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AUG 23 2019

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LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

REF: OCCL: TF

CDUA: HA-3852

MEMORANDUM

AUG 15 2019

TO: Scott J. Glenn, Director
Office of Environmental Quality Control

FROM: Suzanne D. Case, Chairperson
Board of Land and Natural Resources

SUBJECT: Publication of a Draft Environmental Assessment (EA) for Conservation District Use Application (CDUA) HA-3852 for the Huff Single Family Residence (SFR) and Associated Improvements, located at 3221 Kaiwiki Road, Hilo, Hawai'i
Tax Map Key (TMK): (3) 2-6-011:026

The Department of Land and Natural Resources has reviewed the subject draft EA for Conservation District Use Application (CDUA) HA-3852 and anticipates a Finding of No Significant Impact (FONSI) determination. Please publish notice of availability for this project in the September 8th, 2019 issue of the Environmental Notice.

Please contact Trevor Fitzpatrick of our Office of Conservation and Coastal Lands staff at 587-0373 should you have any questions.

Enclosures

RECEIVED
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OFC. OF ENVIRONMENTAL QUALITY CONTROL

20-050

APPLICANT
PUBLICATION FORM

Project Name:	Huff Single-Family Residence in the Conservation District at Kaiwiki
Project Short Name:	Huff Residence at Kaiwiki
HRS §343-5 Trigger(s):	Use of Land in Conservation District
Island(s):	Hawai‘i
Judicial District(s):	South Hilo
TMK(s):	3-2-6-011:026
Permit(s)/Approval(s):	County of Hawai‘i: Plan Approval and Grubbing, Grading, and Building Permits State of Hawai‘i: Conservation District Use Permit Wastewater System Approval
Approving Agency:	Hawai‘i State Department of Land and Natural Resources
Contact Name, Email, Telephone, Address	Trevor Fitzpatrick, Planner, DLNR-OCCL 808-587-0373 Trevor.J.Fitzpatrick@hawaii.gov DLNR- Office of Conservation and Coastal Lands 1151 Punchbowl Street, Room 131 Honolulu HI 96813
Applicant:	
Contact Name, Email, Telephone, Address	Jeffrey and Vanessa Huff 1639 Ala Makani Place Honolulu, Hawai‘i 96819 C/O Zendo Kern 808-3334734; ZendoKern808@gmail.com
Consultant:	
Contact Name, Email, Telephone, Address	Ron Terry, Geometrician Associates LLC 808-969-7090 rterry@hawaii.rr.com P.O. Box 396 Hilo, Hawai‘i 96721

Status (select one)	**Submittal Requirements**
_X_ DEA-AFNSI	Submit 1) the approving agency notice of determination/transmittal letter on agency letterhead, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the DEA, and 4) a searchable PDF of the DEA; a 30-day comment period follows from the date of publication in the Notice.
___ FEA-FONSI	Submit 1) the approving agency notice of determination/transmittal letter on agency letterhead, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the FEA, and 4) a searchable PDF of the FEA; no comment period follows from publication in the Notice.
____ FEA-EISPN	Submit 1) the approving agency notice of determination/transmittal letter on agency letterhead, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the FEA, and 4) a searchable PDF of the FEA; a 30-day comment period follows from the date of publication in the Notice.
____ Act 172-12 EISPN (“Direct to EIS”)	Submit 1) the approving agency notice of determination letter on agency letterhead and 2) this completed OEQC publication form as a Word file; no EA is required and a 30-day comment period follows from the date of publication in the Notice.
____ DEIS	Submit 1) a transmittal letter to the OEQC and to the approving agency, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the DEIS, 4) a searchable PDF of the DEIS, and 5) a searchable PDF of the distribution list; a 45-day comment period follows from the date of publication in the Notice.
____ FEIS	Submit 1) a transmittal letter to the OEQC and to the approving agency, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the FEIS, 4) a searchable PDF of the FEIS, and 5) a searchable PDF of the distribution list; no comment period follows from publication in the Notice.
____ FEIS Acceptance Determination	The approving agency simultaneously transmits to both the OEQC and the applicant a letter of its determination of acceptance or nonacceptance (pursuant to Section 11-200-23, HAR) of the FEIS; no comment period ensues upon publication in the Notice.

____ FEIS Statutory Acceptance	The approving agency simultaneously transmits to both the OEQC and the applicant a notice that it did not make a timely determination on the acceptance or nonacceptance of the applicant's FEIS under Section 343-5(c), HRS, and therefore the applicant's FEIS is deemed accepted as a matter of law.
____ Supplemental EIS Determination	The approving agency simultaneously transmits its notice to both the applicant and the OEQC that it has reviewed (pursuant to Section 11-200-27, HAR) the previously accepted FEIS and determines that a supplemental EIS is or is not required; no EA is required and no comment period ensues upon publication in the Notice.
____ Withdrawal	Identify the specific document(s) to withdraw and explain in the project summary section.
____ Other	Contact the OEQC if your action is not one of the above items.

Project Summary

Provide a description of the proposed action and purpose and need in 200 words or less.

Jeffrey and Vanessa Huff plan a single-family residence, garden and orchard within a 5-acre portion of their 19.89-acre property, located near the mauka end of Kaiwiki Road above Hilo. The plan consists of a single-story, 1,240-square foot structure with three bedrooms; two baths; a kitchen, dining and living area; lanai; covered parking; rooftop solar photovoltaic, IWS; and catchment water tank. Landscape features include small garden planters for vegetables; two orchards for fruit trees, and other features. An unnamed stream bisects the property, and all activity is on the road side of the stream, which has been a mown pasture for many decades. A botanist determined that no threatened or endangered plant species are present. Clearing timing restrictions will prevent impacts to endangered but widespread Hawaiian hoary bats and Hawaiian hawks. An archaeological inspection that found no archaeological sites was approved by SHPD, and a cultural assessment determined that no cultural resources or practices will be affected. Heavy forest surrounds the site and there are no direct views to or from scenic vantage points or other scenic impacts. Landclearing would occur over only a half-acre, with very minor short-term impacts to noise, air and water quality and scenery, mitigated by Best Management Practices.

Draft Environmental Assessment

Huff Single-Family Residence in the Conservation District at Kaiwiki

August 2019

TMK (3rd): 2-6-011-026
Kaiwiki, South Hilo District, County of Hawai‘i, State of Hawai‘i

APPLICANT:

Jeffrey and Vanessa Huff
1639 Ala Makani Place
Honolulu, Hawai‘i 96819

DETERMINING 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

CONSULTANT:

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

Draft Environmental Assessment

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Honolulu, Hawai‘i 96813

CONSULTANT:

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

CLASS OF ACTION:

Use of Land in Conservation District

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

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SUMMARY OF PROJECT, ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Jeffrey and Vanessa Huff (the applicants) seek a Conservation District Use Permit (CDUP) to build a single-family residence within a roughly 5-acre portion of their 19.89-acre property located near the *mauka* end of Kaiwiki Road, at about 1,840 feet in elevation, above the town of Hilo on the Island of Hawai‘i.

The plan for the home consists of a single-story, 1,240-square foot (sf) structure with three bedrooms; two baths; an open plan kitchen, dining and living area; a lanai and stairs; two small rooms for solar power equipment and the water pump; and covered parking. For utilities, the home will feature rooftop solar photovoltaic electricity with a backup generator; a rooftop satellite dish; a 10,000-gallon water tank with a pipe extension to allow fire truck hookup; and an individual wastewater system meeting or exceeding all regulatory requirements. The total developed area as defined under the Conservation District rules is 2,626 sf. Landscape features include two 800-sf garden planters for vegetables; two orchards for approximately 30 lychee, avocado, macadamia nut, coffee, cacao, mango, ohi‘a ‘ai, and ulu trees; a 80-foot long stone wall; improvements to an existing driveway, a 16-foot wide gate at the driveway entrance; a row of koa and sugi cypress trees along the driveway as a privacy screen; and a 5-foot tall hogwire fence on Kaiwiki Road.

The property is bisected by an unnamed stream, and all activity will be on the road side of the stream, which was used for agriculture in the past and has been maintained as a mown pasture for many decades. No native vegetation remains, although some common, hardy native plants have emerged in a few areas. A portion of the mown pasture will be used as an orchard and garden area to raise taro, ulu, coconuts, and other fruits and vegetables for the family’s home consumption. To replace some of the strawberry guava and other invasives that have colonized the roadside areas, various Polynesian, native and non-invasive other trees and shrubs will be planted.

A botanical survey has determined that no threatened or endangered plant species are present. Clearing timing restrictions will help prevent impacts to endangered Hawaiian hoary bats and Hawaiian hawks, which are present throughout most of the island of Hawai‘i. An archaeological inspection that found no archaeological sites has been approved by the State Historic Preservation Division, and a cultural impact assessment has determined that no cultural resources or practices will be affected. The surroundings are heavily forested and there are no direct views of the home site from scenic vantage points, and no scenic impacts would occur. Landclearing would be minimal and occur over about a half-acre, with very minor short-term impacts to noise, air and water quality and scenery. These would be mitigated by Best Management Practices associated with the CDUP and grading permit. The applicant will ensure that all earthwork and grading conform to applicable laws, regulations and standards. In the unlikely event that additional undocumented archaeological resources, including shell, bones, midden deposits, lava tubes, or similar finds, are encountered during construction within the project site, work in the immediate area of the discovery will be halted and the State Historic Preservation Division will be contacted to determine the appropriate actions.

PART 1: PROJECT DESCRIPTION AND E.A. PROCESS

1.1 Project Description and Location

Jeffrey and Vanessa Huff (the applicants) seek a Conservation District Use Permit (CDUP) to build a single-family residence within a roughly 5-acre portion of their 19.89-acre property. The property is located near the *mauka* end of Kaiwiki Road, at 1,840 feet in elevation, above the town of Hilo on the Island of Hawai‘i (Figures 1-2).

The plan for the home consists of a single-story, 1,240-square foot (sf) structure with three bedrooms; two baths; an open plan kitchen, dining and living area; a lanai and stairs; two small rooms for solar power equipment and the water pump; and covered parking (Figure 3). For utilities, the home will feature rooftop solar photovoltaic electricity with a backup generator; a rooftop satellite dish; a 10,000-gallon water tank with a pipe extension to allow fire truck hookup; and an individual wastewater system meeting or exceeding all regulatory requirements. The total developed area as defined under the Conservation District rules is 2,626 sf. Landscape features include two 800-sf garden planters for vegetables; two orchards for approximately 30 lychee, avocado, macadamia nut, coffee, cacao, mango, ohi‘a ‘ai, and ulu trees; a 80-foot long stone wall; improvements to an existing driveway, a 16-foot wide gate at the driveway entrance; a row of koa and sugi cypress trees along the driveway as a privacy screen; and a 5-foot tall hogwire fence on Kaiwiki Road.

The location of all improvements has been being planned to minimize disturbance of native vegetation and maintain a wide setback to a nearby gulch. The property is bisected by an unnamed stream, and all activity will be on the Kaiwiki Road side of the stream, which was used for agriculture in the past and has been maintained as a mown pasture for many decades. In the area to be disturbed, no native vegetation remains, although some common, hardy native plants have emerged in a few areas. The house site itself is near an area where a former landowner had placed two shipping containers, which were removed by the current owners. A house pad and turnaround area will be built, and minor improvements will be made to the driveway. Landclearing would be minimal in depth and extend over about a half-acre.

As shown in the Landscape Plan sheet of Figure 3, a portion of the mown pasture will be used as an orchard and garden area to raise taro, ulu, coconuts, and other fruits and vegetables for the family’s home consumption. To replace some of the strawberry guava and other invasives that have colonized the roadside areas, various Polynesian, native and non-invasive other trees and shrubs will be planted.

Figure 1 Project Location Map

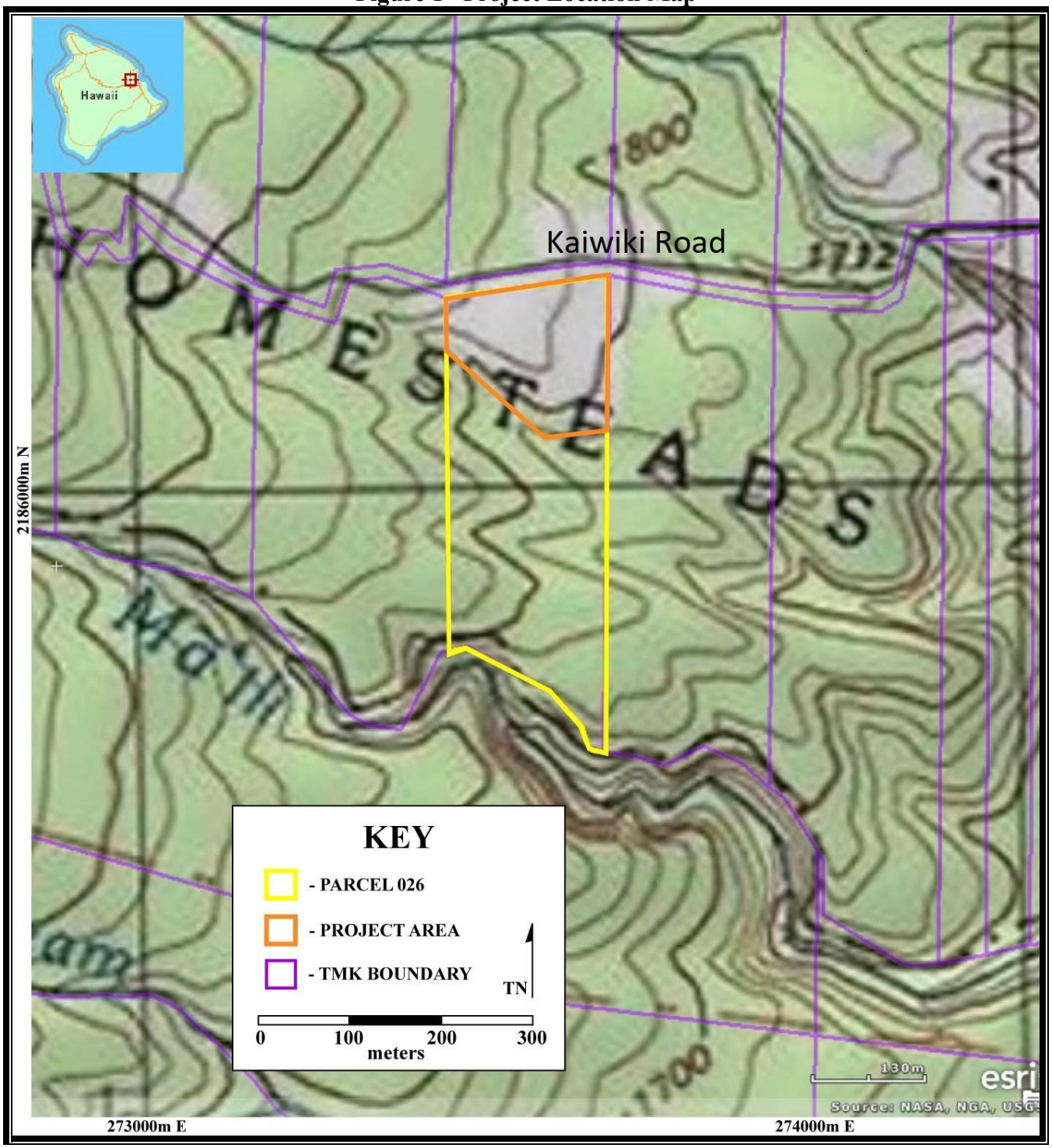
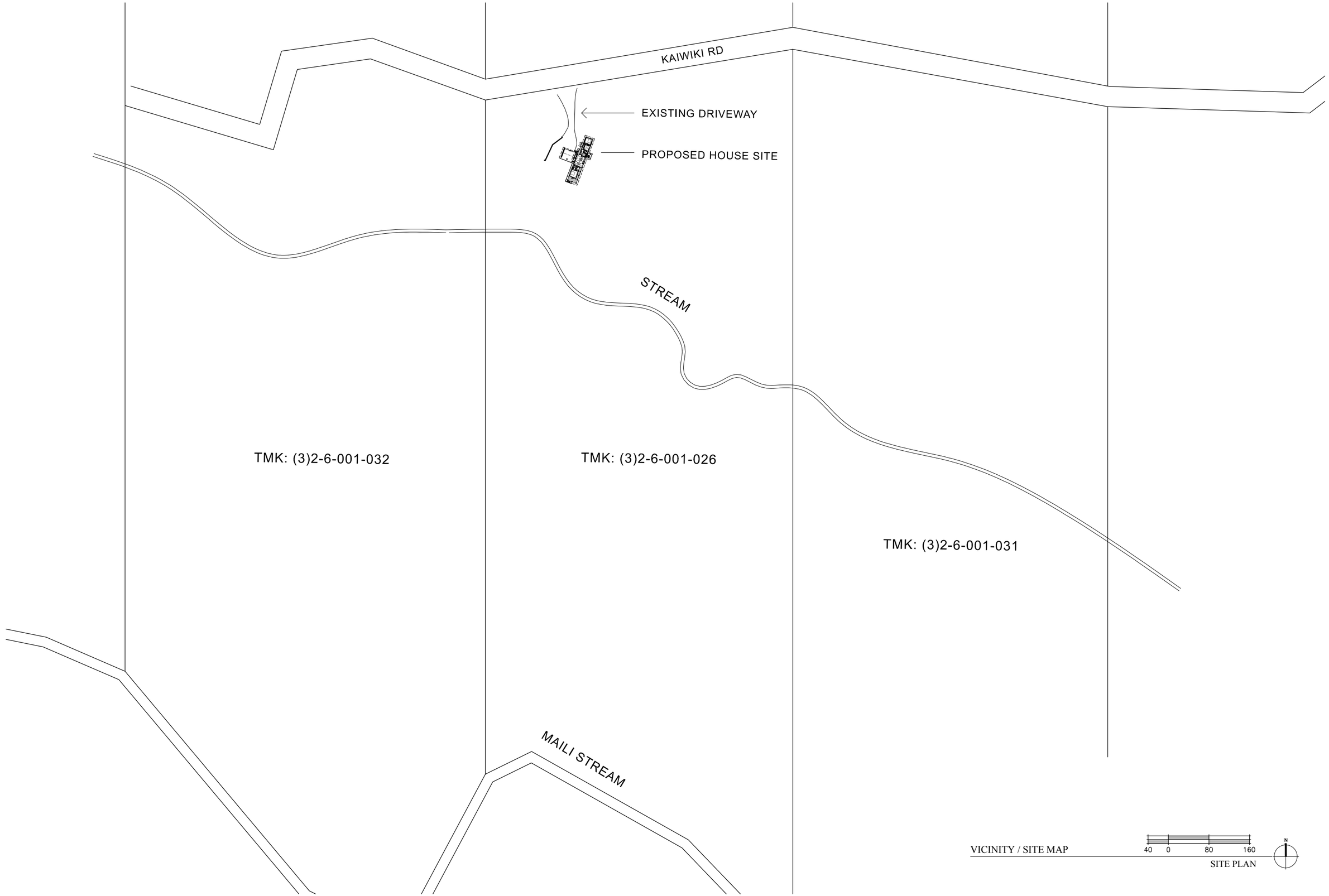


