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July 7, 2014

JUL 23 2014

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

FILE COPY

OFFICE OF ENVIRONMENTAL
QUALITY CONTROL
14 JUL -8 P 1:49
RECEIVED

Dear Ms. Wooley:

**Subject: Final Environmental Assessment for Asing Utility and Road Access Easement
On Government Land at Manā, Waimea, Government Land Adjacent to TMK:
(3rd) 6-4-005:017, South Kohala District, Island of Hawai'i**

With this letter, the Hawai'i County Department of Public Works (DPW) hereby transmits the final environmental assessment and finding of no significant impact (FEA-FONSI) for the subject project for publication in the next available edition of the Environmental Notice. Please note that no comments were received during the 30-day public comment period on the draft environmental assessment and anticipated finding of no significant impact (DEA-AFONSI).

Enclosed is a completed OEQC Publication Form, one copy of the FEA-FONSI, a CD with an Adobe Acrobat PDF file of the same and an electronic copy of the publication form in MS Word.

Please contact Frank DeMarco of DPW at 961-8327 if you have any questions.

Sincerely,

Frank DeMarco

fw Warren H.W. Lee, P.E.
Director

Attach: As noted above

c: (w/o attach) Ron Terry, Ph.D., Project Environmental Consultant

Project Name Asing Utility and Road Access Easement On Government Land at Manā, Waimea
Island: Hawaii
District: South Kohala
TMK: (3rd) Government Land Adjacent to TMK: (3rd) 6-4-005:017
Permits: County of Hawai'i, Department of Public Works: Grubbing and Grading Permits (potential), Permit for Work in County ROW and Driveway Permit

Approving Agency:
Hawai'i County Department of Public Works
101 Pauahi Street, Suite 7
Hilo, Hawai'i 96720
Attn: Frank DeMarco
Ph. (808) 961-8327

Applicant:
Kristian Asing
64-5274 Puanuanu Place
Kamuela, HI 96743

Consultant:
Geometrician Associates
PO Box 396
Hilo HI 96721
Ron Terry Ph. (808) 969-7090 rterry@hawaii.rr.com

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Proposing/Determination Agency:

Consultant:

Status (check one only):

- DEA-AFNSI** Submit the proposing agency notice of determination/transmittal on agency letterhead, a hard copy of DEA, a completed OEQC publication form, along with an electronic word processing summary and a PDF copy (you may send both summary and PDF to oeqchawaii@doh.hawaii.gov); a 30-day comment period ensues upon publication in the periodic bulletin.
- FEA-FONSI** Submit the proposing agency notice of determination/transmittal on agency letterhead, a hard copy of the FEA, an OEQC publication form, along with an electronic word processing summary and a PDF copy (send both summary and PDF to oeqchawaii@doh.hawaii.gov); no comment period ensues upon publication in the periodic bulletin.
- FEA-EISPN** Submit the proposing agency notice of determination/transmittal on agency letterhead, a hard copy of the FEA, an OEQC publication form, along with an electronic word processing summary and PDF copy (you may send both summary and PDF to oeqchawaii@doh.hawaii.gov); a 30-day consultation period ensues upon publication in the periodic bulletin.
- Act 172-12 EISPN** Submit the proposing agency notice of determination on agency letterhead, an OEQC publication form, and an electronic word processing summary (you may send the summary to oeqchawaii@doh.hawaii.gov). NO environmental assessment is required and a 30-day consultation period upon publication in the periodic bulletin.
- DEIS** The proposing agency simultaneously transmits to both the OEQC and the accepting authority, a hard copy of the DEIS, a completed OEQC publication form, a distribution list, along with an electronic word processing summary and PDF copy of the DEIS (you may send both the summary and PDF to oeqchawaii@doh.hawaii.gov); a 45-day comment period ensues upon publication in the periodic bulletin.
- FEIS** The proposing agency simultaneously transmits to both the OEQC and the accepting authority, a hard copy of the FEIS, a completed OEQC publication form, a distribution list, along with an electronic word processing summary and PDF copy of the FEIS (you may send both the summary and PDF to oeqchawaii@doh.hawaii.gov); no comment period ensues upon publication in the periodic bulletin.

___ Section 11-200-23
Determination

The accepting authority simultaneously transmits its determination of acceptance or nonacceptance (pursuant to Section 11-200-23, HAR) of the FEIS to both OEQC and the proposing agency. No comment period ensues upon publication in the periodic bulletin.

___ Section 11-200-27
Determination

The accepting authority simultaneously transmits its notice to both the proposing agency and the OEQC that it has reviewed (pursuant to Section 11-200-27, HAR) the previously accepted FEIS and determines that a supplemental EIS is not required. No EA is required and no comment period ensues upon publication in the periodic bulletin.

___ Withdrawal (explain)

Summary (Provide proposed action and purpose/need in less than 200 words. Please keep the summary brief and on this one page):

Kristian Asing has requested the County of Hawai'i to provide him a 21,080 square-foot, non-exclusive access and utility easement over a "paper road" on Government Land in the vicinity of Manā Subdivision in the outskirts of Waimea. The right-angled, 20-foot wide easement would extend 1,074 feet from the end of a paved road maintained by the County to a 3.0-acre kuleana property owned by Mr. Asing, which would otherwise be landlocked with no access. The land occupied by both the easement and the Asing lot has long been in use as pasture and there are no historic or cultural sites or practices, native species, water bodies or flood zones. Granting of the easement will allow Mr. Asing to build an unpaved road and extend County water lines and possibly HELCO underground electric lines over a portion of the easement to the lot, where he will also conduct agricultural activities in conformance with allowed uses for the Agriculture zoning. Mr. Asing would build a non-dedicable road on the easement, which has a slope of less than one percent. This road would also potentially serve five other lots, including two that also currently lack access. The applicant will be working with the County to obtain a permit to work within the government road right-of-way and fulfill any conditions that might be associated with its use.

**FINAL ENVIRONMENTAL ASSESSMENT
AND FINDING OF NO SIGNIFICANT IMPACT**

**Asing Utility and Road Access Easement
On Government Land at Manā, Waimea**

Government Land Adjacent to TMK: (3rd) 6-4-005:017
South Kohala District, Hawai‘i Island, State of Hawai‘i

July 2014

Prepared for:
County of Hawai‘i
Department of Public Works
101 Pauahi Street, Suite 7
Hilo, Hawai‘i 96720

**FINAL ENVIRONMENTAL ASSESSMENT
AND FINDING OF NO SIGNIFICANT IMPACT**

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On Government Land at Manā, Waimea**

Government Land Adjacent to TMK: (3rd) 6-4-005:017
South Kohala District, Hawai'i Island, State of Hawai'i

APPLICANT:

Kristian Asing
64-5274 Puanuanu Place
Kamuela, HI 96743

APPROVING AGENCY:

County of Hawai'i
Department of Public Works
101 Pauahi Street, Suite 7
Hilo, Hawai'i 96720

CONSULTANT:

Geometrician Associates LLC
PO Box 396
Hilo, HI 96721

CLASS OF ACTION:

Use of Government Land

This document is prepared pursuant to:

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

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

Kristian Asing has requested the County of Hawai‘i to provide him a 21,080 square-foot, non-exclusive access and utility easement over a “paper road” on Government Land in the vicinity of Manā Subdivision in the outskirts of Waimea. The right-angled, 20-foot wide easement would extend 1,074 feet from the end of a paved road maintained by the County to a 3.0-acre *kuleana* property owned by Mr. Asing, which would otherwise be landlocked with no access. The land occupied by both the easement and the Asing lot has long been in use as pasture and there are no historic or cultural sites or practices, native species, water bodies or flood zones. Granting of the easement will allow Mr. Asing to build an unpaved road and extend County water lines and possibly HELCO underground electric lines over a portion of the easement to the lot, where he will also conduct agricultural activities in conformance with allowed uses for the Agriculture zoning. Mr. Asing would build a non-dedicable road on the easement, which has a slope of less than one percent. This road would also potentially serve five other lots, including two that also currently lack access. The applicant will be working with the County to obtain a permit to work within the government road right-of-way and fulfill any conditions that might be associated with its use.

**PART 1: PROJECT DESCRIPTION, PURPOSE AND NEED
AND ENVIRONMENTAL ASSESSMENT PROCESS**

1.1 Project Description, Location and Property Ownership

Kristian Asing has requested the County of Hawai‘i to provide him a 21,080 square-foot, non-exclusive access and utility easement over a “paper road” on Government Land in the vicinity of Manā Subdivision in the outskirts of Waimea (Figure 1). The right-angled, 20-foot wide easement would extend 1,074 feet from the end of a paved road maintained by the County to a 3.0-acre *kuleana* property owned by Mr. Asing (LCAw. 3672:1), which would otherwise be landlocked with no access (Figure 2 and Appendix 2). The land occupied by both the easement and the Asing lot has long been in use as pasture (Figure 3). As shown in the County tax maps for the area, the proposed easement would occupy two segments of the narrow strips of land that separate individual properties. The proposed easement traverses portions of two roadways that were known in the mid-19th century as Ala Mauka and Ala Hikina, which were clearly intended to provide access for the surrounding 3-acre lots. Granting of the easement will allow Mr. Asing to build an unpaved road and extend County water lines and possibly HELCO underground electric lines over a portion of the easement to the lot, where he will also conduct agricultural activities in conformance with allowed uses for the Agriculture zoning and in consultation with the U.S. Natural Resources Conservation Service.

Mr. Asing would build a non-County dedicable road on the easement, which has a slope of less than one percent. This road would also potentially serve five other lots, including two other lots that currently lack access on the former Ala Mauka Road: TMKs 6-4-005:18 and 30. The road will be 16 feet wide, with a six-inch minimum fine select borrow base course with surface treatment of packed gravel. The design will be submitted to the Director of Public Works for review to ensure that it meets the roadway and drainage standards of the County of Hawai‘i for non-dedicable rural roads as described in Section 23-87 to 88 of the Hawai‘i County Code on page R-39 of the County Road Design Standards. The design will be finalized after review, and adjusted if necessary.

The applicant will be working with the County to obtain a permit to work within the government road right-of-way and fulfill any conditions that might be associated with its use.

Figure 1. Project Location Map

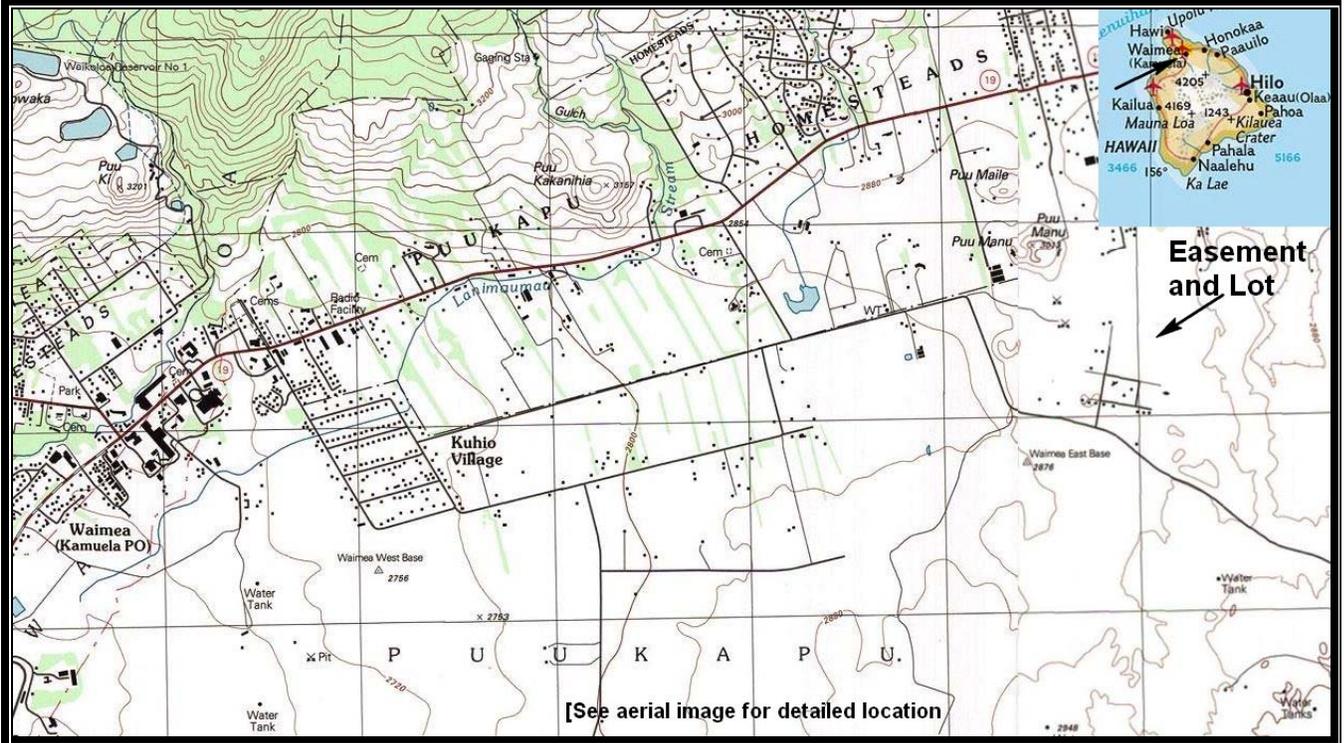


Figure 3
Project Site Photographs



Easement Area Existing Condition ▲ ▼ Asing Lot, Looking SE to Easement Corner



1.2 Environmental Assessment Process

This Environmental Assessment (EA) is being conducted in accordance with Chapter 343 of the Hawai‘i Revised Statutes (HRS). This law, along with its implementing regulations, Title 11, Chapter 200, of the Hawai‘i Administrative Rules (HAR), is the basis for the environmental impact process in the State of Hawai‘i. According to Chapter 343, an EA is prepared to determine impacts associated with an action, to develop mitigation measures for adverse impacts, and to determine whether any of the impacts are significant according to thirteen specific criteria. Part 4 of this document states the anticipated finding that no significant impacts are expected to occur; Part 5 lists each criterion and presents the preliminary findings for each made by the Hawai‘i Department of Public Works, the approving agency. If, after considering comments to the Draft EA, the approving agency concludes that, as anticipated, no significant impacts would be expected to occur, then the agency will issue a Finding of No Significant Impact (FONSI), and the action will be permitted to occur. If the agency concludes that significant impacts are expected to occur as a result of the Proposed Action, then an Environmental Impact Statement (EIS) will be prepared.

1.3 Public Involvement and Agency Coordination

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

State:

- Department of Hawaiian Home Lands, O‘ahu and Waimea Offices
- Department of Health
- Office of Hawaiian Affairs

County:

- Planning Department
- Public Works Department
- Police Department
- County Council
- Department of Water Supply

Private:

- Sierra Club
- All adjoining property owners
- Waimea Community Association
- Waimea Hawaiian Homesteaders’ Association

Copies of communications received during early consultation are contained in Appendix 1a. No comments in response to the Draft EA were received. Additional or modified non-procedural text (primarily the outcome of lack of response) is denoted by double underlines, as in this sentence.

PART 2: ALTERNATIVES

2.1 Action Alternatives

The Proposed Action is the granting of the specified easement by the County of Hawai‘i, and construction of an unpaved roadway and installation of utilities by Kristian Asing, as described above.

One other access easement was also considered, extending from the end of Mana Place. This would have been 50 percent longer and required more expense and disturbance. No other feasible access routes are available. Therefore, no other alternative easements are studied in this EA.

2.2 No Action

Under the No Action Alternative, the easement would not be granted. The applicant would be denied access to his *kuleana* lot utilizing this narrow strip of Government land which was intended to provide access since at least the Great Mahele. This would restrict the rights of the applicant to utilize his property in any way, and the applicant considers the No Action Alternative undesirable and inequitable. Nevertheless, the No Action Alternative is considered in this EA for the purposes of comparison with the Proposed Action.

PART 3: ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES

Basic Geographic Setting

The location for the Proposed Action is referred to throughout this EA as the *project site*. The term *project area* is used to describe the general environs of this part of Waimea and South Kohala.

The project site is a right-angled, 20-foot wide strip of pasture land extending 1,074 feet from the end of a paved County road to TMK 6-4-005:017 (see Figures 1-3; Appendix 2). Nearby land uses include mainly pasture, beyond which are farms and single-family residences on agricultural lots.

3.1 Physical Environment

3.1.1 Climate, Geology, Soils and Geologic Hazards

Environmental Setting

The project area is just below 3,000 feet in elevation on the wet windward side of Waimea and has an average annual rainfall of about 65 inches (Giambelluca et al 2014). Temperatures are generally cool (60-70°F.) and show definite but moderate seasonal variability. The extreme minimum temperature recorded at Waimea is 34°F, while the extreme maximum temperature is 90°F. Northeast tradewinds funnel through the saddle between the Kohala Mountains and Mauna Kea and often blow at speeds exceeding 25 miles per hour. Regionally, tradewinds with an east to northeast direction are present on up to 90 percent of summer days and 50 percent of winter days. Some of the most intense episodes of rainfall occur when the wind direction temporarily shifts from the northeast to the southwest (UH Hilo Dept. of Geography 1998).

The project area has a very low risk of volcanic hazard – zone 8 on a scale of ascending risk 9 to 1 – because Mauna Kea is not an active volcano and the ancient Kohala volcano is extinct (Heliker 1990).

In terms of seismic risk, the entire Island of Hawai‘i is rated Zone 4 Seismic Hazard (*Uniform Building Code, 1997 Edition*, Figure 16-2). Zone 4 areas are at risk from major earthquake damage, especially to structures that are poorly designed or built, as the 6.7-magnitude quake of October 15, 2006, demonstrated. The project site does not appear to be subject to subsidence, landslides or other forms of mass wasting.

Impacts and Mitigation Measures

In general, geologic conditions impose no constraints on the Proposed Action, which would provide an access and facilitate development of the property in conformance with zoning, and

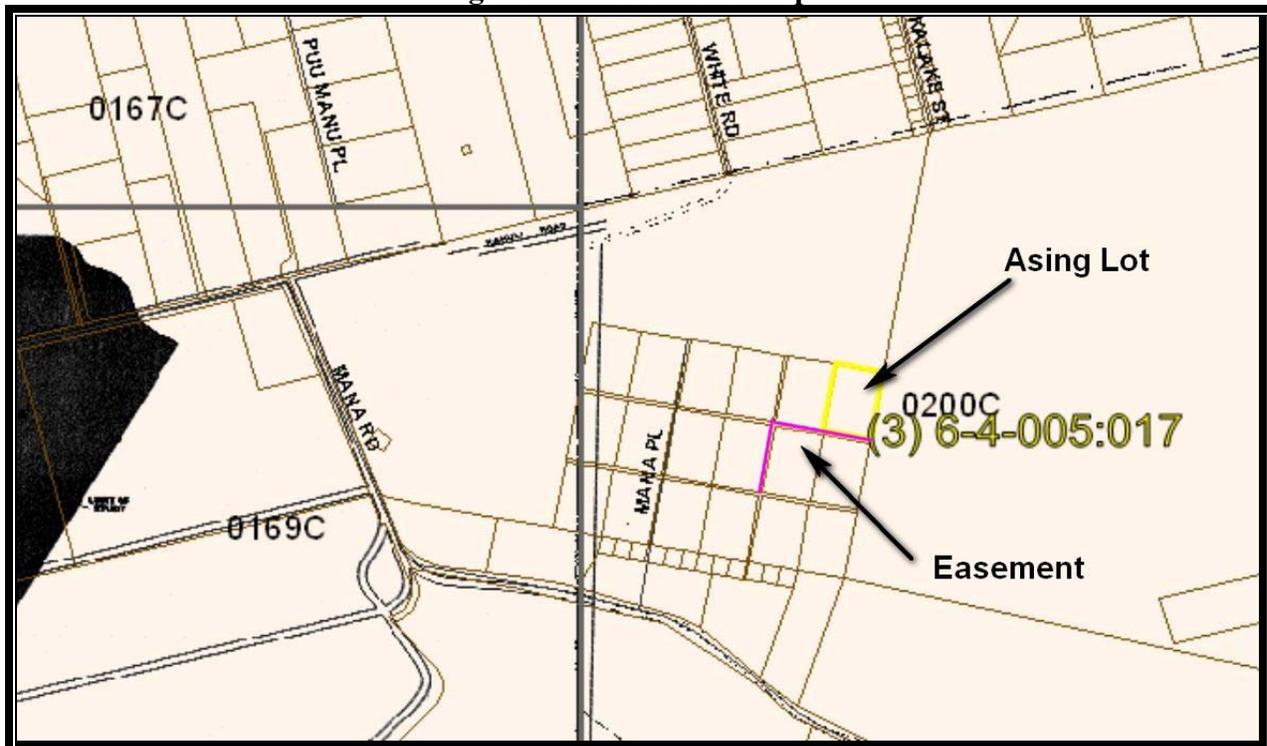
the Proposed Action is not imprudent to construct. Appropriate seismic standards will be followed during construction, per building codes for residential and agricultural actions.

3.1.2 Drainage, Water Features and Water Quality

Existing Environment

The Federal Emergency Management Agency (FEMA) has prepared Flood Insurance Rate Maps (FIRM) for the area (Panel No. 155166 200C), and there are no mapped flood hazards on or near the project site or the Asing lot. The area is within Flood Zone X, outside of the 500-year floodplain (Figure 4). Reconnaissance of the site indicates there are no areas of local (non-stream related) flooding present on the project site.

Figure 4. Flood Zone Map



Impacts and Mitigation Measures

Additional risks for flooding or impacts to water quality associated with the Proposed Action are negligible. The design and construction of the unpaved roadway will be coordinated with DPW to ensure that it will not cause drainage impacts. The home and agricultural uses that would be facilitated by the easement would be required to follow County regulations and policies related to drainage, which require the difference between pre-development and post-development runoff to be contained onsite, limiting impacts. All development-generated runoff shall be disposed of onsite and not directed toward any adjacent properties. A drainage plan may be required by the

Plan Approval process in accordance with Section 25-2-72(3) of the Hawai‘i County Code. In addition, all earthwork, including grading and grubbing, will conform with Chapter 10, Erosion and Sedimentation Control, of the Hawai‘i County Code.

3.1.3 Flora, Fauna and Ecosystems

Existing Environment

Geometrician Associates conducted a botanical survey in February 2014, which included the project site as well as the Asing lot. The vegetation at the project site (and on all adjacent areas) is pastureland. The dominant plant is Kikuyu grass (*Cenchrus clandestinus*), an alien widely established on the island of Hawai‘i. Although invasive, it is highly valued for cattle forage. Several other introduced species of grasses, herbs and ferns also occur within the pasture, including *oiwi* (*Verbena littoralis*), thimbleberry (*Rubus rosifolius*), fireweed (*Senecio madagascariensis*), olive (*Olea europaea*), downy wood fern (*Cyclosorus dentatus*), sword fern (*Nephrolepis multiflora*), white clover (*Trifolium repens*), pangola grass (*Digitaria eriantha*) and *Oxalis corniculata*.

Pastures generally do not provide habitat for native fauna. The Short-eared Owl (*Asio flammeus sandwichensis*), an endemic sub-species of this near-cosmopolitan diurnal owl species, could hunt in the area. In addition, the Pacific Golden Plover (*Pluvialis fulva*), and Ruddy Turnstone (*Arenaria interpres*) is an indigenous migratory species regularly seen in grass areas and pastures throughout the State between August and April each year. A large variety of non-native birds are present, including Black Francolin (*Francolinus francolinus*), Zebra Dove (*Geopelia striata*) and Common Myna (*Acridotheres tristis*).

With the exception of the Hawaiian hoary bat, discussed below, all terrestrial mammals, reptiles and amphibians in Hawai‘i are alien. In addition to horses (*Equus c. caballus*) and domestic cattle (*Bos Taurus*), feral cats (*Felis catus*), small Indian mongooses (*Herpestes a. auropunctatus*) and European house mice (*Mus domesticus*) could be present. No reptiles or amphibians were observed, and none may be present in this pasture.

In the larger Waimea area, there are a number of wide-ranging threatened or endangered vertebrates that are sometimes present, including Hawaiian hoary bat or ope‘ape‘a (*Lasiurus cinereus semotus*), Hawaiian Petrel or ua‘u (*Pterodroma sandwichensis*), Newell’s Shearwater or ‘a‘o (*Puffinus auricularis newelli*), Hawaiian Hawk or ‘Io (*Buteo solitarius*), and Nene (*Branta sandvichensis*). None of the habitat requirements for these species is found at the project site.

Impacts and Mitigation Measures

The project site lacks native plant species or habitat for threatened or endangered vertebrates. No characteristic of the Proposed Action would have an adverse effect on any native species or ecosystem.

3.1.4 Air Quality, Noise and Scenic Resources

Environmental Setting

Air pollution in Waimea is generally minimal, and is mainly derived from volcanic emissions of sulfur dioxide, which convert into particulate sulfate and produce a volcanic haze (vog) that occasionally blankets the district. Persistent trade winds keep the project area relatively free of vog for most of the year.

The principal sources for noise in the project area are agricultural and residential activities, which generates only minor levels of noise.

The Hawai'i County General Plan (Hawai'i County 2005:7-11) notes regarding scenic resources in South Kohala that: "The pastures and pu'u immediately above Waimea Town have been identified as a vista of exceptional natural beauty." In the South Kohala Community Development Plan, trees and groves of trees are identified as important visual resources. No sites of natural beauty are specifically identified at or near the project site, and there are no trees. Nevertheless, the area has a rural charm derived from the landscape of rolling pastures and picturesque farms beneath fast-moving clouds and green, forested hills, often wafted with mist.

Impacts and Mitigation Measures

The Proposed Action would not measurably affect air quality, noise levels or scenic sites recognized in the Hawai'i County General Plan. The continuation of rural uses made possible by the access and utility easement would perpetuate the rural scenic values of the area.

3.1.5 Hazardous Substances, Toxic Waste and Hazardous Conditions

Environmental Setting, Impacts and Mitigation Measures

No professional evaluation such as a Phase I Environmental Site Assessment was conducted for the proposed easement area, but the history of use of the site and its surroundings (see Section 3.2) does not suggest the presence of hazardous materials. Visual surveys of the project site and its surroundings, which is a pasture, did not indicate the presence of structures, equipment or storage containers that might be indicative of hazardous material use. Therefore, based upon prior and present use, no hazardous substances, toxic wastes or hazardous conditions are expected to be present on the project site. The Proposed Action would not involve any impacts related to production of, or exposure to, such substances or conditions.

3.2 Socioeconomic and Cultural

3.2.1 Socioeconomic Characteristics

Environmental Setting

The Proposed Action would occur near the Manā Ranch Subdivision, which has about 15 lots, most of which contain homes. The only access is through Manā Road, which is scenic and has very low levels of traffic, with most traffic associated with ranching activities. This neighborhood is on the outskirts of Waimea, a town unique in the state of Hawai‘i, with a ranching-cowboy culture dating back the early half of the 19th century. Table 1 provides U. S. Census data on Waimea, along with data from the State of Hawai‘i as a whole for comparison.

Table 1. Selected Socioeconomic Characteristics

Characteristic	Waimea CDP	State of Hawai‘i
Population, 2010	9,212	1,360,301
Persons under 5 years, percent, 2010	6. 8%	6. 4%
Persons under 18 years, percent, 2010	27. 5%	22. 3%
Persons 65 years and over, percent, 2010	12. 3%	14. 3%
Female persons, percent, 2010	51. 7%	49. 9%
White alone, percent, 2010 (a)	31. 2%	24. 7%
Asian alone, percent, 2010 (a)	17. 3%	38. 6%
Native Hawaiian and Other Pacific Islander alone, percent, 2010 (a)	15. 8%	10. 0%
Two or More Races, percent, 2010	34. 0%	23. 6%
Hispanic or Latino, percent, 2010 (b)	9. 0%	8. 9%
White alone, not Hispanic or Latino, percent, 2010	29. 4%	22. 7%
Living in same house 1 year & over, percent, 2008-2012	91. 4%	84. 9%
Foreign born persons, percent, 2008-2012	9. 8%	18. 1%
Language other than English spoken at home, pct age 5+, 2008-2012	17. 4%	25. 7%
High school graduate or higher, percent of persons age 25+, 2008-2012	94. 5%	90. 3%
Bachelor's degree or higher, percent of persons age 25+, 2008-2012	29. 0%	29. 6%
Veterans, 2008-2012	454	112,589
Mean travel time to work (minutes), workers age 16+, 2008-2012	27. 8	25. 8
Housing units, 2010	3,475	519,508
Homeownership rate, 2008-2012	63. 0%	58. 2%
Housing units in multi-unit structures, percent, 2008-2012	11. 5%	38. 6%
Median value of owner-occupied housing units, 2008-2012	\$425,200	\$517,000
Households, 2008-2012	3,102	447,453
Persons per household, 2008-2012	2. 88	2. 95
Per capita money income in past 12 months (2012 dollars), 2008-2012	\$28,213	\$29,227
Median household income, 2008-2012	\$62,000	\$67,492
Persons below poverty level, percent, 2008-2012	10. 4%	10. 8%

Source: U. S. Census Bureau: <http://quickfacts.census.gov/qfd/states/15/1578500.html>

Waimea is generally similar to the State as a whole, with a diverse ethnic and economic makeup. There is a higher proportion of Native Hawaiians, Whites and individuals of two or more races, and a lower proportion of Asians in Waimea. Far fewer immigrants are present, and there are slightly more young people and slightly fewer old. Educational attainment is somewhat higher, as is the homeownership rate. The median value of homes is less, but that difference is due to the very high value of property in Honolulu, which skews the State average. Poverty rates and income are roughly equivalent.

Impacts and Mitigation Measures

In enabling access to Mr. Asing's 3-acre lot, the Proposed Action would directly lead to the development of the lot and agricultural activities in conformance with zoning. The creation of a non-exclusive easement and an unpaved roadway would also potentially allow up to two other lots to be developed. Based on an average household size of just under 3 people, this translates to a population increase of about 9 residents. In the context of a 2010 population of 9,212, this is not a significant increase that would change the character of the area, and there is no need for socioeconomic mitigation. It should be noted that the lots already exist and are intended to be utilized in conformance with zoning and the General Plan.

3 2.2 Cultural Resources

The information in this section relies on historical research provided in the Archaeological Inventory Survey (AIS) by ASM Affiliates, Inc., contained in Appendix 3, various other published and unpublished sources, and consultation with Waimea residents and officials conducted for the EA and/or as part of the AIS.

Area Background

The inhabiting of Hawai'i took place in the context of settlement that resulted from voyages taken across the open ocean. For many years, researchers have proposed that early Polynesian settlement voyages between Kahiki (the ancestral homelands of the Hawaiian gods and people) and Hawai'i were underway by A.D. 300, with long distance voyages occurring fairly regularly through at least the thirteenth century. It has been generally reported that the sources of the early Hawaiian population – the Hawaiian Kahiki – were the Marquesas and Society Islands. Recent work summarized by Kirch (2012) indicates a later settlement date of about 1000 A.D.

For generations following initial settlement, communities were clustered along the watered, windward (*ko'olau*) shores of the Hawaiian Islands. Along the *ko'olau* shores, streams flowed and rainfall was abundant, and agricultural production became established. The *ko'olau* region also offered sheltered bays from which deep sea fisheries could be easily accessed, and near shore fisheries, enriched by nutrients carried in the fresh water, could be maintained in fishponds and coastal waters. It was around these bays that clusters of houses where families lived could be

found. In these early times, Hawai‘i’s inhabitants were primarily engaged in subsistence level agriculture and fishing.

Over a period of several centuries, areas with the richest natural resources became populated and sometimes even crowded, and the population began expanding to the *kona* (leeward side) and upland areas such as Waimea (Kirch 2012). Over the generations, the ancient Hawaiians developed a sophisticated system of land and resources management. By the time ‘Umi-a-Līloa rose to rule the island of Hawai‘i in ca. 1525, the island (*mokupuni*) was divided into six districts or *moku-o-loko*. On Hawai‘i, the district of Kohala is one of six major *moku-o-loko* within the island. Kohala like other large districts on Hawai‘i, was subdivided into ‘*okana* or *kalana* (regions of land smaller than the *moku-o-loko*, yet comprising a number of smaller units of land). The *moku-o-loko* and ‘*okana* or *kalana* were further divided into manageable units of land, and were tended to by the *maka ‘āinana* (people of the land). Of all the land divisions, perhaps the most significant management unit was the *ahupua ‘a*. *Ahupua ‘a* are subdivisions of land that were usually marked by an altar with an image or representation of a pig placed upon it (thus the name *ahu-pua ‘a* or pig altar). In their configuration, the *ahupua ‘a* may be compared to wedge-shaped pieces of land that radiate out from the center of the island, extending to the ocean fisheries fronting the land unit.

The *ahupua ‘a* were also divided into smaller individual parcels of land (such as the ‘*ili*, *kō‘ele*, *māla*, and *kīhāpai*, etc.), generally oriented in a *mauka-makai* direction, and often marked by stone alignments (*kuahiwi*). In these smaller land parcels the native tenants tended fields and cultivated crops necessary to sustain their families, and the chiefly communities with which they were associated. As long as sufficient tribute was offered and *kapu* (restrictions) were observed, the common people who lived in a given *ahupua ‘a* had access to most of the resources from mountain slopes to the ocean. These access rights were almost uniformly tied to residency on a particular land, and earned as a result of taking responsibility for stewardship of the natural environment, and supplying the needs of the *ali ‘i*.

Entire *ahupua ‘a*, or portions of the land were generally under the jurisdiction of appointed *konohiki* or lesser chief-landlords, who answered to an *ali ‘i- ‘ai-ahupua ‘a* (chief who controlled the *ahupua ‘a* resources). The *ali ‘i- ‘ai-ahupua ‘a* in turn answered to an *ali ‘i ‘ai moku* (chief who claimed the abundance of the entire district). Thus, *ahupua ‘a* resources supported not only the *maka ‘āinana* and ‘*ohana* who lived on the land, but also contributed to the support of the royal community of regional and/or island kingdoms. This form of district subdividing was integral to Hawaiian life and was the product of strictly adhered to resources management planning. In this system, the land provided fruits and vegetables and some meat in the diet, and the ocean provided a wealth of protein resources.

The project site is located on the Island of Hawai‘i within the District of South Kohala in the *ahupua ‘a* of Pu‘ukapu. The name of an *ahupua ‘a* sometimes indicates its importance, records its history, or reveals something about its resources or population. “Pu‘ukapu, meaning ‘sacred hill’, is both the name of a traditional land division and a homestead community (Pukui et al. 1974:198). Burtchard and Tomonari-Tuggle (2003:20) describe it as a ‘low knoll.’ As a land

unit, Pu‘ukapu incorporates one of the largest traditional land parcels in the District of South Kohala. Although early maps do not show a *pu‘u* or hill by the name Pu‘u Kapu, the name clearly demonstrates traditional significance for native Hawaiians.

