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APR 23 2020

Harry Kim
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Roxcie L. Waltjen
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County of Hawai'i

DEPARTMENT OF PARKS AND RECREATION

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April 14, 2020

Mr. Keith Kawaoka, Acting Director
Office of Environmental Quality Control
Department of Health, State of Hawaii
235 S. Beretania Street, Room 702
Honolulu, Hawai'i 96813

Dear Mr. Kawaoka:

With this letter, the County of Hawaii, Department of Parks and Recreation hereby requests publication of the draft environmental assessment and anticipated finding of no significant impact (DEA-AFONSI) for the Magic Sands Beach Park Accessibility Improvements situated at TMK (3rd) pors. 7-7-008: 017, 094, and 107; 7-7-010:036; and right-of-way of Ali'i Drive in the North Kona District on the island of Hawai'i in the next available edition of The Environmental Notice.

Simultaneous with this letter, we will be utilizing the OEQC online submission platform to provide your office with the required information and files concerning the Draft EA, along with a PDF-formatted electronic copy of the draft environmental assessment.

If there are any questions, please contact Kevin Sakai at (808) 961- 8939.

Sincerely,

Roxcie L. Waltjen
Director

From: webmaster@hawaii.gov
To: [HI Office of Environmental Quality Control](#)
Subject: New online submission for The Environmental Notice
Date: Tuesday, April 14, 2020 8:46:01 AM

Action Name

Magic Sands Beach Park Accessibility Improvements

Type of Document/Determination

Draft environmental assessment and anticipated finding of no significant impact (DEA-AFNSI)

HRS §343-5(a) Trigger(s)

- (1) Propose the use of state or county lands or the use of state or county funds

Judicial district

North Kona, Hawai'i

Tax Map Key(s) (TMK(s))

(3)7-7-008:017, 094, 107; (3)7-7-010:036 (pors.); ROW of Ali'i Drive

Action type

Agency

Other required permits and approvals

- Grading, Grubbing and Driveway Permits (County DPW) • Building Permits and Plan Approval (County DPW and Planning) • Chapter 6e, HRS, determination from State Historic Preservation Division on historic property effects (obtained) • Disability and Communication Access Board (DCAB) plan review and approval • Special Management Area (SMA) Permit/Approval

Proposing/determining agency

Hawaii County Department of Parks and Recreation

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United States
[Map It](#)

Was this submittal prepared by a consultant?

Yes

Consultant

Geometrician Associates

Consultant contact name

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HILO, Hawaii 96720
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[Map It](#)

Action summary

P&R proposes to eliminate architectural barriers through replacement of a noncompliant comfort station with an accessible and environmentally improved facility, as well as new accessible parking, showers, walkways, ramps, a picnic table and a barbecue grill. Also included are improvements to drain sumps, sand interceptors, utility tie-ins and waterlines, pavement reconstruction and restriping, as well as removal of several trees. No impacts to terrestrial flora or fauna would occur, and the coastal waters and marine biota they support will be protected through extensive BMPs. Traffic impacts are minimal and will be mitigated, no historic sites are present in the area of disturbance, and impacts to cultural resources related to retention of a comfort station in a sensitive area will be mitigated through optimal design.

Reasons supporting determination

Chapter 11-200.1-13, Hawai'i Administrative Rules, outlines those factors agencies must consider when determining whether an Action has significant effects:

(a) In considering the significance of potential environmental effects, agencies shall consider and evaluate the sum of effects of the proposed action on the quality of the environment.

(b) In determining whether an action may have a significant effect on the environment, the agency shall consider every phase of a proposed action, the expected impacts, and the proposed mitigation measures. In most instances, an action shall be determined to have a significant effect on the environment if it may:

(1) Irrevocably commit a natural, cultural, or historic resource.

No valuable natural or cultural resources would be committed or lost by the Proposed Action, which would not involve significant historic sites or native species or habitat. The Proposed Action has involved appropriate inventory survey to determine the absence of significant historic sites on the project site, and has also involved mitigation measures to protect adjacent historic sites. No cultural resource or practices on the site will be directly affected, and in the opinion of the County of Hawai'i, mitigation measures will reduce impacts to adjacent natural and cultural resources to minimal levels.

(2) Curtail the range of beneficial uses of the environment;

The Proposed Action expands and in no way curtails beneficial uses of the environment for people of all

abilities. In terms of Covid-19, the Department of Parks and Recreation has a policy of continuing to advance projects through pre-construction regulatory review and approval processes and then, if determined safe and appropriate to do so, incorporate requirements for the safety of construction workers, County staff and the public that would allow construction to proceed in a responsible and safe manner, minimizing public health impacts.

(3) Conflict with the State's environmental policies or long-term environmental goals established by law;

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, environmentally beneficial, and fulfills aspects of these policies calling for an improved social environment by improving and expanding recreational opportunities pursuant to the Americans with Disabilities Act. It is thus consistent with all elements of the State's long-term environmental policies.

(4) Have a substantial adverse effect on the economic welfare, social welfare, or cultural practices of the community and State;

The Proposed Action will benefit the social welfare of the community and State by allowing for expanded and socially just recreational use of public property for public benefit.

(5) Have a substantial adverse effect on public health;

The Proposed Action will promote public health through provision of recreational opportunities for people of all abilities.

(6) Involve adverse secondary impacts, such as population changes or effects on public facilities;

No secondary effects are expected to result from the Proposed Action, which does not expand facilities in such a way as to induce in-migration or unduly affect roads or other public facilities.

(7) Involve a substantial degradation of environmental quality;

The Proposed Action is minor and environmentally benign and would thus not contribute to environmental degradation with adherence to Best Management Practices.

(8) Be individually limited but cumulatively have substantial adverse effect upon the environment or involves a commitment for larger actions;

Although the County Department of Parks and Recreation is steadily improving the accessibility of its facilities through individual projects, they are scattered around the island and would not tend to produce adverse cumulative impacts. Furthermore, the Proposed Action is not related to other non-P&R activities in the region in such a way as to produce adverse cumulative effects or involve a commitment for larger actions.

(9) Have a substantial adverse effect on a rare, threatened, or endangered species, or its habitat;

The project site has vegetation managed for park uses that includes both native and non-native elements. Impacts to rare, threatened or endangered species of flora or fauna will not occur, with planned restrictions of the timing of vegetation removal.

(10) Have a substantial adverse effect on air or water quality or ambient noise levels;

Slight increases in noise and effects to air quality will occur during construction, but they will be temporary and mitigated to non-significant levels.

(11) Have a substantial adverse effect on or be likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, sea level rise exposure area, beach,

erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters;

Although the project site is in an area with volcanic and seismic risk, the entire Island of Hawai'i shares this risk, and the Proposed Action is not imprudent to undertake. The proposed improvements would be undertaken mostly just outside designated coastal floodplains. The proposed continuing land use, a public beach park, is consistent with approved open-space uses and will not adversely affect any floodplain. Maps printed by the Pacific Tsunami Warning Center/Hawai'i County Civil Defense Agency locate the project site within an area that should be evacuated during a tsunami warning. Warning sirens are present nearby and the area can readily be evacuated in the event of a tsunami or other coastal hazard emergency. No aspect of the Proposed Action would adversely affect public exposure to coastal hazards. A scenario of modest sea level rise might not markedly affect the integrity or utility of the comfort station or other accessible features, at least not for several decades. More rapid or extreme rises could place these facilities within a zone where the frequency and severity of flooding led to repeated damage that hindered their utility. The Department of Parks and Recreation has considered the risk of sea level rise and determined that uncertain degree and timing of this risk and the long time scenario indicates that it still prudent to undertake Proposed Action as planned. This would allow the public to realize its benefits for a period of up to many decades, rather than fail to implement it and lose critical functionality at an important recreational site. It is recognized that planning for recreational facilities will require continual "check-ins" on the advance of sea level. Some facilities will require relocation to a retreated site, while others may need to be abandoned altogether.

(12) Have a substantial adverse effect on scenic vistas and viewplanes, during day or night, identified in county or state plans or studies; or

The Proposed Action would not adversely impact any scenic sites or viewplanes. The loss of two banyans will be compensated for by landscaping. The replacement comfort station is smaller in footprint and will have less visual impact than the existing facility.

(13) Require substantial energy consumption or emit substantial greenhouse gases.

The Proposed Action involves only minor use of energy for construction and operation and thus minor production of greenhouse gases. Improving local recreation facilities in various places within a community promotes use by nearby walkers and bicyclists.

Attached documents (signed agency letter & EA/EIS)

- [Draft-EA-Magic-Sands-Beach-Park-Accessibility-Improvements.pdf](#)
- [AFONSI-OEQC-Submission-Letter.pdf](#)

Action location map

- [Magic-Sands-Beach-Park-action-properties.zip](#)

Authorized individual

Ron Terry

Authorization

- The above named authorized individual hereby certifies that he/she has the authority to make this submission.

Magic Sands Beach Park Accessibility Improvements

Draft Environmental Assessment

TMKs (3rd) pors. 7-7-008: 017, 094, and 107;
7-7-010:036; and right-of-way of Ali'i Drive
North Kona District, Hawai'i Island, State of Hawai'i

April 2020

Prepared for:
Hawai'i County
Department of Parks and Recreation
101 Pauahi Street, Suite 6
Hilo, Hawai'i 96720

DRAFT ENVIRONMENTAL ASSESSMENT

Magic Sands Beach Park Accessibility Improvements

Draft Environmental Assessment

TMKs (3rd) pors. 7-7-008: 017, 094, and 107;
7-7-010:036; and right-of-way of Ali'i Drive
North Kona District, Hawai'i Island, State of Hawai'i

**PROPOSING/
APPROVING AGENCY:**

County of Hawai'i
Department of Parks and Recreation
101 Pauahi Street, Suite 6
Hilo, Hawai'i 96720

CONSULTANT:

Geometrician Associates LLC
P.O. Box 396
Hilo Hawai'i 96721

CLASS OF ACTION:

Use of County Land and County Funds

This document is prepared pursuant to:
The Hawai'i Environmental Protection Act,
Chapter 343, Hawai'i Revised Statutes (HRS), and
Title 11, Chapter 200.1, Hawai'i Department of Health Administrative Rules (HAR).

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

The Hawai‘i County Department of Parks and Recreation (P&R) proposes a project to eliminate architectural barriers at Magic Sands Beach Park. The purpose is to create safe, appropriate and compliant access for all park users while retaining and improving the ability to effectively maintain the park. The site is located *makai* of Ali‘i Drive in an intensely utilized park in an area with rich cultural significance as well as dense resort development.

In overview, the Proposed Action involves demolition of the existing non-ADA (Americans with Disabilities Act of 1990, as amended) compliant comfort station and replacement with an accessible facility; provision of new, concrete ADA-compliant parking; new accessible showers; a new accessible picnic table and barbecue grill; and new accessible walkways and ramps connecting the park to Ali‘i Drive and a nearby bus stop. Also included are related and necessary replacements/improvements to drain sumps, sand interceptors, utility tie-ins and waterlines, pavement reconstruction and restriping, as well as removal of several trees.

Because of the limited scale of development and planned mitigation, no impacts to any terrestrial biological resources would occur, and impacts to the ocean and the marine resources they support can be avoided through adherence to Best Management Practices. No archaeological features or other historic properties will be affected. Several local residents with long cultural ties to the area believe the project has adverse cultural impacts because of its proximity to the culturally and biologically sensitive shoreline and adjacent cultural sites. The County has attempted to mitigate that impact as much as practical through design measures, buffers and actions that will protect off-site cultural resources. Traffic impacts that will require professional traffic coordination for mitigation will occur during construction, but permanent impacts are unlikely because there will be no expected increase in use.

Note concerning current COVID-19 crisis

The COVID-19 pandemic, stemming from the disease caused by the novel coronavirus named SARS-CoV-2, has drastically affected all aspects of life in Hawai‘i and around the globe. In addition to illness and death, there are restrictions on travel, essential and non-essential work, and availability of and access to the resources of daily life. County parks are currently closed and the schedule for permanent opening is not clear as of this writing on April 13, 2020.

On a larger scale, the pandemic has adversely impacted all aspects of manufacturing, retail, shipping and the overall financial stability of companies and individuals, with severe effects on the construction industry as a whole and its labor force and supply chain. There are also statewide restrictions on gatherings and requirements to implement social distancing, both of which directly affect construction work. Furthermore, state and county employees who oversee regulatory processes and perform mandatory construction inspection services may have limited or restricted availabilities that may impact County projects in numerous ways.

It is unclear at this time exactly what impacts the pandemic will have on this and other County of Hawai‘i construction projects. Department of Parks and Recreation staff will continue to advance projects through pre-construction regulatory review and approval processes and then, if determined safe and appropriate to do so, incorporate requirements for the safety of construction workers, County staff and the public that would allow construction to proceed in a responsible and safe manner, minimizing public health impacts. The County of Hawai‘i continues to reference guidance provided by the Hawai‘i Department of Health and federal Centers for Disease Control and Prevention, among others.

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

1.1 Project Description and Location

The Hawai‘i County Department of Parks and Recreation (P&R) proposes a project to eliminate architectural barriers and replace a comfort station at Magic Sands Beach Park¹. The site is located *makai* of Ali‘i Drive in an intensely utilized park in an area with rich cultural significance as well as dense resort development. The site is depicted in Figures 1-2 (with additional photos in Appendix 2), and consists of portions of TMKs (3rd) 7-7-008: 017, 094, and 107; 7-7-010:036; and the right-of-way of Ali‘i Drive.

The Proposed Action involves demolition of the existing non-ADA (Americans with Disabilities Act of 1990) compliant comfort station and replacement with an accessible facility; provision of new, concrete ADA-compliant parking; new accessible showers; a new accessible picnic table and barbecue grill; and new accessible walkways and ramps connecting the park to Ali‘i Drive. Also included are related and necessary replacements/improvements to drain sumps, sand interceptors, utility tie-ins and waterlines, and pavement reconstruction and restriping (see overall Site Plans in Fig. 3 and detail sheets in App. 2).

The project has been designed to minimize onsite disturbance to the degree consistent with safely and effectively providing accessible facilities that serve all members of the public. Of the several dozen trees on the site, two banyans require removal. A number of erosion control measures will be implemented during construction to avoid any contamination of sensitive ocean waters sensitive for recreation, cultural practices and marine habitat. These include sediment control devices at grated inlets in the parking area, silt fences, and a stabilized construction entrance.

1.2 Purpose and Need

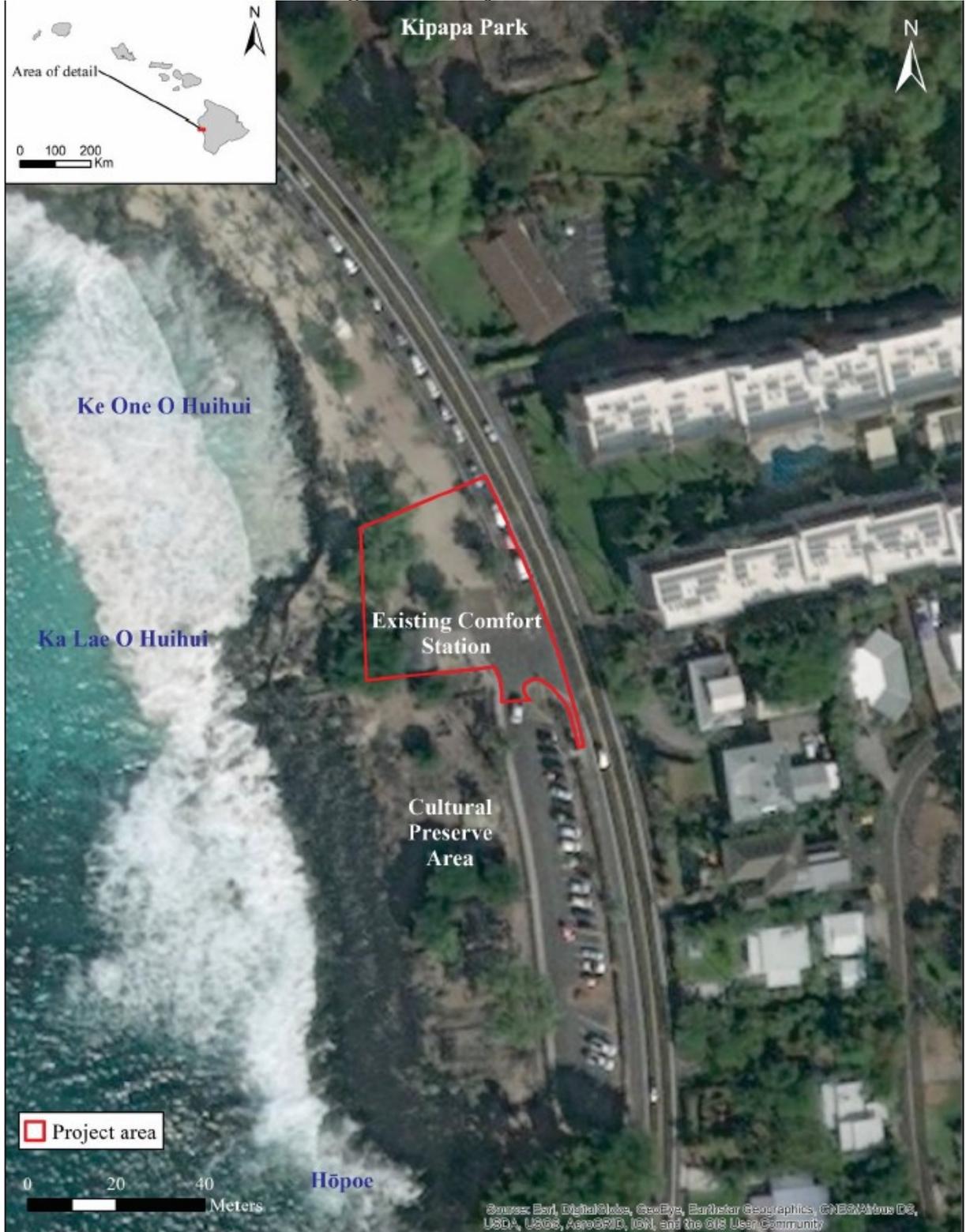
The purpose of the project is to create safe, appropriate and compliant access according to the requirements of the Americans with Disabilities Act for all park users, while retaining and improving the ability to effectively maintain the park. The Americans with Disabilities Act was signed into law on July 26, 1990, by President George H.W. Bush. The ADA is one of America’s most comprehensive pieces of civil rights legislation. It prohibits discrimination and guarantees that people with disabilities have the same opportunities as everyone else to participate in the mainstream of American life – to enjoy employment opportunities, to purchase goods and services, and to participate in state and local government programs and services. Modeled after the Civil Rights Act of 1964, which prohibits discrimination on the basis of race, color, religion, sex, or national origin – and Section 504 of the Rehabilitation Act of 1973 – the ADA is an “equal opportunity” law for people with disabilities. Without these improvements, the park would not be fully accessible, leading to inconvenience for disabled patrons and even the possibility that they would not be able to access many of the park’s facilities at all.

¹ Many names are informally used for the natural features and recreational facilities of this area. Keoneohuihui is a beach also known as White Sands Beach, Disappearing Sands, Magic Sands, Magics, and La‘aloa. The legal name of the park in which the comfort station is located is Magic Sands Beach Park. Although County Ordinance 94-105 in 1994 merged this park with the park to the south and renamed the entire park La‘aloa Bay Beach Park (a name indeed used on the park sign), the official park name is still designated by Hawaii County Code 15.68.1. In the view of P&R, officially changing the name of the park awaits an amendment of HCC 15.68.1. Hence, in this EA, the park is referred to as Magic Sands Beach Park.

Figure 1. Location Map



Figure 2. Project Site Photos



a. Aerial View

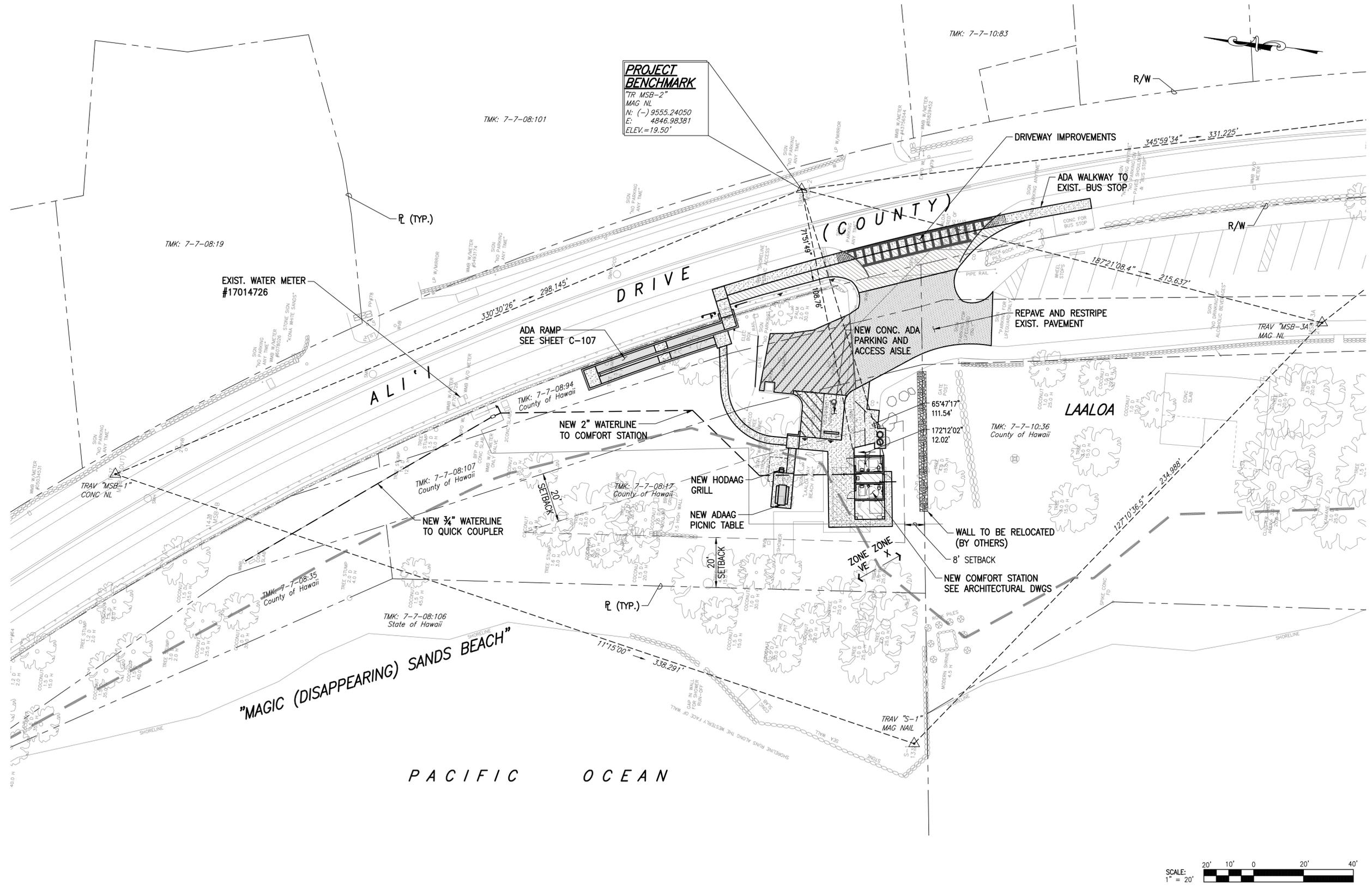
Figure 2. Project Site Photos



b. Comfort Station ▲ ▼ c. Beach in Winter



FILE: O:\PROJ\2018\218-044_MAGICSANDS_ADA\DRAWINGS\GENERAL SITE PLAN.DWG
 USER: CACOB
 PLOTTED: 2/18/2020 11:38 AM



GENERAL SITE PLAN
 SCALE: 1" = 20'

Okahara and Associates, Inc.
 ENGINEERING CONSULTANTS

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CARLES J. JURY
 LICENSED PROFESSIONAL ENGINEER
 NO. 13190-C
 HAWAII

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

EXPIRES 06/30/2020

MARK	DATE	DESCRIPTION	REVIEWED:	DATE

DEPARTMENT OF PARKS AND RECREATION

COUNTY OF HAWAII
 DEPARTMENT OF PARKS & RECREATION
 101 PALAUAH STREET, SUITE 67, HILO, HAWAII 96720 / PHONE: 808.961.8311 / FAX: 808.961.8411

ACCESSIBILITY IMPROVEMENTS
PROJECT - MAGIC SANDS BEACH PARK

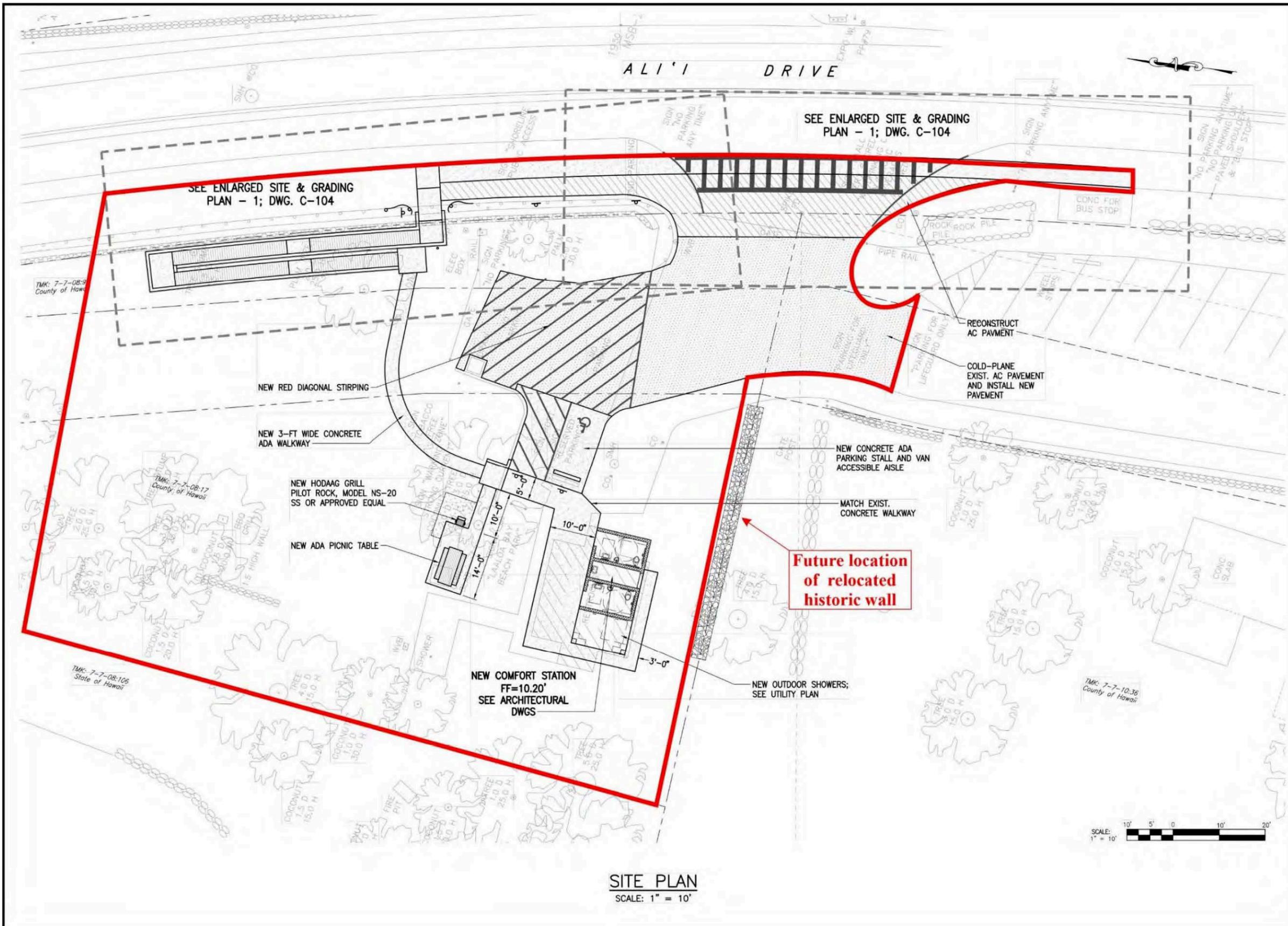
JOB NO.: PR-3730
 NORTH KONA, HAWAII
 TMK: (3) 7-7-8 : 017, 035, 106, 107

PLAN SHEET
 DESCRIPTION: GENERAL SITE PLAN

DESIGNED BY: CJ, CA
 DRAWN BY: CA
 CHECKED BY: CJ

SHEET NO.
C-101

5 OF 48 SHEETS
 DATE: FEB 2020



SITE PLAN
SCALE: 1" = 10'



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MARK	DATE	DESCRIPTION

REVIEWED: _____ DATE: _____
DEPARTMENT OF PARKS AND RECREATION

COUNTY OF HAWAII
DEPARTMENT OF PARKS & RECREATION
101 PALAHEI STREET, SUITE 611 H.O. HAWAII 96720 / PHONE: 808.961.8311 / FAX: 808.961.9411

ACCESSIBILITY IMPROVEMENTS
PROJECT - MAGIC SANDS BEACH PARK

JOB NO.: PR-3730 NORTH KONA, HAWAII TMK: (3) 7-7-8 : 017, 035, 106, 107
PLAN SHEET DESCRIPTION: SITE PLAN

DESIGNED BY: _____
DRAWN BY: _____
CHECKED BY: _____

SHEET NO. **C-101**
X OF SHEETS
DATE: NOV 2018

1.3 Environmental Assessment Process

This Environmental Assessment (EA) is being conducted in accordance with Chapter 343 of the Hawai'i Revised Statutes, and Title 11, Chapter 200.1, of the Hawai'i Administrative Rules. This law and its implementing regulations are 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 findings for each made by the Hawai'i County Department of Parks and Recreation, the proposing and approving agency. If, after considering comments to the Draft EA, the approving agency concludes that 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 proceed to other appropriate approval and permit processes. 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.

1.4 Public Involvement and Agency Coordination

The following agencies, organizations and individuals were consulted by letter during development of the Environmental Assessment.

State:

Department of Land and Natural Resources, Chairperson
Office of Hawaiian Affairs

County:

Civil Defense Agency
County Council
Department of Environmental Management
Department of Public Works
Fire Department
Planning Department
Police Department

Private:

Sierra Club
Neighboring Property Owners: AOA White Sands and Kona Magic Sands; Mangubat

Responses received are contained in Appendix 1a.

1.5 Cost and Schedule

Shortly after the EA is complete and necessary permits are obtained, construction will begin and is expected to take about one year. The cost of the improvements is estimated at about \$930,000.

PART 2: ALTERNATIVES

2.1 No Action Alternative

Under the No Action Alternative, the County of Hawai‘i would not make accessibility improvements for the comfort station, shower, parking, and pedestrian access. The park would not be fully accessible according to the requirements of the Americans with Disabilities Act, leading to inconvenience for disabled patrons and even the possibility that they would not be able to access many of the park’s facilities at all. Existing water quality issues at the park would likely persist until a complete redesign of the comfort station was implemented. Although the benefits and social equity provided by accessible facilities would not occur, there would be no disturbance of the existing ground surface or vegetation, and no impacts to traffic in the area. The No Action Alternative provides a basis for comparing the impacts of the proposed project.

2.2 Alternative Locations for Accessible Facilities

As part of development of the design of an accessible comfort station, the location of which dictates other elements of the design, P&R and the design consultants analyzed a number of alternative configurations *makai* of Ali‘i Drive near the existing facilities. The area to the south of the beach is considered too culturally sensitive to have any additional facilities, and its public parking and recreational uses are being removed, closed or reduced. The area north of the existing comfort station is too narrow in terms of property setbacks and would also encroach on recreational space. P&R also considered relocating the comfort stations across the street at Kipapa Park. This area offers available space, but it would be located within a flood zone and would require patrons to cross Ali‘i Drive to use the facilities. Although this would be convenient for those patrons who park at Kipapa Park when they entered or left the facility, it would be inconvenient, and more importantly, potentially unsafe for all other patrons. This would exacerbate conflicts between pedestrians and vehicles that already exist and might ultimately lead to injuries. After careful consideration of options and all their implications, no alternative sites have been advanced in this Environmental Assessment, because they would not meet the purpose and need of providing safe and effective accessible facilities for Magic Sands Beach Park.

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* (see Figures 1-4). The term *project area* is used to describe the general environs of this part of Kailua-Kona. The project site is bounded by the ocean, Ali'i Drive, and private properties.

3.1 Physical Environment

3.1.1 Climate, Geology, Soils and Geologic Hazards

Environmental Setting

Temperatures are warm year-round at the project site, and annual rainfall is about 32 inches. Winds are generally light upslope sea breezes in the daytime and light downslope land breezes at night (UH Hilo Dept. of Geography 1998; Giambelluca et al. 2013).

There is a scientific consensus that the earth is warming due to manmade increases in greenhouse gases in the atmosphere, according to the United Nations' Intergovernmental Panel on Climate Change (UH Manoa Sea Grant 2014). Global mean air temperatures are projected to increase by at least 2.7°F by the end of the century. This will be accompanied by the warming of ocean waters, expected to be highest in tropical and subtropical seas of the Northern Hemisphere. Wet and dry season contrast will increase, and wet tropical areas in particular are likely to experience more frequent and extreme precipitation. For Hawai'i, where warming air temperatures are already quite apparent, not only is the equable climate at risk but also agriculture, ecosystems, the visitor industry and public health. Guidance to federal agencies for addressing climate change issues in environmental reviews was released in August 2016 by the Council on Environmental Quality (US CEQ 2016). The guidance urged that when addressing climate change, agencies should consider: 1) the potential effects of a proposed action on climate change as indicated by assessing greenhouse gas emissions in a qualitative, or if reasonable, quantitative way; and, 2) the effects of climate change on a proposed action and its environmental impacts. It recommends that agencies consider the short- and long-term effects and benefits in the alternatives and mitigation analysis in terms of climate change effects and resiliency to the effects of a changing climate. Although this guidance has since been withdrawn for political reasons, the State of Hawai'i in HRS §226-109 encourages a similar analysis, and both HAR 11-220.1 and Act 17 of the 2018 Hawai'i Legislature require analysis of sea-level rise in EAs and EISs. For climate per se, it is possible, and even likely, that warmer temperatures and larger and more frequent tropical storms and hurricanes will affect the Hawaiian Islands in the future. Section 3.1.2 discusses the expected accelerating rise of sea level.

The geologic substrate in this area is lava flows from Hualālai Volcano dated to older than 10,000 years before the present (Wolfe and Morris 1996). Although most of the project site contains beach sand or bare rock, the soil on the *mauka* end is classified by the U.S. Natural Resources Conservation Service as Punaluu highly decomposed plant material (U.S. Soil Conservation Service 1973). This soil consists of varying amounts of decomposed organic material over lava flows. Although well drained, runoff potential

is variable. This soil is generally marginal for farming but can support grazing uses. The entire Big Island is subject to geologic hazards, especially lava flows and earthquakes.

The U.S. Geological Survey assesses volcanic hazard in this area of Kona, which is on the slopes of the inactive volcano Hualālai, as Lava Flow Hazard Zone 4, on a scale of ascending risk 9 to 1 (Heliker 1990:23). The hazard risk is based on the fact that Hualālai has steep slopes and is historically the third most active volcano on the island. In volcanic hazard Zone 4, about 5 percent of the area has been covered with lava since 1800, with less than 15 percent covered in the past 750 years.

The Island of Hawai‘i experiences high seismic activity and is at risk from major earthquake damage (USGS 2000), especially to structures that are poorly designed or built. On Sunday, October 15, 2006, two damaging earthquakes of magnitude 6.7 and 6.0 struck the west side of Hawai‘i Island. These earthquakes caused no known damage to the park facilities or road infrastructure in this area. No steep slopes are present at the project site, and there is little to no potential for subsidence, rockfall or landslides after site preparation is complete.

Lava tubes, which are the long cavities left behind by underground channels of lava, are common on pahoehoe lava flows in Hawai‘i, but can also be present on ‘a‘a flows. Some lava tubes have openings large enough for human entry and may thus be classified as caves. Lava tube caves in Hawai‘i may have value as historic sites, recreation areas, unique geological features, or for other reasons. No lava tubes were observed during the course of engineering, archaeological or biological surveys on the project site, which covered the entire area of effect but did not investigate upslope properties. It is likely that any lava tube that existed would have been previously breached by grading for road and park infrastructure on or near the site.

Impacts and Mitigation Measures

Coastal properties and land uses will be subject to increasing stress as a result of climate change. In addition to greater overland flooding, as well as rises in sea level and accompanying coastal erosion and storm surge flooding (discussed in the next section), stronger and more frequent tropical storms may bring increased wind strength. Because the land use of a beach park is completely dependent on its coastal location, there is no alternative of moving the entire park inland. All structures will be designed with adequate wind load to account for potentially greater storm winds.

Lava flow, seismic hazards and mass wasting conditions per se impose no constraints on the Proposed Action, and the continued utilization of the project site as a park is not imprudent to undertake in terms of geological hazards. Most of the surface of Hawai‘i Island is subject to eventual lava inundation, and any recreational facilities in Kona face risk. Given the need for recreation in the area, the County has determined that it is sensible to ensure that its facilities here are made ADA-accessible. Project design will take the seismic setting into account, and no mitigation measures are expected to be required.

3.1.2 Flood Hazard

Existing Environment

Floodplain status for most coastal areas of the island of Hawai‘i has been determined by the Federal Emergency Management Agency (FEMA), which produces the National Flood Insurance Program’s Flood Insurance Rate Maps (FIRM). Most of the park is depicted within Zone VE on the FIRM maps, with a base flood elevation of 13 feet (Figure 4). The VE Flood Zone, also known as the coastal high hazard area, is the area subject to high velocity water including waves and tsunami; it is defined by the 1% annual chance (base) flood limits (also known as the 100-year flood) and wave effects 3 feet or greater. As illustrated in Figure 2, most of the project site is a beach between two basalt shoreline shelves, which is strewn with rounded boulders deposited by large waves. Thick deposits of coarse white sand pile up in summer, only to be scoured away by winter storms, hence the name Magic or Disappearing Sands.

Maps in the *Atlas of Natural Hazards in the Hawaiian Coastal Zone* (Fletcher et al 2002) indicate relatively high levels for a variety of coastal hazards along this coastline, particularly tsunami, high waves, stream flooding (an error due to generalization), erosion and volcanic/seismic risk (Figure 5). Exceptionally high waves, including hurricanes and large north or south swells, can affect all areas of the park. The existing comfort station, showers and lifeguard station were designed to be resilient to occasional flooding, and structures on the property have not suffered any significant damage from wave activity in the recent past, even during the tsunami of March 11, 2011.

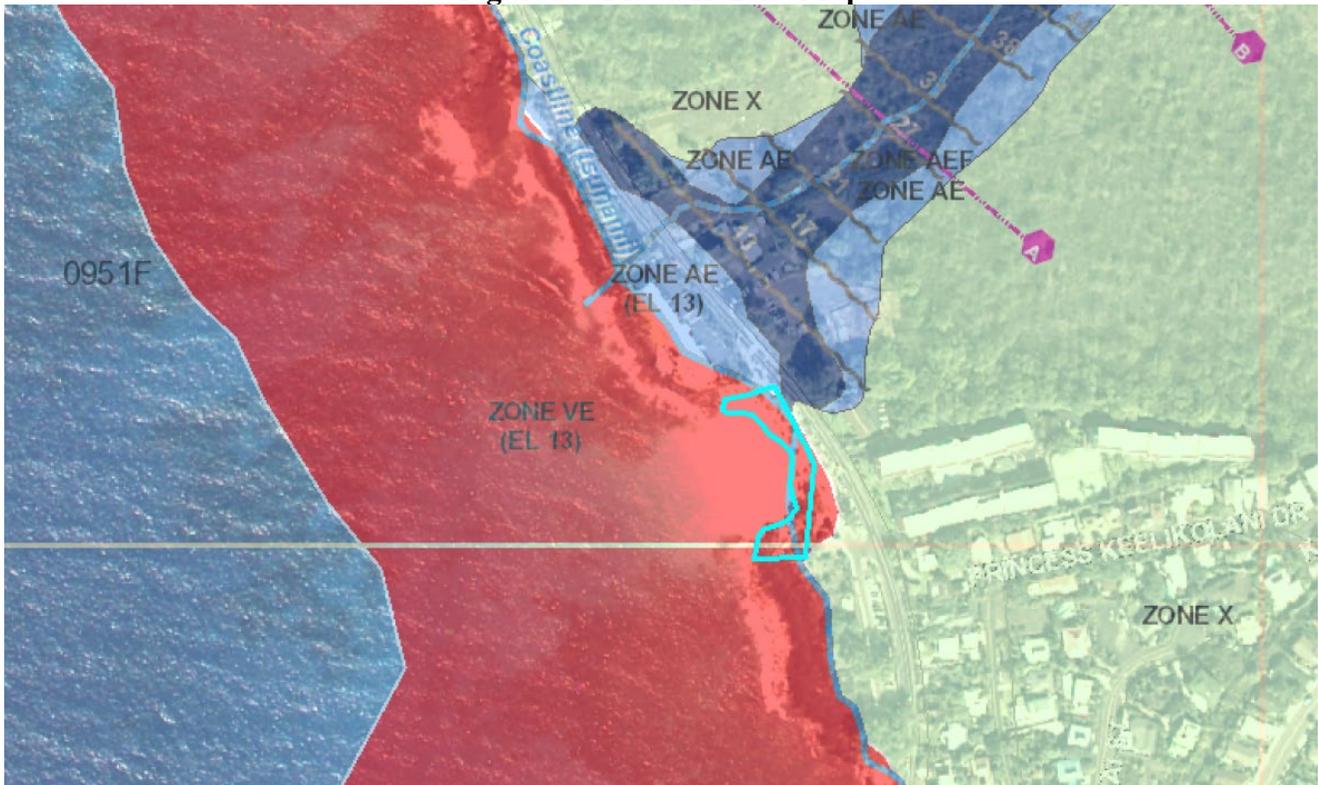
Maps printed by the Pacific Tsunami Warning Center/Hawai‘i County Civil Defense Agency locate the project site within an area that should be evacuated during a tsunami warning (<https://tsunami.coast.noaa.gov/#/>).

Impacts and Mitigation Measures

The park’s location in the VE Zone brings with it inherent flood risk from storms and tsunami. The Proposed Action has been conceived and designed to minimize construction in the VE flood hazard zone (“flood zone”) to the extent consistent with accomplishing key goal of accessible facilities. The footprint of the existing comfort station appears to be partially within the flood zone; the proposed comfort station is located outside it. The ADA barbecue grill, picnic table and associated walkway are within the flood zone but are not structures and require no floodproofing. There will be no impact on the base flood elevation or the size of the floodplain.

The National Weather Service of the National Oceanic and Atmospheric Administration operates the Pacific Tsunami Warning Center and Alaska Tsunami Warning Center, which monitors sudden earth movements throughout the Pacific Basin. Tsunami generated from earth movements on the Pacific Rim, including South America, Japan, California and Alaska, allow for warning times between 4 and 15 hours, sufficient for evacuation of parks on Ali‘i Drive. Sudden movement along faults close to Hawai‘i are unpredictable, allowing only minutes or perhaps an hour of warning time, and evacuation would be more problematic. Coastal recreational areas in Hawai‘i cannot avoid the tsunami hazard because the entire coast is vulnerable to tsunami. Warning sirens are present at the project site and are easily audible in all locations.

Figure 5. Flood Hazard Map



Flood Hazard Assessment Report
www.hawaiiifip.org

Property Information

COUNTY: HAWAII
 TMK NO: (3) 7-7-008:106
 WATERSHED: WAIAHA
 PARCEL ADDRESS: 77-6474 ALII DRIVE
 KAILUA KONA, HI 96740

Notes:

Flood Hazard Information

FIRM INDEX DATE: SEPTEMBER 29, 2017
 LETTER OF MAP CHANGE(S): NONE
 FEMA FIRM PANEL - EFFECTIVE DATE: 1551660951F - SEPTEMBER 29, 2017
 1551660953F - SEPTEMBER 29, 2017

THIS PROPERTY IS WITHIN A TSUNAMI EVACUATION ZONE: YES
 FOR MORE INFO, VISIT: <http://www.scd.hawaii.gov/>

THIS PROPERTY IS WITHIN A DAM EVACUATION ZONE: NO
 FOR MORE INFO, VISIT: <http://dlnreng.hawaii.gov/dam/>



Disclaimer: The Hawaii Department of Land and Natural Resources (DLNR) assumes no responsibility arising from the use, accuracy, completeness, and timeliness of any information contained in this report. Viewers/Users are responsible for verifying the accuracy of the information and agree to indemnify the DLNR, its officers, and employees from any liability which may arise from its use of its data or information.

If this map has been identified as "PRELIMINARY", please note that it is being provided for informational purposes and is not to be used for flood insurance rating. Contact your county floodplain manager for flood zone determinations to be used for compliance with local floodplain management regulations.

FLOOD HAZARD ASSESSMENT TOOL LAYER LEGEND
 (Note: legend does not correspond with NFHL)

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD - The 1% annual chance flood (100-year), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. SFHAs include Zone A, AE, AH, AO, V, and VE. The Base Flood Elevation (BFE) is the water surface elevation of the 1% annual chance flood. Mandatory flood insurance purchase applies in these zones:

	Zone A: No BFE determined.
	Zone AE: BFE determined.
	Zone AH: Flood depths of 1 to 3 feet (usually areas of ponding); BFE determined.
	Zone AO: Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined.
	Zone V: Coastal flood zone with velocity hazard (wave action); no BFE determined.
	Zone VE: Coastal flood zone with velocity hazard (wave action); BFE determined.
	Zone AEF: Floodway areas in Zone AE. The floodway is the channel of stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without increasing the BFE.

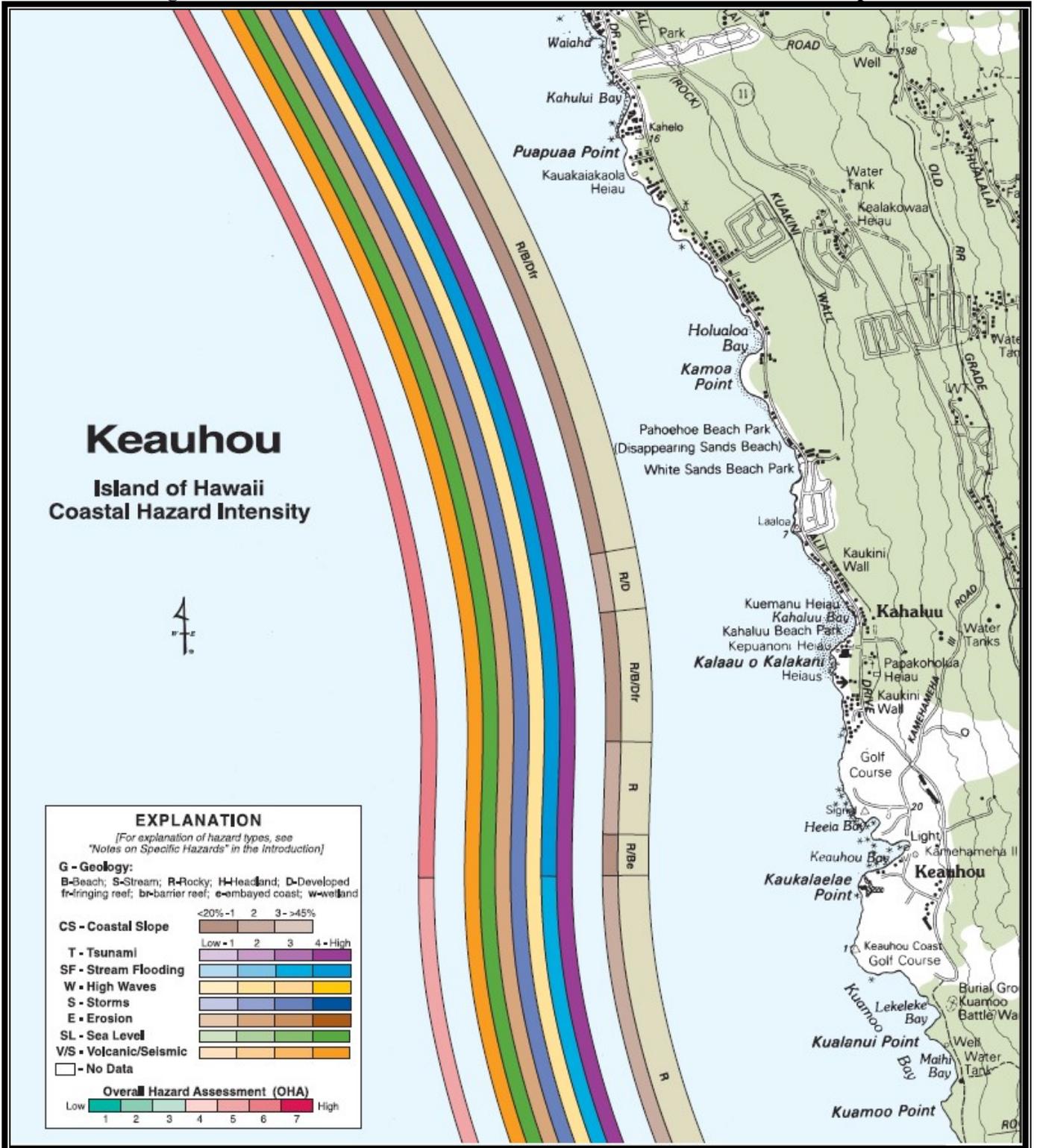
NON-SPECIAL FLOOD HAZARD AREA - An area in a low-to-moderate risk flood zone. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

	Zone X5 (X shaded): Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
	Zone X: Areas determined to be outside the 0.2% annual chance floodplain.

OTHER FLOOD AREAS

	Zone D: Unstudied areas where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase apply, but coverage is available in participating communities.
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Figure 5. Atlas of Natural Hazards in the Hawaiian Coastal Zone Map



Source: (Fletcher et al 2002)

The Proposed Action continues commitment and investment in facilities that are part of a shoreline-dependent recreational use. It is thus important to examine the potential for future sea level rise, which could affect any decisions to commit to such a location.

No one can predict with any certainty how high sea level will rise within 10 years, 20 years or 50 years. An overall global rise in sea level of 3.3 feet by the end of the 21st century was proposed by Fletcher (2010) and others. A 2012 assessment (Rahmstorf et al 2012) posited 4 feet as a reasonable upper bound. Some recent research that concentrates on the potential for Antarctic melting to contribute more to sea level than generally modeled envisions as much as an additional meter (3.3 feet) of sea level rise (DeConto and Pollard 2016). Relative sea-level rise, of course, is a result of the combined water rise and land subsidence. The Big Island of Hawai'i is sinking into the Earth's mantle because of the gravitational, isostatic load of its growing volcanoes. A subsidence rate 0.08-0.12 inches/year) related to isostatic sinking has been determined by submersible studies of drowned reefs off West Hawai'i (Moore and Fornari 1984).

Not only the magnitude of sea level rise but also the timing is the subject of debate. According to the Hawai'i Climate Change Mitigation and Adaptation Commission (HCCMAC) (2017:v):

While the IPCC's "business as usual" scenario, where GHG emissions continue at the current rate of increase, predicts up to 3.2 feet of global sea level rise by year 2100 (IPCC 2014), recent observations and projections suggest that this magnitude of sea level rise could occur as early as year 2060 under more recently published highest-end scenarios...

The HCCMAC report goes on to state that the Island of Hawai'i is in many senses the least vulnerable of the main Hawaiian Islands to the impacts of sea level rise, but that certain areas – particularly Kona, Puakō, Kapoho and Hilo Bay – “....face serious threats. It is estimated that at least 130 existing structures would experience chronic flooding if there were 3.2 feet of sea level rise.”

A sea level rise viewer from the Pacific Island Ocean Observing System (<https://www.pacioos.hawaii.edu/shoreline/slr-hawaii/>) provides graphic representation of how regions will be affected by sea level rise. As the land slope near Magic Sands Beach Park is relatively steep, and elevations rise to 10 feet or more above sea level with a few feet of the shoreline, sea level rise of 3.2 feet in itself will only inundate relatively small areas, not even crossing Ali'i Drive (Figure 6). This is unlike Waikiki, e.g., where a 10-foot rise in sea level would inundate square miles of land.

However, aside from simple inundation, a rise in sea level also raises the level of attack for high waves and tsunami. As reported in the online Science Daily based on an article in the Nature journal, *Scientific Reports* (<https://www.sciencedaily.com/releases/2018/09/180927164230.htm>), a research team including UH Manoa and DLNR determined that much sea level rise effects will be much more wide-reaching. “By including models of dynamical physical processes such as erosion and wave run-up, a team of researchers has determined that land area in Hawai'i vulnerable to future sea level rise may be double previous estimates.”

Figure 6. Sea Level Rise Map



A scenario of modest sea level rise might not markedly affect the integrity or utility of the comfort station or other accessible features, at least not for several decades. More rapid or extreme rises could place these facilities within a zone where the frequency and severity of flooding led to repeated damage that hindered their utility. As with all coastal structures, if they become detached from their foundations, they might cause damage to other structures.

The Department of Parks and Recreation has considered the risk of sea level rise and determined that, given the long time scenario and the uncertain degree and timing of this risk, it is still prudent to undertake the Proposed Action as planned. This would allow the public to realize its benefits for a period of up to many decades, rather than fail to implement it and lose critical functionality at an important recreational site. It is recognized that planning for recreational facilities will require continual “check-ins” on the advance of sea level. Some facilities will require relocation to a retreated site, while others may need to be abandoned altogether.

3.1.3 Water Quality

Existing Environment

No permanent streams, wetlands or anchialine ponds are present in or near the park. Sensitive receiving waters at the project site are limited to the Pacific Ocean itself; the waters of Kona are classified as “AA,” with the highest level of water quality goals. Hawai‘i Administrative Rules (HAR) Chapter 11-54 03(c)(1) states that class AA waters are “high quality waters are those in which water quality is expected to exceed that necessary to support oceanographic research, propagation of aquatic communities and wildlife, compatible recreation and aesthetic enjoyment. It is the objective of class AA waters that these waters remain in their natural pristine state as nearly as possible with an absolute minimum of pollution or alteration of water quality from any human caused source or actions. To the extent practicable, the wilderness character of these areas shall be protected.” These coastal waters are important for fishing, recreation, visual quality, and traditional practices, all of which are manifest at Magic Sands Beach Park.

Impacts and Mitigation Measures

Plans submitted as part of the application for this permit and a County grading permit will specify practices to minimize the potential for sedimentation, erosion and pollution of coastal waters. The County will ensure that its contractor shall perform all earthwork and grading in conformance with:

- (a) “Storm Drainage Standards,” County of Hawai‘i, October, 1970, and as revised.
- (b) Applicable standards and regulations of Chapter 27, “Flood Control,” and Chapter 10, “Erosion and Sedimentation Control,” of the Hawai‘i County Code.

Best Management Practices have been included in the design of the Proposed Action:

- The total amount of land disturbance will be minimized. The construction contractor will be limited to the delineated construction work areas within the project site.
- The contractor will not allow any sediment to leave the site.
- Construction activities with the potential to produce polluted runoff will not be allowed during unusually heavy rains or storm conditions that might generate storm water runoff.
- Cleared areas will be replanted or otherwise stabilized as soon as possible.
- Structures for sediment control will include grated inlets in the parking area, silt fences, and a stabilized construction entrance.

Related construction BMPs aimed at protecting biological resources are discussed below in Section 3.1.4. Grading, paving and construction activities would occur in an area much smaller than one acre, and no dewatering that requires offsite discharge will occur, and the Proposed Action is thus not expected to require a National Pollutant Discharge Elimination System (NPDES) permit.

3.1.4 Flora, Fauna and Ecosystems

Existing Environment

The natural vegetation of this part of Kona consisted of Coastal Strand near the shoreline and Coastal Dry Shrubland and Coastal Dry/Mesic Forest in the inland area (per Gagne and Cuddihy 1990). The Coastal Strand vegetation consisted of a narrow zone with the typical Hawaiian Island pan-tropical herbs, vines and low shrubs adapted to a sandy/rocky, salty substrate. The forest and shrubland consisted of an open canopy forest dominated by a wide variety of trees, shrubs, herbs, vines and ferns. However, the general landscape of the Kailua-Keauhou area has been radically altered by centuries of settlement, over a century of grazing, and particularly the development since 1960 of hotels, condominiums, resort homes, commercial facilities and associated infrastructure. Most of the project site has been either graded and landscaped or is heavily managed, and no totally intact native vegetation exists. A full list of plant species observed on or near the project site is contained in Table 1. Several common native species persist, but no plant species classified as threatened or endangered (USFWS 2020) are present or would be expected on the project site.

The urban beach park project site has only limited habitat for native terrestrial fauna. Typical expected birds include common myna (*Acridotheres tristis*), northern cardinal (*Cardinalis cardinalis*), spotted dove (*Streptopelia chinensis*), zebra dove (*Geopelia striata*), Japanese white-eye (*Zosterops japonicus*), saffron finch (*Sicalis flaveola*), nutmeg mannikin (*Lonchura punctulata*), northern mockingbird (*Mimus polyglottos*) and house finch (*Carpodacus mexicanus*), most of which were observed during the botany survey on the site. Previous observations by the EA author at the site have included parakeets (*Aratinga* sp.).

The only native birds identified during site visits were two common migratory shorebirds typical of rocky shoreline, sandy beach and tidepool habitats: ruddy turnstone or 'akekeke (*Arenaria interpres*), and Pacific golden-plover or kolea (*Pluvialis fulva*). Other shorebirds, particularly the wandering tattler or 'ulili (*Heteroscelus incanus*), would be likely present during extended observations. No threatened or

Table 1 Plant Species Observed Near/On Project Site

Scientific Name	Family	Common Name	Life Form	Status*
<i>Abutilon grandifolium</i>	Malvaceae	Hairy abutilon	Herb	A
<i>Amaranthus viridis</i>	Amaranthaceae	Slender amaranth	Herb	A
<i>Ananas comosus</i>	Bromeliaceae	Pineapple	Shrub	A
<i>Asystasia gangetica</i>	Acanthaceae	Chinese violet	Vine	A
<i>Barleria repens</i>	Acanthaceae	Coral creeper	Shrub	A
<i>Boerhavia coccinea</i>	Nyctaginaceae	None	Herb	A
<i>Bougainvillea sp.</i>	Nyctaginaceae	Bougainvillea	Vine	A
<i>Carica papaya</i>	Caricaceae	Papaya	Tree	A
<i>Catharanthus roseus</i>	Apocynaceae	Madagascar periwinkle	Shrub	A
<i>Chenopodium murale</i>	Amaranthaceae	Lamb's quarters	Herb	A
<i>Chloris barbata</i>	Poaceae	Swollen fingergrass	Herb	A
<i>Cleome gynandra</i>	Capparaceae	Spider wisp	Herb	A
<i>Clusia rosea</i>	Clusiaceae	Autograph tree	Tree	A
<i>Coccinia grandis</i>	Cucurbitaceae	Ivy gourd	Vine	A
<i>Coccoloba uvifera</i>	Polygonaceae	Sea grape	Tree	A
<i>Cocos nucifera</i>	Aracariaceae	Coconut	Tree	A
<i>Codiaeum variegatum</i>	Euphorbiaceae	Croton	Shrub	A
<i>Coffea arabica</i>	Rubiaceae	Coffee	Shrub	A
<i>Cordyline fruticosa</i>	Agavaceae	Ti	Shrub	A
<i>Crinum asiaticum</i>	Amaryllidaceae	Spider lily	Herb	A
<i>Cynodon dactylon</i>	Poaceae	Bermuda grass	Herb	A
<i>Digitaria insularis</i>	Poaceae	Sourgrass	Herb	A
<i>Eleusine indica</i>	Poaceae	Goose grass	Herb	A
<i>Euphorbia heterophylla</i>	Euphorbiaceae	Kaliko	Shrub	A
<i>Euphorbia hirta</i>	Euphorbiaceae	Garden spurge	Herb	A
<i>Euphorbia hypericifolia</i>	Euphorbiaceae	Graceful spurge	Herb	A
<i>Eragrostis tenella</i>	Poaceae	Lovegrass	Herb	A
<i>Ficus microcarpa</i>	Moraceae	Chinese banyan	Tree	A
<i>Ficus sp.</i>	Moraceae	Banyan	Tree	A
<i>Ipomoea indica</i>	Convolvulaceae	Morning glory	Vine	I
<i>Ipomoea triloba</i>	Convolvulaceae	Little bell	Vine	A
<i>Leonotis nepetifolia</i>	Lamiaceae	Lion's ear	Herb	A
<i>Lepidium bonariensis</i>	Brassicaceae	Pepperwort	Herb	A
<i>Livistona chinensis</i>	Arecaceae	Chinese fan palm	Tree	A
<i>Mangifera indica</i>	Anacardiaceae	Mango	Tree	A
<i>Malvastrum coromandelianum</i>	Malvaceae	False mallow	Shrub	A
<i>Megathyrsus maximus</i>	Poaceae	Guinea grass	Herb	A
<i>Merremia tuberosa</i>	Convolvulaceae	Wood rose	Vine	
<i>Momordica charantia</i>	Cucurbitaceae	Bitter gourd	Vine	A
<i>Monstera deliciosa</i>	Araceae	Monstera	Vine	A
<i>Morinda citrifolia</i>	Rubiaceae	Noni	Tree	A
<i>Musa x paradisiaca</i>	Musaceae	Banana	Shrub	A
<i>Paspalum conjugatum</i>	Poaceae	Hilo grass	Herb	A

Scientific Name	Family	Common Name	Life Form	Status*
<i>Passiflora edulis</i>	Passifloraceae	Liliko'i	Vine	A
<i>Passiflora suberosa</i>	Passifloraceae	Huehue haole	Vine	A
<i>Phymatosorus grossus</i>	Polypodiaceae	Laua'e	Fern	A
<i>Pithecellobium dulce</i>	Fabaceae	Opiuma	Tree	A
<i>Plumbago zeylanica</i>	Plumbaginaceae	'Ilie'e	Herb	I
<i>Plumeria sp.</i>	Apocynaceae	Plumeria	Shrub	A
<i>Portulaca oleracea</i>	Portulacaceae	Portulaca	Herb	A
<i>Portulaca pilosa</i>	Portulacaceae	'Akulikuli	Herb	A
<i>Prosopis pallida</i>	Fabaceae	Kiawe	Tree	A
<i>Rivina humilis</i>	Phytolaccaceae	Pokeweed	Shrub	A
<i>Samanea saman</i>	Fabaceae	Monkeypod	Tree	A
<i>Scaevola taccada</i>	Goodeniaceae	Naupaka kahakai	Shrub	I
<i>Schefflera actinophylla</i>	Araliaceae	Octopus tree	Tree	A
<i>Senna occidentalis</i>	Fabaceae	Coffee senna	Herb	A
<i>Solanum americanum</i>	Solanaceae	Popolo	Shrub	I
<i>Sporobolus virginicus</i>	Poaceae	'Aki 'aki grass	Herb	I
<i>Syzygium cumini</i>	Myrtaceae	Java plum	Tree	A
<i>Thespesia populnea</i>	Malvaceae	Milo	Tree	I
<i>Tournefortia argentea</i>	Boraginaceae	Tree heliotrope	Tree	A
<i>Tradescantia spathacea</i>	Commelinaceae	Oyster plant	Herb	A
<i>Waltheria indica</i>	Sterculiaceae	'Uhaloa	Shrub	I

A = alien, E = endemic, I = indigenous, End = Federal and State listed Endangered Species

endangered shorebirds or waterbirds would be expected at the project site. Furthermore, it is unlikely that native forest birds would be expected to use the project site due to its low elevation, urban context, alien vegetation and lack of adequate forest resources. Although the formerly endangered Hawaiian hawk (*Buteo solitarius*) is often seen in Kona at slightly higher elevations, it would be unusual to observe it near the project site. The beach park site lacks tall trees in the appropriate setting for hawk nests.

Several threatened or endangered seabirds also merit discussion because they utilize terrestrial habitat on the Big Island and may be harmed by common human activities and structures. The Hawaiian Petrel (*Pterodroma sandwichensis*), the Hawaiian sub-species of Newell's shearwater (*Puffinus newelli*), and the band-rumped storm-petrel (*Oceanodroma castro*) have been recorded over-flying many areas on the Island of Hawai'i between late April and the middle of December each year. The Hawaiian petrel and band-rumped storm-petrel are listed as endangered, and Newell's shearwater as threatened, under both federal and State of Hawai'i endangered species statutes. The primary cause of mortality in these species in Hawai'i is thought to be predation by alien mammalian species at the nesting colonies. Collision with man-made structures is another significant cause. Nocturnally flying seabirds, especially fledglings on their way to sea in the summer and fall, can become disoriented by exterior lighting. Disoriented seabirds may collide with manmade structures and, if not killed outright, become easy targets of predatory mammals. Although they may fly over various coastal locations in Kona, no suitable nesting habitat for any of these seabird species is documented from the project area.

The endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*) is often found in alien as well as native vegetation in a variety of locations throughout the island of Hawai'i. This is the only native land mammal in Hawai'i. These solitary bats are widely scattered and roost almost undetected in tall shrubs and trees. They are vulnerable to disturbance during the summer pupping season, when mothers with pups may be unable to flee if the trees they are roosting in are cut or trimmed. Apart from the Hawaiian hoary bat, all terrestrial mammals in the project area are introduced species, including feral cats (*Felis catus*), small Indian mongooses (*Herpestes a. auropunctatus*) and various species of rats (*Rattus* spp.). None are of conservation concern and all are deleterious to native flora and fauna.

Three species of marine animals that occur in Hawaiian waters have been declared threatened or endangered by federal wildlife agencies, and one was recently delisted. The threatened green sea turtle (*Chelonia mydas*) occurs commonly along the Kona Coast, and is known to feed on selected species of macroalgae. Endangered green sea turtles are frequently observed at Magic Sands Beach Park. The endangered hawksbill turtle (*Eretmochelys imbricata*) is known infrequently from waters off the Kona Coast. Individuals of the Hawaiian Islands population of humpback whales (*Megaptera novaeangliae* – recently taken off the endangered species list) winter in the Hawaiian Islands from December to April, and are also frequently seen from Magic Sands Beach Park. The Hawaiian monk seal (*Monachus schauinslandi*) is an endangered earless seal that is endemic to the waters off of the Hawaiian Islands. Monk seals commonly haul out of the water onto sandy beaches to rest. As the shoreline at the park is periodically sand covered, it is occasionally a location for seal haul-out.

Impacts and Mitigation Measures

Of the several dozen trees on the site, two banyans require removal. Because of the lack of native ecosystems or threatened or endangered terrestrial species on the project site, the Proposed Action would have no adverse impacts to native vegetation or habitat. Avoidance measures will be instituted in order to avoid impacts to Hawaiian hoary bats and listed seabirds:

- There will be no clearing of woody vegetation taller than 15 feet during the bat pupping season, which runs from June 1 through September 15 each year.
- No additional lighting is planned. All lighting currently is shielded in conformance with the Hawai'i County Outdoor Lighting Ordinance to reduce the risk that seabirds may be attracted to and then disoriented by the lighting, as well as reduce light pollution. Any replacement lighting will similarly conform.
- No nighttime construction work will be allowed during the seabird-fledging season, which runs from September 15 through December 15 each year.

In order to reduce impacts to the shoreline and marine environment and the organisms it contains, including threatened green sea turtle, the endangered hawksbill turtle, the formerly endangered humpback whale, and the endangered Hawaiian monk seal, a number of measures will be undertaken:

- Sedimentation from construction work will be minimized and contained within the vicinity of the site through the appropriate use of effective silt containment devices and the curtailment of work during adverse tidal and weather conditions.

- The installation of sediment control devices *mauka* of the high water mark that is being undertaken to prevent construction-related sediment and debris from entering the ocean during construction activities will be positioned so that no sea turtles may become trapped behind the sediment control devices and thus restricted from accessing the ocean.
- All construction debris that may pose an entanglement hazard to listed species will be removed from the project site if such materials are not being actively used. All construction debris will be removed at the conclusion of work.
- No project-related materials (fill, revetment rock, pipe, etc.) will be stockpiled in the water (intertidal zones, reef flats, stream channels, wetlands, etc.) or on beach habitats.
- Any debris removed from the marine/aquatic environment will be disposed of at an approved upland site.
- No habitat contamination (trash or debris disposal, non-native species introduction, attraction of non-native pests, etc.) will be allowed to result from project-related activities.
- Fueling of project-related vehicles and equipment will take place away from the water and a contingency plan to control petroleum products accidentally spilled during construction will be developed. Absorbent pads and containment booms will be stored onsite, if appropriate, to facilitate the clean-up of accidental petroleum releases. Any under-layer fills used in construction project will be protected from erosion with stones (or core-loc units) as soon after placement is practicable.
- Any soil exposed near water as part of construction will be protected from erosion (with plastic sheeting, filler fabric, etc.) after exposure and stabilized as soon as practicable (with native or non-invasive vegetation matting, hydroseeding, etc.).

3.1.5 Air Quality, Noise, and Scenic Resources

Environmental Setting

As discussed in Section 3.1.2, winds in the area exhibit a daily reversal, with light sea breezes during the daytime (peaking in the afternoon) and a shallow mountain drainage wind from the east at night. Wind speeds are generally light and seldom exceed an average daily speed of 10 miles per hour. Light and variable westerly “kona” winds occasionally replace this pattern, most often in winter (UH-Manoa, Dept. of Geography 1998). Air quality in the project area is somewhat affected by emissions from motor vehicles, industry and natural sources. For 35 continuous years, volcanic emissions of SO² from Kilauea Volcano converted into particulate sulfate, forming a volcanic haze, locally called vog. Vog becomes trapped in the Kona atmosphere because of the diurnal wind reversal, which creates a largely closed airshed system. Since August 2018, when eruption activity at Kilauea ceased, vog has been essentially absent. Manmade air pollution sources include oil-fired power plants, which emit SO², nitrogen oxides, and particulate matter (PM), and motor vehicles, which emit CO, nitrogen oxides and hydrocarbons (an ozone precursor), as well as smaller amounts of other pollutants. The location of Magic Sands Beach Park exposes it to minor levels of automobile exhaust pollutants.

Noise levels on the site are moderate and are derived mainly from motor vehicles and road maintenance on Ali‘i Drive. Other sources include onsite recreational activities, occasional nearby construction, landscape maintenance and other residential activities, and natural sources, including ocean waves. Noise-sensitive receptors within 100 feet of the beach park include several apartments and condominiums.

