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KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

Ref: OCCL:RB

CDUA HA-3894

To: Mary Alice Evans, OPSD Director
Environmental Review Program

From: Suzanne D. Case, Chairperson
Department of Land and Natural Resources

Subject: Draft Environmental Assessment (DEA) for Conservation Use District Application (CDUA) HA-3894 for the Nakoa Single Family Residence (SFR) and Related Improvements, and Landscaping located in Honalo, North Kona, Hawaii,Tax Map Key (TMK): (3) 7-9-005:012

The Department of Land and Natural Resources has reviewed the subject draft EA for Conservation District Use Application (CDUA) HA-3894 and anticipates a Finding of No Significant Impact (FONSI) determination. Please publish notice of availability for this project in the April 8, 2022 issue of The Environmental Notice.

If you have any questions, please contact Rachel Beasley at rachel.e.beasley@hawaii.gov or work cell at 808-798-6481.

From: webmaster@hawaii.gov
To: DBEDT OPSD Environmental Review Program
Subject: New online submission for The Environmental Notice
Date: Thursday, March 31, 2022 9:42:51 AM

Action Name

Nakoa Single-Family Residence

Type of Document/Determination

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

HRS §343-5(a) Trigger(s)

- (2) Propose any use within any land classified as a conservation district

Judicial district

North Kona, Hawai‘i

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

(3) 7-9-005:012

Action type

Applicant

Other required permits and approvals

County building/grading permit; wastewater system approval; water well permit

Discretionary consent required

Conservation District Use Permit

Approving agency

State of Hawaii, Department of Land and Natural Resources

Agency contact name

Rachel Beasley

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Was this submittal prepared by a consultant?

Yes

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Map It

Action summary

The applicant proposes to construct a single story, post and pier foundation single-family residence (SFR) that will occupy a building footprint of 1,600 sq. ft. and accessory structures to total 245 sq. ft. Total proposed SFR and associated improvements are 1,845 sq. ft. This is an approximately .17-acre (7,405 sq. ft.) property.

This is a kuleana parcel which was designated as Land Commission Award (LCA) 8575:2. This property is not oceanfront; it's makai boundary is approximately 115 feet inland from the shoreline. The most seaward portion of the home is proposed approximately 130 feet inland from the makai property boundary. The applicant is requesting a variance from the 15-foot minimum setback for lots under one acre: 13.5-foot setback is requested for the entire SFR. This requested variance is due to lot shape and site characteristics, such as to avoid archaeological site disturbance.

Reasons supporting determination

After review, the OCCL has determined a FONSI for the proposed project pursuant to §11-200.1-13 Significance Criteria.

Attached documents (signed agency letter & EA/EIS)

- ERP_-DEA-submittal.pdf

Action location map

- Project-Location-Map.zip

Authorized individual

Rachel Beasley

Authorization

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

DRAFT ENVIRONMENTAL ASSESSMENT

WALTER KALEO O KALANI NAKOA

SINGLE FAMILY HOME AND

ASSOCIATED IMPROVEMENTS

IN THE CONSERVATION DISTRICT

February 2022

TMK (3rd): 7-9-005:012
Honalo, North Kona, County of Hawai‘i, State of Hawai‘i

APPLICANT: Walter Kaleo O Kalani Nakoa
P.O. Box 5092
Kailua-Kona, Hawai‘i 96745

APPROVING AGENCY: State of Hawai‘i
Department of Land and Natural Resources
Office of Conservation and Coastal Lands
1151 Punchbowl Street, Room 131
Honolulu, Hawai‘i 96813

CLASS OF ACTION: Kuleana Land Use in Conservation District

EXHIBIT R

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I. PROJECT DESCRIPTION

A. Background

Walter Kaleo O Kalani Nakoa ("Applicant") proposes to construct a single-family home and related improvements for himself, his wife, and young family on an approximate 0.17-acre (approximately 7,405.2 square feet) *kuleana* property located in the ahupuaʻa of Honalo, District of North Kona, Island of Hawaii (the "Property"). The Property is not oceanfront. The Property's *makai* boundary is approximately 115 feet inland from the shoreline and the most seaward portion of the home would be an additional 15 feet inland from the *makai* boundary.

The Property is owned by The Puna Wai Trust Living Trust, of which Mr. Nakoa is the trustee and beneficial owner. Applicant is a Native Hawaiian who continues and teaches traditional practices through his non-profit Nakoa Foundation, which conducts Nā Peʻa, a youth program that focuses on the effective stewardship of land and marine resources by perpetuating the traditions and practices associated with the traditional Hawaiian sailing canoe.

Applicant has lineal ties to the Honalo area through his great-grandmother, Ana Kaili Travis. Applicant also has strong cultural ties to Honalo *makai*. Throughout Applicant's childhood and adolescence, he spent time spearfishing and cliff diving in Honalo *makai*. As a member of the Royal Order of Kamehameha I, the nearby battle grounds of Kuamoʻo were assigned to Applicant for restoration and mālama ʻāina. Applicant did not become a resident of the Property until he was given permission by the families from Honalo.

Another purpose of the proposed home and *kuleana* Property is to support Applicant's wife and three children. Applicant will be living a self-sufficient, sustainable lifestyle on the *kuleana* Property. In addition, the home will allow Applicant to pass on traditional Native Hawaiian skills, including some that are specific to the Honalo area, such as hale construction, chanting, fishing, medicine, and farming. Applicant also desires to embrace the cultural significance of the Property and surrounding area and perpetuate its meaning into modern life.

Applicant commissioned an archaeological inventory survey ("AIS") through Haun & Associates which determined that the Property is a *kuleana* parcel that was originally awarded during the *Māhele* to Kaiakahauli as a *pā hale*, or house lot. The Property is an historic habitation site that was likely occupied by Kaiakahauli, who acquired the land in 1819 when he received it from his parents. Kaiakahauli's Land Commission Award ("LCA") testimony included the *pā hale* that is within the Property, along with an inland parcel containing agricultural garden plots. The historical accounts of the area document the presence of house sites, and previous research further solidifies the *kuleana* Property as a "historic house compound." The findings and conclusions in the AIS will be discussed in more detail hereinafter.

The proposed home consists of a single-story structure occupying a footprint of 1,600 sq. ft. with accessory uses including a swimming pool, two (2) irrigation and potable water storage tanks, propane tank, and two (2) air conditioning condensers covering an area of 245 sq. ft. The proposed home is low-profile, with a maximum building height of 24 feet at its peak. Other features include a permeable driveway, native plant landscaping, and potential agricultural

cultivation areas.

Applicant knows of no existing utilities on the Property. The neighboring parcel's electric and phone lines were brought to the lot via a route that extends uphill to existing lines. However, Applicant will utilize an "off-grid" photovoltaic system with battery storage as well as a propane system to provide power for the home. Landline telephone service will not be needed because Applicant and his family will use only cellular phones. The area is not served by an existing public or private water source.

Applicant has applied to the State of Hawaii Commission on Water Resource Management for a Well Construction Permit similar to other permitted wells in the area. Applicant's private water system will include a 1,000-gallon capacity storage tank for landscaping purposes with a reverse osmosis system and a salt pan to evaporate the brine from the desalinization/reverse osmosis process. For potable water, Applicant will rely on catchment water collected from the home's roof and stored in a 1,000-gallon tank to be supplemented by a local water delivery service when necessary.

An accessory Individual Wastewater System ("IWS") in compliance with State Department of Health regulations is also proposed, which will be contained in a subterranean area covering 198.8 sq. ft. The treatment unit will be located a minimum of 50 horizontal feet from the shoreline and a minimum of three (3) vertical feet to groundwater.

The design of the home pays homage to the *pā hale* by incorporating the foundation of the former house site into the siting and design of the proposed home. Applicant has committed to preserving the entirety of existing former *hale* and has situated the proposed home adjacent to the north side of the former *hale*.

Environmental impacts to the *makai* Honalo area and the environment will be minimal as Applicant's use of the Property will be the same as the historic use of the Property; there will be minimal ground disturbance; the proposed home is low-key and in a fairly remote area, not generally traversed or in view of the public; landscaping and its location set back from the shoreline will shield it from view of ocean-going vessels; best management practices will be used during construction to minimize impacts from noise, dust, and runoff/sedimentation; and Applicant will adhere to the Department of Land and Natural Resources ("DLNR"), State Historic Preservation Division ("SHPD") requirements if inadvertent finds are made during construction of the IWS or any other ground-disturbing activity.

B. Project Description and Location

Applicant proposes to construct a single-family home and related improvements on the 0.17-acre *kuleana* Property identified as TMK (3) 7-9-005:012, ahupuaʻa of Honalo, North Kona District, Hawaiʻi. (see TMK Map, Appendix 1). Applicant's proposed home will provide the opportunity for he and his wife to raise their three children in a "modern Hawaiian" lifestyle that is grounded in traditional Hawaiian values and exercises Native Hawaiian rights and practices. The *kuleana* lot is owned in fee by Applicant's trust, and consists of approximately 7,405.2 sq. ft., situated about 1.25 miles south of Keauhou Bay.

Figure 1 Project Location Map

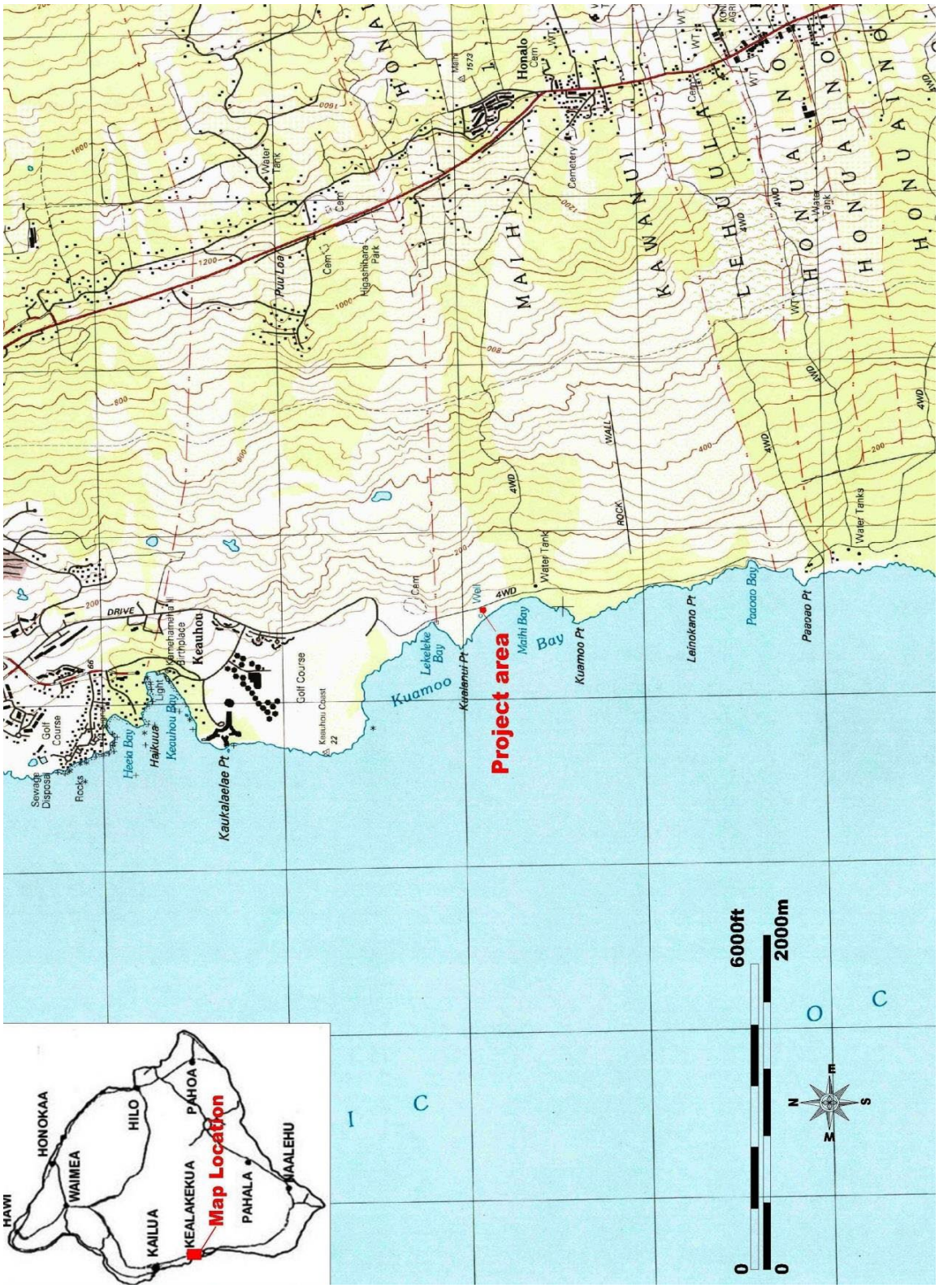


Figure 2
Project Site TMK Map

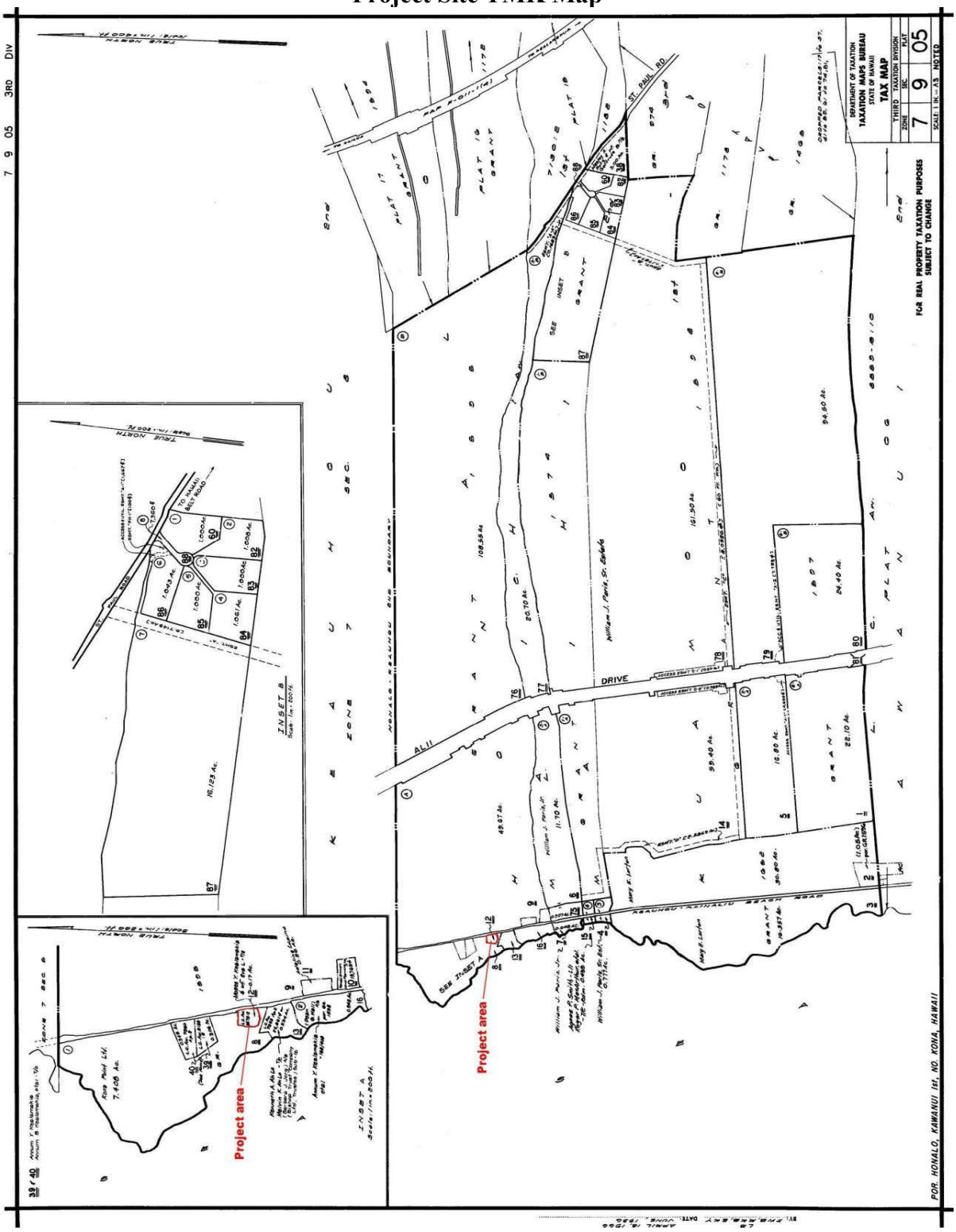


Figure 3 Project Site Photos

3a Aerial Image ▲ ▼ 3b House Site/SE View Across Property Showing House Site

▲ 3c View to SW ▼ 3d View to NW

▼ 3e Driveway/*Makai* View

The Property is a *kuleana*, Land Commission Award ("LCA") number 8575:2, which was historically, customarily, and actually used for single-family residential purposes. (See Draft Archaeological Inventory Survey "AIS," Appendix 3 and Warranty Deed, Appendix 4.) The *kuleana* Property was occupied by Kaiakahauli, who acquired the land in 1819 when he received it from his parents. In 1848, Kaiakahauli was awarded the Property during the Māhele. According to LCA testimony, Kaiakahauli's claim included the pā hale, or house lot, that comprises the proposed home area.

The proposed 1,600 sq. ft. home will encompass a living area, family area, kitchen and dining area, master bedroom and bathroom , a second bedroom and bathroom, laundry/pantry area, and storage and hallway. Landscaping proposed by applicant includes use of native Hawaiian plants and agriculture as referenced in the Kuleana Land Uses section, HAR § 13-5-22, P-3 (D-1). See site plan, floor plans, elevations, landscaping plan, and pool plan at Appendix 2.

Applicant's proposed home pays homage to the *pā hale* by incorporating the former house site into the siting and design of the proposed home. Applicant has committed to preserving the foundation of the historical *hale* and has sited the proposed home and accessory uses adjacent to the north, east, and west sides of the former *hale* foundation. See Appendix 2. The proposed home structure sits parallel to the northern side of the *pā hale* and was designed with the intent to avoid interference with the former *hale* and honor the *pā hale*. The rest of the home will be painted in muted, nonreflective earth tones and all exterior lighting will be shielded.

The proposed home is situated in the northern, fairly level area of the *kuleana* Property. The proposed home calls for a foundation consisting of post and pier construction to accommodate the terrain and requiring minimal ground disturbance. The footprint of the home will create no adverse effect to the natural drainage of the *kuleana* Property. The exterior will be board and batten siding and all wood framing will be Douglas fir number 2 select. The interior floors will be finished with vinyl. Awning-style anodized aluminum windows will be used to harness the specific winds of the area.

The main living structure uses a traditional open gable roof to take advantage of the historically prevalent winds of the Kona region during most of the year. The ‘Eka and Hau O Ma‘ihi winds will be unobstructed by the home design. This will allow for a sustainable ventilation system similar to the concept used by Applicant’s ancestors.

Keeping the roof in one line also imitates the traditional hale that once occupied the *kuleana* Property and is designed for historic appreciation by providing clarity in form with the original *pā hale*. The proposed home will have slate gray corrugated metal roofing with a seamless gutter system and downspout to a catchment tank for the catchment system providing water for the home. At its highest point, the roof will reach an elevation of 24 feet.

The visually low-impact proposed home design embraces but does not overwhelm the historic site. The proposed home avoids disturbing the structural foundation of the traditional home that was on the Property. The proposed home was carefully designed to not only respect the *pā hale*, but to bring it back to life in its original capacity--which is to serve as a home site for a Hawaiian family.

Because the Property is not served by any existing public or private wastewater system, the construction of an IWS will be necessary to process wastewater from the home. Applicant proposes the installation of a 1,000-gallon septic tank with a 12 ft. x 12 ft. leach field, located towards the western seaward portion of the Property. See IWS Plans, Appendix 6, and Appendix 2, Site Plan. The treatment unit will be located a minimum of 50 horizontal feet from the shoreline and a minimum three (3) vertical feet to groundwater (from the bottom of the leach field). See IWS Plans, Appendix 6.

The Property is not served by a public or private water system. Accordingly, Applicant will submit an application for a water well permit for landscape purposes. See Appendix 7. Applicant will use a desalinization/reverse osmosis system and store water in a 1,000-gal. water tank. The planned water well will use a 75 HP, 240 v 10 Goulds GS series pump and motor and will be contained in a 3’ x 3’-pad that protrudes 18” from the ground. The well will be drilled using a down-the-hole hammer on a water well drilling rig. Only non-toxic, biodegradable drilling fluids will be used. The location of the water well and the water tank are shown on the Site Plan, Appendix 2.

The brackish water from the well will be processed by a desalination/reverse osmosis system which will be located within the footprint of the home. Applicant plans to install a traditional salt pan for evaporation of the brine.

Until such time as a public water supply is available for the property, the proposed home will incorporate a water catchment system to capture rainwater from the rooftop, stored in a 1,000-gal storage tank for potable household water use. If necessary, the tank will be replenished by a local water delivery company. Applicant and his family will incorporate and practice water-saving measures whenever practical.

The Property is not served with electrical power by a public utility company. Accordingly, until electrical power is available to the Property, Applicant will install and rely on an "off-grid" rooftop photovoltaic system with battery storage for the proposed home. The battery storage system, such as the Tesla or LG systems, will be installed either under the house or hanging on a wall within the footprint of the proposed home (*see* North Elevation, Appendix 2), similar to what is shown in Appendix 8. In addition, a propane system will be utilized to power appliances and serve as a back-up power system. The location of the propane tank is shown on the Site Plan, Appendix 2.

The Property is not an oceanfront parcel. The Property ranges in elevation from approximately 24 to 41 feet and is situated approximately 35 meters (115 feet) inland of the shoreline at Ma'ihi Bay. See Google Earth Slope Analysis, Appendix 12; see also, Existing Site Condition, Site Plan, and Building Elevations, Appendix 2. The proposed home would be located even further inland.

The majority of the *kuleana* parcel is located in Flood "Zone VE (EL 30)." See Flood Hazard Assessment Report ("FHAT") (Appendix 5). A "Zone VE" area constitutes a coastal flood zone with velocity hazard (wave action). The remaining inland portion of the lot is located in Flood "Zone X." Id. A "Zone X" area is determined to be outside the 0.2% annual chance floodplain. To avoid disturbing the historic *hale* foundation, Applicant proposes to construct the home in the northern portion of the Property. A portion of the home and pool will be located within "Zone VE" and the reminder of the home will be located in "Zone X." See Site Plan, Appendix 2 at p. A1.1.

Direct access to the Property is provided by Keauhou-Kainaliu Beach Road, also known as the Old Government Beach Road, owned and maintained by the State of Hawaii, which runs along the *mauka*, eastern boundary of the site. See Google Earth Aerial Photo, attached hereto as Appendix 10. See, also, photographs of the Property, Appendix 11. No grading will be required as actual access to the home is available from an existing 5.1-meter opening in the stone wall perimeter enclosure (as discussed more in the following section). Paving of driveway areas would be limited to permeable materials. Use of the proposed vehicular access will continue to allow Applicant a safe entry and exit point without disturbing the existing stone wall enclosure. Construction of the proposed home will require very minimal grading and grubbing. The swimming pool and IWS will require approximately 300 cubic yards excavation; the foundation of the home will be post and pier, requiring little to no ground disturbance.

Best management practices (as described below) will be observed during grubbing and grading, including silt fence at the toe of all cut slopes, straw waddles at intermediate locations parallel to contours of exposed soil, stabilization (seeded/planted, etc.) of exposed soil as quickly as possible and according to landscape plan. In the event additional undocumented archaeological resources are discovered on the Property during construction, Applicant will

immediately cease work in the area and contact SHPD to determine appropriate next steps.

Applicant will ensure that its contractor performs all earthwork in conformance with applicable laws, regulations, and standards. Construction activities would produce minor short-term impacts to noise, air quality, access, and scenery. Best Management Practices expected to be required as conditions of the Conservation District Use Permit would mitigate these.

No sensitive biological or hydrological sites are present. Archaeological and cultural resources have been avoided through inventory, consultation, and site planning. As a result, the home has been located, positioned, and designed to honor the *pā hale* and maintain cultural significance and harmony. In the unlikely event that any previously unidentified archaeological resources, including shell, bones, midden deposits, or similar finds are encountered during construction within the project site, work in the immediate area of the discovery will be halted, and the SHPD will be contacted to determine the appropriate actions.

II. ENVIRONMENTAL ASSESSMENT PROCESS

This Environmental Assessment (EA) process is being conducted in accordance with Chapter 343 of the Hawai‘i Revised Statutes (HRS). This law, along with its implementing regulations, Title 11, Chapter 200.1 of the Hawai‘i Administrative Rules (HAR), is the basis for the environmental impact assessment 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 V of this document states the anticipated finding that no significant impacts are expected to occur, based on the preliminary findings for each criterion made in consultation with the DLNR’s Office of Conservation and Coastal Lands (“OCCL”), the approving agency. If, after considering comments to the Draft EA, the approving agency concludes that, as anticipated, no significant impacts would be expected to occur, then the agency will issue a Finding of No Significant Impact (FONSI), and the action will be permitted to occur. If the agency concludes that significant impacts are expected to occur as a result of the proposed action, then an Environmental Impact Statement (EIS) will be prepared. It should be noted that HAR § 11-200.1-15(c)(3)(A) lists “Single-family residences less than 3,500 square feet . . . if not in conjunction with the building of two or more such units” as being “Exempt Classes of Action.”

A. Identification of Agencies, Citizen Groups, and Individuals consulted in Making the Assessment

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

1. Consulted Agencies

County:

County Council
Planning Department

Department of Public Works
Fire Department
Police Department

State:

Department of Transportation, Highways Division
Department of Health
Department of Health, Clean Air Branch
Department of Land and Natural Resources, Office of the Chairperson
Department of Land and Natural Resources, Office of Conservation and Coastal Lands
Department of Land and Natural Resources, Hawaii District Branch
Department of Land and Natural Resources, Historic Preservation Division
Office of Hawaiian Affairs

2. Consulted Citizen Groups

Royal Order of Kamehameha I, Moku O Kona
Aloha Kuamoʻo ʻAina

3. Consulted Individuals and Neighbors

Louis C. Morejohn, Maihi Makai LLC
Kona Residence Trust
Kona Trust
Ackerman Ranch, Inc.
Linda J. and Donald F. Mott
Matthew Jumalon
Stephanie J. and Timothy W. Teslow
Taylor Trust
George A. Schattauer, Jr.
Wilma J. Paris

Copies of communications received during early consultation are contained in Appendix 18.

III. ALTERNATIVES

A. No Action

Under the No Action Alternative, the home would not be built. This EA considers the No Action Alternative as the baseline by which to compare environmental effects from the project. No other alternatives use for the Property are desired by Applicant and, thus, none are addressed in this EA.

B. Proposed Project

The proposed project is described in section I.B. above and its locations and features are illustrated in Figures 1 through 3 and in Appendix 2.

IV. ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION

The *kuleana* Property ranges in elevation from approximately 24 to 41 feet and is situated approximately 35 meters (115 feet) inland of the shoreline at Ma‘ihi Bay. The *mauka* boundary of the lot is Keauhou-Kainaliu Beach Road/Old Government Beach Road. There is an existing single-family home neighboring the subject Property to the south. See Figure 2, TMK Map (also, Appendix 1), aerial photograph, Figure 3a (also, Appendix 10), Slope Analysis at Appendix 12, and photographs at Figures 3b - 3e and Appendix 11.

A. Physical Environment

1. Geology, Soils and Geologic Hazards

Environmental Setting

The project site is located in the District of North Kona, *ahupua‘a* of Honalo, Island of Hawaii. The North Kona district is located in the leeward area of Hawai‘i. Mauna Kea, Mauna Loa, and Hualālai block the prevailing winds. The result is an alternating system of air circulation driven by differences in land and water temperatures. On warm days, this system produces light winds that blow offshore in the morning and early afternoon, and onshore in the late afternoon and evenings.

The Kona Coast is the only region in the islands where summer rainfall exceeds winter rainfall. Kona has an annual rainfall range from 20” along the coast to 100” on the mountain slopes. Kona showers are frequent and heavy enough to produce a much higher mean rainfall in Kona than in other leeward areas in the State. Most of the precipitation in the district occurs in the summer months because the differences in land and water temperatures generate a moderate sea breeze circulation resulting in showers that are typically spotty in distribution and highly variable in duration and intensity. Kona is atypical in that it receives the majority of its annual precipitation in summer, from May through August. Annual rainfall in the vicinity of the project area ranges from 30 to 53 inches, with an average mean temperature of approximately 73.8 degrees Fahrenheit.

The terrain in the project area slopes gently to the west with the surface comprised of soil and scattered cobbles and pebbles. The soil is classified as Kainaliu very stony silty clay loam. The soil has a 10” surface layer of very dark brown stony silty clay loam, over 16” of stony silty clay loam and silt loam. The soil has rapid permeability, a slow runoff, a slight erosion hazard, and is classified as suitable for the cultivation of coffee and macadamia nuts, and for pasture. This is underlain by fragmental *a‘ā* lava. The underlying lava was deposited from Hualālai Volcano between 5,000 and 10,000 years ago. See AIS, Appendix 3 at p. 6.

In addition, the U.S. Department of Agriculture, Natural Resources Conservation Service ("NRCS") has conducted soil surveys for portions of the Island of Hawai'i. The NRCS has identified the soil in this area to consist mainly of *waiaha* cobbly medial silt loam, with the remainder made up of similar soils and minor components. See Soil Survey Staff, NRCS, Map Unit Description: *Waiaha* cobbly medial silt loam, 10 to 20 percent slopes - Island of Hawai'i Area, Hawai'i, Appendix 13.

The entire Big Island is subject to geologic hazards, especially lava flows and earthquakes. Volcanic hazard as assessed by the U.S. Geological Survey in this area of North Kona is 4 on a scale of ascending risk 9 to 1 (see Lava Flow Hazard Map, Appendix 15). In Zone 4, the frequency of eruptions is lower than that for Kilauea or Mauna Loa. About 5 percent of Zone 4 areas have been covered by lava flows since 1800, and less than 15 percent within the last 750 years. As such, there is only a small 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, 1997 Edition*, Figure 16-2). Zone 4 areas are at risk from major earthquake damage, especially to structures that are poorly designed or built. The project site does not appear to be subject to subsidence, landslides, or other forms of mass wasting.

Impacts and Mitigation Measures

In general, geologic conditions impose no constraints on the proposed action as much of Hawai'i Island faces similar volcanic hazard. All structures will 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 and is not imprudent for the landowner. Climatic conditions impose no constraints on the proposed action.

2. Flood Zones, Coastal Waters, Hydrology (Surface Water, Groundwater, and Wetlands

Environmental Setting

Floodplain status for many 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) (see Figure 4 and Flood Hazard Assessment Report at Appendix 5). The map for the project site is 1551660962F. Majority of the *kuleana* parcel lies within Flood "Zone VE." A "Zone VE" area constitutes a coastal flood zone with velocity hazard (wave action). The remaining inland portion of the lot is located in Flood "Zone X," a low-to-moderate risk area, which is outside the floodplain. A "Zone X" area is determined to be outside the 0.2% annual chance floodplain. Accordingly, no mandatory flood insurance requirements apply to this area.

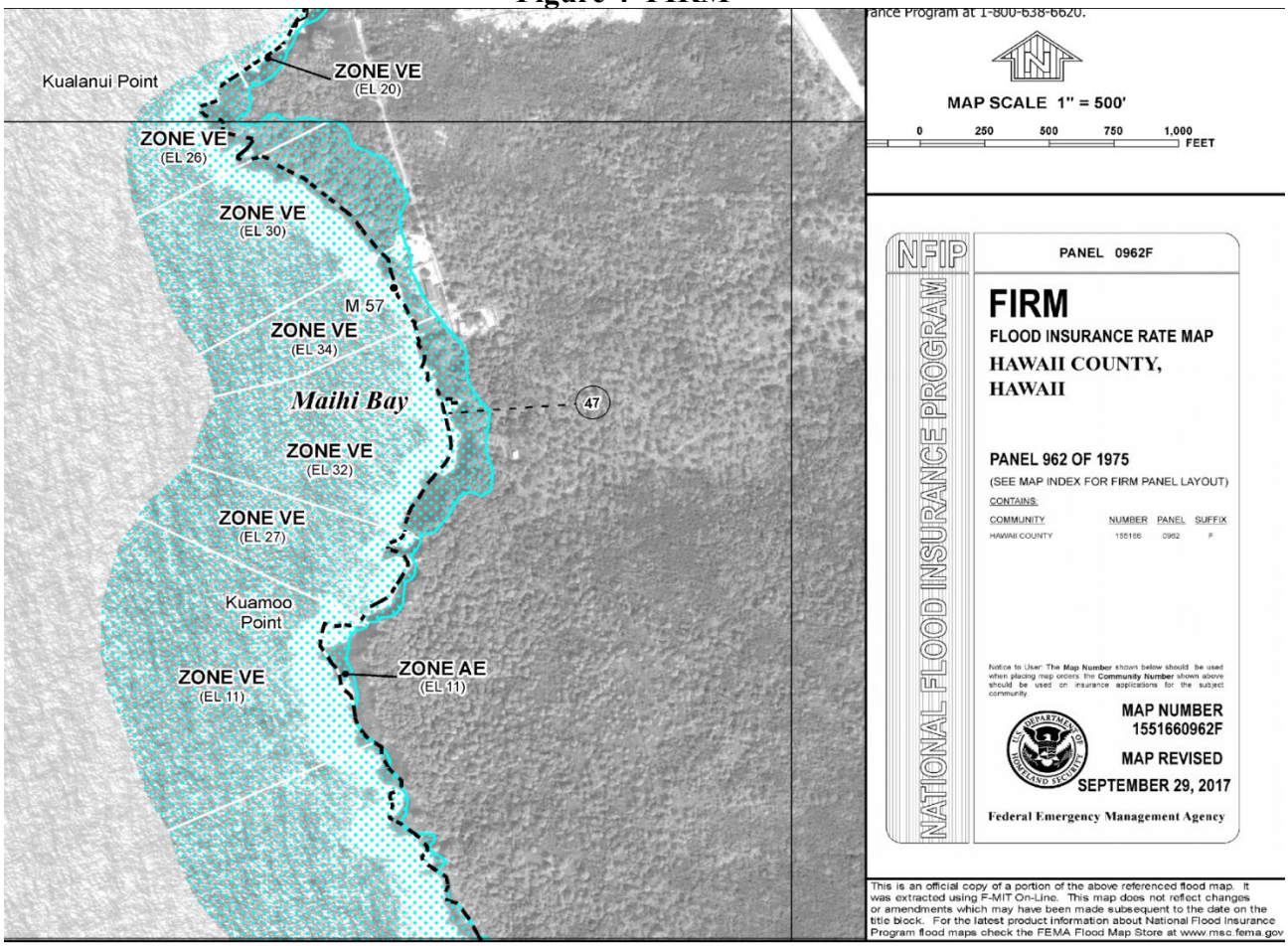
To avoid disturbance of the historic hale foundation, the Site Plan calls for the home to be constructed straddling Flood Zone "VE (EL 30)" that covers the seaward portion of the *kuleana* Property, and Flood Zone "X," that covers the remaining, *mauka* portion of the

Property. *See* Site Plan, Appendix 2.

There are no surface water bodies such as streams, lakes, wetlands, or anchialine ponds located on the Property, and there are no known areas of non-coastal local flooding present.

Of increasing importance to land use approvals in coastal regions throughout the world is the issue of sea level rise. The Earth is warming because of increases in human-produced greenhouse gases such as carbon dioxide and methane, which in turn, this has led to a rise in global sea level (http://www.ncdc.noaa.gov/oa/climate/globalwarming.html). According to the National Climate Data Center of the National Oceanic and Atmospheric Administration (NOAA), global mean sea level has been rising at an average rate of 1.7 mm/year (plus or minus 0.5mm) over the past century, a rate which has increased over the last 10 years to 3.1 mm/year (Bindoff et al 2007). NOAA projects an expected range of sea level rise over the next century of between 0.18 and 0.59 m due mainly to thermal expansion and contributions from melting alpine glaciers. However, potential contributions from melting ice sheets in Greenland or Antarctica may yield much larger increases. Dr. Charles Fletcher of the University of Hawai‘i, Mānoa, estimates that sea level may rise up to one meter by the end of the next century.

Figure 4 FIRM



In Hawai‘i, beach erosion, reef overtopping and consequent higher wave run-ups, more devastating tsunami, and full-time submergence of critical coastal areas are likely to occur (http://www.soest.hawaii.edu/coasts/sealevel/). It is particularly important to consider the location of new infrastructure and the State and counties must consider how to adjust zoning and setbacks so that large, expensive public buildings are not put in the path of inevitable damage. On the Big Island, global sea level rise is coupled with local effects of subsidence. Since 1946, sea level at Hilo on the Big Island has risen an average of 1.8 ± 0.4 mm/yr., faster than in Honolulu on the island of O‘ahu, a figure that has recently decreased. The degree to which this reflects subsidence versus variations in upper ocean temperature is currently not known (Caccamise et al. 2005).

According to the Hawai‘i Sea Level Rise Viewer, the Property is not located within a sea level rise exposure area. The Viewer accounts for predicted sea level rise up to 3.2 feet by the year 2100. The Property is not subject to passive flooding due to sea level rise. The risk of annual high wave flooding is not assessed for the Island of Hawai‘i due to limited information and geospatial data.

A scenario of modest sea level rise would not likely substantially affect the integrity or use of the *kuleana* Property, which is situated approximately 115 feet inland and 24 to 41 feet above sea level. Larger increases, particularly in a case of sudden onset, could certainly affect it. If so, this home would be among thousands, or perhaps tens of thousands, to be affected in what would be the largest disaster to affect the Hawaiian Islands since human settlement. As sea level rise is gradual, there would probably be an opportunity for the owner to consider relocating or scrapping the structure for re-use of its valuable materials should sea level rise sufficiently to endanger the structure.

There is little risk of erosion, as the Property is located 24 to 41 feet above sea level, is located approximately 35 meters inland, contains no surface bodies of water, and is not located in a known drainageway. However, like the rest of Hawai‘i Island, the Property is subject to regular seismic activity due to active volcanic processes.

Most ground water in the coastal Kona area is drawn from a body of fresh or brackish water that floats on top of denser saltwater. See, U.S. Department of the Interior, *Geohydrology and Numerical Simulation of the Ground-Water Flow System of Kona, Island of Hawai‘i* (1990), available at https://pubs.er.usgs.gov/publication/wri994073. The source of the fresh water is ground water recharge from: (1) the upgradient high water-level area; (2) infiltration of rainfall and fog drip; and (3) irrigation water. Id. at 39.

The Property is located within the Keauhou aquifer. Id. at 22. Ground water recharge in the Keauhou aquifer system is estimated to be about 87 million gallons per day. Id. at 21. The aquifer has a sustainable yield of about 38 million gallons per day. See, State of Hawai‘i Commission on Water Resource Management, Water Resource Protection Plan (June 2008) at 6-19, available at http://files.hawaii.gov/dlnr/cwrm/planning/wrpp2008update/FINAL_WRPP_20080828.pdf.

Existing water use as of July 2005 was estimated at 10.723 million gallons per day. Id. at 6-19.

Impacts and Mitigation Measures

The project does not involve any shoreline hardening or use of areas subject to beach processes. Access to the home will be by a permeable gravel driveway at the back/*mauka* portion of the *kuleana* Property.

Applicant maintains that because this Property is a *kuleana*, Applicant has the legal and cultural right to build a home. Therefore, the decision on whether to build this modest, culturally appropriate home in the face of potential sea level rise over the next century is a decision Applicant has the right to make. It is understood that in light of sea level rise of an indeterminate magnitude the Property may be subject to significant erosion or even submergence.

The project should not have any effect on beach processes. As noted, the Property is situated 24 to 41 feet above sea level and is located approximately 115 feet inland of the shoreline at Ma‘ihi Bay, and the proposed home is located even further inland at the northern border of the Property. Construction of the proposed home will not involve areas subject to beach processes. No water features such as streams, springs, or anchialine ponds are found on or near the Property.

The post and pier foundation of the proposed home will require little to no ground disturbance. Excavation of the pool and IWS will include practices to minimize the potential for sedimentation, erosion, and pollution of coastal waters. The builder shall perform all earthwork and grading in conformance with County of Hawaii building and grading permits.

The project would not require an NPDES permit because the minimal grading would occur on much less than one acre. Any grading component for the home will occur in an area well *mauka* of the coastal waters and will take a short period of time to accomplish. It is estimated that grading for the Property, including the IWS and pool, will involve less than 300 cubic yards. The design of the swimming pool will require a cut of only 272 cu. ft. (10.1 cu. yd.). See IWS Application, Appendix 6, and Pool Details, Appendix 2. Applicant will take precautions to prevent soil and sediment runoff during construction activity, thereby minimizing any potential impacts to marine and coastal resources. Applicant will ensure that its contractor performs 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,” of the Hawai‘i County Code;
(c) applicable standards and regulations of the Federal Emergency Management Agency (FEMA);
(d) applicable standards and regulations of Chapter 10, “Erosion and Sedimentation Control,” of the Hawai‘i County Code; and
(e) any additional best management practices required by the Board of Land and Natural Resources.

In addition, and as part of construction, Applicant will require that the construction contractor implement the following practices.

(f) The total amount of land disturbance will be minimized. The construction contractor will be limited to the delineated construction work areas within the lot.
(g) The contractor will not allow any sediment to leave the site, particularly towards the ocean.
(h) 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.
(i) Placing silt fence at toe of all cut slopes, if any;
(j) Placing straw waddles at intermediate locations parallel to contours of exposed soil, if any.
(k) Stabilization (seeding/planting, etc.) of exposed soil as soon as possible.

The area already supports homes and is utilized by residents, property owners, and public; there are no reported water quality problems from these uses. Accordingly, it is expected that the project will not contribute to sedimentation, erosion, and pollution of coastal waters.

3. Flora and Fauna

Environmental Setting

Vegetation on the Property consists of low grass with scattered *kiawe* (*Prosopis pallisa*), *koa haole* (*Leucaena glauca*), purslane (*Portulaca villosa*), and bitter melon (*Momordica balsamina*). See, Appendix 3 at p. 6.

No listed, candidate or proposed endangered animal or plant species were found or would be expected in the area. In terms of conservation value, no botanical or zoological resources requiring special protection are present.

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

The only native Hawaiian land mammal, the Hawaiian Hoary Bat (*Lasiurus cinereus semotus*), may also be present in the general area, as it is present in many areas on the island of Hawai‘i. The project site itself is small and not heavily vegetated and would not offer any substantial habitat for this endangered species, which has been observed in kiawe scrub vegetation in other parts of Kona.

An Environmental Assessment ("EA") was prepared for the construction of a 3,500 square foot single-family residence neighboring the Property, located at TMK: (3) 7-9-005:013. See, Final Environmental Assessment and Finding of No Significant Impact Brand Single-Family Home (1999) (the "Brand EA") (Appendix 14). The Brand EA stated that, "No listed, candidate or proposed endangered animal or plant species were found or would be expected in the area. In terms of conservation value, no botanical or zoological resources requiring special protection are present." Id. at 4. In addition, "[b]ecause of the lack of native ecosystems and threatened or endangered plant species, no adverse impacts would occur as a result of clearing and improvements." Id.

Impacts and Mitigation Measures

Because of the lack of native ecosystems and threatened or endangered plant species, construction and use of the single-family home is not likely to cause adverse biological impacts. No effect on any coastal ecosystem will occur, both because of the lack of well-developed native community on or in front of the Property, and the fact that no activities are planned for the shoreline area. The precautions for preventing any effects to water quality during construction listed above in Sections IV.A.2, .4, and .5 should minimize any adverse impact on aquatic biological resources in coastal waters.

Applicant agrees to use exterior lighting sparingly; any exterior lighting will be shielded to minimize the potential for disorientation of seabirds.

To site the proposed home so that it will not disturb the historic *hale* foundation, Applicant will be required to remove one existing kiawe tree, although some limbs may need to be trimmed from other trees. While there is some potential that Hawaiian hoary bats may be found in the area, if Applicant does remove trees which are more than 15 feet tall, such tree removal will not occur during the bat-birthing and rearing season (June 1 through September 15).

Applicant's landscape plan will blend in with the existing environment and reintroduce native plants to the *kuleana* Property. Applicant proposes to use select native plants from the list attached as Appendix 9 and as shown on the Landscape Plan at Appendix 2.

4. Air Quality, Noise, and Scenic Resources

Environmental Setting

Air quality in the area is relatively good, due to its rural nature and minimal degree of human activity. However, air pollution in Kona is mainly derived from volcanic emissions of sulfur dioxide, which convert into particulate sulfate and produce a volcanic haze (vog) that persistently blankets the district. Drier areas experience blowing dust, especially during construction in high wind episodes.

Construction of the home will create little fugitive dust. As stated above, grading for the house pad will be minimal as the foundation is not a concrete pad. Instead, the home will be supported by concrete-reinforced footings. The IWS and pool will require less than 300 cu. yd. of excavation.

Noise on the site is low and is derived from natural sources (such as surf and wind) due to the very rural nature of the area. There is minimal noise generated by traffic along the adjacent roadway used mostly by neighboring landowners.

The area shares the quality of scenic beauty along with most of the Kona coastline. The County of Hawai‘i General Plan contains Goals, Policies and Standards intended to preserve areas of natural beauty and scenic vistas from encroachment. The Plan does not contain any references to the project area. The proposed home will not impact public views along or toward the shoreline. The proposed home's building height of 24 feet is less than the allowable 25-foot building height limit for the subject Property. Applicant will be preserving the existing perimeter stone wall enclosure that ranges in height from .2 to .55 meters (~ 0.65 ft. - 1.8 ft.). Thus, view planes will not be diminished.

Impacts and Mitigation Measures

The project would not affect air quality or noise levels in any substantial ways. Brief and minor adverse effects would occur during construction. However, there are virtually no sensitive noise receptors in the vicinity and, given the small scale of the project, noise mitigation will likely not be necessary. All construction will adhere to the Uniform Building Code of the Hawai‘i County Code to mitigate any adverse effects on air quality, noise, and scenic resources.

Construction activities will comply with the provisions of HAR § 11-60.1-33 on Fugitive Dust. Although minimal grading or leveling will be required for the foundation of the home, IWS, and pool, the following best management practices will be implemented to control airborne, visible fugitive dust:

a) planning the different phases of construction, focusing on minimizing the amount of airborne, visible fugitive dust-generating materials and activities, centralizing vehicular traffic routes, and locating potential dust-generating equipment in areas of the least impact;

b) providing an adequate water source at the site prior to start-up of construction activities;

c) landscaping and providing rapid covering of bare areas, including slopes, starting from the initial grading phase;

d) minimizing airborne, visible fugitive dust from shoulders and access roads;

e) providing reasonable dust control measures during weekends, after hours, and prior to daily start-up of construction activities; and

f) controlling airborne, visible fugitive dust from debris being hauled away from the project site.

No substantial impact to scenery is expected. Applicant's proposed home will occupy a modest portion of the *kuleana* parcel, has a low-key design that exists in harmony with the existing natural and physical features of the project site, and will be set back substantially from the shoreline in an area not generally visible to the public. The proposed home is under the allowable 25-foot building height limit, will be finished with nonreflective materials and will be painted in muted earth-tone colors. The proposed home will generally comply with the standards applicable to single-family residences under Exhibit 4 of HAR § 13-5 despite not being subject to the section. In addition, there is a 3,500 sq. ft. single-family residence neighboring the subject *kuleana* Property to the south. The subject *kuleana* Property is located a distance from any community or other center of activity. Thus, the proposed home will not introduce any adverse effect on scenic resources.

It should be recognized that, in addition to being permitted as a *kuleana* use, a single-family home is an identified use in the Resource subzone of the Conservation district. Any single-family home will have some visual impact. Applicant is planning to continue the low-key landscape of the Property and utilize a selection of native plants from those identified in Appendix 9, whenever possible, in landscaping which will screen the visual impact. See also, Landscape Plan at Appendix 2.

This is a *kuleana* Property which has been used as a house site and which Applicant seeks to continue to use as a home.

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. In order to ensure that construction-related damage is avoided or minimized, the applicant will ensure the following, which are expected to be imposed as condition of the CDUP:

- construction activities with the potential to produce polluted runoff will be limited to periods of low rainfall;
- cleared areas will be replanted or otherwise stabilized as soon as possible;
- construction materials, petroleum products, wastes, debris, and landscaping substances (herbicides, pesticides, and fertilizers) will be prevented from blowing, falling, flowing, washing, or leaching into the ocean;
- appropriate erosion/silt barriers will be erected, construction waste will be trucked to an appropriate disposal site, and all chemicals, paints, etc., used in construction will be stored and removed from the site in accordance with labeling requirements;
- during construction, emergency spill treatment, storage, and disposal of all hazardous materials will be explicitly required to meet all State and County requirements, and the Contractor will adhere to "Good Housekeeping" for all appropriate substances, with the following instructions;
- onsite storage of the minimum practical quantity of hazardous materials necessary to complete the job;

- fuel storage and use will be conducted and monitored to prevent leaks, spills, or fires;
- products will be kept in their original containers unless unreasonable, and original labels and safety data will be retained;
- disposal of surplus will follow manufacturers' recommendation and adhere to all regulations;
- manufacturers' instructions for proper use and disposal will be strictly followed;
- regular inspection by Contractor to ensure proper use and disposal;
- onsite vehicles and machinery will be monitored for leaks and receive regular maintenance to minimize leakage;
- all spills will be cleaned up immediately upon discovery, using proper materials that will be properly disposed of;
- regardless of size, spills or toxic or hazardous materials will be reported to the appropriate government agency; and
- should spills occur, the spill prevention plan will be adjusted to include measures to prevent spills from re-occurring and clean-up procedures modified as necessary.

B. Socioeconomic and Cultural

1. Land Use, Designations, and Controls

Existing Environment

The Property is bordered by shoreline property to the west, Keauhou-Kainaliu Beach Road to the east, and by private property to the north and south. Currently, the neighboring parcel to the south, located within 20 feet, contains a 3,500 sq. ft. single-family residence, consisting of seven rooms and a swimming pool/deck. The general area of *makai* Honalo is used for cattle grazing and recreation.

Conservation District

The State Land Use District for the subject *kuleana* Property is Conservation, subzone Resource and, therefore, County of Hawai'i zoning ordinances do not apply. The project site is within the Special Management Area. No structures are proposed to be located within the shoreline setback area. As discussed above, the *makai* property boundary is located approximately 115 feet inland from the shoreline.

The Property is a *kuleana*. The established legal and cultural rights associated with *kuleana* parcels are based on Hawaiian cultural stewardship values (as documented in the Kuleana Act), which are a significant aspect for defining and maintaining both an individual's and a community's cultural identity. The owner of a *kuleana* parcel not only owns the fee-simple land, but also the rights and responsibilities appurtenant to that land. These legal rights are transmitted from one *kuleana* owner to the next.

HAR § 13-5-22, P-3 provides the scope of the allowable *kuleana* land uses: "Agriculture and a single family residence, if applicable, when such land use was historically, customarily, and actually found on the property." The only further requirement for such use is the "require[ment] [of] a board permit." See HAR § 13-5-22(b)(4). Notably, the "Kuleana Land Uses" provision, HAR § 13-5-22, P-3 does not include limiting language that subjects the *kuleana* Property to any "design standards," as seen in the Resource Subzone (HAR § 13-5-24, R-7). The subject *kuleana* Property, therefore, is not regulated by the design standards outlined in HAR § 13-5 Exhibit 4. The only additional regulation that the *kuleana* Property is subject is "to ensure the[] [structures] are consistent with the surrounding environment." See HRS § 183C-5.

Similarly, HRS § 183C-5 provides: "Any land identified as a kuleana may be put to those uses which were historically, customarily, and actually found on the particular lot including, if applicable, the construction of a single family residence." Thus, construction of a single-family home and associated improvements is permitted and, indeed, cannot legally be prohibited on a *kuleana* in the Conservation District. The owner, however, may be required to apply for a Conservation District Use Permit and Special Management Area Permit (or exemption) to ensure that the proposed structure is "consistent with the surrounding environment." (HRS § 183C-5).

"Single family residences" are expressly permitted in the Resource Subzone under HAR § 13-5-24 provided that the Applicant asks for and receives a Conservation District Use Permit from the Board. HAR § 13-5-24(a) provides that land uses identified in HAR § 13-5-22 (the Protective Subzone) also are permitted in the Resource Subzone. Thus, the "*Kuleana* Land Uses" provided in HAR § 13-5-22, P-3 are permitted on the subject Property.

Special Management Area

The project site is within the Special Management Area. Applicant is required to apply for a Special Management Area Permit (or exemption) to ensure that the proposed structure is "consistent with the surrounding environment." (HRS § 183C-5.) Single-family residences may be determined to be an exempt action under the County's Special Management Area (SMA) guidelines. Applicant submitted an SMA Assessment Application to the County Planning Director wherein the project was described and requested a determination that the proposed single-family home is exempt from the requirements of an SMA use permit. The Planning Director issued a determination that the project is exempt from the requirement for an SMA Permit and enumerated certain conditions. See Planning Director SMA exemption determination dated September 21, 2020, and October 25, 2021, extension, Appendix 16.

The consistency of the project with the regulations and policies of the Conservation District and the Special Management Area are discussed in Sections IV.B.8.b and c.

2. Socioeconomic Characteristics and Recreation

Existing Environment

The project site is a *kuleana* located within the *ahupua'a* of Honalo in the North

Kona District of the Island and County of Hawai‘i. This is a fairly remote portion of Hawai‘i, with Kailua-Kona located approximately eight (8) miles to the north and Kealakekua located approximately three (3) miles to the south.

Kona was an important district in Precontact Hawai‘i. Kona was a center of political power and population. However, after 1850 it became a sleepy rural district of scattered coffee farms and cattle ranches. The growth of the visitor industry in West Hawai‘i since the 1960s attracted new residents lured by Kona's weather and physical beauty and its employment and entrepreneurial opportunities. Population has grown rapidly in all of West Hawai‘i, particularly in North Kona, where the number of inhabitants increased from 4,832 in 1970, to 22,284 in 1990, to 37,875 in 2010. As of 2010, North Kona trailed only Puna (45,326) and South Hilo (50,927) in number of inhabitants.

Recreation in the general area consists of fishing, diving, cliff jumping, swimming, kayaking, hunting, and hiking.

Impacts and Mitigation Measures

No adverse socioeconomic impacts are expected to result from the project. The project will have a very small positive economic impact for the County of Hawai‘i. The proposed residence and associated improvements will not adversely affect other residents.

The applicant understands that there is public pedestrian access along the shoreline in front of the Property. Construction of the residence would have no adverse effect on recreational use of the shoreline. It will not restrict any shoreline uses such as fishing, hiking, or gathering. It will not obstruct public access to the beach or hinder the ability of the public to engage in coastal recreation.

The residence will also comply with the Coastal Zone Management ("CZM") guidelines set forth under HRS ch. 205A. The home will not interfere with views along the coast. It will not restrict any shoreline uses such as fishing, hiking or gathering. It will not obstruct public access to the beach or hinder the ability of the public to engage in coastal recreation. It will not impact historic resources, marine resources, or coastal hazards.

3. Cultural and Historic Resources

An AIS for the proposed action was performed by Haun & Associates and is summarized below. In the interest of readability, the summary below has eliminated most scholarly references; readers interested in sources may consult Appendix 3.

The AIS identified one site consisting of a complex of features that encompass the entirety of the project area, which was listed on the State Inventory of Historic Places ("SIHP") as 50-10-37-7723. The site is comprised of a terrace, a rectangular shaped enclosure, and a large enclosure that extends around the perimeter of the project area. This habitation site was likely occupied by Kaiakahauli, who acquired the land in 1819 when he received it from his parents.

After a field survey, subsurface testing, and artifact analysis, the AIS indicated that the entire parcel is comprised of an archaeological site. The former *hale* terrace and

perimeter stone wall enclosure date from the 19th century or earlier. The AIS concluded that the *kuleana* Property meets HAR § 13-284-6 "Criterion d," as it has yielded information important for understanding the late prehistoric/early historic use of the project area. Due to the generally disturbed nature of the *kuleana* Property and the limited precontact cultural deposit noted beneath the former *hale* terrace, no further work was recommended for the Property. However, Applicant has elected to preserve the former *hale* terrace as well as the perimeter stone wall enclosure.

A 6E form was submitted to and accepted on December 23, 2020, by SHPD on its Hawaii Cultural Information System. On March 9, 2021, SHPD notified Samuel Lemmo, Administrator, OCCL/DLNR, that, "The Haun and Henry (March 2021) AIS report satisfies the requirements of HAR §13-276-5. **It is accepted**." (Emphasis in original.) See Appendix 17.

Historical and Cultural Background

It is recognized that in Hawaiian society natural and cultural resources are one and the same. Native traditions describe the formation (the literal birth) of the Hawaiian Islands and the presence of life on and around them in the context of genealogical accounts. All forms in the natural environment, from the skies and mountain peaks to the watered valleys and lava plains to the shoreline and ocean depths, were believed to be embodiments of Hawaiian deities. One Hawaiian genealogical account records that Wākea (the expanse of the sky–father) and Papa-hānau-moku (Papa—Earth-mother who gave birth to the islands) (also called Haumea-nui-hānau-wā-wā (Great Haumea—Woman-earth born time and time again)) and various gods and creative forces of nature gave birth to the islands. Hawai'i, the largest of the islands, was the firstborn of these island children. As the Hawaiian genealogical account continues, these same godbeings or creative forces of nature who gave birth to the islands were also the parents of the first man (Hāloa) and, from this ancestor, all Hawaiian people are descended. It was in this context of kinship that the ancient Hawaiians addressed their environment and it is the basis of the Hawaiian system of land use.

Archaeologists and historians believe that for generations following initial settlement from Polynesia, communities were clustered along the watered, windward (*ko'olau*) shores of the Hawaiian Islands. 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. 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.

Over the generations, the ancient Hawaiians developed a sophisticated system of land and resources management. By the time ʻUmi-a-Līloa rose to rule the Island of Hawaiʻi in ca. 1525, the island (*mokupuni*) was divided into six districts or *moku-o-loko*. On Hawaiʻi, the district of Kona is one of six major *moku-o-loko* within the island. The district of Kona 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 Kaʻū, Hilo, and Hāmākua. Like other large land units on the Island of Hawaiʻi, Kona is divided into two smaller units of land and is referred to as North and South Kona.

The subject *kuleana* Property is located in North Kona, situated in the ahupuaʻa of Honalo along the western coast of Hawaiʻi island. The Honalo *ahupuaʻa* originates along the shoreline at Kualanui Point and extends inland for approximately 7.2 miles to an elevation of approximately 4,100 feet. The *ahupuaʻa* of Honalo was named for the chief of that name, husband of Hōkūkano. In the lands of Honalo were a large *hālau auolo aliʻi* (chiefs' compound) and *hālau waʻa* (canoe long houses). Native Hawaiian historic accounts and the observations of early foreign visitors such as Ellis and Wilkes describe the extensive cultivated slopes that included Honalo *ahupuaʻa*. The cultivated lands, today known as the Kona Field System, were in intensive use during late prehistoric times.

The elevation zones were subdivided into four zones. The project area is located within the *kula* zone of the Kona Field System, SIHP Site 50-10-37-6601. This site extends north to Kāʻu *ahupuaʻa*, south to Honaunau, and from the coastline to the forested slopes of Hualālai. The area was intensively cultivated and served as the resource base for the large number of chiefs and retainers that occupied the Kailua-Honaunau coast.

The *kula* zone extends from sea level to 500-700 ft. elevation and includes the seaward most portion of the project area. This lower elevation zone traditionally was used for habitation and cultivation of sweet potatoes, paper mulberry (*wauke*), and gourds. Agricultural features, including clearing mounds, planting mounds, planting depressions, modified outcrops, and planting terraces, are common in this zone. Habitations are scattered throughout the *kula* but they are concentrated along the shoreline portion of the zone. The shoreline portion, extending approximately 200 meters inland, was the focus of permanent habitation and activities such as burial, canoe storage, ritual, and marine exploitation. Royal centers and chiefly residences were also situated near the shoreline. These complexes included residences for high status individuals and their supporters and attendants, *heiau*, places of refuge, hōlua slides, and other structures.

The *kaluʻulu* zone extends from 500 to 1000 ft. elevation. The zone was used for cultivating sweet potatoes, paper mulberry, and especially breadfruit. Archaeologically, this zone is not distinguishable from the adjacent *ʻapaʻa* zone. The *ʻapaʻa* zone is situated between 1,000 and 2,500-ft. elevation and includes the inland margin of the project area. This zone traditionally was used for dryland cultivation of taro, sugar cane, sweet potato, and *ti*. Permanent habitations were present in the *ʻapaʻa* zone but were infrequent. Dwellings were observed by early historic chroniclers but most were probably for temporary use in conjunction with agriculture, bird hunting, and collecting of plant resources. Burials and ritual sites are rare in the upper elevation zones.

Kuaʻiwi are prominent agricultural features of the *kaluʻulu* and *ʻapaʻa*, zones. These are broad, linear piles of rocks built from stones cleared from the adjacent slopes that also served as field boundaries. *Kuaʻiwi* are oriented inland-seaward often interconnected with perpendicular, soil-retaining walls and terraces forming rectangular grid pattern of fields. *Kuaʻiwi* also served to control rainfall runoff. These formal fields contrast with more informal garden areas characterized by scattered agricultural features in very rocky areas, such as young lava flows, and much of the *kula* zone.

The *ʻamaʻu* zone extends from 2,500 ft. to 4,000 ft. elevation. The zone was associated with banana and plantain cultivation. The archaeological traits of the zone have not been well defined but temporary habitations were probably present associated with agriculture and exploitation of forest resources.

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.

The worship of Lono appears to have been 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 *ʻawa* to Hawaiian farmers. The rituals of Lono, "the father of waters," and the annual Makahiki festival, which honored Lono, were of great importance to the native residents of this region. The significance of rituals and ceremonial observances in cultivation and 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.

Given the environmental conditions of the region, the native residents practiced a subsistence-based system of seasonal travel and residence across the land. Oral histories collected from individuals in the area document the land use, treatment of cultural-historical resources, and the changes from about 1915 to present day. Maly and Maly (2001) conducted oral interviews with 15 individuals with knowledge of the general project area vicinity in conjunction with their overview of the lands between Keauhou and Kealakekua.

Of particular interest to the study of trails, access, and cultural historical resources in the present study area, interviewees record that in most areas the land was left as it had been. Cattle continue to be grazed on some of the *kula* lands of the Keauhou-Kealakekua region. In the Honalo-Honuaʻino vicinity, descendants of the Johnson-Paris-Wall-Roy lines or their lessees maintain herds. In the Onouli-Kealakekua vicinity, Greenwell descendants (part of Palani Ranch) have leasehold interests and maintain pasture operations as well on former Greenwell family lands. Sugar cultivation in the Keauhou-Kealakekua region, for the most part, was restricted to lands between Honalo and Onouli. The Kona Sugar Company/Kona Development

Company held leasehold interests in lands of the upper kula region (the area extending from about the 700 foot elevation to Māmalahoa Highway). Development of the sugar fields led to the clearing of nearly all surface signs of past Hawaiian land use. The fields were cleared of stones to improve the planting fields. Stone clearing mounds, most of which were carefully made and faced with set stone, have been described as a product of the plantation era. Because ranching operations continued on the lands *makai* and *mauka* of the sugar fields and the same property owners were also leasing portions of their land to the plantation, most of the *ahupuaʻa* boundary walls were maintained in the sugar fields. The lands were reclaimed for ranching and, in some areas, limited truck farming of watermelons and vegetable crops (where soil could support the activity) was developed.

In oral history interviews conducted with *kamaʻāina* of the study area, it was recorded that *mauka-makai* access in the Honalo-Kaʻawaloa region was limited. A type of "Konohiki" management system of the lands was observed through the 1960s. This meant that access was generally restricted to those individuals who resided in (or had connections to) the *ahupuaʻa* in which access was desired. Those who traveled the *mauka-makai* trails were descendants of the native tenants of the land, small land owners and lessees, or the families and friends of the large land owners. Until the 1950s, the near shore fisheries (access to which was the primary purpose of traveling *makai*) were carefully watched by a few elder descendants of the native Hawaiian families of the lands in the area (for example Kaʻilikini, Hoʻomanawanui, Keliʻi, Kaneao, and Leslie). Most people who wished to travel across the land or to stay on the shore to fish asked permission of the large landowners, and it was not uncommon for fish and limu to be given to the "Konohiki" when travelers returned to the uplands.

In Precontact Hawaiʻi, all land and natural resources were held in trust by the high chiefs (*aliʻi ʻai ahupuaʻa* or *aliʻi ʻai moku*). The use of lands and resources, including fisheries, were given to the *hoaʻāina* (native tenants) at the prerogative of the *aliʻi* and their representatives or land agents (*konohiki*), who were generally lesser chiefs.

By all accounts, the Hawaiian people practiced resource conservation, trying never to deplete their fisheries or over harvest their plant resources. Once a fisherman discovered an area full of fish, it became his special feeding spot (*koʻa*). Here he would feed the fish so they would became accustomed to visiting the *koʻa* and frequent it often. Then he would take only as much fish so as to not alarm the other fish and not deplete the resource. Fish, such as the *aku* and *ʻopelu* that run in large schools, were not to be taken during the spawning season. There were also restrictions as to where people could fish so that they did not take from another *ahupuaʻa*.

It was King Kamehameha I who in historical times united the Hawaiian Islands. Early in his reign there were troubles. Many of the chiefs and landlords under him oppressed the common people. Troubles with oppressive and greedy chiefs led Kamehameha I to make this law: the number of landlords (*hakuʻaina*) over the keeper of the land (*hoaʻaina*) shall be [but] one; the people (*makaʻainana*) shall not be made to come long distances to work for the keeper (*konohiki*); the chiefs and keepers shall not strip the people of their property leaving them destitute; no man shall give many feasts and absorb the property of the poor; no landlord shall compel a man to work for him who does not want to, or to burden him in any way; he should be impartial and judge his people aright.

Captain Cook sailed into Kealakekua Bay, about nine miles to the south, in 1778. With the arrival of foreigners came disease and different views on politics, land and fishing tenure, religion, and tradition. During the time period between Captain Cook's arrival and the death of King Kamehameha I in 1819, settlement and subsistence practices continued to operate much as they had prehistorically. After Kamehameha's death, many of the traditional Native Hawaiian ways were altered to adjust to the influence of foreign entities. One event in history with particular significance to the general project area vicinity is the Battle of Kuamoʻo, an 1819 rebellion by defenders of the traditional religion against the newly Christianized Hawaiian monarchy.

The religious rebellion was led by Kekuaokalani against the young King Liholiho (Kamehameha II). The rebellion was prophesized by the *kaula* (prophet or seer) Kapihe in the 1770s. Kamehameha's consort, Kaʻahumanu, aided the young king in the overthrow of the *kapu* system in 1819. After Liholiho formally dissolved the ancient system by eating with his mother, Keopuolani, and Kaʻahumanu, the king ordered the destruction of *heiau* and overthrow of the old idols. Liholiho's cousin, Kekuaokalani, who was the keeper of the war god Kukailimoku, was enraged by the destruction of the ancient *kapu* system and mounted a rebellion from Kaʻawaloa on the north side of Kealakekua Bay. After a failed attempt to peacefully end the rebellion by Keopuolani, Liholiho's forces, led by Kalanimoku, met Kekuaokalani's forces initially at Lekeleke in Keauhou 2. After an initial skirmish at Lekeleke, the main battle occurred in Kuamoʻo near the coast. After a furious battle, Kekuaokalani was finally killed and his forces dispersed.

Most of the battle took place near the coast between Kekuaokalani Heiau in Maʻihi and south of Lonohelemoa Heiau in Kuamoʻo, located just south of Honalo. Some of the fallen warriors of the battle are interred in coastal Keauhou 2. The location of this burial site is depicted on Figure 8 of the AIS.

Within six months after the death of Kamehameha I and during the rule of his successor Liholiho, the traditional socio-religious (*kapu*) system had been dismantled. With the end of the *kapu* system, changes in the social, religious, and economic patterns began to affect the lives of the common people. Liholiho died in 1824 but, during his short reign, drastic changes that affected the course of Hawaiian history occurred. The friendly reception afforded to the missionary arrival in 1820 was among the most significant of Liholiho's actions.

Liholiho's successor was his younger brother, Kauikeaouli (Kamehameha III). It was Kamehameha III who transformed Hawaiʻi into a constitutional monarchy. It is under a constitutional monarchy that grievances against oppressing chiefs could be considered and settled upon. Kamehameha III redistributed the land between himself, the chiefs, and the commoners. In 1839, Kamehameha III defined and distributed the fishing rights of the native tenants, the chiefs, and himself.

Among the many changes that occurred during the early Historic Period, the change in land tenure was immense. In 1848, the *Māhele ʻĀina* radically altered the Hawaiian system of land tenure. The *Māhele* (division) defined the land interests of Kamehameha III (the King), the high-ranking chiefs, and the *konohiki*. Laws in the period of the *Māhele* record that ownership rights to all lands in the kingdom were "subject to the rights of the native tenants":

those individuals who lived on the land and worked it for their subsistence and the welfare of the chiefs.

A review of the *Waihona ʻAina Māhele* database showed that 15 claims were made for parcels in Honalo *ahupuaʻa*. Of the 15 claims, only 12 were awarded and, of these 12, only 4 are depicted on current tax maps of the area. The claims list ten ʻ*ili.* Kamakauakua, Haleili, Kapukanui, and Kamuku are listed twice and Haleape, Kahoauauhi, Kiekie, Uhapuaa, Kapukalua, and Haleolono are listed once. The testimony mentions the cultivation of taro (*kalo* - 3), sweet potato (*uala - 2*), potatoes (1) and *kou* trees (1).

The present subject *kuleana* parcel corresponds to LCA 8575:2, which was awarded to Kaiakahualui. According to the LCA testimony, Kaiakahauli's claim included an inland parcel comprised of 19 *kihapai* (or garden plot) and 1 seaward parcel with a *pā hale* or house lot. The present subject *kuleana* Property corresponds to Kaiakahauli's *pā hale*. This coastal/upland relationship of house lots and agricultural cites was common.

This *Māhele* induced pattern reflects the traditional Hawaiian settlement pattern where permanent habitation was concentrated at the coast and subsistence oriented agricultural pursuits extend up slope in a zonal pattern based on the correlation between rainfall and elevation. Traditionally, there was a continuum of utilization through the zones (*Kula*, *Kaluʻulu*, *Apaʻa*, and *Amaʻu*). However, because of restrictions of the Kuleana Act itself, claimants were only awarded certain specific lots. Thus, the mid-1800s settlement pattern, as evidenced by the LCA data, included permanent habitation coastal house lots with upland agricultural lots. The upland lots, however, were separated by a considerable expanse of land that had formerly (traditionally) been an integral part of the agricultural system which provided the necessary mix of subsistence-oriented crops.

Following the *Māhele*, the Kingdom began selling parcels of government land to interested residents in an effort to encourage more native tenants onto fee-simple parcels of land. The parcels of land sold in the grants ranged in size from approximately ten acres to many hundreds of acres. When the sales were agreed upon, Royal Patents were issued and recorded following a numerical system that remains in use today.

Following the *Māhele* and Royal Patent Grant program, the issuing of land ownership made possible the development of large-scale ranching. Prior to the *Māhele*, the majority of the cattle on the island belonged to either the King, the government, or select foreigners. By 1851, there were approximately 20,000 cattle on Hawaiʻi with an estimated 12,000 being wild.

By the late 1840s, a system of roads called the "*Alanui Aupuni*," or Government Roads, were created. These were likely initiated due to the land acquisitions by foreigners, and their desire to reach their land more efficiently. The roads also facilitated foot transportation for children who went to schools in different *ahupuaʻa*. Some of the "Government Roads" were modified ancient trails such as the *ala loa*. The *Alanui Aupuni* extends along the inland side of the subject *kuleana* Property. The State has asserted ownership over the road and has maintained that the roadway remain unimpeded for public access.

In 1901, the West Hawai‘i Railway Company began construction of the West Hawai‘i Railroad. The railroad was constructed to transport sugar cane to the Kailua Sugar Company Mill situated in Waiaha. Sugar cane was initially grown between Waiaha and Kaumalumalu. The success there led to an expansion of the fields to as far south as the northern boundary of Keōpuka where the railroad was situated at the low end of the fields that extended upslope to the Mamalahoa Highway.

By the beginning of the 20th Century, the traditional subsistence and coastal settlement pattern was completely supplanted by the market economy and a concomitant shift to dispersed and clustered settlement and commercial establishments along the *mauka Alanui Aupuni*, predecessor to the Mamalahoa Highway. By the 1970s, the rapidly developing tourism industry began to transform the region's land use from ranching and commercial agriculture, except coffee production, to subdivisions, resorts, and commercial establishments.

Today, the entire coastline from Keauhou to Ka‘awaloa is currently used by Native Hawaiians, among others, for fishing, diving, and gathering, both on the shore and via boats. A number of beach homes dot the coastline and are used by the owners and visitors to enjoy the area and its resources.

The practice of traditional gathering rights in the general area near the subject *kuleana* Property, including the shorelines in the area, is traditional, ongoing, and important. Therefore, the proposed improvements have been designed to avoid any obstruction or hindrance to the exercise of such practice. There are no trails on the Property, no public road or trail will be directly or indirectly blocked, and the public will be allowed free access along the shoreline. No *mauka-makai* trails will be disturbed or impeded.

Existing Archaeological Resources

The study area for the AIS was the *pā hale* awarded to Kaiakahauli in 1848 as LCA 8575:2, currently identified as TMK (3) 7-9-005:012. The previous archaeological research in the study area documented a habitation complex. The AIS subsequently concluded that the entire *kuleana* parcel consists of an archaeological site. The *kuleana* parcel is a complex of three features consisting of: (1) a terrace (Feature A); (2) a rectangular shaped enclosure (Feature B); and (3) a large stone wall enclosure that extends around the perimeter of the project area (Feature C). Features A and B are located within the large Feature C stone wall enclosure.

The survey fieldwork was conducted between November 15 and 29, 2018, by Haun & Associates' Project Supervisor, Solomon Kailihiwa, M.S., and field archaeologist Ben Seay, B.A, under the direction of Dr. Alan Haun. Approximately seven person days of labor were required to complete the fieldwork portion of the project. The identified features were flagged with pink and blue flagging tape and a detailed plan map of the parcel was created using a compass and Leica Disto laser distance meter. A datum was established at the northern corner of the Feature A terrace and the location of the datum was determined with the aid of a Garmin Global Positioning System (GPS) Model 60-series device using the North American Datum (NAD) 1983 datum. The accuracy of the GPS device for a single point is +/- 3-5 meters. This accuracy was increased to approximately 2-3 meters by taking multiple points including property corners and overlying the plotted points on a scaled map using AutoCAD software. The features

of the site were photographed, and standardized site and feature forms were prepared.

Subsurface testing consisted of the excavation of one 1.0 by 1.0-meter test unit (TU-1447.1) and six shovel probes that varied in size from 0.25 to 0.25 meters (SP-1 through SP-5) to 0.5 by 0.5 meters (SP-6). A total of 1.56 square meters of excavation was undertaken. TU-1447.1 was excavated in 0.2-meter levels within stratigraphic layers. The shovel probes were excavated in arbitrary 0.2-meter layers and the stratigraphy was defined in the profile of the units. All units were excavated to the bedrock substrate. Architectural layers were dismantled as a single unit. Standardized excavation records were prepared after the completion of each stratigraphic layer. The soil removed during excavation was screened through ¼" mesh hardware cloth and 100% of the cultural material was collected. The portable remains were placed in paper bags labeled with the appropriate provenience information. Charcoal samples were deposited in aluminum foil pouches and placed in properly labeled paper bags. Following the excavation, a section drawing depicting the stratigraphy was prepared and post-excavation photographs were taken. Collected cultural material was transported to Haun & Associates' laboratory for analysis. Collected artifacts and food remains were qualitatively and quantitatively analyzed. Artifacts were analyzed to determine morphological type, condition, degree of completion and material. Standard typological classifications were used for all artifacts. Food remains were identified to the family level, or to the genus and species level when possible. Quantitative analysis included a determination of total weight and total number of identified fragments (TNF) per taxon.

Feature A is a roughly rectangular shaped terrace located in the southern half of the Feature C stone wall enclosure and has overall dimensions of 10.7 meters long (northeast by southwest) by 10.2 meters wide. The northwest, southwest, and south sides are 0.4 to 1.1 meters high, and the east and southeast sides are 0.1 meters in height above the surrounding ground surface. Although Feature A has been altered, the size and formal type of the Feature A terrace suggest it likely served as the foundation for a roofed structure and was likely occupied by Kaiakahauli. The terrace has three distinct areas consisting of the main structure, an entryway, and a possible lanai.

The main house section has been partially dismantled and the north face of the retaining wall has had the small and medium-sized rocks removed leaving behind the large boulders giving that face an unfinished look. Boulder alignments define the eastern extent of the house terrace as well as the northwest corner of the main house section. The southwest corner of the main house section appears to have been completely dismantled. The middle portion of the western side of the main house section has been dismantled as well. The surface is a level pebble and cobble pavement with scattered sun-bleached marine shell and waterworn coral. A linear mound of displaced boulders extends from the western extent of the feature up into the main house section.

A 1.0 by 1.0-meter test unit (TU-1447.1) located in the eastern portion of the Feature A terrace revealed three layers over bedrock (AIS, Figure 22). Layer I consists of a 0.04 to 0.11 meter (6 to 34 centimeters below datum; cmbd) thick architectural layer of boulders, cobbles and pebbles. Cultural material from Layer I consists of marine shell, burned *kukui* nutshell, a basalt groundstone fragment, waterworn coral and basalt and a fragment of bottle glass. The midden recovered from TU-1 is presented in Table 2 of the AIS and the artifacts are

summarized in Table 3 of the AIS.

Layer II is 0.32 to 0.4-meter (24-64 cmbd) thick deposit of very dark grayish-brown (10YR 3/2) silt with 90% boulder, cobble, and pebble inclusions. The midden from Layer II consists of marine shell, urchin spines and body fragments, crab exoskeleton fragments, burned and unburned *kukui* nutshell, charred wood, and bones from fish, dog, pig, rat, and birds. A human premolar tooth fragment with partial root intact was also recovered from Layer II. Indigenous artifacts from Layer II consist of volcanic glass and basalt flakes, a utilized volcanic glass flake, waterworn coral and basalt, a basalt adze flake, the *Mauritia maculifera* shell portion of an octopus lure, a perforated shell ornament, a fragment of modified shell, and a quartz pebble. The perforated shell ornament is depicted in AIS, Figure 23. Historic remains consist of glass bottle fragments, a glass bead, square nails, and a Bakelite comb fragment. The glass bead and the comb fragment are depicted in AIS, Figure 24.

Layer III is 0.07 to 0.15-meter (64-79 cmbd) thick deposit of dark brown (10YR 3/3) silt with 70% cobble and pebble inclusions. The midden from Layer II consists of marine shells, urchin body fragments, bones from fish, dog and unidentified birds, burned and unburned *kukui* nutshell and charred wood. Artifacts from Layer III consist of a utilized volcanic glass flake, and waterworn coral and basalt.

The entryway portion of Feature A consists of a ramp with an irregular surface that slopes down to the west. The entryway is in poor condition and appears to have been partially dismantled. An alignment of embedded boulders appears to define the line between the two sections of Feature A. The entryway abuts the northwest corner of the main house. The southern edge is now defined by the linear of displaced boulders. The bottom of the ramp has boulders piled onto it.

A possible lanai is located to the southwest side of the main house section and the south side of the entryway. This portion of Feature A is bordered on the west side by a retaining wall that is 0.8 meters high and built of stacked and roughly faced boulders and cobbles. The interior surface of the terrace is divided into two sections. The first section, which abuts the main house, is comprised of level soil. The second section is slightly lower than the first and is covered with a cobble and pebble paving. Rubble partially obscures portions of the paving at the north end of the terrace. The linear mound of displaced boulders runs along the north side of this terrace.

Feature B is a roughly square-shaped enclosure located 4.0 meters to the north-northwest of Feature A within the Feature C perimeter enclosure. The Feature B enclosure is a modern addition to the site. Feature B is depicted on the Figure 16 Mills and Irani (2000) map - indicating it was built prior to 2000. Feature B is 6.0 meters long (northeast by southwest) and 5.2 to 5.5 meters wide with a 1.1-meter-wide opening at the southern end. The walls are built of roughly stacked boulders and cobbles with a core-filled cobble interior. The walls are 1.1 to 1.5 meters wide and 0.2 to 0.55 meters high with collapse present along the interior and exterior sides. The interior is level soil with scattered cobbles. A waterworn basalt cobble is present on the wall along the western side.

A 0.5 by 0.5-meter shovel probe (SP-6) was excavated in the center of the Feature B enclosure during the present. The unit was excavated in 0.2-meter arbitrary levels and the stratigraphy was defined in the profile of the unit. The excavation of SP-6 revealed three soil layers over bedrock (AIS, Figure 28). Layer I consists of 0.17 to 0.2 meters (32-47) of dark brown (10YR 3/3) sandy silt with 40% cobble and pebble inclusions.