This region and adjacent areas in Waikoloa served as the primary agricultural and residential area for the southern part of Kohala, with extensive formal fields and clustered residential complexes. The Waimea Field System was one of three large-scale Precontact agricultural systems on the leeward side of Hawai‘i Island. The other two were located at Kona and Kohala. According to Burtchard and Tomonari-Tuggle (2002), the Waimea Agricultural System is best known for: 1) spatially limited residential sites; 2) linear, low earthen ridges; and 3) irrigation ditches located along [Waikoloa Stream] on the eastern margins of the system. Cultivated crops included *wauke*, *mamaki*, plantains, bananas, sugarcane, coconuts, *hala*, taro, and sweet potato (Haun et al. 2003). Rechtman and Prasad (2006) suggest that the area was exploited for forest resources possibly as early as the 13th and 14th centuries, followed by agriculture and prolonged residence in the 16th century. According to Barrère, “the cultivating places at Waimea were first expanded to supply the chiefs’ needs while sojourning there and at Kawaihae” (Barrère 1983:27).

Many pivotal events in Hawaiian traditional history played out in around Waimea, only a few of which will be mentioned here. ‘Umi-a-Līloa was a renowned Pili line *ali‘i* who ruled from Waipi‘o Valley, son of high ranking *ali‘i* Līloa. ‘Umi’s fame stemmed from his successful unification of all the districts of Hawai‘i Island (Kamakau 1992), and his reign lasted until around ca. A.D. 1620 (Cordy 1994). It has been suggested that the unification of the island resulted in a partial abandonment of portions of leeward Hawai‘i, with people moving to more favorable agricultural areas (Barrera 1971; Schilt and Sinoto 1980). Near the end of ‘Umi’s rule, he relocated to Kona where the weather was more favorable (Kamakau 1992).

One of ‘Umi-a-Līloa’s heirs to the Hawaiian kingdom was his son, Keawe-nui-a-‘Umi, who presided over Hilo. Lono-i-ka-makahiki was Keawe-nui-a-‘Umi’s son, and was a ruler of Ka‘ū and Puna (Kamakau 1992). Following the death of his father, Lono-i-ka-makahiki waged a war for the supremacy of Hawai‘i Island against rebel forces in Kohala. After a battle in leeward North Kohala, Lono-i-ka-makahiki pursued his rivals to Hinakahua at Kapa‘au, where they prepared to fight once again before retreating to the east and being defeated at Pololū Valley in windward North Kohala (Erkelens and Athens 1994). Upon achieving this final victory, Lono-i-ka-makahiki celebrated at the *heiau* of Mulei‘ula at Apuakaohau (Fornander 1916:324). Neither of Lono-i-ka-makahiki’s two sons were heirs to the government, and in the wake of his death, rule of Kohala, Kona, and Ka‘ū was instead split between the descendants of his brother, Kanaloa-kua‘ana.

It is also notable that Kamehameha the Great was born in Kohala, albeit in the northern part, some distance from Waimea. It was during the time of Kamehameha that Captain James Cook and his crew on board the ships the H.M.S. Resolution and Discovery first arrived in the Hawaiian Islands on January 18, 1778, drastically altering the course of Hawaiian history. Around 1790, in an effort to secure his rule, Kamehameha began building the *heiau* of Pu‘ukohola in Kawaihae, which was to be dedicated to the war god Kūka‘ilimoku (Fornander

1996). When Pu‘ukoholā Heiau (in Kohala) was completed in the summer of 1791, Kamehameha sent his two counselors, Keaweahu and Kamanawa, to Keōua to offer peace. Keōua was enticed to the dedication of the Pu‘ukoholā Heiau by this ruse, and when he arrived at Kawaihae, he and his party were sacrificed to complete the dedication (Kamakau 1992). The assassination of Keōua gave Kamehameha undisputed control of Hawai‘i Island by A.D. 1792 (Greene 1993).

In 1790, two Western ships, the *Eleanora* and *Fair American*, were trading in Hawaiian waters. As retribution for the theft of a skiff and the murder of one of the sailors, the crew of the *Eleanora* massacred more than 100 natives at Olowalu [Maui]. The *Eleanora* then sailed to Hawai‘i Island, and one of its crew, John Young, went ashore where he was detained by Kamehameha. The other vessel, the *Fair American*, was captured by the forces of Kamehameha off the Kekaha coast and its crew was killed except for one member, Isaac Davis. Guns, and a cannon later named “Lopaka,” were recovered from the *Fair American*, which Kamehameha kept as part of his fleet (Kamakau 1992). Kamehameha made Young and Davis his advisors, and aided by them and his newly acquired ships and foreign arms, succeeded in conquering all the island kingdoms except Kaua‘i by 1796. It wasn’t until 1810, when Kaumuali‘i of Kaua‘i gave his allegiance to Kamehameha, that the Hawaiian Islands were unified under one ruler (Kuykendall and Day 1976).

Demographic trends during this period indicate population reduction in some areas due to war and disease, yet increases in others, with relatively little change in material culture. However, there was a continued trend toward craft and status specialization, intensification of agriculture, *ali‘i* controlled aquaculture, upland residential sites, and the enhancement of traditional oral history. The Kū cult, *luakini heiau*, and the *kapu* system were at their peaks, although western influence was already altering the cultural fabric of the Islands (Kirch 1985; Kent 1983). Foreigners had introduced the concept of trade for profit, and by the time Kamehameha I had conquered O‘ahu, Maui and Moloka‘i in 1795, Hawai‘i saw the beginnings of a market system economy (Kent 1983). This marked the end of the Proto-Historic Period and the end of an era of uniquely Hawaiian culture. Hawai‘i’s culture and economy continued to change drastically as capitalism and industry established a firm foothold. The sandalwood (*Santalum spp.*) trade, established by Euro-Americans in 1790 and turned into a viable commercial enterprise by 1805 (Oliver 1961), was flourishing by 1810. This added to the breakdown of the traditional subsistence system, as farmers and fishermen were ordered to spend most of their time logging, resulting in food shortages and famine that led to a population decline. Kamehameha, who resided on the Island of O‘ahu at this time, did manage to maintain some control over the trade (Kuykendall and Day 1976; Kent 1983).

In October of 1819, seventeen Protestant missionaries set sail from Boston to Hawai‘i. They arrived in Kailua-Kona on March 30, 1820 to a society with a religious void to fill. Many of the *ali‘i*, who were already exposed to western material culture, welcomed the opportunity to become educated in a western style and adopted their dress and religion. Soon they were rewarding their teachers with land and positions in the Hawaiian government. During this period, the sandalwood trade was wreaking havoc on the commoners, who were weakening with the

heavy production, exposure, and famine just to fill the coffers of the *ali'i* who were no longer under any traditional constraints (Oliver 1961; Kuykendall and Day 1976). The lack of control of the sandalwood trade was to soon lead to the first Hawaiian national debt, as promissory notes and levies were initiated by American traders and enforced by American warships (Oliver 1961). The Hawaiian culture was well on its way towards Western assimilation as industry in Hawai'i went from the sandalwood trade, to a short-lived whaling industry, to the more lucrative, but environmentally destructive sugar industry. Soon after the arrival of foreigners, the landscape of Waimea began to change dramatically; initially through deforestation from the collection of sandalwood, followed by the introduction of cattle to these lands (Rechtman and Prasad 2006).

The cattle brought by Captain Vancouver in 1793 and 1794, protected by a *kapu* placed on them by Kamehameha, multiplied rapidly. By the time the *kapu* was lifted a few years later, wild cattle had become rampant throughout the island, disturbing native gardens and damaging streams, grasslands and forests. Foreign bullock hunters were then employed to keep the herds under control. Although the meat was eaten, the main economic products were the hides. Foraging cattle wreaked havoc on the agricultural fields and were responsible for a flurry of wall building as people tried to keep the feral cattle out of their fields and homes. John Parker worked for Governor Kuakini as a bullock hunter in 1831, and before long had founded the famous ranch that still bears his name.

Taro is one of the foods that the Waimea lands were known for. According to Handy and Handy (1972), dry taro was planted along the lower slopes of the Kohala Mountains on the Waimea side, and on the plains south and west of Kamuela (Handy and Handy 1972:532). On his second visit to Waimea town and Pu'ukapu (the last village) William Ellis made the following observation:

“...to Waikoloa, Waikala, Pukalani and to Puukapu, 16 or 18 miles from the sea-shore, and the last village in the district of Waimea...the soil over which he [Mr. Thurston] had passed, was fertile, well watered, and capable of sustaining many thousand inhabitants. He had numbered 220 houses, and the present population is probably between eleven and twelve hundred” (Ellis 1825:217 in Handy and Handy 1972:532).

New crops, such as Irish potatoes, watermelons, cabbage, onions, tomatoes, mulberries, figs, and beans were introduced in Historic times. For a while, agricultural products from Waimea replenished the cargo ships at Kawaihae Harbor, and in the late 1840s many of the potatoes grown in the Waimea area were shipped to California to help feed the gold rush (Haun et al. 2003). However, commercial ventures soon replaced traditional agricultural practices, and the Waimea landscape was substantially altered as a result of this post-contact change. The written history from the late 19th to the early 20th century largely reflects news of new settlers, religious endeavors, and commercial pursuits in the region. McEldowney (1983) discussed changes in land use and land ownership before and after the *Māhele*, with the eventual displacement of the Hawaiian community as cattle ranching became fully established in Waimea (Parker Ranch began operating in 1830). An 1848 description of the Waimea population is as follows: “it can

scarcely be said that there is any native population at all” (McEldowney 1983:432). By this time, the native population of Waimea had been severely reduced by disease, displacement, and the ongoing changes in land tenure (McEldowney 1983). Early missionaries described Pu‘ukapu Village as one of the three population centers in the Waimea area. Maps, some dating to the early 1800s, provide a temporal history of the changes that occurred around Pu‘ukapu and Waimea. In 1853, Coulter estimated that the population of Hawai‘i Island totaled 24,450 (Coulter 1931:3-4), with most settlement primarily along the coast.

In 1848, the Hawaiian system of land tenure was radically altered by the *Māhele ‘Āina*. The *Māhele* (division) defined the land interests of Kamehameha III (the King), the high-ranking chiefs, and the *konohiki*. As a result of the *Māhele*, all land in the Kingdom of Hawai‘i came to be placed in one of three categories: (a) Crown Lands (for the occupant of the throne); (b) Government Lands; and (c) Konohiki Lands. Laws in the period of the *Māhele* record that ownership rights to all lands in the kingdom were “subject to the rights of the native tenants;” those individuals who lived on the land and worked it for their subsistence and the welfare of the chiefs. During the *Māhele* Kamehameha III retained Waimea as personal property (Crown Lands), and as a result, limited written recordation is available pertaining to previous land use and cultural history.

The Board of Commissioners oversaw the program and administered the *kuleana* as Land Commission Awards (LCAw.). Claims for *kuleana* had to be submitted during a two year period that expired on February 14, 1848 to be considered. All of the land claimants were required to provide proof of land use and occupation, which took the form of volumes of native registry and testimony. The claims and awards were numbered, and the LCAw. numbers, in conjunction with the volumes of documentation, remain in use today to identify the original owners and their use of the *kuleana* lands. The work of hearing, adjudicating, and surveying the claims required more time than was prescribed by the two year term, and the deadline was extended several times, not for new claims, but for the Land Commission to finish its work (Maly and Maly 2002). As the new owners of the lands on which the *kuleana* were located began selling parcels to foreigners, questions arose concerning the rights of the native tenants and their ability to access and collect the resources necessary for sustaining life. The “Enabling” or “Kuleana Act,” passed by the King and Privy Council on December 21, 1849, clarified the native tenant’s rights to the land and its resources, and also the process by which they could apply for, and be granted fee-simple interest in their *kuleana*. The volumes of native registry and testimony collected for the *kuleana* claims provide a snap-shot of life in Hawai‘i during the middle part of the nineteenth century. Information recorded in the these volumes contains the names of smaller land divisions (*‘ili*, *mo‘o*, etc.) within the *ahupua‘a*, ties individual claimants and their families to specific locations within those land divisions, provides background information about when and from whom, the claimants received their lands, and gives accounts of the land use at that certain time and place.

At the time of the *Māhele* in 1848, Kekauonohi gave up Pu‘ukapu, and it became Crown Land (Lyons in Maly and Maly 2002). The fact that Pu‘ukapu was Crown Land likely limited the number of land commission claims made for the area; it seems as though only 24 *kuleana* claims

were made within Pu‘ukapu with 20 of those claims awarded, 18 of which are within the immediate project area.

Within the general Waimea area, over 140 claims for *kuleana* parcels were made. Nearly all of these claims were for house lots or cultivated sections (Haun et al. 2003). Of the land commission awards reviewed by Kelly and Nakamura (1975:30), over 20% were issued to persons with non-Hawaiian surnames, such as James Hall (LCAw. 672), John Davis (LCAw. 989), Edmund Bright (LCAw. 986), and William French (LCAw. 4885 and 4886). And of six *kuleana* awarded in the area bordering Pu‘ukapu (Figure 12) to the west (in Paulama and Pukalani ‘ili) four (67%) were to individuals with non-Hawaiian surnames (A. D. Allen, John Collins, William Hughes, and John Thomas).

In contrast to the situation within greater Waimea, the Manā Subdivision area is a portion of a concentrated set of *kuleana* that were awarded to eighteen Hawaiian individuals (see Table 1 and Appendix A of Appendix 3). The Parcel 017 portion of the current study area is the northeastern-most of eighteen 3-acre rectangular lots that are laid out in a 3 (north/south) by 6 (east/west) grid pattern, that is still reflected in the County tax maps (see Figure 2).

The proposed easement is made up of sections of two named roads/trails that were part of a network of such pathways that appear to have provided access within and around the subdivision-like concentration of *kuleana* parcels. Based on the *Māhele* testimony, the small lots appear to have been awarded as house lots and the large parcels as agricultural fields.

The Asing lot (Parcel 017) is one of two *apana* (LCAw. 3692:1) that were awarded to Mana, whose claim to the Land Commission was for a house lot measuring 40 fathoms by 40 fathoms and for an agricultural area in the forest containing 12 *kihapai* belonging to himself and another man within which *kalo* was farmed. Mana referred to the location of his house lot as being at “Kaohia muli.” Apana 1 of Mana’s award (what is now the Asing lot), was a rectangular 3.0-acre agricultural lot, and then Apana 2 was a quarter-acre house lot. A map of LCAw. 3672 (Figure 14) shows Mana’s *Apana* 1 being bordered by the “Ala Mawaho [Hikina]” to the east. Another road, “Ala Mawaho” is shown extending along the northern boundary of the *apana*, and a third road, “Ala Mauka,” is depicted along the southern boundary of the *apana*. According to the testimony, *Apana* 2 was entirely enclosed, and contained two houses for Mana (see Appendix 3 for details). Moluhi claimed to have given this land to Mana in 1833.

According to the archaeologist, this concentration of the eighteen agricultural *apana* and twelve residential *apana* represents 18 of the 20 awarded *kuleana* within Pu‘ukapu. Upon reviewing all of the *Māhele* testimony there are enough discrepancies and potential place name inconsistencies to raise suspicion as to whether the awarded lots were the actual lands that the awardees had been living on, or whether the awarded lots represent an attempt on the part of the *konohiki* and others to consolidate the population in a new location. The highly structured grid network of agricultural plots and house lots with interconnected roadway is not typical of a Hawaiian settlement area, but rather may be an example of an early attempt at community planning. In

either case, this seemingly unique set of *kuleana* awards reflects the spatial organization of a Hawaiian community dating from at least the mid-19th century.

About two miles to the southeast of the project site lies a 640-acre parcel of land, LCAw. 4348-B, issued to Harry Purdy, one of the first cowboys in Hawai‘i, and a close cohort of John Parker of Parker Ranch. Harry Purdy hailed from Ireland and was a man of many names, including Jack Purdy, William Warren, and William Wallace. Eventually Purdy migrated to Hawai‘i Island, where he became a skilled bullock hunter (Bergin 2004). Initially, Purdy was supposed to lease over a thousand acres of land from Leleiohoku, however, in 1851 the King compromised Purdy’s claim, issuing him 640 acres (one square mile) around his existing house, Po‘o Kanaka

One year later, John Palmer Parker, the founder of the legendary Parker Ranch, purchased 640 acres of land right next to Purdy’s lot. This became the nucleus of early ranching operations for Parker Ranch. A family home, dubbed “Hale Mānā” was constructed not long after the purchase was complete. According to Bergin (2004), Parker’s entire ranching staff was comprised of Hawaiians. Parker’s homestead expanded, and a “saddle house/blacksmith shop, a barn for bullock wagons and plows, and a stone-enclosed meat house adjacent to a small household dairy” were constructed, as was an “outdoor cooking *hale* combined *imu* and smokehouse,” and two cisterns composed of stone and mortar (Bergin 2004:152). Upon John Parker’s death in 1868, the spacious homestead was divided between his son, John Palmer Parker II, and his grandson, Samuel Parker Sr., who retained Hale Mānā. Later, Samuel purchased Jack Purdy’s 640 acre lot and graciously left five acres of it to the Purdy family so they could maintain their homestead at Po‘o Kanaka. This lot eventually became a part of Parker Ranch. Harry Purdy passed away in 1886, and was buried on his property.

By the 1870s, Waimea had five stores and a hotel (Haun et al. 2003). The economy became cash based and taxes were collected. Foreigners controlled much of the land and most of the businesses, and the native population was largely dependent on these foreigners for food and money (Ibid). In 1867 the population of Waimea was estimated to be only four hundred people (Ibid). By the early 1900s, Parker Ranch, which had begun operations in the 1830s, was under the direction of Alfred W. Carter, and it had expanded to include over 100,000 acres, acquiring most of the land around Waimea where the ranch headquarters were located (Ibid). Cattle ranching was now the major industry in Waimea. Also in the early 1900s the Waimea Homesteads (located within Pu‘ukapu to the north of the current project area) were created by the Territory of Hawai‘i and sold as house lots (Soehren 1981) and other Pu‘ukapu lands under the jurisdiction of the newly formed (in 1920) Hawaiian Homes Commission were leased as pasture lots. By 1928 all the land surrounding what is now the Manā Subdivision was leased as Pasture Lot 1.

Beginning in 1941, months before the bombing of Pearl Harbor, the U.S. Army established an infantry headquarters in the Pu‘ukapu area of Waimea (Bergin 2006). After the United States formally entered WWII, the earlier Army presence in Waimea expanded into one of the largest multi-force (adding the Navy and Marines) U.S. military camps (Camp Tarawa) and training bases in the Pacific. Large areas of the town and the surrounding pastures were turned over to the

U.S. Government for campsites that housed approximately 20,000 soldiers and as firing ranges for the training U.S. Marines (Brundage 1971). By 1945, the U.S. Military had begun to leave the town and life in Waimea soon returned to its small pre-war population that was largely dependent upon the cattle industry.

Following the war, in 1950, many of the pasture leases reverted back to the Hawaiian Home Commission and by 1952 with the assistance of Parker Ranch beneficiaries moved onto large pasture lots (Bergin 2006:68). It was not until 1964 that the post-statehood Department of Hawaiian Home Lands (DHHL) further divided the pasture lots into smaller parcels.

Waimea today has a cultural heritage drawing from all these eras, much of it reflected in the land use patterns found in and around Manā subdivision, including ranching and farming. Although ranching is not necessarily a traditional cultural practice, it is certainly part of the culture, lifestyle and identity of Waimea. The cowboys or *paniolo*, many but not all of whom are Hawaiian, form a unique subculture that reflects a combination of both its Hawaiian and Western roots (Prasad 2003:18). The older, and certainly the original residents of Kuhio Village and Pu‘ukapu, are very much a part of this *paniolo* subculture. To some extent the ethnic traditions of other cultures have been incorporated into the general cultural milieu of Waimea and are celebrated by all. The Waimea Cherry Blossom Heritage Festival is held each year in February and presents one facet of the unique cultural blend in Waimea that includes rodeo, Taiko drums, hula and cherry blossom viewing. The Aloha Festival, conducted throughout the State, holds many prominent events in Waimea. Other periodic events include cowboy-oriented falsetto and storytelling events, parades and historical festivals sponsored by local schools.

Today, the *paniolo* tradition lives through its many modern faces. Parker Ranch, at one time the biggest cattle ranch in the entire United States, is still a primary landowner and continues to operate a cattle ranch. Other ventures, however, now provide the income for the organization, which has turned into a charitable foundation. Various historical and modern features can be found throughout the town of Waimea that pay tribute to the ranching heritage of the area. The Parker Ranch Museum is a major tourist attraction and serves as a repository for historical artifacts of the ranching tradition. Older ranch style homes, commercial buildings, stables, etc., reflect the town’s ranching-cowboy culture. Waimea is one of the few areas in Hawai‘i where horseback riding is not a purely recreational activity – it is still a means of transportation for those who work the ranch lands. Perhaps most important are the rodeos for which Waimea is famous.

Consultation

To gain any further possible insights about the project area and the specific project site of the Proposed Action, the AIS included consultation with a variety of individuals, as detailed in Appendix 3. Briefly, these included Micah Kamohoalii, who wears many hats within Waimea’s Hawaiian community; Deirdre Bertelmann; Laua‘enanuheaulula‘au Bertelmann-Sanchez; Woodrow Kamohoalii Young; Kainoa Kamohoalii Hodson; Cynthia Spencer; and Queenie Dowsett. All consulted felt that the landscape in Manā Subdivision is a culturally significant one

and should somehow be kept intact. Others also related that where possible the nineteenth century street names should be used for the current roadways as they get built out within the community. As part of the EA early consultation process, the Office of Hawaiian Affairs, the Department of Hawaiian Home Lands, and the Waimea Community Association were also contacted about the action (see Appendix 1a for responses).

Existing Cultural Resources or Practices

Inspection of the project site as well as the Asing lot by a professional archaeologist (see Section 3.2.3) and a biologist revealed no evidence of structures, unique natural features or activities that would be valuable for gathering, ceremonial, or access purposes. Aside from the general cultural importance of the unique group of LCAws that merits preservation, no agency or group identified any natural, cultural or historical resources or expressed concern about potential cultural impacts. In particular, there were no objections to Mr. Asing's proposed request.

Impacts and Mitigation Measures

It is reasonable to conclude, based upon the lack of resources on the easement, which has been used for pasture for over a century, that the exercise of native Hawaiian rights related to gathering, access or other customary activities will not be affected, and there will be no adverse effect upon cultural practices or beliefs. This conclusion was reviewed based on additional input received during review of the Draft EA. No party reviewing the Draft EA supplied any cultural information.

The suggestion offered by consultees concerning reverting to/retaining the original names of the roadways as they are privately developed deserves consideration by the lot owners. The applicant wishes to post a sign on his lot marking and honoring this name from a century and a half ago.

3.2.3 Historic Properties and Archaeological Sites

Methods

Following extensive background research described in Appendix 3, fieldwork for the current project was conducted on February 20th, 2014 by Ashton Dircks Ah Sam, B.A., J. David Nelson, B.A., and Robert B. Rechtman, Ph.D. Fieldwork included a systematic survey of the surface of the study area and subsurface testing (mechanical trenching) at selected locations. The entire study area was accessible, and the boundary corners were clearly marked with flagging tape and lath. Field workers walked pedestrian transects spaced 5 meters apart on the access easement and spaced 10 meters apart on the 3-acre (Parcel 017) portion of the study area. The ground surface was covered with a 20 centimeter-thick mat of kikuyu grass that could have potentially hid small artifacts from view, but did not hinder the ability to identify constructed features. The survey area, significant landforms, and the five test trench locations were plotted on a scaled map of the project area using a Garmin HCx handheld GPS device (set to the UTM NAD 83 datum). Five

trenches were mechanically excavated to test for the presence of buried cultural deposits and to examine the subsurface stratigraphy.

Existing Archaeological Resources

As a result of the surface survey and the subsurface testing, no specific archaeological features were encountered within the proposed easement area or on the Asing lot. The survey with this finding was submitted to SHPD on April 9, 2014, and the Final EA was to report on SHPD review. As of June 30 1, 2014, there has been no response. The background research indicates that the project site and adjacent roads and properties are a portion of a seemingly unique *Māhele*-era cultural landscape, as discussed in the previous section. The boundaries of current Parcel 017 appear to be coterminous with former LCAw. 3672:1 awarded to Mana in 1848 and the proposed access/utility corridor traverses portions of two roadways/trails that were known in the middle nineteenth century as *Ala Mauka* and *Ala Hikina*. These map features were part of a cohesive set of Land Commission Awards for twelve house lots and eighteen farm lots laid out in a grid pattern. Given the seeming historical uniqueness and discrete boundaries of this landscape, the archaeologist assigned a State Inventory of Historic Places (SIHP) site number (Site 50-10-07-30084) to the entire complex of parcels and the road/trail network that make up this landscape (See Figure 16 of Appendix 3 for map of site). Current Parcel 017 (Former LCAw 3672:1) and the access and utility easement (over portions of the former *Ala Mauka* and *Ala Hikina*) comprise elements of Site 30084.

Impacts and Mitigation Measures

It was the recommendation of the archaeologist that Site 30084 be preserved as a significant intact landscape by continuing to maintain the current parcel boundaries (prohibiting further subdivision) and network of roadways. The proposed easement action is consistent with that, and in fact encourages it by allowing residential and agricultural use of individual properties that are currently technically without access. While outside the scope of the current application for an easement, he recommended the following be considered:

1. Use of the historic street names for newly built roads within the existing road rights-of-way and the possible renaming of existing roads.
2. Retention of current lot configurations, which reflect their nineteenth century pattern.
3. Nomination of Site 30084 to the both the State and National Registers of Historic Places.

The archaeologist provided the recommendation concerning renaming of streets to both the applicant and Steve Bowles, an active owner the Manā Subdivision. As stated above, the applicant wishes to post a sign on his lot marking and honoring this name. Based on the zoning, it is highly unlikely that additional subdivision, which would require a change of zone and perhaps State Land Use District, will occur. Concerning the recommendation about nomination to the register, this would require coordination among the many multiple owners of lots and at this time may not be practical but can be considered.

Furthermore, the applicant has been informed that in the unlikely event that archaeological resources or human remains are encountered during future development activities within either the proposed easement or applicant's property, work in the immediate area of the discovery should be halted and DLNR-SHPD contacted as outlined in Hawai'i Administrative Rules 13§13-275-12.

3.3 Public Facilities and Services

3.3.1 Roadways and Utilities

Existing Facilities and Services, Impacts and Mitigation Measures

The access to the proposed easement is from Government Roads not maintained by the County of Hawai'i. The proposed access and utility easement area itself is currently a drivable, low-slope strip of former pasture between cattle fences. The applicant plans a non-dedicable road over a portion of the easement. The road would serve at a maximum six lots, three already served by access from other roads and three of them being the lots that currently lack access on Ala Mauka Road, TMKs 6-4-005:17 (the subject lot), 18 and 30. The design will be submitted to the Director of Public Works for review to ensure that it meets the standards of the County of Hawai'i for non-dedicable rural roads as described in Section 23-87 to 88 of the Hawai'i County Code on page R-39 of the County Road Design Standards. The design will be finalized after review, and adjusted if necessary. The minor level of traffic generated by a maximum of three additional lots would not cause traffic congestion within the Manā Ranch subdivision, on Manā Road, or on State Highway 19. Per laws, regulations and policies of the County and State of Hawaii, within the Government Road right-of-way:

- The applicant shall remove any encroachments or obstructions where the road improvements are proposed.
- The proposed road shall be built to non-dedicable standards as specified under Hawai'i County Code Chapter 23, Section 23-87, having a 16-foot width and six inches minimum fine select borrow base course.
- The road shall be open to public traffic.
- The road is subject to review under the Americans with Disabilities Act (ADA).

The easement would also accommodate an underground County potable water line. The applicant understands from discussions with the Department of Water Supply that a water meter is available for this lot. The applicant is also considering installing underground electrical lines. No impacts to any existing utilities would occur as a result of the Proposed Action.

The applicant is currently exploring the use of alternative energy sources with a backup generator to power the home. Satellite television and cellular phones will serve the residence. No sewer system is present in the rural eastern half of Waimea, and the applicant will therefore build an Individual Wastewater System consisting of a septic tank and leach field in conformance with Department of Health rules. None of these facilities would require use of the easement. All

earthwork, including grading and grubbing, will conform to Chapter 10, Erosion and Sedimentation Control, of the Hawai‘i County Code.

3.3.2 Public Services

Existing Services

The Hawai‘i County Police Department (HCPD) has law enforcement jurisdiction throughout the entire island of Hawai‘i. Administrative personnel and police officers total over 500. HCPD is headquartered in Hilo and maintains a district station in Waimea.

The Hawai‘i Fire Department (HFD) has fire protection jurisdiction throughout the entire island of Hawai‘i. Firefighters must respond to emergency medical situations, hazardous conditions, rescues, building fires, brush and other outdoor fires, and vehicle fires. Fire stations generally have three 24-hour shifts. HFD currently has a force of over 300 administrative personnel and firefighters throughout the island, and has stations within the project area at Waimea.

North Hawai‘i Community Hospital is a non-profit, full-service acute care hospital that opened in May 1996. It is located just east of the center of Waimea town on SR 19. It primarily serves the 30,000 residents and visitors to the northern part of the Big Island and offers 24-hour emergency services. The 40-bed facility has a medical staff of more than a 100 and a total of more than 300 hospital employees (<http://www.northhawaiicommunityhospital.org/index.html>)

Six schools within the Honoka‘a Complex of the State of Hawai‘i Department of Education and service the project area. Public educational institutions in the vicinity of Waimea include Waimea Elementary and Waimea Middle Public Charter School (PCS), as well as Kanu O Ka ‘Aina PCS. High school students in the project area attend Honoka‘a High School. Four private schools – Parker School, Hawai‘i Preparatory Academy, Hawai‘i Montessori School, and Waimea Community Montessori School – are located in Waimea.

Four national parks or historic sites making up 325,072 acres; 15 state parks, recreation areas, or historic sites with about 2,687 acres (not including about 380,000 acres of multiple purpose State forest units); and 137 county parks totaling 1,471 acres are present on the island of Hawai‘i (Hawai‘i County R&D 2014). Recreational facilities in the project area include Waimea County Park, Church Row, and the Waimea Civic Center. The nearest State-designated hunting areas are located *mauka* of Waimea in the Kohala Watershed Forest Reserve and on the leeward slopes of Mauna Kea. Paniolo Park, near the western terminus of the project, is privately owned by Parker Ranch, but is commonly used for community events such as rodeos. No parks or other recreational uses are present at or near the project site.

Solid waste disposal for residents is at the Waimea Transfer Station on Kawaihae Road, which offers glass and mixed recycling and greenwaste disposal as well. Residual waste is processed at the West Hawai‘i Sanitary Landfill (WHSL), located in Pu‘uanahulu about 18 miles from Waimea, which has an expected additional lifetime of more than 40 years.

Impacts and Mitigation Measures

The minor level of additional population growth (approximately 9 people, see Section 3. 2.1) that would be encouraged by having up to three lots made more accessible and buildable by the Proposed Action would not cause adverse impacts to public facilities or services.

3.4 Secondary and Cumulative Impacts

Neither the Proposed Action nor any alternative would involve any secondary impacts, such as population changes or effects on public facilities.

Cumulative impacts result when implementation of several projects that individually have limited impacts combine to produce more severe impacts or conflicts in mitigation measures. It is important to note that the adverse effects of the Proposed Action are very limited in severity, nature and geographic scale. At the current time, there do not appear to be any roadway, utility or development projects being undertaken in the area that would combine in such a way as to produce adverse cumulative effects or involve a commitment for larger actions.

3.5 Required Permits and Approvals

The Proposed Action requires a permit to work within the County Right-of-Way and County grubbing and grading permits. Access to the applicant's property may then trigger a County of Hawai'i Driveway Permit. No other permits or approvals are required. Subsequent construction at the Asing lot (and the others potentially made more accessible by the Proposed Action) would require building permits and potentially grading permits.

3.6 Consistency With Government Plans and Policies

3. 6. 1 Hawai'i State Plan

Adopted in 1978 and last revised in 1991 (Hawai'i Revised Statutes, Chapter 226, as amended), the Plan establishes a set of themes, goals, objectives and policies that are meant to guide the State's long-run growth and development activities. The three themes that express the basic purpose of the *Hawai'i State Plan* are individual and family self-sufficiency, social and economic mobility and community or social well-being. The Proposed Action would not in any way be detrimental to these goals.

3.6.2 Hawai'i State Land Use Law

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

3.6.3 Hawai'i County General Plan and Zoning

The *General Plan* for the County of Hawai'i is a policy document expressing the broad goals and policies for the long-range development of the Island of Hawai'i. The plan was adopted by ordinance in 1989 and revised in 2005 (Hawai'i County Department of Planning). The *General Plan* itself is organized into thirteen elements, with policies, objectives, standards, and principles for each. There are also discussions of the specific applicability of each element to the nine judicial districts comprising the County of Hawai'i. Most relevant to the Proposed Action are the following Goal, Policies, Standards and Courses of Action:

TRANSPORTATION – GOALS

- Provide a transportation system whereby people and goods can move efficiently, safely, comfortably and economically.
- Make available a variety of modes of transportation which best meets the needs of the County.
- Provide a system of thoroughfares and streets for the safe, efficient and comfortable movement of people and goods between and within the various sections of the County.
- Provide an integrated State and County system so that new major routes would complement and encourage proposed land uses.

ROADWAYS - POLICIES

- Adopt street design standards that accommodate, where appropriate, flexibility in the design of streets to preserve the rural character of an area and encourage a pedestrian-friendly design, including landscaping and planted medians.

ECONOMIC GOALS

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

ENVIRONMENTAL QUALITY GOALS

- Define the most desirable use of land within the County that achieves an ecological balance providing residents and visitors the quality of life and an environment in which the natural resources of the island are viable and sustainable.
- Maintain and, if feasible, improve the existing environmental quality of the island.

ENVIRONMENTAL QUALITY STANDARDS

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

HISTORIC SITES GOALS

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

NATURAL BEAUTY GOALS

- Protect, preserve and enhance the quality of areas endowed with natural beauty, including the quality of coastal scenic resources.
- Protect scenic vistas and view planes from becoming obstructed

LAND USE GOALS

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

LAND USE, AGRICULTURE, POLICIES

- Ensure that development of important agricultural land be primarily for agricultural use.

Discussion: The Proposed Action would support a single-family home and agricultural activities on a traditional kuleana lot. It would meet transportation standards for rural, non-dedicable roads, would not affect historic properties, viewplanes, water bodies, or other environmental resources.

The *Hawai‘i County General Plan Land Use Pattern Allocation Guide (LUPAG)*. The LUPAG map component of the *General Plan* is a graphic representation of the Plan’s goals, policies, and standards as well as of the physical relationship between land uses. It also establishes the basic urban and non-urban form for areas within the planned public and cultural facilities, public utilities and safety features, and transportation corridors. The Planning Department stated in a March 24, 2014 letter in response to early consultation that the project site and Asing lot are designated as IAL, Important Agricultural Land, in the LUPAG (see letter in Appendix 1a). The Proposed Action is consistent with this designation.

Hawai‘i County Zoning and Special Management Area. The government land that makes up the project site has no designated zoning, according to the March 24, 2014, letter from the Planning Department. All adjacent parcels, including the Asing lot, are zoned A3a (Agriculture, minimum lot size 3 acres). The Proposed Action is a permitted and intended use within this designation. The easement and applicant’s property are situated outside the County’s Special Management Area (SMA).