Figure 2 Site Photos

2a, Above: Oblique Aerial Image Showing Managed Project Area of Property.
2b, Below: Building site

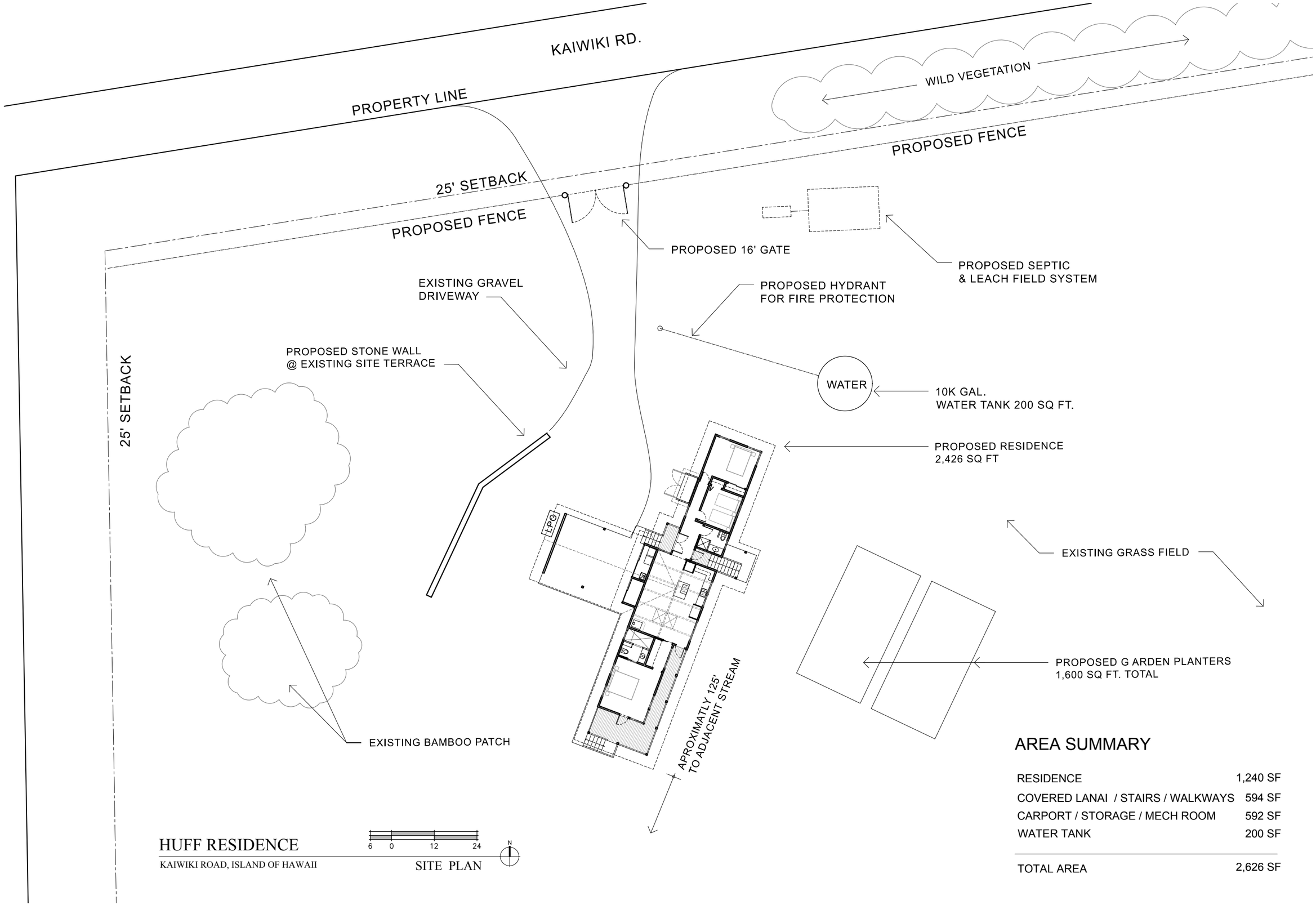
Figure 2. Site Photos

2c, Above: Lower part of property, looking northeast. 2d, Below: Lower property, looking southeast



VICINITY / SITE MAP

SITE PLAN



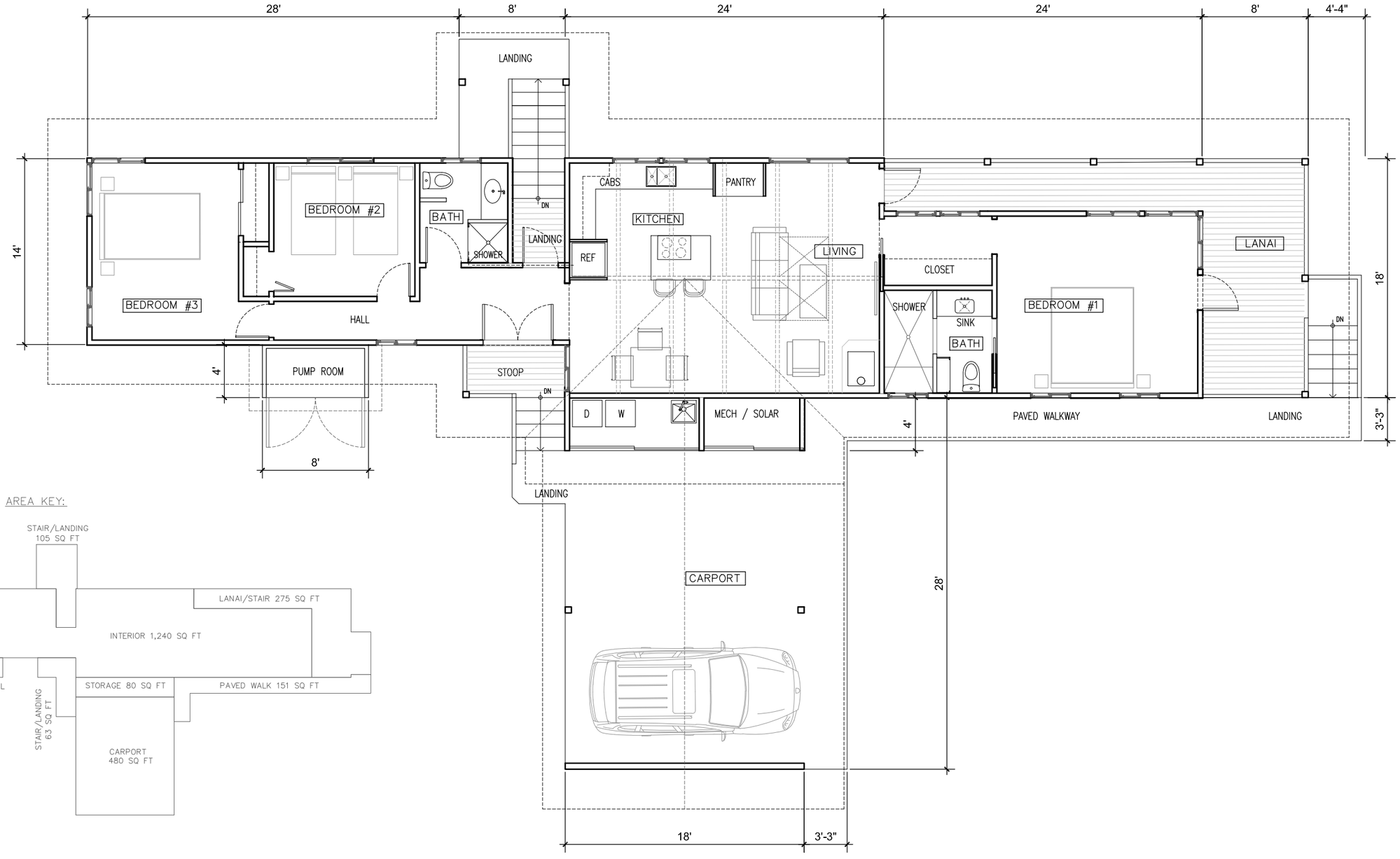
HUFF RESIDENCE

KAIWIKI ROAD, ISLAND OF HAWAII

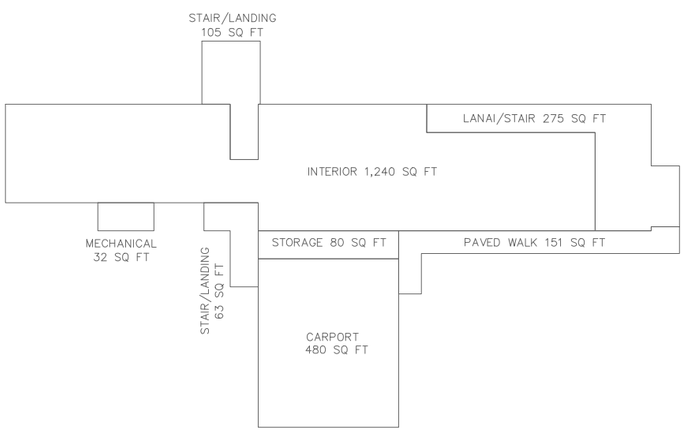
SITE PLAN

AREA SUMMARY

RESIDENCE	1,240 SF
COVERED LANAI / STAIRS / WALKWAYS	594 SF
CARPORT / STORAGE / MECH ROOM	592 SF
WATER TANK	200 SF
TOTAL AREA	2,626 SF



AREA KEY:

