 1840s and 1850s record the disposition of population and land use within Kohanaiki and Kaloko *ahupua'a* that had evolved since western contact. At the Māhele of 1848, Kaloko was claimed by and awarded [Land Commission Award (LCA) 7715] to Lot Kamehameha (who would become Kamehameha V). Kohanaiki was classified as

Government Land. Subsequently, 18 *kuleana* claims - by commoners claiming to occupy and/or cultivate land parcels - were made in Kaloko. Twelve of these claims were awarded. All claims were for *mauka* lands - between 1200 and 1700 ft. elevation - adjacent to or just *makai* of the Government Road. Only testimony for Kahiona's (unawarded) claim (LCA 9205/9237) mentions a fishpond; no claims were made for the coastal area. Farm lands claimed are *mala*, *kihapai*, and *mo'o*, i.e. forms of dry land agriculture; actual crops identified in the award testimonies are taro and sweet potato. Only five of the total 18 claims mention residence on or use of the Kaloko lands dating to the time of Kamehameha I, the first decades of the nineteenth century; the remaining claims testify to residence/use beginning in the 1830s and 1840s.

Parcels within Kohanaiki, having become Government Land, were subject to sale - designated grants - by the Hawaiian Kingdom government. Land sales began in the 1850s with Grant 2030 to Kaiakoili in 1856, awarding 102 acres adjacent to and *makai* of the Government Road. Also beginning in the 1850s, the first taxpayer rolls for Kohanaiki and Kaloko were documented: they indicate, within Kohanaiki, eight, 13 and 12 taxpayers during the years 1857, 1859 and 1860, respectively; within Kaloko, during the same years, 19, 21 and 23 taxpayers were recorded. Just past the middle of the nineteenth century, the populations of Kaloko and Kohanaiki had been drawn beyond the original subsistence-based economy into the western commercial paradigm.

As Cordy notes about Kaloko: "The historical documents suggest that by the 1840s-1850s, the Coastal Zone had been abandoned as a residential area, except probably for a house used by the fishpond's caretaker. This pattern would have been a stunning change from prehistoric and early historic times, when many coastal residences were present" (Cordy et al. 1991:288). This pattern likely also held for Kohanaiki.

3.2.1 Cultivation

Despite descriptions of the lava covered terrain, various crops were traditionally cultivated within the project area, and sweet potato is likely to have been the most abundantly grown crop because of its adaptability to stony, dry environments. It was commonly planted in mounds and in *pāhoehoe* excavations.

Henry J. Lyman, son of missionaries that first arrived in Hilo in 1831, describes features in Puna similar to *pāhoehoe* clearings in the project that were cultivated with sweet potatoes:

Wherever the lava could be pounded into scoria, a plantation of sweet potatoes was laboriously formed by digging among the stones and filling in the holes with dried grass brought from the mountainside. Placed in the nest, the tuberous buds were covered with gravel, and there grew with astonishing luxuriance, yielding the largest and finest potatoes on the island (in Frierson 1991:167).

During the mid 1800s, Captain Charles Wilkes of the American Exploring Team comments on the agricultural use of *pāhoehoe* excavations (similar to the modification of *pāhoehoe* outcrop in the project) which he observed specifically in the Kona region:

Cultivation is carried on in many places where it would be deemed almost impracticable in any other country. The natives, during the rainy season, also plant, in excavations among the lava rocks, sweet potatoes, melons, and pine-apples, all of which produce a crop. (Wilkes 1845:91)

Sweet potatoes were also cultivated within walled fields or depressions in the walls themselves. E.S. Craighill Handy and Elizabeth Green Handy discuss this method from an account that appeared in the Hawaiian newspaper *Ka Nupepa Ku'oko'a* (March 24, 1922):

Rocky lands in the olden days were walled up all around with the big and small stones of the patch until there was a wall (*kua'hi*) about 2 feet high and in the enclosure were put weeds of every kind, 'ama'u tree ferns and so on, and then topped well with soil taken from the patch itself, to enrich ti, or in other words to rot the rubbish and weeds to make soil.

After several months, the rotted weeds were converted into soil of the best grade. The farmer waited for the time when he knew that the rains would fall, then he made the patch ready for planting. If for sweet potatoes, he made mounds for them and for taro too, on some places on Hawai'i. (Handy and Handy 1972:131)

3.2.2 Ranching

Ranching has its roots in this early historic period with the introduction of goats, cattle, and horses by sea captains who sought to develop these resources to replenish their ship holds during long journeys. Captain George Vancouver gave Ke'eaumoku, an *ali'i*, a pair of goats in 1792, and the following year, he brought Ke'eaumoku four sheep. Vancouver also brought the first cattle, California longhorns, to Kamehameha I in 1793. Kamehameha issued a *kapu* (in this case, a prohibition) that carried the death penalty to anyone harming cows or cattle thus ensuring that the first herds would proliferate. The *kapu* was enforced for 10 years. Due to the *kapu*, families constructed walls to protect their sweet potato and taro lands from the cattle. Kamehameha ordered the construction of a wall, *mauka* of the project area, that ran from north to south Kona, to prevent cattle from destroying populated areas (Bergen 2004:22-23). Historical research suggests that both goat and cattle grazing took place within the project area.

In 1803, horses were introduced, and they also ran free although no *kapu* protected them. Horses had difficulties acclimating to local grasses, and herds of feral horses were rare until the 1830s. At that time, Kamehameha III had California *vaqueros*, cowboys of Native Californian, Spanish, and Mexican descent, brought to Hawai'i to herd the cattle and teach Hawaiians to ride horses and tend the cattle. The *paniolo*, as they were called, were expert horsemen and able to chase down the wild cattle on horseback and capture them with a lasso. The hide and tallow trade proved to be successful and cattle were shipped from Kailua Bay to slaughterhouses on O'ahu (Figure 5 and Figure 6). In 1851, it was estimated that Hawai'i Island had 8,000 head of tame cattle and 12,000 head of wild cattle (Kelly 1983:79; Bergen 2004:23, 97).

Historic documents related to the Government Homestead Program of the late 1880s indicate officials determined that goats were the only animals that were adept at grazing within arid, rocky Kaloko and Kohanaiki (Maly and Maly 2003:76, 79). Goats were present in the area prior to the late 1880s and may have been present within the project area. Limited cattle ranching was practiced at the same time, although by 1900, cattle ranching had for the most part replaced the goats (Maly and Maly 2003:75).

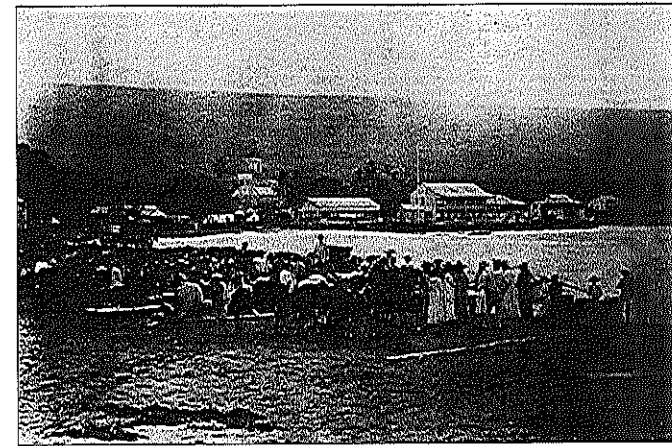


Figure 5. Kailua Wharf on Steamer Day, circa 1890, Moku'aikaua Church in background (photograph by R. J. Baker)

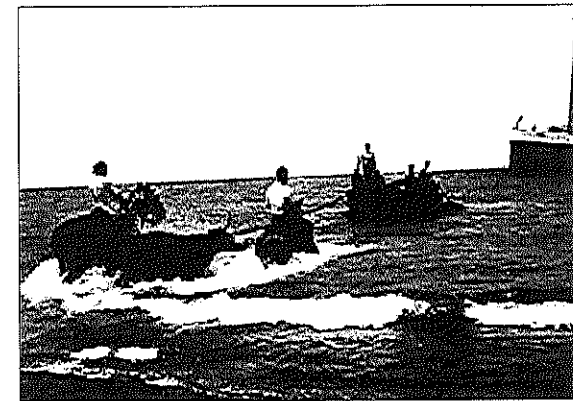


Figure 6. Loading cattle on the Kona Coast, Hawai'i (Faris 1929:296)

3.3 Mid- to Late -1800s

The division of Kohanaiki - through sales of Government lands - continued throughout the remainder of the nineteenth and into the twentieth century. Grant 2942 in 1864 awarded to Huliko'a 929.75 acres which included the width of the *ahupua'a*, extending *makai* from Kaiaikoili's grant. In 1871, Grant 3086 awarded 154 acres to Kapena; this parcel extended *makai* from Huliko'a's grant to the shoreline.

At the time of the Māhele, Huliko'a was a resident of Kohanaiki (Maly and Maly 2003:4). Although Maly and Maly (2003:60) reviewed all Māhele claims, no additional references to Huliko'a were found. However, based on traditional patterns of residency in the region, it is "likely they had primary residences in the uplands, near sheltered *māla 'ai* (agricultural fields), and kept near shore residences for seasonal fishing, collection of salt, access to water in dry periods, and for access to other resources of the coastal zone" (Maly and Maly 2003:60). Maly and Maly (2003:66) also note that during their research "the original notes of survey and map accompanying Grants 2030 and 2942, are missing from the state collection, so the corresponding maps and surveys, and their relationship to Kapena's parcel could not be compared with the original records." These survey documents were also not found during the current study.

Kaloko is documented during the 1870s in testimonies by Hawaiians before the government's Boundary Commission. Testifying on August 12, 1873, Nahuina (who had earlier received LCA 10327 in Kaloko) describes himself as "born at Kaloko North Kona Hawai'i at the time of Keikepuipui, the building of the *heiau* at Kailua, and have always lived there" and states that the boundaries of Kaloko were shown to him by his father, the former *konohiki* of the *ahupua'a*. Identifying the mauka portions of the boundary, Nahuina notes bounds defined by vegetation and a wall (*iwi aina*), and recalls a former habitation site:

...From the makai side of Kaupulehu the boundary runs along said land, the koa being on Kaloko and the mamani and pukeawe [sic] on Kaupulehu to the corner of Lanihau 2nd Keahuolu and Honokohauui...Ohiawela, a *pali*, on the road through the woods is a point on the boundary. This place is above Honokohauui, thence turn makai to Kahua, a place in the fern where houses used to stand, from thence the boundary runs makai along an *iwi aina* to Kapokalani, at the Government road. Thence makai still following the *iwi aina* to Kiikii an *ili aina*, thence to Kahohe, a grove of trees thence to aa...

Nahuina adds that Kaloko has "ancient fishing rights extending out to sea." Testifying on the same date, Hoohia, who "moved to Honokohauui when quite small and reside[s] there now", adds details that suggest the *mauka* Kaloko-Honokohauui boundary was defined by different vegetation that also reflected former traditional gathering rights: "Honokohauui ends at Ohiawela, a *pali*. Kaloko takes the *koa*, and Honokohauui, the *ohia*...The *olona* grows on Honokohauui and Kealakehe and the *koa* on Kaloko."

During the 1880s, Kona lands - including Kaloko and Kohanaiki - were surveyed by J.S. Emerson for the Hawaiian government. A portion of his Registered Map (RM) 1449, Akapipuu Section (Figure 7) shows a trail through the project area; the trail actually ran from the Kohanaiki Homesteads to the Kaloko fishpond. Emerson produced three maps corresponding to the project area during this time period: Registered Map (RM) 1280, RM 1449, and RM 1512. Emerson's

assistant, J. Perryman also produced sketches of the west slopes of Hualālai. Although other surveyors and historians have produced maps for the area, these maps are the most comprehensive. RM 1280 (Figure 8) is cited and reproduced with the most frequency. It is often dated to 1888, but the map does not indicate an original date; rather, the date the map was traced by another surveyor in 1952 for reproduction purposes. An independent attempt to verify its date during the present study was unsuccessful, as the original map is now retired and not available from the State Survey office. Circumstantial evidence dating the map includes the sketches of J. Perryman dated to 1882 that match the features of this map and a date range penciled on the back of the traced map on file - "1877-1903." RM 1449 and RM 1512, dating to 1888 and 1889 respectively, are essentially maps of the same series. RM 1449 is a broad overview map ranging from Kaloko to Kūki'o in the north, and RM 1512 is a detail of the land grants around the government road.

A portion of RM 1280 shows the locations of the three large Kohanaiki grants discussed earlier. Also indicated are "Kealihelepa Hse" at the coast above the Kaloko fish pond and, near the government roads, "Kaloko Cath. Church" and "Kohanaiki Church," which is likely the Protestant church recorded as built by a minister, Kaanohimaka, and his congregation in the 1870s (Kelly 1971:14). As noted by Cordy et al. (1991:418), Emerson's map of the area including the Kohanaiki Church indicates "a set of about 16 stone house enclosures and a Protestant church, collectively called the Kohanaiki Homesteads;" Cordy et al. suggest a "late 1880s age for the formation of the Kohanaiki Homesteads." Kelly (1971) notes that the Kohanaiki Homesteads would draw people as other areas of North Kona were abandoned. Government records of Kohanaiki grants show 18 parcels ranging in size from 0.73 acres to 25.45 acres awarded between 1895 and 1904.

A composite of RM 1449 and RM 1512 (see Figure 7) shows an alternative view of both the country side and the detail in the area of the Kohanaiki Homesteads. Most visible are family claims in the Kohanaiki Homesteads and Kohanaiki Road running directly *makai* from the homesteads. The road ends abruptly on RM 1449, although it appears to come close to joining the prominent "Lower Government Road." The indication of the "Lower Government Road" also ends shortly into Kaloko.

While all three Emerson maps provide survey information for the area, there are inconsistencies that are difficult to interpret. All were surveyed within a short time period but RM 1280 does not indicate survey stations as the others do. The largest inconsistency is the route of the two roads extending *makai* from the homesteads - on RM 1280 crossing into Kaloko just outside of the homesteads and on RM 1449 crossing upslope of the project area. Since RM 1280 does not give a name to this road and the date of the map is somewhat uncertain, it is possible that there were two roads, one superseding the other. It is also likely that RM 1280 was simply a preliminary survey (if the dates for J. Perryman's sketches date the map) and was less accurate (since it did not use many survey markers).

Oral history interviews (Maly and Maly 2002) relate that in the mid-1800s only a few residences were on the coastal lands, in the uplands above 900 ft. elevation, and in the vicinity of Māmalahoa Highway (east of the project area). The land between 900 ft. and the coast was cattle, donkey, and goat pasture. *Mauka/makai* trails through Kohanaiki, Kaloko, Kalaoa, and

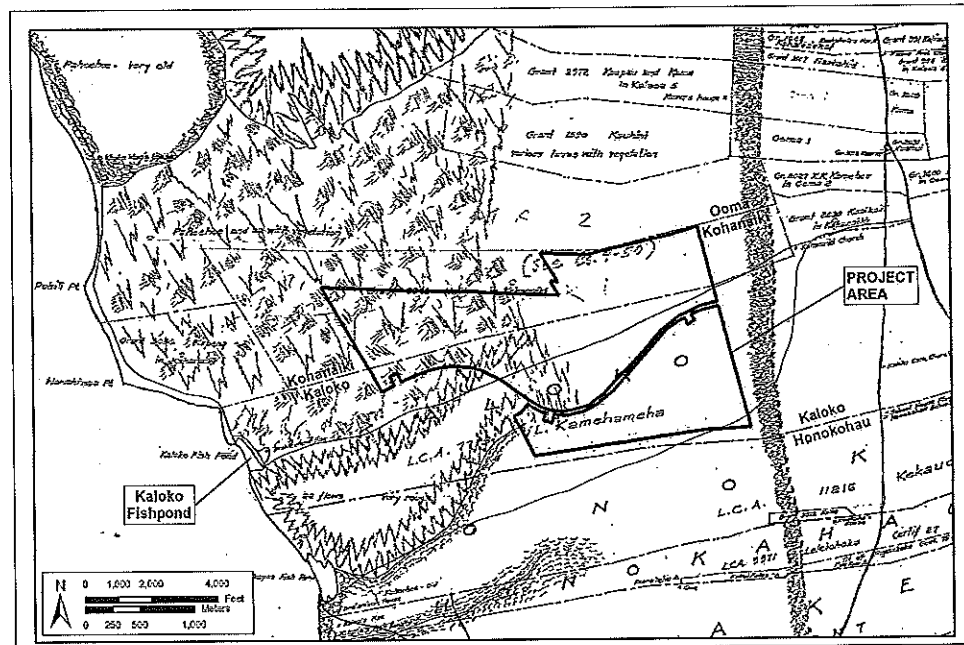


Figure 8. Portion of Registered Map 1280 by J. S. Emerson showing location of project area

Cultural Impact Assessment for a 1,150-Acre Parcel in Kohalaiki and Kaloko Ahupua'a
 TMK: PJ 14-005-017, 028, 029, 030

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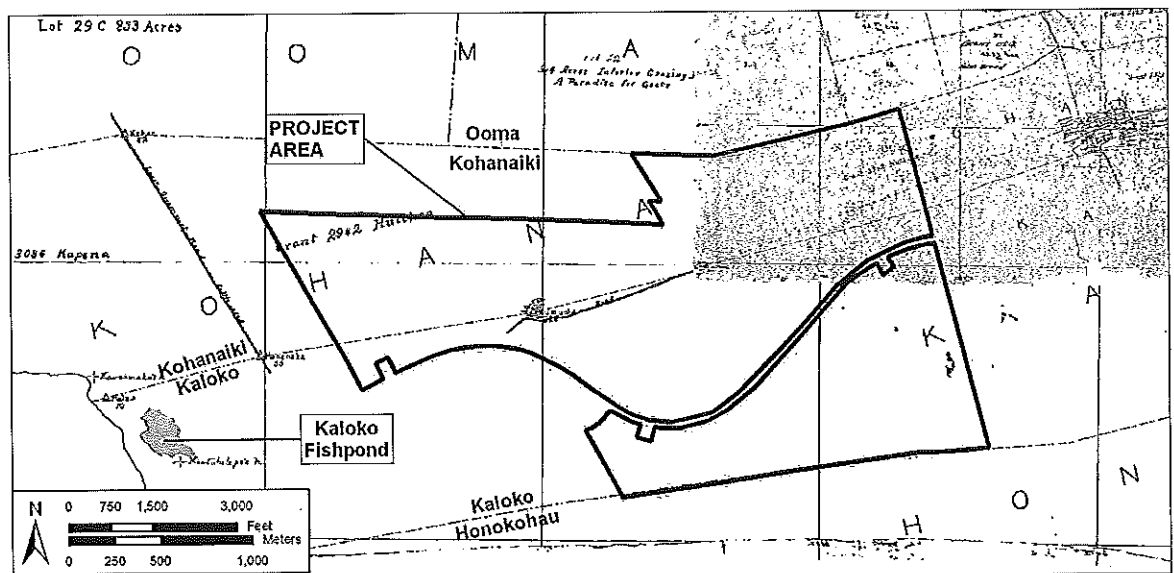


Figure 7. Portions of Emerson's RM 1449 (1858) and RM 1512 (1859) showing the road from Kohalaiki Homesteads

Cultural Impact Assessment for a 1,150-Acre Parcel in Kohalaiki and Kaloko Ahupua'a
 TMK: PJ 14-005-017, 028, 029, 030

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Honokōhau were utilized by upland families to access the coast to fish, and gather water during upland droughts.