There is a lens of oxidized silt located within the Layer II soil in the northern half of the unit (Layer Ia). This deposit is 0.02 to 0.04 meters in thickness (39-43 cmbd) and consists of dark yellowish-brown (10YR 4/6) silt. The Layer I soil is underlain by Layer II, a 0.07 to 0.1-meter thick (43-54 cmbd) deposit of black (10YR 2/1) sandy silt with 70% cobble and pebble inclusions. Layer III is 0.05 to 0.07 meters (52-72 cmbd) of dark yellowish-brown (10YR 4/4) silt with 90% cobble and pebble inclusions.

Cultural material was recovered from the excavation in two 0.2-meter arbitrary levels. The midden from SP-6 is presented in Table 4 of the AIS and the artifacts are summarized in Table 5 of the AIS. The upper portion of the unit yielded 58 fragments of three bottle glass fragments, three steel can fragments, one wire nail, one utilized volcanic glass flake, one basalt adze fragment, 53 fragments of waterworn coral, 54 waterworn basalt pebbles, 50 marine shells, five fish bones, one pig bone, one unidentified small mammal bone, two fragments of kukui nutshells, one fragment of burned kukui nutshell, 32 fragments of charred wood. The lower portion of the unit contained three volcanic glass flakes and eight marine shell fragments.

Feature C is a stone wall that extends around the perimeter of the project area. The stone wall enclosure served to delineate the boundary of the house lot and likely functioned to keep free ranging cattle from entering the habitation area. The stone wall enclosure suggests that the Property may have been occupied in the late 1700s to early 1800s when free-ranging cattle became a problem. The historic habitation use is also indicated by the historic artifacts collected during the AIS: glass bottle fragments, a glass bead, square nails, a Bakelite comb fragment, and a metal cotter pin. The Figure 16 map prepared by Mills and Irani (2000) suggests that the Feature C enclosure has been reconstructed. The current examination of Feature C indicates that the entire structure has been rebuilt with prepared openings along the east and west sides. Although the Feature C stone wall enclosure has been altered, it appears to occupy its original location.

The stone wall perimeter enclosure is roughly rectangular in shape and is 25.8 to 30.7 meters long (north-northwest by south-southeast) and 22.5 to 29.5 meters wide. There is a 5.1-meter-wide opening in the enclosure along the inland side, adjacent to Keauhou-Kainaliu Beach Road/Old Government Beach Road. The enclosure walls are built of stacked and faced boulders and cobbles with a core-filled cobble interior. The walls range in width from 0.8 meters to 1.25 meters and in height from 0.8 to 1.45 meters.

Five 0.25 by 0.25-meter shovel probes (SP-1 through SP-5) were excavated within the Feature C enclosure (AIS, Figure 17). The five probes revealed from one to two layers of silt soil overlying bedrock. AIS, Figures 32 and 33 depict the soil stratigraphy noted in SP-1 through SP-4, and Figure 34 illustrates the results of SP-5.

The Layer I soils consist of very dark brown to black silt that ranges in thickness from 0.17 to 0.4 meters. A variety of cultural material is present. The midden from the probes is presented in Table 6 of the AIS and the artifacts are summarized in Table 7. The recovered midden consists of marine shells, urchin exoskeleton and spines, fish bones, dog bones, pig bones, unidentified small mammal bones, burned and unburned *kukui* nutshells, and charred wood fragments. A human incisor with partial root intact was also recovered from the Layer I soil in SP-3. Indigenous artifacts from the Layer I soils consist of volcanic glass flakes, waterworn coral and basalt, a basalt adze fragment, and a basalt groundstone. Historic remains consist of one glass bottle fragment and a metal cotter pin.

The excavation of SP-5 revealed a small void (0.12 meters long by 0.6 meters wide) in the underlying bedrock beneath the Layer I soil deposit (AIS, Figure 34). This void extended down 0.3 meters to where it encountered a small lava blister. Observations made from the exterior indicate the blister is approximately 0.45 meters long, 0.35 meters wide, and 0.2 meters high, with a bare lava floor and no cultural material.

Underlying Layer II soils are present in SP-1, SP-3, and SP-4 and consist of dark brown to dark yellowish-brown silt. The Layer II soils range in thickness from 0.05 to 0.17 meters with no cultural material present.

The mapping of the *kuleana* Property (Site 7723) indicates that the site has been altered since the Mills and Irani study in 2000. The Feature C enclosure is shown as being formed by Mills and Irani's Wall 72 along the inland side and Wall 57 along the south and east sides (AIS, Figure 16). The northwest side of the enclosure is open, and the north side is discontinuous. According to Mills and Irani, Wall 57 is a rubble filled wall that averaged 0.8 meters wide and 0.9 meters high built of 35% *pahoehoe* stones, 60% *a'ā* stones and 5% waterworn stones. Wall 72 extends along the seaward side of the Site 10290 Old Government Beach beyond the limits of the project area. This wall was not rubble filled and it averaged 0.8 meters wide and 0.4 meters high, built entirely of *a'ā* stones. The current examination of Feature C indicates that the entire structure has been rebuilt with prepared openings along the east and west sides.

Inspection of the Feature A terrace indicates that it has also been dismantled; however, it is unclear if this disturbance occurred before or after the Mills and Irani (2000) survey. Although Site 7723 has been altered, the size and formal type of the Feature A terrace suggest it likely served as the foundation for a roofed structure. The Feature C enclosure served to delineate the boundary of the house lot and likely functioned to keep free ranging cattle from entering the habitation area. An interview with the adjacent landowner indicates that the Feature B enclosure is modern addition to the site. This structure is depicted on the Figure 16 Mills and Irani (2000) map indicating it was built prior to 2000. Site 7723 is altered and in fair condition. It is assessed as significant per HAR §13-284-6 under Criterion d (information content) and is recommended for no further work.

Archival research was conducted at the Hamilton Library Hawai'i and Pacific Collection at the University of Hawai'i at Mānoa, the University of Hawai'i at Hilo Hawaiian Collection, the Land Survey Office and the Archives Division of the Hawai'i Department of Accounting and General Services, the Bishop Museum Archives, the State Historic Preservation

Division library in Hilo, the State Survey Division, and the Hawai‘i State Public Libraries in Honolulu and Hilo.

Portions of Honalo *ahupua‘a* have been subjected to prior archaeological surveys. The seaward portion of the *ahupua‘a* was first examined in 1906 by J.F.G. Stokes (cited in Stokes and Dye 1991), who identified Kualanui Heiau between the coast and the Old Government Beach Road (AIS, Figure 13). William Reinecke returned to this area in 1930 and identified ten sites (Sites 77-86) in Honalo. A plan map of the Kualanui Heiau (AIS, Figure 14) was prepared along with brief written descriptions for the ten sites. These sites consist of four house complexes (Sites 77, 80, 81, 82, and 83), two walls (78 and 86), Kualanui Heiau (Site 79), and a *hōlua* slide (Site 85). Reinecke (1930:109-110) describes the houses in the area as "modern," suggesting that they were potentially occupied at the time of his survey or may have contained remnants of recent wooden superstructures.

This coastal area was also examined in 1971 during the Statewide Survey of Historic Places survey that extended along the west coast of Hawai‘i Island. The sites noted by Reinecke (1930) were designated as the Honalo Complex and assigned State Inventory of Historic Places (SIHP) Site number 4161. The Site 79 heiau was subsequently designated as SIHP Site 3808.

A series of reconnaissance surveys were conducted in coastal Honalo by Soehren (1980a and 1980b) and Ahlo (1981). Soehren (1980a) surveyed an area seaward of the government road and relocated sites previously documented by Reinecke (1930). The locations of the sites identified during these surveys are presented in AIS, Figure 15, prepared by Mills and Irani (2000:84).

Soehren (1980a) surveyed an approximately 7.5-acre portion of Honalo, including the present project area. This project documented 22 sites with 25 features consisting of 16 burials (Sites 1749, 1750, 1751-b, 1752, 1753-a, 1754-a, 7710-7716, 7718, 7719, and 7721), six house sites (Sites 1751-a, 1754, 1755, 7709, 7717, and 7723 [current project area]), an historic well (Site 7724), a potential fishing shrine (Site 7720), and the *hōlua* slide (Site 1753).

Soehren (1980a) examined Kualanui Heiau and determined it to be in close proximity to two house sites (Sites 1751-A and 7709). Soehren suggests that these sites were potentially occupied by kahuna and that the burials in the area are also associated with the heiau.

Soehren (1980a) also examined the seaward portion of the Site 1753 hōlua slide, located to the north of the project area (AIS, Figure 15). The site originates in the uplands of Honalo and is described as being 12 to 15 feet wide and two feet high. According to Soehren (1980a:3), the slide has been significantly impacted by cattle ranching activity and is comprised of "wave-tossed boulders."

Soehren (1980b) surveyed an approximately 1.0-acre area seaward of the Old Government Road at the south end of Honalo *ahupua‘a*. This survey identified six house sites, assigned temporary site numbers 1-6. Little additional information is provided. Ahlo (1981) surveyed the intervening area between the Soehren (1980a and 1980b) parcels. This project identified a house platform, designated as Feature A, and a pen (Feature B).

Mills and Irani (2000) conducted a two-mile-long pedestrian survey along the Old Government Beach Road from the Lands of Honalo to Honua‘ino. This project was conducted as a 1998 University of Hawaii-Hilo archaeological field school. The survey documented 17 sites along the road, although only one is located in Honalo ahupua‘a. Site 22411 is a complex of historic features located on the inland side of the Old Government Beach Road. The features of this site were interpreted as an inland extension of the Honalo Complex. Mills and Irani (2000) also mapped several sites including Site 7723 (AIS, Figure 16) located in the project area. No other descriptive information is presented for this site.

Haun and Henry (2011) conducted an AISof a 290.75-acre parcel located in Honalo, Ma‘ihi 1-2 and Kuamo‘o 1 along the inland side of the Mamalahoa Bypass Road at elevations ranging from approximately 315 to 1,160 feet. Approximately 37% of this survey area or 108.5 acres are situated in Honalo *ahupua‘a*. A total of 227 sites with 16,742 features were noted by Haun and Henry (2011:23) with the Honalo portion containing 66 sites with 6,180 features.

The 6,180 features in Honalo consist of 5,281 modified outcrops, 409 mounds, 256 terraces, 71 enclosures, 41 *kua‘iwi*, 24 grow pits, 24 walls, 19 U-shapes, 15 soil swales, 13 platforms, eight walled terraces, six C-shapes, three trails, two L-shapes, one lava tube, one artifact scatter, one road, one stone ring, one cairn, one railroad grade (the previously discussed West Hawaii railroad grade; see AIS, Figure 11), one truck, and one walled platform. Functionally the 6,180 features consist of agriculture (5,952), permanent habitation (161), permanent habitation/burial (1), ceremonial (9), transportation (6), undifferentiated habitation (4), temporary habitation (3), historic habitation (4), marker (10) and livestock control (39).

Rosendahl (1984) conducted an archaeological reconnaissance survey of the Honalo Marshalling Yard located inland of the Hawaii Belt Road at c. 1,300-ft. elevation. This survey documented a single stone wall along the south boundary of the Property. This wall was subsequently examined by Kawachi (1994) who determined that it was historic in origin.

The coastal surveys by Soehren (1980a and 1980b) and Ahlo (1981) examined an area of approximately nine acres and identified a total of 29 sites and 33 features. This results in a site density of 3.2 sites per acre and a feature density of 3.6 features per acre. The Haun and Henry (2011) mid-elevation survey examined 108.5 acres and identified 66 sites and 6,180 features in Honalo. This results in a site density of 0.6 sites per acre and feature density of 57 features per acre. These findings indicate that site density decreases with elevation. The feature density in the coastal area is biased because agricultural features were usually not systematically documented in surveys dating to the 1980s and earlier; however, if the 5,952 agricultural features noted by Haun and Henry (2011) are not included, a feature density of 2.1 features per acre is generated, which also demonstrates a decrease in density with elevation.

Impacts and Mitigation for Archaeological Resources

LCA 8575:2 was a *kuleana* house lot occupied during the Historic Period and is considered significant under Criterion “d” for the yielded information important for understanding the late prehistoric/early historic use of the project area. The archaeologist has determined that information collected during the current study has been adequate to successfully

mitigate any potential impacts to the subject *kuleana* Property resulting from the proposed single-family home. The landowner has committed to preserving the Feature A house foundation as well as the Feature C perimeter wall enclosure. No additional mitigation is recommended. The archaeologist has submitted the AIS to the State Historic Preservation Division (SHPD) for their review. As noted above, SHPD determined that the AIS satisfies the requirements of HAR §13-276-5 and accepted the report. See Appendix 17. The Final EA will report on any further review of SHPD.

In the event that undocumented archaeological resources, including shell, bones, midden deposits, lava tubes, or similar finds, are encountered during construction of the home, work in the immediate area of the discovery should be halted and SHPD contacted as outlined in Hawai‘i Administrative Rules 13§13-275-12.

Other Cultural Resources and Practices

The investigations of the *kuleana* Property did not reveal any cultural resources aside from the traditional Historic findings. Applicant and his family exercise traditional and customary Native Hawaiian practices on the *kuleana* Property and surrounding area. Applicant has intimate knowledge of the Property and surrounding area and fully supports the exercise of traditional and customary rights. Any traditional and customary practices will not be interfered with or adversely impacted by the proposed home.

In addition, the use of the *kuleana* Property as a single-family home is a cultural practice. As discussed in an article on the legal status of *kuleana* by Jocelyn Garovoy, Esq., in the context of land trusts:

> The *kuleana* lots in areas zoned for Conservation have an associated right to build a house if it can be shown that the parcel was customarily used as a house lot. Hawaii law provides that: "[a]ny land identified as a *kuleana* may be put to those uses which were historically, customarily, and actually found on the particular lot including, if applicable, the construction of a single family residence." Jocelyn B. Garovoy, Esq., *"Ua Koe Ke Kuleana O Na Kanaka" (Reserving the Rights of Native Tenants): Integrating Kuleana Rights and Land Trust Priorities in Hawaii*, 29 HARV. ENVTL. L. REV. 523, 544 (2005) (quoting HRS § 183C-5).

The established legal rights associated with *kuleana* parcels are based on Hawaiian cultural stewardship values (as documented in the Kuleana Act), which are a significant aspect for defining and maintaining both an individual's and a community's cultural identity. The owner of a *kuleana* parcel not only owns the fee-simple land but also the rights and responsibilities appurtenant to that land. These legal rights are transmitted from one *kuleana* owner to the next.

It follows that if one were to be denied the ability to build a single-family home on a *kuleana* parcel that was awarded as a house lot and subsequently identified as having once had a home on it, not only would they be denied a legal right, they would also be denied a valid cultural right.

Impacts and Mitigation Measures to Other Cultural Resources and Practices

No traditional cultural resources or practices will be adversely impacted. Shoreline fishing, gathering, and other activities will not be impacted because the *kuleana* Property is located *mauka* of the shoreline. The hunting, fishing, gathering, and ceremonial cultural practices ongoing in the general area will not be impacted by the construction of a single-family home on the *kuleana* Property. Having been an historic residential lot, there are no identified roads or trails across the Property and no adverse impact will be had to *mauka-makai* trails or lateral coastal shoreline use. No negative effects on gathering, hunting, or other uses by those claiming traditional and customary rights would occur.

4. Public Facilities and Services

Existing Environment, Impacts and Mitigation Measures

a. Vehicular Access

Current access to the Property is via Keauhou-Kainaliu Beach Road/Old Government Road. The Beach Road has a locked gate where it intersects Ali`i Drive, curtailing vehicular access by anyone who does not have a key, so it is lightly travelled by current landowners in the area. No grading will be required as actual access to the home is available from an existing 5.1-meter opening in the stone wall perimeter enclosure on the eastern border of the Property. Use of the proposed vehicular access will continue to allow Applicant a safe entry and exit point without disturbing the existing stone wall enclosure. No adverse impact to area roads or traffic is anticipated as a result of this project.

Construction activities of the project is not expected to block or impede traffic on the Old Government Road. Applicant will instruct contractors and suppliers to not block the road.

b. Schools

There are no schools in the immediate vicinity. Applicant and his family are already Kona residents; his school-age children will not create an additional demand on any area school.

c. Recreation Facilities/Beach Parks

The project will not increase the use of the recreation facilities or beach parks as Applicant and his family already avail themselves of the ocean and park facilities for recreation.

d. Fire Department Access and Water Supply

The "A-5a" zoning of the Property allows for single-family residences and the proposed home will not increase demands on the County Fire Department as Applicant and his family already reside in the County. Plans for the proposed home will be reviewed with the Fire Department while applying for a building permit for adherence with the relevant sections of

the Fire Code.

Due to the lack of a public water supply, water will be provided by a water well and pump, a roof catchment system, and two 1,000-gallon water storage tanks capable of on-demand water supply.

5. Public Utilities

Environmental Setting, Impacts and Mitigation Measures

No public utilities of any kind service the project site. No impact upon public services is expected as a result of the action.

Electricity will be generated by an "off-grid" rooftop photovoltaic system with battery storage as well as via propane.

Sewage treatment will occur via a septic system in conformance with Hawai'i State Department of Health rules and regulations.

As discussed above, water for irrigation and landscape will be provided by a permitted well with a pump, reverse osmosis system, and 1,000-gal. storage tank and the proposed home will be designed with a water catchment system and 1,000-gal. storage tank for potable water.

The Applicant acknowledges and understands that the lot, along with others in this area, is fairly remote from emergency services.

The addition of one single-family home will have no measurable adverse impact to or additional demand on public utilities or facilities such as schools, police or fire services, or recreational areas.

6. Secondary and Cumulative Impacts

Due to its small scale of 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. No other projects are in progress in the immediate area. The adverse effects of building one single-family home in this context are very minor and temporary disturbances to air quality, noise, and visual quality during construction.

It should once again be noted that this area is somewhat isolated from 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 Sections IV.A.2., 4, and 5., no special mitigation measures should be required to counteract the small adverse cumulative effect.

The coastal area of North Kona, and particularly the project area, has a distinctly rural character. Keauhou Bay is a popular residential area and tourist destination but is located approximately 1.25 miles from the project site. While use of *kuleana* properties in the area for approved "Kuleana Uses" would gradually lessen the wilderness character, the rebuilding of homes on *kuleana* in Honalo would be consistent with a legally and culturally appropriate land use. Restoring residences to this area is in keeping with its historical and traditional *kuleana* uses.

7. Required Permits and Approvals

County of Hawai'i:

Special Management Area Permit or Exemption (received)
Building Plan/Grading Plan Permit

State of Hawai'i:

Conservation District Use Permit
Wastewater System Approval
Water Well Permit

8. Consistency with Government Plans and Policies

a. <u>County of Hawai'i General Plan</u>

The General Plan for the County of Hawai'i is the 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. The General Plan's Land Use Allocation Guide Map designates the subject parcel as Open. The General Plan is organized into thirteen elements with policies, objectives, standards, and principles for each. Below are pertinent sections followed by a discussion of conformance.

ECONOMIC GOALS

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

(b) Economic development and improvement shall be in balance with the physical, social, and cultural environments of the Island of Hawai'i.

. . .

(d) 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 project is in balance with the natural, cultural, and social environment of the County, would create temporary construction jobs for local residents, and would indirectly boost 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. Precontact Native Hawaiians identified residential use of the kuleana as the most desirable use of this land. Building a personal single-family home on this kuleana maintains a viable and sustainable quality of life.

ENVIRONMENTAL QUALITY GOALS

(a) 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.

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

(c) Control pollution.

ENVIRONMENTAL QUALITY POLICIES

(a) Take positive action to further maintain the quality of the environment.

ENVIRONMENTAL QUALITY STANDARDS

(a) 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.

(b) Incorporate environmental quality controls either as standards in appropriate ordinances or as conditions of approval.

(c) Federal and State environmental regulations shall be adhered to.

Discussion: The proposed project would not have a substantial adverse effect on the environment and would not diminish the valuable natural resources of the region. The home and associated improvements would be compatible with the existing rural single-family homes and recreational uses in the area. Pertinent environmental regulations would be followed, including those for mitigation of fugitive dust and water quality impacts.

HISTORIC SITES GOALS

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

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

HISTORIC SITES POLICIES

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

(b) Amend appropriate ordinances to incorporate the stewardship and protection of historic sites, buildings and objects.

(c) 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.

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

Discussion: The inventory survey performed for the Property has properly documented and mitigated impacts to historic sites. The continuation of the use of the *kuleana* as a home is consistent with historical and cultural uses and upholds a legal right of the *kuleana* owner. Access to traditional resources and areas will not be affected.

FLOOD CONTROL AND DRAINAGE GOALS

(a) Protect human life.

(b) Prevent damage to man-made improvements.

(c) Control pollution.

(d) Prevent damage from inundation.

(e) Reduce surface water and sediment runoff.

(f) Maximize soil and water conservation.

FLOOD CONTROL AND DRAINAGE POLICIES

(a) 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.

. . .

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

FLOOD CONTROL AND DRAINAGE STANDARDS

(a) "Storm Drainage Standards," County of Hawaii, October, 1970, and as revised.

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

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

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

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

Discussion: The *mauka* portion of the Property is within Zone "X" and the seaward portion of the Property is within Zone "VE (EL 30)," according to the Flood Insurance Rate Maps (FIRM). A Zone "VE" area constitutes a coastal flood zone with velocity hazard (wave action) and Zone "X" constitutes areas outside of the 500-year Floodplain as determined by detailed methods in the community flood insurance study). The project will conform to applicable drainage regulations and policies of the County of Hawai‘i.

NATURAL BEAUTY 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.

NATURAL BEAUTY POLICIES

(a) Increase public pedestrian access opportunities to scenic places and vistas.

(b) Develop and establish view plane regulations to preserve and enhance views of scenic or prominent landscapes from specific locations, and coastal aesthetic values.

Discussion: The improvements are minor and consistent with traditional uses of the land and will not cause scenic impacts or impede access.

NATURAL RESOURCES AND SHORELINES 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.

(d) Protect rare or endangered species and habitats native to Hawaii.

(e) Protect and effectively manage Hawaii's open space, watersheds, shoreline, and natural areas.

(f) Ensure that alterations to existing land forms, vegetation, 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 an earthquake.

NATURAL RESOURCES AND SHORELINES POLICIES

(a) Require users of natural resources to conduct their activities in a manner that avoids or minimizes adverse effects on the environment.

. . .

(c) Maintain the shoreline for recreational, cultural, educational, and/or scientific uses in a manner that is protective of resources and is of the maximum benefit to the general public.

(d) Protect the shoreline from the encroachment of man-made improvements and structures.

. . .

(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.

. . .

(p) Encourage the use of native plants for screening and landscaping.

. . .

(r) Ensure public access is provided to the shoreline, public trails and hunting areas, including free public parking where appropriate.

. . .

(u) Ensure that activities authorized or funded by the County do not damage important natural resources.

Discussion: The Property is not oceanfront, being more than 115 feet from the shoreline at its *makai* boundary. The proposed project avoids impact on shoreline resources by remaining located more than 40 feet from the shoreline. Natural resources will not be affected by the proposed action, and there would be very minimal, if any, alteration of natural landforms. Access to natural resources would not be affected. No unreasonable exposure to natural hazards not shared by every resident of the island would occur.

b. Special Management Area

The entire Property is within the Special Management Area ("SMA"). Single-family residences may be determined to be an exempt action under the County's SMA guidelines. The County of Hawai'i Planning Department requires preparation of and Applicant submitted an SMA Use Permit Assessment Application in which SMA issues were expressly described. The Planning Director issued a determination that the project is exempt from the requirements of an SMA use permit. See Appendix 16. A summary of compliance and consistency is provided below.

The proposed land use complies with provisions and guidelines contained in HRS ch. 205A entitled Coastal Zone Management. Single-family residences may be determined to be an exempt action under the County's Special Management Area (SMA) guidelines. 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 proposed improvements are not likely to result in any substantial adverse impact on the surrounding environment. The house site is set back from 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, the shoreline area.

Furthermore, the proposed home will not create significant visual impacts on any individual or community. The home will be located far from the shoreline and is under the allowable 25-ft. building height limit. Due to the obstructing vegetation and distance, the residence is not likely to be visible from the shoreline. The home is intended to have a modest, low-key design that exists in harmony with the existing natural features of the project site. In addition, the home will be finished with non-reflective materials and will be painted in muted, earth-tone colors.

The home should not cause any adverse effects on the coastal ecosystem. The proposed home is located at over 150 feet from the shoreline. The shoreline consists of lava as opposed to sand or coral. The area may be subject to tsunami and/or high wave runup as would essentially all the existing homes in Honalo. The proposed home will be elevated and will have a State of Hawai'i Department of Health-approved septic system. 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. The Existing Site Conditions (Page A01.1, Appendix 2) locates the delineation of FIRM Zone "VE"/Zone "X" on the Property; the proposed home will somewhat straddle both zones (see Page A01.2, Appendix 2). In terms of beach protection, construction is set back from the shoreline and would not affect any beaches nor adversely affect public use and recreation of the shoreline in this area. No impacts on marine resources are likely to occur. Historic sites and cultural uses have been properly assessed.

c. Conservation District

The *kuleana* Property is in the State Land Use Conservation District, Resource 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.

Continuing *kuleana* use on a *kuleana* parcel in the Conservation District is consistent with the purposes of the District. The development of the single-family home conforms with the purpose of the Conservation District. The proposed use of the subject Property for a single-family home, an identified use in the Conservation District, and management of the site will conserve, protect, and preserve the natural features on the subject Property. The proposed use will not impact the lateral public access or the public's ability to utilize the coastal resources that front this Property. No valuable natural or cultural resource would be committed or lost. No native ecosystems are present.

(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 Resource subzone "is to ensure, with proper management, the sustainable use of the natural resources of those areas." Allowing the continued use and revitalization of the *kuleana* Property which was historically, customarily, and actually a single-family home exemplifies sustainable use.

Development of a single-family residence is an identified use in the Resource Subzone according to HAR § 13-5-24, which allows for "[a] single family residence that conforms to design standards as outlined in this chapter." Accordingly, a single-family home has been found to be consistent with the Resource Subzone. In addition, HAR § 13-5-24(a) expressly states that all identified land uses listed for the Protective and Limited Subzones also apply to the Resource Subzone.

Because the proposed use is a "Kuleana Land Use" under the Resource Subzone, and HRS § 183C-5, the proposed use as a single-family home is not subject to the same conditions as "single family residence" under the Resource Subzone. In other words, a kuleana use (here, a single-family residence) is permitted in the Resource Subzone and is not subject to the same design standards outlined in HAR § 13-5 Exhibit 4. HAR § 13-5-24(a) provides that land uses identified in HAR § 13-5-22 (the Protective Subzone) also are permitted in the Resource Subzone. Thus, uses permitted by HAR § 13-5-22, P-3 (D-1) (Kuleana Land Uses), are permitted in the Resource Subzone without having to meet the requirements of HAR § 13-5-24, R-7 (D-1) (Single Family Residence).

HAR § 13-5-22, P-3 (D-1) identifies the scope of allowable kuleana land uses: "Agriculture and a single family residence, if applicable, when such land use was historically, customarily, and actually found on the property." Notably, this provision does not include limiting language that subjects the HAR § 13-5-22, P-3 (D-1) kuleana land use to "design standards as outlined in this chapter" as enumerated in HAR § 13-5-24, R-7 (D-1).

Moreover, HRS § 183C-5 also states that, "Any land identified as a *kuleana* may be put to those uses which were historically, customarily, and actually found on the particular lot including, if applicable, the construction of a single family residence." Thus, the purpose of the Conservation District use permit process, in this instance, is to ensure that the proposed structure is "consistent with the surrounding environment."

The proposed dwelling will be built to comply with all federal, State and County regulations to ensure that the structure will be safe and there will be no risk to the inhabitants.

(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 proposed land use complies with provisions and guidelines contained in HRS ch. 205A entitled *Coastal Zone Management*, as discussed above in Section IV.B.8.b.

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

The proposed use of the land is the construction of a modest two-bedroom home where the Applicant can raise his young family. The construction of the home will be confined to the owner's *kuleana* Property and will not have any adverse impact on the natural resources of the area, community, or region. The historical use of this area has been that of *kuleana* home sites amidst a larger agricultural area. The proposed use does not represent a change to the surrounding area, community, or region. The AIS confirmed that the Property was the site of a historical habitation. A revived use of the Property for a single-family home will not result in any substantial adverse impact on the surrounding area.

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 single-family home are not likely to cause adverse biological impacts. Applicant would conduct minimal clearing to allow construction of the home. Less than 300 cubic yards of grading will be required.

Applicant will take precautions as outlined above to prevent soil and sediment runoff during construction, thereby minimizing any potential impacts to marine and coastal resources. The home will also allow for better on-site management of the Property to aid in protecting and preserving natural resources.

As discussed above, the *kuleana* home will have no impact on public access to or use of the shoreline area. There is an existing single-family home neighboring the Property to the south. The proposed home will not pose a change compared to the surrounding area. In addition, the Brand EA (Appendix 14) conducted for the neighboring single-family home concluded that "[t]he proposed project will not significantly alter the environment and impacts will be minimal."

(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.

The proposed land use is compatible with other land uses in the area and is appropriate to the physical conditions and uses of the *kuleana* Property. This parcel of land was granted by LCA 8575:2 to Kaiakahauli as a *kuleana* and was intended for use as a home. As discussed above, the proposed home is allowed "when such land use was historically, customarily, and actually found on the property." (HAR § 13-5-22). Applicant appropriately seeks to implement the provisions that were created for this specific situation, i.e., a *kuleana* parcel that was used as a home.

This *kuleana* parcel has been previously used as a habitation site with agricultural and ocean-related uses by residents and other *ahupuaʻa* residents. The AIS and Brand EA (Appendices 3 and 14) identify these previous and ongoing uses of the Property and the area. The rebuilding of a home on this *kuleana* parcel is consistent with legally and culturally appropriate land use.

In addition, the home will have a low-key design: a single story with 1,600 sq. ft. of living space and a 130 sq. ft. pool. These structures and uses will not adversely affect how the neighboring property, which hosts a 3,500 sq. ft. single-family residence and a swimming pool/deck, is utilized.

(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.

Constructing a single-family home on a kuleana which was historically used for residential purposes constitutes improvement in balance with the physical, environmental, and cultural environments. The physical beauty of the *kuleana* parcel will be enhanced by the revival of its intended use as a home. Moreover, Applicant's commitment to preserve and restore the existing *pā hale* and stone wall perimeter enclosure will greatly improve the natural beauty.

The home is designed to be harmonious with its natural setting and this specific *kuleana* use. Applicant will control the alien growth of vegetation, replant native species, and selectively trim some of the vegetation that currently adversely affects the open space. As noted, the building footprint of the proposed dwelling area is minimal, only 1,600 sq. ft., thereby preserving ample open space.

The architecture and design elements of the proposed home have been specifically chosen to ensure compliance with and to not detract from the existing physical and environmental aspects of the Property. The existing perimeter stone wall enclosure will not be damaged and the home will not materially impact or alter views to or along the coast. The access in the existing *mauka* opening of the perimeter enclosure will also preserve the beauty and open space characteristics of the Property.

Applicant plans to do minimal trimming and clearing of the existing vegetation on the Property. Additional landscaping of native Hawaiian plants and use of ground cover in the seaward portion of the Property will improve the natural beauty of the Property. Applicant is a longtime resident of the island and recognizes the stewardship and responsibility that come with owning property in the Conservation District. Applicant is committed to managing the site in a manner that conserves and protects the natural and biological resources of the area.

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

The proposed action does not involve or depend upon subdivision and will not lead to any increase in intensity of use beyond the requested single-family home.

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

The proposed single-family home on a *kuleana* parcel will not be detrimental to the public health, safety, and welfare.

V. DETERMINATION, FINDINGS AND REASONS

A. Anticipated Determination

Applicant expects that the State of Hawai‘i, Department of Land and Natural Resources, Office of Conservation and Coastal Lands will determine that the proposed action will not significantly alter the environment, as impacts will be minimal, and that this agency will accordingly issue a Finding of No Significant Impact (FONSI). This determination will be reviewed based on comments to the Draft EA, and the Final EA will present the final determination.

B. Findings and Supporting Reasons

1. The proposed project will not involve an irrevocable commitment or loss or destruction of any natural or cultural resources.

No valuable natural or cultural resource would be committed or lost. Various common native plants are present but native ecosystems would not be adversely affected, particularly given the limited scale of disturbance and the primarily unvegetated state of the *kuleana* Property. Impacts to archaeological resources have been mitigated through data

recovery during the archaeological inventory survey. No valuable cultural resources and practices such as coastal access, fishing, gathering, hunting, or access to ceremonial sites will be affected in any way.

2. The proposed project will not curtail the range of beneficial uses of the environment.

No restriction of beneficial uses would occur by revival of residential use on this *kuleana* lot.

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 basically environmentally benign 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 Big Island 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.

7. The proposed project will not involve a substantial degradation of environmental quality.

The project is minor and environmentally benign and thus it 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 a single-family home are very minor and temporary disturbance to traffic, air quality, noise, and visual quality during construction. This area is fairly isolated from 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, 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.

Due to the constraint of avoiding disturbance of the historic *hale* foundation on the Property, the proposed home will be situated partially in flood zones "VE (EL 30)" and "X." The home will be constructed on post and pier foundation, accommodating the terrain of the Property. The small pool will be located in zone "VE." All improvements will conform to appropriate regulations guiding development within hazardous zones. The project presents no additional hazard to the public and is not imprudent for landowner.

12. The project will not substantially affect scenic vistas and viewplanes identified in county or state plans or studies.

No County or State plan, including the Hawaii County General Plan, identifies important views in this area. The project will not impair views of or along the coastline.

13. The project will not require substantial energy consumption.

Negligible amounts of energy input will be required during construction. The home will operate pursuant to an "off-grid" photovoltaic system with battery storage as well as propane.

For the reasons above, the proposed project will not have any significant effect in the context of Chapter 343, Hawai`i Revised Statues and section 11-200.1-13 of the State Administrative Rules.

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ENVIRONMENTAL ASSESSMENT

WALTER KALEO O KALANI NAKOA

SINGLE-FAMILY DWELLING

AND ASSOCIATED IMPROVEMENTS IN THE

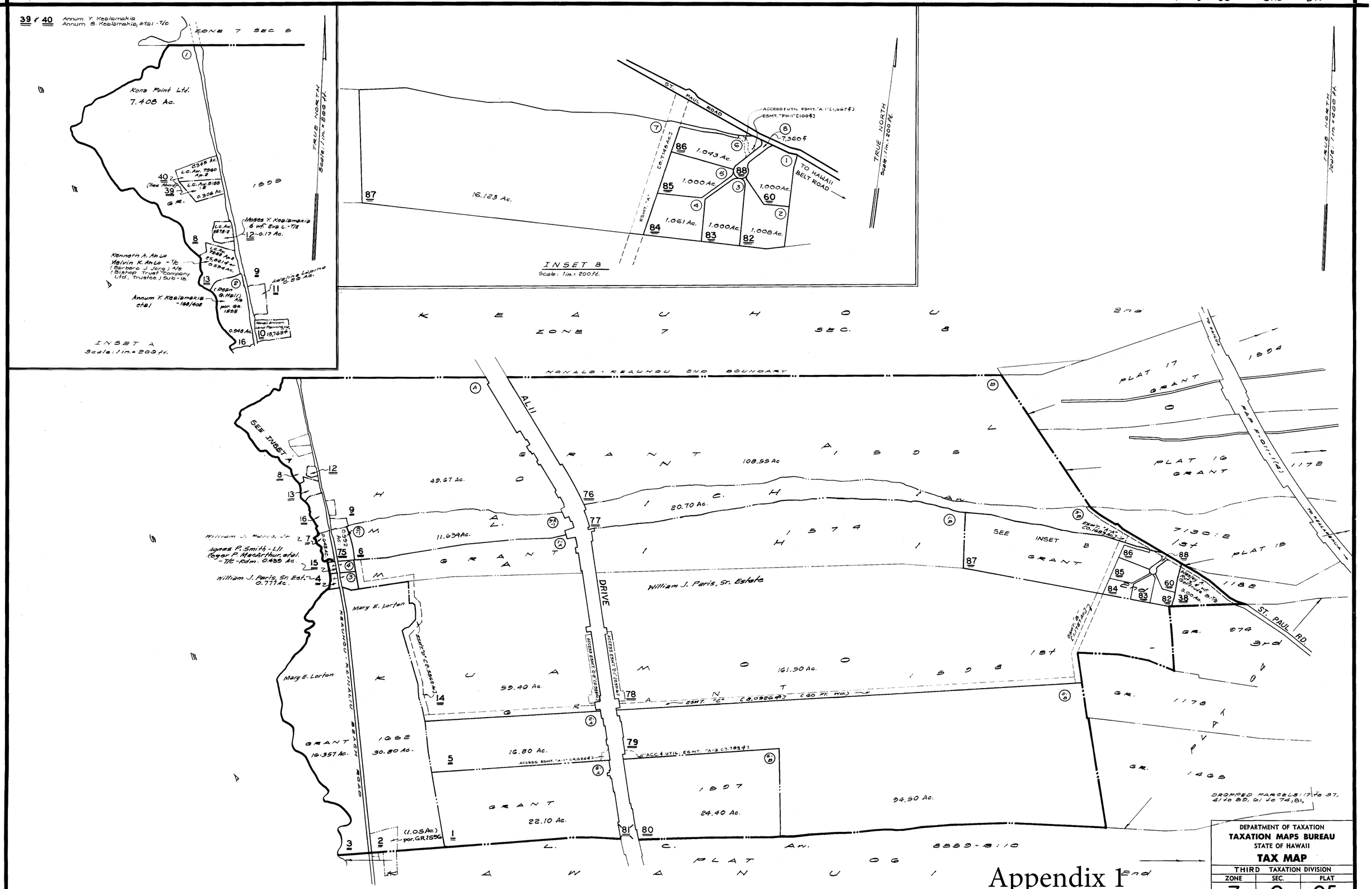
CONSERVATION DISTRICT

TMK No. (3) 7-9-005:012

Honalo, North Kona District, County of Hawai‘i, State of Hawai`i

APPENDIX 1

Tax Map No. (3) 7-9-005



DWG. NO. 2730 RETRACED
SOURCE: T.M.B. L.B.
BY: F.W.B., R.R.B., E.K.Y. DATE: APRIL 18, 1966 JUNE, 1966

POR. HONALO, KAWANUI 1st, NO. KONA, HAWAII

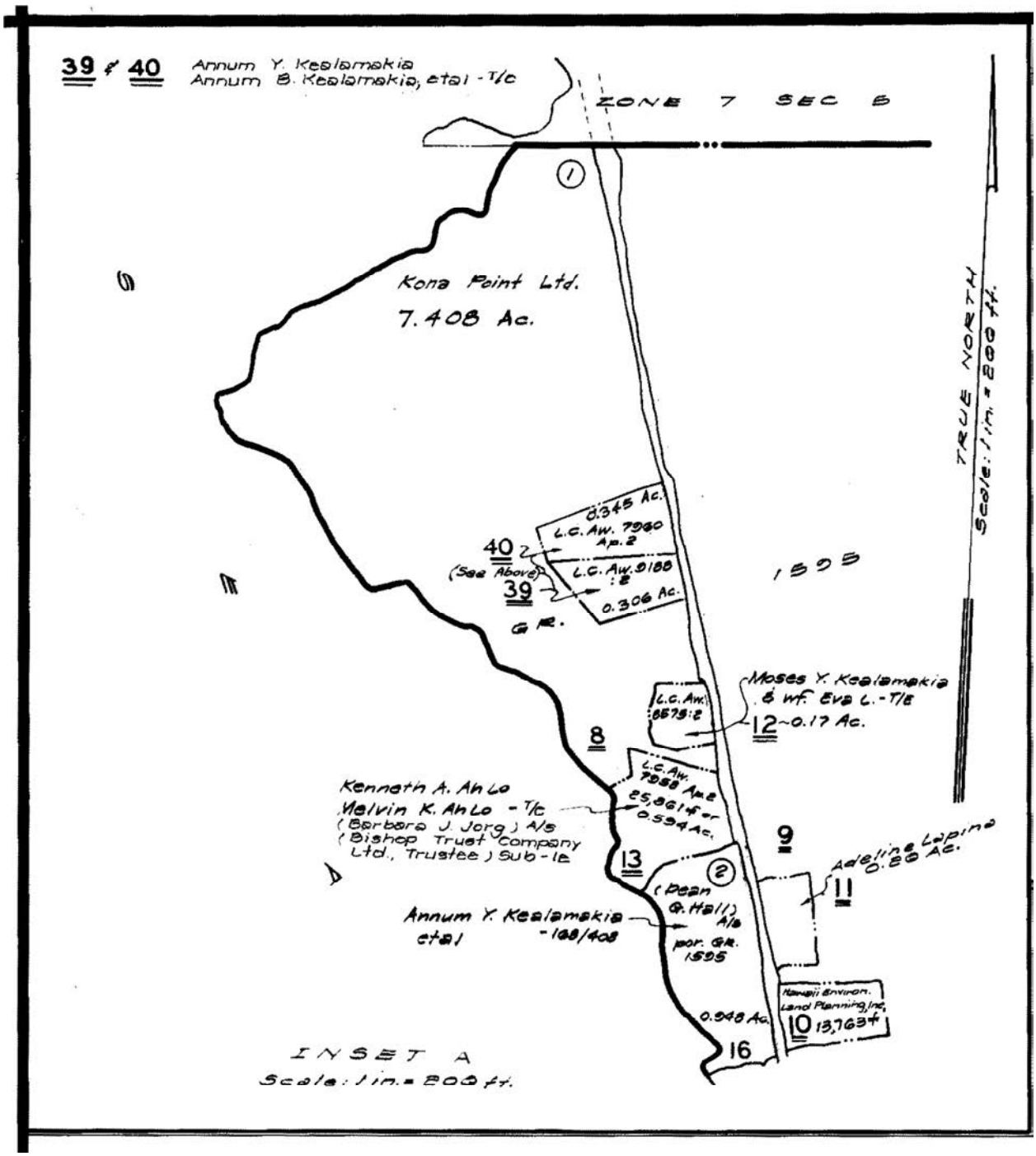
Appendix 1

FOR REAL PROPERTY TAXATION PURPOSES
SUBJECT TO CHANGE

DEPARTMENT OF TAXATION
TAXATION MAPS BUREAU
STATE OF HAWAII
TAX MAP

THIRD TAXATION DIVISION		
ZONE	SEC.	PLAT
7	9	05

SCALE: 1 IN. = AS NOTED


39 & 40
Annum Y. Kealamakia
Annum B. Kealamakia, etal - T/C
ZONE 7 SEC 6
1
Kona Point Ltd.
7.408 Ac.
TRUE NORTH
Scale: 1 in. = 200 ft.
0.345 Ac.
L.C. Aw. 7940 Ap. 2
40
(See Above)
L.C. Aw. 9188 : 2
39
0.306 Ac.
G.R.
1595
Moses Y. Kealamakia & wf. Eva L. - T/E
L.C. Aw. 8575:2
12 ~ 0.17 Ac.
8
L.C. Aw. 7958 Ap. 2
25,861 s.f. or 0.594 Ac.
Kenneth A. Ah Lo
Melvin K. Ah Lo - T/C
(Barbara J. Jorg) A/S
(Bishop Trust Company Ltd., Trustee) Sub-le
9
13
2
Adeline Lapina 0.20 Ac.
11
(Dean G. Hall) A/S
Annum Y. Kealamakia - 168/408
etal
por. G.R. 1595
Hawaii Environ. Land Planning, Inc.
0.948 Ac.
10 13,763+
16
INSET A
Scale: 1 in. = 200 ft.

ENVIRONMENTAL ASSESSMENT

WALTER KALEO O KALANI NAKOA

SINGLE-FAMILY DWELLING

AND ASSOCIATED IMPROVEMENTS IN THE

CONSERVATION DISTRICT

TMK No. (3) 7-9-005:012

Honalo, North Kona District, County of Hawai‘i, State of Hawai`i

APPENDIX 2

Puna Wai Trust House Plans

SYMBOLS & ABBREVIATIONS

SYMBOLS:

&	AND
	ANGLE
@	AT
ø	DIAMETER OR ROUND
#	POUND OR NUMBER
	CENTER LINE
	PROPERTY LINE
FT²	SQUARE FEET
(E)	EXISTING
±	PLUS/MINUS
°	DEGREE

ABBREVIATIONS:

ACOUS.	ACOUSTICAL
ADJ.	ADJACENT
AGG.	AGGREGATE
ALUM.	ALUMINUM
APPROX.	APPROXIMATE
ARCH.	ARCHITECTURAL
A.D.	AREA DRAIN
A.C.	ASPHALT CONC. PAVING
BBQ.	BARBEQUE
BM.	BEAM
BITUM.	BITUMINOUS
BLK.	BLOCK
BLKG.	BLOCKING
BD.	BOARD
BOT.	BOTTOM
BLDG.	BUILDING
B.O.	BY OWNER
CAB.	CABINET
CANT.	CANTILEVER
CPT.	CARPET
CSMT.	CASEMENT
C.I.	CAST IRON
C.B.	CATCH BASIN
CLKG.	CAULKING
CLG.	CEILING
CTR.	CENTER
CEM.	CEMENT
CER.	CERAMIC
CLR.	CLEAR
CLOS.	CLOSET
COL.	COLUMN
CONC.	CONCRETE
CONN.	CONNECTION
CONSTR.	CONSTRUCTION
CONT.	CONTINIOUS
CORR.	CORRUGATED
CTSK.	COUNTER SINK
CNTR.	COUNTER
DEPT.	DEPARTMENT
DET.	DETAIL
DIA.	DIAMETER
DIM.	DIMENSION
D.W.	DISHWASHER
DISP.	DISPENSER
DR.	DOOR
DBL.	DOUBLE
D.H.	DOUBLE HUNG
DN.	DOWN
DS.	DOWNSPOUT
DWR.	DRAWER
DWG.	DRAWING
D.F.	DRINKING FOUNTAIN
D.WTR.	DUMBWAITER
E.	EAST
EA.	EACH
ELEC.	ELECTRICAL
EL.	ELEVATION
ELEV.	ELEVATOR
EMER.	EMERGENCY
ENCL.	ENCLOSURE
EQ.	EQUAL
EQUIP.	EQUIPMENT
EXIST.	EXISTING
EXP.	EXPANSION
E.J.	EXPANSION JOINT
EXPO.	EXPOSED
EXT.	EXTERIOR
F.O.C.	FACE OF CONCRETE
F.O.F.	FACE OF FINISH
F.O.S.	FACE OF STUD
FIN.	FINISH
FFEL	FINISH FLOOR ELEVATION
F.A.	FIRE ALARM
F.E.	FIRE EXTINGUISHER
F.R.	FIRE RATED
F.P.	FIREPLACE
FPRF.	FIREPROOF
F.	FIXED
FLR.	FLOOR
F.T.C.	FLOOR TO CEILING
F.D.	FLOOR DRAIN
FLASH.	FLASHING
FLUOR.	FLUORESCENT
FT.	FOOT OR FEET
FTG.	FOOTING
FDN.	FOUNDATION
F.S.	FULL SIZE
FURN.	FURNACE
FURR.	FURRING
FUT.	FUTURE
GALV.	GALVANIZED
GA.	GAUGE
GLS.	GLASS
G.B.	GRAB BAR
GR.	GRADE
GRAN.	GRANITE
GND.	GROUND
GYP. BD.	GYPSUM BOARD
HDWE.	HARDWARE
HDWD.	HARDWOOD
HD.	HEAD
HGT.	HEIGHT
h.	HIGH
HGT.A.	HOLLOW CORE
HGT.M.	HOLLOW METAL
HORIZ.	HORIZONTAL
H.B.	HOSE BIBB
H.W.	HOT WATER
HR.	HOUR
I.D.	INSIDE DIAMETER
INSUL.	INSULATION
INT.	INTERIOR
JAN.	JANITOR
JT.	JOINT
KIT.	KITCHEN
KD.	KNOCK-DOWN FRAME
LAB.	LABORATORY
LAM.	LAMINATE
LAV.	LAVATORY
LVL.	LEVEL
L.T.	LIGHT
LIN.	LINEN
LINO.	LINOLEUM
LKR.	LOCKER
M.H.	MANHOLE
M.O.	MASONRY OPENING
MANUF.	MANUFACTURER
MAX.	MAXIMUM
MECH.	MECHANICAL
MTL.	METAL
MIN.	MINIMUM
MIR.	MIRROR
MISC.	MISCELLANEOUS
MTD.	MOUNTED
MUL.	MULLION
(N)	NEW
NOM.	NOMINAL
N.	NORTH
N.I.C.	NOT IN CONTRACT
N.T.S.	NOT TO SCALE
NO.	NUMBER
OBS.	OBSCURE
OFF.	OFFICE
O.C.	ON CENTER
OPNG.	OPENING
OPP.	OPPOSITE
O.A.	OUTSIDE DIAMETER
O.A.	OVERALL
O.H.	OVERHANG
OVHD.	OVERHEAD
PTN.	PARTITION
PERF.	PERFORATED
PLAM.	PLASTIC LAMINATE
P.L.	PLATE
P.H.	PLATE HEIGHT
PLY.	PLYWOOD
PT.	POINT
PRCST.	PRE-CAST
Q.T.	QUARRY TILE
RAD.	RADIUS
R.W.L.	RAIN WATER LEADER
RWD.	REDWOOD
RE.	REFERENCE
RAD.	RADIUS
R.W.L.	RAIN WATER LEADER
RWD.	REDWOOD
RE.	REFERENCE
REFR.	REFRIGERATOR
RGTR.	REGISTER
REINF.	REINFORCED
REQ.	REQUIRED
RESIL.	RESILIENT
R.O.W.	RIGHT OF WAY
R.	RISER
RD.	ROOF DRAIN
RM.	ROOM
R.O.	ROUGH OPENING
SCHED.	SCHEDULE
SECT.	SECTION
S.SK.	SERVICE SINK
SHT.	SHEET
SHLV.	SHELF
SHR.	SHOWER
SIM.	SIMILAR
S.H.	SINGLE HUNG
SLDR.	SLIDING DOOR
S.C.	SOLID CORE
S.	SOUTH
SPEC.	SPECIFICATION
SQ.	SQUARE
S.F.	SQUARE FEET
S.S.	STAINLESS STEEL
STD.	STANDARD
STA.	STATION
STL.	STEEL
STOR.	STORAGE
STRUCT.	STRUCTURAL
SUSP.	SUSPENDED
SYN.	SYNTHETIC
SYM.	SYMMETRICAL
TEL.	TELEPHONE
T.V.	TELEVISION
TEMP.	TEMPERED
TER.	TERRAZZO
THK.	THICK
T&G	TONGUE & GROOVE
T.O.B.	TOP OF BEAM
T.O.C.	TOP OF CURB
T.O.P.	TOP OF PAVEMENT
T.O.W.	TOP OF WALL
TRD. OR T.	TREAD
TYP.	TYPICAL
UNF.	UNFINISHED
U.N.O.	UNLESS NOTED OTHERWISE
UR.	URINAL
VERT.	VERICAL
VEST.	VESTIBULE
WSCT.	WAINSCOT
W.C.	WATER CLOSET
WP.	WATERPROOF
W.S.	WATER SOFTENER
WT.	WEIGHT
W.	WEST
w.	WIDE
WIN.	WINDOW
w/	WITH
w/o	WITHOUT
WD.	WOOD

PROJECT DIRECTORY

OWNER: PUNA WAI TRST
PO BOX 5092
KAILUA-KONA, HI 96745 5092

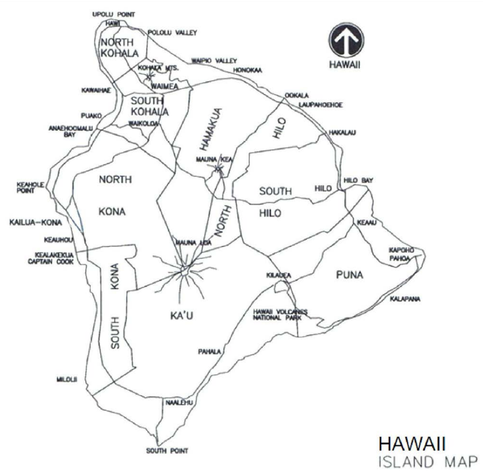
ARCHITECT OF RECORD: DR. WILLIAM C. FOULK
75-5656 KUAKINI HWY., SUITE 301
KAILUA KONA, HAWAII 96740
T: 808-334-0438

DESIGNER: NICHOLSON LLC
77-6425 KUAKINI HWY., SUITE C2-77
KAILUA-KONA, HI 96740
T: 808-896-9748
F: 808-331-1522

CIVIL ENGINEER: PETER J.K. DAHLBERG
pdahlberg@hawaii.rr.com

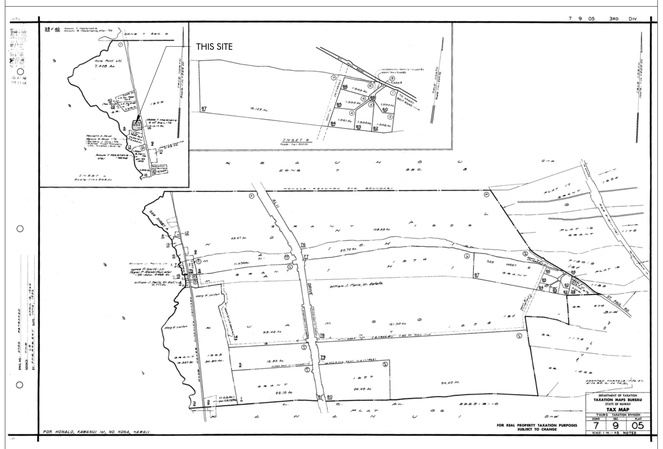
CONTRACTOR: NICHOLSON LLC
77-6425 KUAKINI HWY., SUITE C2-77
KAILUA-KONA, HI 96740
T: 808-896-9748
F: 808-331-1522

ISLAND MAP



HAWAII
ISLAND MAP

VICINITY MAP



CODE DATA

ZONE (IN ACCORDANCE WITH SECTION 25-8-3):

A-5a AGRICULTURAL DISTRICT (MINIMUM BUILDING SITE OF 5 ACRES)

PROPERTY CLASS: CONSERVATION

OCCUPANCY GROUP: SINGLE FAMILY RESIDENCE R-3

TYPE OF CONSTRUCTION: TYPE V-B

LOT SIZE: 7,405 SF

MAXIMUM DEVELOPABLE AREA (MDA):

IN ACCORDANCE WITH DLNR HAWAI'I ADMINISTRATIVE RULES FOR CONSERVATION DISTRICT. (CHAPTER 13-5, EXHIBIT 4, TABLE 1)
DEVELOPABLE AREA: 25% (1,851 SF) OF TOTAL LOT AREA (7,405 SF)

PROPOSED BLDG. FLOOR AREA:	1,600 SQ FT
PROPOSED ACCESSORIES:	245 SQ. FT.
TOTAL AREA:	1,845 SQ. FT.
% OF BUILDABLE AREA COVERED:	99.68%

AREA TABULATION

ROOM NAME	AREA
BATH #2	86 SF
BEDROOM #2	148 SF
HALLWAY	64 SF
KITCHEN/DINING	448 SF
LAUNDRY/PANTRY	147 SF
LIVING	255 SF
MASTER BATH	98 SF
MASTER BEDROOM	198 SF
MASTER CLOSET	122 SF
STORAGE	34 SF
TOTAL FLOOR AREA	1600 SF

ACCESSORIES

POOL	130 SF
IRRIGATION WATER CATCHMENT TANK	20 SF
POTABLE WATER CATCHEMENTS TANK	20 SF
WELL	7 SF
AC PADS	12 SF
AUMAKUA	4 SF
SALT PAN	4 SF
LELE	9 SF
PROPANE TANK	39 SF
TOTAL AREA	**245 SF**

PROPOSED BUILDING HEIGHT: 24'-0"

FLOOR AREA RATIO: NOT APPLICABLE

ALLOWABLE BUILDING HEIGHT: (PER TABLE 503, I.B.C.)
RESIDENTIAL OCCUPANCY, 3 STORIES

PER CONSERVATION DISTRICT ORDINANCE: 25'-0"

WASTEWATER: SEPTIC

BUILDING SETBACKS
IN ACCORDANCE WITH DLNR HAWAI'I ADMINISTRATIVE
RULES FOR CONSERVATION DISTRICT. (CHAPTER 13-5, EXHIBIT 4)

BUILDING SETBACKS: FRONT 15'-0"

SIDE 15'-0"

REAR 15'-0"

EXCEPTIONS: SITE CHARACTERISTICS AND LOT SHAPE MAY BE A FACTOR IN ADJUSTING MINIMUM SETBACKS WHEN DETERMINED BY BOARD.

REQUESTED BUILDING SETBACKS: 13'-6" DUE TO LOT CHARACTERISTICS.

CODE AND STANDARDS
2018 INTERNATIONAL BUILDING CODE
2018 INTERNATIONAL RESIDENTIAL CODE
2018 UNIVERSAL PLUMBING CODE
2017 NATIONAL ELECTRICAL CODE
2018 INTERNATIONAL ENERGY CONSERVATION CODE

LIVE LOADS

ROOF LIVE LOAD:	20 PSF
FLOOR LIVE LOAD:	40 PSF

EARTHQUAKE DESIGN DATA
SEISMIC DESIGN CATEGORY: **D2**
*(RE-CLASSIFY CATEGORY 'E' TO D2 (ref. R301.2.2.1.2))

WIND DESIGN DATA

BASIC WIND SPEED, V:	105 MPH
EFFECTIVE WIND SPEED:	130 MPH (ASCE 7-10)
EXPOSURE:	C

Appendix 2

DRAWING INDEX

T01	PROJECT INFORMATIONS & SITE PLAN
A01.1	EXISTING SITE CONDITION
A01.2	SITE PLAN
A02.0	FLOOR PLAN & DOOR & WINDOW SCHEDULES
A02.1	ROOF PLAN
A03	BUILDING ELEVATIONS
L01	LANDSCAPE PLAN

NICHOLSON
DESIGN • BUILD • MANAGE
77-6425 KUAKINI HWY. SUITE C2-77
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808-331-1522 FAX

Licensed Proffessional Architect
AR - 9859
exp. 4/30/2022
William C. Foulk
Hawaii U.S.A.

4/30/2022
EXP. DATE

This work was prepared by me or under my supervision and construction of this project will be under my observation

A PROPOSED NEW CONSTRUCTION FOR:

PUNA WAI, TRUST
KEAUHOU KAINALIU BEACH RD.
HONALO MAKAI

T.M.K. (3)7-9-005-012

REVISIONS:
NO. DATE

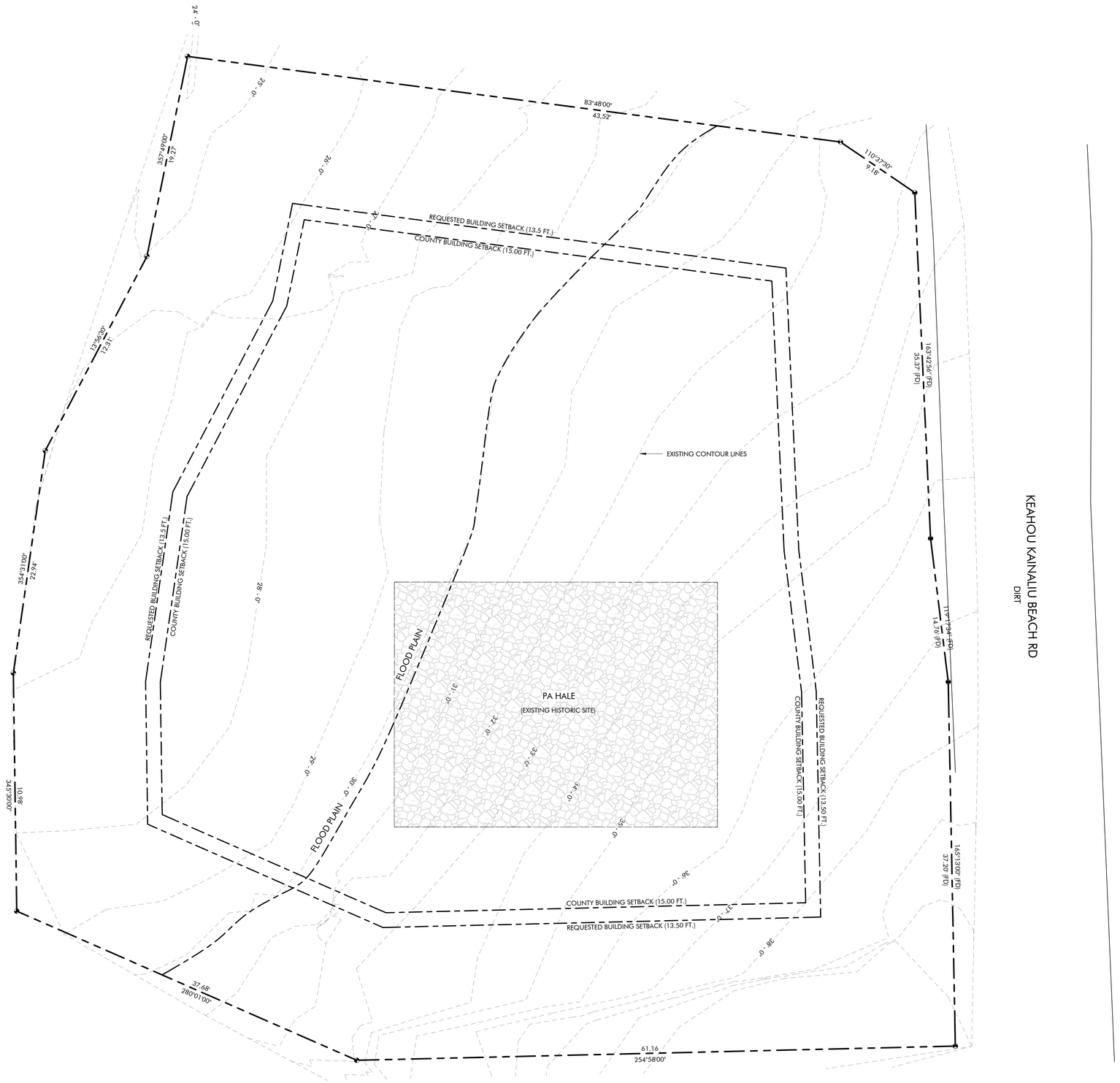
SCALE BAR:

PROJECT INFORMATIONS & SITE PLAN

SHEET: T01

ISSUED: 11/30/2021

PERMIT DOCUMENT



1 A01.1 EXISTING SITE CONDITION
3/16" = 1'-0"

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REVISIONS:
NO. DATE

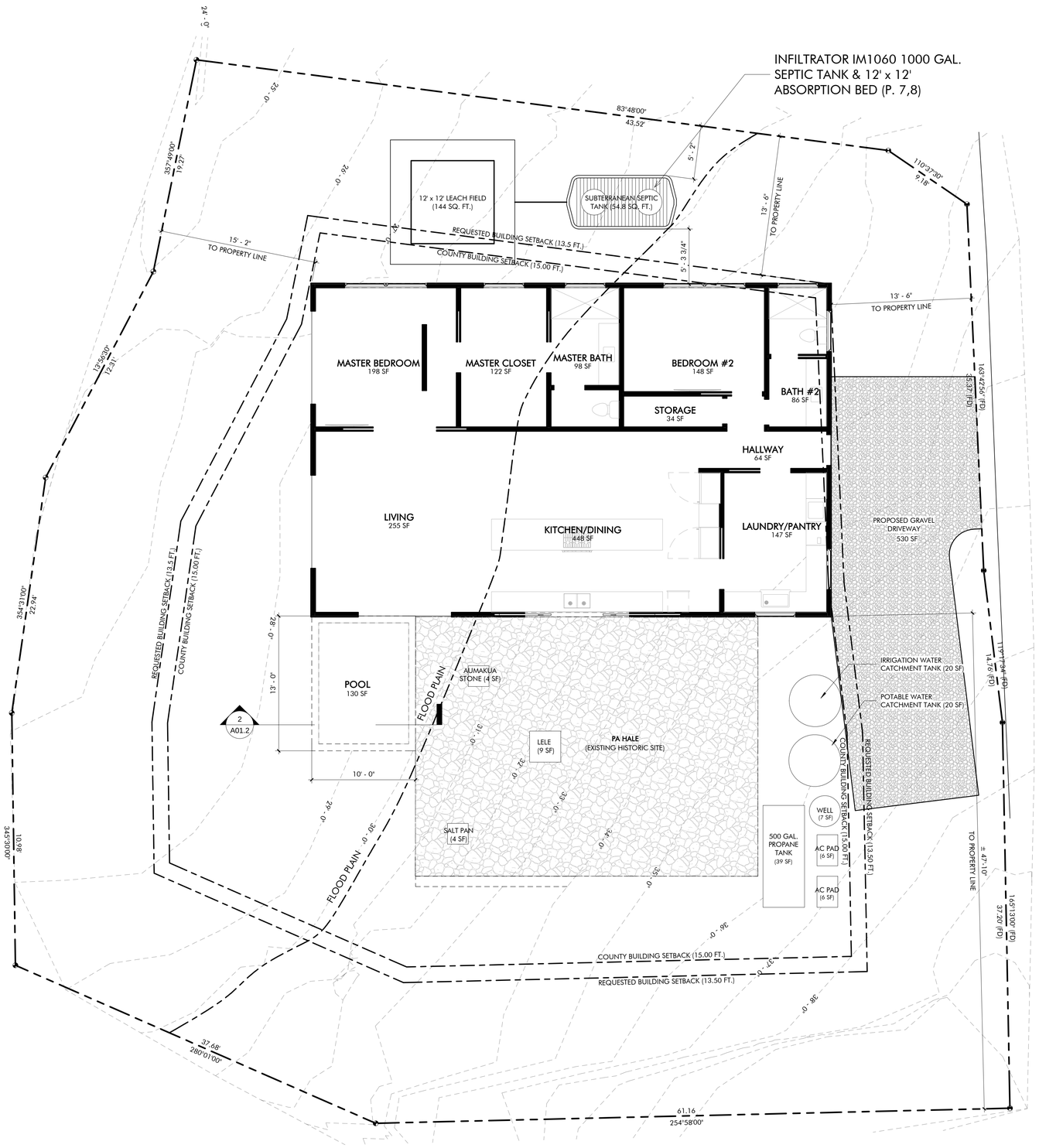
SCALE BAR:
3/16" = 1'
0 1 2 4 8 16

EXISTING SITE CONDITION

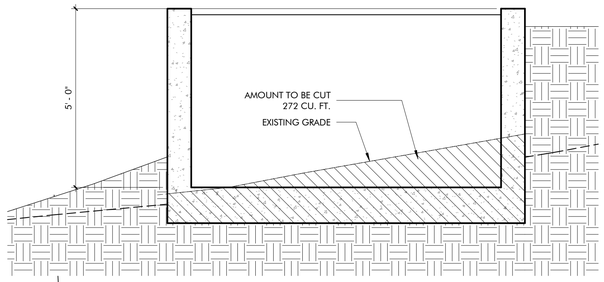
SHEET: A01.1

ISSUED: 11/30/2021

PERMIT DOCUMENT



1 A01.2 SITE PLAN
3/16" = 1'-0"



2 A01.2 POOL - SECTION
1/2" = 1'-0"

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U.S.A. Hawaii

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T.M.K. (3)7-9-005-012

REVISIONS:
NO. DATE

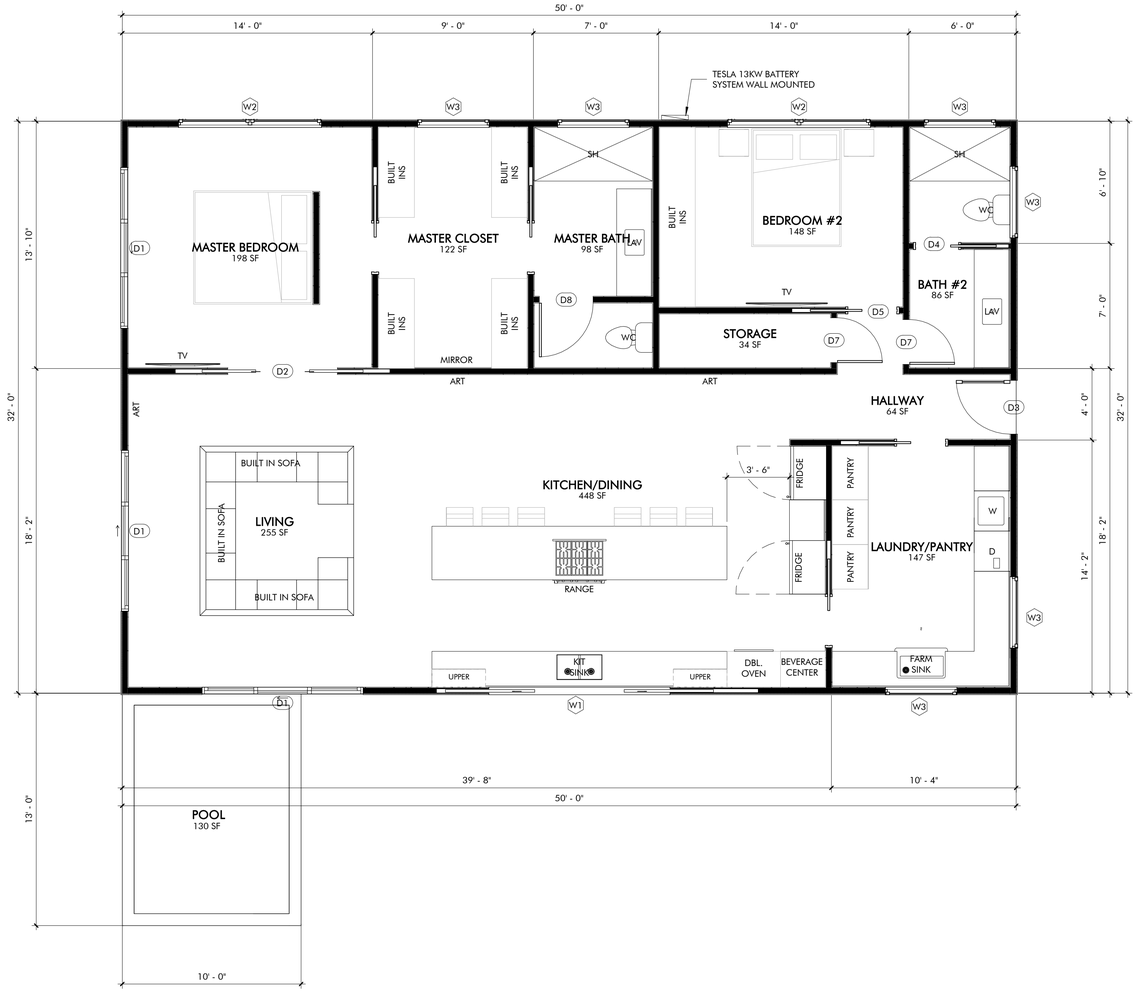
SCALE BAR:
3/16" = 1'
0 1 2 4 8 16

North

SITE PLAN

SHEET: A01.2

ISSUED: 11/30/2021
PERMIT DOCUMENT



1 A02.0 FLOOR PLAN
1/4" = 1'-0"

DOOR SCHEDULE

DOOR NO.	DOOR TYPE	QTY.	SIZE WIDTH	SIZE HEIGHT	SIZE THICKNESS	GLASS	FUNCTION	REMARKS
D1	3-Panel Sliding - OXO	3	9' - 0"	8' - 0"	0' - 4 5/8"	Yes	Exterior	
D2	Double-Pocket Slider	1	6' - 0"	6' - 8"	0' - 1 3/4"	No	Interior	
D3	Single-Swing Glass	1	3' - 0"	8' - 0"	0' - 2"	Yes	Exterior	
D4	Single-Pocket Slider	1	2' - 8"	8' - 0"	0' - 1 3/8"	No	Interior	
D5	Single-Pocket Slider	5	3' - 0"	8' - 0"	0' - 1 3/8"	No	Interior	
D6	Single-Swing	2	3' - 0"	6' - 8"	0' - 1 3/8"	No	Interior	
D7	Single-Swing	2	2' - 6"	8' - 0"	0' - 1 3/8"		Interior	
D8	Single-Swing	1	3' - 0"	8' - 0"	0' - 1 3/8"	No	Interior	

Grand total: 16

WINDOW SCHEDULE

WINDOW NO.	WINDOW TYPE	QTY.	SIZE WIDTH	SIZE HEIGHT	SILL HEIGHT	SHGC	REMARKS
W1	Double-Pocket	1	10' - 0"	5' - 0"	3' - 0"		
W2	Window-Awning-Double-Horizontal	2	8' - 0"	5' - 0"	3' - 0"		
W3	Window-Awning-Single	6	4' - 0"	5' - 0"	3' - 0"		

Grand total: 9

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KEAUHOU KAINALIU BEACH RD.
HONALO MAKAI

T.M.K. (3)7-9-005-012

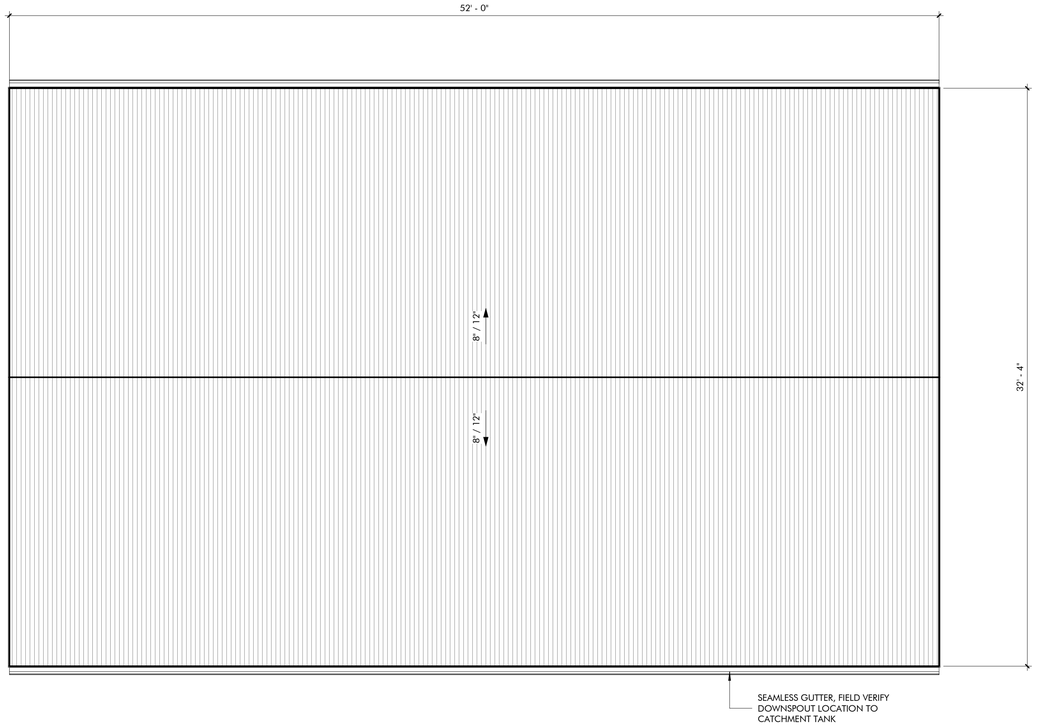
REVISIONS:
NO. DATE

SCALE BAR:
1/4" = 1'
0 1 2 4 8 12

FLOOR PLAN & DOOR & WINDOW SCHEDULES

SHEET: A02.0

ISSUED: 11/30/2021
PERMIT DOCUMENT



1 A02.1 ROOF PLAN
1/4" = 1'-0"

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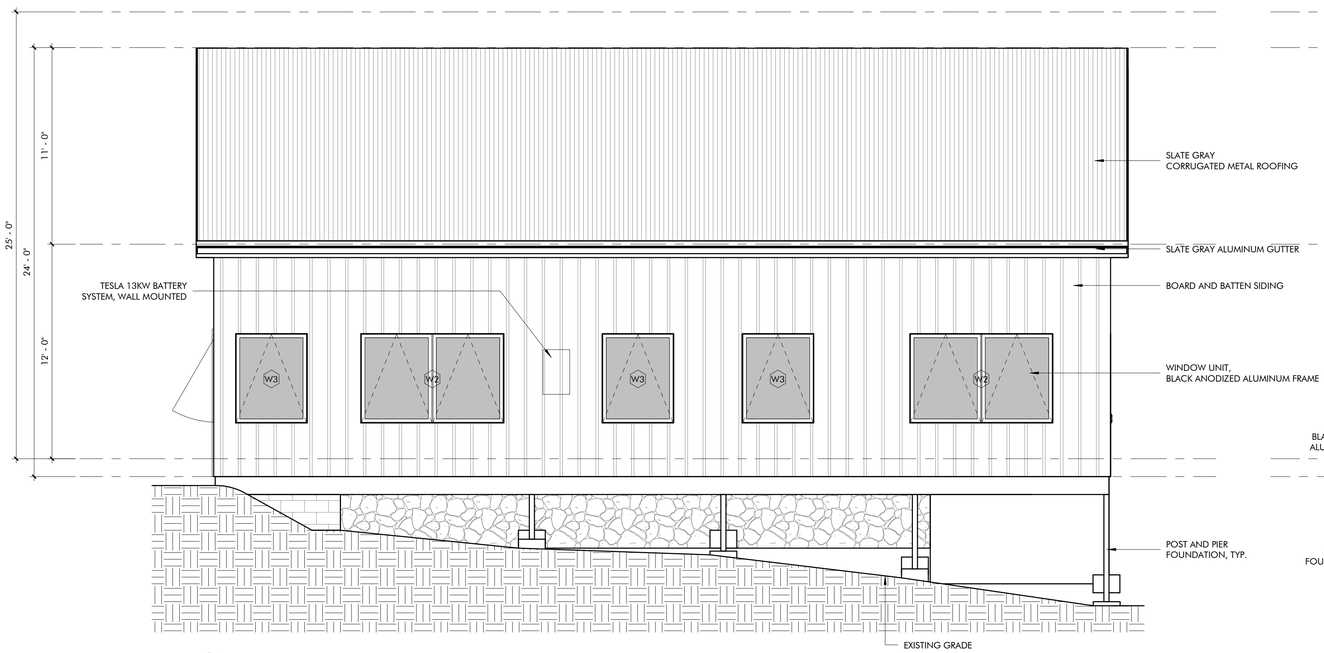
NO. DATE

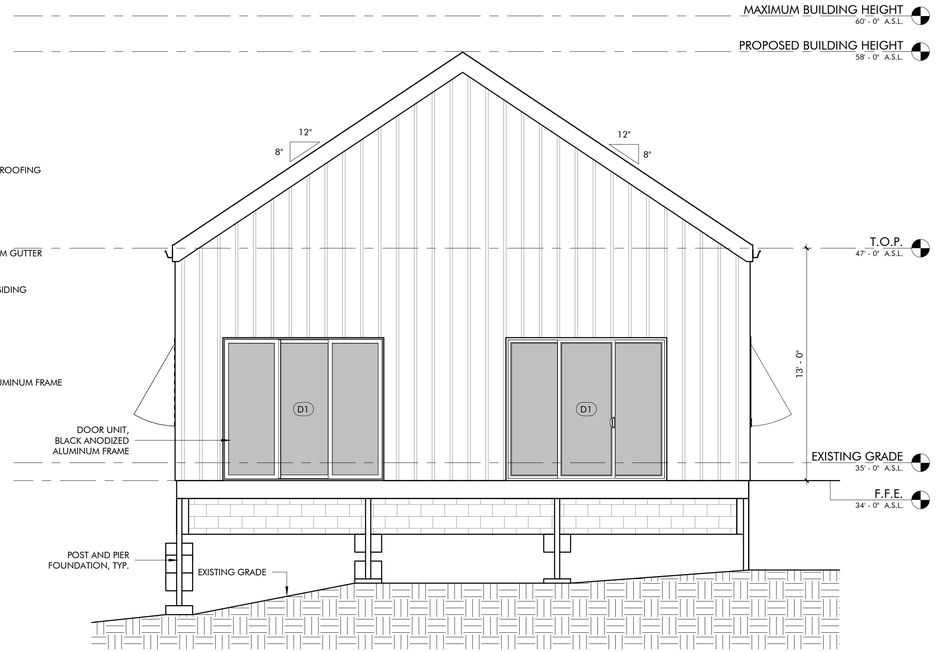
SCALE BAR:
1/4" = 1'
0 1 2 4 8 12

ROOF PLAN

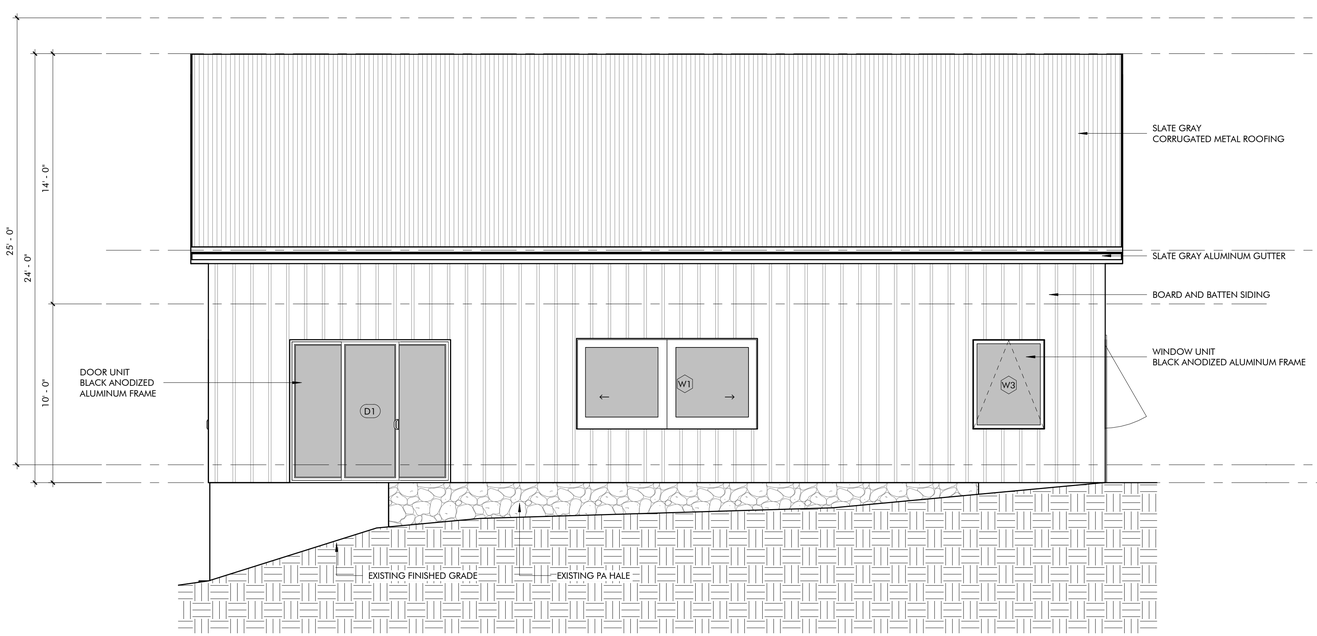
SHEET: A02.1
ISSUED: 11/30/2021
PERMIT DOCUMENT



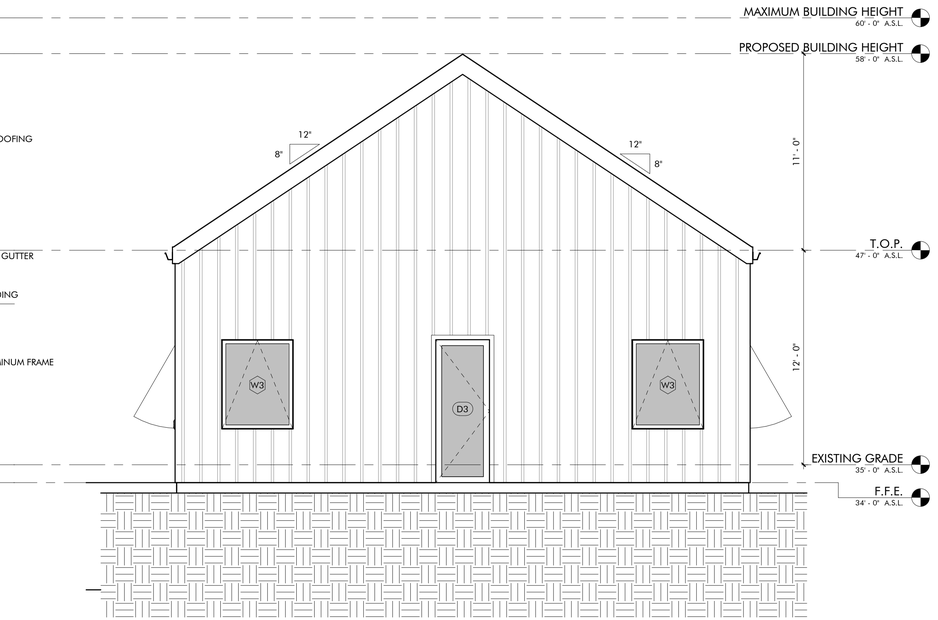
1 A03 NORTH ELEVATION
1/4" = 1'-0"



3 A03 WEST ELEVATION
1/4" = 1'-0"



2 A03 SOUTH ELEVATION
1/4" = 1'-0"



4 A03 EAST ELEVATION
1/4" = 1'-0"

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4/30/2022
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PUNA WAI, TRUST
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HONALO MAKAI
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REVISIONS:
NO. DATE

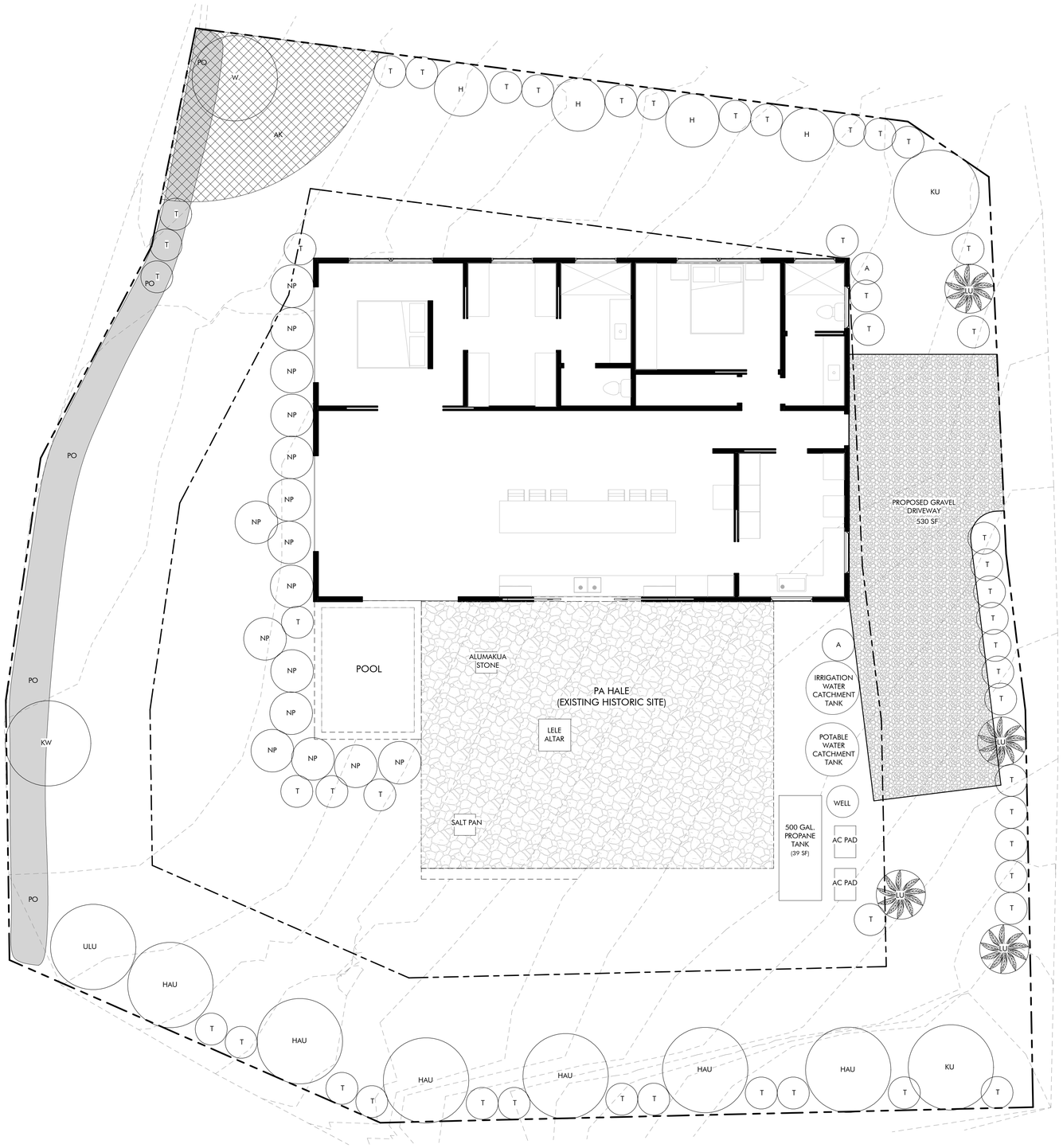
SCALE BAR:
1/4" = 1'
0 1 2 4 8 12

BUILDING ELEVATIONS

SHEET: A03

ISSUED: 11/30/2021

PERMIT DOCUMENT



1 L01 LANDSCAPE PLAN
3/16" = 1'-0"

LEGEND - PLANTING

SYMBOL CALLOUT	COMMON NAME	SIZE	SPACING	COMMENTS	QTY.
PALM					
LU	LOULU PALM	15 GAL.	PER PLAN	15' MAX. HT.	4
TREE					
W	WILI WILI	15 GAL.	PER PLAN	15' MAX. HT.	1
KU	KUKUI	25 GAL.	PER PLAN	15' MAX. HT.	2
H	HALA	15 GAL.	PER PLAN	15' MAX. HT.	4
ULU	ULU	15 GAL.	PER PLAN	15' MAX. HT.	1
HAU	HAU	15 GAL.	PER PLAN	15' MAX. HT.	6
KW	KIAWE	15 GAL.	PER PLAN	15' MAX. HT.	1
SHRUBS					
NP	NAUPAKA		PER PLAN		16
T	TI	3 GAL.	PER PLAN		49
A	ALOE	2 GAL.	PER PLAN		2
GROUNDCOVER					
PO	POHUEHUE				277 sq. ft.
AK	AKULIKULI				224 sq. ft.