The Hawai‘i County General Plan (Hawai‘i County 2005:7-12) notes regarding scenic resources in North Kona that:

“The Kona districts have long attracted people because of their natural beauty. Although man-made structures are in some places dominant, the vast expanse of the Kona landscape is still the area's most striking feature. North Kona, in the area called Kekaha, is characterized by a sense of openness created by expansive areas of lava flows. Vegetation on the lava is comprised of low pockets of grasses and scrub trees. From the coastline, the land climbs slowly to the distant saddle plateau between Mauna Kea and Mauna Loa. This long natural grade also contributes to the sense of openness and space. The rest of North Kona is dominated by Hualālai. Its steep slopes provide a green backdrop when viewed from the coast, or spectacular views of the coastline, ocean and horizon from higher elevations. Part of Kona’s natural beauty is also due to the wide range of climatic conditions in a relatively short distance. Such variations extending from the coastal areas to the higher elevations are evidenced by changes in vegetation, producing a wide scope of different physical environments.”

Although not specifically called out as an example of natural beauty, Magic Sands Beach Park is highly scenic (see Figure 2), which is readily apparent to passing motorists. This site, along with the more extensive shoreline frontage near Kamoia Point (Lyman’s surf spot) and Kahalu‘u County Beach Park, is one of the few stretches along the southern half of Ali‘i Drive where development does not block ocean views.

Impacts and Mitigation Measures

Due to the minor scale of improvements, the Proposed Action would not measurably affect air quality, except temporarily and minimally during construction; dust will be strictly controlled through BMPs.

Noise impacts would occur during construction, which could generate noise exceeding 95 decibels at times, impacting nearby areas. In cases such as here where construction noise is expected to exceed the Department of Health’s (DOH) “maximum permissible” property-line noise levels, contractors are required to obtain a permit per Title 11, Chapter 46, HAR (Community Noise Control) prior to construction. DOH will review the proposed activity, location, equipment, project purpose, and timetable in order to decide upon conditions and mitigation measures, such as restriction of equipment type, maintenance requirements, restricted hours, and portable noise barriers. Such measures, when needed, are effective in reducing noise to minimal levels. No permanent noise impacts would occur.

The Hawai‘i County General Plan calls for preserving the quality of areas endowed with natural beauty and protecting scenic vistas and view planes from becoming obstructed. Impacts to views will occur during construction, as equipment intrudes and blocks views. These minor and temporary scenic impacts would not require mitigation. The comfort station structure will have a slightly smaller footprint than the current structure plus shower, and the height will remain the same. Due to its design (see Figure 3) and location on the south end of the site, there will be no permanent adverse visual impacts, such as interference with scenic views or insertion of incongruous or clashing visual elements. No additional lighting is planned; in order to reduce light pollution, any replacement lighting at the comfort station will

be shielded, and will be specified to be blue-deficient lighting with the lowest lumen value possible consistent with security and safety.

3.1.6 Hazardous Substances, Toxic Waste and Hazardous Conditions

Environmental Setting

No Phase I Environmental Site Assessment was conducted for the project site, including roadsides and beaches. It has a long history as a beach park and site managers are not aware of any hazardous substances, toxic waste and hazardous conditions aside from potential issues at and near the comfort station. State databases did not indicate any Underground Storage Tanks (USTs), Leaking Underground Storage Tanks (LUSTs), or records of incidents or releases on the site or in surrounding properties (<https://eha-cloud.doh.hawaii.gov/iheer/#!/viewer>).

Myounghee Noh & Associates, L.L.C. (MNA) conducted a hazardous material survey and soil screening at the comfort station and vicinity in September and October 2018, targeting areas anticipated to be disturbed or altered as part of the Proposed Action (MNA 2018). The survey identified six suspect building materials and conducted analysis of three asbestos bulk samples, four lead paint chip samples, and a visual inspection of light ballasts, fluorescent light tubes, and light switches. MNA found no lead-containing paints (LCP), arsenic-containing material, or PCB-containing light ballasts. No asbestos-containing material (ACM) was observed, but a tile mortar was found to have trace asbestos. Eight mercury-containing light tubes and one suspect mercury-containing light switch were identified. Soil was tested with multi-incremental (MI) sampling from four decision units (DU). Arsenic, chromium, and lead were measured below the Environmental Action Levels (EAL) for unrestricted land use in all soil samples. No measurable level of cadmium was found in the soil samples. Various pesticides were measured below the EALs for unrestricted land use in the soil samples collected from DU-03 and -04, around the perimeter of the comfort station. No measurable levels of pesticides were reported in soil samples collected from DU-01 (handicap parking and volleyball court) or DU-02 (picnic bench area).

Impacts and Mitigation Measures

Based on the visual survey and sampling and analysis of suspect bulk materials and paints, special hazard control measures are warranted for work involving trace asbestos and mercury. These control measures are required so that OSHA and other applicable federal requirements are met. MNA provided a set of measures to the County that will ensure that properly trained employees perform construction work and renovation that disturbs hazardous materials in a manner protective of the site workers, the public, facility users, and the environment. Engineering control such as water misting and wind barriers will also be instituted to control dust hazard. Best management practices including erosion control will be implemented, as discussed in previous sections, to prevent surface runoff and exposure to humans and the environment. In the event excess soils require disposal, the contractor will be required to coordinate with the landfill or other recipients for their guidelines and requirements. Additional coordination may be required prior to reuse/disposal and other interested agencies (i.e. Hawai'i Department of Health Solid and Hazardous Waste Branch) are to be notified, as applicable.

Although it is unlikely that any potentially hazardous, toxic or radioactive waste would be found on the remainder of the project site, reasonable precautions will be undertaken in the context of project construction best management practices to include provisions for appropriate response and remediation should any such hazardous, toxic, or radioactive material be encountered during the construction phase of the Proposed Action.

3.2 Socioeconomic and Cultural

3.2.1 Socioeconomic Characteristics

The Proposed Action would affect and benefit residents of the Kailua to Keauhou area, Hawai‘i Island in general, and visitors to the Big Island. The immediate project area is within a zone of apartments and condominiums, many occupied by visitors, as well as over 50 single-family residential lots that line Ali‘i Drive. Around this is a residential neighborhood of nearly 500 homes created from successive increments of the White Sands Beach Estates, Keauhou View Estates, and Ali‘i Heights subdivisions.

Table 2 provides information on the population and socioeconomic characteristics of Kailua and the County of Hawai‘i from the U.S. 2010 Census of Population. As with nearly all communities in the State, both Kailua and the island as a whole display marked socioeconomic diversity, with no census-classified racial group representing the majority anywhere. All areas have some of the highest “Two or More Races” responses of anywhere in the U.S., at more than 20%. However, there are differences distinguishing Kailua and other West Hawai‘i communities from Hawai‘i County as a whole. Kailua has a slightly higher proportion of Whites and a lower proportion of Asians, as well as a higher proportion of Native Hawaiians or Pacific Islanders. Kailua’s socioeconomic characteristics reflect in their ethnic, educational attainment, median income and poverty rates the influx of older mainland residents drawn by the drier climate and attractive coastal waters of West Hawai‘i. Somewhat paradoxically, however, there are more elderly in East Hawai‘i than West Hawai‘i, despite the latter’s reputation for attracting retirees. This is explained by the fact that Kailua has a greater proportion in the 25 to 54-year-old category. East Hawai‘i’s lower population in this demographic has likely resulted from the outflow of young, working age people to West Hawai‘i, Honolulu and the mainland. Another difference is the percent of housing for seasonal/vacation use, which reflects the importance of the visitor industry in West Hawai‘i.

Visitors are also an important component of the user population at all Kona beach parks. According to a recent summary of State of Hawai‘i-sponsored research from the Hawai‘i Tourism Authority, arrivals to Hawai‘i Island in 2019 were up 4.3% over 2018 levels to 1,779,526 visitors, and visitor days were up 1.9%. This continues years of rises but at lower rates, perhaps because of lingering fears of volcanic eruptions, emissions and earthquakes. The average daily census rose 1.9% to 35,696 visitors present on any given day, about 16% of the resident population (<https://www.hawaiitourismauthority.org/research/>). HTA has not yet compiled annual statistics for 2019, but previous years indicated that the largest group of visitors to the island of Hawai‘i were from the U.S. West (40.3%), followed by U.S. East (26.6%), Japan (10.8%), Canada (5.9%), Other Asia (5.1%), Oceania (3.7%) and Europe (3%), (10.8%), Canada (5.9%),

Table 2: Selected Socioeconomic Characteristics

	Kailua	Hawai'i County
Population, 2010	11,975	185,079
Persons under 5 years, percent, 2013	6.7%	6.3%
Persons under 18 years, percent, 2013	23.4%	22.2%
Persons 65 years and over, percent, 2013	12.4%	16.8%
Female persons, percent, 2013	49.8%	49.9%
White alone, percent, 2013	36.7%	34.4%
Black or African American alone, percent, 2013	0.4%	0.8%
American Indian and Alaska Native alone, percent, 2013	0.6%	0.6%
Asian alone, percent, 2013	18.1%	22.1%
Native Hawaiian and Other Pacific Islander alone, percent, 2013	15.2%	12.7%
Two or More Races, percent, 2013	25.2%	29.5%
Hispanic or Latino, percent, 2013	12.2%	12.2%
White alone, not Hispanic or Latino, percent, 2013	34.5%	30.7%
Living in same house 1 year & over, percent, 2008-2012	80.3%	86.2%
Foreign born persons, percent, 2008-2012	15.9%	11.9%
Language other than English spoken at home, pct. age 5+, 2008-2012	25.2%	19.4%
High school graduate or higher, percent of persons age 25+, 2008-2012	87.8%	90.6%
Bachelor's degree or higher, percent of persons age 25+, 2008-2012	19.1%	25.6%
Mean travel time to work (minutes), workers age 16+, 2008-2012	18.8	25.4
Homeownership rate, 2008-2012	52.4%	65.1%
Housing units in multi-unit structures, percent, 2008-2012	47.9%	20.2%
Median value of owner-occupied housing units, 2008-2012	\$373,600	\$326,900
Persons per household, 2008-2012	3.09	2.82
Per capita money income in past 12 months (2012 dollars), 2008-2012	\$25,985	\$24,882
Median household income, 2008-2012	\$60,965	\$52,098
Persons below poverty level, percent, 2008-2012	12.2%	17.0%

Source U.S. Census Bureau: State and County QuickFacts. Data derived from Population Estimates, American Community Survey, Census of Population and Housing. <https://www.census.gov/quickfacts/table/PST045216/15>; accessed March 2017

Other Asia (5.1%), Oceania (3.7%) and Europe (3%). The majority (82.4%) of the visitors came to the state for a vacation. Six out of ten (59.3%) visitors to the island of Hawai'i stayed in hotels while in the state. Some visitors stayed in condominiums (17.3%), rental homes (13.1%), timeshares (9.9%) and with friends or relatives (9.9%) (HTA 2018). Until the coronavirus pandemic, visitor numbers were expected to increase again in 2020; future numbers are uncertain at this time. Visitors who stay in Kailua-Kona or travel around the island by car often stop at beach parks in Kona, with Magic Sands being one of the most popular, although not large enough to accommodate more than about two hundred users at any given time.

Impacts and Mitigation Measures

The Proposed Action would benefit recreational users, whether residents or visitors, by providing ADA-accessible facilities, including the comfort station, parking, showers and walkways. Along with the beneficial impacts of parks, they may also generate minor amounts noise and traffic, attract unwanted activities, and pose a nuisance for very close neighbors. Other than temporary construction disturbance, nearby residents would not be affected. The beach park already exists, and no increase in nuisances would occur as a result of improving ADA accessibility. Consultation with the closest neighbors to date has revealed support for and no objections to the plans.

3.2.2 Cultural Resources

A Cultural Impact Assessment was prepared for the Proposed Action by Lokelani Brandt., M.A., Genevieve Glennon, B.A., and Robert Rechtman, Ph.D., of ASM Affiliates. It is contained in whole as Appendix 3 and is summarized below, with some scholarly references removed for readability.

Cultural and Historical Background

The first colonization of Hawai'i Island is believed to have occurred on the eastern side by roughly 1000 A.D. Early settlers are thought to have first come to the leeward side of the Hawai'i Island for the procurement of resources during the Early Expansion period up to 1600 A.D. (Cordy 1995). Permanent habitation of Kona began toward the end of that period (Cordy 1995; Schilt 1984).

The Expansion Period was characterized by significant social stratification, socioeconomic changes and 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, as did efforts to increase upland agriculture. Rosendahl (1972) 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 argued 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 discussed below. 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.

The project site falls within the central region of the traditional *moku* of Kona, in what is today known as North Kona, on the dry leeward side of the island. Kona extends from the shore across the entire volcanic mountain of Hualālai, and continues to the summit of Mauna Loa. Sometime during the A.D. 1400s, the *moku* were further divided into distinct land units known as *ahupua'a* (Kirch 1985). *Ahupua'a* were prototypically long wedge-shaped slices of land that incorporated all of the eco-zones from the mountains to the sea and several hundred yards beyond, which afforded their inhabitants unlimited access to a diverse subsistence resource base (Cordy 2000). Entire *ahupua'a* or portions thereof were managed by appointed *konohiki*, or lesser chiefs, who acted as overseers under the rule of an *ali'i 'ai ahupua'a*. The *moku* of Kona has over 100 *ahupua'a*, and approximately 44 of these fall within the fertile central region of Kona. The majority of the *ahupua'a* in central Kona are fairly narrow and include a combination of forest lands, upland farms, coastal *kula*, and offshore resources.

The project site is located in the shoreline zone, *makai* of the *kula* zone of the Kona Field System, a dryland agricultural complex that extends 20 miles in length, from the coast to the forested slopes of Kona (Cordy 1995). Typically cultivated with sweet potatoes, paper mulberry (*wauke*) and gourds, this zone is often marked by mounds from clearing and planting, modified outcrops and planting terraces and depressions (Hammatt and Clark 1980, Hammatt and Folk 1980, Schilt 1984). Habitation areas are scattered through the *kula* zone but are more typically found along the shoreline (Cordy 1995) along with

burial, canoe storage, rituals and marine exploitation activities. The shoreline zone was also the usual location for homes for royalty and their supporting activities including *heiau*, *holua* slides and *pu'uhonua*, or places of refuge.

The project site is mainly within Pāhoehoe 4 Ahupua'a, with some minor improvements to parking, waterline extensions and Ali'i Drive right-of-way work within the adjacent La'aloa 1 Ahupua'a, also referred to as La'aloa Iki, and with existing utility connections in Pāhoehoe 3 (see Figures 3, 4, and 5 and Appendix 3). According to Pukui et al. (1976), Pāhoehoe was named in honor of the chiefess Pāhoehoe-wahine-iki-a-ka-lani. The name also references the *pāhoehoe* type of lava characterized by its unbroken, smooth texture, which is also a defining geological feature of this area. The name La'aloa has been literally translated by Pukui et al. as "very sacred" and was home to a *heiau* "called Lele-iwi (bone altar)" where Hāwa'e, a famous priest, resided (ibid:126). Although descriptive historical references for Pāhoehoe and La'aloa are limited, Handy et al. (1991) and Kamakau (1992) described the upland areas extending from Kailua to Keauhou. Their accounts are presented below:

In the uplands above Kahalu'u, Keauhou, and Kailua, was a vast plantation named Kuaheua (huge), belonging to Kamehameha I. To protect these lands, which were cultivated for his people in the section, Kamehameha established the law that anyone who took one taro or one stalk of sugar cane must plant one cutting of the same in its place (Handy et al. 1991:524).

He [Kamehameha I] himself and those who ate with him ('*ai-alo*) toiled with their own hands to set out a large tract in the uplands of Kailua, known as Kuaheua. When the land had been cleared and taro tops planted the whole field was covered with fern leaves as mulch. As the taro grew large enough to pull the little ones were left to grow, and it was said that the field was productive for years without wild growth. The chief did not allow his men to help themselves to taro and tops for planting, as was the custom for those in power in time of scarcity. He believed in the rights of the common people... (Kamakau 1992:204).

Presumably, what Handy et al. (1991) described as *Kūāhewa* may be a portion of what has been referred to as the Kona Field System, described in general above. A large portion of the field system is designated in the Hawai'i Register of Historic Places as Site 50-10-37-6601 and has been determined eligible for inclusion in the National Register of Historic Places. The Kona Field System is approximately 20 miles long and 3 miles wide, and extends from Kau Ahupua'a at the north to Ho'okena Ahupua'a at the south, with an elevation range from sea level to 8,000 feet. A defining feature of the Kona Field System is the network of long field walls that extend in a *mauka-makai* direction. These walls are known by several names, all of which share a similar concept of the skeleton of the land, such as *kuaiwi* or backbone. Handy et al. (1991) provided the following additional description of this concept, stating:

Iwi (bone) or *iwi kuamo'o* (backbone) was the term applied to the line of rocks and refuse thrown up along the side of *mo'o'aina*, or *kihapai* in clearing. These *iwi* or *iwi'aina* demarked the boundaries of plantations and arable holdings, and hence were also called *palena*, or bounds. They were not mere rubbish heaps, but for example on Hawaii, served for planting sugar cane round about the field of dry taro in upland Kona, Ka'u, and Kohala... In upland Kona they may be seen today buried in woods or occasionally bounding taro plantations still utilized (Handy et al. 1991:51)

The ancient horticulturalists observed the elements for signs of rain and invoked certain deities to encourage rainfall and promote abundance. Kona is fittingly associated with the deity Lono, who was considered the “rain maker” and an icon of fertility (Handy et al. 1991:333). Lono was often identified with the southern coast of Hawai‘i Island, and according to Kalokuokamaile, a native of Kona, temples dedicated to Lono were established throughout Kona to invoke rain and fertility (ibid.). Lono was also embodied in dark rain clouds brought on by the southerly (*kona*) storms. In traditional myths, it is believed that Lono migrated from the south and landed in Kona where he introduced several food plants, such as *kalo* (taro), *‘uala* (sweet potato), *uhi* (yams), *kō* (sugar cane), *mai‘a* (banana) and *‘awa* (kava) (ibid.). Mythology permeated agricultural pursuits as well as other facets of daily life.

Specific legendary and historical references to the Pāhoehoe and La‘aloa Ahupua‘a are limited and appear mainly as passing remarks, or are lumped together with references to the neighboring *ahupua‘a*. Additionally, the literature referring to Pāhoehoe does not distinguish whether the *ahupua‘a* being referred to is Pāhoehoe 1, 2, 3, or 4. Maly notes that traditionally, Pāhoehoe was one large land unit until the change to a western style land ownership system (the *Māhele* of 1848), when it was divided into four units that are now all identified as separate *ahupua‘a* (Maly 1996:A). Maly identified three legendary accounts that made specific reference to Pāhoehoe and La‘aloa Ahupua‘a: A Story of Hāwa‘e, *Ke Ka‘ao Ho‘oniua Pu‘uwai no Ka-miki* (The Heart Stirring Story of Ka-Miki), *He Mo‘olelo Ka‘ao no Kepaka‘ili‘ula* (A Story about Kepaka‘ili‘ula), and The Legend of Kauma‘ili‘ula. Summaries of each of these stories are presented in Appendix 3.

Other early events documented in the traditional history of Kona are associated with ‘Umi-a-Liloa, whose father was the first to unify rule there. Kona was a popular dwelling place of chiefs (Kamakau 1992), and traditional Hawaiian political authority was centered in the area from Kailua to Keauhou from at least the 15th century to the reign of Kamehameha I. Kamehameha embraced foreign trade, including the provisioning of whaling vessels and sandalwood traders (Schilt 1984).

The prophecy of the *kāula* (seer) named Kapihe during the time of Kamehameha I is a significant *mo‘olelo* that references the Pāhoehoe-La‘aloa area (by association with the identified place names). Kapihe’s prophecy has been interpreted as foretelling the overturning of the traditional *kapu* system, a system that governed nearly all aspects of the traditional Hawaiian socio-political system, as well as the unification of the Hawaiian Islands under a single ruler. It is important to note that several different versions of this prophecy were printed in Hawaiian language newspapers, as well as in Kamakau (1992) and Malo (1951). According to Kamakau’s version:

Ka-pihe the seer prophesied in the presence of Kamehameha [I] and said, “There shall be a long *malo* reaching from Kuamo‘o to Holualoa. The islands shall come together, the tabus shall fall. The high shall be brought low, and the low shall rise to heaven.” (1992:223).

These prophecies were fulfilled within just a few years. Missionaries first arrived in Kailua in 1820 but stayed only a few months. Upon returning three years later they were allotted land for missions and schools. In 1823, to accommodate the growing Hawai‘i Calvinist mission, British missionary William Ellis along with members of the American Board of Commissioners for Foreign Missions (ABCFM) circuited Hawai‘i Island in search of suitable locations for future mission stations and churches. Ellis and

his party set out on the *ala loa* trail, located near the coast and passed through many places. As they made their way through the Pāhoehoe-La‘aloa area, Ellis wrote:

We walked on to Pahoehoe, where we entered a large house, in which many workmen were employed in making canoes. About fifty people soon after assembled around us. We asked them if they would like to hear about the true God, and the way of salvation. They answered, Yes. I then addressed them for about twenty minutes on the first principles of the gospel. As soon as I began to speak, they all sat down, and observed perfect silence.

Shortly after this service we took our leave, and proceeded along the shore to Kahaluu; where a smart shower of rain obliged us to take shelter in a house by the road side. While resting there, the voice of wailing reached our ears. We inquired whence it came and were informed by the people of the house, that a sick person in the neighborhood had just expired (1917:90).

Missionaries like William Ellis sparked a major religious shift that left a lasting impact on the traditional Hawaiian culture including their concepts of agriculture, land ownership and land use. From the 1820s into the 1840s, subsistence farming slowly gave way to a market economy with the introduction of coffee, corn, pumpkins, cotton, pineapple and Irish potatoes. Other crops introduced in the Kailua portion of the *kula* zone of the Kona Field System included melons, cabbage, onions, oranges and tobacco.

Profound religious, socioeconomic and demographic changes also took place in the early 1800s that resulted in the establishment of a Euro-American style of land tenure. The *Māhele ‘Āina* of 1848 was the vehicle used to divide the land between the crown, government, *konohiki* and native tenants. Prior to this land “reform”, all the land and natural resources of Hawai‘i were held in trust by the *ali ‘i* who, in concert with *konohiki* land agents, meted out use rights to the native tenants at will. The *Māhele ‘Āina* of 1848 would forever change the land tenure and the landscape of the Hawaiian Islands. During the *Māhele* all lands were placed in one of three categories: Crown Lands (for the occupant of the throne), Government Lands, and *Konohiki* Lands; all three types of land were subject to the rights of the native tenants therein.

The *ali ‘i* and *konohiki* were required to present their claims to the Land Commission to receive a Land Commission Award (LCAw.) for lands provided to them by Kamehameha III. They were also required to provide commutations to the government in order to receive royal patents on their awards. The lands were identified by name only, with the understanding that the ancient boundaries would prevail until the land could be surveyed. This process expedited the work of the Land Commission and subsequent land transfers (Chinen 1958). In 1862, the Commission of Boundaries (Boundary Commission) was established to legally set the boundaries of all the *ahupua‘a* that had been awarded as a part of the *Māhele*. However, boundary descriptions were not collected for all *ahupua‘a*.

Native commoners could also register claims for land with the Land Commission, and if substantiated, they would receive awards referred to as *kuleana*. Upon confirmation of a claim, a survey was required before the Land Commission could issue a *kuleana* award. After native tenants were given the right to become private landowners through the *Māhele*, beginning in 1850, foreigners were also given the right to own land upon swearing an oath of loyalty to the Hawaiian Monarchy. According to Kelly (1983), several prominent *konohiki* related in some way to the Kamehameha dynasty received land awards in North Kona District.

As a result of the *Māhele* of 1848, the lands comprising Pāhoehoe 3 and Pāhoehoe 4 were retained as Government land, and subsequently divided and sold off as government issued Land Grants. In contrast, Pāhoehoe 2 was claimed by G. Lahilahi (LCAw. 8520), daughter of John Young Olohana and mistress of Kamehameha III (Kame‘eleihiwa 1992; Kanahela 1999), and all of La‘aloa 1 was claimed by R. Ke‘elikolani (LCAw. 7716), granddaughter of Kamehameha I. Part of the project site is within LCAw. 7716 (see Figure 17 of Appendix 3).

Ten *kuleana* were awarded in Pāhoehoe 1, 2, 3, 4, and eight *kuleana* claims were granted within La‘aloa 1 and 2 ; **none of them appear to include land within the current project site** (see Figures 18-22 of Appendix 3), although the exact location of one coastal parcel could not be ascertained. Four *kuleana* parcels were awarded within Pāhoehoe 1 (LCAw 3436C, 5922 and 3434B). One *kuleana* parcel was awarded in Pāhoehoe 2 (LCAw. 10986). Five *kuleana* parcels were awarded in Pāhoehoe 3 (LCAw. 10986, 3435B, 3436B, and 4705). Parcel 1 of LCAw. 10986 does not appear on historical maps and its location has therefore not been ascertained. Three *kuleana* parcels were granted within Pāhoehoe 4 (LCAw. 3433B, 5788, and 10654). Analysis of the Native Testimonies reveals that eight *kuleana* awardees received or inherited their lands from at least the time of Kamehameha I and II. The Native Testimonies also indicate that three *kuleana* awardees received their lands from chiefs Kahoali‘i and Ka‘ōanā‘eha. The name Kahoali‘i appeared in *He Mo‘olelo Ka‘ao no Kepaka‘ili‘ula* as a chief of Kona. According to the genealogy of Queen Emma that was printed in *Ka Nūpepa Kū‘oko‘a* on May 5, 1883, the chiefess Ka‘ōanā‘eha was married to Keoni Ana, and from their union was born Kekelaokalani and her sister Gini Lahilahi, who laid claimed Pāhoehoe 2nd during the *Māhele*. Only one *kuleana* claim was made within La‘aloa 1st, which was awarded to Opunui as LCAw. 10566. The parcel. described as a *pāhale* (house lot), was located just inland of Hōpoe Bay, while the second *‘āpana* used for agriculture (LCAw 10566:1) was located in the *mauka* portion of the *ahupua‘a*. Within La‘aloa 2, seven *kuleana* awards comprising eight distinct parcels were granted (LCAw. 5773, 5770, 5787, 10889, 10888, 5913, and 5899). Two parcels associated with LCAw. 5787 and 5913 were located at the coast, however, a review of historic maps only shows the location of LCAw. 5787. The exact location of the coastal parcel associated with LCA 5913 granted to Pukai could not be ascertained. The remaining six parcels were for agricultural lands location in the *mauka* section of the *ahupua‘a*.

A review of the Native Testimonies associated with each of these *kuleana* claims shows those parcels awarded at the coast were for *pāhale* or house lots, while those parcels in the uplands were within the traditional Hawaiian agricultural zones, specifically the *kalu‘ulu*, *‘āpa‘a*, and *‘ama‘u* zones. The long rectangular shape of these upland parcels would have given the native tenants access to a range of agricultural zones that could be maximized throughout the year and from which various crops could be cultivated. Closer examination of the Native Testimonies also show that majority of the *kuleana* awardees had originally claimed anywhere from two to six parcels but following the decisions rendered by the Land Commission were only awarded one or two parcels at most. The drastic reduction in the area of cultivatable land made it hard for the native tenants to sustain themselves.

The Native Testimonies provide insight into the pre-*Māhele* settlement patterns specific to Pāhoehoe and La‘aloa. The location of house lots on the coast and scattered agricultural fields in the uplands is a classic example of the *mauka-makai* dynamic inherent in the *ahupua‘a* system. Although not explicit in the Native Testimonies, historic maps and information collected from oral histories (Maly 1998a; 1998b)

reveal the importance of pedestrian trails in this system. One such trail is depicted on an early Real Property Tax Office map (see Figure 13 of Appendix 3) extending from the former Ala Loa through Grant 1927 and Grant 1751 and terminating at the current Kuakini Highway. The dispersed agricultural fields coupled with the clustered residential sites provided residents with the resources necessary to sustain themselves. This settlement pattern would be severely altered as lands furnishing the essentials of traditional life were reallocated following the *Māhele*.

In conjunction with the *Kuleana* Act, the King authorized the issuance of Land Grants to applicants for tracts of Government land that were allocated during the *Māhele*. These Land Grants were generally larger than those awarded by the Land Commission. The Act resolved that portions of the Government Lands should be set aside and sold as grants ranging in size from one to fifty acres at a cost of fifty cents per acre. The stated goal of this program was to enable native tenants, many of whom were insufficiently awarded or not awarded land through the *Kuleana* Act to purchase lands of their own. Despite the goal, this provided the mechanism that allowed many foreigners to acquire large tracts of the Government Lands. Two grants were awarded within Pāhoehoe 1, totaling 137 acres; four grants were awarded in Pāhoehoe 3, totaling 69 acres, while another four grants were awarded in Pāhoehoe 4, totaling 67.75 acres. Five land grants were awarded within La‘aloa 2. A portion of the project site falls within the western portion of both Land Grant 2034 to Kaupehe (see Figure 23 of Appendix 3).

The Native Testimonies provided during the Boundary Commission hearings provide insight into the land use and residency of La‘aloa 1 and neighboring Pāhoehoe 4 *Ahupua‘a*. Testimonies described the presence of *iwi ‘āina* or stone walls often used to mark land boundaries (Pukui and Elbert 1986). As previously mentioned, some of these *iwi ‘āina* have survived into the present day, and have been noted as a major characteristic of the Kona Field System. Additionally, Kipapa described the presence of a *kīhāpai kō‘ele*, a “small land unit farmed by a tenant for the chief” (Pukui and Elbert 1986:158). Both testimonies also describe areas known as *o‘io‘ina*, which Pukui and Elbert define as a “resting place for travelers, such as a shady tree, [or] rock” (1986:280). Although these *o‘io‘ina* were likely used mainly by resident farmers, travelers making their way along the steep slopes of Kona may also have rested there.

R. Ke‘elikōlani retained La‘aloa 1 until her death in 1883, when it was transferred to her niece, Bernice Pauahi Bishop. Upon Pauahi’s death in 1884, her husband and associates took over as executors of her estate. In 1885, La‘aloa 1 was sold to Lahapa Kailipeleuli (also known as Lahapa Halsey), who held the *ahupua‘a* until 1902. Between 1885 and 1902, Lahapa Halsey began leasing portions of the *ahupua‘a* to individuals such as Thomas Silva. Between 1891 and 1897, Thomas Silva assigned portions of La‘aloa 1 to the Hawaiian Coffee & Tea Company, Ltd., and later to the Kailua Coffee Company, Ltd. After 1902, portions of La‘aloa 1 were sold to various companies including the Kona Development Company, Ltd., West Hawaii Railroad Company, Ltd., in addition to a number of individuals. Throughout the 19th and 20th centuries, both La‘aloa and Pāhoehoe were utilized for cattle ranching (Maly 1997).

The 19th century brought accelerating change to all of Hawai‘i, even the relatively sleepy district of Kona. Cattle ranching as well as commercial coffee production replaced traditional agricultural practices and necessitated construction of rock walls to control livestock. One of the better-known examples is the Great Wall of Kuakini, which runs roughly parallel to the coastline in the Kailua to Keauhou area, including a segment that used to exist about 1,200 feet *mauka* of the project site. Construction of the wall began in the early 1800s and was completed in the 1850s under the direction of Governor Kuakini.

Although it has been breached in various spots, much remains intact, and it is designated as State Inventory of Historic Places Site 6302.

Beginning in the late 1800s, there was a short-lived attempt at commercial sugar cultivation in central Kona. The Kona Sugar Company, which started in 1899, built a sugar mill in Kona and initially obtained most of its raw cane through purchase from independent growers. By 1926, the sugar operation ceased.

The next significant change for Kona was the advent of tourism, marked by the construction in 1928 of the area's first major hotel, the Kona Inn (Menton 1994). Starting in the 1960s, the area between Kailua and Keauhou became increasingly dominated by resort residential land use. This is the case today around the project site, which adjoins several timeshare and vacation rental condos. While cattle ranching lingered in the *mauka* area of La'aloa and Pāhoehoe well into the mid-20th century, the natural and cultural resources located along the coast were significantly impacted by an expanding tourism based economy and a growing population. To make way for new development projects and supporting infrastructure, cultural sites along the coast were often destroyed and only rarely preserved in situ. However, since the 1970s, government-mandated archaeological studies allowed for the identification and relocation of many traditional and historical trails, burials, agricultural and habitation sites, thus prompting the involvement of lineal and cultural descendants. This fostered the preservation and restoration of several cultural sites along the coast.

In the early 1990s, descendants of the Kipapa line began actively participating in the preservation of their family burials on TMK parcel (3) 7-7-008:031, located *mauka* of the project area (Kipapa et al. 2013). In 2014, the Kipapa 'ohana signed a Friends of the Park agreement with the P&R to assist with management of La'aloa Beach Park. In March 2015 the Kipapa 'ohana reinstalled and dedicated their family *kū'ula* (fishing shrine) located on the boundary of Pāhoehoe and La'aloa, adjacent to the project site.

Continued urban development has severely impacted the Hawaiian cultural landscape, and the area that comprises La'aloa Beach Park and Magic Sands Beach Park is no exception. Condominiums, vacation rentals, and hotels are prevalent throughout this area of Kona, and as a result the beach park receives a high volume of visitors throughout the year. Additionally, continued mismanagement and failed attempts at protecting these resources by the State and local governments has added to this difficulty, which has resulted in distrust and frustration between community members and government officials (Maly 1997). These conflicts have damaged the park's natural and cultural resources, which sustained families for countless generations. Although Magic Sands Beach Park is intensively used for recreation, members of the local Hawaiian community have expressed that this special place is not just for recreating but is also for preserving spiritual and natural resources that are integral to their way of life.

Consultation

As part of the Cultural Impact Assessment documented in Appendix 3, an effort was made to assess both current and former traditional cultural resources and associated practices. In addition to the documentary research above, which established the values of the general area but did not specifically identify any resources or practices that might be affected on the project site, consultation was undertaken.

Gathering input from community members with genealogical ties and/or long-standing residency is vital to assessing impacts to cultural resources, practices, and beliefs. These individuals ascribe meaning and value to traditional resources and practices and often possess traditional knowledge and beliefs that are unavailable elsewhere in the historical or cultural record. As stated in the OEQC Guidelines for Assessing Cultural Impacts, the goal of the oral interview process is to identify potential cultural resources, practices, and beliefs associated with the affected project area. The authors of the CIA stated that the findings from oral interviews should also be used to augment the process of assessing the significance of any traditional cultural properties that may be identified. Thus, it is the researcher's responsibility to use the gathered information to identify and describe potential cultural impacts and propose appropriate mitigation as necessary.

The analysis conducted for the CIA included an extensive review of previous oral histories and interviews concerning the area and its resources, as well as original consultation for the current project. As these community members (many of whom have since passed) have so willingly shared their knowledge of these lands with the intent to protect and preserve the area's resources, it was pertinent to examine the past and current usage of the project site to best proceed with future planning and improvements to the beach park. Henry Kekahuna and Theodore Kelsey, who mapped and recorded sites and oral histories in Kona during the 1940s and 1950s, interviewed *kupuna* Nāluahine Ka'ōpua (1857/1860-1961). Tūtū Nāluahine, a native resident of nearby Kahalu'u, shared his knowledge on the history of Kona. In interviews conducted in the 1950s, Nāluahine provided site specific details of La'aloa, including traditional place names within the project area and the location of springs and well sites. Kepā and Onaona Maly, a husband-wife team whose extensive research over the years conducting oral history interviews with *kama'āina* and *kūpuna* (elders) with first-hand knowledge of various sites within the Hawaiian Islands, produced a wealth of information for the La'aloa area. In a series of interviews conducted between 1996-1997 for the proposed La'aloa Beach Park improvements project, Maly (1997) provided significant insight into land use from the late Historic period up to the present day. Through these interviews, he documented certain Historic features and modifications to the land that have occurred over time. His discussions with elder informants with family ties or familiarity with the land are especially important, as they provide information about resources, land use and the location of structures, including historic sites and place names. In August of 2017, Lokelani Brandt conducted oral history interviews with community members with genealogical ties to the La'aloa-Pāhoehoe area, including Curtis Tyler and Malia Kipapa, concerning potential cultural impacts of a proposed park site located inland of the beach park on TMK [3] 7-7-008:030 (Brandt et al. 2017). No cultural resources were found to be impacted by the park, which was being built mainly on a bulldozed former construction staging area. However, consultees stressed the area-wide critical resources, that were both physical (e.g., former, existing or potential trail corridors, as well as aquifers) and the social infrastructure required to nourish resources. The coastal area of Pāhoehoe is still being cared for by lineal descendants and is accessed for specific cultural practices like maintaining the *kū'ula* and nearby family burial grounds. It was important to maintain *mauka-makai* continuity, as this is how the families from this area utilized and conceptualized the landscape, a concept fundamentally linked to the traditional *ahupua'a* system.

Consultation conducted specifically for Magic Sands Beach Park is contained in Appendix 3. Consultees included Curtis Tyler, Jeffery Cho, Nicole Keaka Lui, Valentine Ako and Iwalani Arakaki, The summary in this EA focuses on information that assisted in assessing the impact of the proposed project on cultural

beliefs, practices and resources found within the park site, but also summarizes the consultee's perspectives on broader regional and societal issues.

Summary of Identification Valued Natural, Cultural and Historical Resources

Archaeological research, review of previous cultural assessments, and discussions with consultees specifically for this project revealed several important cultural sites that, while not on the project site itself, are adjacent to the existing comfort station, including the reconstructed *iwi 'āina* stone wall, the *kū'ula* or fishing shrine re-constructed by the Kipapa 'ohana in March 2015, and a named *pūnāwai* (spring) that had also been used as a Japanese *furo*. Although no specific ongoing customary practices associated with the *iwi 'āina* wall or the *pūnāwai* were identified through the background research or consultation process, these sites are recognized by the consulted parties as valued cultural and historical resources. An important natural resource identified by consultees were *hau* trees located on the west side of the comfort station, described as a *kinolau* (physical manifestation) of the goddess Haumea. The fibrous bark from which cordage and *hula* adornments are made and the light buoyant wood is also culturally valued.

Impacts to Valued Natural, Cultural and Historical Resources

Some consultees, while preferring to have the comfort stations relocated, expressed a willingness to accept the improvements if they would improve the health and betterment of the community. However, most felt that the Proposed Action to renovate the comfort station in place was to some degree culturally offensive. When asked about the cultural significance of the area, Mr. Tyler spoke of the importance of understanding the deeply connected cultural landscape of Pāhoehoe and La'aloa. He pointed out the proximity of a *heiau* often identified as Haukalua. Although not citing direct impacts to any of these resources, Mr. Tyler explained that the plans to keep the comfort station in its existing location were entirely inconsistent with the pre-existing cultural landscape of the area. From a cultural perspective, Mr. Tyler felt it is "hewa" (offensive, mismanage) to have this aging facility so close to a *pūnāwai*, a place traditionally used by his ancestors and others to obtain drinking water, and the other culturally significant places. He said that that complete removal of the comfort station and showers to the *mauka* portion of the Kipapa Park across Ali'i Drive is the most culturally and environmentally responsible action that the County should and must take. Such a relocation would also be in alignment with the preservation plan for the portion of the beach parks that are within the La'aloa Ahupua'a. Mr. Tyler indicated that during periods of high surf, sea water floods the bathroom and the adjacent area and that the contaminated runoff finds its way back into the ocean. He shared that moving the comfort station inland several feet will not mitigate these impacts. He expressed his distrust and frustration with the County for their lack of consideration and failure to heed the concerns and suggestions of the descendant communities. He shared that this project is the perfect opportunity for the County to begin the process of making things *pono* (just, right) and rebuilding trust with the descendant communities, especially after so many decades of neglect and mismanagement. He believes that continuing to keep the comfort stations in its existing location only adds to the frustration and distrust in the County's ability to work with descendant communities.

The County of Hawai'i carefully considered the opinions of the consultees as it attempted to address the need for a comfort station at the park to service the many patrons, including some who are disabled and are legally entitled to accessible facilities. Relocation of the comfort station across the street was studied

in detail. Although a comfort station in that location would be beneficial and will be considered in the future as funding allows, the site is not without its own issues and, most importantly, does not meet the purpose and need of this project. If the comfort station and shower facilities were entirely limited to the *mauka* side of Ali‘i Drive, all park users would be required to cross Ali‘i Drive to utilize them. This would exacerbate conflicts between pedestrians and vehicles that already exist and might ultimately lead to injuries. In terms of the location on the property *makai* of Ali‘i Drive, the comfort station cannot be relocated farther from the southern boundary of the property because the existing location because it is the only “buildable” area (per County Zoning). In the interest of public health and safety, the comfort station/shower complex is planned to remain essentially on and just slightly *mauka*, of its current footprint.

The County plans a number of measures to mitigate cultural concerns. The footprint of the facility has been made smaller and the number of fixtures decreased. The outdoor shower has been moved to the inside of the building and covered to mitigate any shower water running off to the beach/ocean. Although it is acknowledged that the comfort station and other recreational facilities are near the *pūnāwai* and the reconstructed *iwi ‘āina* stone wall, the County feels that through these elements can be protected through proper construction buffers and public education. Ground-disturbing activities near these sites will be undertaken with caution so that any groundwater resources that may be feeding into the spring are not disturbed. It is understood that the current alignment of the reconstructed *iwi ‘āina* just outside the project site is historically incorrect. As part of a separate project in the Cultural Preserve Area portion of La‘aloa Beach Park, the County plans to realign the wall to its original location, with the reconstruction stylistically matching the more *mauka* alignment of this same wall that is still extant on the eastern side of Ali‘i Drive. The County agreed that any wood from hau trees that required removal will be offered as a donation to a *hula hālau* or other cultural practitioners who may be able to utilize this plant in a culturally appropriate manner. However, it appears that no hau trees will require removal. Finally, the County recognizes the need to continue to work with the descendant communities to identify ways to mitigate cultural impacts and improve the park for all stakeholders.

The Office of Hawaiian Affairs, State Historic Preservation Division, and parties who shared information about cultural practices were supplied a link to the Draft EA, which will also be reviewed by agencies and the general public, in order to help finalize the mitigation measures.

3.2.3 Archaeology and Historic Properties

Existing Environment

An archaeological inventory survey of the project site was conducted by ASM Affiliates, Inc. The report is attached as Appendix 4 and summarized below.

The methods used for the research involved fieldwork, consultation and review of documentary sources, including maps, local histories, ethnographic accounts, previous archaeological studies, and records of land use. The background information resulting from this research is covered in Section 3.2.2 above and is not repeated here. However, it should be noted that archaeological resources directly adjacent to the project site are abundant, and the relationship between the cultural and archaeological resources is rich

and complex. The significance of those archaeological resources is not limited to any property or even *ahupua'a* boundaries in this area.

On February 9, 2018, ASM's Benjamin Barna, Ph.D., conducted an intensive on-foot archaeological survey of the entire project site (100% surface survey). The project site was walked in meandering sweeps from Ali'i Drive to the water's edge, beginning at the north end of the beach park and ending at the southern end of the project site adjacent to the reconstructed rock wall (Site 50-10-37-21219) located at the boundary with La'aloa Ahupua'a. This area is swept by waves during high surf and is in intensive use for sunbathing, picnicking and volleyball. No historical properties of any kind were identified within the project site. Sites 21219 (the reconstructed *ahupua'a* boundary wall) and Site 21220 (a *kū'ula* or fishing deity stone) were confirmed to be located outside the project site.

Impacts and Mitigation Measures

Given the absence of archaeological resources within the project site per se, it was concluded that the proposed replacement of the comfort station and accessibility improvements at Magic Sands Beach Park would not impact any known historic properties. Two historic properties (Sites 21219 and 21220) that are subject to an existing preservation plan for a separate P&R project, however, are located in the immediate vicinity of the proposed project site. It is critical that protective measures described in that preservation plan be implemented prior to the start of demolition and/or ground disturbing work in order to ensure that impact to these features is avoided. Additionally, as recreational visitors to the park can have spillover effects on adjacent properties containing significant historic and cultural resources, full implementation of the preservation plan for the entire La'aloa area is important. Finally, in the unlikely event that any unanticipated resources are unearthed during development activities, DLNR-SHPD should be contacted as outlined in Hawai'i Administrative Rules 13§13-280.

The archaeological assessment survey is being officially transmitted concurrently with this EA to the State Historic Preservation Division (SHPD) for review, comment and concurrence. The Final EA will report on this review.

3.3 Infrastructure

3.3.1 Utilities

Existing Facilities and Services and Impacts

Electrical power to the site is supplied by Hawaiian Electric, a privately owned utility company, via its island-wide distribution network, with poles and lines on Ali'i Drive. Telephone and cable TV service are available, although not anticipated to be required, from Hawaiian Telcom and Spectrum Cable.

An existing 2-inch water line from the property's water meter services the current comfort station. The new comfort station will connect via this same line. No increase in water usage is anticipated.

An existing 6-inch wastewater line connected to the County wastewater treatment plant in Kealakehe services the comfort station. The new comfort station will connect via this same line. A sand interceptor is proposed along the wastewater line to prevent sand from entering the County system.

An existing drainage inlet is located in the pavement area. No other drainage systems are onsite. No new drainage systems are proposed.

In summary, the Proposed Action of developing accessible beach park facilities would not have any impact on existing utilities.

3.3.2 Roadways and Traffic

Existing Environment

Magic Sands Beach Park is accessed by Ali'i Drive, which is directly *mauka*. In this area, Ali'i Drive is a two-lane facility with paved shoulders posted at 30 MPH. The *makai* shoulders are roughly eight feet wide and are used for parking. The *mauka* shoulders vary from four to ten feet in width and are shared by walkers, runners, and bicyclists. Recreational use of Ali'i Drive is very heavy. A number of residential, commercial and County facility driveways are present in the area.

Impacts and Mitigation Measures

Although traffic may be disrupted during construction, as the park already exists, no adverse impact to traffic flow is expected as a result of the accessibility improvements. During movement of heavy equipment on or off the site, and at any times when there is a potential for project construction to impede traffic, professional traffic control will be utilized. Such activities will not occur during peak hour traffic for Ali'i Drive unless it is unavoidable. Provisions will be made throughout construction to accommodate pedestrian and bicycle traffic, which may at times involve utilizing the *mauka* side of Ali'i Drive.

No permanent adverse impacts to pedestrian or bicycle safety are expected. The provision of an accessible ramp to access Ali'i Drive (see Figure 2, Sheet C-103) will improve accessibility in conformance with the Americans with Disabilities Act (ADA).

3.4 Secondary and Cumulative Impacts

The Proposed Action will not involve any substantial 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. The Proposed Action will have only very limited impacts, all of them temporary and associated with the construction period, such as noise, traffic, dust and potential sedimentation.

Review of SMA permits and Chapter 343 documents in the *OEQC Environmental Notice* as well as press coverage indicates that there are a number of planned or ongoing projects in North Kona in the 2020 to 2022 timeframe. Most major projects in the region are centered in the growing Kailua to Keahole area, five to 15 miles north of Magic Sands Beach Park. These include improvements to Queen Ka'ahumanu

Highway and related roads; Kona International Airport; energy facilities, aquaculture facilities and road construction at the Natural Energy Laboratory of Hawai'i (NELHA); phases of the Kamakana Villages at Keahuolu; various housing and community facility development at the Villages of La'i'ōpua and on Hina Lani Drive; homeless center improvements in the Old Kona Industrial Area; the Waiaha Transmission Waterline on Mamalahoa Highway; and the West Hawai'i Regional Park at Kealakehe. All of these activities are located sufficiently far from Magic Sands Beach Park there is little interaction potential for construction impacts.

Several projects are planned for the La'aloa area. A private developer is constructing a new park on La'aloa Avenue, approximately a half mile away, as part of its zoning obligations. It will be dedicated to the County upon completion. Another project planned on La'aloa Avenue is directly *mauka* of the proposed La'aloa Avenue park, where the YMCA will construct a passive park with walking facilities, and perhaps pavilions for gatherings. About 1.5 miles and 3 miles north of the proposed park, respectively, are two County Department of Public Works projects: the Lako Street Extension, and the Ali'i Drive Culvert Replacement, which is currently under construction. About a quarter mile south, Hawaii One1 Investors, LLC plans a 62-lot, single family residential, planned unit development. About a mile south of the park, there is demolition, renovation and site repurposing at the former Keauhou Beach Resort, a project of Kamehameha Schools known as Kahalu'u Ma Kai.

For each of these four projects, construction traffic from each project may accumulate with traffic from one or more of the others to make Ali'i Drive function less efficiently. However, only the culvert replacement project will generate substantial traffic slowdowns, as the others will have only minor and temporary effects during periods when equipment is being moved on or off the sites. These infrequent, intermittent traffic impacts can be mitigated by timing such activities to not coincide with peak traffic. There does not appear to be any need for additional mitigation for construction-phase impacts, based on distance, scale and nature. It is expected that local traffic will adjust to any temporary inconveniences.

3.5 Required Permits and Approvals

The following permits and approvals would be required:

- Grading, Grubbing and Driveway Permits (County DPW)
- Building Permits and Plan Approval (County DPW and Planning)
- Chapter 6e, HRS, determination from State Historic Preservation Division on historic property effects
- Disability and Communication Access Board (DCAB) plan review and approval
- Special Management Area (SMA) Permit

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 promote these goals by providing, with no substantial adverse environmental or social impacts, accessible recreational facilities in keeping with State and federal laws, thereby enhancing quality-of-life and community and social well-being.

3.6.2 Hawai‘i State Land Use Law and Hawai‘i County Zoning

Hawai‘i State Land Use District. All land in the State of Hawai‘i is classified into one of four land use categories – Urban, Rural, Agricultural, or Conservation – by the State Land Use Commission, pursuant to Chapter 205, HRS. The property is in the State Land Use Urban District. The Proposed Action for continued use of the project site as a park is consistent with intended uses for this Land Use District.

3.6.3 Hawai‘i County Zoning and Property Designations

The project site is zoned Open, and a park is a permitted use in this zoning category. No change of zone is required to implement the Proposed Action.

3.6.4 Hawai‘i County General Plan and Kona CDP

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

RECREATION

12.2 GOALS

- (a) Provide a wide variety of recreational opportunities for the residents and visitors of the County.
- (b) Maintain the natural beauty of recreation areas.
- (c) Provide a diversity of environments for active and passive pursuits.

12.3 POLICIES

- (a) Strive to equitably allocate facility-based parks among the districts relative to population, with public input to determine the locations and types of facilities.
- (c) Recreational facilities shall reflect the natural, historic, and cultural character of the area.
- (d) The use of land adjoining recreation areas shall be compatible with community values, physical resources, and recreation potential.
- (g) Facilities for compatible multiple uses shall be provided.
- (h) Provide facilities and a broad recreational program for all age groups, with special considerations for the handicapped, the elderly, and young children.
- (i) Coordinate recreational programs and facilities with governmental and private agencies and organizations. Innovative ideas for improving recreational facilities and opportunities shall be considered.

12.4 STANDARDS

(c) Parks for General Use:

- Centered around a major natural asset, such as a sandy beach, a prime forest, or a volcanic feature and includes historic sites whenever feasible.
- Designed to accommodate users from throughout the County.
- Beach parks provide opportunities for swimming/sunbathing, surfing, camping, fishing, boating, nature study, and other pastimes. Every section of the island should be adequately served. Facilities depend on size and intensity of use but should include: comfort stations with showers; picnic facilities; a defined tent camping area when allowed; drinking water; adequate parking; pavilions of various sizes; and lifeguard facilities.

12.5.2.2 COURSES OF ACTION FOR NORTH KONA

- (c) Improve facilities at Laaloa Bay Beach Park [Magic Sands Beach Park] and Kahaluu Beach Park.

Discussion: The Proposed Action provides a Park for General Use with accessible facilities. It satisfies relevant goals, policies, standards and course of action for recreation.

HISTORIC SITES

6.2 GOALS

- (a) Protect, restore, and enhance the sites, buildings, and objects of significant historical and cultural importance to Hawai'i.
- (b) Appropriate access to significant historic sites, buildings, and objects of public interest should be made available.

Discussion: The Proposed Action has involved appropriate archaeological survey to determine the absence of significant historic sites on the project site, and has also involved mitigation measures to protect adjacent historic sites. Therefore the action satisfies relevant goals, policies, and courses of action for historic sites in Hawai'i County.

NATURAL BEAUTY

7.2 GOALS

- (a) Protect, preserve and enhance the quality of areas endowed with natural beauty, including the quality of coastal scenic resources.
- (b) Protect scenic vistas and view planes from becoming obstructed.
- (c) Maximize opportunities for present and future generations to appreciate and enjoy natural and scenic beauty.

7.3 POLICIES

- (a) Increase public pedestrian access opportunities to scenic places and vistas.
- (d) Access easement to public or private lands that have natural or scenic value shall be provided or acquired for the public.
- (i) Do not allow incompatible construction in areas of natural beauty.

Discussion: The Proposed Action does not involve adverse impacts to scenic areas or vantages and would not be inconsistent with the natural beauty of the Kona shoreline area. Therefore the action is consistent

with relevant goals, policies, and courses of action of the Natural Beauty section of the Hawai'i County General Plan.

NATURAL RESOURCES

8.2 GOALS

- (a) Protect and conserve the natural resources from undue exploitation, encroachment and damage.
- (b) Provide opportunities for recreational, economic, and educational needs without despoiling or endangering natural resources.
- (c) Protect and promote the prudent use of Hawaii's unique, fragile, and significant environmental and natural resources.
- (e) Protect and effectively manage Hawaii's open space, watersheds, shoreline, and natural areas.

8.3 POLICIES

- (b) Encourage a program of collection and dissemination of basic data concerning natural resources.
- (h) Encourage public and private agencies to manage the natural resources in a manner that avoids or minimizes adverse effects on the environment and depletion of energy and natural resources to the fullest extent.
- (i) Encourage an overall conservation ethic in the use of Hawaii's resources by protecting, preserving, and conserving the critical and significant natural resources of the County of Hawaii.
- (u) Ensure that activities authorized or funded by the County do not damage important natural resources.

Discussion: The Proposed Action does not involve destruction of natural resources and is consistent with the goals, standards and policies of the Natural Resources chapter of the Hawai'i County General Plan. The *Hawai'i County General Plan Land Use Pattern Allocation Guide (LUPAG)*.

The LUPAG map component of the *General Plan* is a graphic representation of the Plan's goals, policies, and standards as well as of the physical relationship between land uses. It also establishes the basic urban and non-urban form for areas within the planned public and cultural facilities, public utilities and safety features, and transportation corridors. The project site is classified as Open in the LUPAG. Continuing use of the project site for a park is consistent with this designation.

Kona Community Development Plan

The Kona Community Development Plan (CDP) encompasses the judicial districts of North and South Kona, 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 prior to 2008, which were adopted by "resolution" and served only as guidelines or reference documents to decision-makers. The Kona CDP was adopted in September 2008 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 the economy, energy, environmental quality, flooding and other natural hazards, historic sites, natural beauty, natural resources and shoreline, housing, public facilities, public utilities, recreation, transportation and land use.

Maintenance and upgrade actions in La‘aloa area parks are specifically addressed in a prescribed action, which is fulfilled by the proposed project:

Action PUB–7.2c: Provide for upgrading and maintenance to the public facilities in critical need of attention (PR, DPW, on-going):i. Develop a strategic management plan for upgrading facilities at Kahalu‘u Beach Park, **La‘aloa Bay Beach Park**, Hale Hālāwai, Higashihara Park, Yano Hall.

[Note that the parks in the La‘aloa area include La‘aloa Bay Beach Park, Kipapa Park, and Magic Sands Beach Park, which is also referred to as Disappearing Sands or White Sands, as part of La‘aloa Bay Beach Park.]

The accessibility improvements are consistent with various transportation-related elements of the Kona CDP, which states that “... future urban development must contribute to a well-connected local transportation network that provides for safe, direct, and convenient access for automobile, bicycle, and pedestrian traffic” (p. 4-5), and includes the following Policy and Action:

Policy TRAN–3.1: Street Standards. County street standards should be pedestrian-friendly, safely accommodate bicycles, accessible to the disabled, and appropriate for its surrounding land use context.

Action PUB–3.4c: Continue to implement curb ramp program for streets and sidewalks and parks and recreation program facilities (PR, DPW, on-going).

In its promotion of accessible parks and routes to access them, the Proposed Action is also consistent with the transportation network shown in Figure 4-2c of the CDP, and thus Policy TRAN-1.1: Official Transportation Network Map, which shows proposed transit routes, proposed arterials and collectors, and pedestrian/bicycle paths.

Furthermore, the Proposed Action accomplishes the objective of improving recreation for all while preserving environmental values and the visual quality and character of the Kailua urban area, which is consistent with many aspects of the Kona CDP.

3.6.5 Special Management Area

The property is located within the County’s Special Management Area (SMA). Public parks, public uses, and structures are allowed in the Special Management Area. After the EA is complete, P&R will prepare an SMA Assessment describing the characteristics of the Proposed Action that are relevant to the SMA, the potential impacts on SMA resources, and mitigation measures to avoid or reduce impacts. The following preliminarily analyzes the Proposed Action’s effect on key SMA resources:

Recreational Resources. The proposed accessibility improvements would not in any manner adversely affect any recreational resources, and the Proposed Action expands recreational uses for disabled users in the popular Magic Sands Beach Park. The Proposed Action would not restrict any shoreline uses such as hiking, fishing, or water sports, The Proposed Action would help P&R in its mission to provide adequate, accessible and diverse recreational opportunities.

Historic Resources. The historic resources of the project site have been surveyed and evaluated in coordination with the State Historic Preservation Division.

Scenic and Open Space Resources. The guidelines contained in Rule 9 of the Hawai'i County Planning Commission Rules (which governs the SMA) express the intent to minimize development that would "substantially interfere with or detract from the line of site toward the sea from the State Highway nearest the coast or from other scenic areas identified in the General Plan." The proposed improvements would not adversely affect any sight lines or scenic resources in any way. Furthermore, the Proposed Action maintains the quality of scenic and open space resources.

Coastal Ecosystems. The nature, location and design of the improvements, along with precautions that will be undertaken during construction, would minimize impacts to coastal biological resources. No threatened or endangered animal or plant species would be affected.

Economic Uses. The Proposed Action use would not impact adversely affect any economic aspects of the coastal zone, and it would positively contribute to the economy by providing safe and accessible facilities for residents and visitors.

Coastal Hazards. The proposed improvements would be undertaken mostly just outside designated coastal floodplains. The proposed continuing land use, a public beach park, is consistent with approved open-space uses and will not adversely affect any floodplain. Maps printed by the Pacific Tsunami Warning Center/Hawai'i County Civil Defense Agency locate the project site within an area that should be evacuated during a tsunami warning (<https://tsunami.coast.noaa.gov/#/>). Warning sirens are present nearby and the area can readily be evacuated in the event of a tsunami or other coastal hazard emergency. No aspect of the Proposed Action would adversely affect the public exposure to coastal hazards. A scenario of modest sea level rise might not markedly affect the integrity or utility of the comfort station or other accessible features, at least not for several decades. More rapid or extreme rises could place these facilities within a zone where the frequency and severity of flooding led to repeated damage that hindered their utility. The Department of Parks and Recreation has considered the risk of sea level rise and determined that uncertain degree and timing of this risk and the long time scenario indicates that it still prudent to undertake the Proposed Action as planned. This would allow the public to realize its benefits for a period of up to many decades, rather than fail to implement it and lose critical functionality at an important recreational site.

In summary, the Proposed Action would benefit and/or not adversely impact Special Management Area resources, including beaches, recreation, native species or ecosystems, historic sites, water quality, and susceptibility to hazards. Minor impacts and mitigation measures are discussed individually in the

resource sections of Chapter 3, above. The Proposed Action does not involve any irreversible or irretrievable commitment of resources or any substantial adverse environmental impact that cannot be avoided. No valuable natural or cultural resources would be committed or lost by the Proposed Action, although it is recognized that various parties believe it would be culturally preferable to move the comfort station, rather than renovate and make it ADA-accessible. In the opinion of the Department of Parks and Recreation, mitigation measures will reduce impacts to valued natural, cultural and historic resources to minimal levels.

The Planning Department will review the SMA Assessment and determine the level of permitting required in order to implement the Proposed Action.

PART 4: DETERMINATION

Based on the information to this point, the Hawai‘i County Department of Parks and Recreation expects to determine that the proposed project will not significantly alter the environment. It is therefore anticipated that an Environmental Impact Statement is not warranted and that the Department will issue a Finding of No Significant Impact (FONSI). A final determination will be made by the Hawai‘i County Department of Parks and Recreation after consideration of comments on the Draft EA.

PART 5: FINDINGS AND REASONS

Chapter 11-200.1-13, Hawai‘i Administrative Rules, outlines those factors agencies must consider when determining whether an Action has significant effects:

- (a) In considering the significance of potential environmental effects, agencies shall consider and evaluate the sum of effects of the proposed action on the quality of the environment.
- (b) In determining whether an action may have a significant effect on the environment, the agency shall consider every phase of a proposed action, the expected impacts, and the proposed mitigation measures. In most instances, an action shall be determined to have a significant effect on the environment if it may:

- (1) Irrevocably commit a natural, cultural, or historic resource.

No valuable natural or cultural resources would be committed or lost by the Proposed Action, which would not involve significant historic sites or native species or habitat. The Proposed Action has involved appropriate inventory survey to determine the absence of significant historic sites on the project site, and has also involved mitigation measures to protect adjacent historic sites. No cultural resource or practices on the site will be directly affected, and in the opinion of the County of Hawai‘i, mitigation measures will reduce impacts to adjacent natural and cultural resources to minimal levels.

- (2) Curtail the range of beneficial uses of the environment;

The Proposed Action expands and in no way curtails beneficial uses of the environment for people of all abilities. In terms of Covid-19, the Department of Parks and Recreation has a policy of continuing to

advance projects through pre-construction regulatory review and approval processes and then, if determined safe and appropriate to do so, incorporate requirements for the safety of construction workers, County staff and the public that would allow construction to proceed in a responsible and safe manner, minimizing public health impacts.

(3) Conflict with the State's environmental policies or long-term environmental goals established by law;

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, environmentally beneficial, and fulfills aspects of these policies calling for an improved social environment by improving and expanding recreational opportunities pursuant to the Americans with Disabilities Act. It is thus consistent with all elements of the State's long-term environmental policies.

(4) Have a substantial adverse effect on the economic welfare, social welfare, or cultural practices of the community and State;

The Proposed Action will benefit the social welfare of the community and State by allowing for expanded and socially just recreational use of public property for public benefit.

(5) Have a substantial adverse effect on public health;

The Proposed Action will promote public health through provision of recreational opportunities for people of all abilities.

(6) Involve adverse secondary impacts, such as population changes or effects on public facilities;

No secondary effects are expected to result from the Proposed Action, which does not expand facilities in such a way as to induce in-migration or unduly affect roads or other public facilities.

(7) Involve a substantial degradation of environmental quality;

The Proposed Action is minor and environmentally benign and would thus not contribute to environmental degradation with adherence to Best Management Practices.

(8) Be individually limited but cumulatively have substantial adverse effect upon the environment or involves a commitment for larger actions;

Although the County Department of Parks and Recreation is steadily improving the accessibility of its facilities through individual projects, they are scattered around the island and would not tend to produce adverse cumulative impacts. Furthermore, the Proposed Action is not related to other non-P&R activities in the region in such a way as to produce adverse cumulative effects or involve a commitment for larger actions.

(9) Have a substantial adverse effect on a rare, threatened, or endangered species, or its habitat;

The project site has vegetation managed for park uses that includes both native and non-native elements. Impacts to rare, threatened or endangered species of flora or fauna will not occur, with planned restrictions of the timing of vegetation removal.

(10) Have a substantial adverse effect on air or water quality or ambient noise levels;

Slight increases in noise and effects to air quality will occur during construction, but they will be temporary and mitigated to non-significant levels.

(11) Have a substantial adverse effect on or be likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, sea level rise exposure area, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters;

Although the project site is in an area with volcanic and seismic risk, the entire Island of Hawai‘i shares this risk, and the Proposed Action is not imprudent to undertake. The proposed improvements would be undertaken mostly just outside designated coastal floodplains. The proposed continuing land use, a public beach park, is consistent with approved open-space uses and will not adversely affect any floodplain. Maps printed by the Pacific Tsunami Warning Center/Hawai‘i County Civil Defense Agency locate the project site within an area that should be evacuated during a tsunami warning. Warning sirens are present nearby and the area can readily be evacuated in the event of a tsunami or other coastal hazard emergency. No aspect of the Proposed Action would adversely affect public exposure to coastal hazards. A scenario of modest sea level rise might not markedly affect the integrity or utility of the comfort station or other accessible features, at least not for several decades. More rapid or extreme rises could place these facilities within a zone where the frequency and severity of flooding led to repeated damage that hindered their utility. The Department of Parks and Recreation has considered the risk of sea level rise and determined that uncertain degree and timing of this risk and the long time scenario indicates that it still prudent to undertake Proposed Action as planned. This would allow the public to realize its benefits for a period of up to many decades, rather than fail to implement it and lose critical functionality at an important recreational site. It is recognized that planning for recreational facilities will require continual “check-ins” on the advance of sea level. Some facilities will require relocation to a retreated site, while others may need to be abandoned altogether.

(12) Have a substantial adverse effect on scenic vistas and viewplanes, during day or night, identified in county or state plans or studies; or

The Proposed Action would not adversely impact any scenic sites or viewplanes. The loss of two banyans will be compensated for by landscaping. The replacement comfort station is smaller in footprint and will have less visual impact than the existing facility.

(13) Require substantial energy consumption or emit substantial greenhouse gases.

The Proposed Action involves only minor use of energy for construction and operation and thus minor production of greenhouse gases. Improving local recreation facilities in various places within a community promotes use by nearby walkers and bicyclists.

For the reasons above, the Proposed Action would 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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Magic Sands Beach Park Accessibility Improvements
Environmental Assessment

APPENDIX 1a
Comments in Response to Early Consultation

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DAVID Y. IGE
GOVERNOR OF HAWAII



SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

November 1, 2018

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

via email: rterry@hawaii.rr.com

Dear Mr. Terry:

SUBJECT: Early Consultation for Environmental Assessment for **Magic Sands Beach Park Accessibility Improvements** located at North Kona, Island of Hawaii; TMK: (3) 7-7-008:017, 035, 093, 094, 106 & 107 and (3) 7-7-010:036

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

At this time, enclosed are comments from the (a) Engineering Division, (b) Division of Forestry & Wildlife, and (c) Land Division – Hawaii District on the subject matter. Should you have any questions, please feel free to call Darlene Nakamura at (808) 587-0417. Thank you.

Sincerely,

A handwritten signature in black ink, appearing to read "Russell Y. Tsuji".

Russell Y. Tsuji
Land Administrator

Enclosures
cc: Central Files

DAVID Y. IGE
GOVERNOR OF HAWAII



SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

October 10, 2018

MEMORANDUM

TO:
FROM

DLNR Agencies:

- Div. of Aquatic Resources
- Div. of Boating & Ocean Recreation
- Engineering Division
- Div. of Forestry & Wildlife
- Div. of State Parks
- Commission on Water Resource Management
- Office of Conservation & Coastal Lands
- Land Division – Hawaii District
- Historic Preservation

FROM:

Russell Y. Tsuji, Land Administrator

SUBJECT:

Early Consultation for Environmental Assessment for **Magic Sands Beach Park Accessibility Improvements**

LOCATION:

North Kona, Island of Hawaii; TMK: (3) 7-7-008:017, 035, 093, 094, 106 & 107 and (3) 7-7-010:036

APPLICANT:

Geometrician Associates, LLC on behalf of Hawaii County Department of Parks and Recreation

Transmitted for your review and comment is information on the above-referenced subject matter. We would appreciate your comments by **October 31, 2018**.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Darlene Nakamura at 587-0417. Thank you.

- We have no objections.
- We have no comments.
- Comments are attached.

Signed:

Print Name:

Carly S. Chang, Chief Engineer

Date:

10/12/18

Attachments

cc: Central Files

**DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION**

LD/Russell Y. Tsuji

**Ref: Early Consultation for Environmental Assessment for Magic Sands Beach
Park Accessibility Improvements, North Kona, Island of Hawaii;
TMK: (3) 7-7-008:017, 035, 093, 094, 106 & 107 and (3) 7-7-010:036**

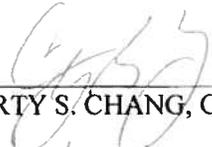
COMMENTS

The rules and regulations of the National Flood Insurance Program (NFIP), Title 44 of the Code of Federal Regulations (44CFR), are in effect when development falls within a Special Flood Hazard Area (high risk areas). State projects are required to comply with 44CFR regulations as stipulated in Section 60.12. Be advised that 44CFR reflects the minimum standards as set forth by the NFIP. Local community flood ordinances may stipulate higher standards that can be more restrictive and would take precedence over the minimum NFIP standards.

The owner of the project property and/or their representative is responsible to research the Flood Hazard Zone designation for the project. Flood Hazard Zones are designated on FEMA's Flood Insurance Rate Maps (FIRM), which can be viewed on our Flood Hazard Assessment Tool (FHAT) (<http://gis.hawaiiinfip.org/FHAT>).

If there are questions regarding the local flood ordinances, please contact the applicable County NFIP coordinating agency below:

- o Oahu: City and County of Honolulu, Department of Planning and Permitting (808) 768-8098.
- o Hawaii Island: County of Hawaii, Department of Public Works (808) 961-8327.
- o Maui/Molokai/Lanai County of Maui, Department of Planning (808) 270-7253.
- o Kauai: County of Kauai, Department of Public Works (808) 241-4846.

Signed: 
CARTY S. CHANG, CHIEF ENGINEER

Date: 10/12/12

19215

DAVID Y. IGE
GOVERNOR OF HAWAII



SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

October 10, 2018

MEMORANDUM

TO:

DLNR Agencies:

- Div. of Aquatic Resources
- Div. of Boating & Ocean Recreation
- Engineering Division
- Div. of Forestry & Wildlife
- Div. of State Parks
- Commission on Water Resource Management
- Office of Conservation & Coastal Lands
- Land Division – Hawaii District
- Historic Preservation

FROM:

Russell Y. Tsuji, Land Administrator

SUBJECT:

Early Consultation for Environmental Assessment for **Magic Sands Beach Park Accessibility Improvements**

LOCATION:

North Kona, Island of Hawaii; TMK: (3) 7-7-008:017, 035, 093, 094, 106 & 107 and (3) 7-7-010:036

APPLICANT:

Geometrician Associates, LLC on behalf of Hawaii County Department of Parks and Recreation

Transmitted for your review and comment is information on the above-referenced subject matter. We would appreciate your comments by **October 31, 2018**.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Darlene Nakamura at 587-0417. Thank you.

- We have no objections.
- We have no comments.
- Comments are attached.