Kaloko and most of Kohanaiki continued to be held by the *ali'i* throughout the remainder of the nineteenth century, passing, after the death of Lot Kamehameha, successively to Bernice Pauahi Bishop, Kalākaua and Kapi'olani.

Maly and Maly (2002:339) translated the following 1875 letter to the editor of *Ku Okoa*, the Hawaiian newspaper. The letter was written in response to another letter describing a drought in the Kekaha region and the subsequent famine. J.P. Pu'uokupa, the writer, lived in Kekaha:

...The people who live in the area around Kailua are not bothered by the famine. They all have food. There are sweet potatoes and taro. These are the foods of these lands. There are at this time, breadfruit bearing fruit at Honokohau on the side of Kailua, and at Kaloko, Kohanaiki, Ooma and the Kalaoas where lives J.P. [the author]. All of these lands are cultivated. There is land on which coffee is cultivated, where taro and sweet potatoes are cultivated, and land livestock is raised. All of us living from Kailua to Kalaoa are not in a famine, there is nothing we lack for the well being of our bodies. Mokuola (reference to a small island in Hilo Bay that is a sanctuary, and place of life and healing – indicates Kekaha is also) is seen clearly upon the ocean, like the featherless back of the ukeke (shore bird). So it is in the uplands where one may wander gathering what is needed, as far as Kiholo which opens like the mouth of a long house into the wind. It is there that the bow of the boats may safely land upon the shore. The livelihood of the people there is fishing and the raising of livestock. The people in the uplands of Napuu are farmers, and as is the custom of those people of the backlands, they all eat in the morning and then go to work. So it is with all of the native people of these lands, they are a people that are well off...

...As was said earlier, coffee is the plant of value on this land, and so is the raising of livestock. From the payments for those products, the people are well off and they have built wooden houses. If you come here you shall see that it is true. Fish are also something which benefits the people. The people who make the *pai ai* on Maui bring it to Kona and trade it. Some people also trade their *poi* for the coffee of the natives here... (J.P. Puuokupa, in *Ku Okoa* November 27, 1875; translated by Maly)

The following is excerpted from George Bowser's (1880) "Directory and Tourists Guide." Bowser traveled around the Hawaiian Islands and published his guide detailing places of interest. His observations during his journey along the west coast of the Big Island include:

...From Kiholo the road southwards is rough and laborious. Perpetual traveling over lava is very hard upon our horses, and it is impossible to travel faster than the slowest walk... Some twelve miles from Kiholo we began to cross the western shoulder of Mauna Hualālai, and the aspect of things changed, although the condition of the road did not. Here all around, for miles and miles, trees are growing thickly, on the otherwise almost bare surface of the lava. In numberless instances these trees, which are numerous enough in places to form a dense forest,

grow out of lava pure and simple, without a semblance of soil of any kind to support them... Pursuing my way through this forest land, I enjoyed, in spite of the roughness of the road, one of the most delightful days experienced throughout my journey.... In this woodland I heard for the first time since I landed on the islands the notes of a pretty little bird about the size of a lark, called by the natives *akakane*. Its song is very sweet; nor is it the only songster of the woods. One especially I noticed, called *iiwi*, from its note. During the ride we saw numbers of native geese and sundry herds of goats skipping from ledge to ledge on the lava beds. Presently I reached the ridge of the mountain and had a fine view of the surrounding country...

Fronting the sea...in North Kona there is a rich tract of bottom land which might be turned to good account. Large areas of the mountain land might also be cultivated for coffee...I was astonished to see in this district how bananas, mangoes, oranges, pineapples, in short all the fruits belonging to these islands, grow in profusion...

At Kohanaike, a place about six miles short of my destination, I came upon a store kept by a Chinaman, who has Hawaiianized his name to Akao. Here the tourist, if he has no supplies with him, can get anything he wants, in the way of canned fish, milk, crackers, etc., and if night should overtake him here, a bed can always be had. I finished my day's journey at Kailua, passing on the way a small place called Kaloko, where there is a blacksmith shop kept by Mr. Philip Ryan...(Bowser 1880:547-549)

Bowser also included the following individuals as residents of Kohanaiki or Kaloko in 1880:

Kaiaikoili lived in Kohanaiki and was a coffee planter who owned 600 acres, 10 of which were cultivated (Bowser 1880:215, 339).

Katy Ryan lived in Kaloko on Kailua Road and was also a coffee planter and owner with seven cultivated acres (Bowser 1880:262, 349).

3.4 1900s

During the twentieth century, major developments focused on Kaloko Ahupua'a, with continuing commercial use of the fishpond and increasing animal husbandry. The Kohanaiki Homesteads were apparently in decline during the early part of the century (Maly and Maly 2003), and are mentioned only in passing in H.W. Kinney's 1913 guide to the Big Island, which notes that it is an "inland settlement without much interest." However, "from Hu'ehu'e southward the road passes through fertile lands, dotted with prosperous homes of Hawaiians, and some Japanese, planters of coffee and other crops (Kinney 1913:53). It appears that lands closer to the coast were inhabited. It should also be noted that Hu'ehu'e likely refers to the town Hu'ehu'e and not the ranch that extended into the project area.

Ranching steadily increased. Once John Maguire purchased the former chiefly lands of Kaloko in 1906 after the deaths of Kalākaua and Kapi'olani (Kelly 1971:29), the *ahupua'a* uplands were developed into the Hu'ehu'e Ranch. Maly and Maly (2003) discuss the acquisition of these lands and the types of ranching that were common:

In 1899, John A. Maguire, founder of Hu'ehu'e Ranch applied for a Patent Grant on... lots in 'O'oma 2nd, but he only secured Grant No. 4536.... Maguire's Hu'ehu'e Ranch did secure General Lease No.'s 1001 and 590 for grazing purposes on the remaining government lands in the Kohanaiki and 'O'oma vicinity. Thus, by the turn of the century, Hu'ehu'e Ranch, utilized both the upper forest lands and lower kula lands to the shore for ranching purposes. Oral history interviews with elder former ranch hands record that this use extended across the Kapena and Huliko'a grant lands of Kohanaiki, from the fee and leasehold lands of Kaloko and 'O'oma. Nineteenth century goat drives gave way to formalized cattle drives and round ups on these lands. (Maly and Maly 2003:78)

3.5 Hu'ehu'e Ranch

John Avery Maguire was the son of Charles and Hiilawe Maguire. He was born in Hamakua, Hawai'i in 1848 and began his ranching career as a foreman for the Pu'uhue Ranch. Maguire later became the ranch manager and then purchased Hu'ehu'e Ranch in 1888. His biography indicates that he did not live at the ranch until 1897, but this is contradicted by other sources, as is the date of purchase. He also bought Kahuā Ranch Company in 1890 and sold it in 1898 to J.F. Woods (Siddall 1917).

John Maguire and his first wife, Luka Hopula'au, had one child, Charles Ka-ulu-hei-malama Maguire, before Luka died in 1898. Maguire inherited his wife's lands in Kona that included Grants 926 and 2121 in Puaa and Kuki'o that were previously owned by Pupule (Kelly 1971:44-46).

Kelly (1971:41) notes that in 1914, J.A. Maguire leased the Kaloko fishpond for 15 years to the Mokuaiia fishing *hui* (group or collective), indicating that he owned the lands. Additionally, Kelly's research of manuscripts at the Bishop Museum includes a document by Lono Maguire on medical lore. This Maguire was identified as a *kahuna lapa'au*, or medicinal expert. Kelly (1971:41) was unable to determine if Lono and John A. Maguire were related.

According to Kelly (1971), the 1918 Polk Directory (p. 960) lists Mrs. John A. Maguire as the commissioner of public instruction for North Kona. Her husband is listed as the President of John A. Maguire Estate, Ltd., and manager of Hu'ehu'e Cattle Ranch at Hu'ehu'e, North Kona. This "Mrs. Maguire" was John Maguire's second wife, Eliza. She recorded some of the traditional accounts of tales she heard on the ranch; "The Pool of Wawaloli" was one of the legends she translated and it appears above in the Mythological and Traditional Accounts section.

Likely due to its location north of the most populated area on the Big Island, Hu'ehu'e Ranch received many guests over the years including Queen Lili'uokalani, Prince Jonah Kuhio Kalaniana'ole, Sanford Dole, first president of the Republic of Hawai'i, and Jack and Charmian London (HawaiiHistory.org 2008).

John A. Maguire's lands extended well beyond the current project area to the north into Waipi'o Valley according to research conducted by Lebo et al. (1999). Maguire, his wife Eliza and his son Charles, conducted multiple land transactions within Waipi'o Valley between 1898 and 1915.

The following information is from the Kona Historical Society's Archive, Hu'ehu'e Ranch Records for 1958-1987. Thelma Springer, the great-granddaughter of J. A. Maguire, and her husband, Philip Springer, and Carl A. Carlson, Jr., the ranch manager for many years until his recent retirement, provided the historical society with the information.

By the time J.A. Maguire died in 1919, Hu'ehu'e consisted of 40,000 acres of land, most of which was leased from the Bishop Estate. He owned 2,500 head of cattle and 500 sheep. His son, Charles, and daughter-in-law Mary Kiha-lani-nui, pre-deceased him, and their only child Aileen Ruth Kiha-lani Maguire lived with her grandfather and inherited Hu'ehu'e Ranch.

Aileen married Arthur Joseph Stillman at the St. John the Baptist Chapel in Kohanaiki on December 27, 1917. Stillman became the ranch's general manager following the death of his father-in-law in 1919. The couple had four children including:

Thelma Kiha-lani who latter married Philip P. Springer. Their daughter is Hannah Kiha-lani Springer;

Ruth Ka-papa-ku'i-ali'i, who died in infancy;

Mary Ka-haili-o'pua, who later married James Allen Robinson. Their daughter is Aileen Ruth Robinson;

Nancy Ka-hiwahiwa, who later married Carol A. Oliver. Their children are Carole, Richard, Myra, John Avery, and Luka.

The Maguire/Stillman family held thousands of acres of property on Hawai'i including lands outside of the project area that are part of Hu'ehu'e Ranch. Maguire initially leased lands from the Bishop Estate and inherited lands from his first wife, as mentioned above; he later added acreage acquired from Kapi'olani at Kaloko.

A livestock survey conducted by the University of Hawai'i in 1927 states that the total land holdings at the time were 40,000 acres, 25,000 acres were leased and the remaining 15,000 was owned fee simple. Hu'ehu'e was south of Pu'uwa'awa'a Ranch and extended from sea level to 1,600 ft. elevation.

Only 12,000 acres were suitable for grazing, since large areas were covered with lava flows, and dense vegetation including lantana and ferns. Hu'ehu'e Ranch contained some 2,000 grade Herefords, 20 purebred Hereford bulls, and 20 purebred cows. Annually, approximately 330 to 400 head of cattle was sold, loaded on steamers in Kailua-Kona, and shipped to Honolulu (University of Hawai'i 1927:28).

There are "seven miles of pipe line which lead from tanks near a natural spring to various parts of the ranch." Additionally, the ranch "is fairly well supplied with fences and paddocks (University of Hawai'i 1927:28).

The Maguire/Stillman family held Hu'ehu'e Ranch until they sold it on July 8, 1966. At that time, the Kona Coast Company, a partnership between the Kaloko Land Corporation, Mauna Loa Cattle Corporation (which later was separately held by members of the Karl B. Rodi family), and Foothill Land Corporation (which was later succeeded by the David Pacific Corporation and Davis family members) was established. The company owned and operated the ranch that was

managed by Roger T. Williams. In early 1970, Carl Carlson became the general manager, and as mentioned above, recently retired.

Kona Historical Society records indicate that cattle ranching continued on Hu'e'hu'e Ranch although game bird hunting and residential and resort development of properties became more important business aspects (Figure 9).

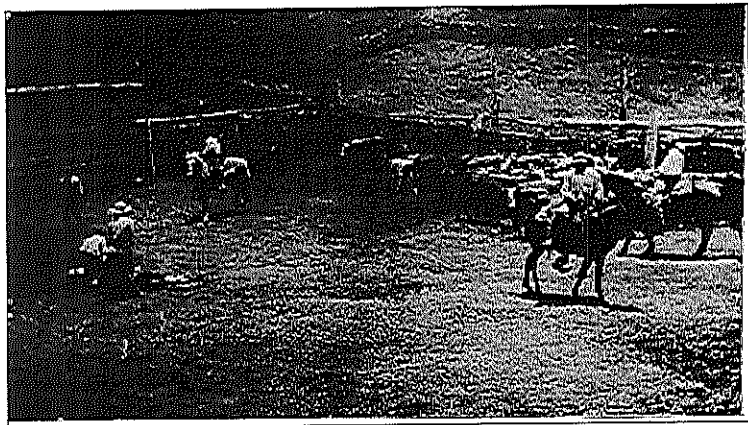


Figure 9. "Branding Pen", possibly at Hu'e'hu'e Ranch; top of the photograph is *mauka* (Kona Historical Society, negative number: C 02284)

3.6 Modern Land Use

The boundary between Kohanaiki and Kaloko was until fairly recently only approximate. Kelly (1971:48) notes that when Emory and Soehren conducted their 1961 archaeological survey, the boundary was south of its current location. Additionally, one of her informants remembered that Kaloko Pond and the coast were within the *ahupua'a* of Kohanaiki, and Kaloko was "farther over, toward Huliko'a" (Kelly 1971:48). Kelly cites Beckley's (1887:256) statement that, "These fish ponds are sometimes owned, by the proprietors of two adjoining lands, the people of one owning the right to fish during the rise of the tide and the other during the ebb."

Until the construction of the Queen Ka'ahumanu Highway in the 1970s, access to the "kula kai (shoreward plains)" (Maly and Maly 2003:101) was limited to local residents. The 1924 USGS map (Figure 10) shows the *mauka/makai* road connecting the Kohanaiki Homesteads with the Kaloko fishpond, and crossing the project area at the *ahupua'a* boundary between Kohanaiki

and Kaloko. In the first half of the twentieth century, the primary method of travel was "by foot or on horse or donkey, and those who traveled the land, were almost always native residents of Kalaoa, 'O'oma, Kohanaiki, Kaloko and Honokōhau" (Maly and Maly 2003:99). Hu'e'hu'e Ranch bulldozed a jeep road to the shore around 1955 (Figure 11) during the construction of the Kailua pier, and this was used primarily by the ranch employees for duties or for going fishing along the coast.

The Kaloko fishpond - leased from the Hu'e'hu'e ranch - continued as a commercial fishing operation until the 1950s. During the 1970s, the pond was incorporated into the newly-established Kaloko-Honokōhau National Historic Park.

While the present project area is largely undeveloped, surrounding areas have seen increasing modern use. The Hu'e'hu'e Ranch jeep road and other signs of animal husbandry activity can be seen on the 1959 USGS map (see Figure 11). More recent nearby development is largely industrial, and the Kaloko Industrial Area is just southwest of the project area, including large stores such as Home Depot and Costco. Huliko'a Road is also heavily developed, primarily as an industrial area, along a portion of the north border of the project area. Hina Lani Street runs along the south border of the project area, and leads *mauka* to a residential area (Kona Heavens) before the Palani junction (at Māmalahoa Highway), as well as leading *makai* to the modern Queen Ka'ahumanu Highway.