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U.S.A.
Hawaii

4/30/2022
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A PROPOSED NEW CONSTRUCTION FOR:
PUNA WAI, TRUST
KEAUHOU KAINALIU BEACH RD.
HONALO MAKAI
T.M.K. (3)7-9-005-012

REVISIONS:
NO. DATE

SCALE BAR:
3/16" = 1'
0 1 2 4 8 16

LANDSCAPE PLAN

SHEET: L01

ISSUED: 11/30/2021
PERMIT DOCUMENT

ENVIRONMENTAL ASSESSMENT

WALTER KALEO O KALANI NAKOA

SINGLE-FAMILY DWELLING

AND ASSOCIATED IMPROVEMENTS IN THE

CONSERVATION DISTRICT

TMK No. (3) 7-9-005:012

Honalo, North Kona District, County of Hawai‘i, State of Hawai`i

APPENDIX 3

Draft Archaeological Inventory Survey

TMK (3) 7-9-005:012

by Haun & Associates

March 2020

HAUN & ASSOCIATES

ARCHAEOLOGICAL, CULTURAL, AND HISTORICAL RESOURCE MANAGEMENT SERVICES

PHONE: 808.325.2402 | FAX: 808.325.1520 | WEB: haunandassociates.com

73-4161 KAAO PLACE | KAILUA-KONA | HI 96740

April 28, 2020

Project 1447

Dr. Susan Lebo, Archaeology Branch Chief
State Historic Preservation Division
Department of Land and Natural Resources
601 Kamokila Boulevard, Suite 555
Kapolei, Hawai'i 96707

Subject: Draft Archaeological Inventory Survey
TMK (3) 7-9-005:012, Honal0 Ahupua'a
North Kona District, Island Hawaii

Dear Dr. Lebo:

Enclosed is the subject draft archaeological inventory survey report for review. Also enclosed are a check for $450.00 and a submittal sheet.

If you have any questions, or require additional information, please contact me at (808) 325-2402.

Sincerely,

Alan E. Haun, Ph.D.
Principal Investigator

Enclosures: Draft Report, Submittal Sheet, and $450.00 check (No. 107434)

cc: Kalani Nakoa
Randy Vitousek

Appendix 3

DAVID Y. IGE
GOVERNOR OF
HAWAII

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
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING
601 KAMOKILA BLVD, STE 555
KAPOLEI, HAWAII 96707

HRS 6E Submittal Filing Fees

All submittals must have the appropriate filing fee in accordance with HAR §13-275-4 or HAR §13-284-4.
All contact fields below must be complete and accurate.

Landowner: _____
(if privately-owned historic property on Hawaii Register, HRS §6E-10)

Agency: Board of Land and Natural Resources C/O DLNR Office of Coastal and Conservation Lands
Contact Name: Samuel Lemmo
Mailing Address: P.O. Box 621 Honolulu, Hawaii 96809
Phone: 808-587-0382 Email: sam.j.lemmo@hawaii.gov

Title of Report/Plan: Archaeological Inventory Survey, TMK: (3) 7-9-005:012, Honalo Ahupua'a, Nouth Kona District, Hawai'i Island
Ahupua'a: Honalo Ahupua'a District: North Kona Island: Hawaii
TMK(s): TMK: (3) 7-9-005:012

Contract Firm: Haun & Associates
(firm who completed the work on behalf of the agency)
Contact Name: Alan Haun
Phone: 808-325-2402 Email: ahaun@haunandassociates.com

_____ Check if Report/Plan is a re-submittal (no fee)
_____ Check if Field Inspection Report requested by SHPD (no fee)
_____ Check if **Final Report** (no fee)

_____	$0	Archaeological Monitoring Report, no resources reported
_____	$25	Archaeological Monitoring Plan
_____	$25	Burial Disinterment Report
_____	$25	Request from Agency for Determination Letter per HAR §13-275
_____	$50	Archaeological Assessment (AIS with negative findings)
_____	$50	Osteological Analysis Report
_____	$100	Archaeological Monitoring Report, resources reported
X	$150	Archaeological Inventory Survey Plan, Archaeological Data Recovery Plan, or Preservation Plan
_____	$250	Burial Treatment Plan (BTP)
_____	$450	Archaeological, Architectural, or Ethnographic Survey Report
_____	$450	Archaeological Data Recovery Report
$450.00		Fee Total: Make check payable to "Hawaii Historic Preservation Special Fund"

For Office Use Only:

Date Received:	Payment Method: Cash	Amount $
Log No.:	Check No.	Amount $
Receipt Issued:	Money Order	Amount $

rev. 11/9/2017

1447-032720

DRAFT

ARCHAEOLOGICAL INVENTORY SURVEY

TMK: (3) 7-9-005:012

HONALO AHUPUAʻA

NORTH KONA DISTRICT

ISLAND OF HAWAIʻI

HAUN & ASSOCIATES

ARCHAEOLOGICAL, CULTURAL, AND HISTORICAL RESOURCE MANAGEMENT SERVICES

73-4161 KAAO ROAD, KAILUA-KONA HI 96740

PHONE: 808-325-2402 FAX: 808-325-1520

1447-032720

DRAFT

ARCHAEOLOGICAL INVENTORY SURVEY

TMK: (3) 7-9-005:012

HONALO AHUPUAʻA

NORTH KONA DISTRICT

ISLAND OF HAWAIʻI

Prepared by:

Alan E. Haun, Ph.D.
and
Dave Henry, B.S.

Prepared for:

Walter Kaleo O Kalani Nakoa
74-381 Kealakehe Parkway D
Kailua Kona, HI 96740

March 2020

HAUN & ASSOCIATES
ARCHAEOLOGICAL, CULTURAL, AND HISTORICAL RESOURCE MANAGEMENT SERVICES
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MANAGEMENT SUMMARY

Haun & Associates conducted an archaeological inventory survey (AIS) of the 0.17 acre TMK: (3) 7-9-005:012 located in Honalo Ahupuaʻa, North Kona District, Island of Hawaiʻi. The objective of the AIS is to satisfy current historic preservation regulatory review inventory requirements of the Department of Land and Natural Resources-State Historic Preservation Division (DLNR-SHPD), as contained within Hawaiʻi Administrative Rules, Title 13, DLNR, Subtitle 13, Chapters 276 and 284, State Historic Preservation Rules. The AIS was prepared in conjunction with a Conservation District Use Permit (CDUP) to build a single family residence as a Kuleana Land Use under HAR 13-5-22(a) P-3 D-1.

The archaeological inventory survey identified one site consisting of a complex of features that encompass the entirety of the project area (Site 50-10-37-7723[1]). The site is comprised of a terrace (Feature A), a rectangular shaped enclosure (Feature B) and a large enclosure that extends around the perimeter of the project area (Feature C). This habitation site was likely occupied by Kaiakahauli, who acquired the land in 1819 when he received it from his parents.

Subsurface testing in the project area identified mixed historic and pre-contact cultural materials throughout the majority of the parcel with a thin pre-contact cultural layer underlying the Feature A terrace. Information from an adjacent landowner indicates that the Feature B enclosure is a modern addition to the site, and a map prepared by Mills and Irani (2000) suggests that the Feature C enclosure has been reconstructed. Based on this information, Site 7723 is altered and in poor to fair condition. The site is assessed as significant for its information content and it has yielded information important for understanding late prehistoric/early historic habitation activity in the area. No further work recommended for the site; however, the landowner has committed to preserving the Feature C enclosure wall and as much of the Feature A terrace as is feasible.

Cover photo: Project area overview (view to northwest)

[1] All sites listed on the State Inventory of Historic Places (SIHP). Site numbers are 5 digit sequential numbers by island : 50 = State of Hawaiʻi, 10= Island of Hawaiʻi, 37=Kealakekua Quadrangle,7723=Site number

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INTRODUCTION

At the request of Walter Kaleo O Kalani Nakoa, Haun & Associates conducted an archaeological inventory survey (AIS) of the 0.17 acre TMK:(3) 7-9-005:012 located in Honalo Ahupuaʻa, North Kona District, Island of Hawaiʻi (**Figure 1** and **Figure 2**). The objective of the AIS is to satisfy current historic preservation regulatory review inventory requirements of the Department of Land and Natural Resources-State Historic Preservation Division (DLNR-SHPD), as contained within Hawaiʻi Administrative Rules, Title 13, DLNR, Subtitle 13, Chapters 276 and 284, State Historic Preservation Rules (DLNR 2003).

The AIS was prepared in conjunction with a Conservation District Use Permit (CDUP) to build a single family residence as a Kuleana Land Use under HAR 13-5-22(a) P-3 D-1. The landowner plans to construct a single family residence with the project area, inland of a flood zone that covers the seaward portion of the lot (**Figure 3**). According to the County of Hawaiʻi Flood Hazard Assessment Report (hawaiinfip.org), the majority of the lot is located in Zone VE, defined as susceptible to, "Coastal flood with velocity hazard (wave action)" during a 100 year flooding event, also known as the Base Flooding Event (BFE). The remainder of the lot is located in Zone X which is outside the floodplain. The landowner plans to construct the proposed residence in the southeast corner of the lot within Zone X. The footprint of the proposed residence is presented in **Figure 4.**

The survey fieldwork was conducted between November 15 and 29, 2018 by Haun & Associates Project Supervisor Solomon Kailihiwa, M.S and field archaeologist Ben Seay, B.A, under the direction of Dr. Alan Haun. Approximately seven person days of labor were required to complete the fieldwork portion of the project. Described in this final report are the project scope of work, field methods, background information, survey findings, and significance assessments of the sites with recommended treatments.

Scope of Work

Based on DLNR-SHPD rules for inventory surveys the following specific tasks were determined to constitute an appropriate scope of work for the project:

1. Conduct background review and research of existing archaeological and historical documentary literature relating to the project area and its immediate vicinity--including examination of Land Commission Awards, *ahupuaʻa* records, historic maps, archival materials, archaeological reports, and other historical sources;
2. Conduct a high intensity, 100% pedestrian survey coverage of the project area;
3. Conduct detailed recording of all potentially significant sites including scale plan drawings, written descriptions, and photographs, as appropriate;
4. Conduct limited subsurface testing (manual excavation) at selected sites to determine feature function;
5. Analyze background research and field data; and
6. Prepare and submit Final Report.

Project Area Description

The project area is a roughly rectangular parcel situated in the seaward portion of Honalo Ahupuaʻa, on the seaward side of Keauhou-Kainaliu Beach Road, also known as the Old Government Beach Road, the Alanui Aupuni and Site 10290. The project area ranges in elevation from approximately 10 to 30 feet and is situated approximately 35 meters inland of the shoreline at Maʻihi Bay. The elevations presented in this report are in feet above mean sea level. An aerial view of the project area, taken on March 8, 2013 is presented in **Figure 5**.

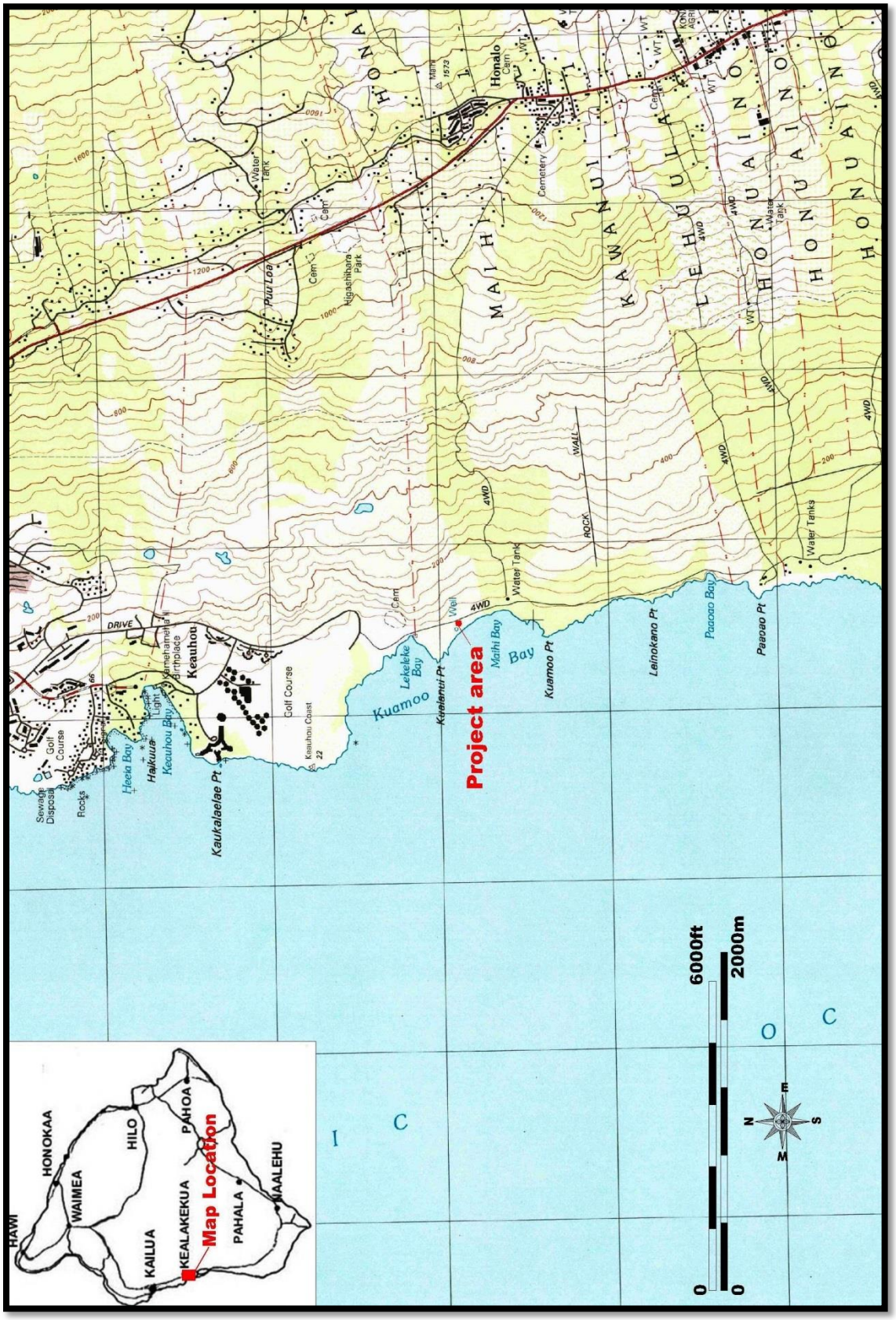


Figure 1. Portion of 1996 USGS 7.5' Kealakekua Quadrangle showing project area

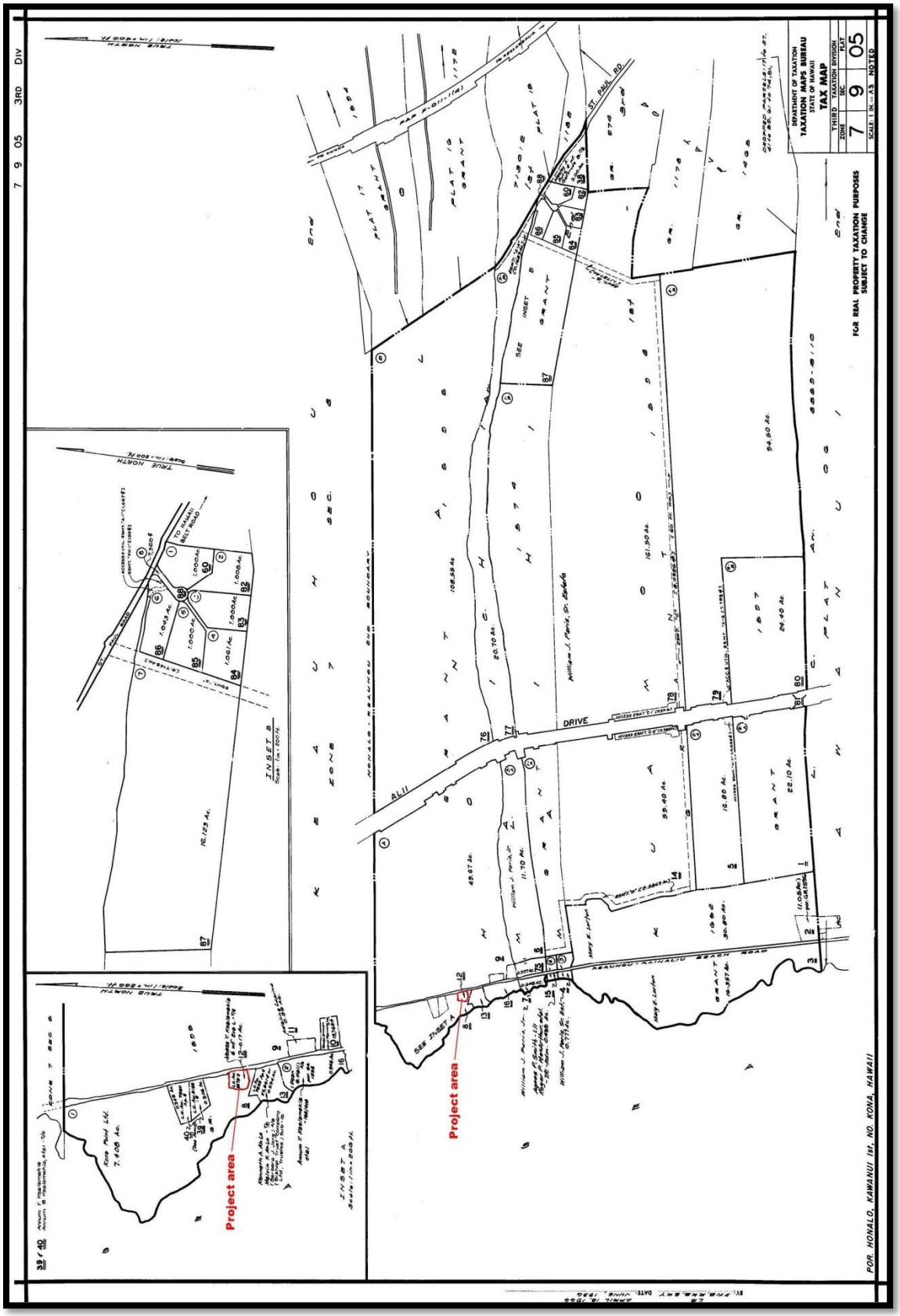


Figure 2. Tax Map Key 7-9-005 showing project area

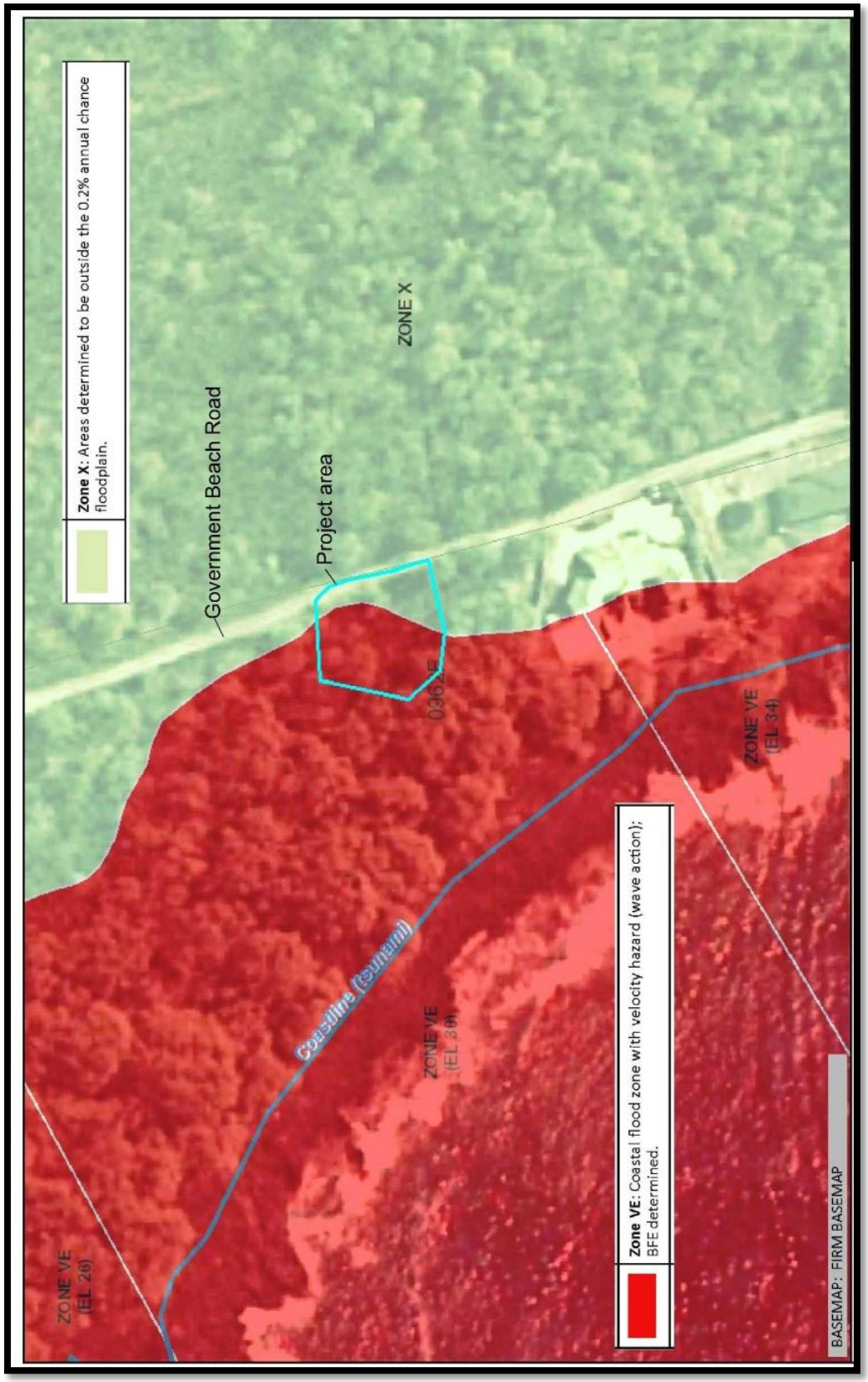


Figure 3. County of Hawai'i Flood Hazard Assessment Report Map showing project area (modified from hawaiinfip.org)

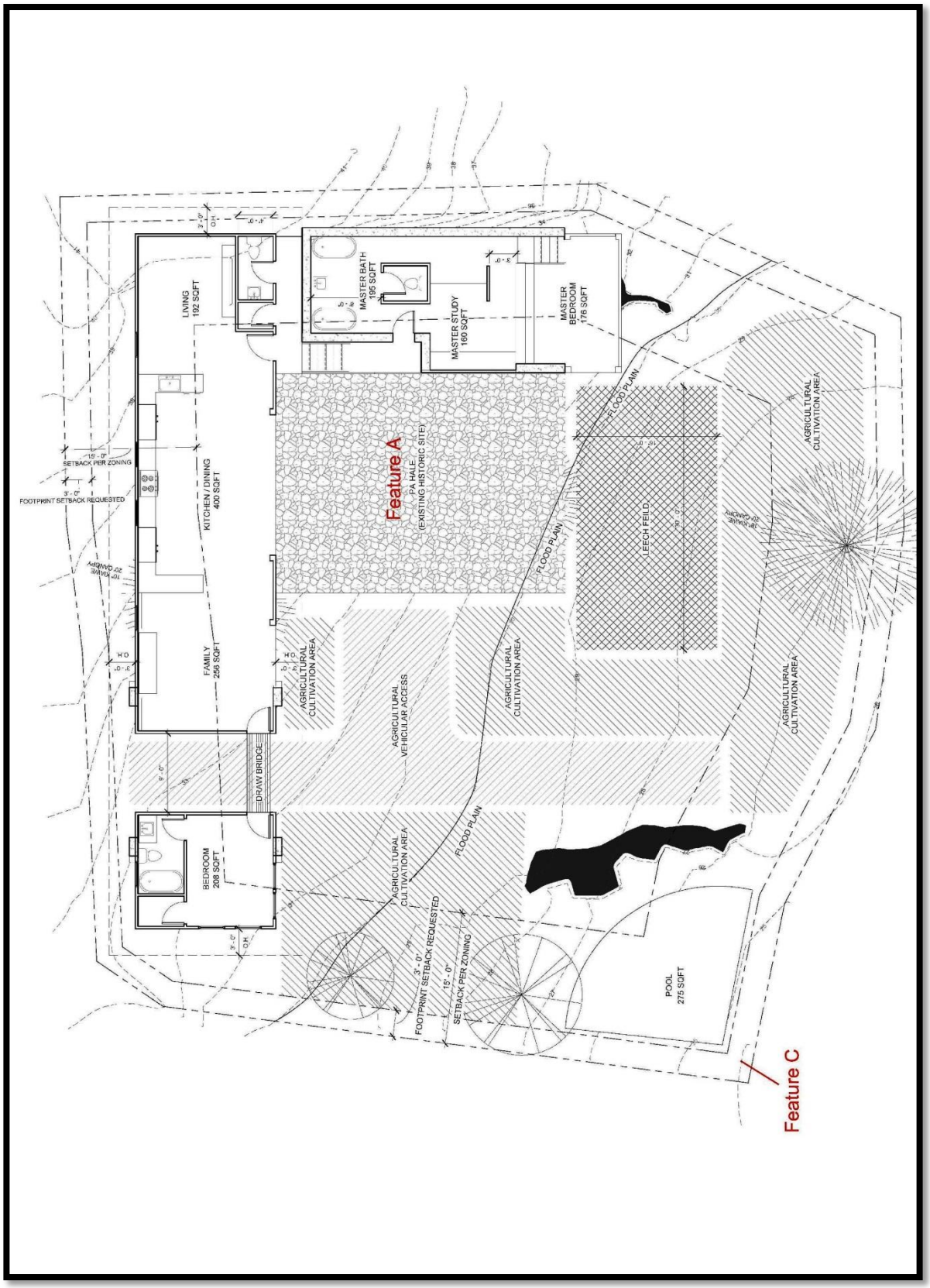


Figure 4. Proposed development

Figure 5. March 8, 2013 aerial view of project area (from Google Earth)

The terrain in the project area slopes gently to the west with the surface comprised of soil and scattered cobbles and pebbles. The soil in the parcel is Kainaliu very stony silty clay loam (KDD; Sato et al. (1973). This soil has a 10" surface layer of very dark brown stony silty clay loam, over 16" of stony silty clay loam and silt loam (*ibid.* 1973:22). This is underlain by fragmental aʻā lava. It has a rapid permeability a slow runoff, a slight erosion hazard, and is classified as suitable for the cultivation of coffee and macadamia nuts and for pasture. The underlying lava was deposited from Hualalai Volcano between 5,000 and 10,000 years ago (Wolfe and Morris Sheet 1 and 2001:12).

The survey indicates that the entire parcel is comprised of an archaeological (Site 7723). Additional information on the project area and this site is included in the Findings section of this report. The entire property was cleared of vegetation by the owner prior to start of the project. The vegetation that remains consists of low grass with scattered *kiawe (Prosopis pallisa*), *koa haole* (*Leucaena glauca*), purslane (*Portulaca villosa*), and bitter melon (*Momordica balsamina*). Overviews of the project area are presented on the cover of this report and in **Figure 6**. There is a modern trailer with a deck and an outdoor shower located in the southwestern portion of the project area (**Figure 7**).

Annual rainfall in the vicinity of the project area ranges from 750 to 1350 mm (30 to 53 inches; Giambelluca et al. 2013). The mean average temperature in this general area is approximately 73.8 degrees F (usclimatedata.com). A well is depicted to the west of the project area on the **Figure 1** quadrangle map; however no water sources are present within the subject parcel.

Methods

Archival research was conducted at the Hamilton Library Hawaiʻi and Pacific Collection at the University of Hawaiʻi at Manoa, the University of Hawaiʻi at Hilo Hawaiian Collection, the Land Survey Office and the Archives Division of the Hawaiʻi Department of Accounting and General Services, the Bishop Museum Archives, the State Historic

Preservation Division library in Hilo, the State Survey Division, and the Hawai'i State Public Libraries in Honolulu and Hilo.

The identified features were flagged with pink and blue flagging tape and a detailed plan map of the parcel was created using a compass and Leica Disto laser distance meter. A datum was established at the northern corner of the Feature A terrace and the location of the datum determined with the aid of a Garmin Global Positioning System (GPS) Model 60-series device using the North American Datum (NAD) 1983 datum. The accuracy of the GPS device for a single point is +/- 3-5 m. This accuracy was increased to approximately 2-3 meters by taking multiple points including property corners and overlying the plotted points on a scaled map using AutoCAD software. The features of the site were photographed and standardized site and feature forms were prepared.

Subsurface testing consisted of the excavation of one 1.0 by 1.0 meter test unit (TU-1447.1) and six shovel probes that varied in size from 0.25 to 0.25 meters (SP-1 through SP-5) to 0.5 by 0.5 meters (SP-6). A total of 1.56 sq meters of excavation was undertaken. TU-1447.1 was excavated in 0.2 meter levels within stratigraphic layers. The shovel probes were excavated in arbitrary 0.2 meter layers and the stratigraphy was defined in the profile of the units. All units were excavated to the bedrock substrate. Architectural layers were dismantled as a single unit. Standardized excavation records were prepared after the completion of each stratigraphic layer. The soil removed during excavation was screened through ¼" mesh hardware cloth and 100% of the cultural material was collected. The portable remains were placed in paper bags labeled with the appropriate provenience information. Charcoal samples were deposited in aluminum foil pouches and placed in properly labeled paper bags. Following the excavation, a section drawing depicting the stratigraphy was prepared and post-excavation photographs were taken. Collected cultural material was transported to Haun & Associates' laboratory for analysis.

Collected artifacts and food remains were qualitatively and quantitatively analyzed. Artifacts were analyzed to determine morphological type, condition, degree of completion and material. Standard typological classifications were used for all artifacts. Food remains were identified to the family level, or to the genus and species level when possible. Quantitative analysis included a determination of total weight and total number of identified fragments (TNF) per taxon.

Figure 6. Project area overview (view to east)

Figure 7. Trailer and deck (view to southeast)

ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

Historical Documentary Research

The project area is situated in the *ahupuaʻa* of Honalo along the western coast of Hawaiʻi Island. This *ahupuaʻa* originates along the shoreline at Kualanui Point and extends inland for approximately 11,630 meters (7.2 miles) to approximately 4,100 ft elevation (**Figure 8**).

The *ahupuaʻa* of Honalo was named for the chief of that name, husband of Hōkūkano. Maly and Maly (2001) translated portions of *Ka 'ao Ho'oniua Pu'uwai No Ka-Miki* (The Heart Stirring Story of Ka-Miki) a legendary account of two supernatural brothers, Ka-Miki and Maka -'iole, who traveled around the island of Hawai'i. Accounts of the Honalo area and Chief Honalo are presented as follows:

> The land of Honalo was named for the chief of that name, husband of Hōkūkano. It was their daughter Kāināliu, who Ka-Miki and Maka-ʻiole brought back to life.
>
> In the lands of Honalo were a large hālau auolo aliʻi (chiefs' compound), and hālau waʻa (canoe long houses). The kālai waʻa (canoe makers) of this region worked under the master Pupukaniaho.
>
> Greeting the companions, Honalo commanded that a feast be prepared to welcome them. All manner of foods were prepared and ʻawa from the uplands of Keauhou was served. After the feast and ʻawa ceremonies, Ka-Miki, Maka-ʻiole, and Keahiolo went to the hālau waʻa where numerous kaʻele (hollowed hulls) were being worked on, some nearly finished with the manu (end pieces) ready to be placed on the hulls.
>
> In the meantime, the chiefs of Keauhou greatly desired to meet with Ka-Miki, Maka-ʻiole, and Keahiolo, for a rumor arose that Ka-Miki and his companions were plotting to overthrow Pōhakunuiokāne and the chiefs of the region. Thus the chiefs sent their runners, Kuhia and ʻŌulu to find Ka-Miki and his companions, and bring them back dead or alive. Kuhia11 and ʻŌulu went first to Keahiolo's compound, but could not find Ka-Miki mä. Kuhia and ʻŌulu then went to Honalo.
>
> Kuhia and ʻŌulu arrived at Honalo and asked for the brothers and Keahiolo. Ka-Miki told all those assembled in the hālau to stay inside, and that any who tried to go out would be killed. Honalo gave Ka-Miki power over those inside the hālau. Kuhia and ʻŌulu announced that they intended to bring Ka-Miki, Maka-ʻiole, and Keahiolo before the chiefs and assembly at Keauhou. The chiefs wished to question Ka-Miki mā about rumors that they were rebels. Kuhia and ʻŌulu threatened to kill those within the hālau, if Ka-Miki mā were not turned over to them. As Kuhia and ʻŌulu readied their stones for the attack, Ka-Miki leapt to the entry of the hālau and called to the runners, that they should be careful lest they become the shark bait of his uncle Kapukalua at Apoʻula, Kohana-iki.
>
> Now Kuhia and ʻŌulu were masters at nou ʻolohū (fighting with ʻulu maika stone trippers), and Kuhia threw his stone attempting to hit Ka-Miki. But Ka-Miki dodged the ʻolohū, and Maka-ʻiole caught it, ʻŌulu tried with his stone, and Ka-Miki dodged it as well. Ka-Miki then leapt to attack the runners, saying that they would now be laid to rest. Kuhia and ʻŌulu saw that they had no retreat, and were killed.
>
> Thus, Pupukaniaho, the kālai waʻa, priests, and people in the hālau realized, that if Honalo had not given his power to Ka-Miki, they might all have died. Ka-Miki then returned the power to

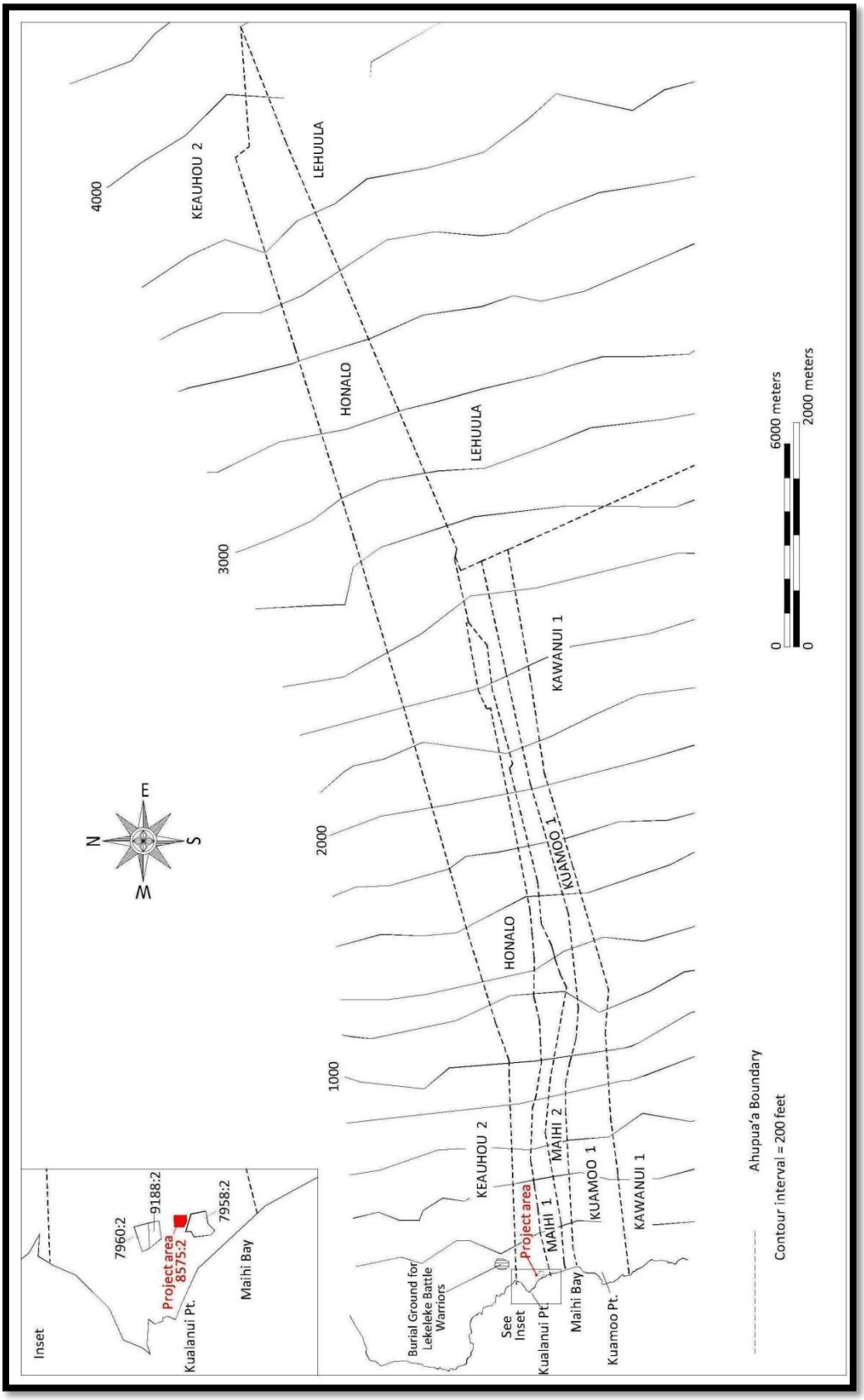


Figure 8. Ahupua'a boundaries and Land Commission Awards

> Honalo, but asked that no one say anything about this event to those from Keauhou. Ka-Miki then had Kuhia and ʻŌulu buried in the cave of Keanawai, a cave in the uplands of Honalo, where the tall ʻōhiʻa, uluhe, and ʻāmaʻumaʻu forest grows.
>
> With the setting of night, Honalo ordered a feast and ʻawa ceremony to be held. The ʻawa was so powerful that Honalo and all who drank it fell asleep, and only Ka-Miki, Maka-ʻiole and Kāināliu remained awake. The brothers decided to go to Lehuʻula, and called to Kāināliu, "Kāināliu-ku-kohu-ka-lani, ka pua nenehiwa o Kona kai ʻōpua" (Kāināliu appears with heavenly beauty, the prized flower of Kona with the billowy horizon clouds), and asked her to join them. (Maly and Maly 2001:28-29)

Native Hawaiian historic accounts and the observations of early foreign visitors such as Ellis and Wilkes describe the extensive cultivated slopes that included Honalo Ahupua`a. The cultivated lands, today known as the Kona Field System, were in intensive use during late prehistoric times. The field system extends north to Kau Ahupuaʼa, south to Honaunau, and from the coastline to the forested slopes of Hualalai.

This agricultural landscape was described by Archibald Menzies, a crew member on voyages by Captains Cook and Vancouver:

> ….the country became more and more fertile, being in a high state of cultivation. For several miles round us there was not a spot that would admit of it but was with great labor and industry cleared of the loose stones and planted with esculent roots or some useful vegetables or other. In clearing the ground, the stones are heaped up in ridges between the little fields and planted on each side, wither with a row of sugar cane or the sweet roots of these islands (*Dracena ferrea,* Linn [Ti]) where they afterwards continue to grow in a wild state, so that even these stony, uncultivated banks are by this means made useful to the proprietors, as well as ornamentals to the fields they intersect. (Menzies 1920:75)

Menzies also describes the area inland of the agricultural fields. He states that, "at the verge of the woods…" were "luxuriant groves of plantains and bananas (1920:76, 80). He also documented several inland villages. "The villages we passed in the woods I said were temporary, as the occupiers, consisting of a few families, had come up here only for a time to pursue various occupations" (1920:82).

One event in history with particular significance to the general project area vicinity is the Battle of Kuamoʻo, an 1819 rebellion by defenders of the traditional religion against the newly Christianized Hawaiian monarchy. The religious rebellion was led by Kekuaokalani against the young King Liholiho. The rebellion was prophesized by the *kaula* (prophet or seer) Kapihe in the 1770s (Maly and Wong-Smith 1999). Kamehameha's consort, Kaʻahumanu aided the young king in the overthrow of the *kapu* system in 1819. After Liholiho formally dissolved the ancient system by eating with his mother, Keopuolani, and Kaʻahumanu, the king ordered the destruction of heiau and overthrow of the old idols. Liholiho's cousin, Kekuaokalani, who was the keeper of the war god Kukailimoku, was enraged by the destruction of the ancient *kapu* system and mounted a rebellion from Kaʻawaloa on the north side of Kealakekua Bay. After a failed attempt to peacefully end the rebellion by Keopuolani, Liholiho's forces, led by Kalanimoku met Kekuaokalani's forces initially at Lekeleke in Keauhou 2. After an initial skirmish at Lekeleke, the main battle occurred in Kuamoʻo near the coast. After a furious battle Kekuaokalani was finally killed and his forces dispersed.

According to Stokes and Dye (1991:89), most of the battle took place near the coast, between Kekuaokalani Heiau in Maʻihi south of Lonohelemoa Heiau in Kuamoʻo, located just south of Honalo. The missionary Reverend William Ellis visited the Lekeleke battle site and made the following observations in 1823:

> After traveling about two miles over this barren waste, we reached where, in the autumn of 1819, the decisive battle was fought between the forces of Rihoriho [Liholiho, Kamehameha II], the present king, and his cousin, Kekuaokalani, in which the latter was slain, his followers completely overthrown, and the cruel system of idolatry, which he took up arms to support, effectually destroyed.
>
> The natives pointed out to us the place where the king's troops, led on by Karaimoku [Kalanimoku] were first attacked by the idolatrous party. We saw several heaps of stones, which our guide informed us were the graves of those who, during the conflict, had fallen there.
>
> We were then shewn [shown] the spot on which the king's troops formed a line from the sea-shore to towards the mountains, and drove the opposing party before them to a rising ground, where a stone fence, about breast high, enabled the enemy to defend themselves for some time, but from which they were at length driven by a party of Karaimoku's [Kalanimoku's] warriors (Ellis 1963:78).

Some of the fallen warriors of the battle are interred in coastal Keauhou 2. The location of this burial site is depicted on **Figure 8.** The site is known as the Lekeleke Battle site where the first skirmish of the rebellion took place and where Ellis visited in 1823.

Stokes, cited in Stokes and Dye (1991) writes of Kualanui Heiau (Site 3808) in Honalo Ahupuaʻa, located between the government road and the shoreline, south of Lekeleke Bay along the shoreline at Kualanui Point. His description of the site is as follows:

> Heiau of Kualanui, land of Honalo, North Kona. Located south of the bay on the flat between the lower government road and the sea. …This is a *heiau* composed of two platforms. The larger, lower platform rises 2 to 3.6 feet high depending on the contour of the ground. The smaller platform is 2 feet higher than the main portion. The entrance would seem to be at the southeast corner, where the main platform slopes downward to the ground. No local history (Stokes and Dye 1991:86).

Further evidence of the cultural significance of the project area vicinity is indicated by Reinecke (1930) as reported in Maly and Wong-Smith (1999):

> …there were numerous graves in a *mauka* section of Maʻihi and Honalo as well as a *holua* (Site 85, SIHP 1753) about 14' – 15' wide and 2' above surface, roughly paved running down within 100' of the shore so that athletes could leap into the water after their slide, and extending 1,000 feet *mauka* (Maly and Wong-Smith 1999:B-1:32)

Maly and Wong-Smith (1999) cite Boundary Commission testimony relevant to the project area:

> Boundary Commission testimonies (in the collection of the authors) record that Kaʻilikini, a native female resident identified "Leinakaloa" as "the name of a canoe landing on the boundary of Maʻihi 1 and 2. A *pali* between "Koa Opelu" (an *opelu* fishing station marker) belongs to Maʻihi 1. Boundary at shore between Maʻihi 1 and Honalo is a Keawakui…Mahikua is on Honalo…
>
> Ehu also testified that Leinakaloa was the boundary at the shore between Maʻihi 1 and 2. He added that "Ancient fishing rights extend out to sea, the *poeplu* belong to Maʻihi and the *ahi* to Keauhou…Mahikua, a cave, is the boundary between Honalo and Maʻihi 1, a bathing place near Kailikini's house is not on the boundary but is on Maʻihi. The boundary is a little on the south side from Mahikua…Leinakaloa is a place on the shore where Umi chased a chief into the sea (Boundary Commission Testimony Aug. 8, 1873; In Maly and Wong-Smith 1999:B-I:28).

In the 1840s, political acts of the Hawaiian Kingdom government would change the land tenure system in Hawaiʻi.

All lands were segregated into one of three categories: "Crown Lands" owned by the occupant of the throne, "Government Lands" controlled by the state, and "*Konohiki* Lands" controlled by the chiefs; and "were all subject to the rights of native tenants" (Chinen 1958:29, Beamer 2014:143). In 1846, King Kamehameha III appointed a Board of Commissioners commonly known as the Land Commissioners, to "confirm or reject all claims to land arising previously to the 10th day of December, AD 1845." Notices were frequently posted in *The Polynesian* (Moffat and Kirkpatrick 1995); however, the legislature did not acknowledge this act until June 7, 1848 (Chinen 1958:16; Moffat and Kirkpatrick 1995:48-49) and the act is known today as *The Great Māhele*. In 1850, the Kingdom government passed laws allowing foreigners to purchase fee simple lands (Speakman 2001:91). The Kuleana Act of 1850 allowed for fee simple land ownership by commoners.

The Waihona ʻAina (2000) Māhele Database; which is a compilation of data from the Indices of Awards (Indices 1929), Native Register (NR n.d.), Native Testimony (NT n.d.), Foreign Register (FR n.d.) and Foreign Testimony (FT n.d.) provides information on the Land Commission Awards (LCA) during the Māhele. This database indicates that 15 claims were made for parcels in Honalo Ahupuaʻa. These 15 claims are summarized in **Table 1**. Of the 15 LCA claims, only 12 were awarded, and of these 12, only four are depicted on current tax maps of the area (LCAs 7958, 7960, 8575:2 and 9188 – see **Figure 8**). The claims list ten *ʻili.* Kamakauakua, Haleili, Kapukanui, and Kamuku are listed twice and Haleape, Kahoauauhi, Kiekie, Uhapuaa, Kapukalua, and Haleolono are listed once. The testimony mentions the cultivation of taro (*kalo* – 3), sweet potato (*uala - 2*), potatoes (1) and *kou* trees (1).

The present project area corresponds to LCA 8575:2 that was awarded to Kaiakahauli. According to the LCA testimony Kaiakahauli's claim included an inland parcel comprised of 19 *kihapai* or garden plots (Parcel 1) and seaward parcel with a *pā hale* or house lot (Parcel 2). The project area corresponds to the Parcel 2 house lot. This pattern of coastal house lots and associated upland agricultural parcels is seen throughout the Kona region. This coastal/upland relationship is described by Borthwick et al. (1997:10) below:

> This Mahele induced pattern reflects the traditional Hawaiian settlement pattern where permanent habitation was concentrated at the coast and subsistence oriented agricultural pursuits extend up slope in a zonal pattern based on the correlation between rainfall and elevation. Traditionally there was a continuum of utilization through the zones (Kula, Kalu'ulu, Apa'a, and Ama'u). However, because of restrictions of the Kuleana Act itself, claimants were only awarded certain specific lots. Thus, the mid-1800's settlement pattern, as evidenced by the LCA data, included permanent habitation coastal house lots with upland agricultural lots. The upland lots, however, were separated by a considerable expanse of land that had formerly (traditionally) been an integral part of the agricultural system which provided the necessary mix of subsistence oriented crops. (Borthwick et al. 1997:10)

Emerson's 1891 Register Map #1281 (**Figure 9**) obtained from the Archives Division of the Hawaiʻi Department of Accounting and General Services (http://ags.hawaii.gov/survey/map-search), indicates that the seaward portion of Honalo, comprises Grant 1595 awarded to J.N. Travis. The parcels immediately inland of this grant consist of Grant 1594 to Poka and Grant 1172 to Kamoehalea. Maly and Maly (2001) annotated the Emerson 1891 map and depicted two *mauka-makai* (inland-seaward) trails that extend through the central portions of Honalo (Honalo Trail) and Maihi 1 (Maihi Trail – see **Figure 9**). These trails extend between the Old Government Road (Alanui Aupuni or Site 10290) and St. Paul road. The Maihi Trail originates at a cattle pen on an inland side of the road.

The Alanui Aupuni extends along the inland side of the project area *ahupuaʻa.* The construction of the road was initiated by Acting Governor George Kapeau in 1847 (Alvarez 1989:35). The road began at the Paris' house in Kuapehu inland of the *pali* (cliffs) in Kaʻawaloa. Work on the road was completed in the late 1850s. The road is also known as the "Old Government Road (Alanui Aupuni) and the "Road from Kealakekua Pali" (1989:3.36).

Table 1. Summary of Land Commission Awards in Honalo

LCA	Claimant	Awarded	Testimony	Date received	Received from:	Source
3695	Heleaole	Yes	A house lot which belonged to my father. He is now deceased, and it was inherited by me (sketch). Waiau Sworn: I know his parcel, a Pahale in the ili of Kamakauakua, Honalo Ahupuaa	1839	Parents	NR 8:486, NT 4:653
5249	Kuapuu	Yes	An Ili in the ahupuaa of Honalo, received from my father who had it. When he died, it came to me. I also have a mala kope in another Ili. My right in that Ili came to me from the Konohiki. Kahunanui & Kuanuuanu Sworn: We know her claim, it is in the Ili of Haleape, Honalo Ahupuaa.	1819	Naaiokalani	NR 8:170-171, NT 8:646
5412	Umiokalani	No	A section of land above the pa pipi (cattle enclosure, up to the koa grove used for canoe making (koa waa). Ehu, Sworn, says, I am a kamaaina of Honalo and have charge of that land at the present time under the Gov't. I know the claim of Umiokalani in Honalo. It is a piece of Kalo and potato land, 5 kihapais. The Konohiki has all of these as Koeles however, Umiokalani having given over this land to the Aupuni in 1848. He was only a Konohiki then & has no title of his own. The land is now worked by others.	1848	Umiokalani	NR 8:179, NT 8:684
7958	Keliinohokaha	Yes	My claim is at Honalo, and extends from the ohia woods in the uplands, to the sea. The name of this moo aina is Kapukanui. That is my land claim, received from my kupuna (grandparents), parents, an to me. Here also is my Pahale , on this land, at the shore. It is 210 feet long by 130 feet wide. Kaanehe & Poka Sworn: we know his claim. Parcel 1 is the Ili of Kapukanui, Honalo Ahupuaa . Parcel 2 is a Pahale at Kapukalua.	1819	Parents	NR 8:517-518, NT 8:643
7959	Kuanuuanu	No	I have a claim for a moo aina near along the shore at Honalo, it is named Kamakauahua. I received it from my grandparents and parents. My kuleana extends from the ohia woods to the sea (moana). Kuapuu & Kahua Sworn: We know his claim, it is the ili of Kamakauakua, Honalo Ahupuaa.	1819	Umiokalani	NR 8:518, NT 8:642
7960	Kahalio	Yes	I have a kuleana moo aina at Honalo, it extends from the ohia woods to the kula . The moo aina is named Haleili. It is an old land from my parents, to me. Poka & Kaanehe Sworn: We know his claim, it is the Ili of Haleili, Honalo Ahupuaa	1819	Parents	NR 8:518, NT 8:643
7961	Kaanehe	Yes	I have a kuleana moo aina at Honalo, it extends from the koa woods to the apaa (arid plain or flat lands). The moo aina is named Kuluauauhi. I have had this kuleana for 17 years. I also have a Pahale at the shore of Honalo. It is 283 feet long by 336. Poka & Keliinohokaha Sworn: We know his claim, the Ili of Kahoauauhi, Honalo Ahupuaa	1839	Kahlele	NR 8:518-519, NT8:643
8575 (Project area)	Kaiakahauli	Yes	I have a kuleana kihapai uala , there are 19 kihapai planted. That is my claim in Honalo. Kaiakahauli's heir is Popoki. Kaanehe & Poka Sworn: We know his claim. Parcel 1 is 19 kihapai kalo & uala at Haleili, Honalo Ahupuaa . Parcel 2 is a Pahale in the ili of Kapukanui.	1819	Parents and Miimii	NR 8:519, NT 8:643
7963	Kuokoa	Yes	I have some kihapai at Honalo. There are 15 kihapai, and it is an old right, from my kupuna and makua , to me. Kahaialii & Pukui Sworn: We know his claim, it is 35 kihapai kalo and uala in the ili of Kiekie, Honalo Ahupuaa.	1819	Parents	NR 8:519, NT 8:644
7964	Kahaialii	No	I have a moo aina at Honalo, an Ili that extends from the ohia woods to the ulu grove. It is an old right from my makua , on this Ili aina . There is also a claim at Uhapuaa, some kihapai of mine. And a Pahale at the shore of Honalo. Kaanehe & Pukui Sworn: We know his claim. Parcel 1 is in the Ili of Uhapuaa, Honalo Ahupuaa. Parcel 2 is a Pahale in the ili of Kamakauakua, Honalo Ahupuaa.	1819	Parents	NR 8:519, NT 8:644
7965	Kawahaaiai	Yes	I have a claim for some kihapai at Honalo. There are 4 kihapai in the moo aina of Kapukanui, 3 kihapai in the Ili of Haleolono, and 1 kihapai in the moo aina of Kumukou. Poka & Kahaialii Sworn: We know his claim. parcel 1 is 4 kihapai kalo in the ili of Kapukalua. Parcel 2 is 3 kihapai kalo at Haleolono. Parcel 3 is a kihapai kalo at Kamuku.	1844	Keliinohokaha	NR 8:519-520, NT 8:644-645
7978	Poka	Yes	I have a claim in a moo aina , it extends from the kalu ulu to the amaumau in the uplands. My right is from my kupuna and makua , to me. The moo aina is named Kamuku, in this ahupuaa of Honalo. I also have a Pahale at the shore of the ahupuaa of Honalo. Kaanehe & Keliinohokaha Sworn: We know his claim. Parcel 1 is in the Ili of Kamuku, Honalo Ahupuaa. Parcel 2 is a Pahale in the ili of Kapukalua, at Honalo.	1819	Parents	NR 8:521, NT 8:643
7979	Pinao	Yes	I have a claim for a moo aina , which I received from my kupuna and makua . The moo aina is named Haleolono. It extends from the wooded uplands to the kalu ulu. I also have a claim for a Pahale , there are two lots for me, handed down from my kupuna and makua . It is there at the shore. Pinao deceased, his heir is his son, Imaikalani. Kaanehe & Pukui Sworn: We know his claim. Parcel 1 is in the Ili of Haleolono at Honalo. Parcel 2 is a Pahale in the ili of Kiakia at Honalo. Thgese parcels were surrounded by the land of the konohiki	1819	Kupuna	NR 8:521, NT 8:644
8578 B	Kaikahuli	Yes	I have a Pahale situated at the shore of Honalo. I have kou trees planted within the lot.	n/a	n/a	NR 8:536
9918 (9941)	Lumihai	Yes	It is 84 feet long by 84 feet wide…that is my Pahale . I have a claim for a moo aina , a kihapai, in the ahupuaa of Honalo. I have 34 kihapai in this ahupuaa . Pukui & Kahaialii Sworn: we know his claim. Parcel 1 is 34 kihapai kalo & uala at Kamuku, Honalo Ahupuaa . Parcel 2 is a Pahale at Kamakauakua.	1839	Maiola	NR 8:578, NR 8:581, NT 8:641

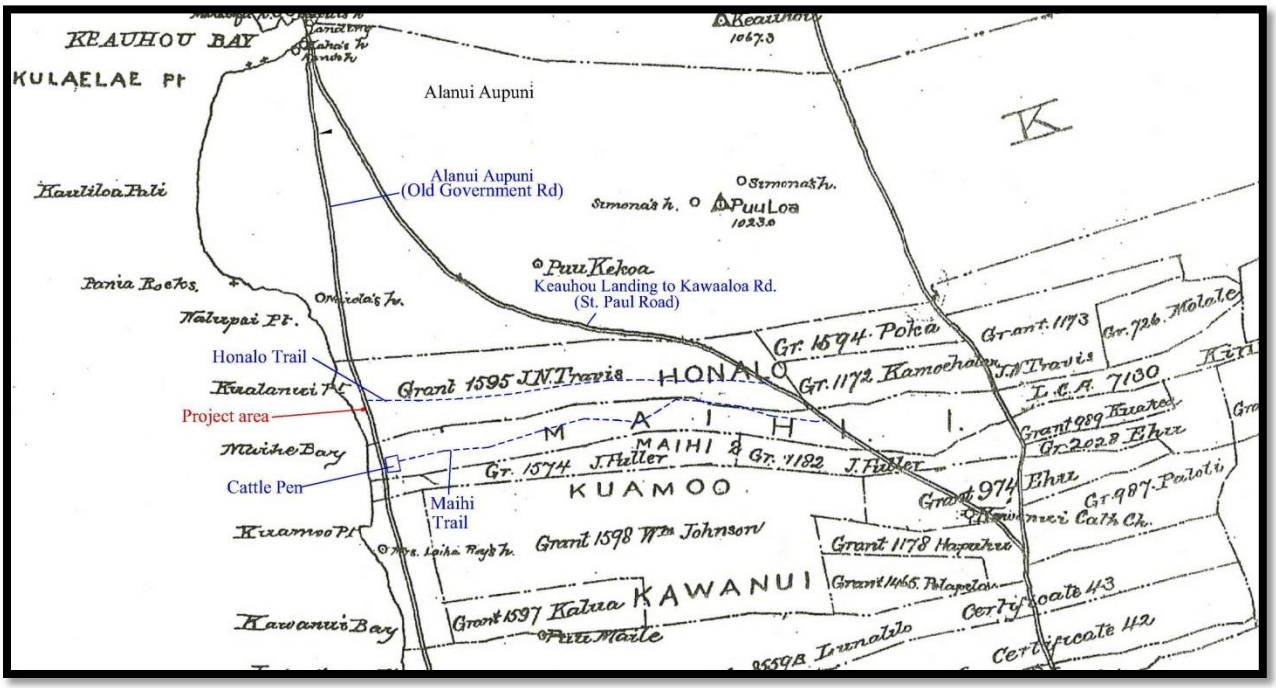


Figure 9. Portion of Emerson's 1891 Register Map #1281 (annotations based on Maly and Maly 2001)

As stated above Land Grant 1595 was awarded to J.N. Travis who served as the North Kona Road Supervisor in the mid-19th Century. A map of this grant is presented in **Figure 10**. The testimony for this grant, reproduced in Maly and Maly (2001:82) is as follows:

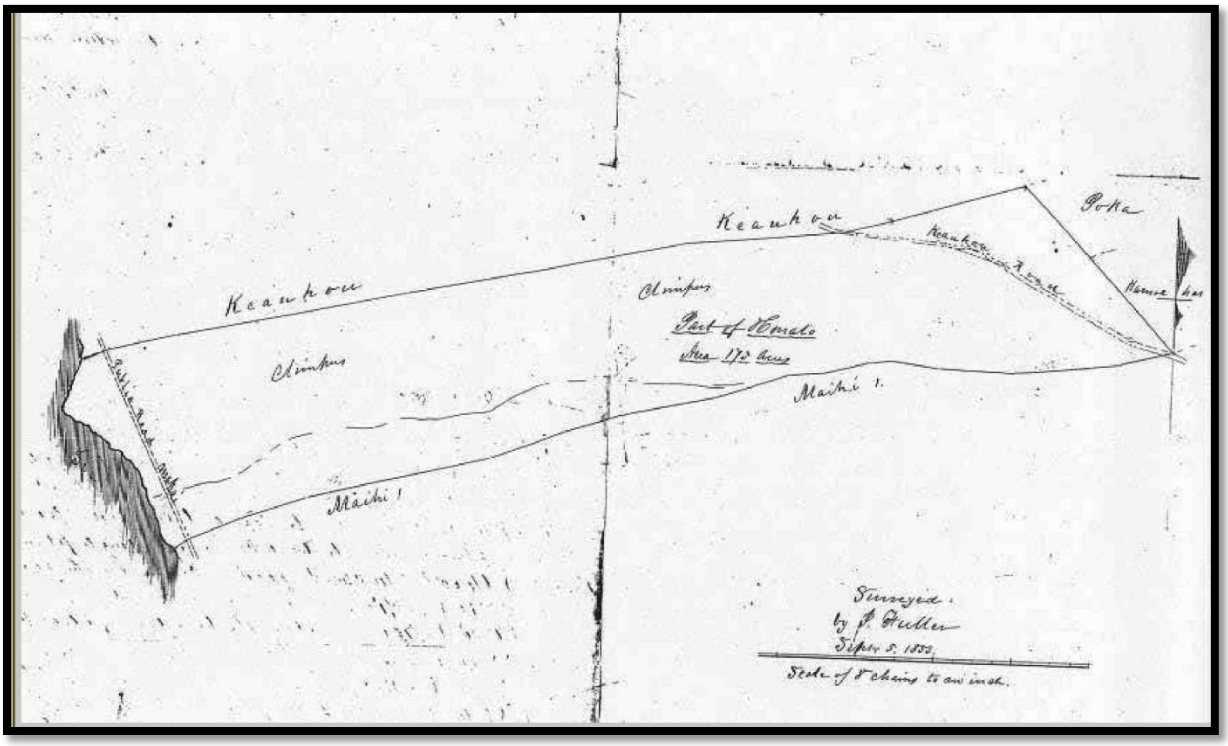


Figure 10. Survey of Grant No. 1595 to J. Travis at Honalo (from Maly and Maly 2001;185)

> September 6, 1853,
> Royal Patent Grant 1595 to J. N. Travis, at Honalo:[summary] Bounded, east by lands of Kamoehalau and Poka; south by Maihi 1; west by the sea; and north by Keauhou. The road from Keauhou Landing to the Kealakekua-Kailua Road crosses diagonally through the upper portion of the land, and the "Public Road makai" passes through it near the shore. Containing 175 acres [Land Division].

Maly and Maly describe the development of cattle ranching in the Kona area (2001:277-279). According to this account, prior to the Māhele the majority of the cattle on the island belonged to either the King, the government or select foreigners. By 1851, there were approximately 20,000 cattle on Hawaiʻi, with an estimated 12,000 being wild. Following the *Māhele* and Royal Patent Grant program, the issuing of land ownership made possible the development of large scale ranching. According to Maly and Maly:

> Every ahupuaʻa in the area between Keauhou to Kealakekua (as well as on lands to the north and south) was put into ranching…The ranches of this region were generally situated in the uplands—between the 1,500 to 4,500 foot elevation, and above the lands that in the same period were being turned over to the cultivation of coffee and other crops—where cooler weather and rainfall could be relied upon to support the activity. As reported in several of the communications cited earlier, there were also important mauka-makai trails at various locations in the Keauhou-Kealakekua vicinity (such as Honalo, Kawanui, Lehuʻula, Honuaʻino, Kalukalu, Onouli, and Kaʻawaloa), where ranchers would drive their cattle to the lowlands for grazing and shipping. Māhele records also tell us that the native Hawaiian land owners in the same region, kept pigs and goats (and probably cattle and horses) on their own lands at lower elevations as well. (2001:279)

Figure 11 is a portion of the 1928 Keauhou to Onouli Section – Real Property Tax Office Map ((http://ags.hawaii.gov/survey/map-search). This map depicts several houses along the inland side of the Alanui Aupuni in the vicinity of the project area, along with clusters of houses along the inland and seaward sides of the upper road. This map also shows the West Hawaii Railroad extending through Honalo and midway between the coast and the upper road. Construction of the railroad began in 1901 by the West Hawaii Railway Company (Condé and Best 1973). The railroad was constructed to transport sugar cane to the Kailua Sugar Company Mill situated in Waiaha. Sugar cane was initially grown between Waiaha and Kaumalumalu (Maly and Maly 2001). It's success there lead to an expansion of the fields to as far south as the northern boundary of Keōpuka where the railroad was situated at the low end of the fields that extended upslope to the Mamalahoa Highway.

By the beginning of the 20th Century, the traditional subsistence and coastal settlement pattern was completely supplanted by the market economy and a concomitant shift to dispersed and clustered settlement and commercial establishments along the *mauka* Alanui Aupuni, predecessor to the Mamalahoa Highway. By the 1970s, the rapidly developing tourism industry began to transform the region's land use from ranching and commercial agriculture, except coffee production, to subdivisions, resorts, and commercial establishments.

Figure 12 is a portion of an aerial view of the project area vicinity taken on January 18, 1965 by the U.S. Geological Survey and obtained from the University of Hawaiʻi at Manoa online library (http://magis.manoa.hawaii.edu). This map depicts widespread clearing throughout the region. It also indicates no obvious development within the project area.

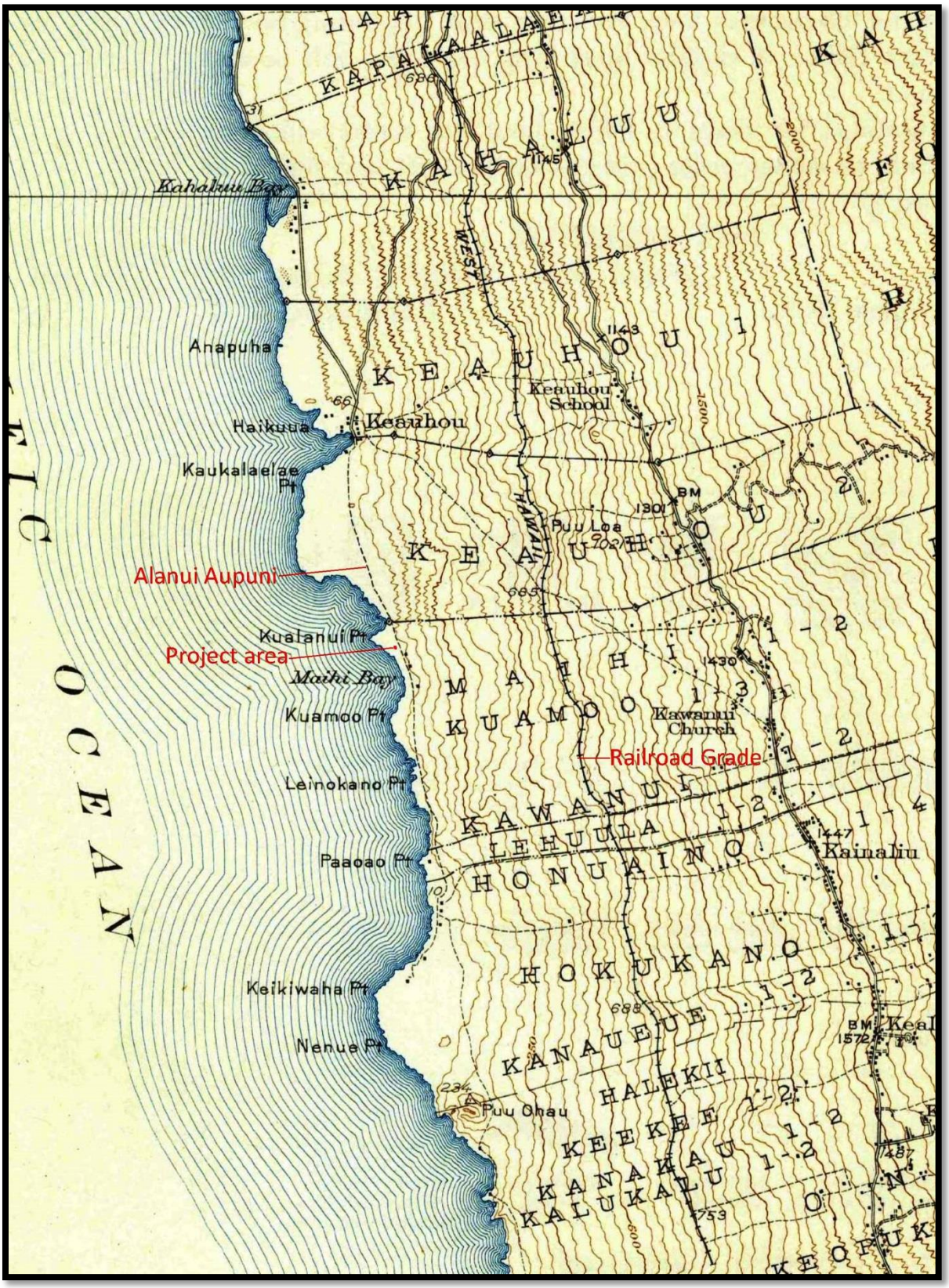


Figure 11. Portion of 1928 Keauhou to Onouli Section – Real Property Tax Office Map showing project area

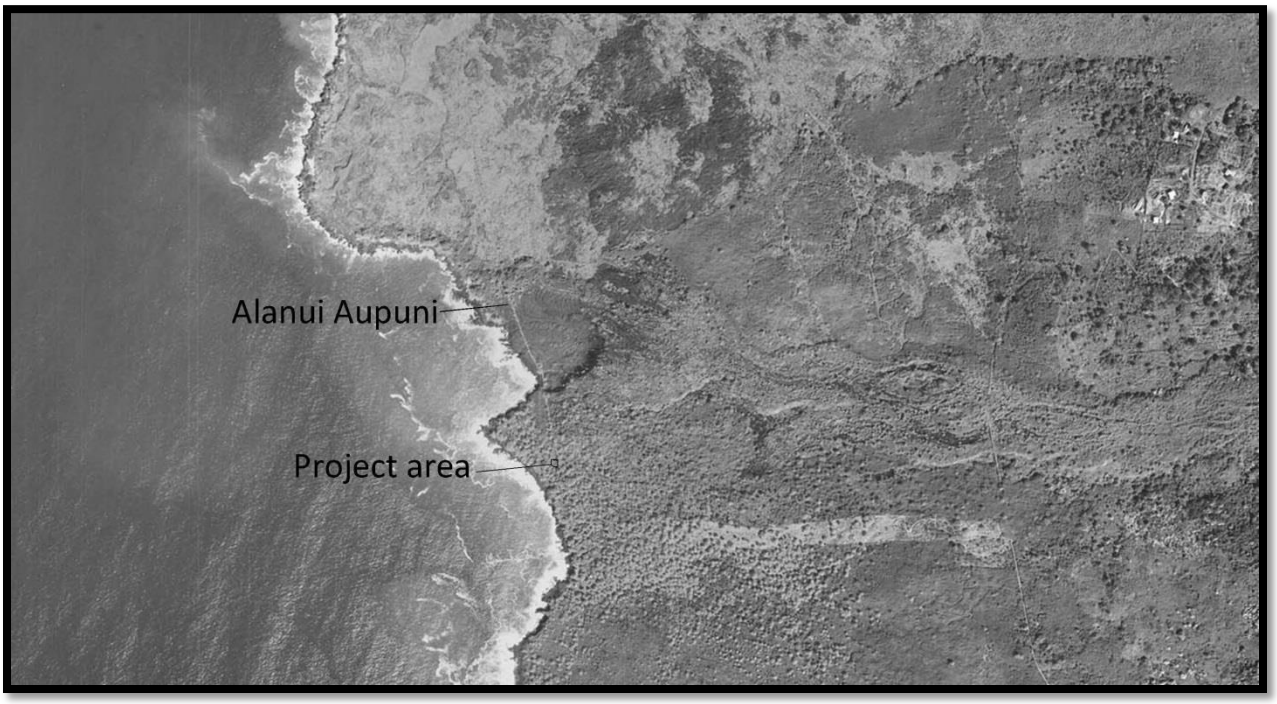


Figure 12. January 18, 1965 aerial view of project area vicinity

Previous Archaeological Research

Portions of Honalo Ahupuaʻa have been subjected to prior archaeological surveys. The seaward portion of the *ahupuaʻa* was first examined in 1906 by J.F.G. Stokes (cited in Stokes and Dye 1991), who identified Kualanui Heiau between the coast and the Old Government Beach Road (**Figure 13**). William Reinecke returned to this area in 1930 and identified ten sites (Sites 77-86) in Honalo. A plan map of the Kualanui Heiau (**Figure 14**) was prepared along with brief written descriptions for the ten sites. These sites consist of four house complexes (Sites 77, 80, 81, 82, and 83), two walls (78 and 86), Kualanui Heiau (Site 79) and a *hōlua* slide (Site 85). Reinecke (1930:109-110) describes the houses in the area as "modern", suggesting that they were potentially occupied at the time of his survey or may have contained remnants of recent wooden superstructures.