Signed:

Print Name:

DAVID G. SMITH, Administrator

Date:

10/10/18

Attachments
cc: Central Files

EA should address bats, seabirds, any proximate wetlands. We would like to see the EA.

DAVID Y. IGE
GOVERNOR OF HAWAII



SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

2018 OCT 12 P 12:09

RECEIVED
LAND DIVISION
HILO, HAWAII

October 10, 2018

MEMORANDUM

FROM:
TO:

DLNR Agencies:

- Div. of Aquatic Resources
- Div. of Boating & Ocean Recreation
- Engineering Division
- Div. of Forestry & Wildlife
- Div. of State Parks
- Commission on Water Resource Management
- Office of Conservation & Coastal Lands
- Land Division – Hawaii District
- Historic Preservation

FROM: Russell Y. Tsuji, Land Administrator

SUBJECT: Early Consultation for Environmental Assessment for **Magic Sands Beach Park Accessibility Improvements**

LOCATION: North Kona, Island of Hawaii; TMK: (3) 7-7-008:017, 035, 093, 094, 106 & 107 and (3) 7-7-010:036

APPLICANT: Geometrician Associates, LLC on behalf of Hawaii County Department of Parks and Recreation

Transmitted for your review and comment is information on the above-referenced subject matter. We would appreciate your comments by **October 31, 2018**.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Darlene Nakamura at 587-0417. Thank you.

- We have no objections.
- We have no comments.
- Comments are attached:

Signed:

Print Name: GORDON C. HEIT

Date: 10/19/18

Attachments
cc: Central Files

DAVID Y. IGE
GOVERNOR OF HAWAII



SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

November 2, 2018

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

via email: rterry@hawaii.rr.com

Dear Mr. Terry:

SUBJECT: Early Consultation for Environmental Assessment for **Magic Sands Beach Park Accessibility Improvements** located at North Kona, Island of Hawaii; TMK: (3) 7-7-008:017, 035, 093, 094, 106 & 107 and (3) 7-7-010:036

Thank you for the opportunity to review and comment on the subject matter. In addition to our previous comments dated November 1, 2018, enclosed are comments from the Division of Aquatic Resources on the subject matter. Should you have any questions, please feel free to call Darlene Nakamura at (808) 587-0417. Thank you.

Sincerely,

A handwritten signature in black ink, appearing to read "Russell Y. Tsuji".

Russell Y. Tsuji
Land Administrator

Enclosure
cc: Central Files

5796

DAVID Y. IGE
GOVERNOR OF HAWAII



SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

October 10, 2018

RECEIVED

OCT 15 2018

Division of Aquatic Resources

DAR 5796

MEMORANDUM

TO: **DLNR Agencies:**
 Div. of Aquatic Resources
 Div. of Boating & Ocean Recreation
 Engineering Division
 Div. of Forestry & Wildlife
 Div. of State Parks
 Commission on Water Resource Management
 Office of Conservation & Coastal Lands
 Land Division – Hawaii District
 Historic Preservation

FROM: Russell Y. Tsuji, Land Administrator

SUBJECT: Early Consultation for Environmental Assessment for **Magic Sands Beach Park Accessibility Improvements**

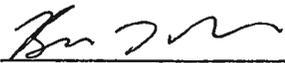
LOCATION: North Kona, Island of Hawaii; TMK: (3) 7-7-008:017, 035, 093, 094, 106 & 107 and (3) 7-7-010:036

APPLICANT: Geometrician Associates, LLC on behalf of Hawaii County Department of Parks and Recreation

Transmitted for your review and comment is information on the above-referenced subject matter. We would appreciate your comments by **October 31, 2018**.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Darlene Nakamura at 587-0417. Thank you.

- () We have no objections.
- () We have no comments.
- (/) Comments are attached:

Signed: 
 Brian J Neilson, Acting DAR Administrator
 Print Name: _____

Date: 10/30/18

Attachments
 cc: Central Files

DAVID Y. IGE
GOVERNOR OF
HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF AQUATIC RESOURCES
1151 PUNCHBOWL STREET, ROOM 330
HONOLULU, HAWAII 96813

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA
FIRST DEPUTY

JEFFREY T. PEARSON, P.E.
DEPUTY DIRECTOR - WATER

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

Date: 29 Oct., 2018
DAR # 5796

MEMORANDUM

TO: Brian J. Neilson
Acting DAR Administrator

FROM: William j. Walsh Wjw, Aquatic Biologist

SUBJECT:

Request Submitted by: Russell Y. Tsuji, Land Administrator

Location of Project: North Kona, Hawai'i portions of TMKs (3) 7-7-008: 017,035,093,094, 106 &

Brief Description of Project:

The Hawai'i County Department of Parks and Recreation (P&R) proposes a project to eliminate architectural barriers at the beach park in order to create safe, appropriate and compliant access for all park users while retaining and improving the ability to effectively maintain the park.

The full list of project activities is currently in development but is expected to include at a minimum replacement of the restroom including showers, drainage sump improvements, utility work, and a tie-in to an accessible route to the adjacent La'aloa Beach Park.

Comments:

No Comments Comments Attached

Thank you for providing DAR the opportunity to review and comment on the proposed project. Should there be any changes to the project plan, DAR requests the opportunity to review and comment on those changes.

Comments Approved: Brian J. Neilson Date: 10/30/18
Brian J. Neilson
Acting DAR Administrator

Harry Kim
Mayor



Paul K. Ferreira
Police Chief

Kenneth Bugado, Jr.
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

October 30, 2018

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

Dear Mr. Terry:

SUBJECT: EARLY CONSULTATION FOR ENVIRONMENTAL ASSESSMENT FOR MAGIC SANDS BEACH PARK ACCESSIBILITY IMPROVEMENTS, NORTH KONA, ISLAND OF HAWAII

This is in response to your letter dated October 2, 2018 requesting comments on any special environmental conditions or impacts relating to the improvement of the recreational facilities related to your project.

Thank you for allowing the Hawai'i Police Department the opportunity to participate. At this time, the Hawai'i Police Department has no comments.

Should you have any questions, please contact Captain Gilbert Gaspar Jr., Commander of the Kona District, at 326-4646, extension 299.

Sincerely,

PAUL K. FERREIRA
POLICE CHIEF


JAMES B. O'CONNOR
ASSISTANT POLICE CHIEF
AREA II OPERATIONS

GG/JAJ
18HQ0094

Magic Sands Beach Park Accessibility Improvements
Environmental Assessment

APPENDIX 2
Selected Site Plan Detail Sheets

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COUNTY OF HAWAII
DEPARTMENT OF PARKS & RECREATION

101 PAUHI STREET; SUITE 6 / HILO, HAWAII 96720 / PHONE: 808.961.8311 / FAX: 808.961.8411

ACCESSIBILITY IMPROVEMENTS MAGIC SANDS BEACH PARK

JOB NO.: PR-3730

MAGIC SANDS, NORTH KONA, HAWAII
TMK: (3) 7-7-8: 017, 035, 106 and 107

VICINITY MAP



LOCATION MAP



APPROVED:

_____ MAYOR	_____ DATE
_____ DIRECTOR DEPARTMENT OF PARKS AND RECREATION	_____ DATE
_____ DIRECTOR DEPARTMENT OF PUBLIC WORKS (FOR WORK WITHIN THE COUNTY RIGHT-OF-WAY)	_____ DATE
_____ DIRECTOR PLANNING DEPARTMENT	_____ DATE

Okahara and Associates, Inc.
ENGINEERING CONSULTANTS
200 KOHOLA STREET
HILO, HAWAII 96720
PH: (808) 961-5527
FAX: (808) 961-5529
677 ALA MOANA BLVD., SUITE 703
HONOLULU, HAWAII 96813
PH: (808) 524-1224
FAX: (808) 527-1511



CONSULTANTS

- OKAHARA AND ASSOCIATES, INC.
200 KOHOLA STREET, HILO, HI. 96720
PHONE 961-5527 / FAX 961-5529
CIVIL ENGINEER
- ISLAND SURVEY, INC.
P.O. BOX 4215 HILO, HI. 96720
PHONE 935-9105 / FAX 935-9105
SURVEYOR
- KAI HAWAII STRUCTURAL & FORENSIC ENGINEERS
50 S. BERATANIA STREE, #C-119C, HONOLULU, HI 96813
PHONE 533-2210 / FAX 533-2686
STRUCTURAL ENGINEER
- RONALD N.S. HO & ASSOCIATES, INC.
2153 NORTH KING STREET, SUITE 201, HONOLULU, HI 96819
PHONE 941-0577 / FAX 945-2646
ELECTRICAL ENGINEER
- MYOUNGHEE NOH & ASSOCIATES, LLC.
99-1046 IWAENA ST. 210A, AIEA, HAWAII 96701
PHONE 935-9105
ENVIRONMENTAL CONSULTANT
- GEOMETRICIAN ASSOCIATES, LLC
P.O. BOX 396, HAWAII 96721
PHONE 969-7090
ENVIRONMENTAL CONSULTANT

MARK	DATE	DESCRIPTION	REVIEWED:	DATE

COUNTY OF HAWAII
DEPARTMENT OF PARKS & RECREATION
101 PAUHI STREET, SUITE 6 / HILO, HAWAII 96720 / PHONE: 808.961.8311 / FAX: 808.961.8411

**ACCESSIBILITY IMPROVEMENTS
PROJECT - MAGIC SANDS BEACH PARK**

JOB NO.: PR-3730
NORTH KONA, HAWAII TMK: (3) 7-7-8 : 017, 035, 106, 107

PLAN SHEET DESCRIPTION: TITLE SHEET

DESIGNED BY: CJ, CA
DRAWN BY: CA
CHECKED BY: CJ

SHEET NO.
T-001

1 OF 48 SHEETS
DATE: FEB 2020

FILE: O:\PROJ\2018\218-044_MAGICSANDS_ADA\DRAWINGS\SHSHEET\CIVIL NOTES.DWG
 USER: CACOB
 PLOTTED: 2/18/2020 11:38 AM

GENERAL CONSTRUCTION NOTES

- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE "STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION", DATED SEPTEMBER 1984, "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION", DATED SEPTEMBER 1986, AS AMENDED, OF THE DEPARTMENT OF PUBLIC WORKS, COUNTY OF HAWAII, THE "HAWAII STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION", DEPARTMENT OF TRANSPORTATION, HIGHWAYS DIVISION, 2005, AND AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS, 3RD EDITION WITH 2010 INTERIM REVISIONS (AASHTO CONSTRUCTION SPECIFICATIONS), UNLESS INDICATED OTHERWISE IN THE PLANS, THESE NOTES, OR THE SPECIAL PROVISIONS. IN THE EVENT OF CONFLICTING PROVISIONS IN THE AASHTO CONSTRUCTION SPECIFICATIONS AND THE STATE STANDARD SPECIFICATIONS, THE STATE STANDARD SPECIFICATIONS SHALL APPLY.
- FOR COUNTY DEDICABLE ROADWAYS SURVEY OF MONUMENT STAKEOUT SHALL BE MADE BY REGISTERED LAND SURVEYORS.
- FOR COUNTY DEDICABLE ROADWAYS REGISTERED SURVEYORS SHALL SUBMIT A LETTER TO THE DEPARTMENT OF PUBLIC WORKS CERTIFYING THAT THE MONUMENTS STAKEOUT AND INSTALLATION IS CORRECT.
- THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES, WHETHER SHOWN ON THE PLAN OR NOT, AND SHALL BE RESPONSIBLE FOR THE REPAIR OR REPLACEMENT OF SAME IN THE EVENT OF DAMAGES DUE TO HIS CONSTRUCTION PRACTICES. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE RESPECTIVE UTILITY COMPANIES.
- THE CONTRACTOR SHALL MAINTAIN VEHICULAR AND PEDESTRIAN ACCESS TO EXISTING FACILITIES AT ALL TIMES AND SHALL SCHEDULE AND PROSECUTE HIS WORK IN SUCH A MANNER AS TO AVOID INTERRUPTION OF NORMAL ACTIVITIES AT THE EXISTING FACILITIES. THE CONTRACTOR SHALL PROVIDE EARLY NOTIFICATION OF AND OBTAIN APPROVAL FOR ANY ANTICIPATED INTERRUPTIONS. CONTRACTOR SHALL SUBMIT A CONSTRUCTION PHASING PLAN FOR APPROVAL PRIOR TO BEGINNING CONSTRUCTION. TEMPORARY SAFE PEDESTRIAN PASSAGEWAYS AROUND OR THROUGH A CONSTRUCTION SITE SHALL COMPLY WITH ADAAG SECTIONS 206.1 AND 402.1.
- THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL TRAFFIC CONTROL DEVICES IN CONFORMANCE WITH THE CURRENT VERSION OF THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS", AND TO THE SATISFACTION OF THE ENGINEER.
- EXCEPT DURING ACTUAL WORKING HOURS, ALL SIGNS WHICH DO NOT PERTAIN TO THE CONSTRUCTION ACTIVITY, SUCH AS "MEN WORKING" AND "FLAGMAN AHEAD" SHALL BE COVERED OR LAID DOWN. HOWEVER ALL SIGNS NECESSARY FOR THE SAFETY OF THE PUBLIC SHALL BE MAINTAINED.
- NO CONSTRUCTION EQUIPMENT SHALL BE PARKED WITHIN THE ROAD RIGHT-OF-WAY IN SUCH A MANNER THAT THE EQUIPMENT WILL OBSTRUCT THE NORMAL MOVEMENT AND SIGHT DISTANCE OF THE DRIVING MOTORIST, EXCEPT DURING ACTUAL WORKING HOURS.
- ALL EXISTING PAVEMENTS, WALKS, UTILITIES, AND OTHER FACILITIES WHETHER SHOWN ON THE PLANS OR NOT, WHICH ARE DAMAGED BY THE CONTRACTOR SHALL BE RECONSTRUCTED OR REPLACED BY THE CONTRACTOR AT HIS OWN EXPENSE TO THE ORIGINAL UNDAMAGED CONDITION.
- NO TRENCHING SHALL BE LEFT OPEN FOR MORE THAN FIVE (5) WORKING DAYS. CONTRACTOR SHALL PROPERLY BARRICADE ALL OPEN TRENCHES DURING ALL PHASES OF CONSTRUCTION.
- EXISTING CONDITIONS ARE SHOWN TO THE BEST OF OUR KNOWLEDGE. DISCREPANCIES SHALL BE PROMPTLY REPORTED TO THE OWNER AND BE RESOLVED BEFORE PROCEEDING WITH THE WORK.
- PRIOR TO COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UTILITIES, WHICH MAY BE AFFECTED BY HIS WORK. INTERFERENCE WITH THE STRUCTURE SHALL BE PROMPTLY REPORTED TO THE OWNER AND BE RESOLVED BEFORE PROCEEDING WITH THE WORK.
- SHOULD A DISCREPANCY OCCUR ON THE DRAWINGS BETWEEN ANY PROJECT SPECIAL NOTES/ SPECIAL DETAILS, AND THE TYPICAL SPECS/TYPICAL DETAILS, SAID SPECIAL NOTES/SPECIAL DETAILS SHALL TAKE PRECEDENCE.

GRADING NOTES

- ALL GRADING WORK SHALL CONFORM TO CHAPTER 10 OF THE HAWAII COUNTY CODE. SHOULD A GRADING PERMIT BE REQUIRED, NO WORK SHALL COMMENCE UNTIL THE DEPARTMENT OF PUBLIC WORKS APPROVES A GRADING PERMIT.
- THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS AND OTHER AREAS RESULTING FROM HIS WORK. THE COSTS INCURRED FOR ANY NECESSARY REMEDIAL ACTION BY THE OWNER SHALL BE PAYABLE BY THE CONTRACTOR.
- THE CONTRACTOR, AT HIS OWN EXPENSE, SHALL KEEP THE PROJECT AND SURROUNDING AREAS FREE FROM DUST NUISANCES. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL RULES OF THE STATE DEPARTMENT OF HEALTH, HAR 11-60.1. FUGITIVE DUST.
- ALL GRADING OPERATIONS SHALL BE PERFORMED IN CONFORMANCE WITH THE APPLICABLE PROVISIONS OF THE HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 55, WATER POLLUTION CONTROL AND CHAPTER 54, WATER QUALITY STANDARDS, AND TO THE EROSION AND SEDIMENTATION CONTROL STANDARDS AND GUIDELINES OF THE DEPARTMENT OF PUBLIC WORKS, COUNTY OF HAWAII.
- THE CONTRACTOR SHALL SOD OR PLANT ALL SLOPES AND EXPOSED AREAS IMMEDIATELY AFTER THE GRADING WORK HAS BEEN COMPLETED.
- THE CONTRACTOR SHALL INFORM THE DEPARTMENT OF PUBLIC WORKS OF THE LOCATIONS OF THE DISPOSAL AND/OR BORROW SITE(S) REQUIRED FOR THIS PROJECT WHEN AN APPLICATION FOR A GRADING PERMIT IS MADE. THE DISPOSAL AND/OR BORROW SITE(S) MUST ALSO FULFILL THE REQUIREMENTS OF THE GRADING ORDINANCE.
- NO GRADING WORK SHALL BE DONE ON SATURDAYS, SUNDAYS AND HOLIDAYS ANYTIME WITHOUT PRIOR APPROVAL FROM THE OWNER. GRADING WORK ON NORMAL WORKING DAYS SHALL BE BETWEEN THE HOURS OF 7:00AM TO 3:30PM.
- COMPACTION OF FILLS FOR ROADWAY SHALL BE OBSERVED AND CERTIFIED BY A GEOTECHNICAL ENGINEER OR SHALL BE DONE BY MAKING A MINIMUM OF EIGHT (8) PASSES WITH A D-9 DOZER OR EQUIVALENT.
- THE CONTRACTOR SHALL VERIFY ALL LINES, LEVELS, ELEVATIONS, AND IMPROVEMENTS INDICATED ON THE DRAWINGS BEFORE ANY CLEARING, EXCAVATION OR CONSTRUCTION BEGINS. ANY DISCREPANCY SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER AND ANY CHANGE SHALL BE MADE IN ACCORDANCE WITH HIS INSTRUCTION. STARTING OF CLEARING AND GRUBBING OPERATIONS SHALL BE CONSTRUED TO MEAN THAT THE CONTRACTOR AGREES THAT THE EXISTING GRADES AND IMPROVEMENTS ARE ESSENTIALLY CORRECT AS SHOWN. THE CONTRACTOR SHALL NOT BE ENTITLED TO EXTRA PAYMENT IF EXISTING GRADES AND IMPROVEMENTS ARE IN ERROR AFTER HIS VERIFICATION THEREOF, OR IF HE FAILS TO REPORT THE DISCREPANCIES BEFORE PROCEEDING WITH ANY WORK WHETHER WITHIN AREA AFFECTED OR NOT.
- THE CONTRACTOR SHALL REMOVE ALL VEGETATION BEFORE THE PLACING OF FILLS ON A NATURAL GROUND SURFACE.

ESTIMATED EARTHWORK QUANTITIES

TOTAL RAW CUT = 49 C.Y.
 TOTAL RAW FILL = 67 C.Y.
 TOTAL AREA TO BE GRADED = 7,200 SQ. FT.

NOTES:

- THE QUANTITIES SHOWN ARE FOR GRADING PERMIT PURPOSES ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE TO DETERMINE THE EXACT QUANTITIES FOR BIDDING PURPOSES.
- NO ADJUSTMENT FACTOR IS APPLIED TO THE RAW CUT/FILL QUANTITIES.
- EARTHWORK QUANTITIES SHOWN WERE TAKEN FROM EXISTING GROUND TO FINISH GRADE.
- CONTRACTOR/BIDDER SHALL NOT USE THE EARTHWORK QUANTITIES SHOWN ABOVE FOR BIDDING PURPOSES. REGARDLESS OF THE CUT AND FILL EARTHWORK QUANTITIES SHOWN ABOVE, THE CONTRACTOR IS RESPONSIBLE TO IMPORT OR EXPORT ALL NECESSARY MATERIALS TO COMPLETE THE GRADING WORK AT NO ADDITIONAL COST TO THE OWNER.

U.S. FISH AND WILDLIFE SERVICE RECOMMENDED STANDARD BEST MANAGEMENT PRACTICES

THE U.S. FISH AND WILDLIFE SERVICE RECOMMENDS THAT THE MEASURES BELOW BE INCORPORATED INTO THIS PROJECT TO MINIMIZE THE DEGRADATION OF WATER QUALITY AND MINIMIZE THE IMPACTS TO FISH AND WILDLIFE RESOURCES.

- TURBIDITY AND SILTATION FROM PROJECT-RELATED WORK SHALL BE MINIMIZED AND CONTAINED WITHIN THE VICINITY OF THE SITE THROUGH THE APPROPRIATE USE OF EFFECTIVE SILT CONTAINMENT DEVICES AND THE CURTAILMENT OF WORK DURING ADVERSE TIDAL AND WEATHER CONDITIONS.
- DREDGING/FILLING IN THE MARINE ENVIRONMENT SHALL BE SCHEDULED TO AVOID CORAL SPAWNING AND RECRUITMENT PERIODS AND SEA TURTLE NESTING AND HATCHING PERIODS.
- DREDGING AND FILLING IN THE MARINE/AQUATIC ENVIRONMENT SHALL BE DESIGNED TO AVOID OR MINIMIZE THE LOSS SPECIAL AQUATIC SITE HABITAT (BEACHES, CORAL REEFS, WETLANDS, ETC.) AND THE FUNCTION OF SUCH HABITAT SHALL BE REPLACED.
- ALL PROJECT-RELATED MATERIALS AND EQUIPMENT (DREDGES, BARGES, BACKHOES, ETC.) TO BE PLACED IN THE WATER SHALL BE CLEANED OF POLLUTANTS PRIOR TO USE.
- NO PROJECT-RELATED MATERIALS (FILL, REVETMENT ROCK, PIPE, ETC.) SHOULD BE STOCKPILED IN THE WATER (INTERTIDAL ZONES, REEF FLATS, STREAM CHANNELS, WETLANDS, ETC.) OR ON BEACH HABITATS.
- ALL DEBRIS REMOVED FROM THE MARINE/AQUATIC ENVIRONMENT SHALL BE DISPOSED OF AT AN APPROVED UPLAND OR OCEAN DUMPING SITE.
- NO CONTAMINATION (TRASH OR DEBRIS DISPOSAL, NON-NATIVE SPECIES INTRODUCTION, ATTRACTION OF NON-NATIVE PESTS, ETC.) OF ADJACENT HABITATS (REEF FLATS, CHANNELS, OPEN OCEAN, STREAM CHANNELS, WETLANDS, BEACHES, FORESTS, ETC.) SHALL RESULT FROM PROJECT-RELATED ACTIVITIES. THIS SHALL BE ACCOMPLISHED BY IMPLEMENTING A LITTER-CONTROL PLAN AND DEVELOPING A HAZARD ANALYSIS AND CRITICAL CONTROL POINT PLAN (HACCP-SEE <http://www.haccprnm.org/Wizard/default.asp>) TO PREVENT ATTRACTION AND INTRODUCTION OF NON-NATIVE SPECIES.
- FUELING OF PROJECT-RELATED VEHICLES AND EQUIPMENT SHOULD TAKE PLACE AWAY FROM THE WATER AND A CONTINGENCY PLAN TO CONTROL PETROLEUM PRODUCTS ACCIDENTALLY SPILLED DURING THE PROJECT SHALL BE DEVELOPED. ABSORBENT PADS AND CONTAINMENT BOOMS SHALL BE RESTORED ON SITE, IF APPROPRIATE, TO FACILITATE THE CLEAN-UP OF ACCIDENTAL PETROLEUM RELEASES.
- ANY UNDER-LAYER FILLS USED IN THE PROJECT SHALL BE PROTECTED FROM EROSION WITH STONES (OR CORE-LOC UNITS) AS SOON AFTER PLACEMENT AS PRACTICABLE.
- ANY SOIL EXPOSED NEAR WATER AS PART OF THE PROJECT SHALL BE PROTECTED FROM EROSION (WITH PLASTIC SHEETING, FILTER FABRIC, ETC.) AFTER EXPOSURE AND STABILIZED AS SOON AS PRACTICABLE (WITH NATIVE OR NON-INVASIVE VEGETATION MATTING, HYDROSEEDING, ETC.).

WASTE DISPOSAL NOTES

- WASTE MATERIALS: ALL WASTE MATERIALS SHALL BE COLLECTED AND STORED IN A SECURELY LIDDED DUMPSTER. THE DUMPSTER SHALL MEET ALL LOCAL AND STATE SOLID WASTE MANAGEMENT REGULATIONS. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE SHALL BE DEPOSITED IN THE DUMPSTER. THE DUMPSTER SHALL BE EMPTIED A MINIMUM OF TWICE PER WEEK OR AS OFTEN AS DEEMED NECESSARY. NO CONSTRUCTION WASTE MATERIALS SHALL BE BURIED ON SITE. THE CONTRACTOR'S SUPERVISORY PERSONNEL SHALL BE INSTRUCTED REGARDING THE CORRECT PROCEDURES FOR WASTE DISPOSAL. NOTICES STATING THESE PRACTICES SHALL BE READILY AVAILABLE TO THE CONTRACTOR'S EMPLOYEES AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR SEEING THAT THESE PROCEDURES ARE FOLLOWED.
- HAZARDOUS WASTE: ALL HAZARDOUS WASTE MATERIALS SHALL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATIONS OR BY THE MANUFACTURER. THE CONTRACTOR'S SITE PERSONNEL SHALL BE INSTRUCTED IN THESE PRACTICES AND SHALL BE RESPONSIBLE FOR ENSURING THAT THESE PRACTICES ARE FOLLOWED.
- SANITARY WASTE: THE CONTRACTOR MAY CHOOSE TO PROVIDE PORTABLE SANITARY UNITS FOR THE USE OF HIS ON SITE PERSONNEL AND SUBCONTRACTORS. ALL SANITARY WASTE SHALL BE COLLECTED FROM THE PORTABLE UNITS A MINIMUM OF ONCE PER WEEK, OR AS REQUIRED.

STANDARD TRAFFIC NOTES

- ALL TRAFFIC SIGNS AND PAVEMENT MARKINGS SHALL CONFORM TO THE LATEST AMENDED EDITIONS OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", APPLICABLE SECTIONS OF PART 5 OF THE "STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION", DATED SEPTEMBER, 1984, AND THE "2005 HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", UNLESS OTHERWISE INDICATED ON THE PLANS, SPECIFICATIONS, OR STANDARD TRAFFIC NOTES.
- THE CONTRACTOR SHALL INSTALL PERMANENT OR TEMPORARY PAVEMENT MARKERS, STRIPING AND MARKINGS AS REQUIRED BY SECTION(S) 629 AND 755.05 OF THE "2005 HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", AND AS AMENDED. TO ENSURE PROPER LANE WIDTHS AND THE SAFE FLOW OF TRAFFIC, TEMPORARY STRIPING SHALL BE INSTALLED AS CLOSELY AS POSSIBLE TO THE FINAL STRIPING PLAN, BUT NOT IN A MANNER THAT WOULD OBSTRUCT PERMANENT STRIPING LAYOUT OPERATIONS.
- THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL TRAFFIC SIGNS AND MARKINGS FOR ALL PROJECT RELATED TEMPORARY TRAFFIC CONTROL PLANS. THE CONTRACTOR SHALL COORDINATE AND HIRE SPECIAL DUTY POLICE OFFICER(S) AS NEEDED TO PROVIDE TRAFFIC CONTROL WHILE WORKING WITHIN THE COUNTY RIGHT OF WAY.
- THE CONTRACTOR SHALL INFORM THE TRAFFIC DIVISION AT LEAST SIX (6) WORKING DAYS PRIOR TO ANY WORK ON PAVEMENT MARKINGS OPERATIONS AND/OR SIGN INSTALLATIONS TO SCHEDULE A REVIEW AND APPROVAL OF THE STRIPING AND/OR SIGNING PLANS.
- THE APPROVED STRIPING PLAN SHALL BE LAYED OUT USING THINNED OUT PAINT OR OTHER APPROVED METHODS. FIELD ADJUSTMENTS SHALL BE MADE AS DIRECTED BY THE ENGINEER BEFORE THE FINAL MARKINGS ARE APPLIED.
- ALL PAVEMENT MARKINGS THAT BECOME INAPPLICABLE SHALL BE REMOVED BY THE CONTRACTOR AT HIS OWN EXPENSE. REMOVAL SHALL BE BY ERADICATION OR BY OTHER METHODS APPROVED BY THE ENGINEER BEFORE NEW PAVEMENT MARKINGS ARE APPLIED. EXCESSIVE GOUGING OF THE PAVEMENT SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- ALL PAVEMENT MARKING SHALL BE WITH ALKYD BASED REFLECTIVE THERMOPLASTIC COMPOUND PAVEMENT MARKING AS SPECIFIED IN SECTION(S) 629 AND 755.05 OF THE HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2005 EDITION, AND AS AMENDED, ON ALL ROADWAYS. THE CONTRACTOR SHALL SUBMIT CERTIFICATE OF COMPLIANCE CERTIFYING THAT THE THERMOPLASTIC MATERIALS TO BE USED MEET THE CURRENT AASHTO M-247 AND AASHTO M-249 SPECIFICATIONS.
- FOR CROSSWALKS AND STOP LINES, THE CONTRACTOR SHALL APPLY HIGH SKID-RESISTANT WHITE CORUNDUM AT A RATE EQUAL TO THE RATE OF APPLICATION OF THE GLASS BEADS.
- ON CONCRETE PAVEMENTS, PRE-STRIPE APPLICATION AREA WITH BINDER MATERIAL, PRIMER, OR PRIME SEAL COAT RECOMMENDED BY PAVEMENT MARKER MANUFACTURER.
- HEAT APPLIED PRE-FORMED THERMOPLASTIC PAVEMENT MARKING TAPE WITH VISIBLE TEMPERATURE INDICATORS, OR AN EQUAL PAVEMENT MARKING TAPE THAT IS APPROVED BY THE TRAFFIC DIVISION SHALL BE USED FOR ALL BIKE LANE SYMBOLS AND LEGENDS, AND MAY BE USED FOR CROSSWALKS, STOP LINES, PAVEMENT ARROWS, ALPHABETS, AND SYMBOLS IN LIEU OF THERMOPLASTIC COMPOUND.
- HEAT APPLIED PRE-FORMED THERMOPLASTIC MARKING TAPE FOR CROSSWALKS AND STOP LINES SHALL BE MADE OF A DURABLE, HIGH SKID-RESISTANT MATERIAL.
- REFLECTORIZED RAISED PAVEMENT MARKERS SHALL BE THE REGULAR SIZED MARKERS WITH APPROXIMATE DIMENSIONS OF 4" BY 4" BY 0.7". THE CONTRACTOR SHALL SUBMIT A CERTIFICATE OF COMPLIANCE CERTIFYING THAT THE RAISED PAVEMENT MARKERS TO BE USED MEETS AND/OR EXCEEDS THE CURRENT STATE OF HAWAII, DEPARTMENT OF TRANSPORTATION SPECIFICATIONS.
- ALL TRAFFIC SIGNS AND POSTS SHALL MEET THE REQUIREMENTS OF THE COUNTY OF HAWAII STANDARD DETAIL T-1 EXCEPT THAT FLANGED CHANNEL POSTS AND OCTAGONAL POSTS WILL NOT BE ACCEPTABLE. SIGNS SHALL BE ON ALUMINUM SHEETING OF 0.080-INCH MINIMUM THICKNESS. SIGN POSTS SHALL BE 2" SQUARE TELESPAR TUBING NO. 20 F 12 OR EQUIVALENT WITH 2 1/4" SQUARE TELESPAR ANCHOR POST.

FOR ALL COUNTY DEDICATED STREETS, THE CONTRACTOR SHALL PLACE A TRAFFIC DIVISION MAINTENANCE STICKER ON THE BACK OF EACH SINGLE-SIDED SIGN. STICKERS ARE TO BE ACQUIRED AT THE TRAFFIC DIVISION.



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THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
 EXPIRES 06/30/2020

MARK	DATE	DESCRIPTION	DATE

COUNTY OF HAWAII
 DEPARTMENT OF PARKS & RECREATION
 101 PALAUA STREET, SUITE 617, HILO, HAWAII 96720 / PHONE: 808-961-8311 / FAX: 808-961-9411

ACCESSIBILITY IMPROVEMENTS
PROJECT - MAGIC SANDS BEACH PARK

NORTH KONA, HAWAII TMK: (3) 7-7-8 : 017, 035, 106, 107
 JOB NO.: PR-3730
 PLAN SHEET: CIVIL NOTES 1
 DESCRIPTION:

DESIGNED BY: CJ, CA
 DRAWN BY: CA
 CHECKED BY: CJ

SHEET NO.
C-001

3 OF 48 SHEETS
 DATE: FEB 2020

FILE: O:\OPROJ\2018\218-044_MAGICSANDS_ADA\DRAWINGS\SHSHEET\CIVIL NOTES 2.DWG
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STANDARD TRAFFIC NOTES (CONT.)

- ALL TRAFFIC SIGNS SHALL BE COMPLETELY REFLECTORIZED WITH TYPE XI HIGH INTENSITY RETROREFLECTIVE SHEETING.
- THE 2 1/4" SQUARE ANCHOR POST FOR SIGNS SHALL BE DRIVEN INTO THE GROUND, A.C. PAVEMENT, OR CONCRETE SIDEWALK IN ACCORDANCE WITH THE PLANS. ALL DAMAGES TO THE SURROUNDING AREA SHALL BE REPAIRED TO ITS ORIGINAL CONDITION OR BETTER. BEFORE DRIVING INTO CONCRETE, A NEAT HOLE OF APPROXIMATELY 3 INCH DIAMETER SHALL BE DRILLED THROUGH THE CONCRETE PRIOR TO THE INSTALLATION OF THE ANCHOR POST. IF DRIVING INTO THE CONCRETE OR A.C. PAVEMENT IS NOT POSSIBLE WITHOUT DAMAGE TO THE SURROUNDING CONCRETE OR A.C. PAVEMENT, A 12" BY 12" SQUARE SHALL BE SAW-CUT AND REMOVED PRIOR TO THE INSTALLATION OF THE ANCHOR POST AND THEN PATCHED, WITH HOT MIX TO MATCH THE EXISTING A.C. PAVEMENT OR CONCRETE TO MATCH THE EXISTING CONCRETE SIDEWALK.
- UPON COMPLETION OF ALL CONSTRUCTION WORK, INCLUDING BUT NOT LIMITED TO THE FINAL PAVING OF THE ENTIRE PROJECT AREA AND OFF-SITE CONSTRUCTION, THE CONTRACTOR SHALL RESTRIPE ALL PAVEMENT MARKINGS WITHIN AND IN THE VICINITY OF THE CONSTRUCTION AREA AS APPROVED BY THE TRAFFIC DIVISION AND IN ACCORDANCE WITH ITEM 6 OF THE CURRENT STANDARD TRAFFIC NOTES. THE CONTRACTOR SHALL MAINTAIN ALL TEMPORARY PAVEMENT MARKINGS, PERMANENT PAVEMENT MARKINGS, AND ALL TRAFFIC SIGNS AND POSTS UNTIL THE PROJECT IS ACCEPTED BY THE COUNTY OF HAWAII.

 ALL TRAFFIC SIGNS AND POSTS WITHIN AND IN THE VICINITY OF THE CONSTRUCTION AREA THAT HAVE BEEN DAMAGED, REMOVED, OR ADVERSELY AFFECTED BY THE CONSTRUCTION WORK SHALL BE REPLACED BY THE CONTRACTOR ACCORDING TO ITEM(S) 10, 11, AND 12 OF THE CURRENT STANDARD TRAFFIC NOTES AT NO COST TO THE COUNTY.

NOTES FOR WORK WITHIN THE COUNTY RIGHT OF WAY

- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE COUNTY OF HAWAII, DEPARTMENT OF PUBLIC WORKS (DPW) "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" DATED SEPTEMBER 1986 AND "STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION" DATED SEPTEMBER 1984.
- THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES, WHETHER SHOWN ON THE PLAN OR NOT, AND SHALL BE RESPONSIBLE FOR THE REPAIR OR REPLACEMENT OF SAME IN THE EVENT OF DAMAGES DUE TO HIS CONSTRUCTION PRACTICES. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE RESPECTIVE UTILITY COMPANIES.
- THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL TRAFFIC CONTROL DEVICES IN CONFORMANCE WITH THE CURRENT EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" AND AS DIRECTED BY THE DEPARTMENT OF PUBLIC WORKS.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS 48 HOURS BEFORE COMMENCEMENT OF ANY UTILITY LINE WORK TO SCHEDULE A FIELD REVIEW AND SECURE APPROVAL OF THE PROPOSED UTILITY LINE LOCATION WITHIN THE COUNTY RIGHT OF WAY.
- THE PROPOSED UTILITY LINE LOCATION SHALL BE LAID OUT IN THE FIELD PRIOR TO THE CONDUCTING OF THE FIELD REVIEW BY THE DEPARTMENT OF PUBLIC WORKS.
- FIELD ADJUSTMENTS SHALL BE MADE AS DIRECTED BY THE DEPARTMENT OF PUBLIC WORKS PRIOR TO THE COMMENCEMENT OF ANY UTILITY LINE WORK.
- THE REQUIRED PERMIT, UNDER CHAPTER 22, ARTICLE 3, SECTION 22-44 OF THE HAWAII COUNTY CODE, SHALL BE OBTAINED FROM THE DEPARTMENT OF PUBLIC WORKS BY THE CONTRACTOR FOR WORK WITHIN THE COUNTY RIGHT OF WAY.
- THE CONTRACTOR SHALL PROVIDE AT LEAST ONE (1) LANE FOR TRAFFIC MOVEMENT AT ALL TIMES. TWO (2) LANES FOR TRAFFIC MOVEMENT SHALL BE PROVIDED BETWEEN THE HOURS OF 3:30PM TO 8:00AM.
- THE EXISTING PAVEMENT SHALL BE SAW-CUT BEFORE COMMENCEMENT OF THE TRENCHING WORK.
- ANY PAVEMENT OUTSIDE THE CONTRACT ZONE LIMITS DAMAGED AS A RESULT OF CONSTRUCTION OPERATIONS SHALL BE RESTORED TO ITS ORIGINAL CONDITION, OR BETTER, AS DIRECTED BY THE DEPARTMENT OF PUBLIC WORKS.

- A TEMPORARY COLD MIX PATCH SHALL BE APPLIED IMMEDIATELY UPON COMPLETION OF THE BACKFILLING OPERATION AND SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL A PERMANENT PATCH IS AUTHORIZED BY THE DEPARTMENT OF PUBLIC WORKS.
- NO MATERIAL, EXCEPT THE TRENCH EXCAVATED MATERIAL, SHALL BE STOCKPILED CLOSER THAN SIX (6) FEET FROM THE EXISTING EDGE OF PAVEMENT.
- NO CONSTRUCTION EQUIPMENT SHALL BE PARKED WITHIN THE ROAD RIGHT OF WAY IN SUCH A MANNER THAT THE EQUIPMENT WILL OBSTRUCT THE NORMAL MOVEMENT AND SIGHT DISTANCE OF THE DRIVING MOTORIST, EXCEPT DURING ACTUAL WORKING HOURS.
- EXCEPT DURING ACTUAL WORKING HOURS, ALL SIGNS THAT DO NOT PERTAIN TO THE CONSTRUCTION ACTIVITY, SUCH AS "MEN WORKING" AND "FLAGMAN AHEAD" SHALL BE COVERED OR LAID DOWN. HOWEVER, ALL SIGNS NECESSARY FOR THE SAFETY OF THE PUBLIC SHALL BE MAINTAINED.
- ANY PAVEMENT MARKINGS, STRUCTURES, AND APPURTENANCES (WITHIN OR OUTSIDE OF THE CONTRACT ZONE LIMITS) DAMAGED AND/OR WORN AWAY UNDER THE PERMIT SHALL BE REPAIRED OR RECONSTRUCTED AS DIRECTED BY THE DEPARTMENT OF PUBLIC WORKS.
- NO TRENCHING SHALL BE LEFT OPEN FOR MORE THAN FIVE (5) WORKING DAYS.
- SHOULD TRENCHING OCCUR THROUGH AN EXISTING SIDEWALK, OR SHOULD DAMAGES OCCUR TO THE SIDEWALK AS A RESULT OF ANY CONSTRUCTION WORK, THE FOLLOWING PROCEDURE SHALL BE UTILIZED TO REPAIR THE SIDEWALK:
 - ALL PORTLAND CEMENT CONCRETE TO BE REMOVED SHALL BE FIRST BE CUT WITH A CONCRETE SAW THAT HAS A DIAMOND OR CARBORUNDUM ABRASIVE WHEEL. THOSE CUTS SHALL BE MADE TO A DEPTH EQUAL TO AT LEAST ONE FOURTH OF THE DEPTH OF THE SLAB, OR ENOUGH AS IS DEEMED NECESSARY BY THE DEPARTMENT OF PUBLIC WORKS, TO PERMIT BREAKING OUT THE BALANCE OF THE CONCRETE WITHOUT SPALLING OFF THE EXPOSED EDGES OF THE SLAB LEFT IN PLACE.
 - IF ANY CONCRETE BLOCK IS TOUCHED, THE WHOLE BLOCK SHALL BE REMOVED AND LATER REPLACED, UNLESS A MINOR VARIATION IS AUTHORIZED BY THE DPW OR ITS REPRESENTATIVE.
 - ANY DAMAGES TO ADJACENT AREAS DUE TO SETTLEMENT OR TO ANY OTHER EFFECTS WHATSOEVER CAUSED BY THE CONSTRUCTION WORK SHALL BE PROPERLY REPAIRED AND CORRECTED.
 - ALL OTHER INCIDENTAL WORK SHALL BE SATISFACTORILY PERFORMED TO EFFECT THE PROPER RESTORATION OF THE SIDEWALK AREA.
 - SHOULD DAMAGE TO A SIDEWALK, CURB AND/OR GUTTER OCCUR AT A LOCATION WHERE A CURB RAMP SHOULD EXIST, OR TO A DRIVEWAY THAT DOES NOT MEET WITH THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT (ADA), REPAIR WORK SHALL INCLUDE THE CONSTRUCTION OF A CURB RAMP, OR RECONSTRUCTION OF THE DRIVEWAY SUCH THAT THE REPAIR WORK COMPLIES WITH THE ADA AND MEETS WITH THE APPROVAL OF THE DEPARTMENT OF PUBLIC WORKS.
- WHEN WORK INTERFERES WITH A SIDEWALK, THE APPLICANT SHALL PROVIDE FOR THE SAFE PASSAGE OF PEDESTRIANS INCLUDING THE DISABLED AROUND OR THROUGH THE WORK AREA.
- NO WORK WITHIN THE COUNTY RIGHT-OF-WAY SHALL BE DONE ON SATURDAYS, SUNDAYS AND HOLIDAYS ANYTIME WITHOUT PRIOR APPROVAL FROM THE DEPARTMENT OF PUBLIC WORKS. RIGHT-OF-WAY WORK ON NORMAL WORKING DAYS SHALL BE LIMITED BETWEEN THE HOURS OF 7:00 A.M. TO 3:30 P.M.
- THE PERMITTEE SHALL MAINTAIN, TO THE SATISFACTION OF THE DEPARTMENT OF PUBLIC WORKS, THE AREA WORKED WITHIN THE GOVERNMENT RIGHT OF WAY INCLUDING ANY REPAIRS TO PAVEMENT AND SHOULDER DAMAGED AS A RESULT OF THE INSTALLATION WORK, FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL INSPECTION. THE PERMITTEE SHALL UNDERTAKE REPAIRS EXPEDITIOUSLY, WHENEVER DIRECTED BY THE DEPARTMENT OF PUBLIC WORKS DURING THE MAINTENANCE PERIOD.

WATERLINE NOTES

- ALL WORK SHALL BE DONE ACCORDING TO THE WATER SYSTEM STANDARDS, STATE OF HAWAII, DATED 2002, AS AMENDED.
- ALL EXISTING WATERLINES, WATERLINE APPURTENANCES, AND OTHER UTILITY LOCATIONS SHOWN ON THE PLANS ARE OBTAINED FROM THE LATEST RELIABLE SOURCES. THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THE EXACT LOCATION OF ALL UTILITIES IN THE FIELD AND SHALL BEAR ALL COSTS FOR DAMAGES DONE DURING THE CONTRACT PERIOD.
- THE CONTRACTOR SHALL INFORM THE D.W.S. ENGINEER 72 HOURS PRIOR TO THE BEGINNING OF ANY WATERLINE WORK AND TWO WEEKS PRIOR TO ANY CONNECTION, CHLORINATION, SHUT-OFF OR RELOCATION WORK.
- ALL CONNECTIONS TO THE EXISTING WATER SYSTEM SHALL BE DONE BY THE D.W.S. THE CONTRACTOR SHALL PERFORM ALL EXCAVATION, BACKFILL, ROAD REPAIR, TRAFFIC CONTROL, AND PROVIDE EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THE CONNECTION.
- THE CONTRACTOR SHALL PAY FOR ALL WORK, EQUIPMENT AND MATERIAL FURNISHED BY THE D.W.S.
- WHERE WATER SHUTOFF OF MORE THAN 3-HOURS BECOMES NECESSARY, THE CONTRACTOR, AT HIS OWN EXPENSE, SHALL PROVIDE A TEMPORARY BYPASS LINE, SIZE OF WHICH SHALL BE DETERMINED BY THE D.W.S. ENGINEER. THE D.W.S. ENGINEER ALSO RESERVES THE RIGHT TO REQUIRE BYPASS LINES, REGARDLESS OF THE WATER SHUT-OFF PERIOD, IF DEEMED NECESSARY.
- CONSTRUCTION PROJECTS REQUIRING TEMPORARY WATER SERVICE SHALL BE METERED AND PAID FOR BY CONTRACTOR.
- OUTSIDE OF STATE ROAD RIGHT-OF-WAYS: MINIMUM COVER ON WATER SYSTEM PIPELINES 4-INCH THROUGH 8-INCH TO BE 2.0 FEET. MINIMUM COVER ON 12-INCH PIPELINES TO BE 2.5 FEET. MINIMUM COVER ON PIPELINES GREATER THAN 12-INCH TO BE 3.0 FEET. MAXIMUM COVER ON PIPELINES NOT TO EXCEED 5 FEET UNLESS APPROVED BY THE MANAGER OF D.W.S. WITHIN STATE ROAD RIGHT-OF-WAYS: MIN. COVER ON ALL SIZES OF WATERLINES TO BE 3.0 FEET.
- ALL NEWLY INSTALLED WATERLINES SHALL HAVE A 4 MIL THICK, 6-INCH WIDE, NON-METALLIC BLUE WARNING TAPE OVER CENTERLINE OF PIPE LABELED "CAUTION - WATERLINE BURIED BELOW" PLACED ABOVE PIPE CUSHION ALONG THE ENTIRE LENGTH OF THE TRENCH.
- MINIMUM VERTICAL CLEARANCE BETWEEN WATERLINES AND OTHER UTILITIES SHALL BE 12-INCHES PROVIDED THE OTHER UTILITY IS CONCRETE JACKETED, AND 18-INCHES IF NO CONCRETE JACKETS ARE USED. IN ALL APPLICABLE INSTANCES, THE WATERLINES SHALL BE AT A GRADE HIGHER THAN OTHER UTILITIES. UTILIZE PERPENDICULAR CROSSINGS WHERE PRACTICABLE. FOR WATERLINES, CENTER FULL PIPELENGTHS AT UTILITY CROSSINGS WHENEVER POSSIBLE.
- MINIMUM HORIZONTAL CLEARANCE BETWEEN WATERLINES AND OTHER UTILITIES SHALL BE 8- FEET (CLEAR SPACE - NOT CENTERLINE TO CENTERLINE) FOR ROAD RIGHT OF WAYS OF 50- FEET OR LESS, AND 10- FEET FOR ROAD RIGHT-OF- WAYS OF MORE THAN 50- FEET.
- WHEN WATERLINE IS WITHIN 6- FEET OF A PRESSURIZED SEWER LINE OR WITHIN 18- INCHES OF A GRAVITY SEWER LINE, THE SEWER MAIN SHALL BE REINFORCED CONCRETE JACKETED. WHENEVER A WATER MAIN CROSSES UNDER A SEWER MAIN, THE SEWER MAIN SHALL HAVE REINFORCED CONCRETE JACKET ON BOTH SIDES OF CROSSING TO A DISTANCE OF 5- FEET FROM THE WATERLINE (MEASURED PERPENDICULAR TO WATERLINE). STANDARD CONCRETE JACKET DETAILS FOR SEWERLINES AS SPECIFIED BY THE DEPARTMENT OF PUBLIC WORKS STANDARDS SHALL BE FOLLOWED. PLASTIC PIPES SHALL NOT BE JACKETED. DUCTILE IRON OR CONCRETE CYLINDER PIPE SHALL BE USED FOR THE PORTION TO BE JACKETED.
- ALL WATER SYSTEM PIPELINES, 4-INCHES OR LARGER IN DIAMETER, SHALL BE DUCTILE IRON, PUSH ON JOINTS, CLASS 52, AND ALL PIPELINES SMALLER THAN 4-INCHES IN DIAMETER SHALL BE SOFT COPPER, TYPE "K", UNLESS OTHERWISE SPECIFIED.
- ALL FITTINGS (MINIMUM CLASS 250) AND GATE VALVES (RESILIENT TYPE, CLASS 200) SHALL BE DUCTILE IRON, WITH MECHANICAL JOINTS UNLESS OTHERWISE SPECIFIED. BUTTERFLY VALVES (MJ) SHALL BE CLASS 250 WITH FUSION EPOXY COATED INTERIOR UNLESS OTHERWISE SPECIFIED. SLOPE OF PIPE INVERT AT VALVE LOCATIONS SHALL NOT EXCEED 6% - ADJUST PIPE AS APPROPRIATE PER STANDARDS.

- PIPE JOINT RESTRAINTS FOR MECHANICAL JOINT (MJ) FITTINGS AND MJ VALVES SHALL BE "MEGALUG" SERIES AS MANUFACTURED BY EBAA IRON, INC., OR AN APPROVED EQUAL (WEDGE TYPE), WHEREVER CALLED FOR ON THE PLANS AND SPECIFICATIONS.
- FIRE HYDRANT ASSEMBLIES SHALL UTILIZE EBAA "MEGALUGS" (OR APPROVED EQUAL) AT ALL MJ CONNECTIONS.
- 4'X4'X4" REINFORCED CONCRETE SLAB FOR FIRE HYDRANT SHALL BE REINFORCED WITH 6X6X10/10 WELDED WIRE FABRIC. SLAB TO SLOPE AWAY FROM HYDRANT AT 2% IN ALL DIRECTIONS.
- THE WATERLINE SHALL BE TESTED AT A MINIMUM OF 225 PSI OR ONE-AND-ONE-HALF TIMES THE STATIC WATER PRESSURE AT THE LOW POINT (WHICHEVER IS GREATER), UNDER D.W.S. SUPERVISION. THE TESTING SHALL BE DONE JUST PRIOR TO PAVING WHENEVER APPLICABLE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CHLORINATION OF THE WATER SYSTEM PER THE MOST CURRENT STANDARDS OF GOVERNING AGENCIES AND SHALL BEAR ALL COST(S). THE PERSON(S) ENGAGED TO DO THE CHLORINATION WORK MUST HAVE THE APPROPRIATE VALID LICENSE TO PERFORM THE WORK IN THE STATE OF HAWAII.
- EXISTING VALVES, FIRE HYDRANT UNITS, VALVE BOXES, FRAMES AND COVERS DESIGNATED "REMOVE AND SALVAGE" SHALL BE CLEANED OF ALL DIRT, SCABS, AND CONCRETE AND DELIVERED TO THE RESPECTIVE D.W.S. BASEYARD. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE VARIOUS BID ITEMS, UNLESS SPECIFIED OTHERWISE.
- EXISTING WATERLINES, VALVES, FITTINGS AND APPURTENANCES NOT DESIGNATED "REMOVE AND SALVAGE" SHALL BE ABANDONED IN PLACE. ALL EXPOSED VALVE BOXES, VALVES, PIPES AND APPURTENANCES SHALL BE REMOVED AND DISPOSED OF PROPERLY AT NO COST TO THE D.W.S.
- REMOVAL OF EXISTING FIRE HYDRANT UNITS AS FOLLOWS: FOR MECHANICAL JOINT FITTINGS - CUT TEE FROM MAIN AND INSTALL PIPE NIPPLE USING TWO SOLID BODY SLEEVES; FOR LEAD JOINT FITTINGS - CUT TEE FROM MAIN AND INSTALL PIPE NIPPLE USING TWO TRANSITION COUPLINGS.
- METER BOXES FOR 5/8-INCH METERS PLACED OUTSIDE OF PAVEMENT TO BE TYPE "B" PER STD. DETAILS M1 & M2. METER BOXES FOR 1-INCH METERS OR FOR 5/8-INCH METERS LOCATED WITHIN PAVEMENT TO BE TYPE "X" PER STD. DETAIL M3.
- RELOCATION OF EXISTING METERS SHALL BE DONE UNDER D.W.S. SUPERVISION. RELOCATIONS OF CUSTOMER SERVICE LINES TO RELOCATED METERS SHALL BE COPPER (TYPE "K") AND DONE BY THE CONTRACTOR. ALL WORK AND MATERIALS SHALL BE PROVIDED BY THE CONTRACTOR AND CONSIDERED INCIDENTAL TO THE RELOCATION WORK. EXISTING METER BOXES DAMAGED BY THE CONTRACTOR SHALL BE REPLACED AT THE CONTRACTOR'S COST. WHEN APPLICABLE, A DIELECTRIC UNION SHALL BE USED TO CONNECT THE COPPER PIPE TO THE CUSTOMER'S GALVANIZED IRON (G.I.) PIPE.
- SOLDER (1/8-INCH DIA.) AND FLUX USED SHALL NOT CONTAIN MORE THAN 0.2% LEAD.
- WHEN COMPACTION TESTS ARE REQUIRED, THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE THE D.W.S. WITH PROCTOR RESULTS OF MATERIALS TO BE USED FOR THAT PORTION OF THE WORK REQUIRING COMPACTION. THESE RESULTS SHALL BE CERTIFIED AND SHALL BE FURNISHED TO D.W.S. ONE WEEK PRIOR TO COMMENCEMENT OF WORK. COSTS FOR COMPACTION TESTS SHALL BE INCIDENTAL TO PIPELINE INSTALLATION.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN AND CERTIFY THE RECORD DRAWINGS AS-BUILT DRAWINGS) AS TO ACCURACY AND AS-BUILT CONDITION, AND A LICENSED ENGINEER SHALL CERTIFY THE DRAWINGS. THE CONTRACTOR SHALL THEN SUBMIT THE RECORD DRAWINGS AND AS-BUILT TRACINGS TO THE D.W.S.
- LOTS REQUIRING A DEPARTMENT OF WATER SUPPLY APPROVED BACKFLOW PREVENTION ASSEMBLY SHALL HAVE ONE. BACKFLOW DEVICE INSTALLATION MAY NOT BE REQUIRED FOR FINAL SUBDIVISION APPROVAL BUT MUST BE INSTALLED, WHERE REQUIRED, BEFORE WATER SERVICE IS ALLOWED. IT MUST BE INSTALLED ON PRIVATE PROPERTY IN ACCORDANCE WITH D.W.S. STANDARD DETAIL NO. V9 AND DEPARTMENTAL STAFF MUST APPROVE THE INSTALLATION BEFORE WATER SERVICE CAN BE STARTED.

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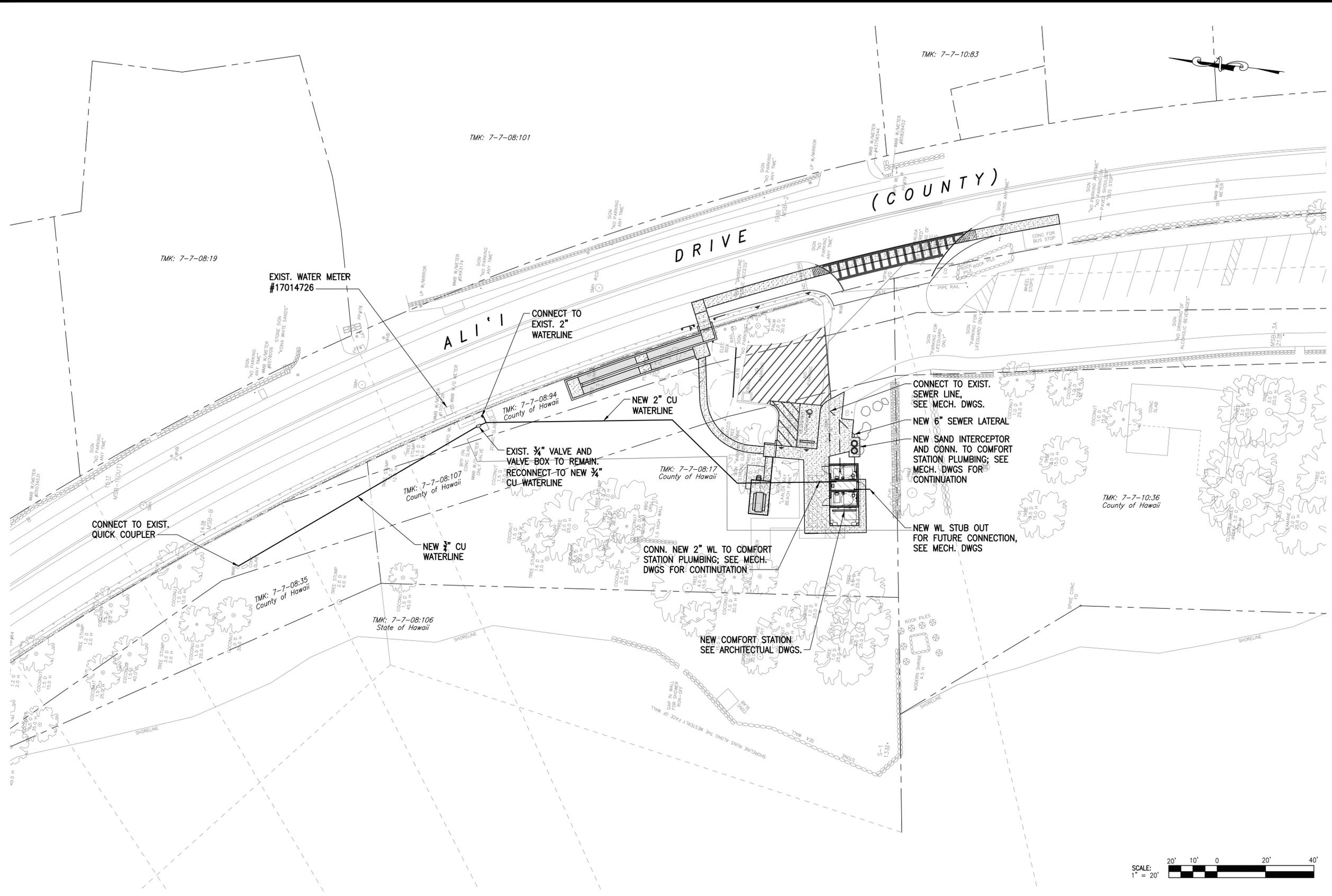
REGISTERED PROFESSIONAL ENGINEER
 NO. 13190-C
 HAWAII
 THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
 EXPIRES 04/02/20

MARK	DATE	DESCRIPTION	DATE

COUNTY OF HAWAII
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ACCESSIBILITY IMPROVEMENTS
PROJECT - MAGIC SANDS BEACH PARK
 NORTH KONA, HAWAII TMK: (3) 7-7-8 : 017, 035, 106, 107
 JOB NO.: PR-3730
 PLAN SHEET DESCRIPTION: CIVIL NOTES 2

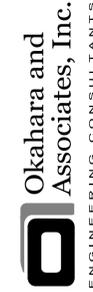
DESIGNED BY: CJ, CA
 DRAWN BY: CA
 CHECKED BY: CJ
 SHEET NO. **C-002**
 4 OF 48 SHEETS
 DATE: FEB 2020

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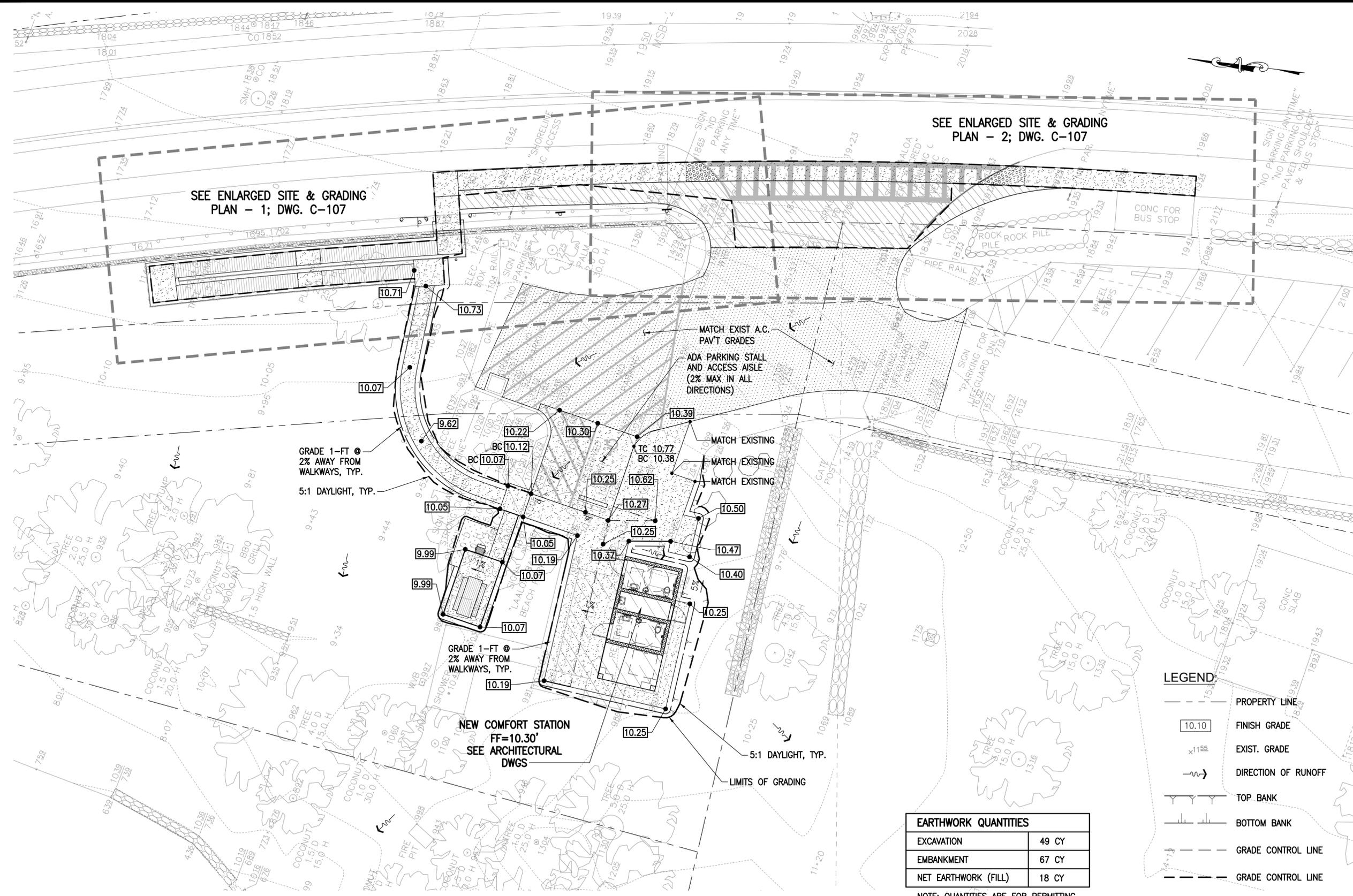


UTILITY PLAN
 SCALE: 1" = 20'



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COUNTY OF HAWAII DEPARTMENT OF PARKS & RECREATION 101 PALAUAH STREET, SUITE 67, HILO, HAWAII 96720 / PHONE: 808.961.8311 / FAX: 808.961.8411		ACCESSIBILITY IMPROVEMENTS PROJECT - MAGIC SANDS BEACH PARK NORTH KONA, HAWAII TMK: (3) 7-7-8 : 017, 035, 106, 107	
DESIGNED BY: CJ, CA	DRAWN BY: CA	CHECKED BY: CJ	SHEET NO. C-104
DATE: FEB 2020		JOB NO.: PR-3730 PLAN SHEET DESCRIPTION: UTILITY PLAN	
REVIEWED:		DEPARTMENT OF PARKS AND RECREATION	
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GRADING PLAN
 SCALE: 1" = 10'

EARTHWORK QUANTITIES	
EXCAVATION	49 CY
EMBANKMENT	67 CY
NET EARTHWORK (FILL)	18 CY

NOTE: QUANTITIES ARE FOR PERMITTING PURPOSES ONLY

- LEGEND:**
- PROPERTY LINE
 - 10.10 FINISH GRADE
 - x1155 EXIST. GRADE
 - DIRECTION OF RUNOFF
 - TOP BANK
 - BOTTOM BANK
 - GRADE CONTROL LINE
 - GRADE CONTROL LINE



SEE ENLARGED SITE & GRADING PLAN - 1; DWG. C-107

SEE ENLARGED SITE & GRADING PLAN - 2; DWG. C-107

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CARLES J. JURY
 LICENSED PROFESSIONAL ENGINEER
 NO. 13190-C
 HAWAII

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

EXPIRES 06/30/2020

MARK	DATE	DESCRIPTION	REVIEWED:	DATE

COUNTY OF HAWAII
 DEPARTMENT OF PARKS & RECREATION
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ACCESSIBILITY IMPROVEMENTS
PROJECT - MAGIC SANDS BEACH PARK

NORTH KONA, HAWAII TMK: (3) 7-7-8 : 017, 035, 106, 107

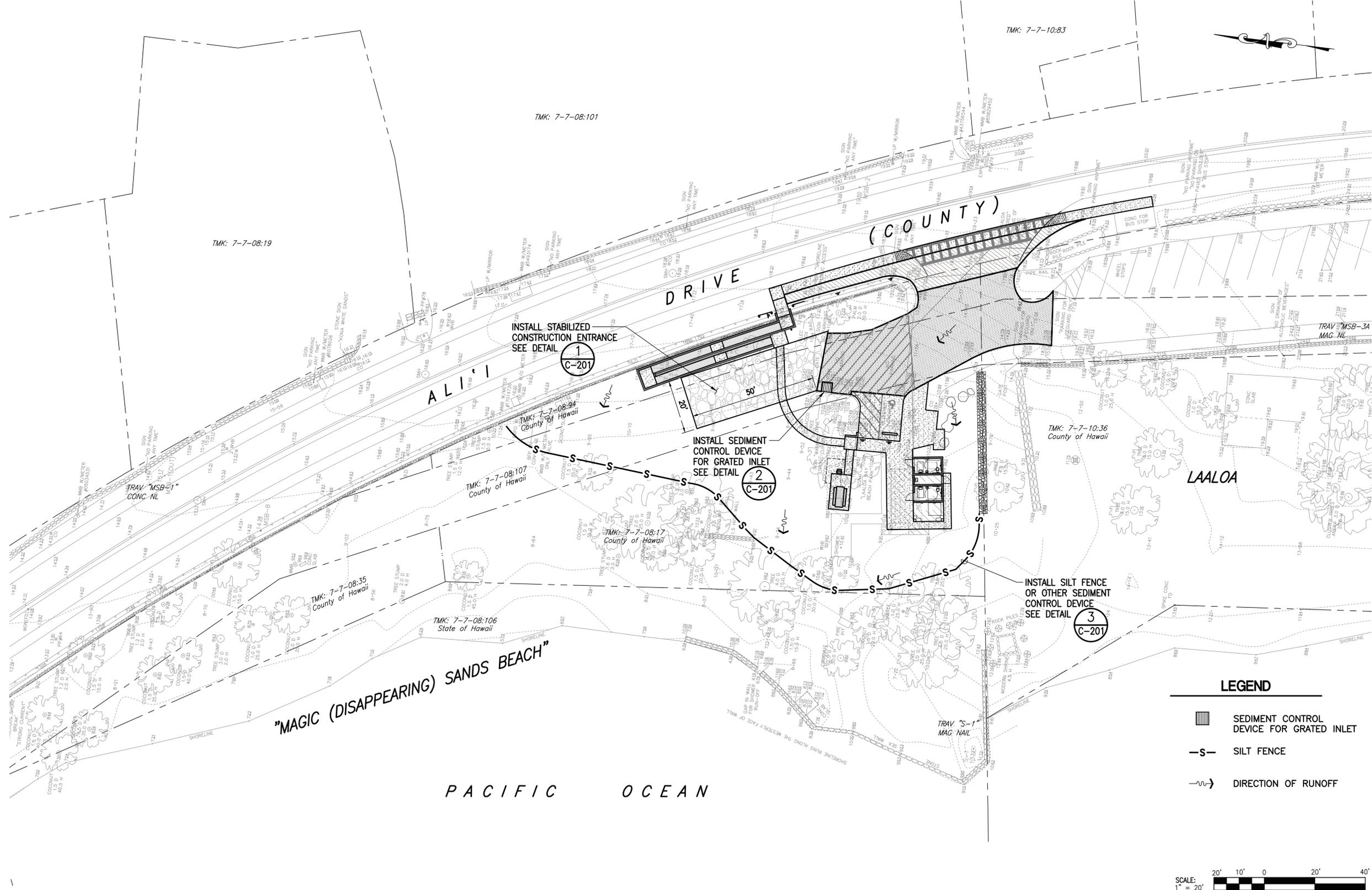
JOB NO.: PR-3730
 PLAN SHEET: GRADING PLAN
 DESCRIPTION:

DESIGNED BY: CJ, CA
 DRAWN BY: CA
 CHECKED BY: CJ

SHEET NO.
C-105

9 OF 48 SHEETS
 DATE: FEB 2020

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PROJECT - MAGIC SANDS BEACH PARK
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Magic Sands Beach Park Accessibility Improvements

Environmental Assessment

APPENDIX 3

Cultural Impact Assessment

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A Cultural Impact Assessment for the Proposed Accessibility Improvements Project at La‘aloa Beach Park

(3) 7-7-008:017, 094, 107 por. and (3) 7-7-010:036 por.