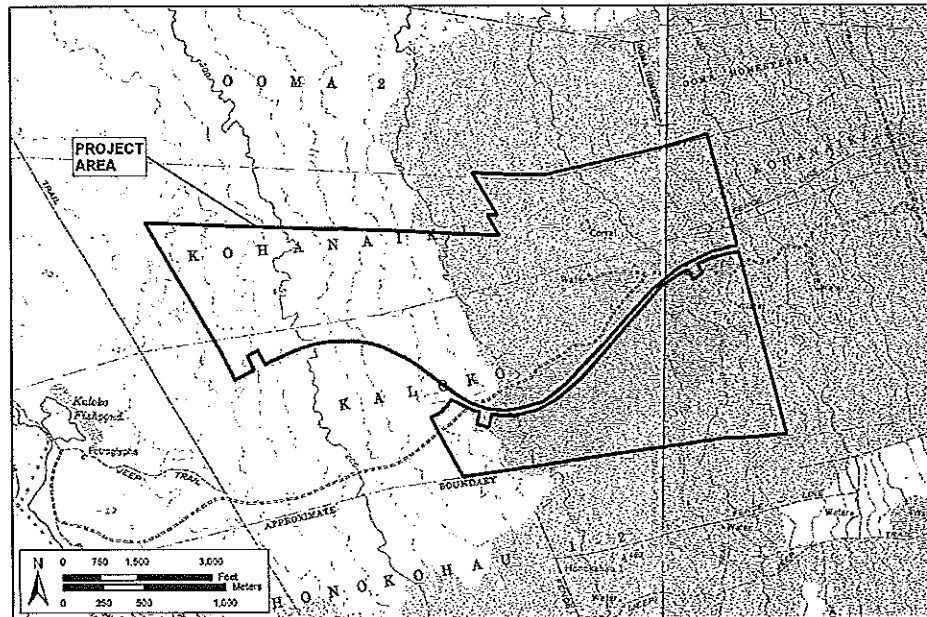


Figure 11. Portion of 1959 USGS map, Kailua and Keahole Point quadrangles, with overlay of project area showing jeep road and signs of historic/modern animal husbandry

Cultural Impact Assessment for a 1,150-Acre Parcel in Kohanaiki and Kaloko Ahupua'a

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TMK [3] 7-3-009:017, 025, 026, 028

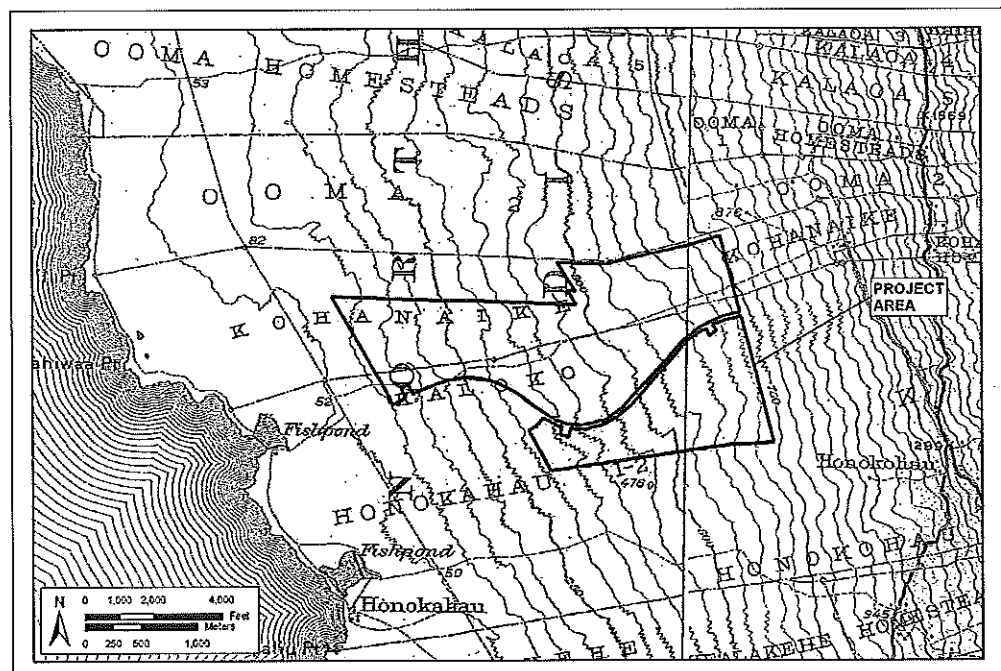


Figure 10. Portion of 1924 USGS map, Kailua and Keahole Point quadrangles, with overlay of project area

Cultural Impact Assessment for a 1,150-Acre Parcel in Kohanaiki and Kaloko Ahupua'a

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TMK [3] 7-3-009:017, 025, 026, 028

Section 4 Archaeological Research

4.1 Overview of Archaeological Studies Conducted within Kohanaiki and Kaloko

This section provides a general overview of archaeological studies in Kaloko and Kohanaiki Ahupua'a. Table 1 lists archaeological studies in this area with brief comments, while studies most relevant to the current project are discussed in additional detail in the text. The section following this discusses archaeological studies within the present project area in greater detail.

Archaeological work conducted within portions of Kohanaiki and Kaloko Ahupua'a (Figure 12) began with the early coastal survey performed by John Reinecke for the Bernice P. Bishop Museum in 1929-1930 (Reinecke 1930). This was a cursory survey in which approximate site locations and very brief site descriptions were recorded. Reinecke recorded eight sites at the coast of Kohanaiki; the sites - minimally documented and mapped - included habitation sites and a *heiau*. The next survey was undertaken by Kenneth Emory and Lloyd Soehren in 1961 (Emory and Soehren 1971). This was also a coastal survey, and focused specifically upon the coast of Kaloko, Honokōhau, and Keālakehe. In 1970 and 1971, Robert Renger and students from the University of California at Santa Barbara conducted an intensive survey of Kaloko and Honokōhau between present-day Queen Ka'ahumanu Highway and the coast (Cordy et al. 1991). This survey also included subsurface testing of selected sites. These three surveys identified a total of 94 sites within Kaloko between the coast and Queen Ka'ahumanu Highway as of 1971.

Additional archaeological work and historical research undertaken within or about Kaloko during the 1970s and 1980s include: an historical study by Marion Kelly (Kelly 1971); research relating to the establishment of the Kaloko-Honokōhau National Park (e.g. Honokōhau Study Advisory Commission 1974, National Park Service 1975); research stemming from the fieldwork conducted by Renger in 1970-71 (see the list presented in Cordy et al. 1991:2); and several reconnaissance-level studies (Ching 1980; Hammatt 1980; Soehren 1983).

Cordy (1981) conducted a survey of the coastal area (up to 1/2 mile inland) of Kohanaiki in 1975. Twelve sites were recorded including pavings, platforms, enclosures and a trail. Eleven of the sites were interpreted as habitation structures including sleeping houses, men's houses, special purpose, and a canoe house/men's house.

During the 1980s, PHRI began investigations of the entire *makai* portion of Kohanaiki Ahupua'a, bounded by its boundaries with 'O'oma 2 and Kaloko, and by the Pacific Ocean and the Māmalahoa Trail. During an inventory survey in 1986 (Donham 1986), "Fourteen previously recorded sites were relocated and 91 sites were newly identified...Habitation sites represented over half of the identified site total, and included habitation complexes, habitation/ceremonial and/or habitation/burial complexes, and temporary habitation sites" (Donham 1986:7-8). In 1991, PHRI performed data recovery of the project area (O'Hare and Goodfellow 1992). This work included: "detailed recording of (a) 31 sites (224 features) previously recorded in the project area, and (b) seven sites newly recorded during the Phase II work" (O'Hare and Goodfellow 1992:ii). Summarizing Kohanaiki settlement pattern within the zones represented by the project area, the report notes:

Table 1. Previous Archaeological Studies Within Kohanaiki and Kaloko Ahupua'a (Projects in Present Study Area are in Bold)

Source	Nature of Study	Area of Study	Findings	Comments
Reinecke 1930	Cursory survey	Coastal Survey	Briefly notes numerous sites	All sites <i>makai</i> of present project area
Emory & Soehren 1971	Cursory survey	Coastal Survey	Briefly notes numerous sites	All sites <i>makai</i> of present project area
Kelly 1971	Historical survey and background	Kaloko and Kuki'o Ahupua'a	Background study	Good background study
Renger 1971	"Field Notes" of "Mauka excavations"	"Mauka excavations"	"Field Notes" describe several sites	No site location map thus hard to be sure where sites are
Soehren 1979	Letter Report Reconnaissance Survey	Kaloko Access Road Corridor (Hina Lani Street)	No finds	-
Soehren 1980a	Letter Report Reconnaissance Survey	Kaloko lowlands	No finds	-
Soehren 1980b	Letter Report Reconnaissance Survey	Kaloko Access Road Corridor	Discusses 3 stepping stone trails, 2 <i>ahu</i> & a lava tube complex	Hina Lani Street Letter Report not actually seen
Hammatt 1980	Archaeological Reconnaissance	410 acre parcel	Identified 2 sites	<i>Mauka</i> of present project area
Barrera Jr. 1983	Archaeological Reconnaissance	TMK 7-3-9:19	No finds	No map
Soehren 1983	Archaeological Reconnaissance Letter Report	-	-	-
Kennedy 1983	Archaeological Reconnaissance	Within present project area	Identifies 27 sites	Within present project area
Kennedy 1984	Intensive Archaeological Survey	Within present project area	Results of investigations of 25 sites	Within present project area
Barrera Jr. 1985	Archaeological Survey	409 acres 700 to 1080' elevation	58 sites	Within present project area

Source	Nature of Study	Area of Study	Finds	Comments
Donham 1986	Archaeological Reconnaissance Survey	470-acres <i>makai</i> of Queen K Hwy	105 sites	Kohana-iki development
Rosendahl & Haun 1987	Archaeological Reconnaissance Survey	3 1-acre parcels, 2 in present project area	Their project area <i>mauka</i> of present project area had one site	Water tanks along Hina Lani Street
Barrera Jr. 1988	Archaeological Excavations	YO Project Area	60 sites	<i>Mauka</i> of present project area
Rosendahl, M 1989	Archaeological Inventory Survey	200 ft.-wide corridor along boundary separating O'oma 2 and Kohanaiki	Identified 4 sites; site 5699 extends into current project area	Adjacent to and north of present project area
Rosendahl 1989a	Letter Report Addendum to Archaeological Inventory Survey	Addl info re: site 13493 stepping stone trail by <i>makai</i> tank	Identified one <i>pāhoehoe</i> slab trail (site 13493)	Water tank <i>makai</i> of present project area
Rosendahl 1989b	Field Inspection	Kaloko Mauka Parcel # 1	Identified 4 sites	-
Rosendahl 1989c	Field Inspection	Kaloko Mauka Parcel # 2	No sites identified	-
Rosendahl & Walker 1990	Addendum to Archaeological Inventory Survey	Addl info re: site 13493 trail by <i>makai</i> tank	Addl info re: site 13493 trail by <i>makai</i> tank	Water tank <i>makai</i> of present project area
Rosendahl & Walker 1991	Archaeological Field Inspection	Industrial crusher site, 2 adjacent 10 acre parcels	Identified a trail with two cairns	South of present project area
Barrera Jr. 1991	Archaeological Inventory Survey & Data Recovery Report	800 to 1100'	Identified 61 sites	<i>Mauka</i> of present project area
Cordy et al 1991	An Ahupua'a Study: The 1971 Archaeological Work at Kaloko	Kaloko-Honokōhau National Park	94 sites identified	<i>Makai</i> of present project area
Kennedy 1991	Surface Reconnaissance	Long thin industrial development	No significant finds	<i>Makai</i> of present project area

Source	Nature of Study	Area of Study	Finds	Comments
Drolet & Schilz 1991	Archaeological Inventory Survey	8.8 acres in O'oma 2	29 sites identified Site -16103 extends into project area	Adjacent to and north of present project area
Barrera Jr. 1993	Archaeological Inventory Survey	5.7 acres; 1450 to 1630' elevation	Identified 40 features of Kona Field System	<i>Mauka</i> of present project area
Fager & Graves 1993	Archaeological Inventory Survey	Kaloko Industrial Park parcel	Identified 17 sites with 60 component features	<i>Makai</i> of present project area, south of Hina Lani Street
Fager & Rosendahl 1993	Interim Report Archaeological Inventory Survey	Kaloko Industrial Park parcel; 15+ acres	Identified 17 sites with 60 component features	Just <i>makai</i> of present project area, south of Hina Lani Street
Henry & Graves 1993	Archaeological Inventory Survey	Transmission line project <i>mauka</i> side of Queen K Hwy.	Identified 10 sites within project area	Within present project area
O'Hare & Rosendahl 1993	Report on burials	On coast	Report on burials	Kohana-iki Resort project
Rosendahl 1993	Archaeological Field Inspection	Kaloko Mauka Parcel	4 sites discussed	-
Nees & Williams 1995	Archaeological Investigations	110 acres, 2100 to 2900' elevation	Identified enclosure, lava tube, terrace, wall, mounds	<i>Mauka</i> of present project area
Walsh & Hammatt 1995	Archaeological Inventory Survey	Queen K Hwy Right-of-Way	Identified 9 sites adjacent to <i>makai</i> side of Hwy in Kohanaiki & Kaloko	<i>Makai</i> of present project area
Colin et al. 1996	Archaeological Inventory Survey	224 acres <i>makai</i> of present project area	Identified 55 sites	Within present project area
Rechtman 1998	Archaeological Field Inspection	2400-2500' elevation	No finds	<i>Mauka</i> of present project area
Rechtman & Henry 1999	Archaeological Inventory Survey	1450-1620' elevation	Identified 15 sites	<i>Mauka</i> of present project area

Source	Nature of Study	Area of Study	Findings	Comments
Wolforth 1999	Monitoring Report	HELCO Keāhole-Kailua Transmission line corridor	Describes one site 21258	Says Walsh & Hammatt previously id'd site as 19946 (on <i>makai</i> side of hwy)
Haun & Henry 2000	Archaeological Inventory Survey	Kaloko Industrial Park TMK: 7-3- 51:60; 102-acre parcel	45 sites with 81 features	<i>Makai</i> of present project area south of Hina Lani Street
Rosendahl 2000	Archaeological Assessment	2435-2730' elevation	No finds	<i>Mauka</i> of present project area
Clark & Rechtman 2002	Archaeological Inventory Survey	1200' to 1600' elevation	Identified 5 sites	<i>Mauka</i> of present project area
Haun & Henry 2002	Data Recovery Plan	Kaloko Industrial Park TMK: 7-3- 51:60; 102-acre	Data Recovery Plan addresses 8 specific sites	<i>Makai</i> of present project area south of Hina Lani Street
Rechtman & Rivera 2002	Archaeological Assessment	3-7-3-26:4; 3,100'	No finds	<i>Mauka</i> of present project area
Cobb et al. 2003	Archaeological Assessment	TMK: 7-3- 09:25, 26 & 28 at Kaloko and Kohanaiki (400 acres)	Briefly identifies 154 features	Descriptions quite brief; map hard to correlate with sites found in present survey
Haun 2003	Archaeological Assessment	400-Acre Portion of TMK 7-3-09:28 Kaloko	Identifies 8 sites (63 features) in present project area	Helicopter flight overhead led him to focus on open 'a'a area
Haun et al. 2003	Data Recovery Report	Kaloko Industrial Park TMK: 7-3- 51:60; 102-acre	Data Recovery Report addresses 8 specific sites	<i>Makai</i> of present project area south of Hina Lani Street
Moore & Kennedy 2003	Archaeological Inventory Survey	Roadway Corridor	Identified 1 site (23973) 2 mounds	South boundary of project area
Puette & Dye 2003	Archaeological Inventory Survey	22 acres 2100 to 2400' elevation	No finds	<i>Mauka</i> of present project area
Rechtman 2003	Archaeological Assessment	3-7-3-26:5; 3,100' elevation	No finds	<i>Mauka</i> of present project area

Source	Nature of Study	Area of Study	Findings	Comments
Elmore et al. 2004	Archaeological Inventory Survey	1400' elevation	Identified one historic site 24133	<i>Mauka</i> of present project area
Shideler & Hammatt 2005	Archaeological Field Inspection and Literature Review	1,200+ Acres in Kaloko and Kohanaiki	Numerous pre- Contact sites observed, including: habitations, agricultural features, petroglyphs, boundary walls, and burials	Within present project area
Wolforth et al. 2005	Archaeological Inventory Survey	TMK: [3] 7-3- 09: 032	A total of 89 sites were identified, consisting of burials, perm. habitation, temp. habitations, religious sites, trails, boundary walls, and agricultural sites	<i>Mauka</i> of present project area
Nelson et al. 2006	Archaeological Inventory Survey	TMK:3-7-3- 009:007	Re-recorded site 16103, which extends into project area	Adjacent to and north of present project area; one site extends into project area

The data recovery work indicates that permanent habitation sites between Puhili and Wawahiwa Points are concentrated in the coastal zone, near the shoreline. In the coastal area south of Wawahiwa Point permanent habitation sites were near the shoreline and further inland. Temporary habitation sites were present in all areas of the coastal zone and in the barren rockland zones. The radiocarbon date ranges indicate that sites in the northern coastal zone might have been inhabited as early as A.D. 1020. Sites in the southern coastal zone may have been inhabited as early as A.D. 1370, and sites in the barren rockland zones may have been inhabited as early as A.D. 1180. In the barren rockland zones, use of the sites was terminated before the historic period, and in the coastal zone most of the sites were not used in the historic period. (O'Hare and Goodfellow 1992:ii)

In 1985, Barrera (1985) surveyed approximately 409 acres within Kaloko and Kohanaiki Ahupua'a; the 409-acre parcel is located between Māmalahoa Highway and Queen Ka'ahumanu Highway, 750 meters *mauka* of the present project area. Four sites were recorded in Kaloko,

including an enclosure, a lava tube cave, a wall and a platform (possible burial). Fifty-five sites were recorded within Kohanaiki and include mounds, platforms, habitation complexes, walls, and terraces. A portion of the study area included the historic period Kohanaiki Homestead. Barrera's site #59 comprises constructions associated with the homestead and is described as a "series of Habitation areas enclosed by large stone walls." No estimate is given of the ages of the other sites.

In 1987, Paul H. Rosendahl Inc. accomplished an archaeological reconnaissance survey of three one-acre parcels - proposed water tank sites - in Kaloko (TMK: 7-3-09:Por.1,17) (Rosendahl and Haun 1987), along the south side of the then "main access road between Queen Ka'ahumanu Highway and Kona Heavens Subdivision" - i.e. the present Hina Lani Road. The parcels were located at 350 ft. a.m.s.l., 630 ft. a.m.s.l., and 910 ft. a.m.s.l. Only one site (SIHP No. 10-28-10887) - an historic wall interpreted as a boundary or cattle wall - was recorded within the mauka-most parcel. Subsequently, in 1989, an additional water tank site parcel (TMK: 3-7-3-10:Por.17) - measuring 360 ft. north/south and east/west - was subject of an archaeological inventory survey (Rosendahl 1989). The parcel bordered the north side of the then "proposed Kamanu Street extension in the Kaloko Light Industrial Park" at the south boundary along Hina Lani Road. One site was recorded and designated SIHP No. 50-10-27-13493:

a steppingstone trail segment measuring 7.5 m (24.6 ft.) long (E-W) by 0.6-0.7 m wide (1.97-2.30 ft.) (N-S)...located on a section of aa lava...The segment consists of approximately six flat and roughly round pahoehoe slab steppingstones set on worn aa gravel. The steppingstones measure c. 0.4 m (1.31 ft.) in diameter by 0.1 m (0.33 ft.) thick. The trail is oriented c. 159 degrees Az. (magnetic). No portable remains were present in association with the trail. The trail appears to be prehistoric, and appears to have been used as a secondary transportation route. (Rosendahl 1989:1)

In 1988, Cordy et al. (1991) began preparing a study of Kaloko Ahupua'a for the new Kaloko-Honokohau National Park. The study was based on Renger's 1971 fieldwork conducted for planned development of coastal Kaloko for Hu'e'hu'e Ranch. The fieldwork "included survey work in the intermediate and upland zones of Kaloko, which located additional sites, extensive excavation in the coastal area, and some excavation in the intermediate and upland sites" (Cordy et al. 1991:2). Renger identified, and in some cases re-identified, 94 sites that included 59 sites in the Coastal Zone, 30 sites in the Middle Zone, and five *mauka/makai* trails that crossed both zones and continued heading inland. As only "summary papers" had been previously written, the monograph published in 1991 includes the 1971 fieldwork data and resultant analyses, and additional fieldwork conducted by Cordy and Hitchcock in the 1970s and 1980s (Cordy et al. 1991:2, 44).