This coastal area was also examined in 1971 during the Statewide Survey of Historic Places survey that extended along the west coast of Hawaiʻi Island. The sites noted by Reinecke (1930) were designated as the Honalo Complex and assigned State Inventory of Historic Places (SIHP) Site number 4161. The Site 79 *heiau* was subsequently designated as SIHP Site 3808.

A series of reconnaissance surveys were conducted in coastal Honalo by Soehren (1980a and 1980b) and Ahlo (1981). Soehren (1980a) surveyed an area seaward of the government road and relocated sites previously documented by Reinecke (1930). The locations of the sites identified during these surveys are presented in **Figure 15**, prepared by Mills and Irani (2000:84).

Soehren (1980a) surveyed an approximately 7.5 acre portion of Honalo, including the present project area. This project documented 22 sites with 25 features consisting of 16 burials (Sites 1749, 1750, 1751-b, 1752, 1753-a, 1754-a, 7710-7716, 7718, 7719, and 7721), six house sites (Sites 1751-a, 1754, 1755, 7709, 7717, and 7723 [current project area]), an historic well (Site 7724), a potential fishing shrine (Site 7720), and the *hōlua* slide (Site 1753).

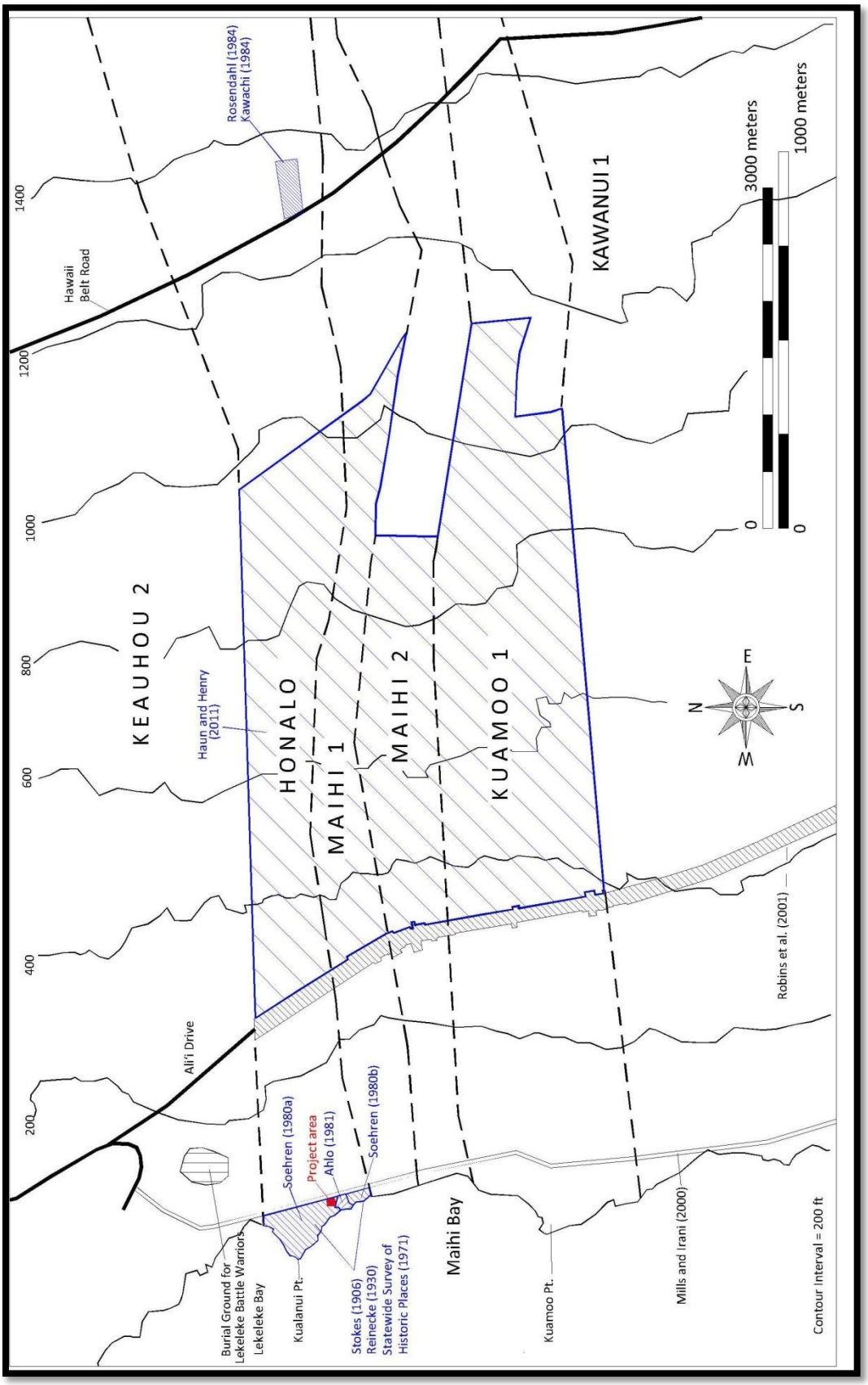


Figure 13. Previous archaeological work

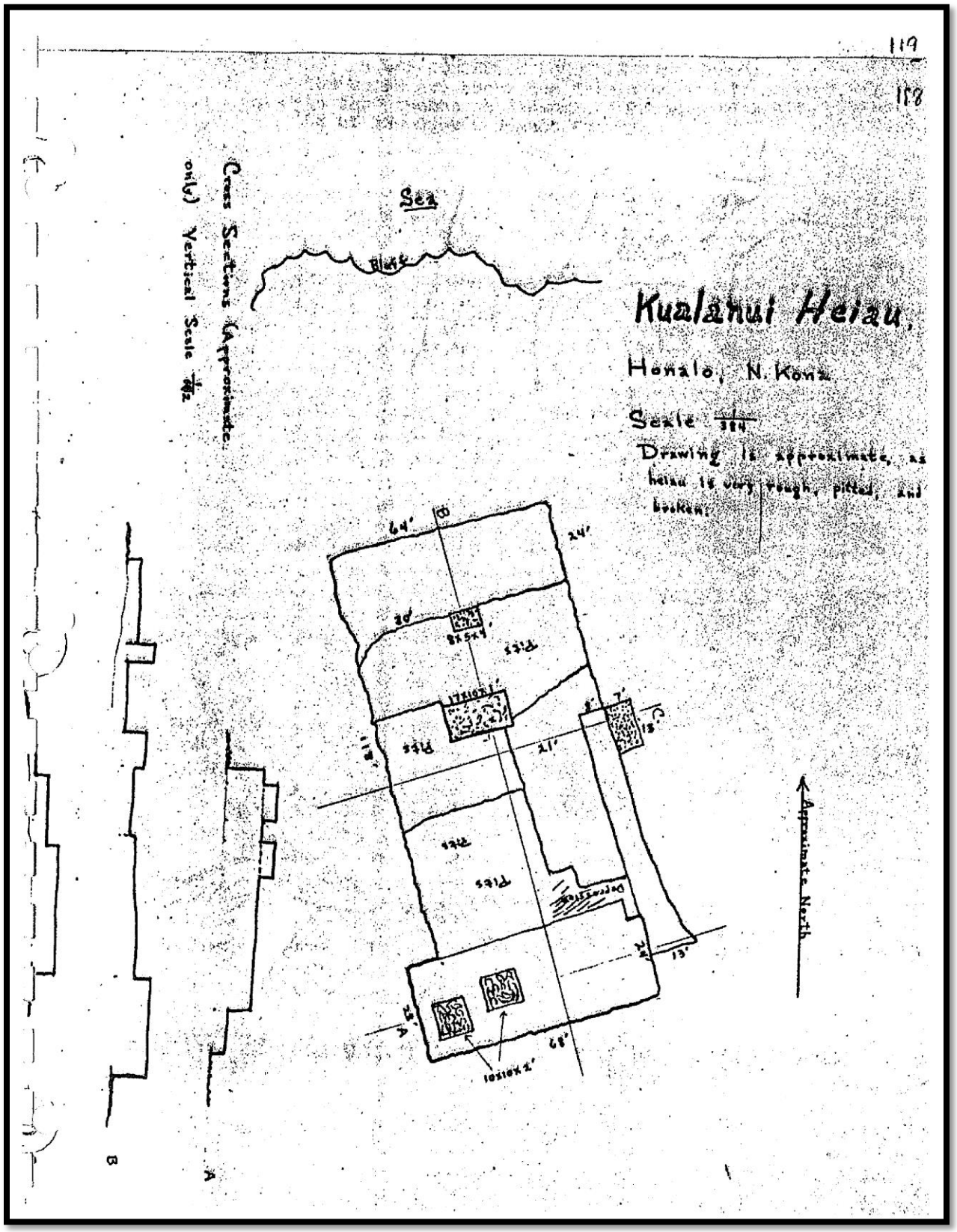


Figure 14. Plan map of Kualanui Heiau from Reinecke (1930:118)

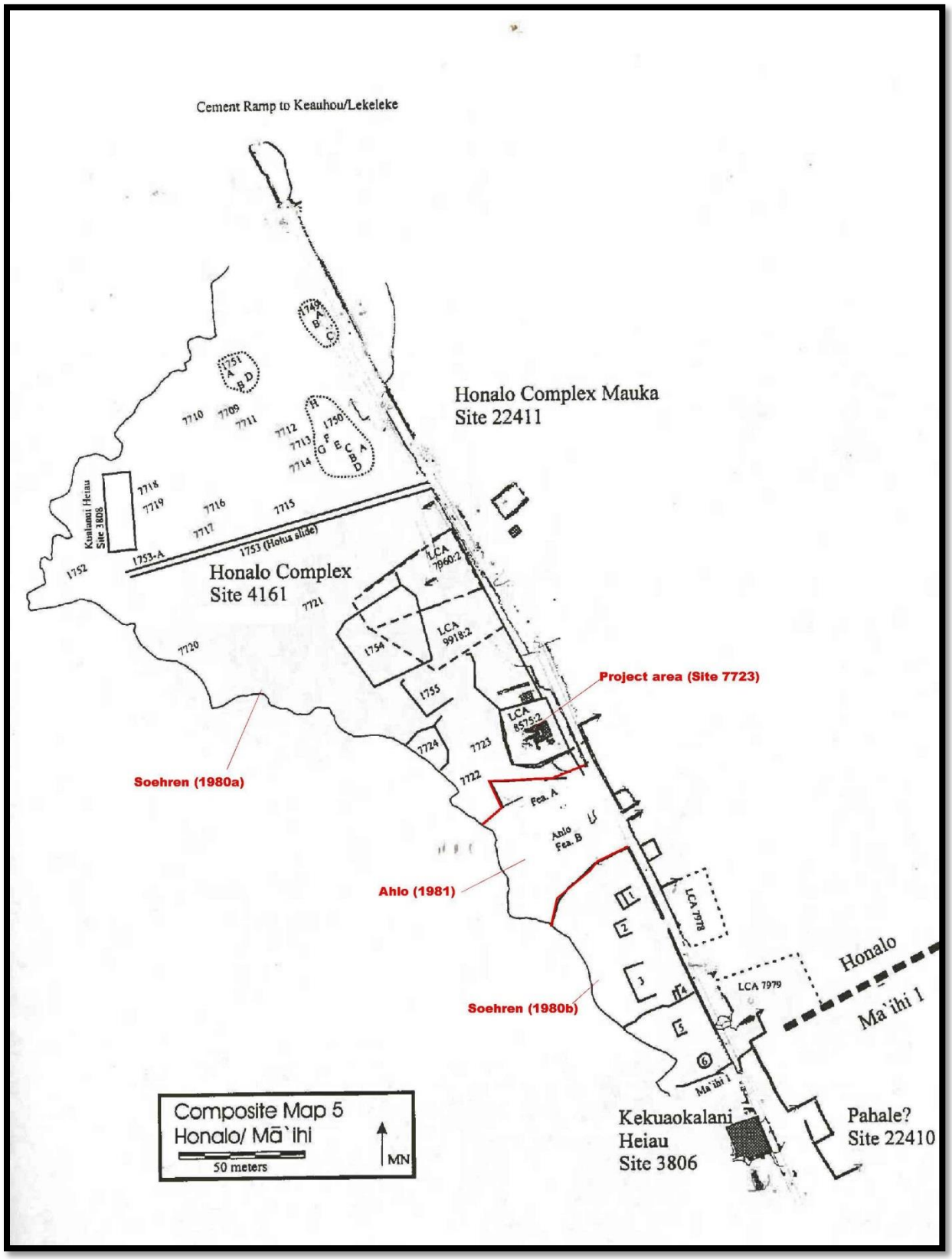


Figure 15. Location of sites identified in coastal Honalo modified from Mills and Irani (2000:84)

Soehren (1980a) also examined Kualanui Heiau and determined it to be in close proximity to two house sites (Sites 1751-A and 7709). Soehren suggests that these sites were potentially occupied by *kahuna* and that the burials in the area are also associated with the *heiau:*

> The number of graves in the immediate vicinity, most of which appear to be post-contact (after 1778), may reflect the sanctity attributed to the heiau or its environs. The possibility that interments may have been made in the heiau itself must also be considered, although its surface has been extensively torn up, some parts remains undisturbed. The destruction may have resulted from the defeat of Kekuaokalani nearby and the resultant order by the victorious Kaahumanu to demolish pagan temples throughout the kingdom. (Soehren 1980a:6)

Soehren (1980a) also examined the seaward portion of the Site 1753 *hōlua* slide, located to the north of the project area (see **Figure 15**). The site originates in the uplands of Honalo and is described as being 12 to 15 feet wide and two feet high. According to Soehren (1980a:3), the slide has been significantly impacted by cattle ranching activity and is comprised of "wave-tossed boulders."

Soehren (1980b) surveyed an approximately 1.0 acre area seaward of the Old Government Road at the south end of Honalo Ahupuaʻa. This survey identified six houses sites, assigned temporary site numbers 1-6. Little additional information is provided. Ahlo (1981) surveyed the intervening area between the Soehren (1980a and 1980b) parcels. This project identified a house platform, designated as Feature A, and a pen (Feature B).

Mills and Irani (2000) conducted a two mile long pedestrian survey along the Old Government Beach Road, from the Lands of Honalo to Honuaʻino, This project was conducted as a 1998 University of Hawaii-Hilo archaeological field school. The survey documented 17 sites along the road, although only one is located in Honalo Ahupuaʻa. Site 22411 is a complex of historic features located on the inland side of the Old Government Beach Road. The features of this site were interpreted as an inland extension of the Honalo Complex. Mills and Irani (2000) also mapped several sites including Site 7723 (**Figure 16)** located in the project area. No other descriptive information is presented for this site.

The Old Government Road has been documented by numerous researchers and is designated as the Site 10290 Alanui Aupuni (Hammatt et al. 1997, Walker and Rosendahl 1990, and Haun and Henry 2003). This is a north-south transportation route that originates in Kaʻawaloa and extends north to Kailua. It borders the present project area along the inland side.

Robins et al. (2001) conducted an archaeological inventory survey of the proposed Mamalahoa Bypass road corridor, a 5.5 mile long by 120 feet wide corridor that extended through 17 *ahupuaʻa* in North and South Kona Districts. The Robins et al. (2001) identified seven sites in Honalo. The sites consist of two complexes of agricultural features interpreted as elements of the Kona Field System (Sites 21634 and 21637), four historic cattle walls (Sites 21237, 21633, 21635, and 21636), and an historic pig pen (Site 21632).

Haun and Henry (2011) conducted an archaeological inventory survey of a 290.75-acre parcel located in Honalo, Maʻihi 1-2 and Kuamoʻo 1 along the inland side of the Mamalahoa Bypass Road at elevations ranging from approximately 315 to 1,160 ft. Approximately 37% of this survey area or 108.5 acres are situated in Honalo Ahupuaʻa. A total of 227 sites with 16,742 features were noted by Haun and Henry (2011:23), with the Honalo portion containing 66 sites with 6,180 features.

The 6,180 features in Honalo consist of 5,281 modified outcrops, 409 mounds, 256 terraces, 71 enclosures, 41 *kuaʻiwi,* 24 grow pits, 24 walls, 19 U-shapes, 15 soil swales, 13 platforms, eight walled terraces, six C-shapes, three trails, two L-shapes, one lava tube, one artifact scatter, one road, one stone ring, one cairn, one railroad grade (the previously discussed West Hawaii railroad grade; see **Figure 11**), one truck and one walled platform. Functionally

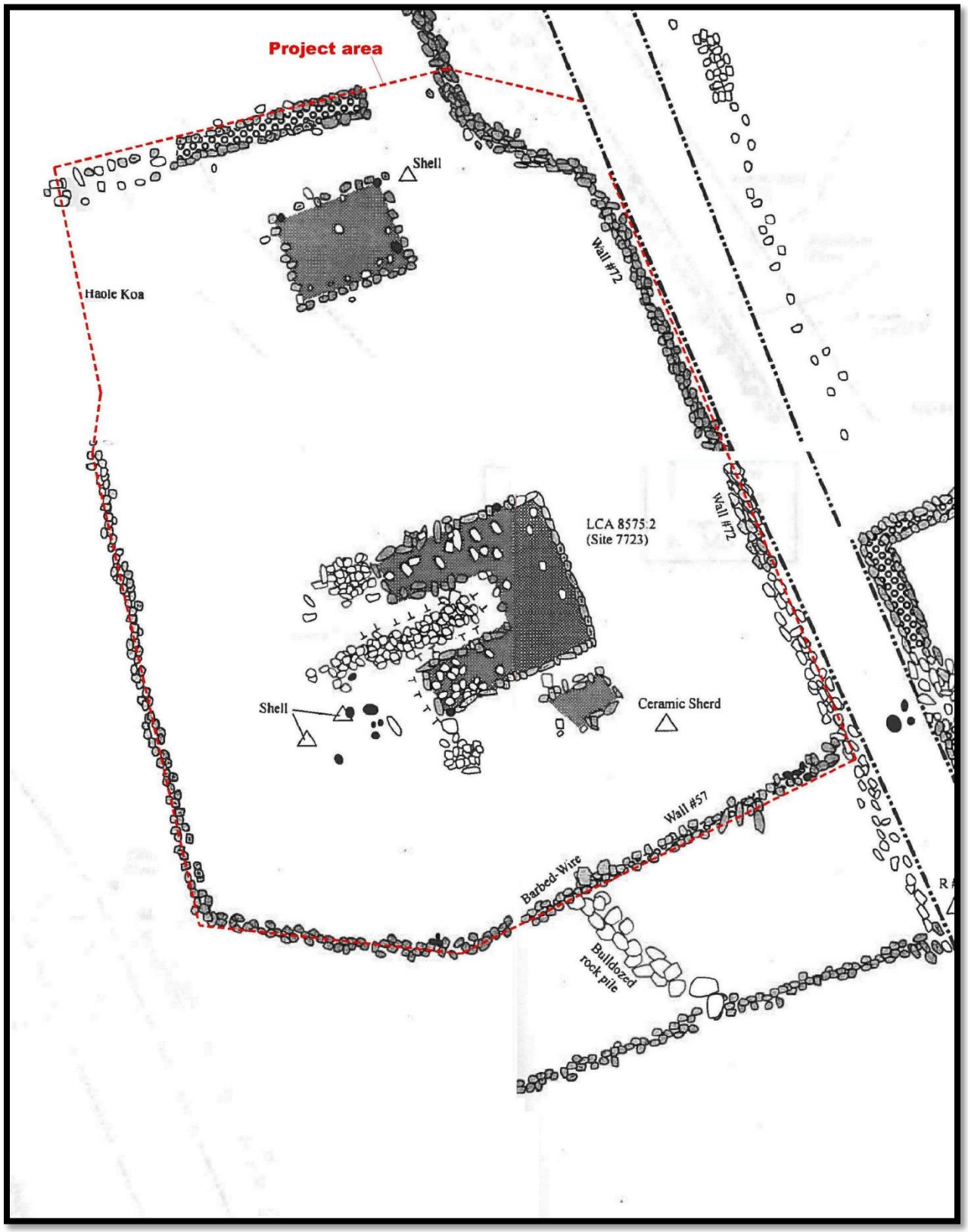


Figure 16. Plan map of Site 7723 compiled from Mills and Irani (2000:155-157)

the 6,180 features consist of agriculture (5,952), permanent habitation (161), permanent habitation/burial (1), ceremonial (9), transportation (6), undifferentiated habitation (4), temporary habitation (3), historic habitation (4), marker (10) and livestock control (39).

Rosendahl (1984) conducted an archaeological reconnaissance survey of the Honalo Marshalling Yard located inland of the Hawaii Belt road at c. 1,300 ft elevation. This survey documented a single stone wall along the south boundary of the property. This wall was subsequently examined by Kawachi (1994) who determined that it was historic in origin.

The coastal surveys by Soehren (1980a and 1980b) and Ahlo (1981) examined an area of approximately nine acres and identified a total of 29 sites and 33 features. This results in a site density of 3.2 sites per acre and a feature density of 3.6 features per acre. The Haun and Henry (2011) mid-elevation survey examined 108.5 acres and identified 66 sites and 6,180 features in Honalo. This results in a site density of 0.6 sites per acre and feature density of 57 features per acre. These findings indicate that site density decreases with elevation. The feature density in the coastal area is biased because agricultural features were usually not systematically documented in surveys dating to the 1980s and earlier; however, if the 5,952 agricultural features noted by Haun and Henry (2011) are no included, a feature density of 2.1 features per acre is generated, which also demonstrates a decrease in density with elevation.

The project area is located within the *kula* zone of the Kona Field System, SIHP Site 50-10-37-6601 (Newman 1970, Kelly 1983, Schilt 1984, Cordy 1995). This site extends north to Kāʻu Ahupuaʻa, south to Honaunau, and from the coastline to the forested slopes of Hualalai. The area was intensively cultivated and served as the resource base for the large number of chiefs and retainers that occupied the Kailua-Honaunau coast. The characteristics and general locations of the elevation zones of the system described by Newman (1970) have been confirmed and elaborated on by subsequent ethnohistorical investigations (Kelly 1983). The system is subdivided into four elevation zones.

The *kula* zone extends from sea level to 500 ft elevation and includes the seaward most portion of the project area. Cordy (1995) has suggested that the upper limit of this zone may be higher between 600-700 ft elevation. This lower elevation zone traditionally was used for habitation and cultivation of sweet potatoes, paper mulberry (*wauke*), and gourds. Agricultural features, including clearing mounds, planting mounds, planting depressions, modified outcrops, and planting terraces, are common in this zone (Hammatt and Clark 1980; Hammatt and Folk 1980; Schilt 1984). Habitations are scattered throughout the *kula*, but they are concentrated along the shoreline portion of the zone (Cordy 1995). The shoreline portion, extending approximately 200 m inland, was the focus of permanent habitation and activities such as burial, canoe storage, ritual, and marine exploitation. Royal centers and chiefly residences were also situated near the shoreline. These complexes included residences for high status individuals and their supporters and attendants, *heiau*, places of refuge, *hōlua* slides, and other structures.

The *kalu'ulu* zone extends from 500 to 1000 ft elevation. The zone was used for cultivating sweet potatoes, paper mulberry, and especially breadfruit. Archaeologically, this zone is not distinguishable from the adjacent *'apa'a* zone (Cordy 1995). The *'apa'a* zone is situated between 1,000 and 2,500 ft elevation and includes the inland margin of the project area. This zone traditionally was used for dryland cultivation of taro, sugar cane, sweet potato, and *ti*. Permanent habitations were present in the *'apa'a* zone, but were infrequent (Cordy 1995, Burtchard 1995). Dwellings were observed by early historic chroniclers, but most were probably for temporary use in conjunction with agriculture, bird hunting, and collecting of plant resources. Burials and ritual sites are rare in the upper elevation zones (Kawachi 1989).

Kua'iwi are prominent agricultural features of the *kalu'ulu* and *'apa'a*, zones (Cordy 1995; Newman 1970). These are broad, linear piles of rocks built from stones cleared from the adjacent slopes that also served as field

boundaries. *Kua'iwi* are oriented inland-seaward often interconnected with perpendicular, soil-retaining walls and terraces forming rectangular grid pattern of fields. *Kua'iwi* also served to control rainfall runoff (Kirch 1985). These formal fields contrast with more informal garden areas characterized by scattered agricultural features in very rocky areas, such as young lava flows, and much of the *kula* zone.

The *'ama'u* zone extends from 2,500 ft to 4,000 ft elevation. The zone was associated with banana and plantain cultivation. The archaeological traits of the zone have not been well defined, but temporary habitations were probably present associated with agriculture and exploitation of forest resources (Allen 1984).

Schilt (1984) used information gathered from the Kuakini Highway Realignment Corridor survey research to propose a five-phase chronology of settlement and field system development in the Kona Field System as follows:

Phase I -Pioneer Settlement (c. A.D. 1050-1400) Very limited, sporadic use of lowland slopes and cave shelters just above the Kailua Bay area. Probably contemporaneous with pioneer settlements along the coast. Development of one or more of the *mauka* sub-zones of the Kona Field System may have commenced in the later portion of this phase.

Phase II - Garden Developments (1400-1600/1650) Initial use of the *kula* sub-zone for small gardens and of the caves for temporary shelter. Erosional deposition, resulting from development of the upland sub-zones, began to bury an old ground surface and gradually created deepening soil deposits on *kula* land.

Phase III- Refuge, Habitation, and Intensive/Extensive Gardening (1600/1650-1779) Extensive development of at least the *mauka* portion of the *kula* subzone, for sweet potatoes, *wauke*, and probably also gourds. This development was accompanied rarely by permanent habitation and more often by temporary and seasonal habitations among the *kula* gardens. Animal enclosures, probably for pigs, may date to this phase. The upland zones were under complete development by this time. Suitable caves were modified for refuge during times of warfare or social conflict. Caves located in the midst of garden features were intensively used for temporary shelter and work spaces.

Phase IV - Historic Habitation and Gardening (1779-1850) The cultivation of *kula* lands gradually decreased in extent and intensity, nevertheless remaining important to a decreasing population. Permanent habitations on the *kula d*uring this phase occurred primarily on the *makai* side of the Great Wall of Kuakini. In 1848, Hawaiians were claiming an undetermined portion of *kula* lands, but none of these *kula* claims were honored by the Board of Land Commissioners (Kelly 1983). Some *kula* lands were being converted to grazing beginning in the 1840s.

Phase V - Historic Ranching (1850-Modern Times) Land-use shifted completely to grazing, following the awards of *kula* lands to chiefs, missionaries, and others (Kelly 1983). Isolated permanent habitations on upland slopes of the *kula* were oriented to ranching. Today ranching is not as extensive as it once was. Kailua in recent years has been rapidly developing as a tourist and urban hub for leeward Hawaii Island (Schilt 1984:284).

While subsequent work has generally confirmed Schilt's chronology, the data from Haun et al. (1998) and Dye and Komori (1992) indicate a peak in dating results in the 1400-1500s and a decline after the mid-1600s. This may indicate that the increase in habitation and agricultural activity in Schilt's Phase III may have begun as much as two centuries earlier.

Project expectations

The previous archaeological research in the project area by Soehren (1980a) and Mills and Irani (2000) documented the Site 7723 habitation complex. It is probable that the remains of this site will be encountered during the present project. While it is possible that additional, previously undocumented features may be present within the 0.17 project area, it is unlikely that substantial features would have been missed during the prior studies.

CONSULTATION

Maly and Maly (2001) conducted oral interviews with 15 individuals with knowledge of the general project area vicinity in conjunction with their overview of the lands between Keauhou and Kealakekua. The results of these interviews are summarized by Maly and Maly as follows:

> Oral history interviews with cowboys and descendants of the founders of the Keauhou-Kealakekua region ranches provide us with important descriptions of ranching operations, land use, treatment of cultural-historical resources, and the changes in ranching from ca. 1915 to the present day. Of particular interest to the study of trails, access, and cultural historical resources in the present study area, interviewees record that in most areas the land was left as it had been. In certain locations between Lehuʻula and Keauhou, the ʻalā stones were set to the side of the trails as the horses would slip on them. Also, after 1948, some dozing occurred — selected mauka-makai routes were either widened or new ones made to provide vehicle improved access between the shore lands and Māmalahoa Highway...
>
> Cattle continue to be grazed on some of the kula lands of the Keauhou-Kealakekua region. In the Honalo-Honuaʻino vicinity, descendants of the Johnson-Paris-Wall-Roy lines or their lessees maintain herds. In the Onouli-Kealakekua vicinity, Greenwell descendants (part of Palani Ranch) have leasehold interests and maintain pasture operations as well on former Greenwell family lands.
>
> Sugar cultivation in the Keauhou-Kealakekua region, for the most part, was restricted to lands between Honalo and Onouli. The Kona Sugar Company/Kona Development Company held lease-hold interests in lands of the upper kula region (the area extending from about the 700 foot elevation to Māmalahoa Highway). Development of the sugar fields led to the clearing of nearly all surface signs of past Hawaiian land use. The fields were cleared of stones to improve the planting fields. Stone clearing mounds, most of which were carefully made, and faced with set stone have been described as a product of the plantation era. Because ranching operations continued on the lands makai and mauka of the sugar fields, and the same property owners were also leasing portions of their land to the plantation, most of the ahupuaʻa boundary walls were maintained in the sugar fields. The lands were reclaimed for ranching and in some areas, limited truck-farming of watermelons and vegetable crops (where soil could support the activity) was developed...
>
> In oral history interviews conducted with kamaʻāina of the study area, it was recorded that mauka-makai access in the Honalo-Kaʻawaloa region was limited. A type of "Konohiki" management system of the lands was observed through the 1960s. This meant that access was generally restricted to those individuals who resided in (or had connections to) the ahupuaʻa in which access was desired. Those who traveled the mauka-makai trails were either descendants of the native tenants of the land, small land owners and lessees, or the families and friends of the

> large land owners. Until the 1950s, the near shore fisheries (access to which was the primary purpose of traveling makai), were carefully watched by a few elder descendants of the native Hawaiian families of the lands in the area (for example Ka‘ilikini, Ho‘omanawanui, Keli‘i, Kaneao, and Leslie). Most people who wished to travel across the land, or to stay on the shore to fish, asked permission of the large land owners, and it was not uncommon for fish and limu to be given to the “Konohiki” when travelers returned to the uplands. Maly and Maly (2001:307).

Haun & Associates Project Supervisor and Cultural Specialist Solomon Kailihiwa, M.S. conducted an interview with the project landowner on February 21, 2019. According to the landowner, Kalani Nakoa, the owner of the parcel to the east of the project area, Mr. Matt Jumalon grew up in the immediate vicinity of the project area. During discussions with Mr. Jumalon, the landowner was informed that the Feature B enclosure was a modern addition to the site and was not present in its current location when he was a child.

FINDINGS

The archaeological inventory survey indicates that the entire parcel consists of an archaeological site. Site 7723 is a complex of three features consisting of a terrace (Feature A) and two enclosures (Features B and C). Features A and B are located within the large Feature C enclosure (**Figure 17**). The site was briefly recorded by Soehren (1980a) and was mapped by Mills and Irani (2000; see **Figure 16**). The current examination of the site indicates it measures 25.8 to 30.7 meters long (north-northwest by south-southeast) and 22.5 to 29.5 meters wide.

Feature A is a roughly rectangular shaped terrace located in the southern half of the Feature C enclosure. The terrace has overall dimensions of 10.7 meters long (northeast by southwest) by 10.2 meters wide (**Figure 18**). The northwest, southwest and south sides are 0.4 to 1.1 meters high, and the east and southeast sides are 0.1 meters in height above the surrounding ground surface. The terrace surface has three distinct areas, consisting of the main structure, an entryway and a possible *lanai*.

The main house section has been partially dismantled and the north face of the retaining wall has had the small and medium-sized rocks removed leaving behind the large boulders giving that face an unfinished look (**Figure 19**). Boulder alignments define the eastern extent of the house terrace as well as the northwest corner of the main house section (**Figure 20**). The southwest corner of the main house section appears to have been completely dismantled. The middle portion of the western side of the main house section has been dismantled as well. The surface is a level pebble and cobble pavement with scattered sun-bleached marine shell and waterworn coral (**Figure 21**). A linear mound of displaced boulders extends from the western extent of the feature up into the main house section.

TU-1447.1 a 1.0 by 1.0 meter test unit located in the eastern portion of the Feature A terrace. This excavation revealed three layers over bedrock (**Figure 22**). Layer I consists of a 0.04 to 0.11 meter (6 to 34 centimeters below datum; cmbd) thick architectural layer of boulders, cobbles and pebbles. Cultural material from Layer I consists of marine shell, burned *kukui* nutshell, a basalt groundstone fragment, waterworn coral and basalt and a fragment of bottle glass. The midden recovered from TU-1 is presented in **Table 2** and the artifacts are summarized in **Table 3**.

Layer II is 0.32 to 0.4 meter (24-64 cmbd) thick deposit of very dark grayish brown (10YR 3/2) silt with 90% boulder, cobble and pebble inclusions. The midden from Layer II consists of marine shell, urchin spines and body fragments, crab exoskeleton fragments, burned and unburned *kukui* nutshell, charred wood, and bones from fish, dog, pig, rat, and birds. A human premolar tooth fragment with partial root intact was also recovered from Layer II. Indigenous artifacts from Layer II consist of volcanic glass and basalt flakes, a utilized volcanic glass flake, waterworn coral and basalt, a basalt adze flake, the *Mauritia maculifera* shell portion of an octopus lure, a perforated shell ornament, a fragment of modified shell, and a quartz pebble. The perforated shell ornament is depicted in **Figure 23**. Historic remains consist of glass bottle fragments, a glass bead, square nails and a Bakelite comb fragment. The glass bead and the comb fragment are depicted in **Figure 24**.

Layer III is 0.07 to 0.15 meter (64-79 cmbd) thick deposit of dark brown (10YR 3/3) silt with 70% cobble and pebble inclusions. The midden from Layer II consists of marine shells, urchin body fragments, bones from fish, dog and unidentified birds, burned and unburned *kukui* nutshell and charred wood. Artifacts from Layer III consist of a utilized volcanic glass flake, and waterworn coral and basalt.

The entryway portion of the feature abuts the northwest corner of the main house section (**Figure 25**). An alignment of embedded boulders appears to define the line between the two sections of Feature A. This portion of the feature consists of a ramp with an irregular surface that slopes down to the west. The southern edge is now

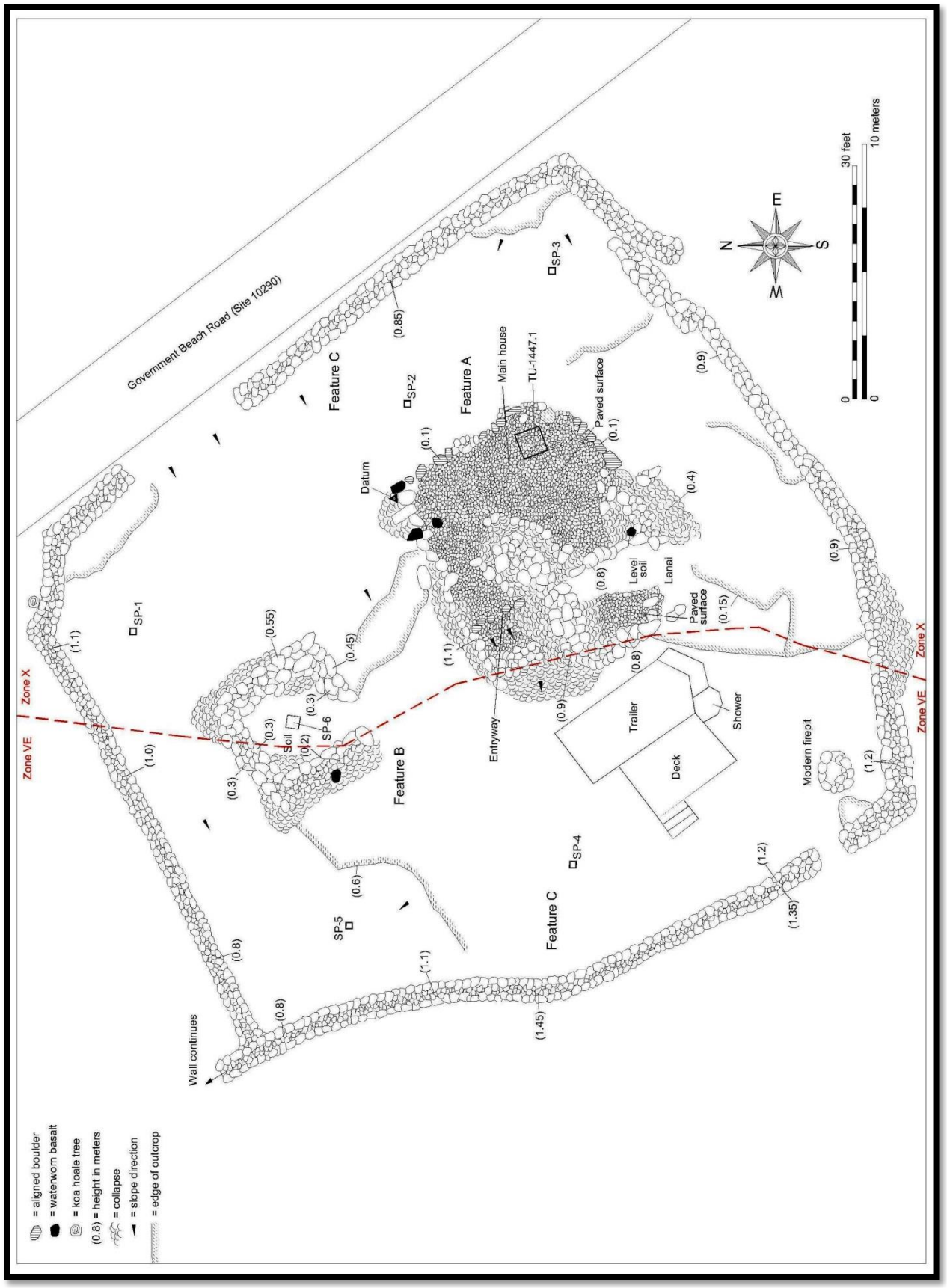


Figure 17. Current condition of Site 7723

Figure 18. Feature A terrace (view to south)

Figure 19. Feature A, boulders along north side of terrace (view to south)

Figure 20. Feature A, eastern side of terrace (view to north)

Figure 21. Feature A, paved surface of main terrace (view to east)

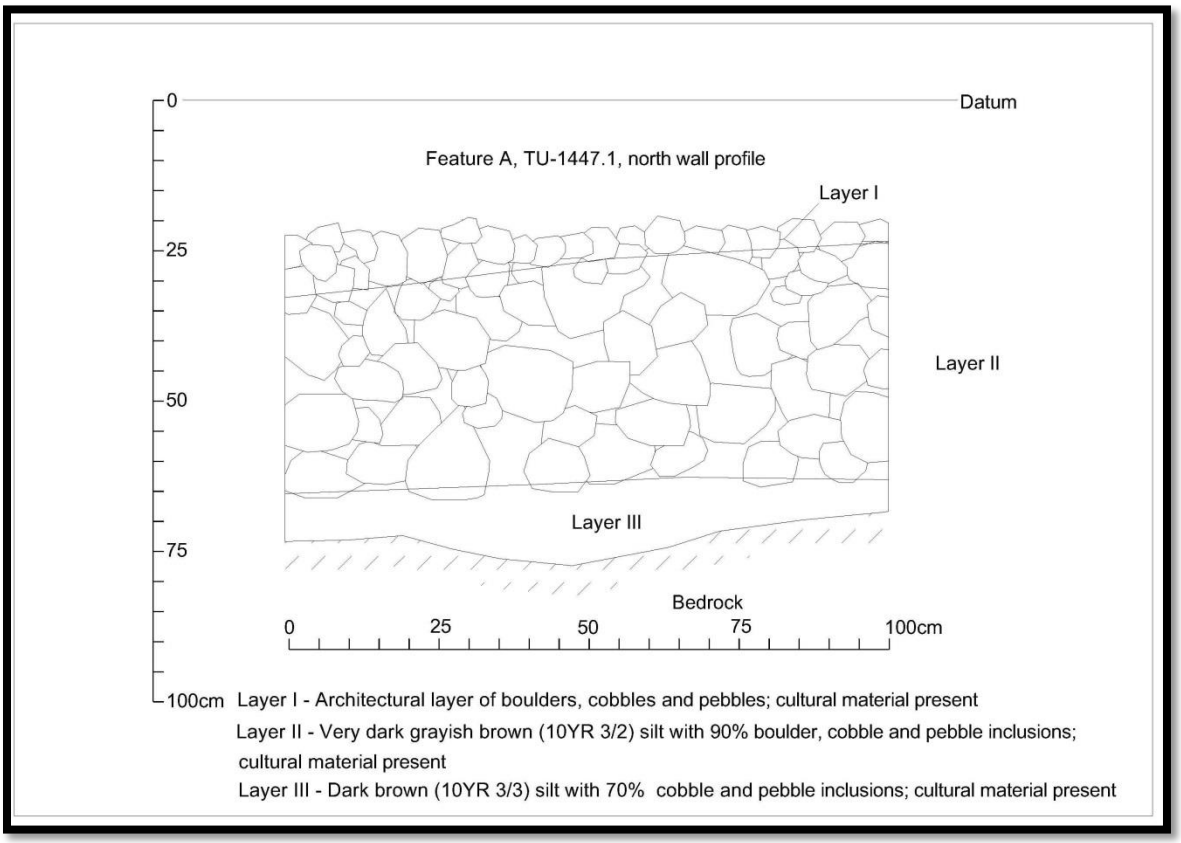


Figure 22. Feature A, TU-1447.1 north wall profile

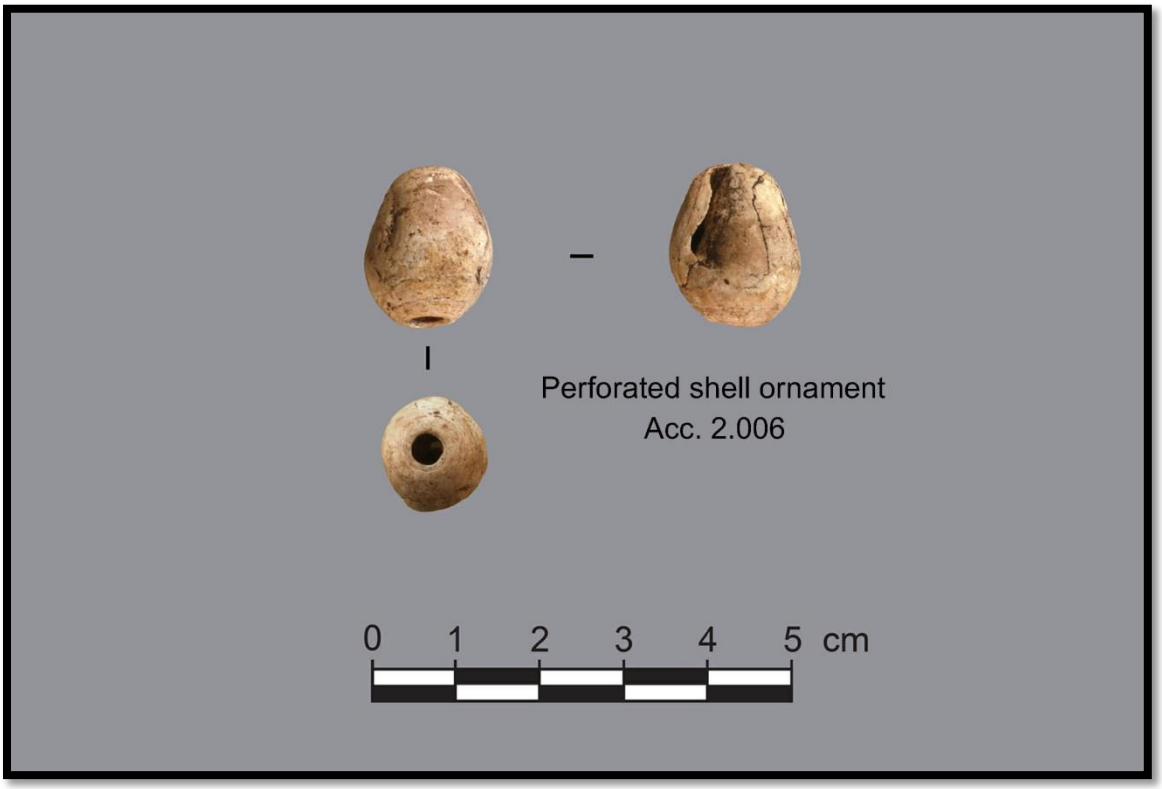


Figure 23. Perforated shell ornament from TU-1447.1

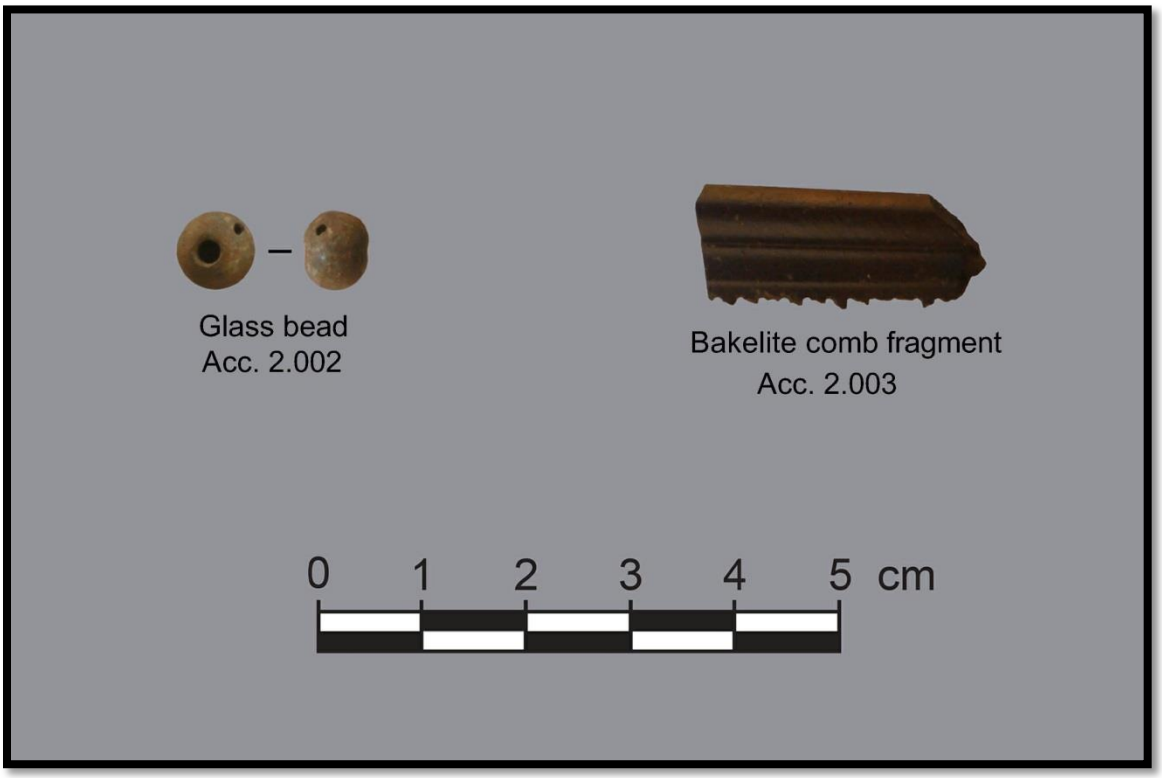


Figure 24. Glass bead and Bakelite comb fragment from TU-1447.1

Figure 25. Feature A, entryway (view to northeast)

Table 2. Midden from Feature A, TU-1447.1

Midden from Feature A, TU 1447.1		Layer I-1 6-34 cmbd		Layer II-2 24-44 cmbd		Layer II-3 44-64 cmbd		Layer III-4 64-79 cmbd		TU 1447.1 total	
		TNF	WT	TNF	WT	TNF	WT	TNF	WT	TNF	WT
MARINE INVERTEBRATES											
GASTROPODA	Conidae			11	10.2	17	31.1			**28**	**41.3**
	Conidae *Rhizoconus rattus*			1	4.6					**1**	**4.6**
	Cypraeidae	1	1.8	107	79.1	119	76.3	8	2.7	**235**	**159.9**
	Cypraeidae *Mauritia* sp.	2	28.0	27	111.5	32	115.7			**61**	**255.2**
	Littorinidae			50	11.4	70	15.5	4	0.8	**124**	**27.7**
	Muricidae	2	5.1	82	33.7	84	31.3	6	2.4	**174**	**72.5**
	Muricidae *Drupa morum*			4	20.1	4	6.6			**8**	**26.7**
	Muricidae *Drupa ricinus*			63	42.8	9	12.3			**72**	**55.1**
	Muricidae *Drupa rubusidaea*			16	21.3	57	37.2	1	0.4	**74**	**58.9**
	Muricidae *Morula granulata*			2	1.2	5	1.5	1	0.5	**8**	**3.2**
	Muricidae *Neothais harpa*			2	0.6			1	0.6	**3**	**1.2**
	Muricidae *Thais intermedia*					1	0.8			**1**	**0.8**
	Neritidae *Nerita picea*			351	86.5	360	94.4	17	5.8	**728**	**186.7**
	Nacellidae *Cellana* sp.	2	10.3	115	49.6	98	32.2	1	0.1	**216**	**92.2**
	Planaxidae			1	0.3					**1**	**0.3**
	Ranellidae			1	1.5					**1**	**1.5**
	Indeterminate Marine Shell			22	5.0	40	13.9			**62**	**18.9**
	Reef rubble			38	51.0	123	68.5	27	14.6	**188**	**134.1**
BIVALVIA	Isognomonidae *Isognomon* sp.					1	0.3			**1**	**0.3**
ECHINOIDEA	Echinometridae urchin exoskeleton			95	12.6	380	45.6	3	0.3	**478**	**58.5**
	Echinometridae Heterocentrotus mammillatus			3	2.0	8	2.0			**11**	**4.0**
	Echinometridae *Colobocentrotus atratus*					1	0.1			**1**	**0.1**
CRUSTACEA	Exoskeleton			23	9.1	22	3.8			**45**	**12.9**
	SUB TOTAL	**7**	**45.2**	**1014**	**554.1**	**1431**	**589.1**	**69**	**28.2**	**2521**	**1216.6**
MARINE VERTEBRATES											
	Fish, cranial (undetermined)			6	0.5	18	1.5	3	0.3	**27**	**2.3**
	Fish, post-cranial (undetermined)			36	1.0	76	1.1			**112**	**2.1**
	Parrotfish (Scaridae)			23	9.1	3	0.5			**26**	**9.6**
	Shark (*Chondrichthyes Selachimorpha*)					1	0.5			**1**	**0.5**
	SUB TOTAL	**0**	**0**	**65**	**10.6**	**98**	**3.6**	**3**	**0.3**	**166**	**14.5**
TERRESTRIAL VERTEBRATES											
MAMMALIA	*Canidae Canis familiaris* (dog)			3	2.2	5	1.5	2	1.0	**10**	**4.7**
	Muridae *Rattus exulans* (rat)					2	0.1			**2**	**0.1**
	Suidae *Sus scrofa* (pig)			1	0.2	4	1.4			**5**	**1.6**
	Undetermined Mammal			11	2.9	19	5.2			**30**	**8.1**
	Undetermined Avian					5	0.7	1	0.2	**6**	**0.9**
	SUB TOTAL	**0**	**0**	**15**	**5.3**	**35**	**8.9**	**3**	**1.2**	**53**	**15.4**
MACROFLORAL											
	Unburned *Kukui* nutshell (*Aleurites molluccana*)			164	54.7	63	19.4	2	0.6	**229**	**74.7**
	Burned *Kukui* nutshell (*Aleurites molluccana*)	2	1.8	21	2.9	116	15.4	3	0.3	**142**	**20.4**
	Charred wood			77	10.0	618	134.4	8	0.7	**703**	**145.1**
	SUB TOTAL	**2**	**1.8**	**262**	**67.6**	**797**	**169.2**	**13**	**1.6**	**1074**	**240.2**
	TOTAL	**9**	**47.0**	**1356**	**637.6**	**2361**	**770.8**	**88**	**31.3**	**3814**	**1486.7**

cmbd= cm below datum, TNF=Total number of fragments, WT=Weight in grams

Table 3. Artifacts from Feature A, TU-1447.1

Acc. No.	Layer	Depth cmbd	Specimen	Material	Type	TNF	Weight	Size Range	Length mm	Width mm	Thickness mm	Comment
1.001	I-1	6-34 cmbd	Colorless Bottle Fragment	Glass	Historic Containter	1	1.2					heavily patinaed glass fragment
1.002	I-1	6-34 cmbd	Groundstone	Basalt	Expedient Tool	1	168.1		57.8	53.5	28.8	waterworn cobble fragment with heavy polish from use wear on 1 surface
1.008	I-1	6-34 cmbd	*Pocillopora* sp. Pebble	Coral	Manuport	178	1577.0					
1.009	I-1	6-34 cmbd	*Porites* sp. Pebble	Coral	Manuport	27	455.0					
1.010	I-1	6-34 cmbd	Waterworn Pebble	Basalt	Manuport	59	2244.0					
2.001	II-2	24-44 cmbd	Green Bottle Fragments	Glass	Historic Containter	9	26.4					heavily patinaed glass fragments
2.002	II-2	24-44 cmbd	Bead	Glass	Historic Ornament	1	0.6					1/4" diameter, 1/4" length aqua glass bead with 1/8" diameter hole
2.003	II-2	24-44 cmbd	Comb	Bakelite	Historic Hygiene	1	0.8		26.7	11.1	4.0	1 1/4" length fragment of a comb made of probable brown bakelite; teeth broken
2.004	II-2	24-44 cmbd	Quartz Pebble	Quartz	Historic Raw Material	1	1.4					
2.005	II-2	24-44 cmbd	Cypraeidae *Mauritia maculifera* Octopus Lure	Gastropod Shell	Composite Tool	1	9.5		45.7	23.9	13.3	fragment of shell with portion of 3.6mm diameter perforation on 1 end made from exterior of shell
2.006	II-2	24-44 cmbd	Perforated Shell	Conidae	Ornament	1	2.9		18.4	15.1	13.9	waterworn conus shell with perforated protoconch
2.007	II-2	24-44 cmbd	Modified Pearl Shell	Pteriidae	Manufacturing Debris	1	2.1		38.1	20.2	1.6	pearl shell tab cut on 2 sides; probable fishhook blank
2.008	II-2	24-44 cmbd	Secondary Flake	Volcanic Glass	Debitage	1	1.7	M				
2.009	II-2	24-44 cmbd	Secondary Flake	Volcanic Glass	Debitage	1	0.2	S				
2.010	II-2	24-44 cmbd	Tertiary Flake	Volcanic Glass	Debitage	2	1.0	M				
2.040	II-2	24-44 cmbd	*Pocillopora* sp. Pebble	Coral	Manuport	696	2979.0					
2.041	II-2	24-44 cmbd	*Porites* sp. Pebble	Coral	Manuport	475	1225.0					
2.042	II-2	24-44 cmbd	Waterworn Pebble	Basalt	Manuport	235	3782.0					
3.001	II-3	44-64 cmbd	Colorless Patent Medicine Bottle Fragment	Glass	Historic Containter	2	0.9					fragments of thin walled patent medicine bottle
3.002	II-3	44-64 cmbd	Square Cut Nails	Iron	Historic Hardware	8	12.3					fragments of square nails
3.003	II-3	44-64 cmbd	Adze Flake	Basalt	Formal Tool Fragment	1	1.6	M	15.3	12.0	9.5	one polished facet
3.004	II-3	44-64 cmbd	Tertiary Flake	Basalt	Debitage	3	1.3	M				
3.005	II-3	44-64 cmbd	Tertiary Flake	Basalt	Debitage	1	0.3	S				
3.006	II-3	44-64 cmbd	Utilized Tertiary Flake	Volcanic Glass	Expedient Tool	1	1.0	M	16.0	13.5	5.1	bilateral use wear
3.039	II-3	44-64 cmbd	*Pocillopora* sp. Pebble	Coral	Manuport	603	1476.0					
3.040	II-3	44-64 cmbd	*Porites* sp. Pebble	Coral	Manuport	756	1188.0					
3.041	II-3	44-64 cmbd	Waterworn Cobble	Basalt	Manuport	1	189.4					
3.042	II-3	44-64 cmbd	Waterworn Pebble	Basalt	Manuport	514	1938.0					
4.001	III-4	64-79 cmbd	Utilized Tertiary Flake	Volcanic Glass	Expedient Tool	1	1.0	M	18.7	14.1	3.4	unilateral use wear
4.018	III-4	64-79 cmbd	*Pocillopora* sp. Pebble	Coral	Manuport	52	65.5					
4.019	III-4	64-79 cmbd	*Porites* sp. Pebble	Coral	Manuport	47	120.1					
4.020	III-4	64-79 cmbd	Waterworn Pebble	Basalt	Manuport	67	289.2					
TOTAL NUMBER AND WEIGHT OF ARTIFACTS						**3748**	**17762.5**					

cmbd= cm below datum, TNF=Total number of fragments, WT=Weight in grams

defined by the linear of displaced boulders. The bottom of the ramp has boulders piled onto it. The entryway is in poor condition and appears to have been partially dismantled.

The possible *lanai* is located to the southwest side of the main house section and the south side of the entryway (**Figure 26**). This portion of Feature A is bordered on the west side by a retaining wall that is 0.8 meters high built of stacked and roughly faced boulders and cobbles. The interior surface of the terrace is divided into two sections. The first section, which abuts the main house, is comprised of level soil. The second section is slightly lower than the first and is covered with a cobble and pebble paving. Rubble partially obscures portions of the paving at the north end of the terrace. The linear mound of displaced boulders runs along the north side of this terrace.

Feature B is a roughly square-shaped enclosure located 4.0 meters to the north-northwest of Feature A, within the Feature C enclosure. It is 6.0 meters long (northeast by southwest) and 5.2 to 5.5 meters wide, with a 1.1 meter wide opening at the southern end (**Figure 27**). The walls are built of roughly stacked boulders and cobbles with a core-filled cobble interior. The walls are 1.1 to 1.5 meters wide and 0.2 to 0.55 meters high, with collapse present along the interior and exterior sides. The interior is level soil with scattered cobbles. A waterworn basalt cobble is present on the wall along the western side.

A 0.5 by 0.5 meter shovel probe (SP-6) was excavated in the center of the Feature B enclosure during the present. The unit was excavated in 0.2 meter arbitrary levels and the stratigraphy was defined in the profile of the unit. The excavation of SP-6 revealed three soil layers over bedrock (**Figure 28**). Layer I consists of 0.17 to 0.2 meters (32-47) of dark brown (10YR 3/3) sandy silt with 40% cobble and pebble inclusions.

There is a lens of oxidized silt located within the Layer II soil in the northern half of the unit (Layer Ia). This deposit is 0.02 to 0.04 meters in thickness (39-43 cmbd) and consists of dark yellowish brown (10YR 4/6) silt. The Layer I soil is underlain by Layer II, a 0.07 to 0.1 meter thick (43-54 cmbd) deposit of black (10YR 2/1) sandy silt with 70% cobble and pebble inclusions. Layer III is 0.05 to 0.07 meters (52-72 cmbd) of dark yellowish brown (10YR 4/4) silt with 90% cobble and pebble inclusions.

Cultural material was recovered from the excavation in two 0.2 meter arbitrary levels. The midden from SP-6 is presented in **Table 4** and the artifacts are summarized in **Table 5**. The upper portion of the unit yielded 58 fragments of three bottle glass fragments, three steel can fragments, one wire nail, one utilized volcanic glass flake, one basalt adze fragment, 53 fragments of waterworn coral, 54 waterworn basalt pebbles, 50 marine shell, five fish bones, one pig bone, one unidentified small mammal bone, two fragments of *kukui* nutshells, one fragment of burned *kukui* nutshell, 32 fragments of charred wood. The lower portion of the unit contained three volcanic glass flakes and eight marine shell fragments.

Feature C is a stone wall that extends around the perimeter of the project area. The enclosure is roughly rectangular in shape and is 25.8 to 30.7 meters long (north-northwest by south-southeast) and 22.5 to 29.5 meters wide. There is a 5.1 meter wide opening in the enclosure along the inland side, adjacent to the Site 10290 Government Beach Road. The enclosure walls are built of stacked and faced boulders and cobbles with a core-filled cobble interior. The walls range in width from 0.8 to 1.25 meters and in height from 0.8 to 1.45 meters. The interior of the enclosure is soil with scattered cobbles and pebbles that slopes gently to the west-southwest. Sun-bleached marine shells and bottle glass fragments are present on the surface. Overviews of the Feature C enclosure walls are presented in **Figure 29**, **Figure 30** and **Figure 31**.

Five 0.25 by 0.25 meter shovel probes (SP-1 through SP-5) were excavated within the Feature C enclosure (see **Figure 17**). The five probes revealed from one to two layers of silt soil overlying bedrock. **Figure 32** and **Figure 33** depict the soil stratigraphy noted in SP-1 through SP-4, and **Figure 34** illustrates the results of SP-5.

Table 4. Midden from SP-6

Midden from Feature B, SP-6		Layer I/Ia/II-1 32-52 cmbd		LayerII/III-2 52-72 cmbd		SP-6total	
		TNF	WT	TNF	WT	TNF	WT
MARINE INVERTEBRATES							
GASTROPODA	Conidae	2	10.8	2	1.1	**4**	**11.9**
	Cypraeidae	5	2.5	2	0.6	**7**	**3.1**
	Cypraeidae *Mauritia* sp.	6	6.4	4	3.6	**10**	**10.0**
	Littorinidae	1	0.6			**1**	**0.6**
	Muricidae	6	2.4			**6**	**2.4**
	Muricidae *Drupa ricinus*	1	0.7			**1**	**0.7**
	Muricidae *Drupa rubusidaea*	5	2.6			**5**	**2.6**
	Muricidae *Thais intermedia*	1	0.5			**1**	**0.5**
	Neritidae *Nerita picea*	5	2.3			**5**	**2.3**
	Nacellidae *Cellana* sp.	6	2.7			**6**	**2.7**
	Reef rubble	8	3.3			**8**	**3.3**
BIVALVIA	Tellinidae *Quidnipagus palatam*	1	0.7			**1**	**0.7**
ECHINOIDEA	Echinometridae urchin exoskeleton	1	0.2			**1**	**0.2**
CRUSTACEA	Exoskeleton	2	0.3			**2**	**0.3**
SUB TOTAL		**50**	**36.0**	**8**	**5.3**	**58**	**41.3**
MARINE VERTEBRATES							
	Fish, cranial (undetermined)	1	0.3			**1**	**0.3**
	Fish, post-cranial (undetermined)	4	0.3			**4**	**0.3**
SUB TOTAL		**5**	**0.6**	**0**	**0.0**	**5**	**0.6**
TERRESTRIAL VERTEBRATES							
MAMMALIA	Suidae *Sus scrofa* (pig)	1	0.4			**1**	**0.4**
	Undetermined Mammal	1	0.2			**1**	**0.2**
SUB TOTAL		**2**	**0.6**	**0**	**0.0**	**2**	**0.6**
MACROFLORAL							
	Unburned *Kukui* nutshell (*Aleurites molluccana*)	2	0.7			**2**	**0.7**
	Burned *Kukui* nutshell (*Aleurites molluccana*)	1	0.2			**1**	**0.2**
	Charred wood	32	3.9			**32**	**3.9**
SUB TOTAL		**35**	**4.8**	**0**	**0.0**	**35**	**4.8**
TOTAL		**92**	**42.0**	**8**	**5.3**	**100**	**47.3**

cmbd= cm below datum, TNF=Total number of fragments, WT=Weight in grams

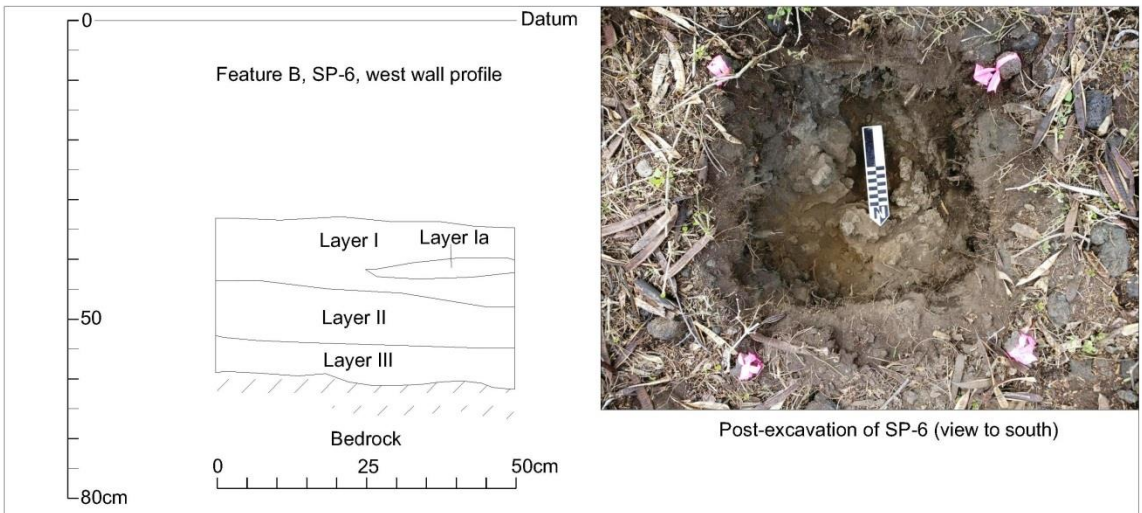
Table 5. Artifacts from SP-6

Acc. No.	Layer	Depth cmbd	Specimen	Material	Type	TNF	Weight	Size Range	Length mm	Width mm	Thickness mm	Comment
13.001	I/Ia/II-1	32-52	Colorless Bottle Fragment	Glass	Historic Containter	1	2.1					fragment of clear glass bottle
13.002	I/Ia/II-1	32-52	Green Bottle Fragments	Glass	Historic Containter	2	13.0					fragments of large green bottle
13.003	I/Ia/II-1	32-52	Can Fragments	Steel	Historic Containter	3	2.4					
13.004	I/Ia/II-1	32-52	1" length wire nail	Steel	Historic Hardware	1	2.4					
13.005	I/Ia/II-1	32-52	Utilized Tertiary Flake	Volcanic Glass	Expedient Tool	1	0.6	M	15.1	7.3	4.6	bilateral use wear
13.006	I/Ia/II-1	32-52	Adze Flake	Basalt	Formal Tool Fragment	1	0.4	M	11.8	9.2	2.6	1 polished facet
13.029	I/Ia/II-1	32-52	*Pocillopora* sp. Pebble	Coral	Manuport	39	76.1					
13.030	I/Ia/II-1	32-52	*Porites* sp. Pebble	Coral	Manuport	14	36.1					
13.031	I/Ia/II-1	32-52	Waterworn Pebble	Basalt	Manuport	54	143.2					
14.001	II/III-2	52-72	Secondary Flake	Volcanic Glass	Debitage	2	1.0	M				
14.002	II/III-2	52-72	Tertiary Flake	Volcanic Glass	Debitage	1	0.5	M				
TOTAL NUMBER AND WEIGHT OF ARTIFACTS						**119**	**277.8**					

cmbd= cm below datum, TNF=Total number of fragments, WT=Weight in grams, M=medium

Figure 26. Feature A, possible *lanai* (view to north)

Figure 27. Feature B enclosure (view to west)



Layer I - Dark brown (10YR 3/3) sandy silt with 40% cobble and pebble inclusions; cultural material present

Layer Ia - Lens of dark yellowish brown (10YR 4/6) oxidized silt; no cultural material

Layer II - Black (10YR 2/1) sandy silt with 70% cobble and pebble inclusions; cultural material present

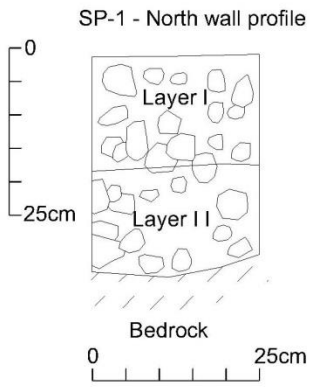
Layer III - Dark yellowish brown (10YR 4/4) silt with 90% cobble and pebble inclusions; no cultural material

Figure 28. Profile and post-excavation photographs of SP-6

Figure 29. Feature C enclosure wall (view to southeast)

Figure 30. Feature C enclosure wall (view to northwest)

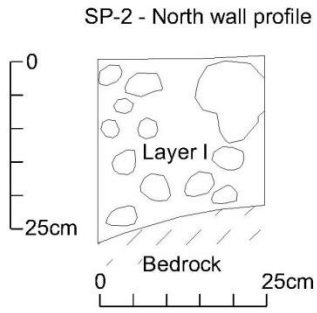
Figure 31. Feature C enclosure wall (view to northeast)



Post-excavation of SP-1 (view to north)

Layer I - Very dark grayish brown (10YR 3/2) silt with 50% cobble and pebble inclusions; cultural material present

Layer II - Dark yellowish brown (10YR 3/6) silt with 55% cobble and pebble inclusions; no cultural material

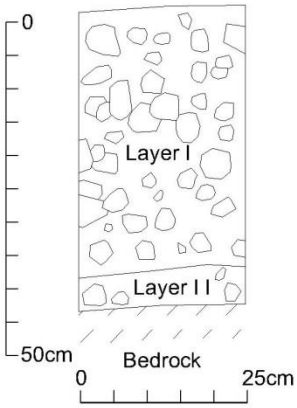


Post-excavation of SP-2 (view to north)

Layer I - Very dark brown (10YR 2/2) silt with 70% cobble and pebble inclusions; cultural material present

Figure 32. Profiles and post-excavation photographs of SP-1 and SP-2

SP-3 - North wall profile

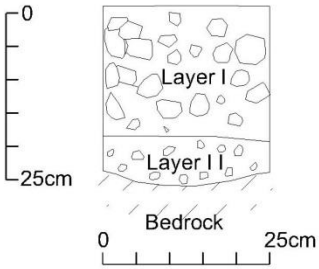


Post-excavation of SP-3 (view to north)

Layer I - Very dark brown (10YR 2/2) silt with 75% cobble and pebble inclusions; cultural material present

Layer II - Dark reddish brown (5YR 2.5/2) silt with 85% cobble and pebble inclusions; no cultural material

SP-4 - North wall profile



Post-excavation of SP-4 (view to north)

Layer I - Black (10YR 2/1) silt with 70% cobble and pebble inclusions; cultural material present

Layer II - Dark brown (10YR 3/3) silt with 50% pebble inclusions; no cultural material

Figure 33. Profiles and post-excavation photographs of SP-3 and SP-4

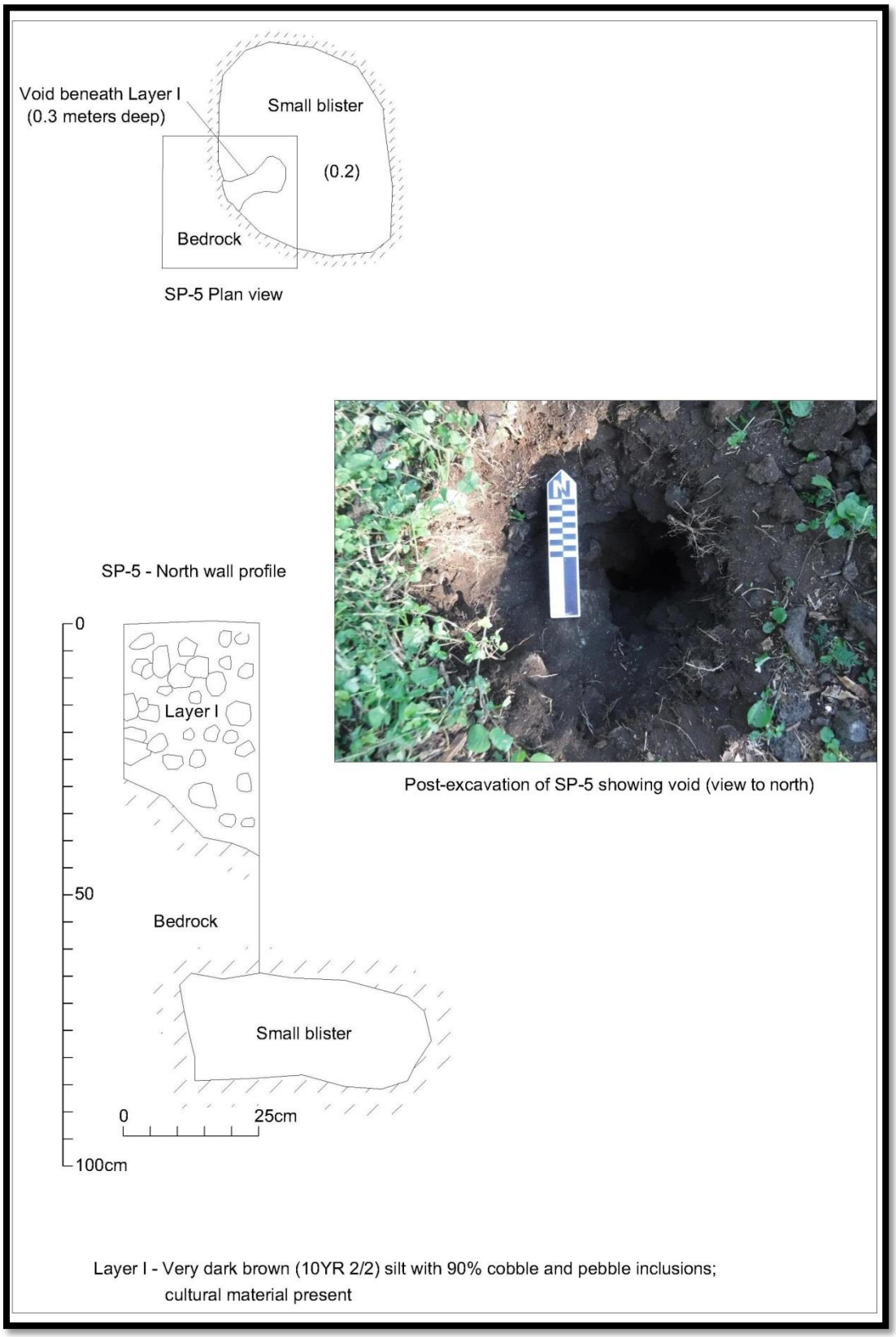


Figure 34. Profile, plan map and post-excavation photograph of SP-5

The Layer I soils consist of very dark brown to black silt that ranges in thickness from 0.17 to 0.4 meters. A variety of cultural material is present. The midden from the probes is presented in **Table 6** and the artifacts are summarized in **Table 7**. The recovered midden consists of marine shells, urchin exoskeleton and spines, fish bones, dog bones, pig bones, unidentified small mammal bones, burned and unburned *kukui* nutshells, and charred wood fragments. A human incisor with partial root intact was also recovered from the Layer I soil in SP-3. Indigenous artifacts from the Layer I soils consist of volcanic glass flakes, waterworn coral and basalt, a basalt adze fragment, and a basalt groundstone. Historic remains consist of one glass bottle fragment and a metal cotter pin.

The excavation of SP-5 revealed a small void (0.12 meters long by 0.6 meters wide in the underlying bedrock beneath the Layer I soil deposit (see **Figure 34**). This void extended down 0.3 meters to where it encountered a small lava blister. Observations made from the exterior indicate the blister is approximately 0.45 meters long, 0.35 meters wide and 0.2 meters high, with a bare lava floor and no cultural material.

Underlying Layer II soils are present in SP-1, SP-3 and SP-4 and consist of dark brown to dark yellowish brown silt. The Layer II soils range in thickness from 0.05 to 0.17 meters with no cultural material present.

The mapping of Site 7723 indicates that the site has been altered since the Mills and Irani study in 2000. The Feature C enclosure is shown as being formed by Mills and Irani's Wall 72 along the inland side and Wall 57 along the south and east sides (see **Figure 16)**. The northwest side of the enclosure is open and the north side is discontinuous. According to Mills and Irani, Wall 57 is a rubble filled wall that averaged 0.8 meters wide and 0.9 meters high built of 35% pahoehoe stones, 60% aʻā stones and 5% waterworn stones (2000:174). Wall 72 extends along the seaward side of the Site 10290 Old Government Beach beyond the limits of the project area. This wall was not rubble filled and it averaged 0.8 meters wide and 0.4 meters high, built entirely of aʻā stones (*ibid.*). The current examination of Feature C indicates that the entire structure has been rebuilt with prepared openings along the east and west sides.

Inspection of the Feature A terrace indicates that it has also been dismantled; however, it unclear if this disturbance occurred before or after the Mills and Irani (2000) survey. Although Site 7723 has been altered, the size and formal type of the Feature A terrace suggest it likely served as the foundation for a roofed structure. The Feature C enclosure served to delineate the boundary of the house lot and likely functioned to keep free ranging cattle from entering the habitation area. An interview with the adjacent landowner indicates that the Feature B enclosure is modern addition to the site. This structure is depicted on the **Figure 16** Mills and Irani (2000) map indicating it was built prior to 2000. Site 7723 is altered and in fair condition. It is assessed as significant per HAR §13-284-6 under Criterion d (information content) and is recommended for no further work.