3.6.4 South Kohala Community Development Plan

The South Kohala Community Development Plan (CDP) encompasses the judicial district of South Kohala, and was developed under the framework of the February 2005 County of Hawai‘i General Plan. Community Development Plans are intended to translate broad General Plan Goals, Policies, and Standards into implementation actions as they apply to specific geographical regions around the County. CDPs are also intended to serve as a forum for community input into land-use, delivery of government services and any other matters relating to the planning area. The General Plan now requires that a Community Development Plan shall be adopted by the County Council as an “ordinance,” giving the CDP the force of law. This is in contrast to plans created over past years, adopted by “resolution” that served only as guidelines or reference documents to decision-makers. In November 2008, the South Kohala CDP was adopted by the County Council.

The Plan has many elements and wide-ranging implications, but there are several major strategies that embody the guiding principles related to land use, housing, public facilities, infrastructure and services, and transportation. The action is also consistent and/or not inconsistent with the goals, objectives and policies of the South Kohala CDP, and in particular with policies that seek to guide planning for the district as a whole and for the four communities of Waimea, Waikoloa Village, Kawaihae and Puakō. Those policies include preserving South Kohala’s culture and “sense of place,” providing for transportation and circulation needs, protecting the community from natural hazards, providing affordable and workforce housing and promoting environmental stewardship and sustainability.

According Planning Department letter of March 24, 2014, in response to early consultation (see Appendix 1a), a relevant aspect of the plan is Strategy 1.6, to “recognize and protect significant trees and other plants in Waimea.” The project site and the Asing lot do not contain any trees (see Figure 3). The Planning Department letter also notes the proposed location of the Waimea Bypass Highway, which lies about 800 feet south of the project site. Although the State Department of Transportation no longer plans to construct this highway, the proposed alignment is not located near project site and there would be no effects if the highway project is ever revived in the former proposed alignment.

3.6.5 DHHL Waimea Nui Hawai‘i Regional Plan

The Waimea Nui Hawai‘i Regional Plan is one of 20 regional plans that express the vision of the Department of Hawaiian Home Lands (DHHL):

“...to build vibrant homestead communities that flourish from the solid foundation of the Hawaiian Home Lands Trust. A trust grounded in commitment to serving and partnering with beneficiaries, implementing sound policies and procedures, following a long-term sustainable financial plan, and practicing an organizational culture that honors the spirit of its founder, Prince Jonah Kūhiō Kalaniana‘ole. DHHL works in partnership with government agencies, private landowners, non-profit organizations, homestead

associations, and other community groups. Regional plans provide the means to solidify visions and partnerships that are essential to effectively manage Hawaiian Home Lands trust lands for the betterment of native Hawaiian beneficiaries.”

In these regional plans, DHHL takes a leadership role in the region, working to strengthen growth of the area, developing partnerships to leverage diverse resources and capital investment; and fostering beneficiary participation in determining the future direction of the homestead community.

A majority of the Waimea Nui lands in DHHL inventory today were part of the original lands included in the 1921 Hawaiian Homes Commission Act (HHCA). Pu‘ukapu, established in 1952, is the largest Hawaiian homestead in the area with over 11,000 acres. The Asing Lot and the easement are located within the original area that became the Manā Subdivision, a collection of Land Commission Awards that predate the HHCA. This subdivision is surrounded by the Pu‘ukapu Homesteads.

Most relevant to an analysis of the relationship of the Proposed Action to the Waimea Nui Plan are the priorities and goals. These priorities relate to:

- Access to existing and potentially new water systems
- Roadways and access
- Drainage issues
- Economic and recreational opportunities
- Homesteader access to cinder from DHHL lands
- Price of leases and the ability of homesteaders to afford leases and homes
- Repair and rehabilitation of existing homes
- Re-leasing policies for agricultural lands
- Agricultural and pastoral ease rules
- County property taxes
- DHHL communication

No aspect of the project would hinder any efforts to address the issues outlined in the plan. The easement reflects the traditional access for the old *kuleana* land from the Mahele. The construction of a home and the development of the Asing lot for agricultural purposes matches and complements adjacent uses in the Pu‘ukapu homesteads.

PART 4: DETERMINATION

Based on the findings above, and in consideration of the lack of comments received, the County of Hawai‘i, Department of Public Works has determined that the proposed project will not have any significant effect in the context of Chapter 343, Hawai‘i Revised Statutes and section 11-200-12 of the State Administrative Rules, and has issued a Finding of No Significant Impact (FONSI).

PART 5: FINDINGS AND REASONS

Chapter 11-200-12, Hawai‘i Administrative Rules, outlines those factors agencies must consider when determining whether an action has significant effects:

1. *The proposed project will not involve an irrevocable commitment or loss or destruction of any natural or cultural resources.* Natural or cultural resources have been fully inventoried and none would be committed or lost. The project site and surrounding area support residential agricultural uses similar to that proposed and will not be affected by the project.
2. *The proposed project will not curtail the range of beneficial uses of the environment.* The Proposed Action expands and in no way curtails beneficial uses of the environment.
3. *The proposed project will not conflict with the State's long-term environmental policies.* The State's long-term environmental policies are set forth in Chapter 344, HRS. The broad goals of this policy are to conserve natural resources and enhance the quality of life. The Proposed Action is minor and fulfills aspects of these policies calling for an improved socioeconomic environment. It is thus consistent with all elements of the State's long-term environmental policies.
4. *The proposed project will not substantially affect the economic or social welfare of the community or State.* The Proposed Action will not adversely affect the social welfare of the community and will contribute to the economy and well being of society by providing access.
5. *The proposed project does not substantially affect public health in any detrimental way.* The Proposed Action will not affect public health in any way.
6. *The proposed project will not involve substantial secondary impacts, such as population changes or effects on public facilities.* No adverse secondary effects are expected to result from the Proposed Action.
7. *The proposed project will not involve a substantial degradation of environmental quality.* The Proposed Action is minor and environmentally benign, and would thus not contribute to environmental degradation.
8. *The proposed project will not substantially affect any rare, threatened or endangered species of flora or fauna or habitat.* The project site is pasture and supports only alien vegetation. Impacts to rare, threatened or endangered species of flora or fauna will not occur.
9. *The proposed project is not one which is individually limited but cumulatively may have considerable effect upon the environment or involves a commitment for larger actions.* The adverse effects of the Proposed Action are very limited in severity, nature and geographic scale. At the current time, there do not appear to be any roadway, utility or development projects being undertaken in the area that would combine in such a way as to produce adverse cumulative effects or involve a commitment for larger actions.
10. *The proposed project will not detrimentally affect air or water quality or ambient noise levels.* No adverse effects on these resources would occur.
11. *The project does not affect nor would it likely to be damaged as a result of being located in environmentally sensitive area such as a flood plain, tsunami zone, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal area.* Although the project

site is in an area with minimal volcanic and some seismic risk, the entire Island of Hawai‘i shares this risk, and the Proposed Action is not imprudent to undertake.

12. *The project will not substantially affect scenic vistas and viewplanes identified in county or state plans or studies.* No scenic vistas and viewplanes identified in the Hawai‘i County General Plan or other scenic resource, including significant trees or groves, will be adversely affected by the Proposed Action.
13. *The project will not require substantial energy consumption.* The Proposed Action does not involve energy use, and no adverse effects would be expected.

For the reasons above, the Proposed Action will not have any significant effect in the context of Chapter 343, Hawai‘i Revised Statutes and section 11-200-12 of the State Administrative Rules.

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ENVIRONMENTAL ASSESSMENT

Asing Utility and Road Access Easement On Government Land at Manā, Waimea

APPENDIX 1a Comments in Response to Early Consultation

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

In reply, please refer to:
File:
[EPO 14-039]
[EC EA for Utility & Rd
Access at Mana, South Kohala,]

February 26, 2014

Dear Mr. Ron Terry, Ph.D.
Project Environmental Consultant
Geometrician Associates, LLC
PO Box 396
Hilo, HI 96721

Transmitted via email only to: rterry@hawaii.rr.com

**SUBJECT: Early Consultation on EA for Utility and Road Access Easement on
Government Land at Mana, South Kohala, HI**

The Department of Health (DOH), Environmental Planning Office (EPO), acknowledges receipt of your letter sent 2.13.2014. Thank you for allowing us to review and comment on the letter. EPO recommends that you review the standard comments at: <http://health.hawaii.gov/epo/home/landuse-planning-review-program/>.

You are required to adhere to all standard comments specifically applicable to this application.

EPO also strongly recommends that you consult with other branches and offices within the Department of Health, particularly the District Health Office in Hilo.

We request electronic response confirming receipt of this letter and any other letters you receive from DOH in regards to this project. Please email: epo@doh.hawaii.gov. We anticipate that our letter(s) and your electronic response(s) will be included in any final document. If you have any questions, please contact me at (808) 586-4337 or laura.mcintyre@doh.hawaii.gov

Mahalo,

Laura Leialoha Phillips McIntyre, AICP
Program Manager, Environmental Planning Office

Via email cc to DHO Hilo

NEIL ABERCROMBIE
GOVERNOR OF HAWAII



DIRECTOR OF HEALTH

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

In reply, please refer to:
File:

LUD-3 6 4 005 017-ID1613
Early Cons Mana Ranch Subd

March 3, 2014

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

Dear Mr. Terry:

Subject: Early Consultation on Environmental Assessment for Utility and Road Access
Easement on Government Land at Mana
Mana Ranch Subdivision, South Kohala, Hawaii 96743 TMK (3) 6-4-005: 017

Thank you for allowing us the opportunity to review the above subject property. We have the following comments to offer you.

Our primary concern is the treatment and disposal of domestic wastewater for the subject project. As the property is not located within the vicinity of a County or private wastewater treatment plant, a wastewater system in accordance with Hawaii Administrative Rules, Chapter 11-62, "Wastewater Systems," will be required.

Should you have any questions, please contact Mr. Mark Tomomitsu of our branch at phone (808) 586-4294.

Sincerely,

A handwritten signature in black ink, appearing to read "Sina Pruder".

SINA PRUDER, P.E., CHIEF
Wastewater Branch

LMMST:lmj

c: Mr. Dane Hiromasa, DOH/WWB, Kona Office
Ms. Laura McIntyre, Environmental Planning Office (EPO 14-039)

William P. Kenoi
Mayor



Harry S. Kubojiri
Police Chief

Paul K. Ferreira
Deputy Police Chief

County of Hawai'i

POLICE DEPARTMENT

349 Kapi'olani Street • Hilo, Hawai'i 96720-3998
(808) 935-3311 • Fax (808) 961-2389

March 4, 2014

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

RE: EARLY CONSULTATION ON ENVIRONMENTAL ASSESSMENT FOR UTILITY AND
ROAD ACCESS EASEMENT ON GOVERNMENT LAND AT MANĀ, TMK 6-4-005:017,
SOUTH KOHALA, ISLAND OF HAWAI'I

Dear Mr. Terry:

This responds to your letter dated February 13, 2014, regarding a request for comments on the proposed site of the easement being sought in reference to this early consultation on an environmental assessment at the above mentioned location.

We have no comments or objections to offer at this time.

If you have any questions, please feel free to contact Captain Randall Medeiros, Commander of the South Kohala District, at 887-3080.

Sincerely,

HARRY S. KUBOJIRI
POLICE CHIEF



PAUL H. KEALOHA JR.
ASSISTANT POLICE CHIEF
AREA II OPERATIONS

RM/jaj
RS140130



STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS

P. O. BOX 1879
HONOLULU, HAWAII 96805

March 13, 2014

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

Aloha Mr. Terry:

Subject: Early Consultation on Environmental Assessment
(EA) for Utility and Road Access Easement on
Government Land at Mana, (TMK: 3-6-4-005-017),
South Kohala, Island of Hawaii

The Department of Hawaiian Home Lands (DHHL) received the above-mentioned letter dated February 13, 2014, for the Utility and Road Access Easement on Government Land at Mana, (TMK: 3-6-4-005-017). The proposed action involves the granting by the County of Hawaii of a right-angled access and utility easement measuring 20 feet wide and 1,054 feet long. The easement is over a right-of-way owned by the County of Hawaii in the vicinity of Mana Subdivision in the periphery of Waimea.

DHHL has land holdings in the Waimea region of approximately 12,198 acres (ac) that includes Puukapu 1 (10,979 ac), Puukapu 2 (493 ac), Puukapu 3 (476 ac), and Lalamilo (250 ac).

(1) DHHL Waimea Nui Regional Plan

The EA for this project should evaluate the project's potential positive or negative impact on DHHL's 2012 "Waimea Nui Regional Plan."

Mr. Ron Terry
March 13, 2014
Page 2 of 2

(2) Early Consultation with Waimea Hawaiian Homesteaders Association Inc.

DHHL also strongly recommends that Geometrician Associates include the Waimea Hawaiian Homesteaders Association Inc. in the consultation process for this project and the cultural impact assessment that will be conducted for this project in accordance with Chapter 343 Hawaii Revised Statutes.

Mahalo for the opportunity to comment. If you have further questions, please contact Andrew Choy at (808) 620-9279 or email him at andrew.h.choy@hawaii.gov.

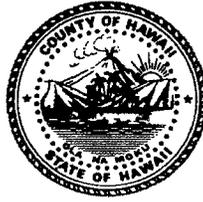
Aloha,



Jobie M. K. Masagatani, Chairman
Hawaiian Homes Commission

c: DHHL West Hawaii District Office
DHHL Land Management Division

William P. Kenoi
Mayor



Duane Kanuha
Director

Bobby Command
Deputy Director

West Hawai'i Office
74-5044 Ane Keohokalole Hwy
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County of Hawai'i
PLANNING DEPARTMENT

East Hawai'i Office
101 Pauahi Street, Suite 3
Hilo, Hawai'i 96720
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Fax (808) 961-8742

March 24, 2014

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

Dear Mr. Terry:

SUBJECT: Pre-Consultation on Draft Environmental Assessment
Applicant: Kristian Asing
Project: Utility & Road Access Easement on Government Land
Tax Map Key: (3) 6-4-005:017, South Kohala, Hawai'i

This is to acknowledge receipt of your February 13, 2014 letter requesting our comments on the proposed utility and road access easement on Government land at the Mana Subdivision.

These roadway lots were not assigned tax map key numbers.

The project involves a right-angled access and utility easement measuring 20 feet wide and 1,054 feet long (21,080 square feet) over a "paper road" right-of-way owned by the State.

We have the following to offer regarding the proposed project area:

1. There is no County zoning for these roadway lots.
2. They are designated Agricultural by the State Land Use Commission.
3. According to the General Plan's Land Use Pattern Allocation Guide Map, they are designated Important Agricultural Land (IAL).
4. The South Kohala Community Development Plan (SKCDP) was adopted by the County of Hawai'i as Ordinance No. 08 159, effective December 1, 2008. Please describe how the proposed use is consistent with the following plan and strategy:

A. Figure 4.4: Waimea Town Conceptual Plan

The Waimea Bypass Road, proposed by the State Department of Transportation in the 1960s, is south of the subdivision.

Mr. Ron Terry
Geometrician Associates
March 24, 2014
Page 2

- B. *Strategy 1.6 Recognize and protect significant trees and other plants in Waimea. A high priority for Waimea should be the identification and protection of significant mature trees or tree clusters within Waimea Town, especially those along the road sides and stream beds, as well those that serve as significant windbreaks.*

Identify any such trees, tree clusters and/or other plants that are located within or near the project area.

5. This parcel is not located in the County's Special Management Area. Therefore, Special Management Area rules and regulations are not applicable.

Thank you for the opportunity to provide preliminary comments on the proposed project. If you have questions, please feel free to contact Esther Imamura of our office at 961-8139.

Sincerely,


DUANE KANUHA
Planning Director

ETI:rl

P:\Wpwin60\ETI\Eadraftpre-Consul\Terry Asing R-O-W To 6-4-5-17 Mana Subd.Rtf

c: Planning Department - Kona

Aloha Ron!

Mana Subdivision is one of the oldest, if not the oldest subdivision in the State. It was once owned by all Native Hawaiian families of which most have sold to date. Possibly one or two family members still possess their residential and Ag allotment, but I might be mistaken. Many have viewed this "Private Property" parcels in the middle of designated Hawaiian Homesteading lands as an illegal land trade by DHHL or by a lessee some time ago, but research will show that the subdivision out dates DHHL lands by nearly 50 years, making that possibility impossible. The parcel in question should be a 3 acre Ag lot with road easements that out date the State and Provisional Government!

Homestead lands around the parcel has been awarded in 1952 and would be improper to seek an easement through the lessee or DHHL.

I don't see any conflict with the rights of our people or a conflict with the land usage.

Aloha,

Mike HODSON

President

Waimea Hawaiian Homesteaders' Association Inc

waimeahomestead.org

ENVIRONMENTAL ASSESSMENT

Asing Utility and Road Access Easement On Government Land at Manā, Waimea

APPENDIX 2 Proposed Easement Survey Description and Map

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ROAD RIGHT OF WAY FOR
ACCESS AND UTILITY PURPOSES
(20.00 feet wide)

Puukapu, Waimea, South Kohala, Island of Hawaii, Hawaii

Being portions of the Government (Crown) Ili of Puukapu in Waimea.

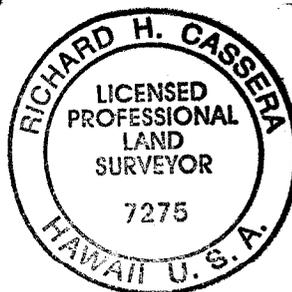
Beginning at a point on the north line of this parcel of land being the southwest corner of L.C. Aw. 3733, Apana 1 to Imoehalau to Nakuala, the coordinates of of said point of beginning referred to Government Triangulation Station "WAIMEA EAST BASE" being 1763.24 feet North and 2011.46 feet East and running by azimuths measured from true South:

- | | | | |
|----|----------|--------|--|
| 1. | 280° 00' | 594.00 | feet along L.C. Aw. 3733, Apana 1 to Imoehalau to Nakuala and along R.P. 7637, L.C. Aw. 3672, Apana 1 to Mana; |
| 2. | 10° 00' | 20.00 | feet along Lot 4B of Puukapu Pasture Lots (Hawaiian Home Lands); |
| 3. | 100° 00' | 594.00 | feet along L.P. S-8578, L.C. Aw. 4214 Apana 1 to James Hanehane and along R.P. 6835, L.C. Aw. 4210-B to Wawaeluhi to Mokuhia; |
| 4. | 10° 00' | 440.00 | feet along R.P. 6835, L.C. Aw. 4210-B to Wawaeluhi to Mokuhia; |
| 5. | 100° 00' | 20.00 | feet along remainder of Parcel 2 according to C.S.F. 18207; |
| 6. | 190° 00' | 460.00 | feet along L.C. Aw. 3675, Apana 1 to Mahuka to Kalua and along remainder of Parcel 2 according to C.S.F. 18207; |
| 7. | 280° 00' | 20.00 | feet along remainder of Parcel 2 according to C.S.F. 18207 to the Point of Beginning and containing an area of 21,080 square feet, more or less. |

Cassera and Christescu, Surveyors
January 24, 2014

Richard H Cassera

Richard H. Cassera
Licensed Professional Land Surveyor
Number 7275



LOT 16

TRUE NORTH
SCALE: 1 IN = 100 FT

L.C. Aw. 3733:1
3.00 Ac.

L.C. Aw. 3672:1
3.00 Ac.

280°00'
20.00'
NORTH 1763.24'
EAST 2011.46'
"WAIMEA EAST BASE"

280°00' → 594.00

21,080 SQ FT

100°00' ← 594.00

10°00'
20.00'

L.C. Aw. 3675:1

190°00' → 460.00'

L.C. Aw. 4210:B
3.00 Ac.

L.C. Aw. 4214:1
3.00 Ac.

10°00' → 440.00'

100°00'
20.00'

LOT 4-B

ROADWAY MAP
SHOWING ACCESS TO

APANA 1 OF R. P. NO. 7637,
L.C. AWARD 3672 TO MANA
AT PUKAPU, WAIMEA, SO. KOHALA
ISLAND OF HAWAII, HAWAII
TMK: (3rd Div) 6-4-5:17
DATE OF SURVEY: 11/4/2013

THIS WORK WAS PREPARED BY ME OR UNDER MY
SUPERVISION AT THE REQUEST OF
JACQUELINE ASING ON 1/24/2014.

Richard H Cassera

REGISTRATION No. 7275
LAND COURT CERT. 243

JOB NUMBER:H13017_R



ENVIRONMENTAL ASSESSMENT

Asing Utility and Road Access Easement On Government Land at Manā, Waimea

APPENDIX 3 Archaeological Inventory Survey

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Archaeological Inventory Survey of a 3-Acre Parcel and Associated Easement

TMK: (3) 6-4-005:017

Pu'ukapu Ahupua'a
South Kohala District
Island of Hawai'i

DRAFT VERSION



Prepared By:

Robert B. Rechtman, Ph.D.,
J. David Nelson, B.A.,
and
Lauren Kupa'a

Prepared For:

Kristian Asing
41-680 Kaaumana Place
Waimanalo, HI 96795

April 2014



Archaeology • History • Ethnography • Architectural History

Office: (808) 969-6066 • Fax: (808) 443-0065

ASM Project Number 21690

An Archaeological Inventory Survey of a 3-Acre Parcel and Associated Easement

TMK: (3) 6-4-005:017

Pu'ukapu Ahupua'a
South Kohala District
Island of Hawai'i



EXECUTIVE SUMMARY

At the request of Kristian Asing (landowner), ASM Affiliates, Inc. conducted an archaeological inventory survey of a 3-acre parcel (TMK: (3) 6-4-005:017) and a 20 foot wide, government-owned access/utility easement located in Pu'ukapu Ahupua'a, South Kohala District, Island of Hawai'i. The landowner intends to construct a single-family residence on the three acre parcel, and utilize a roughly 320 meter long government-owned easement that links the parcel to existing Wong Way. Historical sources indicate that the parcel was in agriculture use in the early nineteenth century and that the government-owned easement area was considered to be part of a network of common use roadways; the entire area is currently used as pasture. Fieldwork for the current archaeological study included a visual inspection of the surface of the project area and subsurface testing (mechanical trenching) at selected locations. While the current study area is considered an integral element of a larger historical landscape (Site 30084), it is the conclusion of this study that use of the easement and development of the parcel will have no adverse effect on historic properties.

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1. INTRODUCTION

At the request of Kristian (landowner), ASM Affiliates, Inc. conducted an archaeological inventory survey of a 3-acre parcel (TMK: (3) 6-4-005:017) and a 20 foot wide, government-owned access/utility easement located in Pu‘ukapu Ahupua‘a, South Kohala District, Island of Hawai‘i (Figures 1 and 2). The landowner intends to develop the three acre parcel, and utilize the 20 foot wide by 320 meter long easement that links the parcel to Wong Way. Historical sources indicate that the parcel was in agriculture use in the early nineteenth century and that the government-owned easement area was considered to be part of a network of common use roadways; the entire area is currently used as pasture. Fieldwork for the current archaeological inventory survey included both a systematic surface inspection as well as subsurface testing. As a result of the current study it is determined that the current study area is a part of a larger historical landscape, however the surface survey and subsurface testing produced negative results with respect to the identification of any specific cultural resources.

The use of the government-owned access/utility easement is a trigger for compliance with State environmental regulations, thus the current study is considered a supporting document to the Environmental Assessment being prepared in compliance with HRS Chapter 343. The current archaeological inventory survey study was undertaken in accordance with Hawai‘i Administrative Rules (HAR) 13§13-275, and was performed in compliance with the Rules Governing Minimal Standards for Archaeological Inventory Surveys and Reports as contained in HAR 13§13–276. Compliance with the above standards is sufficient for meeting the initial historic preservation review process requirements of both the Department of Land and Natural Resources and the County of Hawai‘i Planning Department. This report contains background information outlining the project area’s physical and cultural contexts, a presentation of previous archaeological work in the vicinity of the parcel, and current survey expectations based on that previous work. Also presented is an explanation of the project’s methods, a summary of consultation, and detailed descriptions of the subsurface testing results.

PROJECT AREA DESCRIPTION

The project area is located on an open grassy plain in Pu‘ukapu Ahupua‘a, South Kohala District, Island of Hawai‘i (Figure 3). The current project area consists of both a 3-acre parcel (TMK: (3) 6-4-05:017), and a government-owned access/utility easement that links the parcel to a paved roadway (Wong Way). Beginning at Wong Way the easement (Figure 4), which measures 20 feet wide, extends for approximately 140 meters between Parcel 015 (to the east) and Parcel 014 (to the west), then it turns to the east (Figure 5) extending for approximately 190 meters between Parcels 015 and 016 to the south and 017 and 018 to the north (see Figure 2). The study area is located within the northeastern corner of a subdivision-like complex of *Māhele*-era *kuleana* awards, which were both agricultural and residential in nature. The 3-acre agricultural parcels are laid out in a three (north/south) by six (east/west) grid pattern in blocks of two separated by smaller strips of government-owned land. Along the south edge of the grid are twelve 0.25-acre parcels that were awarded as *kuleana* house lots during the *Māhele* (see the Cultural-Historical Context section below for a discussion of the Land Commission Awards of this area). The study area is bounded by larger tracts of grassland to the north (TMK: (3) 6-4-04:020) and east (TMK: (3) 6-4-04:013). The 3-acre parcel portion of the study area is currently fenced on the north, east, and south sides (Figure 6), and open on the west side.

The project area sits an elevation of roughly 2,915 feet above sea level. The topography is relatively flat with small undulations; there is however, an elevated weathered bedrock outcropping (Figure 7) adjacent to the western edge, and partially within the property in the northwestern corner. Vegetation within the study area is dominated by Kikuyu grass (*Cenchrus clandestinus*); no trees or shrubs were present (Figure 8). The soil within the project area is classified as Kikoni medial silt loam that consists of ash fields on ‘a‘ā flows from Mauna Kea (<http://www.websoilsurvey.sc.egov.usda.gov>). The soil is glacial in origin and contains basaltic rocks that date from 250,000 to 200,000 and 65,000 to 70,000 years old (Wolfe and Morris 1996).

1. Introduction

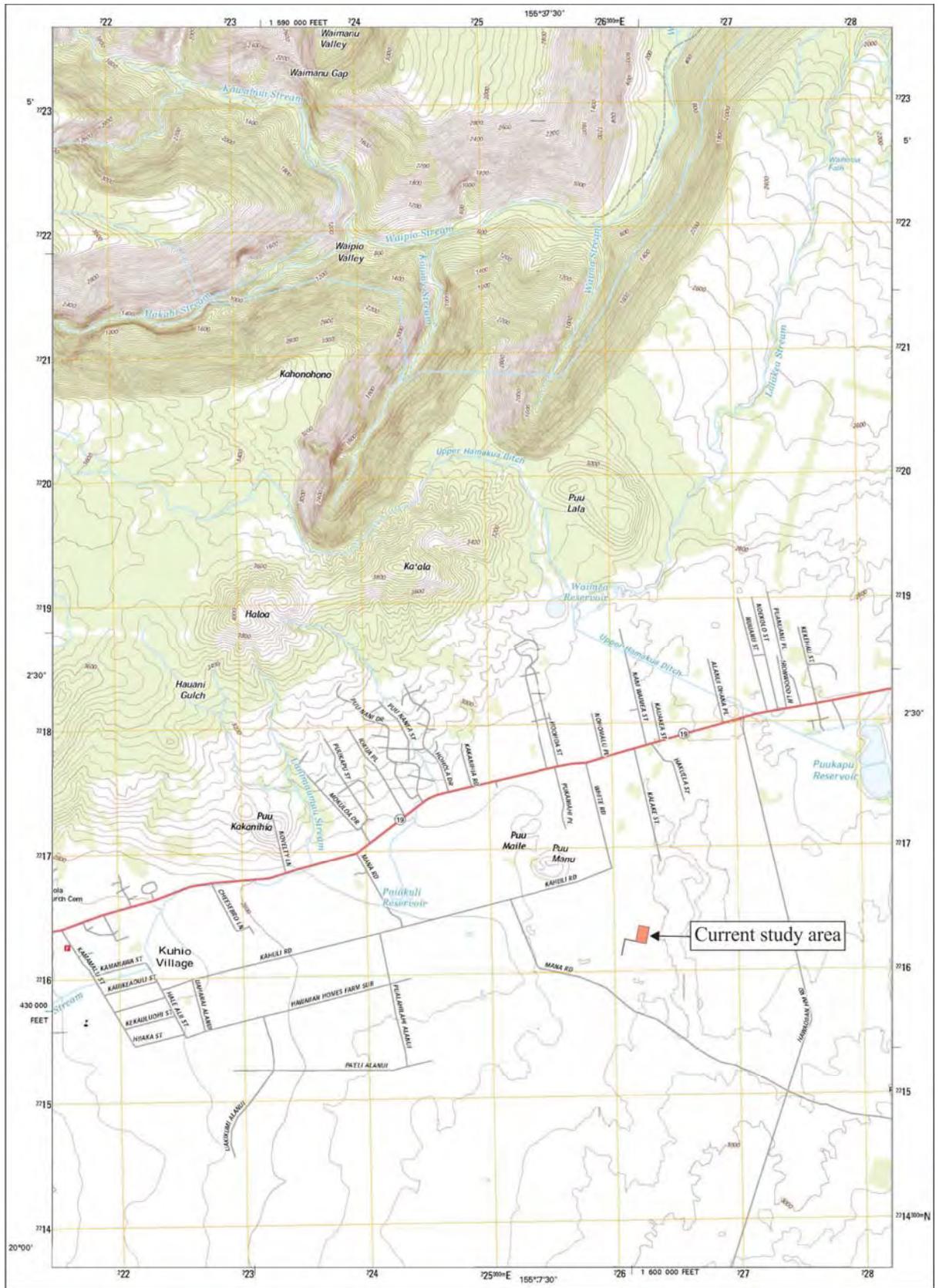


Figure 1. Study area location



Figure 2. Tax Map Key (TMK): (3) 6-5-005:017 showing the current project area location in red.



Figure 3. Google Earth™ satellite image showing current study area in red.



Figure 4. The 20 foot wide government-owned easement corridor at Wong Way, view to the north.



Figure 5. The 20 foot wide government-owned easement corridor between Parcels 015 and 016 (to the right) and Parcels 018 and 017 (to the left), view to the east.



Figure 6. The southern fenced boundary of Parcel 017, view to the west.



Figure 7. Elevated bedrock outcropping (in background) along the western boundary of Parcel 017, view to the northeast.



Figure 8. Typical vegetation cover across Parcel 018, view to the east.

2. BACKGROUND

To generate a set of expectations regarding the nature of archaeological resources that might be encountered on the study parcel, and to establish an environment within which to access the significance of any such resources, previous archaeological studies relative to the project area and a general cultural-historical background for the region are presented.

CULTURE-HISTORICAL CONTEXT

The subject parcel is located on the Island of Hawai‘i within the District of South Kohala in the *ahupua‘a* of Pu‘ukapu (Figure 9). As described by Handy and Handy:

The district of Kohala is the northernmost land area of the island of Hawaii. ‘Upolu Point, the northwesterly projection, fronts boldly out into the Alanuihaha [sic] Channel towards the southeastern coast of Maui, and is the nearest point of communication between the two islands. To the south, along Hawaii’s western coast, lies Kona; to the east the rough coast of Hamakua District unprotected from the northerly winds and sea. Kohala was the chiefdom of Kamehameha the Great, and from this feudal seat he gradually extended his power to embrace the whole of the island, eventually gaining suzerainty of all the Hawaiian Islands. (1991:528)

Handy and Handy further describe Kohala, and more specifically, Waimea:

The rugged central area of the district is formed by the mountainous remains (elevation 5,505 feet) of the Kohala dome, the oldest of the island’s volcanoes, now long regarded as extinct. The high table land between Mt. Kohala and the vast northern slopes of Mauna Kea, known as Waimea, has one of the finest and most salubrious mountain climates in the Hawaiian Islands, and also offers excellent grazing for cattle. In post-European times it became the seat of the Parker Ranch, one of the largest ranches in the world. (1991:528)

2. Background

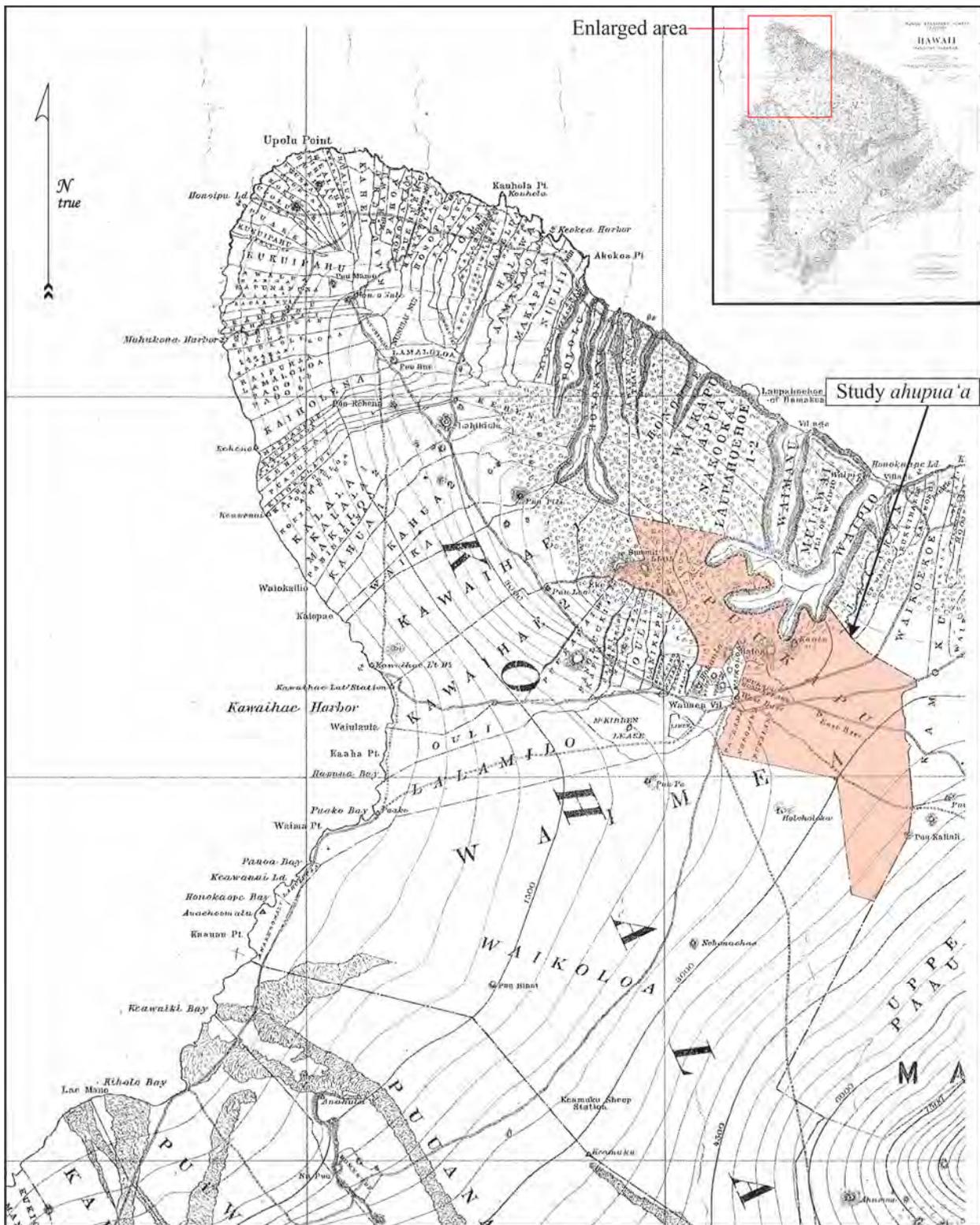


Figure 9: Map showing Pu'ukapu (shaded red).