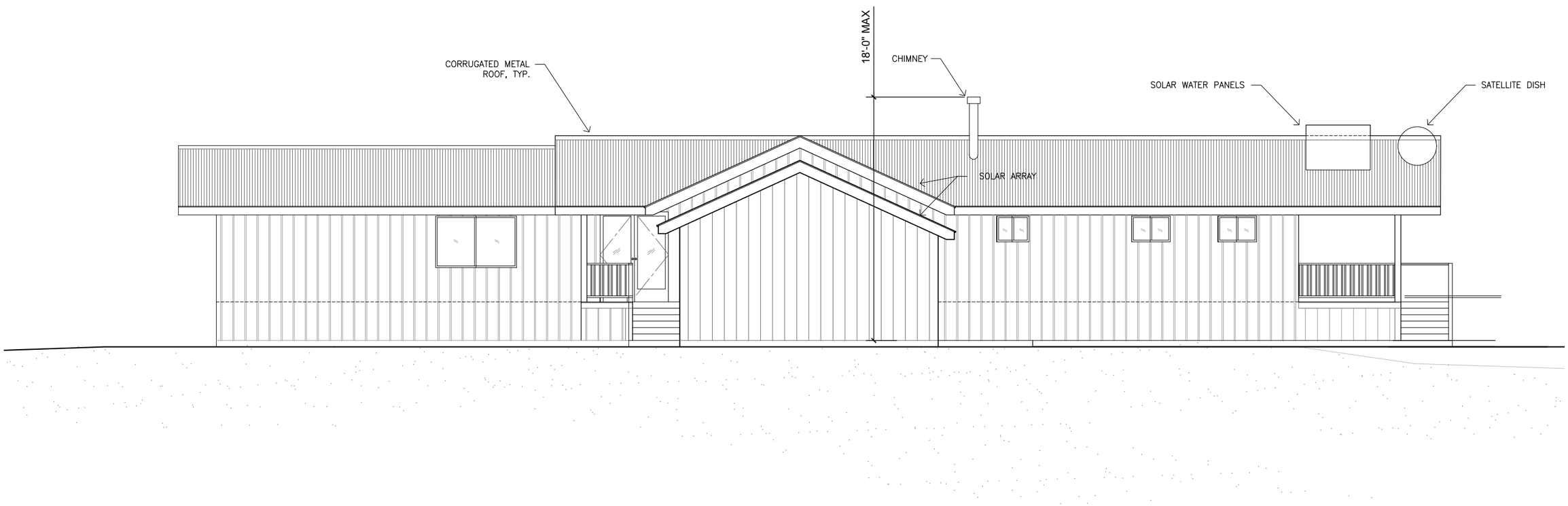


HUFF RESIDENCE

KAIWIKI ROAD, ISLAND OF HAWAII

2 0 4 8

FLOOR PLAN

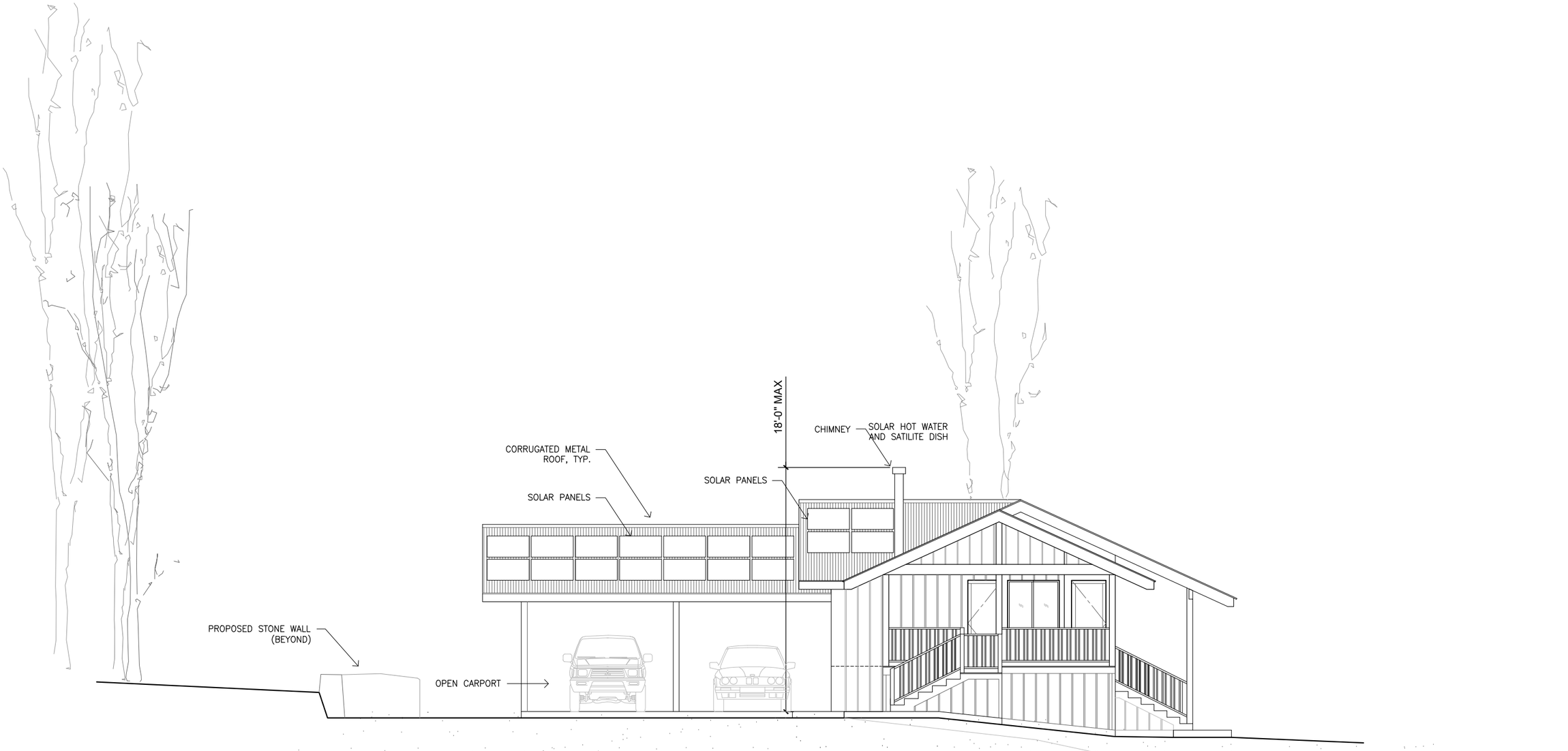


HUFF RESIDENCE

KAIWIKI ROAD, ISLAND OF HAWAII

2 0 4 8

WEST ELEVATION



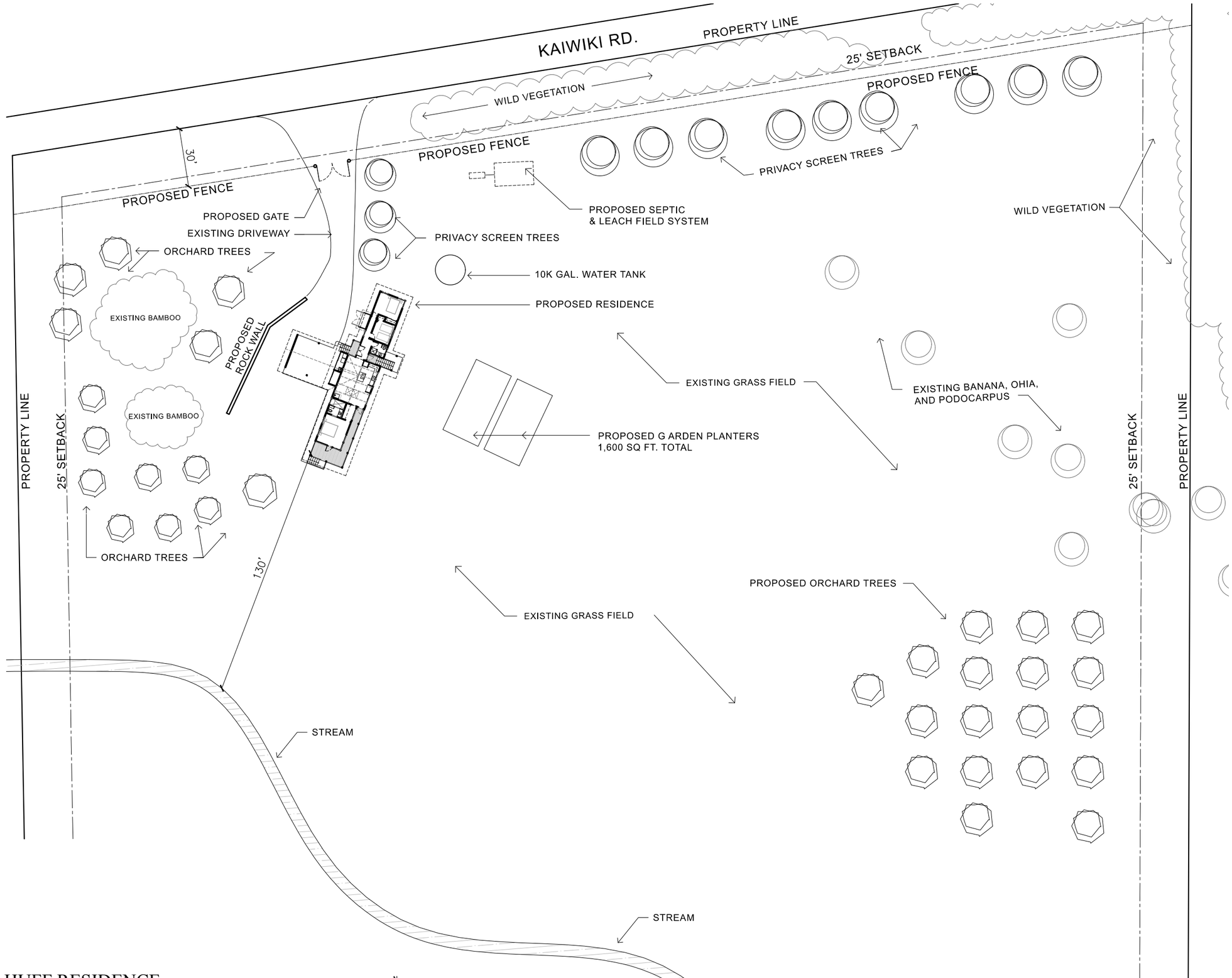
NOTE:
SOLAR HOT WATER PANELS
AND SATILLITE DISH NOT SHOWN FOR CLARITY,
SEE WEST ELEVATION

HUFF RESIDENCE

2 0 4 8

KAIWIKI ROAD, ISLAND OF HAWAII

SOUTH ELEVATION



EXISTING TREES/PLANTS:
Waiwi, Alexander Palm,
Tibouchina, Koa, ‘Ohi‘a Lehua,
Lemon, Bamboo, Podocarpus,
Bananas, Hapu‘u

PROPOSED NATIVE PLANTS/TREES:
(Dispersed throughout existing grass lawn orchards, and privacy screens)
Koa, Kou, Hapu‘u, Manele, ‘Ohi‘a ‘Ai, Ulu

PRIVACY SCREEN TREES:
Koa and Cypress

PROPOSED ORCHARD TREES:
Lemon, Lime, Tangerine, Orange, Lychee,
Mac Nut, Coffee, Cacao, Mango.

HUFF RESIDENCE

KAIWIKI ROAD, ISLAND OF HAWAII

LANDSCAPE PLAN

1.2 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 4 of this document states the anticipated finding that no significant impacts are expected to occur, based on the preliminary findings for each criterion made by the consultant in consultation with the Hawai‘i State Department of Land and Natural Resources, the determining agency. If, after considering comments to the Draft EA, DLNR 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 proceed to other necessary permits. If the agency concludes that significant impacts are expected to occur as a result of the proposed action, then an Environmental Impact Statement (EIS) will be prepared.

1.3 Public Involvement and Agency Coordination

The following agencies, organizations and individuals have been consulted during the Environmental Assessment Process based on their expertise and./or interest in the project/area:

County:

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

State:

Department of Land and Natural Resource (DLNR), Land Division, DOFAW and OCCL
Office of Hawaiian Affairs

Private:

Sierra Club
Six Nearby Property Owners: Kiaaina, Strand, Kamehameha Schools, Golden, Yokoyama, Hutchinson

Copies of communications received during early consultation are contained in Appendix 1a.

PART 2: ALTERNATIVES

2.1 Proposed Project, Alternative House Sites and Alternative Uses

The proposed project and its location are described in Section 1.1 above and illustrated in Figures 1-3. The location of the home site, within an area that was cleared almost a century ago, which was used for agriculture until several decades ago, and maintained as mown pasture ever since, was chosen because it is relatively level, accessible, and would generate very few environmental impacts by minimizing

alteration of topography and surrounding vegetation.

Many other locations on the property could also theoretically serve as the site for a residence, but all would require a longer driveway, and some would involve forest clearing or closely approaching or even crossing the stream that bisects the property. Given the soil, vegetation and slopes, minimal clearing and topographic alteration is a key consideration for the home site. There is no known environmental or other reason for seriously considering other sites on the property.

No other alternative uses for the property that are listed as identified uses in the Conservation District Rules, such as a farm or a commercial nature park, are desired by the applicant, and thus none are addressed in this EA.

2.2 No Action

Under the No Action Alternative, the residence would not be built. The lot would remain unused except for pasture maintenance and temporary camping and picnicking by the owner. This EA considers the No Action Alternative as the baseline by which to compare environmental effects from the project.

PART 3: ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION

The 19.89-acre property is located near the rural, *mauka* end of Kaiwiki Road, at 1,840 feet in elevation, above the town of Hilo on the Island of Hawai‘i. Kaiwiki Road is a County-owned and maintained facility and is flanked by a number of farms and residences. The property is bisected by an unnamed stream, and all proposed activity will be on the roughly 5-acre part of the property on the road side of the stream, which is the focus of this EA. The term project site is used throughout this EA to indicate this portion of the property, which was used for agriculture in the past and has been maintained as a mown pasture for many decades. The term project area is flexibly used to denote the broader area of Kaiwiki, the South Hilo District, or, in some cases, the Island of Hawai‘i.

3.1 Physical Environment

3.1.1 Climate, Geology, Soils and Geologic Hazards

Environmental Setting

The project site receives an average of about 240 inches of rain annually, with a mean annual temperature of approximately 68 degrees Fahrenheit (Giambelluca et al 2014; UH Hilo-Geography 1998:57). Winds in the area are dominantly northeast trades, replaced periodically by winds with a southerly component (UH Hilo 1998), which, from January 1983 to September 2018, have often brought with them volcanic haze, or vog.

The project site is on the southeastern flank of Mauna Kea. The lava flows that underlie it are Hamakua Volcanics dated from prior to 64,000-250,000 years before the present (BP) (Wolfe and Morris 1996). All lava flows in this area are mantled with a thick layer of volcanic ash called Pahala Ash, which is derived from Kohala and Mauna Kea volcanoes (USGS-HVO: 2009). Soil at the project site is classified as Kaiwiki highly organic hydrous silty clay loam, 10 to 20 percent slopes. This deep, ash-derived soil has nurtured highly productive farming from early Hawaiian times through the century of sugar cane until today. Kaiwiki hydrous silty clay loams are fairly well drained but have medium to high runoff (U.S. Soil Conservation Service 1973). Locally boggy conditions quickly develop when the soil is compressed by cultivation, vehicles or animals.

The entire Island of Hawai‘i is subject to geologic hazards, especially lava flows and earthquakes. Volcanic hazard as assessed by the U.S. Geological Survey in this area of the island is Zone 8 on a scale of ascending risk 9 to 1 (Wright et al 1992). The relatively low hazard risk is because Mauna Kea is an inactive volcano. Zone 8 includes areas that have had no lava flows in the last 750 years, and only a few percent covered by lava in the past 10,000 years. Volcanic hazard here is thus very low.

The Island of Hawai‘i experiences high seismic activity and is at risk from earthquake damage (USGS 2000), especially to structures that are poorly designed or built, as the 6.7-magnitude quake of 2006 and the 6.9-magnitude quake of 2018 demonstrated. The portion of the property proposed for the home has a moderate slope and is set back a minimum distance of 200 feet from the channel of a minor unnamed stream. The site is stable and there does not appear to be a substantial risk from subsidence, landslides or other forms of mass wasting.

Impacts and Mitigation Measures

The current extremely wet climate of East Hawai‘i poses challenges to homeowners in areas where stream flooding or localized road flooding can occasionally cut off access. Steep driveways in muddy areas can also become almost impassable. The access to the project site does not involve any stream crossings outside of bridges and culverts on County roads that were designed to pass high stream flows. The moderately sloped driveway from Kaiwiki Road has been periodically maintained by stabilizing with gravel, and it will continue to require regular periodic maintenance.

There is a scientific consensus that the earth is warming due to manmade increases in greenhouse gases in the atmosphere, according to the United Nations’ Intergovernmental Panel on Climate Change (UH Manoa Sea Grant 2014). Global mean air temperatures are projected to increase by at least 2.7°F by the end of the century. This will be accompanied by the warming of ocean waters, expected to be highest in tropical and subtropical seas of the Northern Hemisphere. Wet and dry season contrasts will increase, and wet tropical areas in particular are likely to experience more frequent and extreme precipitation. For Hawai‘i, where warming air temperatures are already quite apparent, accelerating sea level rise is expected. Not only is the equable climate at risk but also agriculture, ecosystems, the visitor industry and public health. It is possible, and even likely, that larger and more frequent tropical storms and even hurricanes will affect the Hawaiian Islands in the future. Guidance to federal agencies for addressing climate change issues in environmental reviews was released in August 2016 by the Council on

Environmental Quality (US CEQ 2016). The guidance urged that when addressing climate change, agencies should consider: 1) the potential effects of a proposed action on climate change as indicated by assessing greenhouse gas emissions in a qualitative, or if reasonable, quantitative way; and, 2) the effects of climate change on a proposed action and its environmental impacts. It recommends that agencies consider the short- and long-term effects and benefits in the alternatives and mitigation analysis in terms of climate change effects and resiliency to the effects of a changing climate. Although this guidance has since been withdrawn for political reasons, the State of Hawai‘i in Hawai‘i Revised Statutes §226-109 encourages a similar analysis, and Title 11-200.1-13 includes significance criteria that consider the hazardousness of sea level rise.

As illustrated in Figure 4, the location of the property at 1,840 feet above sea level, 5 miles from the shoreline, will ensure that its use is not harmed by the direct effects of sea level rise under any scenario. In order to deal with the potential for larger and more frequent tropical storms that could be part of a changing climate, the driveway has previously been reinforced and the home has been designed to withstand hurricane force winds. There are no trees in the immediate area with the potential to topple from high winds and damage the home. Negligible amounts of energy input and greenhouse gas emission would be required for construction and occupation of the residence. Electrical power will be provided via a solar photovoltaic (PV) system. The production of at least some of owners' food on the property as well as planting of tree crops and native trees will reduce the carbon footprint.

In general, geologic conditions do not impose undue constraints on the proposed action, as the lava flow hazard is very low, the seismic hazard is manageable with proper design that meets the Uniform Building Code, and the site is not otherwise geologically hazardous. The applicant understands that there are some geologic hazards associated with homes on the slopes of Mauna Kea and has made the decision that a residence is not imprudent to construct or inhabit.

3.1.2 Flood Zones

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). Digital maps and reports are available from the Department of Land and Natural Resources at http://gis.hawaiinfip.org/fhat/. The property is within Flood Zone X, areas outside the mapped 500-year floodplain (Figure 5). There is no risk of tsunami inundation, and it is outside both all tsunami evacuation and dam evacuation zones.

An unnamed permanent stream too small to be depicted on USGS topographical maps but tributary to Mā‘ili Stream bisects the property. Notwithstanding the lack of a designated flood zone, this stream experiences occasional high flow; the applicants are unaware of the stream ever overtopping its steep banks. The proposed home site and driveway avoid the stream and there does not appear to be any potential for flood hazard.

Figure 4. Sea Level Rise Exposure

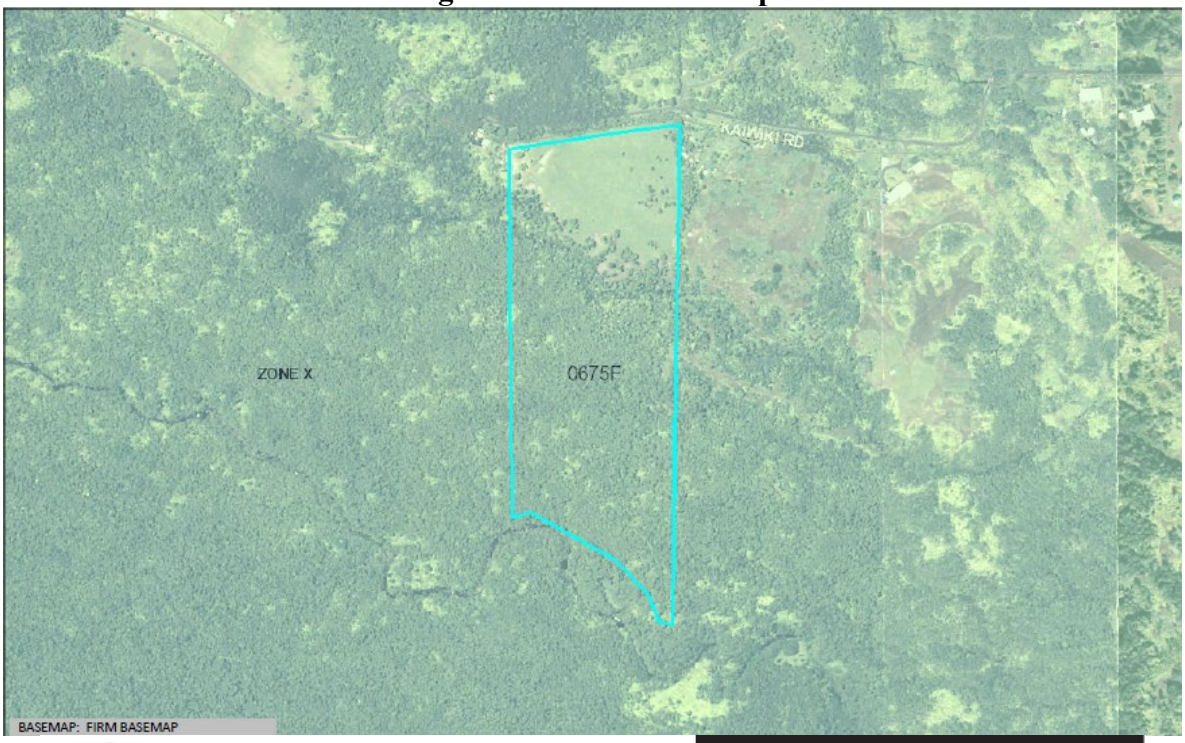
Source: https://www.pacioos.hawaii.edu/shoreline/slr-hawaii/

3.1.3 Water Quality

The grading work would be limited to the home site its related spaces for driveway/parking, septic system, water catchment and construction staging area. The total area of disturbance would be approximately a half-acre and would be set back a minimum of 200 feet from the closest stream channel. No grading activities would occur in areas with the potential to cause erosion near the stream banks. Grading will be planned and conducted to balance cut and fill material for the graded area in order to avoid the need to import or export of soils from the site. For all trenching required for water pipelines and the septic system, extracted materials (spoils) will be used to refill the trenched areas and to blend the areas with the surrounding topography. As discussed in Section 3.3, a wastewater system fully conformant with State Department of Health Rules will be constructed to serve the home.

A County grading permit will be required. After actual grading plans are developed, the applicant in consultation with the County Department of Public Works will determine whether the area of disturbance is sufficiently large to require a National Pollutant Discharge Elimination System (NPDES) permit.

Figure 5. Flood Zone Map



Flood Hazard Assessment Report

www.hawaiinfip.org

Property Information

COUNTY:	HAWAII
TMK NO:	(3) 2-6-011:026
WATERSHED:	MAILI
PARCEL ADDRESS:	3221 KAIWIKI ROAD HILO, HI 96720

Notes:

Flood Hazard Information

FIRM INDEX DATE:	SEPTEMBER 29, 2017
LETTER OF MAP CHANGE(S):	NONE
FEMA FIRM PANEL:	1551660675F
PANEL EFFECTIVE DATE:	SEPTEMBER 29, 2017

THIS PROPERTY IS WITHIN A TSUNAMI EVACUTION ZONE: NO
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/

0 400 800 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.

Source: Hawai‘i DLNR: http://gis.hawaiinfip.org/fhat/

Initial estimates indicate that the total grading area will be far less than an acre and that an NPDES permit will not be required. Grading for the driveway and house lot will include practices to minimize the potential for sedimentation, erosion and pollution of coastal waters. The applicant will ensure that their contractor shall perform all earthwork and grading in conformance with:

(a) "Storm Drainage Standards," County of Hawai‘i, October 1970, and as revised.
(b) Applicable standards of Chapter 27, "Flood Control," of the Hawai‘i County Code.
(c) Applicable standards and regulations of the Federal Emergency Management Agency.
(d) Applicable standards and regulations of Chapter 10, "Erosion and Sedimentation Control," of the Hawai‘i County Code.
(e) Conditions of an NPDES permit, if required, and any additional best management practices required by the Board of Land and Natural Resources.

Best Management Practices (BMPs) will include, but not be limited, to the following:

- The area of the minimum stream bank setback will be marked and fenced in the construction areas to avoid disturbance to the ground or vegetation within the setback area during construction;
- The total amount of land disturbance will be minimized. The construction contractor will be limited to the specific delineated construction work areas within the lot;
- The contractor will take special precautions, including use of a dual-layer sedimentation control system in erosion prone areas, to prevent any sediment leaving the work areas, particularly towards the direction of nearby streams;
- 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; and
- Cleared areas will be replanted or otherwise stabilized as soon as possible.