In 1991, Archaeological Consultants of Hawai'i (Kennedy 1991) performed a reconnaissance survey of a narrow corridor - 500 ft. north/south by 7260 ft. *mauka/makai* (TMK: 7-3-09:15) - in Kohanaiki extending *mauka* from Queen Ka'ahumanu Highway, located adjacent to the northern boundary of the present study area. No sites or features were observed; seven caves "were examined to term and were determined to be devoid of cultural materials" (Kennedy 1991:C-1).

In 1991 William Barrera produced an archaeological inventory survey and data recovery report of an extensive area just inland (*mauka*/east) of the present study area in which he identified 61 sites. These sites were rather clumped in the east central portion of his project area.

Rosendahl and Walker (1991) carried out an archaeological field inspection for proposed Kaloko Industrial crusher sites just south of Hina Lani Street at an elevation of approximately 450 ft a.m.s.l.. A trail and two associated cairns were identified.

In 1993, Paul H. Rosendahl Inc. conducted an inventory survey (Fager and Graves 1993) of an approximately 15-acre parcel adjacent to, and *mauka* of, the Kaloko Industrial Park, which includes a road corridor extended from the main project area to Kamanu Street. The survey recorded 17 sites incorporating 60 component features. The sites were judged

...in poor to good condition and comprised the following formal types: terraces, modified outcrops, mounds, walls, caves, pahoehoe excavations, cairns, filled cracks, enclosures, and a trail. The formal types comprised the following functional types: animal husbandry, temporary habitation, agriculture, marker, quarry, and transportation. (Fager and Graves 1993:ii)

A series of studies (Haun and Henry 2000, 2002; Haun et al. 2003) were carried out on a 102-acre Kaloko Industrial Park parcel south of Hina Lani Street. Of note are the fairly dense and widely distributed site concentration and also extensive areas of both 'a'ā flow and bulldozing.

In recent years a number of studies have been undertaken in the Kaloko Mauka lands (east and upslope from the present project area) including studies by Barrera (1993), Nees and Williams (1995), Rechtman (1998), Rechtman and Henry (1999), Rosendahl (2000), Clark and Rechtman (2002), Rechtman and Rivera (2002), Puette and Dye (2003), Rechtman (2003), and Elmore et al. (2004).

In 2005, Wolforth et al. conducted an archaeological inventory survey of the northern portion of the Kaloko Heights Project (TMK [3] 7-3-09: 032), located approximately 1,000 m east of the current project area. A total of 89 sites were identified, consisting of burials, permanent habitations, temporary habitations, religious sites, trails, boundary walls, and agricultural sites. A historic wall that runs along the *ahupua'a* boundary between Kaloko and Kohanaiki extends from TMK parcel 32, adjoining the current project area to the east, into TMK parcel 25, within the current project area.

4.2 Archaeological Studies Conducted within the Present Project Area

The following is a summary of archaeological studies conducted within the current project area, discussed in chronological order. Table 1 lists in bold historic properties previously identified in the current project area

Survey work was undertaken in 1970-71 by Renger inland of the highway - i.e. that middle zone of Kaloko that includes a portion of the present study area. Although the findings of much of this fieldwork within the middle zone were written up in detail (Cordy et al. 1991), the findings from the survey sample conducted specifically within the project area (i.e. that portion of the middle zone situated on the inland side of the Queen Ka'ahumanu Highway) were not included because, "regrettably... it appears that the maps and survey records have been misplaced

since the end of the 1971 field season" (Cordy et al. 1991:340). Renger's summary of the findings from that part of the survey indicated that fifteen features were identified:

Very few sites were discovered within the "transitional middle zone" ... between the coastal and upland exploitation zones ... Seven lava tube shelters, four trails (coast-upland), three platforms, two cairns ... two low-walled enclosures, and an L-shaped structure were recorded. (cited in Cordy et al. 1991:340)

These sites are presumably the subject of a set of Renger's (1971) "Kaloko Field Notes" that begins "*Mauka* Excavations" but in the apparent absence of any site location map it is difficult to relate these notes to specific sites in the field.

It is our understanding that Lloyd Soehren conducted a reconnaissance survey in 1979 of the Kaloko access road corridor, understood as the current alignment of present Hina Lani Street, but identified no sites.

In 1983, Joseph Kennedy conducted a reconnaissance and subsequent intensive survey (1984) of a parcel within the *makai* portion of the present project area. The 1983 reconnaissance located and briefly described 27 sites. These sites included 17 lava tubes, three *cairn* or cairns, two walls, two platforms, an enclosure, a modified outcrop, and a trail. The 1984 intensive survey identified:

45 separate cave openings and approximately 200 chambers in these caves. In addition there were 4 walls recorded, 5 enclosures, 13 platforms, 9 cairn, 2 trails and 2 sets of petroglyphs. Out of the 79 separate features on the property, 30 were judged to be worthy of re-investigation ... the remaining 49 sites that were not reinvestigated were comprised almost exclusively of relatively shallow caves with little or no evidence of cultural remains or associated modifications. (Kennedy 1984:18)

Many (but not all) of the sites identified in 1984 are described and some of these sites were not mapped. Excavations were carried out in three caves (Sites 11, 22 and 49 in the Kennedy 1984 numbering system). Of the 25 sites for which information is presented in the Kennedy 1984 study, 22 sites were recommended for no further work and three (Kennedy 1984 site #s 11, 22 and 32) were recommended for preservation.

In 1989, Margaret Rosendahl conducted an archaeological inventory survey of a 200 ft.-wide corridor along the boundary separating O'oma 2 and Kohanaiki, north of the project area, for a water system. Survey results included the identification of four sites that included quarrying pits, a ceremonial/habitation complex, a marker, and a historic wall. The wall, SIHP No. -5699, ran along "the inland boundary of the survey corridor" (Rosendahl 1989:13). During the current survey, 15 m of the wall's south end extends within the project area, and continues roughly north for at least 500 m. The rubble-fill method of construction indicates the wall is historic. No further work was originally recommended, although possible inclusion into landscaping was suggested for consideration (Rosendahl 1989:14).

In 1991, Drolet and Schilz conducted an archaeological inventory survey of 8.8 acres in O'oma 2, north of and adjacent to the current project area. Survey findings included the identification of 29 sites including two cave complexes, SIHP Nos. -16103 and -16104, that extend into the current project area. Nelson et al. (2006:66) found that the two caves connect and

actually consist of one subsurface complex. They referred to the sites as SIHP No. -16103. Drolet and Schilz (1991:27-28) determined that the sites were significant and their project, as planned, would avoid the sites and provide a "10 meter buffer zone" around them. Nelson et al. (2006:66) describe the site as containing "several architectural modifications, a plethora of cultural debris, and a single human burial." They determined that "site 16103 retains integrity of location and is in good condition for an archaeological ruin" (Nelson et al 2006:66).

In 1993, Henry and Graves carried out site identification along a Keāhole to Kailua 69 kV transmission line, which comprised a 50-100 ft wide alignment on the *mauka* (east) side of Queen Ka'ahumanu Highway. Nine sites were identified within the current project area. During the current inventory survey only three (SIHP Nos. -15324, -15325, and -15329) of the nine sites were relocated. It is believed that the seven sites not relocated were either situated outside of the current project area, within the *mauka* (eastern) road easement, or were destroyed (via bulldozing) during the installation of new powerlines along the eastern side of Queen Ka'ahumanu Highway.

In 1995, CSH conducted an archaeological inventory survey with limited subsurface testing within a narrow strip of land, averaging 300 ft wide, along Queen Ka'ahumanu Highway between Palani Road and the Keāhole Airport entrance road (Walsh and Hammatt 1995). Three sites were identified in Kohanaiki: two trails and a set of three cairns. One of the trails - a *mauka-makai* trail - had been previously identified and designated SIHP No. 50-10-27-15324. The site is described as consisting of:

...two converging trail segments designated Features A and B...Both trail segments extend in a roughly *mauka-makai* direction, but angle toward each other and converge into one trail that continues inland. The point where the two trails meet is located at the edge of the bulldozed portion of the present highway right of way, 164 feet (50 m.) from the *makai* edge of the highway pavement...On the *mauka* side of the highway, the trail was observed at the edge of the bulldozed portion of the power line (the new right-of-way boundary) and continuing inland at 65 degrees T.N. for at least another 100 feet (30 m.). (Walsh and Hammatt 1995:51)

This trail site is located within the present study area.

In 2003, Archaeological Consultants of the Pacific, Inc. (Cobb et al. 2003) conducted an archaeological assessment of TMK (3) 7-3-009: 025, 026, and 028. One hundred fifty-four (154) features were identified and included "caves, walls, mounds, platforms, enclosures, trails, *cairn*, "C"-shaped structures, possible *heiau*, terraces, alignments and modified outcrops" (Cobb et al. 2003:1). Each feature was identified with a number prefaced with "TF", and descriptions included feature type, a brief description, possible function and a preliminary significance evaluation. The report map does not show the location of particular sites found during the survey but has colored points for sites indicating "High Concern, Potential High Concern, and Minimal Concern" (Cobb et al. 2003:5). The *mauka* portion of the current project area was included in the survey and several site tags from the 2003 survey were found in sites recorded during the current project (see below). One site, TF142, a cave with a small entrance and indeterminate function, was thoroughly surveyed by CSH in 2007; no cultural materials or modifications were present.

Haun (2003) conducted an archaeological assessment of a portion of the current project area, largely via helicopter to cover the 'a'a terrain, but also by foot in the thicker vegetation. He identified eight sites, all of which correlate to sites presented in the CSH archaeological inventory survey for TMK 28 (Esh et al. 2008).

In 2005, CSH completed an archaeological field inspection of a 1200+ acre project area in Kaloko and Kohanaiki [TMK (3) 7-3-009:017, 025, 026, and 028] that included the current project area. Numerous pre-Contact sites including habitations, agricultural features, petroglyphs, boundary walls, and burials were observed (Shideler and Hammatt 2005).

In 2007 and 2008, CSH completed fieldwork for the four archaeological inventory surveys within Kaloko and Kohanaiki Ahupua'a (TMK: [3] 7-3-009:017, 025, 026, 028), that are the companion reports for this CIA. Given the large size of the total project area (over 1,100-acres), a decision was made to split the archaeological inventory survey reports by individual TMK parcel, producing a total of four reports.

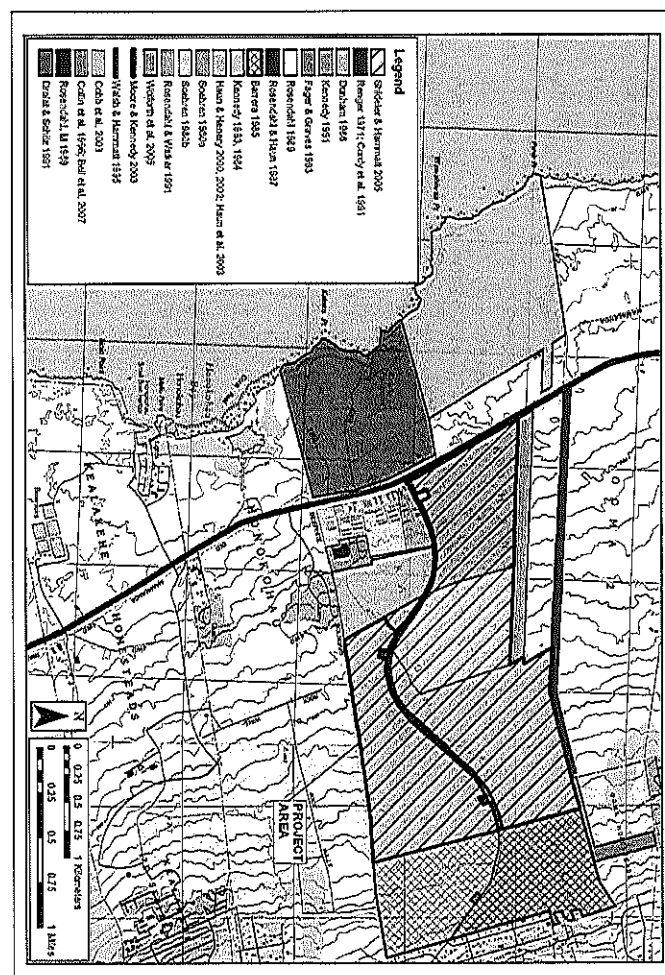
In the 224+ acre project area in TMK [3] 7-3-009:017, a total of 59 historic properties were identified; 53 of the historic properties were previously identified and six were newly recorded during the inventory survey investigation. CSH had previously conducted an archaeological inventory survey (Colin et al. 1996) in the same project area in 1996 with limited subsurface testing for Kimura International; the project was terminated during the review process. Fifty-five sites were identified in 1996. All identified sites were of pre-Contact traditional Hawaiian origin and included the following site types: cairn, simple agricultural features, recurrent and temporary habitation sites, trails, enclosures, walls, and a quarry. During the 2007 inventory survey, two sites (SIHP Nos. -20706 and -20741) identified by Colin et al. were determined to be outside of the project area, likely due to the lack of GPS technology during the 1996 survey. One site, SIHP No. -20741, is within TMK parcel 25, another section of the current project area (Bell et al. 2008).

In the 360.131 acre parcel (TMK: [3] 7-3-009:025), a total of 121 historic properties were identified; two of the historic properties were previously identified and 119 were newly recorded during the inventory survey investigation (Bell et al. 2008).

In the 194.324-acre parcel (TMK: [3] 7-3-009:026), a total of 120 historic properties were identified; six of the historic properties were previously recorded and 114 were newly recorded as part of the inventory survey investigation (Bell et al. 2008).

In the 363.106-acre parcel (TMK: [3] 7-3-009:028), a total of 41 historic properties were identified. All sites were newly recorded as part of the inventory survey investigation; eight of the historic properties were previously noted in an archaeological assessment by Haun (2003), and some features were also noted by Cobb et al. (2003) (Esh et al. 2008).

Figure 12. Map of previous archaeological studies in the project area and its vicinity



Section 5 Community Consultation Effort

Throughout the course of this CIA, an effort was made to contact and consult with Hawaiian cultural organizations, government agencies, and individuals who might have knowledge of and/or concerns about cultural resources and practices specifically related to the project area. A number of attempts (3-7) were made to contact individuals, organizations, and agencies apposite to the CIA for Kohanaiki. This effort was made by letter, e-mail, telephone and in person contact. In the majority of cases, letters along with a map and aerial photograph of the project area were mailed with the following text:

At the request of Stanford Carr Development, Cultural Surveys Hawai'i, Inc. (CSH) is conducting a Cultural Impact Assessment (CIA) for a 1,150 acre project located in Kohanaiki and Kaloko Ahupua'a, North Kona District, on the Island of Hawai'i, Tax Map Key: [3] 7-3-009:17,25,26 and 28. The proposed project area is *mauka* (east) of Queen Ka'ahumanu Highway and is surrounded mostly by undeveloped land. The proposed project area extends *mauka* from the highway to within approximately 1/2 mile (900 meters) of existing residences in the Kona Heavens subdivision area (Anini Street, Manu Mele Street, Kohanaiki Road). The proposed project area is bisected by Hina Lani Street (*mauka/makai* road) and is nestled between the Kohanaiki Industrial Park and Kaloko Industrial Park (i.e. Costco and other big box retailers). See attached USGS map and aerial photograph of the project.

The developers' proposed plans includes a residential community with construction of 5,000 new single- and multi-family residential units sizing at low, medium and high-densities, centralized commercial and neighborhood retail centers, an array of recreational facilities (e.g. parks, trails, open spaces), a new elementary school, a middle school, and associated infrastructure (e.g., new roadways, utilities, drainage, wastewater and potable and non-potable water distribution systems).

The purpose of this cultural study is to assess potential impacts to cultural practices and resources as a result of proposed development in Kohanaiki Ahupua'a. We are seeking your *kōkua* and guidance regarding the following aspects of our study:

- General history and present and past land use of the project area.
- Knowledge of cultural sites which may be impacted by future development of the project area - for example, historic sites, archaeological sites, and burials.
- Knowledge of traditional gathering practices in the project area, both past and ongoing.
- Cultural associations of the project area, such as legends and traditional uses.
- Referrals of *kūpuna* or elders and *kama'āina* who might be willing to share their cultural knowledge of the project area and the surrounding *ahupua'a* lands.
- Any other cultural concerns the community might have related to Hawaiian cultural practices within or in the vicinity of the project area.

The results of the community consultation effort are presented in Table 2 below. Section 6 below presents the community responses to CSH.