With respect to the Precontact use of the general project area, Clark (1987) offered a regional settlement pattern model that includes four elevationally delimited environmental zones: Coastal Zone, Intermediate Zone, Kula Zone, and Wilderness Zone. The Coastal Zone extends up to about 150 feet elevation, and was used for permanent and temporary habitation, coastal resource exploitation, and limited agriculture. The Intermediate Zone extends from the Coastal Zone to about 1,900 feet elevation. This zone was used primarily for seasonal agriculture with associated short-term occupation, typically situated near intermittent drainages. The Kula Zone extends from the Intermediate Zone to about 2,700 feet elevation (and to 3,200 feet in certain areas). This was the primary agricultural and residential area, with extensive formal fields and clustered residential complexes. The Wilderness Zone extends above the Kula Zone to the mountaintops, and was a locus for the collection of wild floral and faunal resources. The current project area, situated at an elevation of roughly 2,900 feet, is perhaps at the interface of Clark's (1987) Kula and Wilderness Zones.

It is within the context of the *kula* slopes of the windward environmental zone of the political divisions of the District of South Kohala and the *ahupua'a* of Pu'ukapu, that the following discussion of the history and culture of the study area is framed. The chronological summary presented below begins with the peopling of the Hawaiian Islands and the presentation of a generalized model of Hawaiian Prehistory that includes legendary references to the study area lands and a discussion of the widely accepted settlement patterns for South Kohala. The discussion of Prehistory is followed by a summary of Historic events in the islands that begins with the arrival of foreigners and then presents a history of land use after contact. The summary includes a discussion of the changing life ways and population decline of the early Historic Period, a review of land tenure in the study *ahupua'a* during the *Māhele 'Āina* of 1848 and the subsequent division of Land Grants. A synthesis of the Precontact settlement patterns and the Historic documentation of land use will then be used to predict the type, location, and likelihood of Historic properties that may be present within the study parcels.

A Generalized Model of Hawaiian Prehistory

The generalized cultural sequence that follows is based on Kirch's (1985) model, and amended to include recent revisions offered by Kirch (2011). The conventional wisdom has been that first inhabitants of Hawai'i Island probably arrived by at least A.D. 300, and focused habitation and subsistence activity on the windward side of the island (Burtchard 1995; Kirch 1985; Hommon 1986). However, there is no archaeological evidence for occupation of Hawai'i Island (or perhaps anywhere in Hawai'i) during this initial settlement, or colonization stage of island occupation (A.D. 300 to 600). More recently, Kirch (2011) has convincingly argued that Polynesians may not have arrived to the Hawaiian Islands until at least A.D. 1000, but expanded rapidly thereafter. The implications of this on the currently accepted chronology would alter the timing of the Settlement, Developmental, and Expansion Periods, possibly shifting the Settlement Period to A.D. 1000 to 1100, the Developmental Period to A.D. 1100 to 1350, and the Expansion Period to A.D. 1350 to 1650.

The initial settlement in Hawai'i is believed to have occurred from the southern Marquesas Islands. This was a period of great exploitation and environmental modification, when early Hawaiian farmers developed new subsistence strategies by adapting their familiar patterns and traditional tools to their new environment (Kirch 1985; Pogue 1978). Their ancient and ingrained philosophy of life tied them to their environment and kept order. Order was further assured by the conical clan principle of genealogical seniority (Kirch 1984). According to Fornander (1969), the Hawaiians brought from their homeland certain universal Polynesian customs: the major gods Kāne, Kū, and Lono; the *kapu* system of law and order; cities of refuge; the *'aumakua* concept; various epiphenomenal beliefs; and the concept of *mana*. Initial permanent settlements in the islands were established at sheltered bays with access to fresh water and marine resources. Communities shared extended familial relations and there was an occupational focus on the collection of marine resources. Over a period of several centuries the areas with the richest natural resources became populated and perhaps even crowded, and there was an increasing separation of the chiefly class from the common people. As the environment reached its maximum carrying capacity, the result was social stress, hostility, and war between neighboring groups (Kirch 1985). Soon, large areas of Hawai'i were controlled by a few powerful chiefs.

The Development Period (A.D. 1100 to 1350) brought about a uniquely Hawaiian culture. The portable artifacts found in archaeological sites of this period reflect not only an evolution of the traditional tools, but some distinctly Hawaiian inventions. The adze (*ko'i*) evolved from the typical Polynesian variations of plano-convex, trapezoidal, and reverse-triangular cross-section to a very standard Hawaiian rectangular quadrangular tanged adze. A few areas in Hawai'i produced quality basalt for adze production. Mauna Kea, on the island of Hawai'i, possessed a well-known adze quarry. The two-piece fishhook and the octopus-lure breadloaf sinker are Hawaiian inventions of this

period, as are *'ulu maika* stones and *lei niho palaoa*. The latter was a status item worn by those of high rank, indicating a trend toward greater status differentiation (Kirch 1985).

The first settlers of Kohala likely established a few small communities near sheltered bays with access to fresh water primarily in the windward valleys and gulches. The communities would have shared extended familial relations, and had an occupational focus on the collection of marine resources. Evidence for early occupation of Kohala has been collected from Kapa'anui, where Dunn and Rosendahl (1989) recovered radiocarbon samples that potentially date to as early as A.D. 461 (Site 12444). This early date should be viewed with suspicion (see Kirch 2011), but may be related to the establishment of small, short-term camps to exploit seasonal, coastal resources. Other early dates from windward Kohala were reported by Cordy (2000); these sites are believed to have been utilized in the early 1200s. Data recovered from Māhukona, along the leeward coast, suggest initial occupation there by about A.D. 1280 (Burgett and Rosendahl 1993:36). Permanent settlement in Kohala has been reported as early as A.D. 1300 at Koai'e, a coastal settlement, where subsistence primarily derived from marine resources, but was probably supplemented by small-scale agriculture as well (Tomonari-Tuggle 1988).

The Expansion Period (A.D. 1350 to 1650) is characterized by the greatest social stratification, major socioeconomic changes, and intensive land modification. Most of the ecologically favorable zones of the windward and coastal regions of all major islands were settled and the more marginal leeward areas were being developed. The greatest population growth occurred during the Expansion Period. It was during the Expansion Period that a second major migration settled in Hawai'i, this time from Tahiti in the Society Islands. According to Kamakau (1976), the *kahuna* Pā'ao settled in the islands during the 13th century. Pā'ao was the keeper of the god Kū'kā'ilimoku, who had fought bitterly with his older brother, the high priest Lonopele. After much tragedy on both sides, Pā'ao was expelled from his homeland by Lonopele. He prepared for a long voyage, and set out across the ocean in search of a new land. On board Pā'ao's canoes were thirty-eight men (*kānaka*), two stewards (*kānaka 'ā'īpu'upu'u*), the chief Pili'ka'aiea (Pili) and his wife Hina'aukekele, Nāmau'u o Malaia, the sister of Pā'ao, and the prophet Makuaka'ūmana (Kamakau 1991). In 1866, Kamakau told the following story of their arrival in Hawai'i:

Puna on Hawai'i Island was the first land reached by Pā'ao, and here in Puna he built his first *heiau* for his god Aha'ula and named it Aha'ula [Waha'ula]. It was a *luakini*. From Puna, Pā'ao went on to land in Kohala, at Pu'uepa. He built a *heiau* there called Mo'okini, a *luakini*.

It is thought that Pā'ao came to Hawai'i in the time of the *ali'i* La'au because Pili ruled as *mo'i* after La'au. You will see Pili there in the line of succession, the *mo'o kā'auhau*, of Hanala'anui. It was said that Hawai'i Island was without a chief, and so a chief was brought from Kahiki; this is according to chiefly genealogies. Hawai'i Island had been without a chief for a long time, and the chiefs of Hawai'i were *ali'i maka'āinana* or just commoners, *maka'āinana*, during this time.

. . . There were seventeen generations during which Hawai'i Island was without chiefs—some eight hundred years. . . . The lack of a high chief was the reason for seeking a chief in Kahiki, and that is perhaps how Pili became the chief of Hawai'i. He was a chief from Kahiki and became the ancestor of chiefs and people of Hawai'i Island. (1991:100–102)

There are several versions of this story that are discussed by Beckwith (1976), including the version where Mo'okini and Kaluawilinau, two *kāhuna* of Moikeha, decide to stay on at Kohala. The bones of the *kahuna* Pā'ao are said to be deposited in a burial cave in Kohala in Pu'uwepa [possibly Pu'uepa?] (Kamakau 1964:41). The Pili line's initial ruling center was likely in Kohala too, but Cartwright (1933) suggests that Pili later resided in and ruled from Waipi'o Valley in the Hāmākua District.

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

According to Kirch's (1985) model, the concept of the *ahupua'a* was established sometime during the A.D. 1400s, adding another component to a then well-stratified society. This land unit became the equivalent of a local community, with its own social, economic, and political significance. *Ahupua'a* were ruled by *ali'i 'ai ahupua'a* or

lesser chiefs; who, for the most part, had complete autonomy over this generally economically self-supporting piece of land, which was managed by a *konohiki*. *Ahupua'a* were usually wedge or pie-shaped, incorporating all of the eco-zones from the mountains to the sea and for several hundred yards beyond the shore, assuring a diverse subsistence resource base (Hommon 1986). This form of district subdividing was integral to Hawaiian life and was the product of strictly adhered to resource management planning. In this system, the land provided fruits and vegetables and some meat for the diet, and the ocean provided a wealth of protein resources (Rechtman and Maly 2003).

The name of an *ahupua'a* sometimes indicates its importance, records its history, or reveals something about its resources or population. "Pu'ukapu, meaning 'sacred hill', is both the name of a traditional land division and a homestead community (Pukui et al. 1974:198). Burtchard and Tomonari-Tuggle (2003:20) describe it as a 'low knoll.' As a land unit, Pu'ukapu incorporates one of the largest traditional land parcels in the District of South Kohala. Although early maps do not show a *pu'u* or hill by the name Pu'u Kapu, the name clearly demonstrates traditional significance for native Hawaiians. Proceedings of the Boundary Commission and *Māhele* records provide a little more history about the area. Most importantly, they record oral testimonies from the primary land users—the Native Hawaiians. The following proceedings (taken from Maly 1999:82-91) provide Native testimonies about the cultural landscape of Pu'ukapu and Waimea.

Volume B, the Ahupuaa of Kawaihae 2nd, District of South Kohala, Island of Hawaii 3d. J.C. November 15, 1873.

(Kalualukea) The land of Puukapu does not cut Kawaihae off. It is about one and a half miles from Kahialepo to the boundary of Waipio, at a pool of water called Ulu, at the foot of the water fall, but the boundary runs along on the top of the *pali* above the falls, leaving the *pali* at the head of Waipio valley.

(Kalua) I know the place called Kalualepo, it is a hole with yellow soil, it is near the Waihoolana. Puukapu an *ili* of Waimea bounds Kawaihae 2nd Thence to Waihoolana, a gulch of standing water. This gulch runs to Waipio. I lived there one month. Thence along the gulch to Kaapeape a place where there used to be a settlement. I do not know that the boundary line is on Kawaihae 2nd, but I do know that the land comes to Kalualepo, which is the only *mauka* boundary of Kawaihae that I know of. This boundary given is the boundary of Puukapu.

Volume B, Ouli an Ili aina of Waimea in the District of South Kohala, Island of Hawaii 3d. J.C. November 14, 1873.

(Pupuka) ...Thence up to Lua Meki Halukuwailani, a deep hole with some small ones near to it, thence to the gulch Keanui o manu where Ouli is cut off by the land of Puukapu. There is a deep water hole and ancient crossing at the corner of Momoualoha [Mamalaho] and Ouli and the boundary of Puukapu, this point is marked X....

Volume A—1, No.2, Rex vs. George Davis, Boundary Dispute, Waikoloa nui Ili of Waimea—Hawaii. Testimony taken August 8th and 9th 1865 at Waimea—Hawaii.

(Ehu) I am kamaaina of Puukapu. I was born in Waimea. I know the boundary from my own and my father's knowledge...I knew Kahanapilo w. wife of George Davis—she was not konohiki of the ilis on Waikoloa—nor of Waimea—I was in Kona when she died...I am kamaaina of Puukapu only—Kainea was the Konohiki when I lived there. There was no pili grass on that land—my father was not a bird catcher, he used to mahiai [farm].

(Cross) "Kainea was Konohiki in the time of Kalaimoku—Kainea is dead. Waikoloa is an ahupuaa of Waimea, which is a Kalana, with eight divisions. I only know about Waikoloa. I have been to Pukalani—Nonoaina and Paulama—they join Waikoloa, but do not run far out. Pukalani joins Puukapu...Puukapu is a division of Waimea...Puukapu belonged to Kalaimoku (I do not know the present owners).

(Wahahee) I am kamaaina of the King's land Puukapu—I was born there. Puulepo is close to Pukalani, which land joins Puukapu. My parents showed me the boundary. My mother belonged at Puukapu...Pukalani belonged to Kamehameha fourth. Nohoaina and Paulama to the same; also Puukapu; and I suppose they descended to Kamehameha V.

(Mi 1st) I live on Waikoloa—I am kamaaina of the lands in dispute. The name of the large land is Waimea—I am a witness for George Davis and also for the Rex. Waimea is a Kalana—which is

the same as an island divided into districts—there are eight Okana in Waimea. In those Okana are those lands said to extend out (*hele mawaho*). These lands came in to the possession of Kamehameha I who said to Kupapaulu, go and look out to of the large lands running to the sea, for John Young and Isaac Davis. Kupapaulu went to Keawekuloa, the *haku aina*, who said if we give Waikoloa to the foreigners they will get Kalahuipua [Kalahuipuaa] and Anaïomalū [Anaïoomalū] (two lands at the beach) then your master will have no fish. So they kept the sea lands and gave Waikoloa to Isaac Davis...They kept all the valuable part of the lands, and gave the poor land outside to Isaac Davis. They kept Puukapu, Pukalani, Nohoaina, Kukuïula (above the church), and Paulama; and gave Waikoloa to Isaac Davis. The other Waikoloa, this side of the stream dividing them, was the King's."

Volume A No.1 No.2, For the King

(Cross) ...Puuhuluhulu is the land makai of Waikoloa; and also Kaleikumikiau; Puupili; Pahoā; Kekio; 2 Puuokaa; and Waikoloa are King's lands adjoining. I know about the wall; I could carry stones then; in the time of Kamehameha I. I know the boundary of Waimea. Commence at Puukapu, the head of the land.

While Pu'ukapu is referred to today as an *ahupua'a*, traditionally it was an 'ili of the *kalana* (or 'okana) of Waimea, a land division that in ancient times was treated as a sub-district, smaller than a district (*moku o loko*), but comprised of several other land divisions that contributed to its wealth (Maly and Maly 2002) (Figure 10). The lands subject to the *kalana* of Waimea were those that form the southern limits of the present day South Kohala District including 'Ōuli, Wai'aka, Lālāmilo, Puakō, Kalāhuipua'a, 'Anaeho'omalū, Kanakanaka, Ala'ōhi'a, Paulama, Pu'ukalani, Pu'ukapu, and Waikōloa.

At least two of the testimonies [above] describe the traditional use and the value of Pu'ukapu lands. According to Ehu, his father farmed (*mahi'ai*) the lands on which they lived. Testimony by Mi indicates the value of Pu'ukapu lands, "They [overseers for Kamehameha I] kept all the valuable part of the lands, and gave the poor land outside to Isaac Davis. They kept Pu'ukapu . . ." After his victory on Hawai'i, Kamehameha is said to have given Waimea to his warrior brother Kalaimamahū, whose son Kahalai'a then inherited it (Anon. 1893 in Barrère 1983:28).

The *ali'i* and the *maka'āinana* (commoners) were not confined to the boundaries of the *ahupua'a*; when there was a perceived need, they also shared with their neighbor *ahupua'a ohana* (Hono-ko-hau 1974). The *ahupua'a* were further divided into smaller sections such as the 'ili, *mo'o'aina*, *pauku'aina*, *kihapai*, *koele*, *hakuone*, and *kuakua* (Hommon 1986, Pogue 1978). The chiefs of these land units gave their allegiance to a territorial chief or *mo'i* (king). *Heiau* building flourished during this period as religion became more complex and embedded in a sociopolitical climate of territorial competition. Monumental architecture, such as *heiau*, "played a key role as visual markers of chiefly dominance" (Kirch 1990:206). This pattern continued to intensify from A.D. 1500 to Contact (A.D. 1778), and there is evidence that suggests that there were substantial changes to the political system as well. Within Kohala, the Great Wall complex at Koai'e is organized with platforms in the complex apart from contemporaneous features. Griffin et al. (1971) interpret this as symbolizing class stratification.

There are two noteworthy events associated with early Hawaiian settlement and use of Waimea. The first is the invasion of Hawai'i Island by Kama-lālā-walu, ruler of Maui Island. According to Kamakau (1961), Kama-lālā-walu's men landed at Puakō and went up to the grass-covered plains of Waimea:

After Kama-lala-walu's warriors reached the grassy plain, they looked seaward on the left and beheld the men of Kona advancing toward them. The lava bed of Kaniku and all the land up to Hu'ehu'e was covered with the men of Kona. Those of Kau and Puna were coming down from Mauna Kea, and those of Waimea and Kohala were on the level plain of Waimea. The men covered the whole of the grassy plain of Waimea like locusts. Kama-lala-walu with his warriors dared to fight. The battle of Puoaoka was outside of the grassy plain of Waimea, but the men of Hawaii were afraid of being taken captive by Kama, so they led to the waterless plain lest Maui's warriors find water and hard, waterworn pebbles. The men of Hawaii feared that the Maui warriors would find water to drink and become stronger for the slinging of stones that would fall like raindrops from the sky. The stones would fall about with a force like lightning, breaking the bones into pieces and causing sudden death as if by bullets.

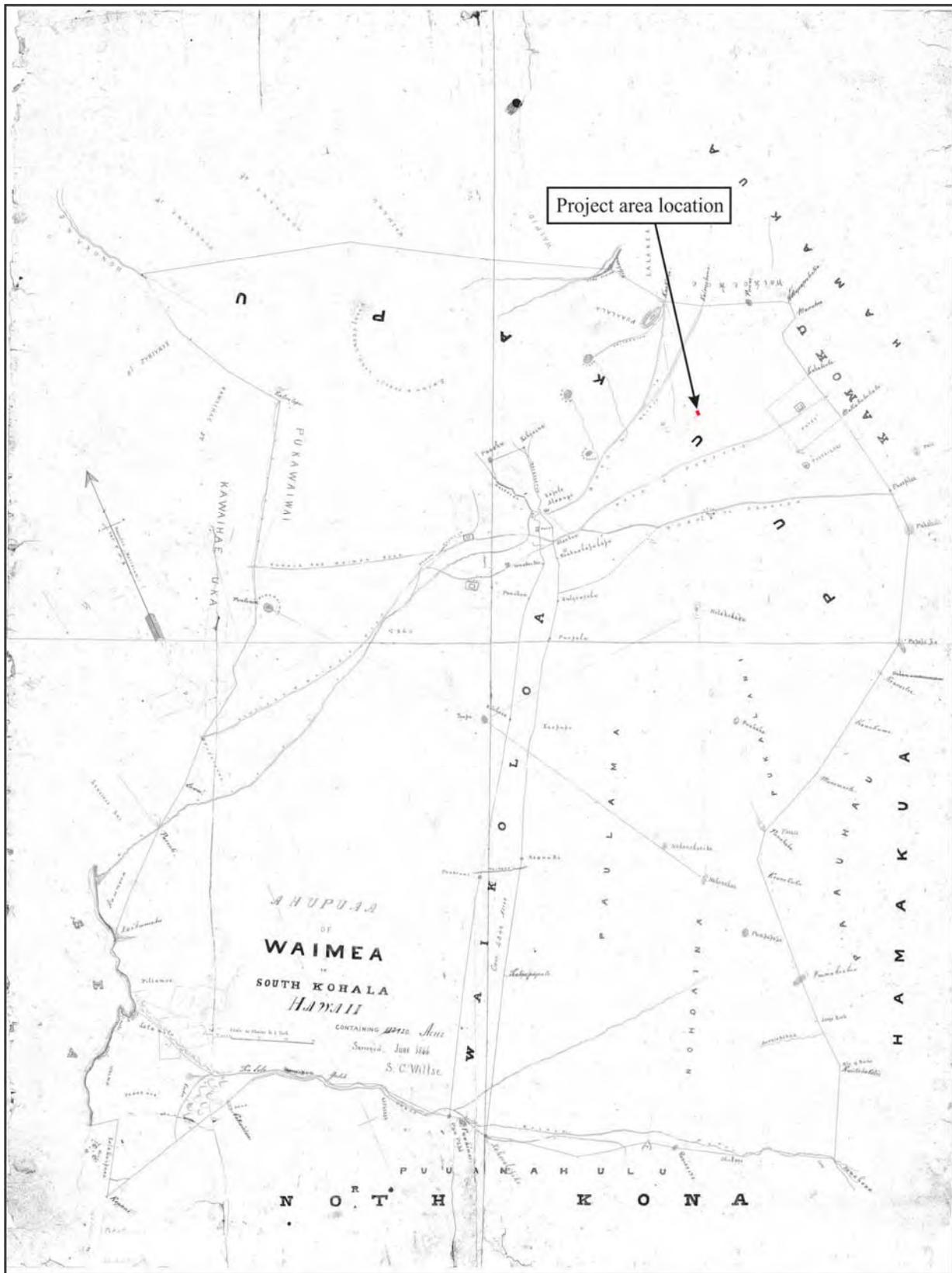


Figure 10. Hawai'i Registered Map No. 712 prepared by S. C. Willse in June of 1866 showing Pu'ukapu within the ahupua'a of Waimea, current study area location indicated in red.

Maui almost won in the first battle because of Hawaii's lack of a strong champion. Maka-ku-i-ka-lani [representing Maui] was first on the field and defied any man on Hawaii to match strength with him. Maka-ku-i-ka-lani tore Hawaii's champion apart. When Puapua-kea arrived later by way of Mauna Kea, those of Hawaii rejoiced at having their champion. Maka-ku-i-ka-lani and Puapua-kea matched their strength in club fighting on the battle site before the two sides plunged into the fight. (Kamakau 1961:58-59)

Once he reached Waimea, Kama-lālā-walu positioned himself on Hōkū'ula, the hill that he was told would serve as a refuge for him and his men (Fornander 1959). In Fornander's description, the battlefield would have extended to Pu'u Kakanihia:

Kamalalawalu, upon arrival thereon, found on reconnoitering that there were neither stones nor trees, but only dirt [on Hōkū'ula]. While they were engaged in a conversation with Kumaieau together with Kumakaia¹, at that time messengers were sent to summon Lonoikamakahiki and Pupuakea. At Kealakekua, in Kona, was the place where Lonoikamakahiki lived. When the messenger appeared before him, he said to Lonoikamakahiki: "Kamalalawalu and Makakuikalani have come to give battle to you both...When Lonoikamakahiki heard these things, he questioned the messenger: "Where is the battle to take place?" The messenger replied: "There, at Waimea, on top of that hill, Hokuula, where Kamalalawalu and all Maui are stationed." (Fornander 1959:188)

During that night and including the following morning the Kona men arrived and were assigned to occupy a position from Puupa to Haleapala. The Kau and Puna warriors were stationed from Holoholoku to Waikoloa. Those of Hilo and Hamakua were located from Mahiki to Puukanianihi [Puukakanihia], while those of Kohala guarded from Momouloa to Waihaka. (Fornander 1959:229)

Puapua-kea was the eventual victor of this fight, and the warriors of Maui were put to flight (Kamakau 1961:60). After Kama-lālā-walu was defeated, Hawai'i was invaded by Alapa'i-nui, also of Maui. Alapa'i-nui was the only chief recorded as having lived in Waimea.

Alapa'i dwelt in Hilo for a year and then went to live in Waipi'o. Shortly after, he and the chiefs moved to Waimea and others went by canoe to Kawaihae. From Waimea, he went to Lanimaomao, where he fell ill. (Kamakau 1961:77)

A second traditional native Hawaiian event or activity that is significantly associated with Waimea is the Waimea Field System. This agricultural complex was one of three large-scale Precontact agricultural systems on the leeward side of Hawai'i Island. The other two were located at Kona and Kohala. According to Burchard and Tomonari-Tuggle (2002), the Waimea Agricultural System is best known for: 1) spatially limited residential sites; 2) linear, low earthen ridges; and 3) irrigation ditches located along [Waikoloa Stream] on the eastern margins of the system. Cultivated crops included *wauke*, *mamaki*, plantains, bananas, sugarcane, coconuts, *hala*, taro, and sweet potato (Haun et al. 2003). Rechtman and Prasad (2006) suggest that the area was exploited for forest resources possibly as early as the 13th and 14th centuries, followed by agriculture and prolonged residence in the 16th century. According to Barrère, "the cultivating places at Waimea were first expanded to supply the chiefs' needs while sojourned there and at Kawaihae" (Barrère 1983:27).

By the seventeenth century, large areas of Hawai'i Island (*moku 'aina* – districts) were controlled by a few powerful *ali'i 'ai moku*. There is island-wide evidence to suggest that growing conflicts between independent chiefdoms were resolved through warfare, culminating in a unified political structure at the district level. The legend of Kapunohu (set about A.D. 1600), relates that in North Kohala, the chiefs of Kukuipahu ruled the leeward *ahupua'a* of the district, and the chiefs of Niuli'i ruled the windward *ahupua'a* of the district, and that Wainai Gulch was the boundary between the two domains (Erkelens and Athens 1994). In about A.D. 1600, the armies of the two polities met on the battlefield of Hinakahua at Kapa'au (east of the present day town of Kapa'au), and the forces of Kukuipahu were defeated, thus control of the district was united under the chiefs of Niuli'i (Fornander 1916:215-220).

'Umi-a-Līloa was a renowned Pili line *ali'i* who ruled from Waipi'o Valley, son of high ranking *ali'i* Līloa. 'Umi's fame stemmed from his successful unification of all the districts of Hawai'i Island (Kamakau 1992), and his reign lasted until around ca. A.D. 1620 (Cordy 1994). It has been suggested that the unification of the island resulted in a partial abandonment of portions of leeward Hawai'i, with people moving to more favorable agricultural areas

¹ Kumaieau and Kumakaia, two men from Kawaihae, served as advisors to kama-lālā-walu. They deliberately deceived Kama into thinking that Hōkū'ula hill would serve as a refuge.

(Barrera 1971; Schilt and Sinoto 1980). Near the end of 'Umi's rule, he relocated to Kona where the weather was more favorable (Kamakau 1992).

One of 'Umi-a-Līloa's heirs to the Hawaiian kingdom was his son, Keawe-nui-a-'Umi, who presided over Hilo. Lono-i-ka-makahiki was Keawe-nui-a-'Umi's son, and was a ruler of Ka'ū and Puna (Kamakau 1992). Following the death of his father, Lono-i-ka-makahiki waged a war for the supremacy of Hawai'i Island against rebel forces in Kohala. After a battle in leeward North Kohala, Lono-i-ka-makahiki pursued his rivals to Hinakahua at Kapa'au, where they prepared to fight once again before retreating to the east and being defeated at Pololū Valley in windward North Kohala (Erkelens and Athens 1994). Upon achieving this final victory, Lono-i-ka-makahiki celebrated at the *heiau* of Mulei'ula at Apuakaohau (Fornander 1916:324). Neither of Lono-i-ka-makahiki's two sons were heirs to the government, and in the wake of his death, rule of Kohala, Kona, and Ka'ū was instead split between the descendants of his brother, Kanaloa-kua'ana.

The Proto-Historic Period (A.D. 1650–1795) was marked by both political intensification and stress. Wars occurred regularly between intra-island and inter-island polities, and this period was one of continual conquest by the reigning *ali'i*. At the beginning of this period, Hawai'i Island was not united under one rule, but was split amongst the chiefs of Kona and Hilo (Kamakau 1992). Keawe, the son of Kanaloakapulehu, was the ruler of Kohala, Kona, and Ka'ū. When Keawe died he split the rule of his lands between two of his sons; Kalaninui'iamamao became the ruling chief of Ka'ū, and Ke'eaumoku became the ruling chief of Kona and Kohala (Kamakau 1992). Wars between the *ali'i* continued unabated through this transition.

After Keawe's death, Alapa'inui, the son of former Kona war chief Kauauanui a Mahi, a former war chief of Kona, desired to wrest control of Hawai'i Island from the other chiefs (Kamakau 1992). Alapa'inui, who had been living on Maui since the death of his father, returned to Hawai'i Island and waged war against the chiefs of Kona and Kohala. Alapa'inui was eventually victorious and took the chiefs of those districts captive, proclaiming Kona and Kohala his own. Kekaulike, the ruler of Maui, however, preferred the former chiefs and wished to help them reclaim their lands. The Maui forces attacked Alapa'inui, but were unable to defeat him. Although Alapa'inui's forces were never beaten, the frequent attacks by Kekaulike did prevent him from taking the chiefs of Hilo and Ka'ū captive (Alapa'inui did eventually take control of these districts however). Alapa'inui later fought and defeated the forces of O'ahu on Moloka'i, and after Kekaulike's death he fought Kauhi, his rival's oldest son, on Maui where he was also victorious. Alapa'inui ruled for many years, but at the end of his reign, after moving to Kikiako'i in Kawaihae, he became seriously ill, and there at the *heiau* of Mailekini, he appointed his son Keawe'opala ruler of the island (Kamakau 1992).

It was during this time of warfare, following the death of Keawe, that Kamehameha was born in the North Kohala District in the *ahupua'a* of Kokoiki, near the Mo'okini Heiau (Kamakau 1992). There is some controversy about the year of his birth, but Kamakau (1992:66–68) places the birth event sometime between A.D. 1736 and 1758, and probably nearer to the later date. The birth event is said to have occurred on a stormy night of rain, thunder, and lightning, signified the night before by a very bright, ominous star, thought by some to be Halley's Comet (this is also controversial). Kamehameha's ancestral homeland was in Halawa, North Kohala (Williams 1919).

It was in 1754 that Keawe'opala became the ruler of Hawai'i, but many of the chiefs who were deprived of their lands fought against him. Keawe'opala was soon defeated in South Kona by Kalani'ōpu'u, who then became the ruler of Hawai'i Island (Kamakau 1992). Kalani'ōpu'u was a clever and able chief, and a famous athlete in all games of strength, but according to Kamakau (1992), he possessed one great fault: he loved war and had no regard for others' land rights. Although Kalani'ōpu'u would maintain his rule over the island for nearly thirty years, his reign was not free of turmoil and strife.

About A.D. 1759, Kalani'ōpu'u conquered East Maui, defeating his wife's brother, the Maui king Kamehamehanui, by using Hāna's prominent Pu'u Kau'iki as his fortress. He appointed one of his Hawai'i chiefs, Puna, as governor of Hāna and Kīpahulu. Following this victory, Ke'eaumoku, the son of Keawepoepoe who had originally supported Kalani'ōpu'u against Keawe'opala, rebelled against the Hawai'i chief. He set up a fort on a hill between Pololū and Honokāne Valleys in windward North Kohala, but Kalani'ōpu'u attacked him there and was victorious. Using ropes, Ke'eaumoku escaped to the sea and fled in a canoe to Maui where he lived under the protection of the Maui chiefs.

In A.D. 1766, Kamehamehanui, the king of Maui, died following an illness and Kahekili became the new ruler of that island. Ke'eaumoku took Kamehamehanui's widow, Namahana, a cousin of Kamehameha I, as his wife, and their daughter, Ka'ahumanu, the future favorite wife of Kamehameha I, was born in a cave at the base of Pu'u Kau'iki, Hāna, Maui in A.D. 1768 (Kamakau 1992). In A.D. 1775, Kalani'ōpu'u and his Hāna forces raided and destroyed the neighboring district of Kaupō in Maui, and then launched several more raids on Moloka'i, Lāna'i,

Kaho'olawe, and parts of West Maui. It was at the battle of Kalaeoka'ilio that Kamehameha, a favorite of Kalani'ōpu'u, was first recognized as a great warrior and given the name of Pai'ea (hard-shelled crab) by the Maui chiefs and warriors (Kamakau 1992). During the battles between Kalani'ōpu'u and Kahekili (1777–1779), Ka'ahumanu and her parents left Maui to live on the island of Hawai'i (Kamakau 1992). Kalani'ōpu'u was fighting on Maui when the British explorer Captain James Cook first arrived in the islands.

With the arrival of foreigners in the islands, Hawai'i's culture and economy underwent drastic changes. Demographic trends during the early part of the nineteenth century indicate population reduction in some areas, due to war and disease, yet increase in others, with relatively little change in material culture. At first there was a continued trend toward craft and status specialization, intensification of agriculture, *ali'i* controlled aquaculture, upland residential sites, and the enhancement of traditional oral history (Kirch 1985; Kent 1983). Later, as the Historic Period progressed, Kamehameha I died, the *kapu* system was abolished, Christianity established a firm foothold in the islands, and introduced diseases and global economic forces had a devastating impact on traditional life-ways. Some of the work of the commoners shifted from subsistence agriculture to the production of foods and goods that they could trade with early Western visitors. Introduced foods often grown for trade with Westerners included yams, coffee, melons, Irish potatoes, Indian corn, beans, figs, oranges, guavas, and grapes (Wilkes 1845). The arrival of foreigners in Hawai'i signified the end of the Precontact Period, and the beginning of the Historic Period.

History After Contact

Captain James Cook and his crew on board the ships the H.M.S. *Resolution* and *Discovery* first arrived in the Hawaiian Islands on January 18, 1778. Ten months later, on a return trip to Hawaiian waters, Kalani'ōpu'u, who was still at war with Kahekili, visited Cook on board the *Resolution* off the East coast of Maui. Kamehameha observed this meeting, but chose not to participate. It was during this visit to the islands that Lt. King of the Cook expedition explored the North Kohala countryside and reported:

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

In January [1779], Cook and Kalani'ōpu'u met again at Kealakekua Bay and exchanged gifts. The following month, Cook set sail for Maui; however, a severe storm off the coast of Kohala damaged a mast of one of the ships and they were forced to return to Kealakekua Bay. While back at the bay a skirmish broke out on the shores of Ka'awaloa over a stolen skiff and Captain Cook was killed (Kuykendall and Day 1976; Sahlins 1985).