With proper implementation of standard BMPs, the construction and use of the residence and associated facilities would be not expected to contribute to sedimentation, erosion, and pollution of stream waters.

3.1.4 Flora and Fauna

Environmental Setting: Flora

No prior botanical surveys are known to have been conducted on the property, but in the *Manual of the Flowering Plants of the Hawaiian Islands,* Gagne and Cuddihy (1990) classified the natural, pre-human vegetation in areas with similar geology, elevation and rainfall as Lowland Wet Forest. Dominant species were likely ‘ōhi‘a trees (*Metrosideros polymorpha*), uluhe (*Dicranopteris linearis*) and hapu‘u ferns (*Cibotium* spp.), and a larger variety of trees, shrubs, ferns and herbs[1]. In the steeper, shadier and rockier soils of the stream gulch, different assemblages of species may have been present.

[1] Latin names for organism are generally given after the first use of a common name in this report. Refer to Table 1 for a full list of observed plants.

The project site itself has a long history of intensive cultivation. Areas *makai* of 2,000 feet in elevation on windward Mauna Kea were cultivated with dryland taro, sweet potatoes, and bananas for centuries after the arrival of Polynesians on the Hawaiian Islands approximately 1,000 years ago (Handy and Handy 1972). After 1850, most of the lowlands in the South Hilo District with adequate soil were cultivated in sugar cane. Airphotos from at least as late 1965 show the project site as fully utilized as a pasture or a sugar cane field (USDA photo series, photo no. EKL-6cc-51, dated 1/16/65 https://guides.library.manoa.hawaii.edu/magis Accessed February 2019).

The vegetation on the project site has been maintained in the half-century since sugar cane cultivation ceased as a periodically mown pasture dominated by various non-native grasses (see photos in Figure 2). The open pasture is framed on the Kaiwiki Road and the *mauka* and *makai* sides by hedgerows of non-native plants, particularly strawberry guava (*Psidium cattleianum*), Alexander palms (*Archontophoenix alexandrae*), Asian melastome (*Melastoma candidum*), and Koster's curse (*Clidemia hirta*), along with a few ferns including the native hapuʻu pulu (*Cibotium glaucum*). As the property slopes down away from the pasture into and across the gulch, outside the area proposed for use in this EA, vegetation becomes a mixed native-non-native forest of various elements, especially ʻōhiʻa, strawberry guava, hapuʻu pulu, Alexander palms, rose apple (*Syzygium jambos*), and palaʻa (*Sphenomeris chinensis*). A list of species detected on the project site (for botanical purposes, the pasture area, the adjacent hedgerows, and the edge of the mixed forest) is provided in Table 1. No rare, threatened or endangered plant species are present.

Environmental Setting: Fauna

During several visits in 2019, we detected relatively few individual birds on the property and only five species: Japanese white-eyes (*Zosterops japonicus*), northern cardinals (*Cardinalis cardinalis*), Japanese bush warblers (*Cettia diphone*), spotted doves (*Streptopelia chinensis*), striped doves (*Geopilia striata*) and cattle egrets (*Bubulcus ibis*). Long-term observation would undoubtedly reveal a wider bird fauna. The relatively low elevation leads to warm temperatures that promote mosquitos, which are inimical to most native birds. No native birds were identified, but it is likely that the mixed ʻōhiʻa-non-native forest adjacent to the project site is occasionally utilized by the Hawai'i ʻamakihi (*Hemignathus virens*), as some populations of this native honeycreeper appear to have adapted to the mosquito borne diseases of the Hawaiian lowlands.

As with all of East Hawaiʻi, several endangered native terrestrial vertebrates may be present in the general area and may overfly, roost, nest, or utilize resources of the property. These include the endangered Hawaiian hawk (*Buteo solitarius*), the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*), the endangered Hawaiian petrel (*Pterodroma sandwichensis*), the endangered band-rumped storm petrel (*Oceanodroma castro*), and the threatened Newell's shearwater (*Puffinus auricularis newelli*). Of these, only the Hawaiian hoary bat is likely to have any substantial presence on the project site, as the nesting requirements for the other species are not present.

Some native waterbirds might also be present within a quarter mile of the project site, particularly in Māʻili Stream and Honoliʻi Stream, but they would be unlikely on the project site itself because of a lack

Table 1. Plant Species Observed on Project Site

Scientific Name	Family	Common Name	Life Form	Status*
Acacia koa	Fabaceae	Koa	Tree	E
Andropogon virginicus	Poaceae	Broomsedge	Grass	A
Archontophoenix alexandrae	Arecaceae	Alexandra palm	Tree	A
Arundina graminifolia	Orchidaceae	Bamboo orchid	Herb	A
Axonopus sp.	Poaceae	Carpet grass	Grass	A
Bambusa vulgaris	Poaceae	Yellow clumping bamboo	Tree	A
Cibotium glaucum	Dicksoniaceae	Hapu‘u pulu	Fern	E
Citrus limon	Rutaceae	Lemon	Tree	A
Clidemia hirta	Melastomataceae	Koster’s curse	Herb	A
Coix lacryma-jobi	Poaceae	Job’s Tears	Herb	A
Commelina diffusa	Commelinaceae	Honohono	Herb	A
Cordyline fruticosa	Agavaceae	Ti	Shrub	A
Crotalaria sp.	Fabaceae	Rattle pod	Herb	A
Cuphea carthagenensis	Lythraceae	Tarweed	Shrub	A
Cymbopogon citratus	Poaceae	Lemon grass	Herb	A
Cynodon dactylon	Poaceae	Bermuda grass	Grass	A
Cyperus halpan	Cyperaceae	Sharp edge sedge	Herb	A
Cyperus polystachyos	Cyperaceae	Manyspike flatsedge	Herb	I
Dicranopteris linearis	Gleicheniaceae	Uluhe	Fern	I
Digitaria eriantha	Poaceae	Pangola grass	Herb	A
Diplazium esculentum	Athyriaceae	Warabi	Fern	A
Erechtites hieracifolia	Asteraceae	Fireweed	Herb	A
Fimbristylis dichotoma	Cyperaceae	Fimbristylis	Herb	I
Hedychium sp.	Zingiberaceae	Ginger	Herb	A
Heterocentron subtriplinervium	Melastomataceae	Pearlflower	Shrub	A
Litchi chinensis	Sapindaceae	Lychee	Tree	A
Megathyrsus maximus	Poaceae	Guinea grass	Grass	A
Melastoma candidum	Melastomataceae	Asian melastome	Shrub	A
Melinus minutiflora	Poaceae	Molasses grass	Grass	A
Melochia umbellata	Sterculiaceae	Melochia	Tree	A
Metrosideros polymorpha	Myrtaceae	‘Ōhi‘a	Tree	E
Mimosa pudica	Fabaceae	Sensitive plant	Herb	A
Nephrolepis multiflora	Nephrolepidaceae	Sword fern	Fern	A
Panicum repens	Poaceae	Wainaku grass	Herb	A
Paspalum conjugatum	Poaceae	Hilo grass	Grass	A
Plantago major	Plantaginaceae	Common plantain	Herb	A
Platycerium bifurcatum	Polypodiaceae	Elkhorn fern	Fern	A
Psidium cattleianum	Myrtaceae	Strawberry guava	Tree	A
Rhynchospora caduca	Cyperaceae	Beak rush	Herb	A
Rubus rosifolius	Rosaceae	West Indian raspberry	Shrub	A
Schizachyrium condensatum	Poaceae	Tufted Beardgrass	Herb	A

Table 1, continued				
Scientific Name	**Family**	**Common Name**	**Life Form**	**Status***
Schizostachyum glaucifolium	Poaceae	’Ohe, Hawaiian bamboo	Grass	P
Sphenomeris chinensis	Lindsaeaceae	Palaʻa	Fern	I
Sporobolus indicus	Poaceae	Sporobolus	Herb	A
Syzygium jambos	Myrtaceae	Rose apple	Tree	A
Urochloa mutica	Poaceae	California grass	Herb	A

A=Alien E=Endemic I=Indigenous END=Federal and State Listed Endangered

of water resources. In the Hilo-Hāmākua Coast in general, waterbirds are found in streams, estuaries, natural and artificial ponds, and wetlands. The most common native waterbird is the indigenous black-crowned night heron, or ʻaukuʻu (*Nycticorax nycticorax hoactli*). This bird is likely present at times in the stream that bisects the property. It is also not unusual to spot the wide-ranging, friendly but endangered Hawaiian goose or nēnē (*Branta sandwicensis*) in various parts of the island. Far less likely to be seen in the property’s streams are two endangered waterbirds that are occasionally present in the Hilo-Hāmākua coast: the Hawaiian duck or koloa maoli (*Anas wyvilliana*), and the Hawaiian coot or ʻalae keʻokeʻo (*Fulica alai)*. Of these, only the koloa maoli is noted in streams somewhat similar to those found on the property. No waterbirds were observed during any of the field visits to the property.

Aside from the Hawaiian hoary bat, all mammals in the project area are all introduced species, including feral cats (*Felis catus*), feral pigs (*Sus scrofa*), small Indian mongooses (*Herpestes a. auropunctatus*) and various species of rats (*Rattus* spp.). Several species of non-native reptiles and amphibians are also likely present. Coqui frogs (*Eleutherodactylus coqui*) were heard and other species of frog may be present. None of these non-native vertebrates are of conservation concern and all are deleterious to native flora and fauna.

As discussed above, an unnamed permanent stream that is not mapped on USGS topographic maps but is tributary to Māʻili Stream bisects the property. The *Hawaiʻi Watershed Atlas* has information about Māʻili Stream’s watershed, stream character and biota (http://www.hawaiiwatershedatlas.com/ha_hilo.html). The 12.8-mile long perennial stream has a watershed of 3.9 square miles, indicating a long, narrow watershed with few tributaries – typical of streams in fairly young volcanic slopes. The maximum elevation of the watershed is 2,838 feet above sea level. It empties into the estuary of Honoliʻi Stream. The percent of the watershed in the different land use districts is as follows: 58.4% agricultural, 41% conservation, 0.7% rural, and 0% urban. About 2% of the watershed is controlled by the State and 98% is in private hands. Only 1.3% is in some form of watershed protection. Under various watershed quality criteria, Māʻili Stream ranks about in the middle of Hawaiian streams.

Surveys of varying intensities and goals were conducted at several locations in the lower and upper reaches of Māʻili Stream in 1967 and 1989. The native fish ʻoʻopu alamoʻo (*Lentipes concolor*), ʻoʻopu ʻakupa (*Eleotris sandwicensis*), ʻoʻopu nākea (*Awaous guamensis*), and ʻoʻopu nōpili (*Sicyopterus stimpsonis*), as well as the native crustaceans or ōpaekalaʻole (*Atyoida bisulcata*) and *Macrobrachium grandimanus* and various native insects, were recorded in the surveys. An unidentified native gobiid fish

was also observed in the stream. No threatened or endangered species were recorded. Various non-native species including Tahitian prawns, Louisiana crayfish and guppies were also seen. Based upon existing knowledge of the stream biota, the area was rated as having some biotic importance according to the DLNR Division of Aquatic Resources Decision Rule criteria for native macrofauna diversity, but not for native insect diversity, native species abundance, presence of candidate endangered species, Newcomb's snail habitat, or absence of Priority 1 introduced species.

An endangered insect, the orangeblack Hawaiian damselfly (*Megalagrion xanthomelas*), lives in streams and wetlands at locations around the island's coastline, primarily in estuaries and ponds at sea level. On other islands, it has been sighted as high as 3,280 feet above sea level. According to conservationists, its limited habitat and small scattered populations may affect long-term stability. The species is susceptible to the effects of habitat loss and introduced species (https://xerces.org/orangeblack-hawaiian-damselfly/; https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=I063; DLNR-DOFAW 2013; Polhemus 1993 and 1995; Polhemus and Asquith 1996). The species has not been noted from Mā‘ili Stream.

No grading or construction will occur within 1,000 feet of Mā‘ili Stream itself, or within 200 feet of the channel of the small unnamed tributary. Reconnaissance of this smaller stream on several occasions did not reveal any fish or aquatic invertebrates. Nevertheless, it is possible that non-native frogs, native gobioid fish (o‘opu), non-native guppies, native shrimp or ōpaekala‘ole, non-native crustaceans such as crayfish and Tahitian prawn, native damselflies, dragonflies, and stream spiders, and various non-native insects and spiders are present.

Impacts and Mitigation Measures

The project's small footprint and degree of physical disturbance combined with its location in an area of the property with no sensitive flora or fauna resources limits the biological impacts to negligible levels.

No rare, threatened or endangered plant species are present. Although there are several native plants, the area of impact is dominated by non-natives. The applicants wish to preserve and enhance the native vegetation through gradual planting of native tree and shrub species. With minimal care and input, the native component of the vegetation could increase. An issue for construction projects located in ‘ōhi‘a forests has recently surfaced. A fungus called *Ceratocystis fimbriata* has led to a disease that is new to science and new to Hawai‘i – Rapid ‘Ōhi‘a Death (Hawai‘i DOFAW 2017). This disease has killed hundreds of thousands of ‘ōhi‘a trees across more than 34,000 acres of the Big Island. It was first discovered in Lower Puna. Projects that harm or relocate ‘ōhi‘a trees can spread the disease, and mitigation measures are recommended, although it is important to recognize that treatment protocols are evolving. The following mitigation is recommended:

- A small number of mostly juvenile ‘ōhi‘a trees are planned for careful removal; identify any other ‘ōhi‘a trees near the construction area and ensure that their branches are not accidentally broken during construction;
- Treat any unavoidable scars to prevent infestation of the fungus;

- Stack all removed ʻōhiʻa trees and dispose of by burying or chipping; do not remove from project site. Decontaminate boots and work tools prior to entering the construction site and after leaving;

Based on the location of the proposed actions, no impact to ʻōhiʻa trees is likely to occur, but if any activities disturb them, the above protocol will be implemented.

The project avoids sensitive locations adjacent to streams, and in fact no activities whatsoever are proposed for the roughly two-thirds of the property from the unnamed stream south. The precautions for preventing effects to water quality during construction listed in Sections 3.1.1 and 3.1.6 will reduce adverse impact on native stream organisms, if any are present, to negligible levels.

Preventing certain biological impacts will require specific mitigation actions. In order to avoid impacts to the endangered but regionally widespread terrestrial vertebrates listed above, the applicant will commit to certain conditions, which are expected to be proposed for the CDUP. Specifically:

- Construction will refrain from activities that disturb or remove shrubs or trees taller than 15 feet between June 1 and September 15, when Hawaiian hoary bats may be sensitive to disturbance. No barbed wire will be used on the border fence, the driveway gate, or elsewhere.
- Any exterior lighting will be shielded from shining upward, in conformance with Hawaiʻi County Code § 14 – 50 et seq., to minimize the potential for disorientation of seabirds.

3.1.5 Air Quality, Noise, and Scenic Resources

Environmental Setting

Air quality in the area is generally excellent, due to its rural nature and minimal degree of human activity, although vog from Kilauea volcano may be present during southerly winds when it is erupting. Noise on the site is very low, and what sounds exist are mostly natural sources, primarily birdsong and wind in trees, although there is also occasionally light noise from yard and farm maintenance activities on neighboring properties. The occasional helicopter overflight also causes some noise.

With its mowed pasture surrounded by hedgerows and forest, the project site has a subtle, pleasant rural scenery. The County of Hawaiʻi General Plan contains Goals, Policies and Standards intended to preserve areas of natural beauty and scenic vistas from encroachment. The General Plan discusses waterfalls, including the famous Akaka Falls and nearby Kahuna Falls, Rainbow Falls, and others, as being noted features of natural beauty in the *mauka* areas of South Hilo. No specific features or views are noted from the Kaiwiki Area, which lacks scenic waterfalls.

Impacts and Mitigation Measures

The project would not affect air quality, scenery or noise levels in any substantial ways. Brief and minor adverse effects would occur during construction. However, there are no sensitive noise or visual receptors

in the immediate vicinity – with no houses or other structures within 200 feet of the proposed home site. Given the small scale and short duration of any noise impacts, coupled with the lack of sensitive receptors, noise mitigation would not be necessary. The single-family home would be in harmony with the rural landscape of South Hilo.

3.1.6 Hazardous Substances, Toxic Waste and Hazardous Conditions

Based on onsite inspection and the history of uses on the property, it appears unlikely that the site contains any substantial quantity of hazardous or toxic substances or exhibits any other hazardous conditions. In addition to the measures related to water quality detailed in Section 3.1.3, in order to ensure to minimize the possibility for spills of hazardous materials, the applicant proposes the following:

- Unused materials and excess fill will be disposed of at an authorized waste disposal site.
- 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 to prevent leaks, spills or fires;
    - Products will be kept in their original containers unless unresealable, and original labels and safety data will be retained;
    - 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;
    - 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
    - All spills will be cleaned up immediately after discovery, using proper materials that will be properly disposed of;
    - Should spills occur, the spill prevention plan will be adjusted to include measures to prevent spills from re-occurring and for modified clean-up procedures.

3.2 Socioeconomic and Cultural

3.2.1 Socioeconomic Characteristics

Existing Environment

The property is located about five miles inland from the sea near the top of narrow and curving Kaiwiki Road, just outside the main urban area of Hilo. Like the entire Hilo- Hāmākua coast, Kaiwiki was transformed by commercial sugar cane cultivation into a collection of fields and plantation camps, with

scattered individual homes on old government grants and homestead lots. Since the demise of sugar cane, the area has continued to attract residents because of the cool weather and large rural lots that feel distant but are actually close to Hilo, East Hawai‘i’s hub of jobs, shopping and services.

The spread-out community of Kaiwiki is too small to be measured as a discrete unit by the U.S. Census Bureau. The latest comprehensive data set for the census tract that contains Kaiwiki (CT 202.2, which also includes Wainaku, Upper Pi’ihonua, and a small area near Stainback Highway, is from the 2013-2015 American Community Survey (http://files.hawaii.gov/dbedt/op/gis/maps/agol-maps/ACS2013/). This census tract has a population of 2,214. Reflecting the sugar plantation heritage, it has a large proportion of foreign-born residents (12.6%), a relatively low median household income of $36,881, a relatively low proportion of adults with a high school degree (88.7%), and moderately high individual poverty rate of 16.2%.

