FINAL ENVIRONMENTAL ASSESSMENT

GATING OF ACCESS ROADS IN THE CONSERVATION DISTRICT AT KAHAULOA

TMK (3rd): 8-3-005:001
Kahauloa, South Kona, Island of Hawai'i, State of Hawai'i

APPLICANT:

Charles and Diane Bundrant
P.O. Box 550
Captain Cook, Hawai'i 96704

ACCEPTING AUTHORITY:

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

CONSULTANT:

Geometrician Associates
Ron Terry Ph.D.
PO Box 396
Hilo, Hawai'i 96721

CLASS OF ACTION:

Use of Land in Conservation District

This document is prepared pursuant to:

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

[This page intentionally left blank]

TABLE OF CONTENTS

SUMMARY OF PROJECT, ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Chuck and Diane Bundrant, lessees under the landowner Kamehameha Schools (KS), plan to erect two vehicular gates on existing access roads on an undeveloped property in Kahauloa 2nd Ahupua'a in South Kona. The gating action is a condition of their lease with KS. Pedestrian access will continue to be allowed. The purpose of the gates is to provide a secured access for the 17 properties at Keawaiki Beach Lots that take access from this access road, called Keawaiki Road, which does not provide access to any public resources such as the shoreline or parks. Currently, this private road through Kamehameha Schools properties is also used by others as a vehicular shortcut to the village and beach at Ke'ei, which has its own, separate access across the property that will not be affected. A number of sensitive archaeological resources are present on the property, and unsecured access has promoted unauthorized camping, off-road driving and vandalism of these archaeological sites, as well as security issues for the property owners who take access from the access road. There are no archaeological features within the two areas planned for the placement of gates. The project would help protect historic sites. While the placement of the gates will limit vehicular through-traffic on the Keawaiki Road, a special gate and cindered walkway will be established adjacent to the gate structure for the express purpose of facilitating pedestrian travel. Consultation with community members did not identify any specific resources such as gathering practices, ceremonial sites, or traditional cultural properties that would be impacted by the proposed construction of the gates. However, several of those consulted felt that the placement of the gates would exclude community members from driving on a road that they have been accustomed to using for many years, a road that at some level substitutes for an ancient foot trail that was displaced by creation in the 1960s of the Keawaiki Beach Lots.

Land clearing and construction activities would produce minor short-term impacts to noise, air and water quality, access and scenery. The contractor will be required to emplace best management practices (BMPs) to properly manage storm water runoff and prevent erosion. If during construction any previously unidentified sites or remains such as artifacts, shell, bone, charcoal deposits or human burials are encountered, work will stop immediately and SHPD will be consulted to determine the appropriate mitigation. The lava rock design of the gates will be in keeping with the landscape of the area and will not produce adverse scenic impacts.

PART 1: PROJECT DESCRIPTION AND E.A. PROCESS

1.1 Project Description and Location

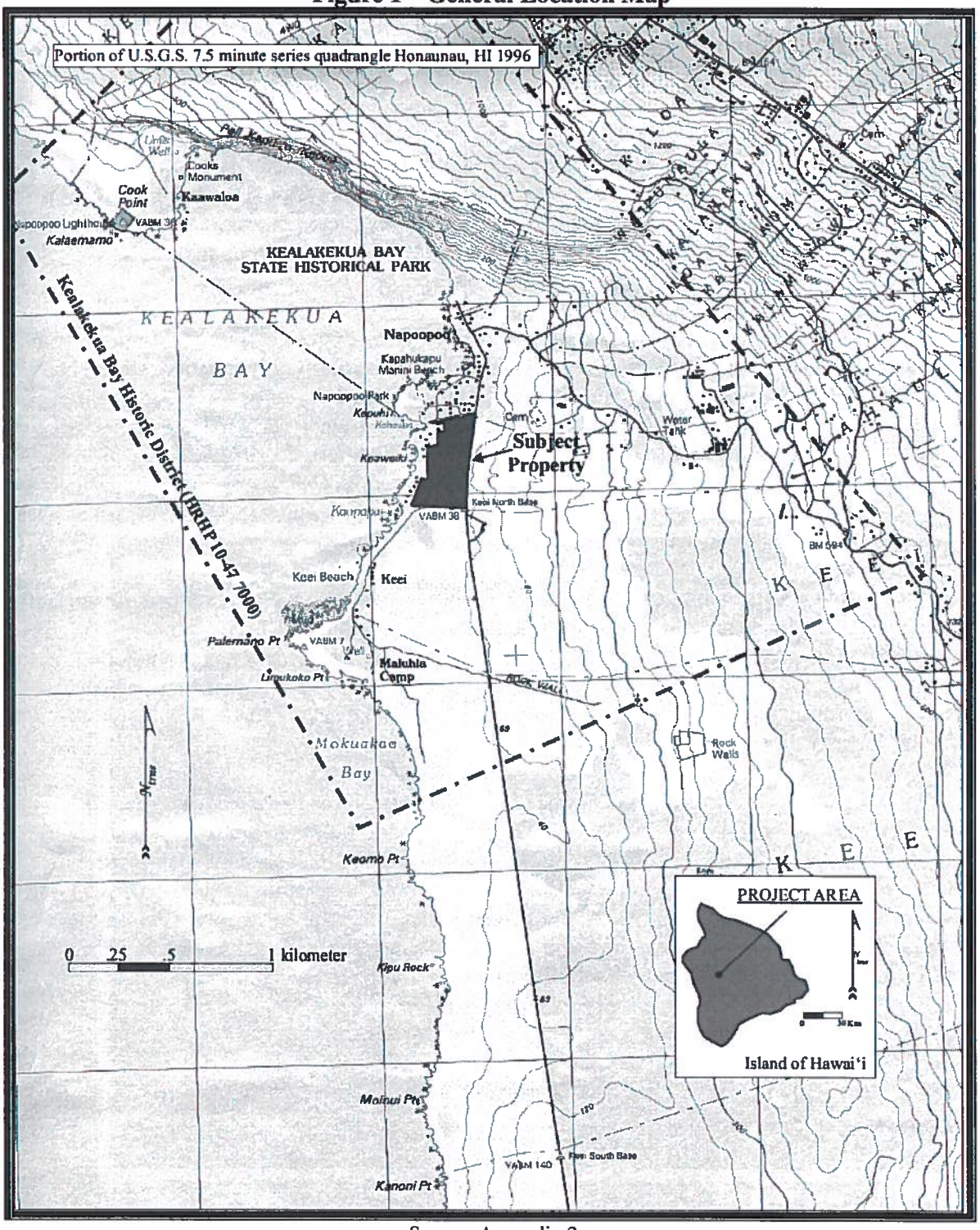
Chuck and Diane Bundrant, lessees under the landowner Kamehameha Schools, plan to erect two vehicular gates on existing private access roads on a 25.5696-acre undeveloped property in Kahauloa 2nd Ahupua'a in South Kona, TMK 8-3-005:001 (Figures 1-5). The action is in conformance with the requirements of their lease. The purpose of the gates is to help protect archaeological sites on the property and to provide security for the 17 properties at Keawaiki Beach Lots that take access from this road, which does not provide access to any public resources such as the shoreline or parks.

As shown in Figure 3 and 4a, the property is traversed by two unpaved mauka-makai roads from Pu'uhonua Road, which is the County road connecting Kealakekua Bay with Honaunau. The more southerly mauka-makai road is variously called Ke'ei Beach Road or Ke'ei Road, and it provides the access to Ke'ei Village and the shoreline. The more northerly mauka-makai road, informally called Keawaiki Road, is essentially an 800-foot long private driveway to access the roughly 1,400 foot long north-south road that fronts the Keawaiki Beach Lots and connects the two mauka-makai roads at their makai ends. The property through which these private roads pass is landlocked, with no public accesses to the shoreline.

Currently, the private Keawaiki Road system is used by not only the property owners it is meant to serve but also as an alternate public route to Ke'ei Road. A number of sensitive archaeological resources are present on the property, and unsecured access has promoted unauthorized camping, off-road driving and vandalism of these archaeological sites, as well as security issues for the property owners who take access from the access road. For the reasons above, the security gates are being proposed..

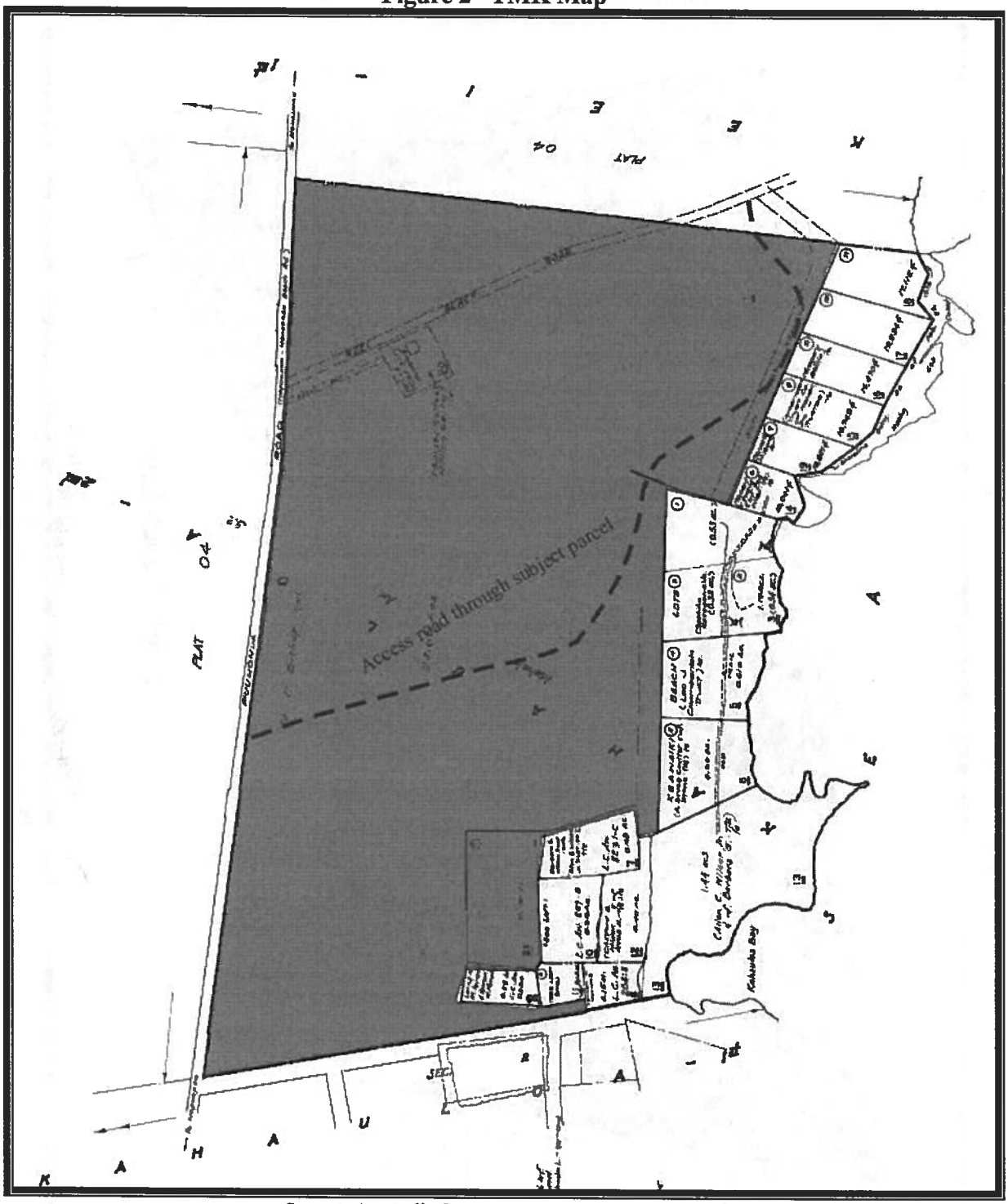
The proposed gating plan would install a locked, keypad gate on the private access road just makai of Pu'uhonua Road (see Figures 3 and 5), to which Mr. and Mrs. Bundrant and all lot owners in Keawaiki would have access. This would become the main access. The private entrance to the Keawaiki Road from Ke'ei Beach Road would be a manually operated, swinging pipe gate. The gates would provide more protection and security for the historic sites on the Kamehameha Schools property and for the residents of Keawaiki Beach Lots, who have been consulted as part of the project and who the Bundrants report have agreed to this arrangement.