After the death of Captain Cook and the departure of H.M.S. *Resolution* and *Discovery*, Kalani'ōpu'u moved to Kona, where he surfed and amused himself with the pleasures of dance (Kamakau 1992). While he was living in Kona, famine struck the district. Kalani'ōpu'u ordered that all the cultivated products of that district be seized, before setting out on a circuit of the island. Kalani'ōpu'u then went to Hinakahua in Kapa'au where he amused himself with "sports and games such as hula dancing, *kilu* spinning, *maika* rolling, and sliding sticks" (Kamakau 1991:106). During his stay in Kohala, Kalani'ōpu'u proclaimed that his son Kiwala'ō would be his successor, and he gave the guardianship of the war god Kūka'ilimoku to Kamehameha. However, Kamehameha and a few other chiefs were concerned about their land claims, which Kiwala'ō did not seem to honor (Fornander 1996; Kamakau 1992). The *heiau* of Moa'ula was erected in Waipi'o at this time (ca. A.D. 1781), and after its dedication, Kalani'ōpu'u set out for Hilo to quell a rebellion by a Puna chief named Imakakolo'a.

Imakakolo'a was defeated in Puna by Kalani'ōpu'u's superior forces, but he managed to avoid capture and hide from detection for the better part of a year. While the rebel chief was sought, Kalani'ōpu'u "went to Ka-u and stayed first at Punalu'u, then at Waiohinu, then at Kama'oa in the southern part of Ka-u, and erected a *heiau* called Pakini, or Halauwailua, near Kama'oa" (Kamakau 1992:108). Imakakolo'a was eventually captured and brought to the *heiau*, where Kiwala'ō was to sacrifice him as an offering. "The routine of the sacrifice required that the presiding chief should first offer up the pigs prepared for the occasion, then bananas, fruit, and lastly the captive chief" (Fornander 1996:202). However, before Kiwala'ō could finish the first offerings, Kamehameha, "grasped the

body of Imakakolo‘a and offered it up to the god, and the freeing of the tabu for the *heiau* was completed” (Kamakau 1992:109). Upon observing this single act of insubordination, many of the chiefs believed that Kamehameha would eventually rule over all of Hawai‘i. After usurping Kiwalao’s authority with a sacrificial ritual in Ka‘ū, Kamehameha retreated to his home district of Kohala. While in Kohala, Kamehameha farmed the land, growing taro and sweet potatoes (Handy and Handy 1972). Kalani‘ōpu‘u died in April of 1782 and was succeeded by his son Kiwala‘ō.

The Rule of Kamehameha I (1782-1819)

After Kalani‘ōpu‘u died, several chiefs were unhappy with Kiwala‘ō’s division of the island’s lands, and civil war broke out. Kiwala‘ō, Kalani‘ōpu‘u’s son and appointed heir, was killed at the battle of Moku‘ōhai, South Kona in July of 1782. Supporters of Kiwala‘ō, including his half brother Keōua and his uncle Keawemauhili, escaped the battle of Moku‘ōhai with their lives and laid claim to the Hilo, Puna, and Ka‘ū Districts. According to I‘i (1963), nearly ten years of almost continuous warfare followed the death of Kiwala‘ō, as Kamehameha endeavored to unite the island of Hawai‘i under one rule and conquer the islands of Maui and O‘ahu. Keōua became Kamehameha’s main rival on the island of Hawai‘i, and he proved difficult to defeat (Kamakau 1992). Keawemauhili would eventually give his support to Kamehameha, but Keōua never stopped resisting. Around 1790, in an effort to secure his rule, Kamehameha began building the *heiau* of Pu‘ukohola in Kawaihae, which was to be dedicated to the war god Kūka‘ilimoku (Fornander 1996).

When Pu‘ukoholā Heiau was completed in the summer of 1791, Kamehameha sent his two counselors, Keaweheulu and Kamanawa, to Keōua to offer peace. Keōua was enticed to the dedication of the Pu‘ukoholā Heiau by this ruse, and when he arrived at Kawaihae, he and his party were sacrificed to complete the dedication (Kamakau 1992). The assassination of Keōua gave Kamehameha undisputed control of Hawai‘i Island by A.D. 1792 (Greene 1993).

In 1790, two Western ships, the *Eleanora* and *Fair American*, were trading in Hawaiian waters. As retribution for the theft of a skiff and the murder of one of the sailors, the crew of the *Eleanora* massacred more than 100 natives at Olowalu [Maui]. The *Eleanora* then sailed to Hawai‘i Island, and one of its crew, John Young, went ashore where he was detained by Kamehameha. The other vessel, the *Fair American*, was captured by the forces of Kamehameha off the Kekaha coast and its crew was killed except for one member, Isaac Davis. Guns, and a cannon later named “Lopaka,” were recovered from the *Fair American*, which Kamehameha kept as part of his fleet (Kamakau 1992). Kamehameha made Young and Davis his advisors, and aided by them and his newly acquired ships and foreign arms, had succeeded in conquering all the island kingdoms except Kaua‘i by 1796. It wasn’t until 1810, when Kaumuali‘i of Kaua‘i gave his allegiance to Kamehameha, that the Hawaiian Islands were unified under one ruler (Kuykendall and Day 1976).

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

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

Upon returning to Kailua in 1812, Kamehameha ordered men into the mountains of Kona to cut sandalwood and carry it to the coast, paying them in cloth, *tapa* material, food and fish (Kamakau 1992). This new burden added to the breakdown of the traditional subsistence system. Farmers and fishermen were ordered to spend most of their time logging, resulting in food shortages and famine that led to a population decline. Kamakau indicates that, “this rush of labor to the mountains brought about a scarcity of cultivated food . . . The people were forced to eat herbs and tree ferns, thus the famine [was] called Hi-laulele, Haha-pilau, Laulele, Pualele, ‘Ama‘u, or Hapu‘u, from the wild plants resorted to” (1992:204). Once Kamehameha realized that his people were suffering, he “declared all the sandalwood the property of the government and ordered the people to devote only part of their time to its cutting and

return to the cultivation of the land” (ibid.:204). In the uplands of Kailua, a vast plantation named Kuahewa was established where Kamehameha himself worked as a farmer. Kamehameha enacted the law that anyone who took one taro or one stalk of sugarcane must plant one cutting of the same in its place (Handy and Handy 1972). While in Kailua, Kamehameha resided at Kamakahonu, from where he continued to rule the islands for another nine years. He and his high chiefs participated in foreign trade, but also continued to enforce the rigid *kapu* system.

The Death of Kamehameha I and the Abolition of the Kapu System

Kamehameha I died on May 8, 1819 at Kamakahonu in Kailua-Kona, and the changes that had been affecting the Hawaiian culture since the arrival of Captain Cook in the Islands began to accelerate. Following the death of a prominent chief, it was customary to remove all of the regular *kapu* that maintained social order and the separation of men and women and elite and commoner. Thus, following Kamehameha’s death, a period of ‘*ai noa* (free eating) was observed, along with the relaxation of other traditional *kapu*. It was for the new ruler and *kahuna* to re-establish *kapu* and restore social order, but at this point in history traditional customs were altered:

The death of Kamehameha was the first step in the ending of the tabus; the second was the modifying of the mourning ceremonies; the third, the ending of the tabu of the chief; the fourth, the ending of carrying the tabu chiefs in the arms and feeding them; the fifth, the ruling chief’s decision to introduce free eating (‘*ainoa*) after the death of Kamehameha; the sixth, the cooperation of his aunts, Ka-ahu-manu and Ka-heihei-malie; the seventh, the joint action of the chiefs in eating together at the suggestion of the ruling chief, so that free eating became an established fact and the credit of establishing the custom went to the ruling chief. This custom was not so much of an innovation as might be supposed. In old days the period of mourning at the death of a ruling chief who had been greatly beloved was a time of license. The women were allowed to enter the heiau, to eat bananas, coconuts, and pork, and to climb over the sacred places. You will find record of this in the history of Ka-ula-hea-nui-o-ka-moku, in that of Ku-ali’i, and in most of the histories of ancient rulers. Free eating followed the death of the ruling chief; after the period of mourning was over the new ruler placed the land under a new tabu following old lines (Kamakau 1992: 222).

Immediately upon the death of Kamehameha I, Liholiho (his son and to be successor) was sent away to Kawaihae to keep him safe from the impurities of Kamakahonu brought about from the death of Kamehameha. After the purification ceremonies, Liholiho returned to Kamakahonu:

Then Liholiho on this first night of his arrival ate some of the tabu dog meat free only to the chiefesses; he entered the *lauhala* house free only to them; whatever he desired he reached out for; everything was supplied, even those things generally to be found only in a tabu house. The people saw the men drinking rum with the women *kahu* and smoking tobacco, and thought it was to mark the ending of the tabu of a chief. The chiefs saw with satisfaction the ending of the chief’s tabu and the freeing of the eating tabu. The *kahu* said to the chief, “Make eating free over the whole kingdom from Hawaii to Oahu and let it be extended to Kauai!” and Liholiho consented. Then pork to be eaten free was taken to the country districts and given to commoners, both men and women, and free eating was introduced all over the group. Messengers were sent to Maui, Molokai, Oahu and all the way to Kauai, Ka-umu-ali’i consented to the free eating and it was accepted on Kauai (Kamakau 1992: 225).

When Liholiho, Kamehameha II, ate the *kapu* dog meat, entered the *lauhala* house and did whatever he desired it was still during a time when he had not reinstated the eating *kapu* but others appear to have thought otherwise. Kekuaokalani, caretaker of the war god Kū-Ka’ilimoku, was dismayed by his cousin’s (Liholiho) actions and revolted against him, but was defeated.

With an indefinite period of free-eating and the lack of the reinstatement of other *kapu* extending from Hawai’i to Kaua’i, and the arrival of the Christian missionaries shortly thereafter, the traditional religion had been officially replaced by Christianity within a year following the death of Kamehameha I. By December of 1819, Kamehameha II had sent edicts throughout the kingdom renouncing the ancient state religion, ordering the destruction of the *heiau* images, and ordering that the *heiau* structures be destroyed or abandoned and left to deteriorate. He did, however, allow the personal family religion, the ‘*aumakua* worship, to continue (Oliver 1961; Kamakau 1992).

With the end of the *kapu* system, changes in the social and economic patterns began to affect the lives of the common people. Liholiho moved his court to O’ahu, lessening the burden of resource procurement for the chiefly class on the residents of Hawai’i Island. Some of the work of the commoners shifted from subsistence agriculture to

the production of foods and goods that they could trade with early Western visitors. Introduced foods grown for trade included yams, coffee, melons, Irish potatoes, corn, beans, figs, oranges, guavas, and grapes (Wilkes 1845).

Waimea and Pu'ukapu: A Land in Transition

In October of 1819, seventeen Protestant missionaries set sail from Boston to Hawai'i. They arrived in Kailua-Kona on March 30, 1820 to a society with a religious void to fill. Many of the *ali'i*, who were already exposed to western material culture, welcomed the opportunity to become educated in a western style and adopted their dress and religion. Soon they were rewarding their teachers with land and positions in the Hawaiian government. During this period, the sandalwood trade was wreaking havoc on the commoners, who were weakening with the heavy production, exposure, and famine just to fill the coffers of the *ali'i* who were no longer under any traditional constraints (Oliver 1961; Kuykendall and Day 1976). The lack of control of the sandalwood trade was to soon lead to the first Hawaiian national debt, as promissory notes and levies were initiated by American traders and enforced by American warships (Oliver 1961). The Hawaiian culture was well on its way towards Western assimilation as industry in Hawai'i went from the sandalwood trade, to a short-lived whaling industry, to the more lucrative, but environmentally destructive sugar industry.

Soon after the arrival of foreigners, the landscape of Waimea began to change dramatically; initially through deforestation from the collection of sandalwood, followed by the introduction of cattle to these lands (Rechtman and Prasad 2006). Foraging cattle wreaked havoc on the agricultural fields and were responsible for a flurry of wall building as people tried to keep the feral cattle out of their fields and homes. From the 1820s until the 1840s a sugar mill operated in the Waimea area.

Taro is one of the foods that the Waimea lands were known for. According to Handy and Handy (1972), dry taro was planted along the lower slopes of the Kohala Mountains on the Waimea side, and on the plains south and west of Kamuela (Handy and Handy 1972:532). On his second visit to Waimea town and Pu'ukapu (the last village) William Ellis made the following observation:

to Waikoloa, Waikala, Pukalani and to Puukapu, 16 or 18 miles from the sea-shore, and the last village in the district of Waimea...the soil over which he [Mr. Thurston] had passed, was fertile, well watered, and capable of sustaining many thousand inhabitants. He had numbered 220 houses, and the present population is probably between eleven and twelve hundred. (Ellis 1825:217 in Handy and Handy 1972:532)

New crops, such as Irish potatoes, watermelons, cabbage, onions, tomatoes, mulberries, figs, and beans were introduced in Historic times. For a while, agricultural products from Waimea replenished the cargo ships at Kawaihae Harbor, and in the late 1840s many of the potatoes grown in the Waimea area were shipped to California to help feed the gold rush (Haun et al. 2003). However, commercial ventures soon replaced traditional agricultural practices, and the Waimea landscape was substantially altered as a result of this post-contact change.

The written history from the late 19th to the early 20th century largely reflects news of new settlers, religious endeavors, and commercial pursuits in the region. McEldowney (1983) discusses changes in land use and land ownership before and after the *Māhele*, with the eventual displacement of the Hawaiian community as cattle ranching became fully established in Waimea (Parker Ranch began operating in 1830). An 1848 description of the Waimea population is as follows: "it can scarcely be said that there is any native population at all" (McEldowney 1983:432). By this time, the native population of Waimea had been severely reduced by disease, displacement, and the ongoing changes in land tenure (McEldowney 1983).

Early missionaries described Pu'ukapu Village as one of the three population centers in the Waimea area. Maps, some dating to the early 1800s, provide a temporal history of the changes that occurred around Pu'ukapu and Waimea. In 1853, Coulter estimated that the population of Hawai'i Island totaled 24,450 (Coulter 1931:3-4). His map (Figure 11) indicates that settlement was primarily along the coastal areas; as shown by the 'absence' of dots, there were very few inhabitants in the Waimea area by the time that Coulter arrived.

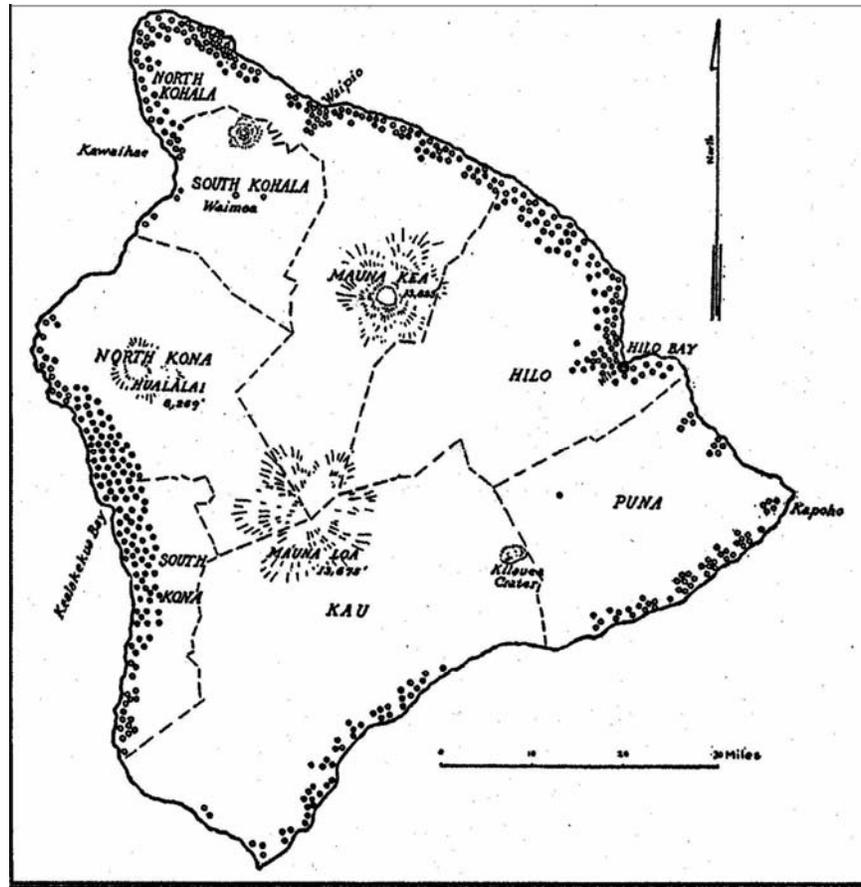


Figure 11. Population of the Island of Hawai'i in 1853 (Coulter 1931:28).

The Ahupua'a of Pu'ukapu during the Māhele 'Āina of 1848

In 1848, the Hawaiian system of land tenure was radically altered by the *Māhele 'Āina*. The *Māhele* (division) defined the land interests of Kamehameha III (the King), the high-ranking chiefs, and the *konohiki*. As a result of the *Māhele*, all land in the Kingdom of Hawai'i came to be placed in one of three categories: (a) Crown Lands (for the occupant of the throne); (b) Government Lands; and (c) Konohiki Lands. Laws in the period of the *Māhele* record that ownership rights to all lands in the kingdom were “subject to the rights of the native tenants;” those individuals who lived on the land and worked it for their subsistence and the welfare of the chiefs. During the *Māhele* Kamehameha III retained Waimea as personal property (Crown Lands), and as a result, limited written recordation is available pertaining to previous land use and cultural history.

The Board of Commissioners oversaw the program and administered the *kuleana* as Land Commission Awards (LCAw.). Claims for *kuleana* had to be submitted during a two year period that expired on February 14, 1848 to be considered. All of the land claimants were required to provide proof of land use and occupation, which took the form of volumes of native registry and testimony. The claims and awards were numbered, and the LCAw. numbers, in conjunction with the volumes of documentation, remain in use today to identify the original owners and their use of the *kuleana* lands. The work of hearing, adjudicating, and surveying the claims required more time than was prescribed by the two year term, and the deadline was extended several times, not for new claims, but for the Land Commission to finish its work (Maly 2002). As the new owners of the lands on which the *kuleana* were located began selling parcels to foreigners, questions arose concerning the rights of the native tenants and their ability to access and collect the resources necessary for sustaining life. The “Enabling” or “*Kuleana Act*,” passed by the King and Privy Council on December 21, 1849, clarified the native tenant’s rights to the land and its resources, and also the process by which they could apply for, and be granted fee-simple interest in their *kuleana*.

The volumes of native registry and testimony collected for the *kuleana* claims provide a snap-shot of life in Hawai'i during the middle part of the nineteenth century. Information recorded in the these volumes contains the

names of smaller land divisions (*'ili, mo'o*, etc.) within the *ahupua'a*, ties individual claimants and their families to specific locations within those land divisions, provides background information about when and from whom, the claimants received their lands, and gives accounts of the land use at that certain time and place. Rev. Elias Bond served the Land Commission as the Land Agent in Kohala during the *Māhele* period. Bond was at first unwilling to accept this position, but was convinced that “he must, in order to protect the interests of the Hawaiians against foreigners coming in” (Damon 1927:180). As the Kohala Land Agent, he actively encouraged Hawaiians to make land claims (Erkelens and Athens 1994), and in a few cases he even wrote letters to the Land Commission in support of various claims that were contested.

At the time of the *Māhele* in 1848, Kekauonohi gave up Pu'ukapu, and it became Crown Land (Lyons in Maly and Maly 2002). The fact that Pu'ukapu was Crown Land likely limited the number of land commission claims made for the area; it seems as though only 24 *kuleana* claims were made within Pu'ukapu with 20 of those claims awarded, 18 of which are within the immediate project area.

Within the general Waimea area, over 140 claims for *kuleana* parcels were made. Nearly all of these claims were for house lots or cultivated sections (Haun et al. 2003). Of the land commission awards reviewed by Kelly and Nakamura (1975:30), over 20% were issued to persons with non-Hawaiian surnames, such as James Hall (LCAw. 672), John Davis (LCAw. 989), Edmund Bright (LCAw. 986), and William French (LCAw. 4885 and 4886). And of six *kuleana* awarded in the area bordering Pu'ukapu (Figure 12) to the west (in Paulama and Pukalani *'ili*) four (67%) were to individuals with non-Hawaiian surnames (A. D. Allen, John Collins, William Hughes, and John Thomas).

In contrast to the situation within greater Waimea, the current study area is a portion of a concentrated set of *kuleana* that were awarded to eighteen Hawaiian individuals (Table 1 and Appendix A). The Parcel 017 portion of the current study area is the northeastern-most of eighteen 3 acre rectangular lots that are laid out in a 3 (north/south) by 6 (east/west) grid pattern (see Figure 12); and the easement portion of the current study area are sections of two named roads/trails that were part of network of such pathways that appear to have provided access within and around the subdivision-like concentration of *kuleana* parcels. Twelve smaller (0.25-acre) lots span the southern perimeter of the subdivision, abutting LCAws. 3685:1, 4227:1, 4210:1, and 4130:1 to the north (see Figure 2). *Kuleana* awardee-ship of these twelve lots directly corresponds to twelve of the eighteen larger 3-acre parcels (Mahoe, Paukumoku, Kalua, Kaohimaunu, Naihe to Mauae, Kualehelehe, Imoehalau to Nakuala, Mahuka to Kalua, Mana, Kanakaole, Kaina to Kanekuapuu, and James Hanehane) (Figure 13). Based on the *Māhele* testimony, the small lots appear to have been awarded as house lots and the large parcels as agricultural fields.

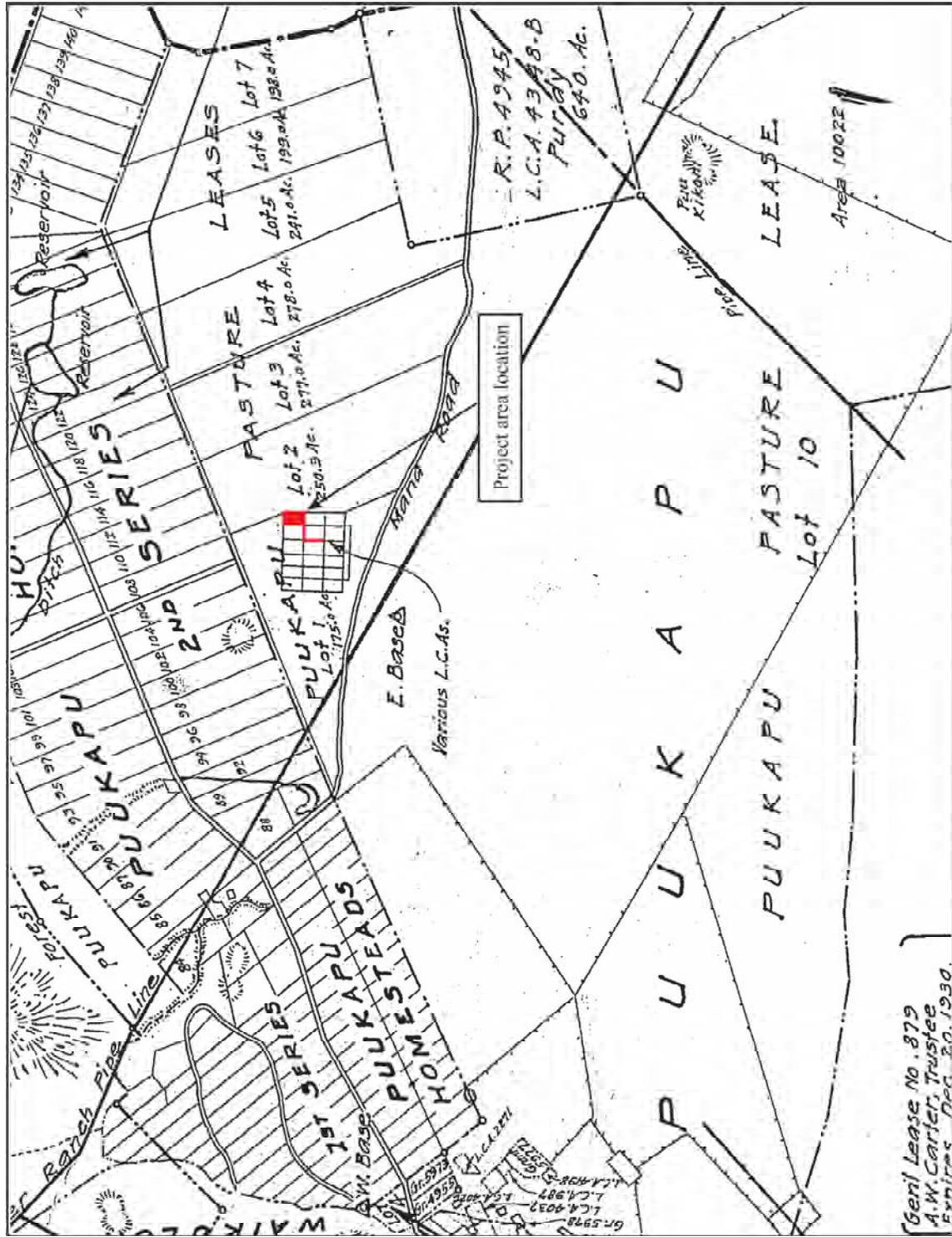


Figure 12. Plat Map 404 (by R. Lane, April 1928) showing current project area in red.

Table 1. Land Commission Awards in immediate vicinity of project area.

<i>LCAw. #</i>	<i>Claimant</i>	<i># of Apana</i>	<i>Acreage</i>	<i>House Lots</i>	<i>Houses</i>	<i>Crops Grown</i>
4230	Kukahekahe**	2	5.25	1	1	Taro
3686	Moluhi**	2	5.94	1	2	—
3923	Naihe to Mauae*	2	3.23	1	—	Banana
4212	Kualehelehe*	2	3.24	1	1	Taro
3733	Imoehalau to Nakuala*	2	3.23	1	1	Taro, banana, <i>māmaki</i>
3672	Mana*	2	3.23	1	2	Taro
4183	Kaluahinenui and Kanaue**	2	4.87	1	2	<i>Kou</i> , sugarcane
3842	Paukumoku*	2	3.24	1	2	Taro, <i>māmaki</i>
4218	Kaohimaunu*	2	3.23	1	-	Taro
3675	Mahuka to Kalua*	2	3.24	1	1	Taro, banana
4210-B	Wawaeluhi to Mokuhia	1	3.0	0	0	Sugarcane, <i>Māmaki</i> , Taro, banana
4214	Hanehane, James*	2	3.24	1	1	Taro
4183-B	Kanaue	1	3.0	0	0	Taro, banana, potato, sugarcane
3685	Mahoe*	2	3.24	1	1	Taro, banana, Irish potato, sugarcane
4227	Kaulunui**	2	5.8	1	2	Taro
4210	Kalua*	2	3.247	1	1	Sugarcane, <i>Māmaki</i> , Taro, banana
4130	Kanakaole*	2	3.24	1	2	Taro, potato, sweet potato
4132	Kaina to Kanekuapuu*	2	3.24	1	1	Taro, sugarcane, potato

* Awardees with corresponding 0.25 acre lots.

** House lot awarded at different location.

— Not specified in testimony.

2. Background

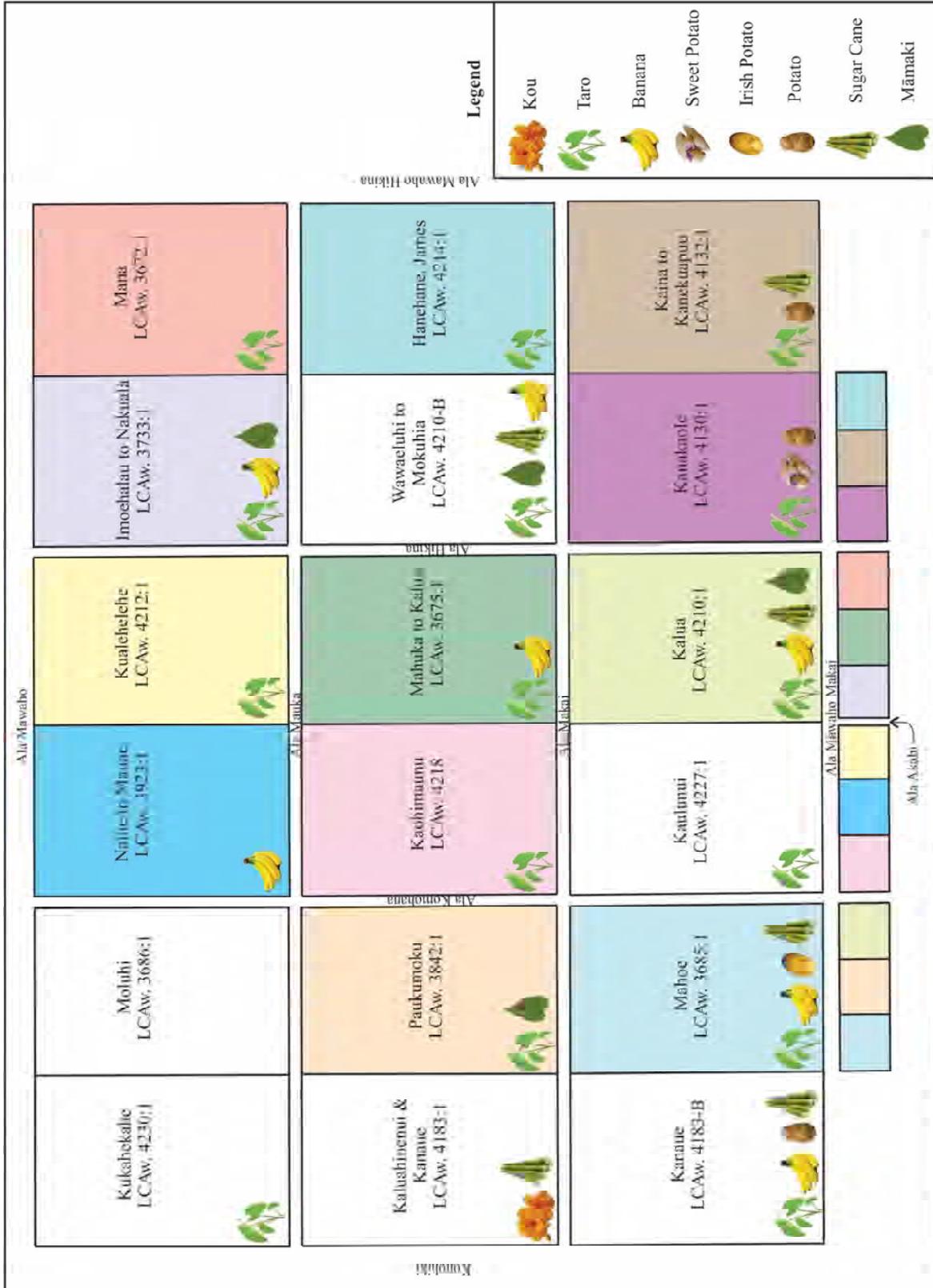


Figure 13. Map showing corresponding agricultural and house lot *kaleana* parcels.

A review of the *Māhele* testimony provides information about land use activities as well as land tenure. Of the eighteen awarded *kuleana*, only two did not include a house lot *apana*. Of the sixteen awards that included house lots, four were at location other than the immediate study area (not part of the clustered set of LCAw.). Of the twelve house lots that do correspond with a proximate agricultural lot, six of them were identified as enclosed, partially enclosed, or in the process of being enclosed. Three of those house lots contained two houses, seven included a single house, and one testimony failed to clarify whether or not a house was present. The information contained within the testimony about cultivation indicates that taro was the most prevalent of the crops, having been farmed on fifteen of the lots. Aside from taro, seven claimants farmed banana, four grew *māmaki*, six cultivated sugarcane, three raised an unspecified variety of potato, one produced sweet potato, one propagated the Irish potato, one stated growing *kou*, and two of the testimonies mention the cultivation of an unspecified crop (see Figure 13). This variety of farming activity is not surprising, considering that a great deal of Waimea’s history is extensively rooted in agricultural activities, encouraged by an ideal *kula* growing environment.

Four of the claimants specify that they had acquired the claimed lands during Keōpūolani’s reign (1795-1819), one after the death of Keōpūolani (after 1823), and one received their land during the time when Ka’ahumanu was the Prime Minister (1824-1832). Ten of the claimants had received their lands from Mōluhi (the *konohiki* at the time of the *Māhele*) and two from Kainea (a former *konohiki* of Pu’ukapu during the time of Kalaimoku ca. 1824-1833).

The Parcel 017 portion of the current study area is one of two *apana* (LCAw. 3692:1) that were awarded to Mana, whose claim to the Land Commission was for a house lot measuring 40 fathoms by 40 fathoms and for an agricultural area in the forest containing 12 *kihapai* belonging to himself and another men within which *kalo* was farmed. Mana referred to the location of his house lot as being at “Kaohia muli” [possibly kaohiaula c.f. Imoehalau testimony for LCAw. 3733] (Appendix B). *Apana* 1 of Mana’s awarded (a portion of the current project area) was a rectangular 3.0 acre agricultural lot, and then second was a ¼ acre house lot. A map of LCAw. 3672 (Figure 14) shows Mana’s *Apana* 1 being bordered by Imoehalau’s property to the west, and by a road “Ala Mawaho [Hikina]” to the east. Another road, “Ala Mawaho” is shown extending along the northern boundary of the *apana*, and a third road, “Ala Mauka,” is depicted along the southern boundary of the *apana*. *Apana* 2 was a smaller, square, 0.25 acre house lot situated at the southern boundary of the larger, agricultural lots, being bordered to the north by “Ala Mawaho Makai,” to the east by “Ala Hikina,” and to the west by another *kuleana* house lot which was awarded to Mahuka [to Kalua] (see Figure 14). According to the testimony, *Apana* 2 was entirely enclosed, and contained two houses for Mana (see Appendix B). Mōluhi claimed to have given this land to Mana in 1833.

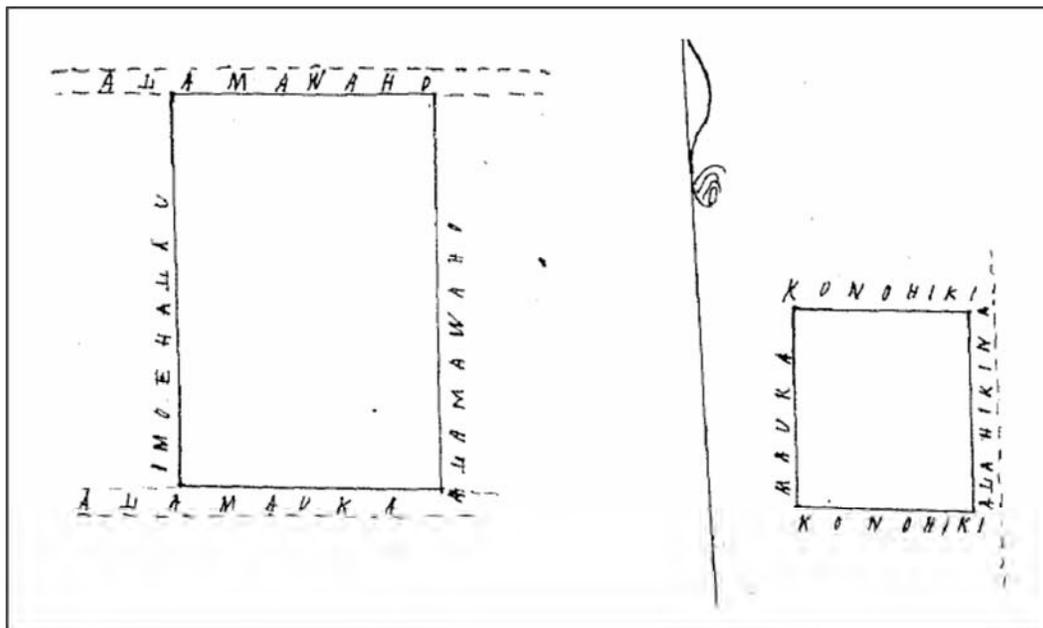


Figure 14. Map of LCAw. 3672 to Mana showing house lot *Apana* 2 (on right) and agricultural lot *Apana* 1 (on left) with adjacent named roadways (portions of current study area).