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 by providing employment during construction and increasing the tax base, which will be balanced out to some degree by a very slight increase in demand for services. The residence and associated improvements will not adversely affect population or demand for services.

3.2.2 Cultural and Historic Resources

An archaeological assessment survey of the portion of the property north of the unnamed stream (the only portion of the property proposed for use) and a cultural impact assessment of the project were prepared by Scientific Consultant Services, Inc., and are attached as Appendices 2 and 3, respectively. Research for these reports included primary fieldwork, consultation of archaeological and ethnographical studies and primary documents including maps and Mahele testimony, and consultation of informants. In the interest of readability, the summary below does not include all scholarly references; readers interested in extended discussion and sources may consult these appendices. Separately, the Office of Hawaiian Affairs, Councilperson Valerie Poindexter, the Sierra Club, DLNR officials and several neighbors were also consulted by mail, email, and/or telephone as part of the EA to determine whether they had any information on natural or cultural resources that might be present or affected, and additional research on cultural resources and impacts was conducted.

Historical and Cultural Background

The first inhabitants of Hawai‘i were believed to be settlers who had undertaken difficult voyages across the open ocean. For many years, researchers have proposed that early Polynesian settlement voyages between Kahiki (the ancestral homelands of the Hawaiian gods and people) and Hawai‘i were underway by A. D. 300, although recent work suggests that Polynesians may not have arrived in Hawai‘i until at least A. D. 1000 (Kirch 2012).

Early settlers established settlements on the windward shores in likely places such as Waipiʻo, Waimanu, and Hilo Bay. People at these locations were able to sustain themselves through inshore and pelagic fishing, gathering shellfish from the shore and strand, plant and animal husbandry, and the utilization of natural terrestrial flora and fauna. The pattern of this early settlement is thought to have consisted of widely spaced, permanent home bases that gradually expanded to form a nearly continuous zone of permanent settlement along the windward coasts as local populations grew. Societal order was maintained by their traditional philosophies and by the conical clan principle of genealogical seniority (Kirch 2012). Universal Polynesian customs brought from their homeland included the observance of major gods *Kane*, *Ku*, and *Lono*; the *kapu* system of law and order; cities of refuge, various beliefs, and the concepts of *mana* and the *ʻaumakua* (Fornander 1969).

The Development Period, believed under Kirch's new concept to have occurred from A. D. 1100 to 1350, brought an evolution of traditional tools, including a variation of the adze (*koʻi*), and some new Hawaiian inventions such as the two-piece fishhook and the octopus-lure breadloaf sinker. That was followed by the Expansion Period (A. D. 1350 to 1650) which saw greater social stratification, intensive land modification, and population growth. This period was also the setting for the second major migration to Hawaiʻi, this time from Tahiti. Also established during this period was the *ahupuaʻa*, a land-use concept that incorporated all of the eco-zones from the mountains to the shore and beyond. The usually wedge-shaped *ahupuaʻa* provided a diverse subsistence resource base (Hommon 1986) and added another component to what was already becoming a well-stratified society (Kirch 2012).

As population grew during the following centuries so did the reach of inland cultivation in the upland environmental zones and consequent political and social stresses. During the Proto-Historic Period (A. D. 1650-1795), wars reflective of a complex and competitive social environment are evidenced by *heiau* building. During this period, sometime during the reign of Kalaniopuʻu (A. D. 1736-1758), Kamehameha I was born in North Kohala.

Ahupuaʻa were ruled by *aliʻi ʻai ahupuaʻa* or lesser chiefs and managed by a *konohiki*. *Aliʻi* and *makaʻainana*, or commoners, were not confined to the boundaries of *ahupuaʻa* as resources were shared when a need was identified. *Ahupuaʻa* were further divided into smaller sections such as *ʻili, moʻoʻaina, paukuʻaina, kihapai, koele, hakuone* and *kuakua*. The chiefs of these land units have their allegiance to a territorial chief or *moʻi* (literally translated as king) (Hommon 1986).

Situated along the windward coast of Hawaiʻi Island, Kaiwiki is a verdant and abundant district with good rainfall, rich soils, and flowing streams. Kaiwiki Ahupuaʻa is a traditional Hawaiian land division in Hilo Moku situated along the 200-foot high cliffs of the Hāmākua coast up to 1,500 feet in elevation. Kaiwiki is translated as quick sea (Pukui et al 1974:71). Traditional settlement patterns in Kaiwiki are more characteristic of those along the Hāmākua coast than of lowland Hilo (Cordy 2000:44). There are no legendary places mentioned in moʻolelo concerning Kaiwiki and its immediate environs. According to Maly:

> The lands of Kaiwiki were named for Kaiwi-kî-a-ola an ʻōlohe instructor, who was the husband of Honoliʻi, and grandfather of Kīkoʻakapuna. Kaiwiki's foremost students were: Pau and Kekaʻa (brothers whose names combined to become Paukaʻa), Pueopākū, Pāpʻi-nui-a-kou (Pāpaʻikou), Waiāhole, and Kaʻieʻie-lulu-ka-iʻa (Kaʻieʻie). Ahupuaʻa and site features along this coastline are named for these ʻōlohe, and it was their custom to waylay all who traveled along their trails (Maly 1993:59).

No published prehistoric accounts of Kaiwiki are recorded by Kamakau (1992), Iʻi (1993), Kalakaua (1990), or Fornander (1996). Kaiwiki appears to have been sparsely populated and there is little traditional information in the form of *mele*, *oli* or *ʻōlelo* concerning the area's inhabitants or happenings. Nevertheless, it is clear from work in similar areas of Hawaiʻi that different elevations of the ahupuaʻa comprised various social-ecological zones that had profound consequences for not only resources but also the sacredness of the landscape. The inland zones, or *wao*, are stratified by variations in elevation and rainfall, and are considered as a region all their own. As Handy et al. (1991:56) explained:

> *Wao* means the wild—a place distant and not often penetrated by man. The *wao laʻau* is the inland forested region, often a veritable jungle, which surmounts the upland *kula* slopes on every major island of the chain, reaching up to very high elevations especially on Kauai, Maui, and Hawaii. The Hawaiians recognized and named many divisions or aspects of the *wao*: first, the *wao kanaka*, the reaches most accessible, and most valuable, to man (*kanaka*); and above that, denser and at higher elevations, the *wao akua*, forest of the gods, remote, awesome, seldom penetrated, source of supernatural influences, both evil and beneficent. The *wao kele*, or *wao maʻu kele*, was the rain forest. Here grew giant trees and tree ferns (*ʻamaʻu*) under almost perpetual cloud and rain. The *wao kanaka* and the *wao laʻau* provided man with the hard wood of the *koa* for spears, utensils, and logs for boat hulls; pandanus leaves (*lau hala*) for thatch and mats; bark of the *mamaki* tree for making tapa cloth; candlenuts (*kukui*) for oil and lights; wild yams and roots for famine time; sandalwood, prized when shaved or ground as a sweet scent for bedding and stored garments. These and innumerable other materials were sought and found and worked by man in or from the *wao*.

Traditional life in Hawaiʻi' took a sharp turn on January 18, 1778 with the arrival of British Capt. James Cook in the islands. On a return trip to Hawaiʻi ten months later, Kamehameha visited Cook aboard his ship the *Resolution* off the east coast of Maui and helped Cook navigate his way to Hawaiʻi Island. Cook exchanged gifts with Kalaniopuʻu at Kealakekua Bay the following January and Cook left Hawaiʻi in February. However, Cook's ship then sustained damage to a mast in a severe storm off Kohala and returned to Kealakekua, setting the stage for his death on the shores of the bay.

During the Proto-Historic Period there was a continuation of the trend toward intensification of agriculture, *aliʻi*-controlled aquaculture, settling of upland areas and development of traditional oral history. The *Ku* cult, *luakini heiau* and the *kapu* system were at their peaks, but the influence of western civilization was being felt in the introduction of trade for profit and a market-system economy. By 1810, the sandalwood trade established by Europeans and Americans twenty years earlier was flourishing. That

contributed to the breakdown of the traditional subsistence system, as farmers and fishermen were required to toil at logging, which resulted in food shortages and a decline in population.

The rampant sandalwood trade resulted in the first Hawaiian national debt, as promissory notes and levies granted by American traders were enforced by American warships. The assimilation of western ways continued with the short-lived whaling industry to the production of sugar cane, which was more lucrative but carried a heavy environmental price.

Following the death of Kamehameha I in 1819, the customary relaxing of *kapu* took place. But with the introduction of Christianity shortly thereafter, his successor, Kamehameha II, renounced the traditional religion and ordered that *heiau* structures either be destroyed or left to deteriorate. The family worship of *ʻaumakua* images was allowed to continue.

As with prehistoric accounts, very few historic accounts of the area exist. William Ellis traveled by canoe from Hilo to Laupāhoehoe where he disembarked and continued on foot to Humuʻula along the tree line at the northern foot of Mauna Kea (Ellis 2004:341-344). He travelled by canoe because the road along the cliffs was told to be too rough and passed through many deep gulches. Ellis states that the cliffs between Hilo and Laupāhoehoe were dotted with plantations. Their canoe passed more than fifty ravines in the several hours it took them to travel the twenty-five or so miles between Hilo and Laupāhoehoe. He noted that none of ravines had a place for their canoe to land without being swamped in the surf. No mention is made of Kaiwiki Ahupuaʻa, though he passed it by canoe on the way to Laupāhoehoe.

The *Mahele ʻAina* took place in 1848, placing all land in Hawaiʻi into three categories: Crown Lands, Government Lands and Konohiki Lands. Ownership rights were "subject to the rights of the native tenants," or those individuals who lived on the land and worked it for their subsistence and for their chiefs. Native tenants could claim and acquire title to *kuleana* parcels that they actively lived on or farmed at the time of the Māhele. Much of Kaiwiki Ahupuaʻa was awarded to Crown Prince William Pitt Leleiohoku (Land Claim Award 9971H). Three smaller awards were made to Pakele (LCA9928), Kaainoa (LCA5007), and Kaheana (LCA7852). No Land Commission awards were made within or near the Huff property. In later decades, the Huff property and surrounding lands were all land grants awarded primarily to farmers of Portuguese descent. The 19.89-acre parcel where the project area is located was awarded in October 1902 to Antones Swaris Da Mail, Jr. for $159.12 as Land Grant 4647.

By as early as the 1850s, the cultivation of sugar cane was becoming an important economic activity that also transformed land use in many districts of the Hawaiian Islands. This included much of South Hilo. Following the signing of the 1875 Treaty of Reciprocity, a free-trade agreement between the United States and the Kingdom of Hawaiʻi that guaranteed a duty-free market for Hawaiian sugar in exchange for special economic privileges for the United States, a number of new sugar plantations incorporated in the Islands. Hawaiʻi County Planning records show that the property was owned by the Mauna Kea Agribusiness Company, Inc, then by C. Brewer and Company. For over fifty years the property was used for agriculture. Beginning in the 1970s sugar acreage in Hawaiʻi began to rapidly decline, culminating in the closure in the 1990s of the last plantations on the island.

With a century of reliance on sugar cane as the mainstay of the economy suddenly gone, the former plantation communities – including upper Kaiwiki - were left essentially without an economic mainstay. Ranching and farming of diversified crops varying from silage corn to cacao to mushrooms to tea have occupied some of the lands and employ growing numbers of workers. Tourism based on the attractions in and near Honokaʻa and Honomū also provides local jobs. Despite this, it would appear that most residents either commute the five miles to Hilo or have independent, often web-based businesses, or subsist mostly on retirement or trust income.

For long-time residents, a major issue of this transformation has been maintenance of the shoreline and forest access formerly enjoyed as part of the lifestyle of the plantation community. Hunting and fishing remain important subsistence and social activities that are being jeopardized by deteriorating roads, new fences and gates, and no-trespassing signs.

Despite changes, there is a feeling of continuity and heritage in this community. In the words of the draft Hāmākua Community Development Plan (Hawaiʻi County Planning Department 2018: 20):

> The region referred to as Hamakua stretches along north of Hilo along the upright cliffs (Hilo Palikū) to the majestic, historic valley of Waipiʻo and up the slopes to the sacred summit of Mauna Kea. It is against this sweeping, lush green landscape that the people of the Hamakua region have flourished for generations. The region was historically renowned as a powerful religious, economic, and demographic center of Hawaiʻi Island and from early times, the region was known for its agriculture. One cannot truly understand Hamakua's people without appreciating the legacy that agriculture has stamped on this land and its people.
>
> For some, Hamakua is a place where their ancestors flourished for centuries and for others, agricultural employment drew their ancestors to emigrate from foreign lands. Here they raised their children and learned to love the land and sea as their own. Still others have come in search of a simpler way of life, drawn by the beauty of the land and a host of personal stories that testify to the magical attraction that draws people to places where they feel at home. Together, these groups form the modern communities of Hamakua.
>
> Regardless of their background, the people of Hamakua share a deep appreciation for the historical heritage of their small towns and highly value preserving an ʻohana-centered community that emphasizes quality of life, neighborhood cooperation, and the aloha spirit. The people of Hamakua recognize that their future is tied to the preservation of their way of life and the natural and cultural resources that have sustained them for generations.

Archaeological Investigations and Resources

As discussed in Appendix 2, project archaeologists at Scientific Consultant Services reviewed previous archaeological studies conducted in East Hawaiʻi to generate a working model for the types and density of

features that could be expected on the project site. Traditional settlement patterns in Kaiwiki are more characteristic of those along the Hāmākua coast than of lowland Hilo (Cordy 2000:44). The upland forest areas of Hilo and Hamakua were used traditionally for catching birds and gathering forest resources, both of which are transitory activities that are unlikely to have left a substantial, or easily recognizable, archaeological record. Early archaeological studies conducted in the area by various parties in the early 20th century did not locate any *heiau* or significant cultural resources in the area on and around the project site. In modern times, there appear to have been no archaeological inventory surveys (AIS) conducted off of Kaiwiki Road. It was concluded that if archaeological sites were located on the project site, they would be related to pre-Contact temporary habitation and forest resource extraction, as well as Historic-era farming and ranching. Pre-Contact era features might include terraces, enclosures, rock mounds, and possibly trails.

Senior Archaeologist Glenn Escott, M.A. conducted the field inspection on October 9, 2017. A series of northwest/southeast transects spaced 3 meters apart were walked across the five-acre project area. One hundred percent of the five-acre project area was surveyed. Ground cover consisted of primarily of mown grass and ground visibility was very good. Mā‘ili Stream and its banks are outside the boundaries of disturbance for the project site, but this wooded area was surveyed anyway to help determine the likelihood that archaeological sites once existed on the project site itself prior to the intense disturbance of agriculture, including crops and livestock. No archaeological features, feature remains, or artifacts were located on five-acre project site, nor were any found on the stream banks. The field inspection survey concluded that there are no archaeological sites or features in the 5.0-acre project area and that there will be no effect to historic properties posed by any proposed work in association with the construction and use of the home and garden.

The survey was provided to the DLNR State Historic Preservation Division (SHPD) for their review and comment on June 18, 2018. On August 10, 2018, SHPD concurred with the finding of no historic properties affected (see letter at beginning of Appendix 2). Although no archaeological sites or other historic properties appear to present, the applicants are aware that in the unlikely event that any unanticipated archaeological resources are unearthed within the project site during the proposed development activities, work in the immediate vicinity of those resources by them or their contractors should be halted and SHPD should be contacted in compliance with Hawai‘i Administrative Rules 13§13-280.

Consultation and Cultural Informant Interviews

SCS, Inc contacted ten individuals who, either work for the Office of Hawaiian Affairs, are SHPD personnel, are familiar with the project area lands through cultural, professional, or historical work, or are long-time residents of the area, request information about cultural practices in the Kaiwiki area. Consultation was sought from Kamaile Puluole-Mitchell, OHA East Hawai‘i Representative; Shane Palacat-Nelsen, OHA West Hawai‘i Representative; Jordan Kea Calpito, SHPD Burial Sites Specialist; Sean Naleimaile, State Historic Preservation Division (SHPD) Assistant Archaeologist; Nalei Pate-Kahakalau, Chairman of the Hawai‘i Island Burial Council (HIBC); Randy Waiola Higa, HIBC Member;

Kalena Blakemore, HIBC Member; Jackson Bauer, Nā Ala Hele Trail and Access Specialist; Moana Rowland, Nā Ala Hele Abstractor; and longtime Kaiwiki resident Noe Noe Wong-Wilson. Public notices were also published in the Office of Hawaiian Affairs *Ka Wai Ola* Newspaper, the *Honolulu Star-Advertiser* and the *Hawai'i Tribune Herald*.

Three individuals responded to inquires but were not aware of cultural practices associated with Kaiwiki. SHPD Burial Sites Specialist Jordan Calpito spoke with a friend who is familiar with the history of Kaiwiki, but he did not offer any information concerning Kaiwiki. The public notices also did not generate responses. The lack of information regarding cultural practices in upland Kaiwiki is not surprising, as the upland region of Kaiwiki are far from known habitation centers along the coast.

Cultural Resources and Practices

Investigations of the property and its history along with consultation did not reveal any cultural resources or practices on the project site itself. Prior to European contact, it is possible that this upland region was infrequently visited by bird hunters, canoe builders and those collecting upland forest plants. The lack of trails depicted on early Historic era survey maps suggest the area was only visited infrequently. In addition, it is likely that canoe builders could find koa trees to carve their canoes at lower elevations, making it possible to port the finished canoes from areas closer to the coast. Upland Kaiwiki remained an isolated forest area until after the Māhele when the land was subdivided and sold for cattle ranching, sugarcane agricultural and homesteads. No consulted individuals with ties to and history with the area had any specific information concerning this area, and no archaeological features are present. Streams are present on the border of the area of the property that will be used for the home, garden and orchards, but the stream will not be affected by any aspect of the proposed action. No gathering of plant or animal material is noted from the property.