Table 6. Midden from Shovel Probes 1-5

Midden from Feature C shovel probes	SP-1		SP-2				SP-3				SP-4		SP-5				Shovel Probes total	
	Layer I-1		Layer I-1		Layer I-2		Layer I-1		Layer I-2		Layer I-1		Layer I-1		Layer I-2			
	0-17 cmbs		0-20 cmbs		20-27 cmbs		0-20 cmbs		20-40 cmbs		0-20 cmbs		0-20 cmbs		20-40 cmbs			
	TNF	WT	TNF	WT	TNF	WT	TNF	WT	TNF	WT	TNF	WT	TNF	WT	TNF	WT	TNF	WT
MARINE INVERTEBRATES																		
GASTROPODA Conidae			2	0.9	1	1.1	1	0.5	1	0.4							**5**	**2.9**
Cypraeidae			7	8.4	5	3.9	20	9.2	11	10.9			3	1.5	1	1.4	**47**	**35.3**
Cypraeidae *Mauritia* sp.			1	6.0			4	50.0	6	20.8							**11**	**76.8**
Littorinidae							2	0.3	1	0.2	1	0.2					**4**	**0.7**
Muricidae			4	1.0	3	1.5	7	1.9	4	1.6	2	1.4					**20**	**7.4**
Muricidae *Drupa morum*							1	7.7									**1**	**7.7**
Muricidae *Drupa ricinus*			1	0.8	2	1.6	4	5.6					1	1.6			**8**	**9.6**
Muricidae *Drupa rubusidaea*			3	1.4			6	2.0	5	3.4			1	1.7			**15**	**8.5**
Muricidae *Morula granulata*							1	1.0					1	0.3			**2**	**1.3**
Muricidae *Thais intermedia*									1	1.6							**1**	**1.6**
Neritidae *Nerita picea*			3	0.5			2	0.4	3	0.7	2	0.5			1	0.3	**11**	**2.4**
Nacellidae *Cellana* sp.			4	0.8			5	13.4	2	1.4	4	0.5					**15**	**16.1**
Ranellidae							1	0.2									**1**	**0.2**
Indeterminate Marine Shell			16	6.8	12	4.2	3	2.5	2	1.3							**33**	**14.8**
Reef rubble	1	0.4									17	8.7					**18**	**9.1**
ECHINOIDEA Echinometridae urchin exoskeleton			1	0.2			3	0.3	8	1.0							**12**	**1.5**
Echinometridae Heterocentrotus mammillatus							2	1.3	3	0.8							**5**	**2.1**
SUB TOTAL	**1**	**0.4**	**42**	**26.8**	**23**	**12.3**	**62**	**96.3**	**47**	**44.1**	**26**	**11.3**	**6**	**5.1**	**2**	**1.7**	**209**	**198.0**
MARINE VERTEBRATES																		
Fish, cranial (undetermined)							3	0.5									**3**	**0.5**
Fish, post-cranial (undetermined)							2	0.1	3	0.3							**5**	**0.4**
Parrotfish (Scaridae)									1	0.2					1	0.1	**2**	**0.3**
SUB TOTAL	**0**	**0.0**	**0**	**0.0**	**0**	**0.0**	**5**	**0.6**	**4**	**0.5**	**0**	**0.0**	**0**	**0.0**	**1**	**0.1**	**10**	**1.2**
TERRESTRIAL VERTEBRATES																		
MAMMALIA *Canidae Canis familiaris* (dog)	2	0.7															**2**	**0.7**
Suidae *Sus scrofa* (pig)									2	0.5							**2**	**0.5**
Undetermined Mammal					1	0.1	5	1.5	8	2.7							**14**	**4.3**
SUB TOTAL	**2**	**0.7**	**0**	**0.0**	**1**	**0.1**	**5**	**1.5**	**10**	**3.2**	**0**	**0.0**	**0**	**0.0**	**0**	**0.0**	**18**	**5.5**
MACROFLORAL																		
Unburned *Kukui* nutshell (*Aleurites molluccana*)			35	6.0	7	1.1	83	25.8	101	22.7	17	4.2	3	1.4			**246**	**61.2**
Burned *Kukui* nutshell (*Aleurites molluccana*)							2	0.3									**2**	**0.3**
Charred wood					1	0.1	5	0.3	27	2.3							**33**	**2.7**
SUB TOTAL	**0**	**0.0**	**35**	**6.0**	**8**	**1.2**	**90**	**26.4**	**128**	**25.0**	**17**	**4.2**	**3**	**1.4**	**0**	**0.0**	**281**	**64.2**
TOTAL	**3**	**1.1**	**77**	**32.8**	**32**	**13.6**	**162**	**124.8**	**189**	**72.8**	**43**	**15.5**	**9**	**6.5**	**3**	**1.8**	**518**	**268.9**

cmbs= cm below surface, TNF=Total number of fragments, WT=Weight in grams

Table 7. Artifacts from Shovel Probes 1-5

Acc. No.	Unit	Layer	Depth cmbs	Specimen	Material	Type	TNF	Weight	Size Range	Length mm	Width mm	Thickness mm	Comment
5.003	SP-1	I-1	0-17 cmbs	*Pocillopora* sp. Pebble	Coral	Manuport	6	28.7					
5.004	SP-1	I-1	0-17 cmbs	*Porites* sp. Pebble	Coral	Manuport	1	16.4					
5.005	SP-1	I-1	0-17 cmbs	Waterworn Pebble	Basalt	Manuport	3	4.9					
6.001	SP-2	I-1	0-20 cmbs	Cotter Pin	Steel	Historic Hardware	1	7.8					3" length cotter pin
6.002	SP-2	I-1	0-20 cmbs	Secondary Flake	Volcanic Glass	Debitage	1	1.4	M				
6.014	SP-2	I-1	0-20 cmbs	*Pocillopora* sp. Pebble	Coral	Manuport	217	513.0					
6.015	SP-2	I-1	0-20 cmbs	*Porites* sp. Pebble	Coral	Manuport	63	137.2					
6.016	SP-2	I-1	0-20 cmbs	Waterworn Pebble	Basalt	Manuport	29	304.7					
7.001	SP-2	I-2	20-27 cmbs	Groundstone	Basalt	Expedient Tool	1	21.6		47.4	40.4	17.2	cobble fragment of fine grained basalt with 1 utilized surface with polish from use wear
7.010	SP-2	I-2	20-27 cmbs	*Pocillopora* sp. Pebble	Coral	Manuport	42	66.5					
7.011	SP-2	I-2	20-27 cmbs	*Porites* sp. Pebble	Coral	Manuport	13	6.7					
7.012	SP-2	I-2	20-27 cmbs	Waterworn Pebble	Basalt	Manuport	11	44.1					
8.001	SP-3	I-1	0-20 cmbs	Adze Fragment	Basalt	Formal Tool Fragment	1	22.6	L	50.9	30.9	13.1	medial fragment with polish on 1 facet and slight polish from use wear on adjacent facet
8.023	SP-3	I-1	0-20 cmbs	*Pocillopora* sp. Pebble	Coral	Manuport	83	282.3					
8.024	SP-3	I-1	0-20 cmbs	*Porites* sp. Pebble	Coral	Manuport	156	242.7					
8.025	SP-3	I-1	0-20 cmbs	Waterworn Pebble	Basalt	Manuport	56	524.0					
9.001	SP-3	I-2	20-40 cmbs	Colorless Bottle Fragment	Glass	Historic Containter	1	0.2					fragment of clear glass bottle
9.002	SP-3	I-2	20-40 cmbs	Groundstone	Basalt	Expedient Tool	1	12.5	L	23.1	19.2	17.1	fragment of fine grained basalt with 1 utilized surface with polish from use wear
9.021	SP-3	I-2	20-40 cmbs	*Pocillopora* sp. Pebble	Coral	Manuport	69	216.5					
9.022	SP-3	I-2	20-40 cmbs	*Porites* sp. Pebble	Coral	Manuport	138	291.7					
9.023	SP-3	I-2	20-40 cmbs	Waterworn Cobble	Basalt	Manuport	2	318.6					
9.024	SP-3	I-2	20-40 cmbs	Waterworn Pebble	Basalt	Manuport	46	593.0					
10.007	SP-4	I-1	0-20 cmbs	*Pocillopora* sp. Pebble	Coral	Manuport	98	189.6					
10.008	SP-4	I-1	0-20 cmbs	*Porites* sp. Pebble	Coral	Manuport	27	45.1					
10.009	SP-4	I-1	0-20 cmbs	Waterworn Pebble	Basalt	Manuport	169	279.6					
11.007	SP-5	I-1	0-20 cmbs	Reef Rubble	Waterworn Shell	Ecofact	9	4.5					
11.008	SP-5	I-1	0-20 cmbs	*Pocillopora* sp. Pebble	Coral	Manuport	37	80.5					
11.009	SP-5	I-1	0-20 cmbs	*Porites* sp. Pebble	Coral	Manuport	9	37.9					
11.010	SP-5	I-1	0-20 cmbs	Waterworn Pebble	Basalt	Manuport	55	155.8					
12.004	SP-5	I-2	20-40 cmbs	Reef Rubble	Waterworn Shell	Ecofact	2	1.6					
12.005	SP-5	I-2	20-40 cmbs	*Pocillopora* sp. Pebble	Coral	Manuport	8	48.1					
12.006	SP-5	I-2	20-40 cmbs	Waterworn Pebble	Basalt	Manuport	15	43.2					
TOTAL NUMBER AND WEIGHT OF ARTIFACTS							**1370**	**4543**					

cmbs= cm below surface, TNF=Total number of fragments, WT=Weight in grams

CONCLUSION

Discussion

The archaeological inventory survey results generally conform to the expectations derived from historical and archaeological background research. This research indicated that any sites in the parcel would likely be limited to historic remains most probably associated with historic habitation. The project documented the remnants of an historic house compound within the project area (Site 7723). This historic habitation site was likely occupied by Kaiakahauli, who acquired the land in 1819 when he received it from his parents. Kaiakahaul was awarded the subject parcel during the *Māhele* as LCA 8575:2. According to LCA testimony Kaiakahauli's claim included the *pā hale* or house lot that comprises the project area, along with an inland parcel containing agricultural garden plots.

Reinecke noted several house complexes in the coastal portion of Honalo Ahupuaʻa (Sites 77, 80, 81, 82, and 83); however, Reinecke's map of the area (1930:121) is illegible and it is impossible to determine which site corresponds to Site 7723. Reinecke (1930:109-110) does state that the houses in the area were "modern" at the time of his survey suggesting that they were potentially occupied or may have contained remnants of the wooden superstructures.

The presence of the Feature C wall that surrounds the parcel suggests that the site may have been occupied in late 1700s to early 1800s when free-ranging cattle became a problem. The historic use is also indicated by the historic artifacts collected during the project. These consist of glass bottle fragments, a glass bead, square nails, a Bakelite comb fragment and a metal cotter pin.

The thin underlying Layer III deposit noted in TU-1447.1 excavated in the Feature A terrace contained no historic material and potentially represents the remnants of the pre-contact use of this location. Two isolated human teeth were also recovered during the project. No additional human remains were present in association with these teeth indicating they do not represent human burials.

Information from an adjacent landowner indicates that the Feature B enclosure is a modern addition to the site and comparison of Mills and Irani's map of Site 7723, prepared in 2000 (see **Figure 16**), with the current condition of the site (see **Figure 17**), indicates that the Feature C enclosure that surrounds the site has been reconstructed in the interim. Although this feature has been altered it appears to occupy its original location.

Significance Assessments

The site identified during the survey is assessed for significance based on Hawaiʻi Administrative Rules (HAR) §13-284-6. According to (HAR) §13-284-6 (b), a site must possess integrity of location, design, setting, materials, workmanship, feeling, and/or association and shall meet one or more of the following criteria:

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

Site 7723 possesses integrity of location and materials. It is assessed as significant under Criterion “d”. The site has yielded information important for understanding the late prehistoric/early historic use of the project area.

Treatment Recommendations

Due to the generally disturbed nature of Site 7723, and the limited pre-contact cultural deposit noted beneath Feature A, no further work is recommended for the site; however, the landowner however has elected to preserve the Feature C enclosure and as much of the Feature A terrace as feasible.

TRANSLATION OF HAWAIIAN WORDS[1]

ahupuaʻa – traditional Hawaiian land unit usually extending from the uplands to the sea

hālau waʻa – canoe long house

heiau – Pre-Christian place of worship, shrine

hōlua – the ancient sled used on grassy slopes; the sled course

ʻili – next in importance to *ahupuaʻa* and usually a subdivision of an *ahupuaʻa*

kālau waʻa – canoe maker

kalo – taro

kahuna – Priest, sorcerer, magician, wizard, minister

kapu – taboo, forbidden

kaula – prophet or seer

kihapai – cultivated patch, garden, orchard, field, small farm; parish

konohiki – headman of an *ahupuaʻa* land division under the chief

kuaʻiwi – inland-seaward agricultural feature

kukui – Candlenut tree (*Aleurites moluccana*), a large tree in the spurge family bearing nuts containing oily kernels

kuleana – small piece of property, as within an *ahupuaʻa*

Māhele – land division of 1848

makai – seaward

mauka – inland

pā hale – house lot

pahoehoe –- Smooth, unbroken type of lava, contrasting with *aʻā* lava

pali – cliff

uala – sweet potato

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[1] - from wehewehe.org

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ENVIRONMENTAL ASSESSMENT

WALTER KALEO O KALANI NAKOA

SINGLE-FAMILY DWELLING

AND ASSOCIATED IMPROVEMENTS IN THE

CONSERVATION DISTRICT

TMK No. (3) 7-9-005:012

Honalo, North Kona District, County of Hawai‘i, State of Hawai`i

APPENDIX 4

Warranty Deed for the Property

STATE OF HAWAII
BUREAU OF CONVEYANCES
RECORDED
July 17, 2017 8:01 AM
Doc No(s) A-64070203

/s/ LESLIE T. KOBATA
REGISTRAR

1 1/2 TAW
B-33020859

Conveyance Tax: $225.00

LAND COURT SYSTEM | REGULAR SYSTEM

AFTER RECORDATION, RETURN BY: ☐ MAIL ☐ PICKUP

THIS DOCUMENT CONTAINS 5 PAGES

WALTER KALEO OKALANI NAKOA
Post Office Box 390224
Keauhou, Hawaii 96739-0224

Fidelity National Title & Escrow
Escrow No.: 101600348-TT
Tia Tagavilla

FNT

deeds\jaj\2017-257

AFFECTS TAX MAP KEY: (3) 7-9-005-012

WARRANTY DEED

PARTIES:

SELLER: **MYRON L. LINDSEY, married**, whose mailing address is 122 Ke Ala Ola Road, Honolulu, Hawaii 96817.

BUYER: **WALTER KALEO OKALANI NAKOA, Trustee of The Puna Wai Trust Living Trust, U/A dated October 13, 2015**, possessing full power to acquire, hold, grant, bargain, sell, convey, mortgage, lease, encumber and hypothecate real and personal property, and whose mailing address is Post Office Box 390224, Keauhou, Hawaii 96739-0224.

DESCRIPTION OF PROPERTY:

The property covered by this Warranty Deed is described in Exhibit "A" attached to this document.

SALE AND TRANSFER OF PROPERTY:

In return for the Buyer's payment of the purchase price as agreed between Seller and Buyer, the Seller sells and transfers the property described in Exhibit "A" to the Buyer.

SALE AND TRANSFER OF OTHER RIGHTS:

Seller also sells and transfers to the Buyer the following:

(A) All improvements located on the property;

(B) All rights the Seller has in other property because of the Seller's ownership of the property being sold (these rights are known as "easements and appurtenances");

(C) All rents or royalties from the property;

(D) Any mineral and metallic rights owned by the Seller in the property; and

(E) All other rights or privileges that the Seller owns because of the Seller's ownership of the property.

BUYER'S TENANCY:

The Buyer will take and own the property as **TRUSTEE AFORESAID**. The Buyer will also own the other rights described above in the same tenancy.

SELLER'S WARRANTIES:

By signing this Warranty Deed, Seller gives Buyer a general warranty of title. This means that Seller guarantees:

(A) That the Seller lawfully owns the property and other rights being sold to Buyer;

(B) That the Seller has the right to sell and transfer the property and other rights described in Exhibit "A" and this Deed;

(C) That there are no other claims by any person against the property or the other rights being sold and no other person has any rights in the property unless those claims or rights are described in Exhibit "A"; and

(D) That if any other person makes any lawful claim against the property or the other rights being sold, or has any rights in the property, and those claims or rights are not described in Exhibit "A", then the Seller will defend the Buyer's ownership against those lawful claims and rights. The Seller does not have any obligation to defend the Buyer's ownership against any claims or rights described in Exhibit "A".

DEFINITIONS:

The word "person" includes natural persons, business organizations and any other entity the law allows to own property or conduct business;

The words "Seller" and "Buyer" include the persons named in this Deed and those who take over or succeed to that person's rights or interests, whether by purchase, inheritance, operation of law or otherwise.

DATE:

This Deed is being signed by the Seller on the 13th day of July, 2017.

MYRON L. LINDSEY

"Seller"

STATE OF HAWAII)
Hawaii) SS.
~~CITY &~~ COUNTY OF ~~HONOLULU~~)
& W.P.

On this 13th day of July, 2017, in the ~~First~~ 3rd & W.P. Circuit, State of Hawaii, before me personally appeared **MYRON L. LINDSEY**, to me personally known or proved to me on the basis of satisfactory evidence, who, being by me duly sworn or affirmed, did say that such person(s) executed the foregoing instrument identified or described as **WARRANTY DEED**, as the free act and deed of such person(s), and if applicable in the capacity shown, having been duly authorized to execute such instrument in such capacity.

The foregoing instrument is dated July 13, 2017, and contained 5 pages at the time of this acknowledgment/certification.

(Official Stamp or Seal)

STASON BARIDO NOTARY PUBLIC No.16-303 STATE OF HAWAII

Print Name: Stason Barido
Notary Public, State of Hawaii
My Commission Number: 16-303
My Commission Expires: August 14, 2020

STASON BARIDO NOTARY PUBLIC No.16-303 STATE OF HAWAII

Doc. Date: 7/13/17 # Pages: 5
Stason Barido
Doc. Description Warranty Deed
Second Circuit ~~Third~~ & W.P.
Notary Signature 7/13/17 Date
NOTARY CERTIFICATION

EXHIBIT "A"

Land situate at Honalo, District of North Kona, Island of Hawaii being Royal Patent 3726, Land Commission Award 8575 Apana 2 to Kalakahouli and containing an area of 0.17 Ac., and commonly designated as Tax Map Key: (3) 7-9-005-012.

Being all the property conveyed by the following:

Warranty Deed

Grantor:	Eva Lindsey Kealamakia, Trustee under that certain unrecorded Revocable Living trust of Eva Lindsey Kealamakia dated June 21, 2000
Grantee:	Myron L. Lindsey, Married, as Tenant in Severalty
Dated:	June 13, 2016
Recorded Date:	June 17, 2016
Recording No:	A-60120854

SUBJECT, HOWEVER, TO:

1. (a) Unpatented mining claims: (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b) or (c) are shown by the Public Records.

2. Mineral and water rights of any nature in favor of the State of Hawaii.

3. Claims arising out of rights customarily and traditionally exercised for subsistence, cultural, religious, access or gathering purposes as provided for in the Hawaii Constitution or the Hawaii Revised Statutes.

END OF EXHIBIT "A"

ENVIRONMENTAL ASSESSMENT

WALTER KALEO O KALANI NAKOA

SINGLE-FAMILY DWELLING

AND ASSOCIATED IMPROVEMENTS IN THE

CONSERVATION DISTRICT

TMK No. (3) 7-9-005:012

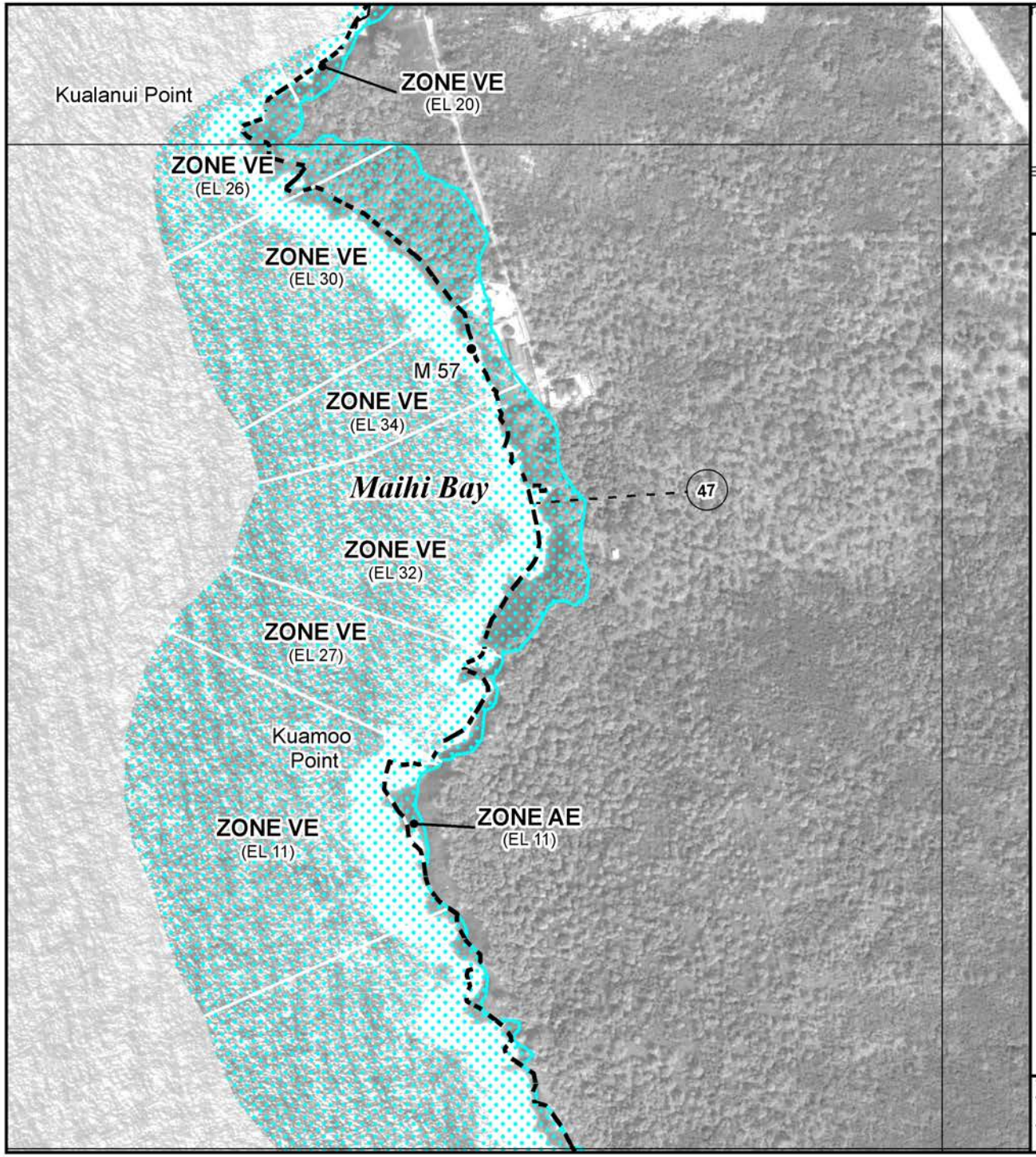
Honalo, North Kona District, County of Hawai‘i, State of Hawai`i

APPENDIX 5

FIRM Map 1551660962F

and

Flood Hazard Assessment Report



ance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

0 250 500 750 1,000 FEET

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0962F

FIRM

FLOOD INSURANCE RATE MAP

HAWAII COUNTY, HAWAII

PANEL 962 OF 1975

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
HAWAII COUNTY	155166	0962	F

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

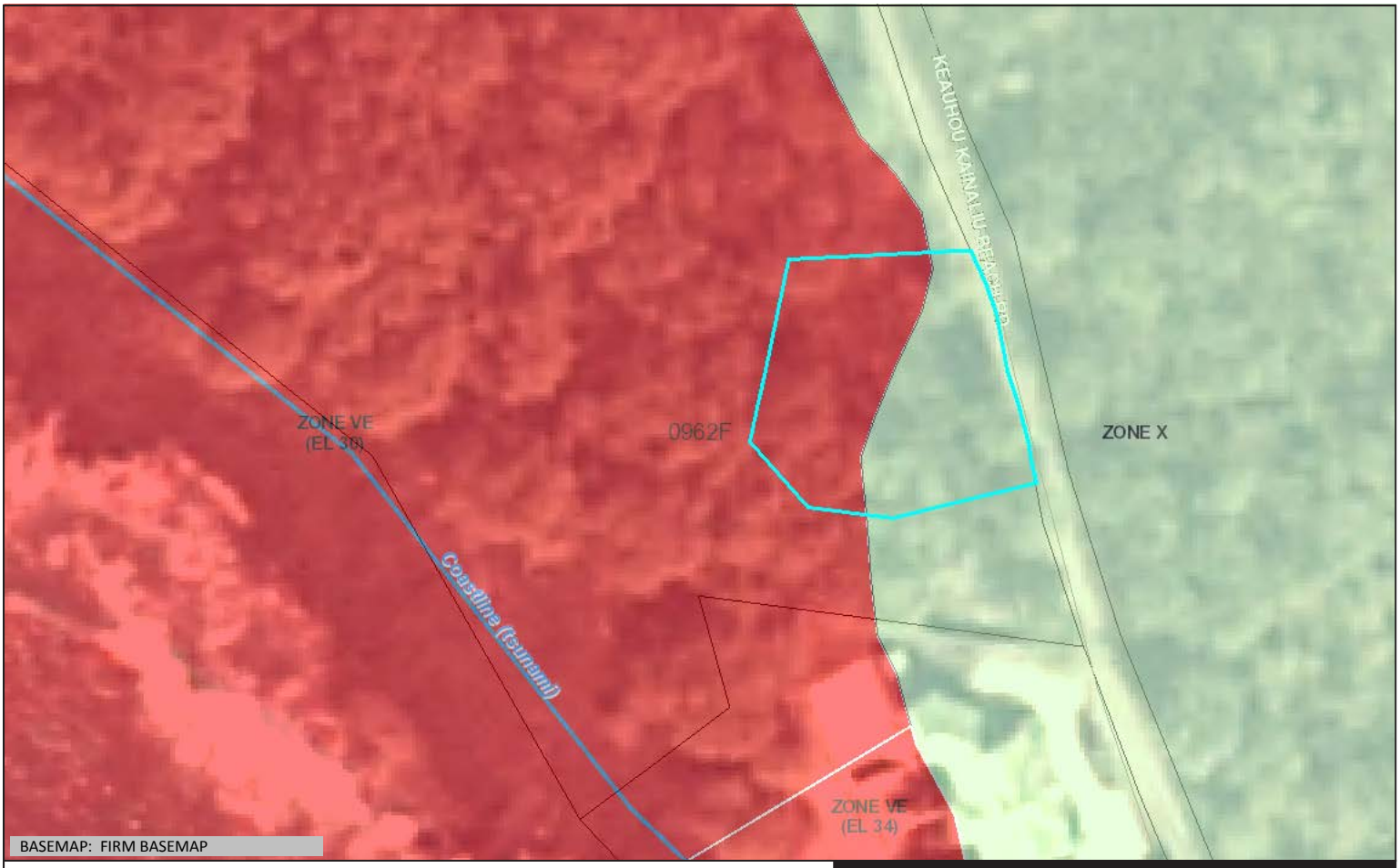
MAP NUMBER
1551660962F

MAP REVISED
SEPTEMBER 29, 2017

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Appendix 5



Flood Hazard Assessment Report

www.hawaiinfip.org

Property Information

COUNTY:	HAWAII
TMK NO:	(3) 7-9-005:012
WATERSHED:	WAIAHA
PARCEL ADDRESS:	ADDRESS NOT DETERMINED KAILUA KONA, HI 96740

Notes:

Flood Hazard Information

FIRM INDEX DATE:	SEPTEMBER 29, 2017
LETTER OF MAP CHANGE(S):	NONE
FEMA FIRM PANEL:	1551660962F
PANEL EFFECTIVE DATE:	SEPTEMBER 29, 2017

THIS PROPERTY IS WITHIN A TSUNAMI EVACUTION 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/

0 40 80 ft

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 know 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 XS (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.

ENVIRONMENTAL ASSESSMENT

WALTER KALEO O KALANI NAKOA

SINGLE-FAMILY DWELLING

AND ASSOCIATED IMPROVEMENTS IN THE

CONSERVATION DISTRICT

TMK No. (3) 7-9-005:012

Honalo, North Kona District, County of Hawai‘i, State of Hawai`i

APPENDIX 6

Individual Wastewater System Application

INDIVIDUAL WASTEWATER SYSTEM
APPLICATION INFORMATION SHEET

Engineer: Peter J.K. Dahlberg,(PE-11345 C) (808) 895-6173
pdahlberg@hawaii.rr.com

Owner: PUNA WAI TRUST

Owner's Mailing Address: P.O. Box 2266
Kailua-Kona, HI. 96745

Project Location: Keauhou Kainaliu Beach Rd. (Honalo), North Kona
(Street address, Subdivision Name, and General Area)

Project TMK: (3) - 7 - 9 - 005 : 012

Lot Size: 7,405 sq. ft.

Projected Flow or Number of Bedrooms: 2 (see pg 4)

Proposed Treatment Unit: INFILTRATOR IM1060 1000 GAL. TANK

Proposed Disposal System: ABSORPTION BED

Design Percolation Rate: ONE MIN. PER INCH (see pg 3)

Existing IWS on the lot: NO Type: NA

Existing structure on lot: NO Type:

Existing potable drinking well within 1,000 ft. Of the proposed disposal system? NO

Would the construction and/or discharges from the proposed IWS affect any public trust or Native Hawaiian resources or the exercise of traditional cultural practices in the vicinity? NO

If yes, indicate what feasible action can be taken to protect those resources or exercise of practices: N/A

FOR DEPARTMENT USE ONLY:

Date Received:_____Project Engineer:_____File No._____

Notes:_____

Revised 3/11/14

TABLE OF CONTENTS

1. Design Criteria
2. Site Plan
3. Site Evaluation/Percolation Test
4. Floor Plan
5. Vicinity Map (Road Map)
6. Location Map (Lot Location)
7. Absorption Bed Layout
8. Absorption Bed Detail
9. IWS Profile
10. 5 pages Septic Tank Detail and Installation Instructions
11. 2 pages Owner's Certification Letter
12. Inspecting your Septic Tank
13. Operation and Maintenance Instructions
14. Septic Tank Inspection Record

OPTIONAL MAINTENANCE ATTACHMENT

A. Residential size Effluent Filter

B. Sweet Air Vent Filter

23 pages total, to include application sheet

DESIGN CRITERIA

Individual Wastewater System (IWS) Septic

1. LOCATION: Keauhou Kainaliu Beach Rd. (Honalo)
PUNA WAI TRUST Residence
TMK (3) - 7 - 9 - 005 : 012
2 Bedrooms

2. PROJECTED FLOW

No. of Bedrooms (BDR) 2

Total Daily Flow: 2 x 200 = 400 GPD
(BDR) * 200(gallons per day per BDR)
(see HAR 11-62 App D. Table I)

3. SEPTIC TANK

INSTALL: 1000 Gallon INFILTRATOR IM1060 Septic Tank

4. DISPOSAL SYSTEM

- Percolation Rate:		1 min. / inch
- Required Absorption Area	per BDR	= 70 ft^2
- Required Absorption Area	2 x 70	= 140 ft^2
- Absorption Area Provided	12' x 12'	= 144 ft^2

INSTALL: 12' x 12' bed (144 sq. ft.) with 3 feet of suitable soil replacement.

INSTALLATION NOTES

-IWS shall not be constructed during rainy periods.

-Contractor shall provide photographs to the engineer showing progress of IWS installation and pictures of the installed IWS prior to final backfill.

-No heavy equipment is allowed in bed excavation.

PETER J.K. DAHLBERG, P.E.
PDAHLBERG@HAWAII.RR.COM
PHONE (808)895-6173

DESIGN CRITERIA
PUNA WAI TRUST

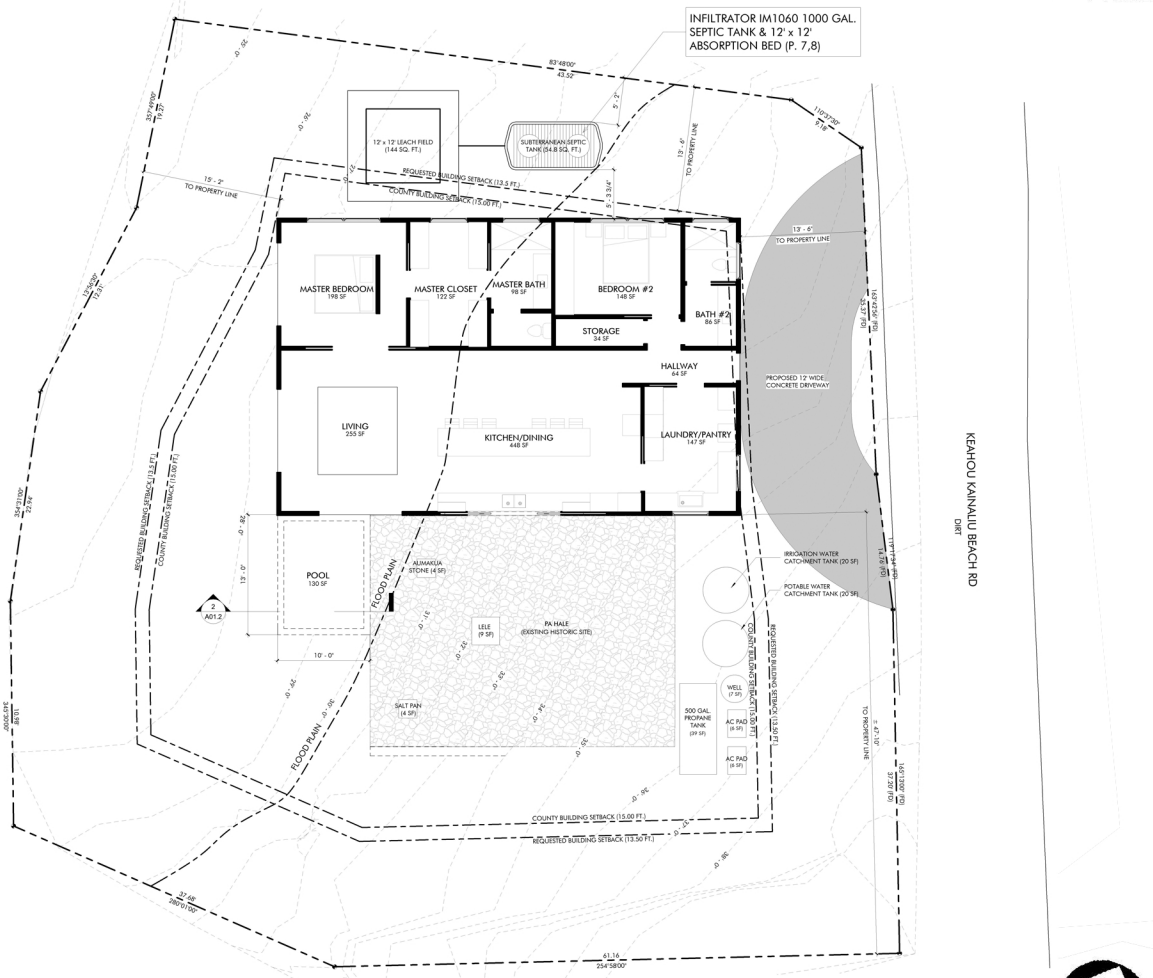
PROJECT INFORMATION:

OWNER: Puna Wai Trust
LOCATION: Keauhou Kainaliu Beach Road
(lot 14, Kahauloa House Lots)
TMK:(3) - 8 - 2 - 006 : 030
LOT SIZE: 7,405 Sq. Ft.
BEDROOMS: 2

LOCATION NOTES:

NOTE: MINIMUM SEPARATION DISTANCES FOR SEPTIC TANK / ABSORPTION SYSTEM FROM:
ABSORPTION SYSTEM / SEPTIC TANK - 5'
PROPERTY LINE (PL) - 5'
BUILDING LINE - 5'
STREAM OR POND - 50'
LARGE TREES - 10'

(REF. HAR 11-62 APP. D;TII)



2.1 SITE PLAN FOR SEPTIC SYSTEM

SCALE: 1" = 20'

CONSTRUCTION NOTES:

1. SEPTIC SYSTEM WORK BY ONLY THE FOLLOWING LICENSED CONTRACTORS: TYPE "A" GENERAL ENGINEERING; C-9 CESSPOOL; C-37 PLUMBING; C-37A SEWER AND DRAINLINE; OR C-43 SEWER, SEWER DISPOSAL, DRAIN AND PIPE LAYING.
2. CONSTRUCTION OF THE SYSTEM SHALL START AFTER THE PERMIT IS REVIEWED AND APPROVED BY THE DEPARTMENT OF HEALTH (DOH). NO DEVIATIONS FROM DOH APPROVED PLANS UNLESS APPROVED BY DOH.
3. NEW WASTELINE TO BE 4" ABS OR PVC SCH. 40 DWV UNDER 12" MIN. COVER. SLOPE AT 2% TO SEPTIC TANK AND FROM SEPTIC TANK TO ABSORPTION BED. ALL WORK SHALL CONFORM TO THE STATE OF HAWAII ADMINISTRATIVE RULES TITLE 11 CHAPTER 62 AND THE GOVERNING LOCAL OR UNIFORM PLUMBING CODE AS AMENDED BY THE COUNTY OF HAWAII.
4. PROPERTY LINE AND BUILDING LOCATIONS SHOWN HAVE BEEN PROVIDED BY MOST ACCURATE INFORMATION AVAILABLE WHICH WAS NOT VERIFIED BY ENGINEER OR SURVEY. CONTRACTOR TO VERIFY PROPERTY LINES, REQUIRED SETBACKS AND PROVIDE AS-BUILT SURVEY IF NECESSARY FOLLOWING SEPTIC SYSTEM INSTALLATION.

THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION AND
CONSTRUCTION OF THIS PROJECT
WILL BE UNDER MY OBSERVATION

24 MAY 2020
DESIGN DATE

PETER J.K. DAHLBERG, (PE-11345 C; exp. 4/30/2022)
P: (808) 895-6173 F: (808) 331-0449 E: pdahlberg@hawaii.rr.com

IWS DESIGN PAGE
2
SITE PLAN FOR SEPTIC SYSTEM

SITE EVALUATION/PERCOLATION TEST

DATE/TIME:

TEST PERFORMED BY: Peter J.K Dahlberg, P.E. - 11345

OWNER: PUNA WAI TRUST

TAX MAP KEY: (3) - 7 - 9 - 005 : 012

ELEVATION: ~30' FT.
DEPTH TO GROUNDWATER TABLE: N\O > 60 INCHES BELOW GRADE
DEPTH TO BEDROCK (if observed): 1.5 FT. BELOW GRADE
DIAMETER OF HOLE: SIX (6) INCHES
DEPTH TO HOLE BOTTOM: FIVE (5) FT. BELOW GRADE

DEPTH, INCHES BELOW GRADE	SOIL PROFILE (color, texture, other)
0 - 18"	Extremely cobbly silt loam
18" - 60"	Bedrock

PERCOLATION READINGS

TIME 12 in. OF WATER TO SEEP AWAY: 10 Min.
TIME 12 in. OF WATER TO SEEP AWAY: 10 Min.

CHECK ONE:

X Percolation tests in sandy soils, recorded time intervals and water drops at least every 10 minutes for at least 1 hour.

Percolation test in non-sandy soils, presoaked the test hole for at least 4 hours. Recorded time intervals and water drops at least every 10 minutes for 1 hour or if the time for the first 6 inches to seep away is greater than 30 minutes record time intervals and water drops at least every 30 minutes for 4 hours or until 2 successive drops do not vary by more than 1/16 inch.

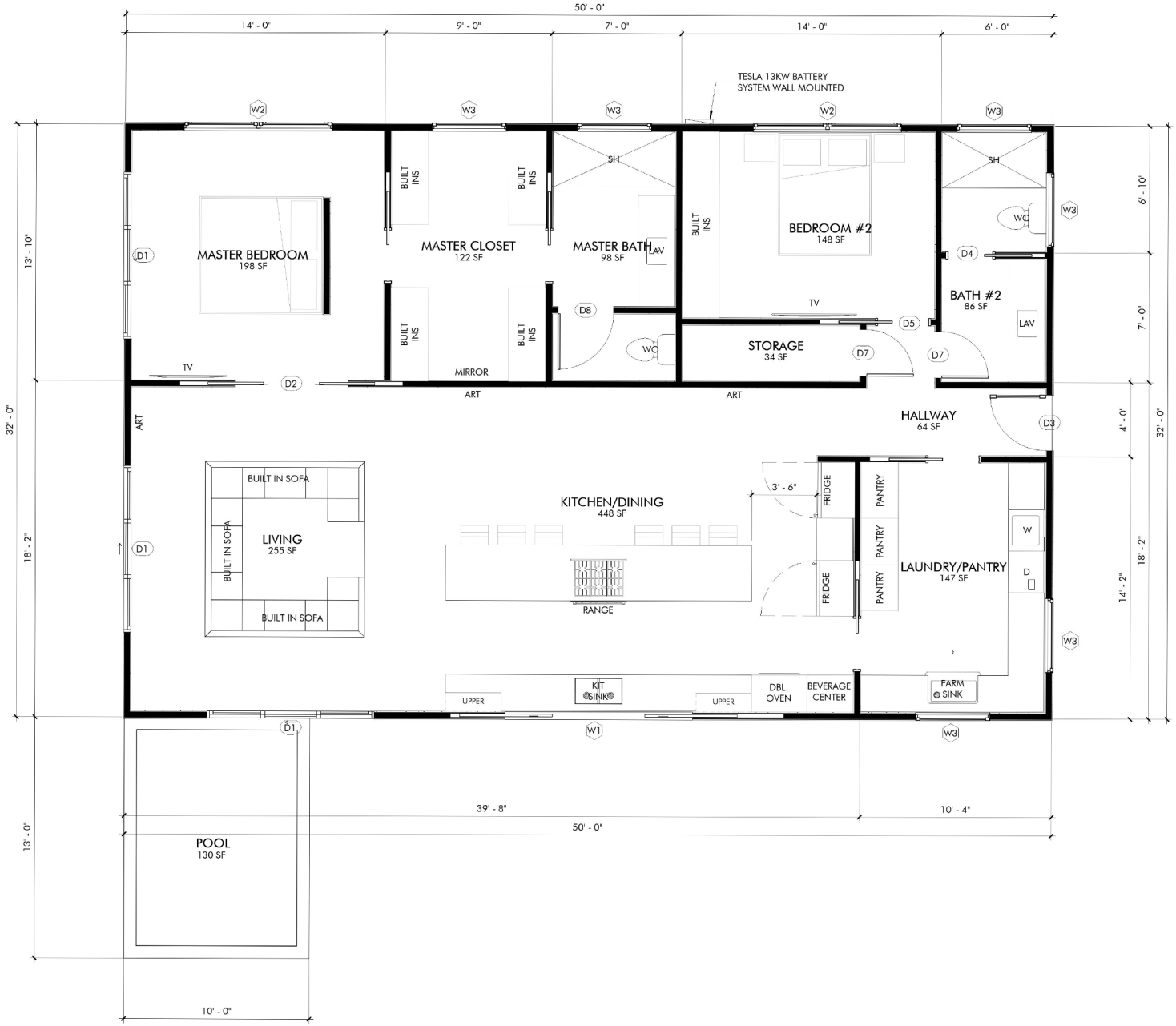
TIME INTERVAL	DROP IN INCHES	TIME INTERVAL	DROP IN INCHES
10 min.	>18	10 min.	>18
10 min.	>18	10 min.	>18
10 min.	>18	10 min.	>18
10 min.	>18	10 min.	>18
10 min.	>18	10 min.	>18
10 min.	>18	10 min.	>18

PERCOLATION RATE (time/final water level drop): 1 Min/in

As the engineer responsible for gathering and providing site information and percolation test results, I attest to the fact that above site information is accurate and that the site evaluation was conducted in accordance with the provisions of Chapter 11-62, "Wastewater Systems" and the results were acceptable. I also attest that three feet of suitable soil exist between the bottom of the soil absorption system and the groundwater table or any other limiting layer.

PETER J.K. DAHLBERG, P.E.
PDAHLBERG@HAWAII.RR.COM
PHONE (808)895-6173

Engineer's Signature/ Stamp



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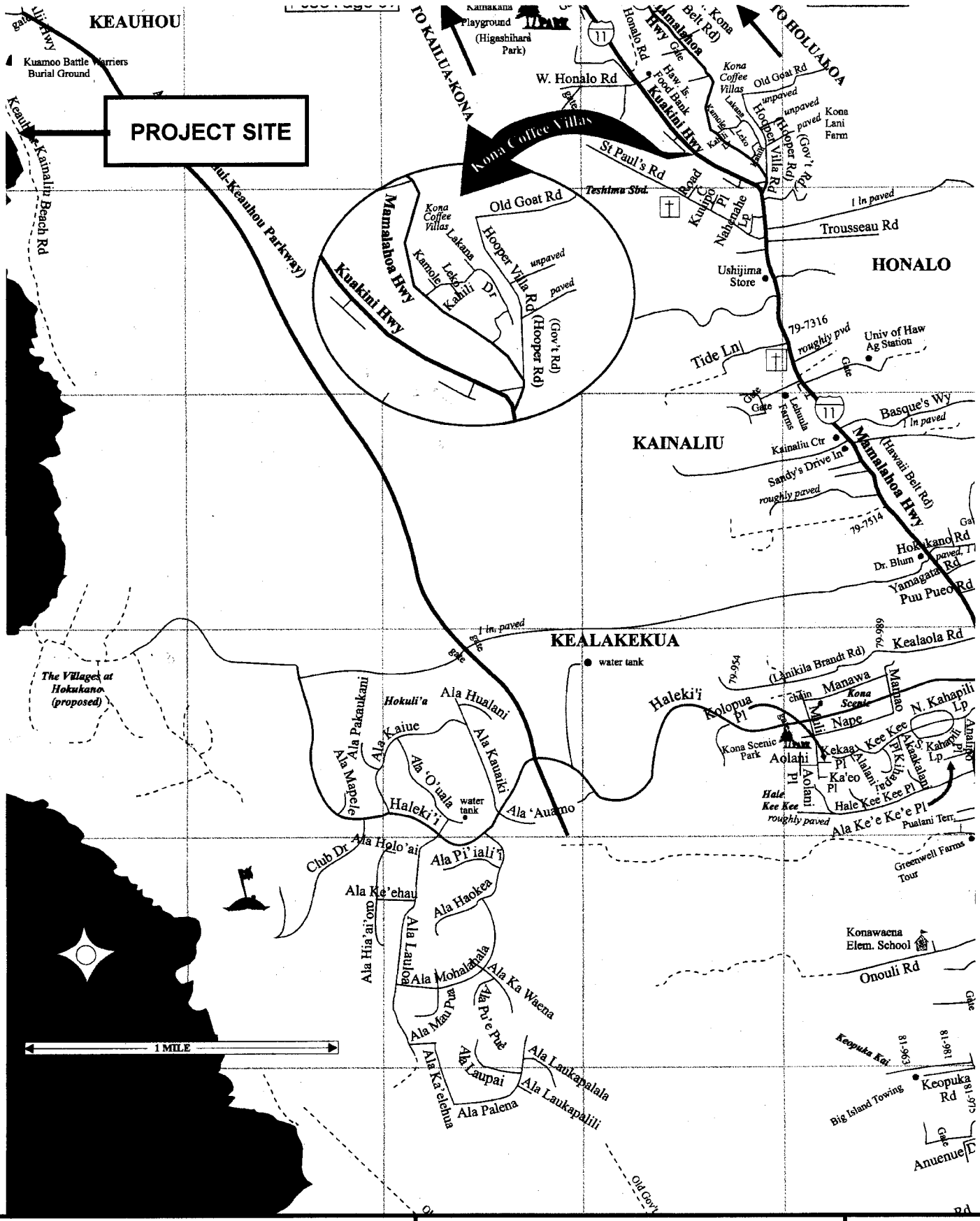
FLOOR PLAN

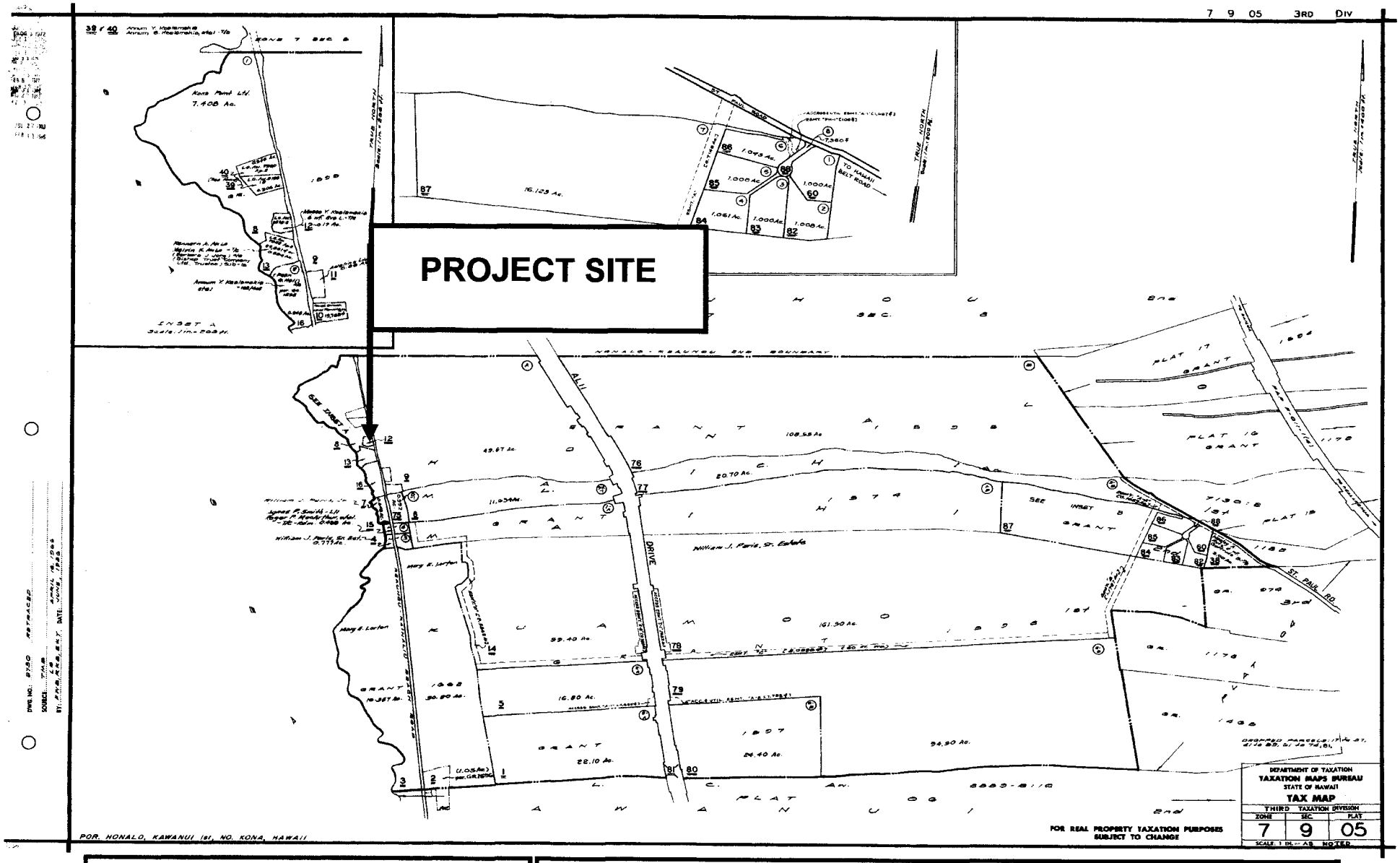
PUNA WAI TRUST

(3) 7 – 9 – 005 : 012

4



PETER J.K. DAHLBERG, P.E. PDAHLBERG@HAWAII.RR.COM (808) 895-6173	VICINITY MAP PUNA WAI TRUST KEAUHOU – KAINALIU BEACH RD	5



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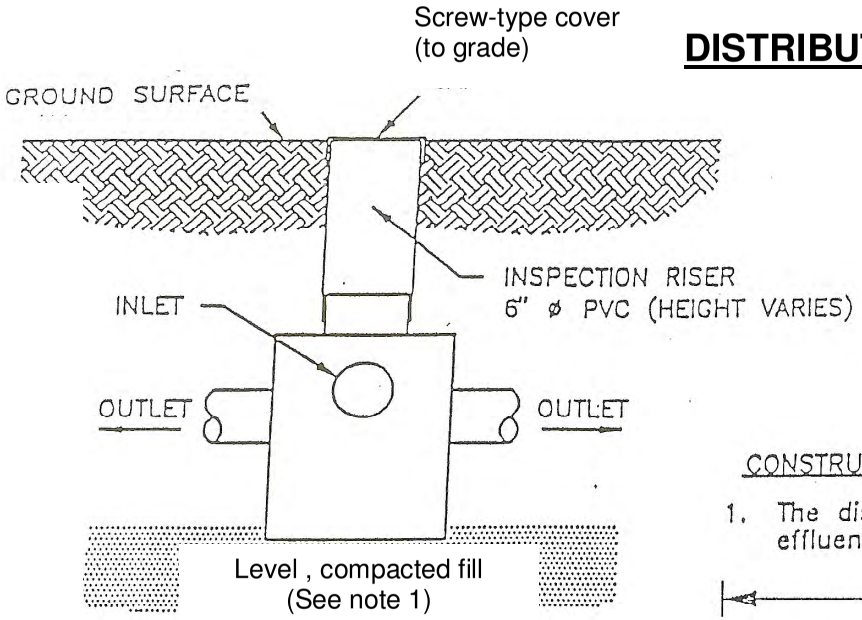
(808) 895-6173

LOCATION MAP

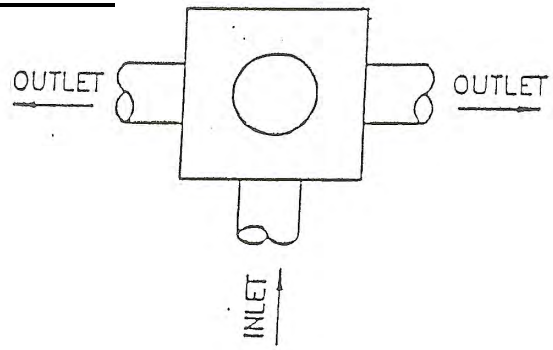
PUNA WAI TRUST

(3) 7 – 9 – 005 : 012

DISTRIBUTION BOX DETAIL



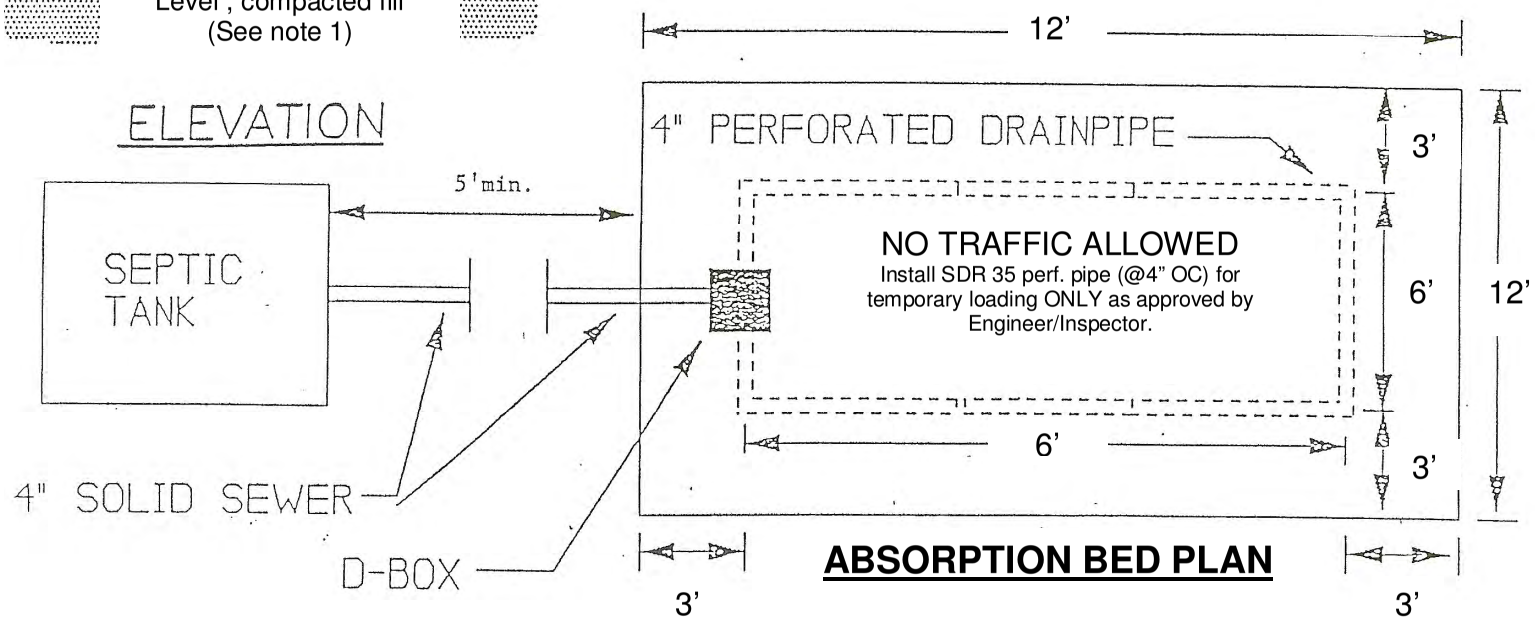
ELEVATION



PLAN

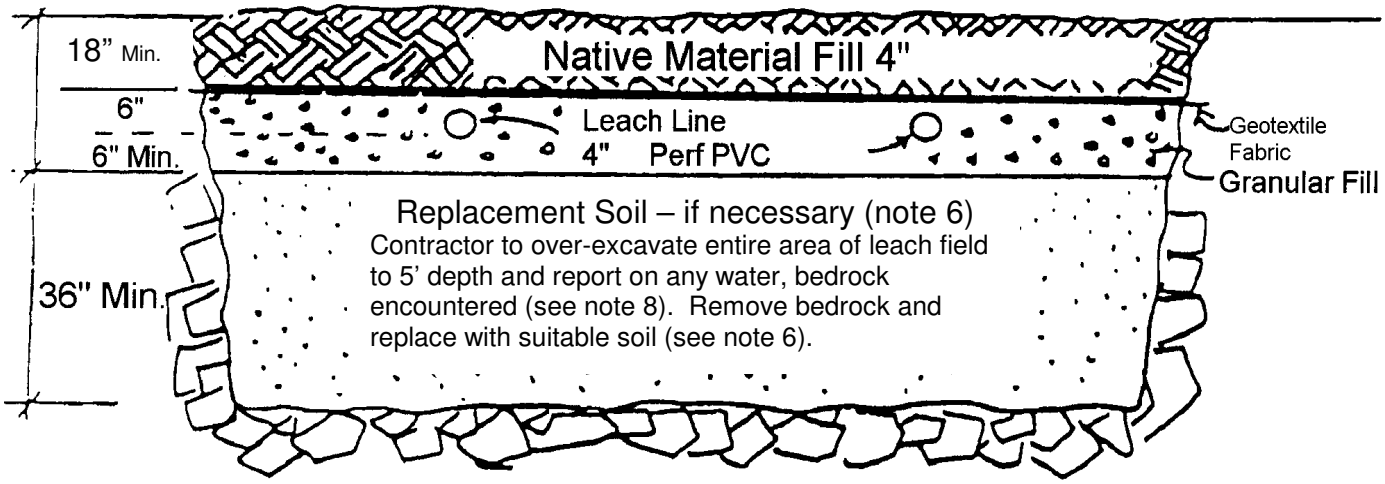
CONSTRUCTION NOTE

1. The distribution box shall be set level and arranged so that effluent is evenly distributed to each distribution line.



ABSORPTION BED PLAN

PETER J.K. DAHLBERG, P.E. PDAHLBERG@HAWAII.RR.COM (808) 895-6173	ABSORPTION BED PLAN DISTRIBUTION BOX DETAIL 12' x 12' (TYPICAL) NOTE: D-BOX AT CENTER OF HEADER (AS SHOWN) NO MODIFICATIONS UNLESS APPROVED BY DOH	7



CONSTRUCTION NOTES

1. Two leach lines minimum. Maximum length each line 100'.

2. Spacing between leach lines shall be 6' on center, minimum 4'. Each line shall be at least 1.5', but no greater than 3' from absorption bed sides/walls.

3. The floor of the absorption bed and leach lines shall be level.

4. Leach line pipe to be 4" dia. PVC Perforated Pipe (shall meet the appropriate ASTM standard or those of an equivalent laboratory). **Finish grade shall be a minimum of 18" above leach pipes.** No vehicular or heavy traffic is allowed over bed and leach lines.

5. Granular material shall be gravel or crushed stone (drain rock) washed and range from ¾"-2.5" in size. Provide Geotextile Fabric (4 oz. MIRAFI or approved equivalent) cover over drain rock.

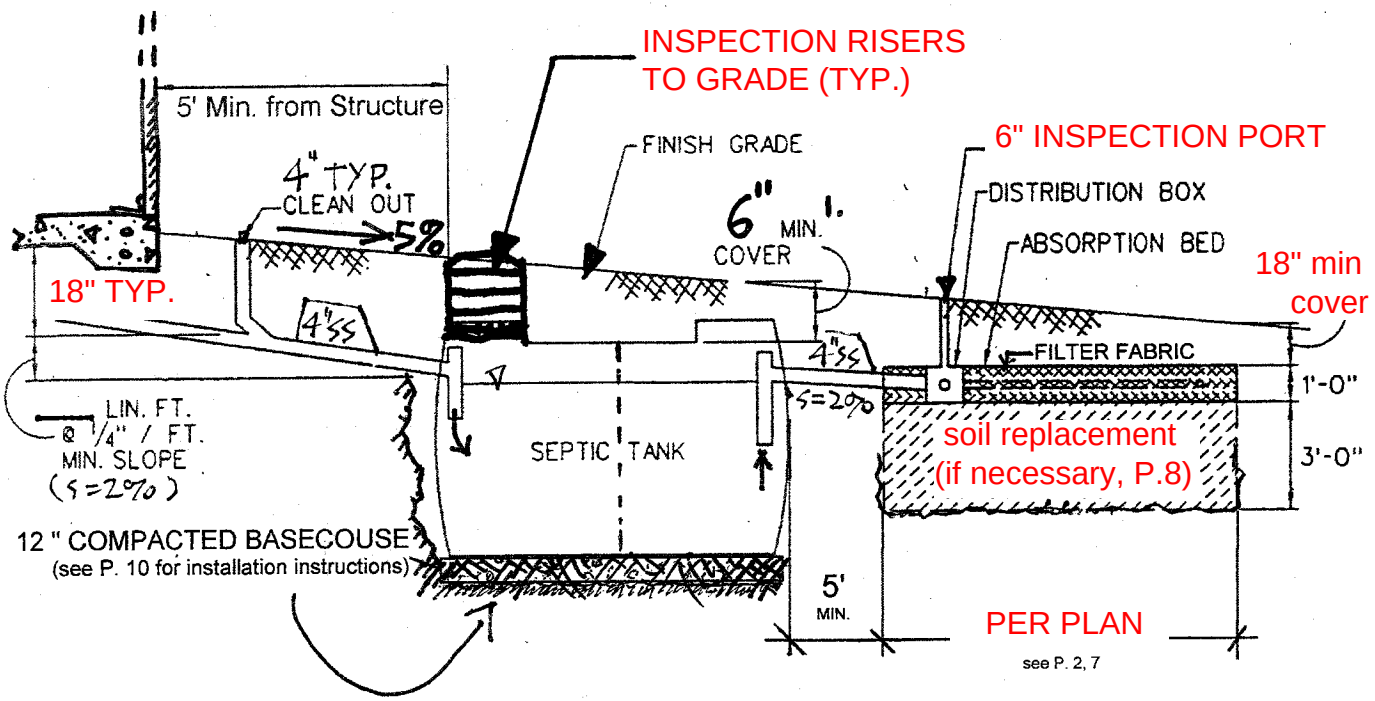
6. Absorption Bed – Replacement Soil:
   a) 3/8-inch minus cinder material from an approved source with a percolation rate of no more than one minute per inch. Material to be compacted to between 80% - 90% compaction, or
   b) 3/8-inch minus cinder-soil mixture from an approved source with a percolation rate of no more than one minute per inch. Material to be compacted to between 80% and 90% compaction.

7. Rock in native fill material shall not exceed 4 inches (remove boulders). **Contractor to provide to engineer invoice copies of soil replacement used, showing quantities.**

8. **The bottom of the absorption bed to the seasonal high groundwater level, bedrock, or other limiting layer shall be greater than 3'.** The depths to the pipe inverts of the septic tank, distribution box, and absorption system are controlled by topographic features and the invert of the building sewer, all of which may affect the depths shown on the drawings.

9. Where not otherwise specified, the construction of the absorption bed shall conform to Title 11, Chapter 62, Subchapter 3 Individual Wastewater Systems, Section 11-62-34, Administrative Rules, State of Hawaii, Department of Health. **Contractor to provide Engineer with photos of construction showing all stages of system progress and implementation.** Contractor and/or Owner to inform Engineer of any deviations made to stated Construction Notes and above detail.

PETER J.K. DAHLBERG, P.E. PDAHLBERG@HAWAII.RR.COM (808) 895-6173	ABSORPTION BED DETAIL NO SCALE (R 10/31/2014)	8



CONSTRUCTION NOTES:

1. The depths to the pipe inverts of the septic tank, distribution box, and adsorption system are controlled by topographic features and the invert of the building sewer, all of which may affect the depths shown on the drawings.

2. Where not otherwise specified, the construction of the individual wastewater system shall conform to Title 11, Chapter 62, Subchapter 3 Individual Wastewater Systems, Section 11-62-34, Administrative Rules, Dept. of Health, State of Hawaii. Contractor to notify Engineer for inspection of installed IWS prior to final backfill.

PETER J.K. DAHLBERG, P.E. PDAHLBERG@HAWAII.RR.COM PHONE (808)895-6173	TYPICAL SEPTIC SYSTEM CROSS SECTION	9

INFILTRATOR® tanks

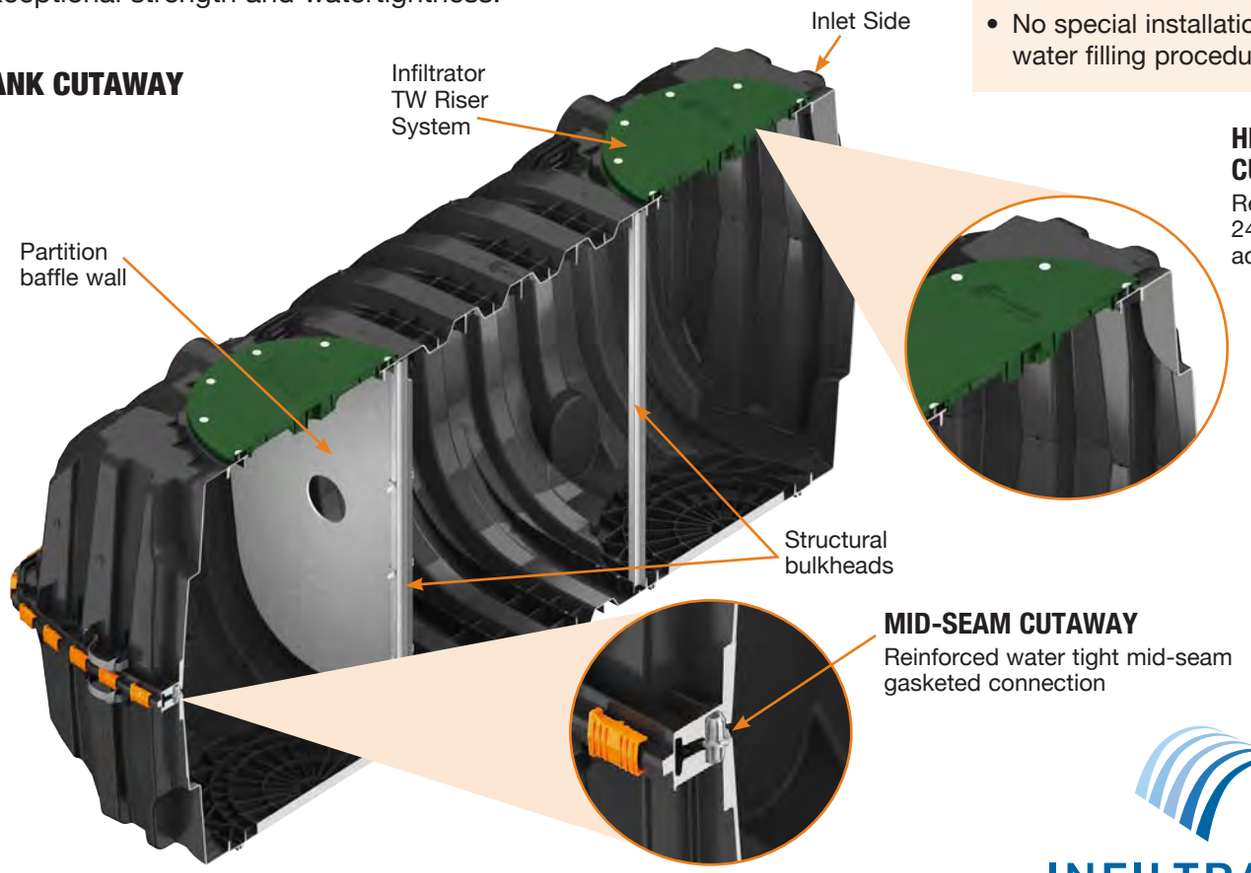
IM-1060

Features & Benefits

- Strong injection molded polypropylene construction
- Lightweight plastic construction and inboard lifting lugs allow for easy delivery and handling
- Integral heavy-duty green lids that interconnect with TW™ risers and pipe riser solutions
- Structurally reinforced access ports eliminate distortion during installation and pump-outs
- Reinforced structural ribbing and fiberglass bulkheads offer additional strength
- Can be installed with 6” to 48” of cover
- Can be pumped dry during pump-outs
- Suitable for use as a septic tank, pump tank, or rainwater (non-potable) tank
- No special installation, backfill or water filling procedures are required

The Infiltrator IM-1060 is a lightweight strong and durable septic tank. This watertight tank design is offered with Infiltrator’s line of custom-fit risers and heavy-duty lids. Infiltrator injection molded tanks provide a revolutionary improvement in plastic septic tank design, offering long-term exceptional strength and watertightness.

TANK CUTAWAY



HEAVY DUTY LID CUTAWAY
Reinforced 24” structural access port

MID-SEAM CUTAWAY
Reinforced water tight mid-seam gasketed connection

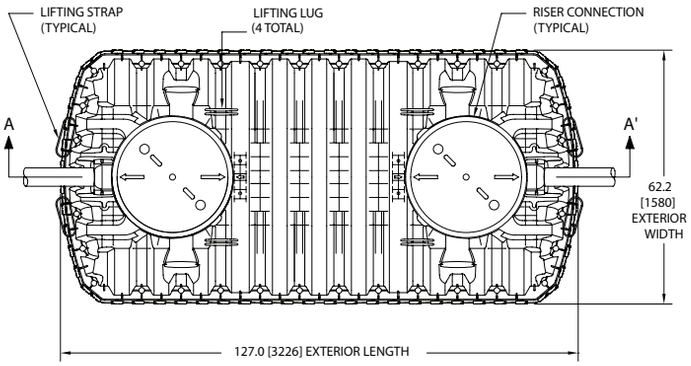
Protecting the Environment with **Innovative Wastewater Treatment Solutions**

INFILTRATOR® systems inc.

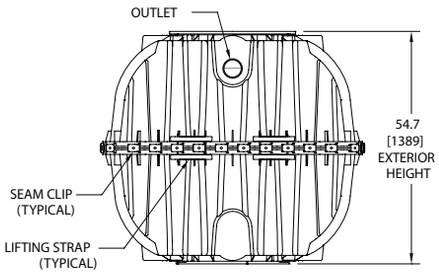
IM-1060 General Specifications and Illustrations

The IM-1060 is an injection molded two piece mid-seam plastic tank. The IM-1060 injection molded plastic design allows for a mid-seam joint that has precise dimensions for accepting an engineered EPDM gasket. Infiltrator's gasket design utilizes technology from the water industry to deliver proven means of maintaining a watertight seal. The two-piece design is permanently fastened using a series of non-corrosive plastic alignment dowels and locking seam clips. The IM-1060 is assembled and sold through a network of certified Infiltrator distributors.

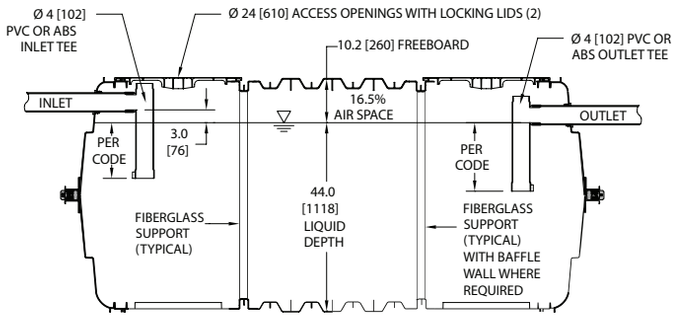
IM-1060	
Working Capacity	1094 gal (4141 L)
Total Capacity	1287 gal (4872 L)
Airspace	16.5%
Length	127" (3226 mm)
Width	62.2" (1580 mm)
Length-to-Width Ratio	2.3 to 1
Height	54.7" (1389 mm)
Liquid Level	44" (1118 mm)
Invert Drop	3" (76 mm)
Fiberglass Supports	2
Compartments	1 or 2
Maximum Burial Depth	48" (1219 mm)
Minimum Burial Depth	6" (152 mm)
Maximum Pipe Diameter	6" (152 mm)
Weight	320 lbs (145 kg)



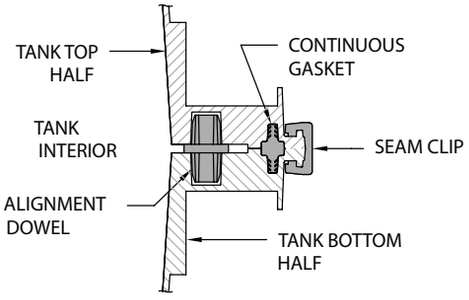
TOP VIEW



END VIEW



SIDE VIEW



MID-HEIGHT SEAM SECTION

INFILTRATOR® systems inc.

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P.O. Box 768
Old Saybrook, CT 06475
860-577-7000 • Fax 860-577-7001
1-800-221-4436
www.infiltratorsystems.com

U.S. Patents: 4,759,661; 5,017,041; 5,156,488; 5,336,017; 5,401,116; 5,401,459; 5,511,903; 5,716,163; 5,588,778; 5,839,844 Canadian Patents: 1,329,959; 2,004,564 Other patents pending. Infiltrator, Equalizer, Quick4, and SideWinder are registered trademarks of Infiltrator Systems Inc. Infiltrator is a registered trademark in France. Infiltrator Systems Inc. is a registered trademark in Mexico. Contour, MicroLeaching, PolyTuff, ChamberSpacer, MultiPort, PosiLock, QuickCut, QuickPlay, SnapLock and StraightLock are trademarks of Infiltrator Systems Inc. PolyLok is a trademark of PolyLok, Inc. TUF-TITE is a registered trademark of TUF-TITE, INC. Ultra-Rib is a trademark of IPEX Inc.

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IM02 1213

Contact Infiltrator Systems' Technical Services Department for assistance at 1-800-221-4436

Infiltrator IM-Series Septic Tank General Installation Instructions

AUGUST 2015

INFILTRATOR® tanks

BEFORE YOU BEGIN

Infiltrator Water Technologies' tanks must be installed according to state and/or local regulations, which supersede the manufacturer's installation instructions. If unsure of the installation requirements for a specific site, contact the health department or permitting authority. The IM-Series referred to in this document includes the IM-540, IM-1060, and IM-1530 models.

WARNING: IMPLOSIONS MAY CAUSE SERIOUS INJURY
Follow Infiltrator Water Technologies vacuum test instructions

MATERIALS AND EQUIPMENT NEEDED

- ☐ IM-Series tank
- ☐ Access port lid(s)*
- ☐ 10 screws per lid*
- ☐ 2 inlet/outlet gaskets (included)
- ☐ Inlet/outlet tees*
- ☐ Tape measure
- ☐ Pipe, risers, etc.
- ☐ Socket wrench
- ☐ Excavator
- ☐ Shovel
- ☐ Level
- ☐ 5-inch-diameter (125 mm) hole saw
- ☐ Utility knife
- ☐ PVC pipe glue with primer

*tee and lid inclusion varies by state/province

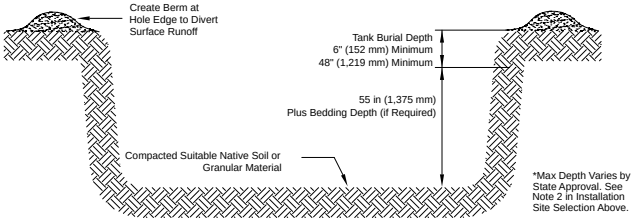
INSTALLATION SITE SELECTION

1. Do not install the tank in vehicular traffic areas. The tank is designed for non-traffic applications.
2. The allowable soil cover depth is 6 to 48* inches (150 to 1,200 mm). *18-inch (450 mm) max. in Florida for Cat. 3 IM-Series tanks; 48-inch (1,200 mm) max. in Florida for Cat. 4 IM-Series tanks; 36-inch (900 mm) max. in Massachusetts, New Hampshire, North Carolina, and Oregon.
3. The tank shall not be installed where the subsurface water level outside the tank exceeds the height of the outlet pipe saddle. Follow Table 4 guidelines.

EXCAVATING AND PREPARING THE SITE

1. Unless buoyancy control measures are required, the excavation width and length should be 18 to 36 inches (450 to 900 mm) larger than the tank on each side or sized as necessary to ensure proper backfill compaction, as outlined in Steps 5-10 of "Backfilling the Tank" in this document. See Infiltrator IM-Series Tank Buoyancy Control Guidance document, available online at www.infiltratorwater.com, for specific excavation requirements when installing buoyancy control measures.
2. Excavation depth shall account for the 55-inch (1,375 mm) tank height. Also account for 4 inches (100 mm) of bedding (if required) and cover depth (permissible cover depth is 0.5 to 4 feet (150 to 1,200 mm) of soil).

   Note: If the water level outside the tank exceeds the height of the outlet pipe saddle, tank structural integrity may be compromised. See page 4 for maximum allowable subsurface water elevation guidelines.
3. Inspect bottom of excavation to verify suitability of native soil for tank installation. Soils with large, protruding, or sharp stones or other similar objects that may damage the tank are not suitable.
4. The tank may be installed either in suitable native soil (see Backfilling the Tank section) or a minimum 4-inch (100 mm) layer of well-graded granular soil having particles less than 3 inches (75 mm) in diameter, or maximum 0.5-inch (13 mm) diameter crushed stone.
5. Create a uniform, compacted, level surface to ensure that the bottom of the tank is evenly supported. Verify that the installation surface is flat.

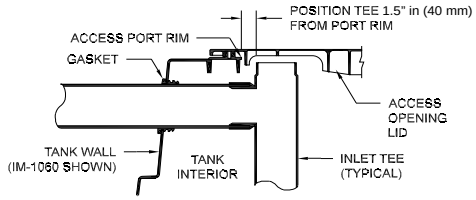


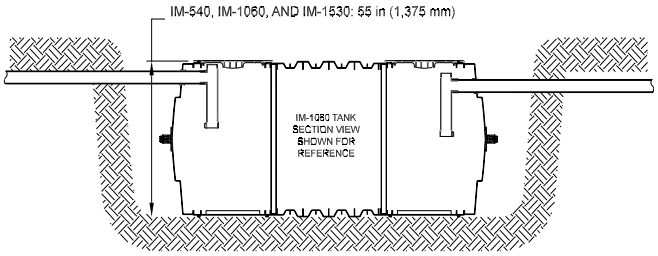
INSTALLING THE TANK

1. Inspect the tank for damage before installation.
2. If the tank inlet and outlet penetrations are not drilled, drill holes using the drill points provided at each of the inlet and outlet ports according to the applicable Inlet and Outlet Hole Locations section of this document. The inlet and outlet may be drilled on either the sides or ends of the tank, as required based on applicable codes and site conditions.*

   * Indiana, Kentucky, Oregon, West Virginia, and certain Florida and Texas tanks are factory-drilled.
3. The gaskets supplied with the tank are compatible with Schedule 40 and SDR 35 pipe using a 5-inch-diameter (125 mm) hole saw.
4. Install the rubber gaskets at the inlet and outlet.
5. Using all four of the tank's integral lifting lugs, lower tank into excavation.
6. Slide the inlet and outlet pipes* through the gaskets. Soapy lubricant may be used to slide the pipe in.

   *For North Carolina, the inlet pipe shall be a straight pipe with no tee.
7. Horizontally position the tee 1½ inches (40 mm) from the access port rim, allowing the tee to fit into the recess in the access port lid (see detail).
8. Install lids and risers (see Installing Risers section) as necessary. Rotate lid over access opening until it indexes to tank and drops into position.



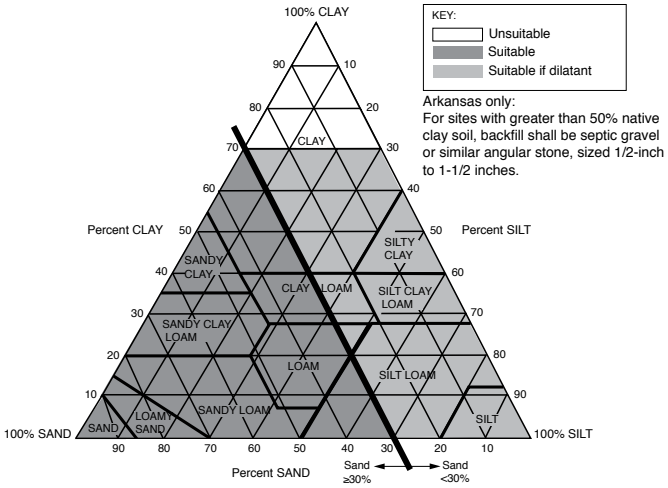


BACKFILLING THE TANK

Note: Infiltrator tanks do not require filling with water prior to backfill placement. Water filling and backfilling to the tank mid-height is required if the tank is left in either an open or backfilled excavation that may fill with water from rain or other sources.

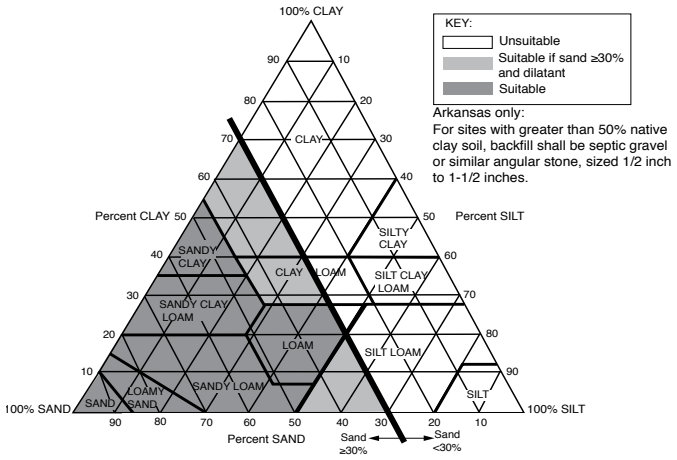
1. Backfill with suitable native soil (max. 3-inch (75-mm) stone diameter). If native soil is unsuitable, replace unsuitable fraction with suitable soil. If suitable soil is not locally available, contact Infiltrator for assistance.
2. Suitable soil shall include soil textural classes defined in the United States Department of Agriculture soil triangle. Suitable soil textural classes are based on the tank installation depth, as measured from finished grade to the top of tank.

a) For a tank soil cover depth of 0.5 to 2.0 feet (150 to 600 mm), suitable soil textures include:



Failure to comply with these installation instructions will invalidate the warranty. Contact Infiltrator Water Technologies' Technical Services Department for assistance at 1-800-221-4436.

b) For a tank soil cover depth that is greater than 2.0 feet and up to 4.0 feet (600 to 1,200 mm), suitable soil textures include:

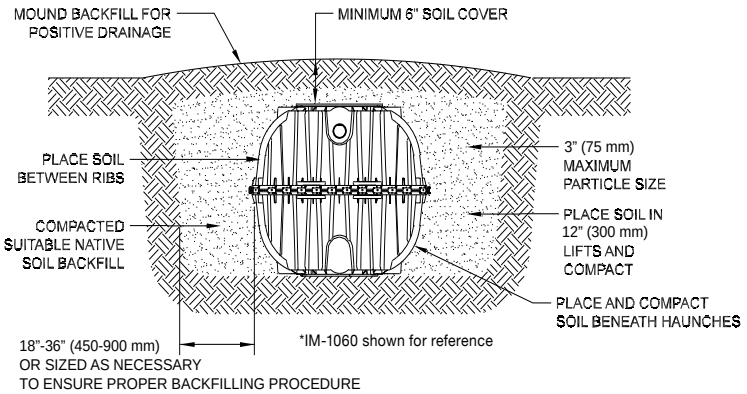


3. Backfill should not have stones greater than 3 inches (75 mm) in diameter or excessive clods that do not break apart during placement and compaction. Backfill must be capable of occupying the spaces between the tank ribs and beneath the haunches.