2. Background

This concentration of the eighteen agricultural *apana* and twelve residential *apana* represents 18 of the 20 awarded *kuleana* within Pu‘ukapu. Upon reviewing all of the *Māhele* testimony there are enough discrepancies and potential place name inconsistencies to raise suspicion as to whether the awarded lots were the actual lands that the awardees had been living on, or whether the awarded lots represent an attempt on the part of the *konohiki* and others to consolidate the population. The highly structured grid network of agricultural plots and house lots with interconnected roadway is not typical of a Hawaiian settlement area, but rather may be an example of an early attempt at community planning. In either case, this is a seemingly unique set of *kuleana* awards and ultimately reflects the spatial organization of, if not older, a middle nineteenth century Hawaiian community.

According to boundary commission documents (taken from Maly and Maly 2004), the *konohiki* Moluhi [Mooluhi] was born and raised in Pu‘ukapu, as were his parents and uncles. Moluhi indicated that “Puukapu is a kupono of Waimea Ahupuaa, my father had charge of it, the present King owns it...” He had become the *konohiki* of Pu‘ukapu during the time of the missionaries [1820] upon his father’s death. Moluhi specified that the boundaries of Pu‘ukapu that he had described during his 1866 testimony were the same boundaries he had always known from the time of his ancestors.

To the southeast of the current project area lies a 640 square foot parcel of land, LCAw. 4348-B, issued to Harry Purdy, one of the first cowboys in Hawai‘i, and a close cohort of John Parker of Parker Ranch. Harry Purdy hailed from Ireland and was a man of many names, including Jack Purdy, William Warren, and William Wallace. Eventually Purdy migrated to Hawai‘i Island, where he became a skilled bullock hunter (Bergin 2004). Initially, Purdy was supposed to lease over a thousand acres of land from Leleiohoku, however, in 1851 the King compromised Purdy’s claim, issuing him 640 acres (one square mile) around his existing house, Po‘o Kanaka (see Figure 10).

One year later, John Palmer Parker, the founder of the legendary Parker Ranch, purchased 640 acres of land right next to Purdy’s lot. This became the nucleus of early ranching operations for Parker Ranch. A family home, dubbed “Hale Mānā” was constructed not long after the purchase was complete. According to Bergin (2004), Parker’s entire ranching staff was comprised of Hawaiians. Parker’s homestead expanded, and a “saddle house/blacksmith shop, a barn for bullock wagons and plows, and a stone-enclosed meat house adjacent to a small household dairy” were constructed, as was an “outdoor cooking *hale* combined *imu* and smokehouse,” and two cisterns composed of stone and mortar (Bergin 2004:152). Upon John Parker’s death in 1868, the spacious homestead was divided between his son, John Palmer Parker II, and his grandson, Samuel Parker Sr., who retained Hale Mānā. Later, Samuel purchased Jack Purdy’s 640 acre lot and graciously left five acres of it to the Purdy family so they could maintain their homestead at Po‘o Kanaka. This lot eventually became a part of Parker Ranch. Harry Purdy passed away in 1886, and was buried on his property.

By the 1870s, Waimea had five stores and a hotel (Haun et al. 2003). The economy became cash based and taxes were collected. Foreigners controlled much of the land and most of the businesses, and the native population was largely dependent on these foreigners for food and money (Haun et al. 2003). In 1867 the population of Waimea was estimated to be only four hundred people (Haun et al. 2003). By the early 1900s, Parker Ranch, which had begun operations in the 1830s, was under the direction of Alfred W. Carter, and it had expanded to include over 100,000 acres, acquiring most of the land around Waimea where the ranch headquarters were located (Haun et al. 2003). Cattle ranching was now the major industry in Waimea. Also in the early 1900s the Waimea Homesteads (located within Pu‘ukapu to the north of the current project area) were created by the Territory of Hawai‘i and sold as house lots (Soehren 1981) and other Pu‘ukapu lands under the jurisdiction of the newly formed (in 1920) Hawaiian Home Commission were leased as pasture lots. By 1928 the area surrounding the current study area was leased as Pasture Lot 1 (see Figure 12).

Beginning in 1941, months before the bombing of Pearl Harbor, the U.S. Army established an infantry headquarters in the Pu‘ukapu area of Waimea (Bergin 2006). After the United States formally entered WWII, the earlier Army presence in Waimea expanded into one of the largest multi-force (adding the Navy and Marines) U.S. military camps (Camp Tarawa) and training bases in the Pacific. Large areas of the town and the surrounding pastures were turned over to the U.S. Government for campsites that housed approximately 20,000 soldiers and as firing ranges for the training U.S. Marines (Brundage 1971). By 1945, the U.S. Military had begun to leave the town and life in Waimea soon returned to its small pre-war population that was largely dependent upon the cattle industry.

Following the war, in 1950, many of the pasture leases reverted back to the Hawaiian Home Commission and by 1952 with the assistance of Parker Ranch beneficiaries moved onto large pasture lots (Bergin 2006:68). It was not until 1964 that the post-statehood Department of Hawaiian Home Lands (DHHL) further divided the pasture lots into smaller parcels.

PREVIOUS ARCHAEOLOGICAL STUDIES

Only a small number of archaeological surveys have been previously conducted in the immediate vicinity of the current project area. Carson (2006), Rechtman and Prasad (2006), Rechtman (2009 and 2013b) conducted archaeological inventory surveys within Pu'ukapu Ahupua'a, and Soehren (1981) conducted an archaeological reconnaissance survey within the Waimea Homesteads. None of these studies identified any archaeological resources (Figure 15, Table 2).

Other archaeological work within the Waimea area has included several studies of the Lālāmilo agricultural fields, a large complex of Precontact agricultural features and associated habitations that were used into Historic times (c.f. Barrera 1993; Clark 1981; Clark et al. 1990, Clark and Kirch 1983; Erkelens 1993; Haun et al. 2003; Rechtman 2000) (see Figure 16 and Table 2). These studies were all located to the south and west of the current project area, outside of downtown Waimea. Feature types identified within the field system include terraces, mounds, enclosures, field boundaries (*kuaiwi*), irrigation ditches (*'auwai*), stone walls, platforms, walled terraces, C-shapes, U-shapes, modified outcrops, surface hearths, L-shapes, cairns, pond fields, and various other miscellaneous types (Haun et al. 2003). The area of the agricultural fields was later used for military training and cattle ranching. Sites and features related to those uses are interspersed with the Precontact agricultural fields and habitations (Haun et al. 2003).

Thompson and Rosendahl (1992) conducted an archaeological inventory survey of seven parcels for the potential location of the North Hawai'i Community Hospital. All of these parcels were located to the west of the current project area on TMK: (3) 6-7-02. Four of the parcels examined contained the remains of a Precontact *'auwai* system (Site 16095) and one of the parcels contained the remains of an agricultural complex (Site 18054). Both sites were interpreted as part of the Lālāmilo Field System. Subsurface testing conducted at Site 16095 revealed no cultural material, but produced a radiocarbon sample from the base of one of the *'auwai* with a calibrated age range of A.D. 770 to 1020.

In 1998, International Archaeological Research Institute (Erkelens 1998) conducted an archaeological survey and subsurface testing of the 385-acre Waimea Town Center property for Parker Ranch (located to the southwest of the current project area on TMK: (3) 6-7-02). They located five sites including three nineteenth century house lots (including two LCAw. parcels and a Grant parcel) covering an area of 26.6 acres (Site 8812), a Historic cemetery (Site 19416), and four Historic structures grouped into three sites (Sites 19417, 19418, 19419). Twenty-four backhoe trenches were excavated at the five recorded sites. The skeletal remains of two individuals and a large number of Historic artifacts were discovered during the subsurface excavations. This led the researchers to suggest that there was the likelihood of encountering more unmarked burials within the study area during ground disturbing activities and further monitoring and burial testing was recommended for the study area. The additional work did not result in any additional findings (Magnuson and Athens 2001).

Wolforth (1999) later conducted archaeological data recovery excavations at Site 16095 on TMK: (3) 6-7-02:013, located to the southwest of the current project area. The primary focus of the excavations was to establish a date of construction and use of the *'auwai*. The system was also mapped in detail. Based on five radiocarbon dates, pollen and macrobotanical analysis, stratigraphic contexts, and historical documentary research, Wolforth (1999) concluded that the earliest use of the *'auwai* was likely sometime after A.D. 1175, and that it continued to be used into the Historic Period.

Clark and Rechtman (2004) conducted an archaeological inventory survey of a 9.18 acre property within the Waimea Homesteads located to the west of the current project area on TMK (3) 6-5-04:29, 30, and 50. This property was previously the subject of an archaeological reconnaissance survey conducted by Scientific Consultant Services in 2000 (Wolforth 2000). All cultural features that were previously located during the Wolforth study (2000) were relocated and evaluated by Clark and Rechtman (2004), and two additional cultural features were observed and documented as well. As a result of the inventory survey, Clark and Rechtman (2004) identified a single archaeological site (SIHP Site 24168) on Parcel 30 (LCAw. 3674 to Barenaba), consisting of a Historic dwelling and several associated features. According to Wolforth (2000), several decades prior to their archaeological survey, a burial was removed from its original location in Site 24168 and reinterred at a cemetery in the nearby town of Honoka'a. In addition, a partial burial was also inadvertently discovered in Parcel 29, located just south of Parcel 30. Site 24168 was deemed significant under Criterion E, and Clark and Rechtman (2004) recommended archaeological monitoring for any future ground disturbance activities associated with the project area.

In 2005, Burtchard and Tomonari-Tuggle (2005) reported on data recovery investigations at several sites within the Waimea Town Center development area. Their work was designed in a 1995 data recovery plan (Erkelens 1995) and was focused on gathering data on the development of the agricultural systems and associated habitations within

2. Background

their project area; more specifically, assessing the antiquity of irrigated fields on the Waimea plains. Burtchard and Tomonari-Tuggle (2005) concluded that while traditional agriculture may date back to the A.D 1400s in this area, it consisted on non-irrigated fields; and the formal irrigation systems that characterize the Waimea Agricultural System are a nineteenth century development associated with commercial agriculture.

Clark and Rechtman (2006) conducted an archaeological inventory survey of a roughly 13.6 acre property consisting of two adjacent land parcels located to the west of the current project area for the proposed development of a sports field complex for Parker School in Waimea. As a result of the survey, four archaeological sites were documented; a Historic wall segment (Site 26681), two sections of a Historic wall (Site 26680), an *'auwai* (Site 26682), and a wooden Historic structure likely associated with the U.S. Military (Site 26683). Four backhoe trenches were excavated, one of which yielded Historic cultural materials including fragments of a concrete flume section in the general vicinity of the *'auwai*, and a burned layer containing equine/bovine skeletal material and an intrusive pit, likely the result of refuse disposal methods which were common in the area. Sites 26680, 26681, and 26682 were deemed significant under Criterion D, and Clark and Rechtman (2006) recommended no further preservation work. Clark and Rechtman (2006) considered Site 26683 significant under Criteria A and D, and recommended that the site be documented by an architectural historian prior to any structural or cosmetic alteration.

In 2009, Cultural Surveys Hawai'i, Inc. (Yucha et al. 2009) conducted an archaeological inventory survey of portions of several parcels comprising almost 9 acres of the Waimea Trails and Greenway Project along the banks of Waikoloa Stream. Three sites or portions thereof SIHP Site 50-10-06-26871 were identified and recorded as two remnant features (a paved roadway and a concrete stream crossing associated with WWII Camp Tarawa activities. SIHP Site 26872 was assigned to a water transport ditch known historically as Akona's *'auwai*. SIHP Site 26873 is a relatively intact concrete stream ford and associated roadway whose location matches that of the "Road to Puopleu depicted on a 1908 map. Sites 26871 and 26872 were determined significant under Criteria A and D, and Site 26873 was determined significant under Criterion D. The concrete stream crossing of Site 26871 and Site 26872 were slated for preservation, and no further work was the recommendation for the other features and sites.

International Archaeological Research Institute Inc. (Rieth and Filimoehala 2012) conducted archaeological monitoring and emergency data recovery associated with the construction of the Parker Ranch Connector Road. They documented 126 archaeological features at sixteen sites, the bulk of which were Precontact hearths at temporary habitation sites associated with dryland agricultural activities. Some historic material was encountered and believed to either be associated with nineteenth century residences or US Military Camp Tarawa. No burials were encountered. International Archaeological Research Institute Inc. also conducted archaeological monitoring for the Luala'i Subdivision located to the south of the current study area (O'Day and Rieth 2007); burials were found during that work.

Rechtman Consulting, LLC prepared a burial site component of a preservation plan for Site 29368 (Rechtman 2012). The skeletal remains of a single adolescent individual were displaced during electrical trenching activities under a corner of Parker School's Theater Building. The displaced skeletal remains were recovered from the trench, and the in situ portion of the skeleton was identified and documented. A decision was made in consultation with SHPD and the Hawai'i Island Burial Council (HBIC) to preserve the remains in place, and to install a preservation buffer around the site extending four feet beyond the location of the remains. A sign indicating the presence of culturally-sensitive resources was also to be posted at the preservation area, and the location of the burial was to be maintained by Parker School.

In 2013, Rechtman Consulting, LLC (Rechtman 2013) conducted an archaeological inventory survey of a roughly 5 acre property at TMK: (3) 6-5-03:002 for the proposed development of a commercial/retail center, located to the west of the current project area. The inventory survey identified two previously documented Historic Period sites; Remnant features associated with U.S. Military Camp Tarawa (Site 26871), and remnants of the Akona *'Auwai* and a side branching ditch (Site 26872), initially recorded during an inventory survey by Cultural Surveys Hawai'i in 2009 (Yucha et al. 2009). Based upon the likelihood of encountering future Historic properties and burial sites, both of which have been inadvertently discovered in the surrounding area, SHPD recommended an archaeological monitor be present for all ground disturbing activities.

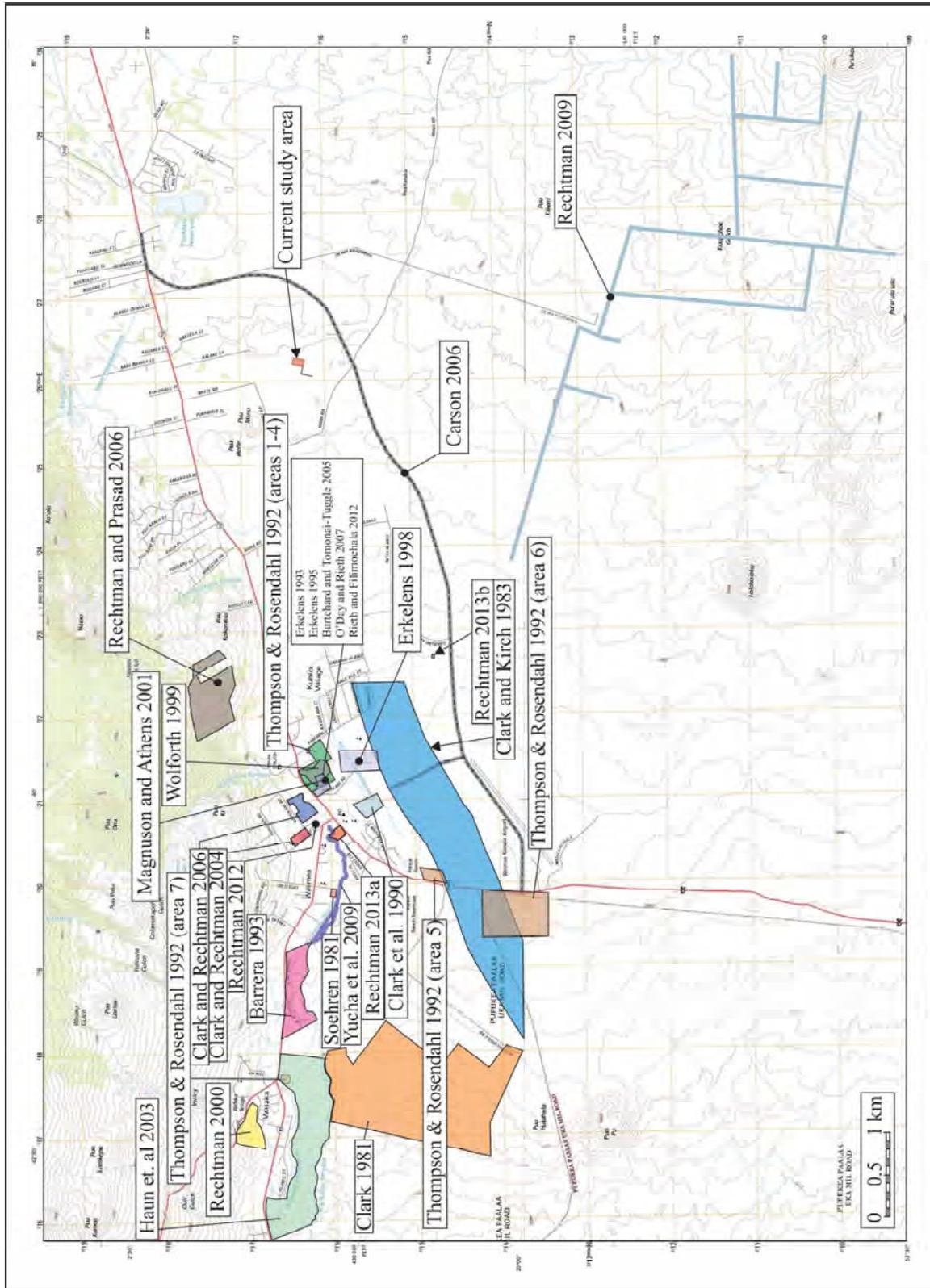


Figure 15. Previous archaeological studies conducted in the vicinity of the project area.

Table 2. Previous archaeological studies within the vicinity of the project area

<i>Year</i>	<i>Author</i>	<i>Area</i>	<i>Type of Study</i>
1981	Clark	Lālāmilo	Archaeological Survey
1981	Soehren	Waimea	Reconnaissance Survey
1983	Clark and Kirch	Waimea	Archaeological Investigation
1990	Clark et al.	Waikōloa	Testing and Data Recovery
1992	Thompson and Rosendahl	Waikōloa, Pu‘ukapu, Lālāmilo	Inventory Survey
1993	Erkelens	Waimea	Preliminary Report
1993	Barrera	Lālāmilo	Inventory Survey
1995	Erkelens	Kamuēla/Waimea	Data Recovery
1998	Erkelens	Waimea	Reconnaissance Survey
1999	Wolforth	Waikōloa	Data Recovery
2000	Rechtman	Lanikepu	Inventory Survey
2001	Magnusen and Athens	Waimea	Burial Testing/Monitoring
2003	Haun et al.	Kawaihae	Inventory Survey
2004	Clark and Rechtman	Waimea	Inventory Survey
2005	Burtchard & Tomonari-Tuggle	Kamuēla/Waimea	Data Recovery
2006	Clark and Rechtman	Waimea	Inventory Survey
2006	Carson	Waimea	Assessment
2006	Rechtman and Prasad	Pu‘ukapu	Arch/Cultural Assessment
2007	O’Day and Rieth	Kamuēla/Waimea	Monitoring
2009	Rechtman	Pu‘ukapu	Assessment
2009	Yucha, et al.	Lālāmilo	Inventory Survey
2012	Rechtman	Waimea	Burial Preservation Plan
2012	Rieth and Filimoehala	Waimea	Monitoring
2013a	Rechtman	Waimea	Inventory Survey
2013b	Rechtman	Pu‘ukapu	Archaeological Study

3. PROJECT AREA EXPECTATIONS

Based on a review of the previous archaeological research, historical documentary research, and settlement patterns for the South Kohala District, a set of general archaeological expectations for the current study area can be derived. These expectations are then refined based on the specific history of the project area’s land use, garnered from our review of the *Māhele* records. We know that the Parcel 017 portion of the current study area was claimed as agricultural fields and the easement portions of the current study area were named roadway in the middle nineteenth century. We also know that the current study area is a portion of a larger historical landscape that appears to be a somewhat unique concentration of both residential and agricultural *kuleana* lots. It is our expectation that if any archaeological features (agricultural in nature with respect to Parcel 017) are present that attest to this former land use, they would be visible on the surface as rock construction. It is possible that such features may have been buried during twentieth century pasture improvement activities as much of this area was used as pasture land by Parker Ranch. It is also remotely possible that Precontact sites, including trails, temporary habitations, and agricultural sites may have been present within the project area. However, the documented extensive land use throughout the late nineteenth and twentieth centuries would have significantly altered the Precontact landscape.

4. FIELDWORK

Fieldwork for the current project was conducted on February 20th, 2014 by Ashton Dircks Ah Sam, B.A., J. David Nelson, B.A., and Robert B. Rechtman, Ph.D.

METHODS

Fieldwork included a systematic survey of the surface of the study area and subsurface testing (mechanical trenching) at selected locations. The entire study area was accessible, and the boundary corners were clearly marked with flagging tape and lath. Field workers walked pedestrian transects spaced 5 meters apart on the access easement and spaced 10 meters apart on the 3-acre (Parcel 017) portion of the study area. The ground surface was covered with a 20 centimeter-thick mat of kikuyu grass (*Pennisetum clandestinum*) that could have potentially hid small artifacts from view, but did not hinder the ability to identify constructed features. The survey area, significant landforms, and the five test trench locations were plotted on a scaled map of the project area using a Garmin HCx handheld GPS device (set to the UTM NAD 83 datum).

FINDINGS

As a result of the surface survey and the subsurface testing, no specific archaeological features were encountered within the study area. The background research indicates that the current study area is a portion of a seemingly unique *Māhele*-era cultural landscape. The boundaries of current Parcel 017 appear to be coterminous with former LCAw. 3672:1 awarded to Mana in 1848 and the proposed access/utility corridor traverses portions of two roadways/trails that were known in the middle nineteenth century as *Ala Mauka* and *Ala Hikina*. These map features were part of a cohesive set of Land Commission Awards for twelve house lots and eighteen farm lots laid out in a grid pattern. Given the seeming uniqueness of this landscape we felt it appropriate to assign an SIHP site number (Site 50-10-07-30084) to the entire complex of parcels and the road/trail network that make up this landscape. Current Parcel 017 (Former LCAw 3672:1) and the access and utility easement (over portions of the former *Ala Mauka* and *Ala Hikina*) comprise elements of Site 30084. As no archaeological features were observed within the study area, it is the map boundaries (Figure 16) of these former nineteenth century cultural landscape features that constitute the various elements of Site 30084.

Test Trenches

Five trenches (Table 3) were mechanically excavated as a part of the current study to test for the presence of buried cultural deposits and to examine the subsurface stratigraphy. The trenches were excavated in the south (BT-1 and 2), central (BT-3), and northern (BT-4 and 5) sections of the 3-acre parcel portion of the area, and were placed on topographical undulations in an attempt to increase the chance of encountering a subsurface deposit (Figure 17). The trenches were excavated with a mini excavator equipped with a 24 inch bucket. Excavation of the trenches did not reveal the presence of any subsurface cultural material or deposits, but did exemplify the subsurface stratigraphy. All of the trenches contained similar soil profiles. The results and stratigraphic profile drawings and photographs for each of the excavated trenches are presented below.

Table 3. Backhoe trenches excavated within the current study area.

<i>Trench #</i>	<i>Location within Parcel 017</i>	<i>Length</i>	<i>Depth</i>	<i>Bedrock Present</i>
BT-1	Southeast	4 meters	1.4 meters	No
BT-2	South/central	4 meters	1.4 meters	No
BT-3	West/central	3 meters	1.65 meters	Yes
BT-4	Northwest	2.5 meters	1.3 meters	No
BT-5	Northeast	3 meters	1.4 meters	Yes

4. Fieldwork

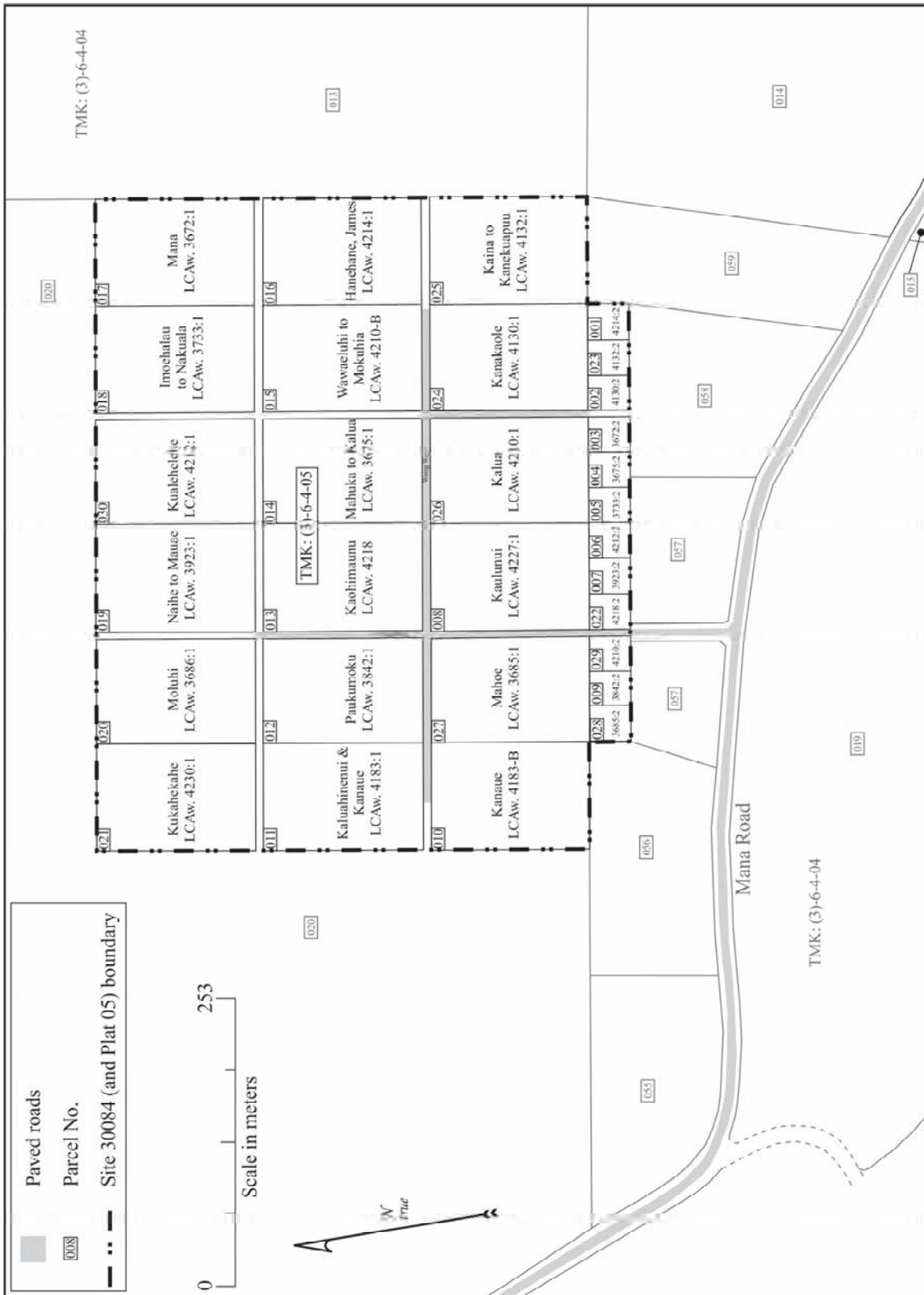


Figure 16. SIHP Site 50-10-07-30084.

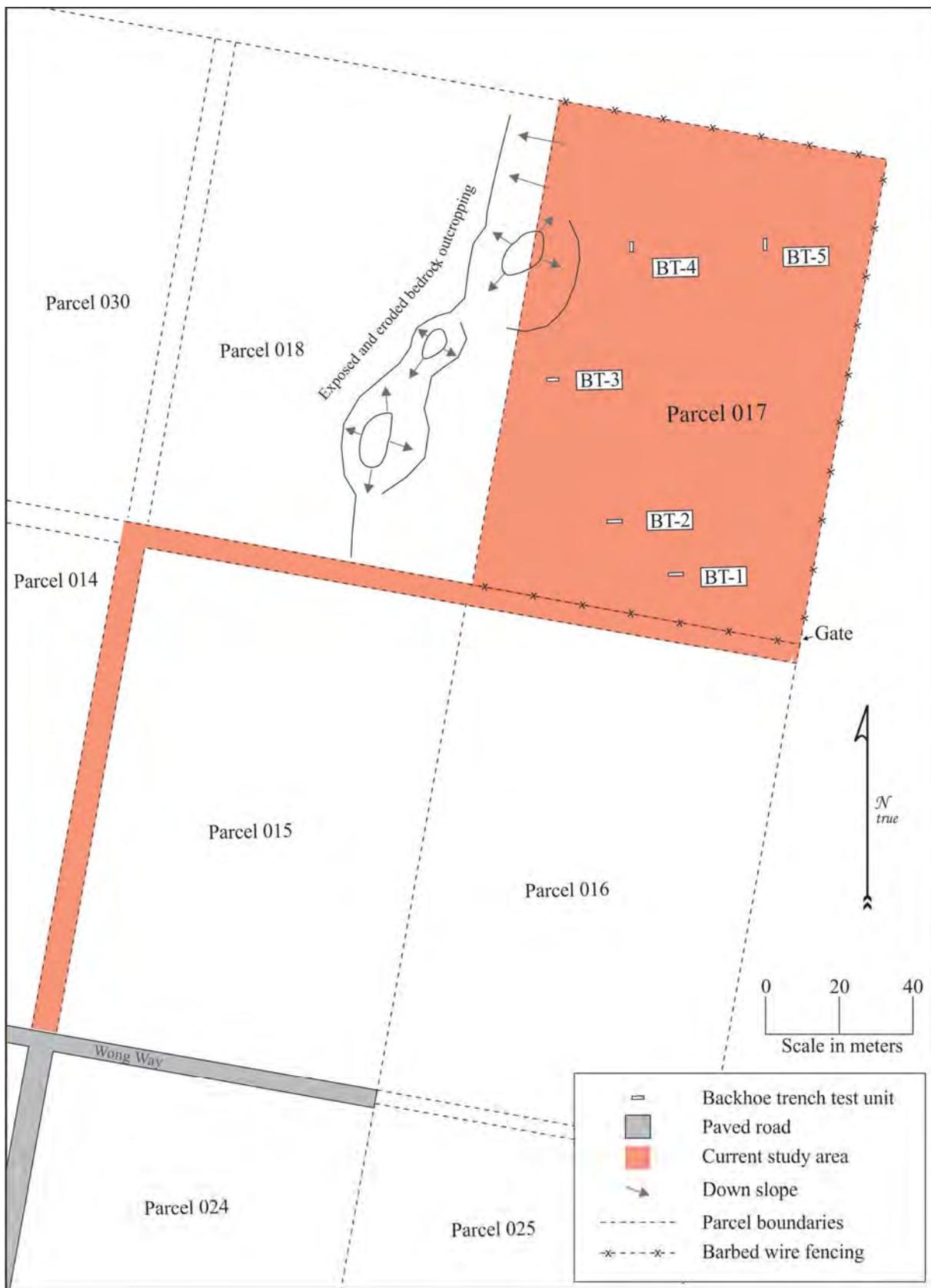


Figure 17. Project area map.

4. Fieldwork

Backhoe Trench 1 (BT-1)

BT-1 was a four meter long by 1.4-meter deep trench located in the southeastern portion of the project area; ten meters north of the southern boundary (see Figure 17). The trench was excavated east/west in the open field. Excavation of BT-1 revealed three stratigraphic layers (Figure 18). Layer I, a roughly 15 to 20 centimeter thick humus layer, consisted of very dark brown (10YR 3/3) loam with grass rootlets. Layer II, an 80 to 85 centimeter thick soil layer, consisted of dark brown (10YR 3/3) silt loam with several grass rootlets present. Layer III, a 30+ centimeter thick in-situ soil development layer, consisted of dark yellowish brown (10YR 3/4) compact clay loam. No cultural material of any kind was observed within BT-1.

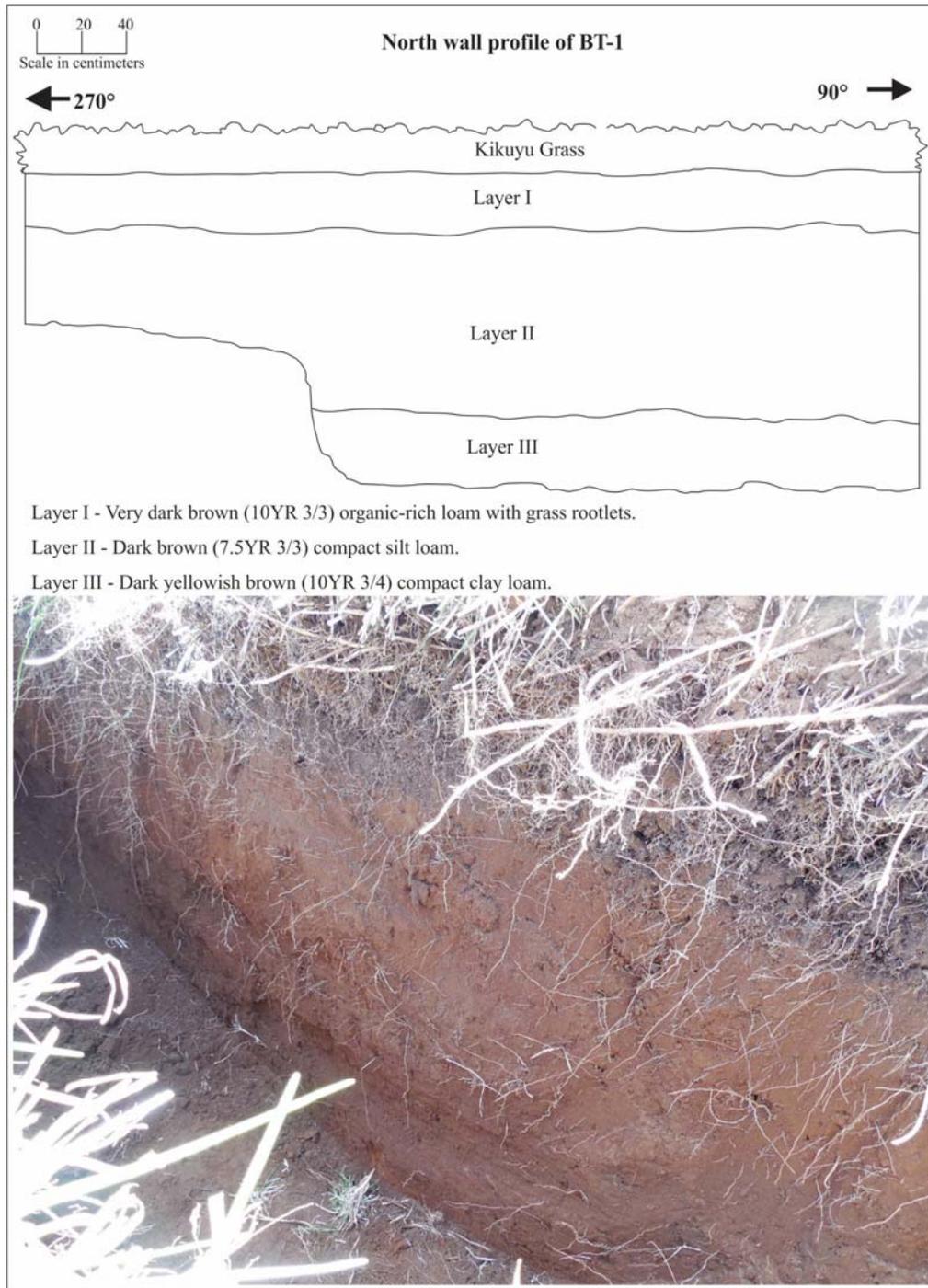


Figure 18. Stratigraphic profile drawing and photograph of BT-1, view to the northwest.