Pāhoehoe 4th and La‘aloa 1st Ahupua‘a
North Kona District
Island of Hawai‘i



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North Kona District
Island of Hawai‘i



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1. INTRODUCTION

At the request of Okahara and Associates, Inc., on behalf of the County of Hawai‘i (landowner), the Department of Parks and Recreation, ASM Affiliates has prepared this Cultural Impact Assessment (CIA) for the proposed comfort station and accessibility improvements project at the County managed La‘aloa Beach Park. This beach park is also known by other epithets including Disappearing Sands, White Sands, and Magic Sands Beach Park. The roughly 0.39-acre project areas comprise portions of Tax Map Keys (TMK): (3) 7-7-008:017, 094, and 107 located in the *ahupua‘a* of Pāhoehoe 4th and a portion of TMK: (3) 7-7-010:036 in La‘aloa 1st Ahupua‘a, North Kona District, Island of Hawai‘i (Figures 1 and 2). The County of Hawai‘i Department of Parks and Recreation is seeking to improve the existing facilities at La‘aloa Beach Park to meet the requirements and standards set forth in the Americans with Disabilities Act (ADA). The proposed project involves demolishing and replacing the existing comfort station facility and installing ADA compliant accessibility infrastructure, including concrete ramps and paths, from Ali‘i Drive to the comfort station and a barbecue and picnic area. The proposed project also calls for repaving, signing, and striping a new entrance driveway and parking area; installing new covered showers on the comfort station building and connecting them to the County wastewater treatment system; removal of some of the existing trees; adding new landscaping.

This CIA study is intended to inform a Hawai‘i Revised Statutes (HRS) Chapter 343 Environmental Assessment (EA) conducted in compliance with HRS Chapter 343; pursuant to Act 50 and in accordance with the Office of Environmental Quality Control (OEQC) *Guidelines for Assessing Cultural Impacts*, adopted by the Environmental Council, State of Hawai‘i, on November 19, 1997 (Office of Environmental Quality Control (OEQC) 1997). As stated in Act 50, which was proposed and passed as Hawai‘i State House of Representatives Bill No. 2895 and signed into law by the Governor on April 26, 2000, specifically acknowledges that State’s responsibility to protect native Hawaiian cultural practices. Act 50 further states that “environmental assessments . . . should identify and address effects on Hawaii’s culture, and traditional and customary rights” and that “native Hawaiian culture plays a vital role in preserving and advancing the unique quality of life and the ‘aloha spirit’ in Hawai‘i. Articles IX and XII of the state constitution, other state laws, and the courts of the State impose on governmental agencies a duty to promote and protect cultural beliefs, practices, and resources of native Hawaiians as well as other ethnic groups.”

This report is divided into four main sections, beginning with an introduction and a general description of the study area as well as the proposed accessibility and comfort station improvements project. This section is followed by a detailed culture-historical background and a presentation of prior studies conducted within the vicinity of the project area; all of which combine to provide a physical and cultural context for the proposed project area. The results of the consultation process are then presented, along with a discussion of potential cultural impacts as well as appropriate actions and strategies to mitigate any such impacts.

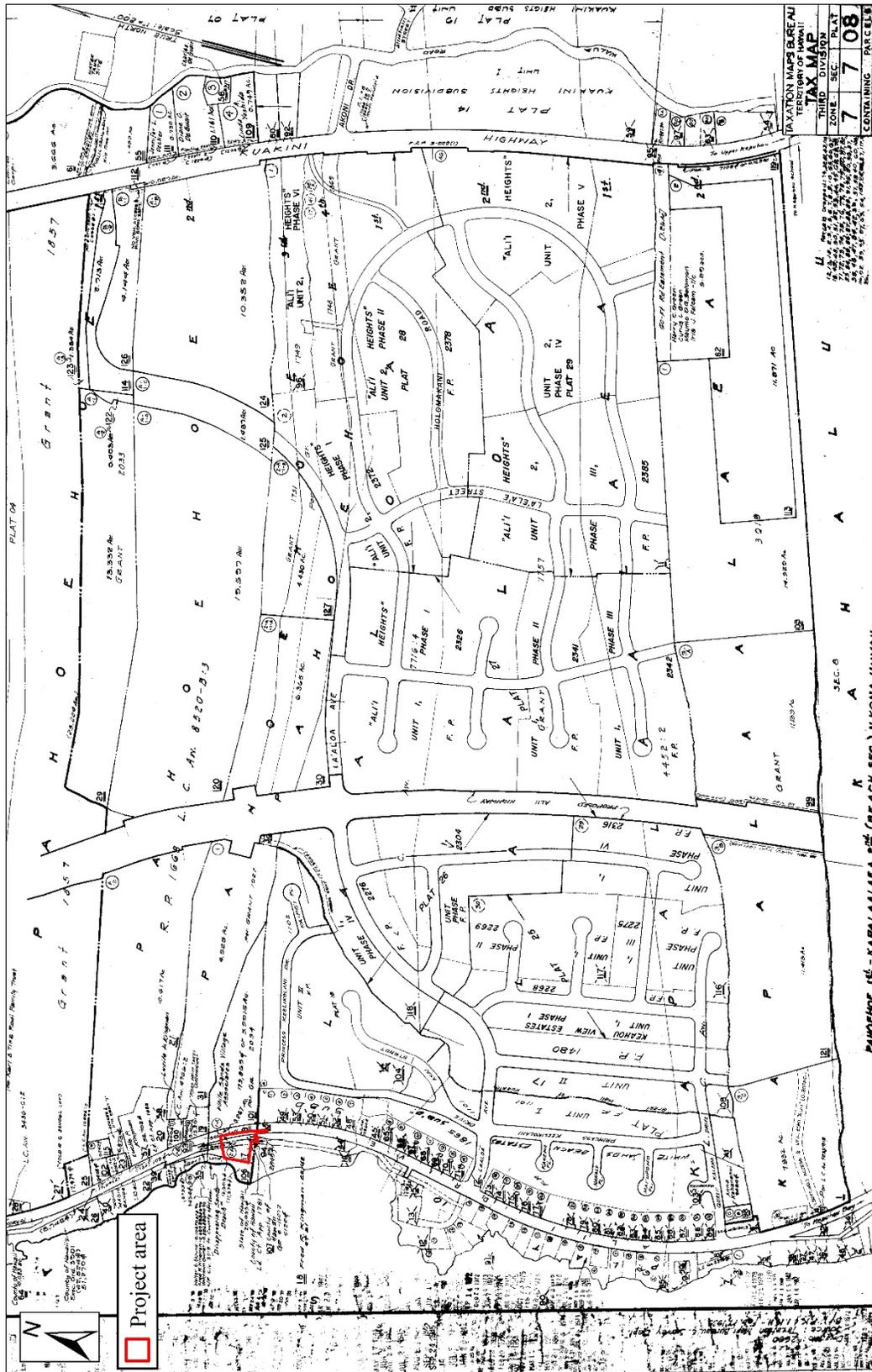


Figure 2. Tax Map Key (3) 7-7-008 showing the current project area parcels (outlined red).

PROJECT AREA DESCRIPTION

The roughly 0.39-acre project area is located along the Kona coast of Hawai‘i Island, *makai* of present-day Ali‘i Drive (Figure 3), the main thoroughfare that meanders along the coast beginning at Kailua Pier and terminates in the vicinity of Keauhou. The northern portion of the project area is within the *ahupua‘a* of Pāhoehoe 3rd and 4th and consists of a white sandy cove interspersed with *pāhoehoe* flats and loose boulders (Figure 4). This sandy section is known traditionally as Ke One O Huihui (lit. the sands of Huihui). During periods of high surf and strong currents, the sand from this beach erodes and exposes a large concentration of shoreline boulders (Figure 5). This natural phenomenon is reflected in some of the common names given to this area including Magic Sands and Disappearing Sands. The south portion of the sandy cove transitions back into rising *pāhoehoe* flats at a point traditionally named Ka Lae O Huihui (lit. the point of Huihui; see Figures 3 and 6). To the east of Ka Lae O Huihui is the current restroom facility, showers, and the entrance into the paved parking area (Figures 7 and 8). On the south side of the restroom is a reconstructed *iwi ‘āina* stone wall that was traditionally intended to delineate the boundary between La‘aloa and Pāhoehoe (Figure 9). The wall’s current location does not match its historical alignment, and the details of this discrepancy are discussed in the Cultural Landscape section of this report. The area extending to the south of the *iwi ‘āina* stone wall is within the La‘aloa 1st Ahupua‘a, whose coastal section is marked by undulating *pāhoehoe* topped with loose boulders (Figure 10). The ocean fronting Pāhoehoe and La‘aloa, like that of the greater Kona region was known for its rich fisheries. Inland of the coastal section of La‘aloa 1st is a cultural preserve area buffered on the east by a stone wall (see Figures 3 and 11). Between the preservation area buffer and Ali‘i Drive is the former La‘aloa Beach Park parking lot, which is no longer in use. Public parking for La‘aloa Beach Park is along Ali‘i Drive and within the County-owned, Kipapa Park, located to the northeast of the study area (see Figure 3). The elevation in the northern section of the study area near the sandy section of La‘aloa Beach Park ranges from zero meters and rises to a max of one meter above mean sea level, while the elevation in the area south of Ka Lae O Huihui rises to a maximum height of six meters above mean sea level. (Rechtman and Loubser 2007)



Figure 3. Google Earth™ satellite image showing study area location (outlined in red) and other important features.



Figure 4. Sandy portion of La'aloa Beach Park, view to the south. Existing comfort station not shown in photo.



Figure 5. Sandy portion of La'aloa Beach Park showing exposed *pāhoehoe* and boulders with existing comfort station in the background, view to the south.



Figure 6. View of the northern section of La‘aloa Beach Park from Ka Lae O Huihui, view to the north.



Figure 7. Existing comfort station and showers located to the east of Ka Lae O Huihui, view to the southwest.



Figure 8. Paved parking area adjacent to the existing comfort station, view to the southeast.



Figure 9. Reconstructed *iwi 'āina* stone wall located on the south side of the existing comfort station, view to the west.



Figure 10. Cultural preserve area within La‘aloa 1st Ahupua‘a, view to the south.



Figure 11. Stonewall separating the parking lot from cultural preserve with the existing comfort station in the background, view to the northwest.

Geology and Soils

The terrain within the project area is characterized by level to moderate 2 to 10 degree west/southwest-trending slope. The underlying geology documented by Sherrod et al. (2007) is comprised predominately of *pāhoehoe* basalt (mapped as “Qh” in Figure 12) originating from Hualālai Volcano 11,000 to 30,000 years ago. Soils within the study area are described as Punalu‘u highly decomposed plant material with a two to ten percent slope (mapped as “120” in Figure 13) (Soil Survey Staff 2018). These soils are well-drained, thin organic soils over *pāhoehoe* bedrock with very slow runoff and pose little to no erosion hazard. The project area receives a mean annual rainfall of 79.7 millimeters (31.4 inches) that peaks between the months of July through September (Giambelluca et al. 2013).

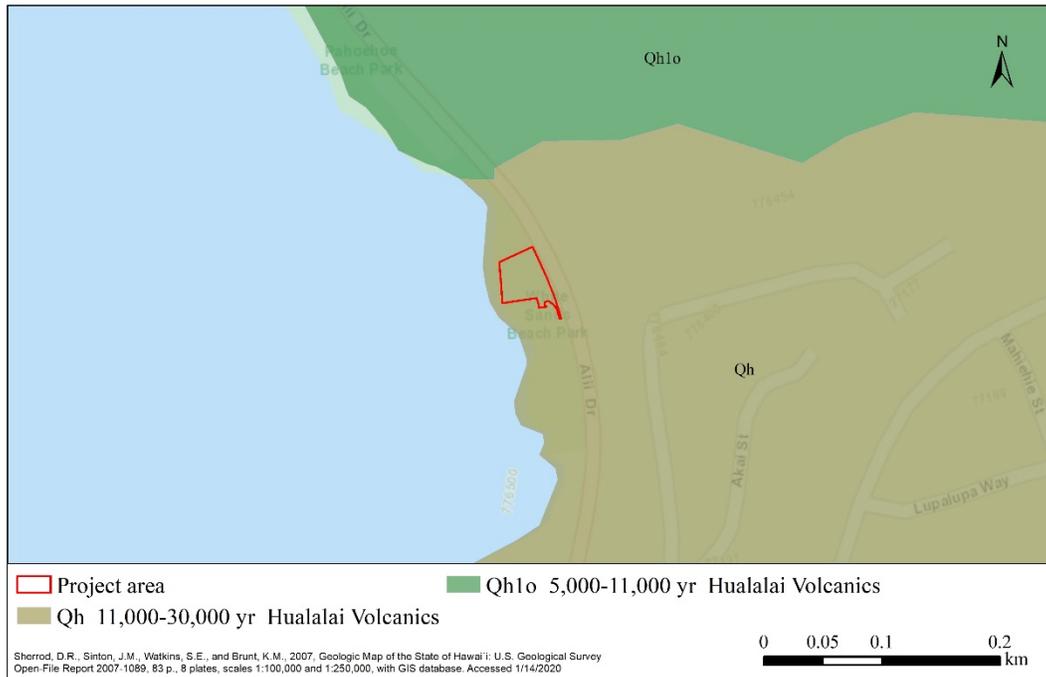


Figure 12. Geology in the project area vicinity (outlined in red).



Figure 13. Soils in the project area vicinity (outlined in red).

PROPOSED DEVELOPMENT ACTIVITY

The County of Hawai‘i, Department of Parks and Recreation is seeking to improve the existing comfort station facilities at La‘aloa Beach Park by downsizing the existing comfort station facility to two unisex stalls and installing ADA compliant accessibility infrastructure, including concrete ramps and paths, from Ali‘i Drive to the comfort station and, constructing picnic and grilling area. The proposed project also calls for repaving, signing, and striping a new entrance driveway and parking area; installing new covered showers on the comfort station building and connecting it to the County wastewater treatment system; removal of some of the existing trees; and adding new landscaping (Figure 14).

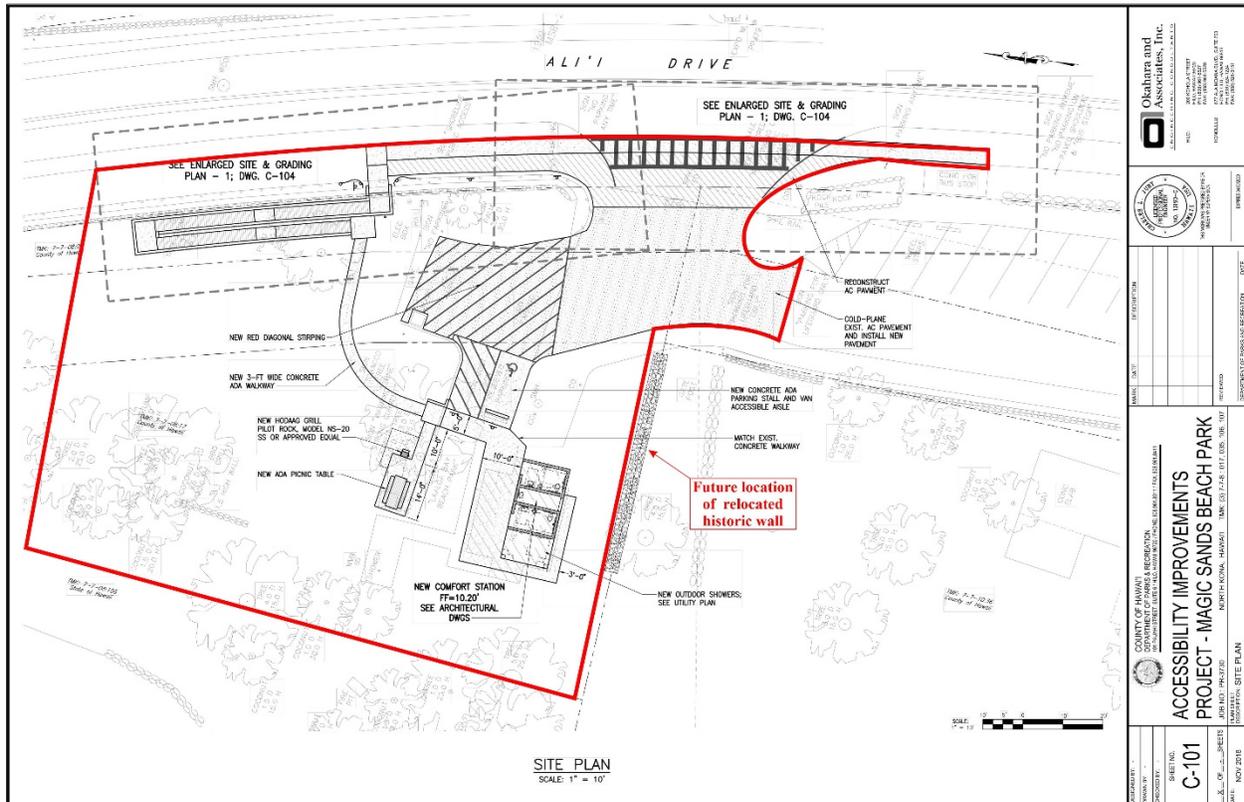


Figure 14. Proposed plans for the La‘aloa Beach Park accessibility improvements project.

2. BACKGROUND

This section of the report includes a discussion of the cultural-historical background for the proposed project area and greater geographical region and includes a synthesis of relevant prior archaeological and ethnohistorical research. This information is presented to provide a comprehensive understanding of the cultural significance of the proposed project area and general vicinity and to establish an analytical basis for the assessment of any potential cultural impacts that may result from the proposed project. As stated in the OEQC (1997) *Guidelines for Assessing Cultural Impacts*, the ability to assess the cultural significance of the current project area is contingent upon developing (at a minimum), a comprehensive understanding of the *ahupua‘a* in which the project area is located. Furthermore, the OEQC (1997:1) guidelines go on to state that “[t]his is to ensure that the cultural practices which may not occur within the boundaries of the project area, but which may nonetheless be affected, are included in the assessment.” As will be demonstrated in the ensuing section, the study area undertaken in this CIA will focus on the *ahupua‘a* of Pāhoehoe and La‘aloa and at times the broader region and island landscape.

CULTURE-HISTORICAL CONTEXT

The chronological summary presented below begins with the peopling of the Hawaiian Islands and a generalized model of Hawaiian Prehistory followed by a summary of Historic events in the Hawaiian Islands after the arrival of foreigners. The discussion continues with a presentation of legendary and historical references to the *ahupua'a* of Pāhoehoe and La'aloa and at times the broader Kona District. This summary includes oral traditions and first-hand Historic accounts recorded by visitors and missionaries who passed through the area. Land use practices and settlement patterns in the study area as documented in mid to late-19th century land documents are also presented. The discussion concludes with a summary of the cultural landscape at coastal Pāhoehoe and La'aloa as identified in prior studies conducted in the project area vicinity.

A Generalized Model of Hawaiian Prehistory

While the question of the timing of the first settlement of Hawai'i by Polynesians remains unanswered, several theories have been offered that derive from various sources of information (i.e., genealogical, oral-historical, mythological, radiometric). However, none of these theories is today universally accepted (Kirch 2011). What is more widely accepted is the answer to the question of where Hawaiian populations came from and the transformations they went through on their way to establish a uniquely Hawaiian culture. The initial settlement in Hawai'i is believed to have originated from the southern Marquesas Islands (Emory in Tatar 1982). During these early times, Hawai'i's inhabitants were primarily engaged in subsistence-level agriculture and fishing (Handy and Handy 1991). 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; which was further assured by the conical clan principle of genealogical seniority (Kirch 1984). According to Fornander (1880), the Hawaiians brought from their homeland certain universal Polynesian customs and belief: the major gods Kāne, Kū, and Lono; the *kapu* system of law and order; cities of refuge; the *'aumakua* concept; and the concept of *mana*. The initial permanent settlements were established at sheltered bays with access to freshwater and marine resources. These communities shared extended familial relations and there was an occupational focus on the collection of marine resources. Over a period of a few 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 populations increased so did societal conflict, which resulted in hostility and war between neighboring groups (Kirch 1985).

As time passed, a uniquely Hawaiian culture developed. The portable artifacts found in archaeological sites of this next period reflect an evolution of the traditional tools and 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. 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). As the population continued to expand so did social stratification, which was accompanied by 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. During this expansion period, additional migrations to Hawai'i occurred from Tahiti in the Society Islands. Rosendahl (1972) has proposed that settlement at this time was related to the 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; as Hommon (1976) argues, kinship links between coastal settlements disintegrated as those links within the *mauka-makai* settlements expanded to accommodate the exchange of agricultural products for marine resources. This shift is believed to have resulted in the establishment of the *ahupua'a* system sometime during the A.D. 1400s (Kirch 1985), which added another component to an already well-stratified society. The implications of this model include a shift in residential patterns from seasonal, temporary occupation, to the permanent dispersed occupation of both coastal and upland areas.

The *ahupua'a* became the equivalent of a local community, with its own social, economic, and political significance, which added another component to a then well-stratified society. *Ahupua'a* were ruled by *ali'i 'ai ahupua'a* or chiefs who controlled the *ahupua'a* resources; who, for the most part, had complete autonomy over this generally economically self-supporting piece of land. *Ahupua'a* lands were in turn, managed by an appointed *konohiki* or lesser chief-landlord. 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* (lit. people that attend

the land; the common class of people) who lived on the land but also contributed to the support of the royal community of regional and/or island kingdoms (Pukui and Elbert 1986). *Ahupua'a* are land divisions that typically incorporated 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). Although the *ahupua'a* land division typically incorporated all of the eco-zones, their size and shape varied greatly. This form of district subdividing was integral to Hawaiian life and was the product of resource management planning that was strictly adhered to. 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). In communities with long-term royal residents, divisions of labor (with specialists in various occupations on land and in the procurement of marine resources) were also strictly enforced.

By the 17th century, large areas of Hawai'i Island 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. 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). 'Umi a Līloa, a renowned *ali'i* of the Pili line, is often credited with uniting the Island of Hawai'i under one rule during the Precontact Period (Cordy 1994). 'Umi-a-Līloa is also credited with formalizing the land division system on Hawai'i Island and separating the various classes of chiefs, priests, and laborers (Beamer 2014; Cordy 2000; Kamakau 1992). Kamakau (1992), also reports that 'Umi a Līloa managed to gain control over the Kona District which was ruled at this time by 'Ehu-nui-kai-malino. Upon the death of 'Umi-a-Līloa, Hawai'i Island came under the control of his eldest son Keli'iokāloa-A-'Umi (Cordy 2000), whose reign is marked by his mistreatment of the lesser chiefs and commoners. His reign was short-lived and by the early 18th century, Hawai'i Island fell under the control of Alapa'inui, who assembled a robust army and assigned his closest potential usurpers (his nephews Keawema'uhili, Kalani'ōpu'u, and Keōua) as generals in his militia. The prodigious 'Ī clan, spread across the districts of Ka'ū, Puna, Hilo, and portion of Hāmākua was also a powerful force and threat to Alapa'i campaign (Cordy 2000). As Alapa'i gathered his forces to strike back at Kekaulike, the *ali'i nui* of Maui, the high ranking *ali'i wahine* (chiefess) Keku'iapoiwa made her way to Kokoiki, Kohala to give birth to Pai'ea, the birth name of Kamehameha I (ibid.).

Kamehameha was reared in the traditions and customs of the ancient chiefs and trained under some of the most skilled warriors of that time including Kekūhaupi'o. Upon Alapa'i's death, his eldest son Keawe'ōpala was named heir to the kingdom. By the mid-18th century, the young and determined Kamehameha directed his efforts toward consolidating Hawai'i Island under his rule. To accomplish this monumental task, Kamehameha continued his training under his more experienced kin namely Kalani'ōpu'u, who was the *ali'i nui* of Hawai'i Island ('Ī'i 1959). During Kalani'ōpu'u's reign, the first foreign vessels arrived in Hawaiian waters captained by British explorer, James Cook. Cook first landed at Waimea, Kaua'i in 1778 and in 1779, he anchored just off the shores of Kealahou Bay, South Kona. Aboard these ships were innovative technologies and diseases unknown to the inhabitants of these islands. Items such as metal, nails, guns, canons, and the large foreign vessels themselves stirred the interest of the *ali'i* and *maka'āinana* alike. The acquisition of these technological advancements came primarily through barter. This resulted in the *ali'i* gaining possession of such items that ultimately set traditional Hawaiian warfare in new trajectory; one that would be forged by none other than Kamehameha. Wars occurred regularly between intra-island and inter-island politics during this period. It was during this time of warfare that Kamehameha incorporated western weaponry into his war strategies, where he conquered all the islands, except for Kaua'i and Ni'ihau, which were later incorporated into his kingdom through negotiation. He eventually rose to power and united all the Hawaiian Islands under one rule (Kamakau 1992).

A Brief History of Hawai'i After Western Contact

The arrival of Western explorers in Hawai'i signified the end of the Precontact Period and the beginning of the Historic Period. With the influx of foreigners, Hawai'i's culture and economy underwent drastic changes. Demographic trends during the early Historic Period 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, the establishment of 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 (Kent 1983; Kirch 1985). Foreigners very quickly introduced the concept of trade for profit, and by the time Kamehameha had conquered O'ahu, Maui, and Moloka'i, in 1795, Hawai'i saw the beginnings of a market system economy (Kent 1983). Some of the work of the *maka'āinana* shifted from subsistence agriculture to the production of foods and goods that they could trade with early 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). In 1819, Kamehameha died and the *kapu* system that governed all aspects of traditional Hawaiian society was symbolically abolished when Liholiho (son of Kamehameha) ate in the presence of his mothers Keōpūolani and Ka‘ahumanu. Shortly after 1820, Christianity established a firm foothold in the islands, and introduced diseases and global economic forces began to have a devastating impact on traditional life-ways.

Pāhoehoe 4th and La‘aloa 1st Ahupua‘a and the Greater North Kona District

The current project area is situated in the central region of the *moku* (district) of Kona, which is one of six traditional *moku* on Hawai‘i Island (Figure 15). The *moku* of Kona extends from the shore across the entire volcanic mountain of Hualālai and continues to the summit of Mauna Loa. Due to its sheer size, Kona is often geographically divided into two regions, North Kona or Kona ‘Ākau, and South Kona or Kona Hema (see Figure 15). The project area is situated within the North Kona region, which is traditionally defined as the area between Keahualono at the north to Pu‘uohau at the south (Pukui 1983). Furthermore, this section of Kona in which the project area is situated was poetically referred to as Kona Kai ‘Ōpua, which has been interpretively translated by Maly (1996:A-1) as “Kona of the distant horizon clouds on the ocean.” The subject *ahupua‘a* of Pāhoehoe, which contains four distinct sections of land (identified as Pāhoehoe 1st-4th) is bound on the north by Kaumalumu and shares its south boundary with La‘aloa Ahupua‘a, a traditional land division that consists of two distinct land sections (La‘aloa 1st and 2nd). La‘aloa 2nd Ahupua‘a is bound on the south by Kapala‘alaea 1st Ahupua‘a (Figure 16). La‘aloa 1st and 2nd are also respectively referred to as La‘aloa Iki and La‘aloa Nui, and these names have been used interchangeably throughout history.

Within the greater Kona region, royal centers were established at several locations including Kailua, located north of the project area, and Kahalu‘u-Keauhou, Ka‘awaloa-Kealakekua, and Hōnaunau, located to the south of the project area. The *moku* of Kona contains over 100 *ahupua‘a* and approximately forty-four of these fall within the agriculturally fertile central Kona region, known archaeologically as the Kona Field System (see Figure 15). The majority of the *ahupua‘a* located in the central Kona region are fairly narrow and include a combination of forest lands, upland farms, coastal *kula*, and offshore resources.

The current study area has been designated by the County of Hawai‘i as La‘aloa Beach Park (also known by other epithets including Magic Sands, White Sands, and Disappearing Sands). However, *kūpuna* (elders) from the area have criticized the namesake “La‘aloa Beach Park” stating that the name is misleading as the park straddles the boundaries of both Pāhoehoe 3rd, 4th, and La‘aloa 1st Ahupua‘a and as a consequence, perpetuates the cycle of incorrect use of traditional place names (Brandt, personal communication, February 5, 2019). The sandy portion of the beach that is more commonly used by park goers is situated within the Pāhoehoe 3rd and 4th (TMK: 7-7-008:017, 035, 093, 106 and 107; see Figure 2), however, the majority of the park’s documented Historic sites, including Haukālua Heiau are within La‘aloa 1st (TMK: (3) 7-7-010:036; see Figure 2). Despite the geopolitical and poetical distinctions, the history of La‘aloa and Pāhoehoe are closely tied, as described in the ethnohistory, and historically the area that the park encompasses was utilized interchangeably amongst the residents of these neighboring *ahupua‘a* (Maly 1997).

According to Pukui et al. (1974), Pāhoehoe Ahupua‘a was named in honor of the chiefess Pāhoehoe-wahine-iki-a-ka-lani. The name also references the *pāhoehoe* type of lava characterized by its unbroken, smooth texture (ibid.), which is also a defining geological feature of this area. The name La‘aloa has been literally translated by Pukui et al. (ibid.:126) as “very sacred” and was the home to a *heiau* “called Lele-iwi (bone altar)” where Hāwa‘e, a famous priest, resided. Although descriptive historical references of Pāhoehoe and La‘aloa are limited, Handy and Handy (1991) and Kamakau (1992) provide general descriptions of the upland areas extending from Kailua to Keauhou. Their accounts are presented below:

In the uplands above Kahalu‘u, Keauhou, and Kailua, was a vast plantation named Kuaheua (huge), belonging to Kamehameha I. To protect these lands, which were cultivated for his people in the section, Kamehameha established the law that anyone who took one taro or one stalk of sugar cane must plant one cutting of the same in its place. (Handy and Handy 1991:524)

He [Kamehameha I] himself and those who ate with him (*‘ai-alo*) toiled with their own hands to set out a large tract in the uplands of Kailua, known as Kuaheua. When the land had been cleared and taro tops planted the whole field was covered with fern leaves as mulch. As the taro grew large enough to pull the little ones were left to grow, and it was said that the field was productive for years without wild growth. The chief did not allow his men to help themselves to taro and tops for planting, as was the custom for those in power in time of scarcity. He believed in the rights of the common people... (Kamakau 1992:204)

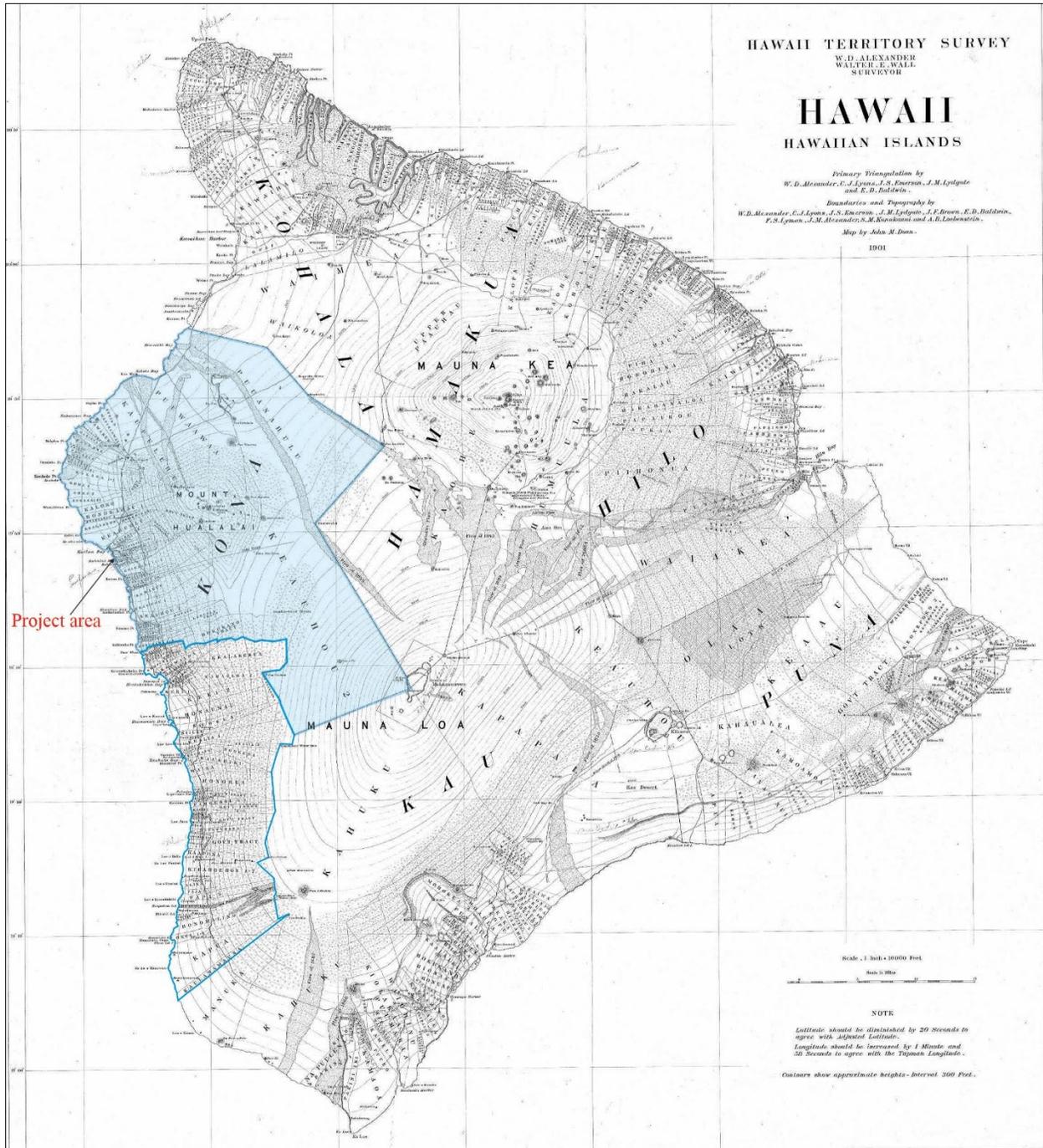


Figure 15. A portion of Hawai'i Registered Map No. 2060 by J. M. Donn in 1901 showing the project area location in the North Kona District (shaded blue) and Kona Field System (shaded gray).

2. Background

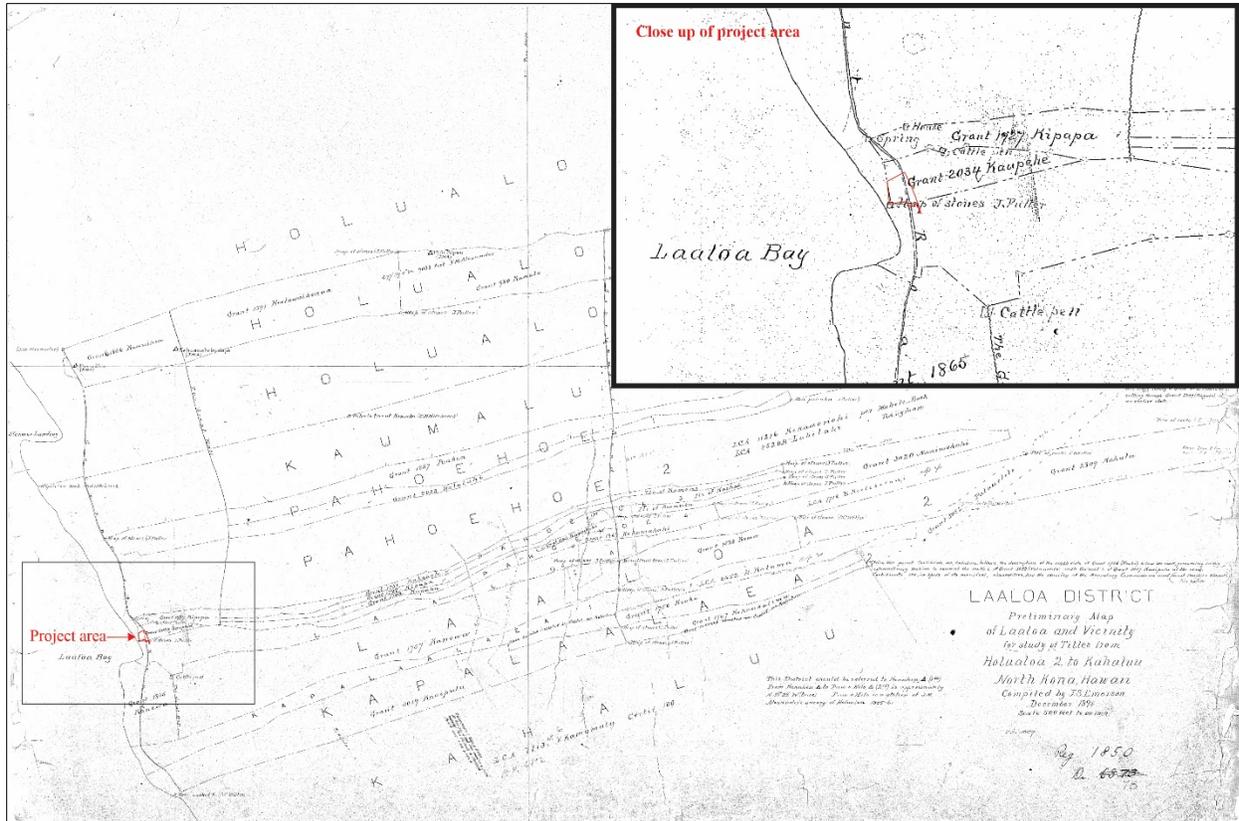


Figure 16. A portion of Hawai‘i Registered Map No. 1850 from 1891 by J.S. Emerson showing the *ahupua‘a* within the study area (outlined in red) vicinity.

Presumably, what Handy and Handy (1991:524) described as “*Kuahewa*” may be a portion of what has been referred to by archaeologists as the Kona Field System (see Figure 15); an agriculturally fertile region that includes multiple *ahupua‘a* across North and South Kona districts (Cordy 1995; Newman 1970; Schilt 1984). A large portion of the field system has been designated in the Hawai‘i Register of Historic Places as Site 50-10-37-6601 and determined eligible for inclusion on the National Register of Historic Places. The Kona Field System is approximately 30 x 5 kilometers, and extends from Kaū Ahupua‘a at the north to Ho‘okena Ahupua‘a at the south, with an altitudinal range of 0-2,500 meters (Horrocks and Rechtman 2009). A defining feature of the Kona Field System is the network of long field walls that extend in a *mauka-makai* direction. These walls are known by several names, all of which share a similar concept of the skeleton of the land, such as *kuaiwi* or back bone (Allen 2004). Handy and Handy provided the following description of this concept, stating:

Iwi (bone) or iwi kuamo‘o (backbone) was the term applied to the line of rocks and refuse thrown up along the side of mo‘o ‘aina, or kihapai in clearing. These iwi or iwi ‘aina demarked the boundaries of plantations and arable holdings, and hence were also called palena, or bounds. They were not mere rubbish heaps, but for example on Hawaii, served for planting sugar cane round about the field of dry taro in upland Kona, Ka‘u, and Kohala... In upland Kona they may be seen today buried in woods or occasionally bounding taro plantations still utilized. (Handy and Handy 1991:51)

Other key features of this dryland field system included terraces, mounds, and enclosures (Allen 2004). Historically, the various fields that make up the Kona Field System were thought to be a cohesive unit (Newman 1974). However, recent research and interpretation suggest the field system was more dynamic with distinct agro-ecological zones (Lincoln and Ladefoged 2014). Additionally, the field system is believed to have expanded as the regional population increased and the Hawaiian socio-political system became more centralized (Horrocks and Rechtman 2009; Rechtman 2001). This field system was a major source of food for the Island of Hawai‘i as evidenced by early European explorers and played a central part in the Hawai‘i’s Precontact economy. Given the lack of major surface streams in this geologically young district, the Kona Field System relied primarily on rainfall, supplemented with innovative regional horticultural techniques (Lincoln and Ladefoged 2014).

The basic characteristics of this agricultural/residential system as presented in Newman (1970) have been confirmed and elaborated on by archaeological (Cordy 1995; Johnson and Wolforth 2006; Kelly 1983) and ethnohistorical investigations (Kelly 1983). The construct is based largely on the Hawaiian terms for the major vegetation zones, which are used to define and segregate space horizontally across the region's *ahupua'a* (Table 1).

Table 1. Traditional Hawaiian agricultural zones

<i>Zone</i>	<i>Annual Rainfall (cm)</i>	<i>Elevation (m)</i>	<i>Primary Crops</i>
<i>Kula</i>	75-125	Sea level-150	' <i>Uala, wauke, and ipu</i>
<i>Kalu'ulu</i>	100-140	150-300	' <i>Ulu, 'uala, and wauke</i>
' <i>Āpa'a</i>	140-200	300-750	Dry land <i>kalo, 'uala, kī, and kō</i>
' <i>Ama'u</i>	>200	750-1,200	<i>Mai'a</i> (both plantain and banana)

These vegetational bands are organized roughly parallel to the coast and mark changes in elevation, rainfall, and flora. The current project area is located within the *kula* zone, described by Horrocks & Rechtman (2009) as extending from sea level-150-meter elevation. Kelly briefly described the general characteristics of the *kula* zone thusly:

The term *kula* is defined as a “plain, field, open country, pasture” (Pukui and Elbert 1957:164). A legislative act passed in 1884 “distinguishes dry or *kula* land from wet or taro land” (ibid.). At Kailua, Kona, the *kula* zone, or coastal plain, stretches inland from the beach. (Kelly 1983:47)

Because of the geographical location coupled with the lack of perennial streams, the field system depended primarily on rainfall. Noted Hawaiian historian and language expert, Mary Kawena Pukui documented several '*ōlelo no 'eau* (Hawaiian proverbs) for Kona that highlight the traditional cultural importance of observing nature for signs of rain.

Aia ka wai i ka maka o ka 'ōpua.

Water is in the face of the 'ōpua clouds.

In Kona, when the 'ōpua clouds appear in the morning, it's a sign that rain is to be expected. (Pukui 1983:9)

Ao 'ōpiopio.

Young cloud.

A cloud that rises from sea level or close to the cloud banks and is as white as steam. When seen in Kona, Hawai'i, this is a sign of rain. (ibid.: 27)

Māmā Kona i ka wai kau mai i ka maka o ka 'ōpua.

Kona is lightened in having water in the face of the clouds.

Kona is relieved, knowing that there will be no drought, when the clouds promise rain. (ibid.:232)

In addition to observing the natural elements for signs of rain, the ancient Hawaiian horticulturalists also invoked certain deities to encourage rainfall and to promote abundance and fertility of the land. It is therefore not unusual that the Kona region is synonymous with the deity Lono, who was considered the “rain maker” and closely associated with fertility (Handy and Handy 1991:333). Lono was often identified with the southern coast of Hawai'i Island, and according to Kalokuokamaile, a native of Kona, temples dedicated to Lono were established throughout Kona to invoke rain and fertility (ibid.). Lono was also embodied in dark rain clouds brought on by the southerly (*kona*) storms. In traditional myths, it is believed that Lono migrated from the south and landed in Kona where he introduced several food plants, such as *kalo* (taro), '*uala* (sweet potato), *uhi* (yams), *kō* (sugar cane), *mai'a* (banana) and '*awa* (kava) (ibid.). Hawaiian spirituality and traditional lore permeated agricultural pursuits as well as other facets of traditional life. The following section focuses on such legendary accounts associated with the project area vicinity.

Legendary Accounts for the Ahupua'a of Pāhoehoe and La'aloa

Specific legendary and historical references to the Pāhoehoe and La'aloa *ahupua'a* are limited and appear mainly as passing remarks, or are lumped together with references to neighboring *ahupua'a*. Additionally, traditional accounts referring to Pāhoehoe does not distinguish whether the *ahupua'a* being referred to is Pāhoehoe 1, 2, 3, or 4. Maly (1996:A-4) noted that traditionally, Pāhoehoe (and likely La'aloa) “...was one large land unit until the change to a western-style ownership system (the Māhele of 1848), when it was divided into four units that are now all identified as separate *ahupua'a*”. Three legendary accounts have been identified during this study that made specific reference to Pāhoehoe and La'aloa *ahupua'a*: A Story of Hāwa'e, “*Ke Ka'ao Ho'oniua Pu'uwai no Ka-miki*” (The Heart Stirring Story of Ka-Miki), “*He Mo'olelo Ka'ao no Kepaka'ili'ula*” (A Story about Kepaka'ili'ula), and The Legend of Kauma'ili'ula. The summaries of each of these stories are presented below.

A Story of Hāwa‘e

In 1997, Kepā Maly located a legendary account in the Charles R. Bishop collection at the Bernice Pauahi Bishop Museum about an ancient and powerful priest named Hāwa‘e. According to legend, Hāwa‘e was born in a supernatural form and lived at the *heiau* of Leleiwi located in the uplands of La‘aloa. Hāwa‘e became such a powerful and renowned priest that he was later worshipped by the ancient people. Reference to La‘aloa has been underlined for emphasis. Maly’s translation and synopsis of this narrative is as follows:

Hāwa‘e is the name of one of the gods, worshipped by the ancient people of these islands. This god was famous for his *mana* (power), and ability to help those who cared for him. In this story of the priestly order, Hāwa‘e was of the seventeenth order of priests descended from Haumea... Because Hāwa‘e was expert in various practices of the priest, he became the foremost priest of Ehu Kaipo, the chief who controlled the island of Hawai‘i, who dwelt above the trail known as Ehu Kaipo (*ke ala Ehu*) in North Kona. The chief would continually call upon the name of his priest and seer, Hāwa‘e, because there was no one more powerful than he...

The Stone Images that were given the Name of Hāwa‘e

There were eight images which were all called by the name Hāwa‘e. The first image was hidden near the *heiau* Ka-houpo-o-Kāne at Kapu‘a. The second image was hidden in an ocean cave in front of Hale-o-Keawe. The third image was hidden in a cave near the *heiau* called Hai-lu-lani in Hōlualoa 4. The fourth image was in the uplands of La‘aloa, North Kona, near the *heiau* called Leleiwi. It was at this *heiau* that the priest Hāwa‘e also dwelt. The fifth image was hidden near the *heiau* called Ku-ho‘opio-ka-lā, above Kailua. The sixth image was on the north side of the hill of Hu‘ehu‘e in Kekaha. It was broken apart when the road was made. The seventh image was in the uplands of Wai‘aha, [a] place in the spring of Waiki‘i, near the *heiau* of Papa-kōlea. The eighth image was found there in the *heiau* of Kuahua, at Kukui-o-lauka.

The order of priest of Keawe‘aikō were the last to care for these images... It was because so many of these images were kept at the various *heiau*, that the saying came about “*Ho‘okāhi wale no o Hāwa‘e, lauhue Kona*” (There is only one Hāwa‘e, all Kona is covered with the vines of the poison gourd)... (Maly 1997:4–5)

Based on Hāwa‘e’s association with the ruling chief ‘Ehu, Maly (ibid.) dates this account to sometime during the 16th century and thus this legendary account is one of the earliest for the Pāhoehoe-La‘aloa area.

Ke Ka‘ao Ho‘oniua Pu‘uwai no Ka-miki- The Heart Stirring Story of Ka-Miki

The *mo‘olelo* (story; history; account) titled, “*Ka‘ao Ho‘oniua Pu‘uwai no Ka-Miki*” (The Heart Stirring Story of Ka-Miki), originally appeared in the Hawaiian language newspaper *Ka Hōkū o Hawai‘i* between 1914 and 1917. This *mo‘olelo* was authored during the late 1800s through the early 1900s by noted Hawaiian scholars John Wise and J. W. H. I. Kihe (who was from North Kona). Maly, who translated this story noted that although this *mo‘olelo*:

... is not an ancient account, the authors used a mixture of local legends, tales, and family traditions in association with place names to tie together fragments of site specific stories that had been handed down over the generations. Thus, while in many cases, the personification of individuals and their associated place names may not be “ancient,” the site documentation within the “story of Ka-miki” is of both cultural and historical value. (Maly 1997:5)

This account tells of two supernatural brothers, Ka-Miki (the quick, or adept one) and Maka‘iole (rat squinting eyes), who were skilled ‘*ōlohe* (competitors/fighters), and their travels around Hawai‘i Island by way of the ancient trails and paths (*ala loa* and *ala hele*), seeking competition with other ‘*ōlohe* (Maly 1997). The two brothers were born to Pōhaku-o-Kāne (male) and Kapa‘ihilani (female), who were the *ali‘i* of the lands of Kohana-iki and Kaloko, North Kona. Upon the mysterious and premature birth of Ka-miki, he was placed in the cave of Pōnahanaha and given up for dead. Ka-Miki was eventually saved and raised by his ancestress, Ka-uluhe-nui-hihi-kolo-i-uka (the great entangled growth of *uluhe* fern which spreads across the uplands), a manifestation of the goddess Haumea, at Kalama‘ula, an area located on Hualālai. Ka-miki was later joined by his elder brother Maka‘iole and they were trained by their ancestress Ka-uluhe-nui to become ‘*ōlohe*, or experts skilled in fighting, wrestling, debating, riddle solving, and running, and how to use their supernatural power.

A portion of this legend was set in the Pāhoehoe-La‘aloa area and was published in *Ka Hōkū o Hawai‘i* on April 9, 1914. Although brief, the account goes on to explain that upon partaking in some ‘*awa*, a drink made by mixing the root of the ‘*awa* plant (*Piper methysticum*) with freshwater, with their ancestress, Ka-uluhe-nui falls asleep and the two

brothers venture down to the area of Kealakekua to explore the land and the people. Upon their return, Ka-uluhe-nui inquired about their visit. From this portion of the *mo'olelo*, we learn about the lands of Pāhoehoe and La'aloa. Based on the described route, Ka-miki and his brother Maka'iole would have passed through the Pāhoehoe-La'aloa area. Translated by Maly, this portion of the *mo'olelo* describes the people and places within the area as follows:

... Kaumalumalu was named for the chief Kaumalumalu, he was the - *ali'i 'ai ahupua'a, me nā paukū 'āina a me nā 'okana 'āina o Pāhoehoe, La'aloa, a me Kāpala'alaea*—chief to whom the sub-districts and land parcels of Pāhoehoe, La'aloa and Kāpala'alaea answered. The saying, “Kaumalumalu i ka hēkuawa” (Kaumalumalu is like a sheltered, or shaded valley) is said in praise of the calm and beauty of this area...(Maly 1997:6)

From this brief narrative, we learn that Pāhoehoe and La'aloa contained *paukū* and *'okana 'āina*. In defining these terms, Paul Nahoa Lucas's book titled *A Dictionary of Hawaiian Legal Land-Terms* explains that *paukū* were “land divisions smaller than a *mo'o 'āina*” (Lucas 1995:91) and that *'okana* were “subdistricts comprising several *ahupua'a*” but were generally smaller than a *moku* (district) (ibid.:81).

Ka Mo'olelo No Kepaka'ili'ula—A Story about Kepaka'ili'ula

The areas of Pāhoehoe and La'aloa are briefly mentioned in the *mo'olelo* of Kepaka'ili'ula. This story has been recorded in two Hawaiian language newspapers, *Ka Nūpepa Kū'oko'a* between October 22, 1864, and June 8, 1865, by S. W. P. Kaulainamoku (1864–1865), and later in *Ka Hōkū O Hawai'i* between March 20, 1919, and December 9, 1920 (1919–1920). Abraham Fornander (1916–1917) also recorded this story, however, his version differs substantially from those printed in the Hawaiian language newspapers and has therefore, not been included in this study. As such, from versions recorded in the newspapers, we learn of a large *māla mai'a* (banana patch) that belonged to the chief named Kaho'oali'i of Kona. This *māla mai'a* is described as extending across the *mauka* lands from Kaumalumalu (north of project area) to Kāpala'alaea (south of project area).

Maly (1997) provides a brief background for this lengthy story. Through analyzing and associating other figures identified in this story, Maly (ibid.) believes the story is set sometime during the 16th century. As such, a summary of Maly's description is provided. Kepaka'ili'ula was born in an *'e'epa* (mysterious, premature) form to his mother Hina'aikamālama and his father Makaokū at Mokuola (also known as Coconut Island) in Hilo. Being left for dead by his parents, Kepaka'ili'ula was taken and reared by his mother's brothers, Ki'ihele and Ki'inoho, who trained him in fighting techniques, and instructed him on how to use his supernatural powers. When Kepaka'ili'ula came of age, his uncles set out in search of a suitable chiefess whom he could marry. The uncles searched all over Hawai'i Island but found no one suitable until they met Mākole'ā, the daughter of chief Keolonāhihi and his wife Kahalu'u. Keolonāhihi, Kahalu'u and the two uncles agreed that Mākole'ā was the most suitable partner for Kepaka'ili'ula. After securing the marital arrangement, the chief Kaikipa'ananea of Maui approached Keolonāhihi and asked to marry his daughter, to which he agreed. Thus, Keolonāhihi broke the betrothal between Kepaka'ili'ula and Mākole'ā. The breaking of this betrothal set in motion a series of events which is the focus of this narrative.

After leaving Kahalu'u, Kepaka'ili'ula and his men travel in the uplands and reach the *ahupua'a* of Kaumalumalu at a place known as Ki'ei. Here they arrive at a large patch of bananas that belonged to chief Kahoali'i of Kona. Kepaka'ili'ula and his men remain at this patch for four *anahulu* (roughly forty nights as one *anahulu* equals ten days) (Pukui and Elbert 1986) then destroyed the chief's banana patch (*Ka Nūpepa Kū'oko'a*, November 5, 1864). This section of the story differs slightly in the version printed in *Ka Hōkū O Hawai'i* (July 24, 1919). The version in *Ka Hōkū O Hawai'i* adds that Kepaka'ili'ula sought to wage war on Kahoali'i by eating from his sacred patch and later destroying the patch altogether—an act that was traditionally interpreted as a decree of war (Kamakau 1992).

The Legend of Kauma'ili'ula

In her book titled *Hawaiian Mythology*, Martha Beckwith published a shortened version of the story of Kauma'ili'ula. From her account, we learn that Hōlualoa and La'aloa, the namesake of one of the subject *ahupua'a*, were husband and wife who together bore ten children (Beckwith 1970). Their five sons were named Kalino, Lulukaina, Ahewahewa, Wawa, and Mumu. Beckwith lists their five daughters as “the four Maile sisters and Kaulana” (ibid.:517). Additional research into the Hawaiian language newspapers reveals that the names of the four *maile* sisters were: Mailelauli'i, Maileha'iwale, Mailepākaha and Mailehikaluhea (*Ka Nūpepa 'Elele* 1892). According to Pukui & Elbert, four varieties of *maile* (*Alyxia* sp.) are named in honor of the four demigoddess sisters, who each possessed the fragrance of the *maile* plant (1986:478). Beckwith's version of this legend is presented below:

...Mailelauli'i, the eldest girl, becomes the wife of Hikapoloa, chief of Kohala district, and lives upward of Pu'uwepa. Ka-ili-a(a)la (*Fragrant skin*) is their child. He marries Waikua-aala and the

two have four children, Lu'ukia, Kaumailiula, Ka-lehua-lihilihi-loloa, and Kukui-kupuohiohiho'owiliwili. Lu'ukia sails to Kahiki and weds Olopana, ruling chief of Kahiki. Olopana's daughter Kaupea hears so much from Lu'ukia of the beauty of Kaumailiula that she sails from Kuaihelani, finds him at Kailua, and takes him for her husband. She becomes pregnant and returns to Kahiki for the child's birth. Kaumailiula follows but lands in Kuaihelani on a tapu day when Kaupea is in labor and Lu'ukia and the chief are gathered in the tapu house prepared for the birth of the child. The whole party is seized and imprisoned. Old woman Kaikapu proceeds to have them burnt to death, but through the prayers of Kaulana [youngest child of Hōlualoa and La'aloa] they escape. The child is called Ka-maka-o-ke-ahi (Eye of fire), and from him is descended Kahihi-o-ka-lani (The branching of the heavenly one). (Beckwith 1970:517)

In summary, while the traditional legendary accounts reveal little about the coastal section of Pāhoehoe and La'aloa, these accounts make reference to upland features such as the *heiau* of Leleiwi and describe the uplands as a fertile agricultural production zone. We also learn of several place names, natural resources, and this area's association with certain significant persons.

Chiefly Rule and Early Historical Accounts

Sometime during the 16th century, the chief 'Ehu-nui-kai-malino (also referred to as 'Ehu) was appointed by his father Kūāiwa to rule over Kona, while a junior son, Hukulani ruled over Kohala. During 'Ehu's reign, four of the six *moku* on Hawai'i Island were ruled by independent chiefs: Kulukulu'ā in Hilo, Hua'ā in Puna, 'Īmaikalani in Ka'ū, and it is believed that Līloa ruled over Hāmākua (Cordy 2000). In addition to 'Ehu, Kūāiwa had three sons from a previous wife, Kahoukapu, Hukulani, and Manaua, all of whom became the heads of Hawai'i's aristocratic families (Fornander 1880). Although the 'Ehu line of chiefs grew to be somewhat powerful, 'Ehu is described as being ranked second to Līloa (Kelly 1983). According to Kamakau (1992), 'Ehu placed his son, Laea-nui-kau-manamana (Laea-nui) in Līloa's royal court and for some time they both resided in Waipi'o where Laea-nui assisted with the construction of the sacred stone slab known as *Ka paepae kapu o Līloa*. Upon the death of Līloa, his kingdom was passed to his eldest son Hākau, who was subsequently killed for his continued mistreatment of the people including his younger brother 'Umi-a-līloa. After the death of Hākau, 'Umi-a-līloa assumed the role of *ali'i*. However, the chiefs of Hilo, Puna, Ka'ū, and Kona withheld their allegiance to 'Umi. According to Kamakau (ibid.), by the time 'Umi sought to gain control over Kona, 'Ehu was of old age, and therefore Kona and Kohala were easily seized by 'Umi. With regard to the death of 'Ehunuikaimalino, Malo (1951) notes that he was assassinated by some fishermen out in Keahuolū, Kona, located north of the current study area just beyond Kailua.

Upon 'Umi's unification of Hawai'i Island, he moved his royal court to Kailua, Kona and eventually took the daughter of 'Ehu as his wife, Moku-a-hua-lei-akea. She bore 'Umi a daughter named 'Akahi-'ili-kapu. 'Umi's reign is one that is often celebrated as it marked a time of peace and increased productivity and a move towards craft specialization. According to Kamakau,

There was no kingdom like his. He took care of the old men, the old women, the fatherless, and the common people. Murder and thievery were prohibited. He was a religious chief, just in his rule...

During 'Umi-a-Līloa's reign, selected workers and set them in various positions in the kingdom. He separated those of the chiefly class (*papa ali'i*), of the priestly class, of the readers of omens (*papa kilo*), those skilled in the affairs of the land (*po'e akamai o ka 'aina*), farmers, fishermen, canoe builders, warriors, and other skilled artisan (*po'e pale 'ike*) in the work they were best suited for; and each one applied himself to his own task. . .

'Umi-a-Līloa did two things with his own hands, farming and fishing. He built large wet taro patches in Waipi'o, and farming was done on all the lands. Much of this was done in Kona. . . (Kamakau 1992:19)

References to Pāhoehoe and La'aloa also appear in the book titled *Mo'olelo ka'ao no Kūhaupi'o, ke koa kaulana o ke au o Kamehameha ka Nui* (Kamehameha and his warrior Kekūhaupi'o), published by Reverend Stephen Desha (Desha 2000). According to Desha's account, after the death of the high chief Kalani'ōpu'u in 1782 (Kamakau 1992), his body was transported to Kona on a large canoe accompanied by Kīwala'ō, his son and heir to his kingdom, and chief Keawemauhili of Hilo. Upon their arrival in Kona, Keawemauhili greeted the chiefs of Kona, who took insult to his speech. The Kona chiefs suspected that Keawemauhili was seeking grounds to wage war against them. Aware of the impending situation, Kekūhaupi'o, a famed warrior, fetched Kamehameha from Kohala and brought him to Ka'ūpūlehu, Kona. After preparing Kamehameha, the account goes on to note that Kekūhaupi'o departed Ka'ūpūlehu and stayed with some of his uncles in La'aloa (ibid.).

The Prophecy of Kapihe

The prophecy of the *kāula* (seer) named Kapihe during the time of Kamehameha I is another significant *mo'olelo* that references the Pāhoehoe-La'aloa area (by association with the identified place names). Kapihe's prophecy has been interpreted as foretelling the overturning of the traditional *kapu* system, as well as the unification of the Hawaiian Islands under a single ruler. It is important to note that there are several different versions of this prophecy that have been printed in Hawaiian language newspapers as well as by (Kamakau 1992) and (Malo 1951). According to Kamakau's version:

Ka-pihe the seer prophesied in the presence of Kamehameha [I] and said, "There shall be a long *malo* reaching from Kuamo'o to Holualoa. The islands shall come together, the tabus shall fall. The high shall be brought low, and the low shall rise to heaven." (Kamakau 1992:223)

In his book *Hawaiian Antiquities*, Malo expounds on characteristics of traditional *kāula* and describes them as "a very eccentric class of people" who often "lived apart in desert places, and did not associate with people or fraternize with any one" (Malo 1951:114). Regarding the details of the prophecy, Malo writes:

Kapihe was a noted *kaula* of the last century, living in Kona, Hawaii, at the time when Kamehameha was a general under Kalaniopuu. To Kapihe was ascribed the following oracular utterance (*wanana*) which is of the nature of a prophecy:

<i>E iho ana o luna;</i>	That which is above shall be brought down;
<i>E pii ana o lalo;</i>	That which is below shall be lifted up;
<i>E hui ana na moku;</i>	The islands shall be united;
<i>E ku ana ka paia.</i>	The wall shall stand upright (Malo 1951:115)

Another version of this prophecy was published in *Ka Hae Hawai'i* on May 23, 1860, under the title "He Wanana" (A Prophecy). Maly provides a translation of the article, and it is presented below in its entirety:

Perhaps you have heard about the prophecy made by Kapihe, before Kamehameha first. If perhaps you have not, here is the prophecy—Kamehameha returned to Hawaii with the Niauani (fleet of canoes and ships in c. 1812), he dwelt at Holualoa in North Kona. Kapihe was a person who dwelt at Kuamo'o, and he was at times considered to be somewhat crazy (a result of his gift of prophesy). He traveled from Kuamoo to Holualoa with a long *malo* (loincloth), prophesizing before the King. This is what he said.

<i>E hui ana na aina,</i>	The lands shall be united,
<i>E iho mai ana ko ka lani,</i>	That which is above shall come down,
<i>E pii aku ana ko lalo nei,</i>	That which is below shall rise above,
<i>E iho mai ana ke Akua ilalo nei,</i>	The God shall come down,
<i>E kamailio pu ana me kanaka,</i>	Speaking with mankind,
<i>E pii mai ana o Wakea iluna,</i>	Wakea shall rise up,
<i>E iho aku ana o Milo ilalo,</i>	Milo shall descend,
<i>E noho pu ana ke akua me kanaka.</i>	The gods shall dwell like man. (Maly 1997:9)

Hawaiian chief and grandnephew of Kamehameha I, Gideon Peleioholani La'anui also wrote about his personal observations of Kapihe's prophesy. La'anui was reared in Kamehameha's court and traveled on king's *peleleu* fleet of canoe to the various islands and through various parts of the Kona District where he observed life in the royal court. Based on the events described in La'anui's narrative, this event can be placed sometime around 1812, following Kamehameha's return to Hawai'i Island during an event known historically as the *nī'aukani*. La'anui penned his observations and published it first in the Hawaiian language newspaper, *Ke Kumu Hawai'i* in 1838. His account was later translated and published in Thrum's *Hawaiian Annual for 1930* (Thrum 1929). La'anui's account as presented by Thrum reads thusly:

We saw a certain deceiving man at that time, named Kapihe. We were living at Kukuipahu, Kohala, catching flying-fish. Kaikioewa arrived [and said] let us go to Kona, there is a gifted man there named Kapihe, Kaonohiokala is the god; the islands will be overturned; ancestors preserved; the solid of the heavens above will be below here; that beneath will be above in the heavens; water will ascend; on movement of the hand the sick will recover that day. So said Kaikioewa to Kamehameha, so we came to Kaiakeakua [Kailua], thence to Holualoa where this man met Kamehameha. From Kuamoo to Holualoa was the length of the *malo*. The islands did not join; ancestors were not revived. That ends it. (Thrum 1929:92)

While La‘anui’s account reveals skepticism in Kapihe’s prophesy, his words were nevertheless fulfilled when Kamehameha I conquered and unified the islands, with the exception of Kaua‘i and Ni‘ihau. By 1810, Kamehameha managed through negotiation with chief Kaumuali‘i of Kaua‘i to cede the remaining two islands to Kamehameha (Kamakau 1992). Following the death of Kamehameha in 1819, his son and heir to the Kingdom, Liholiho failed to reinstate the laws of *‘aikapu*, which resulted in a war fought at Kuamo‘o (ibid.) and the overturning of the ancient religious system.

Around the same time that the prophecy of Kapihe was uttered (ca. 1812), Hawaiian historian John Papa ‘Ī‘ī describes a brief family gathering in Pāhoehoe. Born in 1800, John Papa ‘Ī‘ī was descended from the Luluka line, and following in the customs of his family, served as *kahu* (caretaker) to several chiefs (‘Ī‘ī 1959). Thus, ‘Ī‘ī’s accounts offer an intimate look into the daily lives of the chiefs during the 19th century. ‘Ī‘ī’s family had ties to the lands of Pāhoehoe, Kaumalumu, and Kahalu‘u. At the time of his account, ‘Ī‘ī’s grandfather had become ill and requested to leave Kailua for Ho‘okena in South Kona. During their trip ‘Ī‘ī recalled:

Papa’s health had become much worse after the king and chiefs had left for Kahaluu. His friends and the boy’s father had gathered at Pahoehoe in Kaumalumu, near Kailua, to be with him. The boy and his companions arrived there at dusk, to find that Papa could no longer speak clearly. (‘Ī‘ī 1959:115)

The Journal of William Ellis (1823) and the Construction of the “Great Wall” By Kuakini (1830)

In 1823, to accommodate Hawai‘i’s growing Calvinist mission, British missionary William Ellis along with members of the American Board of Commissioners for Foreign Missions (ABCFM) circuited Hawai‘i Island in search of suitable locations for future mission stations and churches. Ellis and his party set out on the *ala loa* (a name given to an ancient trail that circled the island), located near the coast and passed through many places. As they made their way through the Pāhoehoe-La‘aloa area, Ellis encountered a large house where people were making canoes. Ellis wrote:

We walked on to Pahoehoe, where we entered a large house, in which many workmen were employed in making canoes. About fifty people soon after assembled around us. We asked them if they would like to hear about the true God, and the way of salvation. They answered, Yes. I then addressed them for about twenty minutes on the first principles of the gospel. As soon as I began to speak, they all sat down, and observed perfect silence.

Shortly after this service we took our leave, and proceeded along the shore to Kahaluu; where a smart shower of rain obliged us to take shelter in a house by the road side. While resting there, the voice of wailing reached our ears. We inquired whence it came and were informed by the people of the house, that a sick person in the neighborhood had just expired. (Ellis 1917:90)

Although limited, these early historical accounts describe the changing lifeways following the arrival of Westerners. The growing missionary presence in addition to the introduction of Western concepts of trade and commerce sparked major religious and economic shifts. These shifts reshaped traditional spiritual practices, beliefs, and influenced traditional concepts of land. One such change included the introduction of cattle and other European livestock in 1789, which were allowed to roam unrestrained (Bergin 2004). By the early 19th century, the unregulated population of livestock had become a nuisance to the native farmers and evidence of their impacts on the greater environment had become a major concern prompting action by government officials. In response to the growing concern of the impacts caused by the free-roaming livestock, during the 1830’s appointed governor of Hawai‘i Island, John Adams Kuakini ordered the construction of a massive stone wall extending between Kailua to Keauhou to. Burtchard (1995:41) goes on to note that that wall was “... intended as a barrier to prevent cattle from wandering through coastal settlement areas...” and that “...the wall symbolizes the changing character of the region’s agricultural and economic base.” In describing the broader socioeconomic changes of Kona during this time, Burtchard (ibid.:41-42) goes on to add that:

Those changes, combined with population losses from epidemic diseases and removal of central control to Honolulu, began altering the nature of human use of the landscape. Essentially, fewer people were engaged in a mix of activities that contained an increased fraction of trade production overlaying traditional agricultural and fishing practices.

By 1848, under the administration of the reigning monarch, Kamehameha III, Hawai‘i’s traditional land tenure system would undergo a drastic reformation—a process that forever altered traditional concepts and beliefs around the land.

The *Māhele* ‘*Āina* of 1848

By the mid-19th century, the ever-growing population of Westerners in the Hawaiian Islands forced socioeconomic and demographic changes that promoted the establishment of a Euro-American style of land ownership. By 1840 the first Hawaiian constitution had been drafted and the Hawaiian Kingdom shifted from an absolute monarchy into a constitutional government. Convinced that the feudal system of land tenure previously practiced was not compatible with a constitutional government, the *Mō‘ī* Kamehameha III and his high-ranking chiefs decided to separate and define the ownership of all lands in the Kingdom (King n.d.). The change in land tenure was further endorsed by missionaries and Western businessmen in the islands who were generally hesitant to enter business deals on leasehold lands that could be revoked from them at any time. After much consideration, it was decided that three classes of people each had one-third vested rights to the lands of Hawai‘i: the *Mō‘ī* (King), the *ali‘i* (chiefs) and *konohiki* (land agents), and the *maka‘āinana* (common people or native tenants).

In 1845 the legislature created the Board of Commissioners to Quiet Land Titles (more commonly known as the Land Commission), first to adopt guiding principles and procedures for dividing the lands and granting land titles, and then to act as a court of record to investigate and ultimately award or reject all claims brought before them. All land claims, whether by chiefs for entire *ahupua‘a* or by tenants for their house lots and gardens, had to be filed with the Land Commission within two years of the effective date of the Act (February 14, 1848) to be considered. This deadline was extended several times for the *ali‘i* and *konohiki*, but not for commoners (Alexander 1920; Soehren 2004).

The *Mō‘ī* and some 245 *ali‘i* (Kuykendall 1938) spent nearly two years trying unsuccessfully to divide all the lands of Hawai‘i amongst themselves before the whole matter was referred to the Privy Council on December 18, 1847 (King n.d.). Once the *Mō‘ī* and his *ali‘i* accepted the principles of the Privy Council, the *Māhele* ‘*Āina* (Land Division) was completed in just forty days (on March 7, 1848), and the names of all of the *ahupua‘a* and *‘ili kūpono* (nearly independent *‘ili* land division within an *ahupua‘a*) of the Hawaiian Islands and the chiefs who claimed them, were recorded in the *Buke Māhele* (also known as the *Māhele* Book) (Soehren 2004). As this process unfolded the *Mō‘ī*, who received roughly one-third of the lands of Hawai‘i, realized the importance of setting aside public lands that could be sold to raise money for the government and also purchased by his subjects to live on. Accordingly, the day after the division when the last chief was recorded in the *Buke Māhele*, the King commuted about two-thirds of the lands awarded to him to the government (King n.d.). Unlike the King, the *ali‘i* and *konohiki* were required to present their claims to the Land Commission to receive their Land Commission Award (LCAw.). The chiefs who participated in the *Māhele* were also required to provide commutations of a portion of their lands to the government to receive a Royal Patent that gave them title to their remaining lands. The lands surrendered to the government by the *Mō‘ī* and *ali‘i* became known as “Government Land,” while the lands that were personally retained by the *Mō‘ī* became known as “Crown Land,” and the lands received by the *ali‘i* became known as “*Konohiki* Land” (Chinen 1958:vii, 1961:13). Most importantly, all lands (Crown, Government, and *Konohiki* lands) identified and claimed during the *Māhele* were “subject to the rights of the native tenants” therein (Garavoy 2005:524). Finally, all lands awarded during the *Māhele* were identified by name only, with the understanding that the ancient boundaries would prevail until the land could be formally surveyed. This process expedited the work of the Land Commission.