Impacts to and Mitigation for Cultural Resources and Practices

Given the above consultation and assessment, it was the conclusion of the cultural impact assessment that the proposed development of a single-family residence and garden on the project site would not result in impacts to any traditionally valued cultural or historical resources nor will it impact any traditional cultural practices or beliefs. The Draft EA was distributed to agencies and groups who might have knowledge in order to confirm this finding.

Archaeological Investigations and Resources

As discussed in Appendix 2, project archaeologists at Scientific Consultant Services reviewed previous archaeological studies conducted in East Hawai'i to generate a working model for the types and density of features that could be expected on the project site. Traditional settlement patterns in Kaiwiki are more characteristic of those along the Hāmākua Coast than of lowland Hilo (Cordy 2000:44). The upland forest areas of Hilo and Hāmākua were traditionally used for catching birds and gathering forest resources, both of which are transitory activities that are unlikely to have left a substantial, or easily recognizable,

archaeological record. Archaeological studies conducted in the area by various parties in the early 20th century did not locate any *heiau* or significant cultural resources on or near the project site. In modern times, there appear to have been no archaeological inventory surveys (AIS) conducted for properties off Kaiwiki Road. It was concluded that if archaeological sites were located on the project site, they would be related to pre-Contact temporary habitation and forest resource extraction, as well as Historic-era farming and ranching. Pre-Contact era features might include terraces, enclosures, rock mounds, and possibly trails.

Senior Archaeologist Glenn Escott, M.A. conducted the field inspection on October 9, 2017. A series of northwest/southeast transects spaced 3 meters apart were walked across the five-acre project area. One hundred percent of the 5-acre project area was surveyed. Ground cover consisted of primarily of mown grass and ground visibility was very good. Mā‘ili Stream and its banks are outside the boundaries of disturbance for the project site, but this wooded area was surveyed anyway to help determine the likelihood that archaeological sites once existed on the project site itself prior to the intense disturbance of agriculture, including crops and livestock raising. No archaeological features, feature remains, or artifacts were located on five-acre project site nor on the stream banks. The field inspection survey concluded that there are no archaeological sites or features in the 5.0-acre project area and that there will be no effect to historic properties posed by any proposed work in association with the construction and use of the home and garden.

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3.3 Public Roads, Services and Utilities

3.3.1 Roads and Access

Existing Environment, Impacts and Mitigation Measures

The sole road access to the project site is via an existing short driveway that extends south from Kaiwiki Road, which is unpaved in this area (see Figure 2 for ground and aerial photos). The existing driveway that currently extends to the proposed house site has previously been and improved with gravel but left unpaved. The driveway will be improved with additional gravel and be expanded to include an unpaved parking and turn-around area.

3.3.2 Public Utilities and Services

Environmental Setting, Impacts and Mitigation Measures

Ground and rooftop-mounted solar photovoltaic panels together with a backup generator will provide electricity and a satellite dish would provide telecommunications. There will be no extension of electric lines from Kaiwiki Road.

Domestic water will be supplied via a catchment system directly adjacent to the home (see Figure 3 for location). The proposed storage is expected to be more than adequate to meet the expected demand, based on the owner‘s expected use of less than 300 gallons per day.

Wastewater will be treated with a septic system in conformance with State Department of Health regulations (see Figure 3 for location). No parks, schools or other public facilities are present nearby. Police, fire and emergency medical services are available from stations about eight road miles away in Hilo. For onsite fire protection, the applicant proposes use of the water tanks.

There will be no adverse impact to any public or private utilities. The addition of one single-family home will have no measurable adverse impact to or additional demand on public facilities such as schools, police or fire services, or parks. The Huff ‘Ohana acknowledge and understand that this lot, along with most other residences in the rural areas of the South Hilo District, is not located within a mile of emergency services.

3.4 Secondary and Cumulative Impacts

Due to its small scale, the proposed project would not produce any major secondary impacts, such as population changes or effects on public facilities.

Cumulative impacts result when implementation of several projects that individually have limited impacts combine to produce more severe impacts or conflicts in mitigation measures. The County of Hawai‘i occasionally performs road maintenance on Kaiwiki Road. No substantial government or private projects such as roadways, schools, businesses, or subdivisions, are known to be occurring or in planning for this portion of South Hilo. There are several hundred private lots that take access of the six-mile long Kaiwiki Road. At any given time, a home or agricultural structure or communications facility may be undergoing maintenance or construction, and occasionally there are two or more minor projects occurring at the same time. The adverse effects of building a single-family residence in this context are very minor and involve temporary disturbances to air quality, noise, traffic and visual quality during construction. It should again be noted that the proposed home is in a somewhat isolated, sparsely populated area, and no accumulation of adverse construction effects would be expected. Other than the precautions for preventing adverse impacts during construction listed above in Sections 3.1.3 and 3.1.6, no special mitigation measures should be required to counteract the small adverse cumulative effect.

3.5 Required Permits and Approvals

County of Hawai'i:

Plan Approval and Grubbing, Grading, and Building Permits

State of Hawai'i:

Conservation District Use Permit Wastewater System Approval

3.6 Consistency with Government Plans and Policies

3.6.1 Hawai'i County General Plan

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 property as Open. The *General Plan* is organized into 13 elements, with policies, objectives, standards, and principles for each. There are also discussions of the specific applicability of each element to the nine judicial districts comprising the County of Hawai'i. 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 Hawaii.
(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 construction and occupation of a single-family home would be 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.

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 construction and occupation of a single-family home 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 agricultural and recreational uses in the area. Pertinent environmental regulations would be followed, including those for mitigation of 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: An archaeological survey determined that no historic sites were present. There are no known cultural resources or known or expected cultural uses on the lot; access to traditional forest resources and hunting 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 proposed home site, turnaround area and driveway, and garden area, which comprise the small area planned for modification, are within Zone X, or areas outside of the 500-year floodplain as determined by detailed methods in the Flood Insurance Rate Maps (FIRM). 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: Natural resources will not be affected the proposed action, and there would be very minimal 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.

HĀMĀKUA COMMUNITY DEVELOPMENT PLAN

The Hāmākua Community Development Plan (CDP) planning area encompasses not only the judicial district of Hāmākua, but also that of North Hilo, and a portion of the South Hilo district commonly referred to as Rural South Hilo (Wainaku to Hakalau. It was developed under the framework of the February 2005 County of Hawai‘i General Plan and was adopted by the Hawaii County Council in August 2018 as Ordinance 2018-78.

Community Development Plans are intended to translate broad General Plan Goals, Policies, and Standards into implementation actions as they apply to specific geographical regions around the County. CDPs are also intended to serve as a forum for community input into land-use, delivery of government services and any other matters relating to the planning area.

The Hāmākua CDP does not specify land use per se on the property, but has policies relevant to construction of a single-family home in certain aspirational priorities for natural and cultural resources and community infrastructure:

- Protects coastal areas, agricultural land, and mauka forests from development
- Protects open space, areas with natural beauty, and scenic view planes
- Guides the development of programs to strengthen protections for coastal and agricultural lands as well as open space and view planes
- Preserves historic resources
- Ensures appropriate public access to the shoreline and mauka forests
- Guides the development of a regional network of trails
- Guides collaborative stewardship and enhancement of coastal and forest ecosystems, cultural resources, agricultural lands, public access, and trails
- Concentrates future development in the existing towns, villages, and subdivisions
- Supports the preservation of village and town character and guides the enhancement of communities’ unique sense of place

Discussion: The proposed single-family home would not represent development of *mauka* forest lands, as the property was subdivided in 1902 to Antones Swaris Da Mail, Jr. as Land Grant 4647 for farming and residential purposes. A home and garden on this lot fulfill the purpose of this rural subdivision. No pristine native vegetation, rare species, forest resources would be affected. The home and garden on this secluded site would have no adverse effect on natural beauty and scenic view planes. No historic properties are affected, and there would be impact to the access to the forest. Occupation of the home would promote additional patronage of local businesses in the rural South Hilo area, helping to preserve the quality of life and economy. The construction of a single-family home here would be consistent with the CDP.

3.6.2 Conservation District

The State Land Use District for the Ramos property is Conservation. Its subzone is Resource, for which, according to Hawai‘i Administrative Rules (HAR) §13-5-15, a single-family residence is an identified use. Any proposed use must undergo an examination for its consistency with the goals and rules of this district and subzone. The applicant has concurrently prepared a Conservation District Use Application (CDUA), to which this EA is an appendix. The CDUA includes a detailed evaluation of the consistency of the project with the criteria of the Conservation District permit process. Briefly, the following individual consistency criteria should be noted:

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

The development of the single-family residence is in conformance with the purpose of the Conservation District. It is an identified use within the Conservation District, requiring a Board Permit for such use. The owner is committed to conserve, protect and preserve the natural features on the subject property. Due to the careful and limited nature of the proposed development, there would be no significant impacts to the natural or cultural resources of the area.

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 develop, with proper management, areas to ensure sustained use of the natural resources of those areas."* A single-family residence is an identified use in the Resource subzone under HAR 13-5-24, R-8. The proposed home conforms to the design standards in 13-5-41 and will ensure the sustained use of the natural resources in the project area by mitigating potential impacts, as outlined in this EA.

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 objectives, policies and guidelines of the Coastal Zone Management (CZM) program contained in Chapter 205A, Hawai‘i Revised Statutes (HRS), are focused on the preservation, protection, and where possible, the restoration of the natural resources of the coastal zone in Hawai‘i. The proposed land use is outside the Special Management Area (SMA) that lies near the shoreline itself and is thus not subject to County SMA rules. Furthermore, the use complies with all CZM provisions and guidelines. The property is 1,840 feet above sea level and well removed from the coast and will not affect beaches, recreation, or access. Best Management Practices to avoid polluted runoff will protect streams and thus any indirect impact to coastal biota, water quality or ecosystems. No impact to economic uses or management of the coastal zone would occur. Based on the lack of impact to any aspect of coastal resources, the proposed action would be fully compliant with the provisions and guidelines contained in Chapter 205A pertaining to Coast Zone Management.

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

Because of the relatively minor nature of the project and the lack of threatened or endangered plant species or pristine native ecosystems, the proposed single-family residence is not likely to cause adverse biological impacts. Impacts to the island wide-ranging endangered Hawaiian hoary bat will be avoided through timing of vegetation removal. The proposed action will also have no impact on the public's current access to or use of the forest reserve or any other public area.

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 use is consistent with single-family residential use in the area. The proposed home will be a single-story, 1,240-square foot (sf) structure and outside the flood zone. It will be in area not readily visible to any important public vantage point. This identified use, which conforms to the design standards in HAR 13-5-41, will ensure the sustained use of the natural resources in the project area by mitigating impacts. The use will not adversely affect the surrounding properties or how these properties are utilized. This land use will be attractive and compatible with the area, as there are scattered single-family residences on other lots on Kaiwiki Road.

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;

The proposed use of the subject property for a single-family residence will help conserve, protect and preserve the natural features 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 residence.

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

The proposed single-family residence will not be detrimental to the public health, safety, and welfare.

PART 4: DETERMINATION, FINDINGS AND REASONS

4.1 Determination

The applicant expects that the State of Hawai‘i, Department of Land and Natural Resources, 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.

4.2 Findings and Supporting Reasons

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

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

1. *Irrevocably commit a natural, cultural, or historic resource.* No valuable natural or cultural resource would be committed or lost. The property is a periodically mown pasture with hedgerows of non-native trees and shrubs, with only a few individuals of very common native plants present. No native ecosystems would be adversely affected. No adverse impact upon endangered species would occur. An archaeological inventory survey has determined that no historic sites are present on the property or would be otherwise be affected. No valuable cultural resources and practices such as forest access, fishing, gathering, hunting, or access to ceremonial sites would be affected in any way.

2. *Curtail the range of beneficial uses of the environment.* No restriction of beneficial uses would occur by residential use on this lot.

3. *Conflict with the State’s environmental policies or long-term environmental goals established by law*. The State’s long-term environmental policies are set forth in Chapter 344, HRS. The broad goals of this policy are to conserve natural resources and enhance the quality of life. The project is environmentally benign and minor, and it is thus consistent with all elements of the State’s long-term environmental policies.

4. *Have a substantial adverse effect on the economic welfare, social welfare, or cultural practices of the community and State.* The project would not have any substantial effect on the economic or social

welfare of the Big Island community or the State of Hawai‘i.

5. *Have a substantial adverse effect on public health.* The project would not affect public health and safety in any way. Wastewater will be disposed of in conformance with State Department of Health regulations.

6. *Involve adverse secondary impacts, such as population changes or effects on public facilities*. The small scale of the proposed project would not produce any major secondary impacts, such as population changes or effects on public facilities.

7. *Involve a substantial degradation of environmental quality*. The project is minor and environmentally benign, and thus it would not contribute to environmental degradation.

8. *Be individually limited but cumulatively have substantial adverse effect upon the environment or involves a commitment for larger actions.* The adverse effects of building a single-family residence are limited very minor and temporary disturbance to traffic, air quality, noise, and visual quality during construction. This area is fairly isolated from sensitive receptors. The County of Hawai‘i occasionally performs road maintenance on Kaiwiki Road. There are no substantial government or private projects in construction or planning, and no accumulation of adverse construction effects would be expected. Other than the precautions for preventing adverse effects during construction listed above, no special mitigation measures should be required to counteract the small adverse cumulative effect.

9. *Have a substantial adverse effect on a rare, threatened, or endangered species, or its habitat.* Thorough survey has determined that no endangered plant species are present. Other than Hawaiian hoary bats and Hawaiian hawks, island wide-ranging species that will experience no adverse impacts due to mitigation in the form of timing of vegetation removal and/or hawk nest survey, no rare, threatened or endangered species of fauna are known to exist on or near the project site, and none would be affected by any project activities.

10. *Have a substantial adverse effect on 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 would be mitigated. The context of the property’s location, with no residences, parks, or other sensitive uses nearby, will help avoid noise impacts. Erosion and sedimentation impacts will be avoided by implementation of Best Management Practices during grading, which will occur in a very limited area.

11. *Have a substantial adverse effect on or be likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, sea level rise exposure area, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters.* The proposed home site is not located in a flood zone or any other hazardous area, and it would not affect any such area. The home is more than 1,840 feet above sea level and will not be affected directly by sea level rise. The project has adapted to climate change by accounting for the potential for larger storms, through

reinforcing the gravel driveway, minimizing hard surfaces that generate runoff in heavy rainfall and siting the home within an area with no potential for treefall.

12. *Have a substantial adverse effect on scenic vistas and viewplanes, during day or night, identified in county or state plans or studies.* No scenic views are located nearby or would be affected in any way. The attractive design of the home, combined with a context in which the home would not be visible from public vantage points, would ensure that the scenery of the project area would not be affected. Only minor exterior lighting is planned, and it will be shielded to protect dark skies and transiting seabirds.

13. *Require substantial energy consumption or emit substantial greenhouse gases*. Negligible amounts of energy input and greenhouse gas emission would be required for construction and occupation of the residence. Electrical power will be provided via a solar photovoltaic (PV) system. The production of at least some of owners' food on the property as well as planting of tree crops and native trees will reduce the carbon footprint.

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Environmental Assessment
Huff Single-Family Residence
in the Conservation District at Kaiwiki

APPENDIX 1a

Comments in Response to Early Consultation

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Harry Kim
Mayor

Darren J. Rosario
Fire Chief

Lance S. Uchida
Deputy Fire Chief

County of Hawai'i
HAWAI'I FIRE DEPARTMENT
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February 4, 2019

Ron Terry, Principal
Geometrician Associates, LLC
P.O. Box 396
Hilo, Hawai'i 96721

Dear Mr. Ron Terry:

SUBJECT: Early Consultation for Environmental Assessment for Proposed Single-Family Residence in the Conservation District, South Hilo District, Island of Hawai'i TMK (3) 2-6-011-026

In regards to the above-mentioned Environmental Assessment Early Consultation application, 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 Hawai'i 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

From: Fujio, Mary <Mary.Fujio@hawaiicounty.gov>
Sent: Thursday, February 21, 2019 9:30 AM
To: rterry@hawaii.rr.com
Subject: Early Consultation for EA (Atkins, TMK 2-6-011-026)

Good morning –

Our Solid Waste Division and Wastewater Division have reviewed your Early Consultation for EA notice dated 1/29/19, and neither division has any comments on the project. We do not need to receive notice of the availability of the Draft EA.

Thank you.

Mary E. Fujio
Private Secretary to William Kucharski, Director
and Diane Noda, Deputy Director
Department of Environmental Management
County of Hawai'i
345 Kekūanāo'a Street, Suite 41
Hilo, Hawai'i 96720
Telephone: (808) 961-8099

Harry Kim
Mayor

Wil Okabe
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

February 25, 2019

ATTN: RON TERRY
GEOMETRICIAN ASSOCIATES, LLC.
P.O. BOX 396
HILO, HAWAII 96721
(via email to rterry@hawaii.rr.com)

SUBJECT: EARLY CONSULTATION FOR ENVIRONMENTAL ASSESSMENT FOR PROPOSED SINGLE FAMILY RESIDENCE IN THE CONSERVATION DISTRICT
SOUTH HILO DISTRICT, ISLAND OF HAWAII
TMK: (3) 2-6-011:026

We received the subject dated January 31, 2019 and have the following comments:

The subject parcel is in an area designated as Zone X on the Flood Insurance Rate Map (FIRM) by the Federal Emergency Management Agency (FEMA). Zone X is an area determined to be outside the 500-year floodplain.

All activities shall comply with the requirements of Hawaii County Code, Chapter 10, Erosion and Sedimentary Control. Agricultural operations may qualify for a conservation program with the applicable soil and water conservation district. An approved conservation program would be an exclusion to Chapter 10.

Construction within the County right-of-way shall comply with HCC, Chapter 22, County Streets.

Should there be any questions concerning this matter, please contact Ms. Robyn Matsumoto in our Engineering Division at (808) 961-8924.