Backhoe Trench 2 (BT-2)

BT-2 was a four meter long by 1.4-meter deep trench located in the south/central portion of the project area; twenty-four meters north of the southern boundary (see Figure 17). The trench was excavated east/west in the open field. Excavation of BT-2 revealed three stratigraphic layers (Figure 19). Layer I, a roughly 15 to 20 centimeter thick humus layer, consisted of very dark brown (10YR 3/3) loam with grass rootlets. Layer II, a 60 to 70 centimeter thick soil layer, consisted of dark brown (10YR 3/3) silt loam with several grass rootlets present. Layer III, a 40+ centimeter thick in-situ soil development layer, consisted of dark yellowish brown (10YR 3/4) compact clay loam. No cultural material of any kind was observed within BT-2.

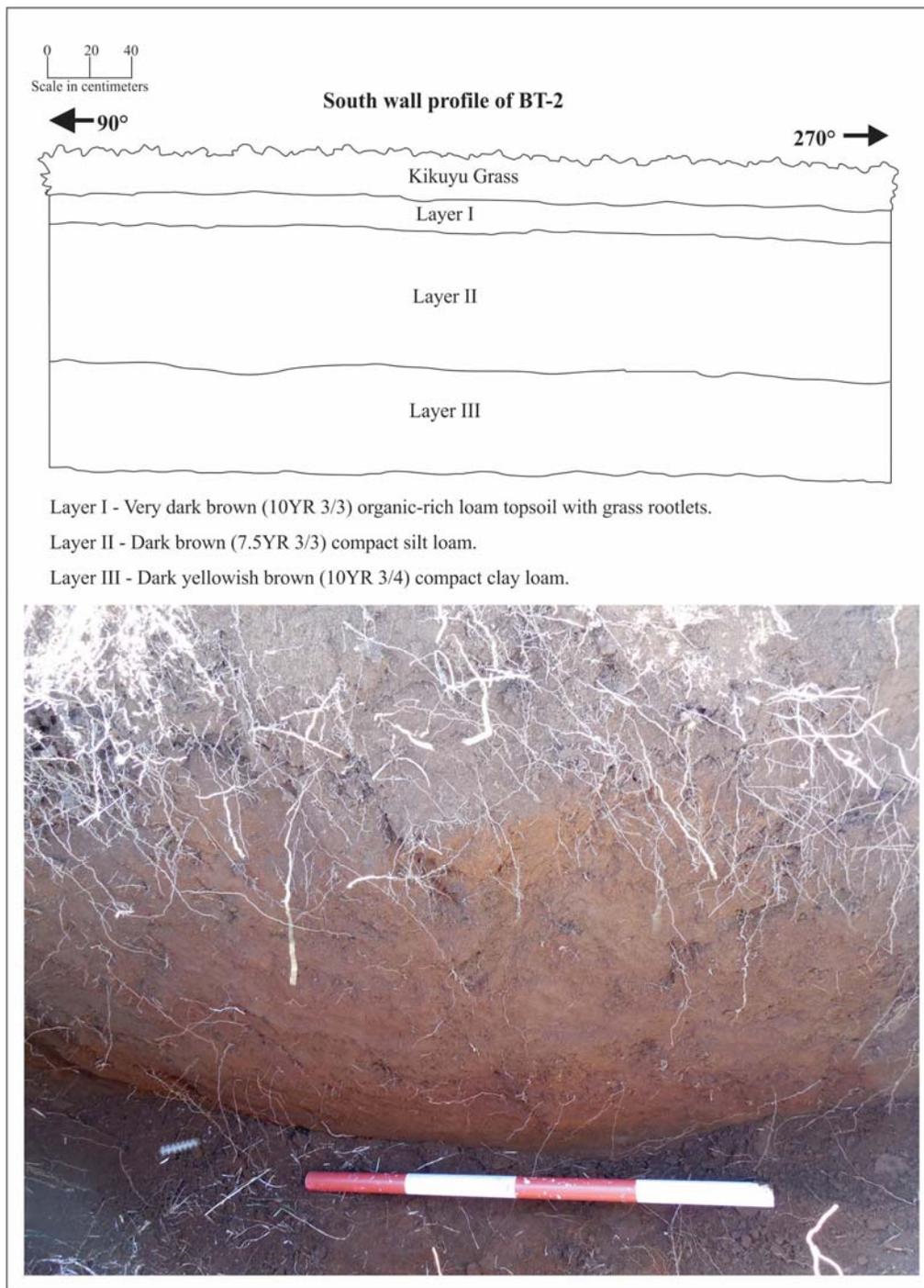


Figure 19. Stratigraphic profile drawing and photograph of BT-2, view to the south.

4. Fieldwork

Backhoe Trench 3 (BT-3)

BT-3 was a three meter long by 1.65-meter deep trench located in the west/central portion of the project area; fourteen meters east of the western boundary (see Figure 17). The trench was excavated east/west in the open field. Excavation of BT-3 revealed three stratigraphic layers (Figure 20). Layer I, a roughly 15 to 20 centimeter thick humus layer, consisted of very dark brown (10YR 3/3) loam with grass rootlets. Layer II, a roughly 50 centimeter thick soil layer, consisted of dark brown (10YR 3/3) silt loam with several grass rootlets present. Layer III, a 90+ centimeter thick in-situ soil development layer, consisted of dark yellowish brown (10YR 3/4) compact clay loam that was intermixed with broken 'a'ā bedrock at a depth of 1.15 meters below the surface. The unit terminated upon reaching bedrock, the presence of which may be due to the proximity to an elevated bedrock outcropping located a few meters to the northwest. No cultural material of any kind was observed within BT-3.

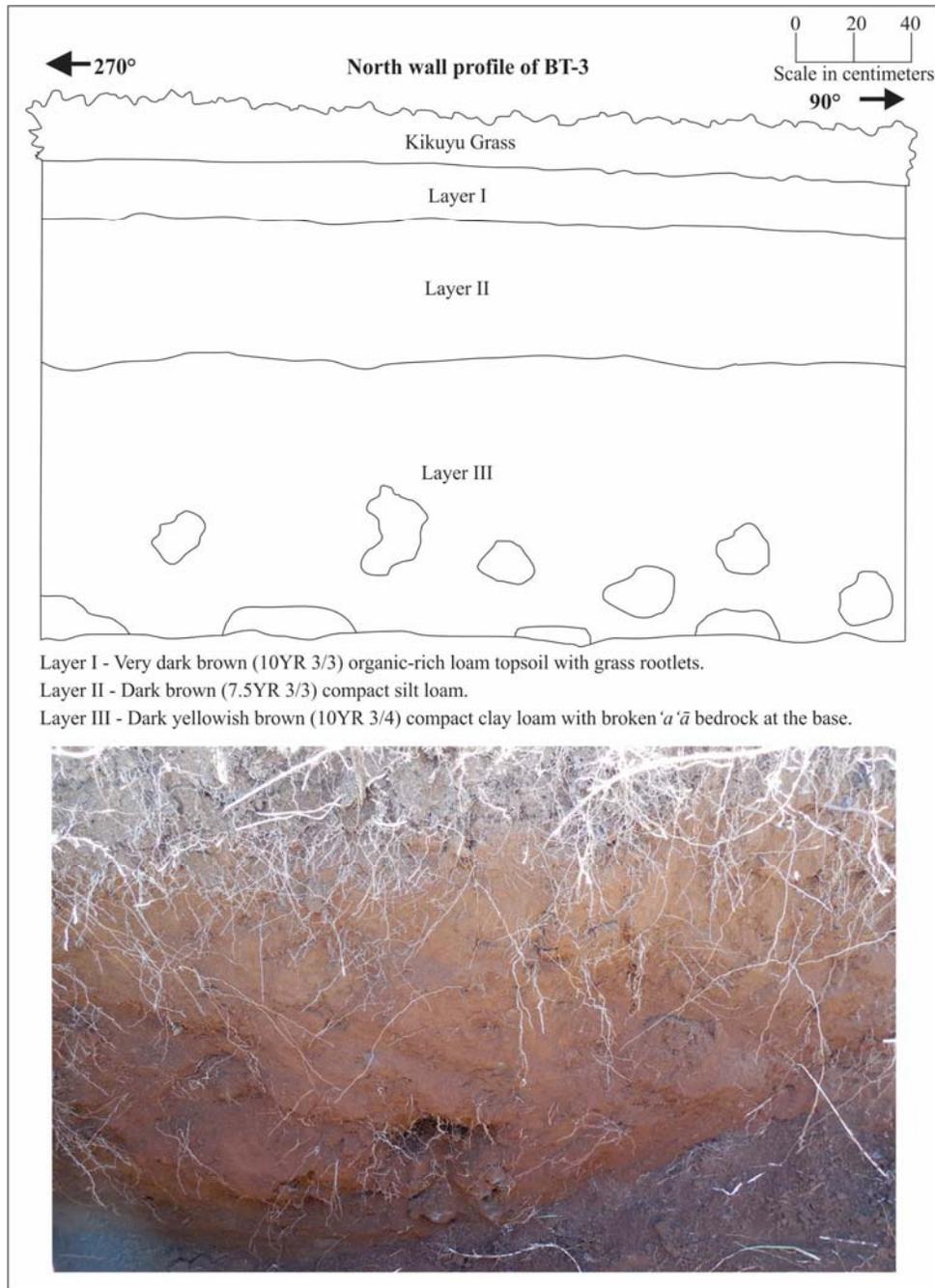


Figure 20. Stratigraphic profile drawing and photograph of BT-3, view to north.

Backhoe Trench 4 (BT-4)

BT-4 was a four meter long by 1.4-meter deep trench located in the northwestern portion of the project area; thirty meters south of the northern boundary (see Figure 17). The trench was excavated north/south in the open field. Excavation of BT-4 revealed three stratigraphic layers (Figure 21). Layer I, a roughly 15 to 20 centimeter thick humus layer, consisted of very dark brown (10YR 3/3) loam with grass rootlets. Layer II, a 60 to 65 centimeter thick soil layer, consisted of dark brown (10YR 3/3) silt loam with several grass rootlets present. Layer III, a 50+ centimeter thick in-situ soil development layer, consisted of dark yellowish brown (10YR 3/4) compact clay loam. No cultural material of any kind was observed within BT-4.

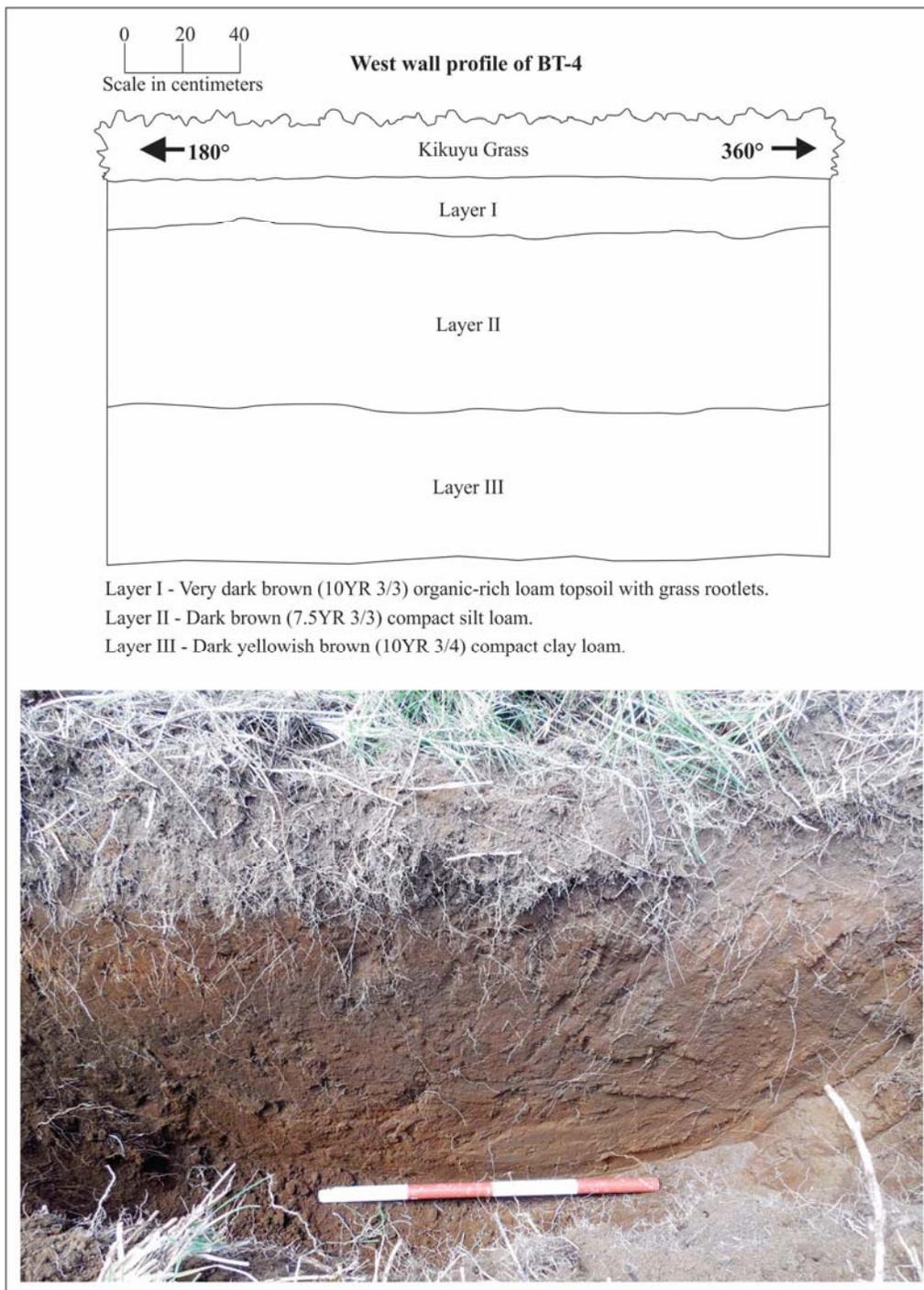


Figure 21. Stratigraphic profile drawing and photograph of BT-4, view to west.

4. Fieldwork

Backhoe Trench 5 (BT-5)

BT-5 was a three meter long by 1.65-meter deep trench located in the west/central portion of the project area; twenty-two meters west of the eastern boundary (see Figure 17). The trench was excavated north/south in the open field. Excavation of BT-5 revealed three stratigraphic layers (Figure 22). Layer I, a roughly 15 to 20 centimeter thick humus layer, consisted of very dark brown (10YR 3/3) loam with grass rootlets. Layer II, a roughly 60 centimeter thick soil layer, consisted of dark brown (10YR 3/3) silt loam with several grass rootlets present. Layer III, a 60+ centimeter thick in-situ soil development layer, consisted of dark yellowish brown (10YR 3/4) compact clay loam that was intermixed with broken 'a'ā bedrock at a depth of 1.4 meters below the surface. BT-5 is not within close proximity to the elevated bedrock outcroppings on the western portion of the project, but the presence of bedrock within the unit is representative of the undulating nature of the 'a'ā flow that lies beneath the soil.

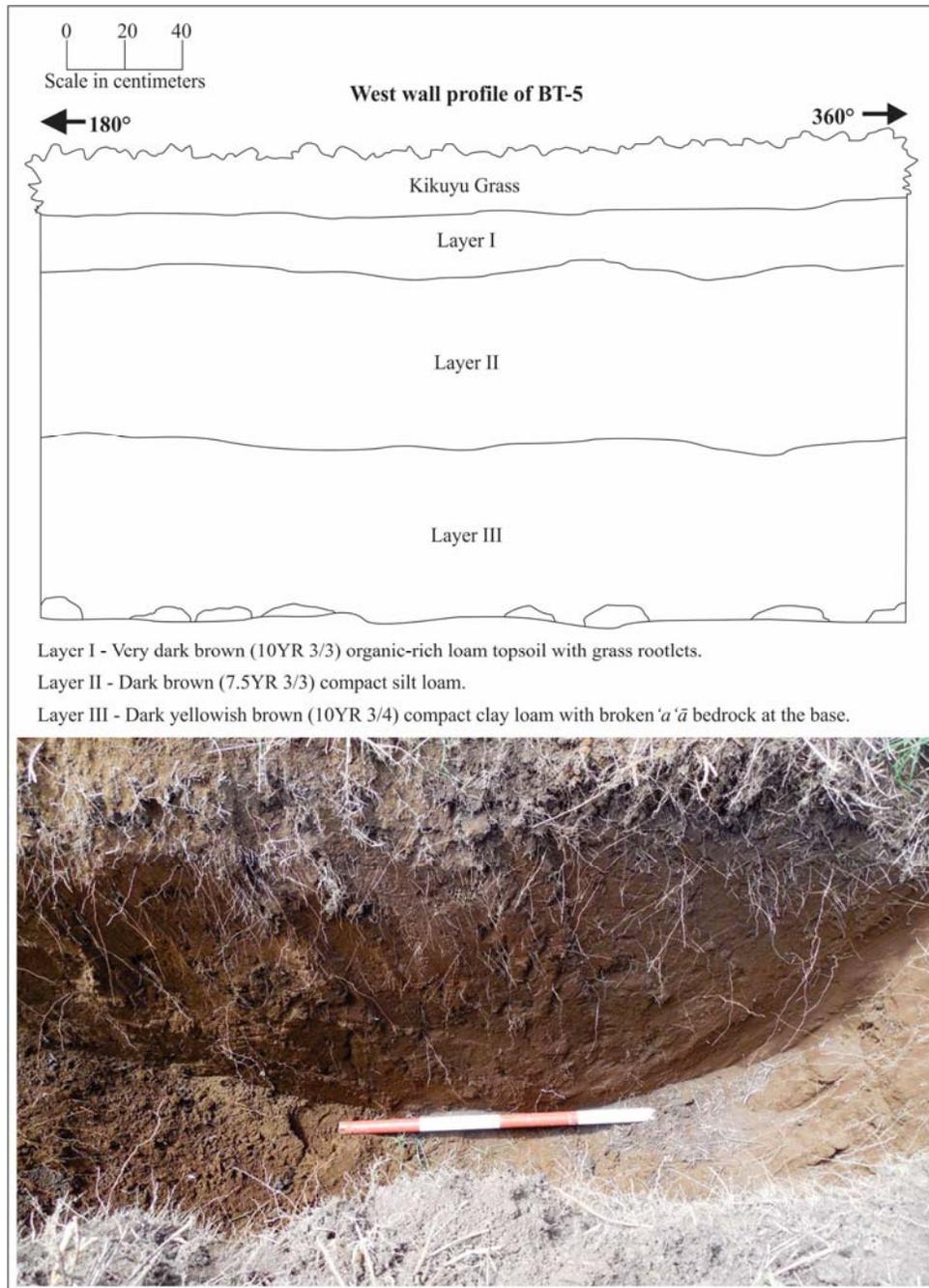


Figure 22. Stratigraphic profile drawing and photograph of BT-5, view to west.

5. CONSULTATION

To gain any further possible insights about the study area, Micah Kamohoalii, who wears many hats within Waimea's Hawaiian community (Cultural Chairman & Cultural Advisor with the Waimea Hawaiian Homesteaders' Association; Chief Executive Officer of Kihikihiniuakea Associates; Executive Director of KĪPU'UPU'U), was enlisted to consult with community members who may have genealogical ties to the *kuleana* awardees of SIHP Site 30084. The following individuals were contacted: Deirdre Bertelmann; Laua'enanuheaulula'au Bertelmann-Sanchez; Woodrow Kamohoalii Young; Kainoa Kamohoalii Hodson; and Queenie Dowsett, who shared that the bulk of the lands in the area were Parker Ranch lands and that her family, the Kauwe family also has family lands and burials in the Pu'ukapu and Mana areas. While most of those consulted (including Micah) recognized the awardee names as genealogical ancestors of theirs, no one had any specific knowledge about the seemingly unique spatial organization of the nineteenth century community within which their ancestors lived.

The members of the Bertelmann family that consulted provided names of current residents of Mana and the families that lived in the areas years ago, explaining that the land surrounding the current study area are DHHL land belong to the Kalani Schutte family. Kalani Schutte's widow Louella Spencer-Schutte is first cousins with Deirdre Bertelmann. These lands were mainly used for ranching. Parker Ranch owned and operated most of the lands in Mana area to the east, which were given to John Palmer Parker by Kamehameha I.

The Kamohoalii family members shared a section of a long *mele* (below) from their family collection that was written about Waimea, and speaks about Mana.

Kuleana i Māna ka makani Kolo 'āpu 'upu 'u
He makani kama 'aina nō Pu 'ukapu
ronmental Transect. Departmental Re 'O Maunakea i hānau i nā pu 'u kini lehu
'O Maunakea i hānau i nā pu 'u kini lehu
'O Makahalau, Pu 'u o Kale, Ka 'ali 'ali, iō Kamoku
E komo i ka 'āina o ke anu akua
I ka unu lā 'au o ke 'a 'ali 'i kū makani
Mai koi mai 'oe, he kuleana ko 'u e

They also acknowledged two awardees (Kaohimaunu and Naihe/Mauae) within the list of *kuleana* recipients within Site 30084 as ancestors of the Kamohoalii family. Woodrow shared that he traveled through this region on horseback as a child and into adulthood while getting to his family ranch, and related that the Mana area was mainly used for ranching, and that several family members worked for Parker Ranch

All of those consulted felt that the landscape that comprises Site 30084 is a culturally significant one and should somehow be kept intact. Others also related that where possible the nineteenth century street names should be used for the current roadways as they get built out within the community.

The primary author of the current report also spoke with Cynthia Spencer, (the widow of Merv Spencer) who owns and resides on the house lot awarded to Kualehelehe (LCAw. 4212:2). She also owns the adjoining house lot parcel awarded to Mauae (LCAw. 3923:2) along with both of the corresponding 3 acre lots (LCAw. 4212:1 and 3923:2). That these house lots and agricultural lots have remained linked in both cases suggests that perhaps Kualehelehe and/or Mauae was/were ancestor(s) of the Spencer family; Cynthia could not confirm this.

Mr. Steve Bowles, owner and resident of the agricultural *kuleana* lot awarded to Moluhi (the *konohiki* at the time of the *Māhele*) was also contacted. Mr. Bowles is a long time resident of Waimea and a history buff. He personally conducted research into the history of his "community" with respect to the seemingly unique nineteenth century use of residential and agricultural space as well as for roadway access and maintenance issues. Mr. Bowles felt that the orderly grid patterned organization of space did not necessarily reflect a pre-*Māhele* land use pattern, but rather was a creation of the *Māhele*.

6. SIGNIFICANCE EVALUATION AND TREATMENT RECOMMENDATIONS

The above-described archaeological site is assessed for its significance based on criteria established and promoted by the DLNR-SHPD and contained in the Hawai'i Administrative Rules 13§13-284-6. This significance evaluation should be considered as preliminary until DLNR-SHPD provides concurrence. For a resource to be considered significant it must possess integrity of location, design, setting, materials, workmanship, feeling, and association and meet one or more of the following criteria:

- A Be associated with events that have made an important contribution to the broad patterns of our history;
- B Be associated with the lives of persons important in our past;
- C Embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; or possess high artistic value;
- D Have yielded, or is likely to yield, information important for research on prehistory or history;
- E Have an important traditional cultural value to the native Hawaiian people or to another ethnic group of the state due to associations with traditional cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts—these associations being important to the group's history and cultural identity.

Table 3 presents a summary of the significance and proposed treatment for SIHP Site 30084, a discussion of which is found below.

Table 3. Site significance and treatment recommendations

SIHP Site No.	Function	Age	Significance	Recommended Treatment*
30084	Residential/agricultural	Historic	A,C,D,E	Preservation

SIHP Site 30084, as identified by lot boundaries and roadways, is a seemingly unique example of the organization of space within a middle nineteenth century Hawaiian community, the configuration of which may represent an attempt at intentioned community organization at a time when Hawai'i's traditional land tenure system was being radically altered. As such, this site would be considered significant under multiple criteria: A for the *Māhele* association, C for its uniqueness, D for the research value, and E for the cultural significance assigned by modern-day descendants of the *kuleana* awardees.

The current study area (Parcel 017 and the roadway easement) would be considered elements of Site 30084 as they are map features with locational integrity. As the intact nature of the map elements of this historic landscape is a key factor in this site's significance, the current study area would be considered as contributing to the overall site significance. However, as no specific archaeological resources were discovered within the current study area during the surface survey and subsurface testing, it is the conclusion of the current study that the development of Parcel 017 and the use of portions of former Ala Hikina and Ala Mauka for their intended purposes (access to a property) will have no effect on the integrity of Site 30084 as a historic property.

It is the recommendation of the current study that Site 30084 be preserved as a significant intact landscape by continuing to maintain the current parcel boundaries (prohibiting subdivision) and network of roadways. While it is recognized that preservation of the overall historic landscape is outside the scope of the current study, the following suggestions for future consideration are offered:

- 1) Use of the historic street names for newly built roads within the existing road rights-of-way and the possible renaming of existing roads,
- 2) Retention of current lot configurations, which are reflective of their nineteenth century pattern,
- 3) Nomination of Site 30084 to the both the State and National Registers of Historic Places.

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APPENDIX A —LCAW. MAPS FOR SIHP SITE 30084

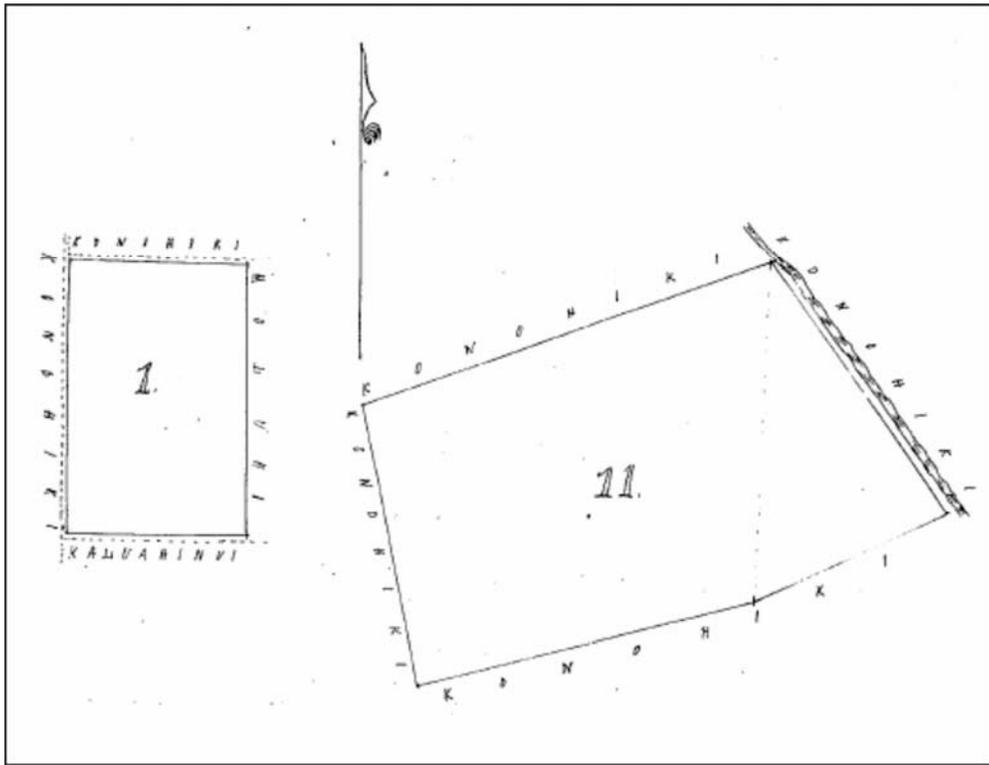


Figure A-1. LCAw. 4230:1 to Kukahekahe.

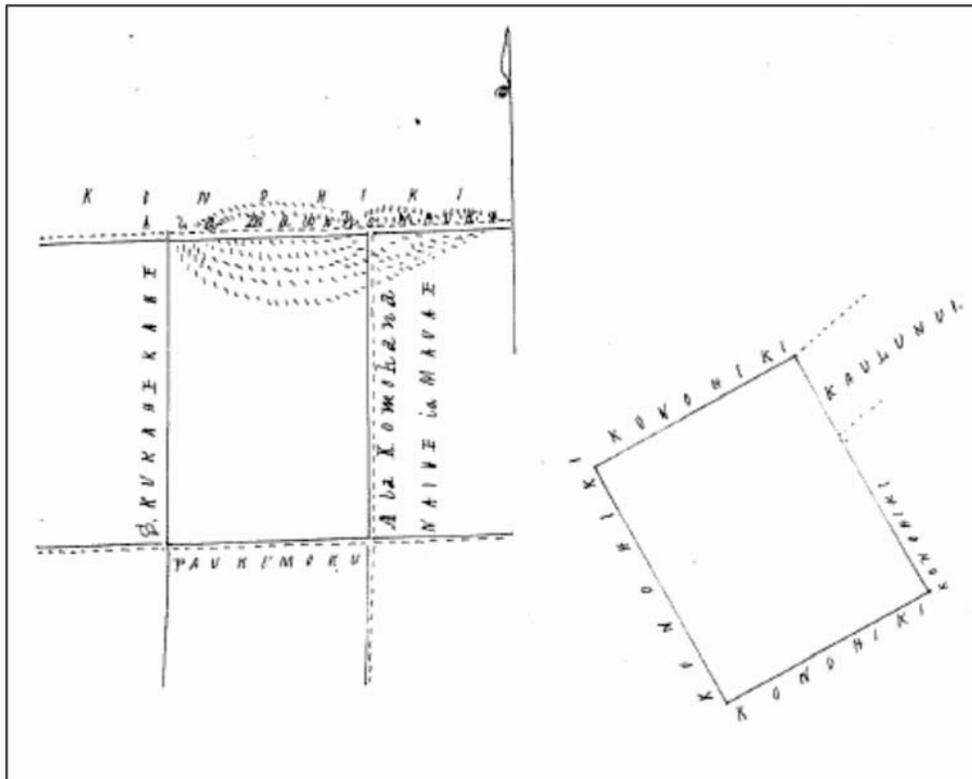


Figure A-2. LCAw. 3686:1 to Moluhi.

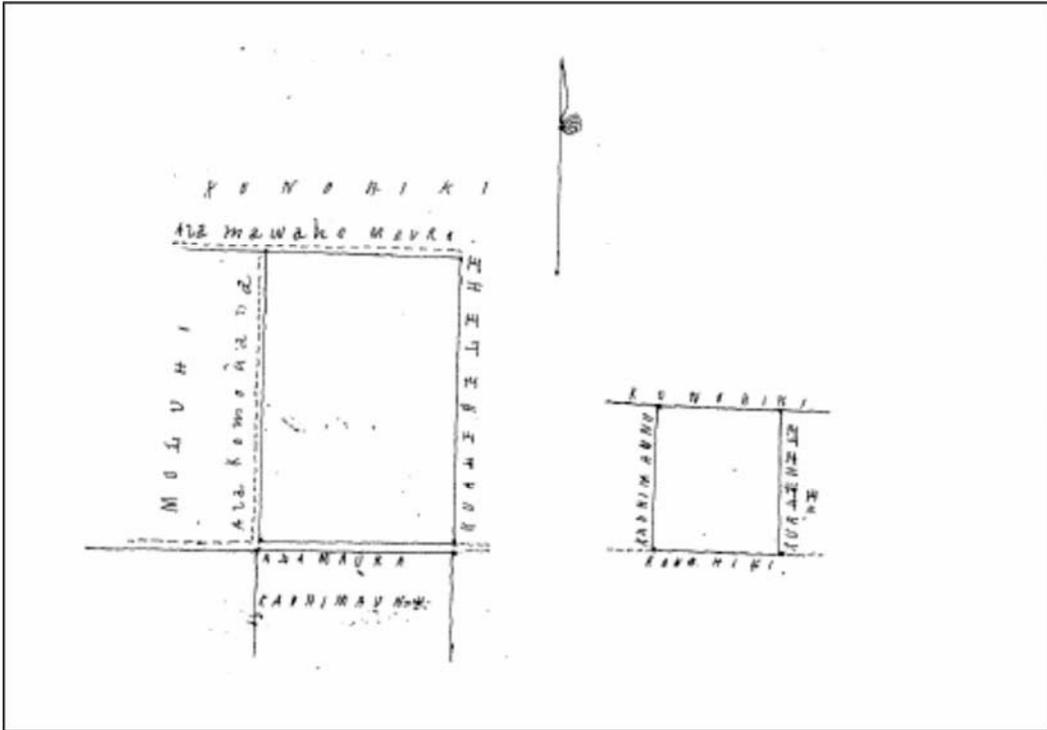


Figure A-3. LCAw. 3923:1 to Naihē to Mauae.