   Note: Rounded screened aggregate (e.g., pea gravel) is not a suitable backfill.
4. Standard field soil classification methods shall be used to determine the soil textural class.

   Note: Under most circumstances, the determination of soil dilatancy will not be required. Dilatancy shall be determined in the field using a test that does not require specialized equipment, per ASTM D2488, Section 14.3. Complete instructions can be found at www.infiltratorwater.com
5. Place and compact soil by walking-in beneath the haunches of the tank.
6. Place backfill around the four sidewalls in an alternating manner, so that the backfill height along the four sidewalls is maintained within a 12-inch (300-mm) tolerance.
7. Do not backfill top of tank before sidewalls are completely backfilled.
8. **Continue to place backfill along the sidewalls in 12-inch (300-mm) lifts. Place backfill between the ribs on the sidewalls such that the space between the ribs is completely filled with soil.**
9. **Compact backfill material either by walking-in, hand tamping or mechanical compaction (includes backhoe bucket). If mechanical compaction is used, such as a walk-behind tamper or backhoe bucket, a single pass is recommended. Compact each lift prior to placement of next lift. Compact backfill from tank walls to excavation sidewalls.**
10. Complete backfilling and grade the area.
11. A minimum 6-inch (150-mm) depth of suitable soil must be placed over the top of the tank. The balance of backfill placed to finish grade above the tank may be either suitable or unsuitable soil.
12. Establish a strong stand of erosion-resistant vegetation.

    Note: Grade to prevent the backfilled excavation from filling with surface runoff. If the water level in the backfilled excavation exceeds the height of the outlet pipe saddle, tank structural integrity may be compromised.



SHORT AND LONG-TERM GROUNDWATER CONTROL

It may be necessary to implement groundwater control measures during tank installation. Maintain dry conditions by expanding the excavation to create a short-term groundwater collection sump for temporary placement of a dewatering pump if needed. Long-term groundwater control measures such as underdrains and interceptor trenches may be sensible if the site is amenable to construction of a control system and such systems are not prohibited by regulation or law, and the tank location is not subject to flooding. Properly installed underdrains and groundwater interceptor trenches may prevent the need for tank buoyancy control measures.

INSTALLING UNDER SHALLOW GROUNDWATER CONDITIONS

Buoyancy control measures may be required if the Infiltrator tank is to be installed with less than 12 inches (300 mm) of soil backfill cover, and where the water level outside the tank has the potential to rise 30 inches (750 mm) or more above the elevation of the tank bottom. Otherwise, no control measures are required (see Table 1). The need for buoyancy control measures must be determined based on backfill cover depth and height of water outside of tank above the tank bottom according to Table 1. Refer to Infiltrator IM-Series Tank Buoyancy Control Guidance document for more information.

Table 1: Tank models[1] and conditions requiring buoyancy control[2]

Water height above tank bottom	Soil cover depth above tank[3]	
	6 in (150 mm) to 12 in (300 mm)	Above 12 in (300 mm)
Above outlet pipe saddle	Do not install	Do not install
36 in (900 mm) to outlet pipe saddle[4]	All models	None
30 in (750 mm) to 36 in (900 mm)	IM-1530	None
Less than 30 in (750 mm)	None	None

1. IM-540, IM-1060 and IM-1530.
2. See Infiltrator IM-Series Tank Buoyancy Control Guidance for detailed information on the use of controls.
3. No controls are required for soil cover depths exceeding 12 in (300 mm).
4. The tank shall not be installed where the water level outside the tank exceeds the height of the outlet pipe saddle. Follow Table 4 guidelines.

INSTALLING RISERS

1. Compatible risers include 24-inch (600 mm) diameter products such as the Infiltrator TW-Riser, EZset by Infiltrator, PolyLok®, Inc., and Tuf-Tite® Corporation, in addition to 24-inch (600 mm) diameter corrugated HDPE and IPEX Ultra Rib® PVC pipe. Follow Infiltrator's IM-Series Tank Riser Connection Guidance.
2. In Oregon only, watertightness testing shall include filling with water at least 2 inches above riser connection, with no more than 1 gallon leakage per 24 hours, per OAR 340-073-0025(3).

INSTALLING PUMPS AND RELATED EQUIPMENT

Pumps may be supported on a stable, level 16x16-inch (400x400-mm) platform positioned on the bottom of the tank. One 16x16-inch block or two 8x16-inch (200 -mm x 400-mm) side-by-side blocks may be used. Limit block height to account for pump height and liquid levels during pump cycles. Block(s) should be placed below an access opening and level upon the tank bottom. For two blocks, orient them perpendicular to ribs on the tank bottom, if present, for stability.

Installation of products such as electrical conduit and wiring, pumps, water level control equipment, valves, siphon equipment, etc. shall be in accordance with the product manufacturer's instructions and compliant with applicable state or local rules and regulations. Appurtenances shall be fastened to the tank riser system and not the tank body or access opening rim. Where possible, appurtenances shall be installed to facilitate maintenance and repair access via the tank access openings.

Note: Prefabricated pump vaults may be installed.

GENERAL SPECIFICATIONS

- Failure to comply with installation instructions will void warranty.
- Prior to ground disturbance, check for subsurface obstructions and utilities in conformance with applicable requirements.
- Operating water temperature shall be less than 100° F (40° C).
- In cold conditions, handle and backfill tank with care to prevent impact damage.
- Tanks are not fire resistant. Store away from ignition sources.
- Removal of structural bulkheads is prohibited; removal of locking clips on the IM-Series tank mid-seam connection is also prohibited.
- Only suitable for potable applications if the tank bears the NSF/ANSI 61 certification mark. Otherwise, tank is recommended for use in septic, rainwater/stormwater storage, holding, and pump applications, or other non-potable uses.
- Infiltrator tanks shall not be installed above ground. Contact Infiltrator if the 6-inch (150-mm) minimum soil cover depth cannot be met.

INLET AND OUTLET HOLE LOCATIONS

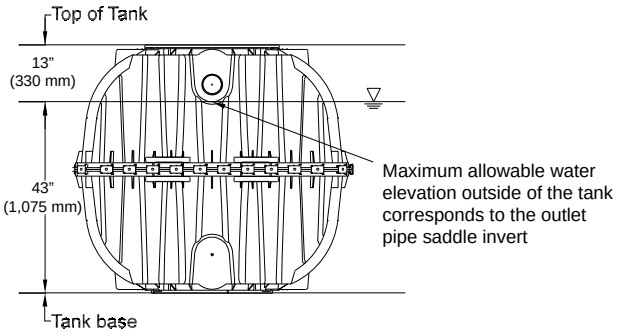
Drill height marks are provided on all Infiltrator tank models to guide inlet and outlet hole drilling. A single drill height mark is provided at each end or side port on IM-Series tanks (example illustrated below). Holes may be drilled at the end or side inlet and outlet locations, as allowed by state and/or local regulations. The drill height mark indicates the center point location for the hole saw. The pilot drill bit on the hole saw should be positioned at the center of the drill height mark to align the hole saw properly. Table 3 provides drilling and invert information by regulatory jurisdiction for the installation of 4-inch- (100-mm-) diameter pipe.

Table 3: Inlet and Outlet Hole Locations[4]

Jurisdiction[1]	Inlet Drill Location	Outlet Drill Location	Invert Drop (in) [mm]	Inlet Invert Height (in) [mm]		Outlet Invert Height[2] and Liquid Level (in) [mm]
				Above Inside Bottom of Tank[2]	Above Excavation Base[3]	
IM-540 and IM-1530						
All	All	All	3.00 [76]	47.00 [1,994]	47.20 [1,199]	44.00 [1,118]
IM-1060						
All	End	End	3.00 [76]	47.00 [1,994]	47.20 [1,199]	44.00 [1,118]
	Side	Side	3.00 [76]	47.50 [1,207]	47.70 [1,212]	44.50 [1,130]
	Side	End	3.50 [89]	47.50 [1,207]	47.70 [1,212]	44.00 [1,118]
	End	Side	2.50 [64]	47.00 [1,994]	47.20 [1,199]	44.50 [1,130]

1. Indiana, Kentucky, Oregon, West Virginia, and certain Florida and Texas tanks are factory drilled.
2. Invert heights are measured from the lowest interior surface at the bottom of the tank to the invert.
3. Invert heights are measured from the base of the excavation to the invert.
4. State, provincial, and local regulatory requirements supersede Table 3 information.

IM-Series Tanks: Maximum Allowable Subsurface Water Elevation



Infiltrator Water Technologies, LLC ("Infiltrator")

INFILTRATOR® SEPTIC TANK LIMITED WARRANTY FIVE (5) YEAR MATERIALS AND WORKMANSHIP LIMITED WARRANTY

(a) This limited warranty is extended to the end user of an Infiltrator Tank. A Tank manufactured by Infiltrator, when installed and operated in accordance with Infiltrator's installation instructions and local regulation by a licensed installer, is warranted to you: (i) against defective materials and workmanship for five (5) years after installation. Infiltrator will, at its option, (i) repair the defective product or (ii) replace the defective materials. Infiltrator's liability specifically excludes the cost of removal and/or installation of the Tank.

(b) In order to exercise its warranty rights, you must notify Infiltrator in writing at its corporate headquarters in Old Saybrook, Connecticut within fifteen (15) days of the alleged defect.

(c) YOUR EXCLUSIVE REMEDY WITH RESPECT TO ANY AND ALL LOSSES OR DAMAGES RESULTING FROM ANY CAUSE WHATSOEVER SHALL BE SPECIFIED IN SUBPARAGRAPH (a) ABOVE. INFILTRATOR SHALL IN NO EVENT BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES OF ANY KIND, HOWEVER OCCASIONED, WHETHER BY NEGLIGENCE OR OTHERWISE. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THIS LIMITA- TION OR EXCLUSION MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

(d) THIS LIMITED WARRANTY IS THE EXCLUSIVE WARRANTY GIVEN BY INFILTRATOR AND SUPERSEDES ANY PRIOR, CONTRARY, ADDITIONAL, OR SUBSEQUENT REPRESENTATIONS, WHETHER ORAL OR WRITTEN. INFILTRATOR DISCLAIMS AND EXCLUDES TO THE GREATEST EXTENT ALLOWED BY LAW ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, OR STATUTORY, INCLUDING ANY WARRANTY OF MERCHANTABILITY, FINESSE FOR A PARTICULAR PURPOSE AND ANY IMPLIED WARRANTIES OTHERWISE ARISING FROM COURSE OF DEALING, COURSE OF PERFORMANCE, OR USAGE OF TRADE. NO PERSON (INCLUDING ANY EMPLOYEE, AGENT, DEALER, OR REPRESENTATIVE) IS AUTHORIZED TO MAKE ANY REPRESENTATION OR WARRANTY CONCERNING THIS PRODUCT, EXCEPT TO REFER YOU TO THIS LIMITED WARRANTY. EXCEPT AS EXPRESSLY SET FORTH HEREIN, THIS WARRANTY IS NOT A WARRANTY OF FUTURE PERFORMANCE, BUT ONLY A WARRANTY TO REPAIR OR REPLACE.

(e) YOU MAY ASSIGN THIS LIMITED WARRANTY TO A SUBSEQUENT PURCHASER OF YOUR HOME.

(f) NO REPRESENTATIVE OF INFILTRATOR HAS THE AUTHORITY TO CHANGE THIS LIMITED WARRANTY IN ANY MANNER WHATSOEVER, OR TO EXTEND THIS LIMITED WARRANTY.

(g) NO WARRANTY OF ANY KIND IS MADE WITH REGARD TO ANY PRODUCT, COMPONENTS, DEVICES, MEDIA OR TREATMENT UNITS WHICH ARE MANUFACTURED BY OTHERS AND ARE INSTALLED IN AN INFILTRATOR TANK. USE OF THESE PRODUCTS ARE AT YOUR OWN RISK.

(h) THE INFILTRATOR TANK IS DESIGNED TO BE BURIED UNDERGROUND. NO WARRANTY OF ANY KIND IS MADE IF YOUR TANK IS NOT BURIED UNDERGROUND AS SPECIFIED IN THE PRODUCT'S INSTALLATION INSTRUCTIONS.

CONDITIONS AND EXCLUSIONS

There are certain conditions or applications over which Infiltrator has no control. Defects or problems as a result of such conditions or applications are not the responsibility of Infiltrator and are NOT covered under this warranty. They include failure to install the Tank in accordance with instructions or applicable regulatory requirements or guidance, altering the Tank contrary to the installation instructions and disposing of chemicals or other materials contrary to normal tank usage.

The above represents the Standard Limited Warranty offered by Infiltrator. A limited number of states and counties have different warranty requirements. Any purchaser of a Tank should contact Infiltrator's corporate headquarters in Old Saybrook, Connecticut, prior to such purchase to obtain a copy of the applicable warranty, and should carefully read that warranty prior to the purchase of a Tank.

INFILTRATOR®
water technologies

4 Business Park Road
P.O. Box 768
Old Saybrook, CT 06475
860-577-7000 • Fax 860-577-7001
1-800-221-4436
www.infiltratorwater.com

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U.S. Patents: 4,759,661; 5,017,041; 5,156,488; 5,336,017; 5,401,116; 5,401,459; 5,511,903; 5,716,163; 5,588,778; 5,839,844 Canadian Patents: 1,329,959; 2,004,564 Other patents pending. Infiltrator, Equalizer, Quick4, and SideWinder are registered trademarks of Infiltrator Water Technologies. Infiltrator is a registered trademark in France. Infiltrator Water Technologies is a registered trademark in Mexico.
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DEPARTMENT OF HEALTH - WASTEWATER BRANCH
INDIVIDUAL WASTEWATER SYSTEM (IWS)
OWNER'S CERTIFICATION FORM

Subject: Individual Wastewater System for **Puna Wai Trust**

Tax Map Key (TMK) Number: (3) 7 - 9 - 005 : 012

Mailing Address: c/o Kalani Nakoa P.O. Box 2266

Kailua-Kona, HI 96745

I, **Puna Wai Trust**, hereby certify that I am the owner (s) of the
(please print name)
subject property and that I have read the following and shall comply with all provisions. Failure to comply with any or all of the provisions can lead to imposition of the penalties and remedies as provided for in Administrative Rule, Title 11, Chapter 62, Section 11-62-72, Penalties and remedies.

1. I certify that as the owner of the Individual Wastewater System (IWS) serving the subject property, the IWS will be inspected, operated and maintained in accordance with the operation and maintenance manual developed by my IWS design engineer section (section 11-62-31.1(e)(2)).

   Furthermore, if an aerobic unit is utilized for wastewater treatment, an active service contract for the proper operation and maintenance shall be maintained at all times (section 11-62-33.1.(b)(3)).

2. I understand and shall comply with the provision of section 11-62-08 (g) which requires that the IWS be constructed by a licensed contractor with a license type of: **A, C-9, C-37, C-37a or C-43**.

3. I understand and shall comply with the provisions of section 11-62-31.(f) which states that the IWS must be inspected and approved of by the Department prior to use.

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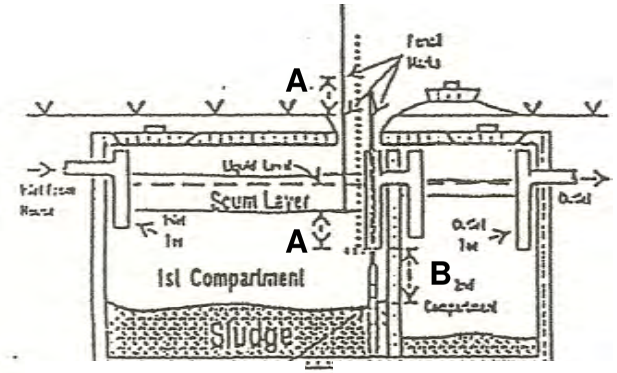
Furthermore, I shall instruct and require my contractor to leave uncovered for inspection, various parts of the IWS system. These parts include manhole/access openings, distribution boxes, ends of trenches to visually see gravel, pipe and geotextile fabrics used and/or seepage pit openings. I understand that I will be required to re-expose these areas if at the time of inspection they are not visible.

4. I understand and shall comply with the provisions of section 11-62-31.1.(e)(2) which required me to certify upon sale or transfer of the subject property, that the appropriate transfer or sales documents and provisions shall bind the new owners to the operation and maintenance provisions referenced in item 1 above.

5. I understand and shall submit any and all changes made to my IWS plans to the Department (section 11-62-08(b)) for review and approval. Changes to the approved IWS plans that need to be submitted to the Department include but are not limited to the following - changes in location of any component of the wastewater system, changes in the type of products used, changes in the disposal system methods, changes in the dwellings/buildings location or size and changes in the design engineer for the IWS.

Signed: DocuSigned by: Walter Nakoa 78C861A8D121448... Dated: 5/25/2020

INSPECTING YOUR SEPTIC TANK

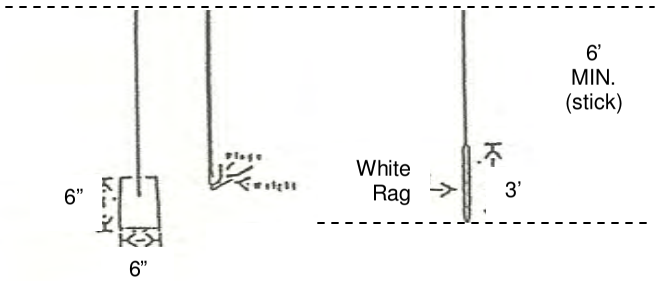


Sludge Measuring Device

Pump out tank when:
"A" is 3' or Less OR
"B" is 12" or Less

SCUM and SLUDGE

MEASURING DEVICES



EFFLUENT FILTER SHALL BE REMOVED AND RINSED OVER SEPTIC TANK ANNUALLY TO REMOVE BUILD-UP, OR MORE FREQUENTLY AS NECESSARY. www.zabelzone.com

MEASURING THE SCUM LEVEL

This procedure is for determining the distance between the bottom of the scum layer and the bottom of the outlet baffle or tee

1. Establish a convenient reference point, such as a stick at ground level to inspection port.
2. Attach a 6" square board to the bottom of a stick at least 6' long (See Fig. left).
3. At the outlet end or your tank's first compartment, carefully push the stick through the scum layer to find the bottom of the baffle or tee.
4. Mark your stick at the reference point to indicate the bottom of the scum layer.
5. Raise the stick until you feel or see the stick contact the bottom of the scum layer.
6. Mark your stick again at the reference point to indicate the bottom of the sludge.
7. **(A)** If the two pencil marks are 3" or less apart, the **tank needs to be pumped out.** If the top of the scum is within 1" of the top of the outlet baffle, the tank needs to be pumped.
8. Lay stick aside for later comparison with the sludge level stick.

MEASURING THE SLUDGE LEVEL

This procedure is for determining the distance between the bottom of the outlet baffle or tee to the top of the sludge layer

1. Wrap 3' of a white rag or old towel around the bottom of a stick at least 6' long and fasten it with tape or string.
2. Carefully lower the stick to the bottom of the first compartment. To avoid pushing through the scum layer, lower the stick behind the outlet baffle o through the outlet tee.
3. Hold the stick in the tank for a few minutes to allow sludge particles to adhere to the towel. Mark the stick at the reference point to indicate the bottom of the tank.
4. Remove the stick carefully and note a dark stain on the towel representing the sludge layer.
5. Lay the stick beside the scum stick. Line up the top pencil marks.
6. Measure the distance from the bottom of the scum stick to the top of the dark stain on the sludge stick.
7. **(B)** If the distance is 12" or less, **your tank needs to be pumped out.**

PETER J.K. DAHLBERG, P.E.
PDAHLBERG@HAWAII.RR.COM
(808) 895-6173

OPERATION AND MAINTENANCE INSTRUCTIONS FOR SEPTIC SYSTEMS

(See Page 12 for inspection detail and instructions)

1. Septic tanks shall be inspected on an annual basis by opening the access cover and checking the thickness of the sludge and scum layers and if either the sludge or scum are near the outlet pipe.

2. The septic tank shall be cleaned out if either: (a) the bottom of the floating scum mat is over twelve inches thick or within three inches of the bottom of the outlet pipe; or (b) the sludge is thicker than twelve inches or comes within six inches of the bottom of the outlet pipe.

3. Cleaning the septic tank shall consist of pumping of the contents into a tank truck and hauling it to a State Health Department approved point of disposal. The septic tank shall not be washed or disinfected after pumping. A three inch depth of residual sludge shall be left in the tank for seeding purposes.

4. A septic tank shall not be entered by anyone unless proper safety procedures are followed. There is a potential hazard of explosion of gases and/or asphyxiation of personnel if precautions are not taken.

5. Chemicals or disinfectants do not improve the operation of septic tanks and are not recommended. Ordinary chemicals used in the household in small quantities will not adversely affect the operation of the septic tank.

6. **Paper towels, newspaper, plastics, rags, vegetable peelings, feminine napkins and applicators should not be flushed into the septic tank. These items will not decompose and will eventually have to be pumped out and could lead to clogging of the absorption bed.**

7. **Improper operation and maintenance of the septic tank will lead to early failure of the disposal system** (absorption beds/pits or leach lines) by clogging the piping and adjacent soil. This will result in septic tank overflows and disposal system flooding. Complete replacement of the disposal system could then be required.

Please visit **http://septicprotector.com/Howsepticsfunction.html** for further information. As an Owner of a septic system, it is your responsibility to understand its operation, proper preventative and scheduled maintenance.

OWNER NAME: PUNA WAI TRUST

ADDRESS: Keauhou Kainaliu Beach Rd. (Honalo)
TMK (3) - 7 - 9 - 005 : 012

MAKE AND MODEL OF TANK:

MATERIAL TANK MADE OF: **CAPACITY:**

Keeping a good preventative maintenance record will help anticipate when the next cleaning of the tank may be needed and avoid major problems arising from poorly maintained septic tanks. "A" = Scum Depth "B" = Sludge Depth

Date	Work Done & By Whom	"A"	"B"	Comments

PETER J.K. DAHLBERG, P.E.
PDAHLBERG@HAWAII.RR.COM
PHONE (808)895-6173

SEPTIC TANK
INSPECTION RECORD

TechData

2003 Catalog

Effluent Filters

Filter Series (A1800™ Series)

A1801-4x18, A1801-4x22

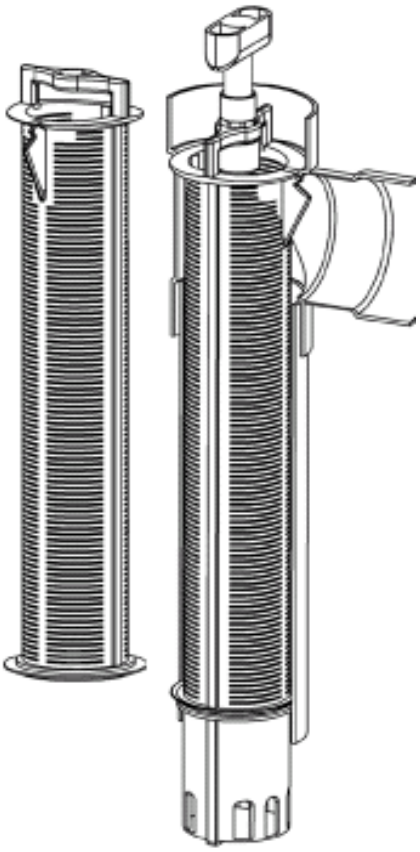
A1800-4x18-VT-B35, A1800-4x18-VT-B40
A1800-4x22-VT-B35, A1800-4x22-VT-B40

Features

- Patented cartridge type effluent filter for single family residences
- Filter should be cleaned when the septic tank is normally inspected and pumped as required by local regulation
- A1801's fit into any 4" outlet tee
- A1800's are designed to slough most normal solids off the inside of the vertical walls and back into the tank when the effluent flow is in a resting state
- Average of 40% TSS reduction within 6 months of installation
- All Zabel® Filters accept SmartFilter® alarm switch

NSF

Residential Application Certified to ANSI/NSF STANDARD 46



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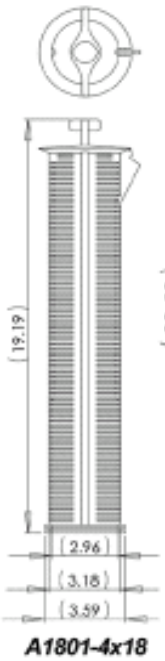
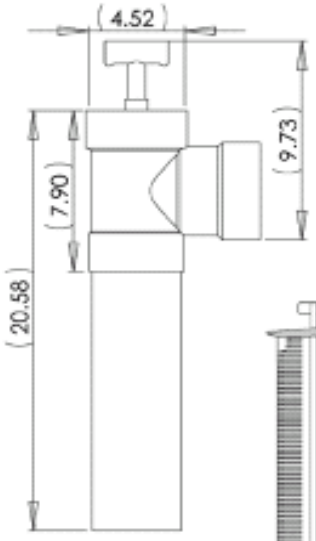


A1801-4x18



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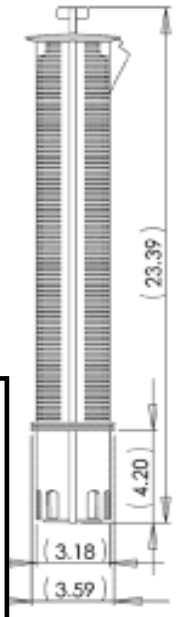
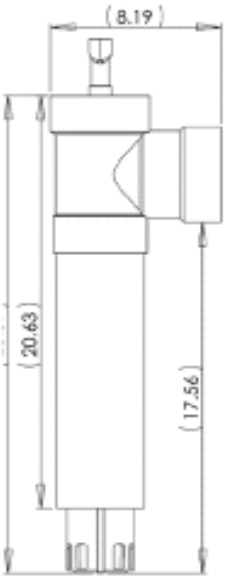
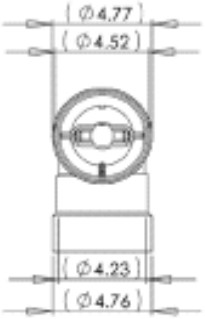


A1801-4x22



A1800-4x22



Recommended Filter Model
A-1800 - 4 x 18 - VT
ZABEL (800) 221-5742
www.zabelzone.com

(See website for Installation and Maintenance Instructions)

Zabel Environmental Technology
P.O. Box 1520, Crestwood Ky. 40014

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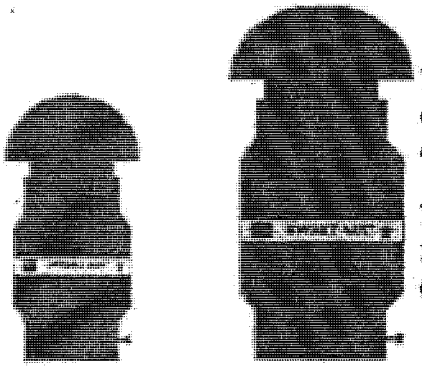
Product(s) covered by one or more U.S. and/or International patents. Other U.S. and International patents may be pending

PETER J.K. DAHLBERG, P.E. PDAHLBERG@HAWAII.RR.COM (808) 895-6173	**OPTIONAL MAINTENANCE ATTACHMENT** EFFLUENT FILTER DETAIL ZABEL A1800 To be installed in 6" effluent riser tube upon request at time of tank order (See P. 10)	A

SWEET AIR™
1-800-622-8768

SWEET AIR™ *Is The Answer!*

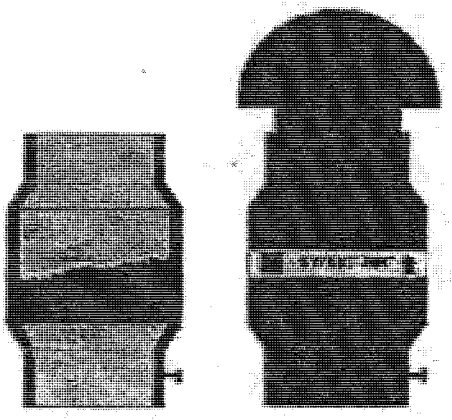


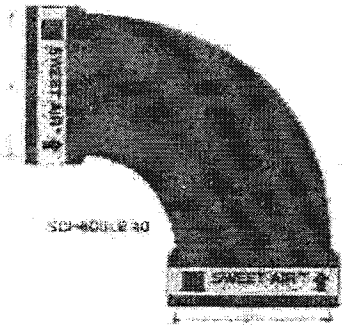
The 3" **SWEET AIR TM** Filtering Device is eleven and one-half inches (11½") tall with rain cover.

The 4" **SWEET AIR TM** Filtering Device is fifteen and one-half inches (15½") tall with rain cover.

The cut-away view (shown without rain cap) of the SWEET AIR TM Filtering Device shows the pre-measured amount of activated carbon necessary to filter the air properly for a home.

Standard plumbing reducers will adapt the SWEET AIR TM Filtering Device to 1½" or 2" Vents. The filter is three inches standard opening but can be reduced down to any size .





4 inch **SWEET AIR TM** 90 o Filtering Device

Also available in 6", 8" and 10" sizes

B

ENVIRONMENTAL ASSESSMENT

WALTER KALEO O KALANI NAKOA

SINGLE-FAMILY DWELLING

AND ASSOCIATED IMPROVEMENTS IN THE

CONSERVATION DISTRICT

TMK No. (3) 7-9-005:012

Honalo, North Kona District, County of Hawai‘i, State of Hawai`i

APPENDIX 7

Application for a Well Construction/Pump Installation Permit

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
APPLICATION FOR A WELL CONSTRUCTION / PUMP INSTALLATION PERMIT

For Official Use Only:

Instructions: Please print in ink or type and send completed application with attachments to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809. Original application must be accompanied by a non-refundable filing fee of **$25.00** payable to the Dept. of Land and Natural Resources. The Commission may not accept incomplete applications. For assistance, call the Regulation Branch at **587-0225**. For further information and updates to this application form, visit http://www.hawaii.gov/dlnr/cwrm.

WELL LOCATION INFORMATION

1. STATE WELL NO. (if assigned)	2. WELL NAME	3. ISLAND	4. TMK
	Honalo Makai	Hawai'i	(3) 7 - 9 - 005 : 012

TMK: island (3), zone 7, sec 9, plat 005, parcel 012, lot

5. WELL COORDINATES (latitude and longitude, referenced to NAD 83, degrees, minutes, seconds to 1 decimal place) and ADDRESS (street, city, zip code)
19°32'44.23"N 155°57'30.26"W Keauhou Kainaliu Beach Rd. Kailua Kona, HI 96740

The following must be attached before this application is accepted as complete:
- Property tax map, showing well location referenced to established property boundaries
- Photograph of the proposed well site
- A schematic diagram showing the well site, access road and proposed well infrastructure
- Attach written permission from the landowner listed below, that acknowledges the work proposed by this application. If the landowner changes during construction, a new permission statement is required.

6. WELL OPERATOR'S NAME/COMPANY	Well Operator's Contact	7. LANDOWNER'S NAME/COMPANY	Landowner's Contact
same	same	Puna Wai Trust	Kalani Nakoa

Well Operator's Mailing Address	Landowner's Mailing Address
same	PO Box 390224 Keauhou, HI 96739

Well Operator's Phone	Well Operator's Fax	Well Operator's E-mail	Landowner's Phone	Landowner's Fax	Landowner's E-mail
same	same	same	808-960-2768		kalani.nakoa@gmail.com

PROPOSED WELL CONSTRUCTION

8. Proposed Work
- ■ Construct New Well
- ☐ Modify Existing Well
- ☐ Abandon/Seal Well

9. Construction Type
- ■ Drilled
- ☐ Dug
- ☐ Shaft
- ☐ Tunnel

10. Is this well part of a battery of wells? ☐ Yes ■ No

PROPOSED PUMP INSTALLATION

11. Proposed Work
- ■ Install New Pump
- ☐ Replace Pump

12. Method of flow measurement
- ☐ Flowmeter
- ■ Other (explain)

13. Proposed Pump Capacity, gpm (gallons per minute): 25

14. Proposed Amount of Withdrawal, gpd (gallons per day): 1,500.00

15. Proposed Surveyor name and license number (a surveyor is required for all Well Construction Permits and may be required for some Pump Installation Permits)

PROPOSED USE
If the well water will be treated, please describe how (reverse osmosis, ultra violet, etc.) and disposal method of resulting effluent, reject water, etc.

- ☐ 16. Municipal (water systems serving greater than 25 individuals or 15 service connections)
- ☐ 17. Domestic Number of units to be served: _____
- ☐ 18. Industrial (describe)
- ■ 19. Irrigation (describe crop and no. of acres) R.O Treatment For landscaping.
- ☐ 20. Military (describe)
- ☐ 21. Other (describe)

OTHER LEGAL REQUIREMENTS
If required, items 22. and 23. must be obtained before the Commission can legally issue a permit:

22. **Conservation District Use Permit (CDUP)**
- ☐ Well is in Conservation District
  - ☐ Required, CDUP # _____ date approved _____
  - ☐ Not Required (attach documentation from OCCL)
  - ☐ I have not checked with OCCL about whether or not a CDUP is required.
- ☐ Well is not in Conservation District
- ■ I have not checked if the well is in the Conservation District

23. **Special Management Area Permit (SMAP)**
- ☐ Well is in the Special Management Area
  - ☐ Required, SMA # _____ date approved _____
  - ☐ Not Required (attach documentation from applicable County agency)
  - ☐ I have not checked with the county about whether or not an SMA Permit is required.
- ☐ Well is not in the Special Management Area
- ■ I have not checked if the well is in the Special Management Area

24. **State Historic Preservation Division (SHPD) of the Department of Land and Natural Resources (Hawaii Revised Statute, Chapter 6E, Section 106)**
- ☐ I have consulted with the SHPD regarding potential impacts of well construction activities on historic sites. I have attached applicable documentation from the HPD.
- ■ I have not consulted with the SHPD regarding potential impacts of well construction activities on historic sites.

25. **Chapter 343**
- ☐ An Environmental Assessment was completed, and
  - ☐ An Environmental Impact Statement was required and has been accepted (attach letter of acceptance). Publication date in The Environmental Notice: _____
  - ☐ A Finding of No Significant Impact has been determined (attach letter). Publication date in The Environmental Notice: _____

This project proposes:
- ☐ Use of state or county lands, or use of state or county funds
- ☐ Use within a state conservation district
- ☐ Use within a shoreline setback area
- ☐ Use within a national or Hawaii registered historic site
- ☐ Use within the Waikiki Special District
- ☐ The construction, expansion or modification of helicopter facility
- ☐ A wastewater treatment unit
- ☐ Waste-to-energy facility
- ☐ Landfill
- ☐ Oil refinery
- ☐ Power-generating facility
- ■ None of the above 11 items

26. Water Use Permit No. (if applicable): N/A

Additional remarks, explanations, etc. (attach additional sheet if more space is needed)

NOTE: Signing below indicates that the signatories understand and swear that the information provided is accurate and true to the best of their knowledge. Further, the signatories understand that upon permit approval: 1) the proposed work is to be completed within two (2) years of the approval date; 2) the contractor shall submit to the Commission a well completion/abandonment report within **30** days after the completion date of the permitted work; 3) if the landowner changes during construction, a new permission statement is required; 4) in the event that the application is not completed correctly, any permit may be suspended until the item is brought in to compliance, and any work done while the permit is in suspension may result in fines of up to $5000/day.

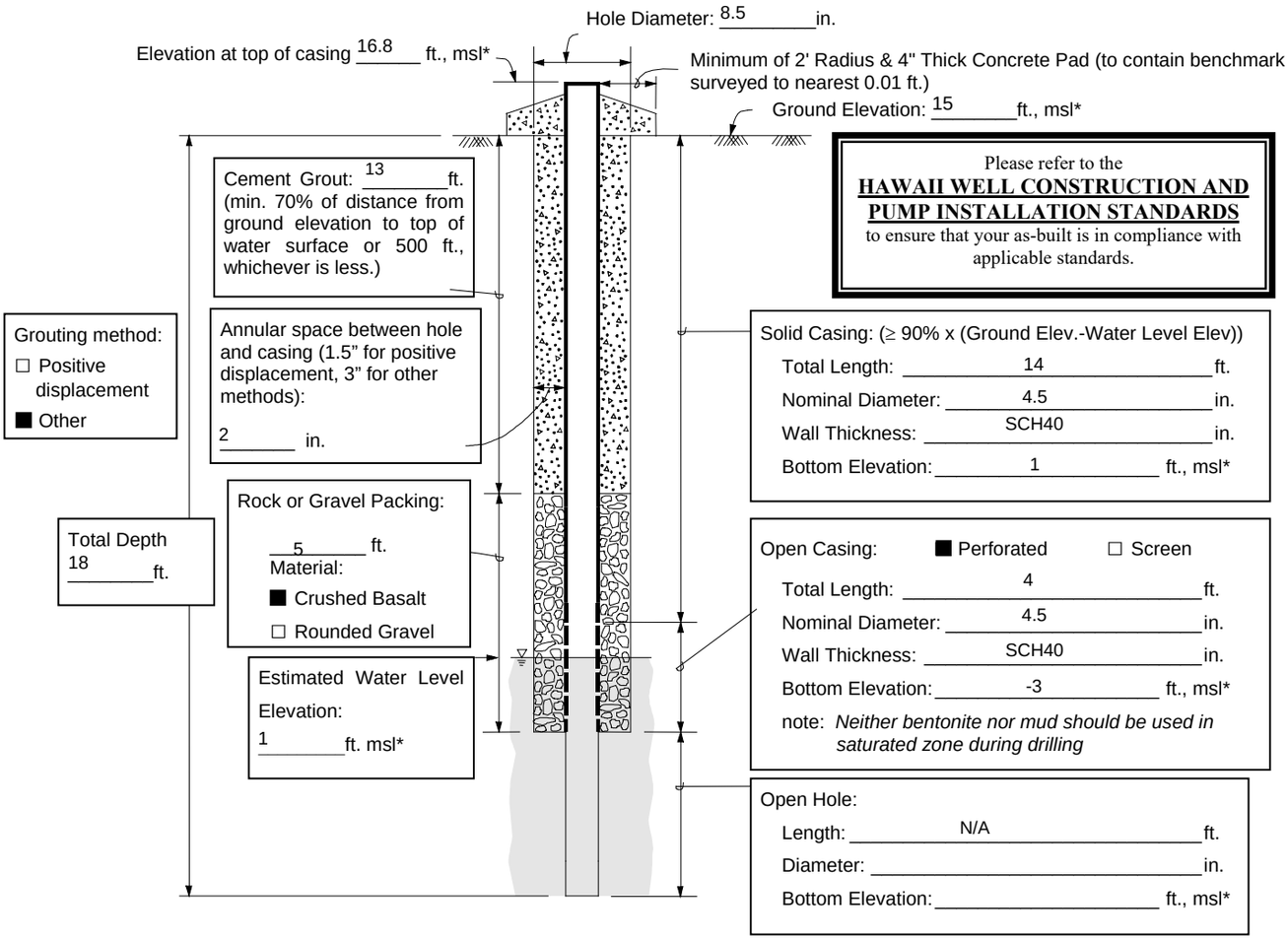
27. WELL DRILLER (**Must** be filled out if application is for Well Construction)

Daniel R Diamond — Licensee business name
C33980 — C-57 License No.
Signature
Daniel R Diamond — Print
22 Jul 2020 — Date
HCR 3 Box 14073 Keaau, HI 96749 — Address
808-333-2320 — Phone
808-966-4129 — Fax
diamonddrillingandpump@yahoo.com — E-mail

28. PUMP INSTALLER (**Must** be filled out if application is for Pump Installation)

Daniel R Diamond — Licensee business name
C33980 — C-57/C-57a/A License No.
Signature
Daniel R Diamond — Print
22 Jul 2020 — Date
HCR 3 Box 14073 Keaau, HI 96749 — Address
808-333-2320 — Phone
808-966-4129 — Fax
diamonddrillingandpump@yahoo.com — E-mail

PROPOSED WELL SECTION *(Please attach schematic if different from diagram provided below. Also, if this proposed well is a dug well, attach a grading plan with cross section profiles showing existing and finished grades)*



* The approximate elevation must be referenced to mean sea level (msl) at the time of application filing. Final elevations of well components shall be submitted in the Well Completion/Well Abandonment reports and referenced to a benchmark which has been established by a surveyor licensed by the State.

For non-salt water Basal Wells - bottom elevation of well should not be deeper than 1/4 of aquifer thickness or,

$$\text{Bottom Elevation of Well Limit} = \left(\text{Water Elevation} - \frac{41 \times \text{Water Level Elevation}}{4}\right)$$

Example: Estimated + 2 ft. Water Level Elev. ⟶ Bottom Elevation of Well Limit = $\left(2 - \frac{41 \times (2)}{4}\right) = -18.5$ ft.

Note: Unless a variance is requested and approved, if the well is greater than ¼ of the theoretical aquifer thickness, the well may have to be backfilled to bring the depth into compliance.

Solid Casing Material:

Carbon Steel: compliant with (check one or more): ☐ ☐ ANSI/AWWA C200 ☐ API Spec. 5L ☐ ASTM A53 ☐ ASTM A139

And compliant with (check one or more): ☐ ASTM A242 (or A606) ☐ Type E ☐ Type S ☐ Grade B ☐ Other

Stainless Steel: (check one): ☐ ASTM A409 (production wells) ☐ ASTM A312 (monitor wells)

ABS Plastic conforming to ASTM F480 and ASTM D1527: (check one) ☐ Schedule 40 ☐ Schedule 80

PVC Plastic conforming to ASTM F480 and (ASTM D1785 or ASTM D2241): (check one): ■ Schedule 40 ☐ Schedule 80 ☐ Schedule 120

Thermoset Plastic: (check one)
- ☐ Filament Wound Resin Pipe conforming to ASTM D2996
- ☐ Centrifugally Cast Resin Pipe conforming to ASTM D2997
- ☐ Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517
- ☐ Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950
- ☐ PTFE Fluorocarbon Tubing conforming to ASTM D3296
- ☐ FEP Fluorocarbon Tubing conforming to ASTM D3296

Open Casing Material:

Carbon Steel: compliant with (check one or more): ☐ ☐ ANSI/AWWA C200 ☐ API Spec. 5L ☐ ASTM A53 ☐ ASTM A139

And compliant with (check one or more): ☐ ASTM A242 (or A606) ☐ Type E ☐ Type S ☐ Grade B ☐ Other

Stainless Steel: (check one): ☐ ASTM A409 (production wells) ☐ ASTM A312 (monitor wells)

ABS Plastic conforming to ASTM F480 and ASTM D1527: (check one) ☐ Schedule 40 ☐ Schedule 80

PVC Plastic conforming to ASTM F480 and (ASTM D1785 or ASTM D2241): (check one): ■ Schedule 40 ☐ Schedule 80 ☐ Schedule 120

Thermoset Plastic: (check one)
- ☐ Filament Wound Resin Pipe conforming to ASTM D2996
- ☐ Centrifugally Cast Resin Pipe conforming to ASTM D2997
- ☐ Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517
- ☐ Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950
- ☐ PTFE Fluorocarbon Tubing conforming to ASTM D3296
- ☐ FEP Fluorocarbon Tubing conforming to ASTM D3296

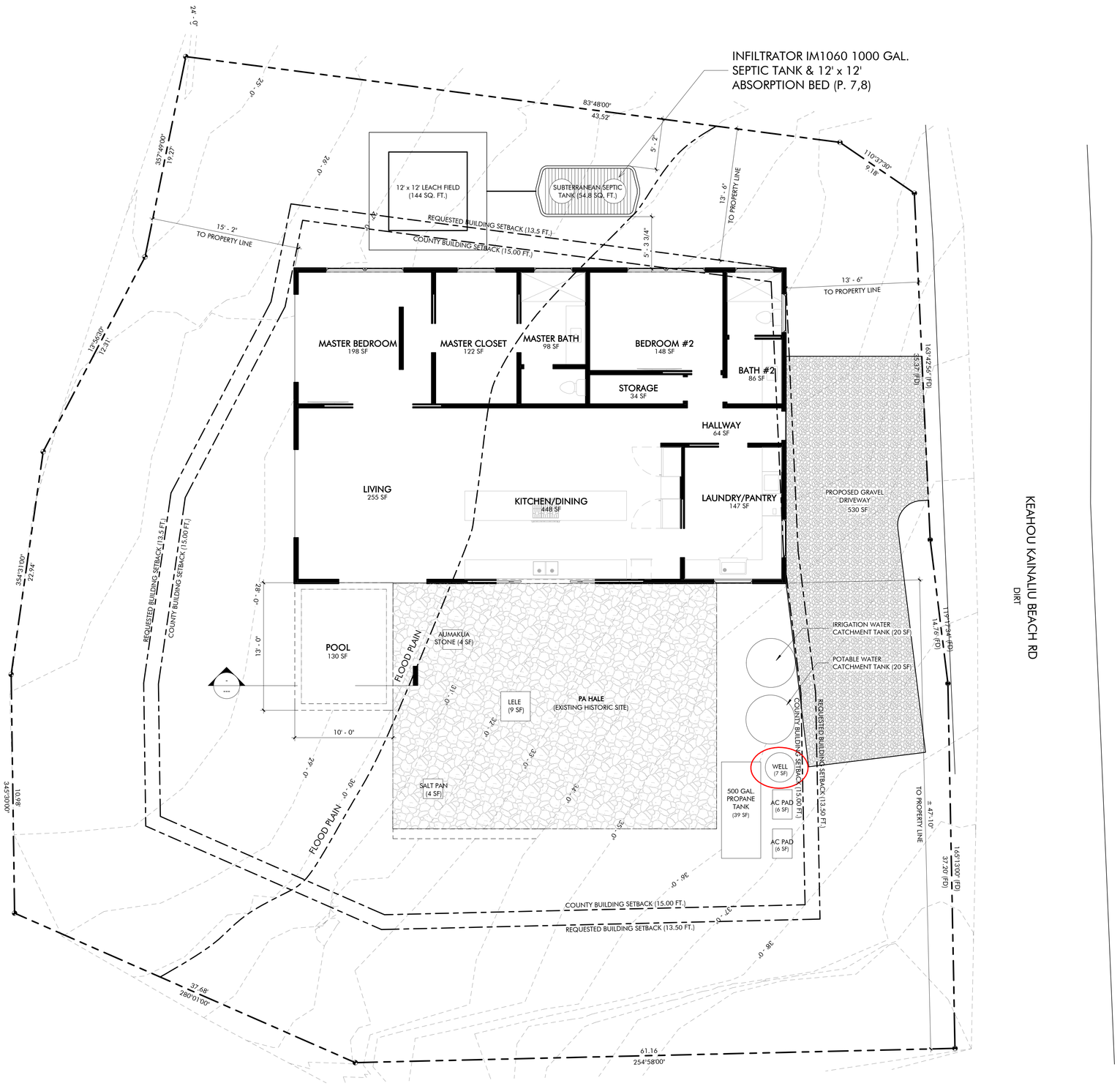
COUNTY OF HAWAI'I
Real Property Tax Office

Kalani Nakoa TMK

Parcel ID	790050120000	**Situs/Physical Address**		**Market Land Value**	$220,000	**Last 2 Sales**			
Acreage	0.17	**Mailing Address**	PUNA WAI TRST PO BOX 5092 KAILUA KONA HI 96745 5092	**Dedicated Use Value**	$0	**Date**	**Price**	**Reason**	**Qual**
Class	CONSERVATION					7/13/2017	$225000	ARMS LENGTH TRANSACTION	Q
				Land Exemption	$0	6/13/2016	0	RELATED INDIVIDUALS OR CORPORATIONS	U
				Net Taxable Land Value	$220,000				
				Assessed Building Value	$0				
				Building Exemption	$0				
				Net Taxable Building Value	$0				
				Total Taxable Value	$220000				

Brief Tax Description 0.17 AC RP 3726 LCAW 8575:2

*Hawaii County makes every effort to produce the most accurate information possible. No warranties, expressed or implied, are provided for the data herein, its use or interpretation. The assessment information is from the last certified taxroll. All data is subject to change before the next certified taxroll. The 'parcels' layer is intended to be used for visual purposes only and should not be used for boundary interpretations or other spatial analysis beyond the limitations of the data. The 'parcels' data layer does not contain metes and bounds described accuracy therefore, please use caution when viewing this data.Overlaying this layer with other data layers that may not have used this layer as a base may



1 A01.2 SITE PLAN
3/16" = 1'-0"

North

NICHOLSON
DESIGN • BUILD • MANAGE

77-6425 KUAKINI HWY, SUITE C2-77
KAILUA-KONA, HAWAII 96740
808-331-1511 OFFICE
808-331-1522 FAX

Licensed Proffessional Architect
AR - 9859
exp. 4/30/2022
William C. Faulk
U.S.A. Hawaii

4/30/2022
EXP. DATE

This work was prepared by me or under my supervision and construction of this project will be under my observation

A PROPOSED NEW CONSTRUCTION FOR:

PUNA WAI, TRUST
KEAUHOU KAINALIU BEACH RD.
HONALO MAKAI

T.M.K. (3)7-9-005-012

REVISIONS:
NO. DATE

SCALE BAR:
3/16" = 1'
0 1 2 4 8 16

SITE PLAN

SHEET: A01.2

ISSUED: 11/30/2021
PERMIT DOCUMENT

Kalani Nakoa
Honalo Makai Well
3-7-9-005-012

Kalani Nakoa
Honalo Makai Well
3-7-9-005-012

July 22, 2020

Commission on Water Resources Management
P.O. Box 621
Honolulu, HI 96809

Aloha,

I give my permission to Daniel Diamond to apply for a Well construction/Pump Installation Permit for my lot at:

TMK: 3-7-9-005-012

Keauhou Kainaliu Beach Rd,

Kailua Kona 96740

Thank you,

Kalani Nakoa

Kalani Nakoa, Puna Wai Trust.
808-960-2768

ENVIRONMENTAL ASSESSMENT

WALTER KALEO O KALANI NAKOA

SINGLE-FAMILY DWELLING

AND ASSOCIATED IMPROVEMENTS IN THE

CONSERVATION DISTRICT

TMK No. (3) 7-9-005:012

Honalo, North Kona District, County of Hawai‘i, State of Hawai`i

APPENDIX 8

Photographs Representative of Battery Storage for Proposed Photovoltaic System

Appendix 8

LG Chem

ENVIRONMENTAL ASSESSMENT

WALTER KALEO O KALANI NAKOA

SINGLE-FAMILY DWELLING

AND ASSOCIATED IMPROVEMENTS IN THE

CONSERVATION DISTRICT

TMK No. (3) 7-9-005:012

Honalo, North Kona District, County of Hawai‘i, State of Hawai`i

APPENDIX 9

Fauna Synopsis

Groundcovers- Zone 1

(N) **Maiapilo, pua pilo** (*Capparis sandawichiana*) -height 48" (...also Shrubs-Zone 1)

(N) **Akoko, koko, beach spurge** (*Euphorbia degeneri*) -height 5"

(N) **Hinahina ku kahaki** (*Heliotropium anomalum*)- height 6"

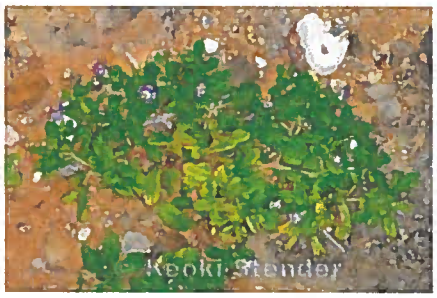
(N) **Pohuehue, Beach Morning Glory** (*Ipomoea pes-caprae*)- height 6" (...also Vines- Zone 1)

(N) **Pa uohi iaka** (*Jacquemontia sandwicensis*)- height 4" (...also Groundcovers Zone 2)

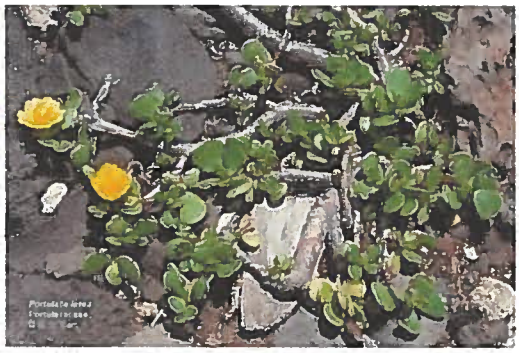
(N) **Nehe** (*Lipochaeta integrifolia*)- height 12"

(N) **Ohelo kai, ae ae** (*Lycium sanwicense*)- height 6"

(N) **Hawaiian Nama** (*Nama sandiwicensis*)- height 4"



(N) **Ihi, Native yellow portulaca** (*Portulaca lutea*)- height 36"



(N) **Ohai** (*Sesbania tomentosa*)- height 12" (...also Shrubs Zone 1)

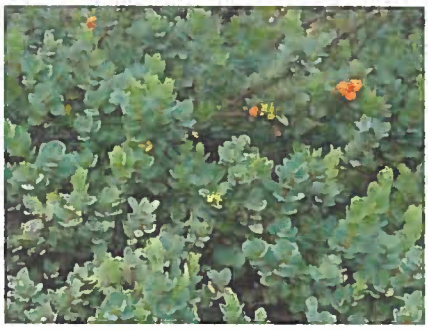
(N) **Akulikuli** (*Sesuvium portulacastrum*)-height 12"

(N) **Aki aki** (*Sporobolus virginicus*)- **height 12"**

Groundcovers- Zone 2

(N) **Ilima papa** (*Sida fallax*) -**height 6"**

(N) **Akia** (*Wikstroemia uva-ursi*)- **height 18"**



Palms – Zone 1

(P) **Coconut, Niu** (*Cocos nucifera*)- height 80'

(N) **Kona loulu** (*Pritchardia affinis*)- height 25' (.... also Palms Zone 2)

Shrubs- Zone 1

(N) **Ulei** (*Osteomeles anthyllidifolia*)- height 2' (...also Shrubs Zone 2)

(N) **Naupaka** (*Scaevola frutescens*)- height 10'

Trees- Zone 1

(P) **Kamani** (*Calophyllum inophyllum*)- height 40'

(P) **Kou** (*Cordia subcordata*)- height 20'

(P) **Hau** (*Hibiscus tiliaceus*) -30'

(N) **Naio** (*Myoporum sandwicense*)- height 15-20'

(N) **Pandanus, Hala** (*Pandanus odoratissimus*)- height 15'

(P) **Milo** (*Thespesia populnea*)- height 30'

Trees -Zone 2

(P) **Kukui, candlenut** (*Aleurites moluccana*)- height 40'

Royal Poinciana (*Delonix regia*)- height 50'

(N) **Wiliwili** (*Erythrina sanwicensis*)- height 30'

Mango (*Mangifera indica*)- height 50'

ENVIRONMENTAL ASSESSMENT

WALTER KALEO O KALANI NAKOA

SINGLE-FAMILY DWELLING

AND ASSOCIATED IMPROVEMENTS IN THE

CONSERVATION DISTRICT

TMK No. (3) 7-9-005:012

Honalo, North Kona District, County of Hawai‘i, State of Hawai`i

APPENDIX 10

Google Earth Photograph of Property

Appendix 10

ENVIRONMENTAL ASSESSMENT

WALTER KALEO O KALANI NAKOA

SINGLE-FAMILY DWELLING

AND ASSOCIATED IMPROVEMENTS IN THE

CONSERVATION DISTRICT

TMK No. (3) 7-9-005:012

Honalo, North Kona District, County of Hawai‘i, State of Hawai`i

APPENDIX 11

Photographs of Property

EXISTING ENTRY TO PROPERTY
FROM OLD GOVERNMENT ROAD

Appendix 11

NORTHEAST CORNER OF PROPERTY
AT OLD GOVERNMENT ROAD

VIEW MAKAI ACROSS ROPERTY
FROM SOUTHEAST BOUNDARY

SOUTHEAST CORNER OF PROPERTY
AT OLD GOVERNMENT ROAD

VIEW OF PROPERTY AND SOUTH
ALONG OLD GOVERNMENT ROAD

SECTION OF DRY STACK ROCK WALL

VIEW ACROSS PROPERTY FROM
SOUTHEAST CORNER

ENVIRONMENTAL ASSESSMENT

WALTER KALEO O KALANI NAKOA

SINGLE-FAMILY DWELLING

AND ASSOCIATED IMPROVEMENTS IN THE

CONSERVATION DISTRICT

TMK No. (3) 7-9-005:012

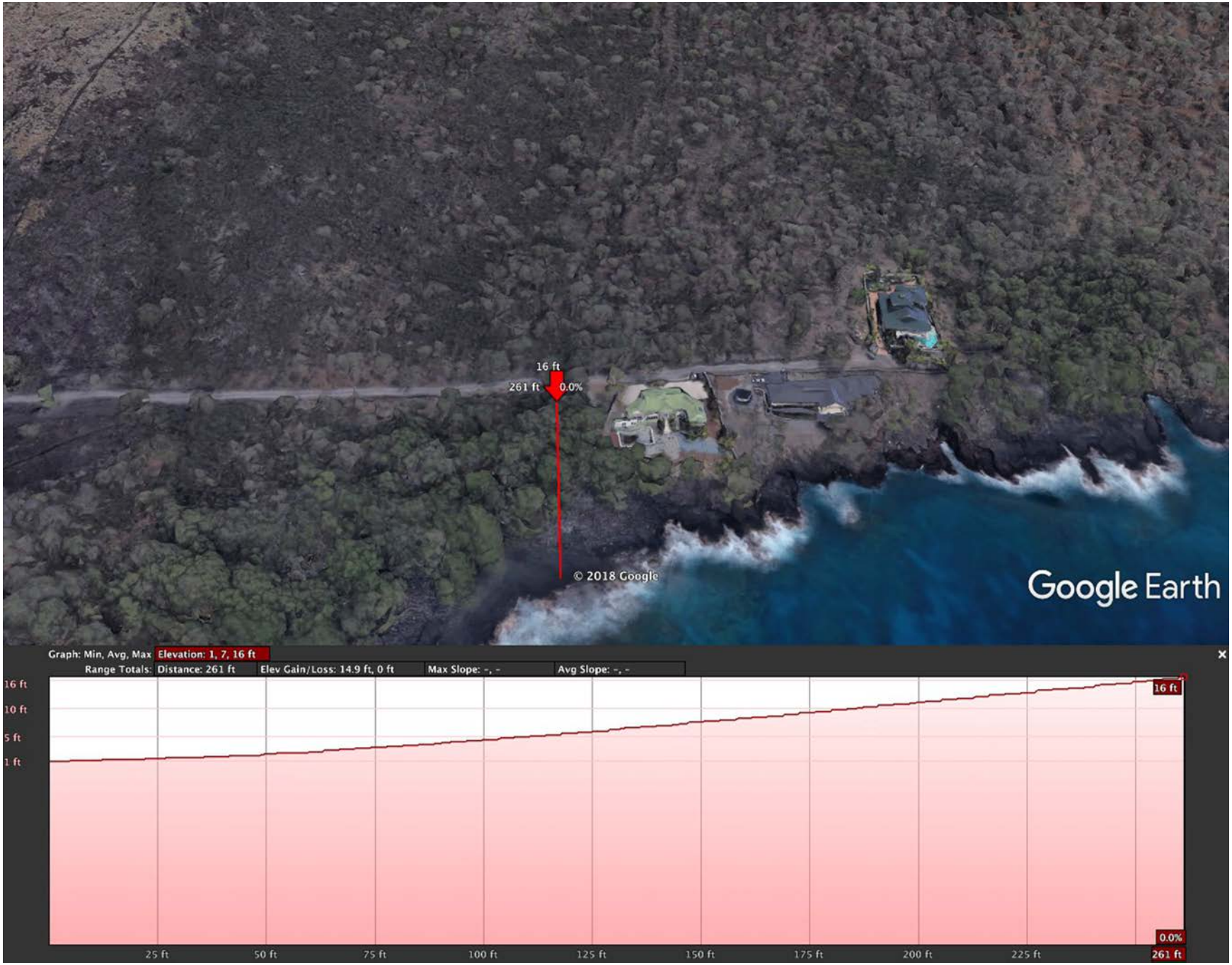
Honalo, North Kona District, County of Hawai‘i, State of Hawai`i

APPENDIX 12

Slope Analysis

20 ft
165 ft
0.0%
© 2018 Google
Google Earth
Graph: Min, Avg, Max
Elevation: 9, 14, 20 ft
Range Totals:
Distance: 165 ft
Elev Gain/Loss: 11.6 ft, 0 ft
Max Slope: -, -
Avg Slope: -, -
20 ft
15 ft
9 ft
20 ft
0.0%
165 ft
25 ft
50 ft
75 ft
100 ft
125 ft
150 ft

Appendix 12


16 ft
261 ft
0.0%
© 2018 Google
Google Earth
Graph: Min, Avg, Max
Elevation: 1, 7, 16 ft
Range Totals:
Distance: 261 ft
Elev Gain/Loss: 14.9 ft, 0 ft
Max Slope: -, -
Avg Slope: -, -
16 ft
10 ft
5 ft
1 ft
16 ft
0.0%
25 ft
50 ft
75 ft
100 ft
125 ft
150 ft
175 ft
200 ft
225 ft
261 ft

ENVIRONMENTAL ASSESSMENT

WALTER KALEO O KALANI NAKOA

SINGLE-FAMILY DWELLING

AND ASSOCIATED IMPROVEMENTS IN THE

CONSERVATION DISTRICT

TMK No. (3) 7-9-005:012

Honalo, North Kona District, County of Hawai‘i, State of Hawai`i

APPENDIX 13

NRCS Soil Survey

Island of Hawaii Area, Hawaii

245—Waiaha cobbly medial silt loam, 10 to 20 percent slopes

Map Unit Setting

National map unit symbol: 2kly6
Elevation: 0 to 1,000 feet
Mean annual precipitation: 20 to 50 inches
Mean annual air temperature: 70 to 75 degrees F
Frost-free period: 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Waiaha and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Waiaha

Setting

Landform: Ash fields on aa lava flows
Landform position (two-dimensional): Summit, backslope, shoulder, footslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Linear, convex
Parent material: Basic volcanic ash over aa lava

Typical profile

A - 0 to 8 inches: cobbly medial silt loam
2C/Bw - 8 to 15 inches: extremely cobbly medial fine sandy loam
2R - 15 to 25 inches: bedrock

Properties and qualities

Slope: 10 to 20 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 1.3 inches)

Interpretive groups

Land capability classification (irrigated): 7s
Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: D
Ecological site: Kona Weather Ustic Forest (F161BY501HI)
Hydric soil rating: No

Minor Components

Kainaliu
Percent of map unit: 5 percent
Landform: Ash fields on aa lava flows
Landform position (two-dimensional): Summit, backslope, shoulder, footslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Linear, convex
Hydric soil rating: No

Lava flows, `a`a
Percent of map unit: 5 percent
Landform: Aa lava flows
Down-slope shape: Linear
Across-slope shape: Linear, convex
Hydric soil rating: No

Data Source Information

Soil Survey Area: Island of Hawaii Area, Hawaii
Survey Area Data: Version 11, Sep 11, 2018

STATE OF HAWAII
Department of Land and Natural Resources
Land Division, Planning Branch
Honolulu, Hawaii

June 25, 1999

RECEIVED
'99 JUN 28 A9:43
OFC. OF ENVIRONMENTAL QUALITY CONTROL

REF:PB:LT

File No.: HA-2922
180-Day Exp. Date: 9/3/99

Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control
235 South Beretania St., Suite 702
Honolulu, Hawaii 96813

Dear Ms. Salmonson:

Subject: **Final Environmental Assessment (EA) for the Brand Single Family Residence; TMK: 7-9-05: 13 at Honalo, North Kona, Hawaii**

The Department of Land and Natural Resources has reviewed the comments received during the public comment period which ended on May 10, 1999. We hereby issue a Finding of No Significant Impact and request that you publish this notice in the July 8, 1999 issue of the Environmental Notice.

Enclosed are four copies of the final environmental assessment, a completed OEQC Bulletin Publication Form. If you have any questions, please call Lauren Tanaka at 587-0385.

Aloha,

Dean Uchida, Administrator

Enclosures

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ENVIRONMENTAL ASSESSMENT

WALTER KALEO O KALANI NAKOA

SINGLE-FAMILY DWELLING

AND ASSOCIATED IMPROVEMENTS IN THE

CONSERVATION DISTRICT

TMK No. (3) 7-9-005:012

Honalo, North Kona District, County of Hawai‘i, State of Hawai`i

APPENDIX 14

BRAND SINGLE FAMILY RESIDENCE FEA

File No. HA-2922

TMK (3) 7-9-013 at Honalo, North Kona

JUL 8 1999
FILE COPY

1999-07-08-HA-FEA- (rest of title in yellow)

FINAL ENVIRONMENTAL ASSESSMENT

AND FINDING OF NO SIGNIFICANT IMPACT

★ BRAND SINGLE-FAMILY HOME ★

TMK (3rd): 7-9-05:13
Honalo, North Kona, Hawaii Island, State of Hawaii

June 1999

Prepared for:

Hawaii State Department of Land and Natural Resources
Land Division
P.O. Box 621
Honolulu, Hawaii 96809

FINAL ENVIRONMENTAL ASSESSMENT

AND FINDING OF NO SIGNIFICANT IMPACT

BRAND SINGLE-FAMILY HOME

TMK (3rd) 7-9-5:13
Honalo, North Kona District, Island of Hawaii, State of Hawaii

APPLICANT:

Gary Brand
C/o Gregory R. Mooers
P.O. Box 1101
Kamuela, Hawaii 96743

ACCEPTING
AUTHORITY:

Hawaii State Department of Land and Natural Resources
Land Division
P.O. Box 621
Honolulu, Hawaii 96809

CONSULTANT:

Ron Terry Ph.D.
HC 2 Box 9575
Keaau, Hawaii 96749

CLASS OF ACTION:

Action in Conservation District

This document is prepared pursuant to:
the Hawaii Environmental Protection Act,
Chapter 343, Hawaii Revised Statutes (HRS), and
Title 11, Chapter 200, Hawaii Department of Health Administrative Rules (HAR).

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6. EXISTING SITE PHOTOGRAPHS
APPENDIX 3 ARCHAEOLOGICAL REPORT

SUMMARY OF PROJECT, ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Project Summary

The project consists of construction of a single family home on a kuleana of 26,185 sf. on the shoreline 1.25 miles south of Keauhou Bay in the Conservation District. The two-story house would consist of seven rooms occupying approximately 3,500 sf, with associated improvements including an Individual Wastewater System, a swimming pool/deck and landscaping. The design would blend in with the surroundings through use of natural rock walls and earth-tones on other surfaces. Access is via the existing Keauhou-Kainaliu jeep road. Electric/phone lines would be brought to the house via a route that extends directly uphill to existing lines. The house would be set back approximately 55 feet from the shoreline.

Short Term Impacts

Construction Impacts: Landclearing and construction activities will produce short-term impacts to noise, air quality, access and scenery. In order to ensure that construction-related damage to the land and adjacent ocean is avoided or minimized, the following will be implemented:

Mitigation Measure: Construction activities will be limited to periods of low rainfall; cleared areas will be replanted or otherwise stabilized as soon as possible; and construction materials, petroleum products, wastes, debris, and landscaping substances (herbicides, pesticides, and fertilizers) will be prevented from blowing, falling, flowing, washing or leaching into the ocean.

Long Term Impacts

No sensitive biological, hydrological or historic site resources are present and no adverse long-term impacts are expected to result from the project. The project has been surveyed for historic sites and the State of Hawaii determined that no sites that require preservation are present on the parcel. The shoreline in Kona is used for fishing and gathering. The following will be implemented in order to ensure no adverse impacts to historic sites or traditional fishing, gathering and access rights:

Mitigation Measure: If any previously unidentified sites, or remains such as artifacts, shell, bone or charcoal deposits, human burials, rock or coral alignments, pavings, or walls are encountered, work will stop immediately and SHPD will be consulted to determine the appropriate mitigation. Furthermore, the applicant will not obstruct access or otherwise hinder fishing, gathering, ceremonial or other traditional activities in the areas adjacent to the parcel.

PART 1: PROJECT DESCRIPTION

1.1 Project Description and Location

The project consists of construction of a single family home on a kuleana in the Conservation District identified by TMK (3rd) 7-9-5:13 in the ahupua`a of Honalo in the North Kona on the Island of Hawaii (Figs. 1-3). The lot is owned in fee by Mr. Gary Brand, and consists of 26,185 sf. situated on the shoreline about 1.25 miles south of Keauhou Bay.

The proposed house would consist of seven rooms (bedroom, bathroom, living room, dining room, foyer, kitchen, and breakfast room) occupying approximately 3,500 square feet (Figs. 4-5). Associated improvements would include an Individual Wastewater System in conformance with Hawaii State Department of Health regulations, a swimming pool/deck and landscaping. The design would blend in with the surroundings through use of natural rock walls and earth-tones on other surfaces. Road access is via the existing Keauhou-Kainaliu jeep road. Electric/phone lines would be brought to the house via a route that extends directly uphill to existing lines. The house would be set back approximately 55 feet from the shoreline, which was certified on September 28, 1998. The approximate cost of the improvements is $300,000, and all funding is private (no public funds are involved). Earlier permit applications resulted in the granting of both an SMA Minor Use Permit and a Conservation District Use Permit in 1985, but due to other commitments of the landowner, the only improvements implemented were grading and building of the wall.

1.2 Summary of Regulatory Requirements

This Environmental Assessment (EA) process was conducted in accordance with Chapter 343 of the Hawaii Revised Statutes (HRS). This law, along with its implementing regulations, Title 11, Chapter 200, of the Hawaii Administrative Rules (HAR), is the basis for the environmental impact process in the State of Hawaii. 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 5 lists these criteria and the preliminary findings made by the State of Hawaii Department of Land and Natural Resources. If no impacts are considered significant, then the proposing or approving agency will issue a Finding of No Significant Impact (FONSI).

Accordingly, if this study concludes that no significant impacts would occur from implementation of the proposed action, a FONSI will be prepared and the action will be permitted to occur. If this study finds that significant impacts are expected to occur as a

result of the proposed action, then an Environmental Impact Statement (EIS) will be prepared.

1.3 Public Involvement and Agency Coordination

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

County:

Planning Department
Department of Water Supply
County Council

State:

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

Private:

Kona Outdoor Circle

Copies of communications received during preconsultation are contained in Appendix 1A.

Notice of the availability of the Draft EA was published by the Hawaii State Office of Environmental Quality Control (OEQC) in the *Environmental Notice* of 8 April 1999. This initiated a 30-day comment period during which the public and agencies were invited to respond to the Draft EA with comments or questions. Eight comment letters were received. These letters and the responses to them are included as Appendix 1B. The Final EA was revised in portions to incorporate corrections or clarifications supplied by these letters.

PART 2: ALTERNATIVES

2.1 Proposed Project

The proposed project is described in Section 1.1 above and illustrated in Figures 1-3.

2.2 No Action

Under the No Action Alternative, the property would remain vacant. This EA considers the No Action Alternative as the baseline by which to compare environmental effects from the project.

No other Alternatives have been considered by Mr. Brand or are addressed in this EA.

PART 3: ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES

3.1 Basic Geographic Setting

The project site is a slightly sloping shelf perched above the shoreline behind low cliffs. The partially graded lot is moderately vegetated with kiawe trees and assorted alien shrubs and herbs (Fig. 6). Several cattle walls and a concrete/lava rock wall built in the 1980s are present. The mauka boundary of the lot is the Keauhou-Kainaliu Beach Road, a government jeep road which provides access to the site from the end of Alii Drive. The site varies in elevation from sea level to about 42 feet above sea level. The surface geology consists of lava flows from Hualalai dated between 5 and 10 ka (Wolfe and Morris 1996). Soil is minimal and is classified as Kainaliu very stony silty clay loam. This thin soil is very permeable with low runoff and slight erosion hazard (U.S. Soil Conservation Service 1973). Annual rainfall averages about approximately 40 inches (U.H. Hilo-Geography 1998:57).

3.2 Physical Environment

3.2.1 Drainage, Flooding and Hazards

Environmental Setting

A portion of the parcel lies within Zone VE (Coastal High Hazard Area) on the Flood Insurance Rate Maps (FIRM) prepared by the Federal Emergency Management Agency (FEMA) (see Fig. 2). Chapter 27 of the Hawaii County Code stipulates that any new construction or substantial improvements within Special Flood Hazard Areas must adhere to certain requirements.

The entire Big Island is subject to geologic hazards, especially lava flows and earthquakes. The project site is located in Lava Flow Hazard Zone 4 (on a scale of ascending risk 9 to 1). In Zone 4, "the frequency of eruptions is lower than that for Kilauea or Mauna Loa" (Heliker 1990). About 5 percent of Zone 4 areas have been covered by lava flows since 1800, and less than 15 percent within the last 750 years. As such, there is only a small risk of lava inundation over relatively short time scales.

In terms of seismic risk, the entire Island of Hawaii is rated Zone 4 Seismic Probability Rating (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.

Impacts and Mitigation Measures

In general, geologic and drainage conditions impose no substantial constraints on the project. In order to avoid impacts to the VE Flood Zone, the project will be reviewed by the Hawaii County Department of Public Works to ensure that it conforms with Chapter 27 of the Hawaii County Code. All structures will conform to the Uniform Building Code. Although the project is located in an area exposed to a certain amount of hazard from coastal flooding, lava flows and earthquake, the project presents no additional hazard to the public and is not imprudent for landowner.

3.2.2 Flora and Fauna, Wetlands, and Threatened and Endangered Species

Flora and Fauna

The site was inspected for biological resources in October 1998. The vegetation is dominated by scattered alien trees and shrubs with very scattered alien herbs and vines. Prominent species include kiawe (*Prosopis pallida*), koa haole (*Leucaena leucocephala*), and opiuma (*Pithecellobium dulce*). A few common native species are found, including uhaloa (*Waltheria indica*). Several individuals of the Polynesian introduction noni (*Morinda citrifolia*) are also present. No listed, candidate or proposed endangered animal or plant species were found or would be expected in the area. In terms of conservation value, no botanical or zoological resources requiring special protection are present.

Impacts and Mitigation Measures

Because of the lack of native ecosystems and threatened or endangered plant species, no adverse impacts would occur as a result of clearing and improvements.

3.2.3 Air Quality, Noise, and Scenic Resources

Environmental Setting

Air pollution in the Kona is mainly derived from volcanic emissions of sulfur dioxide, which convert into particulate sulfate and produce a volcanic haze (vog) that persistently blankets the district. Drier areas experience blowing dust, especially during construction in high wind episodes.

Noise on the site is very low and is almost exclusively derived from natural sources, especially waves crashing on the lava shoreline.

The area shares the quality of scenic beauty along with most of the Kona coastline. The Hawaii County General Plan contains Goals, Policies and Standards intended to preserve areas of natural beauty and scenic vistas from encroachment. The Plan does not contain any references to this area.

Impacts and Mitigation Measures

The project would not affect air quality or noise levels, except for very minor and brief effects during construction. No substantial impact to scenery is expected, because the site, which will contain a home and landscaping that is blended into the background, is not visible from any roads, scenic lookouts, or other likely public viewpoints.

3.2.4 Hazardous Substances, Toxic Waste and Hazardous Conditions

Based on onsite inspection and information on file, it appears that the site contains no hazardous or toxic substances and exhibits no other hazardous conditions. In order to ensure that construction-related damage is avoided or minimized, the following will be implemented:

> *Mitigation Measure: Construction activities will be limited to periods of low rainfall; cleared areas will be replanted or otherwise stabilized as soon as possible; and construction materials, petroleum products, wastes, debris, and landscaping substances (herbicides, pesticides, and fertilizers) will be prevented from blowing, falling, flowing, washing or leaching into the ocean.*

3.3 Socioeconomic and Cultural

3.3.1 Land Ownership and Land Use, Designations and Controls

Existing Environment

The kuleana property is owned by Gary Brand. Surrounding land is owned by various private landowners. Currently the subject parcel and surrounding areas within 1,000 feet do not contain structures. The general area is used for cattle grazing and recreation.

Zoning is A-5a (Agriculture, minimum lot size 5 acres). The State Land Use District is Conservation, and the Subzone is Limited. The Land Use Pattern Allocation Guide Maps identify the area as Open. The site is within the Special Management Area.

Construction of a single-family home within such designation is permitted if a Conservation District Use Permit and a Special Management Area Use Permit are obtained. This Environmental Assessment is part of the process for obtaining the permits. The consistency of the project with the regulations and policies of the Conservation District and Special Management Area are discussed in Section 3.7.

3.3.2 Socioeconomic Characteristics

Existing Environment: Social Characteristics

The project site is within the ahupua`a of Honalo in the North Kona District of the island of Hawaii. Kona was an important district in pre-Contact Hawaii, a center of political power and population. However, after 1850 it became a sleepy rural district of scattered coffee farms and cattle ranches. The growth of the visitor industry in West Hawaii since the 1960s has attracted new residents lured by Kona's physical beauty and its employment and entrepreneurial opportunities. Population has grown rapidly in all of West Hawaii and particularly in North Kona, where the number of inhabitants increased from 4,832 in 1970 to 22,284 in 1990. Population is expected to rise to over 50,000 by the year 2005, according to most projections. Along with increasing numbers have come changes in social characteristics. Census data reveals that Kona is practically unique among the many districts in the State for its high proportion of Caucasian population (over 54 percent) and simultaneously high Hawaiian population (almost 20 percent). The retired mainlanders who have flocked to Kona have also raised the median age of the district to 34.6 years -- 2.0 years higher than the State median -- despite the fact that 27.4 percent of the population in Kona is under 18 years of age - much higher than the statewide average of 25.2 percent.

With its 1990 median income of $16,385, Kona appears relatively affluent when compared to the statewide median of $15,770. This average statistic, however, disguises a relatively high rate of poverty -- 11.6 percent, much higher than the statewide figure of 8.3 percent.

The large-scale urban geography of Kona has begun to assume a clear and definite form as a result of recently created housing, commercial and industrial areas and the framework set by the Keahole to Kailua Plan (Hawaii County Planning Dept: 1991). Kona's population is growing and changing in ways that are taxing existing recreational resources.

The State Comprehensive Outdoor Recreation Plan (SCORP) surveys accomplished in 1988 revealed that the most popular pastimes in Kona were ocean boating, walking-jogging-running, bicycle riding and surfing-bodysurfing-bodyboarding (Hawaii DLNR 1990). Clearly, residents value fitness and ocean recreation. According to the Statewide Tourism Impact Core Survey (Community Resources, Inc. 1989), one in four residents said that some favorite place had been taken over by visitors in the past five years. Nevertheless, residents reported that their favorite place to interact with visitors was outdoors, at beaches and parks.

Impacts and Mitigation Measures

Preservation of access to coastal areas is vital for maintaining the recreational opportunities of Kona residents. A condition of a previous SMA Minor Permit (No. 85-10) was the requirement for a 10-foot wide mauka-makai pedestrian access from the Keauhou-Kainaliu Beach Road. The applicant recognizes the need to fulfill this condition. This project does not impede shoreline or government road access and will not interfere with this important goal.

3.3.3 Archaeology, Historic Sites and Cultural Setting

Archaeology: Environmental Setting, Impacts and Mitigation Measures

The site was inspected for archaeological resources in 1981 as part of an earlier Conservation District Use Permit. Appendix 3 contains the archaeological report. The archaeologist found two features on the property, both of which are terraces that appear to date from the 19th century or later. After field survey, mapping and data recovery, he concluded that neither feature contained sufficient value for preservation or information to qualify them for inclusion on the State or National Historic Registers.
The State of Hawaii in a letter of 24 February 1984 (see end of Appendix 3) concurred with the conclusion that no further archaeological work or mitigation would be required, other than that stated below:

> *Mitigation Measure: If any previously unidentified sites, or remains such as artifacts, shell, bone or charcoal deposits, human burials, rock or coral*

alignments, pavings, or walls are encountered, work will stop immediately and SHPD will be consulted to determine the appropriate mitigation.