Table 2. Community Contacts Summary

Name	Affiliation, Background	Comments
Ako, Mr. Val	Fisherman, lineal descendant	CSH sent letter and maps on Mar. 12, 2008. Mr. Ako shared his <i>mana'o</i> on March 27. See Section 6 below.
Carlson, Mr. Carl	Former general manager of Hu'ehu'e Ranch	CSH emailed letter and maps on Mar. 14, 2008. CSH spoke with Mr. Carlson the same day and he agreed to draw the borders of Hu'ehu'e Ranch on a TMK map, for the year 1955. CSH faxed the maps for Mr. Carlson to draw the borders on March 17. Mr. Carlson emailed CSH on Mar. 18, and said he would work on maps when he has time.
Davis, Ms. Morgan	State Historic Preservation Division, Hawai'i Office	CSH sent letter and maps on Feb. 26, 2008
Flores, Mr. E. Kalani	Lecturer, University of Hawai'i and trail expert	CSH sent email inquiry regarding historic trails on Feb. 24, 2008. Mr. Flores replied on Mar. 10, providing information about descendants and organizations. He requested to be notified of findings and of the report when it is done.
Haleamau, Mr. Karin	<i>Paniolo</i> for Hu'ehu'e Ranch and lineal descendant, as well as traditional fisherman	CSH sent letter and maps on Feb. 25, 2008. CSH called on Mar. 13, and interviewed Mr. Haleamau on March. 20. An additional statement was made by Mr. Haleamau on April 15. See Section 6 below.
Keanaaina, Mr. Duane	Lineal descendant	CSH sent letter and maps on Feb. 25, 2008. CSH interviewed Mr. Keanaaina on March 26. See Section 6 below.
Keanaaina, Rev. Norman	Lineal descendant	CSH sent letter and maps on Feb. 25, 2008. CSH interviewed Rev. Keanaaina on April 9. See Section 6 below.

Name	Affiliation, Background	Comments
Keka, Mr. Peter	Multi-generational ties to Kaloko-Honokōhau fishponds and surrounding lands with knowledge regarding traditional stonework and caring for fishponds	CSH sent letter and maps to Mr. Keka via Richard Boston, his supervisor at Kaloko-Honokōhau National Park, on Feb. 25, 2008. Mr. Keka shared his <i>mana'o</i> on March 21. See Section 6 below.
Kuali'i, Mr. Melvyn Kaleo	Lineal descendant and member, Hawai'i Island Burial Council	CSH sent letter and maps on Feb. 25, 2008. CSH telephoned on Mar. 18. CSH sent email on April 14.
Kunewa, Mr. Herman and Mrs. Iris	Lineal descendants and educators who grew up in Kohanaiki.	CSH sent letter and maps on Feb. 26, 2008. On Mar. 12, 2008, Mr. Kunewa supplied a statement. See Section 6 below.
Lamont, Ms. Joan	Vice President of Beautification, Kona Outdoor Circle	CSH contacted Ms. Lamont by phone on April 14, 2008 regarding proposed project area. CSH mailed letter and maps on April 15.
Lee, Mrs. Elizabeth	Master <i>lauhala</i> weaver, lineal descendant	CSH sent letter and maps on Feb. 26, 2008. CSH met Mrs. Lee on March 19. Interview pending approval.
Lee, Mr. Reggie	Lineal descendant; works with DNLR; son of Elizabeth Lee	CSH sent letter and maps on Feb. 26, 2008. Mr. Lee called on March 12, for his mother and brother Robert. CSH spoke to the Lees on Mar. 19, where they declined to make a cultural statement at that time and requested in-depth information regarding the proposed development.
Machado, Ms. Wendy	Cultural Historian, State Historic Preservation Division	CSH emailed Ms. Machado on March 14, 2008 to request a list of lineal descendants for Kaloko and Kohanaiki. Ms. Machado responded on March 25, saying she had a list of cultural descendants. Ms. Machado provided the list of cultural descendants for Kohanaiki on March 31. Ms. Machado emailed on April 1 to confirm she received project information and maps through Ms. Morgan Davis and to ask clarification of project TMK and provide several references.

Name	Affiliation, Background	Comments
Mahi, Mr. Arthur	<i>Paniolo</i> and Native Hawaiian cultural practitioner	CSH called Feb. 26 and sent letter and maps on Feb. 27, 2008. CSH interviewed Mr. Mahi on March 20. See Section 6 below.
McDonald, Mrs. Ruby Keanaaina	Lineal descendant and Office of Hawaiian Affairs community resource coordinator	CSH sent letter and maps on Feb. 25, 2008. CSH sent another letter and maps on March 25, 2008 to Mrs. McDonald's home address as she requested information as a lineal descendant. CSH interviewed Mrs. McDonald on April 15. Interview pending approval.
Nāmu'o, Mr. Clyde	Administrator, Office of Hawaiian Affairs	CSH sent letter and maps on Feb. 25, 2008. See Section 6 below for OHA's response letter.
Nazara, Mrs. Cynthia	Lineal descendant and member of Hawai'i Island Burial Council	CSH sent letter and maps on Feb. 25, 2008. CSH interviewed Mrs. Nazara on March 24. See Section 6 below.
Paik, Ms. Linda Kaleo	Cultural Specialist, History and Culture, State Historic Preservation Division	CSH sent letter and maps on Feb. 25, 2008.
Punihaole, Mr. Robert	Hawaiian cultural practitioner with multi-generational ties to the Kekaha region and North Kona district	CSH sent letter and maps on March 25, 2008. CSH called on April 9. Mr. Punihaole declined to make statement as Kohanaiki is not his <i>ahupua'a</i> .
Springer, Ms. Hannah Kihalani	Former Office of Hawaiian Affairs trustee and a member of Kahu Ku Mauna, the cultural advisory group which advises the Mauna Kea Management Board. Her great-great grandmother, Luka Hopula'au, was the first wife of John Avery Maguire, the founder of Hu'ehu'e Ranch.	CSH mailed letter and maps on March 25, 2008. CSH reached Ms. Springer by telephone on April 22, and she shared the following: "Although my family is certainly connected to Hu'ehu'e Ranch and the surrounding lands, I don't know much about Kohanaiki and the project area. But you might check the development of the <i>makai</i> lands for additional information. My great-great grandmother, Luka Hopula'au Maguire, was born on Kohanaiki. I learned this from the Mormon church...There is much written on Kekaha lands and you could use that for information."

Name	Affiliation, Background	Comments
Soehren, Dr. Lloyd J.	Archaeologist, expert on place names	CSH called on Mar. 14, 2008, and emailed letter and maps the same day. Dr. Soehren replied on April 18 with the following statement via email: "...I once collected and propagated an 'ohe makai seed from Kaloko, at about that elevation. The area contains a remnant dry land forest...Place names are scarce in that region, most being either at the shore or higher among the <i>kuleana</i> ."
Van Gieson, Mr. George	<i>Hōlua</i> (sledding) expert for the island of Hawai'i and former member of Hōlua Project Incorporated, which sought to preserve <i>hōlua</i> throughout Hawai'i Island	CSH sent letter and maps on Feb. 26, 2008. CSH called on April 28 and Mr. Van Gieson supplied a cultural statement. See Section 6 below.
Ursua, Kumu Larry	Hawaiian cultural practitioner and Kumu kāne hula	CSH sent letter and maps on March 19, 2008. CSH called on April 9, and interviewed Kumu Larry on April 15. Interview pending approval.
Young, Mr. Charles	Chair, Hawai'i Island Burial Council	Sent letter and maps on April 12, 2008. CSH called Mr. Young on April 28 and left message.

Section 6 Community Responses

Kama'āina and *kūpuna* with knowledge of Kohalaiki and Kaloko Ahupua'a and the proposed project area were contacted for participation in this assessment. The approach of CSH to cultural impact studies affords these community contacts an opportunity to review transcriptions and/or interview notes and to make any corrections, deletions or additions to the substance of their testimony.

Presented below are brief backgrounds of each participant, followed by their comments and concerns about the proposed project area. OHA's response letter follows the participants' comments and concerns.

6.1 Kama'āina Interviews

6.1.1 Mr. Herman Kunewa

CSH interviewed Mr. Herman Kunewa on March 12, 2008 by telephone. His statement represents his *mana'o* (thoughts, ideas, theories) as well as that of his wife Iris. They both have *'ohana* who hail from Kohalaiki. Mr. Kunewa was raised in Kohalaiki, and works as an educator along with Mrs. Kunewa.

When CSH inquired if Mr. and Mrs. Kunewa had any comments about the proposed project, Mr. Kunewa at first declined to make a statement. "We believe in taking a stand this time. You are not the first to approach us about cultural sites and practices, and it doesn't tell us how we can live," he said. "Hawaiians are having a hard time. We are just learning to get back our land."

Mr. Kunewa questions the validity of the proposed project. "The infrastructure in Kona is bad," he pointed out. "The resources are dwindling. When a development comes in, the bottom line is money. That's not what we want to see. Let them back off a bit and let Kona breathe. Let the *iwi kūpuna* (ancestral remains) rest in peace."

Mr. Kunewa emphasized that he is not blindly against development, but he is very much aware of the consequences of uncurtailed and ad hoc building.

Specifically, we go through this apprehension. We are looking, reading about what is going on. We are very adamant about what is going on. We already work with the families of Kohalaiki, so that they are responsible for all the major sites on it. We are not totally against the development, but we are not for it.

Because he and Mrs. Kunewa are both teachers, they do their best to teach the young, both their children and their students. "We talk to them about the concept of the *ahupua'a*," he said. To understand the *ahupua'a* properly, one needs to also understand how it should look.

When you go *makai*, and you look up and see development, or look down from *mauka*, and you see construction, the *ahupua'a* is already ruined. If you overdevelop it, aesthetically speaking, you also ruin it. It's all money, money, money. You talk to them, and they say it brings jobs. But I got friends in construction, and they are all laid off. How many families I know who have left Kona and moved away, because they cannot make a living.

Mr. Kunewa commented on the ongoing development in Kailua-Kona and throughout the state.

No matter where development is happening, we need to go back to what is *pono*. These developments, they know if they don't do it right, they are going to pay for it. We are trying to survive and keep what is *pono*. Once it is gone, it is *pau*, and you will never know Kona. We all grew up in this area. We are the last generation, that generation that experienced what the *kūpuna* have left. To pass it to the next generation, that's what we're doing. But they're not going to experience it, because it is gone...I'm 54, and I grew up experiencing what is abundant. The *limu kōhu* down the side of the cliff, the fish dancing all around you, and seeing the black crabs crawling all over, like a lava flow...I'd rather look at barren rock, than houses.

6.1.2 Uncle Karin Haleamau

CSH conducted an interview with retired *paniolo* Uncle Karin Haleamau on March 20, 2008, and he also participated in a site visit on May 22, 2008. Born in 1940, Mr. Haleamau worked for Hu'ehu'e Ranch from 1958 to 1993. He generously shared his *mana'o* on life as a Hawaiian cowboy. Mr. Haleamau is familiar with the trails of the project area and ranching history for both Hu'ehu'e and Palani Ranch. At 68 years old, he keeps fit by continuing to run cattle he owns as well as staying active in the community.

Mr. Haleamau grew up as a child in the 1940s, and when he was seven years old, he took a historic trip with his father on the last steamboat of Hawai'i. He is the third generation to work as a *paniolo*. His grandfather was also a cowboy, and so was his dad. In effect, Hu'ehu'e belongs to him, to his father, and grandfather as they all worked on the ranch. Ranches regularly reached out to the community in the form of parades and other events. They were an integral part of the community.

Life as a *paniolo* was hard, but also fun. As he recalls it, *paniolo* at the time did everything to make the land "go," not just taking care of the cattle. A typical work week was eight hours a day, sometimes 10 hours, six days a week. On Sundays, he would go to church, and then work. He got paid \$170 a month. Each day, they would start work at 7 a.m.

In the olden days, we did everything to make the land go. We fixed fences, ran cattle etc. Only four of us worked the land," said Mr. Haleamau. "We never grumbled, because when we needed help, the ranch gave help. When you are working for the ranch, you either survive or don't work at all because it was a rough life.

Although Hu'ehu'e Ranch was considerably bigger than Palani Ranch, the latter had more *paniolo* to care for its land and cattle. "Palani Ranch really took care of its land, they did manual work, cleared the land by hand. They had 8-10 guys, and it's a smaller ranch," he said.

Working at the ranch taught him how to appreciate the 'āina, the abundant resources, and the rewards of hard work. "The ranch was very important to us—we can farm on the land, fish and hunt. There was enough for us," he remembered. "We didn't have to take for tomorrow. My dad told us, just take what you need." Mr. Haleamau noted that there were no luxuries, and

transportation was limited to horseback riding, or walking. Nature often determined the work, such as battling a huge fire in 1978, when a lightning storm touched off a fire which burned several thousand acres.

Mr. Haleamau is married to his wife Patricia for 45 years, and they have four children: Gary, Kalei, Kevin, and Conrad. They have seven grandchildren. Mr. Haleamau feels it is significant to share his lifestyle and experience as a *paniolo* to all of them.

I tell my kids you have to learn what the land is about. I'm so concerned about the 'āina. God gave us the land for one reason, to use it and to share it. I try to do this for the young generation.

Regarding the quality of the cattle, Mr. Haleamau reminisced about the strength and beauty of the *pipi*. One cow can weigh over 700 pounds, with horns ranging from two to three feet. "The Hereford and dairy cattle can handle going over the 'a'a (stony lava), beautiful cattle, they were strong...It was important to have a strong horse," he said. Once over the lava, the cows would refresh themselves by drinking the brackish water at the coast, which is high in minerals and good for the cows.

Due to the hot and challenging landscape of the *mauka* Kaloko and Kohala Ahupua'a, water was an extremely precious resource. Mr. Haleamau is aware of only one cave for water collection, although he had heard of other caves that were also used to gather water drops that dripped into calabashes placed on the floor. He did not have to drink water from caves, as the ranch had its own well. "Water was so important here, we didn't waste water. It was so important to cattle."

Mr. Haleamau also discussed caves that held burials. He emphasized the importance of respecting burials and to ask permission from the *iwi kūpuna* if the need to enter the cave arises. He warned that people who do not ask for permission can fall sick if they disrespect the burials.

There are three trails in the project area that he is most familiar with, especially one that he calls "*Uluwini mui*," a secret trail. He describes the start of this trail as being close to a burial. All three trails he is aware of began *mauka* and close together before branching out, depending on their use. One trail led *makai*, so that one can access the sea while the other trails led to neighboring *ahupua'a* like Honokōhau. He believes old Hawaiians made the roads in order to gather such resources as fish. "Maybe this is what trails are for, for those who lived here," he said. Mr. Haleamau is saddened and upset because a lot of trails have been destroyed. "What I'm telling now, it's a dying thing. I'm the only one that can tell you...why are they destroying our land?"

While working the 'āina, Mr. Haleamau grew familiar with the plants and crops that were available for use and consumption. For example, he used sisal (*Agave potatorum*) for rope. Fruit and plants in and around the project area included avocado, breadfruit, coffee trees, mangoes, Hawaiian lemon, navel oranges, purple *liliko'i* (*Passiflora edulis*) and banana *poka* (*Passiflora* spp.).

When asked if he observed any traditional practices, Mr. Haleamau noted the presence of numerous small pens, where goats were raised by old Hawaiians. But because he was always busy with ranching, he was not able to do anything but his work. "Once you get on a horse, *brah*, you get that cow, and you lose it," he laughed.

For him, the main area of concern regarding the proposed development is the preservation of holding corrals, known as *puakini*. "I would like them to preserve it, so we could show the people... This is very important. This is the one I'm concerned about," he stressed. "I feel this place and the old people who worked there. I feel *aloha* for that place. If they destroy it, they cannot build it again."

Speaking about the difference between the old *paniolo* life and the cowboy life today, Mr. Haleamau said:

Ours was the way to survive, not to compete... we help others, that's what we did [with] our time. It wasn't a challenge; [it was] more of a responsibility and a life, but today it's so different. I can't be like that. I've seen a lot of good cowboys but also bad cowboys. They tested your skills. They would test you with a horse that can buck you. I had to show the *kāpuna* the habits they taught me, the hard way. Until today, I'm still learning. To me, we are all learning. Every day is a new thing, we learn.

Because Mr. Haleamau shared his memories of working on the ranch, his thoughts also turned to the people who crossed his path and influenced him in many ways.

I walked with them, and I want to acknowledge them. If I miss anyone, please excuse me. I would like to acknowledge them. These men started the ranch and they made us who we are. The old *paniolo* days, they make sure everybody is *pono*, have *kaukau*...

During my time of work at Hu'ehu'e, around October 1958 or 1959, I was part-time at the ranch that was run by Ed Johnson, who was manager at that time. There was another manager by the name of Roger Williams. After that, we had Dennis Hasarat, and our former and last manager was Carl Carlson. This is my time of work. Before these managers came in, I would like to acknowledge the people I worked with, including Uncle Kino George Kahanani, Jack Kau'i Ha'o, John Kapehe, John Apela Sr., Eddie Kalai, Richard K. Punihaole, Carl Hose, Louis Kipano, Thomas K. Lindsey Jr., Gilbert Louwando, Clyde Buli, my brother Herman K. Haleamau, Henry Ha'o Jr., Joe B. Keka Sr., mechanic Peter Cantor Sr., pasture herdsman Herbert Kono, Henry Sereon Sr., Simeon Tina Jr., William Gomes Sr., Kazui Matsumoto, Clifford Medeiros Sr. and Pek'e Bob Manuel Sr. They are all *paniolo* and employees of Hu'ehu'e Ranch before my time and after, who taught me most about the cattle and cultural work, how to live together and survive.

Mr. Haleamau recalled his childhood days when as a six-year-old, his father would take him riding horseback at night. As the horses slowly trotted up and down trails along Kohanaiki, his father would play music and both would drink in the soft sights and sounds of the night around them.

My father always said take care of the land, it is not ours to fight, not ours to take, it's ours to be... it is for everyone. I want this to be *pono*, for every piece of land. I still remember the old Hawaiians when I used to ride with my father—their house

was always open. The first thing you see is *kaukau*, and there are no signs telling you that you are trespassing.

He emphasized his need to share his *mo'olelo* about his *paniolo* life and experiences and the knowledge he gained working with people, animals and the land. It is knowledge that can inspire people to take care of the land.