During the *Māhele* of 1848, the lands comprising Pāhoehoe 1st, 3rd and 4th were retained as Government land and after 1850, were divided and sold off as government-issued Land Grants. It is unclear whether these lands were ever claimed by any *ali‘i* during the *Māhele* as these lands are not listed in the *Buke Māhele* (1848). The lands comprising Pāhoehoe 2nd was however claimed by two *ali‘i* women, Gini Lahilahi, (daughter of John Young Olohana, a British subject that was detained by Kamehameha I in 1790) who received a portion of Pāhoehoe 2nd as LCAw. 8520B and by Miriam Kekauonohi who received the other portion as LCAw. 11216 (see Figure 16) (Apple 1978; Office of the Commissioner of Public Lands of the Territory of Hawaii 1929). Similarly, La‘aloa 1st was claimed by Ruth Ke‘elikōlani, granddaughter of Kamehameha I and granted as LCAw. 7716 (ibid.), while La‘aloa 2nd was claimed by the *ali‘i* Kaunuohua who later returned these lands to the Hawaiian Kingdom government (see Figure 16) (Soehren 2004).

Kuleana Claims in Pāhoehoe and La‘aloa

As the King and his *ali‘i* and *konohiki* made claims to large tracts of land via the *Māhele*, questions arose regarding the protection of rights for the native tenants. To resolve this matter, on August 6, 1850, the *Kuleana* Act (also known as the Enabling Act) was passed, clarifying the process by which native tenants could claim fee simple title to any portion of lands that they physically occupied, actively cultivated, or had improved (Garavoy 2005). The *Kuleana* Act also clarified access to *kuleana* parcels, which were typically landlocked, and addressed gathering rights within an *ahupua‘a*. Lands awarded through the *Kuleana* Act were and still are, referred to as *kuleana* awards or *kuleana* lands.

2. Background

The Land Commission oversaw the program and administered the *kuleana* as Land Commission Awards (LCAws.) (Chinen 1958). Native tenants wishing to make a claim to their lands were required to register in writing those lands with the Land Commission, who assigned a number to each claim, and that number (the Native Register) was used to track the claimant through the entire land claims process. The native tenants registering their *kuleana* were then required to have at least two individuals (typically neighbors) provide testimony to confirm their claim to the land. Those testimonies given in Hawaiian became known as the Native Testimony, and those given in English became known as Foreign Testimony. Upon provision of the required information, the Land Commission rendered a decision, and if successful, the tenant was issued the LCAw. Finally, to relinquished any government interest in the property, the holder of a LCAw. obtained a Royal Patent Grant from the Minister of the Interior upon payment of the commutation fee. The information recorded in the Native Register and Native and Foreign Testimony provides insight into land use and settlement patterns around the time of the *Māhele*. Figure 17 shows all the awarded LCAw. within the *ahupua'a* of Pāhoehoe 1-4 and La'aloa 1-2. The details of these *kuleana* awards and further discussed below.



Figure 17. Distribution of LCAws. within the Pāhoehoe 1-4 and La'aloa 1-2 Ahupua'a.

Kuleana Awards Granted in Pāhoehoe 1-4

A total of ten *kuleana* awards were granted within Pāhoehoe 1st through 4th comprising a total of fourteen distinct parcels (Table 2). Figure 18 shows the location of those *kuleana* parcels located within the coastal portion of Pāhoehoe, and Figure 19 shows the *kuleana* parcels located in the *mauka* (inland) portion of the *ahupua'a*. Four *kuleana* parcels were awarded within Pāhoehoe 1st (LCAw. 3436C, 5922 and 3434B). One *kuleana* parcel was awarded in Pāhoehoe 2nd (LCAw. 10986). Five *kuleana* parcels were awarded in Pāhoehoe 3rd (LCAw. 10986, 3435B, 3436B, and 4705). Parcel 1 of LCAw. 10986 does not appear on historical maps and its location has therefore not been ascertained. Three *kuleana* parcels were granted within Pāhoehoe 4th (LCAw. 3433B, 5788, and 10654). Analysis of the Native Testimonies reveals that eight *kuleana* awardees received or inherited their lands from at least the time of Kamehameha I and II. The Native Testimonies also indicate that three *kuleana* awardees received their lands from chiefs Kahoali'i and Ka'ōanā'eha. The name Kahoali'i appeared in *He Mo'olelo Ka'ao no Kepaka'ili'ula* as a chief of Kona. According to the genealogy of Queen Emma that was printed in *Ka Nūpepa Kū'oko'a* on May 5, 1883, the chiefess Ka'ōanā'eha was married to Keoni Ana, and from their union was born Kekelaokalani and her sister Gini Lahilahi, who laid claimed Pāhoehoe 2nd during the Māhele.

Table 2. Land Commission Awards granted in Pāhoehoe 1st through 4th (ali'i* award)**

<i>Ahupua'a</i>	<i>LCAw. No.</i>	<i>Awardee Name</i>	<i>No. of 'āpana claimed</i>	<i>No. of 'āpana awarded</i>	<i>Royal Patent No.</i>	<i>Acres</i>
Pāhoehoe 1	3436C	Paele	4	2	4133	2.20
Pāhoehoe 1 & Kaumalumalu	5922	Puuloa	5	2	4151	1.32
Pāhoehoe 1	3434B	Kahaoi	1	1	4215	1.70
Pāhoehoe 2	11216:35	Kekauonohi*	n/a	<i>ahupua'a</i>	n/a	1,190
Pāhoehoe 2	8520B:3	Gini Lahilahi*	n/a	<i>ahupua'a</i>	1668	n/a
Pāhoehoe 2 & 3	10986	Nawelu	5	2	4220	2.49
Pāhoehoe 3	3435B	Kapahu	3	1	4218	2.0
Pāhoehoe 3	3436B	Koeke	3	1	4217	2.10
Pāhoehoe 3	4705	Moepuu	4	2	4221	3.38
Pāhoehoe 4	3433B	Kahookele	4	1	7018	1.80
Pāhoehoe 4	5788	Kauaawa	2	1	4222	1.60
Pāhoehoe 4	10654	Pueo	4	1	4219	1.80

2. Background



Figure 18. Inset 1 showing LCAws. in the coastal section of Pāhoehoe 1st through 4th with the project area (outlined in orange).

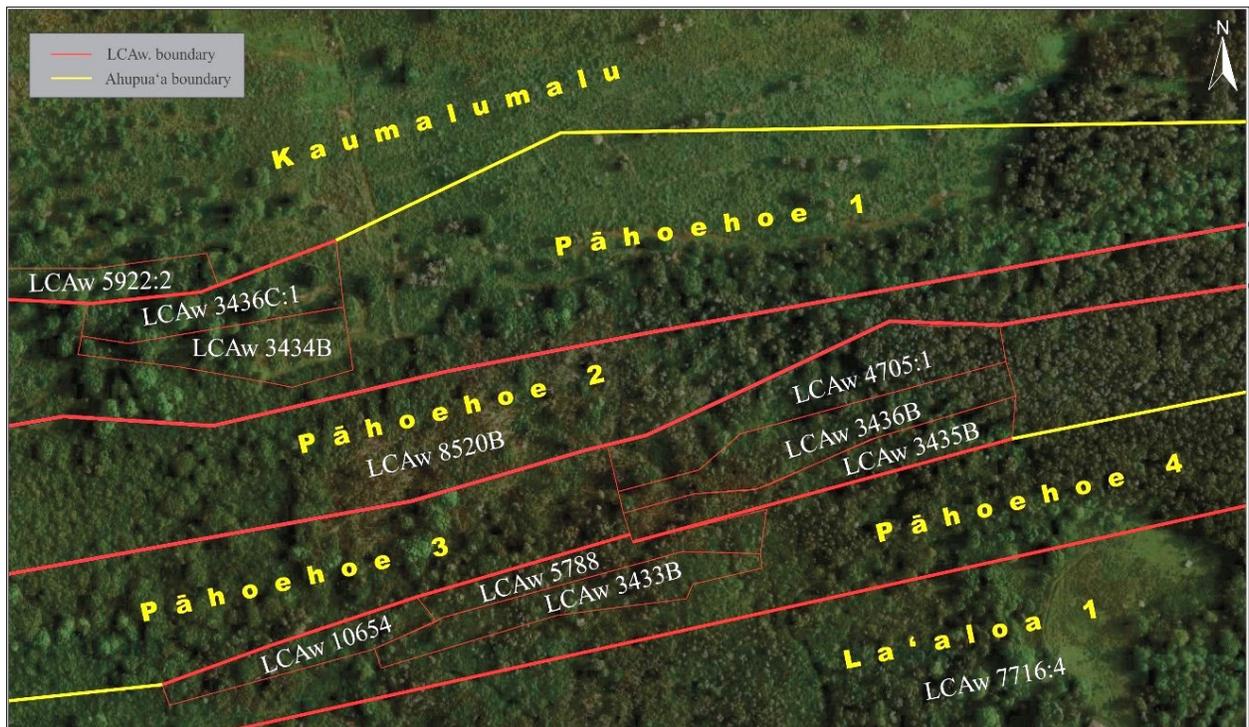


Figure 19. Inset 2 showing LCAws. in the mauka portion of Pāhoehoe 1st through 4th, the project area not shown.

Kuleana Awards Granted in La‘aloa 1st and 2nd

A total of eight *kuleana* claims comprised of ten distinct parcels were granted within La‘aloa 1st and 2nd (Table 3). Figure 20 shows the location of the *kuleana* awards located along the coastal portion of La‘aloa and Figure 21 shows the location of those *kuleana* awards granted in the *mauka* portion of the *ahupua‘a*. Only one *kuleana* claim was made within La‘aloa 1st, which was awarded to Opunui as LCAw. 10566. This coastal parcel (LCAw. 10566:2) described as a *pāhale* (house lot) was located just inland of Hōpoe Bay (see Figure 20), while Opunui’s second parcel, used for agriculture (LCAw 10566:1) was located in the *mauka* portion of the *ahupua‘a* (see Figure 21). Within La‘aloa 2nd, seven *kuleana* awards comprised of eight distinct parcels were granted (LCAw. 5770, 5773, 5787, 5899, 5913, 10888, and 10889). Two parcels associated with LCAw. 5787 and 5913 were located at the coast, however, a review of historic maps only shows the location of LCAw. 5787. The exact location of the coastal parcel associated with LCA 5913 granted to Pukai could not be ascertained. The remaining six parcels were for agricultural lands located in the *mauka* section of the *ahupua‘a* (see Figure 21).

Table 3. Land Commission Awards Granted in La‘aloa 1st and 2nd (ali‘i* award)**

<i>Ahupua‘a</i>	LCAw. No.	Awardee Name	No. of ‘āpana claimed	No. of ‘āpana awarded	Royal Patent No.	Acres
La‘aloa 1	7716	R. Ke‘elikōlani*	n/a	<i>ahupua‘a</i>	n/a	n/a
La‘aloa 1	10566	Opunui	6	2	4214	1.53
La‘aloa 2	5773	Kalepaa	4	1	4212	2.50
La‘aloa 2	5770	Kalua 2	4	1	4213	2.0
La‘aloa 2	5787	Kanewa	5	2	4165	1.40
La‘aloa 2	10889	Manuunuu	2	1	4211	1.90
La‘aloa 2	10888	Nahuakou	2	1	4726	1.35
La‘aloa 2	5913	Pukai	5	1	4209	0.24
La‘aloa 2	5899	Pupu	5	1	4210	2.25



Figure 20. Inset 3 showing LCAw. awards granted in the coastal portion of La‘aloa 1st and 2nd with project area (outlined in orange).

2. Background

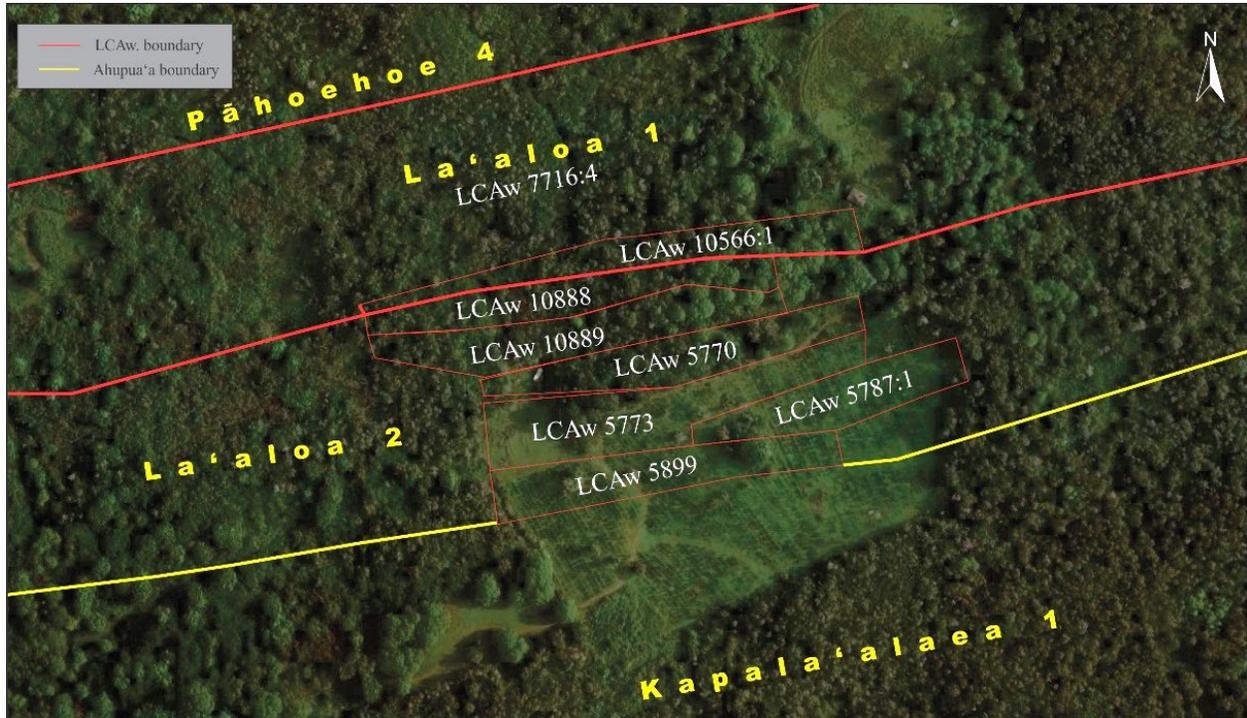


Figure 21. Inset 4 showing LCAws. in the *mauka* portion of La'aloa 1st and 2nd, the project area not shown.

Summary of Kuleana Awards

A review of the Native Testimonies associated with each of these *kuleana* claims indicated that those parcels awarded at the coast were for *pāhale* or house lots, while those parcels in the uplands were within the traditional Hawaiian agricultural zones, specifically the *kalu'ulu*, *'āpa'a*, and *'ama'u* zones (see Table 1). The long rectangular shape of these upland parcels would have given the native tenants access to a range of agricultural zones that could be maximized throughout the year and from which various crops could be cultivated. Closer examination of the Native Testimonies also shows that the majority of the *kuleana* awardees had originally claimed anywhere from two to six parcels, but following the decisions rendered by the Land Commission, were only awarded one or two parcels at most. The drastic reduction in the amount of cultivatable land for the native tenants would have likely had an adverse impact on their ability to sufficiently sustain themselves. Additionally, given that the *Māhele 'Āina* codified preexisting land-use patterns that were in place for several generations or more, this suggests that at least some if not most of the native people were still living according to the principles of the traditional *ahupua'a* system during this time.

Government Land Grants

In conjunction with the *Kuleana* Act, the King authorized the issuance of Land Grants to applicants for tracts of Government land that were allocated during the *Māhele*. These Land Grants were generally larger than those awarded by the Land Commission. The Act resolved that portions of Government Lands should be set aside and sold as grants ranging in size from one to fifty acres at a cost of fifty cents per acre. The stated goal of this program was to enable native tenants, many of whom were insufficiently awarded or not awarded land through the *Kuleana* Act to purchase lands of their own. Despite the stated goal of the land grant program, this provided the mechanism that allowed many foreigners to acquire large tracts of the Government Lands.

Between 1855 and 1867, fifteen land grants ranging in size from 5 acres to 128 acres were purchased by Native Hawaiians. Table 4 list of all Land Grants for Pāhoehoe 1st, 3rd, and 4th, as well as La'aloa 2nd and Figures 22 and 23, an 1891 map produced by J. S. Emerson, show all of the awarded land grants within the subject *ahupua'a*. While Emerson map shows the locations of the land grants, it does not depict the location of the various LCAws. that were previously granted within these *ahupua'a*. The close up of Emerson's map (see Figure 23) also shows a square-shaped structure in a portion of the southwest corner of the proposed project area with the label "Heap of stones J. Fuller." John T. Fuller was an early government surveyor (Moffat and Fitzpatrick 1995) and it is likely that the "heap of stones" noted on the map was a survey marker as the surveyor notes shown on the *Palapala Sila Nui* (Royal Patent Grant) (Figures 24 and 39) issued to Kaupehe described an "*ahupohaku*" (lit. heap of stones) on the southeast corner

of Kaupehe's land grant. However, what is unclear from this description and from Emerson's map is whether the structure was built for the purpose of surveying or whether it was an older structure that was used as a marker by early surveyors.

A total of two grants were awarded within Pāhoehoe 1st, totaling 137 acres; four grants were awarded in Pāhoehoe 3rd, totaling 69 acres; while another four grants were awarded in Pāhoehoe 4th, totaling 67.75 acres. Five land grants were awarded within La'aloa 2nd. A portion of the current project area is situated within the southwestern portion of Land Grant 2034 purchased by Kaupehe (see Figures 23). A scanned copy of the original *Palapala Sila Nui* (Royal Patent Grant) issued to Kaupehe has been included (see Figures 24 and 39) and translation (completed by the lead author of this report) of that document is also provided.

Table 4. Land Grants Awarded in Pāhoehoe and La'aloa

<i>Grant No.</i>	<i>Awardee</i>	<i>Acres</i>	<i>Year Awarded</i>	<i>Ahupua'a</i>
1583	Kama	37.0	1855	La'aloa 2
1743	Kumukahi	5.0	1855	Pāhoehoe 4
1748	Kapahu	21.0	1855	Pāhoehoe 3
1749	Kipapa	22.5	1855	Pāhoehoe 3
1751	Kahauale	19.0	1855	Pāhoehoe 3
1757	Kanewa	128.0	1855	La'aloa 2
1857	Paakea	102.0	1857	Pāhoehoe 1
1865	Kanewa	22.0	1855	La'aloa 2
1869	Kekamakahi	26.5	1855	Pāhoehoe 4
1927	Kipapa	6.5	1855	Pāhoehoe 3
2033	Haleluhi	35.0	1856	Pāhoehoe 1
2034	Kaupehe	3.75	1856	Pāhoehoe 4
2809	Kahula	104.0	1861	La'aloa 2
3020	Naaimokohi	32.5	1866	Pāhoehoe 4
3052	Palaualelo	35.20	1867	La'aloa 2 & Kapala'alaea

2. Background

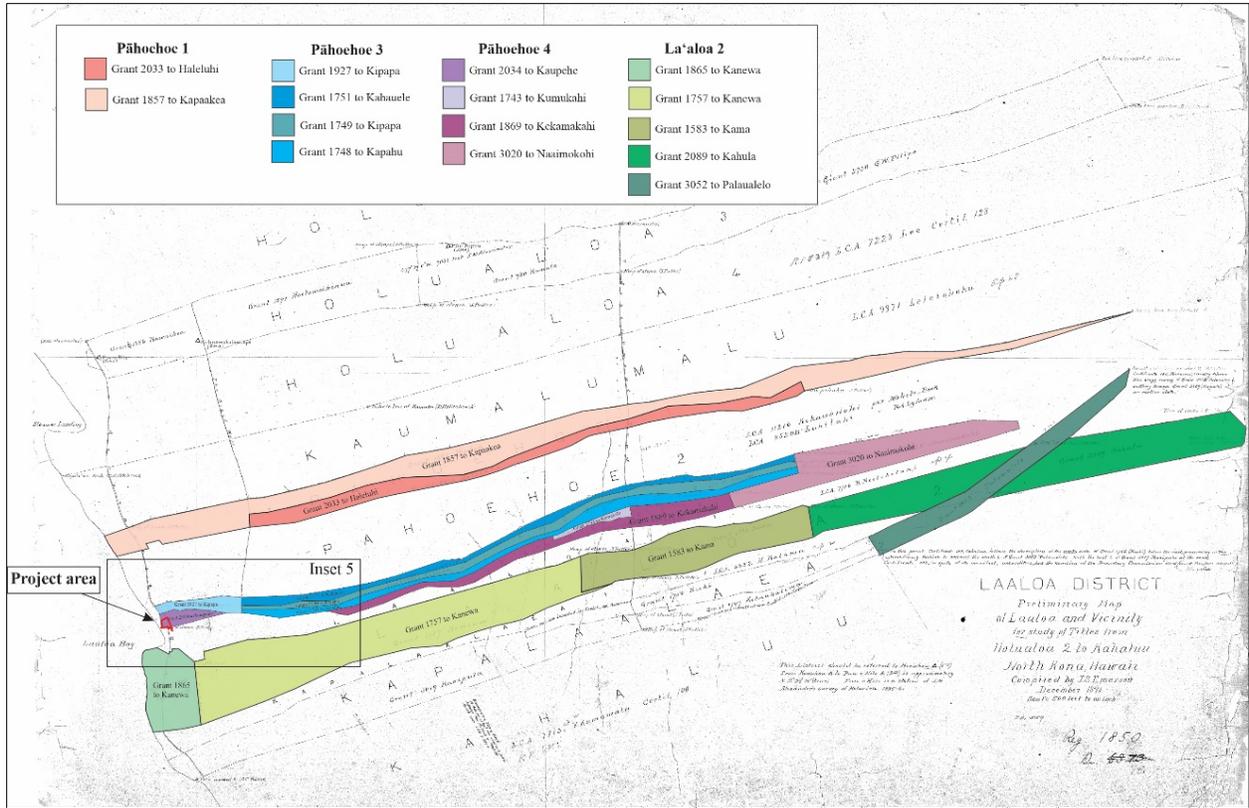


Figure 22. Hawai'i Registered Map 1850 by J. S. Emerson, showing land grants within Pāhoehoe 1st, 3rd, and 4th in 1891 with the current project area location (outlined in red).



Figure 23. Inset 5 showing a portion of Hawai'i Registered Map 1850, depicting land grants within and mauka of the current study area in 1891 and the proposed project area (outlined in red).

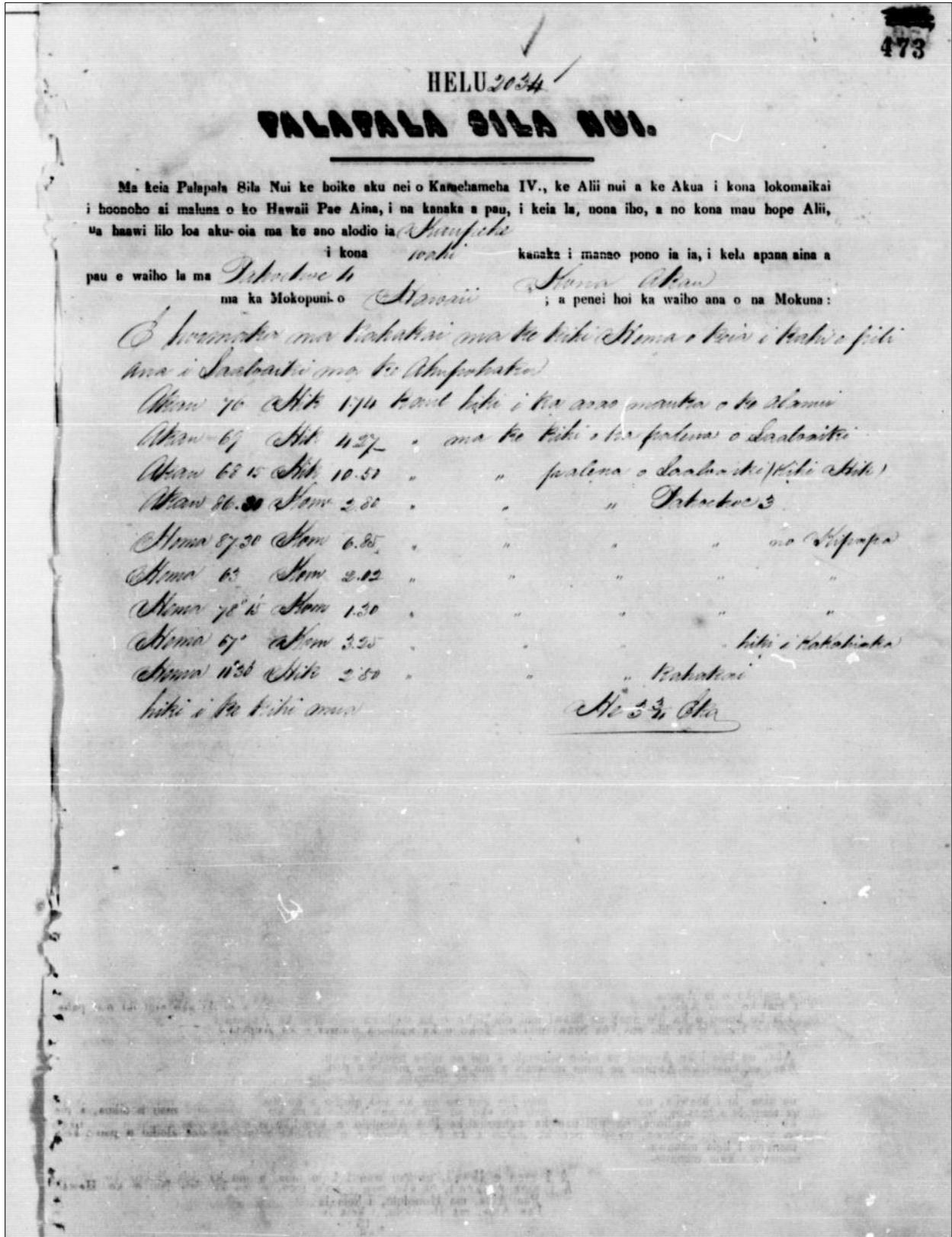


Figure 24. The first page of the Palapala Sila Nui (Royal Patent) number 2034 issued to Kaupehe.

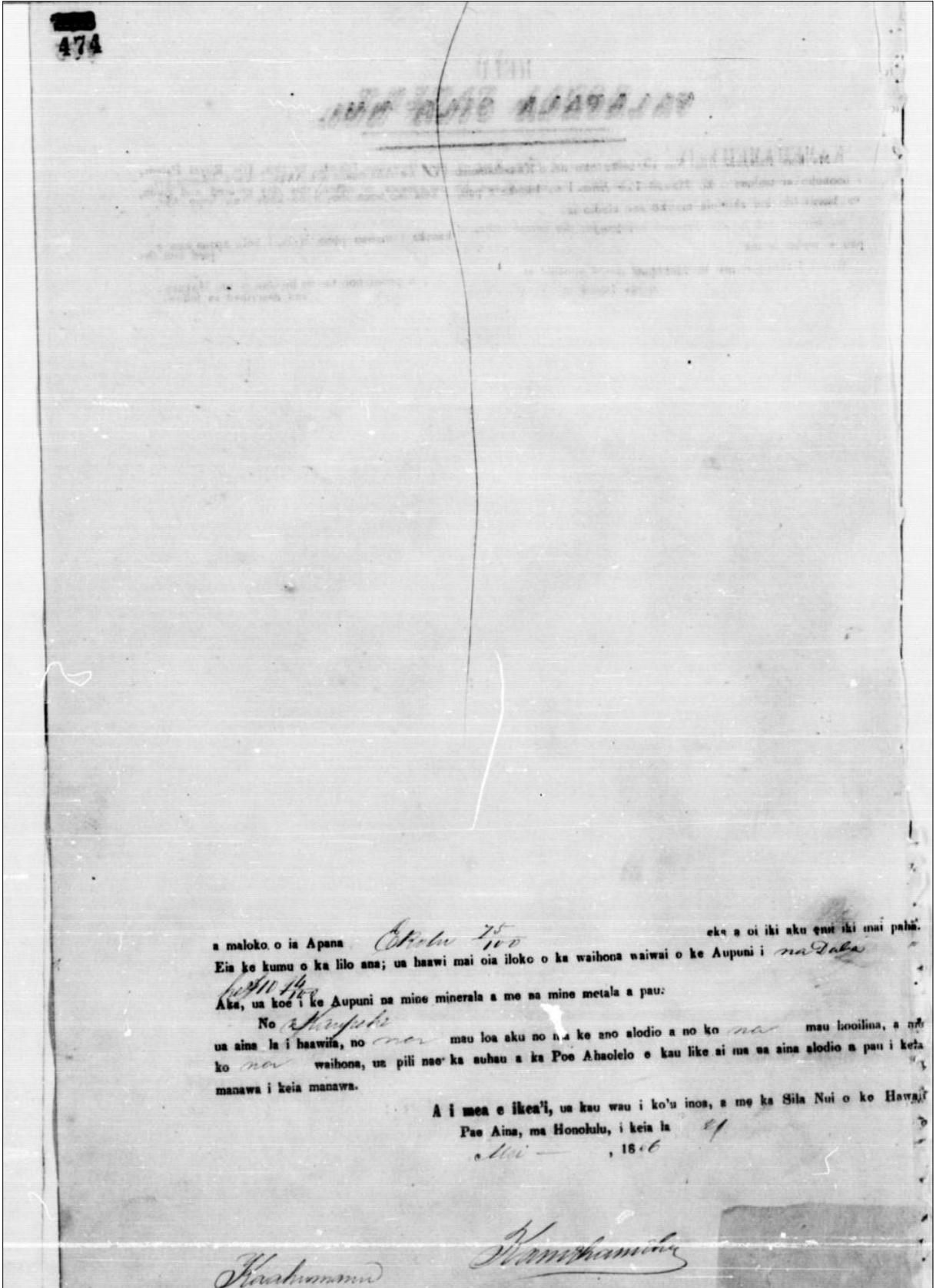


Figure 25. The second page of the Palapala Sila Nui (Royal Patent) number 2034 issued to Kaupehe.

Number 2034**Royal Patent Grant**

By this Royal Patent, Kamehameha IV, the Sovereign by whom God in his grace has established over the Hawaiian Islands, hereby makes known unto persons this day that he has for himself and his royal successors, granted and conveyed absolutely in fee simple unto Kaupehe, his faithful and loyal deposed subjects all that certain piece of land situated in Pāhoehoe 4, North Kona on the Island of Hawaii, the boundaries thus as follows:

Commencing at the shore on the south corner of this [parcel] at the point adjoining Laaloaiki at the stone mound.

North 76°	East 174 chains to the inland side of the road
North 69°	East 427 chains to the boundary of Laaloaiki
North 68° 15'	East 10.50 chains to the boundary of Laaloaiki's east corner
North 86° 30'	West 2.80 chains to the boundary of Pahoehoe 3
South 87° 30'	West 6.85 chains to the boundary of Pahoehoe 3 for Kipapa
South 63°	West 2.02 chains to the boundary of Pahoehoe 3 for Kipapa
South 78° 15'	West 1.30 chains to the boundary of Pahoehoe 3 for Kipapa
South 67°	West 3.25 chains to the boundary until the <i>kakahiaka</i> [definition unknown]
South 11°30'	East 2.50 chains to the boundary at the shore until the first corner

3 3/10 Acre

and within said parcel 3 75/100 acres more or less.

Here the reason for conveyances. He/she has deposited into the government treasury \$10 14/100 cash, but reserve to the Hawaiian Government, all minerals or metallic mines.

For Kaupehe that said land is granted, for him/her all times, in fee simple and for his/her heirs and his/her assigns subject to the taxes that the Legislature may equally impose upon the fee simple lands at any time.

As a means so that it may be known, I place my name and the Great Seal of The Hawaiian Islands in Honolulu on this 4th day of May 1856.

Boundary Commission Hearings for La‘aloa 1st Ahupua‘a

In 1862, the Commission of Boundaries (also known as the Boundary Commission) was established in the Kingdom of Hawai‘i to legally set the boundaries of all the *ahupua‘a* that had been awarded as a part of the *Māhele*. Subsequently, in 1874, the Commissioners of Boundaries were authorized to certify the boundaries for lands brought before them. The primary informants for the boundary descriptions were old native residents of the lands, many of which had also been claimants for *kuleana* during the *Māhele*. This information was collected primarily between 1873 and 1885 and was usually given in Hawaiian and transcribed in English. Although hearings for most *ahupua‘a* boundaries were brought before the Boundary Commission and later surveyed by Government employed surveyors, in some instances, the boundaries were established through a combination of other methods. In some cases, *ahupua‘a* boundaries were established by conducting surveys on adjacent *ahupua‘a*. Or in cases where the entire *ahupua‘a* was divided and awarded as Land Claim Awards and or Government issued Land Grants (both which required formal surveys), the Boundary Commission relied on those surveys to establish the boundaries for that *ahupua‘a*. This was the case for Pāhoehoe 1st, 3rd and 4th and La‘aloa 2nd as the entirety of these *ahupua‘a* were subdivided into Land Commission Awards and or Government issued Land Grants. As for Pāhoehoe 2nd, its boundaries were established by the surveys conducted in the adjacent *ahupua‘a*. Therefore, the Boundary Commission did not solicit testimony from area residents. Although these small-scale surveys aided in establishing the boundaries, they lack the detailed knowledge of the land that is found in the Boundary Commission hearings. However, the boundaries for neighboring La‘aloa 1st were brought before the Boundary Commission in 1873 and is presented in its entirety below.

On August 11, 1873, hearings were held regarding the boundaries of La‘aloa 1 Ahupua‘a. The testimony of two native residents, Nahina and Kipapa states:

Laaloa 1st (August 11, 1873)

Nahina, sworn: I was born at Pahoehoe... at the time of *Okuu*, know the land of Laaloa 1st and its boundaries adjoining Pahoehoe. Know the corner of Kipapa’s land at the big stone wall, it is on Pahoehoe and is called Haukalua. Thence *mauka* along old *iwi aina* between Laaloa 1st and Pahoehoe to Puuheu, an *oioina* [a trail side resting place] with *puuhala* trees. Thence *mauka* to *oioina* o Puukukui, with *kukui* trees, thence to a pile of stones at the *mauka* Government road called Lehukapu. Thence to Kaukahoku by a spring of water, thence to Kaaikukai, a *kahua hale* [house site]. Thence to Hehenapuweo, thence to Waialiipoa, the *mauka* corner of Laaloa 1st and Pahoehoe, where Kaumalumalu and Kahaluu cut them off. Ancient fishing rights extending out to sea. (Boundary Commission 1873–1885:330)

Kipapa, sworn: I was born in Puna Hawaii. Have lived in Pahoehoe North Kona for over twenty years, and know a part of the boundaries between Laaloa and Pahoehoe. They were pointed out to me by Nakuina. The corner of my land on Pahoehoe, adjoining Laaloa is at a place called Puka auwai, a pile of stones by the gate in the big wall; thence *mauka* along the *iwi aina* by the old road. Thence along the road to Puuheu an *oioina*, with *puuhala*. Thence *mauka* to Kohelepo an *ahu pohaku* at the corner of Kekamakahi’s land on Pahoehoe. Thence along his land to Puukukui, where there is a... *kukui* tree, and *puuhala*, to Kamalako, an *oioina*. Thence to Kahawaihele, where the road leaves the *iwi aina* and runs on to Pahoehoe, said place is a *pulu lepo*. Thence the boundary follows the *iwi aina* to the Government road. Thence *mauka* to Pulehukapu, a water hole. Kaukahoku a *kihapai koele* [a garden plot worked for the chief] is the boundary and is on the north side of the spring... My land ends at a stone in the corner.... (ibid. :331)

The testimonies above provide insight into the traditional settlement patterns specific to Pāhoehoe and La‘aloa. The concentration of coastal house lots and the scattered upland agricultural fields reflects the *mauka-makai* relationship that was inherent in the *ahupua‘a* system. It is evident from the testimonies presented above that a network of trails, some of which are described as extending along the boundaries of La‘aloa and Pāhoehoe connected the coastal habitation area with the fertile agricultural lands located *mauka*. Information collected from oral histories (Brandt et al. 2017; Maly 1998) reveals the importance of pedestrian trails in this system. One such trail is depicted on an early Real Property Tax Office map circa 1928 (Figure 26) extending from the former *Ala loa* (also identified in the testimony as Government Road), near the coast then through Grant 2034 (to Kaupehe), Grant 1927 (to Kipapa), and Grant 1751 (to Kanahale), where it terminated on the *makai* side of Kuakini Highway (see Figure 26).

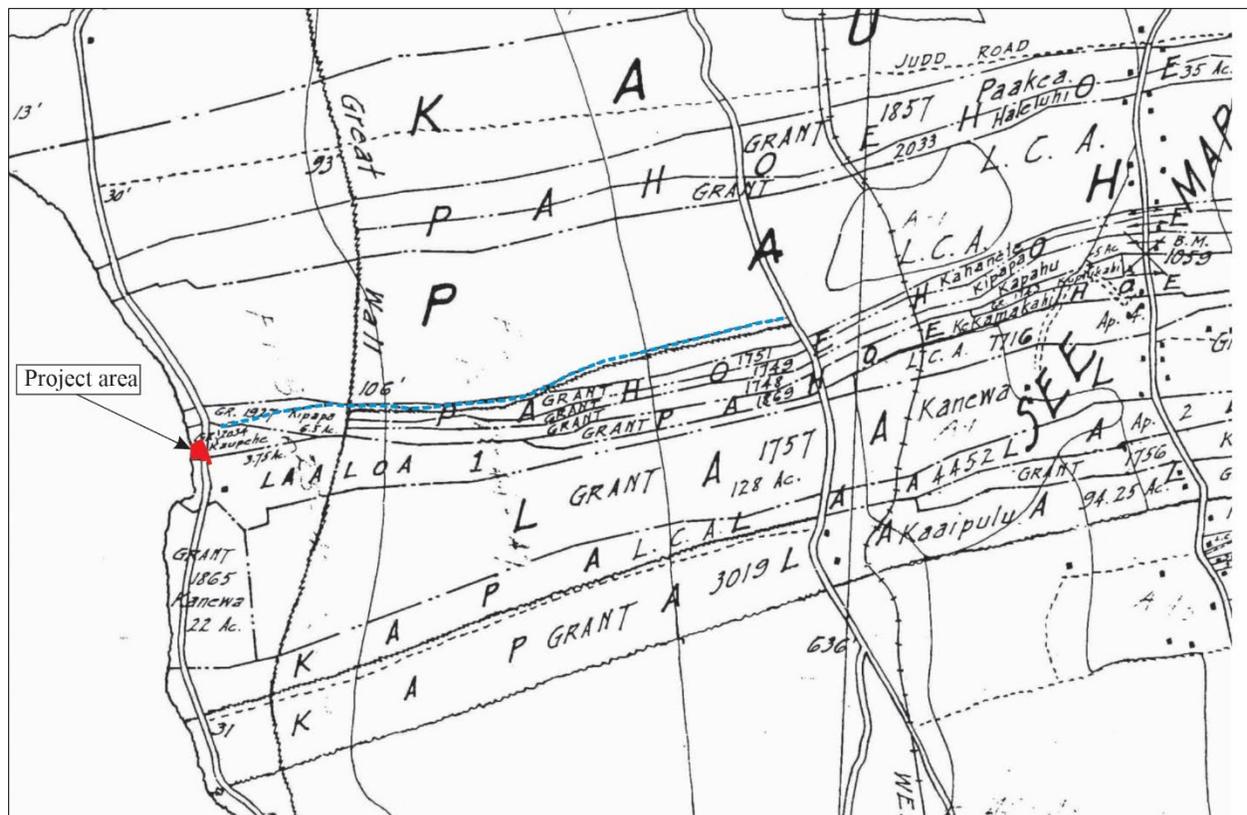


Figure 26. A portion of the “Kainaliu” pre-tax map ca. 1929 (Real Property Tax Office) showing study area and a *mauka-makai* trail (blue dashed line) extending through several land grants.

Both testimonies also described the presence of *iwi ʻāina* or stone walls often used to mark land boundaries (Pukui and Elbert 1986). As previously mentioned, some of these *iwi ʻāina* have survived into the present day and have been noted as a key characteristic of the Kona Field System. Additionally, Kipapa described the presence of a *kīhāpai kōʻele*, a “small land unit farmed by a tenant for the chief” (Pukui and Elbert 1986:158). Both testimonies also relate areas known as *oʻioʻina*, which Pukui and Elbert (ibid.:280) define as a “resting place for travelers, such as a shady tree, [or] rock”. Although these *oʻioʻina* could have likely been used by resident farmers, it could also be suggested that such resting places were important for travelers making their way along the steep slopes of Kona.

History of the Current Project Area: Post-Māhele to Present Day

The following paragraphs summarize the land holdings for Pāhoehoe 4th and Laʻaloa 1st after the *Māhele ʻĀina* of 1848 and the passing of the *Kuleana* Act in 1850 to the mid to late 20th century. In summarizing Maly’s (1997) work, Laʻaloa 1st was retained by chiefess Ruth Keʻelikōlani until her death in 1883, at which time Laʻaloa was transferred to her niece, Bernice Pauahi Bishop. Upon Pauahi’s death in 1884, her husband and his associates took over as executors of her estate. In 1885, Laʻaloa 1st was sold to Lahapa Kailipeleuli (also known as Lahapa Halsey), who held the *ahupuaʻa* until 1902. Between 1885-1902, Lahapa Halsey leased portions of the *ahupuaʻa* to Thomas Silva. Between 1891-1897, Thomas Silva assigned portions of Laʻaloa 1st to the Hawaiian Coffee & Tea Company, Ltd, and later to the Kailua Coffee Company, Ltd (Supreme Court of the Territory of Hawaii 1903). After 1902, portions of Laʻaloa 1st were sold to various companies including the Kona Development Company, Ltd., West Hawaii Railroad Company, Ltd., in addition to a number of individuals. Throughout the 19th and 20th centuries, the *mauka* portions of Laʻaloa and Pāhoehoe were utilized for cattle ranching (Maly 1997).

Maly, in relating the recorded ownership of TMK Parcel (3) 7-7-010:036 situated in Laʻaloa goes on to add that:

...the earliest site specific reference to the study area parcel occurs in 1928 when Charles Nāhale purchased the parcel. In August 1938, Nāhale sold the study area parcel to Sydney Lytham, and in September 1938, he sold it to Mrs. Hatsuyo Inaba (cf. Bureau of Conveyances Records in the collection of the Planning Department, County of Hawaii).

...no one contacted in the course of conducting this study had any recollection of a family living on the property, predating Sydney Lytham in 1938 (Walter Eklund, a *haole* businessman, had a home in the present-day beach park parcel, in the vicinity of the restrooms.) (Maly 1997:15)

A review of the County of Hawai'i tax records and historic maps shows that beginning in the 1940s, several changes occurred within the current project area. The *Alanui Aupuni* or government road that crossed through the current project area was moved *mauka* to its current alignment of Ali'i Drive (Figure 39). Several buildings (including three dwelling structures, a kitchen and bath, an open shed, and garage) and several accessory structures (including three tanks and a well) (Figure 28) were constructed in the project area parcel, which by then was owned in part by Mr. Walter E. Eklund. Over the next two decades, the parcel was divided into four separate parcels (see Figure 28) that included a beach portion (Parcel 106), the developed portion (Parcel 017), the former road alignment (Parcel 107), and the portion of the parcel *mauka* of the former road alignment (Parcel 094). The last division, creating Parcel 107, took place in 1971. The next year, Parcel 017 was condemned and acquired by the County of Hawai'i in 1972, by which time most of the buildings had already been demolished. By 1980, the last two of these structures had been demolished, and the park's comfort station and other facilities were constructed beginning the next year.

A review of historical aerial imagery compiled by the United States Geological Survey (USGS) during the mid to late 20th century shows a changing landscape in the project area vicinity. While the USGS aerial from 1954 (Figure 29), does not show any major detail for the proposed project area, it does show the route of present-day Ali'i Drive passing along the east of the proposed project area with a few scattered residential lots on the *makai* side of Ali'i Drive. A second USGS aerial image from 1976 (Figure 30) shows increased residential development near the project area parcels, most notably, the White Sands Village condominiums, shown as three large white rectangular-shaped structures located to the east of the project area (see Figure 30). Increased residential development is clearly visible along the *mauka* and *makai* sides of Ali'i Drive. Additionally, the route of Ali'i Drive appears to have been improved.

While the above paragraphs provide a brief overview of changing ownership and land use of the project parcels and general vicinity, Maly's (1997) historical and oral history study provides a more comprehensive and in-depth understanding of the cultural landscape of proposed project area. Although a summary of Maly's work and the work of others are provided in the following section titled *Cultural Landscape of La'aloa and Pāhoehoe*, readers should refer to Maly's report for a more in-depth and comprehensive understanding of land use of the current project area during the 20th century.

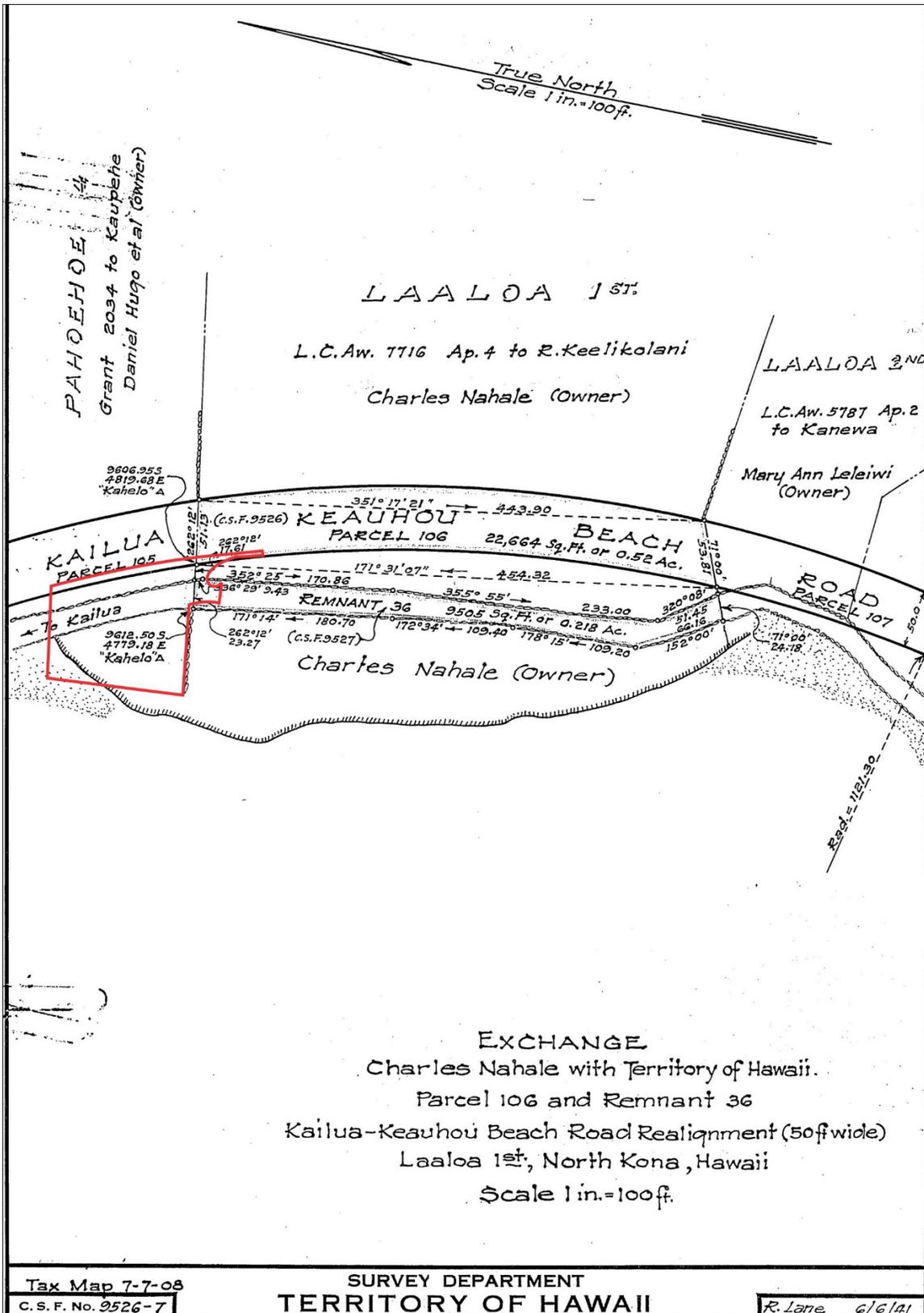


Figure 27. A portion of C.S.F. map 9526-7 showing the new alignment of Kailua-Keauhou Beach Road (Ali'i Drive) with the project area (outlined red).

2. Background

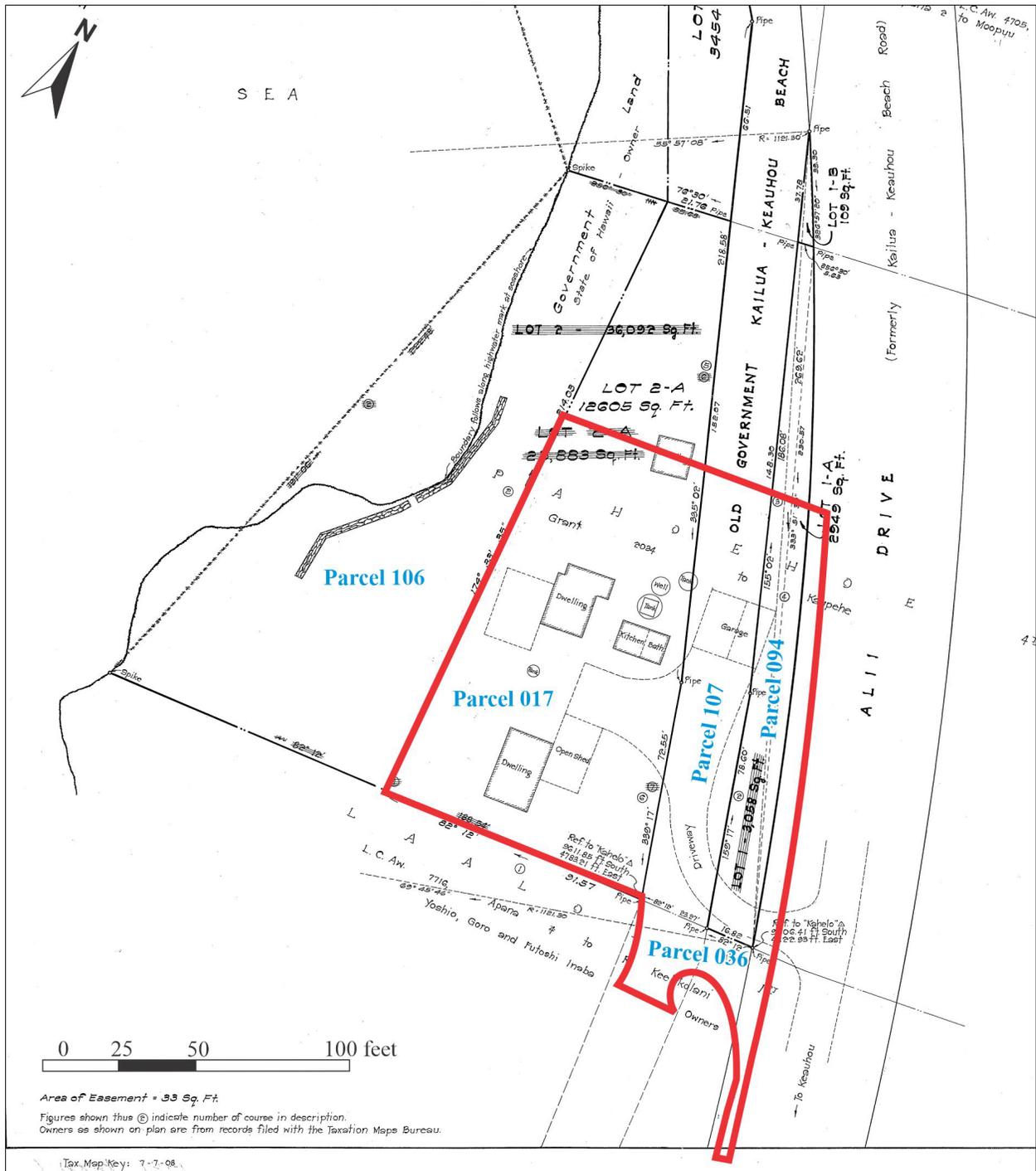


Figure 28. A portion of Land Court Application 1781 Map 1 showing various TMKs and structures located within the project area.

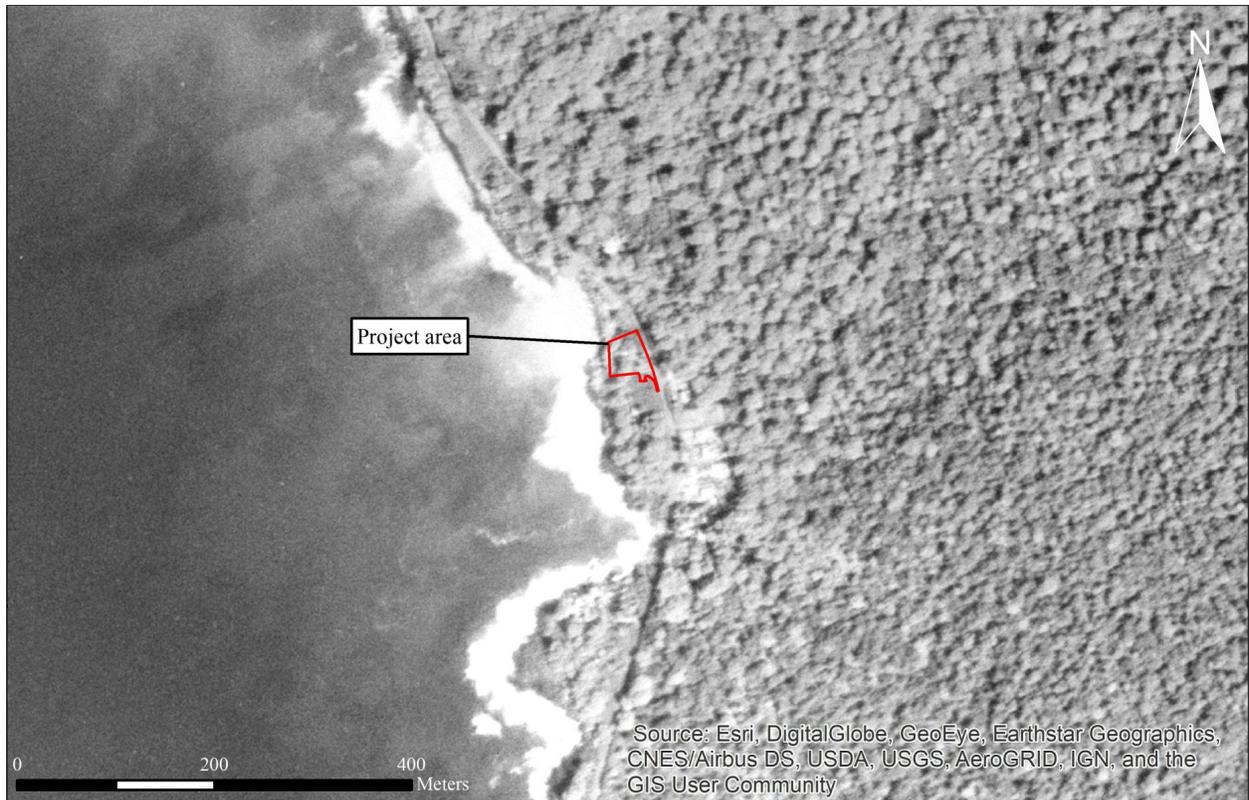


Figure 29. A portion of a 1954 aerial photograph showing the current project area (outlined red).

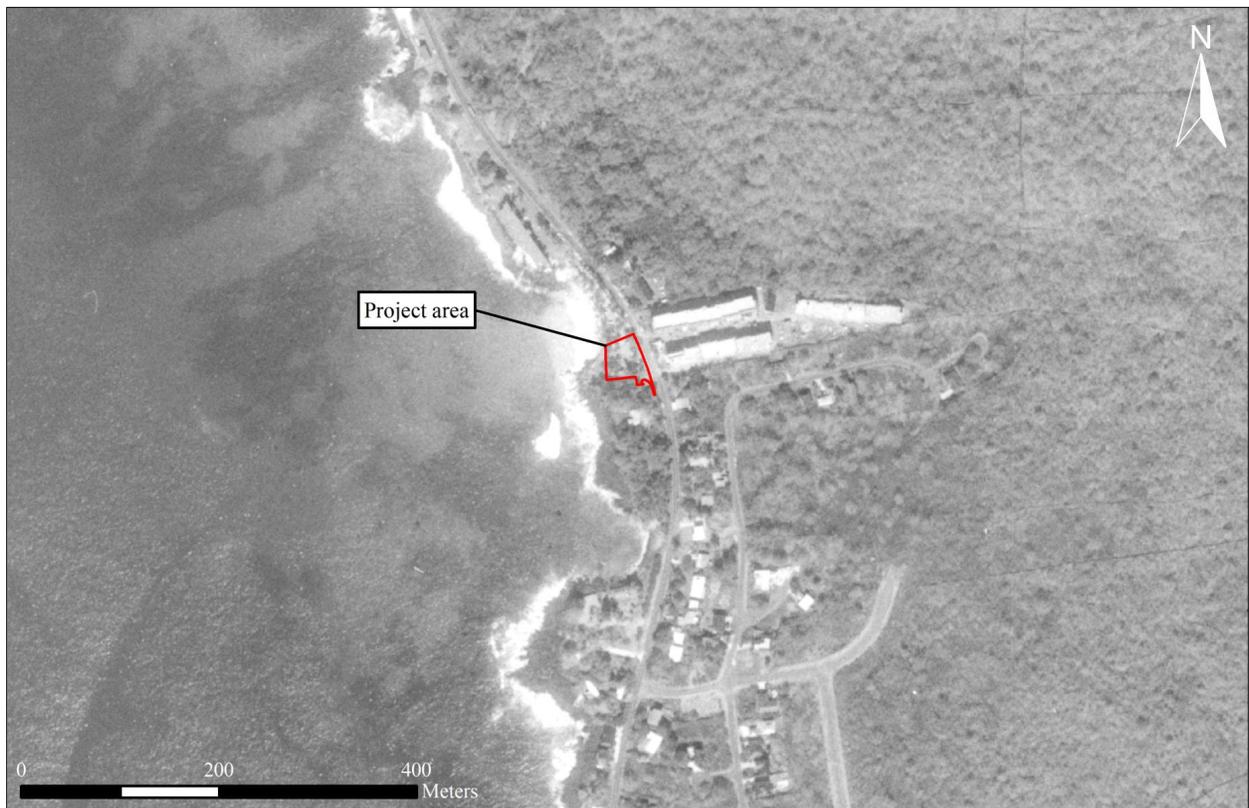


Figure 30. A portion of a 1976 aerial photograph showing the current project area (outlined red).

CULTURAL LANDSCAPE OF COASTAL LA‘ALOA AND PĀHOEHOE

Native Hawaiians have developed an intimate sense of place over hundreds of generations of evolving cultural attachment to the natural, physical and spiritual aspects of their environment. Native Hawaiians have not differentiated their culture and sense of being from the natural environment and believe in a strict interrelation between the health of the land and the health of the culture as a whole. “In the Hawaiian mind all aspects of the land—all natural and cultural resources are interrelated, and that all are culturally significant” (Maly 2001:2). Since Native Hawaiians are inseparable from every land and seascape in Hawai‘i, understanding the cultural significance of these lands have come through decades worth of *mo‘olelo* (stories, history) shared by knowledgeable informants. The collective knowledge shared by these individuals and families is what comprises and ascribes value to the cultural landscape. In understanding the cultural landscape, one must take a holistic approach to address the current issues and inequalities that have impacted the native inhabitants of these lands as well as the natural and cultural resources. One cannot interpret a specific site without first addressing the cultural landscape associated with it. It is therefore important to collect information beyond the archaeological record to determine the way forward in the preservation and planning of historical sites and the landscape in which these sites are found. To establish this sense of place, the authors have not only reviewed historical documents but have included previous oral interviews conducted with *kūpuna* (elders) and area residents that have lineal ties to the lands of La‘aloa and Pāhoehoe. These informants have extensive knowledge of the cultural and natural resources in and around the study area. It is precisely from these narratives that a deeper and more profound understanding of the interrelation between the natural and cultural resources are derived.

Continued urban development has severely impacted the Hawaiian cultural landscape and the people who are deeply connected to these landscapes, and the area that comprises La‘aloa Beach Park is no exception. Condominiums, vacation rentals, and hotels are prevalent throughout this area of Kona, and as a result, the beach park receives a high volume of visitors throughout the year. Additionally, continued mismanagement and failed attempts at protecting these resources by State and County agencies have added to this difficulty, which has resulted in distrust and frustration between community members and government officials (Maly 1997). These adversities have created negative and lasting impacts on the park’s natural and cultural resources. Although the current park is widely used for recreation, members of the community have expressed that this place is not only for recreating but that the areas spiritual and natural resources are integral to their way of life, and in the past, many of the families that lived here subsisted off these resources. It is critical to understand that knowledge of the cultural landscape is significant not only for its Historic value but forms the cultural foundation that sustains present-day and future communities (Kawelu 2015). As many of these community members, (many of whom have since passed) have so willingly shared their knowledge of these lands with the intent to protect and preserve the area’s resources, the authors of this study find it pertinent to examine the past and current usage of the study area to best proceed with future planning and improvements to the beach park. Provided below is a brief description of the oral history interviews conducted between the 1950s to the present-day.

Overview of Previous Oral History Studies

The following paragraphs provide a brief overview of the previous oral history studies conducted from the 1950s up to the present. The authors contend that careful attention and consideration be made to the recommendations and comments provided by various community members over the past decade. Developing a contemporary understanding of the issues concerning the protection of the cultural landscape of Pāhoehoe and La‘aloa comes from reviewing the concerns and comments that have been thoroughly described in previous studies. While additional consultation has been conducted for this study and detailed in the Consultation section of this report, Table 6 shows the names of the individuals that were previously interviewed and the dates in which they were interviewed. The ensuing section summarizes previous oral history studies conducted within the proposed project area vicinity as well as a brief discussion of each informant.

Summary of Previous Oral History Studies

Henry Kekahuna and Theodore Kelsey, who mapped and recorded sites and oral histories in Kona during the 1940s and 1950s, interviewed *kupuna* Nāluahine Ka‘ōpua (1857/1860-1961). Tūtū Nāluahine, a native resident of Kahalu‘u (located to the south of the project area), shared his knowledge on the history of Kona and was a primary informant for Kekahuna and Kelsey. In interviews conducted in the 1950s, Nāluahine provided site-specific details of La‘aloa, including traditional place names within the project area and the location of springs and well sites. Excerpts of Nāluahine’s testimony have been included below.

Kepā and Onaona Maly, a husband-wife team whose extensive research over the years conducting oral history interviews with *kama ʻāina* and *kūpuna* (elders) with first-hand knowledge of various sites within the Hawaiian Islands, has yielded a wealth of information for the Laʻaloa Beach Park area. In a series of interviews conducted between 1996-1997 for the proposed Laʻaloa Beach Park improvements project, Maly (1997) provided significant insight into land use of the beach park from the late Historic period up to the present day. Through these interviews, he documented certain Historic features and modifications to the land that have occurred over time. His discussions with elder informants familiar with the property and/or have family ties to the land are especially important, as they provide information about the condition of the property, its uses and the location of structures, including Historic sites and place names. A preservation plan for the historic sites identified in Laʻaloa Beach Park was also drafted during this study (Figure 31).

In August of 2017, Lokelani Brandt conducted oral history interviews to discuss the potential cultural impacts of a proposed park site located to the northeast of the project area within TMK (3) 7-7-008:030 (Brandt et al. 2017). Although the focus for this particular study is outside of the beach park, informants that she interviewed provided information pertaining to cultural and historic land use of the project area *ahupuaʻa*, as well as site-specific information relating to traditional place names and historic sites within the project area itself. Additionally, the consulted individuals are recognized lineal descendants of Kipapa, Kekamakahi, and Kaupehe lines, all of whom were awarded Land Grants in Pāhoehoe 3rd and 4th during the mid-19th century. Portions of her interviews are included below.

Table 5. Previous Oral History Studies

<i>Name of Informant</i>	<i>Date of Interview</i>	<i>Study</i>
Nāluahine Kaʻōpua	ca. 1959	Kelsey and Kekahuna
Lily Namakaokaiʻa Haʻanio-Kong	January 14, 15 & 23, 1997	Maly 1997
Goro Inaba	January 15, 1997	Maly 1997
James Inaba	January 21, 1997	Maly 1997
Lolina (Lawrence) Makuakāne	January 22, 1997	Maly 1997
Luciana Kaʻailehua Makuakāne-Tripp	January 22, 1997	Maly 1997
Lily Namakaokaiʻa Haʻanio-Kong	January 22, 1997	Maly 1997
Valentine K. Ako	January 1996	Maly 1997
E. Kalaniola Wilson-Hamm	June 1996	Maly 1997
Hannah Wilson-Freitas	June 1996	Maly 1997
Agnes Kahulamū-Funk	June 1996	Maly 1997
Hattie Makini-Keanaʻāina	June 1996	Maly 1997
Dorothy Wilson-Sipe	June 1996	Maly 1997
Zachary Kapule	February 2 & 3, 1997	Maly 1997
Kahu Leon Sterling Jr.	January 15, 1997	Maly 1997
Alena Kaiokekoa	January 16, 1997	Maly 1997
Curtis Tyler	August 4, 2017	Brandt et al. 2017
Malia Kipapa	August 10, 2017	Brandt et al. 2017

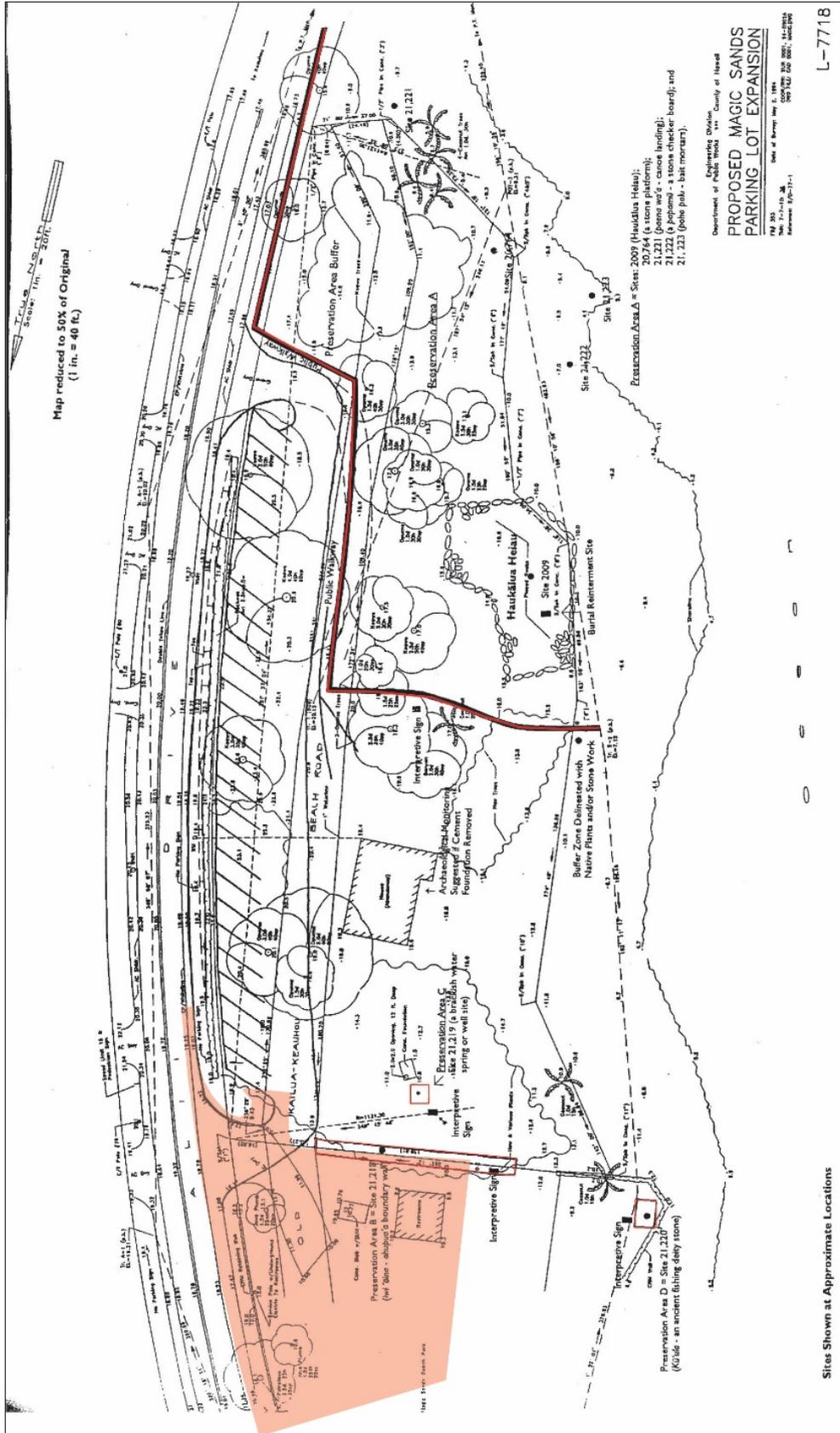


Figure 31. La'aloa Beach Park proposed preservation plan map (preservation areas A-D outlined in red) and proposed project area location (shaded red) (from Maly 1997:51).