In a letter of 8 January 1999 in response to preconsultation for this EA (App. 1A), SHPD reiterated that no mitigation would be necessary for any activities on the parcel itself. The agency questioned whether access to the parcel might have any adverse effect. In response, the Draft EA clarified that access would occur via an existing government jeep road that the applicant would not improve or modify. In a letter of 7 April 1999 (App. 1B) , SHPD agreed that given these conditions, no effects would likely occur.

Traditional Cultural Practices: Environmental Setting, Impacts and Mitigation Measures

Kona was an important and powerful district in pre-Western contact Hawaii, the seat of ruling chiefs. Along with the rest of Kona, the Honalo ahupua`a had productive upland agriculture and teeming shoreline and offshore fisheries. Nearby is the burial ground for the Kuamoo Battle Warriors, an important cultural area and registered historic site. The entire coastline from Keauhou to Kaawaloa (the site of the Captain Cook Monument) is currently used by native Hawaiians, among others, for fishing, diving and gathering, both on the shore and via boats. A number of beach homes dot the coastline and are used by the owners and visitors to enjoy the area and its resources.

According to a 30 November 1998 letter from the Hawaii State Na Ala Hele Program (see Appendix 1A), the State of Hawaii has asserted ownership over the Old Government Road (also known as the Keauhou-Kainaliu Beach Road) that is on the mauka border of the property, and is concerned that "this roadway alignment remain unimpeded for public access." The landowner is unaware of any mauka-makai trails through or near the property and will not block or hinder access around the parcel or through the 10-foot wide easement that is required as part of the 1985 SMA permit.

This report and the recommendations contained herein include the strong presumption that the practice of traditional gathering rights in the areas near the property, including the shoreline in front and directly adjacent to the parcel, is traditional, ongoing and important.

Therefore, the project has been designed to avoid any obstruction or hindrance to the exercise of such practice. No public road or trail will be directly or indirectly blocked, and the public will be allowed free access along the lava shelf area makai of the shoreline, which is commonly used by fishermen. No mauka-makai trails will be disturbed or impeded.

Mitigation Measure: It is proposed that the CDUP explicitly state that the applicant will not obstruct access or otherwise hinder fishing, gathering, ceremonial or other traditional activities in the areas adjacent to the parcel.

3.4 Public Facilities

The site is not served by paved roads, water, sewer, electricity or telephone service. No impact upon public services is expected as a result of the action.

Access is through the Keauhou-Kainaliu Beach Road. Electric/phone lines would be brought to the house via a route that extends directly uphill to existing lines. Water service may be provided via this same route or possibly through another means. Sewage treatment will occur via a septic system in conformance with Hawaii State Department of Health rules and regulations.

3.5 Secondary and Cumulative Impacts

The proposed project will not involve any secondary impacts, such as population changes or effects on public facilities.

Cumulative impacts result when implementation of several projects that individually have limited impacts combine to produce more severe impacts or conflicts in mitigation measures. Other projects in progress or planning include the Oceanside 1250 project, a large-scale development involving several hundred single-family homes, and new infrastructure. The adverse effects of the Brand project – very minor and temporary disturbance to air quality, noise, and visual quality during construction, as well as adding to the density of houses along this relatively unpopulated stretch of the North Kona coastline – are negligible in the context of the Oceanside project. No special mitigation measures should be required to counteract the small adverse cumulative effect.

3.6 Required Permits and Approvals

Construction of the restrooms would require the following:

County of Hawaii:

Special Management Area Permit
Building Permit

State of Hawaii

Conservation District Use Permit

3.7 Consistency With Government Plans and Policies

3.7.1 Consistency with CD/SMA Rules, Guidelines and Objectives

The property is in the State Land Use Conservation District, Subzone Limited. 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. Because it is located in the Special Management Area (SMA), the CDUA must also address the consistency of the project with SMA objectives. Briefly, the following individual consistency criteria should be noted:

- The development of this single family residence is a regulated land use within the Limited Subzone and is consistent with the purpose of the district as defined in Chapter 13-5, HAR. The objective of the Limited Subzone is to limit uses where natural conditions suggest constraints on human activities. The proposed action is a permitted use in the Limited Subzone and will not create any hazards for the public. The property is located on the Federal Insurance Rate Maps (FIRM) in the "X" and "VE" areas. The VE height is identified in this area. All construction on the subject property will be consistent with the County of Hawaii's Chapter 27-Flood Control. This will insure that all safety considerations are addressed.
- The proposed land use complies with provisions and guidelines contained in Chapter 205A, Hawaii Revised Statutes (HRS), entitled "Coastal Zone Management." Single family residences are considered to be an exempt action under the County's Special Management Area (SMA) guidelines. 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 applicant has filed a SMA Use Permit Assessment Application request with the Planning Department and an SMA Impact Assessment Application. Through the granting of a prior exemption, the Planning Department has previously confirmed that the proposed action is exempt from SMA Rules.
- 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 this single family residence will be confined to the owner's lot and will not have any adverse impact on the natural resources of the area, community or region.
- The proposed land use, including buildings, structures and facilities are compatible with the locality and surrounding areas, appropriate to the physical conditions and capabilities of the specific parcel or parcels. This parcel of land was granted by Royal Patent 3804, L. C. Aw. 7958, Apana 2, to Keliinohokaha as a kuleana, and was intended for use as a residence. Owners of kuleana lands may be entitled to

the property meets certain requirements. The applicant's property meets all such requirements and is compatible with and appropriate to its surroundings and capabilities as part of the Conservation District.

- 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. The physical beauty of the lot will be improved with the removal of unwanted plant material and the installation of landscaping.
- 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 the permitted single family residence

PART 4: DETERMINATION

The proposed project will not significantly alter the environment and impacts will be minimal. Therefore, the Hawaii Department of Land and Natural Resources has made a Finding of No Significant Impact (FONSI), and an Environmental Impact Statement will not be prepared.

PART 5: FINDINGS AND REASONS

Chapter 11-200-12, Hawaii Administrative Rules, outlines those factors agencies must consider when determining whether a project has significant effects. The following outlines the evaluation for significance according to each factor.

1. *The proposed project will not involve an irrevocable commitment or loss or destruction of any natural or cultural resources.* No valuable natural or cultural resource would be involved, committed or lost.

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 basically environmentally benign, 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 Kona community or State.

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.* As the project involves only one single-family home, no secondary effects are expected.

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

8. *The proposed project will not substantially affect any rare, threatened or endangered species of flora or fauna or habitat.* The site supports overwhelmingly alien vegetation. 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 project is not related to other activities in the region in such a way as to produce adverse cumulative effects or involve a commitment for larger actions.

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.* Although the proposed project is located in zone exposed to flood damage, earthquake and volcanic hazard, there are no reasonable alternatives that would avoid such exposure. Although the project is located in an area exposed some hazard from coastal flooding, lava flows and earthquake, the project presents no additional hazard to the public and is not imprudent for landowner. All construction will adhere to the Uniform Building Code and Chapter 27, Flood Control, of the Hawaii County Code.

12. *The project will not substantially affect scenic vistas and viewplanes identified in county or state plans or studies.* No County or State plan, including the Hawaii County General Plan, identifies important views in this area. The project will not impair views of or along the coastline.

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

For the reasons above, the proposed project will not have any significant effect in the context of Chapter 343, Hawaii Revised Statues and section 11-200-12 of the State Administrative Rules.

REFERENCES

Community Resources, Inc. 1989. *1988 Statewide Tourism Impact Core Survey: Detailed Findings: Volume 1: Results for Planners Volume 2: Results for Visitor Industry Analysts. Volume 3: Results for Demographers and Social Researchers.* Prep. for Hawaii Department of Business, Economic Development and Tourism. Community Resources, Inc. 1989. Honolulu.

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 Hawaii.* 2 vols. Honolulu: University of Hawaii Press.

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APPENDIX 1A

COMMENT LETTERS IN RESPONSE

TO PRECONSULTATION

NA ALA HELE
Hawai'i Trail & Access System

November 30, 1998

MEMORANDUM:

TO: Ron Terry, Ph. D.
Geo Metrician
HCR 9575
Keaau, HI 96749

FROM: Rodney T. Oshiro, Na Ala Hele

SUBJECT: Pre-Consultation on Environmental Assessment for Construction of Single-Family Dwelling at TMK 7-9-05:13, Honalo, North Kona

The subject property is located adjacent to the Old Government Road alignment in which the State of Hawaii has asserted ownership. Our concern in the development of parcel 13 is that this roadway alignment remain unimpeded for public access. The environmental assessment will need to address historical/cultural sites that are located on the property.

We will appreciate a copy of the EA when it is completed.

Attachment

TMK/AREA/ SOURCE OF TITLE *trail noted	LANDOWNER(S)/ VESTING DOCS	PUBLIC ACCESS PROVIDED
7-9-5-11 / 0.20 acre LCAward 7978:2 *cites Alanui Aupuni	Benjamin Jumalon et al (17053-510)	LCA 7978 dated 1853 cites: "...ma ke alanui" (along the road)
7-9-5-12 / 0.17 acre LCAward 8575:2 * cites Alanui	Moses Y. Kealamakia & Eva L. Kealamakia, as T/E (8419-149)	Metes & Bounds in LCA dtd 1852 cites: "ma ke Alanui.." (along the Road)
7-9-5-13 / 25861 sq. Ft. or 0.594 acre LCAward 7958:2 * cites Alanui	Bishop Trust Co., Ltd, a HI corp., as Trustee etc. (21469-48)	Metes & Bounds in LCA dtd 1852 cites: "ma ke Alanui..." (along the Road)
7-9-5-15/ .439 acre portion Grant 1574 * delineates Road Makai	Agnes Smith et al (22159-237)	Excluding Old Govt. Trail being 1532 sq. ft. or .035 acres (22159-237)
7-9-5-16 /.948 acre por Grant 1595 * previously noted	Burnette Hazen, Trustee of the Burnette Hazen Trust (90-17386)	CA 2229 JG in 8684-395 cites: "The Keauhou-Kainaliu Beach Road is excluded from the said property."
7-9-5-39 / .306 acre LCAward 9918:2	Allen D. Israel, as Trustee of the Kona Residence Trust etc. (90-52501)	Metes & Bounds in 90-52501 cites: "along the Southwest side of Old Keauhou-Kainaliu Beach Road.."
7-9-5-40 / .345 acre LCAward 7960:2	Allen D. Israel, as Trustee of the Kona Residence Trust etc. (90-52501)	Metes & Bounds in 90-52501 cites: "along the Southwest side of Old Keauhou-Kainaliu Beach Road.."
7-9-5-75 /.907 acre por LCA 7130:2 LP 8592 * previously noted	Wm. J. Paris Trust (LP S-8592)	CSF 19631 (Lot B) LP 8592 cites: "along the easterly side of an old Government (road) trail..."

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF AQUATIC RESOURCES
75 AUPUNI STREET
HILO, HAWAII 96720

CHAIRPERSON
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BOARD OF LAND AND NATURAL RESOURCES
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CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION PROGRAM
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

December 7, 1998

Dr. Ron Terry
GEO METRICIAN
HCR 9575
Keaau, HI 96749

Re: Pre-Consultation on Environmental Assessment for Construction of Single-Family Dwelling at TMK: 7-9-05:13, Honalo, North Kona

Dear Dr. Terry:

Thank you for your letter dated November 24, 1998, regarding the above-referenced matter. I would appreciate a copy of the EA when completed.

Sincerely,

Robert T. Nishimoto, PhD

xc: Richard Sixberry

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF LAND MANAGEMENT
P.O. BOX 936
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FORESTRY AND WILDLIFE
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

December 8, 1998

Ron Terry, Ph.D.
Geo Metrician
HCR 9575
Keaau, Hawaii 96749

SUBJECT: Pre-consultation on environmental assessment for construction of single-family dwelling at North Kona, Hawaii, tax map key: (3) 7-9-5-13.

Dear Mr. Terry:

Thank you for your letter dated November 24, 1998, concerning the above referenced subject matter. We have no comments to provide. No State properties are impacted by your request.

Should you have any questions, please call our office at 974-6203.

Sincerely,

Charlene E. Unoki

Charlene E. Unoki

xc: Hawaii BM
Support Services

PHONE (808) 594-1888

FAX (808) 594-1865

STATE OF HAWAI'I
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAI'I 96813

December 10, 1998

Mr. Ron Terry, Ph.D.
Geo Metrician
HCR 9575
Kea'au, Hawai'i 96749

PC 29

Re: Advanced comments for the Preparation of a Draft Environmental Assessment for Construction of a Single Family Dwelling at TMK: 7-9-05:13, Honalo, North Kona

Dear Mr. Terry:

Thank you for the opportunity to comment on the preparation of a draft Environmental Assessment (DEA) for a single-family residence on kuleana lands at Honalo, North Kona.

The Office of Hawaiian Affairs' primary concern is for the cultural and historic resources that may remain on the property, as well as for any traditional gathering rights which may have occurred in the project area. This is especially important as Kuleana owners are likely to have practiced subsistence gathering. This information should be fully discussed in the environmental documents.

We offer you the following caution in doing the assessment of cultural resources. Controversy often arises among the Hawaiian community when a proponent relies solely on contracted archaeologists or anthropologists for the interpretation of cultural sites and practices. In order to avoid this controversy, we suggest that you contact a Hawaiian cultural expert to help prepare the environmental assessment. We strongly suggest that the Hawaiian cultural expert you choose should be a person who is recognized within the immediate Hawaiian community for his/her cultural expertise. The concerns of the community will not be addressed if the DEA contains information provided solely by a person whose knowledge of Hawaiian culture is limited to a study of archaeology or anthropology.

We look forward to receiving your draft environmental assessment. We will carefully review the document, especially as it pertains to cultural properties and make appropriate comments. If you have any questions, please contact Sebastian Aloot, Land and Natural Resource Division Officer or Lynn Lee, EIS Planner at 594-1936.

Sincerely,

Colin Kippen
Deputy Administrator

C. Sebastian Aloot
Acting Land and Natural Resources
Division Officer

cc: Board of Trustees
West Hawaii Community Affairs Office

DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAII
25 AUPUNI STREET • HILO, HAWAII 96720
TELEPHONE (808) 961-8660 • FAX (808) 961-8657

January 4, 1999

Ron Terry, Ph.D.
HCR 9575
Keaau, HI 96749

PRE-ASSESSMENT CONSULTATION FOR THE PROPOSED SINGLE FAMILY DWELLING
SITUATED AT HONALO, NORTH KONA, HAWAII
TAX MAP KEY 7-9-005:013

We have reviewed the subject pre-assessment consultation and for your information, the Department's nearest facility is a 12-inch waterline at the southern end of Alii Drive, which is about 2,500 feet away.

Should there be any questions, please call our Water Resources and Planning Branch at 961-8660.

Milton D. Pavao, P.E.
Manager

BCM:gms

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

MICHAEL D. WILSON, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTIES
GILBERT COLOMA-AGARAN
TIMOTHY E. JOHNS

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
CONSERVATION AND RESOURCES
ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND
STATE PARKS
WATER RESOURCE MANAGEMENT

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
Kakuhihewa Building, Room 555
601 Kamokila Boulevard
Kapolei, Hawaii 96707

January 8, 1999

Dr. Ron Terry
Geo Metrician
HCR 9575
Keaau, Hawaii 96749

LOG NO: 22671
DOC NO: 9812PM05

Dear Dr. Terry:

SUBJECT: Pre-Consultation on Environmental Assessment for Construction of Single Family Dwelling, Honalo, North Kona, Hawaii Island TMK: 7-9-05:13

Thank you for your letter of November 24, 1998 and the opportunity to comment on the proposed project. Our files indicated that the subject parcel had an archaeological survey, but we could not find the report or any correspondence relating to this parcel. We appreciate the copy of the report and Departmental memo that you sent us on December 28, 1998.

The archaeological survey report indicates that one site with two constituent features was found on the parcel in 1981. According to the memo dated February 24, 1984 from Ralston Nagata, Acting State Parks Administrator, to Roger Evans, OCEA-DLNR Planner, the Department of Land and Natural Resources agreed that no further mitigation of the site would be required.

While no further archaeological work seems to be required in the parcel itself, we would like to know how the landowner will access the property and whether or not the access could have an adverse effect on historic sites. These issues should be addressed in any environmental assessment that is done. Dr. Peter Mills of the University of Hawaii at Hilo conducted a field school in this area last summer and may have some information relevant to this issue.

If you should have any questions please contact Patrick McCoy (692-8029).

Aloha,

DON HIBBARD, Administrator
State Historic Preservation Division

PM:amk

APPENDIX 1B

COMMENT LETTERS TO DRAFT EA

AND RESPONSES

Stephen K. Yamashiro
Mayor

Jiro A. Sumada
Deputy Chief Engineer

County of Hawaii

DEPARTMENT OF PUBLIC WORKS

25 Aupuni Street, Room 202 • Hilo, Hawaii 96720-4252
(808) 961-8321 • Fax (808) 961-8630

'99 MAR 9 A10:13
RECEIVED
DIVISION OF
LAND MANAGEMENT

March 23, 1999

Department of Land and Natural Resources
Division of Land Management
P.O. Box 621
Honolulu, Hawaii 96809

SUBJECT: Conservation District Use Application HA-2922B
for a Single Family Dwelling
Location: Honalo, North Kona, Hawaii
TMK: 7-9-05: 013

We have reviewed the subject application and offer the following comments:

1. All development generated runoff shall be disposed of on site and shall not be directed toward any adjacent properties.

2. All grading and grubbing activities shall comply with Chapter 10 of the Hawaii County Code.

3. The FEMA map shows a portion of this parcel to lie within the "VE" flood zone. Any construction must comply with Chapter 27 of the Hawaii County Code.

Galen Kuba, Division Chief
Engineering Division

TWP:swa

cc: Engineering-Hilo
Engineering-Kona

GEO METRICIAN
Ron Terry, Ph.D.

HC 2 Box 9575
Kaasu, Hawaii 96749
(808) 982-5831

June 7, 1999

Galen Kuba, Division Chief
Engineering Division
Hawaii County Department of Public Works
25 Aupuni Street
Hilo, Hawaii 96720

Dear Mr Kuba:

Subject: **Comments to Draft Environmental Assessment for Conservation District Use Application for Brand Single Family Dwelling at Honalo, TMK 7-9-5:013, North Kona, Island of Hawaii**

Thank you for your comments on the subject project contained in your letter of 23 March 1999. The applicant is aware of the requirements to dispose of runoff on site and to ensure that grading activities comply with Chapter 10 of the Hawaii County Code. We would note that Section 3.2 of the EA provides a discussion of the flood zone status and the statement that the requirements of Chapter 27 of the Hawaii County Code must be met.

Sincerely,

Ron Terry, Ph.D.
Project Environmental Consultant

NA ALA HELE
Hawai'i Trail & Access System

April 28, 1999

Post-it® Fax Note 7671	Date 5/13/99	# of pages ▶ 9
To Greg Masuoka	From Lauren Tanaka	
Co./Dept.	Co. DLNR.	
Phone #	Phone # 5870385	
Fax # (808) 8861574	Fax # 5870456	

RECEIVED
DIVISION OF
LAND MANAGEMENT
APR 30 9 49 AM '99

MEMORANDUM:

TO: Lauren Tanaka, Planner
Land Division

FROM: Rodney T. Oshiro, Na Ala Hele

SUBJECT: CDUA HA-2922
Applicant: Gary Brand, Single Family Residential Construction
TMK: (3) 7-9-05: 15, Honalo, North Kona, Hawaii

Na Ala Hele would like to point out item 3 of the conditions stipulated under SMA Minor 85-10 that "a 10-foot wide mauka-makai public pedestrian access from the Keauhou-Kainaliu Beach Road to the shoreline shall be provided. The shoreline access area shall be described by metes and bounds, approved by the Planning Director, and recorded with the Bureau of Conveyances within six months of the effective date of the Shoreline Setback Variance". An identical condition is endorsed by the Na Ala Hele Trails and Access program in the issuance of another SMA minor permit by the County of Hawaii.

Also, electrical/telephone poles will need to be sited away from the Keauhou-Kainaliu Beach Road as much as possible to mitigate undesireable visual impact.

Thank you for the opportunity to comment.

cc: Curt Cottrell, Na Ala Hele

Division of Forestry & Wildlife • Dept. of Land & Natural Resources • P.O. Box 4849 • Hilo, Hawaii 96720-0849

GEO METRICIAN
Ron Terry, Ph.D.

HC 2 Box 9575
Keaau, Hawaii 96749
(808) 982-5831

June 7, 1999

Rodney Oshiro
Na Ala Hele Program
Hawaii State DLNR-DOFAW
P.O. Box 4849
Hilo, Hawaii 96720-0849

Dear Mr Oshiro:

Subject: **Comments to Draft Environmental Assessment for Conservation District Use Application for Brand Single Family Dwelling at Honalo, TMK 7-9-5:013, North Kona, Island of Hawaii**

Thank you for your comments on the subject project contained in your letter of 28 April 1999 to Lauren Tanaka of the DLNR Land Division. We acknowledge that the condition stipulated under SMA Minor Permit 85-10 for a 10-foot wide mauka-makai pedestrian access from the Keauhou-Kainaliu Beach Road to the shoreline is still in effect. This information has been added to Section 3.2.3 of the EA. Concerning the utility poles, Mr. Brand seeks to bring them via a route that extends directly uphill to existing lines. If this option is not available, then a route along the Keauhou-Kainaliu Beach Road may become necessary. It is acknowledged that this latter option may require an additional CDUP if it involves work in the Conservation District.

Sincerely,

Ron Terry, Ph.D.
Project Environmental Consultant

PHONE (808) 594-1888

FAX (808) 594-1865

STATE OF HAWAI'I
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAI'I 96813

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LAND MANAGEMENT
APR 21 8 47 AM '99

April 18, 1999

Mr. Dean Uchida, Administrator
Land Division
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawai'i 96809

PA (99) 223

Re: Conservation District Use Application (CDUA) HA-2922B for a Single Family Residence at Honalo, North Kona, Hawai'i (TMK: 7-9-05:13)

Dear Mr. Uchida:

Thank you for the opportunity to review the Conservation District Use Application (CDUA) for a single family residence at Honalo, North Kona, Hawai'i. This application raises several concerns for the Office of Hawaiian Affairs (OHA).

The applicant propose to build a single family home on 26,185 square feet of Kuleana land. The home will have one bedroom and one and a half bathrooms in a home of a 3,500 square feet. The applicants also propose to build a swimming pool. The home will be 55 feet from the shoreline and is in a conservation district.

The archaeological report prepared for this project was done in 1981. In the intervening years between the report and this application, new information has been gathered and a new understanding of the patterns of Hawaiian occupation and use of the land has been developed.

At best, it would be difficult to make decisions based on a twenty year old report. At worst, it may be inappropriate to base decisions on a report which is based on an obsolete scientific approach. As Kuleana property this parcel carries some unique privileges as well as unique responsibilities. The preparation of this supplemental archaeological information is thus not only appropriate it is essential. Therefore, we urge you to require the preparation of a supplemental archeological report.

In addition, this application may have some special responsibilities in the area of access. The applicant claims that shoreline access will not be impeded by this project because there is open space near the project from which to access the shoreline. However, the restrictions in the property description of the deed indicate that ownership of this parcel is subject to "[r]ights of native tenants". This explicit requirement in the deed must be considered before any approval to build a home is granted. We suggest that this be handled in two ways.

First, the applicant should be required to prepare a report on the gathering practices that once occurred and/or continue to occur in this area. This report could be done following the guidelines for a cultural impact statement prepared by the Office of Environmental Quality Control. We further suggest that the applicant hire a Hawaiian cultural expert to prepare the report. The Hawaiian cultural expert chosen to work on the report must be someone recognized within the Hawaiian community for his/her cultural expertise. The concerns of the community will not be addressed if the cultural impact statement contains information and analysis provided solely by a person whose knowledge of Hawaiian culture is limited to a study of archaeology or anthropology.

When this assessment has been completed, a formal access or gathering easement should be included as a condition to granting the conservation district use permit. This condition should have language which assures that the project proponents will not hamper, impede or otherwise limit the exercise of traditional, customary or religious access or practice.

We urge you to hold this application until these reports have been satisfactorily completed.

Finally, we would appreciate receiving a copy of the supplemental archaeological and cultural impact reports when completed. If you have any questions, please contact Lynn Lee, EIS Planner at 594-1936.

Sincerely,

Colin Kippen
Deputy Administrator

C. Sebastian Aloot
Land and Natural Resources Division Officer

cc: Board of Trustees
OHA West Hawaii Community Affairs Office
Office of Environmental Quality Control

GEO METRICIAN
Ron Terry, Ph.D.

HC 2 Box 9575
Keaau, Hawaii 96749
(808) 982-5831

June 7, 1999

Colin Kippen, Deputy Administrator, and
Sebastian Aloot, Land and Natural Resources Division Officer
Hawaii State Office of Hawaiian Affairs
711 Kapi`olani Blvd., Suite 600
Honolulu, Hawai`i 96813

Dear Sirs:

Subject: **Comments to Draft Environmental Assessment for Conservation District Use Application for Brand Single Family Dwelling at Honalo, TMK 7-9-5:013, North Kona, Island of Hawai`i**

Thank you for your comments on the subject project contained in your letter of 18 April 1999. A detailed response to each of the points raised in your letter is supplied below:

1. *Supplemental Archaeological Report.* A full archaeological inventory survey was conducted in 1981 by a qualified archaeologist. The conclusion that no significant historic sites were present was reviewed and approved by the State Historic Preservation Officer. Subsequent to that finding, the applicant engaged in a substantial amount of surface preparation. The State Historic Preservation Division in letter of 8 January 1999 (see App. 1 of the EA) recommended no further investigation of mitigation on the site. There appears to be little justification for the expense and time required for a supplemental archaeological report.

2. *Access and Rights of Native Tenants.* The Hawaii Environmental Policy Act (and the National Environmental Policy Act on which it is modeled) are clear that the scope and extent of information gathered for an EIS should be commensurate with the impacts expected. Your letter suggests an elaborate, expensive and time-consuming process for collecting data with no clear goal in terms of what impact is being avoided. The parcel in question is slightly larger than half an acre and is surrounded on all sides by undeveloped land. The vegetation is almost exclusively non-native, and those native or Polynesian-introduced species that are present are common throughout the region. The shoreline in front of the parcel – which the applicant in no way proposes to alter or block and in fact is obliged to provide an easement towards – is typical of the shoreline for miles in either direction. What specific resources or gathering practices is your agency concerned about? We can conceive of none that is threatened in this area; absent this, the cultural impact assessment

process your refer to, which may be perfectly justified on a large piece of undeveloped land, is excessive in the context of a house lot.

Sincerely,

Ron Terry, Ph.D.
Project Environmental Consultant

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
Land Division
Planning and Technical Services Branch
Honolulu, Hawaii

MAR 9 1999

SUSPENSE DATE: 21 Days

TO:
ADMINISTRATOR
ASS'T. ADMIN.
DIV. BR.
PLAN BR.
RES. MGT. BR.
PROJ. CONTROL
SW. REC. PLAN.
CLERICAL STAFF
ADMIN. ASS'T.
INTERP. BR.

CIRCULATE/POST/STAFF RM
COMMENTS & REC.
DRAFT REPLY
FILE
FOLLOW UP
INFO.
DUE
FILE
COPY TO:

MEMORANDUM

TO: Aquatic Resources, Oahu District Land Agent, Historic Preservation, Division of Forestry and Wildlife, State Parks, Commission on Water Resources Management, Engineering Branch, Conservation and Resources Enforcement

FROM: Dean Uchida, Administrator
Land Division

SUBJECT: REQUEST FOR COMMENTS Conservation District Use Application HA-2922B for a Single Family Residence at Honalo, North Kona, Hawaii

APPLICANT: Gary Brand

AGENT: Greg Mooers

TMK: 7-9-05:13

LOCATION: Honalo, North Kona, Hawaii

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PUBLIC HEARING: YES __ NO _X__

Please contact Sam Lemmo at 587-0381, should you have any questions on this matter.

If no response is received by the suspense date, we will assume there are no comments. The suspense date starts from the date stamp.

Attachment(s)

~~No~~ comments.

RALSTON NAGATA, State Parks
Administrator

Date: 3/10/99

Unless adequately screened by vegetation, this home and other similar developments along the coastline will greatly diminish views of the coastline from offshore vessels. Also consider use of earth tones to mask structures.

GEO METRICIAN
Ron Terry, Ph.D.

HC 2 Box 9575
Keaau, Hawaii 96749
(808) 982-5831

June 7, 1999

Ralston Nagata, Director
State Parks Division
Hawaii State DLNR
P.O. Box 621
Honolulu Hawaii 96809

Dear Mr Nagata:

Subject: **Comments to Draft Environmental Assessment for Conservation District Use Application for Brand Single Family Dwelling at Honalo, TMK 7-9-5:013, North Kona, Island of Hawaii**

Thank you for your comments on the subject project contained in your note of 10 March 1999 to Dean Uchida of DLNR, which was forwarded to us. Any home built on the coastline will be visible from the ocean. The aesthetic impact of a man-made feature on the landscape will depend upon the viewer and the particular qualities of the structure. The Brand home will have attractive architecture and landscaping, but it will of course insert a manmade element in the viewplane. We believe that it would be unreasonable to require the applicant to camouflage his home. We would note that dozens of homes and structures, including the massive Kona Surf Hotel, are present on the shoreline between Keauhou Bay and Kealakekua Bay, and that we disagree that another home would "greatly diminish" views of the coastline.

Sincerely,

Ron Terry, Ph.D.
Project Environmental Consultant

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
Kakuhihewa Building, Room 555
601 Kamokila Boulevard
Kapolei, Hawaii 96707

TIMOTHY E. JOHNS, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
DEPUTIES
JANET E. KAWELO
AQUATIC RESOURCES
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CONSERVATION AND RESOURCES
ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND
STATE PARKS
WATER RESOURCE MANAGEMENT

April 7, 1999

MEMORANDUM

LOG NO: 23177
DOC NO: 9904PM01

TO: Dean Uchida, Administrator
Land Division

FROM: Don Hibbard, Administrator
State Historic Preservation Division

SUBJECT: Conservation District Use Application HA-2922B for a Single Family Residence, Honaio, North Kona, Hawaii Island
TMK: 7-9-05:13

In 1984 the Department agreed that no further mitigation of historic sites would be required for the subject parcel, which had been surveyed in 1981. The correspondence relating to this determination, along with a copy of the archaeological survey report, are contained within the Draft EA. Earlier this year we were invited to provide further comment on the proposed development of this parcel. In a letter dated January 8, 1999 to Dr. Ron Terry, we indicated that our only concern was access to the property and what affect, if any, this might have on other historic sites. The Draft EA indicates that the owner will access the property using an existing jeep road that will not be improved or modified. With this understanding and the previous determination by the Department that no further mitigation would be required, we believe that the proposed residence will have "no effect" on significant historic sites.

PM:amk

GEO METRICIAN
Ron Terry, Ph.D.

HC 2 Box 9575
Keaau, Hawaii 96749
(808) 982-5831

June 7, 1999

Don Hibbard, Administrator
State Historic Preservation Division
601 Kamokila Blvd., Rm. 555
Kapolei, Hawaii 96707

Dear Mr Hibbard:

Subject: Comments to Draft Environmental Assessment for Conservation District Use Application for Brand Single Family Dwelling at Honalo, TMK 7-9-5:013, North Kona, Island of Hawaii

Thank you for your comments on the subject project contained in your memo of 7 April 1999 to Dean Uchida of DLNR, which was forwarded to us. We take note of your determination that given the inventory and mitigation already done for the site and the fact that no improvements will occur to the access road, no effect on significant historic sites would be expected to occur.

Sincerely,

Ron Terry, Ph.D.
Project Environmental Consultant

6/4/82

State of Hawaii
Department of Land and Natural Resources
DIVISION OF AQUATIC RESOURCES

HA-2722

Date February 28, 1984

MEMORANDUM
TO: Paul Kawamoto, Chief, Fisheries Branch
THROUGH: Alvin Katekaru, Chief, Marine Section
FROM: Francis G. Oishi, Aquatic Biologist
SUBJECT: Comments on x 1. Conservation District Use Application HA-1656
__ 2. _____

Comment Requested by Roger Evans, Planning Office, DLNR Date of Request 02/21/84 Date Rec'd 02/21/84

Summary of Proposed Project

Title: NON-CONFORMING SINGLE FAMILY HOME

Project by: Mr. Gary Brand

Location: Kualanui, Point, N. Kona, Hawaii

Brief Description:

The applicant proposes to build a single-family dwelling and a guest house on 0.6 acres of ocean front property at Kualanui Point, a mile and one-quarter south of Keauhou Bay, on the northern side of Maihi Bay.

Comments:

The West Hawaii Coral Reef Inventory characterizes the sea bottom near the site as rubble and boulders with low to moderate coral diversity. Limu-gathering is the only activity reported for the adjacent shoreline.

We expect that public access to the shoreline in this area would not be impeded by the project proposed because jeep trails (which appear in the County's Inventory of Public Shoreline Access) lead to the shoreline nearby. However, the applicant should be required not to impede passage along the shoreline itself.

We also anticipate no or little impacts adverse to aquatic resources provided the applicant exercises routine precautions:

1. Construction activities should be limited to periods of minimum rainfall and low runoff.

2. Areas denuded of vegetation or susceptible to erosion should be replanted or otherwise stabilized as soon as possible.

3. Construction materials, petroleum products, wastes, debris, and landscaping substances (herbicides, pesticides, fertilizers) should be prevented from blowing, falling, flowing, washing or leaching into the ocean.

COPY FOR YOUR INFORMATION

Francis G. Oishi
FRANCIS G. OISHI

GEO METRICIAN
Ron Terry, Ph.D.

HC 2 Box 9575
Keaau, Hawaii 96749
(808) 982-5831

June 7, 1999

William Devick, Administrator
Hawaii State Division of Aquatic Resources
1151 Punchbowl St., Room 325
Honolulu, Hawaii 96813

Dear Mr Devick:

Subject: **Comments to Draft Environmental Assessment for Conservation District Use Application for Brand Single Family Dwelling at Honalo, TMK 7-9-5:013, North Kona, Island of Hawaii**

As part of the Draft EA/CDUA consultation process, we received from DLNR a copy of the comments you had submitted in response to a 1984 CDUA (HA-1656) for the same parcel. It is our understanding that your office re-sent these comments in response to the current CDUA. This letter is simply to acknowledge that we did receive and consider the comments as part of the Draft EA process. We agree that given the conditions that have been and will be imposed upon the landowner as part of Conservation District, Building and Special Management Areas, no adverse impact to coastal access or aquatic resources is likely to occur.

Sincerely,

Ron Terry, Ph.D.
Project Environmental Consultant

ENGINEERING BRANCH

COMMENTS

We agree that the proposed construction work follow Chapter 27 of the Hawaii County Code.

We confirm that the proposed project site is located in Zone VE. This is an area located within the 100-year flood plain where coastal flooding occurs with velocity hazard (wave action), and base flood elevations determined.

GEO METRICIAN
Ron Terry, Ph.D.

HC 2 Box 9575
Keaau, Hawaii 96749
(808) 982-5831

June 7, 1999

Engineering Branch
C/o Lauren Tanaka, Land Division
Hawaii State Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

Subject: **Comments to Draft Environmental Assessment for Conservation District Use Application for Brand Single Family Dwelling at Honalo, TMK 7-9-5:013, North Kona, Island of Hawaii**

Thank you for your comments on the subject project contained in your undated memo to Dean Uchida of DLNR, which was forwarded to us. Concerning your specific comments, Section 3.2.1 of the Draft EA explains the flood zone status for the project area and that the project must comply with Chapter 27 of the Hawaii County Code.

Sincerely,

Ron Terry, Ph.D.
Project Environmental Consultant

03/10/99

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF CONSERVATION AND RESOURCES ENFORCEMENT

DOCARE-18
(Rev. 1/94)

SITE VISIT/FIELD INSPECTION REPORT

BRANCH: HAWAII REPORT IS DUE AT DOCARE ADMIN BY: 03/29/99

1. CASE DATA

a. FILE NUMBER: 29228 HA-00/00/00

b. INITIATOR: BRAND, Mr. Gary

c. LOCATION: TMK:(3)7-9-05:13 Honalo, North Kona, Hawaii

d. SUMMARY: Construction of single family residence & assoc improvements

e. REMARKS: * Agent is Gregory Mooers, Kamuela, 808-885-6839

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APR 28 9 58 AM '99

2. INSTRUCTIONS FOR OFFICER

a. Familiarize yourself with the attached CDUA paperwork, then conduct an inspection as directed by your Supervisor.

b. Determine if action described in the CDU proposal would have any apparent conflict with any statute, rule, or regulation of which you are aware.

c. Attach any pertinent photographs and/or information as exhibits. Return original DOCARE-18 form and all supporting documents to DOCARE Administrative Office (Attn: Investigator).

3. FILL-IN THE FOLLOWING BLANKS:

a. Branch Report Number (if one is assigned): HA-99-798

b. Date Case Referred to Officer: 3 /22/99

c. Date of Site Visit/Inspection: / / 03/23 & 29/99

d. Had any project work been done? YES XX NO ()

If "YES," briefly describe the work: cemented stonewall, bulldoze parcel and cesspool with cemented cap. Refer to supplementry's submitted to report HA-99-798

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e. Did you detect any discrepancy in the applicant's description of the site conditions/situation? Yes ( ); No (X). If "Yes," describe:

It is believed that all existing work done on the property was done when first CUDA application was approved.

f. Did you note anything that might be a bar to approval of the applicant's proposal? Yes (X); No ( ). If "yes," describe (continue on a separate sheet if necessary).

It is unknown whether a site inspection was conducted by a state archaeologist no report to stipulate.

It should be mentioned that there are evidence that some unknown individuals did some cement work on the access road leading into the area of the parcel. Road is within the conservation Zone. Work appeared to have commenced during the sametime when original work was done on the parcel.

Nothing mentioned within the EIS.

g. General comments, if any. (Along with other observations, you should include opinions on possible impact of the proposal on flora, fauna, archeological and/or historical sites: No report from state archeaologist...

Reginald LEE	#122	Charles NAHALE	4/16/99
Officer's Signature	Badge No.	Supervisor's Signature	Date

GEO METRICIAN
Ron Terry, Ph.D.

HC 2 Box 9575
Keaau, Hawaii 96749
(808) 982-5831

June 7, 1999

Division of Conservation and Resources Enforcement
C/o Lauren Tanaka, Land Division
Hawaii State Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

Subject: **Comments to Draft Environmental Assessment for Conservation District Use Application for Brand Single Family Dwelling at Honalo, TMK 7-9-5:013, North Kona, Island of Hawaii**

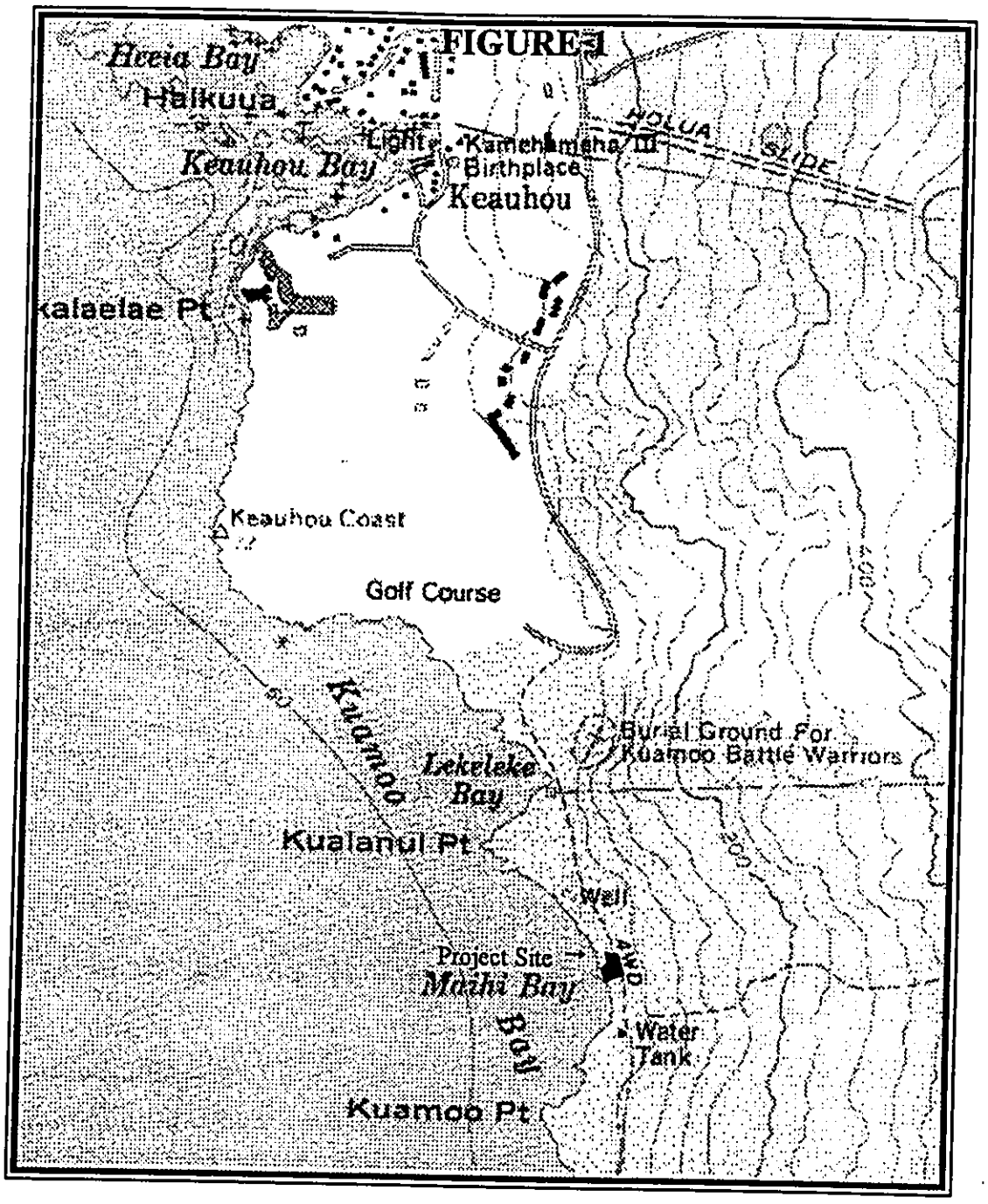
Thank you for your comments that were based on a site inspection of the subject parcel, which we reviewed in your memo of 28 April 1999 to Dean Uchida of DLNR. Concerning your specific comments: 1) an archaeological inventory survey was conducted in 1981 as part of an earlier Conservation District Use Permit, as explained in Section 3.3.3 of the Draft EA. Appendix 3 of the Draft EA contains the archaeological report. The archaeologist found two features on the property, both of which are terraces that appear to date from the 19th century or later. After field survey, mapping and data recovery, he concluded that neither feature contained sufficient value for preservation or information to qualify them for inclusion on the State or National Historic Registers. The State of Hawaii in a letter of 24 February 1984 concurred with the conclusion that no further archaeological work or mitigation would be required other than standard conditions for inadvertent finds. SHPD reviewed the situation again in 1999 and concluded similarly; and 2) we have no information concerning the cement work done on the Kainaliu-Keauhou Road, which accesses a number of parcels.

Sincerely,

Ron Terry, Ph.D.
Project Environmental Consultant

APPENDIX 2

FIGURES



Scale: 1 inch = 3,125 feet

Source: USGS Kealakekua 7 ½° Map

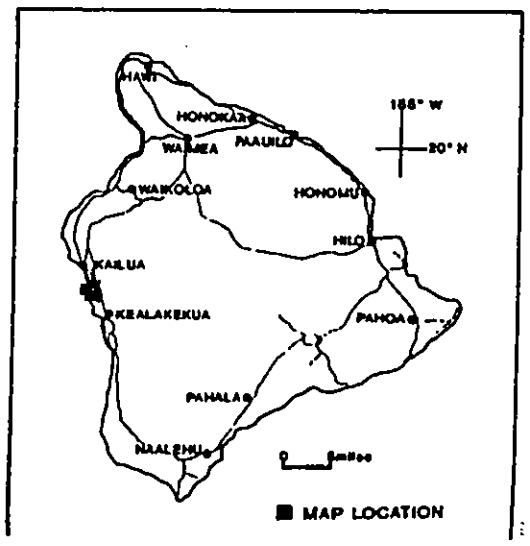
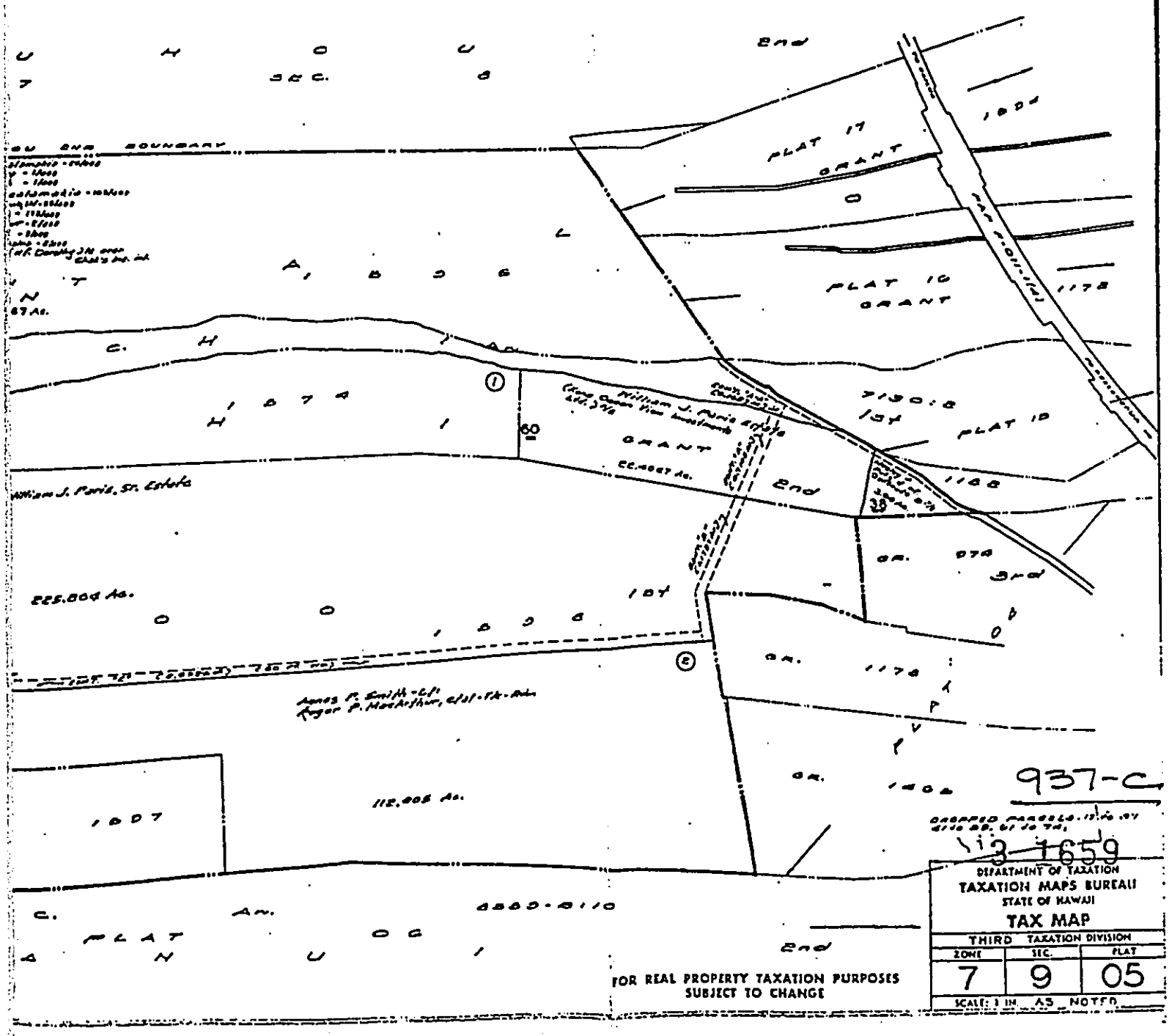


FIGURE 2

TAX MAP, WITH F.I.R.M. FLOOD ZONE

THE FLOOD ZONE SHOWN PROPERLY
DPW'S INFORMATION ON THE FIRM
(FLOOD MAPS) AS OF 12/22/95



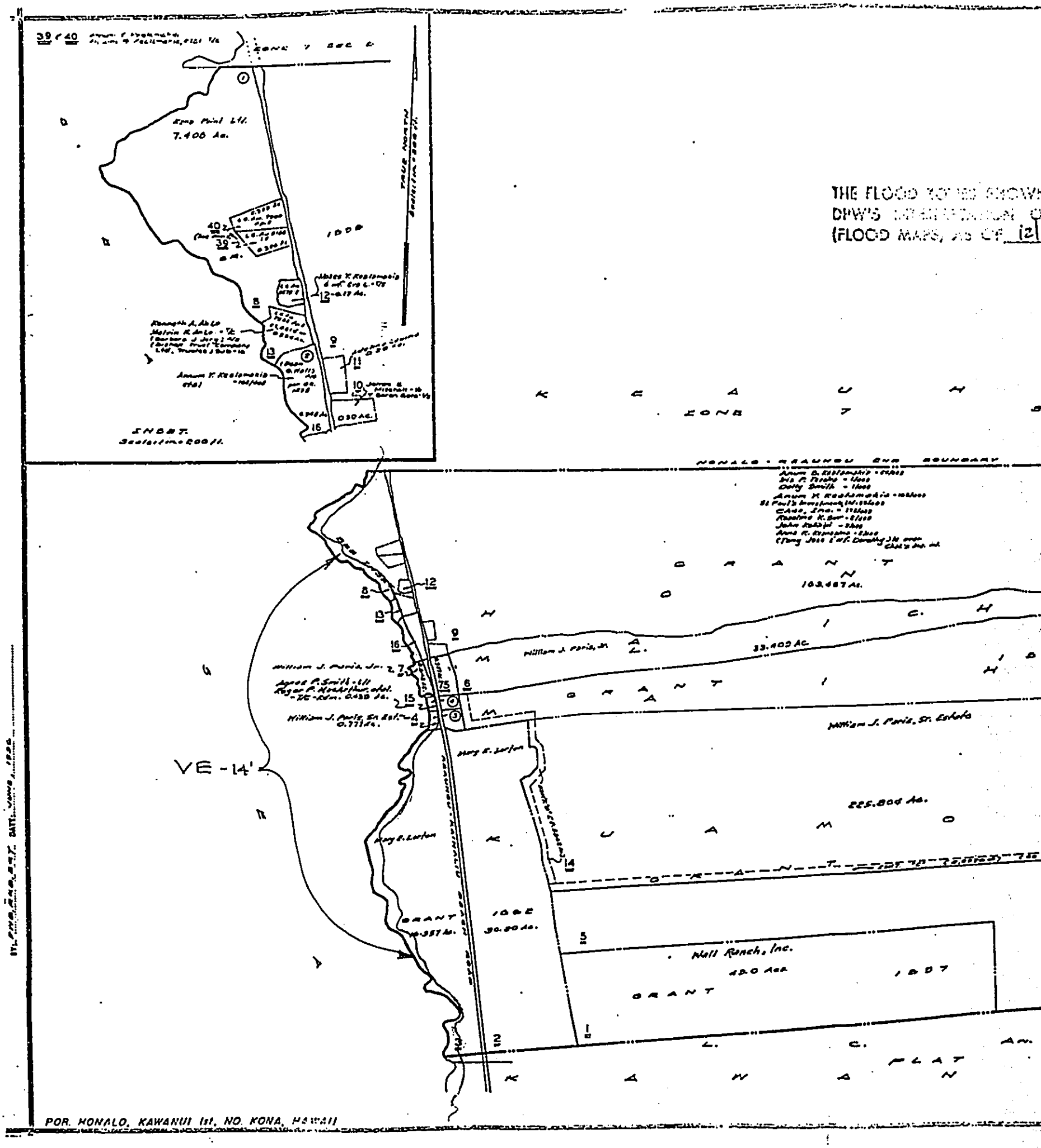
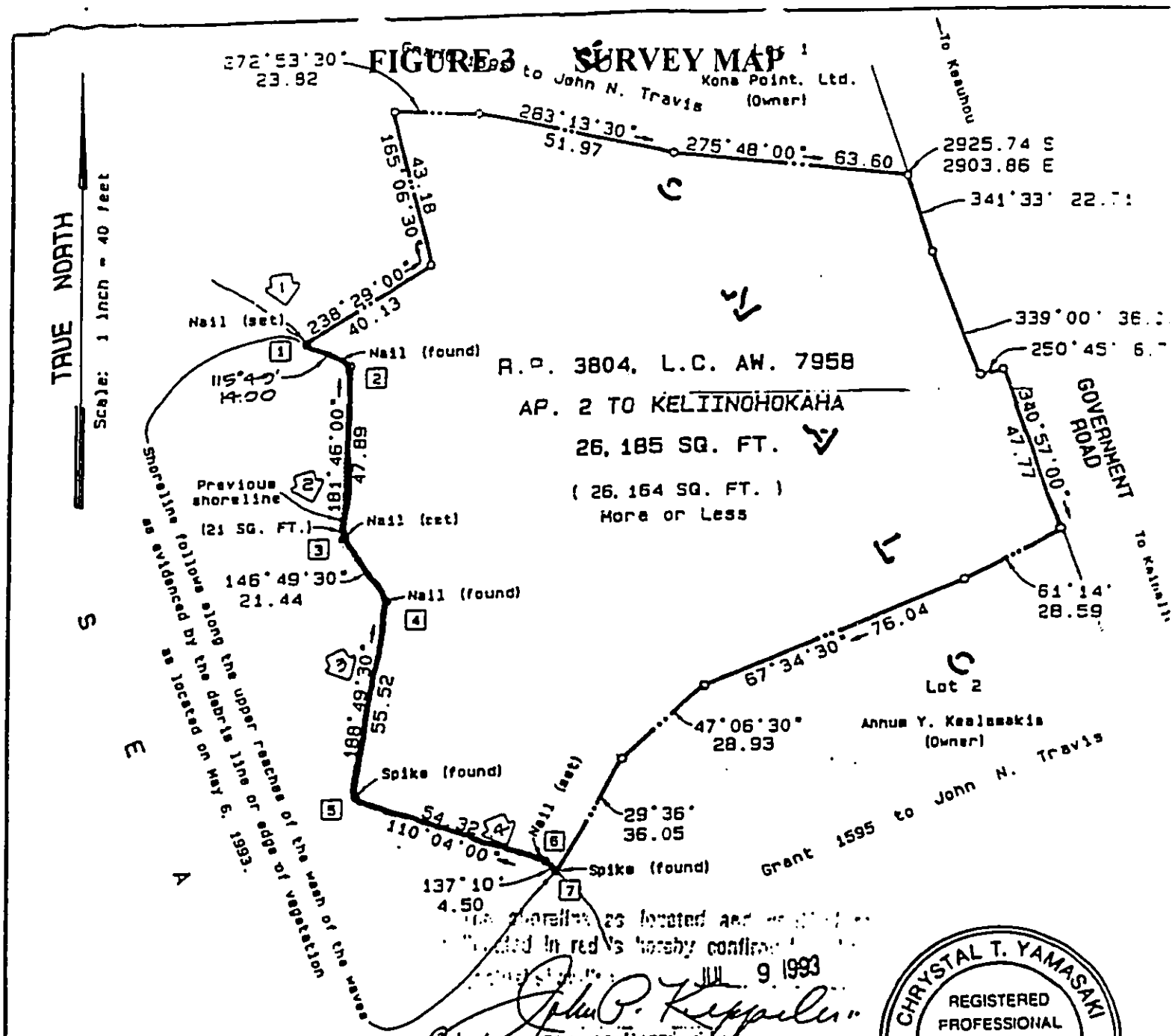

THE FLOOD ZONES SHOWN
DHW'S INTERPRETATION OF
(FLOOD MAPS) AS OF
KONA
KAUHOLA
HONALO - KEAUHOU ZONE BOUNDARY
103.487 Ac.
33.403 Ac.
William J. Paris, Jr.
William J. Paris, Sr. Estate
225.804 Ac.
VE-14'
Mary E. Larson
GRANT
Hall Ranch, Inc.
40.0 Acs.
1007
POR. HONALO, KAWANUI 1st, NO. KONA, HAWAII

FIGURE 3 SURVEY MAP



SHORELINE CERTIFICATION MAP SHOWING

THE WHOLE OF R.P. 3804, L.C. AW. 7958
AP. 2 TO KELIINOHOKAHA

AT HONALO, NORTH KONA, ISLAND AND COUNTY OF HAWAII
STATE OF HAWAII

CHRYSTAL T. YAMASAKI
REGISTERED PROFESSIONAL LAND SURVEYOR
No 4331
HAWAII, U.S.A.

This map was prepared by me or under my direct supervision.

CHRYSTAL THOMAS YAMASAKI
Registered Professional Land Surveyor
State of Hawaii Certificate Number LS-433

NOTES:

1. [8] Denotes numbered point in photographs.

2. [3] Denotes photograph number and direction of view

PROJECT NUMBER: 03436.2
DATE: MAY 20, 1993
FIELD BOOK: 959 DISK: 450
TMK: 7-9-05: 13 (3RD DIVISION)

WES THOMAS & ASSOCIATES, INC.

LAND SURVEYORS

[illegible] Kona, Hawaii 96740

FIGURE 4 SITE PLAN

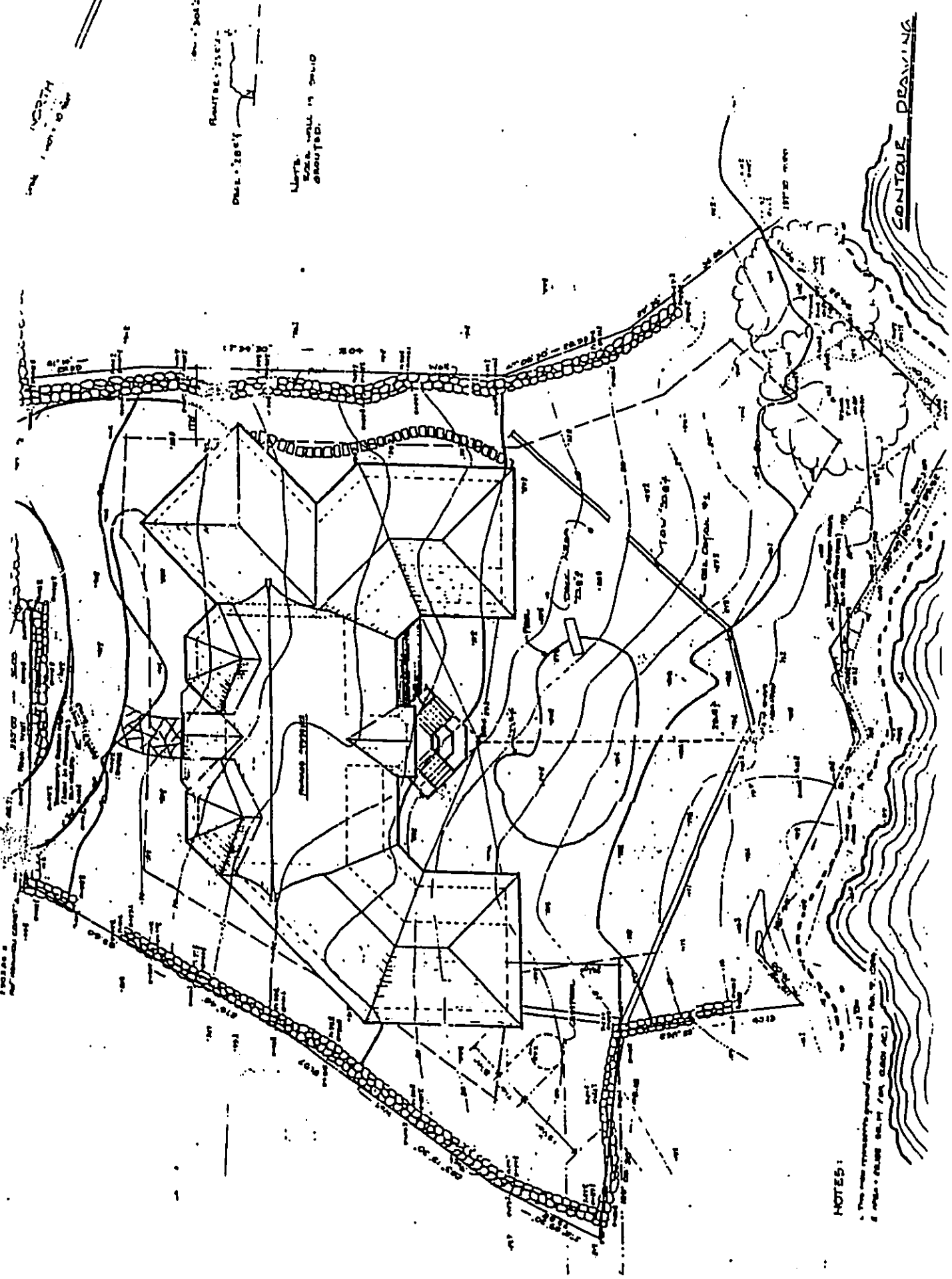


FIGURE 5A

ARCHITECTURAL ELEVATION

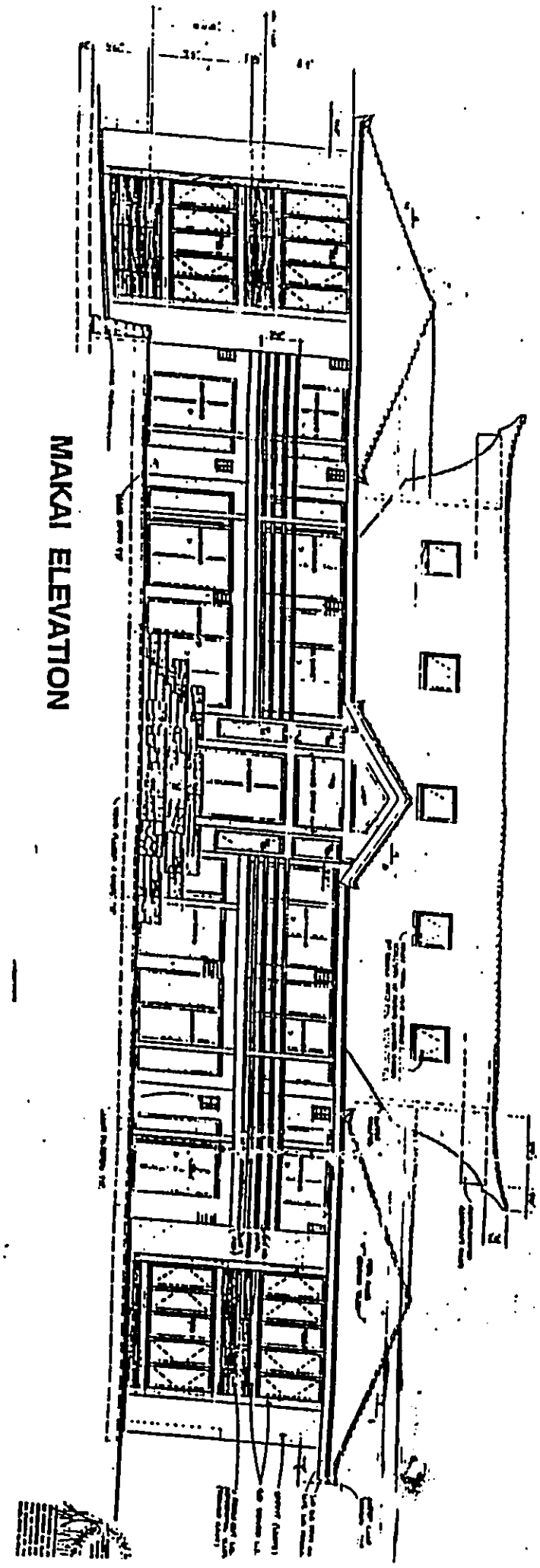


FIGURE 5B

ARCHITECTURAL
ELEVATION

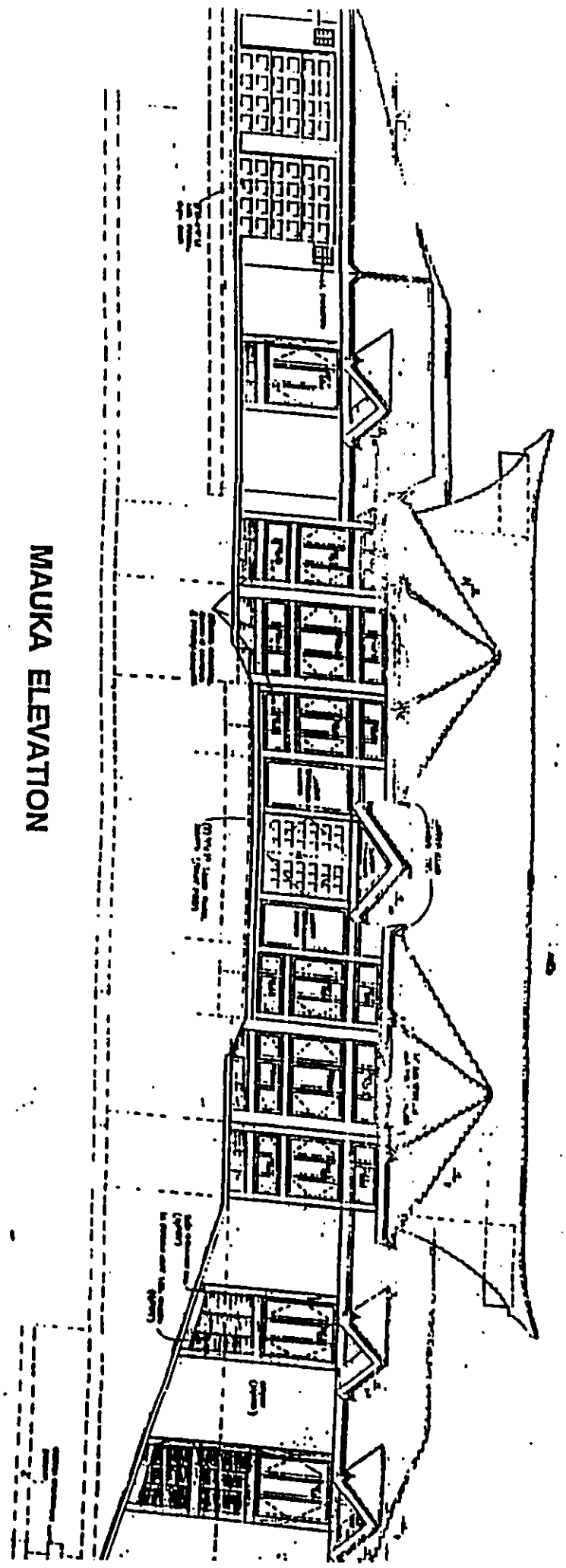
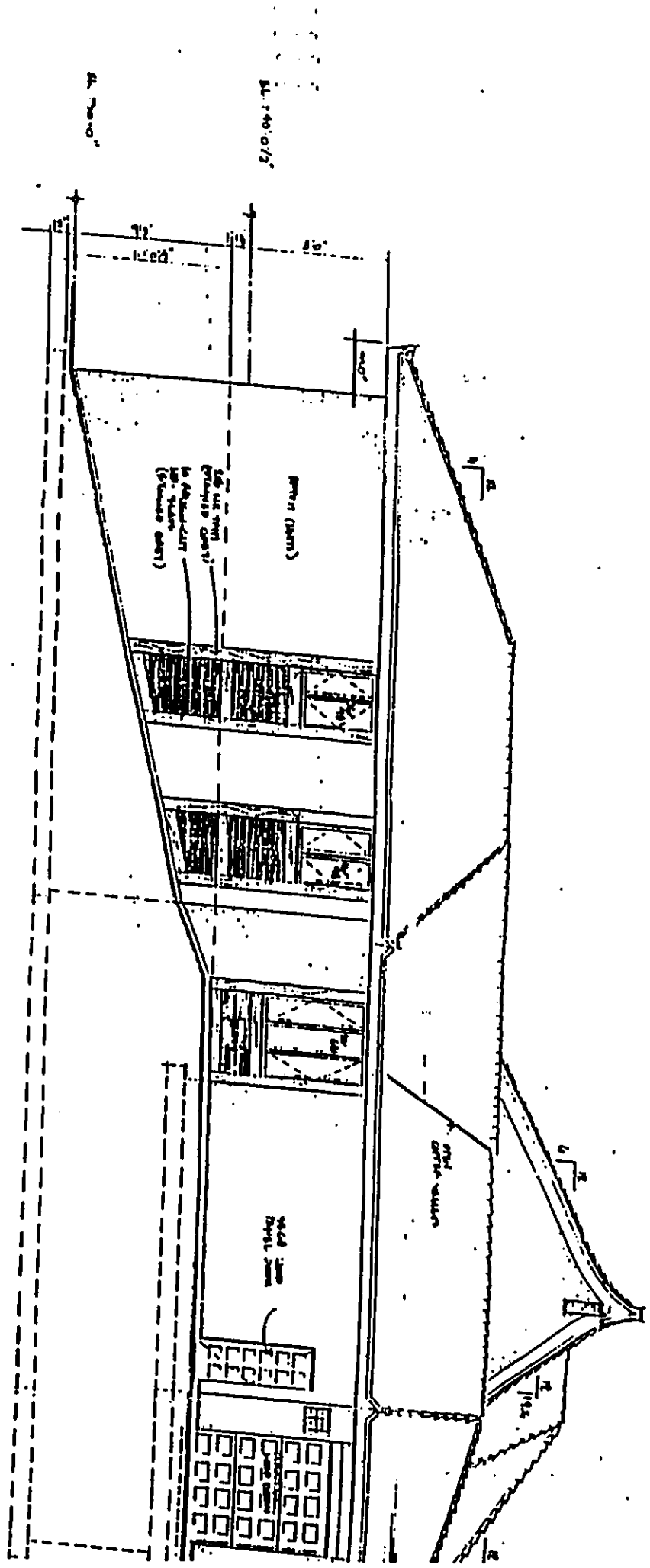
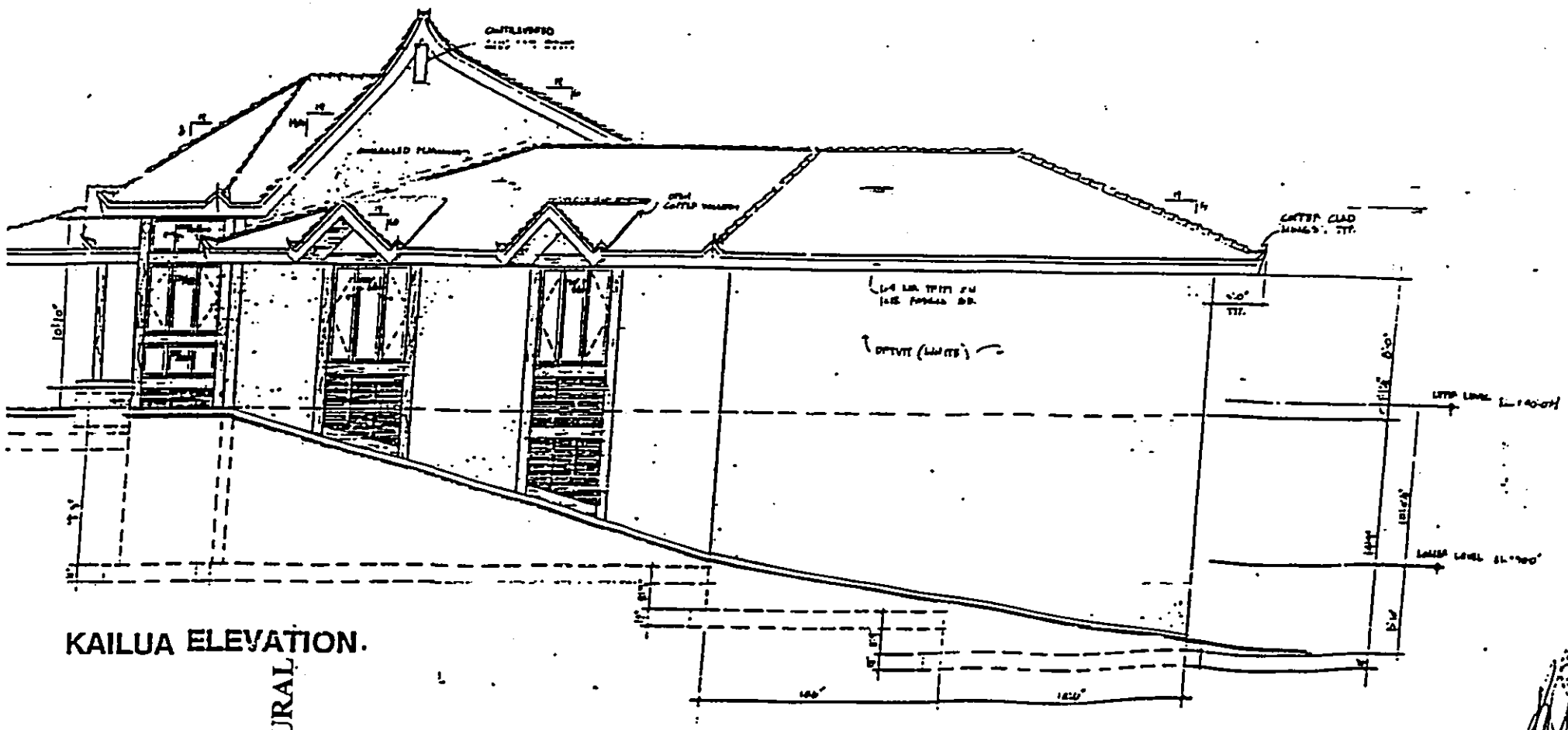


FIGURE 5C

ARCHITECTURAL ELEVATION



KA'Ü ELEVATION



KAILUA ELEVATION.

FIGURE 5D

ARCHITECTURAL ELEVATION

View on north
edge of parcel
looking south
along shoreline

B →

A ↓
Access Road

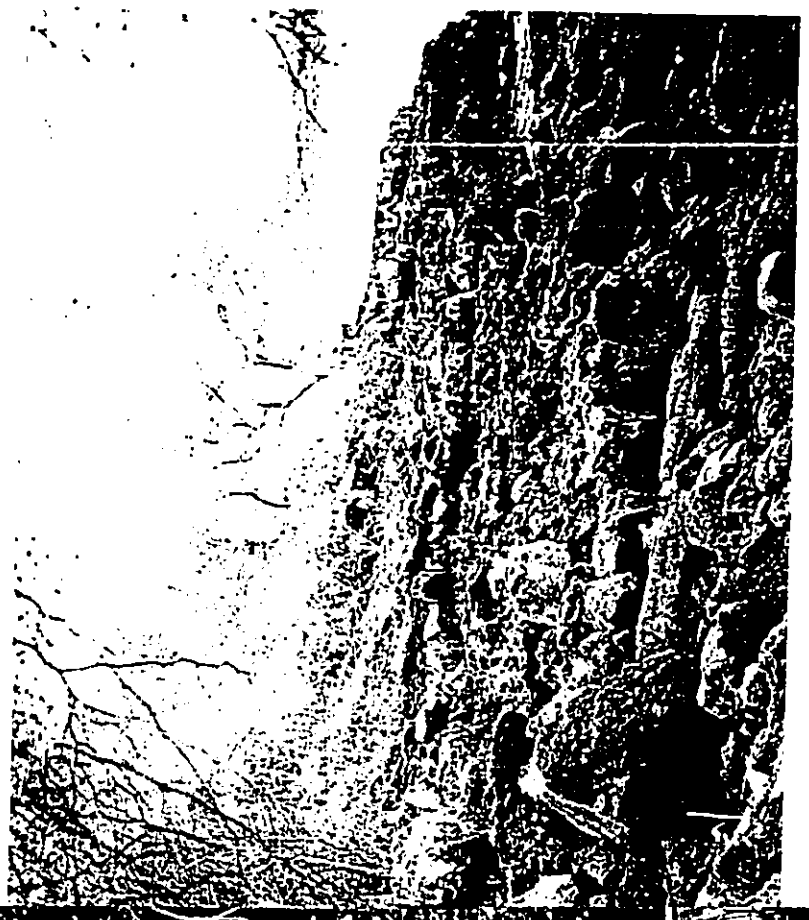


FIGURE 6

EXISTING SITE PHOTOGRAPHS

Proposed House Site
C ↓

APPENDIX 3

ARCHAEOLOGICAL REPORT

FINAL REPORT OF AN INTENSIVE ARCHAEOLOGICAL SURVEY AT HONALO MAKAI, NORTH KONA, HAWAII - (TMK 7-9-05:13)

Prepared by:

Hamilton M. Ahlo Jr.
Science Management Inc.
830 Ala Moana Blvd. #22
Honolulu, Hawai

Prepared for:

Stan Jorg
May 6, 198

At the request of Mr. Stan Jorg, an intensive archaeological survey was conducted on a 1/2 acre parcel of land at Honalo Makai, North Kona, Hawaii (TMK 7-9-05:13) on April 23, 1981. The purpose of the survey was to identify and evaluate the significance of any archaeological resources located on the parcel.

The surveyed parcel is located on gently sloping land along the coast approximately 1.25 miles south of the Kona Surf Hotel. Vegetation on the parcel is sparse (the property has been recently cleared) with a few kiawe (Prosopis pallida) and numerous weed and grass spec: present. Soil cover on the property is thin and occurs mainly in pockets. The Soil Conservation Service classifies the soils in the area as "Kainaliu very stony silty loam". Approximately 30% of the parcel, primarily the inland portion, appears to have been recently cleared by earth moving machinery.

The parcel is within the boundaries of the Kona Field System (Hawaii Register of Historic Places Site Number 10-37-6601) and the Honalo Archaeological Complex (Site Number 10-37-4161). The parcel is bounded on the east by the old Keauhou to Kainaliu Beach Road and along the west by the Pacific Ocean.

Dr. Robert Hommon and Mr. Hamilton M. Ahlo, Jr. surveyed the parcel on April 23, 1981. The parcel was thoroughly inspected for any signs of archaeological material. In addition, test probings with a trowel in areas with soil deposits were done. No evidence of any archaeological deposit was located, though a thin scatter of shell fragments, old ceramic fragments and bottle glass, and urchin spines is present throughout the area. Only two archaeological features were identified.

Feature A is a 16 by 12 meter terrace in the northwest corner of the parcel. It is bounded on the west and north by walls along the property boundary. Approximately 30% of the terrace (the southwest corner) is paved with a'a cobbles and coral fragements ranging in size from 3 to 10 cm. diameter. A breach in the wall along the western edge of the terrace approximately 1.5 meters wide may have been associated with a set of steps leading from the terrace down to a second terrace on an adjoining piece of property. A small ash and charcoal filled fireplace approximately 1 meter in diameter is present in the northwest corner of the terrace. The fireplace appears to have been used quite recently. A small, broken cowrie shell octopus lure was found on the terrace. The unfaded condition of the shell suggests that it was manufactured and used recently.

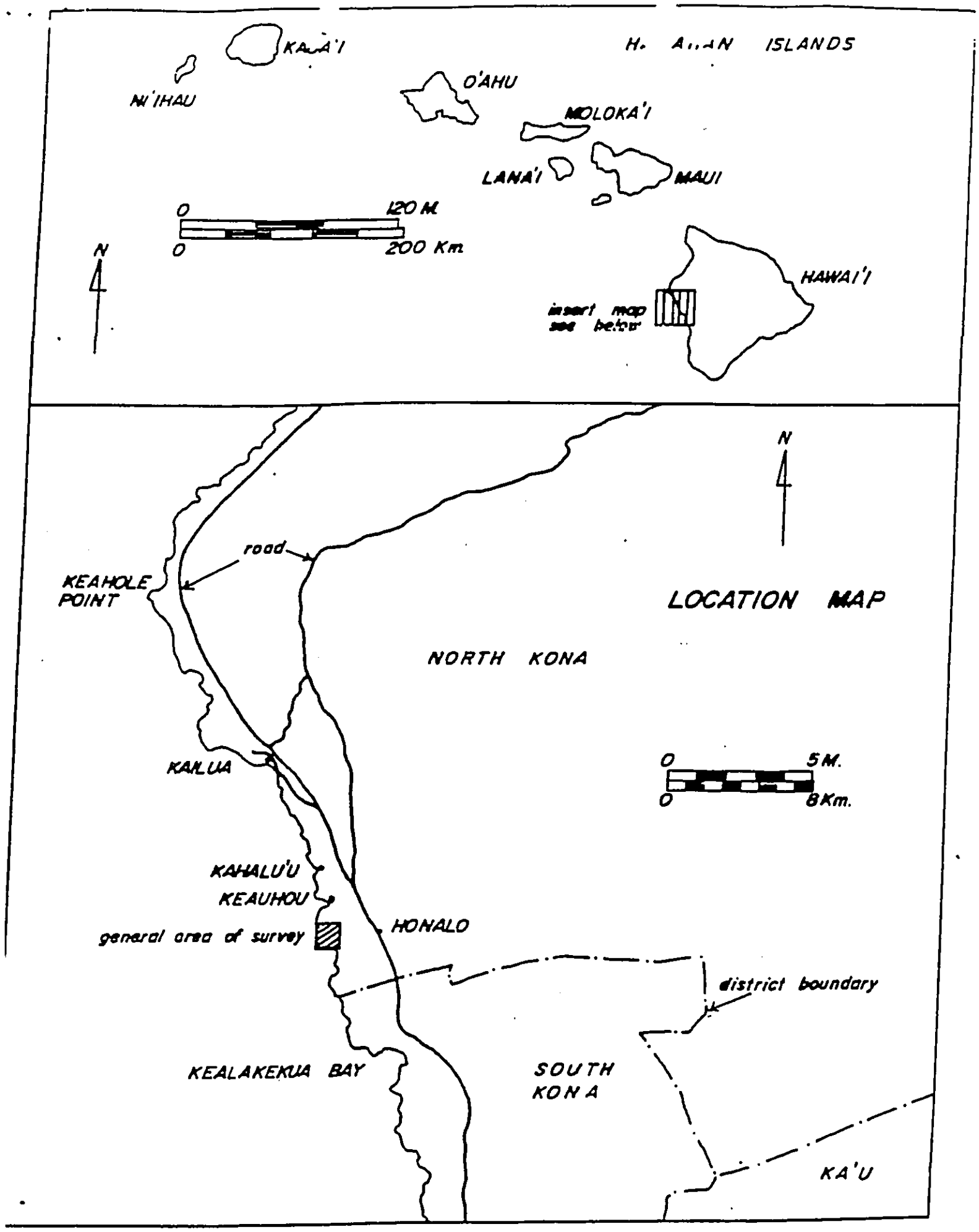
Feature B is a small (1.5 x 4 meter) terrace located near the eastern property boundary of the parcel. It retains only a very small a'a pebble and coral fragment pavement. A single alignment of stones approximately .5 meter high forms the western margin of the terrace while a bedrock outcrop forms the eastern and southern margins. No artifactual material or other items of archaeological interest were noted in this feature.