Figure 1 General Location Map



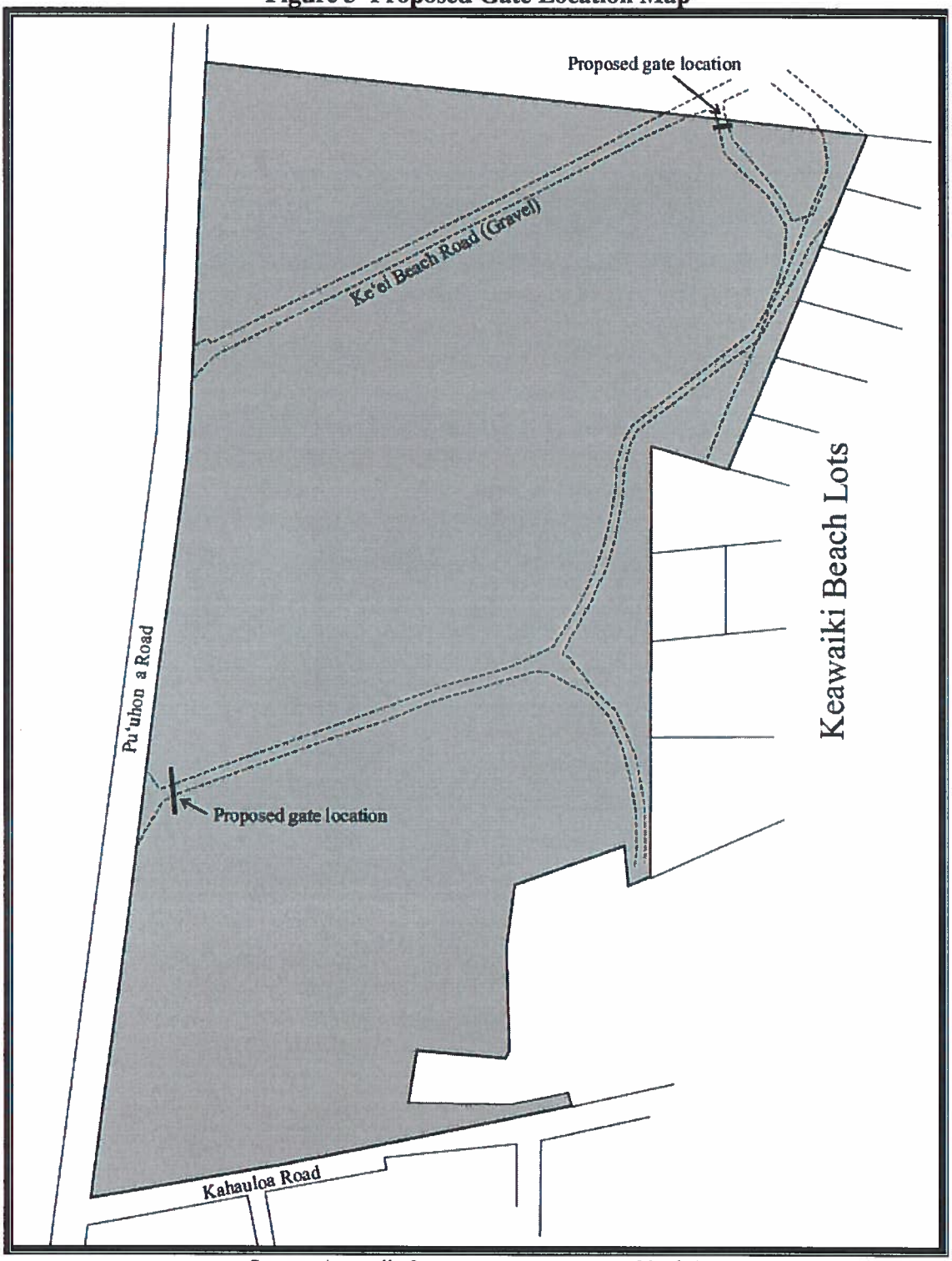
Source: Appendix 2

Figure 2 TMK Map



Source: Appendix 2 North ↓

Figure 3 Proposed Gate Location Map



Source: Appendix 2 North ↓

Figure 4 Photos

North ↑ Airphoto ▲ ▼ Site of Main Proposed Gate

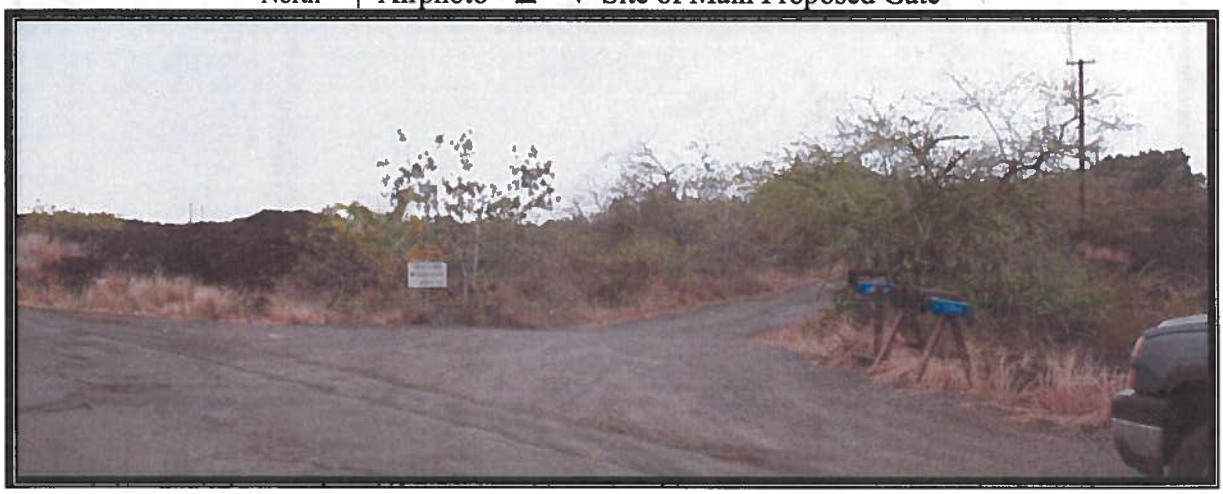
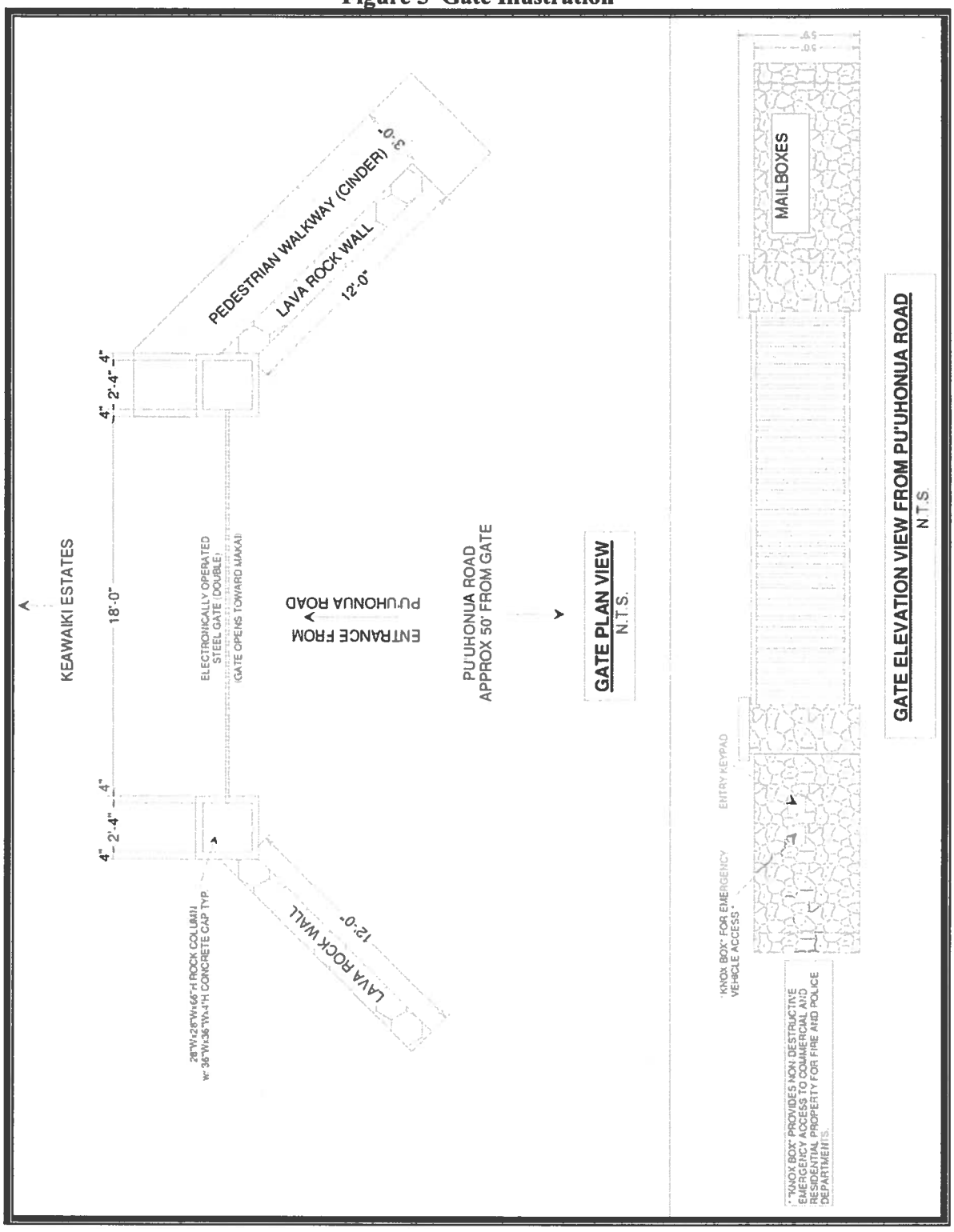