If I don't share it with you now, it will never be spoken anymore by anyone who has more experience than I have had, in this *'āina* of ours. Now is the time to share with the next generation; there's a lot of memories that I have. If they could feel the *mana*, and *mana'o* of what is true, then they could *mālama* the *'āina*. The *'āina* is going to be here forever more. I love this land. And don't forget to *mahalo* a Ke Akua [i.e., to thank God]. He loves us. That's what it is about...

I want to acknowledge whatever goes on now, and not to feel sorry later on, because this is for the next generation to be preserved. And I want everybody to understand that what we are doing is for all of us. And pls. support the whole community and let's do the right thing now.

6.1.3 Uncle Arthur Mahi

CSH interviewed former *paniolo* and pureblood Native Hawaiian culture practitioner Uncle Arthur Mahi on March 20, 2008. Mr. Mahi's *'ohana* lived in Kohanaiki. He worked for Hu'ehu'e Ranch in the 1930s to 1946, when he enlisted in the army. He was stationed in Korea, Lebanon, Philippines and Vietnam, among other places, and was a member of the military police. Married to his wife Theresa for 55 years, Mr. Mahi has 18 *hanai* children, including his own. He is knowledgeable about traditional fishing, trails, vegetation and other cultural resources and practices in and around the project area, particularly the middle section to the *mauka* portion of the proposed development.

Mr. Mahi is extremely concerned that the proposed development may negatively impact the *'āina*. He questions why trees such as the *wiliwili* (*Erythrina sandwicensis*) are dying, noting there are no more mango trees or native trees like *alahe'e* (*Canthium odoratum*) in the project area. During the 1930s to 1940s, these trees flourished in the project area and the surrounding land. Plants like banana, *uhi* or yam (*Dioscorea alata*), and *pia*, a Polynesian arrowroot (*Tacca leontopetaloides*) used as medicine and food by Hawaiians, were also widely distributed. "All kinds of plants were present, until these were choked by the bushes," said Mr. Mahi.

According to him, such plants were integral to Hawaiians not only for their use as a food and medicine resource but also for their connection to other aspects of life. For example, he cites a Hawaiian proverb that when the *alahe'e* tree blossoms, the *he'e* (squid, octopus) are *momona* (fat) and ready to harvest. Another saying involves the *lākana* (*Lantana camara*); when this plant blossoms, the *hā'u'uke'u'uke* (*Colobocentrotus aratus*), an edible variety of sea urchin, are also *momona*. If while harvesting the urchin, one was stung by the spikes of the *hā'u'uke'u'uke*, lemon or vinegar could be used to neutralize its sting.

Mr. Mahi remains steadfast in his insistence that plants must be respected. People need to be aware of giving back to the *'āina* whenever harvesting them. "When you plant, the plant is not just for you, but for everything and everyone," he said. "Everything that grows in the culture, you respect them. If you don't take care of them, they die." For Hawaiians, there is no such thing

as one "earth day" once a year; rather, it is every single day. "Our earth day is every day," Mr. Mahi noted. "You take care of the 'āina and the 'āina will take care of you."

This belief goes hand-in-hand with his conviction that no one can really own the land. "When people buy the land, you only buy the use of the land," he said. "Who owns the land? Ke Akua (God) and grandparents...When you die, you can't take the land with you. You don't own the land, the land owns you. What belongs to Hawai'i, belongs to Hawai'i."

As far as Mr. Mahi is concerned, "the *iwi* own the place." He recounted the traditional practice of Hawaiians burying their loved ones in the lava tubes or caves around the project area. Since there were hardly, if any, cemeteries before, Hawaiians used the places where they lived. They wrapped their loved ones with a *tapa* cloth and placed them in lava tubes or caves.

Caves were also used for other purposes, such as water collection. It was sometimes the case that water was collected in caves where *iwi* would also be present. Hence, Mr. Mahi stated that one must always ask permission from the *iwi*, before collecting the water. "You always say *mahalo* when entering, *aloha*, and *mahalo* when leaving." He frequently utilized the water collection in caves, noting that some water drips were fast, and some were slow. He brought his own calabash to collect the water, which tasted like "regular water."

Besides collecting water in caves, Mr. Mahi recounted diving in the deep sea with a gallon jug to collect water from the fresh water springs in the ocean, during the 1970s. Rain was also used for water. He also drank brackish water from the anchialine ponds in Kaloko and Honokōhau. "We got water all over the coast," said Mr. Mahi. He added that a *limu* (algae, seaweed), or moss was squeezed as a source of water and was found at the entrance of *ana* (caves).

An avid fisherman, Mr. Mahi shared some of the traditional ways of preserving fish. Using fish like *aku*, bonito or skipjack (*Katsuwonus pelamis*), he preserves them in Hawaiian sea salt, for up to 10 years. The fermentation yields a liquid condiment similar to *bagoong*, a Filipino fermented shrimp/fish condiment.

Besides the negative impact on plants, Mr. Mahi is concerned about the price of homes as well as the preservation of trails. When told that the price of homes may vary from an estimated \$200,000 up to a million, he expressed doubts that the homes would really be affordable and wondered what kind of house it would be for \$200,000. "That's not affordable houses, that's hanging our neck," he said.

According to Mr. Mahi, there are plenty of trails, *mauka-makai*, in the project area. He underscored the importance of preserving the trails. "Don't build houses on the trails," he warned. "Spirits are going to come, donkeys, people on the trail, through the house."

Mr. Mahi told of stories of people who complained about spirits that continue to pass through their house, as if they were still walking on a trail. He also advised against moving *iwi*, saying "Don't move the burials, because the artifacts are theirs."

Through his lifestyle, cultural practices and beliefs, Mr. Mahi expressed the value and the need to respect the Hawaiian worldview, where nature and people are interconnected and mingle with the past, present and future. "Everything you do is not for you. It is for the future, for the grandchildren, great-grandchildren etc. If you don't know now, it's too late."

6.1.4 Mr. Peter Keka

CSH interviewed Mr. Peter Keka on March 21, 2008, at the Kaloko- Honokōhau National Historical Park. Mr. Keka's *ohana* has lived on Honokōhau for many years, and they also leased the fishponds in both Kaloko and Honokōhau. He grew up learning about the traditional ways to maintain and manage the enormous ponds, and is currently employed to restore the fishponds as well as other ancient Hawaiian sites in the park. Mr. Keka was born in 1940, and is 68 years old.

In response to the question if he has any concerns about the proposed development, Mr. Keka said:

Let them come. Let them destroy it. Then they'll know what they did. You won't be able to stop it. You can slow it down but you can't stop it. Because greed is in everybody's blood...That's what's nature is about. It's people. To try is one thing, to stop it, is another. If you look at it, one is to be satisfied with what is, and the other is... (to be) in contempt.

Mr. Keka remembers vividly when his grandfather passed away 56 years ago. As a young boy, he was warned by his grandfather that change was coming. "It will destroy everything," Mr. Keka said, describing his grandfather's words. "I didn't know what he was talking about. Now I know. It's everybody, but look carefully. It's how you control things. You have development all over the place. You won't be able to stop it. No matter how you try, you can't stop it."

6.1.5 Mrs. Cynthia Nazara

CSH consulted Mrs. Nazara in person about the proposed development in Kohanaiki and Kaloko Ahupua'a on March 24, 2008. Mrs. Nazara's *ohana* is from the project area and surrounding *ahupua'a*. Her great-great grandfather, William Keanaaina, was the caretaker of Kaloko pond. Her mother, Malaea Keanaaina, was born in Honokōhau junction, while her grandparents are from O'oma. Mrs. Nazara serves on the Hawai'i Island Burial Council and is an active member of the Kona Hawaiian Civic Club. She was born on O'ahu in 1947, and moved to Hawai'i when she was 13. She is the oldest of 10 siblings, and is the first cousin of Ruby McDonald.

Mrs. Nazara spoke of her extensive experience working as a cultural consultant to ensure that developments would not stray from what was promised to the community. In 1993, she worked on Four Seasons Hualālai.

It was very different from what they promised. The first five years I was involved, it was low impact. And they always said they would build affordable. But to whom? They set it up so that they would build and it won't be seen from the road, but now you can see it from the road.

Although the experience made her wary of development, Mrs. Nazara believes that it is possible for cultural and lineal descendants to work with the developer.

For me, I am never against progress. Progress is good. But people are angry because big companies come in and exploit us. They promise things, but when you look at the project, it's not the same. We want as a people to make sure the

developer does what he wants to do, but we cannot help them if he doesn't tell us the truth.

According to Mrs. Nazara, developers in general are out to make money, and it is the responsibility of the descendants to be involved.

Here in Hawai'i, whether we like it or not, developers are going to come in. As *keiki o ka 'āina* [children of the land], we want to be able to come to the table with these developers to ensure that things will be done right. And that's what everybody should strive for. There have been too many people living here that have been exploited. Developers come and suck all the "hā" out, all our breath and knowledge, and then they throw us out. We have to let people know. If we can get our foot in the door and work together with the developer, that's a good thing. Our goal is to not stir things up, but to work together. Don't exploit us.

6.1.6 Mr. Duane Keanaaina

CSH interviewed Mr. Keanaaina on March 26, 2008. Born in Kalaoa Kona, Hawai'i in 1952, Mr. Keanaaina's 'ohana is from Kohanaiki as well as neighboring O'oma, Kalaoa, Ho'ona, Mahai'ula, Makalawena and Pu'uana'hulu. The Keanaainas spent a lot of time in Kohanaiki *makai*. They also traversed the project area hunting feral goats, pigs, and gathered seasonal fruit. He mentioned that there were several trails traversing the project area. Additional information on the trails can be obtained from the Hao and Lee 'ohana.

For Mr. Keanaaina, the size of the proposed development is not the question, but how it is developed. His main issues of concern focus on the areas of safety and ensuring the development is people-friendly:

Development is inevitable, but how you do it, that's the question. If it is just high density, nobody wants that. But if it's community-friendly, you won't have too much opposition. Don't jam the lots too small, make it open so it's comfortable to walk around. If they are building a community, make it as safe as possible.

According to Mr. Keanaaina, the development should have careful landscaping:

Landscaping is the key of the whole thing. You can soften the development if you have a bunch of houses, if trees are planted around it. If you use different types of landscaping, you can soften the visual impact for the neighbors above them...any opposition would come from neighbors above them.

In addition, he called attention to a section on the project area made up of a lowland forest. He also noted that although there are not too many endangered plants in the project area, there is at least one native plant called "*ko'oko'olau*" (*Bidens* spp.). When dried, it is taken as a tea or used medicinally as a tonic. It is often preferred over store-bought tea because of its pleasant taste. He suggested that the seeds of the plant should be collected and later re-planted as part of the landscaping:

The *ko'oko'olau* plant is in the project area. The only place you'll find the plant. If they will develop it, please get the seeds, and use it as part of the landscaping when doing it. The plant is used for tea, better than Lipton and Earl Grey. You

have to watch for this plant, because this is the only area that has it and collect the seeds.

The following is a list expanding Mr. Keanaaina's concerns and questions:

1. Children can get hurt if the multifamily complex is across the street from a shopping center and convenience stores. Consider installing an underground tunnel for ease and safe pedestrian access.
2. Regarding project density, sidewalk has to be no less than 4 feet, even wider if possible. This is because there are more people walking in the morning and the evening. "If you make it neighborhood friendly, are they going to install a walking trail that would allow them to go around the area and back to their residence?" he asked.
3. Pointing out that the development will be right next to a busy and steep road going uphill, Mr. Keanaaina suggests the inclusion of a runaway truck ramp. With all the heavy equipment on trucks going uphill, the ramp could keep people safe in case brakes fail.
4. No master plan has been provided for review and consideration.
5. Does the developer plan to build a shopping center or market?
6. On what side of Hina Lani Street will the multiple housing project be built, north or south? How many stories will the multiple family housing have?
7. Will the developer construct a highway to Kealahou school, to help with traffic problems on Queen Ka'ahumanu Highway?
8. Are open areas being considered, such as a community center, parks, walking paths, soccer and baseball fields?
9. How will the community traverse Hina Lani Street, overpass or underground tunnel?
10. Does the developer plan to keep the lowland forest within the project area?

As mentioned above, the *ko'oko'olau* plant used medicinally as a tonic or dried and drank as a tea is found within the project area. But there are other native plants, some endangered, which also thrive within the project area. Seeds from these plants should be collected and replanted within the project area as part of the landscape design plan.

Mr. Keanaaina also made referrals to several individuals, including Kelly Greenwell whose family operated a cattle ranch in the *ahupua'a*. Clarence Rapoza now operates Palani Ranch and may have information on the proposed project.

6.1.7 Uncle Valentine K. Ako

CSH interviewed Mr. Valentine K. Ako on Mar. 27, 2008. Mr. Ako was born in 1926 in Hōlualoa. He comes from a long line of family that has resided in North Kona for generations. As a young boy, he learned from *kāipuna* how to fish and gather salt, as well as other vital Hawaiian traditions. At 17, he enlisted in the Merchant Marine and travelled around the world for eight years, during a period he calls "some of the best years of my life." He is knowledgeable

about the fishing practices and resources up and down the coast of Kona, and about the people who lived in the project area and beyond.

When asked about his concerns regarding the proposed project, Mr. Ako said: "That's a big area." He mentioned several trails in Kohanaiki, with some trails taken by *kūpuna* in order to go fishing. Mr. Ako also confirmed the presence of burials in lava tubes in the project area, saying:

During the old days, prior to Westerners coming over, our *kūpuna* buried their loved ones in the lava tubes in that particular area. As generations went by, they didn't notify the heirs where their loved ones are buried. My dad before he passed away, took me up Palani and Māmalahoa, it was just barren at that time, so you could see down to Kohanaiki. And he said, "Our ancestors are buried there, these are all our ancestors buried there."

He expressed strong feelings against the removal of any of the burials that may be found during the course of development.

My concern is this: Do not relocate these ancestors to another *ahupua'a*. If you find these graves, do not make it so that people can find them. This is where all our Hawaiian ancestors are buried. Leave the lava tubes alone, and seal it up. Don't make it so that people can come and see the graves and desecrate them. It's so important for developers to realize where our ancestors lived. You have to tell developers that this issue is important to us. My ancestors are all from this area. When they find these lava tubes, seal it up and do not expose it. Do not relocate them to another *ahupua'a*.

Besides lava tubes, cinder hills were easiest place to bury the *kūpuna*, because there were no metal implements. An 'ō'ō (digging stick) was used in sandy beaches, but most of the time, Hawaiians dug by hand. Mr. Ako warned that it is when graves are moved or disturbed that the tribulation begins.

When people come from all over the parts of the world and they have different ideas and no respect for our ancestors, and they try to implant their lifestyle, that's when trouble starts. As an elderly person today, we should make it a point to respect our *kūpuna*'s burials.

He stressed the importance of listening to *kūpuna* and their words to learn about the rich history and culture of Hawai'i. From 1992 to 2000, Mr. Ako worked with Kepā Maly to help locate *kūpuna* around 80 years or older in order to record their knowledge. The interviews span North Kona history from Kohanaiki and other *ahupua'a* up to Kawaihae, and are stored with the Kona Historical Society. He also recommended two works in particular that would assist in appreciation and understanding of Hawaiian culture. One is a book by Mona Kahele, *Clouds of Memories*. The other is a book featuring maps and trails of the *ahupua'a* of Hawai'i, by Walter E. Wall, Dec. 1928 edition.

Mr. Ako shared some interesting insights into preserving fish and making fish sauce. For example, he takes 'ōpelu, adds a lot of salt, and then mixes it in a blender. He then puts the salted fish pieces in a dish with a towel over it, leaving it under the hot sun for two months. After it becomes grey, he strains the liquid and uses it for cooking as well as the fish. He also discussed the different kinds of *poi*. Not everyone was allowed to mix *poi*, as one's body

chemicals could turn it sour or sweet. "Our *kūpuna* were conscious of who made the *poi*," he said. "The same goes for turtle meat. If you have lousy hands, the meat will turn bad."

6.1.8 Kahu Norman Keanaaina

Cultural Surveys Hawai'i interviewed Rev. Keanaaina by phone on April 9, 2008. He comes from a family of 14 children and was born in Kona on Nov. 4, 1940. Rev. Keanaaina's *ohana* has lived in the lands of Kaloko and Kohanaiki, as well as Honokōhau and Kalaoa, for generations. Rev. Keanaaina's great-great grandfather Kea'naina, or Kea'naaina Nuuanu, is buried at the Kohanaiki point. According to the reverend, Kohanaiki is also known as Kohaneiki and Kahaneiki.

When asked what he thinks of the proposed project, Rev. Keanaaina said:

The project is not in Kohanaiki, I've seen the deed, it is for Kohana'iki, which is located in the *ahupua'a* of Honokōhau-iki. My grandfather owned all of this, Kohanaiki. Kohanaiki is still with the Kingdom of Hawai'i. Kohana'iki is noted as a nudist area, while Kohanaiki is a place of discipline.

Rev. Keanaaina feels very strongly against the proposed development, stating several times that the deed is not for the proposed area. He maintains he has filed a notice at the Bureau of Conveyances on O'ahu and at the Recordation office of the Aupuni Hawaii, an organization which seeks recognition for the Kingdom of Hawai'i. Rev. Keanaaina also states that notices have already been served to the developers of Kohanaiki over a year ago.

He cautions against what he called "lies and false filing."

....They said my grandpa was just an agent. No, my grandpa has the deed and now I have it. Mayor Kim and Angel Pilago is another problem. When they found out what was happening in Kohanaiki (*maka* of the project area), they ran away. I'm not blaming the developers, rather, I'm blaming them. And Linda Lingle. They're the cause of all this, the problems of Kohanaiki. They're playing a political game. But...they should stop and listen.

Rev. Keanaaina also discussed his plans of constructing a center to bring together various cultures present in Hawai'i. He would want to construct the center on the *ahupua'a* of Kohanaiki.

I have plans for an international cultural center, because in Hawai'i, there are a lot of cultures today. In order to please everybody, we are going to have this center. There are 190 nations that I have contacted to bring their culture to Hawai'i. They are a part of my family, because of so many intermarriages.