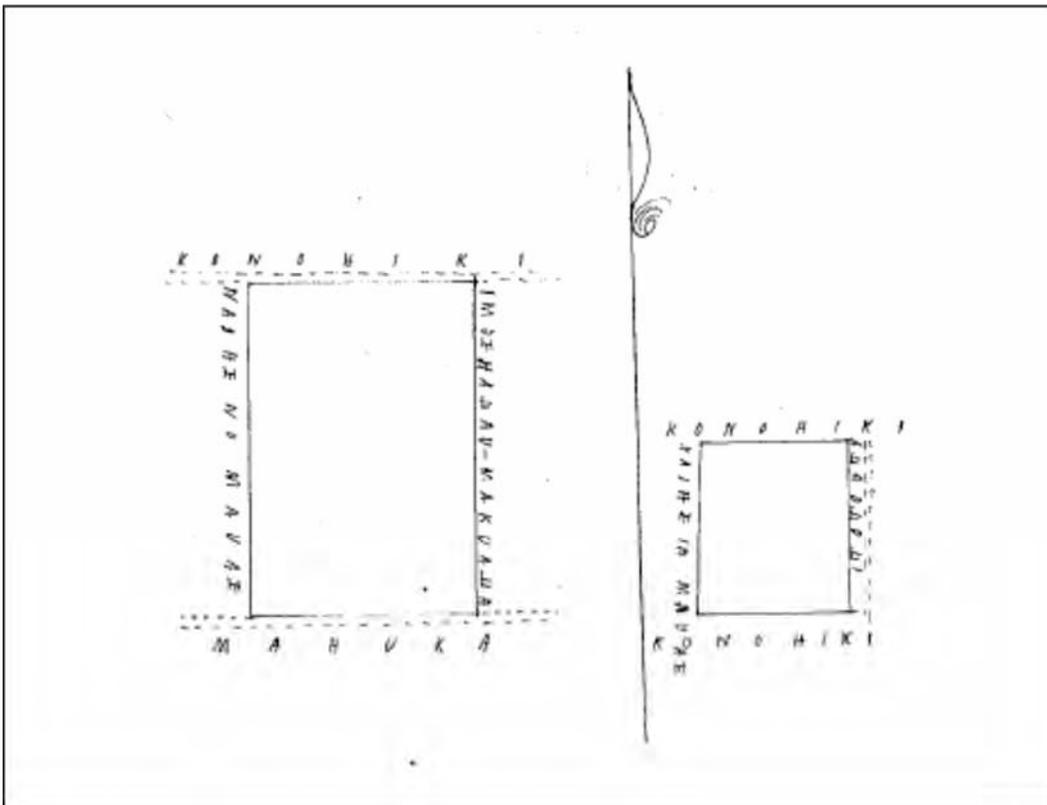


Figure A-4. LCAw. 4212:1 to Kualehelehe.

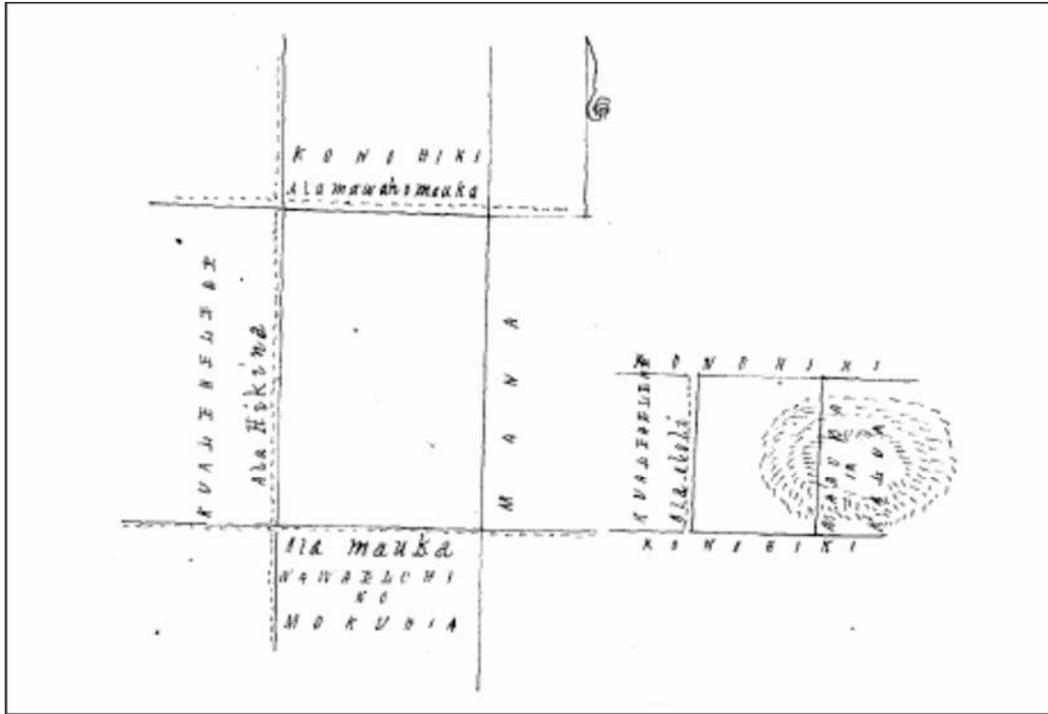


Figure A-5. LCAw. 3733:1 to Imoehalau to Nakuala.

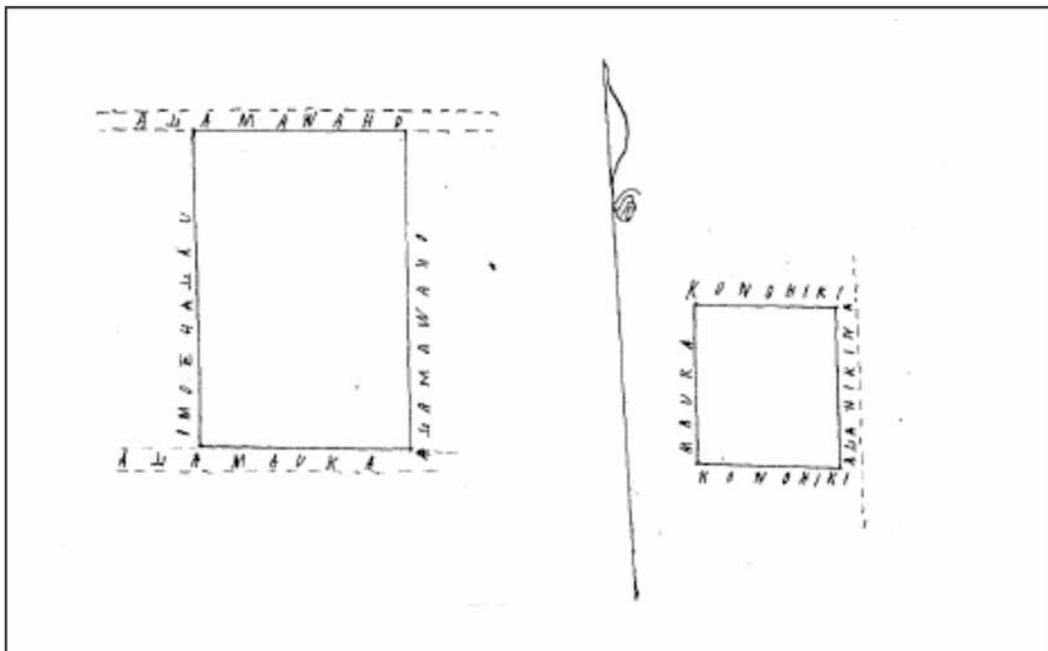


Figure A-6. LCAw. 3672:1 to Mana.

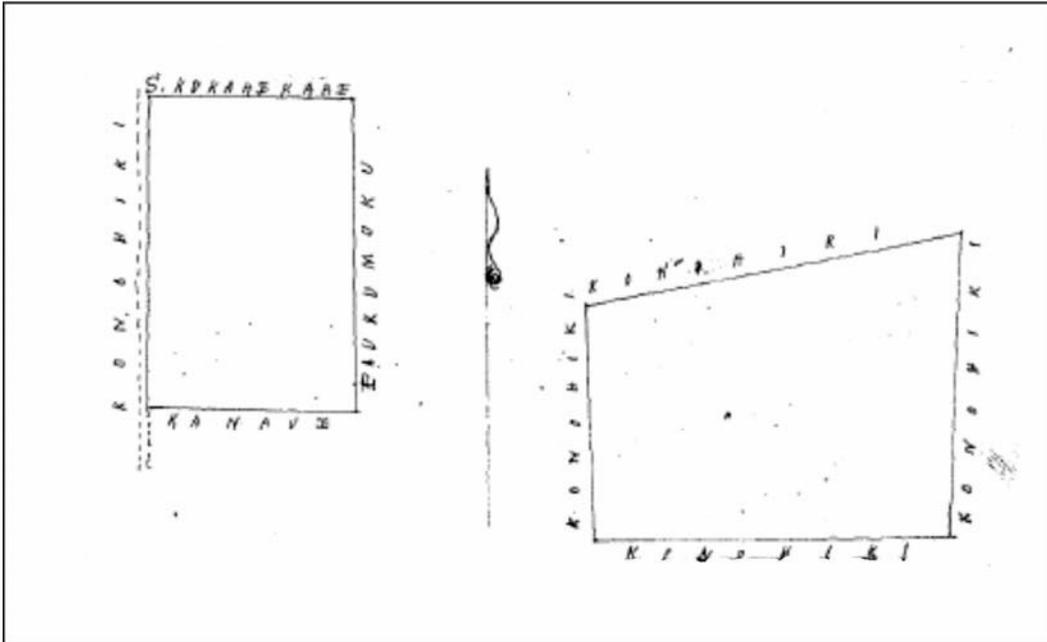


Figure A-7. LCAw. 4183:1 to Kaluahinenui & Kanaue.

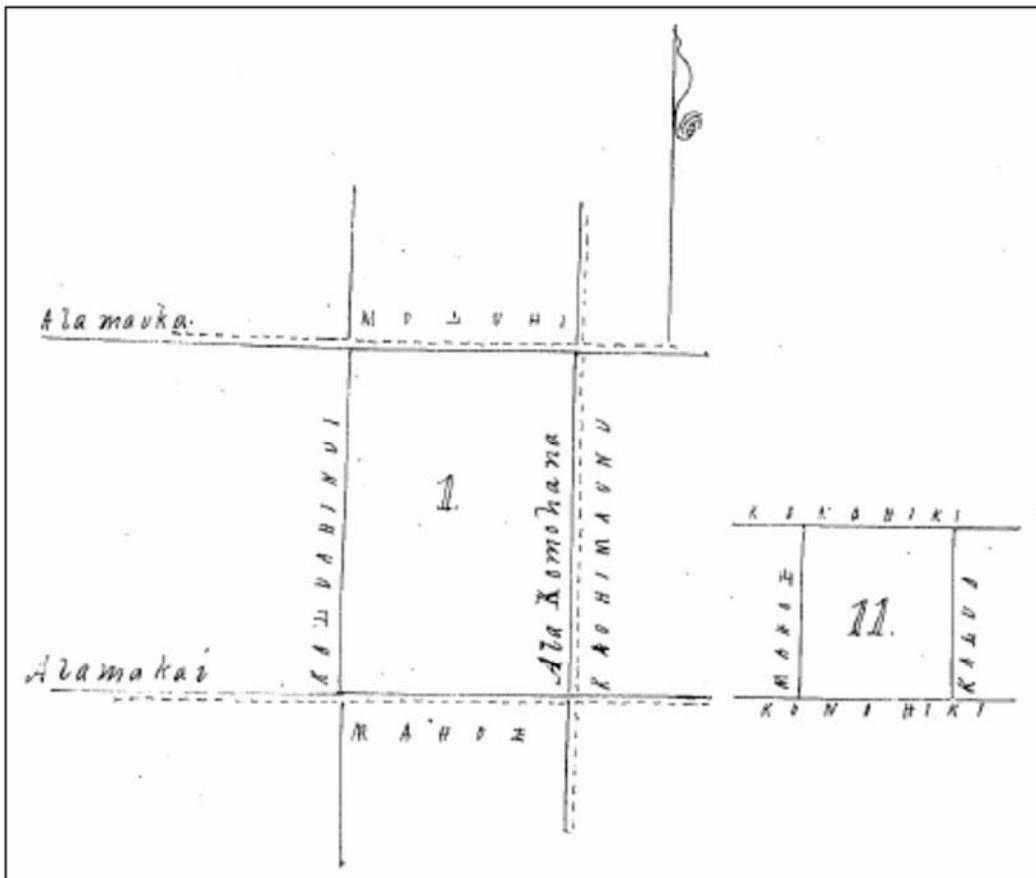


Figure A-8. LCAw. 3842:1 to Paukumoku.

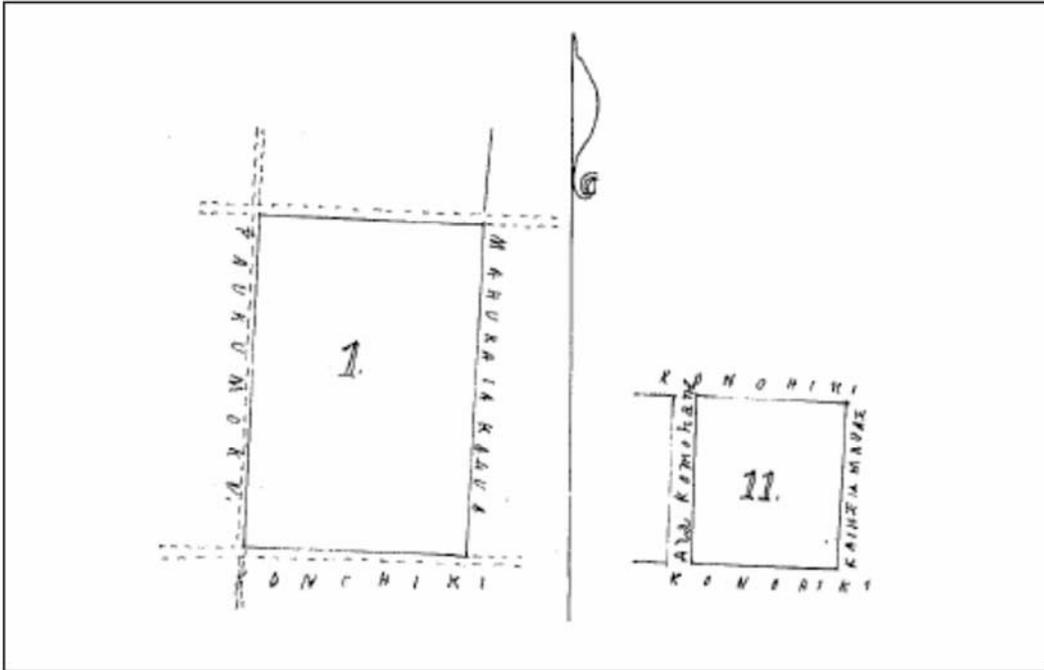


Figure A-9. LCAw. 4218:1 to Kaohimaunu.

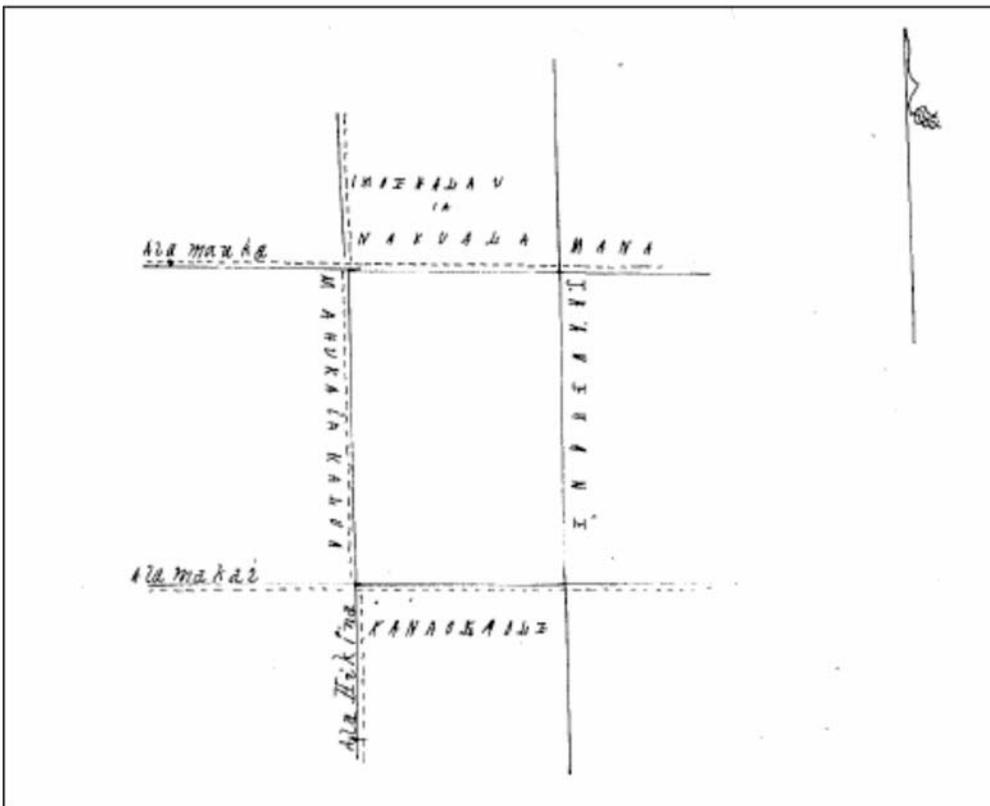


Figure A-10. LCAw. 4210-B to Wawaeluhi to Mokuhia.

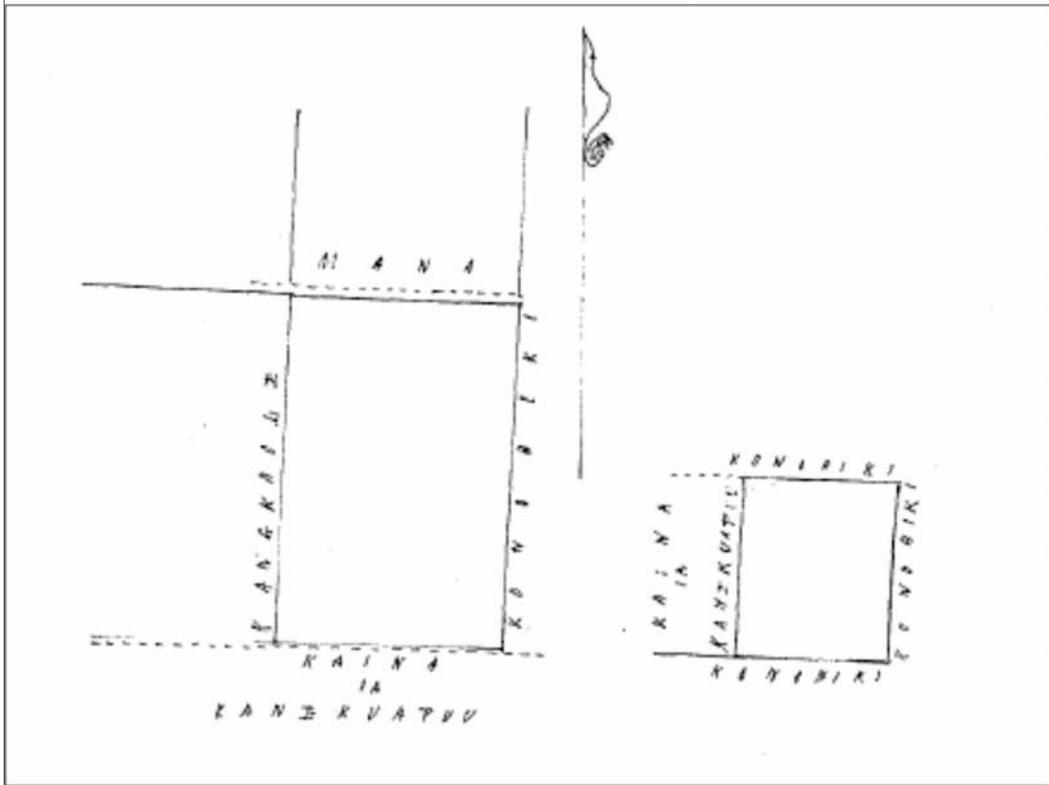


Figure A-11. LCAw. 4214:1 to Hanehane, James.

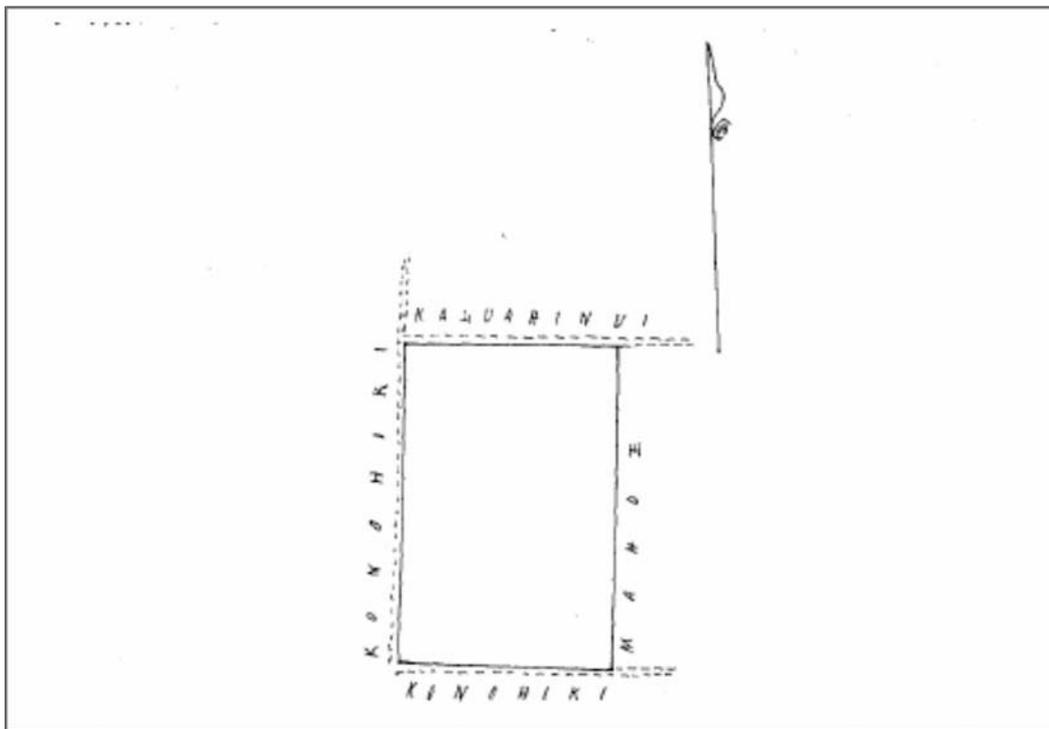


Figure A-12. LCAw. 4183-B to Kanaue.

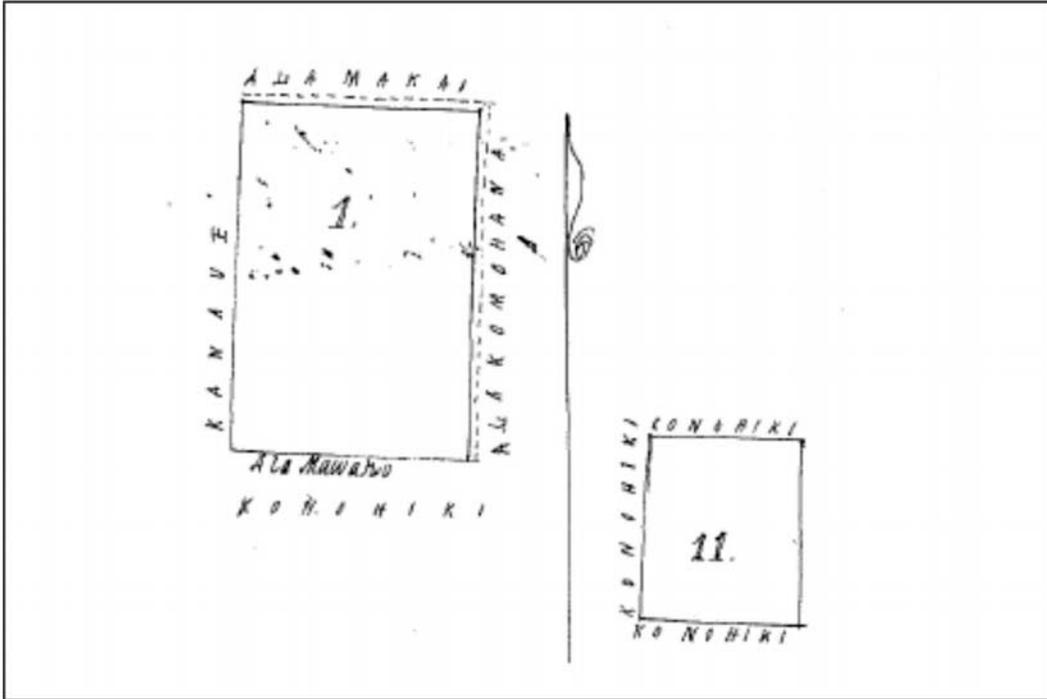


Figure A-13. LCAw. 3685:1 to Mahoe.

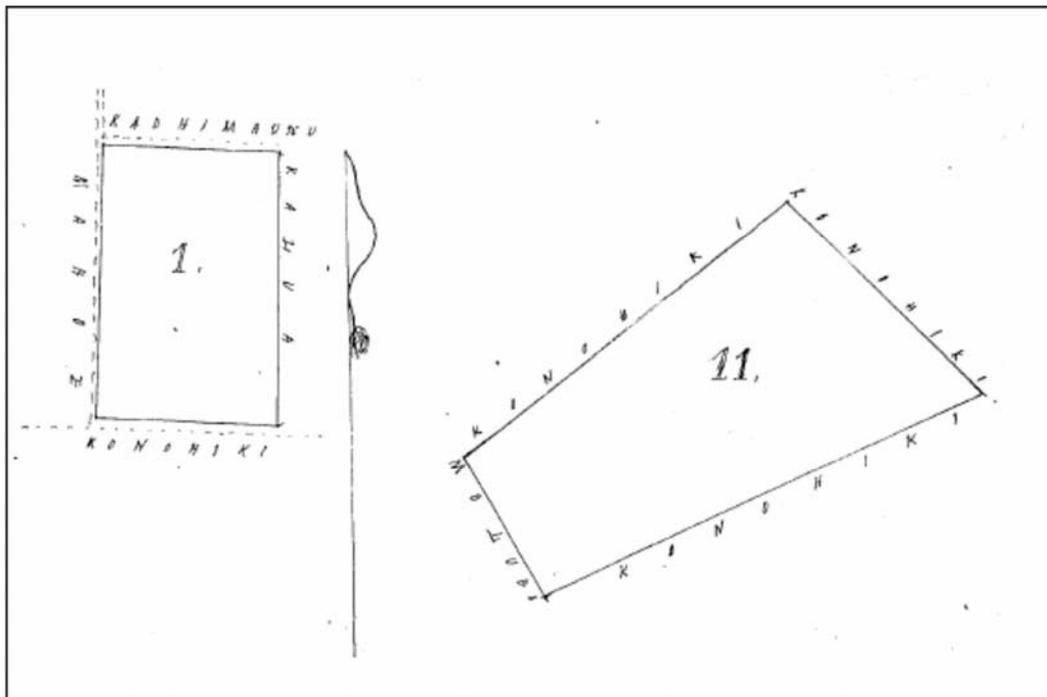


Figure A-14. LCAw. 4227:1 to Kaulunui.

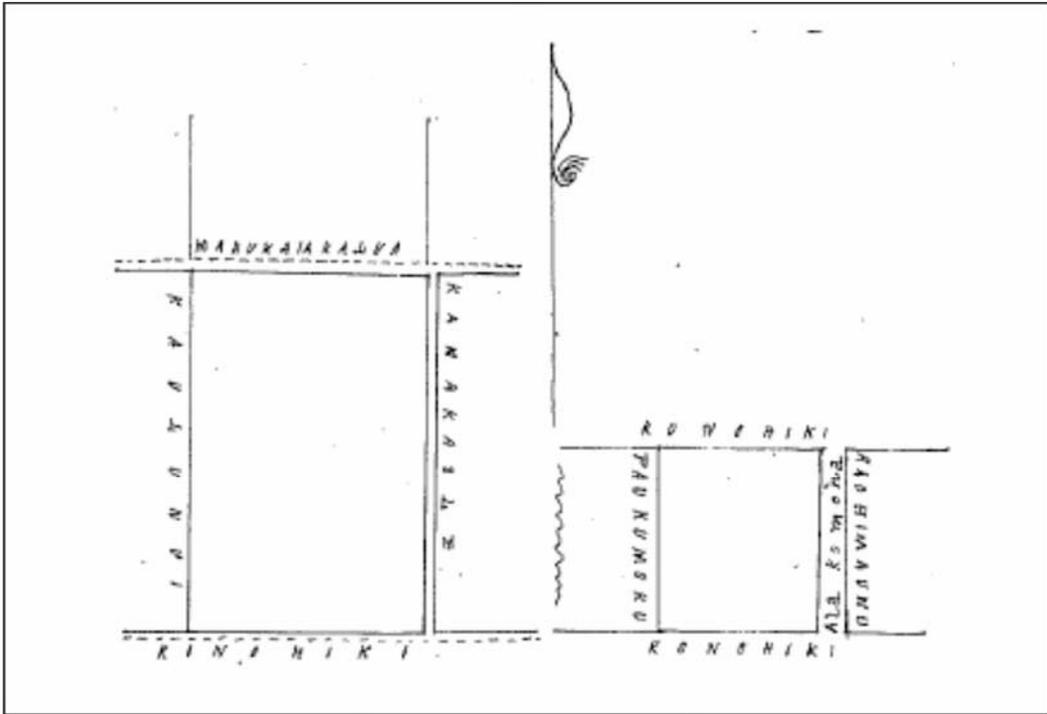


Figure A-15. LCAw. 4210:1 to Kalua.

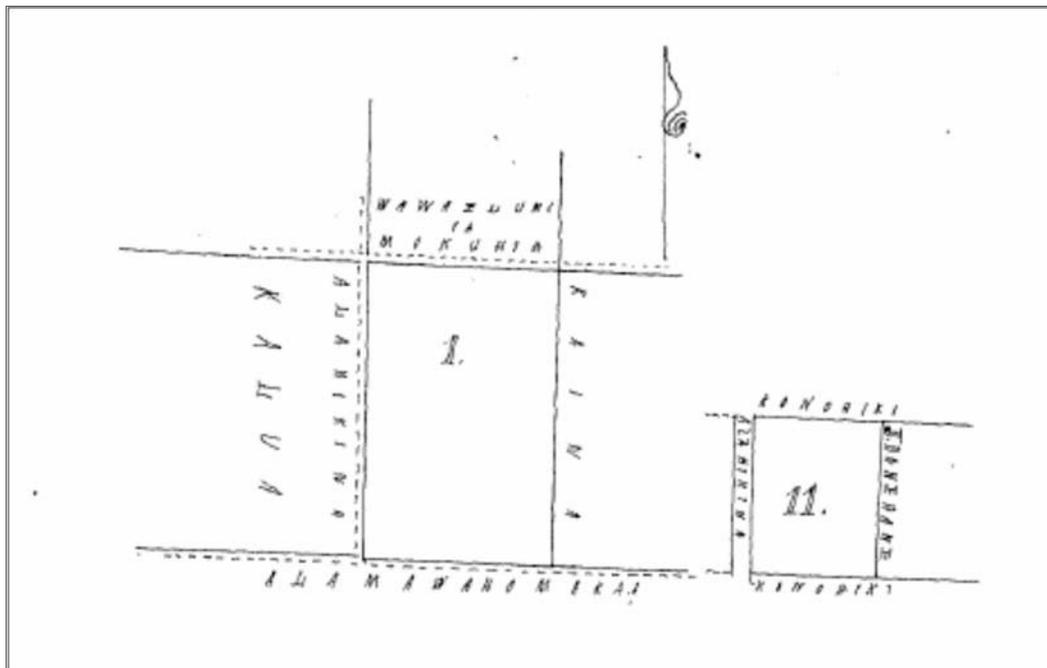


Figure A-16. LCAw. 4130:1 to Kanakaole.

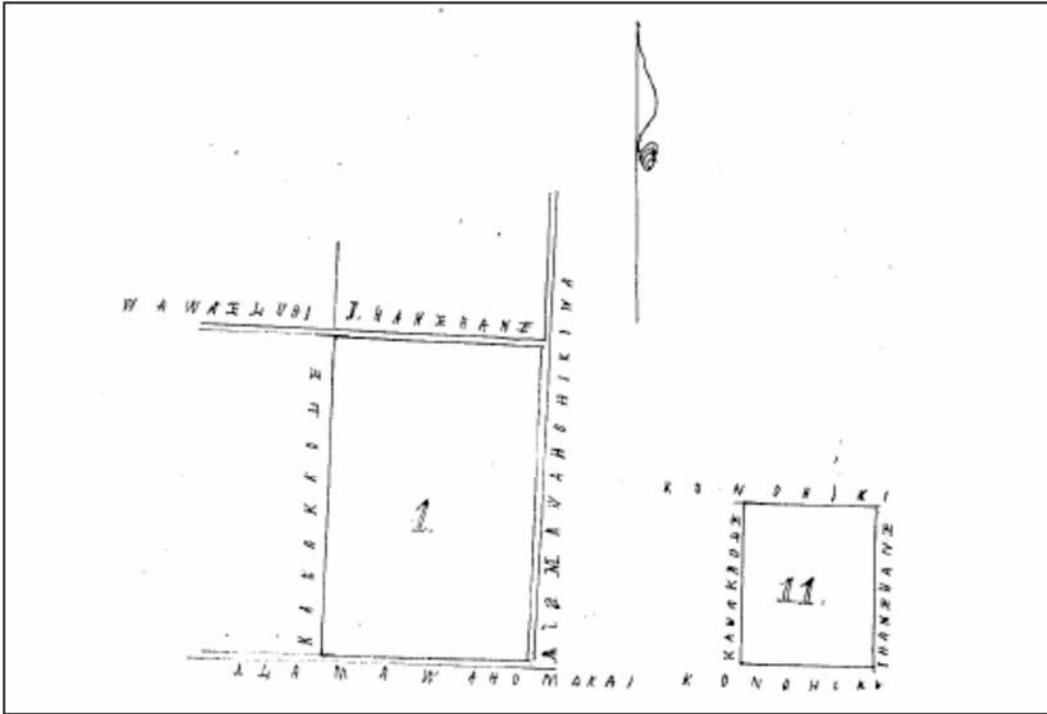


Figure A-17. LCAw. 4132:1 to Kaina to Kanekupuu.

APPENDIX B - LCAw. 3672 Testimony

N.R. 41-42v8

[No. 3672], Mana, Puukapu, January 13, 1848

[listed as No. 3692!]

To the Honorable Land Commissioners, Greetings: Here are the claims for land and a houselot, which is at Kaohia muli. It is a square lot, 40 fathoms by 40 fathoms.

Our farms are as follows: One man has six kihapais/farm/, and the second man also has six farms, within the forest. Our right of occupation was from Moluhi, and our houselot and land are at Puukapu.

MANA

N.T. 29v4

No. 3672, Mana, September 18, 1848

Oponui, sworn and stated: I have seen it in the ili land in Puukapu of seven patches.

1. House-lot: It has been enclosed and there are two houses in there for Mana. Moluhi's boundaries surround the lot.

2. Taro patch with Moluhi's boundaries only.

3, 4, 5, 6 & 7. Each is taro surrounded by Moluhi's boundaries. Moluhi is the konohiki of Puukapu and he had given Mana his interest in 1833, probably. No one has objected to him to this day.

Moluhi, sworn and stated, I have known exactly as Oponui has just stated here. The same applies to the time and I had given him his interest.

[Award 3672; R.P. 7637; Puukapu Waimea S. Kohala; 2 ap.; 3.23 Acs]