Figure 5 Gate Illustration



Gating these private roads to prevent unauthorized vehicular access would help protect historic sites and would not adversely impact pedestrian travel, the rights of Native Hawaiians, or public access to shoreline resources. While an intensive archaeological reconnaissance found numerous archaeological features located on the overall parcel, many of which had been damaged by carelessness or vandalism, there are no archaeological features within the two areas planned for the placement of gates. Pedestrians would be able to walk around the gates on a special walkway and pedestrian access on Keawaiki Road will continue to be allowed. The constitutionally protected rights of Native Hawaiians to exercise traditional gathering or other practices on this Kamehameha Schools property will not be affected. In terms of shoreline access, it is important to emphasize that although the gating would exclude other vehicles from this part of Keawaiki, the roads do not provide public access to the shoreline areas, as the entire shoreline is fronted by private properties with no shoreline access easements. Mauka-makai shoreline access is available on the properties immediately south at Ke'ei and to the north at Manini Beach. Although the shoreline in front of the Keawaiki Beach Lots is rough and uneven, lateral shoreline access from the north or south is available along this roughly quarter-mile stretch of shoreline for those who traverse it to fish, gather and dive on the rocky shoreline. The proposed project does not in any way restrict or affect beach access, or access to any other public resource.

All funding for the gates is private, no public funds are involved, and work would begin as soon as permits were obtained.

1.2 Environmental Assessment Process

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

According to Chapter 343, an EA is prepared to determine impacts associated with an action, to develop mitigation measures for adverse impacts, and to determine whether any of the impacts are significant according to thirteen specific criteria. If a study concludes that no significant impacts would occur from implementation of the proposed action, a Finding of No Significant Impact (FONSI) is prepared and an action is permitted to occur. If a study finds that significant impacts are expected to occur as a result of a proposed action, then an Environmental Impact Statement (EIS) is prepared with wider investigation of impacts and public involvement. Section 2 considers alternatives to the proposed project, and Section 3 discusses the existing environment and impacts associated with this project. Section 4 issues the determination (anticipated determination in the Draft EA), and Section 5 lists the criteria and the findings made by the applicant in consultation with the Department of Land and Natural Resources (DLNR) for this project.

1.3 Public Involvement and Agency Coordination

The following agencies, organizations and individuals have been consulted during the Environmental Assessment Process:

County:
- Planning Department
- County Council
- Department Water Supply

State:
- Department of Land and Natural Resources, Office of Chairman
- Department of Land and Natural Resources, State Historic Preservation Division
- Office of Hawaiian Affairs, Honolulu and West Hawai'i

Private:
- Sierra Club
- Kona Outdoor Circle
- Kona Hawaiian Civic Club

Copies of communications received during early consultation are contained in Appendix 1a. It should be noted that the gate project was originally part of a larger project to also build a single-family residence and landscape the property, which is currently no longer under consideration, although it may be considered in the future. Early consultation letters reflect responses to all three aspects of the action as it was then proposed.

Appendix 1b contains written comments on the Draft EA and the responses to these comments. Various places in the EA have been modified to reflect input received in the comment letters; additional or modified non-procedural text is denoted by double underlines, as in this paragraph.

PART 2: ALTERNATIVES

2.1 Proposed Project

The proposed project is described in Section 1.1 above and its locations and features are illustrated in Figures 1-5.

2.2 No Action

Under the No Action Alternative, the gates would not be built and the archaeological features of concern would be less protected from the effects of unauthorized camping, vandalism, looting, and careless off-road driving, and the residents of Keawaiki Beach Lots would have less security and privacy. Alternative security could be provided by a combination of 24-hour security guards, County police and DOCARE enforcement officers rather than physical gates. In the end, such an alternative would be far more expensive to the property owners than two simple gates, and it would also burden public law enforcement officers, and it is therefore not under consideration.

PART 3: ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION

3.1 Basic Geographic Setting

The property (also called herein the project site), which is presently vacant and unused, is bounded on the west or makai side by the Keawaiki Beach Lots subdivision, on the north by Kahauloa Road, on the east or mauka side by Pu'uhonua Road and on the south by other properties belonging to Kamehameha Schools. The project site lies a minimum of approximately 250 feet from the coastline. Elevations vary from about 50 feet above sea level at Pu'uhonua Road on the mauka side, where the main gate would be, to about 20 feet above sea level on the makai side of the property, near the second gate. The climate in the area is mild and semi-arid, with annual rainfall averaging about 40 inches and average daily temperatures of approximately 75 degrees F (U.H. Hilo-Geography 1998:57).

3.2 Physical Environment

3.2.1 Geology and Geologic Hazards

Environmental Setting

The project site is located the western slope of Mauna Loa volcano. About 1,300 feet to the northeast is the base of a steep pali (cliff) presenting a dramatic backdrop. The surface of the parcel consists of weathered basaltic soils and rock outcroppings derived from Holocene epoch (between 200 and 750 years old) lava flows from Mauna Loa (Wolfe and Morris, 1996). The U.S. Natural Resources Conservation Service (formerly Soil Conservation Service) classifies nearly the entire surface of the project site as a'a lava flows and the remainder, primarily along the makai portion, as Kainaliu very stony silty clay loam (KDD). This well-drained soil is typically found on slopes of 12 to 20 percent and has about 1 percent of its surface covered by cobbles or boulders. Its subclass is VIs; soils of that type have severe limitations which make them generally unsuited to cultivation and limit their use largely to pasture or similar uses. The subclass for the a'a lava is VIIIs which also limits its use to recreation or aesthetic purposes.

The entire Big Island is subject to geologic hazards, especially lava flows and earthquakes. Volcanic hazard as assessed by the United States Geological Survey in this area of Kona is zone 3, on a scale of ascending risk from 9 to 1 (Heliker 1990:23). The high hazard risk is based on the fact that Mauna Loa is presently an active volcano. Volcanic hazard zone 3 areas have had 1-5% of their land area covered by lava or ash flows since the year 1800, but are at lower risk than zone 2 areas because of their greater distances from recently active vents and/or because the local topography makes it less likely that flows will cover these areas.

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

Impacts and Mitigation Measures

Geologic conditions impose no substantial constraints on the project. Although the action would occur in an area with both lava flow and seismic hazard, this is shared with all property in South Kona, and no additional public risk or imprudent development would occur.

3.2.2 Flood Zones, Water Bodies, and Water Quality

Environmental Setting

The project site has no streams, ponds, lakes, wetlands or other surface water bodies. The Flood Insurance Rate Maps (FIRM 1551661156C) show that the project site is in Flood Zone X, outside the 100-year floodplain. No known areas of local (non-stream related) flooding are present.

Impacts and Mitigation Measures

No impact to the floodplain will occur, as the project site is outside FEMA designated floodplain. During any construction project, activities have the potential to produce uncontrolled excess sediment from soil erosion during and after excavation and construction that may impact natural watercourses, water quality and flooding. Contaminants associated with heavy equipment and other sources during construction have the potential to impact surface water and groundwater if not mitigated effectively, although such potential in this site is limited because of the small scale of the project.

In order to minimize the potential for sedimentation and erosion, the contractor shall perform all earthwork and grading in conformance with Chapter 10, Erosion and Sediment Control, Hawai'i County Code, and all specifications required by the Hawai'i Department of Land and Natural Resources. At a minimum, the contractor will implement the following best management practices (BMPs) for the project:

- Schedule construction to avoid periods of heavy rain;
- Apply protective covers to cleared areas, soil and material stockpiles, as necessary and appropriate;
- Store and use fuel storage in manner to prevent leaks, spills or fires;
- Use drip pans beneath heavy vehicles and construction equipment not in use in order to trap vehicle fluids;
- Conduct routine maintenance of BMPs by adequately trained personnel;
- Prevent construction materials, petroleum products, wastes, debris, and landscaping substances (herbicides, pesticides, and fertilizers) from blowing, falling, flowing, washing or leaching into the ocean; and
- Clean-up and dispose at an approved site of any significant leaks or spills, if they occur.

3.2.3 Flora and Fauna

Environmental Setting

The natural vegetation of this dry site covered with almost bare lava is a very sparse dry herbland. Some of the project site has been previously disturbed by grading and other activities. Even more influential on the flora makeup has been colonization by introduced species. The flora currently consists mostly of introduced species, with few indigenous plants that are common throughout Kona. The results of a botanical survey are shown in Table 1.

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

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

The only native Hawaiian land mammal, the Hawaiian Hoary Bat (*Lasiurus cinereus semotus*), may also be forage in the area, as it is present in many areas on the island of Hawai'i, but the lack of any significant shrub or tree cover reduces the value of the area for foraging and probably precludes roosting.

Impacts and Mitigation Measures

Because of the relatively minor nature of the project and the lack of native terrestrial ecosystems and threatened or endangered plant species, construction and use of the gates is not likely to cause adverse biological impacts. The property is situated about 250 feet from the shoreline, with a row of houses between it and the shoreline, and no effect on any coastal ecosystem is expected.