Inaba Family

The Inaba family purchased the La‘aloa beach property from Sydney “Sid” Lytham in 1938. Goro Inaba indicated that the family generally only spent weekends and holidays at the property and that Sydney Lytham lived on the property as a caretaker. Between 1958-1970 Jimmy Inaba lived on the property with his family and in his interview with Maly (1997), he indicated that Sid had built a small 20 x 14-foot house on a concrete slab. Jimmy and his family remodeled the small home in 1958, adding onto Sid’s original slab to include two bedrooms and a bathroom as well as a patio. Jimmy also talked about how he had constructed two large columns at the southern entrance to the lot “made with 450 beer bottles cemented, together and topped with one large five-gallon glass jar” (Maly 1997:31). The columns had to be taken down eventually, as people were throwing rocks and breaking the glass. He also indicated that the old driveway followed the old Government Road remnants up the house.

The Inaba family indicated that “in the nearly 60 years that the family owned the property, no one ever knew of any *heiau*, burials, or other Hawaiian sites there” (Maly 1997:32). It was recalled, however, that on the southwest side of the property there was a thick grove of *hau* and *kiawe* trees growing in the area that has been identified as the location of Haukālua *Heiau* (Site 2009). The Inaba family indicated that all clearing of the brush was done by hand and a bulldozer had never been brought into the property. According to James Inaba, besides the house, there was also a water tank, cesspool, and a *furo* (Japanese bath), but in all, the family had never touched most of the property.

Makuakāne-Tripp Family

Maly (1997) had also interviewed members of the Makuakāne-Tripp family, which included Lolina Makuakāne, and Luciana Ka‘ailehua Makuakāne-Tripp, descendants of the Kipapa-Kekapahaukea line who had ancestral lands within the *ahupua‘a* of Pāhoehoe. Lolino Makuakāne related that his family had moved to the area around 1934 when he was a child, and had lived on the shore of La‘aloa Iki, on the south side of the Hōpoe cove (also known as La‘aloa cove). Mr. Makuakāne related that the children would travel along the La‘aloa Iki shoreline, including the area of the beach park. He also shared certain memories of the area and provided site-specific details of the canoe landing within Hōpoe Bay.

Lily Namakaokai‘a Ha‘anio-Kong

Aunty Lily Ha‘anio-Kong was born in 1927 and is a lifelong resident of Keauhou, Kona with family ties to the La‘aloa area. She is a cultural practitioner and has been a proponent of programs that interpret and protect cultural sites, natural resources, and traditional practices. She used to fish regularly along the shorelines of La‘aloa. She provided recommendations regarding the preservation plan drafted during the 1997 proposed La‘aloa Beach Park improvements and is very familiar with the sites within the beach park itself.

Valentine K. Ako

Valentine Ako was born in Hōlualoa, Kona and lived there as a youth, however, during the time in which he was interviewed by Maly regarding the proposed improvements to La‘aloa Beach Park in 1997, he was living on Kaua‘i and had been so for the past 50 years. Although Mr. Ako had not been living in Kona for some time, he had memories of sites and land use within the project area location. According to Maly, Mr. Ako had contacted him with concerns about the removal of boulders from the shore in order to increase the amount of sand along the beach. He informed Maly that he thought it was important to leave the shoreline intact and to preserve the proper place names (La‘aloa and Pāhoehoe). Mr. Ako also spoke about the traditional fishing grounds at Pāhoehoe and noted a *ko‘a* (fishing grounds) for ‘ō‘io (bonefish) was once located there. He also described some of the old-timers who would use canoes to fish for ‘ōpelu (Mackerel scad) at La‘aloa.

E. Kalaniola Wilson-Hamm and the descendants of Keli‘ihulamū

In 1996, Maly conducted an interview with Kalaniola Wilson-Hamm and her sisters and cousins, Hannah Wilson-Freitas, Agnes Kahulamū-Funk, Hattie Makini-Keana‘āina, and Dorothy Wilson-Sipe. While Mrs. Makini-Keana‘āina spoke of the destruction of a famed *hala* grove that was once located *mauka* of the beach park, most of their comments expressed distrust for the County and State because of having seen so much destruction to Hawaiian sites during their lifetime. The interviewees expressed frustration with local government officials noting that for years their questions and concerns have been disregarded or gone unanswered. The sense of futility and frustration expressed by the interviewees should prompt current planners and agency representatives to engage with the community in more meaningful ways and utilize their advice and guidance to hopefully avoid future conflict.

Zachary Kapule

Zachary Kapule is a Hawaiian practitioner and a member of the La‘aloa ‘Ohana. Mr. Kapule is from South Kona but has frequented the La‘aloa beach area since the 1960s, and has been involved with activities concerning La‘aloa beach park, and stewardship of the area’s resources. At the time of Maly’s (1997) interview the La‘aloa ‘Ohana, whose membership consisted of some community members, had been in existence for five or six years. The primary interest of the ‘Ohana was to protect the cultural and natural resources of the La‘aloa Beach area. The ‘Ohana has cared for the sites in the area, cultivated Hawaiian plants in an effort to establish an ethnobotanical garden, and has sought out advice from *kūpuna* (elders). At the time of the interview, the ‘Ohana had also participated in the Family Court Juvenile Community Service Project, where youth utilized their service hours helping to maintain the sites and garden within the park.

Kahu (Reverend) Leon Sterling Jr.

Born on O‘ahu in 1916, Kahu Sterling settled in Kona in 1970 and became active in many cultural and community issues, including those concerning La‘aloa Beach Park. In his interview with Maly (1997), Kahu Sterling provided detailed recommendations for the site preservation plan while noting the importance of preserving the cultural sites that have been spared from destruction. In his interview with Maly, Kahu Sterling pointed out the County’s lack of communication with the community and the disappointment felt by the community for the County’s delay in preserving the cultural sites within the beach park. He expressed the importance of the County maintaining timely and honest communication with the community as a means to avoid future confrontation.

Alena Kaiokekoa

In his interview with Maly (1997), Alena, a Hawaiian practitioner who has worked with the La‘aloa ‘Ohana provided input for the preservation plan. Alena noted that although he has no direct ties to La‘aloa, his commitment to caring for Hawaiian resources has prompted him to assist in the preservation of the area’s cultural sites. He spoke explicitly about understanding the responsibility that comes with assuming stewardship over a place and its resources and recommended that a “clear sense of direction” be established for whoever (e.g. particular individuals, the County, or a partnership between the County and families) assumes this role (ibid.:41). He also gave specific recommendations regarding site stabilization and urged for the protection of burial and reinternment sites at La‘aloa.

J. Curtis Tyler, III

On August 4, 2017, Lokelani Brandt met with Curtis Tyler at La‘aloa Beach Park to discuss the potential cultural impacts of a proposed park site located northeast of the project area within TMK (3) 7-7-008:030. Mr. Tyler was born and raised in Kona and is a recognized lineal descendant of the Kipapa, Kekamakahi, Kaupehe lines, all of whom were awarded Land Grants in Pāhoehoe 3rd and 4th during the mid-1800s. Much of his knowledge of this area comes from oral histories passed down in his family as well as personal research and onsite experience. Mr. Tyler believes that Hawaiian culture is a living culture and that cultural and historical properties, including customary and traditional rights and practices associated with them, must be documented, respected, and carefully considered when lands on which such properties are located are being considered for different and/or more modern use. In his interview in 2017, Mr. Tyler provided information about Historic place/site names within La‘aloa Beach Park.

Malia Kipapa

Malia Kipapa grew up and was raised on the Hawaiian homestead in Keaukaha but has been living in North Kona since 2009. Her paternal lineage connects her with the lands of Pāhoehoe, while her maternal lineage traces to the neighboring *ahupua‘a* of Hōlualoa. Ms. Kipapa is Curtis Tyler’s niece and thus a direct descendant of Kipapa, Kaupehe, and Kekamakahi, who have historically held land grants in the area of Pāhoehoe. Since moving to Kona, Ms. Kipapa and her uncle Mr. Tyler have taken leadership roles in the preservation of their *iwi kūpuna* (ancestral remains) located on the *makai* portion of Pāhoehoe (TMK: (3)7-7-008:031) to the northeast of the project area. In addition to caring for their ancestral burial grounds, a Friends of the Park Agreement between Hawai‘i County and the Kipapa ‘Ohana was established. Mr. Kipapa and Mr. Tyler have been working with the County of Hawai‘i to assist with the future plans of Kipapa Park and ensuring that this cultural park is established with respect to place and to encourage the restoration and reuse the old *mauka-makai* trails.

Cultural Sites within La‘aloa Beach Park as Described in the Oral Histories

Hōpoe Bay, Paena Wa‘a and Ko‘a

Tūtū Nāluahine Ka‘ōpua, in his interview with Kekahuna and Kelsey, ca. 1959, specified that the bay/cove itself that fronts La‘aloa 1st was traditionally called Hōpoe. Figure 32, a rough sketch map compiled by Kelsey and Kekahuna with tūtū Nāluahine shows the location of Hōpoe, as well as the approximate location of springs/wells in the vicinity of the bay (further discussion of these wells is provided below). A review of Historic maps, however, indicate that this bay was labeled as La‘aloa Bay, and has been called thus into recent times.

Maly’s (1997) interviews with elder informants reveal that there was a *paena wa‘a* or canoe landing within Hōpoe cove, and that the Inaba and Kāne families kept canoes in this area. Several interviewees also relate that this area was known for its *‘ōpelu* (mackerel scad) and *‘ō‘io* (bonefish) fishing, and a *ko‘a* (fishing ground). The Inaba’s, who owned the property before it was purchased by the County for the creation of La‘aloa Beach Park, spoke of both the canoe landing and the *ko‘a* within Hōpoe. They relate that there was an old canoe landing on the south side of the property in the little cove where Minoru Inaba kept his canoe, and would regularly go out *‘ōpelu* fishing in front of La‘aloa (ibid.). At the time of Maly’s interview in 1997, Minoru was 92 years of age. Mr. Inaba states that “they regularly went out to the *‘ōpelu ko‘a* (*‘ōpelu* fishing site) in front of La‘aloa, and also paddled all the way out to Kāināliu to a spot where they caught Kona crabs” (Maly 1997:32).

Valentine K. Ako also refers to the canoe landing and *ko‘a* in La‘aloa, as well as the abundant fishing grounds located offshore. He states:

Pāhoehoe was noted for that *ko‘a* for *‘ō‘io*. Because the place was sandy and the *‘ō‘io* school used to be loaded over there, you know. Even up to my time adjacent to Pāhoehoe is La‘aloa.

What I remember of La‘aloa was the Kāne family and their canoe and catching *‘ōpelu*. And old man Kāne was the one that caught large squid, *he‘e*. And he, you now, the way he did it is with the banyan tree leaf, eh... But La‘aloa had two canoes. Both canoes were the Kāne’s. Outside of La‘aloa-Pāhoehoe had *ko‘a* [a dedicated fishing ground] for *‘ō‘io*, Kāne took care of that *ko‘a*, and he even used to chase people out who didn’t belong there. Nice *‘ō‘io*, 10-15 pounds, and you could catch them by the canoe load. (Maly 1997:37).

A review of literature pertaining to fishing practices in the islands defines a *ko‘a* in two ways. One being a specific site offshore where certain species of fish were called and baited, another describing a *ko‘a* as a constructed site (e.g platform or alter) associated with offerings to Kū‘ula (the chief patron deity of fishing). Mehana Blaich Vaughan, in her book *Kaiāulu Gathering tides* (2018), describes a *ko‘a* as areas where certain species of fish would gather and be baited by the fisherman/woman. She also states that the practice of feeding fish in certain areas was used extensively throughout the island of Hawai‘i, and provides a detailed example of how this practice could be carried out:

...he would paddle his small canoe out to the bay. Inside, he kept a set of wooden mallets of varying sizes. Each mallet made a different sound underwater when tapped against the side of his boat. By releasing food into the water while tapping mallets, he trained different species to respond to each tone. When tapped a certain mallet against the side, the corresponding fish swam right to his boat. He always brought whatever species her grandmother requested in plenty of time to prepare the fish for dinner. (Vaughan 2018:43).

In describing traditional Hawaiian fishing practices, Hawaiian scholar David Malo detailed various *ko‘a* types as well as how the location of these deep-sea spaces was identified:

The name *koa* [*ko‘a*] or *koa-lawaiia* [*ko‘a-lawai‘a*] was applied to certain places in the deep sea where fish hunted. Thus the place where the *ahi* were wont to be found was called a *koa-ahi*; and that where the *aku* or the *kahala* or *opelu* were to be found was called a *koa-aku*, a *koa-kahala*, or a *koa-opelu*, and so on.

These *koa-lawaiia* were so deep under water that the eye failed to perceive them, not could the fish be seen when swimming over them, nor when they seized the hook. In order to find them, it was necessary to take one’s bearings from the land. Two bearings were required; and where these were found to intersect, there was a *koa*, and there the fisherman let down his hook or his net. (Malo 1951:211)

Another definition of *ko‘a* was provided by John F. Stokes who noted that “[k]oa [*sic*] is the name of a small walled enclosure or platform, numerous examples of which are scattered around the coasts of these islands, where the fish were offered to Kuula” (Stokes 1909:209).

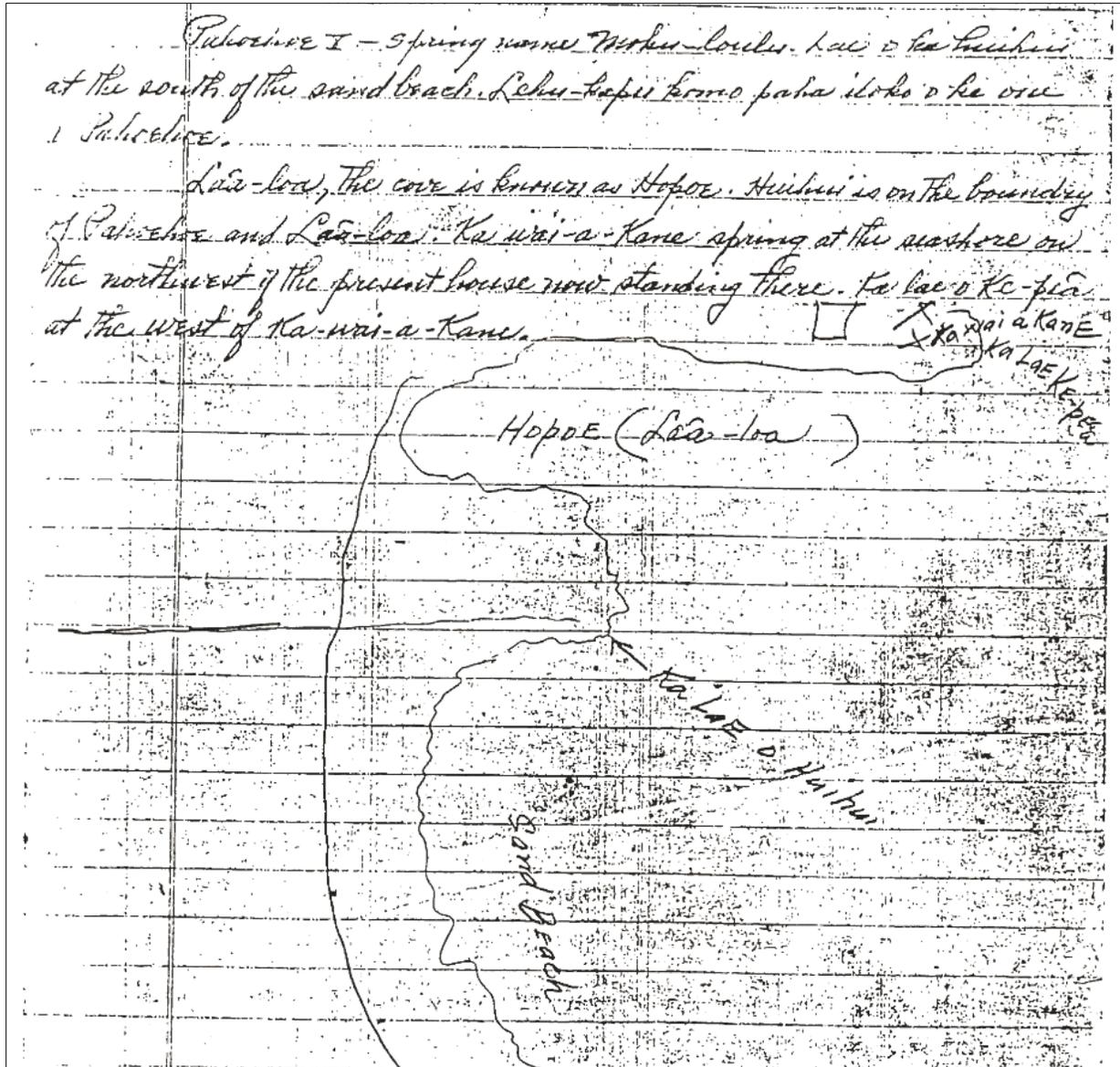


Figure 32. Sketch map of La'aloa Bay (Kelsey and Kekahuna with Nāluahine, ca. 1959(in Maly 1997:22)

In Maly's interviews with the Makuakāne-Tripp family, Lolino Makuakāne related that his family had moved to the area around 1934 when he was a child and had lived on the shore of La'aloa Iki, on the south side of the Hōpoe. Mr. Makuakāne provided details of the canoe landing within La'aloa:

It was around 1934 that Lucy Leleiwi-Makuakāne and her children moved to the La'aloa-iki property (presently the "Kona Onenalo" condo). Uncle Lolina was about seven years old. He recalls that Charles Nāhale worked out a trade with Mrs. Makuakāne, given them the La'aloa-iki property. Nuhi Kāne, was a son-in-law of Mrs. Makuakāne's, and lived on the property with the family as well. The ancient *paena wa'a* (canoe landing) which they also used, can still be seen on the north facing shore of the little cove, looking right across to the park... The *papa* (shelf) of *pāhoehoe* is worn smooth, almost concave from years of use (presently an opening in the *naupaka* growth marks that landing). In the water, on the ocean side of the landing, is a shallow *papa* that breaks the waves, causing the landing area to be calm. And the landing itself, in front of the canoe hauling *papa*, is quite deep. Uncle Lolina fondly remembers how they would count the waves, and glide into the protected landing, and then *une*, or quickly push the paddles into the water to turn the canoe around and haul it out. (Maly 1997:33)

Interviews conducted with the Makuakāne-Tripp *‘ohana*, indicates that in the 1920s and 30s there used to be sand in Hōpoe cove and that the rocks were not exposed as they are today (Maly 1997). The family also indicated that at the southern end of the park's extension, there was an older canoe landing but that during their time the landing was not used regularly. During the proposed improvements and parking lot expansion of La‘aloa Beach Park in 1997, a preservation plan was developed to preserve the canoe landing (Site 21221 *paena wa ‘a*) at the southern end of the park's extension within Hōpoe and was incorporated within the proposed Preservation Area A (see Figure 31).

Springs and Well Sites

Tūtū Nāluahine, in his interviews with Kekahuna and Kelsey, ca. 1959, identified three brackish water springs within the boundary of the present-day beach park. Within Pāhoehoe, these include *Moku-loulu*, (described as being at the shoreline on the boundary of Pāhoehoe and La‘aloa Iki Ahupua‘a), and *Lehu-kapu* “a spring, from which Pāhoehoe and Laaloa obtained water.” (Maly 1997:20). A third spring site, *Ka-wai-a-kāne* was also noted and is said to be located in La‘aloa 1st. Below is an excerpt from Nāluahine’s narrative collected by Kelsey and Kekahuna and presented in Maly’s (1997) report discussing these springs:

Selected Excerpts from Interviews with Nāluahine Ka‘ōpua

[T. Kelsey: written by hand]

Lehu-kapu, a spring, from which Pāhoehoe and Laaloa obtained water. (*Komo ka wai o Pāhoehoe me Laa-loa.*) (Maly 1997:20)

Laa-loa I. The *‘awa* bowl of Kāne. (Kāne and Kana-loa were twin demi-gods, bearing the names of major deities.) Kānoa *‘Awa a Kāne*, on the right. It is a large stone by the road. (Some iron rails are laid over a slight depression in the road near here). There is a house on the upland side.

[hand written notes; nd.] Pāhoehoe I—Spring name Moku-loulu. Lae o ka huihui [noted not “*hu‘ihu‘i*”], at the south of the sand beach. *Lehu-kapu komo paha iloko o ke one o Pāhoehoe* [Lehu-kapu spring perhaps enters in the sands of Pāhoehoe].

La‘a-loa, the cove is known as Hopoe. Huihui is on the boundary of Pāhoehoe and La‘a-loa. Ka wai-a-Kane spring at the seashore on the northwest of the present house now standing there. Ka lae o Ke-pe‘a [the point of Ke-pe‘a] at the west of Ka-wai-a-Kane. . .

Huihui (not Hu‘ihu‘i), a patch of sand (Kīpuka one). The name is also given to the cove here.

La‘a-loa, a large land. There is a spring at the shore here named Wai a Kāne. Demi-god Kāne’s bowl for drinking *‘awa* portions is in upland La‘a-loa on the upper side of the road, near one or more residences, where some iron rails are laid, (I think; Kel.). The water of Kāne’s spring was used to clear his *‘awa* (*hoka i ka ‘awa*). When a menstruating woman went to bathe in Kāne’s water upland it dried up and reappeared at the shore. The place upland, where Ke Kānoa *‘Awa o Kāne* (Kāne’s *‘Awa Bowl*) is was very *tabu*. There was water there for preparing the *‘awa* drink. There is a *pāhoehoe* flat (*papa pāhoehoe*) and a high mound there, hollowed for the drinking of Kāne’s *‘awa*. (*Ua hana poho ‘ia i wahi e inu ai ka ‘awa o Kāne.*)

Ke-pe‘a, a tiny rocky cove. . .20. Wai-a-Kāne. Puka keia wai i kai o Laa-loa; he punawai. Aia Ka ‘Apu *‘Awa o Kāne iuka o Laa-loa*. Oia ka wai e hoka ai ka *‘awa o Kāne*. Hele kekahi wahine hana wai malaiāla [sic], a holoi i kona ma‘i, a maloo ka wai o uka, a puka i kahakai. Kapu loa kela wahi o uka. Aia malaila he Kānoa *‘Awa o Kāne*. He wai hana i ka *‘awa*. He papa pāhoehoe a he ohua ki‘eki‘e malaila. Ua hana poho ia i wahi e inu ai ka *‘awa o Kāne*. Kanana ia ka *‘awa*, a inu. (ibid.:21)

The location of *Lehu-kapu* is somewhat unclear as this spring is not identified on any historic maps, and Nāluahine’s narrative and sketch map do not provide a specific location. Maly also noted that when asked, none of the informants had heard of the name *Lehu-kapu*.

The Makuakāne family identified a brackish water hole within the project area, near to the restrooms. They indicate that this spring was the primary source of the family’s drinking water and recalled that “[t]he water was always sweet, not salty like some of the water holes that were even farther inland” (Maly 1997:34). Although the Makuakāne family knew of and had used this watering hole, they had not heard of the name *Ka-wai-a-kāne*, however, the location of this spring corresponds with the location of *Ka-wai-a-kāne* as indicated through Tūtū Nāluahine’s testimony c.1959. Zachary Kapule indicated that “you can still hear water underground in the lava tube system, though the recent road work seems to have collapsed the tunnels...because the flow isn’t noticeable.” James Inaba also stated that shortly after the Inaba family’s purchase of the property in 1934, they had constructed a small *furo* house and that

the *furo* was built alongside a small natural spring. This spring *Ka-wai-a kāne*, was identified, documented and given a site number in Kawachi et al.'s (2000) archaeological inventory survey (Site 21219 *furo*/spring). The site was slated for preservation within the proposed Preservation Area C just south of the current restrooms and was the only spring site recorded within the project area (see Figure 31).

In an interview conducted in 2017 for the proposed construction of a park on a roughly 6.4-acre parcel (TMK: (3) 7-7-008:030) located northeast of the current study area, Curtis Tyler pointed out that, among other significant cultural and natural resources, the *mauka* areas are intimately connected to the natural freshwater resources that emerge along the coast (Brandt et al. 2017). He described historical references to several freshwater *pūnāwai* (springs) that originate in the uplands of Pāhoehoe and emerge along the coast (e.g. *Ka Wai a Kāne*, *Umukahī* Spring, *Mokuloulu* Spring) Mr. Tyler believes that the comparatively narrow nature of Pāhoehoe 3rd and 4th reflects the extent of significant freshwater sources, relating the definition of the *ahupua'a* boundaries to the distribution of the water sources. Curtis cautioned that ground disturbance occurring *mauka* of these *pūnāwai* could adversely impact the transport of freshwater down to the coast, thereby, directly impacting the extent and location of freshwater resources within these springs.

Kū'ula

As mentioned previously, *Kū'ula* is the primary fishing deity worshipped in the Hawaiian Islands. According to Maly and Maly (2003:176), “*Kuula* was deified upon his death at the cruel hands of *Hua* of Maui, according to traditions, that he became the god of fishermen to whom the *koas* [ko'as] around Oahu, Maui and other islands are dedicated.” Through continuous care and ritualistic feedings, this male deity assisted fishermen by attracting fish into an area. There was no specific standard for the shape, size, or style of a *kū'ula*. Pukui and Elbert put forth their definition of *kū'ula* as:

Any stone god used to attract fish, whether tiny or enormous, carved or natural, named for the god of fishermen; heiau near the sea for worship of fish gods; hut where fish gear was kept with *kū'ula* images so that gear might become impregnated with *kū'ula mana*, usually inland and very taboo. (Pukui and Elbert 1986:187)

A note published in Malo's (1951) book *Hawaiian Antiquities* provides additional insight into the nature of traditional *kū'ula*. The note reads thusly:

The *kuula* [*kū'ula*] was generally a mere pile of stones, often placed on a promontory or elevation overlooking the sea. Coral or some sort of limestone was preferred to any other variety of stone. The altar itself was commonly called a *koa*, *Kuula* being the name of the chief patron deity of fishermen. The number of gods and godlings worshipped by fishermen is too numerous for mention. (Malo 1951:212)

In interviews conducted by Maly in 1997, many of the informants recalled a *kū'ula* stone that was set in the vicinity of La'aloa cove. According to these informants, the stone once stood near to the ocean where “it could be washed by the sea spray”, but had been moved during the construction of the parks retaining wall, and during the time of Maly's interview, the stone was not in its original position and was laying down behind the lifeguard station (Maly 1997:36). Both Lily Namakaokai'a Ha'anoi-Kong and Luciana Makuakāne-Tripp commented on how plentiful the fish had been when the stone was set upright, and Mrs. Makuakāne stated “if people mess around with 'um, and don't respect it all the way, it can come back and bite them. You can't feed it sometimes and then forget to feed it other times” (Maly 1997:36). Luciana Makuakāne-Tripp, when informed by Maly that tūtū Nāluahine had indicated that the traditional name for La'aloa Bay is Hōpoe, said that she had heard of the name before and that she thought that Hōpoe may also be the name of the *kū'ula* stone of La'aloa-Pāhoehoe Ahupua'a. Zachary Kapule indicated that he had once set the stone upright (noting that the fish increased in significant numbers) but was later told by County officials that it needed to be taken down, as it posed a safety issue in the event that it should fall on someone.

During Kawachi et al.'s (2000) archaeological inventory survey conducted in 1995, they incorrectly concluded the *kū'ula* was not within their study area but assigned it as SIHP Site 21220 (see Figure 31) based on oral information collected by Maly (1997). Although no detailed description or map of the *kū'ula* was made, Kawachi et al. (2000:3.4), reported that “[t]his stone has been moved and is currently in the Pāhoehoe side of the park.” As a result of Maly's (1997) study, the *kū'ula* stone's original location was identified as being at Ka Lae o Huihui on top of a *pāhoehoe* outcrop, located to the west of the current comfort station facility. During the time of the proposed improvements to the La'aloa Beach Park in 1997, the La'aloa 'Ohana supported the idea that the *kū'ula* be placed upright on a small *kahua* (platform) at *Ka Lae o Huihui*. The 1997 proposed preservation plan for the *kū'ula* placed it within Preservation Area D within the park, just west of the restrooms (see Figure 31). In March of 2015, members of the Kipapa 'Ohana came together to construct and dedicate a *kū'ula* that today sits on the high outcrop of Ka Lae O Huihui (Figure 33).



Figure 33. *Kū'ula* located at Ka Lae O Huihui constructed in 2015 by members of the Kipapa 'Ohana, view to the north.

Haukālua Heiau

Haukālua Heiau was first recorded in 1906 by John F. Stokes, working for the Bishop Museum (Stokes and Dye 1991) and was described as the remnants of a *heiau* structure. Between 1929 and 1930, John Reineke also recorded a *heiau* in La'aloa but listed it as "Haukaloa Heiau" (Reinecke 1930:31). The *heiau* is a prominent site within La'aloa Beach Park and is located in the southern portion of the park, just south of the proposed project area. During the 1995 archaeological survey (Kawachi et al. 2000) of the park, the *heiau* was designated as Site 2009 and is located within the proposed Preservation Area A (see Figure 31) within the park (Maly 1997). It is of note that during the interviews conducted by Maly in 1997, the Inaba family as well as the Makuakāne-Tripp family had never heard of or seen the remains of this *heiau*, and were "surprised to hear that early archeologists had identified the *heiau*, and that the State archaeologist, Marc Smith had indeed seen structural evidence under the wave washed rubble." (Maly 1997:34). Other informants, however, such as Lily Namakaokai'a Ha'ania-Kong, remembered the *heiau*.

It is also important to note that in the Boundary Commission testimony offered by Nahina in 1873, the name Haukālua is used to reference as a boundary point located inland. Nahina stated that "...the corner of Kipapa's land at the big stone wall, it is on Pahoehoe and is called Haukalua" (Boundary Commission 1873–1885:330)

During the time of Maly's interviews with residents and informants of the area in 1997, it was noted by Zachary Kapule that the La'aloa 'Ohana had "stabilized the ruins" and when asked if any of the original, remaining features of the *heiau* were preserved he stated that "all the 'Ohana had done, was to gather up the loose stone that had been washed down off the *heiau*, and restacked it. The *makai* section of the *heiau* had been almost completely destroyed by wave action. The original features, like the exposed foundation and wall alignments that remained under the rubble, are still intact, under the replaced stone work." (Maly 1997:44). Additionally, coral had been placed around the tiered levels of the *heiau*. He also recalled that members of the 'Ohana had observed pot-hunting occurring in the vicinity of the *heiau* in the early 1990s. A call was made to the then acting Hawai'i Island State Archaeologist, Marc Smith, who was informed that looters had dug into the south, *makai* facing walls of the *heiau*, and as a result *iwi* (burial remains) were exposed under the surface of the structure (Maly 1997). These remains were classified as an inadvertent discovery and were collected by Mr. Smith for safekeeping until DLNR-SHPD's Burial Program Coordinator could make arrangements for their reinterment. Mr. Smith consulted with Alena Kaiokekoa and Edward Halealoha Ayau,

2. Background

and members of the La‘aloa ‘Ohana and on February 17th, 1996, the *iwi* were reinterred to the *heiau* (ibid.). In describing the reinterment site by Alena Kaiokekoa, Maly (1997:42) reported:

That day, Uncle, Kawelu, and Fred Himalaya took the *iwi* home to La‘aloa. Upon going to the *heiau*, Uncle saw an area mid-way in the *heiau*, on the *makai* side, where there was a small *ahu* (cairn-like feature) and an opening down into a crypt-like feature. It was in this crypt opening that the *iwi* were reinterred.

Upon reinterment, additional *iwi* was observed within the *heiau* interior. It was not until 2006 that a Burial Treatment Plan for Haukālua *Heiau* was finalized following construction for the parking lot within the park (Rechtman 2006a). Maly’s report details that numerous community members who expressed their desires to see the *heiau* be preserved and cared for. Lily Ha‘anio-Kong, in referencing the reconstruction efforts that had taken place during this time, indicated that the *heiau* should be preserved as stabilized ruins:

What’s left, I think it should be preserved and kept as it is, because if we don’t, or we try to restore, then you lose the history, like I said, ‘There’s no story to talk about,’ you know. When you “restore”, you rewrite the whole thing. You know, every rock was blessed when it was set down, it was because it was for the *ali‘i* [royalty]...This is the way I feel about preservation, we need to preserve what’s left, not restore or remake it. Everything should be preserved that way. Then you know, you have some history of the old Hawai‘i. Otherwise it’s lost forever. Aunty Lily urges “*Waiho mālie*” (leave it at peace, leave it be). (Maly 1997:29)

Today, the *heiau* exhibits extensive modification, which has apparently been occurring since 1996. Over the years, new surface platforms have been built; pavements, upright stones, and coral have been added: and a wooden *lele* was also constructed on the platform surface (Figure 34). Today, much of the *heiau* is overgrown with vegetation and the wooden *lele* is no longer at the site (Figure 35).



Figure 34. Haukālua Heiau in ca. 2006 with constructed *lele*, view to the west (Rechtman 2006a:4).



Figure 35. Haukālúa Heiau in 2018, view to the north.

PREVIOUS STUDIES

At the turn of the century, traditional Hawaiian sites were rapidly being destroyed, and the native knowledge of these sites was being lost. Of most concern was the destruction of Native Hawaiian ceremonial sites, in particular *heiau* around the islands. This inspired writers, historians and archaeologists alike to begin documenting these sites. Thomas Thrum, a historian and editor for *The Hawaiian Annual* compiled a shortlist of *heiau* in 1906-1907, John Stokes, an archaeologist with the Bishop Museum, traveled through the Island of Hawai‘i documenting and recording *heiau* he encountered. In 1906, Stokes was the first to record Haukālúa Heiau (Figure 36), located immediately to the south and of the current project area and within La‘aloa Beach Park (Stokes and Dye 1991). He described the site as follows:

Heiau of Haukālúa, land of La‘aloa, North Kona. Located on the north side of the bay, between the sea and the road. This is a low platform or terrace that rises to a height of 4 feet at its southwest corner. The northern and eastern sides are level with the ground. The location of the northeastern corner is somewhat uncertain (Stokes and Dye 1991:63)

Thrum enhanced the description of the *heiau* with the comment “100 by 75 feet, little of which now remains” (1908:44). Based on his 1906 field operations, Stokes prepared a drawing of the site (see Figure 36), which is a simple line drawing of the borders of the *heiau* with no record or indication of internal features.

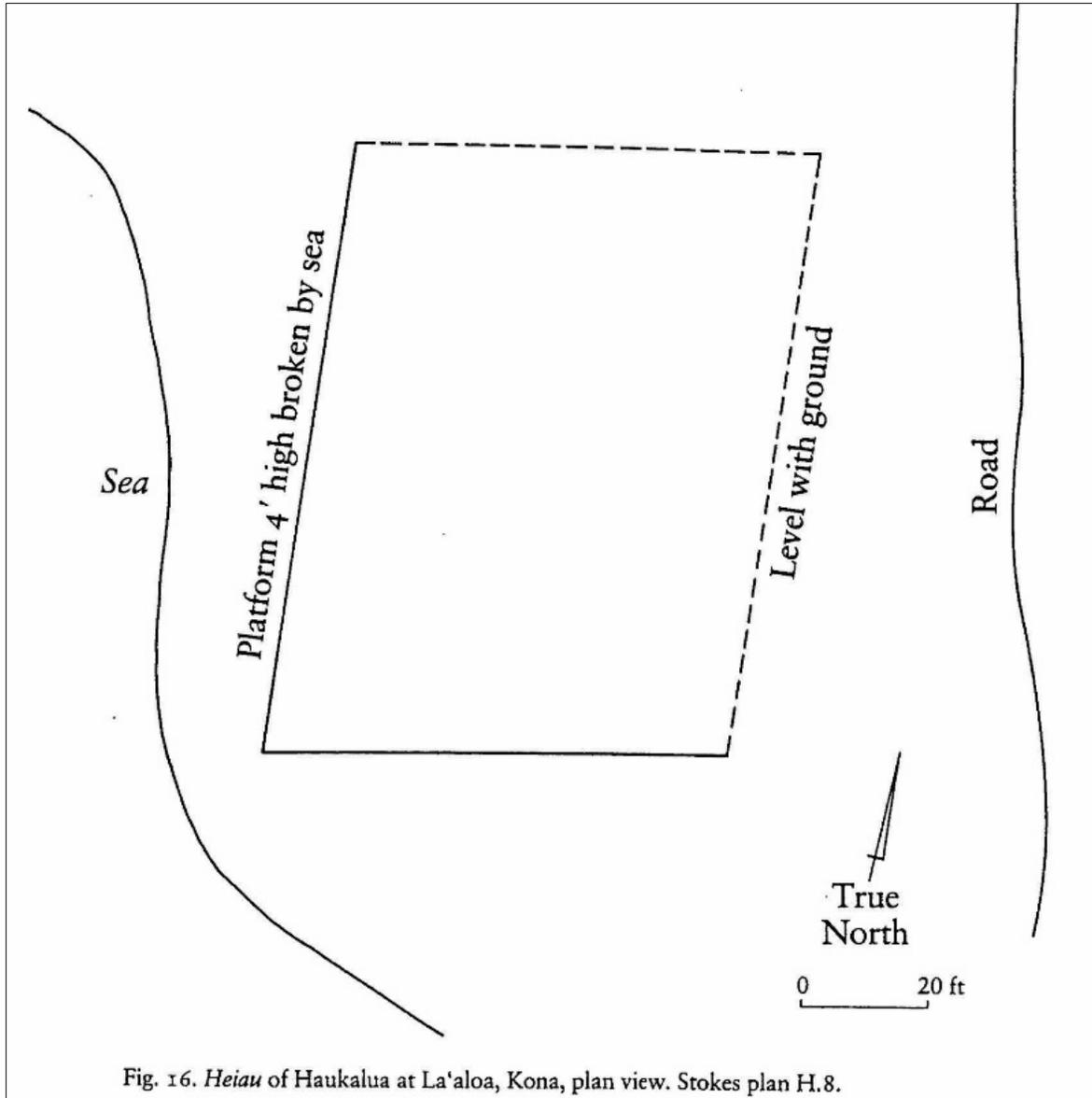


Fig. 16. Heiau of Haukalua at La'aloa, Kona, plan view. Stokes plan H.8.

Figure 36. Map of Haukālua Heiau (in Stokes and Dye 1991:64)

In 1929-1930 Bishop Museum hired John Reinecke who conducted a study of sites in the Kona district. Reinecke (1930:52) also recorded some general information on the cultural landscape of that time and referred to the destruction of historic sites near to the project area, stating:

The most distinctive feature of this section is the use of coral fragments as a top dressing for the floors of dwelling sites. This is as characteristic as the use of ilili in the a-a section of kahaluu

A very large portion of the dwelling sites and other structures along the coast must have been erected mauka of the government beach road; but it is practically impossible to penetrate the undergrowth to investigate even as far mauka as the Pa Kuakini; where I did so, the results were disappointing, as grazing of cattle and the demands of Kuleana walls have resulted in the destruction of many sites. Furthermore, this coast was rather densely populated until recently, so that most dwelling sites will be recent and of little interest

Reinecke also recorded several sites within La'aloa and its neighboring Pāhoehoe Ahupua'a, however, only one, Site 15 (SHPD Site 2009) Haukālua Heiau (see Figure 31), is located within the project area. Based on fieldwork conducted in 1929-1930, Reinecke (1930:31) made the following notes relative to what he recorded as Site 15 at La'aloa:

Site 15. HAUKALO A HEIAU, in La'aloa (?)...A simple platform which, in its broken-down condition slants sharply makai; was probably built in two levels; is about 4' high in front. At the south end it appears to have been two terraces. There is a house site on the S.E. corner. The approximate length is...95'; the width cannot be stated even approximately, as the platform runs in to the bank, but may have been about 56'. South of it are a small old house site followed by a larger one. North are two or three old house sites before reaching a pen, which contains a smaller pen and a shallow pit, probably once a well.

Haukālúa Heiau was once again investigated in 1972 during the statewide Inventory of Historic Properties project conducted by the Department of Land and Natural Resources (DLNR). Several features on the surface of the *heiau* not noted in the earlier studies were depicted on the sketch of the site that was prepared to accompany the Hawai'i Register of Historic Places nomination form (Figure 37). These features include a square platform measuring 2 meters x 2 meters standing 75 centimeters above the main platform surface and a paved area along the southern portion of the site. The bulk of the platform surface is rough and mounded fill. An archaeological Inventory Survey conducted in 1995 (Kawachi et al. 2000) did not elaborate or provide further detail on the site, but had documented more recent disturbance and vandalism of the *heiau* stating:

In February of 1995, vandals were digging in the heiau platform. Upon investigation of the vandalism by the State Historic Preservation Division, three fragments of a single human rib were recovered from looters back-dirt pile. These remains were reburied in the platform. This is the only recorded location of any burial or reburial site in the subject parcel. In July 1995, we found the structure has continued to be eroded by high surf, and that a portion of the northeast corner of the structure has been removed. It appears the this was done during clearing for improvements (a water tank), to the residence [Inaba] that was constructed in the 1930's. (Kawachi et al. 2000:3.1).

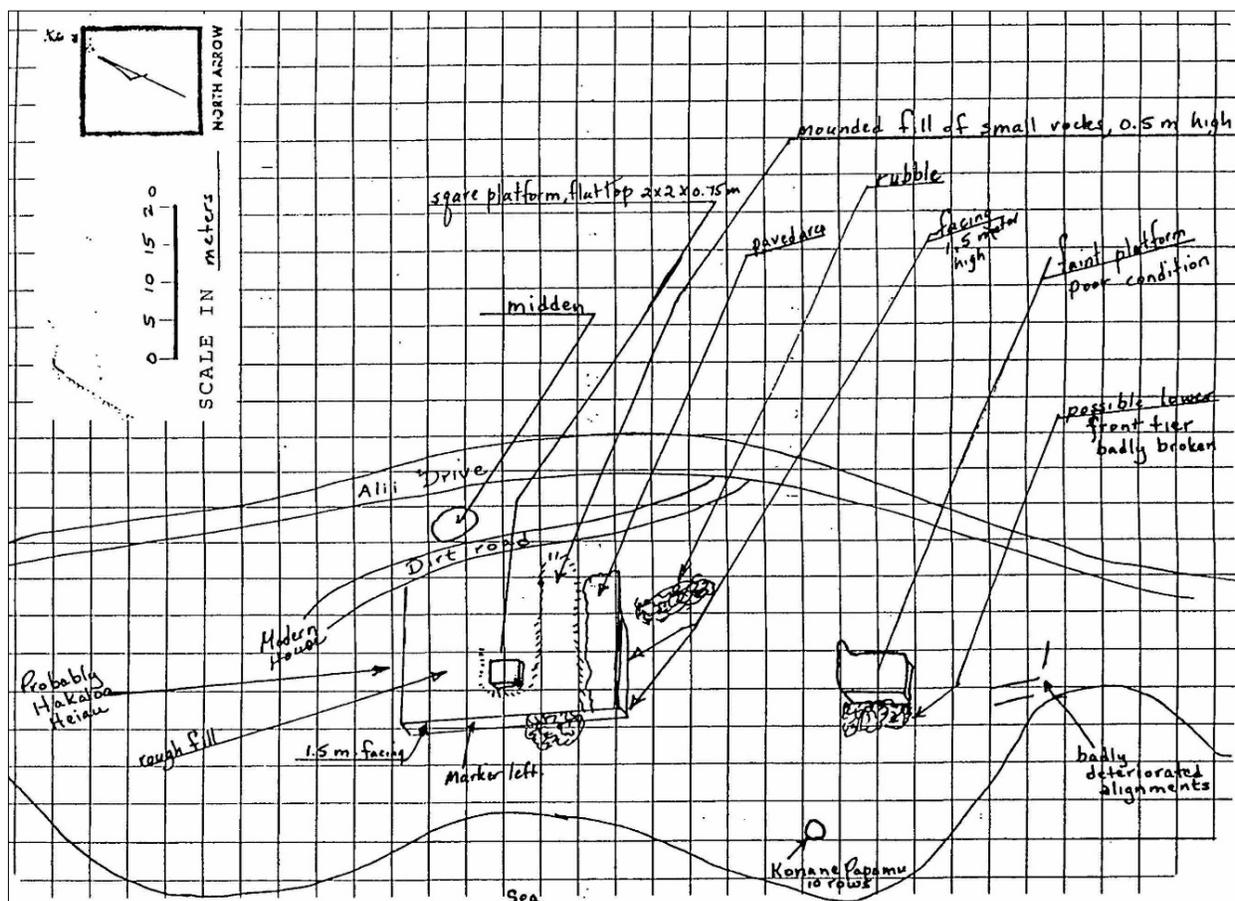


Figure 37. 1972 Hawaii Register of Historic Places nomination map of sites within the southern portion of La'aloa Beach Park, including Haukālúa Heiau (in Kawachi et al. 2000:2.4)

2. Background

Previous studies conducted within La‘aloa Beach Park Post-1970

Since the 1970s, mandated archaeological studies prompted by the passing of federal and state legislature concerning the preservation of historic and cultural sites have been conducted in the project area vicinity. Figure 38 shows the location of these studies, relative to the current study area and Table 6. below is a listing of all relevant studies organized chronologically. A summary of the findings of each of the listed studies is described in the following paragraphs.

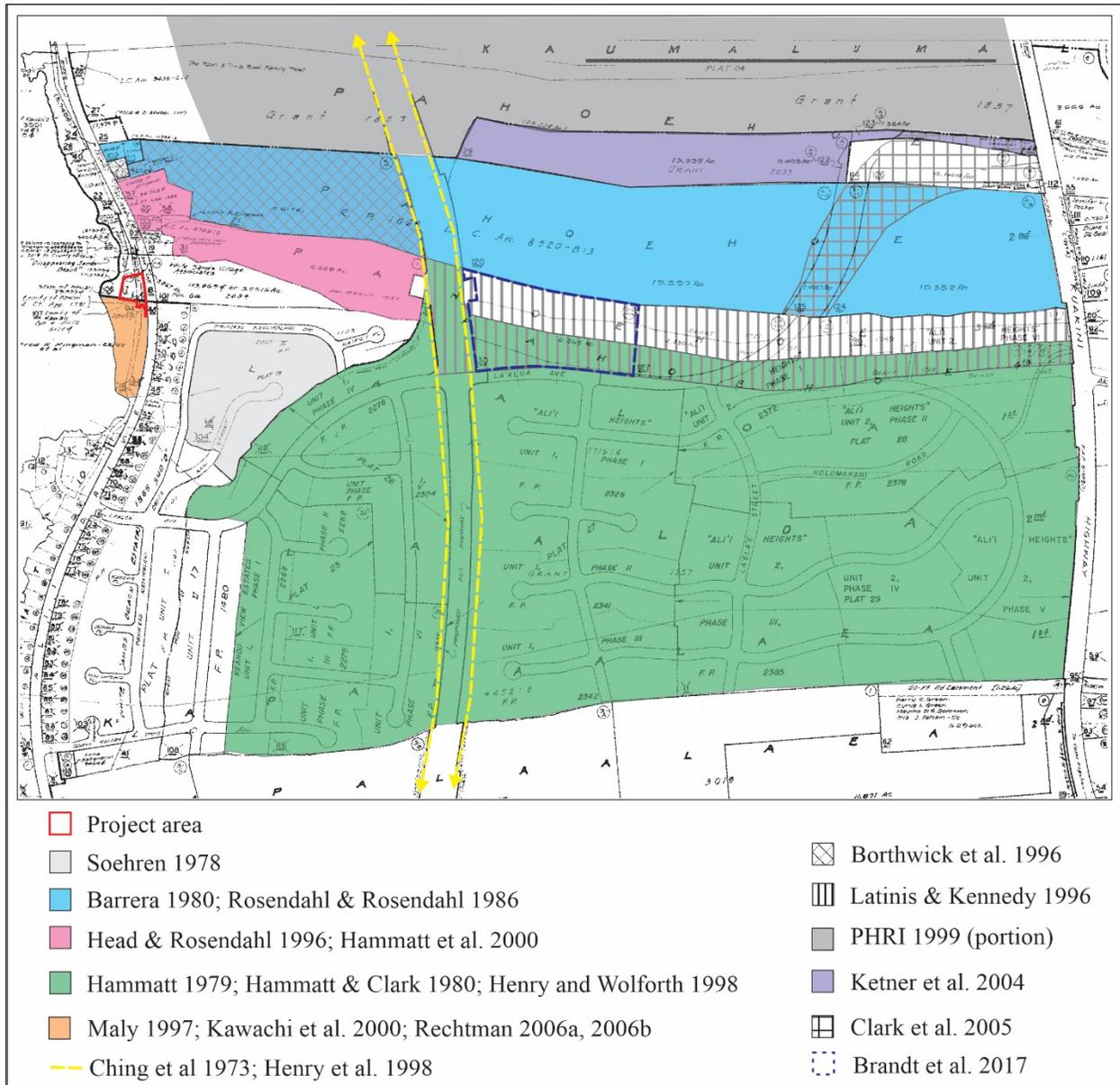


Figure 38. Previous studies conducted within the project area (outlined red) vicinity.

Table 6. Previous studies conducted within the project area vicinity.

<i>Year</i>	<i>Author(s)</i>	<i>Type of Study</i>	<i>Ahupua'a</i>
1973	Ching et al.	Inventory survey	Kahului to Kahalu'u
1978	Soehren	Reconnaissance survey	La'aloa
1979	Hammatt	Reconnaissance survey	Various
1980	Hammatt and Clark	Testing and salvage excavations	Various
1980	Barrera	Inventory survey	Kaumalumu and Pāhoehoe
1983	Hommon and Rosendahl	Inventory survey	Various
1986	Rosendahl and Rosendahl	Reconnaissance survey	Pāhoehoe 2 nd
1996	Head and Rosendahl	Inventory survey	Pāhoehoe 2 nd
1996	Latinis et al.	Inventory survey	Pāhoehoe 3 rd
1997	Borthwick et al.	Inventory survey	Pāhoehoe 2 nd and 3 rd
1997	Maly	Historical, oral history, and site preservation plan	La'aloa 1 st
1998	Haun et al.	Inventory survey	Kahului to Keauhou
1998	Henry et al.	Inventory survey	Various
1998	Henry and Wolforth	Inventory survey	La'aloa
1999	Paul H. Rosendahl Inc.	Inventory survey	Kaumalumu and Pāhoehoe 1st
2000	Kawachi et al.	Inventory survey	La'aloa 1 st
2000	Hammatt et al.	Data recovery	Pāhoehoe 2 nd
2004	Ketnet et al.	Inventory survey	Pāhoehoe 1 st
2005	Clark et al.	Inventory survey	Pāhoehoe 1 st and 2 nd
2006a	Rechtman	Burial treatment plan	La'aloa 1 st
2006b	Rechtman	Preservation plan	La'aloa 1 st
2017	Brandt et al.	Cultural impact assessment	Pāhoehoe 3 rd , 4 th and La'aloa 1 st

Four studies (Kawachi et al. 2000; Maly 1997; Rechtman 2006a, 2006b) have been conducted within the La'aloa section of the current project area (see Figure 38), and a total of eight sites have since been recorded within La'aloa Beach Park (Table 7). Kawachi et al. (2000) conducted an archeological inventory survey and subsurface testing in 1995 within TMK parcel (3) 7-7-010:036. This parcel was purchased by the County for the proposed expansion of the adjacent Magic Sands Beach Park (since renamed La'aloa Beach Park). Six sites were recorded within this 1.5-acre parcel. These sites included Haukālua Heiau (SIHP Site 2009), a low platform southeast of the *heiau* (SIHP Site 20764), a wall remnant (SIHP Site 21218), the location of a brackish spring and remains of a *furo* bath (SIHP Site 21219), a *papamū* (SIHP Site 21222) and two bait mortars (SIHP Site 21223) (the *papamū* and bait mortars were located *makai* of the proposed project area along the shoreline) (see Figure 31). Although the study was carried out in 1995, the report was not completed until 2000.

As previously discussed, in 1997, Kēpā Maly (1997) prepared a preservation plan and cultural study that included oral history, consultations, and historical documentary research for the then-proposed improvements to La'aloa Beach Park (TMK: (3) 7-7-010:036) (see Figure 38). As a result of the interviews he conducted between 1996 and 1997, Maly was able to gather information regarding the traditional land use and the former condition of historic properties within the coastal parcel, in addition to recommendations for the preservation of the remaining cultural sites. In addition to the six sites previously recorded by Kawachi et al. (2000), three other sites were identified through archival research and interview documentation. These sites include the remnants of the *iwi 'āina* or boundary wall delineating the *ahupua'a* of La'aloa and Pāhoehoe (SIHP Site 21218), a spring (SIHP Site 21219), and the aforementioned *Kū'ula* fishing shrine (SIHP Site 21220) (see Figure 31). Four preservation zones (A through D) were delineated at this time for the protection of the sites (see Figure 31). Preservation Area A, includes the area on the north side of the *heiau*, extending south along the *makai* boundary of the Old Government Road easement, and down to the shoreline of Hōpoe Bay and includes the six sites previously recorded by Kawachi et al. (2000). Preservation Area B, consists of a buffer around SIHP Site 21218 (*iwi 'āina* wall). Preservation Area C includes SIHP Site 21219 (spring), and Preservation Area D protects what remains of SIHP Site 21220 (*Kū'ula* stone) and a buffer around a constructed platform for the *Kū'ula*.

Table 7. SIHP Sites recorded within La‘aloa Beach Park

<i>SIHP Site Number</i>	<i>Site Type</i>	<i>Preservation Area</i>	<i>Additional Comments</i>
50-10-37-2009	Haukālua Heiau	A	Burial site. Preservation Plan completed in 2005 (Rechtman 2006a).
50-10-37-20764	Stone platform	A	Possibly a house foundation
50-10-37-21221	<i>Paena wa ‘a</i> (canoe landing)	A	Identified through oral history
50-10-37-21222	<i>Papamū</i>	A	Set within the <i>pāhoehoe</i> flats
50-10-37-21223	Two bait bowls	A	Set within the <i>pāhoehoe</i> flats
50-10-37-21218	<i>Iwi ‘āina</i> (boundary wall)	B	Boundary wall separating La‘aloa 1 st and Pāhoehoe 4 th
50-10-37-21219	Spring	C	Identified through oral history
50-10-37-21220	<i>Kū‘ula</i> (fishing deity stone)	D	The stone is preserved on top of a constructed platform, built on a <i>pāhoehoe</i> rise overlooking Ka Lae O Huihui

Eight years later, in 2005, Rechtman Consulting, LLC (RC) prepared a Burial Treatment Plan (Rechtman 2006a) for Haukālua Heiau (SIHP Site 2009; Figure 39) and a Preservation Plan (Rechtman 2006b) for additional Historic Properties located within the Maly (1997) study area in conjunction with the improvements to La‘aloa Beach Park. The burial treatment plan addressed a single burial site (SIHP Site 2009) (see Figure 31), which is also the site inventory number assigned to Haukālua Heiau, and the location of modern Hawaiian cultural practices (Rechtman 2006a).

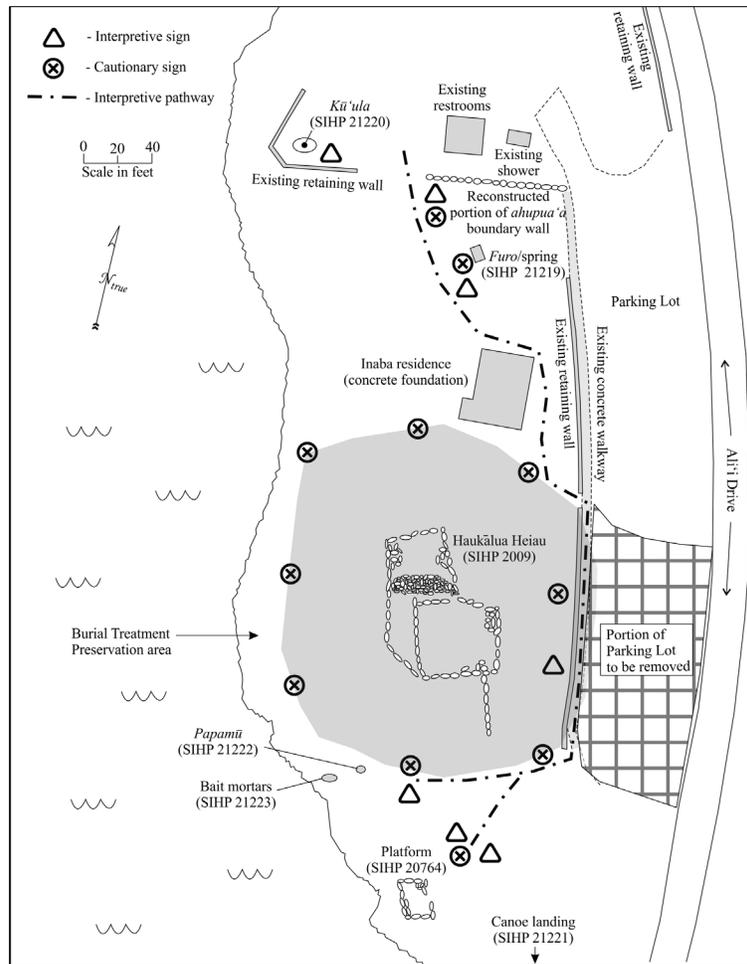


Figure 39. Burial treatment preservation area for Site 2003; Haukālua Heiau (Rechtman 2006a).

Previous Archeological Studies Conducted Within the Greater La‘aloa and Pāhoehoe

In 1973, the Archaeological Research Center Hawaii (ARCH) conducted the initial archaeological surface survey (Ching et al. 1973) for the proposed Ali‘i Drive realignment project. Their study area crossed through seven *ahupua‘a* (from north to south)- Kahului, Puapua‘a, Hōlualoa, Pāhoehoe, La‘aloa, Kapala‘alaea, and Kahalu‘u; and extended 150 feet on either side of the proposed road centerline for approximately 3.4 miles starting at Kuakini Highway in Kailua and terminating near Kahalu‘u Beach Park (see Figure 38). A total of 285 archaeological features were recorded within the limits of the proposed road and assigned SIHP numbers. Twenty-six features were recorded in both La‘aloa 1st and 2nd, and Pāhoehoe 1st through 4th. For Pāhoehoe, SHIP Site 6355 is described as an agricultural mound complex, SIHP Sites 6352, 6353, and 6354 are described as walls. For La‘aloa, SIHP Site 6382 is described as a monument platform.

Twenty-five years later, Paul H. Rosendahl, Ph.D., Inc. (PHRI) conducted an archaeological inventory survey (AIS) of the proposed Ali‘i Highway corridor (Haun et al. 1998). The fieldwork for this project involved several highway alignment alternatives and was conducted in five phases over the span of twenty-five years, which began in 1973 with the aforementioned ARCH study (Ching et al. 1973). The total length of the corridor was 4.49 miles and originated in Kahului 1 Ahupua‘a (located north of the project area), and extended along the southwest side of the Queen Ka‘ahumanu Highway and terminated at Keauhou 1 Ahupua‘a (located south of the project area) (see Figure 38). The *ahupua‘a* of Pāhoehoe and La‘aloa made up approximately 13% of the entire corridor area. A total of 177 sites were identified in their study corridor, with 1,548 component features, in addition to the Kona Field System (SIHP Site 6601), and the Kahalu‘u Historic District (SIHP Site 4150).

In 1978, Lloyd Soehren (1978) conducted a preliminary archaeological reconnaissance survey of a 5.81-acre parcel (TMK: (3)-7-7-08:104) in La‘aloa, located to the east of Ali‘i Drive and the current study area (see Figure 38). Soehren recorded eleven sites, some of which he identified as walls and cairns, which he associated with agricultural activities. He also recorded habitation sites, house foundations, one possible *heiau*, and platforms of various shapes and sizes. Soehren did confirm that one exposed platform (site eight) was indeed a burial site. Although Soehren interpreted many of the platforms to be burials, he did not carry out further testing to confirm his interpretation.

In 1979, ARCH conducted a reconnaissance survey (Hammatt 1979) of the 155-acre Ginter property located to the southeast of the current project area in La‘aloa 1st and 2nd Ahupua‘a (see Figure 38). The following year, ARCH conducted testing and salvage excavations (Hammatt and Clark 1980) of the sixty-six sites recorded by Hammatt (1979). ARCH reported that artifact assemblages recovered from testing platforms indicated use associated with volcanic glass reduction; while the assemblage from cave sites indicated fishhook manufacture and woodworking. Nearly twenty years later, PHRI conducted an archaeological inventory survey of the same property and recorded five previously unidentified sites and recommended data recovery for eight sites (Henry and Wolforth 1998). In addition, Henry and Wolforth reported that thirty-one of the previously recorded sites had been destroyed as a result of mechanical clearing activities.

In 1985, PHRI conducted an archaeological reconnaissance survey (Rosendahl and Rosendahl 1986) of a 44-acre property (TMK: [3] 7-7-008:021) located in Pāhoehoe 2nd Ahupua‘a, between Ali‘i Drive and Kuakini Highway, to the northeast of the current project area (see Figure 38). Portions of their study area had been surveyed as part of the Ali‘i Drive realignment project (Ching et al. 1973; Hommon and Rosendahl 1983) and for residential development (Barrera 1980). As a result of these three earlier studies, twenty-one sites comprised of nearly one hundred features were recorded and assigned SIHP site numbers within the Pāhoehoe 2nd project area prior to the initiation of the 1985 fieldwork. PHRI relocated the previously identified sites and recorded an additional twenty-three sites with over 350 component features. The newly identified sites were assigned only temporary site numbers. The forty-four sites were distributed throughout the project area and included a *heiau*, agricultural components, boundary walls, possible burials, habitation complexes, terraces, platforms, shelters, ranching features, and trails. Rosendahl and Rosendahl (1986) found evidence of both Historic and Precontact occupation. Historic land use was limited to ranching features such as walls. The large Precontact habitation complexes and a single *heiau* were located near the coast, whereas smaller habitation complexes and associated agricultural features were located throughout the project area. The majority of the agricultural field components were located in the higher elevations of the project area.

In 1991, Cultural Surveys Hawaii conducted an archaeological inventory survey (Borthwick et al. 1997) of a 7-acre parcel (TMKs: (3) 7-7-008:020, 031 and 100) extending across Pāhoehoe 2nd and 3rd Ahupua‘a northeast of the current study area (see Figure 38). As a result of their survey, twenty sites and site complexes were recorded. Site types encountered included agricultural, boundary, burial, and habitation. Feature types included platforms, walls/wall complexes, enclosures, modified outcrops, and terraces. Excavation units were placed in six of the sites to determine function and age. Age was determined by observable characteristics of the site and the cultural remains found within

2. Background

the excavation units. Of the six sites tested, two were reported to be Precontact, three were Historic, and one represented use from Precontact through to Historic times. Borthwick et al. (1997) concluded that their study revealed the typical Kona settlement pattern in which Precontact habitation features are located near the coast with a few located more inland near agricultural features. They identified that areas of higher elevation contained agricultural features representative of the Kona Field System; and that soon after European contact and settlement, habitation moved more inland to make room for residential expansion along the coast. They surmised that the early to mid-1900s saw the introduction of cattle into the area leaving traces of ranching features on the landscape, and that following the 1940s, the coast was once again used for residential purposes, leaving the inland areas for pasturage.

In 1996, PHRI conducted an AIS (Head and Rosendahl 1996) of the then proposed sewage pump station site (TMKs: (3) 7-7-008:021 and 023) in Pāhoehoe 2nd Ahupua‘a, located to the northeast of the current project area (see Figure 38). As a result of their fieldwork, PHRI recorded two sites (SIHP Sites 6381 and 6996) previously identified by Barrera (1980) and Rosendahl and Rosendahl (1986), and three previously unidentified sites (SIHP Sites 19857-19859). No further work was the recommended treatment for the three stone wall sites (SIHP Sites 6381, 19858, and 19859) based on the lack of cultural deposits. While a midden scatter (SIHP Site 6996) and a buried cultural deposit (SIHP Site 19857), both interpreted as associated with short-term Precontact habitation were recommended for data recovery. Head and Rosendahl (1996:37) reported “other than a thin scatter of surface ecofacts that may have been culturally modified, there are no indications of the expected late prehistoric-early historic period structures.” They posited that the lack of such features was likely due to either earlier repurposing of materials from Precontact or Historic features, or the effects of mechanical land clearing. About fifteen years later, Cultural Surveys Hawaii, Inc. conducted data recovery for sites SIHP Sites 6996 and 19857 (Hammatt et al. 2000).

In 1996, Archaeological Consultants of the Pacific (ACP) conducted a 14-acre archaeological inventory survey (Latinis et al. 1996) of two parcels in Pāhoehoe 3rd, east of the current project area and the Kuakini Highway (see Figure 38). As a result of their fieldwork, ACP recorded eight previously identified sites, seven of which were stacked stone walls (SIHP Sites 4587, 4588, 4591, 6302, 6352-6354). The remaining previously recorded site was an agricultural complex containing fifteen features (SIHP Site 6355). Latinis et al. (ibid.) also recorded eleven previously unidentified sites: (SIHP Sites 20834-20844), comprised of fifteen features that included two stone clearing mounds (SIHP Sites 20835, 20836, 20838C), a C-shaped enclosure (SIHP Site 20839), a walled enclosure (SIHP Site 20840), three modified outcrops (SIHP Site 20837 and 20841, 20842), four crude platforms (SIHP Sites 20838 A, B, D, and E) and three blister caves/shelters (SIHP 2034, 20843 and 20844). Subsurface testing revealed cultural remains only from the lava blister features, located to the east of the current project area, which consisted of Precontact artifacts including charcoal, *kukui* nut fragments, dog tooth bracelet links, bone picks, and faunal remains. The absence of Historic artifacts throughout their study area was also noted. Latinis et al. (ibid.) concluded that their study area, “may have been marginally utilized for limited agricultural production (primarily sweet potato, dryland taro, wauke, sugar cane, and possibly yam)” and said production “likely did not contribute substantially to subsistence demands in comparison to more productive zones located further inland” (ibid.:85).

In 1999, PHRI conducted an AIS (Paul H. Rosendahl, Ph. D., Inc. (PHRI) 1999) of 173 acres (TMKs: (3) 7-7-004:002 and (3) 7-7-008:027) in Kaumalumu and Pāhoehoe 1st, located to the north of the current project area (see Figure 38). The report encompassed two phases of survey. The first survey occurred on a portion of the property in 1997 (Henry and Wolforth 1998) and was submitted to DLNR-State Historic Preservation Division (SHPD) for review, but was never finalized because the developer wanted the rest of the property surveyed. After addressing the review comments by DLNR-SHPD and surveying the remainder of the property, a second report (PHRI 1999) was completed. PHRI recorded sixty-six sites and site complexes comprised of 715 features, which included mounds, terraces, modified outcrops, walls, platforms, enclosures, and planting areas. Fifty-one of the sites were recorded as single features. Functions for the recorded Precontact sites and features included temporary and permanent habitation, agriculture, trail, storage, and possible *heiau*. Permanent habitation sites and features were located near the shore with only a few recorded in the upland agricultural areas where more temporary habitation features were located. Historic Period sites included mainly walls that functioned as either animal control features or land division boundaries, but a Historic trail (the Judd Trail) and four cattle enclosures were also recorded. PHRI dug a total of thirty-two excavation units and thirteen charcoal samples taken. The charcoal samples yielded dates ranging from A.D. 1265 to modern times. PHRI (1999) stated that their findings fit the expectations derived from the Kona Field System model in which more Precontact permanent habitation took place near the coast and Precontact temporary habitation and agricultural practices were conducted in the upland portions of the *kula* zone. Historical features related to ranching were expected due to the introduction of cattle into the project area in the 1920s.

In 2004, Rechtman Consulting, LLC (RC) conducted an archaeological inventory survey (Ketner et al. 2004) of a roughly 15-acre parcel (TMK: (3) 7-7-008:029) located between the proposed Ali‘i Highway and the current Kuakini

Highway in Pāhoehoe 1st, to the north and east of the current project area (see Figure 38). As a result of their fieldwork, eight previously unrecorded archaeological sites and three previously recorded sites were located and recorded. The sites included the Kuakini Wall (SIHP Site 6302) and three historic ranching/boundary walls (SIHP Sites 6381, 21384, and 24271), a bedrock outcrop modified historically for ranching purposes (SIHP Site 24273), a core-filled wall segment (SIHP Site 24276), four Precontact habitation complexes (SIHP Sites 24270, 24274, 24275, and 24277), one of which included a burial (SIHP Site 24270), and a grouping of 321 agricultural features that spanned nearly their entire survey area (SIHP Site 24272). All identified sites were assessed and determined to be significant under Criterion d, except for SIHP Sites 6302 and 24270. SIHP Site 6302 was determined to be significant under Criteria a and c, and SIHP Site 24270 was determined to be significant under Criterion e. Recommended for preservation was SIHP Sites 6302, 24270, 24274, 24275 and 24277. No further work was recommended for the remaining sites.

In 2005, RC conducted an archaeological inventory survey (Clark et al. 2005) for the La‘aloa Avenue Extension Project of a roughly 14-acre parcel that straddled Pāhoehoe 1st and 2nd, located to the northeast of the current study area (see Figure 38). The study area included portions of TMKs: (3) 7-7-008:029, 114, and 120, thus creating a *maukamakai* access connecting Ali‘i Drive to La‘aloa Avenue and Kuakini Highway. As a result of their survey, six previously unrecorded archaeological sites and eight previously recorded sites were located and recorded. The sites include seven historic ranching/boundary walls (SIHP Sites 4591, 6352, 6381, 21384, 24271, 24376, and 24380), an alignment of possible Historic origin (SIHP Site 24379), a trail (SIHP Site 6350), four Precontact habitation sites including three complexes (SIHP Sites 6984, 24375, and 24378) and a terrace remnant (SIHP Site 24377), and a grouping of 213 agricultural features that span the entire project area (a portion of SIHP Site 24272). Fifteen test units were excavated at six of these sites. All identified sites were assessed and determined to be significant under Criterion d. As such, data recovery was recommended for four Precontact sites (SIHP Sites 6984, 24375, 24377, and 24378), while no additional work was recommended for the remaining sites.

In 2017, ASM Affiliates prepared a Cultural Impact Assessment for the proposed construction of a park on a roughly 6.4-acre parcel (TMK: (3) 7-7-008:030) that straddles the Pāhoehoe 3rd and 4th Ahupua‘a boundary, and extends into La‘aloa 1st Ahupua‘a, east of the current project area (Brandt et al. 2017). On July 18, 2017, ASM Affiliates inspected the subject parcel. The purpose of the visit was to assess the current condition of the property and identify any remaining sites that were previously documented by Latinis et al. (1996) and Henry et al. (1998). During the inspection, a Historic Period wall (SIHP Site 6352) was observed separating Pāhoehoe 2nd and 3rd; as was the southern portion of SIHP Site 20841 a modified rock outcrop associated with a possible agricultural plot that extends between Pāhoehoe 2nd and 3rd (Latinis et al. 1996). The authors of the report also conducted oral history interviews with Malia Kipapa and Curtis Tyler, both lineal descendants of the Pāhoehoe and La‘aloa area. Excerpts of these interviews are presented in the oral history section of this report.