6.1.9 Mr. George Van Gieson

CSH interviewed Mr. Van Gieson by telephone on April 28, 2008. Mr. Van Gieson is the Fire Captain of the Volcano Fire Station, and was active in helping preserve the *hōlua* or slides around Hawai'i. In 1976, he was one of the members of the non-profit Hōlua Project Information whose mission was to record and safeguard *hōlua*. Mr. Van Gieson stated that all of the slides the organization found were on the Makahiki trail, which goes around the coastline of the island.

When asked if he is aware of any slides in the project area, Mr. Van Gieson mentioned the *hōlua* in the Kaloko-Honokōhau national park.

That one has always been a mystery to us, because it's so short and only 300 ft. long. And also it's really, really wide. The other thing is, that might have been to move logs down for canoes. It has the classic shape of a *hōlua* but it's so short and wide. But some people say it might have been a practice *hōlua* as several people can fit in it.

Another issue about the *hōlua* is that, between it and the highway, there are a lot of burials found, according to Mr. Van Gieson. His father had been with a select group of people who had seen a cave filled with many *iwi* that is located *mauka* of the *hōlua*. It is believed that they are the remains of hundreds who died in a flu epidemic which swept the island sometime in the mid-to-late nineteenth century.

6.1.10 Kumu Larry Ursua

CSH interviewed Kumu Larry Ursua on April 15, 2008. He is a Hawaiian cultural practitioner and an active community participant. Married to his wife Laurie for many years, Mr. Ursua is a 48-year-old father of six children. He works as a Father Coach at the West Hawai'i Family Support Services. Trained by the highly respected John Kaimikaua who was his mentor and teacher, Mr. Ursua continues to teach *kāne hula* (men's hula) in West Hawai'i and also previously taught Hawaiian Language and Culture as part of the community college.

When asked if he knew of any specific cultural practices and resources in Kohanaiki and Kaloko Ahupua'a, Mr. Ursua stated that he is not versed in the *mo'olelo* and referred to two individuals in particular, Mahealani Pai and Uncle Black Ho'ohuli, who are descendants from the Kohanaiki Ahupua'a. He said simply, "this is not my *kua 'āina*" (countryside).

Mr. Ursua shared his particular concern about the proposed project by expressing a wide-ranging prophecy from the ninth century that was taught to him by the *kūpuna*. Called the *Wānana*, (lit. "prophecy"), it foretells the consequences that happen when land is used for one's personal gain and how it is of the utmost importance to give back and respect its resources.

I know that our ancestors began with a prophecy. The prophecy is called *Wānana*. The prophecy was the inevitable would come, that the land would be inhabited by many natives and people. The *Wānana* also said we would lose the ideas, religious and beliefs of our culture and we would struggle with a western lifestyle but later with time, we will adapt to it. This is the *Wānana* that I share...

The *Wānana* concerns the forthcoming of a new age of life of the people of Hawai'i. These people that will come, will come from many nations trying to utilize the lands and to gain their own personal and their own nations' gain. The *Wānana* was spoken by the prophets, the prophets of old, going back all the way to the time of the ninth century. This *Wānana* was not only spoken on each island but was spoken by powerful prophets, leaders and *kahunas*. Like Kohanaiki, it is another land being developed. Like the prophecy, it entails the using, producing and manufacturing of lands, to serve not those *koko* to the '*a'ina*, *koko* as in bloodline to the '*a'ina*, but those from the outside. This prophecy helps us to

understand that when these things occur, either we will stand as a nation of people that are raised from the sands of Hawai'i or we will stand separate. It spoke even about the lessons, tribulations that will be brought about by new generations of Hawaiians which would become aware of how important the western education would be in being able to utilize their system and law and government because the land would be taken.

The land was taken and it was genocide. Later in 1993, an apology was made to the people of Hawai'i for the genocide of the islands and the Kingdom of Hawai'i. That separating many Hawaiians to stand for the reasons they stand today, creating many types of programs and other types of governments. At least small governments that help them to stand and build more Hawaiians to come to help them in their endeavors, to regain their kingdom, regain their government and regain their land. That would all fail. That would all fail because of the small uniqueness of the land and its people, now divided in this 21st century.

So the *Wānana* as we were talking about...to better understand why Hawaiians will have difficulties coming together from families, from different districts concerning Kohanaiki. Kohanaiki in their first motion to do what they needed to do, affected Hawaiians, a very small (number) of families, to step forth in protecting and giving voice to that land...

Mr. Ursua discussed his belief that development is "inevitable," but what is essential is to work together with developers to ensure that the land is protected. He mentioned the Kohanaiki *makai* development that involved community members, including him, to assist in conducting the proper protocols in taking care of the cultural resources that were found on the land.

However, the *Wānana* says that no matter what, the inevitable would be the land would have development and would be used for some gain and goals for other developers to come unto the land. As a person, as a Hawaiian myself, looking at the land and watching it being developed, I realize the prophecy is coming to pass; that this place must be built like many places from the past. And they are built out of different types of minerals, resources and structure. Our land will be built out of other things not from this land. Our ancestors will not be able to recognize the structure and building but they are also aware of it even though they are behind the veil and have passed on from this life. They have an idea and it echoes in their ears that the prophecy, the inevitable, would come. These things can be of great benefit to the people of Hawai'i, and these things can be a great downfall to many people who tried to look at opposition and looked at it as conflict.

This is the inevitable, things will be built on the land, but as developers come, if we can gain their support, gain their trust, we can work civilly towards protecting the land still and providing the land with what it needs. The culture of Hawai'i is an important part of our children and those who come to learn the culture of Hawai'i. With that, we need to provide the kind of guidance for our generation to come so that they will be able to act accordingly, properly, in a way that they can meet certain things and communicate well with the developers. Rutledge came in

and they allowed a team to investigate one of the caves that was breached and I was one of those members who were part of the team. That in itself says that some developers will want to be culturally sensitive to things that are culturally here. And that would be a great step as business and developers come to the land. That cultural consultants and people who have sentiment to the land communicate and work together with them to provide proper burial sites and proper protocols for where certain parts of the land were sacred in the past, sacred now, and will be sacred in the future. This is the *Wānana* that was spoken. Many things will fall, the sky, the heavens, the sun, the stars, the moon. The heavens will fall, and all that shall be left is the *maka'āinana*, which is the common people. *Maka* the eyes, *nana* is to watch. The watchers and keepers of the land. And I am one of them, hoping that the land would produce properly for the future.

This was the *Wānana*. It is now, it is happening. This is the present time...

For Mr. Ursua, at the heart of any development of the land is the proper or *pono* way that one must approach it. He believes that to conduct oneself with arrogance and self-centeredness at the cost of gouging others and resources of the land is setting up one's self for later punishment.

This is just my personal *mana'o*. If I preach this to many, they would follow. They would want to follow what their ancestors said. I don't preach this enough, but if I did, I think more people will have respect for peoples of the past and the generations unborn. If we all remain sensitive as people in general, not just Hawaiians, the land will be welcoming to all kinds of people whether you build your home here or not. But when we come for self-gain and self glorification, whatever you build on the foundation of the land, Hawaiians know in the past, our ancestors, (that) the land is alive. It is the mother and the womb of the Hawaiian people and if our mouth, our lips, and our voice as Hawaiians is not heard, not just any Hawaiian voice, but a voice of a Hawaiian person who is *pono*, submissive, humble, the mouth of Mother Earth will consume developers, and all those who build on her land for self gain. It may not happen tomorrow or next year, but she will consume it on her own time. Tūtū Pele is awake and her breath, the volcanic vog is an indication as she covers the state of Hawai'i to remind all her fires have no boundaries. That she will creep into any crack or crevice even onto developers' land and turn any haughty or self-gained development into ash. These are the words spoken from our prophets.

Discussing the contemporary events such as the high rise in gas prices, the sudden end of long-term airlines such as Aloha Airlines, and the cost of war, Mr. Ursua links all these events as part of the prophecy and illuminates what it means for the future of Hawai'i if people do not change how they live.

We are in a depression mode, because we cannot build Aloha Airlines and ATA airlines. It can't be realized because of billions of billions of dollars are spent to conduct peace, but at the price of human life. Very shortly, for Hawaiians and all kinds of people, the crime rates will soar because people don't have jobs...

We live on four major islands of Hawai'i and we live right smack in the middle of the Pacific. Our islands will not be on the priority list for products to be brought here. Because of what is important, crude oil, all things are run by those particular minerals. So we are heavily stocked by shipment, not by airway. Already the airways are shutting down. The airways that we fly to and from will be so expensive that it will be actually a luxury to travel and see family members. Now they will open the waterways, and it's still the same kind of product that we run our planes with, fuel. It has to cut across the ocean but those things will be cut off. Not only that, all of the products that come to Hawai'i will be cut off...

According to Mr. Ursua, caring for the land and turning back to the traditional methods of giving to it, not just taking from it, can help Hawai'i survive the steep costs of being dependent on oil. Those with the knowledge of caring for the land will suddenly be the most integral in a chaotic world where wars are caused over oil. Hand-in-hand with taking care of the land is the essential need to turn back to God or Ke Akua and to be mindful of the evils caused by greed and selfishness.

A dependent land has to become independent and their people on it and Hawai'i will be challenge by that. With independence, you can do as you need but it will be how we have taken care of the land. Now we will have to go back to the very basic things our people did, to care for the land, to plant on the land, to fish on the land, all those practices will come back into play, and we will see how the land and the ocean will respond. And the resources of these things that were once in the land have already vanished. The land will be in chaos, the people will be confused. The *pono* within them will be lost. It will become a dog-cat-dog world.

But there will be a few that will have power. Not just to suggest or to speak words, but the power to bring together the very few who are called "*Hoale Kalepopolo*." These are the kinds of people who come from the fields, from the mudflats, from the ocean. They will not be filled with education; they will be filled with understanding and the spirit of the land. And to those few, the land will yield. Bananas will grow, taros shall foot forth from its waters, the mountain will flourish for them and they will provide a "*pu'uhomua*" for the modern-day families. *Pu'uhomua* are used as a safe zone for those who broke the laws of the land. But the modern day *pu'uhomua* will be a person, will be a group of people who shall have wisdom, they shall have knowledge, they will be one with the land and the heavens. When they *pule* and pray and command the land to yield forth its fruits, the heavens will be one with them and the land will produce. People will understand that all we have today that technology can provide, it will be the spiritual foundation of the people of Hawai'i and the land to promote and provide the things that will care for the people here. And they will turn back to their past and turn back to their *kūpuna* and they will become a prayerful people, a submissive people, and Ke Akua will look upon that and we pray that He might be merciful. That in His response, we can start to rebuild the kind of heaven that is needed on earth. This is only a piece, a short version of the *Wānana*.

These things actually continue to exist, but if we continue to build, to develop down the coastline thinking that it is a good type of building and a good type of selling, then think about where you are building and where you are selling. You are not selling just any land, you are selling a land where people believe and live to know that the land itself is alive with spirit. And that spirit, that *uhane* of the land, when you drive pillars, when you drive wood, when you drive metal to her and she is not willing to receive it. Many lands have to be blessed and consecrated by *kahus*, and sometimes not just the whole project, but in the project if there is 50 feet or if there is 47 acres, one prayer would not encompass the entire 47 acres, because what you blessed the land to take place for that moment, it might have changed on the blueprint of what they were going to do in a particular location of the property which was not part of the deal. When you changed that, the *pule*, or the blessing is voided. Therefore it re-opens itself to all kinds of things. And just be mindful that like any child, or any person, when we need to be reprimanded, we first get a warning. And our little warning was a 6.3 earthquake recently. That is just a shake, and now we are going into a rattle. Now the rattle is, although we don't say much, we are rattled by the vapors that when we look on the land, we can see the vapors, the *hā*, or the breath of Pele, travelling throughout the land. She is swelling, she is expanding beneath us, and she will make herself known. And there will be no mountains, no hills that you can run or hide from, because every hill and every mountain was created by her and at her command. Four of her mountaintops that lie on the island of Hawai'i are only dormant; they are not dead. She can travel to any of them...I'm not trying to be scary about this but when you tell people stuff like this--

...If we are in the image and likeness of our Creator, and he is looking at us right now, then he is saying "well for some of you, but woe onto many of you who have not been mindful of the things and place that I have given you." Of course, this is not the Garden of Eden anymore, but that place once in the very beginning existed. We left that garden, that we might till and care for the land. But instead, we have ripped and stripped and tore the land. For those who go about with Greenpeace, those who go about preserving the land and caring the ocean, blessed are those who do that because you are caring for the very earth that produces for you. But those who go into the sea, to the mountain and strip it of its resources, and tear it and make things extinct, your time will come. You don't have to die, but you will be afflicted by the things what others feel, you should be able to taste it. If we are the image of our Creator, then we have the potential to become like Him...If we have the opportunity to be like our Father, and have our own work to govern, give our only begotten Son, and watch the world as it produce and the nations and generations produce upon the earth and watch it develop, we are going to know exactly how those people are going to take care it. If we do what we do unto our father's planet, our children would do the same. But how are we going to respond to that? We have so much potential. And that was part of the prophecies of Hawaiians. We are not just a vapor of time; we are not a vapor like the vog you see in the sky that when the winds come, it shall blow away and is no more. We go from our mortality and our existence and our learning, our

probation, our trials and tribulations, our joys and happiness, all of that which our emotion can stand... And then it is followed by immortality. When we are in the immortality stages, and we separate our body from our spirit, we do not not continue to exist, we just exist on a higher plane. And we can look down and help our descendants like our *kāpunas* in the past have helped us. But we need to acknowledge them now more than ever, because they come with a righteous and ancient past, and righteousness that will provide us the wisdom and the strength to carry on in this last dispensation.

This is the last dispensation and our people knew that Lono wasn't just Lono. They knew Lono to be Ke Akua, he was Jesus Christ, and Jesus Christ came here and he taught the consecrated law. How can they bow down to Captain Cook, because he looked like someone they saw before his time? The only description he fits is the description of Jesus Christ, with eyes that are bluish green, fair skin and hair long and brown. And he wore his red robe. Our people were very clear about who that person was, and that person sat and showed them who he was and told them he would come again. And the reason why he's going to come is that he is going to cleanse the earth with his entity. Under the command of his word, Tūtū Pele would burn the land. At the command of his word, he would call his prophets to call upon the ocean to cleanse the lands with its high waves. Upon his words, he will call those who will command the winds that come and strip down everything that stands. What will be left is a pure form of the land itself, and then we will start again and that is what is meant to be. But all that we have, that we take advantage of—I am one of them, I like roads, I like stores, I like this and that—if we don't ration properly, we are going to lose more than what we have. That again goes back to the prophecy. I don't live just by that, but I understand that when it was prophesized 900 years ago, why would they say that about our time? Because they could foresee what people and how greedy people were going to be. And all the simple laws of the land were going to be forgotten, the simplicity of life, the basics of life were going to be put on the back burner and they were going to put up new things and it's not bad. I'm not saying that it's bad, but it is the intent and purposes in how they are using it, that makes it bad.

6.2 OHA Response Letter

In a response letter dated April 24, 2008, the Office of Hawaiian Affairs (OHA) conveyed several specific concerns and requests regarding the proposed project (see Appendix A for the letter). First, OHA requested CSH "conduct a thorough review of all archaeological reports and cultural studies related to the larger area which will be subject to the cultural impact assessment," and "a comprehensive archaeological inventory survey" pursuant to applicable statutes.

Second, OHA requested the opportunity to comment on all significance criteria assigned to historic properties identified during archaeological inventory survey in accordance with HAR 13-13-284-6(c).

Third, OHA raised the issue of consulting with individuals regarding their rights to access the project area "for constitutionally protected traditional and customary purposes."

Fourth, OHA recommended consultation with cultural descendants to burials within the "Kaloko Heights" project area, as recognized by the Hawai'i Island Burial Council, regarding cultural sites and resources that may be present in the subject project area; this consultation should also include community groups such as "Kahu o Kahiko."

Fifth, OHA discussed the cultural significance of the "Road to the Sea" trail, and stressed it should "be preserved in perpetuity," in accordance with applicable statutes and legal decisions protecting traditional and customary practices and the landscapes that support or supported these (in this case, subsistence activities taking place at both the seashore and the uplands).

Finally, OHA requested the opportunity to review the final CIA for this project.

Section 7 Traditional Practices and Properties

Discussions of specific aspects of traditional Hawaiian culture as they may relate to the project area are presented below. This section examines resources and practices identified within the project area in the broader context of the encompassing Kohanaiki and Kaloko Ahupua'a landscape. Excerpts from *kama'aina* interviews are incorporated throughout this section where applicable.

7.1 Hawaiian Habitation and Agriculture

According to the CSH archaeological inventory surveys of the project area (Bell et. al 2008a, b, c; Esh et al. 2008), of the total fifteen (15) habitation sites in the project area, thirteen (13) sites fit the characteristics of temporary habitation and two (2) are categorized as permanent habitation.

The majority of the temporary habitation sites within the project area are located on the *pāhoehoe* flow on the east and southeast side of the project area. Both permanent habitation sites are located on or near the edge of the large 'a'ā flow that dominates the project area. In terms of elevation, all of the habitation sites are located above approximately 500 ft a.m.s.l., and generally the sites are scattered across the eastern portion of the project area. It is notable that nearly all non-lava tube habitation features are located on a naturally elevated area (either tumuli, outcrops, or 'a'ā edge).

The terrain throughout the majority of the project area severely limits agricultural productivity, since large portions of the project area are barren 'a'ā lava or rough *pāhoehoe* with no soil development. However, some of the *pāhoehoe* areas do have soil development, although these tend to be fairly small and shallow everywhere except for the far *mauka* extent of the project area. The agriculture-related features throughout most of the lower elevations of the project area represent more of an opportunistic approach versus the more expansive/intensive approach practiced at higher, more productive elevations.

Despite the lava covered terrain, various crops were traditionally and in historic times cultivated within the project area; and sweet potato is likely to have been the most abundantly grown crop because of its adaptability to stony, dry environments. It was commonly planted in mounds and in *pāhoehoe* excavations. It is notable that the most intensive areas of agricultural modification are located where there are older (highly eroded) 'a'ā flows, ideal for building planting mounds. Besides sweet potato, gourds, mulberry, and taro are the most likely crops to have been grown in this area. Both taro and sweet potato were named as actual crops during the Land Commission documents for Kaloko lands during the Māhele of 1848.