Table 1. Plant Species on Project Site

Scientific Name	Family	Common Name	Life Form	Status*
Acacia farnesiana	Fabaceae	Klu	Shrub	A
Amaranthus spinosa	Amaranthaceae	Spiny amaranth	Herb	A
Argemone glauca	Papaveraceae	Pua kala	Herb	I
Asystasia gangetica	Acanthaceae	Chinese violet	Vine	A
Boerhavia coccinea	Nyctaginaceae	Boerhavia	Herb	A
Calophyllum inophyllum	Clusiaceae	Kamani	Tree	A
Carica papaya	Caricaceae	Papaya	Shrub	A
Casuarina sp.	Casuarinaceae	Ironwood	Tree	A
Chamaecrista nictitans	Fabaceae	Partridge pea	Herb	A
Chamaesyce hirta	Euphorbiaceae	Hairy spurge	Herb	A
Chamaesyce hypericifolia	Euphorbiaceae	Graceful spurge	Herb	A
Cleome gynandra	Capparaceae	Spider wisp	Herb	A
Clusia rosea	Clusiaceae	Autograph tree	Tree	A
Coccinia grandis	Cucurbitaceae	Ivy gourd	Vine	A
Desmodium tortuosum	Fabaceae	Desmodium	Herb	A
Eleusine indica	Poaceae	Wiregrass	Herb	A
Eragrostis sp.	Poaceae	Love grass	Herb	A
Eucalyptus sp.	Myrtaceae	Eucalyptus	Tree	A
Galinsoga sp.	Asteraceae	Galinsoga	Herb	A
Hedyotis corymbosa	Rubiaceae	Hedyotis	Herb	A
Jacaranda mimosifolia	Bignoniaceae	Jacaranda	Tree	A
Kalanchoe pinnata	Crassulaceae	Air plant	Herb	A
Kalanchoe sp.	Crassulaceae	Kalanchoe	Herb	A
Kyllinga nemoralis	Cyperaceae	Kyllinga	Herb	A
Lantana camara	Verbenaceae	Lantana	Shrub	A
Leucaena leucocephala	Fabaceae	Haole koa	Shrub	A
Mangifera indica	Anacardiaceae	Mango	Tree	A
Momordica charantia	Cucurbitaceae	Balsam pear	Vine	A
Morinda citrifolia	Rubiaceae	Noni	Shrub	A
Nephrolepis multiflora	Nephrolepidaceae	Sword fern	Fern	A
Panicum maximum	Poaceae	Guinea grass	Herb	A
Paspalum conjugatum	Poaceae	Hilo grass	Herb	A
Passiflora foetida	Passifloraceae	Love-in-a-mist	Vine	A
Passiflora suberosa	Passifloraceae	Huehue haole	Vine	A
Passiflora edulis	Passifloraceae	Lilikoi	Vine	A
Pennisetum setaceum	Poaceae	Fountain grass	Herb	A
Peperomia af. leptostachya	Piperaceae	Peperomia	Herb	I

Table 1 continued below

Table 1, continued				
Scientific Name	**Family**	**Common Name**	**Life Form**	**Status***
Pithecellobium dulce	Fabaceae	Dulce	Tree	A
Pityrogramma calomelanos	Pteridaceae	Silver fern	Fern	A
Plectranthus parviflorus	Lamiaceae	Spurflower	Herb	I
Pluchea symphytifolia	Asteracae	Sourbush	Shrub	A
Portulaca pilosa	Portulacaceae	Portulaca	Herb	A
Psidium guajava	Myrtaceae	Guava	Tree	A
Rhynchelytrum repens	Poaceae	Natal redtop	Herb	A
Ricinus communis	Euphorbiaceae	Castor bean	Shrub	A
Samanea saman	Fabaceae	Monkey pod	Tree	A
Scaevola sericea	Goodeniaceae	Beach naupaka	Shrub	I
Schefflera actinophylla	Araliaceae	Octopus tree	Tree	A
Schinus terebinthifolius	Anacardiaceae	Christmas berry	Shrub	A
Spathodea campanulata	Bignoniaceae	African tulip	Tree	A
Tephrosia purpurea	Fabaceae	Auhuhu	Shrub	A
Terminalia catappa	Combretaceae	Tropical almond	Tree	A
Thevetia peruviana	Apocynaceae	Be-still tree	Shrub	A
Tridax procumbens	Astreaceae	Coat buttons	Herb	A
Waltheria indica	Sterculiaceae	ʻUhaloa	Herb	I

* Note: list includes vegetation on entire property, not just gate area. A = alien, E = endemic, I = indigenous, End = Federal and State listed Endangered Species

3.2.4 Air Quality, Noise, and Scenic Resources

Environmental Setting

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

Noise on the site is low to moderate, and is derived from natural sources (such as surf and wind) as well as road noise, as the project site lies along Pu'uhonua Road. Other permanent sources are residences and the Hawai'i County solid waste convenience center several hundred feet southeast of the property; construction in the area is a temporary source of noise.

The viewplane from the Kahauloa area (TMK 8-3-03) is listed as a scenic resource in the Hawai'i County General Plan, as is the viewpoint of Palemano Point (8-3-04:005) and Ke'ei cove (8-3-04:1), white sand beach (8-3-04:4) and unnamed viewpoint (8-3-03).

Impacts and Mitigation Measures

The project would not affect air quality or noise levels in any substantial way. Brief and minor adverse effects would occur during construction. However, there are few sensitive noise receptors in the vicinity, primarily several residences, and given the small scale of the project, noise mitigation will likely not be necessary.

The gates will be visible from Pu'uhonua Road and Ke'ei Beach Road, but in the context of the landscape, where there are numerous residences and stone walls, they would not pose any visible impacts, and the lava rock design will match the surroundings. Because of distance and intervening topography and vegetation, the shoreline is not visible from Pu'uhonua Road, and no visual impact upon the shoreline is expected. Regarding General Plan scenic viewpoints, Palemano Point is located more than 3,000 feet to the south, making it considerably distant from the project and not a factor in the scenic character or impacts of the project site. The other scenic sites are listed as being from vantage points mauka of the project site. The gates are not of a scale to pose any scenic impacts from a distance.

3.2.5 Hazardous Substances, Toxic Waste and Hazardous Conditions

Based on onsite inspection, it appears that the site contains no hazardous or toxic substances and exhibits no other hazardous conditions. Other than the precautions listed in Section 3.2.2, above, no mitigation for such conditions is necessary.

3.3 Socioeconomic and Cultural

3.3.1 Land Ownership and Land Use, Designations and Controls

Existing Environment

The State Land Use District for the property, as well as adjacent properties, is Conservation, and is therefore not zoned by Hawai'i County. The subzone is General. The project site is within the Special Management Area. No structures are proposed to be located within the Shoreline Setback Area.

Construction of security gates are not prohibited within these land use designations, conditional upon a Conservation District Use Permit (CDUP) and Special Management Area Permit or exemption therefrom. The Hawai'i County Planning Department requires preparation of an SMA Assessment Application, through which SMA issues are expressly dealt. According to their letter of December 18, 2009, the Department is awaiting a decision on how to proceed with the SMA permit pending an abstract on a trail to determine if Keawaiki Road is considered a trail under the Highways Act of 1892. The consistency of the project with the regulations and policies of the Conservation District and the Special Management Area are discussed in Section 3.7.2 and 3.7.3.

3.3.2 Socioeconomic Characteristics and Recreation

Existing Environment

The project site is within the ahupua'a of Kahauloa 2nd in the South Kona District on the west side of the Island and County of Hawai'i. Between 1970 and 2006, the County's population almost tripled, from 63,468 to 175,784 in 2008 (Hawai'i State Data Book, DBEDT population estimates, and U.S. Census of Population 2000). The population of Hawai'i County, which is leading the state in percentage growth in the 21st century, is expected to expand by another 100,000+ residents by 2035 (DBEDT 2035 Series 2008). In 2008, visitors made up an additional 16% (28,011 individuals) of the County's de facto population each day. In Captain Cook, the town closest to the project area, the population grew by nearly 24 percent in the decade ending in 2000 alone.

Hawai'i's economy, particularly that of West Hawai'i, which includes the districts of Kona and Kohala, is based primarily on tourism. In 2008 there was a drastic nationwide economic slowdown that is expected to continue throughout most of 2009 and into 2010. Visitor arrivals are expected to decline throughout 2009 and 2010. Assuming a turnaround in the national economy by late 2009, the local economy should begin to improve in and experience modest growth in 2011 (http://hawaii.gov/dbedt/info/economic/data_reports/qser/outlook-economy).

Although Hawai'i County in general and Kona in particular have seen regular and rapid growth in recent decades, the southern part of Kona has retained a distinctly rural character, which is true of the project site. While there are roughly a dozen residences nearby, with steady growth in homes around the Napo'opo'o area, the nearest large population center is located at Captain Cook, approximately 1.5 miles away.

Napo'opo'o Beach Park, a small County facility located about a quarter-mile to the north, serves as the gateway to Kealakekua Bay State Historical Park, which is the site of the first extensive contact between Hawaiians and Westerners represented by Captain James Cook. The area includes Hikiau Heiau, located just above the shoreline near the beach park, and a monument to Cook located across Kealakekua Bay. The shoreline and nearshore waters at Kealakekua Bay are currently used by fishermen, divers, swimmers and kayakers.

Impacts and Mitigation Measures

No adverse socioeconomic impacts are expected to result from the project, As discussed above, although the gates restrict vehicular access, the roads being restricted do not provide access to any shorelines, parks, or other public resources.

3.3.3 Cultural and Archaeological Resources

An assessment of historic properties and a cultural impact assessment were conducted for the proposed action by Rechtman Consulting. The reports are contained in Appendix 2 and summarized below. The reader is referred to Appendix 2 for scholarly references, most of which are not included in the summary below.

Cultural and Historical Background

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

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

Over a period of several centuries, areas with the richest natural resources became populated and perhaps crowded, and by about A.D. 900 to 1100, the population began expanding to the *kona* (leeward side) and more remote regions of the island (Cordy 2000:130). In Kona, communities were initially established along sheltered bays with access to fresh water and rich marine resources. The primary "chiefly" centers were established at several locations – the Kailua (Kaiakeakua) vicinity, Kahalu'u-Keauhou, Ka'awaloa-Kealakekua, and Hōnaunau. The communities shared extended familial relations, and there was an occupational focus on the collection of marine resources. By the fourteenth century, inland elevations to around the 3,000-foot level were being turned into a complex and rich system of dryland agricultural fields (today referred to as the Kona Field System). By the fifteenth century, residency in the uplands was becoming permanent, and there was an increasing separation of the chiefly class from the common people. In the sixteenth century the population stabilized and the *ahupua'a* land management system was established as a socioeconomic unit.