3. CONSULTATION

Gathering input from community members with genealogical ties and long-standing residency or relationships to the study area is vital to the process of assessing potential cultural impacts on resources, practices, and beliefs. It is precisely these individuals that ascribe meaning and value to traditional resources and practices. Community members often possess traditional knowledge and in-depth understanding that are unavailable elsewhere in the historical or cultural record of a place. As stated in the OEQC (1997) *Guidelines for Assessing Cultural Impacts*, the goal of the oral interview process is to identify information “relating to the practices and beliefs of a particular cultural or ethnic group or groups” (State of Hawai‘i, Office of Environmental Quality Control 2012:11). It is the present authors’ further contention that in addition to assessing the significance of any identified traditional cultural properties, oral interviews should also be used to augment the process of identifying traditional cultural properties. Thus, it is the researcher’s responsibility to utilize the gathered culture-historical background information, as well as the information collected through the consultation process, to identify and describe potential cultural impacts to resources, practices, and beliefs, and to propose appropriate mitigative measures for those impacts as necessary.

To identify individuals knowledgeable about traditional cultural practices and/or uses associated with the current project area, a public notice was submitted to the Office of Hawaiian Affairs (OHA) for publication in their monthly newspaper, *Ka Wai Ola*. Although the notice was submitted via email on December 27, 2018, with the intent that it would appear in the following month’s issue, the notice was not published until the February 2018 issue (Brandt 2019). Two individuals, Mr. Valentine Ako originally from Kona but now residing on Kaua‘i and Mrs. Iwalani Arakaki with genealogical ties to La‘aloa but currently residing in Kalama‘ula, Moloka‘i both responded to the OHA public notice and a summary of their interviews are included below.

Additionally, nine individuals, whose names are listed in Table 8 were identified as persons knowledgeable about the cultural history and resources at La‘aloa Beach Park. An in-person interview was conducted with each of the nine individuals. As part of this interview process and with the consent of the interviewees, handwritten notes were taken during the interview. Upon completion of the interview, Lokelani Brandt prepared an interview summary, which was emailed and or mailed to the interviewees for review and approval. The interviewees were asked to review the draft summary and make any necessary edits. With the approval of the interviewees, the finalized versions of their summaries are included below.

Table 8. Persons contacted for consultation

<i>Name</i>	<i>Date Interviewed</i>	<i>Interviewed</i>	<i>Consent to Release</i>
J. Curtis Tyler III	November 28, 2018	Yes	Yes
Jeffery Cho	December 11, 2018	Yes	Yes
Greg Haapla	December 11, 2018	Yes	Yes
Nicole Keaka Lui	December 12, 2018	Yes	Yes
Ronald Cawthon	December 20, 2018	Yes	No response
Malia Kipapa	December 27, 2018	Yes	No response
Iwalani Arakaki	February 19, 2019	Yes	Yes
Valentine Ako	February 5, 2019	Yes	Yes
Mattson Davis	April 16, 2019	Yes	Yes

It is important to note that at the commencement of the interviews (November-December 2018), the consulted parties were provided with the original comfort station improvement plans. However, after early consultation feedback, the County of Hawai‘i and its planners explored alternative project designs and locations. In light of these project changes, ASM staff began to contact several of the consulted parties for additional consultation on the new design. ASM staff had learned from the County planner that the alternative location was not feasible, and thus the project location shifted back to the original site location. The finalized plans for the proposed project were provided to ASM staff in January of 2020 and ASM staff resumed consultation. All of the consulted parties were once again contacted, and the new plans and the original interview summaries were emailed or mailed to all of the consulted individuals. The consulted parties were allowed to revise their summaries to reflect any additional comments and recommendations for the final project plans. What is presented below reflects the thoughts, knowledge, concerns, and recommendations for the final proposed project plans.

J. CURTIS TYLER, III

On November 28, 2018, Lokelani Brandt of ASM Affiliates interviewed J. Curtis Tyler, III at La‘aloa Beach Park to identify and discuss potential cultural impacts that may result from the proposed accessibility improvements project. Born and raised in North Kona, Hawai‘i, Mr. Tyler is a recognized lineal descendant of the Kipapa, Kipola, Polohe (sister of Kekapahaukea; whose parents were Koeke an *ali‘i* ‘*āīpu‘upu‘u* and Nawahinekuilehua), and Mākuakane *mā* in La‘aloa, and Kekamakahi, and Kaupehe lines, all of whom were awarded Land Grants in Pāhoehoe 3rd and 4th during the mid-19th century. Mr. Tyler served as a Hawai‘i County Council member for the North Kona District and is very familiar with the history of Pāhoehoe and La‘aloa. Much of Curtis’ knowledge comes from oral history passed down in his family as well as personal research and onsite experience.

When asked about the cultural significance of the area, Mr. Tyler spoke of the importance of understanding the cultural landscape of Pāhoehoe and La‘aloa as they are deeply connected and pointed out the many cultural sites that are found throughout the beach park, including the *heiau* often identified as Haukalua. Curtis indicated that early archaeologist, John F. Stokes recorded the *heiau* name as Haukalua during his survey of *heiau* of Hawai‘i Island and he believes that the name recorded by Stokes is the correct name, as a *mauka* corner of Kipapa’s grant 1927 contains the recorded place name Haukalua. While there are a number of culturally significant sites within La‘aloa Beach Park, Mr. Tyler called attention to several important cultural sites that are adjacent to the existing restroom facility, including the reconstructed *iwi ‘āina* stone wall, a *kū‘ula* (fishing shrine) re-constructed by the Kipapa ‘*ohana* in March of 2015 with the knowledge and permission of the County, and a named *pūnāwai* (spring). In discussing the name of the *pūnāwai*, Mr. Tyler put forth two names, Wai A Kāne and Lehu-kapu and cited the excerpts from the interview conducted by Kelsey and Kekahuna with Tūtū Nāluahine Ka‘ōpua during the 1950s. He also remarked on the concrete-filled stone wall that sits on the *pāhoehoe* promontory (Ka Lae O Huihui) located on the *makai* side of the existing restrooms, noting that the wall was built by the Eckland family who once lived in the area, and this wall is not the

correct location of the original *iwi 'āina*, which passed to the south side of the kū'ula. Mr. Tyler specified that the existing bathroom sits on the site of the former home of his *kupuna*, Kaupehe, who was awarded Land Grant 2034 in 1856. He also commented on the current beach park name and indicated that the name La'aloa Beach Park is misleading because the sandy portion of the beach most used by beachgoers is within Pāhoehoe Ahupua'a, not La'aloa. Mr. Tyler noted that the sandy portion of the beach was known traditionally as Ke One O Huihui, while the bay at the south end of the park is Hōpoe. In noting other traditional place names, he specified that the *pāhoehoe* outcrop/headland fronting the existing restrooms is Ka Lae O Huihui and that the reconstructed *iwi 'āina* wall located *mauka* of Ka Lae O Huihui on the south side of the restroom was supposed to mark the boundary between La'aloa and Pāhoehoe. He clarified that the current *iwi 'āina* wall is not in its original location as it is not in alignment with the *mauka* portion of the wall east of Ali'i Drive, and it did not run thru the middle of the *pūnāwai* Lehu-kapu.

When asked about his thoughts on the proposed accessibility improvements project, Mr. Tyler was not and is not in support of the current plans to keep the bathroom in its existing location, because it is entirely inconsistent with the pre-existing cultural landscape of the area. He feels that complete removal of the bathroom and showers to the *mauka* portion of Parcel 22 is the most culturally and environmentally responsible action that the County should and must take. From a cultural perspective, Mr. Tyler felt it is “*hewa*” (offensive, mismanage) to have an aging bathroom so close to a *pūnāwai*, a place traditionally used by his ancestors and others to obtain drinking water, and the other culturally significant places. He expressed that relocating the restroom off the beach, *mauka* of Ali'i Drive, would also be in alignment with the preservation plan for that portion of the beach park within La'aloa. In describing some of the environmental concerns that he has observed, Mr. Tyler indicated that during periods of high surf, seawater floods the bathroom and the adjacent area and that the contaminated runoff finds its way back into the ocean. He shared that moving the comfort station inland several feet will not mitigate these impacts. Mr. Tyler strongly believes that removing the existing restrooms would address the cultural and environmental concerns and allow the proper restoration of the *pūnāwai* Lehu-kapu. He expressed his distrust and frustration with the County for their lack of consideration and failure to heed the concerns and suggestions of the descendant communities. He shared that this project is the perfect opportunity for the County to begin the process of making things *pono* (just, right) and rebuilding trust with the descendant communities, especially after so many decades of neglect and mismanagement. He believes that continuing to keep the restrooms in its existing location only adds to the frustration and distrust in the County's ability to work with descendant communities. Not in support of the proposed project, Mr. Tyler strongly urges the County to move the bathrooms and showers to Parcel 22 and that, in doing so, the pedestrian access and safety to and from that parcel and across Ali'i Drive to the beach, must be significantly improved.

JEFFERY CHO

An on-site interview was conducted with Jeffery “Jeff” Cho on December 11, 2018, at La'aloa Beach Park by ASM staff Lokelani Brandt. Born on the Island of O'ahu in 1959, Mr. Cho's family relocated to Kona in 1970 when his father took a construction position. Mr. Cho has lived in Kona since then and has been coming to La'aloa for over forty years. Mr. Cho is also the founder of Kanaka Foundation, an organization maintained for cultural, social, and education development for any persons interested in Hawaiian history and culture. Mr. Cho became increasingly concerned for the care of the cultural sites at La'aloa and sometime around 2005, with the permission of the County of Hawai'i (granted by a Friends of the Park agreement), he began clearing the vegetation and trash that was obscuring the area's cultural sites. Mr. Cho is a firm believer in the traditional practice of *mālama 'āina* and believes in the importance of maintaining the cleanliness of Hawai'i's cultural sites. Mr. Cho has continued to maintain the area, but since the early part of 2018, access to the cultural preserve area has been restricted, which has made maintaining the sites vary challenging. He expressed his desire to once again return to La'aloa to care for the sites. His growing interest in these sites prompted him to do additional research and to learn about the history of the area.

When asked about the cultural significance of La'aloa and Pāhoehoe, Mr. Cho pointed to the many culturally significant places within the beach park. Concerning some of the cultural sites near the existing restroom, Mr. Cho noted the *iwi 'āina* wall separating Pāhoehoe from La'aloa. He then pointed to another stone wall *mauka* of the reconstructed *iwi 'āina* across of Ali'i Drive and indicated that the reconstructed wall is a representation of the *mauka* wall but noted that the walls are not aligned. He explained that the *iwi 'āina* on the *mauka* side of Ali'i Drive extends along the *ahupua'a* boundary and transitions into a double-walled trail. Mr. Cho then turned his attention to the nearby spring, pulling back the overgrowth of weeds. He shared the *mo'olelo* associated with this spring noting that a *wahine ma'i* (menstruating woman) had washed in the spring which caused it to dry up. Mr. Cho also indicated the presence of human bones at Haukalua Heiau.

When asked about his thoughts on the proposed project, Mr. Cho advocated for the removal of the existing restroom facilities and relocating any future facilities across Ali'i Drive at Kipapa Park. In describing his reasons for

wanting to remove and relocate the restrooms, Mr. Cho believes that sewage is leaking into the ocean and that at the very least it being tracked onto the beach by park users. He then pointed to a nearby sign which says “La‘aloa Very Sacred” and commented that how can a sign exist near the restrooms where human fecal matter is being deposited. Mr. Cho noted that these kinds of things diminish the “*la‘a*” or sacredness of this place. Mr. Cho also remarked that the existing comfort station structure is in a state of decay and that the existing changing rooms in the restroom encourage illegal drug use at the park. Mr. Cho also spoke of the high volume of park users, many of whom use tanning oil and sunscreen which impacts marine life. He believes that moving the restrooms would also be in alignment with the proposed preservation plan for the La‘aloa side of the park. Mr. Cho recommends the County considers relocating the restrooms to an area within Kipapa Park. He also expressed that since the parking for La‘aloa Beach Park is now concentrated at Kipapa Park, moving the restroom there would be more convenient for park users. Mr. Cho advised that if the restroom facility is relocated to Kipapa Park, that efforts be made to improve pedestrian access and safety along Ali‘i Drive.

GREG HAAPLA

On December 11, 2018, Lokelani Brandt of ASM (at the recommendation of Mr. Jeffery Cho) completed a brief interview at La‘aloa Beach Park with Mr. Greg Haapla. Mr. Haapla has lived in the Kona District for the past twenty years and frequents La‘aloa Beach Park. Mr. Haapla was aware of the many cultural sites within the park but did not speak explicitly about these sites. He did, however, expressed his desire to see the existing restroom facility removed from the beachfront to Kipapa Park. Mr. Haapla explained that the drainage system in the existing bathrooms is defunct and that by the end of the day, the bathroom floors are filthy. Given the sometimes-dangerous shoreline conditions at La‘aloa Beach Park and the potential for medical emergencies, Mr. Haapla would like to ensure that the County of Hawai‘i maintains unobstructed access to the beach for emergency vehicles.

NICOLE KEAKA LUI

On December 12, 2018, Lokelani Brandt conducted an interview with Ms. Nicole Keaka Lui at the West Hawai‘i Civic Center. Ms. Lui has lineal and cultural ties to various Kona lands extending from Haleki‘i to Pu‘uanahulu and has worked as a Cultural Monitor on a number of projects in Kona. Ms Lui is also a non-degree genealogical researcher for the Kona area of 30+ years and is related to many families of not only the Kona area but also of Kohala, Kā‘u, Hamākua and Puna. Ms. Lui explained that those lands extending from Lanihau to Pu‘u Ohau were considered today and in traditional times as the Kai ‘Ōpua lands, while those lands from Keahuolū to Pu‘uanahulu are known traditionally as the Kekaha-wai-‘ole-o na-Kona lands. She is also a recognized cultural descendant to burials in Hōlualoa, Pāhoehoe, Kaumalumu and Kapalaalaea. She and her family have been active in the care and preservation of many traditional cultural sites throughout Kona, including those concerning the protection and care of *iwi kupuna* (ancestral remains). In discussing the traditional cultural history of the current study area, Ms. Lui explained that the names Hōlualoa (k) and La‘aloa (w) are derived from a husband and wife who were from these areas. Ms. Lui pointed out that there are living descendants who claim genealogical ties to this wedded pair. She also added that La‘aloa is where the famed warrior Kekūhaupi‘o was trained (this knowledge if from the author of the book Kamehameha and his warrior Kekuahupi‘o Stephen L. Desha) She then explained that the word La‘a-loa means very (*loa*), sacred (*la‘a*) and stated that this place deserves deep reverence. This definition is well known with many of the cultural practitioners and descendants of the Kona region. She reminded that people ought to be mindful of their behavior and actions when visiting the place and also when discussing any matters related to the area.

In sharing her concerns for some of the cultural sites adjacent to the existing restroom facility, Ms. Lui spoke about access to the *kū‘ula* and questioned whether a barrier should be constructed around it or not to prevent people from desecrating the site. She noted that traditionally, barriers were not constructed around a *kū‘ula* because people were encouraged to give offerings there. She also spoke of the reconstructed *iwi ‘āina* located on the south side of the existing restrooms and commented that the reconstructed portion is not in alignment with the older portion of the wall extending *mauka* across of Ali‘i Drive and adjacent to the driveway of the White Sands Village condominiums. She would like to see the reconstructed portion of the *iwi ‘āina* realigned to its original location and built to match the architecture of the *mauka* portion of the wall, including its height. Ms. Lui also commented on the existing rock wall separating Ali‘i Drive from the now-defunct paved parking area for La‘aloa. She stated that the wall is in poor condition and should be rebuilt to match any new walls that are constructed as part of the proposed improvements project. When asked about the existing bathroom facility, Ms. Lui stated that she would like to see the bathrooms relocated from its existing location. She further explained that if the bathrooms are located to an area near Kipapa Park, the County must consider improving the crosswalk and pedestrian safety.

In reviewing the proposed plans, Ms. Lui noted that it looks like the County of Hawai‘i will be impacting the same area. While she would have preferred that the comfort station be relocated, she went on to explain that she is willing to accept these plans if it will improve the health and betterment of the community. Furthermore, Ms. Lui would like to ensure that the proposed project does not adversely impact the water sources, the historic wall, the supposed *kū‘ula* shrine, *heiau*, and the *hau* and *kou* trees fronting the bathrooms as she believes these trees provide much-needed shade and help stabilize the *‘āina* fronting the ocean.

VALENTINE AKO

Mr. Valentine Ako (93 years old) contacted Lokelani Brandt via phone on February 5, 2019, in response to the public notice printed in the *Ka Wai Ola* newspaper. Mr. Ako was born in Hōlualoa, Kona, Hawai‘i on July 10, 1926, and moved to Kaua‘i in 1953 where he and his family settled in the Wailua Houselots. Mr. Ako has been consulted with on a number of projects for the North Kona area on Hawai‘i Island, including the 1997 archival-historical study conducted by Kepā Maly for La‘aloa Beach Park (Maly 1997). Mr. Ako contacted ASM to clarify the *ahupua‘a* in which the current beach park is located and to explain the naming of “Magic Sands.” Mr. Ako clarified that the sandy portion of the study area known today as “Magic Sands” or as “La‘aloa Beach Park” is rightfully in the *ahupua‘a* of Pāhoehoe. He expressed that the name “La‘aloa Beach Park” is misleading as it suggests that the sandy portion of this park is within La‘aloa Ahupua‘a. He explained that the rocky cove south of the current beach park is also known as La‘aloa Bay and that this cove is within La‘aloa Ahupua‘a. He went on to explain that the name “Magic Sands” was given to the beach in Pāhoehoe because the white sand disappears during the winter months, thereby exposing the bay’s rocky shoreline. Mr. Ako did not give any comments regarding the proposed improvements project.

IWALANI ARAKAKI

On February 19, 2019, Lokelani Brandt met with *kupuna* Iwalani Arakaki (88 years old) at her home in the Hawaiian Homestead community of Kalama‘ula, Moloka‘i, after she contacted ASM’s Hilo office in response to the public notice printed in *Ka Wai Ola*. Ms. Arakaki is one of eighteen children and traces both her maternal and paternal lineage to La‘aloa and other parts of Kona. She is also a descendant of Kahula, who was awarded 104 acres in 1861 as part of Land Grant 2809, situated in the *mauka* portion of La‘aloa 2nd Ahupua‘a. During her early twenties, Mr. Arakaki became increasingly involved in the protection of *iwi kupuna* after witnessing years of continued desecration and mass evictions of Native Hawaiians from places like Mākua Valley on O‘ahu.

Concerning the coastal lands of La‘aloa and Pāhoehoe, Mr. Arakaki noted that there are many cultural sites found along the coast and in the uplands. She also recalled burials being found at La‘aloa Beach Park. In light of this, Mr. Arakaki emphasized the importance of understanding and managing this area using traditional Hawaiian land division concepts. She explained that the traditional land division system accounted for every part of the land, from small garden plots to slightly larger ones such as the *‘ili*, *ahupua‘a*, *moku* (district), and finally to the largest, *mokupuni* (island). Mr. Arakaki maintained that this type of land management was beneficial to the land and the people. She emphasized that the sites at the coast were traditionally connected to the sites found in the uplands and that together, these sites operated as a whole. She opined that current land management practices implemented by County and State agencies only consider tax map parcels, which she firmly believes has obstructed past and current efforts to properly protect and steward the cultural sites in the area. In looking at the proposed plan, she opined that the plans only show the restrooms but not the cultural landscape in which it is situated. She explained that the County’s halfhearted efforts to protect and steward the cultural sites has created a lot of *pilikia* (trouble, hardship) within the community, which has resulted in the improper treatment and total neglect of the area’s cultural sites. She stated that this type of management is not *pono* (proper, beneficial) for the community and the cultural sites.

When asked about her thoughts on the proposed project, Mr. Arakaki expressed a sense of discontent and frustration. She also expressed concern for the potential of encountering human burials during earthmoving activities and would like to ensure that the County will adhere to the burial laws and make a concerted effort to preserve any such burials in place.

MATTSON DAVIS

At the recommendation of Mr. J. Curtis Tyler, III (who was also interviewed as part of this CIA), ASM staff Lokelani Brandt interviewed Mattson Davis on April 16, 2019, at Magics Beach Grill located on the northside of La‘aloa Beach Park to discuss and identify any cultural impacts that might result from the proposed improvements project. Mr. Davis has lived on the Kona coast since 1997 and has been active in many community organizations. He is also the proprietor of Magics Beach Grill and has hosted beach clean-ups at La‘aloa Beach Park. When asked about the presence of cultural resources in the area, Mr. Davis shared that although he is not a cultural practitioner, he has actively worked

with and supported the efforts of the long-time families, including descendants of the Kipapa family and other cultural practitioners from Kona, who have been working to preserve the area's history and resources. He emphasized the importance of understanding the cultural history of a place and has worked with the Kipapa family to provide cultural competency training for the staff at Magics Beach Grill. He stated that this type of training is important so that people develop sensitivity and have a better understanding of the place they live and work. With respect to cultural resources, Mr. Davis stated that there are a number of culturally significant sites in and around the La'aloa Beach Park and Kipapa Park areas including the *heiau* [Haukalua] at La'aloa, and raised platforms, burials, and agricultural sites at Kipapa Park. While Mr. Davis expressed his support for improving the restroom facilities at La'aloa Beach Park he also stressed the importance of *mālama*, or caring for the area's resources through partnerships with those who are knowledgeable about the area's cultural history and significance. He expressed that families like the Kipapa *'ohana* have faced many challenges in working with the County of Hawai'i to manage the area's cultural resources. With regard to the proposed project, Mr. Davis felt that moving the restroom to Kipapa Park would be a more appropriate place given that the primary parking for La'aloa Beach Park is now at Kipapa Park. He noted that moving the comfort station would require the County to add additional precautions to improve pedestrian safety, such as restriping the road and creating a pathway on the inside of the guardrail that extends along Ali'i Drive.

4. IDENTIFICATION AND MITIGATION OF POTENTIAL CULTURAL IMPACTS

The OEQC guidelines identify several possible types of cultural practices and beliefs that are subject to assessment. These include subsistence, commercial, residential, agricultural, access-related, recreational, and religious and spiritual customs. The guidelines also identify the types of potential cultural resources, associated with cultural practices and beliefs that are subject to assessment. Essentially these are natural features of the landscape and historic sites, including traditional cultural properties. A working definition of traditional cultural property is provided.

“Traditional cultural property” means any historic property associated with the traditional practices and beliefs of an ethnic community or members of that community for more than fifty years. These traditions shall be founded in an ethnic community's history and contribute to maintaining the ethnic community's cultural identity. Traditional associations are those demonstrating a continuity of practice or belief until present or those documented in historical source materials, or both.

The origin of the concept of traditional cultural property is found in National Register Bulletin 38 published by the U.S. Department of Interior-National Park Service. “Traditional” as it is used, implies a time depth of at least 50 years, and a generalized mode of transmission of information from one generation to the next, either orally or by act. “Cultural” refers to the beliefs, practices, lifeways, and social institutions of a given community. The use of the term “Property” defines this category of resource as an identifiable place. Traditional cultural properties are not intangible, they must have some kind of boundary; and are subject to the same kind of evaluation as any other historic resource, with one very important exception. By definition, the significance of traditional cultural properties should be determined by the community that values them.

It is however with the definition of “Property” wherein there lies an inherent contradiction, and corresponding difficulty in the process of identification and evaluation of potential Hawaiian traditional cultural properties, because it is precisely the concept of boundaries that runs counter to the traditional Hawaiian belief system. The sacredness of a particular landscape feature is often cosmologically tied to the rest of the landscape as well as to other features on it. To limit a property to a specifically defined area may actually partition it from what makes it significant in the first place. However offensive the concept of boundaries may be, it is nonetheless the regulatory benchmark for defining and assessing traditional cultural properties. As the OEQC guidelines do not contain criteria for assessing the significance for traditional cultural properties, this study will adopt the state criteria for evaluating the significance of historic properties, of which traditional cultural properties are a subset. To be significant the potential historic property or traditional cultural property must possess integrity of location, design, setting, materials, workmanship, feeling, and association and meet one or more of the following criteria:

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

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

While it is the practice of the DLNR-SHPD to consider most historic properties significant under Criterion d at a minimum, it is clear that traditional cultural properties by definition would also be significant under Criterion e. A further analytical framework for addressing the preservation and protection of customary and traditional native practices specific to Hawaiian communities resulted from the *Ka Pa‘akai O Ka ‘Āina v Land Use Commission* court case. The court decision established a three-part process relative to evaluating such potential impacts: first, to identify whether any valued cultural, historical, or natural resources are present; and identify the extent to which any traditional and customary native Hawaiian rights are exercised; second, to identify the extent to which those resources and rights will be affected or impaired; and third, specify any mitigative actions to be taken to reasonably protect native Hawaiian rights if they are found to exist.

SUMMARY OF CULTURE-HISTORICAL BACKGROUND

A review of the culture-historical background material presented above reveals that the area traditionally referred to as Pāhoehoe received its namesake from the chiefess Pāhoehoe-wahine-iki-a-ka-lani. The origins of the name La‘aloa can be traced to a chiefess who was the wife of Hōlualoa. Additionally, the known literal translation of La‘aloa has been defined by Pukui et al. (1974:126) as “very sacred.” A review of traditional accounts for this area associates La‘aloa with several persons of cultural importance, including Hāwa‘e, a famous 16th-century priest who lived at the *heiau* of Leleiwi located in the upland, as well as others including the chiefs Kaumalumu, Kaho‘oali‘i, and Kepaka‘ili‘ula. Historical accounts recorded for this area also associated these lands with the famed warrior Kekūhaupi‘o, and other *kaukau ali‘i* (lesser chiefs), particularly the ancestors of the famed Hawaiian historian John Papa ‘Ī‘i. The earliest historical reference to the immediate project area vicinity comes from William Ellis, who passed through the area in 1823. His account is of particular interest as he describes a very large house where canoes were being built. Although brief, his narrative offers insight into some of the traditional Hawaiian practices of this area.

By the mid-19th century, the growing population of westerners in the islands continued to promote major socioeconomic and demographic changes, one of which included the conversion to fee-simple ownership of land based on the capitalistic model. As a result, in 1848, the subject *ahupua‘a* of Pāhoehoe 3rd was claimed by two *ali‘i* women, Gini Lahilahi (LCAw. 8520B) and Miriam Kekauonohi (LCAw. 11216), while the La‘aloa 1st was claimed by another *ali‘i* woman, Ruth Ke‘elikōlani. Subsequently, as the King and other *ali‘i* laid claim lands in Hawai‘i, the native tenants who lived on the land could also make claims to those parcels which they actively lived on, cultivated, or had improved. After the passing of the *Kuleana* Act in 1850, three *kuleana* awards were granted within Pāhoehoe 4th and a single *kuleana* award was granted within La‘aloa 1st. Although three of the four *kuleana* awards granted within the study area *ahupua‘a*, received only a single parcel, one of them received two, with one parcel located at the coast and the other located in the uplands. The distribution of *kuleana* lots across the landscape lends insight into the location of the fertile and agriculturally productive lands and some of the traditional farming practices as well as the coastal area which appears to have been the preferred residential areas.

Between 1855 and 1867 the reigning monarch authorized the issuance of Land Grants to applicants to purchase tracts of Government land that were created as a result of the *Māhele* of 1848. Within Pāhoehoe 4th, four grants were purchased totaling 67.75 acres. A portion of the current project area is situated within the southwest corner of Land Grant 2034 (totaling 3.75 acres) that was sold to Kaupehe in 1856. A review of the surveyor notes recorded on May 4th, 1856, indicate that an *ahu pōhaku* (heap of stones) was located in the southeast corner of the proposed project area location. While it is evident from the surveyor notes that this *ahu pōhaku* was used by the early Hawaiian government surveyors, it is not clear whether this structure served any other important cultural purposes.

By 1873, the Boundary Commission, which was established in 1862 and tasked with the duty of settling the boundaries for all *ahupua‘a* that has been awarded as part of the *Māhele*, heard testimony from elder native residents who shared their knowledge about the traditional *ahupua‘a* boundaries. On August 11, 1873, native residents, Nahina and Kipapa (who also received a land grant in Pāhoehoe 3rd) went before the Commission and gave their testimony for the boundaries of La‘aloa 1st. In their testimony, they described a network of *mauka-makai* trails, various cultural

features including place names, *o'io'ina* (resting places for travelers), *kahua hale* (house foundations), *ahu pōhaku*, *iwi 'āina* walls, garden plots, and natural resources such as water holes and the presence of *kukui* (candlenut) trees and *hala* (pandanus). Their testimony also identified access to offshore fisheries by the native tenants of La'aloa 1st. By the late 19th-century and into the early part of the 20th century, the traditional lifeways continued to shift to meet the demands of the changing market economy and as a result, the *mauka* portion of both Pāhoehoe and La'aloa were utilized for cattle ranching. Although there was a growing detraction from traditional agricultural practices during this time, fishing, and gathering of both offshore and nearshore marine resources using traditional methods remained an integral part of life for the people of La'aloa, Pāhoehoe, and the greater Kona District.

Throughout the early part of the 20th century, archaeologists, some of whom relied on native informants for site-specific cultural information began recording what was left of the cultural landscape of Pāhoehoe and La'aloa including a *heiau* which was recorded by Stokes in 1906 as Haukālua and by Reineke in 1929-1930 as Haukaloa. With respect to the current project area, it appears that by the 1940s, the *Alanui Aupuni* or government road, which originally crossed through the project area was relocated *mauka* to its current alignment of Ali'i Drive. Additionally, several buildings and accessory structures, owned in part by Mr. Walter E. Eklund, including a well were identified to have been constructed in the project area. Over the next two decades, the project area parcel was subdivided into four separate parcels and by 1972, most of these structures have been demolished. By the 1980s, the last two structures were demolished, and the following year the park's comfort station was constructed.

Throughout the latter half of the 20th century, archaeological and oral history studies led to the discovery of a variety of Precontact and Historic era archaeological sites within and in the vicinity of La'aloa Beach Park. As a result of the studies conducted within La'aloa Beach Park, a total of eight sites were recorded including Haukālua Heiau and burial site (Site 2009), a stone platform (Site 20764), a *paena wa'a* (canoe landing) (Site 21221), a *papamū* (Site 21222), *poho palu* (bait mortars) (Site 21223), an *iwi 'āina* (wall) (Site 21218), a brackish spring/Japanese *furo* (Site 21219), and a *Kū'ula* fishing shrine (Site 21220), all of which were been deemed significant and ultimately recommended for preservation (Kawachi et al. 2000; Maly 1997; Rechtman 2006b, 2006a). Of the eight sites previously identified, three are within the immediate project area and have the potential of being impacted by the proposed project, with the *iwi 'āina* wall (Site 21218) being the closest, followed by the spring/ Japanese *furo* (Site 21219) (both of which are located to the south of the project area), and the reconstructed *Kū'ula* (Site 21220) (located to the west of the project area).

IDENTIFICATION OF POTENTIAL CULTURAL IMPACTS AND RECOMMENDED MITIGATIVE MEASURES

In summary, the previous archaeological and ethnographic studies conducted within the project area parcels and the greater La'aloa Beach Park have identified several valued cultural, historical, and natural resources—resources that have always been known and valued by the descendant communities. While the authors recognize the inherent connection between the sites located within and beyond the proposed project area, attention is focused on those sites that have the potential of being impacted by the project. With respect to the immediate project area vicinity, the valued cultural resources identified included an *iwi 'āina* wall (Site 21218), a spring/ Japanese *furo* (Site 21219), and the reconstructed *Kū'ula* (Site 21220). The results of the consultation revealed that these sites, as well as those located in the greater La'aloa Beach Park, are part of a cultural landscape that has and continues to be deeply valued by descendant communities. Many of these individuals have been engaged in past issues relating to the area's significant cultural resources and they continue to advocate for the culturally appropriate treatment of these sites. As part of their right to exercise their traditional customary practices, the consultation process revealed that several of the consulted parties continue to utilize some of the sites for ceremonial purposes, most notably the reconstructed *Kū'ula* (Site 21220). Additionally, the consultation process also identified the *hau* trees located to the west of the comfort station as a valued natural resource. In light of the identification of valued cultural and natural resources, and customary practices, the consulted parties expressed concern over the proposed project.

Unfortunately, many of the past issues, specifically the culturally appropriate care and protection (or lack thereof) of the area's significant cultural sites by the State and County agencies have not been resolved and remain a major point of contention amongst many community members. The lack of remediation and slowness to respond to community concerns has and continues to add to the mistrust between community members and these government agencies. Additionally, as expressed by some of the consulted parties who once served as caretakers for this area, restricted access (following the closure of the former La'aloa Beach Park parking lot) by the County and lack of communication has prevented them from continuing to care for the area's cultural sites and resources. As expressed by some of the consulted individuals, the act of *mālama 'āina*, or actively caring for the land, is an ongoing traditional

cultural practice that helps to keep the tangible and intangible elements of Hawaiian culture alive in our ever-changing society and landscape. Likewise, *mālama 'āina* also helps to ensure the cleanliness of the area's cultural sites. Several of the consulted parties, most notably Mr. Cho does wish to re-establish a partnership with the County so that these sites can be properly cared for and preserved for cultural practices and appreciation by the greater public. In light of these comments, is recommended that the County engage with the interested parties and reinstate stewardship agreements so that the descendant communities can continue to access and care for the sites.

As noted in the culture-historical background and expounded on in the consultation portion of this study, members of the Kipapa 'ohana led the effort to rebuild the *Kū'ula* (Site 21220). The *Kū'ula* is located to the west of the current comfort station at Ka Lae O Huihui. It is likely that the 'ohana and perhaps, members from the community will continue to access this *Kū'ula* to conduct ceremonies and give *ho'okupu* (offerings) during and after the construction of the proposed project. To ensure that this site and its associated cultural practices and ceremonies are not impeded upon or disrupted by the proposed project, a clearly demarcated access route to this site should be established during the construction process. Likewise, a reasonably distanced buffer should be created around the site and caution should be taken when working or operating heavy equipment near the vicinity of the *Kū'ula*. It is further recommended that the County coordinate with the Kipapa 'ohana regarding any construction activities in the vicinity of the *Kū'ula*. Implementation of these measures will help to safeguard against disrupting the site and any associated customary practices.

Although no specific ongoing customary practices associated with the *iwi 'āina* wall (Site 21218) or the spring/Japanese *furo* (Site 21219) were identified through the background research or consultation process, these sites are recognized by the consulted parties as valued cultural and historical resources. Similar to the protective measures recommended above for the *Kū'ula*, special care should be given when working around these sites and a reasonably distanced buffer should be established around them to limit any potential for adverse impacts. Ground-disturbing activities near these sites should be undertaken with caution so that any groundwater resources that may be feeding into the spring are not disturbed. As expressed by the consulted parties, the alignment of the reconstructed *iwi 'āina* is incorrect. In light of the concerns expressed by multiple consulted parties, the County should plan to realign the wall to its original location and its reconstruction should stylistically match the more *mauka* alignment of this same wall that is extant on the eastern side of Ali'i drive. It is the authors' understanding that the realignment of the *iwi 'āina* wall will not be included in the comfort station improvement project plans, rather this activity will be part of the County's preservation plan implementation project that will take place in the Cultural Preserve Area portion of La'aloa Beach Park. Thus, mitigating the potential cultural impacts on these sites is contingent upon the successful execution of the preservation plan project.

An important natural resource that was identified was the *hau* trees, described as a *kinolau* (physical manifestation) of the goddess Haumea, that are located on the west side of the comfort station. The fibrous bark from which cordage and *hula* adornments are made and the light buoyant wood is also culturally valued. As stated by Ms. Lui, she would like to see this and any other native trees preserved. If extensive trimming of the *hau* trees is required for the proposed project, it is recommended that the wood be donated to a *hula hālau* or other cultural practitioners who may be able to utilize this plant in a culturally appropriate manner.

As voiced by the majority of the consulted parties, relocating the comfort station from its existing location is considered to be the most culturally appropriate way of mitigating the potential for adverse cultural impacts. To that end and as expressed by several of the consulted parties, keeping the comfort station in its existing location perpetuates the perceived impacts to the previously identified cultural sites and associated customary practices. While all of the consulted parties have tolerated the cultural impacts caused by having the comfort station in its existing location, maintaining the status quo does not negate or mitigate their concerns or the perceived impacts. Keeping the restroom in its existing location has and will continue to be culturally offensive. Although nuanced, the issue lies in the fact that the restroom is and will continue to be in close proximity to the previously identified cultural sites and its location within a cultural landscape is considered to be culturally inappropriate. While it is not anticipated that the proposed project would have any direct physical impacts to the identified cultural resources, from a cultural perspective and as articulated by the consulted parties, keeping the comfort station in its existing location has been and will still be considered culturally inappropriate. While relocation may not be feasible at this time, it is recommended that the County and its planners continue to work with the descendant communities to identify processes that will ultimately result in the relocation of the comfort station facility at La'aloa Beach Park to a more culturally and environmentally suitable location.

To summarize, the following valued cultural, historical, and natural resources and associated practices have been identified: *iwi 'āina* wall (Site 21218); a spring/ Japanese *furo* (Site 21219); and the reconstructed *Kū'ula* (Site 21220) and associated cultural practices; the *hau* trees to the west of the comfort station and associated cultural practices; and

4. Identification and Mitigation of Potential Cultural Impacts

the general cultural practice of *mālama ‘āina* as described by several interviewees. The extent to which any of these resources and or practices will be directly impacted by the project is minimal, however, the continued existence of the comfort station at this location could be considered an adverse impact on what most of the interviewees consider to be a culturally-significant landscape. To mitigate any such potential impacts, the recommendations provided above are intended to ensure that the County of Hawai‘i Parks and Recreation considers the concerns and thoughts shared by the consulted parties with respect to the proposed project. It is imperative to reiterate that while people understand the importance of improving accessibility to the park and updating the facilities, most of the consulted parties spoke out against keeping the comfort station in its existing location due to the perceived cultural and environmental concerns. The concerns and recommendations described above are intended to illuminate some of the long-standing issues associated with the valued cultural landscape at La‘aloa Beach Park and to identify how descendant communities, other interested parties, and the County can work together to rebuild trust and find solutions that will mitigate these concerns. There is certainly a strong attachment by the descendant communities to the cultural landscape at La‘aloa Beach Park and enhancing the future cultural vibrancy of this area is contingent upon working together and reaching mutually beneficial outcomes. Ultimately, relocation of the comfort station would resolve many of the cultural concerns raised during consultation, however, current attention to and implementation of the above-described recommendations could help to lessen the perceived cultural impacts.

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APPENDIX A.
***KA WAI OLA* PUBLIC NOTICE**

◀

HO‘OLAHA LEHULEHU

PUBLIC NOTICE

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PUBLIC NOTICE

ASM Affiliates is preparing a Cultural Impact Assessment (CIA) in advance of the proposed County of Hawai‘i, Department of Parks and Recreation accessibility and restroom improvements project at La‘aloa Beach Park, Pāhoehoe 3rd, 4th, and La‘aloa 1st Ahupua‘a, North Kona District, Island of Hawai‘i. The current La‘aloa Beach Park (also known as Magic Sands or Disappearing Sands) is located along Ali‘i Drive between Ho‘omaluhia Place and La‘aloa Avenue.

We are seeking consultation with any community members that might have knowledge of traditional cultural uses of the proposed project area; or who are involved in any ongoing cultural practices that may be occurring on or in the general vicinity of the subject properties, which may be impacted by the proposed project. If you have and can share any such information, please contact Lokelani Brandt lbrandt@asmaffiliates.com. Phone: (808) 969-6066. Mailing address: ASM Affiliates 507-A E. Lanikāula Street, Hilo, HI 96720. ■

Ka Wai Ola o OHA Newspaper, Pepeluali (February) 2019, 36(2):17

Magic Sands Beach Park Accessibility Improvements
Environmental Assessment

APPENDIX 4
Archaeological Report

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An Archaeological Assessment for the Proposed Accessibility Improvements Project at La‘aloa Beach Park

Portions of TMKs: (3) 7-7-008:017, 094, 107, and (3) 7-7-010:036)

Pāhoehoe 4th and La‘aloa 1st Ahupua‘a
North Kona District
Island of Hawai‘i

DRAFT VERSION



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EXECUTIVE SUMMARY

At the request of Okahara and Associates, Inc., on behalf of the County of Hawai‘i (landowner), Department of Parks and Recreation, ASM Affiliates (ASM) conducted an Archaeological Inventory Survey (AIS) in support of a comfort station and accessibility improvements project at the County managed La‘aloa Beach Park. The AIS investigated a roughly 0.39-acre project area comprising portions of Tax Map Keys (TMK): (3) 7-7-008:017, 094, and 107 in Pāhoehoe 4th Ahupua‘a and a portion of TMK: (3) 7-7-010:036 in La‘aloa 1st Ahupua‘a, North Kona District, Island of Hawai‘i. The County of Hawai‘i Department of Parks and Recreation is seeking to improve the existing facilities at La‘aloa Beach Park to meet the requirements and standards set forth in the Americans with Disabilities Act (ADA). The proposed project involves demolishing and replacing the existing comfort station facility and installing ADA compliant accessibility infrastructure, including concrete ramps and paths from Ali‘i Drive to the comfort station and a picnic area. The proposed project also calls for repaving, signing, and striping a new entrance driveway and parking area; installing a new covered showers on the comfort station building and connecting them to the County wastewater treatment system; removal of some of the existing trees; adding new landscaping.

On February 9, 2018, Benjamin Barna, Ph.D. conducted an intensive on-foot archaeological survey of the entire project area (100% surface survey). The entire ground surface of the project area was investigated by walking in meandering sweeps oriented perpendicular to Ali‘i Drive, beginning at the north end of the project area. The project area was not marked in the field, and the extent of the survey was determined by referencing project drawings. No historical properties of any kind were identified within the project area. Sites 21219 (the reconstructed *ahupua‘a* boundary wall) and Site 21220 (a *Kū‘ula* or fishing deity stone) were confirmed to be located outside the project area.

The current study was conducted in support of a Hawai‘i Revised Statutes Chapter 343 environmental assessment being prepared for the project. It was undertaken in accordance with Hawai‘i Administrative Rules §13–275 and was performed in compliance with the *Rules Governing Minimal Standards for Archaeological Inventory Surveys and Reports* as contained in Hawai‘i Administrative Rules (HAR) §13–276. Compliance with the above standards is sufficient for meeting the historic preservation review process requirements of both the Department of Land and Natural Resources–State Historic Preservation Division (DLNR–SHPD) and the County of Hawai‘i Planning Department. Because no archaeological sites were observed in the project area, the current report has been prepared as an Archaeological Assessment in accordance with HAR §13-275-5(b)(5)(A).

Given the negative findings of the current study, it is concluded that the proposed project will not impact any known historic properties, and the project effect determination is “No historic properties affected.” Two previously recorded historic properties (Sites 21219 and 21220) that are subject to an existing preservation plan are located near the proposed project area. Protective measures described in that preservation plan should be implemented prior to the start of demolition and/or ground disturbing work. Additionally, in the unlikely event that any unanticipated resources are unearthed during development activities, DLNR–SHPD should be contacted as outlined in Hawai‘i Administrative Rules 13§13–280.

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1. INTRODUCTION

At the request of Okahara and Associates, Inc., on behalf of the County of Hawai'i (landowner), Department of Parks and Recreation, ASM Affiliates (ASM) conducted an Archaeological Inventory Survey (AIS) in support of the proposed comfort station and accessibility improvements project at La'aloa Beach Park. The AIS investigated a roughly 0.39-acre project area comprising portions of Tax Map Keys (TMK): (3) 7-7-008:017, 094, and 107 in Pāhoehoe 4th Ahupua'a and a portion of TMK: (3) 7-7-010:036 in La'aloa 1st Ahupua'a, North Kona District, Island of Hawai'i (Figures 1, 2, and 3). The County of Hawai'i Department of Parks and Recreation is seeking to improve the existing facilities at La'aloa Beach Park to meet the requirements and standards set forth in the Americans with Disabilities Act (ADA). The proposed project (Figure 4) involves demolishing and replacing the existing comfort station facility and installing ADA compliant accessibility infrastructure, including concrete ramps and paths, from Ali'i Drive to the comfort station and a barbecue and picnic area. The proposed project also calls for repaving, signing, and striping a new entrance driveway and parking area; installing a new covered showers on the comfort station building and connecting them to the County wastewater treatment system; removal of some of the existing trees; adding new landscaping.

The current study was conducted in support of a Hawai'i Revised Statutes Chapter 343 environmental assessment being prepared for the project. It was undertaken in accordance with Hawai'i Administrative Rules §13-275 and was performed in compliance with the *Rules Governing Minimal Standards for Archaeological Inventory Surveys and Reports* as contained in Hawai'i Administrative Rules (HAR) §13-276. Compliance with the above standards is sufficient for meeting the historic preservation review process requirements of both the Department of Land and Natural Resources–State Historic Preservation Division (DLNR–SHPD) and the County of Hawai'i Planning Department. Because no archaeological sites were found during the current study, the current report has been prepared as an archaeological assessment in accordance with HAR §13-275-5(b)(5)(A). This report provides a project area description, a brief culture-historical background and discussion of prior archaeological studies in the vicinity of the current project area, and the results of the current field investigation of the project area.

1. Introduction



Figure 1. Project area location.

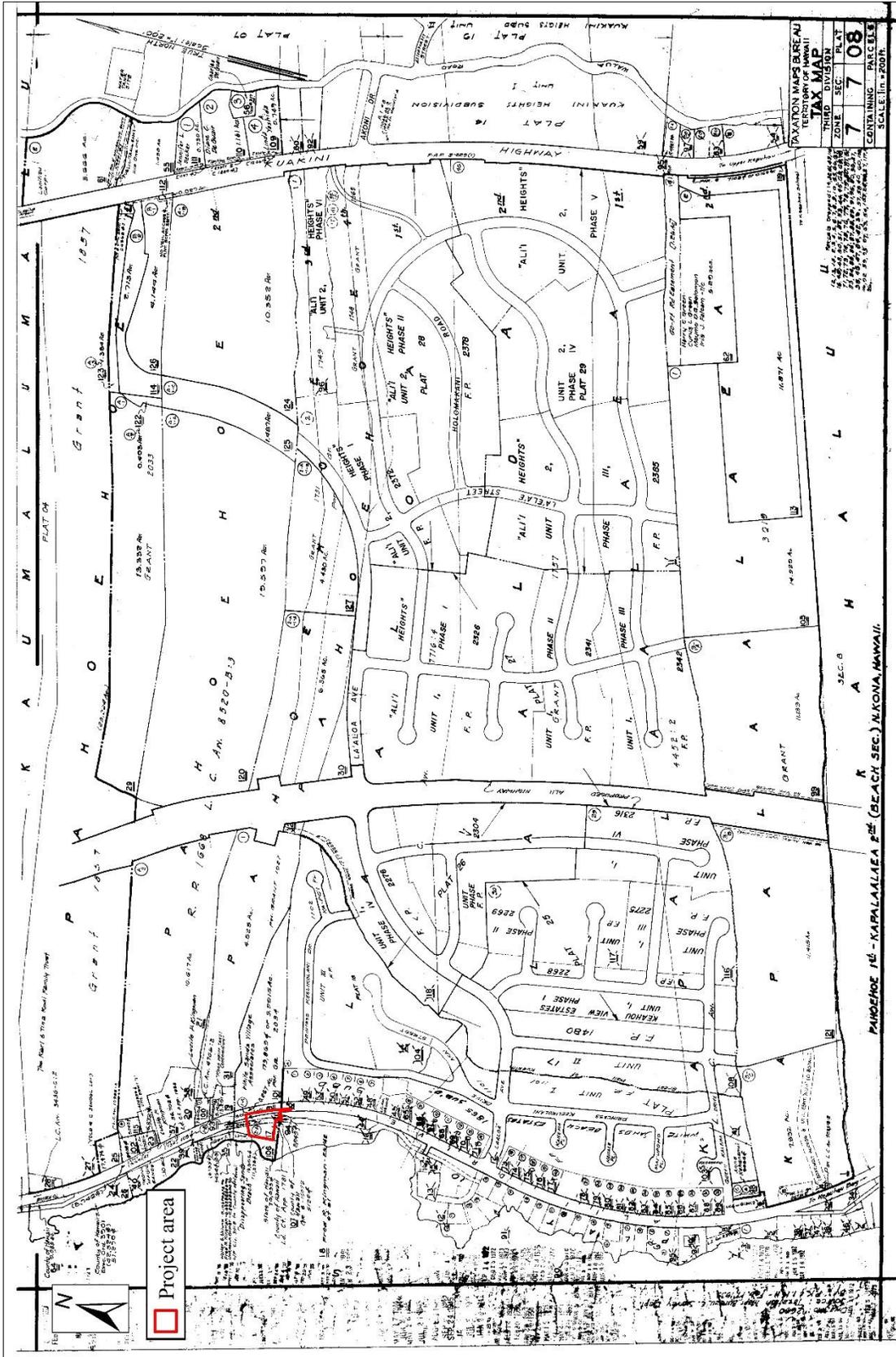


Figure 2. Tax Map Key (3) 7-7-008 showing location of current project area.

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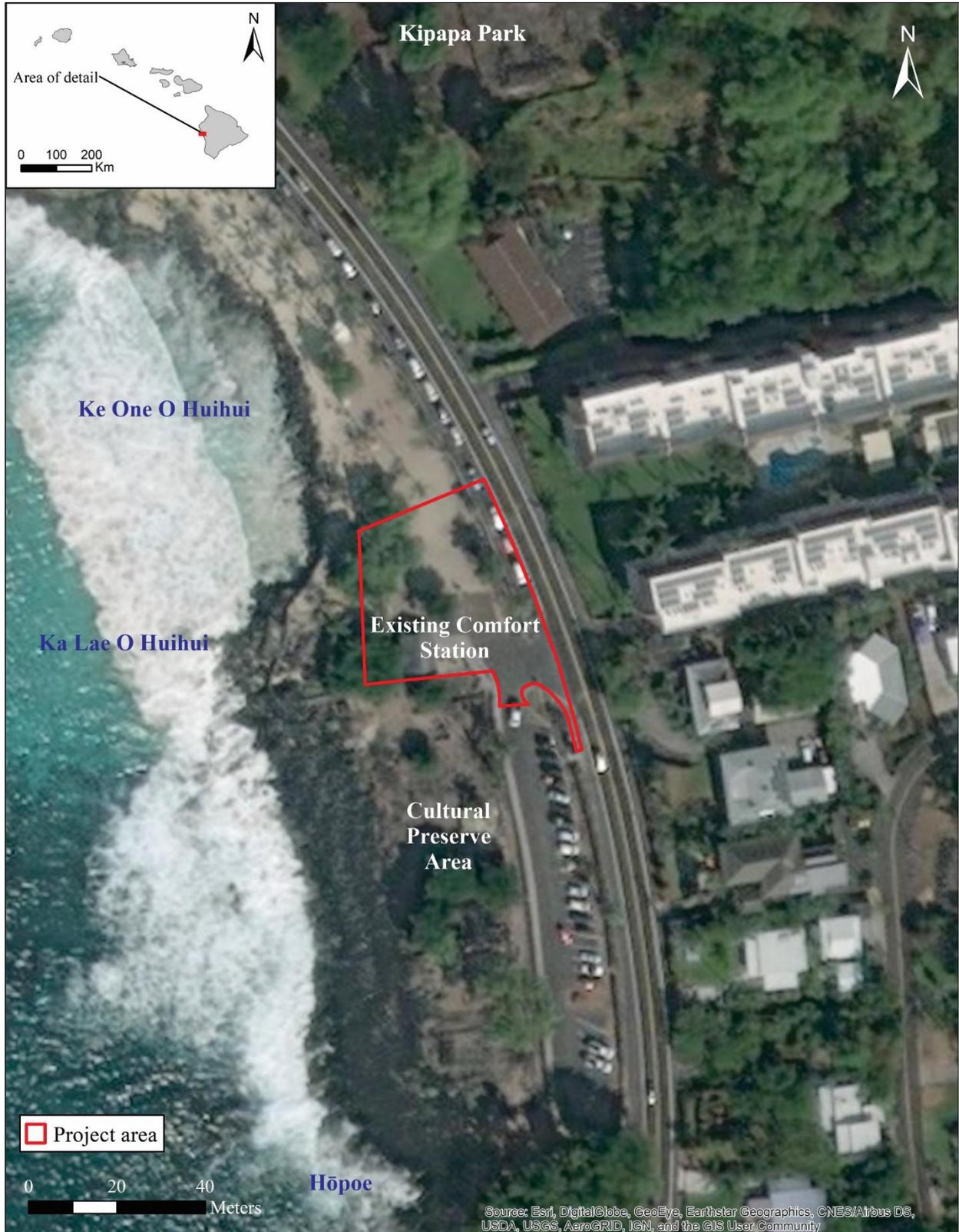


Figure 3. Google Earth™ satellite image showing project area location.

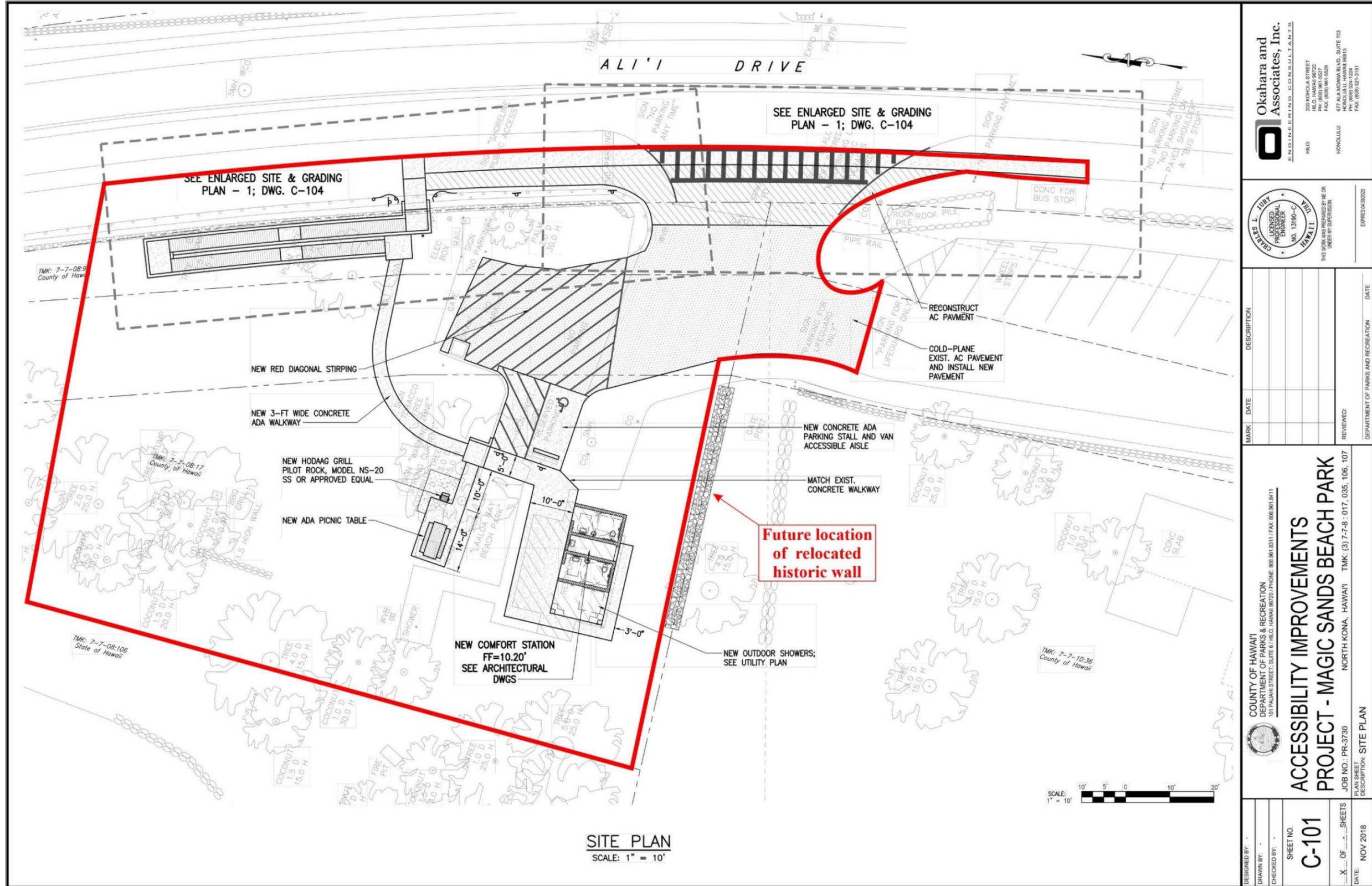


Figure 4. Site plan with current project area outlined in red.

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PROJECT AREA DESCRIPTION

The roughly 0.39-acre project area (see Figure 4) encompasses all of the proposed ground disturbing activities proposed for the project. It is located along the Kona coast of Hawai‘i Island to the west of present day Ali‘i Drive, the main thoroughfare that meanders along the coast beginning at Kailua Pier and terminates in the vicinity of Keauhou (see Figure 3). The northern portion of the project area is within the *ahupua‘a* of Pāhoehoe 4th and consists of a white sandy cove (Figure 5) interspersed with *pāhoehoe* flats and loose boulders. This sandy section is known traditionally as Ke One O Huihui. During periods of high surf and strong currents, the sand from this beach erodes and exposes a large concentration of shoreline boulders (Figure 6). This natural phenomenon is reflected in some of the common names given to this area including “Magic Sands” and “Disappearing Sands.” The sandy beach (Figures 7 and 8) used for recreation is located between these shoreline boulders and Ali‘i Drive. The southern portion of the sandy cove transitions back into rising *pāhoehoe* flats at the point called Ka Lae O Huihui (see Figure 5). To the east of Ka Lae O Huihui is the current restroom facility, showers, and the entrance into the paved parking area (Figures 9, 10, and 11). On the south side of the restroom is a reconstructed *iwi ‘āina* stone wall (Site 50-10-37-21219) that was intended to delineate the boundary between La‘aloa and Pāhoehoe (Figure 12). The wall’s current location does not match its historical alignment, and the details of this discrepancy are discussed in the Cultural Impact Assessment (Glennon and Brandt 2019) prepared to accompany this report. A preservation plan (Rechtman 2006b) that was prepared for the 1997 expansion of the park calls for moving the wall to the *ahupua‘a* boundary, but this task has not yet been implemented. Should this occur prior to the commencement of the current proposed project, the relocated wall will be partially within the current project area.



Figure 5. North section of La‘aloa Beach Park from Ka Lae O Huihui, view to the north.

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Figure 6. La'aloa Beach Park with exposed *pāhoehoe* and loose boulders, view to the south.



Figure 7. View of the beach park, view to the south.



Figure 8. View of the beach park, view to the north.



Figure 9. Existing restrooms and showers located to the east of Ka Lae O Huihui, view to the southwest.

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Figure 10. Shower and fire pit (at left), view to the east.



Figure 11. Paved parking area adjacent to the restrooms, view to the southeast.



Figure 12. Reconstructed *iwi* 'āina stone wall (Site 50-10-37-21219) located on the southern boundary of the project area, view to the west.

Terrain within the project area is characterized by level to moderate 2 to 10 degree west/southwest-trending slope. The underlying geology documented by (Sherrod et al. 2007) is comprised predominately of pāhoehoe basalt (mapped as “Qh” in Figure 13) originating from Hualālai Volcano 11,000 to 30,000 years ago. The northern tip of the project area parcel falls within a younger lava flow also originating from Hualālai Volcano some 5,000 to 11,000 years ago (mapped as “Qh1o” in Figure 13). Soils within the study (Figure 14) area described as Punalu‘u highly decomposed plant material with a two to ten percent slope (mapped as “120” in Figure 14) (Soil Survey Staff 2018). These soils are well drained, thin organic soils over pāhoehoe bedrock with very slow runoff and pose little to no erosion hazard. The project area receives a mean annual rainfall of 79.7 millimeters (31.4 inches) that peaks between the months of July through September (Giambelluca et al. 2013). The elevation in the project area near the sandy section of La‘aloa Beach Park ranges from zero meters and rises to a max of one meter above mean sea level.

1. Introduction

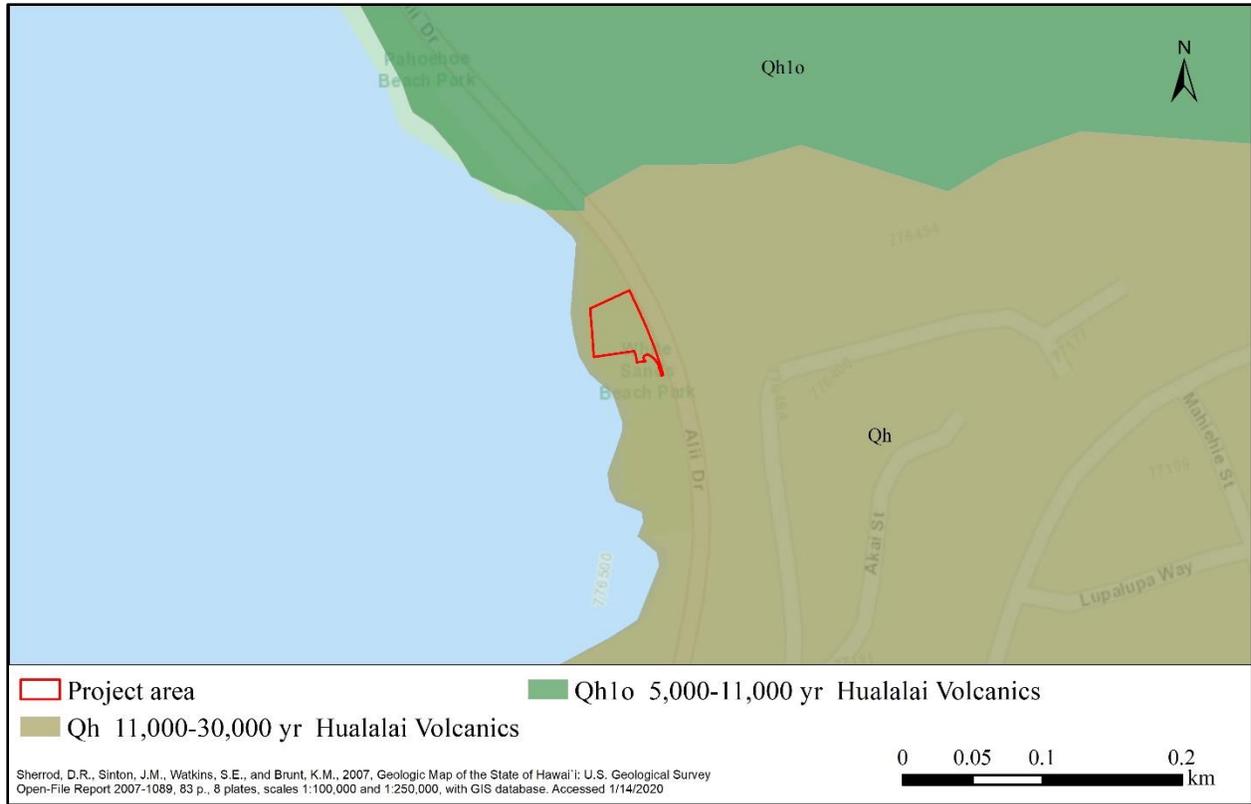


Figure 13. Geology in the current project area.



Figure 14. Soils in the current project area.

2. BACKGROUND

To generate a set of expectations regarding the nature of archaeological resources that might be encountered within the current project area, and to establish an environment within which to assess the significance of any such resources, a brief culture-historical context for the North Kona region that includes specific information regarding the known history of Pāhoehoe 4th and La‘aloa 1st Ahupua‘a and the project area is presented. This is followed by a discussion of relevant prior archaeological studies conducted in the vicinity of the project area.

SUMMARY CULTURE-HISTORICAL CONTEXT

The following abbreviated culture-historical context presents a summary of the more detailed culture-historical context that is included in the Cultural Impact Assessment (Glennon and Brandt 2019) prepared for the proposed project. The current project area is within the County of Hawai‘i’s La‘aloa Beach Park (formerly known as Magic Sands or Disappearing Sands). The northern, sandy portion of the park that used for recreation is located within Pāhoehoe 3rd and 4th ahupua‘a. The southern portion of the park, which contains the majority of the park’s documented historic properties, is located in the ahupua‘a of La‘aloa 1st. The history of Pāhoehoe and La‘aloa ahupua‘a are closely tied, and the residents of the area containing the park are known to have lived in and used both sides of the ahupua‘a boundary (Maly 1997). These two land divisions are located in the traditional *moku* or District of Kona.

Within the greater Kona region, royal centers were established at several locations including Kailua, located north of the project area, and Kahalu‘u-Keauhou, Ka‘awaloa-Kealakekua, and Hōnaunau, located to the south of the project area. The *moku* of Kona contains over 100 ahupua‘a and approximately forty-four of these fall within the agriculturally fertile central portion of Kona. The majority of the ahupua‘a located in the central portion of Kona are fairly narrow and ascend through several zones of agricultural production that included forest lands, upland farms, and the plains of the coastal *kula*, as well as providing access to offshore resources. Archaeologists refer to the agricultural/residential system that developed here as the Kona Field System (Newman 1970; Soehren and Newman 1968). The basic characteristics of this system, as presented in Newman (1970), have been confirmed and elaborated on by archaeological (Cordy 1995; Horrocks and Rechtman 2013; Johnson and Wolforth 2006; Kelly 1983; Lincoln and Ladefoged 2014; McCoy et al. 2017) and ethnohistorical investigations (Kelly 1983). The construct is based on the Hawaiian terms for the major vegetation zones, which are used to define and segregate space horizontally across the region’s ahupua‘a (Table 1). These zones roughly parallel the coast and mark changes in elevation, rainfall, and flora. Access between the coast and the inland agricultural zones was via *mauka-makai* trails. Near the shore, a coastal trail connected adjacent ahupua‘a. This trail, which later evolved into the *Alanui Aupuni* or government road, passed through the current project area just *makai* of the current alignment of Ali‘i Drive. The current project area is located in the *kula* zone, modeled by Newman (1971) as extending from sea level-150-meter elevation.

Table 1. Traditional Hawaiian agricultural zones.

<i>Zone</i>	<i>Annual Rainfall (cm)</i>	<i>Elevation (m)</i>	<i>Primary Crops</i>
<i>Kula</i>	75-125	Sea level-150	<i>‘Uala, wauke, and ipu</i>
<i>Kalu‘ulu</i>	100-140	150-300	<i>‘Ulu, ‘uala, and wauke</i>
<i>‘Āpa‘a</i>	140-200	300-750	Dry land <i>kalo, ‘uala, kī, and kō</i>
<i>‘Ama‘u</i>	>200	750-1,200	<i>Mai‘a</i> (both plantain and banana)

Sometime during the sixteenth century, chief ‘Ehuinukaimalino (also referred to as ‘Ehu) was appointed by his father Kūāiwa to rule over Kona, while a junior son, Hukulani ruled over Kohala. During ‘Ehu’s reign, four of the six *moku* on Hawai‘i Island was ruled by an independent chief: Kulukulu‘ā in Hilo, Hua‘ā in Puna, ‘Īmaikalani in Ka‘ū, and it is believed that Līloa ruled over Hāmākua (Cordy 2000). In addition to ‘Ehu, Kūāiwa had three sons from a previous wife, Kahoukapu, Hukulani, and Manaua, all of whom became the heads of Hawai‘i’s aristocratic families (Fornander 1880). Although the ‘Ehu line of chiefs grew to be somewhat powerful, ‘Ehu was ranked second to Līloa (Kelly 1983). According to Kamakau (1992), ‘Ehu placed his son, Laea-nui-kau-manamana (Laea-nui) in Līloa’s royal court and for some time they both resided in Waipi‘o where Laea-nui assisted with the construction of the sacred stone slab known as *Ka paepae kapu o Līloa*. Upon the death of Līloa, his kingdom was usurped by his second son, ‘Umi-a-līloa. However, the chiefs of Hilo, Puna, Ka‘ū, and Kona withheld their allegiance to ‘Umi. According to Kamakau (ibid.), by the time ‘Umi sought to gain control over Kona, ‘Ehu was of old age, and therefore Kona and Kohala were easily seized by ‘Umi. With regard to the death of ‘Ehuinukaimalino, Malo (1951) notes that he was assassinated by some fishermen out in Keahuolū, Kona. Upon ‘Umi’s unification of Hawai‘i Island, he moved his royal court to Kailua, Kona and eventually took the daughter of ‘Ehu, Moku-a-hua-lei-akea as his wife. She bore ‘Umi

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a daughter named ‘Akahi-‘ili-kapu. ‘Umi’s reign is one that is often celebrated as it marked a time of peace and increased productivity and a move towards craft specialization.

References to Pāhoehoe and La‘aloa also appear in the book titled *Mo‘olelo ka‘ao no Kūhaupi‘o, ke koa kaulana o ke au o Kamehameha ka Nui* (Kamehameha and his warrior Kekūhaupi‘o), published by Reverend Stephen Desha (Desha 2000). According to Desha’s account, after the death of the high chief Kalani‘ōpu‘u in, 1782 (Kamakau 1992), his body was transported to Kona on a large canoe accompanied by Kīwala‘ō, his son and heir to his kingdom, and chief Keawemauhili of Hilo. Upon their arrival in Kona, Keawemauhili greeted the chiefs of Kona, who thereby took insult to his speech. The Kona chiefs suspected that Keawemauhili was seeking grounds to wage war against them. Aware of the impending situation, Kekūhaupi‘o fetched Kamehameha from Kohala and brought him to Ka‘ūpūlehu, Kona. After preparing Kamehameha, the account goes on to note that Kekūhaupi‘o departed Ka‘ūpūlehu and stayed with some of his uncles in La‘aloa (Kamakau 1992).

By the mid-nineteenth century, the ever-growing population of Westerners in the Hawaiian Islands forced socioeconomic and demographic changes that promoted the establishment of a Euro-American style of land ownership. During the *Māhele* of 1848, the lands comprising Pāhoehoe 1st, 3rd and 4th were retained as Government land and after 1850, were divided and sold off as government issued Land Grants. It is unclear whether these lands were ever claimed by any *ali‘i* during the *Māhele* as these lands are not listed in the *Buke Māhele* (1848). The lands comprising Pāhoehoe 2nd was however claimed by Gini Lahilahi, daughter of John Young Olohana and granted as LCAw. 8520B and by Miriam Kekauonohi as LCAw. 11216 (Hawaii 1929). Similarly, La‘aloa 1st was claimed by Ruth Ke‘elikōlani, granddaughter of Kamehameha I and granted as LCAw. 7716. La‘aloa 2nd was claimed by the *ali‘i* Kaunuohua who later returned these lands which were retained by the government (Soehren 2004).