BEN ISHII, Division Chief
Engineering Division

RM

Harry Kim
Mayor

Paul K. Ferreira
Police Chief

Kenneth Bugado Jr.
Deputy Police Chief

County of Hawai`i

POLICE DEPARTMENT
349 Kapiolani Street • Hilo, Hawai`i 96720-3998
(808) 935-3311 • Fax (808) 961-8865

February 21, 2019

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

Dear Mr. Terry:

SUBJECT: EARLY CONSULTATION FOR ENVIRONMENTAL ASSESSMENT FOR PROPOSED SINGLE-FAMILY RESIDENCE IN THE CONSERVATION DISTRICT, SOUTH HILO DISTRICT, ISLAND OF HAWAI'I
TMK (3RD) 2-6-011-026

Staff, upon reviewing the provided documents, does not anticipate any significant impact to traffic and/or other public safety concerns.

Thank you for allowing us the opportunity to comment. We will not be requesting a copy of the assessment once completed.

If you have any questions, please contact Captain Kenneth Quiocho, South Hilo Patrol, at (808)961-2214 or via e-mail at kenneth.quiocho@hawaiicounty.gov.

Sincerely,

(for) MITCHELL K. KANEHAILUA, JR.
ASSISTANT POLICE CHIEF
AREA I OPERATIONS BUREAU

KQ:lli/19HQ0148

DAVID Y. IGE
GOVERNOR OF HAWAII

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

March 1, 2019

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

via email: rterry@hawaii.rr.com

Dear Mr. Terry:

SUBJECT: Early Consultation for Environmental Assessment for Proposed Single-Family Residence in the Conservation District located in South Hilo, Island of Hawaii; TMK: (3) 2-6-011:026 on behalf of **Hayden & Kaitlyn Atkins**

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

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

Sincerely,

Russell Y. Tsuji
Land Administrator

Enclosures
cc: Central Files

DAVID Y. IGE
GOVERNOR OF HAWAII

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

February 6, 2019

MEMORANDUM

FROM

TO

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

RECEIVED
LAND DIVISION
2019 FEB 25 AM 11: 19
DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

FROM: Russell Y. Tsuji, Land Administrator
SUBJECT: Early Consultation for Environmental Assessment for Proposed Single-Family Residence in the Conservation District
LOCATION: South Hilo, Island of Hawaii; TMK: (3) 2-6-011:026
APPLICANT: Geometrician Associates, LLC on behalf of **Hayden & Kaitlyn Atkins**

Transmitted for your review and comment is information on the above-referenced subject matter. We would appreciate your comments by **February 27, 2019.**

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

( ) We have no objections.
( ) We have no comments.
(v) Comments are attached.

Signed: _____
Print Name: Carty S. Chang, Chief Engineer
Date: 2/22/19

Attachments
cc: Central Files

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/Russell Y. Tsuji
Ref: Early Consultation for Environmental Assessment for Proposed Single-Family Residence in the Conservation District
Location: South Hilo, Island of Hawaii; TMK: (3) 2-6-011:026
Applicant: Geometrician Associates, LLC on behalf of Hayden & Kaitlyn Atkins

COMMENTS

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

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

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

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

Signed: _____
CARTY S. CHANG, CHIEF ENGINEER

Date: 2/22/19

19507

DAVID Y. IGE
GOVERNOR OF HAWAII

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

February 6, 2019

MEMORANDUM

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

FR:

RECEIVED
LAND DIVISION
2019 FEB 20 AM 10:53
DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

FROM: Russell Y. Tsuji, Land Administrator
SUBJECT: Early Consultation for Environmental Assessment for Proposed Single-Family Residence in the Conservation District
LOCATION: South Hilo, Island of Hawaii; TMK: (3) 2-6-011:026
APPLICANT: Geometrician Associates, LLC on behalf of **Hayden & Kaitlyn Atkins**

Transmitted for your review and comment is information on the above-referenced subject matter. We would appreciate your comments by **February 27, 2019.**

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

( ) We have no objections.
(✓) We have no comments.
( ) Comments are attached.

Signed: _____

Print Name: **DAVID G. SMITH, Administrator**

Date: 2/14/19

Attachments
cc: Central Files

DAVID Y. IGE
GOVERNOR OF HAWAII

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

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STATE OF HAWAII
LAND DIVISION

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

RECEIVED
2019 FEB -6 AM 11:30
COMMISSION ON WATER RESOURCE MANAGEMENT

February 6, 2019

MEMORANDUM

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

FROM: Russell Y. Tsuji, Land Administrator
SUBJECT: Early Consultation for Environmental Assessment for Proposed Single-Family Residence in the Conservation District
LOCATION: South Hilo, Island of Hawaii; TMK: (3) 2-6-011:026
APPLICANT: Geometrician Associates, LLC on behalf of **Hayden & Kaitlyn Atkins**

Transmitted for your review and comment is information on the above-referenced subject matter. We would appreciate your comments by **February 27, 2019.**

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

( ) We have no objections.
( ) We have no comments.
(x) Comments are attached.

Signed: /s/ M. Kaleo Manuel

Print Name: Deputy Director

Date: February 22, 2019

Attachments
cc: Central Files

FILE ID: RFD.503218
DOC ID: 211751

DAVID Y. IGE
GOVERNOR OF HAWAII

SUZANNE D. CASE
CHAIRPERSON

BRUCE S. ANDERSON, PH.D.
WILLIAM D. BALFOUR, JR.
KAMANA BEAMER, PH.D.
MICHAEL G. BUCK
NEIL J. HANNAHS
PAUL J. MEYER

M. KALEO MANUEL
DEPUTY DIRECTOR

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

February 22, 2019

REF: RFD.5032.8

TO: Mr. Russell Tsuji, Administrator
Land Division

FROM: M. Kaleo Manuel, Deputy Director
Commission on Water Resource Management

SUBJECT: Early Consultation for Environmental Assessment for Proposed Single-Family Residence in the Conservation District

FILE NO.: RFD.5032.8
TMK NO.: (3) 2-6-011:026

Thank you for the opportunity to review the subject document. The Commission on Water Resource Management (CWRM) is the agency responsible for administering the State Water Code (Code). Under the Code, all waters of the State are held in trust for the benefit of the citizens of the State, therefore all water use is subject to legally protected water rights. CWRM strongly promotes the efficient use of Hawaii's water resources through conservation measures and appropriate resource management. For more information, please refer to the State Water Code, Chapter 174C, Hawaii Revised Statutes, and Hawaii Administrative Rules, Chapters 13-167 to 13-171. These documents are available via the Internet at http://dlnr.hawaii.gov/cwrm.

Our comments related to water resources are checked off below.

☐ 1. We recommend coordination with the county to incorporate this project into the county's Water Use and Development Plan. Please contact the respective Planning Department and/or Department of Water Supply for further information.

☐ 2. We recommend coordination with the Engineering Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.

☐ 3. We recommend coordination with the Hawaii Department of Agriculture (HDOA) to incorporate the reclassification of agricultural zoned land and the redistribution of agricultural resources into the State's Agricultural Water Use and Development Plan (AWUDP). Please contact the HDOA for more information.

☐ 4. We recommend that water efficient fixtures be installed and water efficient practices implemented throughout the development to reduce the increased demand on the area's freshwater resources. Reducing the water usage of a home or building may earn credit towards Leadership in Energy and Environmental Design (LEED) certification. More information on LEED certification is available at http://www.usgbc.org/leed. A listing of fixtures certified by the EAP as having high water efficiency can be found at http://www.epa.gov/watersense.

☐ 5. We recommend the use of best management practices (BMP) for stormwater management to minimize the impact of the project to the existing area's hydrology while maintaining on-site infiltration and preventing polluted runoff from storm events. Stormwater management BMPs may earn credit toward LEED certification. More information on stormwater BMPs can be found at http://planning.hawaii.gov/czm/initiatives/low-impact-development/

☐ 6. We recommend the use of alternative water sources, wherever practicable.

☐ 7. We recommend participating in the Hawaii Green Business Program, that assists and recognizes businesses that strive to operate in an environmentally and socially responsible manner. The program description can be found online at http://energy.hawaii.gov/green-business-program.

☐ 8. We recommend adopting landscape irrigation conservation best management practices endorsed by the Landscape Industry Council of Hawaii. These practices can be found online at

http://www.hawaiiscape.com/wp-content/uploads/2013/04/LICH_Irrigation_Conservation_BMPs.pdf.

☐ 9. There may be the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.

☐ 10. The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit is required prior to use of water. The Water Use Permit may be conditioned on the requirement to use dual line water supply systems for new industrial and commercial developments.

☐ 11. A Well Construction Permit(s) is (are) are required before the commencement of any well construction work.

☐ 12. A Pump Installation Permit(s) is (are) required before ground water is developed as a source of supply for the project.

☐ 13. There is (are) well(s) located on or adjacent to this project. If wells are not planned to be used and will be affected by any new construction, they must be properly abandoned and sealed. A permit for well abandonment must be obtained.

☐ 14. Ground-water withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.

☒ 15. A Stream Channel Alteration Permit(s) is (are) required before any alteration can be made to the bed and/or banks of a steam channel.

☒ 16. A Stream Diversion Works Permit(s) is (are) required before any stream diversion works is constructed or altered.

☐ 17. A Petition to Amend the Interim Instream Flow Standard is required for any new or expanded diversion(s) of surface water.

☐ 18. The planned source of water for this project has not been identified in this report. Therefore, we cannot determine what permits or petitions are required from our office, or whether there are potential impacts to water resources.

☐ OTHER:

If you have any questions, please contact Dean Uyeno of the Commission staff at 587-0234.

MC

DAVID Y. IGE
GOVERNOR OF HAWAII

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

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2019 FEB -6 A 11: 33

DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

February 6, 2019

MEMORANDUM

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

FROM: Russell Y. Tsuji, Land Administrator
SUBJECT: Early Consultation for Environmental Assessment for Proposed Single-Family Residence in the Conservation District
LOCATION: South Hilo, Island of Hawaii; TMK: (3) 2-6-011:026
APPLICANT: Geometrician Associates, LLC on behalf of **Hayden & Kaitlyn Atkins**

Transmitted for your review and comment is information on the above-referenced subject matter. We would appreciate your comments by **February 27, 2019.**

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

( ) We have no objections.
(✓) We have no comments. - we will wait on CDUA
( ) Comments are attached.

Signed: Michael Cain

Print Name: Michael Cain

Date: 2 26 19

Attachments
cc: Central Files

DAVID Y. IGE
GOVERNOR OF HAWAII

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LAND DIVISION
2019 FEB 22 AM 10: 41
DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

2019 FEB -8 A 11: 53
RECEIVED
LAND DIVISION
HILO, HAWAII

February 6, 2019

MEMORANDUM

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

FROM: Russell Y. Tsuji, Land Administrator
SUBJECT: Early Consultation for Environmental Assessment for Proposed Single-Family Residence in the Conservation District
LOCATION: South Hilo, Island of Hawaii; TMK: (3) 2-6-011:026
APPLICANT: Geometrician Associates, LLC on behalf of **Hayden & Kaitlyn Atkins**

Transmitted for your review and comment is information on the above-referenced subject matter. We would appreciate your comments by **February 27, 2019.**

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

( ) We have no objections.
(✓) We have no comments.
( ) Comments are attached.

Signed: _____

Print Name: GORDON C. HEIT

Date: 2/19/19

Attachments
cc: Central Files

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Environmental Assessment
Huff Single-Family Residence
in the Conservation District at Kaiwiki

APPENDIX 2

Archaeological Field Inspection and SHPD Correspondence

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SCIENTIFIC CONSULTANT SERVICES Inc.
Hawai‘i Island Office: PO Box 155 Kea‘au, HI 96749

October 17, 2017

Sean Naleimaile
Hawai‘i Island Assistant Archaeologist
State Historic Preservation Division
40 Po‘okela Street
Hilo, HI 96720

Re: Archaeological Field Inspection Letter Report for 5.0 Acres of Mown Field Located on a 19.89 Acre Parcel Located in Kaiwiki Ahupua‘a, South Hilo District, Island of Hawai‘i [TMK: (3) 2-6-011:026].

Aloha e Mr. Naleimaile:

As a result of consultation with your office, Scientific Consultant Services, Inc. (SCS) conducted an archaeological field inspection of 5.0 acres of mown field to determine the presence or absence of historic properties within the surveyed area (Enclosures 1, 2, 3, and 4). The 5.0-acre field inspection project area is located on Jeffrey and Vanessa Huff’s 19.89-acre property referenced in the subject heading above. The property is bounded to the north by Kaiwiki Road and by undeveloped land on all other sides. The property owner’s mailing address is 1639 Ala Makani Place Honolulu, HI 96819. Their email address is jhuff@hawaii.rr.com.

According to information provided by Mr. Huff, the property is in the Kaiwiki Conservation District and he is preparing a Conservation District Use Application. There are two temporary storage containers in the northwest corner of the property (see Attachment 4). The field inspection was conducted as a result of consultation with your office.

Environmental Background

The property is located at 1,720 feet (524 meters) to 1,840 feet (561 meters) above mean sea level on a single Mauna Kea lava flow dated to the Pleistocene Era more, than 10,000 years before present (Wolfe and Morris 1996). Soil in the project area is Akala (rAK) series moderately well drained silty clay loam with 3 to 20% slope (Sato 1973:11). The project area ground surface is level to rolling mown grass with a moderate southeasterly slope. Annual rainfall at the property ranges from 200 to 240 inches. Mā‘ili Stream forms the south boundary of the project area and serves as the main drainage for the project area.

Plants in the project are dominated by grass varieties, *ʻuluhe* fern (*Dicranopteris linearis*), and scattered *ʻohia* (*Metrosideros plymorpha*), *waiwi* (*Psidium sp*.), *koa* (*Acacia koa*), bamboo (*Bambusa sp*.), and palm trees (Starr Environmental 2016).

Pre-Contact Era Cultural and Historical Background

Kaiwiki 3 Ahupuaʻa is a traditional Hawaiian land division in Hilo *Moku* situated along the 200 foot high cliffs of the Hāmākua coast up to 1500 feet amsl (W.E. Wall Map 1928). Kaiwiki is translated as quick sea (Pukui *et al*.1974:71). Traditional settlement patterns in Kaiwiki are more characteristic of those along the Hāmākua coast than of lowland Hilo (Cordy 2000:44). There are no legendary places mentioned in *moʻolelo* concerning Kaiwiki and its immediate environs.

According to Maly,

> The lands of Kaiwiki were named for Kaiwi-kî-a-ola an *ʻôlohe* instructor, who was the husband of Honoliʻi, and grandfather of Kîkoʻoakapuna. Kaiwiki's foremost students were: Pau and Kekaʻa (brothers whose names combined to become Paukaʻa), Pueopâkû, Pâpaʻi-nui-a-kou (Pâpaʻikou), Waiâhole, and Kaʻieʻie-lulu-ka-iʻa (Kaʻieʻie). *Ahupuaʻa* and site features along this coastline are named for these *ʻôlohe*, and it was their custom to waylay all who traveled along their trails. [Maly 1993:59].

Post-Contact Era Cultural and Historical Background

No published prehistoric accounts of Kaiwiki are recorded by Kamakau (1992), Iʻi (1993), Kalakaua (1990), or Fournander (1996). As for early historic accounts, William Ellis traveled by canoe from Hilo to Laupāhoehoe (Figure 6) where he disembarked and continued on foot to Humuʻula along the tree line at the northern foot of Mauna Kea (Ellis 2004:341-344). He travelled by canoe because the road along the cliffs was told to be too rough and passed through many deep gulches. Ellis states that the cliffs between Hilo and Laupāhoehoe were dotted with plantations. Their canoe passed more than fifty ravines in the several hours it took them to travel the twenty-five or so miles between Hilo and Laupāhoehoe. He noted that none of ravines had a place for their canoe to land without being swamped in the surf. No mention is made of Kaiwiki Ahupuaʻa, though he passed it by canoe on the way to Laupāhoehoe.

Native Testimony Before the Commission to Quiet Land Titles
With the Māhele of 1848 and the two Acts of 1850, authorizing the sale of land in fee simple to resident aliens and the award of *kuleana* lands to native tenants, land tenure in Hawaii arrived at a significant turning point (Chinen 1961:13). Much of Kaiwiki Ahupuaʻa was awarded to Crown Prince William Pitt Leleiohoku (Land Claim Award 9971H) Three smaller wards were made to Pakele (LCA9928), Kaainoa (LCA5007), and Kaheana (LCA7852). No Land Commission awards were mine within or near the project area parcel.

The project area parcel and the surrounding lands were all land grants awarded primarily to farmers of Portuguese descent (see Attachment 5). The 19.89-acre parcel where the project area is located was awarded in October 1902 to Antones Swaris Da Mail, Jr. for $159.12 as Land Grant 4647.

Modern Land-Use
Hawaiʻi County Planning records show that the property was owned by the Mauna Kea Agribusiness Company, Inc, then by C. Brewer and Company, and was then sold to private owners. The current owner, Mr. and Mrs. Huff bought the property recently from the previous owner who had owned the property for eleven years. The previous owner stated that the mown field was there when he purchased the parcel.

Previous Archaeological Studies
Early archaeological studies conducted in the area by Thrum and Stokes (Thrum 1907 and 1908, and Stokes and Dye 1991), and by A.E. Hudson (Hudson 1932) did not locate any *heiau* or significant cultural resources in the area within or around the current project area.

A single archaeological inventory survey (AIS) was conducted by Hammatt and Colin (1998) within the Ahupuaʻa of Kaiwiki 3 on the slopes of Kolekole Gulch, under and surrounding the Kolekole bridge, including the 100 feet of slopes *mauka* and *makai* of the bridge. Cement footings from the previous bridge were recorded in their report. No other cultural resources were identified during the study.

In May of 2004, Rechtman Consulting, LLC conducted an AIS on 4.5 acres [(3) 2-9-03:13, 29, and 60] in coastal Wailea Ahupuaʻa, over one kilometer northeast of the current project area (Desilets *et* al. 2004). A single site (SIHP 50-10-26-24212 consisting of a section of railroad grade and a trestle abutment were recorded. Both features were recorded as significant under Criterion D and no further work was recommended at the site (Desilets *et* al. 2004:20).