In Kona, where there were no regularly flowing streams to the coast, access to potable water (*wai*), was of great importance and played a role in determining the areas of settlement. The waters of Kona were found in springs and caves (found from shore to the mountain lands), or procured from rain catchments and dewfall. Traditional and historic narratives abound with descriptions and names of water sources, and also record that the forests were more extensive and extended much further seaward than they do today. These forests not only attracted rains from the clouds and provided shelter for cultivated crops, but also in dry times drew the *kēhau* and *kēwai* (mists and dew) from the upper mountain slopes to the lowlands.

In the 1920s-1930s, Handy et al. (1972) conducted extensive research and field interviews with elder native Hawaiians. In lands of North and South Kona, they recorded native traditions describing agricultural practices and rituals associated with rains and water collection. Primary in these rituals and practices was the lore of Lono—a god of agriculture, fertility, and the rituals for inducing rainfall. Handy et al., observed:

> The sweet potato and gourd were suitable for cultivation in the drier areas of the islands. The cult of Lono was important in those areas, particularly in Kona on Hawai'i . . . there were temples dedicated to Lono. The sweet potato was particularly the food of the common people. The festival in honor of Lono, preceding and during the rainy season, was essentially a festival for the whole people, in contrast to the war rite in honor of Ku which was a ritual identified with Ku as god of battle. (Handy et al. 1972:14)

The worship of Lono was centered in Kona. Indeed, it was while Lono was dwelling at Keauhou, that he is said to have introduced taro, sweet potatoes, yams, sugarcane, bananas, and *'awa* to Hawaiian farmers (Handy et al. 1972:14). The rituals of Lono "the father of waters" and the annual Makahiki festival, which honored Lono and which began before the coming of the *kona* (southerly) storms and lasted through the rainy season (the summer months), were of great importance to the native residents of this region (Handy et al. 1972: 523). The significance of rituals and ceremonial observances in cultivation and indeed in all aspects of life was of great importance to the well being of the ancient Hawaiians, and cannot be overemphasized, or overlooked when viewing traditional sites of the cultural landscape.

Over the generations, the ancient Hawaiians developed a sophisticated system of land and resources management. By the time 'Umi-a-Līloa rose to rule the island of Hawai'i in ca. 1525, the island (*mokupuni*) was divided into six districts or *moku-o-loko*. On Hawai'i, the district of Kona is one of six major moku-o-loko within the island. The district of Kona itself, extends from the shore across the entire volcanic mountain of Hualālai, and continues to the summit of Mauna Loa, where Kona is joined by the districts of Ka'ū, Hilo, and Hāmākua.

Kona, like other large districts on Hawai'i, was subdivided into *'okana* or *kalana* (regions of land smaller than the *moku-o-loko*, yet comprising a number of smaller units of land). The lands of Kahauloa, situated in an area now known as Kona Hema (South Kona), are part of an ancient subregion generally known as "Ka-pali-lua" (The-two-cliffs; describing the topographic features of the *kula* or lands of the mountain slope). The *moku-o-loko* and *'okana* or *kalana* were further divided into manageable units of land, and were tended to by the *maka'āinana* (people of the land). Of all the land divisions, perhaps the most significant management unit was the *ahupua'a*. *Ahupua'a* are subdivisions of land that were usually marked by an altar with an image or representation of a pig placed upon it (thus the name *ahu-pua'a* or pig altar). In their configuration, the *ahupua'a* may be compared to wedge-shaped pieces of land that radiate out from the center of the island, extending to the ocean fisheries fronting the land unit.

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

Entire *ahupua'a*, or portions of the land were generally under the jurisdiction of appointed konohiki or lesser chief-landlords, who answered to an *ali'i-'ai-ahupua'a* (chief who controlled the *ahupua'a* resources). The *ali'i-'ai-ahupua'a* in turn answered to an *ali'i 'ai moku* (chief who claimed the abundance of the entire district). Thus, *ahupua'a* resources supported not only the *maka'āinana* and *'ohana* who lived on the land, but also contributed to the support of the royal community of regional and/or island kingdoms. This form of district subdividing was integral to Hawaiian life and was the product of strictly adhered to resources management planning. In this system, the land provided fruits and vegetables and some meat in the diet, and the ocean provided a wealth of protein resources. Also, in communities with long-term royal residents (like Ke'ei, Ka'awaloa, and Kealakekua), divisions of labor (with specialists in various occupations on land and in procurement of marine resources) came to be strictly adhered to.

It is in the general cultural setting outlined above, that we find the *ahupua'a* of Kahauloa at the time of European contact. The ocean resources fronting Kahauloa were integral to life upon the land. On the *kula kahakai* or shoreward flats, were found potable water sources (caves, wells and springs), several village clusters and many residents, groves of coconut trees, and lowland agricultural fields. The *kula uka* or upland plains, extending up to an area above the *mauka* alaloa, Keala'ehu (near present day Māmalahoa Highway), was highly valued for its fertile lands, which were extensively cultivated. The lands extending from around the 2,000 to 5,000 foot elevation were cultivated in bananas, and were a significant resource of woods, fibers, birds, and other materials of value and importance to native life.

The subject property is located within Kahauloa 2nd near Kahauloa Bay along the southern shore of Kealakekua Bay. This area played a well-documented and significant role in the history of the Hawaiian Islands. Kealakekua Bay is the former home of some of Hawai'i's most powerful *ali'i* and feared warriors. One such warrior, named Kekūhaupi'o, was born of royal blood (his father was Kohapi'olani, a Ke'ei chief, and his mother was from Nāpo'opo'o) at Ke'ei, just south of Kahauloa 2nd. An article published in Ka Hōkū o Hawai'i on September 10, 1908 (translated by K. Maly) tells of Kekūhaupi'o's loyalty to Kamehameha and his role at the battle of Moku'ōhai, which also took place just south of Kahauloa, against the chief's cousin, Kiwala'ō. Although a lower chief, Kekūhaupi'o fought so well in this battle that he came to be known as "Ko Kamehameha koa a waele makaihe" (Kamehameha's warrior who weeds through men with a spear) and he became the most cherished companion of Kamehameha, outside of his own uncles. Kekūhaupi'o continued to live at Ke'ei and serve Kamehameha for the remainder of his life, which he lost not in battle, but at the sport of spear fighting.

Kealakekua Bay (more precisely the flats of Ka'awaloa north of the current project area) is perhaps best known as the place where Captain Cook first made landfall on the island and then ultimately met his demise. The arrival of Europeans on Hawai'i Island began a long series of events that would eventually, but not immediately, alter the Hawaiian way of life. As Major writes, "From the moment Cook and his crew arrived, relations between Native Hawaiians and outsiders were heavily influenced by the sailors' need for supplies". Because of Hawai'i's isolation in the mid-Pacific it made an excellent way point for Europeans and Americans involved in the East Indian and northwest American trade networks. Kealakekua Bay, with its excellent anchorage and abundant supply of food soon became the most frequented harbor by visitors to the island. Thus began the written history of Hawai'i.

Captain James Cook and members of his crew provided the first European accounts of the coastal region in 1779. The journals and diaries of the expedition noted the political and religious importance of the area. Descriptions provided by John Ledyard and Lieutenant James King of the expedition described the coastal area to approximately 3 miles inland as being cultivated primarily in sweet potatoes (*'uala*). These were grown in small enclosures separated by low walls (Ching 1971). Also grown in this coastal zone were sugar cane, wauke, and banana trees. Breadfruit trees (ulu) were cultivated in the area situated inland of this coastal habitation and agrarian zone. Archibald Menzies, who was a member of Captain George Vancouver's 1792-1794 expeditions, provided descriptions of the coastal and upland areas and observed that the upper elevations were cultivated primarily in taro and ti.

Some of the first Europeans to reside permanently on the island, besides sailors who jumped ship, were Christian missionaries. In 1823, William Ellis visited this coastal area during his tour of the Island of Hawai'i. After leaving Ke'ei village for Hōnauanu, he described passing the location of the decisive battle of Moku'ōhai where Kamehameha defeated his cousin Kiwala'ō for control of half of the island of Hawai'i. His description of the battlefield follows:

> Since leaving Ke'ei, we had seen several heaps of stones raised over the bones of the slain, but now became more numerous. As we passed along, our guide pointed out the place where Tairi, Tamehameha's [Kamehameha's] war-god, stood, surrounded by the priests, and, a little further on, he showed us the place where Tamehameha himself, his sisters, and friends, fought during the early part of the eighth day. A few minutes after we left it, we reached a large heap of stones overgrown with moss, which marks the spot where Kauikeouli [Kiwalao] was slain. (Ellis 1963:95)

In 1824, Reverend James Ely established the South Kona Mission Station on the flats of Ka'awaloa (Maly and Maly 2002). The Mission set up not only churches in South Kona, but schools for formal education and the spread of the Christian word. Missionaries observed that about 2,000 Hawaiians lived on the south side of Kealakekua Bay.

The best source of documentation pertaining to native Hawaiian residency and land use practices – identifying specific residents, types of land use, crops cultivated, and features on the landscape – is found in the records of the *Māhele 'Āina* (Land Division) which the King entered into with the chiefs and people in 1848. The "Land Division" gave native tenants an opportunity to acquire land (in fee-simple) that they lived on and actively cultivated.

In Precontact Hawai'i, all land and natural resources were held in trust by the high chiefs (*ali'i 'ai ahupua'a* or *ali'i 'ai moku*). The use of lands and resources were given to the *hoa'āina* (native tenants), at the prerogative of the *ali'i* and their representatives or land agents (*konohiki*), who were generally lesser chiefs as well. In 1848, the Hawaiian system of land tenure was radically altered by the *Māhele 'Āina*. This change in land tenure was promoted by the missionaries and the growing Western population and business interests in the island kingdom. Generally these individuals were hesitant to enter business deals on leasehold land.