As the King and chiefs made claims to large tracts of land via the *Māhele*, questions arose with regard to the protection of rights for the native tenants. To address this matter, on August 6, 1850, the *Kuleana* Act or Enabling Act was passed that allowed native tenants to acquire an allodial title to *kuleana* parcels that they actively lived on or farmed. Figure 15 shows all the awarded LCAw. within the *ahupua‘a* of Pāhoehoe 1-4 and La‘aloa 1-2.

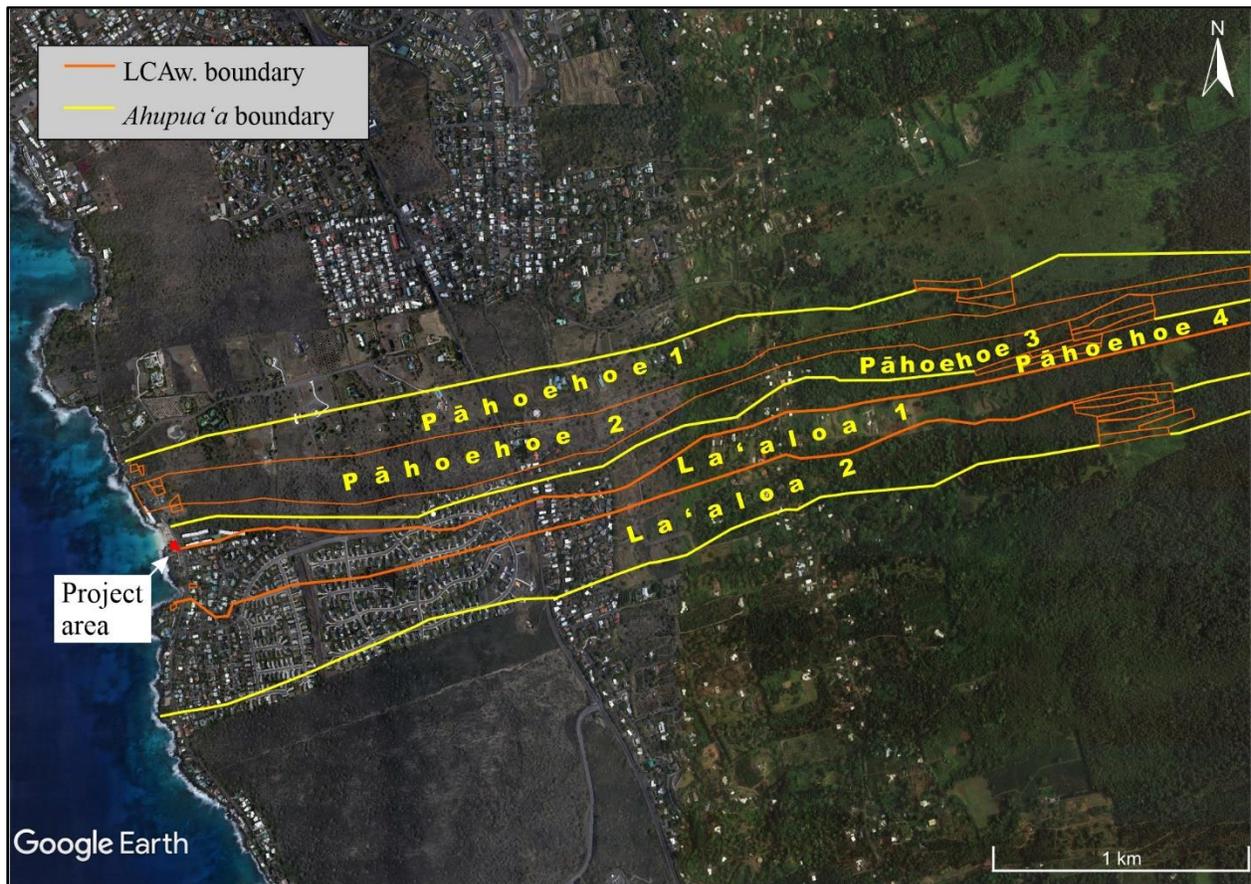


Figure 15. Distribution of LCAw. within the Pāhoehoe 1-4 and La‘aloa 1-2 Ahupua‘a.

Ten *kuleana* parcels were awarded within Pāhoehoe 1st through 4th, comprising fourteen distinct parcels (Table 2), but none were located within the current project area. Figure 16 shows the location of *kuleana* parcels located within the coastal portion of Pāhoehoe. Four *kuleana* parcels were awarded within Pāhoehoe 1st (LCAw 3436C, 5922 and 3434B). One *kuleana* parcel was awarded in Pāhoehoe 2nd (LCAw. 10986). Five *kuleana* parcels were awarded in Pāhoehoe 3rd (LCAw. 10986, 3435B, 3436B, and 4705). ‘*Apana* 1 of LCAw. 10986 does not appear on historical maps, and therefore has not been included in Figure 16. Three *kuleana* parcels were granted within Pāhoehoe 4th (LCAw. 3433B, 5788, and 10654). Analysis of the Native Testimonies reveals that eight *kuleana* awardees received or inherited their lands from at least the time of Kamehameha I and II. The Native Testimonies also indicate that three *kuleana* awardees received their lands from chiefs Kahoali‘i and Ka‘ōanā‘eha. The name Kahoali‘i appeared in *He Mo‘olelo Ka‘ao no Kepaka‘ili‘ula* as a chief of Kona. According to the genealogy of Queen Emma that was printed in *Ka Nūpepa Kū‘oko‘a* on May 5, 1883, the chiefess Ka‘ōanā‘eha was married to Keoni Ana, and from their union was born Kekelaokalani and her sister Gini Lahilahi, who laid claimed Pāhoehoe 2nd during the Māhele.

A total of eight *kuleana* claims were granted within La‘aloa 1st and 2nd comprising ten distinct parcels (Table 3). Figure 17 shows the location of the *kuleana* awards located along the La‘aloa coast. Only one *kuleana* claim was made within La‘aloa 1st, which was awarded to Opunui as LCAw. 10566. The parcel described as a *pāhale* (house lot) was located just inland of Hōpoe Bay (Figure 17), while the second ‘*āpana* used for agriculture (LCAw 10566:1) was located well *mauka* of the *ahupua‘a*. Within La‘aloa 2nd, seven *kuleana* awards comprising eight distinct parcels were granted (LCAw. 5773, 5770, 5787, 10889, 10888, 5913, and 5899). Two parcels associated with LCAw. 5787 and 5913 were located at the coast, however, a review of historic maps only shows the location of LCAw. 5787. The exact location of the coastal parcel associated with LCA 5913 granted to Pukai could not be ascertained. The remaining six parcels were for agricultural lands located in the *mauka* portion of the *ahupua‘a*.

In conjunction with the *Kuleana* Act, the King authorized the issuance of Land Grants to applicants for tracts of Government-owned land. These Land Grants were generally larger than those awarded by the Land Commission. The Act resolved that portions of the Government Lands should be set aside and sold as grants ranging in size from one to fifty acres at a cost of fifty cents per acre. The stated goal of this program was to enable native tenants, many of whom were insufficiently awarded or not awarded land through the *Kuleana* Act to purchase lands of their own. Despite the stated goal of the land grant program, this provided the mechanism that allowed many foreigners to acquire large tracts of the Government Lands. Table 4 is a listing of all Land Grants for Pāhoehoe 1st, 3rd, and 4th, as well as La‘aloa 2nd. Figure 18 shows awarded land grants within Pāhoehoe 3rd and 4th near the current project area. The current project area falls within the western portion of Land Grant 2034 to Kaupehe (see Figure 18). The map also shows the *Alanui Aupuni* crossing through the *mauka* end of the current project area.

Table 2. Land Commission Awards granted in Pāhoehoe 1-4 (ali‘i* award)**

<i>Ahupua‘a</i>	LCAw. No.	Awardee	No. of ‘ <i>āpana</i> claimed	No. of ‘ <i>āpana</i> awarded	Royal Patent No.	Acres
Pāhoehoe 1	3436C	Paele	4	2	4133	2.20
Pāhoehoe 1 & Kaumalumalu	5922	Puuloa	5	2	4151	1.32
Pāhoehoe 1	3434B	Kahaoi	1	1	4215	1.70
Pāhoehoe 2	11216:35	Kekauonohi*	n/a	<i>ahupua‘a</i>	n/a	1,190
Pāhoehoe 2	8520B:3	Gini Lahilahi*	n/a	<i>ahupua‘a</i>	1668	n/a
Pāhoehoe 2 & 3	10986	Nawelu	5	2	4220	2.49
Pāhoehoe 3	3435B	Kapahu	3	1	4218	2.0
Pāhoehoe 3	3436B	Koeke	3	1	4217	2.10
Pāhoehoe 3	4705	Moepuu	4	2	4221	3.38
Pāhoehoe 4	3433B	Kahookele	4	1	7018	1.80
Pāhoehoe 4	5788	Kauaawa	2	1	4222	1.60
Pāhoehoe 4	10654	Pueo	4	1	4219	1.80

2. Background

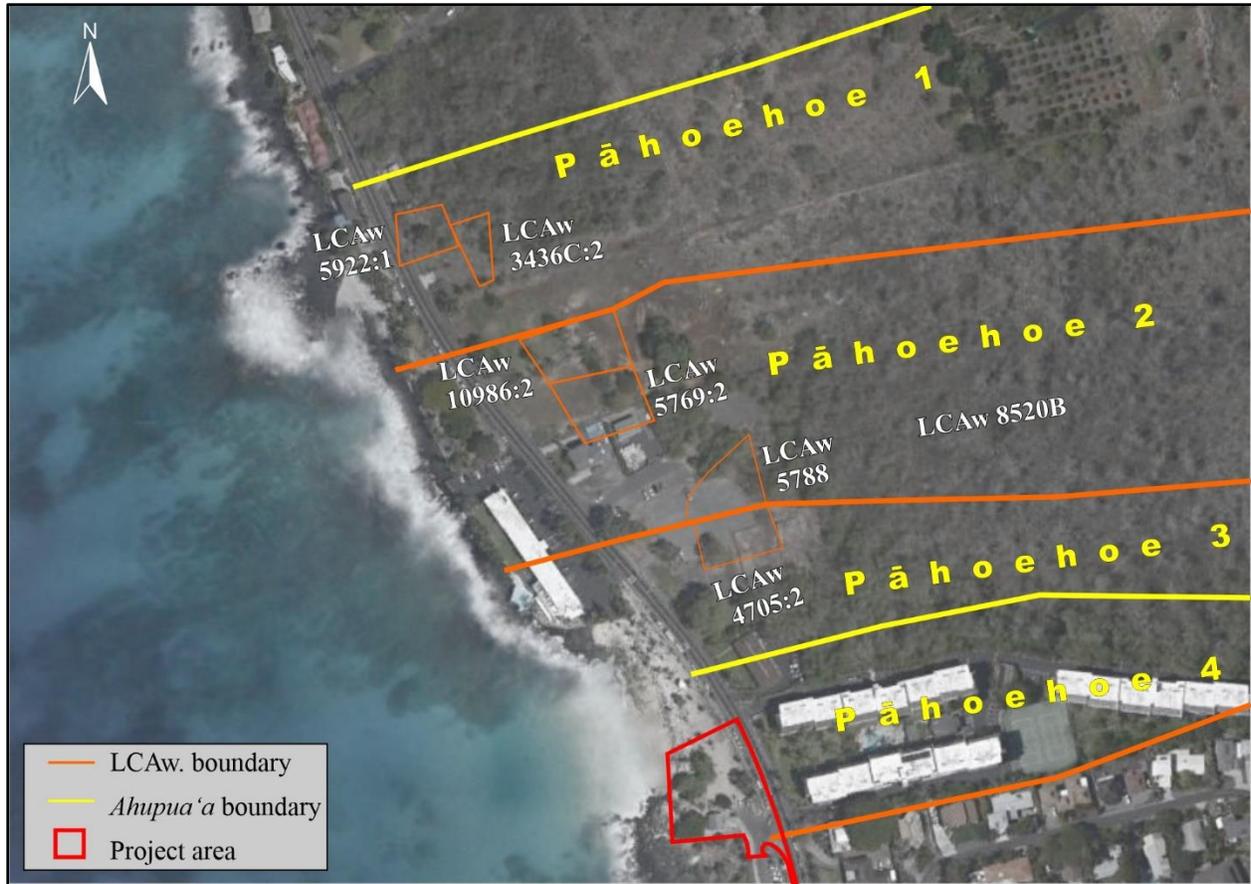


Figure 16. Kuleana parcels awarded in the coastal section of Pāhoehoe 1-4.

Table 3. Land Commission Awards Granted in La‘aloa 1 and 2 (*ali‘i award)

<i>Ahupua‘a</i>	<i>LCAw. No.</i>	<i>Awardee</i>	<i>No. of ‘āpana claimed</i>	<i>No. of ‘āpana awarded</i>	<i>Royal Patent No.</i>	<i>Acres</i>
La‘aloa 1	7716	R. Ke‘elikōlani*	<i>n/a</i>	<i>ahupua‘a</i>	<i>n/a</i>	<i>n/a</i>
La‘aloa 1	10566	Opunui	6	2	4214	1.53
La‘aloa 2	5773	Kalepaa	4	1	4212	2.50
La‘aloa 2	5770	Kalua 2	4	1	4213	2.0
La‘aloa 2	5787	Kanewa	5	2	4165	1.40
La‘aloa 2	10889	Manuunuu	2	1	4211	1.90
La‘aloa 2	10888	Nahuakou	2	1	4726	1.35
La‘aloa 2	5913	Pukai	5	1	4209	0.24
La‘aloa 2	5899	Pupu	5	1	4210	2.25



Figure 17. Kuleana parcels awarded in the coastal portion of La'aloa 1st and 2nd.

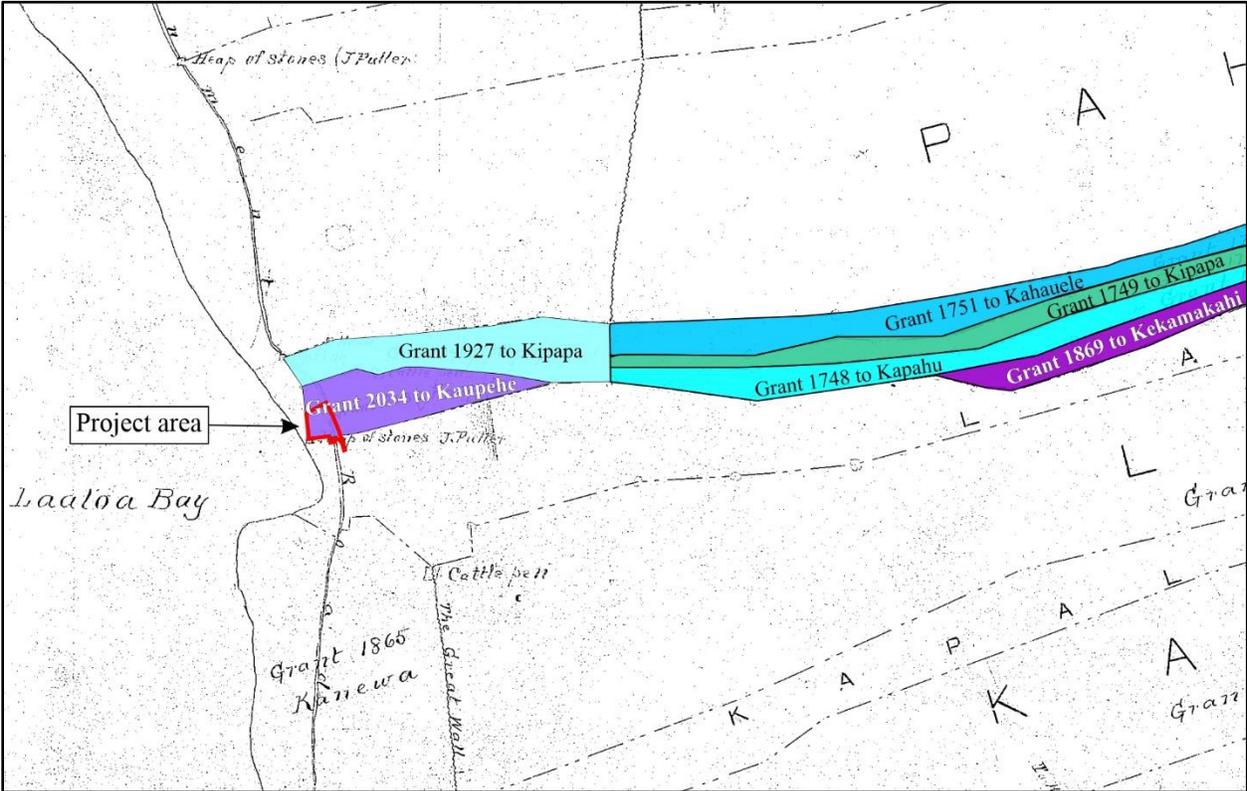


Figure 18. Portion of Hawai'i Registered Map 1850 (Emerson 1891) depicting land grants.

2. Background

Table 4. Land Grants Awarded in Pāhoehoe 3rd and 4th.

<i>Grant No.</i>	<i>Awardee</i>	<i>Acres</i>	<i>Year Awarded</i>	<i>Ahupua'a</i>
1927	Kipapa	6.5	1855	Pāhoehoe 3
1751	Kahauele	19.0	1855	Pāhoehoe 3
1749	Kipapa	22.5	1855	Pāhoehoe 3
1748	Kapahu	21.0	1855	Pāhoehoe 3
2034	Kaupehe	3.75	1856	Pāhoehoe 4
1743	Kumukahi	5.0	1855	Pāhoehoe 4
1869	Kekamakahi	26.5	1855	Pāhoehoe 4
3020	Naaimokohi	32.5	1866	Pāhoehoe 4

After the *Māhele 'Āina* of 1848 and passing of the *Kuleana* Act in 1850, La'aloa 1st was retained by Ruth Ke'elikōlani until her death in 1883, at which time La'aloa was transferred to her niece, Bernice Pauahi Bishop. Upon Pauahi's death in 1884, her husband and his associates took over as executors of her estate. In 1885, La'aloa 1st was sold to Lahapa Kailipeleuli (also known as Lahapa Halsey), who held the *ahupua'a* until 1902. Between 1885-1902, Lahapa Halsey leased portions of the *ahupua'a* to Thomas Silva. Between 1891-1897, Thomas Silva assigned portions of La'aloa 1st to the Hawaiian Coffee & Tea Company, Ltd, and later to the Kailua Coffee Company, Ltd (Supreme Court of the Territory of Hawaii 1903). After, 1902, portions of La'aloa, 1st were sold to various companies including the Kona Development Company, Ltd., West Hawaii Railroad Company, Ltd., in addition to a number of individuals. During the 19th and 20th centuries, *kula* lands in both La'aloa and Pāhoehoe were used for cattle ranching (Maly 1997).

Use of the coastal portion of La'aloa-Pāhoehoe by the resident families for fishing was documented in a series of oral history interviews conducted by Maly (1997) with members of several families with ties to the current project area, which included Lily M.N. Ha'anio-Kong, James and Goro Inaba, members of the Makuakāne family, Valentine K. Ako, and Kalaniola Hamm and family, along with community members Kahu Leon Sterling, Alena Kaiokekoa and Kawelu, and Zachary Kapule. Interviewees related that Pāhoehoe was known traditionally and during the early 20th century for a *ko'a* for 'ō'io (a dedicated fishing ground for bonefish [*Albula vulpes*]) (Maly 1997), and that the Makuakāne children played and fished along the entire shoreline.

Beginning in the 1940s, several changes occurred within the current project area. The *Alanui Aupuni* or Keauhou-Kailua Government Beach Road that crossed through the current project area was moved *mauka* to the current alignment of Ali'i Drive (Figure 19). County of Hawai'i tax records show that several buildings (including three dwelling structures, a kitchen and bath, an open shed, and garage) and several accessory structures (including three tanks and a well) were constructed in the current project area parcel (Figure 20), which by then was owned in part by Mr. Walter E. Eklund, a *haole* businessman. Over the next two decades, the parcel was divided into four was divided into four separate parcels (see Figure 20) that included a beach portion (Parcel 106), the developed portion (Parcel 017), the former road alignment (Parcel 107), and the portion of the parcel *mauka* of the former road alignment (Parcel 094). The last division, creating Parcel 107, took place in 1971. The next year, Parcel 017 was condemned and acquired by the County of Hawai'i in 1972, by which time most of the buildings had already been demolished. In 1980, the last two of these structures had been demolished, and the current park facilities were constructed beginning the next year.

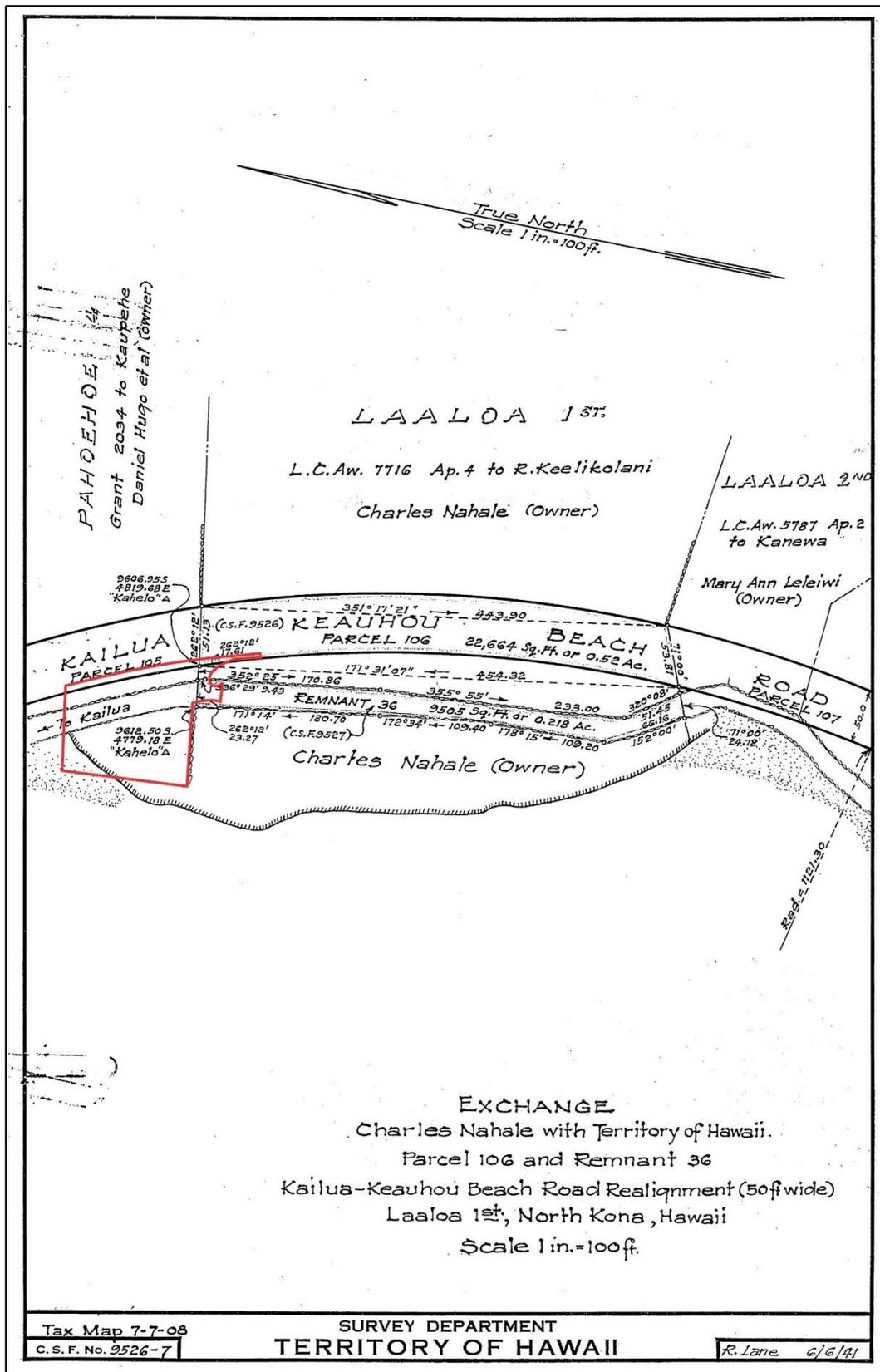


Figure 19. Relocated alignment of Keauhou-Kailua Beach Road with current project area outlined in red (Lane 1941).

2. Background

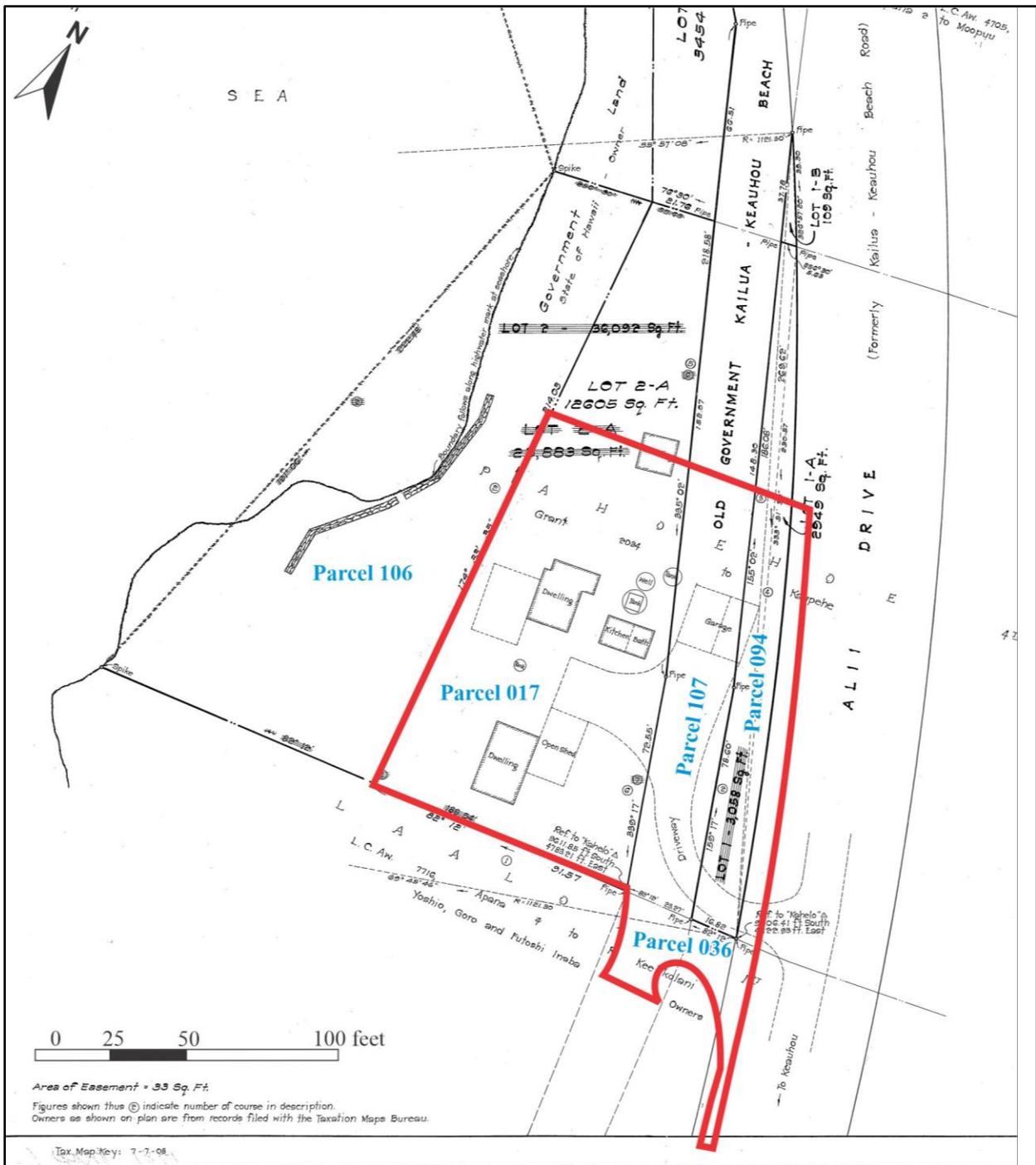


Figure 20. Portion of Land Court Application 1781 Map 1 (Smith 1957).

PREVIOUS STUDIES

At the turn of the century, traditional Hawaiian sites were rapidly being destroyed, and the native knowledge of these sites were being lost. Of most concern was the destruction of Native Hawaiian ceremonial sites, in particular *heiau* around the islands. This inspired writers, historians, and archaeologists alike to begin documenting these sites. Thomas Thrum, a historian and editor for *The Hawaiian Annual* compiled a short list of *heiau* in 1906-1907 John Stokes, an archaeologist with the Bishop Museum, traveled through the Island of Hawai'i documenting and recording *heiau* he encountered. In 1906, Stokes was the first to record Haukālūa *Heiau*, located immediately to the south and of the current project area and within La'aloa Beach Park (Stokes and Dye 1991). He described the site as follows:

Heiau of Haukālūa, land of La'aloa, North Kona. Located on the north side of the bay, between the sea and the road. This is a low platform or terrace that rises to a height of 4 feet at its southwest corner. The northern and eastern sides are level with the ground. The location of the northeastern corner is somewhat uncertain (Stokes and Dye 1991:63)

Thrum (1908:44) described the *heiau* as measuring "100 by 75 feet, little of which now remains." Based on his 1906 field operations, Stokes prepared a drawing of the site, which is a simple line drawing of the borders of the *heiau*:

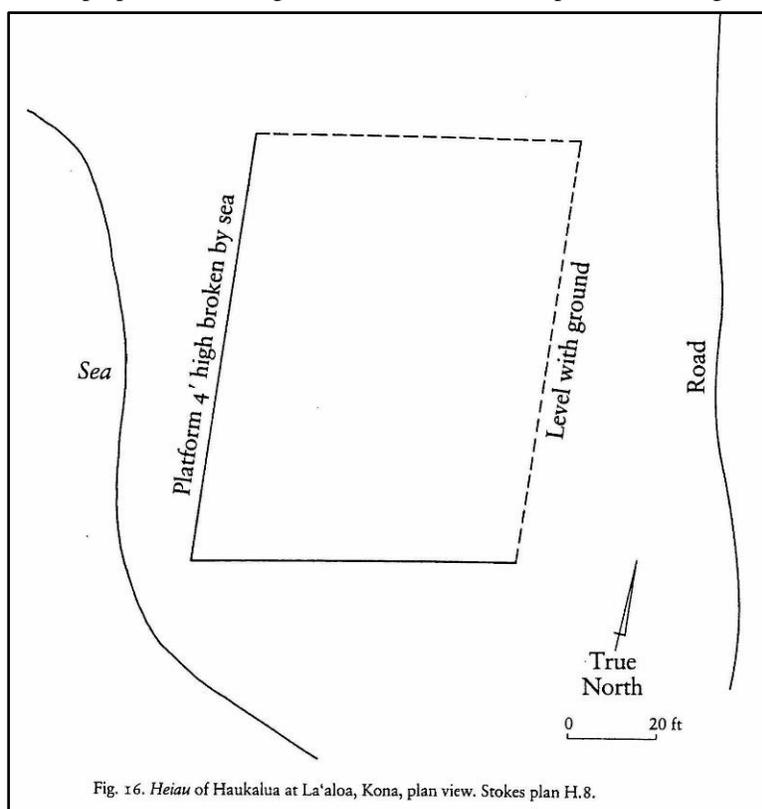


Figure 21. Map of Haukālūa Heiau (in Stokes and Dye 1991:64).

In 1929-1930 Bishop Museum hired John Reinecke who conducted a study of sites in the Kona district. Reinecke (1930:52) also recorded some general information on the cultural landscape of the time and refers to the destruction of historic sites near to the project area, stating:

The most distinctive feature of this section is the use of coral fragments as a top dressing for the floors of dwelling sites. This is as characteristic as the use of ilili in the a-a section of kahaluu

A very large portion of the dwelling sites and other structures along the coast must have been erected mauka of the government beach road; but it is practically impossible to penetrate the undergrowth to investigate even as far mauka as the Pa Kuakini; where I did so, the results were disappointing, as grazing of cattle and the demands of Kuleana walls have resulted in the destruction of many sites. Furthermore, this coast was rather densely populated until recently, so that most dwelling sites will be recent and of little interest

2. Background

Reineke also recorded several sites within La‘aloa and its neighboring Pāhoehoe Ahupua‘a, however only one, Site 15 (SHPD Site 2009) Haukālūa Heiau, is located within the project area. Based on field work conducted in 1929-1930, Reinecke (1930:31) made the following notes relative to what he recorded as Site 15 at La‘aloa:

Site 15. HAUKALO A HEIAU, in La‘aloa (?)...A simple platform which, in its broken-down condition slants sharply makai; was probably built in two levels; is about 4' high in front. At the south end it appears to have been two terraces. There is a house site on the S.E corner. The approximate length is...95'; the width cannot be stated even approximately, as the platform runs in to the bank, but may have been about 56'. South of it are a small old house site followed by a larger one. North are two or three old house sites before reaching a pen, which contains a smaller pen and a shallow pit, probably once a well.

Haukālūa Heiau was once again investigated in 1972 during the statewide Inventory of Historic Properties project conducted by DLNR. Several features on the surface of the *heiau* not noted in the earlier studies were depicted on the sketch of the site that was prepared to accompany the Hawai‘i Register of Historic Places nomination form (Figure 22). These features include a square platform measuring 2 meters by 2 meters standing 75 centimeters above the main platform surface and a paved area along the southern portion of the site. The bulk of the platform surface is rough and mounded fill. An archaeological Inventory Survey conducted in 1995 did not elaborate or provide further detail on the site, but had documented more recent disturbance and vandalism of the *heiau*:

In February of 1995, vandals were digging in the heiau platform. Upon investigation of the vandalism by the State Historic Preservation Division, three fragments of a single human rib were recovered from looters back-dirt pile. These remains were reburied in the platform. This is the only recorded location of any burial or reburial site in the subject parcel. In July 1995, we found the structure has continued to be eroded by high surf, and that a portion of the northeast corner of the structure has been removed. It appears the this was done during clearing for improvements (a water tank), to the residence [Inaba] that was constructed in the 1930's. (Kawachi et al. 2000:3.1)

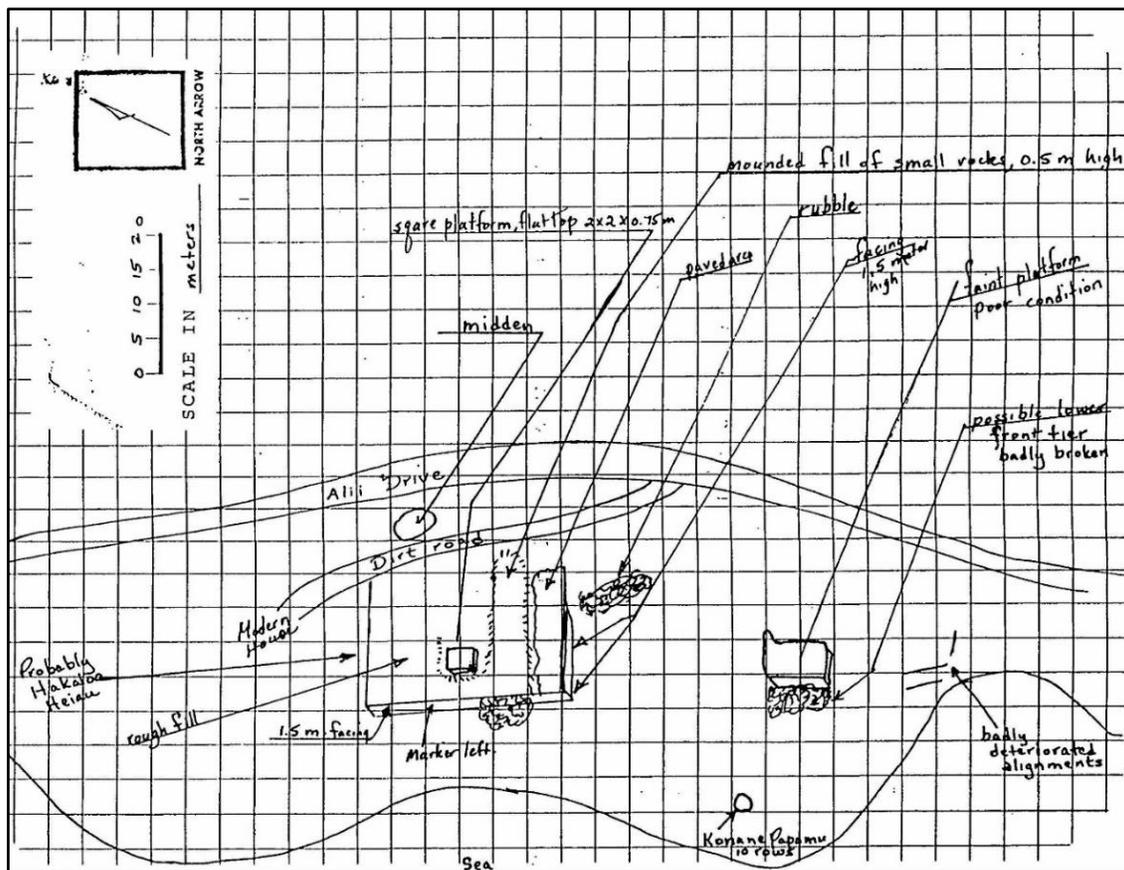


Figure 22. 1972 Hawaii Register of Historic Places nomination map of sites within southern portion of La‘aloa Beach Park, including Haukālūa Heiau (in Kawachi et al. 2000:2.4)

Previous studies conducted within La‘aloa Beach Park after 1970

Since the 1970s, mandated archaeological studies prompted by the passing of federal and state legislature concerning the preservation of historic and cultural sites have been conducted in the project area vicinity. Figure 23 shows the location of these studies, relative to the current project area. Table 5. below lists all relevant studies organized chronologically. A summary of findings of each of the listed studies are described in the following paragraphs.

Four studies (Kawachi et al. 2000; Maly 1997; Rechtman 2006a, 2006b) have been conducted within La‘aloa south of the current project area (see Figure 23), and a total of eight sites have since been recorded within La‘aloa Beach Park (Table 6). Kawachi et al. (2000) conducted an archeological inventory survey and subsurface testing in 1995 within TMK parcel (3) 7-7-010:036. This parcel was purchased by the County for the proposed expansion of the adjacent Magic Sands Beach Park (since renamed La‘aloa Beach Park). Six sites were recorded within this 1.5-acre parcel. These sites included Haukālūa Heiau (SIHP Site 2009), a low platform southeast of the *heiau* (SIHP Site 20764), a wall remnant (SIHP Site 21218), the location of a brackish spring and remains of a *furo* bath (SIHP Site 21219), a *pāpamu* (SIHP Site 21222), and two bait mortars (SIHP Site 21223). These latter two sites are located south of the current project area along the shoreline.

Kepā Maly (1997) prepared a preservation plan and cultural study that included an oral history, consultations, and historical documentary research for the then-proposed improvements to La‘aloa Beach Park (TMK: [3] 7-7-010:036) (see Figure 23). As a result of the interviews he conducted between 1996 and 1997, Maly was able to gather information regarding the traditional land use and the former condition of historic properties within the coastal parcel, in addition to recommendations for the preservation of the remaining cultural sites. In addition to the six sites previously recorded by Kawachi et al. (2000), three sites were identified through archival research and interview documentation. These sites include: the remnants of the *iwi ‘āina* or boundary wall delineating the *ahupua‘a* of La‘aloa and Pāhoehoe (SIHP Site 21218), a spring (SIHP Site 21219), and the aforementioned *Kū‘ula* fishing shrine (SIHP Site 21220). Four preservation zones (A through D) were delineated at this time for the protection of the sites (Figure 24). Preservation Area A, includes the area on the north side of the *heiau*, extending south along the *makai* boundary of the Old Government Road easement, and down to the shore line of Hōpoe Bay and includes the six sites previously recorded by Kawachi et al. (2000). Preservation Area B, consists of a buffer around SIHP Site 21218 (*iwi ‘āina* wall). Preservation Area C, includes SIHP Site 21219 (spring), and Preservation Area D protects SIHP Site 21220 (*kū‘ula*).

Table 5. Previous studies conducted within the project area vicinity.

<i>Year</i>	<i>Author(s)</i>	<i>Type of Study</i>	<i>Ahupua‘a</i>
1973	Ching et al.	Inventory survey	Kahului to Kahalu‘u
1978	Soehren	Reconnaissance survey	La‘aloa
1979	Hammatt	Reconnaissance survey	Various
1980	Hammatt and Clark	Testing and salvage excavations	Various
1980	Barrera	Survey	Pāhoehoe
1983	Hommon and Rosendahl	Inventory survey	Various
1986	Rosendahl and Rosendahl	Reconnaissance survey	Pāhoehoe 2 nd
1990	Barrera	Inventory survey	Kaumalumu and Pāhoehoe
1996	Head and Rosendahl	Inventory survey	Pāhoehoe 2 nd
1996	Latinis et al.	Inventory survey	Pāhoehoe 3 rd
1997	Borthwick et al.	Inventory survey	Pāhoehoe 2 nd and 3 rd
1997	Maly	Site preservation plan	La‘aloa 1 st
1998	Haun et al.	Inventory survey	Kahului to Keauhou
1998	Henry et al.	Inventory survey	Various
1998	Henry and Wolforth	Inventory survey	La‘aloa
1999	Paul H. Rosendahl Inc.	Inventory survey	Kaumalumu and Pāhoehoe 1st
2000	Kawachi et al.	Inventory survey	La‘aloa 1 st
2000	Hammatt et al.	Data recovery	Pāhoehoe 2 nd
2004	Ketner et al.	Inventory survey	Pāhoehoe 1 st
2005	Clark et al.	Inventory survey	Pāhoehoe 1 st and 2 nd
2006a	Rechtman	Burial treatment plan	La‘aloa 1 st
2006b	Rechtman	Preservation plan	La‘aloa 1 st
2017	Brandt et al.	Cultural impact assessment	Pāhoehoe 3 rd , 4 th and La‘aloa 1 st

2. Background

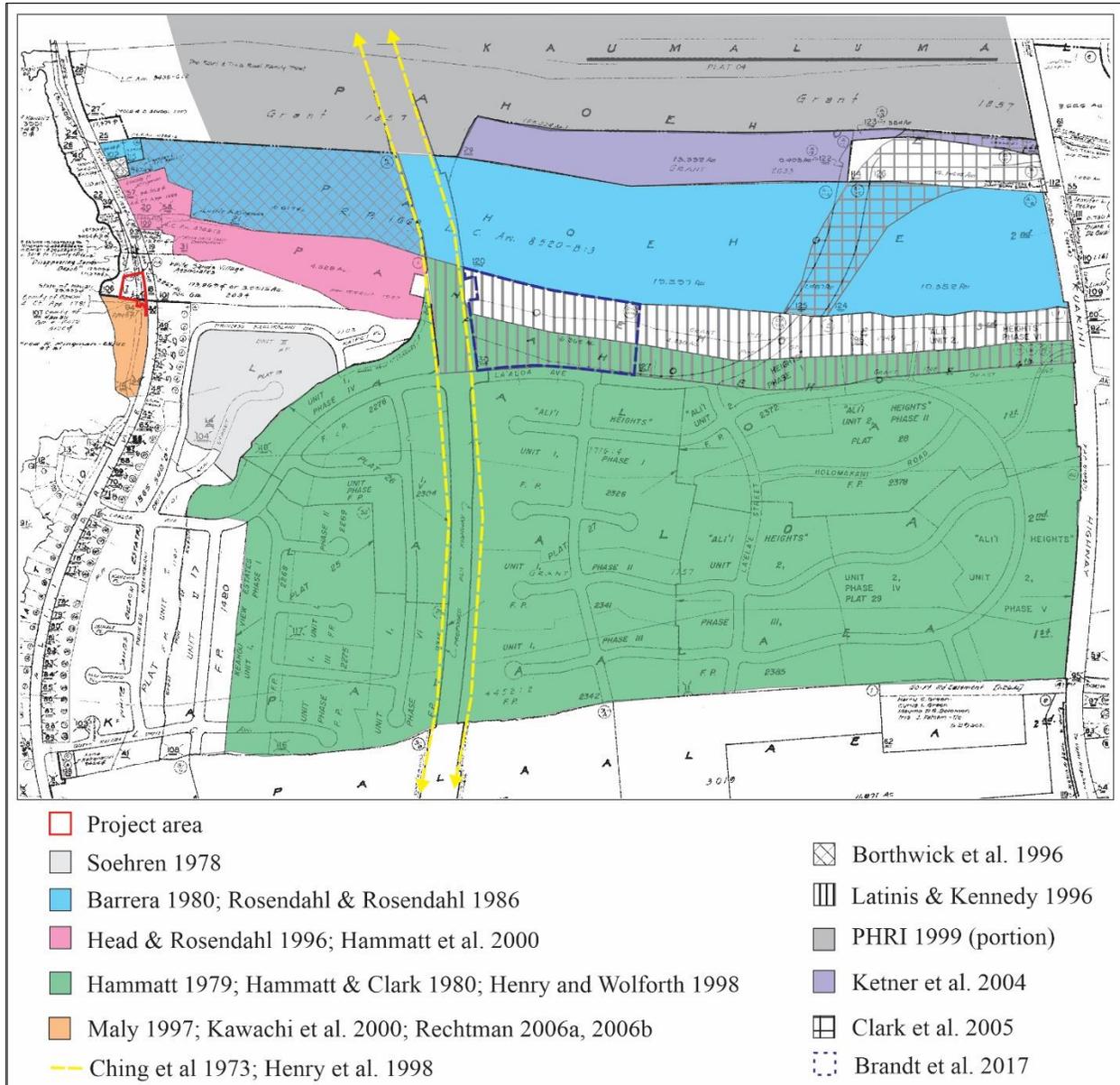


Figure 23. Previous studies conducted within the project area (outlined red) vicinity.

Table 6. SIHP Sites recorded within La‘aloa Beach Park, but outside project area.

SIHP Site No.	Site Type	Preservation Area	Additional Comments
2009	Haukālua Heiau	A	Also includes a burial site.
20764	Stone platform	A	Possibly a house foundation
21218	Iwi ‘āina (wall)	B	Boundary wall separating La‘aloa 1 st and Pāhoehoe 4 th
21219	Spring	C	Identified through oral history
21220	Kū‘ula (fishing deity stone)	D	The stone is preserved on top of a constructed platform, built on a <i>pāhoehoe</i> rise overlooking Ka Lae O Huihui
21221	Paena wa‘a (canoe landing)	A	Identified through oral history
21222	Papamū	A	Set within the <i>pāhoehoe</i> flats
21223	Two bait bowls	A	Set within the <i>pāhoehoe</i> flats

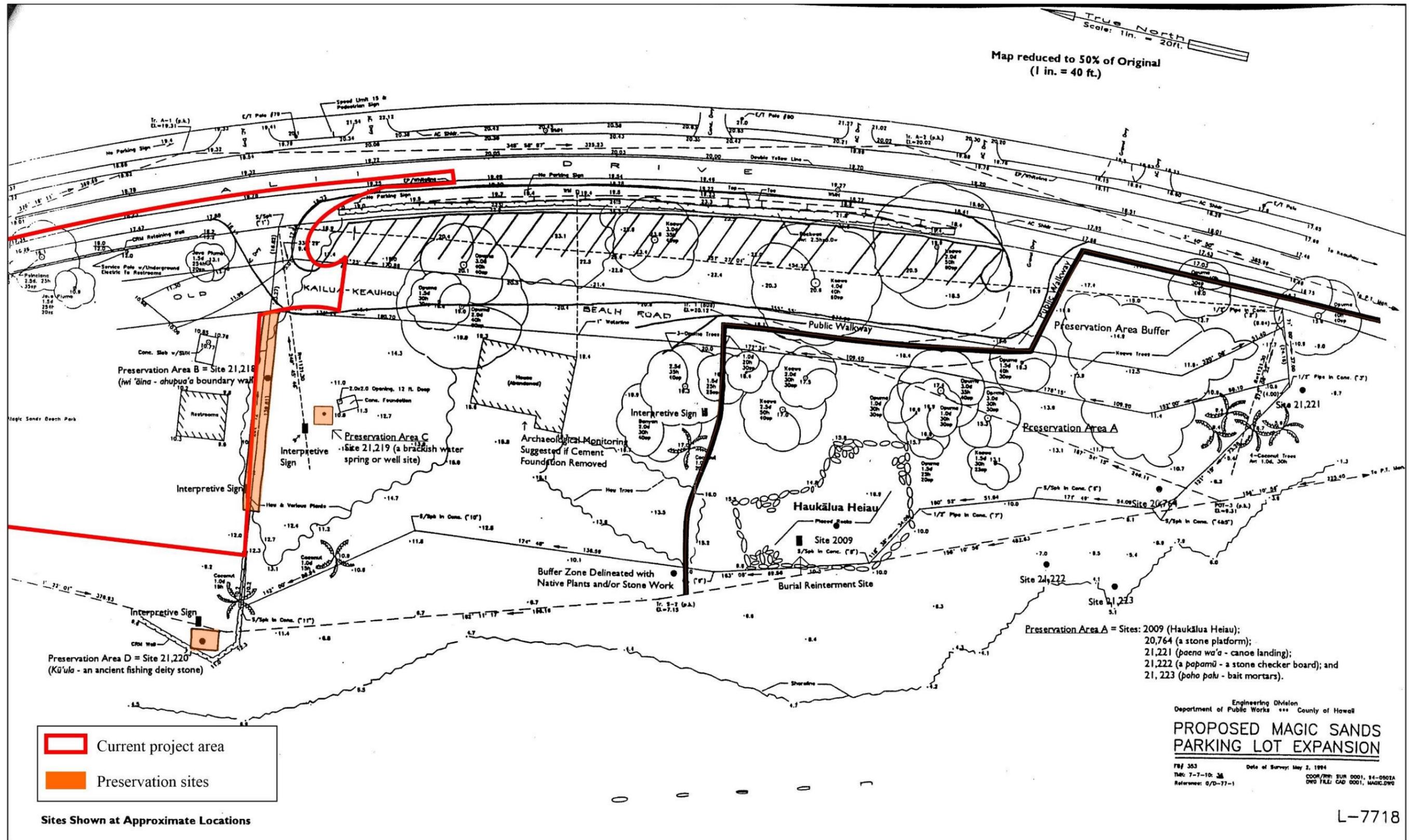


Figure 24. La'aloa Beach Park proposed preservation plan map (preservation areas A-D outlined in red) (after Maly 1997:51).

Eight years later, in 2005, Rechtman Consulting, LLC (RC) prepared a Burial Treatment Plan (Rechtman 2006a) for Haukālua Heiau (SIHP Site 2009) and a Preservation Plan (Rechtman 2006b) for additional Historic Properties located within the Maly (1997) project area in conjunction with the improvements to La‘aloa Beach Park. The burial treatment plan addressed a single burial site which was designated a part of Site 2009 along with Haukālua Heiau, and also the location of modern Hawaiian cultural practices (Figure 25).

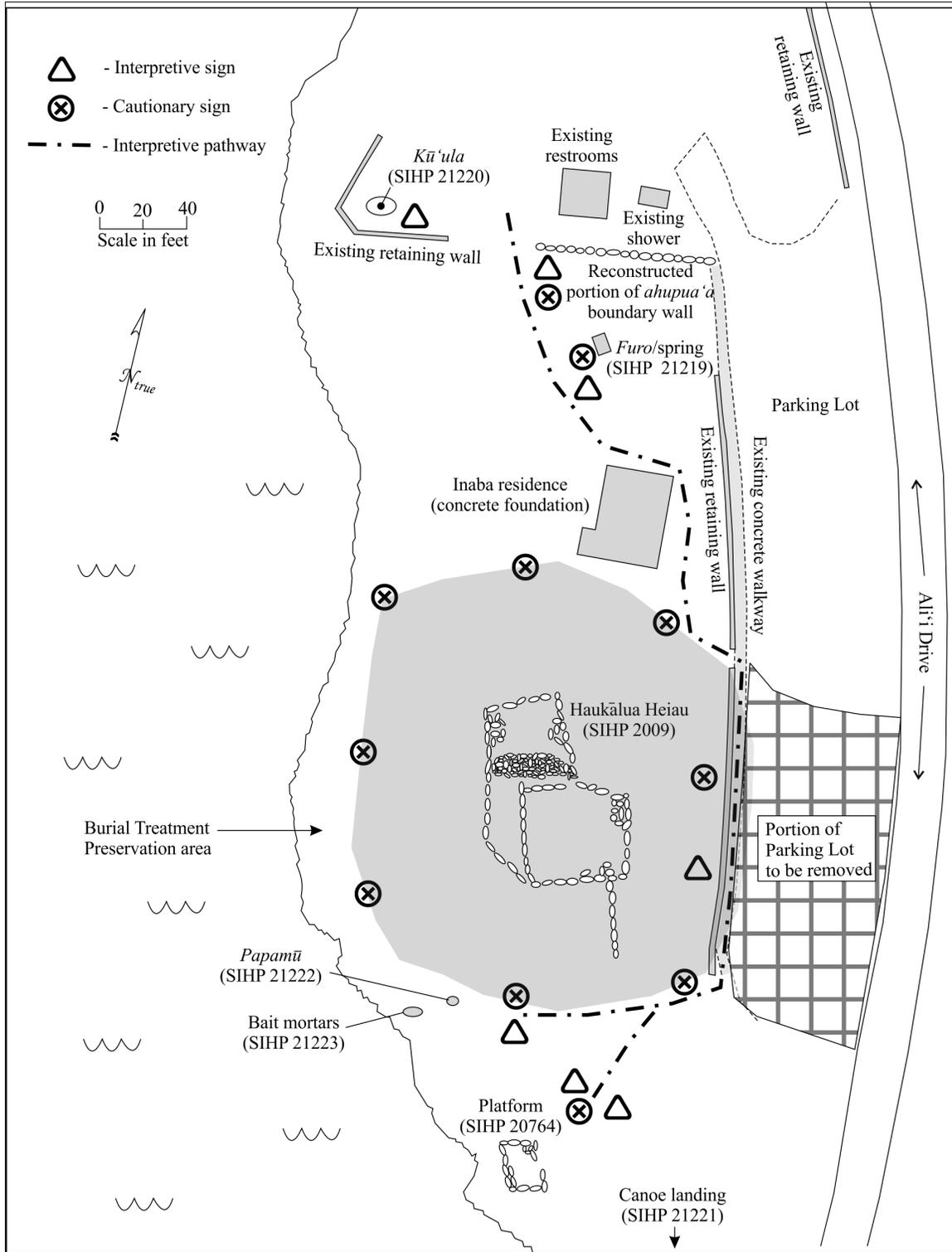


Figure 25. Burial treatment preservation area for Site 2009 (Rechtman 2006a).

Summary of Previous Archeological Studies Conducted in the Lower Kula of Pāhoehoe and La'aloa

Since the 1970s, several compliance-driven archaeological and cultural studies have been conducted within the lower *kula* zone of Pāhoehoe and La'aloa (see Figure 23). Nearly all of these studies have occurred *mauka* of Ali'i Drive, leaving most of the immediate shoreline without modern, formal archaeological investigations. In general, the results of these studies have confirmed and elaborated on the Kona Field System model proposed by Newman (1971), documenting agricultural features such as walls and mounds, and also habitation sites and complexes, platforms, *heiau*, burials, and trails. Faunal remains at many of the features recorded during these studies included marine shell and fish bone likely obtained at the coast in the vicinity of the current study area, and artifacts associated with fishing or made from marine shell and urchin spines were also reported. Historic ranching features such as walls and animal pens have also been recorded.

In 1973, the Archaeological Research Center Hawaii (ARCH) conducted the initial archaeological surface survey (Ching et al. 1973) for the proposed Ali'i Drive realignment project. Their project area crossed through seven *ahupua'a* (from north to south)- Kahului, Puapua'a, Hōlualoa, Pāhoehoe, La'aloa, Kapala'alaea, and Kahalu'u; and extended 150 feet on either side of the proposed road centerline for approximately 3.4 miles starting at Kuakini Highway in Kailua and terminating near Kahalu'u Beach Park (see Figure 23). A total of 285 archaeological features were recorded within the limits of the proposed road and assigned SIHP numbers. Twenty-six features were recorded in both La'aloa 1st and 2nd, and Pāhoehoe 1st through 4th. For Pāhoehoe, SHIP Site 6355 is described as an agricultural mound complex, SIHP Sites 6352, 6353, and 6354 are described as walls. For La'aloa, SIHP Site 6382 is described as a monument platform.

Twenty-five years later, Paul H. Rosendahl, Ph.D., Inc. (PHRI) conducted an archaeological inventory survey (AIS) of the proposed Ali'i Highway corridor (Haun et al. 1998). The fieldwork for this project involved several highway alignment alternatives and was conducted in five phases over the span of twenty-five years, which began in 1973 with the aforementioned ARCH study (Ching et al. 1973). The total length of the corridor was 4.49 miles and originated in Kahului 1 Ahupua'a (located north of the project area), and extended along the southwest side of the Queen Ka'ahumanu Highway and terminated at Keauhou 1 Ahupua'a (located south of the project area) (see Figure 23). The *ahupua'a* of Pāhoehoe and La'aloa made up approximately 13% of the entire corridor area. A total of 177 sites were identified in their study corridor, with 1,548 component features, in addition to the Kona Field System (SIHP Site 6601), and the Kahalu'u Historic District (SIHP Site 4150).

In 1978, Lloyd Soehren (1978) conducted a preliminary archaeological reconnaissance survey of a 5.81 acre parcel (TMK: (3)-7-7-08:104) in La'aloa, located to the east of Ali'i Drive and the current project area (see Figure 23). Soehren recorded eleven sites, some of which he identified as walls and cairns, which he associated with agricultural activities. He also recorded habitation sites, house foundations, one possible *heiau*, and platforms of various shapes and sizes. Soehren did confirm that one exposed platform (site eight) was indeed a burial site. Although Soehren interpreted many of the platforms to be burials, he did not carry out further testing to confirm his interpretation.

In 1979, ARCH conducted a reconnaissance survey (Hammatt 1979) of the 155-acre Ginter property located to the southeast of the current project area in La'aloa 1st and 2nd Ahupua'a (see Figure 23). The following year, ARCH conducted testing and salvage excavations (Hammatt and Clark 1980) of the sixty-six sites recorded by Hammatt (1979). ARCH reported that artifact assemblages recovered from testing platforms indicated use associated with volcanic glass reduction; while the assemblage from cave sites indicated fishhook manufacture and woodworking. Nearly twenty years later, PHRI conducted an archaeological inventory survey of the same property and recorded five previously unidentified sites and recommended data recovery for eight sites (Haun et al. 1998). In addition, Henry and Wolforth reported that thirty-one of the previously recorded sites had been destroyed as a result of mechanical clearing activities.

In 1985, PHRI conducted an archaeological reconnaissance survey (Rosendahl and Rosendahl 1986) of a 44-acre property (TMK: [3] 7-7-008:021) located in Pāhoehoe 2nd Ahupua'a, between Ali'i Drive and Kuakini Highway, to the northeast of the current project area (see Figure 23). Portions of their project area had been surveyed as part of the Ali'i Drive realignment project (Ching et al. 1973; Hommon and Rosendahl 1983) and for residential development (Barrera 1980). As a result of these three earlier studies, twenty-one sites comprised of nearly one hundred features were recorded and assigned SIHP site numbers within the Pāhoehoe 2nd project area prior to the initiation of the 1985 fieldwork. PHRI relocated the previously identified sites and recorded an additional twenty-three sites with over 350 component features. The newly identified sites were assigned only temporary site numbers. The forty-four sites were distributed throughout the project area and included a *heiau*, agricultural components, boundary walls, possible

burials, habitation complexes, terraces, platforms, shelters, ranching features, and trails. Rosendahl and Rosendahl (1986) found evidence of both Historic and Precontact occupation. Historic land use was limited to ranching features such as walls. The large Precontact habitation complexes and a single *heiau* were located near the coast, whereas smaller habitation complexes and associated agricultural features were located throughout the project area. The majority of the agricultural field components were located in the higher elevations of the project area.

In 1991, Cultural Surveys Hawaii conducted an archaeological inventory survey (Borthwick et al. 1997) of a 7-acre parcel (TMKs: [3] 7-7-008:020, 031 and 100) extending across Pāhoehoe 2nd and 3rd Ahupua'a northeast of the current project area (see Figure 23). As a result of their survey, twenty sites and site complexes were recorded. Site types encountered were agricultural, boundary, burial, and habitation. Feature types included platforms, walls/wall complexes, enclosures, modified outcrops, and terraces. Excavation units were placed in six of the sites to determine function and age. Age was determined by observable characteristics of the site and the cultural remains found within the excavation units. Of the six sites tested, two were reported to be Precontact, three were Historic, and one represented use from Precontact through to Historic times. Borthwick et al. (1997) concluded that their study revealed the typical Kona settlement pattern in which Precontact habitation features are located near the coast with a few located more inland near agricultural features. They identified that areas of higher elevation contained agricultural features representative of the Kona Field System; and that soon after European contact and settlement, habitation moved more inland to make room for residential expansion along the coast. They surmised that the early to mid-1900s saw the introduction of cattle into the area leaving traces of ranching features on the landscape, and that following the 1940s, the coast was once again used for residential purposes, leaving the inland areas for pasturage.

In 1996, PHRI conducted an AIS (Head and Rosendahl 1996) of the then proposed sewage pump station site (TMKs: (3) 7-7-008:021 and 023) in Pāhoehoe 2nd Ahupua'a, located to the northeast of the current project area (see Figure 23). As a result of their fieldwork, PHRI recorded two sites (SIHP Sites 6381 and 6996) previously identified by Barrera (1980) and Rosendahl and Rosendahl (1986), and three previously unidentified sites (SIHP Sites 19857-19859). No further work was the recommended treatment for the three stone wall sites (SIHP Sites 6381, 19858, and 19859) based on the lack of cultural deposits. While a midden scatter (SIHP Site 6996) and a buried cultural deposit (SIHP Site 19857), both interpreted as associated with short-term Precontact habitation were recommended for further data collection. Head and Rosendahl (1996:37) reported "other than a thin scatter of surface ecofacts that may have been culturally modified, there are no indications of the expected late prehistoric-early historic period structures." They posited that the lack of such features was likely due to either earlier repurposing of materials from Precontact or Historic features, or the effects of mechanical land clearing. About fifteen years later, Cultural Surveys Hawaii, Inc. conducted data recovery for sites SIHP Sites 6996 and 19857 (Hammatt et al. 2000).

In 1996, Archaeological Consultants of the Pacific (ACP) conducted a 14-acre archaeological inventory survey (Latinis et al. 1996) of two parcels in Pāhoehoe 3rd, east of the current project area (see Figure 23). As a result of their fieldwork, ACP recorded eight previously identified sites, seven of which were stacked stone walls (SIHP Sites 4587, 4588, 4591, 6302, 6352-6354). The remaining previously recorded site was an agricultural complex containing fifteen features (SIHP Site 6355). The study also recorded eleven previously unidentified sites: (SIHP Sites 20834-20844), comprising fifteen features that included two stone clearing mounds (SIHP Sites 20835, 20836, 20838C), a C-shaped enclosure (SIHP Site 20839), a walled enclosure (SIHP Site 20840), three modified outcrops (SIHP Site 20837 and 20841, 20842), four crude platforms (SIHP Sites 20838A, B, D, and E) and three blister caves/shelters (SIHP 2034, 20843 and 20844). Subsurface testing within the lava blister features revealed cultural remains that included Precontact artifacts such as dog tooth bracelet links, bone picks, and charcoal, *kukui* nut fragments, and faunal remains. Latinis et al. (1996:81) concluded that their project area, "may have been marginally utilized for limited agricultural production (primarily sweet potato, dryland taro, wauke, sugar cane, and possibly yam)" and said production "likely did not contribute substantially to subsistence demands in comparison to more productive zones located further inland (Latinis et al. 1996:81)."

In the late 1990s, Paul H. Rosendahl, Ph.D., Inc. conducted an AIS (PHRI 1999) of 173 acres (TMKs: [3] 7-7-004:002 and [3] 7-7-008:027) in Kaumalumu and Pāhoehoe 1st, located to the north of the current project area (see Figure 23) and resurveyed land investigated by (Barrera 1990). The report encompassed two phases of survey. The first survey occurred on a portion of the property in 1997, and a draft report was submitted to DLNR-SHPD for review but was never finalized because the developer wanted the rest of the property surveyed. After addressing the review comments by DLNR-SHPD and surveying the remainder of the property, a second report (PHRI 1999) was completed. PHRI recorded sixty-six sites and site complexes comprised of 715 features, which included mounds, terraces, modified outcrops, walls, platforms, enclosures, and planting areas. Fifty-one of the sites were recorded as single

features. Functions for the recorded Precontact sites and features included temporary and permanent habitation, agriculture, trail, storage, and possible *heiau*. Permanent habitation sites and features were located near the shore with only a few recorded in the upland agricultural areas where more temporary habitation features were located. Historic Period sites included mainly walls that functioned as either animal control features or land division boundaries, but a Historic trail (the Judd Trail) and four cattle enclosures were also recorded. PHRI dug a total of thirty-two excavation units and thirteen charcoal samples taken. The charcoal samples yielded dates ranging from A.D. 1265 to modern times. PHRI (1999) stated that their findings fit the expectations derived from the Kona Field System model in which more Precontact permanent habitation took place near the coast and Precontact temporary habitation and agricultural practices were conducted in the upland portions of the *kula* zone. Historical features related to ranching were expected due to the introduction of cattle into the project area in the 1920s.

In 2004, Rechtman Consulting LLC conducted an archaeological inventory survey (Ketner et al. 2004) of a roughly 15-acre parcel (TMK: [3] 7-7-008:029) located to the north and east of the current project area (see Figure 23). As a result of their fieldwork, eight previously unrecorded archaeological sites and three previously recorded sites were located and recorded. The sites included the Kuakini Wall (SIHP Site 6302) and three historic ranching/boundary walls (SIHP Sites 6381, 21384, and 24271), a bedrock outcrop modified historically for ranching purposes (SIHP Site 24273), a core-filled wall segment (SIHP Site 24276), four Precontact habitation complexes (SIHP Sites 24270, 24274, 24275, and 24277), one of which included a burial (SIHP Site 24270), and a grouping of 321 agricultural features that spanned nearly their entire survey area (SIHP Site 24272). All identified sites were assessed and determined to be significant under Criterion d, except for SIHP Sites 6302 and 24270. SIHP Site 6302 was determined to be significant under Criteria a and c, and SIHP Site 24270 which was determined to be significant under Criterion e. Recommended for preservation was SIHP Sites 6302, 24270, 24274, 24275 and 24277. No further work was recommended for the remaining sites.

In 2005, Rechtman Consulting LLC conducted an archaeological inventory survey (Clark et al. 2005) for the La‘aloa Avenue Extension Project of a roughly 14-acre parcel that straddled Pāhoehoe 1st and 2nd, located to the northeast of the current project area (see Figure 23). The project area included portions of TMKs: (3) 7-7-008:029, 114, and 120, thus creating a *mauka-makai* access connecting Ali‘i Drive to La‘aloa Avenue, and Kuakini Highway. As a result of their survey, six previously unrecorded archaeological sites and eight previously recorded sites were located and recorded. The sites include seven historic ranching/boundary walls (SIHP Sites 4591, 6352, 6381, 21384, 24271, 24376, and 24380), an alignment of possible Historic origin (SIHP Site 24379), a trail (SIHP Site 6350), four Precontact habitation sites including three complexes (SIHP Sites 6984, 24375, and 24378) and a terrace remnant (SIHP Site 24377), and a grouping of 213 agricultural features that spans the entire project area (a portion of SIHP Site 24272). Fifteen test units were excavated at six of these sites. All identified sites were assessed and determined to be significant under Criterion d. As such, data recovery was recommended for four Precontact sites (SIHP Sites 6984, 24375, 24377, and 24378), and no additional work was recommended for the remaining sites.

In 2017, ASM Affiliates prepared a Cultural Impact Assessment for the proposed construction of a park on a roughly 6.4-acre parcel (TMK: [3] 7-7-008:030) that straddles the Pāhoehoe 3rd and 4th Ahupua‘a boundary, and extends into La‘aloa 1st Ahupua‘a, east of the current project area (Brandt et al. 2017). The study included a field inspection, during which a Historic Period wall (SIHP Site 6352) separating Pāhoehoe 2nd and 3rd was observed, as was the southern portion of SIHP Site 20841, a modified rock outcrop (Latinis et al. 1996).

3. PROJECT AREA EXPECTATIONS

Based on the information presented above, and the history of land use and prior disturbance associated with the construction of the existing facilities at the beach park, it is unlikely that historic properties will be identified within the project area. The structures shown in Figure 20 were demolished in 1980 to make way for the current park facilities. Outside the limits of the proposed project, there are six preserved archaeological sites, which include Sites 2009, 20764, 21221, 21222, 21223, 21218, 21219, 21220 (see Figure 24).

4. FIELDWORK

On February 9, 2018, Benjamin Barna, Ph.D. conducted an intensive on-foot archaeological survey of the entire project area (100% surface survey). The entire project area was walked in meandering sweeps from Ali'i Drive to the water's edge, beginning at the north end of the beach park and ending at the southern end of the proposed project adjacent to the reconstructed rock wall (Site 21219) located at the boundary with La'aloa Ahupua'a. The project area was not marked in the field, but the area surveyed was determined by the extent of proposed ground disturbance indicated in the provided site plan (see Figure 4). The beach park was in use at the time of the survey. No historical properties of any kind were identified within the project area. Site 21219, the reconstructed *ahupua'a* boundary wall, is located immediately adjacent to the project area (Figures 26 and 27). The previously mapped location of Site 21220 (Figure 28), a *kū'ula* (fishing deity stone), is located outside the project area.



Figure 26. Southern end of the project area, with Site 21219 at left.



Figure 27. Site 21219 and parking lot entrance, view to the southeast.



Figure 28. Location of Site 21220 viewed from the western edge of the project area, view to the southwest.

5. DETERMINATION OF EFFECT AND RECOMMENDATIONS

Given the negative findings of the current study with respect to archaeological historic properties, it is concluded that the proposed Accessibility Improvements Project at La‘aloa Beach Park will not impact any known historic properties. Based on these results, a “no historic properties affected” determination of effect is recommended.

Although no historic properties are located within the current project area, care should be taken not to impact Site 21220, the *kū‘ula* located *makai* of the comfort station during implementation of the project. Silt fencing, construction fencing, or a similar type of barrier installed around the project area as part of Best Management Practices would provide an adequate visual and physical barrier between construction equipment and the site.

In the unlikely event that significant archaeological resources are discovered during the proposed ground disturbing activity, work should cease in the area of the discovery and DLNR-SHPD contacted pursuant to HAR 13§13-280-3.

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