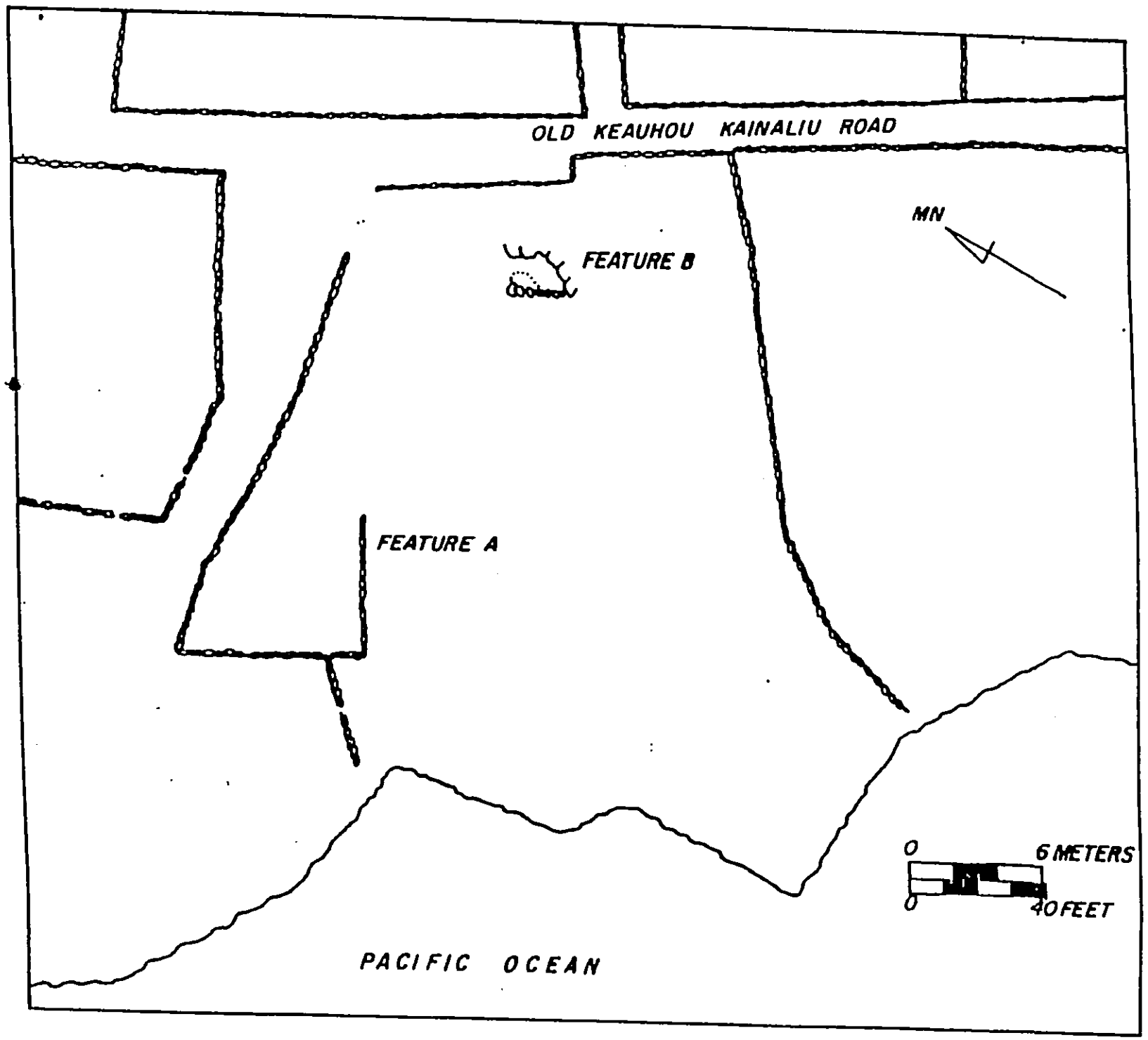
Conclusions

According to Mr. Stan Jorg, the previous owner of the parcel informed him that the parcel was occupied in the early part of this century and that a house once stood on what we have termed Feature A. Though no remnants of a structure can be seen today, the presence of bottle glass and ceramic fragments in the area support this. Except for some disturbance along its eastern margin and a tree stump in the middle of the terrace the feature is in relatively good condition. Insufficient evidence exists to determine the age of the feature. It was certainly used within the historic period but any conjecture as to an earlier use or date of construction cannot be substantiated.

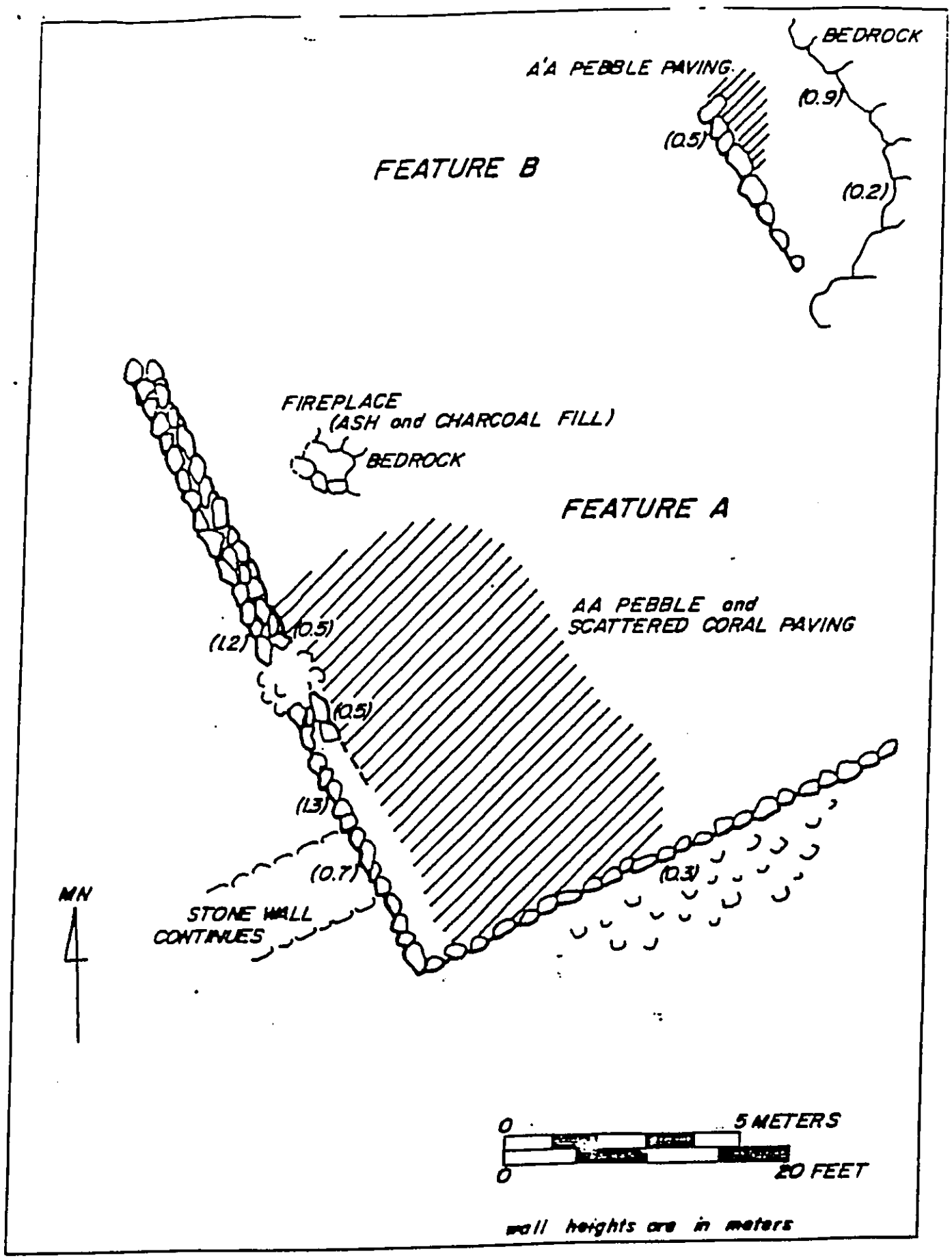
Feature B is in very poor condition and would probably not even be recognizable as an archaeological feature to a layman.

Neither feature contains sufficient information to qualify them for inclusion on either the State or National Registers of Historic Places. No mitigation would be warranted were construction to occur on the site. Though our examination of the parcel was as thorough as practicable, there still exists a possibility however, that subsurface archaeological material without corresponding surface manifestations may be discovered during construction. In this event, we recommend that work be stopped and a qualified archaeologist be consulted as to the appropriate course of action. In addition, if any human skeletal material is discovered, removal and disinterment should conform to the regulations of the Department of Health.


KAUA'I
NI'IHAU
O'AHU
MOLOKA'I
LANA'I
MAUI
HAWAI'I
0
120 M.
0
200 Km.
N
insert map see below
N
road
KEAHOLE POINT
LOCATION MAP
NORTH KONA
KAILUA
0
5 M.
0
8 Km.
KAHALU'U
KEAUHOU
general area of survey
HONALO
district boundary
KEALAKEKUA BAY
SOUTH KONA
KA'U



Jorg Property Survey Area TMK 3/7-9-5:13



Detailed Plan View of Features A & B

(spatial relationship between features A & B is incorrect - see Fig. 2 for correct perspective)

Figure 3

February 24, 1984

MEMORANDUM

TO: Mr. Roger Evans, Planner
Planning Office

FROM: Ralston H. Nagata, Acting State Parks Administrator

SUBJECT: CDUA HA-1/19/84-1656
Review of Archaeological Reconnaissance (SMI, 1981)
Stan Jorg (Gary Brand)
Honalo, North Kona, Hawaii
TMK: 7-9-05:13

Thank you for the opportunity to comment on the subject application.

HISTORIC SITES concerns:

A review of our records indicates that the subject parcel occurs in the Kona Field System (site #6601), a site determined Eligible for Inclusion to the National Register of Historic Places, and in the Honalo Archaeological Complex (site #4161), a site listed on the Statewide Archaeological Inventory.

Our review of the subject archaeological reconnaissance entitled, "Final Report of an Intensive Archaeological Survey at Honalo Makai, North Kona, Hawaii" (Science Management Inc., 1981), has resulted in our concurrence that the two features occurring on the subject parcel do not qualify for placement on either the Hawaii or National Registers of Historic Places. We further concur that no further archaeological mitigation would be necessary prior to construction.

We do recommend that in the event that any previously unidentified sites or remains such as artifacts, shell, bone, or charcoal deposits, human burials, rock or coral alignments, pavings, or walls are encountered, please direct the applicant to stop work and contact our office at 548-7460 immediately.

RECREATION Concerns:

There are no known public recreation interest except to provide public shoreline access wherever it is feasible to do so.

/s/ [illegible] NAGATA
RALSTON H. NAGATA

ENVIRONMENTAL ASSESSMENT

WALTER KALEO O KALANI NAKOA

SINGLE-FAMILY DWELLING

AND ASSOCIATED IMPROVEMENTS IN THE

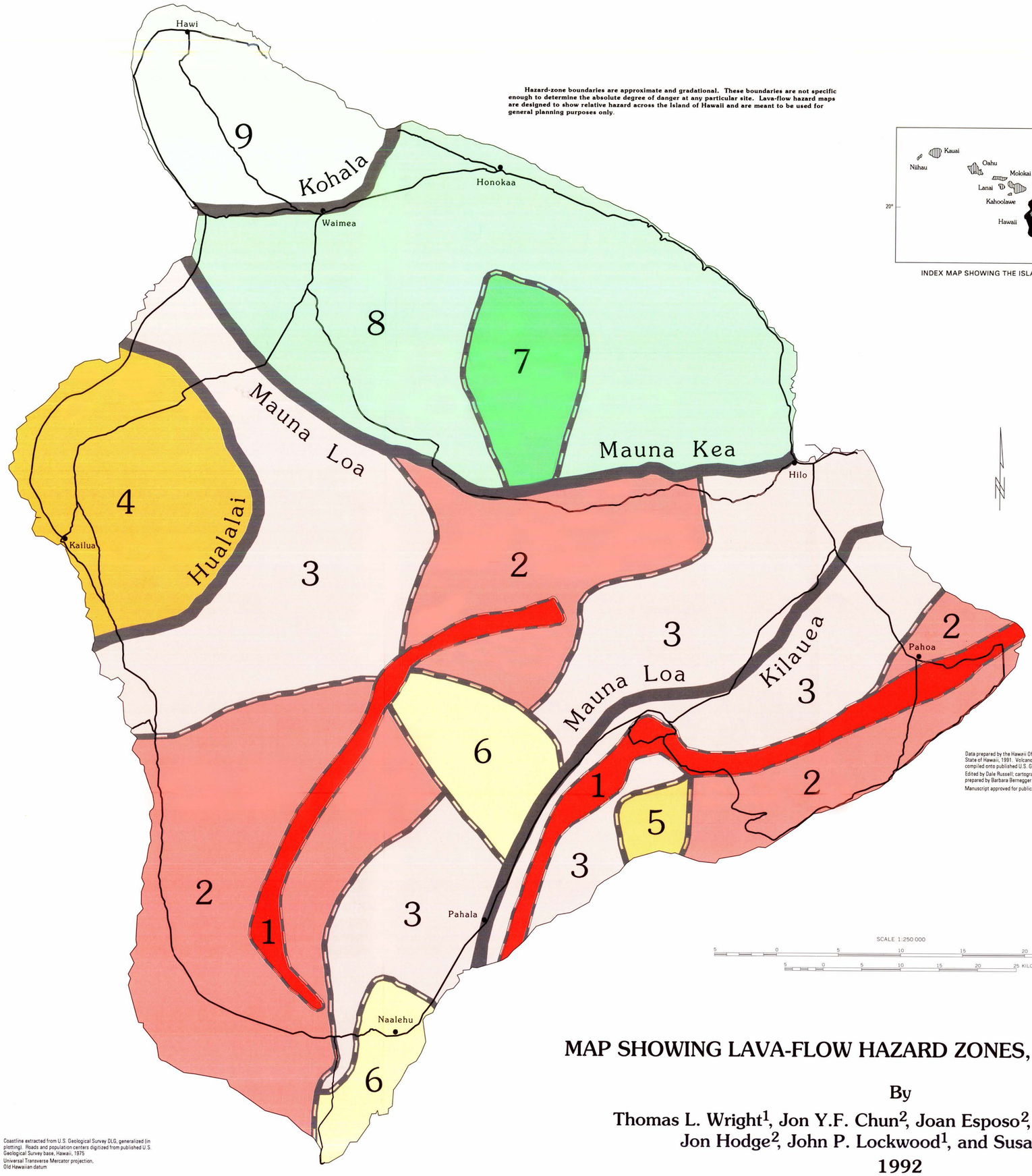
CONSERVATION DISTRICT

TMK No. (3) 7-9-005:012

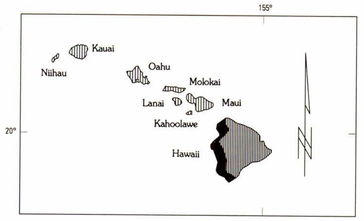
Honalo, North Kona District, County of Hawai‘i, State of Hawai`i

APPENDIX 15

Lava Flow Hazard Map and County GIS Lava Flow Hazard Map



Hazard-zone boundaries are approximate and gradational. These boundaries are not specific enough to determine the absolute degree of danger at any particular site. Lava-flow hazard maps are designed to show relative hazard across the Island of Hawaii and are meant to be used for general planning purposes only.



INDEX MAP SHOWING THE ISLANDS OF HAWAII

Data prepared by the Hawaii Office of State Planning using the GIS of the State of Hawaii, 1991. Volcano and hazard boundaries digitized from data compiled onto published U.S. Geological Survey base, Hawaii, 1975
Edited by Dale Russell; cartography by Sandy Margriter;
prepared by Barbara Bernegger
Manuscript approved for publication, March 2,1992

SCALE 1:250 000

5 0 5 10 15 20 25 MILES

5 0 5 10 15 20 25 KILOMETERS

Coastline extracted from U.S. Geological Survey DLG, generalized (in plotting). Roads and population centers digitized from published U.S. Geological Survey base, Hawaii, 1975
Universal Transverse Mercator projection,
Old Hawaiian datum

EXPLANATION

Lava-flow hazard zones—Based on location of eruptive vents, past lava coverage, and topography

Increasing severity of hazard

- 1 — **Zone 1**—Includes summits and rift zones of Kilauea and Mauna Loa, where vents have been repeatedly active in historical time
- 2 — **Zone 2**—Areas adjacent to and downslope of zone 1. Fifteen to twenty-five percent of zone 2 has been covered by lava since 1800, and 25 to 75 percent has been covered within the past 750 years. Relative hazard within zone 2 decreases gradually as one moves away from zone 1
- 3 — **Zone 3**—Areas less hazardous than zone 2 because of greater distance from recently active vents and (or) because of topography. One to five percent of zone 3 has been covered since 1800, and 15 to 75 percent has been covered within the past 750 years
- 4 — **Zone 4**—Includes all of Hualalai, where the frequency of eruptions is lower than that for Kilauea or Mauna Loa. Lava coverage is proportionally smaller, about 5 percent since 1800, and less than 15 percent within the past 750 years
- 5 — **Zone 5**—Area on Kilauea currently protected by topography
- 6 — **Zone 6**—Two areas on Mauna Loa, both protected by topography
- 7 — **Zone 7**—Younger part of dormant volcano Mauna Kea. Twenty percent of this area was covered by lava in the past 10,000 years
- 8 — **Zone 8**—Remaining part of Mauna Kea. Only a few percent of this area has been covered by lava in the past 10,000 years
- 9 — **Zone 9**—Kohala Volcano, which last erupted over 60,000 years ago

Boundaries—Approximately located and gradational

- **Lava-flow hazard zone 1**
- **Lava-flow hazard zones 2 through 9**
- **Volcano**

DISCUSSION

This map shows lava-flow hazard zones for the five volcanoes on the Island of Hawaii. Volcano boundaries are shown as heavy, dark bands, reflecting the overlapping of lava flows from adjacent volcanoes along their common boundary. Hazard-zone boundaries are drawn as double lines because of the geologic uncertainty in their placement. Most boundaries are gradational, and the change in the degree of hazard can be found over a distance of a mile or more. The general principles used to place hazard-zone boundaries are discussed by Mullineaux and others (1987) and Heliker (1990). The differences between the boundaries presented here and in Heliker (1990) reflect new data used in the compilation of a geologic map for the Island of Hawaii (E.W. Wolfe and Jean Morris, unpub. data, 1989).

The primary source of information for volcano boundaries and generalized ages of lava flows for all five volcanoes on the Island of Hawaii is the geologic map of Hawaii (E.W. Wolfe and Jean Morris, unpub. data, 1989). More detailed information is available for the three active volcanoes. For Hualalai, see Moore and others (1987) and Moore and Clague (1991); for Mauna Loa, see Lockwood and Lipman (1987); and for Kilauea, see Holcomb (1987) and Moore and Trusdell (1991).

REFERENCES CITED

Heliker, Christina, 1990, Volcanic and seismic hazards on the Island of Hawaii: U.S. Geological Survey General Interest Publication, 48 p.

Holcomb, R.T., 1987, Eruptive history and long-term behavior of Kilauea Volcano, *in* Decker, R.W., Wright, T.L., and Stauffer, P.H., eds., Volcanism in Hawaii: U.S. Geological Survey Professional Paper 1350, v.1, p. 261-350.

Lockwood, J.P., and Lipman, P.W., 1987, Holocene eruptive history of Mauna Loa Volcano, Hawaii, *in* Decker, R.W., Wright, T.L., and Stauffer, P.H., eds., Volcanism in Hawaii: U.S. Geological Survey Professional Paper 1350, v.1, p. 509-535.

Moore, R.B., and Clague, D.A., 1991, Geologic map of Hualalai volcano, Hawaii: U.S. Geological Survey Miscellaneous Investigations Series Map I-2213, scale 1:50,000.

Moore, R.B., Clague, D.A., Rubin, M., and Bohrson, W.A., 1987, Hualalai Volcano: A preliminary summary of geologic, petrologic, geophysical data, *in* Decker, R.W., Wright, T.L., and Stauffer, P.H., eds., Volcanism in Hawaii: U.S. Geological Survey Professional Paper 1350, v.1, p. 571-585.

Moore, R.B., and Trusdell, F.A., 1991, Geologic map of the lower east rift zone of Kilauea Volcano, Hawaii: U.S. Geological Survey Miscellaneous Investigations Series Map I-2225, scale 1:24,000.

Mullineaux, D.R., Peterson, D.W., and Crandell, D.R., 1987, Volcanic hazards in the Hawaiian Islands, *in* Decker, R.W., Wright, T.L., and Stauffer, P.H., eds., Volcanism in Hawaii: U.S. Geological Survey Professional Paper 1350, v.1, p. 599-621.

MAP SHOWING LAVA-FLOW HAZARD ZONES, ISLAND OF HAWAII

By

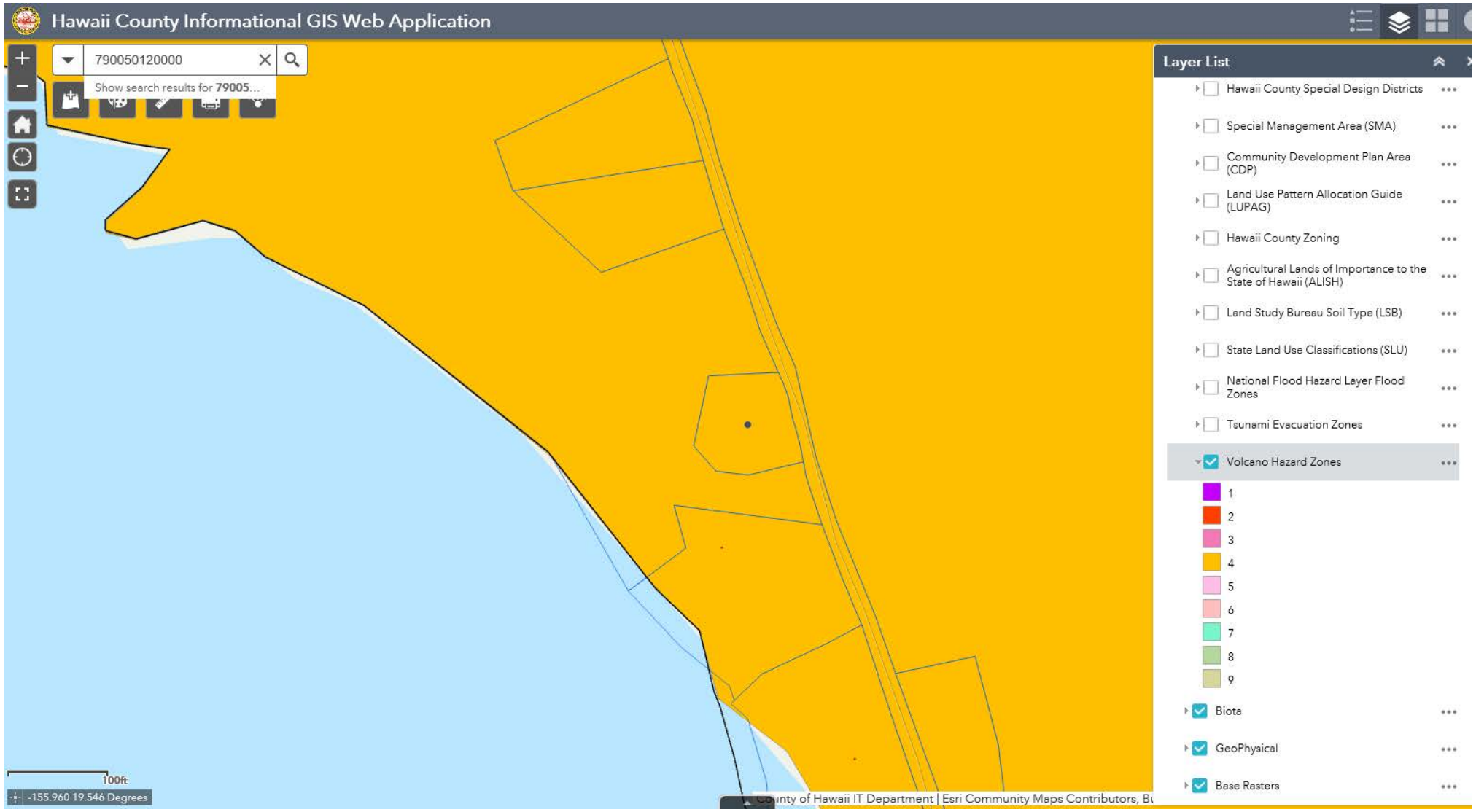
Thomas L. Wright[1], Jon Y.F. Chun[2], Joan Esposo[2], Christina Heliker[1], Jon Hodge[2], John P. Lockwood[1], and Susan M. Vogt[2]

1992

Authorship alphabetical following first author.
[1]U.S. Geological Survey, Hawaiian Volcano Observatory.
[2]Hawaii Office of State Planning.

Appendix 15

INTERIOR—GEOLOGICAL SURVEY, RESTON, VA—1992
For sale by U.S. Geological Survey, Map Distribution, Box 25286, Federal Center, Denver, CO 80225


Hawaii County Informational GIS Web Application
790050120000
Show search results for 79005...
Layer List
Hawaii County Special Design Districts
Special Management Area (SMA)
Community Development Plan Area (CDP)
Land Use Pattern Allocation Guide (LUPAG)
Hawaii County Zoning
Agricultural Lands of Importance to the State of Hawaii (ALISH)
Land Study Bureau Soil Type (LSB)
State Land Use Classifications (SLU)
National Flood Hazard Layer Flood Zones
Tsunami Evacuation Zones
Volcano Hazard Zones
1
2
3
4
5
6
7
8
9
Biota
GeoPhysical
Base Rasters
100ft
-155.960 19.546 Degrees
County of Hawaii IT Department | Esri Community Maps Contributors, B

ENVIRONMENTAL ASSESSMENT

WALTER KALEO O KALANI NAKOA

SINGLE-FAMILY DWELLING

AND ASSOCIATED IMPROVEMENTS IN THE

CONSERVATION DISTRICT

TMK No. (3) 7-9-005:012

Honalo, North Kona District, County of Hawai‘i, State of Hawai`i

APPENDIX 16

County of Hawaii Planning Department

SMA Exemption Determination

Harry Kim
Mayor

Roy Takemoto
Managing Director

West Hawai'i Office
74-5044 Ane Keohokālole Hwy
Kailua-Kona, Hawai'i 96740
Phone (808) 323-4770
Fax (808) 327-3563

County of Hawai'i

PLANNING DEPARTMENT

Michael Yee
Director

April Surprenant
Acting Deputy Director

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

September 21, 2020

Mr. Roy A. Vitousek III
Cades Schutte LLP
75-170 Hualālai Road Suite B-303
Kailua-Kona HI 96740

Dear Mr. Vitousek:

SUBJECT:	**Special Management Area (SMA) Use Permit Assessment Application (SAA-20-001762)**	
	Applicant(s):	**Walter Kaleo O Kalani Nakoa**
	Land Owner(s):	**Walter Kaleo O Kalani Nakoa, Trustee of the Puna Wai Trust Living Trust**
	Project:	**Single-Family Dwelling with Related Improvements**
	Tax Map Key:	**(3) 7-9-005:012, North Kona, Hawai'i**

We have reviewed your Special Management Area Use Permit Assessment Application (SAA-20-001762) submitted to our office on May 26, 2020.

The applicant is proposing to construct a 1,773 square-foot, single-story, single-family dwelling with a 1,250 gallon septic tank and 12'x30' leach field, a water well and a 2,000 gallon water storage tank, salt pan, propane tank, two air conditioning condensers, a spa area with a jacuzzi, a pool, and a rooftop photovoltaic system with battery storage. The driveway may be improved using permeable materials. Also proposed are native plant landscaping and agriculture cultivation.

The subject 7,405 square-foot parcel is zoned Agricultural (A-5a) by the County and designated Conservation District by the State Land Use Commission. The parcel is designated as Open (ope) and Extensive Agriculture (ea) by the Hawai'i County General Plan Land Use Pattern Allocation Guide (LUPAG) Map. Although this parcel is located entirely within the Special Management Area (SMA), it is mauka (inland) of TMK: (3) 7-9-005:008 and is approximately 35 meters (114.8 feet) from the shoreline at Ma'ihi Bay and therefore is not a shoreline parcel.

It is our understanding that you will be filing a Conservation District Use Application with the State Board of Land and Natural Resources to allow the development of the proposed project. Since the property is situated within the State Land Use Conservation District, the proposed project also triggers the review under Chapter 343, HRS, relating to Environmental Impact Statements.

Special Management Area Determination:

Pursuant to Hawai'i Revised Statutes (HRS) §205A-22, as amended, and Planning Commission Rule 9-4(e)(1) relating to the Special Management Area, *"Development" means any of the [listed] uses, activities, or operations on land or in or under water within the special management area.* According to the application, the following definitions of "Development" can be applied to the proposed single-family dwelling use:

- Placement or erection of any solid material or any gaseous, liquid, solid, or thermal waste;
- Grading, removing, dredging, mining, or extraction of any materials;
- Construction, reconstruction, demolition, or alteration of the size of any structure.

1. Pursuant to Planning Commission Rule 9-4(e)(3), "*any proposed use, activity, or operation listed in Section 9-4(e)(2) shall be deemed to be "Development" until the Director has determined it to be exempted from the definition of "Development*". According to 9-4(e)(2) "Development" <u>does not include</u> the following uses, activities or operations, and therefore is determined to be *exempt* from the definition of "Development":

    - Construction or reconstruction of a single-family residence that is less than seven thousand five hundred square feet of floor area and is not part of a larger development. Floor area shall be the total area of all floors of a building(s) associated with the single-family residence, including a basement and accessory structures, measured along the exterior walls of such building(s). The floor area of a building(s), or portion thereof, not provided with surrounding exterior walls shall be the usable area under the horizontal projection of the roof or floor above.

2. Pursuant to Planning Commission Rule 9-4(e)(4), "*whenever the Director finds that any excluded use, activity, or operation may have a cumulative impact, or a significant adverse environmental or ecological effect on the Special Management Area, that use, activity, or operation shall be defined as "Development" for the purposes of this rule.*"

- At this time, the Director finds that the construction of a 1,773 square-foot single-family residence that includes associated site improvements will not have a cumulative impact, or significant adverse environmental or ecological effect on the Special Management Area.

However, please note that any substantive changes to the proposed improvements may require further review by this office and possibly the submittal of another SMA Use Permit Assessment Application.

Future Special Management Area Determinations:

The Planning Department would like to inform the applicant/landowner that prior to submitting any future Special Management Area Use Assessment Applications for any activities conducted on the subject parcel, that the applicant/landowner contact this office to determine if the proposed use will require review. This will aim to alleviate unnecessary reviews and approvals for this site which is well established. However, please note that the Planning Department will continue to evaluate any proposed use for consistency with SMA rules and regulations, as well as the proposed projects cumulative impact on coastal resources.

While further review of the proposed activities against the Special Management Area rules and regulations will not be required, all other applicable Zoning and Building Code requirements must be satisfied. Additionally, pursuant to Planning Commission Rule 9-10(g), "*the Director may impose certain conditions with the exemption determination to assure that the proposed use, activity, or operation does not have a substantial adverse effect on the Special Management Area*". The Director has added the following conditions:

Director's Conditions:

1. The applicant, its successors or assigns shall be responsible for complying with all stated conditions of approval.

2. The applicant shall secure all necessary approvals and permits from other affected federal, state, and county agencies (i.e., Building Department) as necessary to comply with all applicable laws and regulations.

3. The proposed work shall comply with the requirements of Hawai'i County Code (HCC), Chapter 27 Flood Control, and HCC Chapter 10 Erosion and Sedimentation Control.

4. A Conservation District Use Permit from the Board of Land and Natural Resources or other written approval from the Department of Land and Natural Resources Office of Conservation and Coastal Lands must be obtained for the construction of the single-

family dwelling within one (1) year from the date of approval of this permit.

5. The Building Permit for the proposed single-family dwelling shall be secured within two (2) years from the date of approval of the Conservation District Use Permit.

6. The applicant shall remove all construction debris, contractor waste, and other deleterious material from the property at the completion of construction.

7. In the unlikely event that surface or subsurface historic resources, including human skeletal remains, structural remains (e.g. rock walls, terraces, platforms, etc.), cultural deposits, marine shell concentrations, sand deposits, or sink holes are identified during the demolition and/or construction work, cease work in the immediate vicinity of the find, protect the find from additional disturbance and contact the State Historic Preservation Division at (808) 933-7651. Subsequent work shall proceed upon an archaeological clearance from DLNR-SHPD when it finds that sufficient mitigation measures have been taken.

8. Artificial light from exterior lighting fixtures, including, but not necessarily limited to floodlights, uplights or spotlights used for decorative or aesthetic purposes shall be prohibited if the light directly illuminates, or is directed to project across property boundaries toward the shoreline and ocean waters, except as may otherwise be permitted pursuant to Section 205A-71(b), Hawai'i Revised Statutes.

9. Any further development, including but not limited to, the construction of additional structures or improvements not included in this approval shall require further review and approval as provided under Chapter 205A, HRS, and Rule 9, Planning Commission Rules of Practice and Procedure.

10. That in issuing this permit, the Department has relied on the information and data that the applicant has provided in connection with this permit. If, subsequent to this permit, such information and data prove to be false, incomplete or inaccurate, this permit may be modified, suspended or revoked, in whole or in part, and/or the Department may, in addition, institute appropriate legal proceedings.

11. An extension of time for the performance of the conditions contained herein may be granted by the Planning Director upon the following circumstances:

    a) The non-performance is the result of conditions that could not have been foreseen or are beyond the control of the applicant, successors or assigns, and that are not the result of their fault or negligence;

    b) Granting of the time extension would not be contrary to the original reasons for the granting of the determination; and

c) The time extension granted shall be for a period of not to exceed the period originally granted for performance (i.e., a condition to be performed within one year may be extended up to one additional year).

12. The Planning Director shall initiate procedures to revoke this determination should any of the conditions not be met or substantially complied with in a timely fashion.

If you have questions, please contact Esther Imamura of this office at (808) 961-8139.

Sincerely,

MICHAEL YEE
Planning Director

ETI:kvs
P:\Wpwin60\CZM\SMAA\2020\SAA-20-001762 Vitousek Nakoa.Doc

cc: Planning Department, Kona

Mitchell D. Roth
Mayor

Lee E. Lord
Managing Director

West Hawai'i Office
74-5044 Ane Keohokālole Hwy
Kailua-Kona, Hawai'i 96740
Phone (808) 323-4770
Fax (808) 327-3563

County of Hawai'i
PLANNING DEPARTMENT

Zendo Kern
Director

Jeffrey W. Darrow
Deputy Director

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

October 5, 2021

Roy A. Vitousek III
75-170 Hualālai Rd., Ste. B-303
Kailua-Kona, HI 96740-1737

Dear Mr. Vitousek:

SUBJECT: Special Management Area Use Permit Assessment Application (SAA 20-001762)
Applicant: Walter Kaleo O Lalani Nakoa, Trustee of the Puna Wai Trust Living Trust
Request: Single-Family Dwelling and Related Improvements
Landowners: Walter Kaleo O Lalani Nakoa, Trustee of the Puna Wai Trust Living Trust
Subject: Time Extensions for Condition No. 4 (Secure Conservation District Use Permit)
TMK: (3) 7-9-005:012, North Kona District, Island of Hawai'i

This is to acknowledge receipt of your letter on September 10, 2021, requesting a one-year time extension to comply with Condition No. 4 (time to secure Conservation District Use Permit) of Special Management Area Use Permit Assessment No. 20-001762 (SAA 20-001762). This permit was approved on September 21, 2020, to allow for the construction of a single-family dwelling with related improvements on the subject parcel.

We note the following Conditions of Approval of SAA 20-001762:

> Condition No. 4 - *"A Conservation District Use Permit from the Board of Land and Natural Resources or other written approval from the Department of Land and Natural Resources Office of Conservation and Coastal Lands must be obtained for the construction of the single-family dwelling within one (1) year from the date of approval of this permit."*
>
> Condition No. 11 - Allows for an administrative time extension for a period not to exceed the period originally granted (1 year).

A Conservation District Use Application (CDUA) was filed with the Department of Land and Natural Resources (DLNR) on December 16, 2020, for the proposed project. On February 13, 2021, the DLNR advised the applicant that it would not be able to process the application. After discussions between the applicant's agent and DLNR, the applicant was provided the opportunity to modify the design of the single-family residence to address DLNR's concerns. The CDUA will be revised accordingly and resubmitted to the DLNR after revised plans are received.

As the non-performance of Condition No. 4 is the result of conditions that could not have been foreseen and were beyond the control of the applicant, a **one-year time extension to September 21, 2022, is approved**.

Please note, however, that it is the responsibility of the landowners to read and comply with all conditions outlined in SAA-20-001762. Also, any substantive changes to the project as proposed under the original application may require further review and approval as provided under Chapter 205A, HRS, and Rule 9, Planning Commission Rules of Practice and Procedure.

If you have questions, please contact Alex J. Roy of this department at (808) 961-8140 or via email at Alex.Roy@hawaiicounty.gov.

Sincerely,

Zendo Kern
Zendo Kern (Oct 11, 2021 07:43 HST)

ZENDO KERN
Planning Director

AJR:jaa
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ENVIRONMENTAL ASSESSMENT

WALTER KALEO O KALANI NAKOA

SINGLE-FAMILY DWELLING

AND ASSOCIATED IMPROVEMENTS IN THE

CONSERVATION DISTRICT

TMK No. (3) 7-9-005:012

Honalo, North Kona District, County of Hawai‘i, State of Hawai`i

APPENDIX 17

State Historic Preservation Division

SHPD Acceptance of AIS

From: HICRIS
To: Barbara Huitt
Subject: HICRIS Project Review Initial Submission Accepted by SHPD as Project Number 2020PR35089
Date: Wednesday, December 23, 2020 2:49:07 PM

This is an automated notification sent by the Hawaii State Historic Preservation Division (SHPD) from the Hawaii Cultural Information System (HICRIS).

Initial submission 42DYE7RFO69G has been accepted as a new Project Review named Nakoa Single-Family Residence Kuleana Land Use. Please refer to Project Number 2020PR35089 in future correspondence. You will receive further notifications from HICRIS when SHPD has completed their review of your submission, and may require further action on your part at that time. At this time, no other action is required.

https://shpd.hawaii.gov/hicris/

Barbara Huitt

From: Lebo, Susan A <susan.a.lebo@hawaii.gov>
Sent: Thursday, March 11, 2021 2:52 AM
To: Lemmo, Sam J; Mello, Nicole A; ahaun@haunandassociates.com; Barbara Huitt; Randy Vitousek; kalani.nakoa@gmail.com
Subject: AIS for Conservation District Use Permit (CDUP) for Walter Kaleo O Kalani Nakoa
Attachments: 3-7-9-005_2020-00962_2020PR33069_2020PR35089_2103NM01_ARCHY_6E42_AIS_ ACCP.pdf

Hello,

Attached is a pdf copy of our division's review of the following:

Chapter 6E-42 Historic Preservation Review –
County of Hawaii Conservation District Use Permit (CDUP) for Walter Kaleo O Kalani Nakoa
Archaeological Inventory Survey
Honalo Ahupuaʻa, North Kona District, Island of Hawaiʻi
TMK: (3) 7-9-005:012

Sincerely,

Susan

Susan A. Lebo, PhD
Archaeology Branch Chief
State Historic Preservation Division
Department of Land and Natural Resources
Kakuhihewa Building
601 Kamakila Blvd., Suite 555
Kapolei, HI 96707
(808) 321-9000 (cell)

NOTICE: All submittals to SHPD must be submitted via HICRIS (see SHPD website). SHPD no longer accepts CDS or hard copy submittals or email copies via DLNR.Intake.SHPD@hawaii.gov.

In HICRIS, complete contact information (name, title (e.g., project manager, applicant), mailing address, email, etc.) must be provided for the primary contact for the project and all individuals who the primary contact wants to be able to upload and/or receive access to project materials (e.g., archaeological consultant, architectural consultant, County staff) or SHPD determinations (e.g., County of Hawaii, Planning Department). Do not list SHPD as the primary contact. SHPD is a reviewer. If the project involves a County permit, then the appropriate County agency should be listed as the primary contact (e.g., City and County of Honolulu, Department of Planning and Permitting).

SHPD's HICRIS system will notify all individuals for whom full contact information is provided. Notifications may involve requests for additional information (e.g., provide photos, submit an AIS report) or involve a review letter providing SHPD's determination.

At this time, SHPD Archaeology Branch will continue to send email copies of SHPD letters for legacy submittals received prior to December 17, 2020 launch of HICRIS as we do not have full contact information for all project cc's. This will be phased out as our branch draws down backlogged reviews.

ENVIRONMENTAL ASSESSMENT

WALTER KALEO O KALANI NAKOA

SINGLE-FAMILY DWELLING

AND ASSOCIATED IMPROVEMENTS IN THE

CONSERVATION DISTRICT

TMK No. (3) 7-9-005:012

Honalo, North Kona District, County of Hawai‘i, State of Hawai`i

APPENDIX 18

Comments Responsive to Pre-Consultation

DAVID Y. IGE
GOVERNOR OF HAWAII

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

ROBERT K. MASUDA
FIRST DEPUTY

M. KALEO MANUEL
DEPUTY DIRECTOR - WATER

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING
601 KAMOKILA BLVD, STE 555
KAPOLEI, HAWAII 96707

March 9, 2021

IN REPLY REFER TO:
Project No. 2020PR35089
Project No. 2020PR33069
Log No. 2020.00962
Doc. No. 2103NM01
Archaeology

Samuel Lemmo, Administrator
Office of Coastal and Conservation Lands
Department of Land and Natural Resources
P.O. Box 621
Honolulu, HI 96809
Sam.J.Lemmo@hawaii.gov

Dear Samuel Lemmo:

SUBJECT: **Chapter 6E-42 Historic Preservation Review –**
County of Hawaii Conservation District Use Permit (CDUP) for Walter Kaleo O Kalani Nakoa
Archaeological Inventory Survey
Honalo Ahupuaʻa, North Kona District, Island of Hawaiʻi
TMK: (3) 7-9-005:012

This letter provides the State Historic Preservation Division's (SHPD's) review of the State of Hawaii, Department of Land and Natural Resources, Conservation District Use Permit (CDUP) application for the proposed construction of a single-family residence as Kuleana Land Use and the supporting document titled *Draft Archaeological Inventory Survey TMK (3) 7-9-005:012 Honalo Ahupuaʻa, North Kona District, Hawaiʻi Island* (Haun and Henry, revised March 2021). SHPD received the archaeological inventory survey (AIS) report on April 28, 2020 (Project No. 2020PR33069, Log No. 2020.00962). Subsequently, SHPD received the permit submittal from the State of Hawaiʻi, Office of Conservation and Coastal Lands (OCCL). The permit submittal received on December 23, 2020 included a Department of Land and Natural Resources CDUP application, the proposed building plans, a copy of the AIS (Haun and Henry, March 2020), photographs of the project area, and a TMK map (Project No. 2020PR35089). SHPD requested revisions to the AIS on March 5, 2021 and the revisions were addressed on March 9, 2021 (Email correspondence between Susan Lebo and Nicole Mello [SHPD] and Alan Haun [Haun and Associates]).

Haun and Associates conducted the AIS of the project area at the request of the landowner, Walter Kaleo O Kalani Nakoa. According to the submittal materials, the landowner applied for a CDUP permit to build a single-story, single-family residence as a Kuleana Land use. The project area consists of the total 0.17-acre parcel. The proposed two-bedroom residence will consist of a total of 1,773 square feet. The proposed construction activities also include a catchment system with a 1,000-gallon capacity storage tank, a propane tank, two air conditioning condensers, a spa area with a jacuzzi, and a swimming pool totaling 286 square feet. An additional Individual Wastewater System (IWS) that consists of 189 square feet is also proposed.

Previous archaeological studies that included the project area consist of a reconnaissance survey by Soehren (1980a) and a survey of the Old Beach Road by Mills and Irani (2000). Site 50-10-37-7723, a complex with three features, and located within the current project area, was briefly documented by Soehren (1980a) and mapped by Mills and Irani (2000).

The current AIS (Haun and Henry, March 2021) incorporates a summary of the history of the pre-Contact and Historic use of the Honalo Ahupuaʻa. The report indicates the project area was awarded to Kaiakahauli in Land Claim Award (LCA) 8575:2 as a result of the *Māhele.* The coastal portion of the LCA and the location of the current project area was comprised of a house lot (*pā hale*) while the *mauka* portion (outside of the project area) contained garden plots. The fieldwork component of the current AIS was conducted between November 15-29, 2018. The fieldwork included a 100% pedestrian surface survey of the project area. Site 50-10-37-7723 comprises the entirety

of the current project area. The site consists of a terrace (Feature A), and two enclosures (Feature B and Feature C). The identified site was documented, mapped, GPS recorded, and photographed. Excavations involved 6 shovel probes (one in Feature B and five in Feature C) and one 1 x 1-meter test unit in the Feature A terrace.

The current AIS (Haun and Henry, March 2021), states that Site 50-10-37-7723 retains integrity of location and materials and was assessed as significant under Criterion d for having yielded information important to late pre-historic/early historic use of the area. The site was recommended for no further work although the landowner intends to preserve (as is) the Feature C enclosure and part of the Feature A terrace.

SHPD agrees with the site integrity and significance assessment. Additionally, SHPD concurs that Site 50-10-37-7723 has been successfully documented and the proper treatment for Site 50-10-37-7723 is a combination of preservation for Feature C and part of Feature A and no further work for Feature B. Additionally, archaeological monitoring should occur during construction activities. Therefore, SHPD's determination is "Effect, with agreed upon mitigation commitments" and the mitigation commitments include preservation and archaeological monitoring as previously stated.

The Haun and Henry (March 2021) AIS report satisfies the requirements of HAR §13-276-5. **It is accepted**. Please send two hard copies of the document, clearly marked FINAL, along with a text-searchable PDF copy of the document and a copy of this acceptance letter to the Kapolei SHPD office, attention SHPD Library. Additionally, please upload a text-searchable PDF version of the document to HICRIS Project No. 2020PR35089 using the Project Supplement option and send a PDF copy to lehua.k.soares@hawaii.gov.

The SHPD hereby notifies the Office of Conservation and Coastal Lands that the AIS has been accepted and, prior to project initiation, SHPD looks forward to receiving for review and acceptance an archaeological preservation plan for Site 50-10-37-7723 Feature A and Feature C that meets the requirements of HAR §13-277 and an archaeological monitoring plan for the current project that meets the requirements of HAR §13-279-4. Please submit these two plans to HICRIS Project No. 2020PR35089.

Please contact Nicole A. Mello, Historic Preservation Archaeologist IV, at Nicole.Mello@hawaii.gov for matters regarding archaeological resources or this letter.

Aloha,

Alan Downer

Alan S. Downer, PhD
Administrator, State Historic Preservation Division
Deputy State Historic Preservation Officer

cc: Alan Haun, Ahaun@haunandassociates.com
Barbara Huitt, Bhuitt@cades.com
Roy Vitousek, Rvitousek@cades.com
Kalani Nakoa, Kalani.nakoa@gmail.com

cades · schutte

A LIMITED LIABILITY LAW PARTNERSHIP

Roy A. Vitousek III
75-170 Hualalai Road, Suite B-303
Kailua-Kona, Hawai'i 96740-1737
Direct Line: (808) 329-5811
Direct Fax: (808) 326-1175
Email: rvitousek@cades.com

May 6, 2020

Dear Agency, Organization, or Neighboring Resident:

Re: Early Consultation on Environmental Assessment for Construction of a Single-Family Residence in the Conservation District at Honalo, North Kona, TMK No. (3) 7-9-005:012 (the "Property")

We have been asked by landowner Walter Kaleo O Kalani Nakoa, Trustee of the Puna Wai Trust, to prepare an Environmental Assessment (EA) in compliance with Chapter 343, Hawaii Revised Statutes. Mr. Nakoa plans to build a home on his property (.17 acres) located in the ahupua'a of Honalo on the Keauhou-Kainaliu Beach Road (also known as Old Government Road), North Kona, Hawaii. The EA is being required because the property is in the State of Hawaii land use Conservation District and the EA will be part of a Conservation District Use Permit Application. The purpose of this letter is to provide information about the project and request your input on site conditions and issues that you wish to be addressed in the EA, and any other concerns you may have.

The property is a *kuleana* lot. It was awarded to Kaiakahauli as Land Commission Award 8575:2. It has been determined, through a review of Land Commission testimony, that this parcel was awarded as a house lot. Archaeologist Alan Haun, Haun & Associates, has confirmed that this *kuleana* parcel was historically, customarily, and actually used as a residence. Mr. Nakoa is of native Hawaiian ancestry and he has family connections to this area. His plan to use this *kuleana* as a residence for himself and his family is completely consistent with the applicable statutes and the Board of Land and Natural Resources regulations.

Mr. Nakoa acquired the property in 2017. He plans to build and occupy a modest 1,773 sq. ft. single-story two (2) bedroom, two and one-half bathroom home with a kitchen and dining area, family room, and study with minimal disturbance of the structural foundation of the historic era home that was on the property. The proposed home was carefully designed to not only respect the *pā hale*, but to bring it back to life in its original capacity to serve as a home for the Nakoa family. Most of the site will be left as is and there will be minimal disturbance of any natural features on the property. Associated improvements will include an individual wastewater system meeting Department of Health requirements, a water well with a storage tank and desalinization unit, a roof-mounted solar electrical system with battery storage, a gravel driveway, and landscaping using native plants and including an agricultural cultivation area. The residence will rely on cellular phone service. The property is not an oceanfront lot, and the proposed home will be set back more than 115 feet from the shoreline.

Mr. Haun has submitted a draft Archaeological Inventory Survey (DAIS) to the State Historic Preservation Division, and Mr. Nakoa will be submitting a Special Management Area Assessment Application seeking a determination of exemption from a Special Management Area Use Permit from the County of Hawaii Planning Department. The DAIS documented the remnants of a historic era house compound within the property, determined that the property is a historical site having been a historic era residence and, due to its generally disturbed nature and the limited pre-contact cultural deposits, recommended no further work. No burials were found. It is Mr. Nakoa's election to preserve as much of the historical features as feasible.

The areas of investigation in the EA will include, but not be limited to, the following: water quality assurance; wastewater treatment; flora, fauna, and ecosystems; traffic impacts; geology, soils, and hazards; flooding and drainage impacts; social, cultural and community impacts; historic sites; and economic impacts. Again, we would appreciate your comments on any special environmental conditions or impacts related to the project.

Please provide any written questions or comments to undersigned at 75-170 Hualalai Road, Suite B-303, Kailua-Kona, Hawaii 96740. If you need clarification, please contact me at (808) 329-5811 or email me at rvitousek@cades.com. Kindly indicate whether you wish to receive a copy of the EA when completed.

Very truly yours,

Roy A. Vitousek III
for
CADES SCHUTTE
A Limited Liability Law Partnership

RAV:bah/tmt

Harry Kim
Mayor

Darren J. Rosario
Fire Chief

Lance S. Uchida
Deputy Fire Chief

County of Hawai'i
HAWAI'I FIRE DEPARTMENT
25 Aupuni Street • Suite 2501 • Hilo, Hawai'i 96720
(808) 932-2900 • Fax (808) 932-2928

May 14, 2020

Cades Schutte
75-170 Hualālai Road, Suite B 303
Kailua-Kona, Hawai'i 96740-1737
Attention: Mr. Roy A. Vitousek III

Dear Mr. Viousek,

SUBJECT: Early Consultation on Environmental Assessment for construction Of a Single-Family Residence in the Conservation District at Honalo, North Kona TMK (3) 7-9-005:012

In regards to the above-referenced Environmental Assessment Pre-Assessment Consultation, the following shall be in accordance:

NFPA 1, UNIFORM FIRE CODE, 2006 EDITION
Note: Hawai'i State Fire Code, National Fire Protection Association 2006 version, with County of Hawaii amendments. County amendments are identified with a preceding "C~" of the reference code.

Chapter 18 Fire Department Access and Water Supply

18.1 General. Fire department access and water supplies shall comply with this chapter.

For occupancies of an especially hazardous nature, or where special hazards exist in addition to the normal hazard of the occupancy, or where access for fire apparatus is unduly difficult, or areas where there is an inadequate fire flow, or inadequate fire hydrant spacing, and the AHJ may require additional safeguards including, but not limited to, additional fire appliance units, more than one type of appliance, or special systems suitable for the protection of the hazard involved.

18.1.1 Plans.

18.1.1.1 Fire Apparatus Access. Plans for fire apparatus access roads shall be submitted to the fire department for review and approval prior to construction.

18.1.1.2 Fire Hydrant Systems. Plans and specifications for fire hydrant systems shall be submitted to the fire department for review and approval prior to construction.

C~ 18.1.1.2.1 Fire Hydrant use and Restrictions. No unauthorized person shall use or operate any Fire hydrant unless such person first secures permission or a permit from the owner or representative of the department, or company that owns or governs that water supply or system. Exception: Fire Department personnel conducting firefighting operations, hydrant testing, and/or maintenance, and the flushing and acceptance of hydrants witnessed by Fire Prevention Bureau personnel.

18.2 Fire Department Access.

18.2.1 Fire department access and fire department access roads shall be provided and maintained in accordance with Section 18.2.

18.2.2* Access to Structures or Areas.

18.2.2.1 Access Box(es). The AHJ shall have the authority to require an access box(es) to be installed in an accessible location where access to or within a structure or area is difficult because of security.

18.2.2.2 Access to Gated Subdivisions or Developments. The AHJ shall have the authority to require fire department access be provided to gated subdivisions or developments through the use of an approved device or system.

18.2.2.3 Access Maintenance. The owner or occupant of a structure or area, with required fire department access as specified in 18.2.2.1 or 18.2.2.2, shall notify the AHJ when the access is modified in a manner that could prevent fire department access.

18.2.3 Fire Department Access Roads. (*may be referred as FDAR)

18.2.3.1 Required Access.

18.2.3.1.1 Approved fire department access roads shall be provided for every facility, building, or portion of a building hereafter constructed or relocated.

18.2.3.1.2 Fire Department access roads shall consist of roadways, fire lanes, parking lots lanes, or a combination thereof.

18.2.3.1.3* When not more than two one- and two-family dwellings or private garages, carports, sheds, agricultural buildings, and detached buildings or structures 400ft^2 (37 m^2) or less are present, the requirements of 18.2.3.1 through 18.2.3.2.1 shall be permitted to be modified by the AHJ.

18.2.3.1.4 When fire department access roads cannot be installed due to location on property, topography, waterways, nonnegotiable grades, or other similar conditions, the AHJ shall be authorized to require additional fire protection features.

18.2.3.2 Access to Building.

18.2.3.2.1 A fire department access road shall extend to within in 50 ft (15 m) of at least one exterior door that can be opened from the outside that provides access to the interior of the building. Exception: 1 and 2 single-family dwellings.

18.2.3.2.1.1 When buildings are protected throughout with an approved automatic sprinkler system that is installed in accordance with NFPA 13, NFPA 13D, or NFPA 13R, the distance in 18.2.3.2.1 shall be permitted to be increased to 300 feet.

18.2.3.2.2 Fire department access roads shall be provided such that any portion of the facility or any portion of an exterior wall of the first story of the building is located not more than 150 ft (46 m) from fire department access roads as measured by an approved route around the exterior of the building or facility.

18.2.3.2.2.1 When buildings are protected throughout with an approved automatic sprinkler system that is installed in accordance with NFPA 13, NFPA 13D, or NFPA 13R, the distance in 18.2.3.2.2 shall be permitted to be increased to 450 ft (137 m).

18.2.3.3 Multiple Access Roads. More than one fire department access road shall be provided when it is determined by the AHJ that access by a single road could be impaired by vehicle congestion, condition of terrain, climatic conditions, or other factors that could limit access.

18.2.3.4 Specifications.

18.2.3.4.1 Dimensions.

C~ 18.2.3.4.1.1 FDAR shall have an unobstructed width of not less than 20ft with an approved turn around area if the FDAR exceeds 150 feet. **Exception:** FDAR for one and two family dwellings shall have an unobstructed width of not less than 15 feet, with an area of not less than 20 feet wide within 150 feet of the structure being protected. An approved turn around area shall be provided if the FDAR exceeds 250 feet.

C~ 18.2.3.4.1.2 FDAR shall have an unobstructed vertical clearance of not less then 13ft 6 in.

C~ 18.2.3.4.1.2.1 Vertical clearances may be increased or reduced by the AHJ, provided such increase or reduction does not impair access by the fire apparatus, and approved signs are installed and maintained indicating such approved changes.

18.2.3.4.1.2.2 Vertical clearances shall be increased when vertical clearances or widths are not adequate to accommodate fire apparatus.

C~ 18.2.3.4.2 Surface. Fire department access roads and bridges shall be designed and maintained to support the imposed loads (25 Tons) of the fire apparatus. Such FDAR and shall be comprised of an all-weather driving surface.

18.2.3.4.3 Turning Radius.

C~ 18.2.3.4.3.1 Fire department access roads shall have a minimum inside turning radius of 30 feet, and a minimum outside turning radius of 60 feet.

18.2.3.4.3.2 Turns in fire department access road shall maintain the minimum road width.

18.2.3.4.4 Dead Ends. Dead-end fire department access roads in excess of 150 ft (46 m) in length shall be provided with approved provisions for the fire apparatus to turn around.

18.2.3.4.5 Bridges.

18.2.3.4.5.1 When a bridge is required to be used as part of a fire department access road, it shall be constructed and maintained in accordance with county requirements.

18.2.3.4.5.2 The bridge shall be designed for a live load sufficient to carry the imposed loads of fire apparatus.

18.2.3.4.5.3 Vehicle load limits shall be posted at both entrances to bridges where required by the AHJ.

18.2.3.4.6 Grade.

C~ 18.2.3.4.6.1 The maximum gradient of a Fire department access road shall not exceed 12 percent for unpaved surfaces and 15 percent for paved surfaces. In areas of the FDAR where a Fire apparatus would connect to a Fire hydrant or Fire Department Connection, the maximum gradient of such area(s) shall not exceed 10 percent.

18.2.3.4.6.2* The angle of approach and departure for any means of fire department access road shall not exceed 1 ft drop in 20 ft (0.3 m drop in 6 m) or the design limitations of the fire apparatus of the fire department, and shall be subject to approval by the AHJ.

18.2.3.4.6.3 Fire department access roads connecting to roadways shall be provided with curb cuts extending at least 2 ft (0.61 m) beyond each edge of the fire lane.

18.2.3.4.7 Traffic Calming Devices. The design and use of traffic calming devices shall be approved the AHJ.

18.2.3.5 Marking of Fire Apparatus Access Road.

18.2.3.5.1 Where required by the AHJ, approved signs or other approved notices shall be provided and maintained to identify fire department access roads or to prohibit the obstruction thereof of both.

18.2.3.5.2 A marked fire apparatus access road shall also be known as a fire lane.

18.2.4* Obstruction and Control of Fire Department Access Road.

18.2.4.1 General.

18.2.4.1.1 The required width of a fire department access road shall not be obstructed in any manner, including by the parking of vehicles.

18.2.4.1.2 Minimum required widths and clearances established under 18.2.3.4 shall be maintained at all times.

18.2.4.1.3* Facilities and structures shall be maintained in a manner that does not impair or impede accessibility for fire department operations.

18.2.4.1.4 Entrances to fire departments access roads that have been closed with gates and barriers in accordance with 18.2.4.2.1 shall not be obstructed by parked vehicles.

18.2.4.2 Closure of Accessways.

18.2.4.2.1 The AHJ shall be authorized to require the installation and maintenance of gates or other approved barricades across roads, trails, or other accessways not including public streets, alleys, or highways.

18.2.4.2.2 Where required, gates and barricades shall be secured in an approved manner.

18.2.4.2.3 Roads, trails, and other access ways that have been closed and obstructed in the manner prescribed by 18.2.4.2.1 shall not be trespassed upon or used unless authorized by the owner and the AHJ.

18.2.4.2.4 Public officers acting within their scope of duty shall be permitted to access restricted property identified in 18.2.4.2.1.

18.2.4.2.5 Locks, gates, doors, barricades, chains, enclosures, signs, tags, or seals that have been installed by the fire department or by its order or under its control shall not be removed, unlocked, destroyed, tampered with, or otherwise vandalized in any manner.

18.3 Water Supplies and Fire Hydrants

18.3.1* A water supply approved by the county, capable of supplying the required fire flow for fire protection shall be provided to all premises upon which facilities or buildings, or portions thereof, are hereafter constructed, or moved into or within the county. When any portion of the facility or building is in excess of 150 feet (45 720 mm) from a water supply on a fire apparatus access road, as measured by an approved route around the exterior of the facility or building, on-site fire hydrants and mains capable of supplying the required fire flow shall be provided when required by the AHJ. For on-site fire hydrant requirements see section 18.3.3.

EXCEPTIONS:

1. When facilities or buildings, or portions thereof, are completely protected with an approved automatic fire sprinkler system the provisions of section 18.3.1 may be modified by the AHJ.
2. When water supply requirements cannot be installed due to topography or other conditions, the AHJ may require additional fire protection as specified in section 18.3.2 as amended in the code.
3. When there are not more than two dwellings, or two private garage, carports, sheds and agricultural. Occupancies, the requirements of section 18.3.1 may be modified by AHJ.

18.3.2* Where no adequate or reliable water distribution system exists, approved reservoirs, pressure tanks, elevated tanks, fire department tanker shuttles, or other approved systems capable of providing the required fire flow shall be permitted.

18.3.3* The location, number and type of fire hydrants connected to a water supply capable of delivering the required fire flow shall be provided on a fire apparatus access road on the site of the premises or both, in accordance with the appropriate county water requirements.

18.3.4 Fire Hydrants and connections to other approved water supplies shall be accessible to the fire department.

18.3.5 Private water supply systems shall be tested and maintained in accordance with NFPA 25 or county requirements as determined by the AHJ.

18.3.6 Where required by the AHJ, fire hydrants subject to vehicular damage shall be protected unless located within a public right of way.

18.3.7 The AHJ shall be notified whenever any fire hydrant is placed out of service or returned to service. Owners of private property required to have hydrants shall maintain hydrant records of approval, testing, and maintenance, in accordance with the respective county water requirements. Records shall be made available for review by the AHJ upon request.

C~ 18.3.8 Minimum water supply for buildings that do not meet the minimum County water standards:

Buildings up to 2000 square feet, shall have a minimum of 3,000 gallons of water available for Firefighting.

Buildings 2001- 3000 square feet, shall have a minimum of 6,000 gallons of water available for Firefighting.

Buildings, 3001- 6000 square feet, shall have a minimum of 12,000 gallons of water available for Firefighting.

Buildings, greater than 6000 square feet, shall meet the minimum County water and fire flow requirements.

Multiple story buildings shall multiply the square feet by the amount of stories when determining the minimum water supply.

Commercial buildings requiring a minimum fire flow of 2000gpm per the Department of Water standards shall double the minimum water supply reserved for firefighting.

Fire Department Connections (FDC) to alternative water supplies shall comply with 18.3.8 (1)-(6) of *this code.*

NOTE: In that water catchment systems are being used as a means of water supply for firefighting, such systems shall meet the following requirements:

1) In that a single water tank is used for both domestic and firefighting water, the water for domestic use shall not be capable of being drawn from the water reserved for firefighting;

2) Minimum pipe diameter sizes from the water supply to the Fire Department Connection (FDC) shall be as follows:
   a) 4" for C900 PVC pipe;
   b) 4" for C906 PE pipe;
   c) 3" for ductile Iron;
   d) 3' for galvanized steel.

3) The Fire Department Connection (FDC) shall:
   a) be made of galvanized steel;
   b) have a gated valve with 2-1/2 inch, National Standard Thread male fitting and cap;
   c) be located between 8 ft and 16 ft from the Fire department access. The location shall be approved by the AHJ;
   d) not be located less than 24 inches, and no higher than 36 inches from finish grade, as measured from the center of the FDC orifice;
   e) be secure and capable of withstanding drafting operations. Engineered stamped plans may be required;
   f) not be located more than 150 feet of the most remote part, but not less than 20 feet, of the structure being protected;
   g) also comply with section 13.1.3 and 18.2.3.4.6.1 of *this code.*

4) Commercial buildings requiring a fire flow of 2000gpm shall be provided with a second FDC. Each FDC shall be independent of each other, with each FDC being capable of flowing 500gpm by engineered design standards. The second FDC shall be located in an area approved by the AHJ with the idea of multiple Fire apparatus'conducting drafting operations at once, in mind.

5) Inspection and maintenance shall be in accordance to NFPA 25.

6) The owner or lessee of the property shall be responsible for maintaining the water level, quality, and appurtenances of the system.

EXCEPTIONS TO SECTION 18.3.8:

1) Agricultural buildings, storage sheds, and shade houses with no combustible or equipment storage.

2) Buildings less than 800 square feet in size that meets the minimum Fire Department Access Road requirements.

3) For one and two family dwellings, agricultural buildings, storage sheds, and detached garages 800 to 2000 square feet in size, and meets the minimum Fire Department Access Road requirements, the distance to the Fire Department Connection may be increased to 1000 feet.

4) For one and two family dwellings, agricultural buildings, and storage sheds greater than 2000square feet, but less than 3000 square feet and meets the minimum Fire Department Access Road requirements, the distance to the Fire Department Connection may be increased to 500 feet.

5) For buildings with an approved automatic sprinkler system, the minimum water supply required may be modified.

If there are any questions regarding these requirements, please contact the Fire Prevention Bureau at (808) 932-2911.

DARREN J. ROSARIO
Fire Chief

CB:ds

Harry Kim
Mayor

Roy Takemoto
Managing Director

David Yamamoto, P.E.
Director

Allan G. Simeon, P.E.
Deputy Director

County of Hawai'i
DEPARTMENT OF PUBLIC WORKS
Aupuni Center
101 Pauahi Street, Suite 7 · Hilo, Hawai'i 96720-4224
(808) 961-8321 · Fax (808) 961-8630
public_works@hawaiicounty.gov

May 15, 2020

Roy A. Vitousek III
75-170 Hualalai Road, Suite B-303
Kailua-Kona, Hawai'I 96740-1737
(via email to: rvitousek@cades.com)

Subject: Environmental Assessment Early Consultation for Construction of a Single-Family Residence in the Conservation District at Honalo, North Kona, TMK No. (3) 7-9-005:012

We have reviewed the request for early consultation for an Environmental Assessment and our comments are as follows:

1. Flood zone VE affects the subject parcels as designated by the Flood Insurance Rate Map (FIRM). New construction and substantial improvements shall comply with Chapter 27 – Floodplain Management – of the Hawaii County Code.
2. All development generated runoff shall be disposed of on-site and shall not be directed toward adjacent properties.
3. All earthwork and grading shall conform to Chapter 10 – Erosion and Sedimentation Control – of the Hawaii County Code.

Please provide us with a copy of the EA when it is completed for our review.

Should there be any questions concerning this matter, please feel free to contact Kyle Honda of our Kona Engineering Division office at 323-4854.

Kyle Honda
FOR Ben Ishii, Division Chief
Engineering Division

KH

Copy: Engineering Division - HILO/KONA, Planning Department - Hilo

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

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

May 19, 2020

Mr. Roy A. Vitousek III
CADES SCHUTTE
A Limited Liability Law Partnership
75-170 Hualalai Road, Suite B-303
Kailua-Kona, Hawaii 96740-1737

Dear Mr. Vitousek:

RE: EARLY CONSULTATION ON ENVIRONMENTAL ASSESSMENT FOR CONSTRUCTION OF A SINGLE-FAMILY RESIDENT IN THE CONSERVATION DISTRICT AT HONALO, NORTH KONA, TMK NO. (3) 7-9-005:012 (the "Property")

The above-referenced Early Consultation on Environmental Assessment for Construction has been reviewed and we offer no comments at this time.

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

Sincerely,

PAUL K. FERREIRA
POLICE CHIEF

R. Wa

ROBERT WAGNER
ASSISTANT POLICE CHIEF
AREA II OPERATIONS

GG/jaj
20HQ0375

DAVID Y. IGE
GOVERNOR OF HAWAII

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

ROBERT K. MASUDA
FIRST DEPUTY

M. KALEO MANUEL
DEPUTY DIRECTOR - WATER

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
OFFICE OF CONSERVATION AND COASTAL LANDS
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

ref:OCCL:RB

Correspondence HA-20-171

JUN - 5 2020

Roy A. Vitousek III
Cades Schutte
75-170 Hualalai Road
Suite B-303
Kailua-Kona, Hawaii 96740

SUBJECT: Pre-Consultation for the Preparation of a Draft Environmental Assessment (EA) for the Proposed Construction of a Single-Family Residence (SFR) Located at Honalo, North Kona, Hawaii
TMK: (3) 7-9-005:012

Dear Mr. Vitousek,

Thank you for your pre-consultation correspondence regarding the preparation of the draft EA. The rules and regulations regarding Environmental Impact Statement Rules are noted as Hawaii Administrative Rules, §11-200.1. The subject property lies in the Limited subzone of the Conservation District. A single-family residence is an identified land use in the Limited subzone that could be applied for pursuant to the HAR §13-5-23 L-3 SINGLE FAMILY RESIDENCE (D-1), a single family residence in a flood zone or coastal high hazard area defined by the boundaries of the Federal Insurance Rate Maps (FIRM) that conforms to applicable county regulations regarding the National Flood Insurance Program and single family residential standards as outlined in this chapter. This proposed land use requires the filing of a Conservation District Use Application (CDUA) and all required attachments such as an Environmental Assessment; the filing of an HRS, 6E Intake Form for historic compliance (the subject property is near the area of the Kuamoo battlefield and burials may be present on kuleana parcels); and Special Management Area determination. To allow, modify or deny the proposed land use would be at the discretion of the Board of Land and Natural Resources.

You state the property is a kuleana lot. Kuleana Land use is an identified land use pursuant to the HAR §13-5-22 Kuleana Land Uses (D-1), agriculture and a single family residence, if applicable, when such land use was historically, customarily, and actually found on the property. Agriculture means the planting, cultivating, and harvesting of horticultural crops, floricultural crops, or forest products, and subsistence livestock. Pursuant to §13-5-31(f) the burden of proving that a parcel of land is a kuleana rests with the applicant. The following information shall accompany an application in which the applicant is requesting nonconforming use of kuleana land as defined in this chapter: (1) deed of property; (2) Land Commission Award (LCA) number; (3) Land Patent Grant documentation; (4) documentation showing current ownership of the kuleana; (5) tax map

key number; (6) documentation showing modern metes and bounds of the kuleana (if required by the department); (7) identification of legal access to the kuleana; and (8) identification of uses to which the kuleana land was historically, customarily, and actually found on the particular lot including, if applicable, a single family residence.

The subject property is .17 acres, approximately 7,405 square feet, and not an ocean front lot. Pursuant to the HAR §13-5, Exhibit 4, "for lots up to 14,000 square feet, the maximum developable area is 25 per cent of total lot area." Therefore, the approximate maximum developable area is 1,851 square feet; the OCCL notes the proposed SFR is 1,773 square feet. For lots under one acre, pursuant to §13-5 Exhibit 4, the minimum setbacks for the front, sides, and back are 15 feet. Refer to the HAR §13-5 Exhibit 4 for additional single-family residential standards.

The draft Environmental Assessment (EA) should site and describe all improvements for the proposal. This would include the proposed residence, access, utilities, landscaping and any other proposed work including trenching, and grading. A portion of the property appears to be located in a special flood hazard area, Zone VE, and the rest of the property appears to be in Zone X.

Alternatives that may include other possible sites for the residence or other alternatives should be included with the draft. Proposed mitigation and best management practices before, during and after the proposed construction should be described. For all proposed landscaping, preference shall be given to native, indigenous, and endemic species. The introduction of invasive plant species is prohibited in the Conservation District.

The HAR, Chapter 13-5 known as the rules and regulations of the Conservation District is available on our website at dlnr.hawaii/occl.com. Should you have any questions, please feel free to contact Rachel Beasley at Rachel.e.beasley@hawaii.gov or 798-6481 (work cell) or email at rachel.e.beasley@hawaii.gov.

Sincerely,

Samuel J. Lemmo, Administrator
Office of Conservation and Coastal Lands

cc: County of Hawaii, Planning

Harry Kim
Mayor

Roy Takemoto
Managing Director

West Hawai'i Office
74-5044 Ane Keohokālole Hwy
Kailua-Kona, Hawai'i 96740
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County of Hawai'i

PLANNING DEPARTMENT

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Director

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Acting Deputy Director

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June 23, 2020

Mr. Roy A. Vitousek III
Cades Schutte LLLP
75-170 Hualalai Road, Suite B-303
Kailua-Kona, HI 96740-1737

Dear Mr. Vitousek:

SUBJECT: Early Consultation for Environmental Assessment for Construction of a Single-Family Residence in the Conservation District at Honalo, North Kona, Tax Map Key (TMK): (3) 7-9-005:012

This is in response to your May 6, 2020 letter (Cor-20-132928) requesting early consultation comments on the proposed construction of a 1,773 sq. ft. single-family residence in the State Conservation District on the subject TMK parcel. Your correspondence communicates that along with the single-family residence, associated improvements such as an individual wastewater system, a water well with storage tank and desalinization unit, a roof-mounted solar electrical system with battery storage, a gravel driveway, native plant landscaping, and an agricultural cultivation area are also proposed.

Hawai'i State and County Geographic Information Systems (GIS) layers provide the following land use data relevant to the subject parcel. The State Land Use District is "Conservation", and according to the Hawai'i County Land Use Pattern Allocation Guide (LUPAG) designations the parcel is mostly "Open" with its northeastern portion being "Extensive Agriculture". The Hawai'i County zoning district is "Agricultural – 5 acres" (A-5a). This parcel is within the County's Special Management Area subject to Hawai'i Revised Statute (HRS) 205A permit processing. Finally, this parcel is outside of the Kona Community Development Plan's (KCDP) Kona Urban Area.

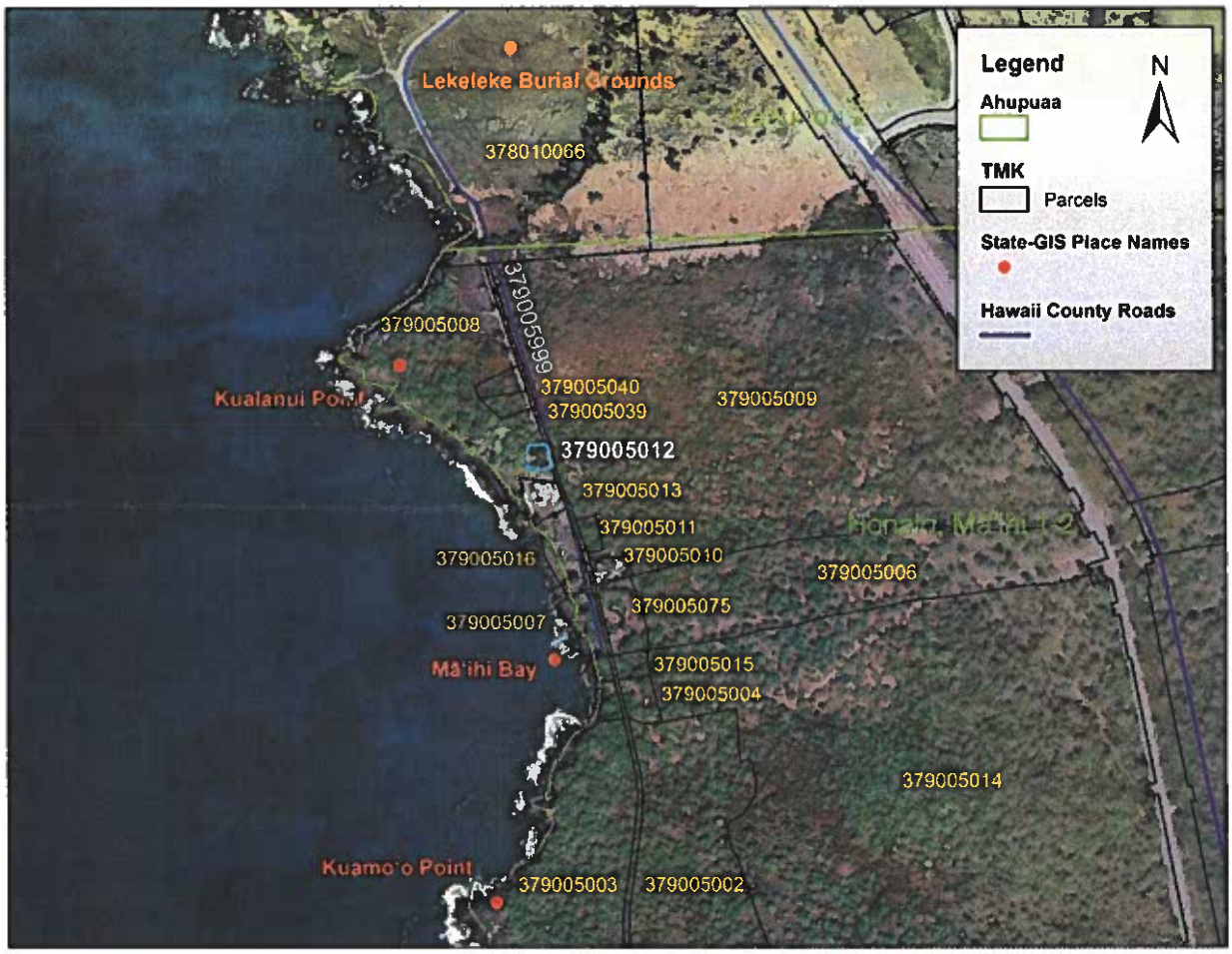

Figure 1. Subject parcel in relation to other parcels, a County road, Lekeleke Burials and Kuamo'o Point.

Planning Department Requests

The County acknowledges that the project area is in a culturally sensitive area associated with the 1819 Battle of Kuamo'o connected by the ancient coastal trail. Additionally, in line with Hawaii Administrative Rule (HAR) 11-200.1, as pertains to potential significant and/ or cumulative impacts, the Planning Department requests that you address the following in your upcoming draft Environmental Assessment (DEA):

- Please confirm which government agency will be the "Approving Agency" for this project's Environmental Assessment process
- List all permits required for this project and the timing and order your client will be applying for said permits
- Per the Conservation District Use Permit (CDUP) please discuss potential impacts to cultural and natural resources
- Please discuss how you feel the project qualifies for an SMA permit exemption
- Please discuss any discrepancies the proposed uses have with County Zoning districts or LUPAG designations

- Will the draft Archaeological Inventory Survey (DAIS) and a recommendation of "no further work" be approved by the State Historical Preservation Department (SHPD) prior to disturbing any historical properties? Is there a mitigation plan component to the DAIS?
- Please discuss any potential for temporary or permanent disruption to the County road, corresponding to the Ala Kahakai Trail and Public Access adjacent to the mauka boundary line of the subject property.

Thank you for requesting comments from the Hawai'i County Planning Department. Should you have any inquiries please contact Kamuela Plunkett at kamuela.plunkett@hawaiicounty.gov .

Sincerely,

MICHAEL YEE
Planning Director

KP: ks
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