The *Māhele* (division) defined the land interests of Kamehameha III (the King), the high-ranking chiefs, and the konohiki. As a result of the *Māhele*, all land in the Kingdom of Hawai'i came to be placed in one of three categories: (1) Crown Lands (for the occupant of the throne); (2) Government Lands; and (3) Konohiki Lands. The "Enabling" or "Kuleana Act" (December 21,1849) laid out the frame work by which native tenants could apply for, and be granted fee-simple interest in "*kuleana*" lands, and their rights to access and collection of resources necessary to their life upon the land in their given *ahupua'a*. The lands awarded to the *hoa'āina* (native tenants) became known as "Kuleana Lands." All of the claims and awards (the Land Commission Awards or LCA) were numbered, and the LCA numbers remain in use today to identify the original owners of lands in Hawai'i.

The *ahupua'a* of Kahauloa 2nd was awarded as an *ali'i* award to Kanele during the *Māhele*, LCAw. No. 32 (Royal Patent No. 1663). A review of the Waihona 'Āina database indicates that at least nineteen k*uleana* were claimed in Kahauloa 2nd, three of which, all house lots, are situated adjacent to the northern boundary of the current study area. All of these awardees also claimed agricultural lands distant from their house lots, in more *mauka* sections of the *ahupua'a*.

The population of South Kona declined during the early nineteenth century and Hawaiians maintained marginalized communities outside of the central population centers. These communities were located in the "out-of-the-way" places, like Ka'awaloa Point, while the recently immigrated Asian and haole populations lived above the *pali*. In the aftermath of the *Māhele*, economic interests in the region swiftly changed from the traditional Hawaiian land tenure system of subsistence farming and regional trading networks to the more European based cash crops including coffee, tobacco, sugar, and pineapple, and emphasized dairy and cattle ranching. The earliest mention of a wharf at Ka'awaloa Point was in 1853, and its construction insured the ability to effectively export these products and maintain a regional presence, as Kailua eventually became the primary political seat on the Hawai'i Island.

Archaeological Studies and Current Assessment

Various archaeological studies in the Kahauloa region have documented a number of sites, some of which appear to be on or near the subject property. Most relevant were studies by Archaeological Research Center Hawaii (Ching 1971) of the Nāpo'opo'o-Hōnaunau Road Alignment (Alternate 2) for the County of Hawai'i, Department of Public Works. The survey corridor ranged from coastal elevations to approximately one mile inland and extended for a total distance of almost four miles. These survey efforts identified a total of 144 archaeological features which were placed into seven major categories: habitation structures, enclosures, agricultural features, burials, trails, ahu, and miscellaneous (27 independent walls and one cistern). Because of the linear nature of this study (coursing across multiple *ahupua'a* at varying elevations), it offered a unique opportunity to observe settlement strategies used for this particular environment along the southern Kona coastline. Nine of Ching's sites (SIHP Sites 6006, 6008, 6009, 6014, 6015, 6016, 6017, 6018, and 6020) were identified within the subject property, including two walls, an animal enclosure, an agricultural enclosure, two burial complexes, a C-shape, a trail, and a lava void.

A statewide inventory conducted by the Hawai'i State Office of Historic Preservation inspected and evaluated multiple sites in the general vicinity of Kahauloa. This effort, conducted between 1971 and 1975, contributed to defining the Kealakekua Bay Archaeological and Historical District and provided information on previously recorded sites south of the current project area as well as a summary of sites at Hōnaunau (McEldowney 1979).

During the first week in January 2007, Robert B. Rechtman, Ph.D., Matthew R. Clark, B.A., Mark J. Winburn, B.A., and Sandra Ireland, B.A. performed a systematic reconnaissance survey of the entire area encompassed by TMK: (3)8-3-05:001, along with two smaller properties (parcels 020 and 021) contained within the same lease. As discussed above, numerous archaeological features, some of them no doubt the ones Ching (1971) recorded, were encountered within Parcel 001. However, the specific areas where the gates are proposed to be constructed have been highly disturbed by prior mechanized activity and there are no archaeological resources present.

Impacts to Archaeological Sites and Mitigation Measures

By letter of June 9, 2009 (see Appendix 2; note incorrect year date on letter), Rechtman Consulting requested the Department of Land and Natural Resources, State Historic Preservation Division (DLNR-SHPD) to issue a written determination of "no historic properties affected" in accordance with HAR 13§13-284-5(b)1, subject to the mitigation conditions listed below. By letter of July 2, 2009, the State Historic Preservation Division concurred with this finding, requesting that an archaeological inventory survey be conducted if additional activities were proposed that might disturb any other areas (see letter at end of Appendix 1a).

Archaeological survey has determined that no archaeological resources are present in the area to be affected. In the unlikely event that archaeological resources are encountered during gate construction activities, work in the immediate area of the discovery will be halted and DLNR-SHPD contacted as outlined in Hawai'i Administrative Rules 13§13-275-12.

Cultural Resources and Consultation

When assessing potential cultural impacts to resources, practices, and beliefs; input gathered from community members with genealogical ties and/or long-standing residency relationships to the study area is vital. It is precisely to these individuals for whom meaning and value are ascribed to traditional resources and practices. Community members may also retain traditional knowledge and beliefs unavailable elsewhere in the historical or cultural record of a place. As part of the current assessment study several individuals were consulted; during these consultations other potential interested parties were identified that were also contacted.

An informal consultation was conducted at the Kahauloa Bay extended family residence of Maxiedel "Uncle Del" Navas and Lawrence Alu (uncle Del's nephew). These individuals have strong genealogical ties to the area having descended from Hawaiians resident in Kahauloa dating from pre-*Māhele* times, and likely Precontact times. Uncle Del's personal recollections of the current study area extend back to 1956, when he was a small boy walking the trails and roads and collecting water from the formerly several (now only one) *punawai* (springs) in and around Kahauloa Bay. He explained that before the houses in Keawaiki Beach Lots were built, there were essentially three ways to cross Kahauloa. Foot traffic for travel to Ke'ei was along the old coastal trail where the houses are now (a segment of what is probably this trail remains on TMK maps; see Figure 3). Residents also engaged in subsistence activities while walking directly along the rocky shoreline. In addition, they used the roadway that is *mauka* of the houses for vehicular travel. His nephew Lawrence added that now the direct shoreline is impassible due to excessive vegetation planting, and that the lateral vehicle road has also been blocked to entry from the north in the vicinity of the Wilcox parcels. Both Uncle Del and Lawrence felt strongly that gating the Keawaiki Road is a bad idea, citing their perception of the cumulative impacts on traditional access across Kahauloa 2nd Ahupua'a, that such access is being pushed further and further away from the shore.

Gordon Leslie was consulted by telephone. Gordon's genealogy ties him to South Kona and he is a resident at Manini Beach along the southern shore of Kealakekua Bay, situated just to the north of the current study area. He is culturally active in the community and has served as the chair of the cultural committee of a citizens group called Mālama Pono Kealakekua. In a 2002 legal proceeding, the Office of Environmental Quality Control recognized the organization Mālama Pono Kealakekua as an affected citizens group that must be consulted in the Environmental Assessment process relative to development of the State Park at Kealakekua Bay. Mr. Leslie related that his family once own land in the immediate vicinity of the study area. He also indicated that he thought the Keawaiki access road was constructed after 1964. Mr. Leslie was aware that the study parcel contained numerous archaeological features and concurred that the placement of gates would likely not directly adversely impact any such features. However, he was resistant to the concept of the gates, as he felt that all of the former traditional access ways between Kahauloa Bay and Ke'ei have already been extinguished, citing the houses constructed on the ancient foot trail and the blocking of the part of Keawaiki Road that fronts the Keawaiki Beach Lots. Mr. Leslie responded to the Draft EA (see App. 1b) with concerns about being misquoted (this EA has removed statements that Mr. Leslie said were inaccurate), questioned the presence of burials on the property, and provided contextual information about Kamehameha School's development of the Keawaiki Beach Lots that helped explain his opposition to the general public not being able to drive on the road.

Steven Wilcox was also contacted by telephone. His family (a *kama'āina* family with genealogical ties to Kaua'i) has owned and resided on five parcels at Kahauloa Bay adjacent to the Keawaiki Beach Lots for over 30 years. Steven's father Allen C. Wilcox, Jr. first moved to the area in the early 1970s and lived there until his passing in 2003. Steven related that from his experience the only traditional and customary use of the area has been fishing that occurs along the rocky shoreline fronting his family's properties and the Keawaiki Beach Lots. Steven expressed support for the placement of the gates on Keawaiki Road, which also provides access to his family's property.

Based on a referral from Lawrence Alu, Michael Matsukawa of the community group Mālama Pono Kealakekua was contacted by telephone. He related that the group Mālama Pono Kealakekua has been idle for several years (although Mr. Leslie clarified in his comment letter that the Cultural and Planning Committee remains active). He had no comment with respect to the proposed gate installation on Keawaiki Road.

Cultural Impacts and Mitigation Measures

As discussed above, an archaeological reconnaissance determined that no archaeological resources (which may have cultural and well as historical value) were present in the area impacted by the proposed placement of the gates. In fact, the placement of the gates may serve to help protect the archaeological resources that were identified within the larger study area. Inadvertent damage to archaeological features was observed during the reconnaissance, which was likely the result of off-road vehicle activity. The placement of the gates would definitely curtail such activity.

Likewise, consultation with community members did not identify any specific resources such as gathering practices, ceremonial sites, or traditional cultural properties that would be impacted by the proposed construction of the gates. However, consultation brought to light one potential access-related cultural impact. It is felt by some that the placement of the gates will exclude individuals in the community from driving on a road that they have been accustomed to using for many years, a road that at some level substitutes for an ancient foot trail that was displaced by creation in the 1960s of the Keawaiki Beach Lots. While the placement of the gates will certainly limit vehicular through-traffic on Keawaiki Road, it will in no way preclude pedestrians from traveling along Keawaiki Road between Pu'uhonua Road and Ke'ei Beach Road. In fact, a special gate and cindered walkway will be established adjacent to the gate structure for the express purpose of facilitating pedestrian travel.

To confirm this finding and determine whether there may be additional concerns, this Draft EA was distributed to the consulted individuals and a number of Native Hawaiian organizations including the Honolulu and West Hawai'i offices of the Office of Hawaiian Affairs (OHA), and the Kona Hawaiian Civic Club for their input. OHA stated that that based on the information supplied they had no objections. Gordon Leslie of the Cultural and Planning Committee of Malama Pono Kealakekua clarified and corrected some of the statements that had been attributed to him based on an interview (see letter in App. 1b). He also disputed the presence of burials and the cause of the degradation of archaeological sites asserted by the applicant, and stated that it was not *pono* to take away the historical *alanui kahakai*. In response, the archaeologist says that there are multiple burials that require protection. The applicant notes that although public vehicular access would be prevented, the gating is not occurring on an *alanui kahakai*, no restriction of pedestrian access would occur and there is no shoreline access from the roads being gated. No other party reviewing the Draft EA supplied any information concerning this subject.