7.2 Gathering of Plant Resources

In ancient Hawai'i, upland forest regions provided various woods needed for canoes, tools and more, as well as cordage, food and herbs (Abbott 1992). Several of the plants within the project area have past and present ethnobotanical uses for native Hawaiians (e.g., as medicinal, building, weaving). Many of these plants are (possible) Polynesian introductions such as *kukui* (*Aleurites moluccana*), *kī* or *tī* (*Cordyline fruticosa*), and *noni* (*Morinda citrifolia*). Some of

these Hawaiian canoe plants (plants brought by the early Polynesians in their canoes) are indicators of former Hawaiian habitation. For example, *kī* was often planted around *heiau* (temples), and considered a sacred plant in parts of Polynesia. *Kī* was also planted around taro *lo'i* (pondfields) (<http://www.canoeplants.com>).

A contributor to this cultural assessment mentioned past or ongoing plant gathering of the *ko'oko'olau* (*Bidens* spp.). Emphasizing that the project area is "the only place you'll find the plant," Mr. Keanaaina discussed the use of the *ko'oko'olau* plant for tea and as a medicinal tonic. Its pleasant taste when dried makes it preferable to "store-bought" teas, according to Mr. Keanaaina. He and several other participants also noted the presence of one of the last remnants of a dry land forest located on the project area. Other plants present in the project area include the native *pili* grass (*Heteropogon contortus*), 'ōhi'a trees (*Metrosideros polymorpha*), *laua'e* ferns (*Phymatosorus scolopendria*), 'ōhe trees (*Reynoldsia sandwicensis*), *alahe'e* (*Psydrax odorata*), and *halapepe* (*Pleomele* spp.). Native plants observed at higher elevations include: *naio* (*Myoporum sandwicense*), 'a'ali'i (*Dodonaea* sp.) and 'ulei (*Osteomeles anthyllidifolia*).

Mr. Mahi specifically names native trees like *alahe'e* (*Canthium odoratum*) in the project area. During the 1930s to 1940s, the *alahe'e* along with mango, banana, *uhi* or yam (*Dioscorea alata*), and *pia*, a Polynesian arrowroot (*Tacca leontopetaloides*) used as medicine and food by Hawaiians, were also widely distributed in the project area. "All kinds of plants were present, until these were choked by the bushes," said Mr. Mahi.

7.3 Marine and Freshwater Resources

Like the integrated system of Hawaiian culture where an individual is linked to the surrounding environment, there is often a connection between marine resources and the agricultural plants found in the project area. For example, Mr. Mahi noted the presence of *alahe'e* trees in the project area and cited a proverb that when the *alahe'e* tree blooms, the *he'e* (squid, octopus) are *momona* and ready to harvest. Another saying involves the *lākana* (*Lantana camara*); when this plant blossoms, the *hā'u'ke'u'ke* (*Colobocentrotus atratus*), an edible variety of sea urchin, are also *momona*.

Although outside the project area, the Kaloko-Honokōhau fishponds provided Hawaiians with a rich resource for fish and shellfish. The ingenious design of the fishponds allowed fresh water in but prevented large fish from getting out. Besides the extensive aquaculture and tidepools available for shellfish and several types of *limu*, the ocean near the project area abounds with all kinds of fish. Both Mr. Mahi and Mr. Ako fished in the ocean for *aku* and bonito near the project area, and they shared their traditional methods of preserving fish in brine solutions. Mr. Kunewa recalled a time when everything was abundant. "The *limu kōhu* down the side of the cliff, the fish dancing all around you, and seeing the black crabs crawling all over, like a lava flow..."

There are no springs or ponds located in the project area; however, there are dozens of water collection lava tubes identified during the archaeological inventory survey. As described in more detail in the archaeological reports (see Bell et al. 2008a, b, c; Esh et al. 2008), most of these subterranean water sources are relatively small and require intensive and careful methods of collection, including building of small rock structures to hold *ipu* (gourds) in place for days in order to fill them. Both Mr. Mahi and Mr. Haleamau knew of caves that were used as fresh water collection sites, although the latter also had the use of a ranch-owned well.

In addition to these water collection lava tubes, which were probably used most intensively in pre-Contact times, community participants recall using anchialine ponds in the *makai* areas of Kaloko and Kohalaiki in historic times as drinking water for themselves and for their animals. Mr. Haleamau states that cows from the ranch would be driven over the lava so they could refresh themselves with the brackish water that was high in minerals and good for their health. Mr. Mahi also shared his experience of diving into the deep sea to collect water from the fresh water springs in the ocean, and collecting rain for water.

7.4 Burials

There have been at least 65 burials found at about two dozen sites within the current project area. Most of the community participants were aware of the presence of burials throughout the project area. It was a common practice to use lava caves as burial sites in addition to other uses like water collection and habitation. Mr. Ako remembered his father taking him to an overlook above the project area when he was a little boy, to point out the lava tubes where relatives were buried. Mr. Mahi confirmed the traditional practice of burying loved ones in the caves after wrapping their bodies with tapa cloth. All participants who mentioned the presence of burials in the project area were adamant at preserving the *twi kīpuna* in place.

7.5 Trails

There were seven trails or trail segments observed during the archaeological inventory survey (Bell et al. 2008a, b, c; Esh et al. 2008). Trails are a common site type within the Kekaha region in general. Although some of the trails in the project area were little more than remnants, several run many hundreds of meters and are in good-to-excellent condition. The intersection of three of the trails is especially of interest, as it appears to represent trail use during subsequent periods of time. The construction type also is indicative of changing needs in transportation, specifically the creation of trails more amenable to travel by horse or other pack animal.

The trails indicate a network of transportation corridors that focus on transportation over the large 'a'ā flow that dominates the project area, with *maukai/makai* and cross slope-oriented trails. The network of trails thus provides fairly direct coast-to-uplands routes via the project area and access to activity areas within the project area. The activity areas include: agricultural pursuits, a ceremonial site, and temporary and recurrent habitation sites, as well as an animal husbandry area. Overall the trails suggest a high level of energy investment in constructing paths for traversing the 'a'ā flow, both in pre-Contact times as well as historically.

OHA's response letter highlights the importance of the "Road to Sea" trail that has been a subject of some controversy in past archaeological projects, given the uneven nature of its preservation and integrity as a historic property. OHA strongly advocates for a relatively broad interpretation of this particular trail's importance and significance to the wider Kona community, rather than a more narrow scientific view that some or much of the trail has been altered beyond its "traditional" design or intent. Many older people from this area used this "Road to the Sea" trail during the early twentieth century for subsistence purposes.

Several community participants described their use of trails during their childhood and adult years. Mr. Haleamau mentioned three trails, including a secret one that he called "Uluwini." All

three trails began *mauka* and branched out depending on their use, whether to lead Hawaiians to another *ahupua'a* or to the ocean to gather fish. Mr. Mahi stated there numerous *mauka-makai* trails in the project area and warned against blocking the trails with houses. Mr. Keanaaina noted the custom of one family being designated to maintain each trail, and that trail would then be named after them.

7.6 Hunting

A variety of animals were present in the project area into historic times, including wild pigs and goats. The presence of ranches such as Hu'ehu'e Ranch also meant numerous cattle abounded in the area.

Section 8 Summary and Recommendations

At the request of Stanford Carr Development, LLC, Cultural Surveys Hawai'i, Inc. (CSH) conducted a cultural impact assessment (CIA) of a 1,150-acre parcel within portions of Kaloko Ahupua'a and Kohanaiki Ahupua'a, North Kona District, Hawai'i Island, TMK: [3] 7-3-009:017, 025, 026, 028 (see Figures 1-3).

In addition to conducting background research into the traditional and historic importance of the project area, in the context of Kaloko and Kohanaiki Ahupua'a, including results from previous archaeological studies, CSH also made a substantial effort to consult with community members and organizations. A total of twenty-five people were contacted for the purposes of this CIA; 18 people responded; and 12 *kūpuna* and/or *kama'iāina* were interviewed for more in-depth contributions. At this writing, a total of nine of these individuals have consented to have their testimonies included in this report. Efforts at obtaining permission to include the testimonies of the remaining three individuals who were interviewed for this CIA are ongoing.

8.1 Summary of Results

Background research conducted for this project yields the following results:

1. The project area is part of the traditional region known as Kekaha, extending from Honokōhau to 'Anaeho'omahu in North Kona. Mary Kawena Pukui notes that Kekaha, within which Kaloko and Kohanaiki Ahupua'a are located, is known "for its scarcity of water but is dearly loved by its inhabitants" (Pukui 1983:185). Despite being a dry place, the project area contains many unique resources—including dozens of subterranean lava tubes and caverns used to collect water; the project area included an extensive pre-Contact Hawaiian settlement that continued to support a subsistence-based lifestyle into the early historic era.
2. Archaeological research shows the project area contains hundreds of culturally and historically significant sites and thousands of individual features within these sites; adjacent areas contain even more significant sites and features. Sites in the project area include permanent and temporary habitation structures—many of which incorporate natural features of subterranean lava tubes into their design, agricultural features (including extensive rock mounds used to plant sweet potatoes), at least 65 burials located in approximately two dozen burial sites, *ahu* (stone markers), trails, petroglyphs, *ahupua'a* boundary walls, *papamū* (traditional gaming site), and others.
3. Radiocarbon dating from nearby sites definitively shows the general area has been utilized by humans for at least 1,000 years.
4. The project area is likely to contain substantial additional subsurface deposits—as yet undiscovered and undocumented—associated with lava tubes and subterranean chambers, including burials and other highly sacred materials.

5. The project area is also associated with the unique history of Hawaiian-style ranching and *paniolo* ("Hawaiian cowboys"), including the well-documented Hu'eahu'e Ranch.
6. Because of its association with Kaloko and Kohanaiki Ahupua'a and the Kekaha region, the project area is associated with specific *mo'olelo* (oral history) about (a) the sixteenth or seventeenth century ruler of Hawai'i Island Lonoikamakahiki (Lono-i-ka-makahiki), who was involved in several famous battles with the chiefs of Maui (including Kama-lala-walu) and other parts of Hawai'i, (b) Kamehameha I, whose remains were reportedly interred near Kaloko Fishpond (*makai* of the project area), (c) 'Umi-a-Liloa, who frequented the famous fisheries of Kaloko and Kohanaiki, and (d) the Nahuolu chiefs (including Ka-me'e-ia-moku and Ka-manawa); the project area is also associated with more legendary references to Ka-Miki, various *mo'o* (water spirits) that resided at fishponds at and near the seashore, and Hualālai; and more general references to water-collection lava tubes and the unique environmental conditions of the region (e.g., the heavy night dew that formed and was carefully used by gardeners to grow sweet potatoes and other foods in a seemingly marginal environment).

Community consultation conducted for this project yields the following results:

1. Several participants voiced negative feelings and opinions about the overall cumulative impacts of ongoing and future developments in Kona District and the project area environs pointing out such factors as a diminished quality of life for locals, dwindling resources, prices beyond the reach of most *kama'āina* and overtaxed infrastructure as contributing to a loss of what is authentic and traditional about Kona.
2. Several participants talked about subsistence resources that were previously available to, and enjoyed by, locals—such as various *limu* (seaweeds), crabs and fish—but that are no longer available or easily accessed due to the cumulative impacts of development in Kona.
3. Most participants talked about the presence of burials and *iwi kūpuna* (ancestral remains) throughout the project area. It is clear from some of the interviews that there are many lineal and/or cultural descendents to some of these burials that should be consulted during the proposed development, since some historic-era family burial sites, in particular, may be impacted by the subject project.
4. A few participants talked specifically about changing patterns of vegetation and plant life, highlighting the loss of native and Polynesian-introduced species as well as useful historic introductions such as mango trees. In particular, there is a remnant area of lowland forest in the project area containing several endangered and threatened native species, including *ko'oko'olau* (*Bidens* spp.). It is important to understand that such natural

resources are significant cultural and historical resources to many native Hawaiians.

5. A few participants talked about drinking from water collection caves in historic times, as they moved around the landscape (e.g., as ranchers), and of brackish pools used by their animals (e.g., cattle and horses).
6. Several individuals discussed trails in the project area, including a historic trail running from the ocean to the mountains (this is the so-called "Road to the Sea") along the *ahupua'a* boundary between Kaloko and Kohanaiki, that were used in the recent memories of some participants to gather resources from the sea and the uplands. Given many changes and modern developments, the trails in the project area have not been used by many people for several decades.

8.2 Recommendations

The following recommendations are based on a synthesis of all the information gathered during preparation of this CIA. Faithful attention to these recommendations, and efforts to develop appropriate measures to address these concerns, will help mitigate the adverse impacts of the proposed action on Hawaiian cultural beliefs, practices and resources by the project:

1. Most of the people who voiced negative feelings and opinions about the overall cumulative impacts of ongoing and future developments in Kona District stopped short of saying they were entirely opposed to the proposed project; however, some participants recommended the project proponent prepare a draft Master Plan for review and comment by the public so that the various short- and long-term cumulative impacts, both negative and positive (e.g., the construction of recreational facilities and/or parks and other "green spaces"), can be assessed by the community.
2. Several participants, including the Office of Hawaiian Affairs (OHA), recommend the project proponents work together with the local community in order to develop plans that are *pono* (i.e., harmonious with the local environment), culturally sensitive and fair and balanced with respect to the *'āina* and its natural and cultural resources.
3. Efforts should be made to protect and preserve brackish water pools and water collection lava tubes.
4. Most participants strongly urged that no burials or *iwi kūpuna* (ancestral remains) should be relocated or moved to make way for the proposed project.
5. One participant who worked as a *paniolo* for many years recommended preservation and protection of "holding corrals" (*puakini*) in order to educate present and future generations about the unique Hawaiian-style "cowboys" that flourished in and around the subject project area in historic times.

6. Efforts should be made to preserve and protect all trails in the project area, including designing around trails to maintain an authentic sense of place that is unique to Kona.
7. Efforts should be made to preserve and protect the remnant lowland forest and any other native and Polynesian-introduced plants species in the project area, including *ko'oko'olau* plants and other endangered and threatened species. Preparation of a "vegetation master plan," which could be combined with the next item (below), would help guide plans and commitments to preserve and protect these unique resources.
8. Several participants stated that, if the proposed development goes forward, it should use environmentally-appropriate landscaping that enhances the sense of place, including native and Polynesian-introduced species. Preparation of a "vegetation master plan," which could be combined with the previous item (above), would help guide plans and commitments to preserve and protect these unique resources.
9. OHA, in particular, recommends the project proponents faithfully follow all applicable laws with respect to the treatment of all historic properties located within the subject project area.
10. Cultural monitoring should be conducted during all phases of development, including all significant ground disturbances, to ensure that significant cultural and historical resources are protected and preserved in accordance with appropriate mitigation plans.
11. Community members and groups responsible for the long-term care of the Kohanaiki and Kaloko Ahupua'a, as well as cultural practitioners who utilize the area for gathering and for cultural and educational activities, should be further consulted regarding the above issues and other concerns throughout the planning, development and operation of the proposed housing development. This consultation should include all interested community groups and individuals who have a stake in the project area.

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Appendix A OHA Response Letter

PHONE (808) 594-1000

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STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPIOLANI BOULEVARD, SUITE 600
HONOLULU, HAWAII 96913

April 24, 2008

HRD08-3532

Margaret Magat, Researcher
Cultural Surveys Hawai'i, Inc.
P.O. Box 1114
Kailua, Hawaii 96734

Re: Cultural Impact Assessment
Kohanaiki and Kaloko Ahupua'a
North Kona District, Island of Hawai'i

Dear Ms. Magat:

The Office of Hawaiian Affairs (OHA) is in receipt of your letter initiating consultation ahead of a cultural impact assessment for a 1,150 acre project located in Kohanaiki and Kaloko Ahupua'a. Based on the information contained within your letter, it is our understanding that Stanford Carr Development has proposed development plans which include residential units, commercial and neighborhood retail centers, recreational facilities, schools and associated infrastructure.

OHA recommends that your firm conduct a thorough review of all archaeological reports and cultural studies related to the larger area which will be subject to the cultural impact assessment.

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 pursuant to §13-284-6(c), Hawai'i Administrative Rules. Consideration should also be afforded to any individuals accessing the project area for constitutionally protected traditional and customary purposes.

We are aware that numerous cultural sites and resources were identified within the "Kaloko Heights" project area which is adjacent to this proposed development. Numerous families have been recognized as cultural descendants to burials within the "Kaloko Heights" project area by the Hawai'i Island Burial Council. OHA recommends that consultation occur with these families occur regarding cultural sites and resources within the proposed development area. The Historic Preservation Division should be able to provide you with the names of these families.

Margaret Magat
Cultural Surveys Hawai'i, Inc.
April 24, 2008
Page 2

Community groups such as "Kahu o Kahiko" should also be consulted regarding cultural sites and resources within the proposed development area.

The maps included with your letter which depict the proposed development area indicate that it is highly probable that the "Road to the Sea" trail is within the boundaries of the proposed development area. OHA strongly advocates that the "Road to the Sea" trail alignment be preserved in perpetuity.

Please note that the significance members of the Hawaiian community associate with this trail are not being conjured up from stories of a distant past. There are kama'āina of Kōna still living today who recall accessing this trail to gather land and ocean resources for subsistence. These are traditional and customary practices which are protected by the Constitution of the State of Hawai'i as well as in the Hawai'i Revised Statutes and in court decisions. While the constant and active use of this trail may have faded through the years due to multiple factors, the passage of time and physical changes can never eliminate the trail's history and significance to the Hawaiian people.

Thank you for initiating consultation at this early stage. We look forward to the opportunity to review the completed cultural impact assessment. Should you have any questions, please contact Koola Lindsey, Lead Advocate-Culture at (808) 594-1904 or koolal@oha.org.

'O wau iho nō,

Clyde W. Nima'o
Administrator

C: Ruby McDonald, OHA- Community Resource Coordinator- West Hawai'i
75-5706 Hanalei Place, Suite 107
Kailua-Kona, Hawai'i 96740