3.4 Public Services, Facilities and Utilities

Environmental Setting, Impacts and Mitigation Measures

Electricity would be supplied to the site by Hawai'i Electric Light Company through a proposed underground power line from the Keawaiki Beach Lots area. No other utilities are required or affected, and there are no impacts to public facilities such as roads, parks, or schools. Public access is discussed in Section 1.1. In response to the Draft EA (see letters in Appendix 1b), the Hawai'i County Police Department and a resident questioned whether emergency response or evacuation would be slowed or prevented by the gates. The applicants intend to install a "Knox Box" type of lock on the subject gate. The applicants must apply through the Hawai'i County Fire Department to register and obtain the necessary lock, and emergency services have a universal key that will open all Knox Boxes.

3.5 Secondary and Cumulative Impacts

Due to its small scale, the proposed project would not produce any major 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. Various single-family homes are in construction in the Napo'opo'o area, but few in the immediate vicinity of the project site.

The coastal area around Napo'opo'o, a distance of less than a mile, has seen greater recreational use of the bay in large part as a result of increased number of purveyors of water craft such as kayaks. Settlement is scattered, with concentrations in small subdivisions such as Keawaiki Beach Lots. Napo'opo'o Beach

Park is a popular destination for both residents and visitors. Cumulatively, the in-filling of residential areas along this coastline will gradually lessen the rural character.

Kamehameha Schools (KS) is currently drafting a Management Plan for approximately 195 acres of its holdings near Ke'ei for residential and conservation assets and aligning the plan with its mission, vision and strategic goals. The plan is viewed by KS as an opportunity to considerably increase the cultural, environmental, educational and community returns of these assets and to improve the region as a whole. At this point, no specific plans are available.

The adverse effects of building the gates are negligible and temporary disturbance to noise and visual quality during construction. Other than the precautions for preventing any effects to water quality during construction listed above in Section 3.2.1, no special mitigation measures should be required to counteract the small adverse cumulative effect.

3.6 Required Permits and Approvals

County of Hawai'i:

Special Management Area Permit or Exemption
Plan Approval and Grubbing, Grading, Building Permits

State of Hawai'i:

Conservation District Use Permit

3.7 Consistency With Government Plans and Policies

3.7.1 Hawai'i County General Plan

The *General Plan* for the County of Hawai'i is 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 2004 (Hawai'i County Department of Planning 2005). 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 project are the following Goal and Policies, and Courses of Action:

ECONOMIC GOALS

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

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

Strive for diversity and stability in the economic system.

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

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

ENVIRONMENTAL QUALITY GOALS

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

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

ENVIRONMENTAL QUALITY POLICIES

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

ENVIRONMENTAL QUALITY STANDARDS

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

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

Discussion: The proposed action would not have a substantial adverse effect on the environment and would not diminish the valuable natural resources of the region. The gate would be compatible with the preservation of and appropriate access to recreational and historic site uses in the area.

HISTORIC SITES GOALS

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

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

HISTORIC SITES POLICIES

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

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

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

Discussion: Archaeological resources would be better protected by the proposed action, by limiting the chance for degradation by off-road vehicles or looting.

FLOOD CONTROL AND DRAINAGE GOALS

Conserve scenic and natural resources.

Protect human life.

Prevent damage to man-made improvements.

Control pollution.

Prevent damage from inundation.

Reduce surface water and sediment runoff.

FLOOD CONTROL AND DRAINAGE POLICIES

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

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

FLOOD CONTROL AND DRAINAGE STANDARDS

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

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

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

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

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

NATURAL BEAUTY GOALS

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

Protect scenic vistas and view planes from becoming obstructed.

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

NATURAL BEAUTY POLICIES

Increase public pedestrian access opportunities to scenic places and vistas.

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

Do not allow incompatible construction in areas of natural beauty.

Discussion: The construction of the gates will take place on an existing road in an area with existing residences and the structures will not be incongruous with their surroundings. Because of distance and intervening topography and vegetation, the shoreline is not visible from Pu'uhonua Road, and no visual impact upon the shoreline is expected.

NATURAL RESOURCES AND SHORELINES GOALS

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

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

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

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

NATURAL RESOURCES AND SHORELINES POLICIES

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

Encourage the use of native plants for screening and landscaping.

Discussion: The proposed action would not occur near the shoreline. Impacts to existing natural landforms and vegetation have been mitigated through permit-regulated Best Management Practices to avoid any impacts related to flooding, landslides, sedimentation or other similar impacts.

LAND USE GOALS

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

LAND USE POLICIES

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

LAND USE, OPEN SPACE GOALS

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

Protect designated natural areas.

LAND USE, OPEN SPACE POLICIES

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

Discussion: The proposed gates would not detract from the open space in the area.

3.7.2 Special Management Area

The proposed land use would appear to comply with provisions and guidelines contained in Chapter 205A, Hawai'i Revised Statutes (HRS), entitled *Coastal Zone Management*. The proposed use would be consistent with Chapter 205A because it would not affect public access to recreational areas, historic resources, scenic and open space resources, coastal ecosystems, economic uses or coastal hazards. As stated previously, the Hawai'i County Planning Department is awaiting a decision on how to proceed with the SMA permit pending an abstract on a trail to determine if Keawaiki Road is considered a trail under the Highways Act of 1892 (see App. 1b).

The proposed improvements are not likely to result in any substantial adverse impact on the surrounding environment. The proposed gates are not located on the shoreline and will not restrict any shoreline uses such as hiking, fishing or water sports. Lateral pedestrian use of the shoreline area will not be impacted and there will be no effect on the public's access to or enjoyment of this shoreline area.

Furthermore, the viewplanes towards the property will not be adversely impacted, as the gates are relatively distant from the highway with tall vegetation between the highway and the gates. The improvements will not be unduly visually imposing or out of character. Historic sites and cultural uses have been properly assessed. It is expected that the project will not result in any impact on the biological or economic aspects of the coastal ecosystem. The project site is not situated over any major natural drainage system or water feature that would flow into the nearby coastal system. The property contains few native plants and none that are not extremely common. Areas with native plants will not be affected by the proposed project. Flood Insurance Rate Maps (FIRM) delineate the areas of the property in which construction would occur as Zone X, outside the floodplain. In terms of beach protection, construction is approximately 250 feet mauka of the shoreline and would not affect any beaches nor adversely affect public use and recreation of the shoreline in this area. No effects on marine or groundwater will occur, and no impacts to marine resources are expected.

3.7.3 Conservation District

The property is in the State Land Use Conservation District, in the General subzone. Any proposed use must undergo an examination for its consistency with the goals and rules of this district and subzone. The applicant has concurrently prepared a Conservation District Use Application (CDUA), to which this EA is an Appendix.

The CDUA includes a detailed evaluation of the consistency of the project with the criteria of the Conservation District permit process. Briefly, the following individual consistency criteria should be noted:

1. The proposed land use is consistent with the purpose of the Conservation District;

The placement of gates on these two private roads will help conserve, protect and preserve the historic and cultural features on the subject properties. The proposed action is an identified land use within the General subzone and is consistent with the purpose of the district as defined in Chapter 13-5, HAR. The proposed action will positively impact the natural resources of the State and it will not be detrimental to the public health, safety or welfare. Subdivision of land will not be utilized to increase the intensity of land uses in the Conservation District. The proposed action will not subdivide the property and will not lead to any increase in intensity of use beyond currently permitted uses.

2. The proposed land use is consistent with the objectives of the subzone of the land on which the use will occur;

The objective of the General subzone is to designate open space where specific conservation uses may not be defined, but where urban use would be premature. These lands encompass lands with topography, soils, climate, or other related environmental factors that may not be normally adaptable or presently needed for urban, rural or agricultural use.

The proposed action is a permitted use in the general subzone under Section 13-5-25, G-2, and will not create any hazards for the public. In the past the Board of Land and Natural Resource approved several applications for single-family residences in the Keawaiki Beach Lots. This is a residential subdivision and the approval of this permit and proposed action to install these vehicular gates will not add any additional urban uses to this area. Furthermore, the gating of these two roads will help secure the area and its historic features from careless disruption or intentional vandalism.

3. The proposed land use complies with provisions and guidelines contained in Chapter 205A, Hawaii Revised Statutes (HRS), entitled "Coastal Zone Management," where applicable;

The purpose of Chapter 205A, HRS, and the Special Management Area (SMA) Rules and Regulations of the County of Hawai'i are to preserve, protect and to restore the natural resources of the coastal zone areas. Special controls on development in the coastal zone area are needed to avoid permanent loss of resources. The proposed land use complies with Chapter 205A and SMA rules and regulations. Placement of gates on these access roads is considered accessory to the existing single-family residences in the area and may be determined to be an exempt action under the County's Special Management Area (SMA) guidelines, Planning Commission, Rule 9.

The proposed use would be consistent with Chapter 205A because it would not affect public access to recreational areas, historic resources, scenic and open space resources, coastal ecosystems, economic uses, or coastal hazards. The Hawai'i County Planning Department has previously confirmed that single family dwellings in this subdivision were exempt from SMA Rules for previous CDUPs. They will be asked to make that same determination for this proposed action.

The proposed improvements are not likely to result in any substantial adverse impact on the surrounding environment. The proposed gates are approximately 300 feet and 800 feet, respectively, from the shoreline, and they will not restrict any shoreline uses such as hiking, fishing or water sports. Furthermore, neither the viewplanes to and along the shoreline towards the property nor the viewplane from any adjoining roadway, would be adversely impacted, as the gates are set well back from the ocean. It is expected that the project will not result in any impact on the biological or economic aspects of the coastal ecosystem. The project site is not situated over any major natural drainage system or water feature that would flow into the nearby coastal system. The property contains few native plants and none that are uncommon. No floodplains are present in the area. In terms of beach protection, construction is set back hundreds of feet from the shoreline and would not affect any beaches nor adversely affect public use and recreation of the shoreline in this area. The current private roads do not provide public access to the shoreline or any park facilities. No impacts on marine resources are likely to occur.

4. The proposed land use will not cause substantial adverse impact to existing natural resources within the surrounding area, community or region;

The construction activities of these two gates will be confined to the subject property and will not have any adverse impact on the natural resources of the area, community or region. The lots are located immediately adjacent and mauka of a residential neighborhood, Keawaiki Beach Lots, developed in 1968, with single family residences already present. While currently vacant, the lots have suffered trespassing, camping and disturbance of historic features.

Due to the lack of native ecosystems and threatened and endangered plant species, no adverse impacts are expected to occur as a result of the construction of the gate improvements. Construction activities will generate temporary, intermittent, short-term impacts affecting air quality and noise levels. This will be mitigated with established construction practices that will limit the construction activities to day time hours. There will be no development generated runoff directed toward adjacent properties. All gate structures and related construction activities will be conducted in conformance with applicable requirements in the Hawai'i County Code and the Uniform Building Code. The existing physical and environmental aspects of the land, such as natural beauty and open space characteristics, will be preserved. The construction activities of these two gates will be confined to the Bundrant's leased lot and will not have any adverse impact on the natural resources of the area, community or region. The physical beauty of the lot will not be affected materially by the gate construction and existing landscaping along the roads, and open space will be preserved.

5. The proposed land use, including buildings, structures and facilities, shall be compatible with the locality and surrounding areas, appropriate to the physical conditions and capabilities of the specific parcel or parcels;

These lots are immediately adjacent and mauka of the Keawaiki Beach Lots which were developed as a residential subdivision in 1968. The proposed land use, gates on the two access roads, is compatible with the locality and surrounding areas, appropriate to the physical conditions and capabilities of the specific property. The installation of these gates is a specific requirement of the landowner in their lease to the applicants for this property

6. The existing physical and environmental aspects of the land, such as natural beauty and open space characteristics, will be preserved or improved upon, whichever is applicable;

Air quality and noise levels will not be affected, except for minor temporary effects during the gate construction period. No significant impact to the visual scenery is expected as the gates are designed to blend into the surrounding area. The site is not described in any State or County plan that identifies important views for the area.

7. Subdivision of land will not be utilized to increase the intensity of land uses in the Conservation District;

The property will not be subdivided and there will be no increase to the intensity of land uses. The proposed action involves the construction of two gates in compliance with HAR 13-5 and all State and County codes.

8. The proposed land use will not be materially detrimental to the public health, safety and welfare.

The proposed action will not be materially detrimental to the public health, safety and welfare. In general, geologic and drainage conditions impose no substantial constraints on the project. All structures associated with the proposed gates would conform to the Uniform Building Code. Although the project is located in an area exposed to a certain amount of hazard from lava flows and earthquake, the project presents no additional hazard to the public. Landowners and residents of high-hazard lava inundation areas have been made aware of the potential and accept the risk when they purchase and/or inhabit such areas.

The project site is designated "X", defined as areas outside the 500 year flood plain, on the Flood Insurance Rate maps (FIRM). Maps printed by the Hawaii County Civil Defense Agency locate the parcel in the area that should be evacuated during a tsunami warning.

The entire Big Island is subject to geologic hazards, especially lava flows and earthquakes. The project site is located in Lava Flow Hazard Zone 3 (on a scale of ascending risk 9 to 1). Zone 3 consists of areas on both sides of the northeast and southwest rift zones of Mauna Loa (Heliker 1990). About 15-20 percent of Zone 3 areas have been covered by lava flows in the last 750

years. The nearest lava flow is the northern branch of the 1950 lava flow, about 7 miles south. As such, there is some risk of lava inundation over relatively short time scales.

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

3.7.4 Kona Community Development Plan

The Kona Community Development Plan (Kona CDP) was adopted by the County Council on September 25, 2008 under Ordinance 08-131. The Kona CDP translates the broad goals and policies of the *County of Hawai'i General Plan* into specific actions and priorities for specific geographic areas in the districts of North Kona, reaching nearly to Waikoloa Village, and South Kona, including the community of Miloli'i. The Kona CDP deals with all the elements included in the General Plan such as the economy, energy, environmental quality, flooding and other natural hazards, historic sites, natural beauty, natural resources and shoreline, housing, public facilities, recreation, transportation, and land use. The *General Plan* requires Community Development Plans be adopted by the County Council as an "ordinance", giving the plans force of law. This is in contrast to plans of the past that were adopted by resolution, and therefore, served only as guidelines or reference documents for decision-makers. Community Development Plans are to be long-term plans with a planning horizon to year 2020, consistent with the *General Plan*.

The purposes of the Kona CDP are to:

- Articulate Kona's residents' vision for the planning area.
- Guide regional development in accordance with that vision, accommodating future growth while preserving valued assets.
- Provide a feasible infrastructure financing plan to improve existing deficiencies and proactively support the needs of future growth.
- Direct growth in appropriate areas.
- Create a plan of action where government and the people work in partnership to improve the quality of life in Kona to live, work, and visit.
- Provide a framework to monitor the progress and effectiveness of the plan and to make changes and update, if necessary.

The draft CDP states that:

> "Outside of the Urban Area, the character of the rural areas should prevail. This means that limited future growth should be directed to the existing rural towns and villages in a way that revitalizes and enhances the existing rural lifestyle and culture of those communities. Outside of these towns and villages, the protection of important agricultural land is a priority objective. Protecting these lands requires regulations and incentives that will keep these lands available for agricultural use. Any development outside of the rural

towns and villages should be directed to suitable areas that are not important for agriculture, in clustered patterns that will optimize the preservation of rural open space."

The proposed security gates help preserve historic sites and do not affect viewplanes, agricultural uses, or open space, and would not affect the rural ambience of this part of Kona.

PART 4: DETERMINATION, FINDINGS AND REASONS

4.1 Determination

Based on evaluation of the environmental setting and the findings below, and upon consideration of comments to the Draft EA, the Hawai'i State Board of Land and Natural Resources is expected to determine that the Proposed Action will not significantly alter the environment, as impacts will be minimal, and is expected therefore to issue a Finding of No Significant Impact (FONSI).

4.2 Findings and Reasons

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

1. *The proposed project will not involve an irrevocable commitment or loss or destruction of any natural or cultural resources.* Native plant communities are not present and historic sites would be given more protection by the action. Consultation with community members did not identify any specific resources such as gathering practices, ceremonial sites, or traditional cultural properties that would be impacted by the proposed construction of the gates. Despite the continuation of pedestrian access, however, several community members who were consulted about cultural impacts opposed the idea of excluding them from driving on a road that they have been accustomed to using for many years, a road that at some level substitutes for an ancient foot trail that was displaced by creation in the 1960s of the Keawaiki Beach Lots.

2. *The proposed project will not curtail the range of beneficial uses of the environment.* No restriction of beneficial uses would occur.

3. *The proposed project will not conflict with the State's long-term environmental* policies. The State's long-term environmental policies are set forth in Chapter 344, HRS. The broad goals of this policy are to conserve natural resources and enhance the quality of life. The project is minor and environmentally benign and positive, and it is thus consistent with all elements of the State's long-term environmental policies.

4. *The proposed project will not substantially affect the economic or social welfare of the community or State.* The project will not have any substantial effect on the economic or social welfare of the South Kona community or the State of Hawai'i.

5. *The proposed project does not substantially affect public health in any detrimental way.* The project will not affect public health and safety in any way.

6. *The proposed project will not involve substantial secondary impacts, such as population changes or effects on public facilities.* The small scale of the proposed project will not produce any major secondary impacts, such as population changes or effects on public facilities. The rural character of the project area would not be affected by the security gates.

7. *The proposed project will not involve a substantial degradation of environmental quality.* The project is minor and environmentally benign and positive, and thus would not contribute to environmental degradation.

8. *The proposed project will not substantially affect any rare, threatened or endangered species of flora or fauna or habitat.* The site supports mostly alien vegetation and represents poor habitat for native animals. No rare, threatened or endangered species of flora or fauna are known to exist on the project site, and none would be affected by any project activities.

9. *The proposed project is not one which is individually limited but cumulatively may have considerable effect upon the environment or involves a commitment for larger actions.* The adverse effects of building two security gates are very minor and consist of temporary impacts to noise, and visual quality during construction. The gates are not directly adjacent to other residences and no accumulation of adverse construction effects would be expected. Other than the precautions for preventing any effects to water quality during construction listed above in Section 3.2.2, no special mitigation measures should be required to counteract the small adverse cumulative effect.

10. *The proposed project will not detrimentally affect air or water quality or ambient noise levels.* No substantial effects to air, water, or ambient noise would occur. Brief, temporary effects would occur during construction and will be mitigated.

11. *The project does not affect nor would it likely to be damaged as a result of being located in environmentally sensitive area such as a flood plain, tsunami zone, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal area.* The proposed gates would not be located within a flood zone or other area with hazards that preclude such a use.

12. *The project will not substantially affect scenic vistas and viewplanes identified in county or state plans or studies.* Because of distance and intervening topography and vegetation, no visual impact upon coastal areas is expected. The lava-rock design of the gates would be in character with the neighborhood, which includes a number of single-family residences and stone walls.

13. *The project will not require substantial energy consumption.* Negligible amounts of energy input will be required for construction and operation of the gates.

REFERENCES

Ching, F. 1971. *The Archaeology of South Kona from the Ahupuaa of Kahauloa to the Ahupuaa of Honaunau: Surface Survey Napoopoo-Honaunau Road (Alternate 2)*. Archaeological Research Center Hawaii, Lawai, Kauai.

Gagne, W., and L. Cuddihy. 1990. "Vegetation," pp. 45-114 in W.L. Wagner, D.R. Herbst, and S.H. Sohmer, eds., *Manual of the Flowering Plants of* Hawai`i. 2 vols. Honolulu: University of Hawai`i Press.

Handy, E.S.C., E.G. Handy, with M. Pukui 1972. *Native Planters in Old Hawaii, Their Life, Lore, and Environment*. B.P. Bishop Museum Bulletin 233. B.P. Bishop Museum Press.

Hawai'i State Department of Business Economic Development and Tourism (DBEDT). 2006. *State of Hawai`i Data Book*. Honolulu: DBEDT.

Kamakau, S.M. 1992. *Ruling Chiefs of Hawaii*. The Kamehameha Schools Press, Honolulu (revised edition).

Stearns, H. 1985. *Geology of the State of Hawaii*. Second Edition, Pacific Books, Palo Alto, California.

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

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

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

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

[This page intentionally left blank]