SCS, Inc. conducted an archaeological inventory survey of 3.5 acres in Kaiwiki 3 Ahupuaʻa along the Kolekole stream (Escott 2011). There were no archaeological or cultural sites identified on the project area.

Field Inspection Expectations
Based on previous archaeological studies, historical and ethnographic studies, and land-use research in the area of the property, it was expected that if archaeological sites were located on the property, they would be related to pre-Contact temporary habitation and forest resources extraction, and Historic era farming and ranching activities. Pre-Contact era features might include terraces, enclosures, rock mounds, and possibly trails.

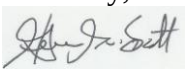
Field Inspection Methods
SCS Senior Archaeologist Glenn Escott, M.A. conducted the field inspection on October 9, 2017. A series of northwest/southeast transects spaced 3.0 meters apart were walked across the five-acre project area. Close inspection was made of the northeast bank of Mā‘ili Stream. One hundred percent of the five-acre project area was surveyed. Ground cover consisted of primarily of mown grass and ground visibility was very good.

In addition, a reconnaissance survey was made of the wooded area along the southwest bank of Mā‘ili Stream to determine if archaeological sites were present on the unimproved portion of the stream. The southwest bank is outside of the current project area and was surveyed to determine the likelihood that archaeological sites once existed on the previously improved project area. An area from the stream to roughly 20.0 meters above the stream was surveyed for the entire length of it within Parcel 026. Transects were spaced at roughly 2.0 meters apart.

Field Inspection Results
No archaeological features, feature remains, or artifacts were located on five-acre project area. In addition, no archaeological features, feature remains, or artifacts were identified along the southwest bank of the stream.

The field inspection pedestrian survey concluded that there are no archaeological sites or features in the 5.0-acre project area and that there will be no effect to historic properties posed by any proposed work at this portion of Parcel 026. SCS requests SHPD concurrence that there will be no effect to historic properties posed by future ground disturbance activities at the 5.0-acre project area.

Sincerely,



Glenn G. Escott, MA
Senior Archaeologist
Scientific Consultant Services, Inc.
PO Box 155 Kea‘au, HI 96749
808-938-0968 (cell)

Enclosures:
Enclosure 1: Hawai‘i Island Project Area Map
Enclosure 2: USGS TMK Project Area Map
Enclosure 3: USGS TMK Project Area Close Up Map
Enclosure 4: TMK Project Area Map
Enclosure 5: Aerial Photo of Project Area
Enclosure 6: Portion of Kaiwiki Homesteads Map 1915
Enclosures 7 through 22: Photographs of Survey Area

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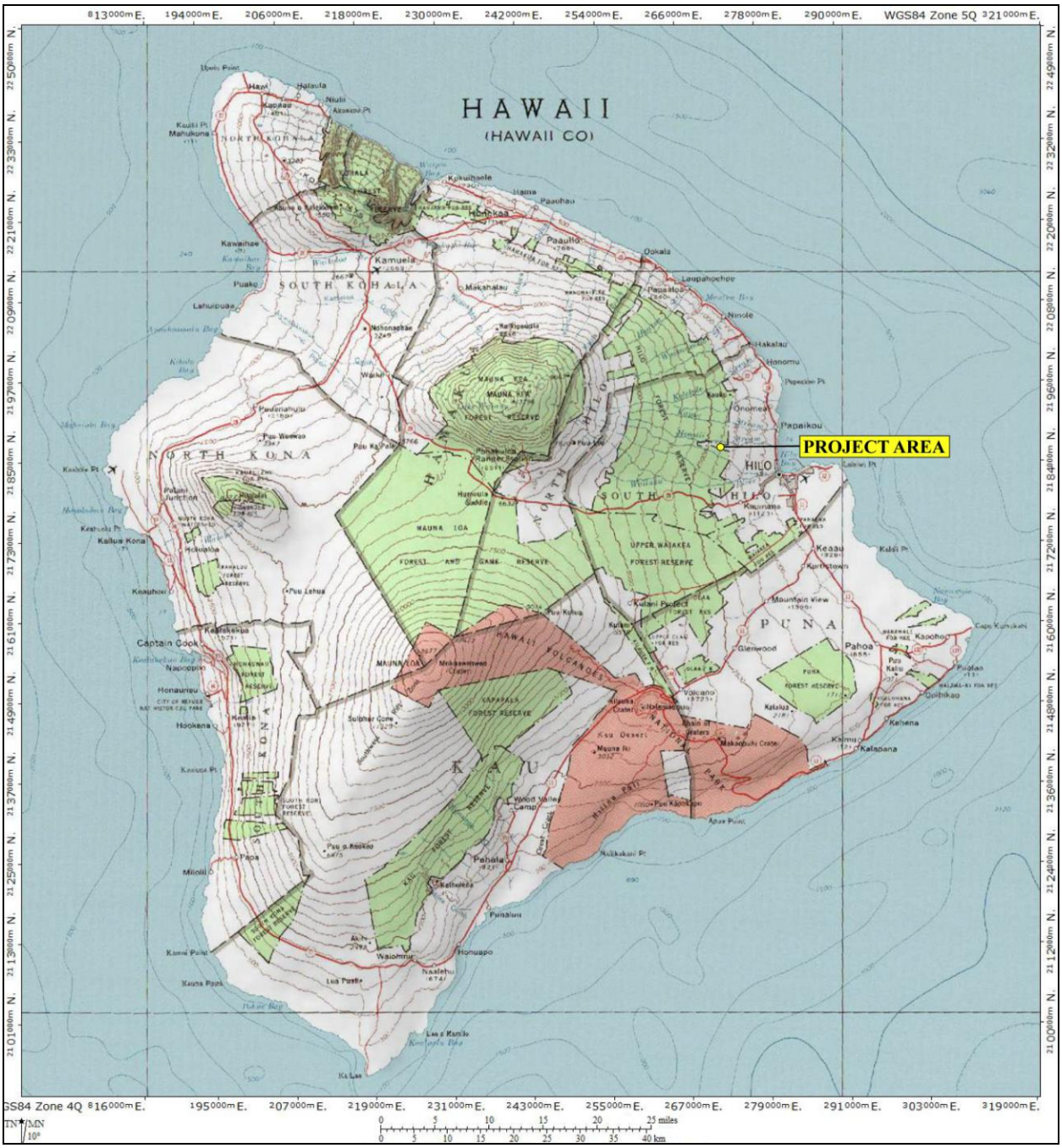
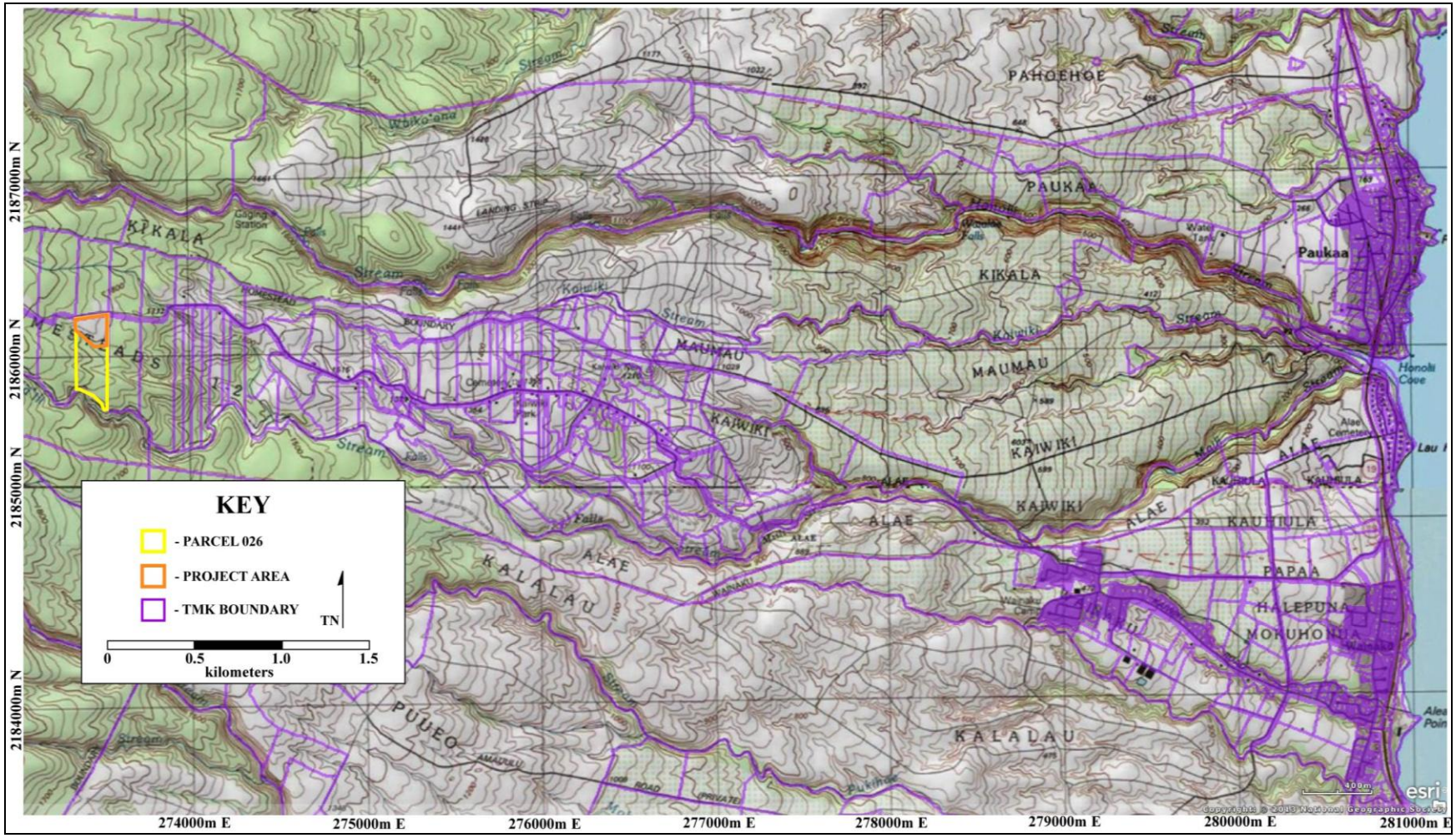
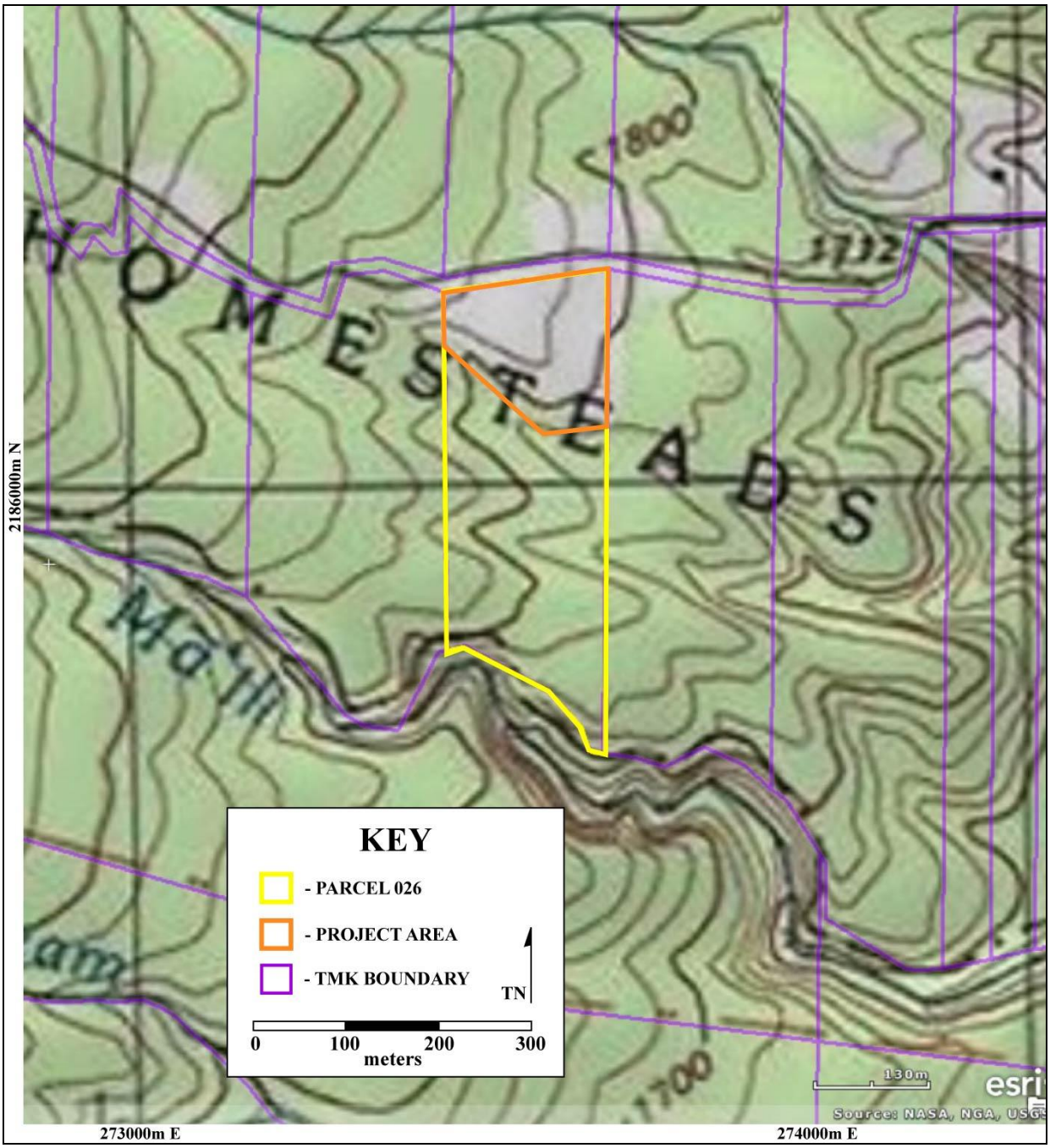


Enclosure 1: 5,500 K-Series Map of Hawai‘i Showing Location of Project Area (National Geographic Topo!, 2003. Sources: National Geographic Society, USGS).



Enclosure 2: 7.5-Minute Series USGS Topographic Map Showing Location of Parcel 0265 and Field Inspection Survey Area (ESRI, 2011. Sources: National Geographic Society, USGS. Akaka Falls Quadrangle).



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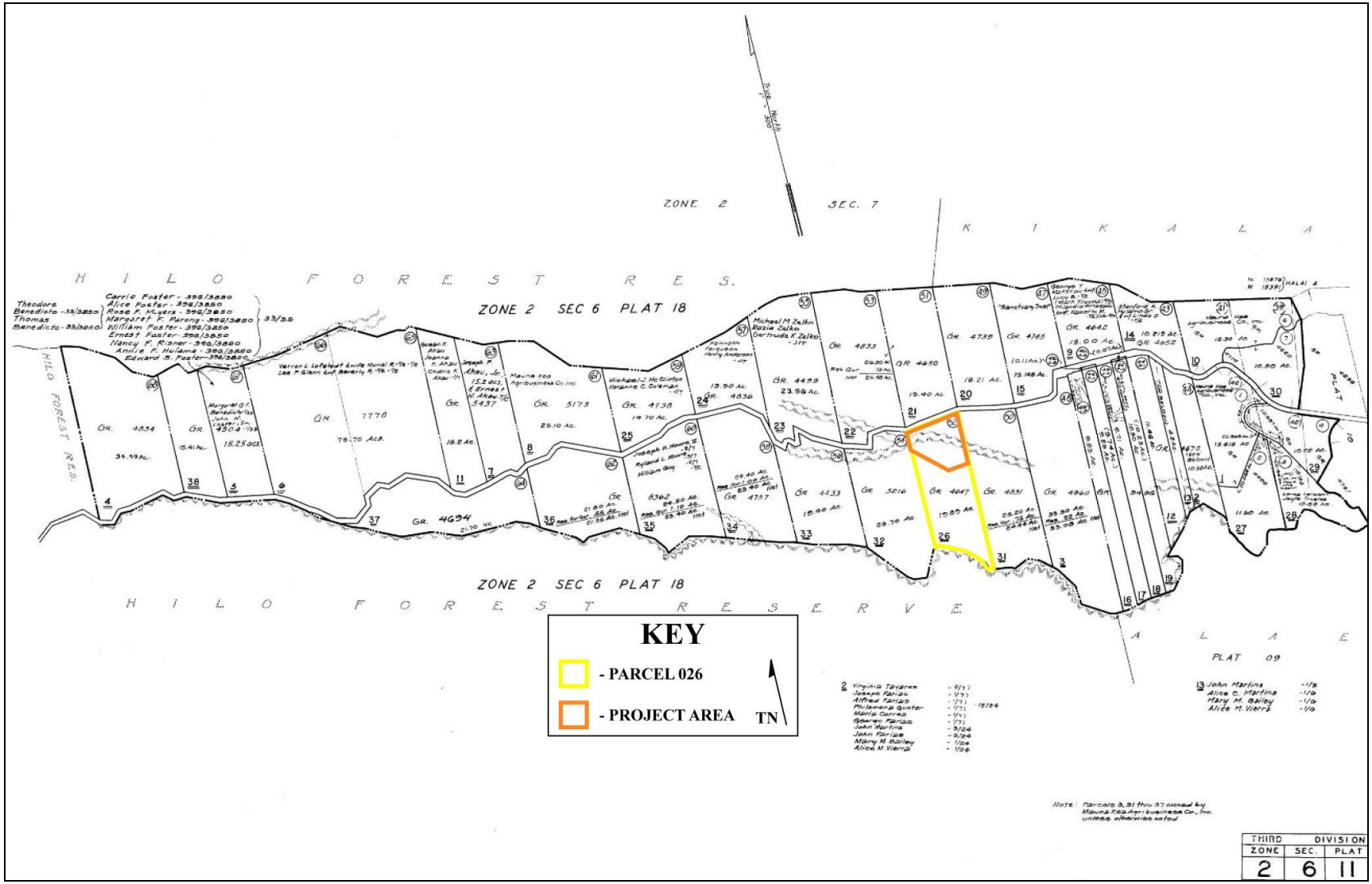
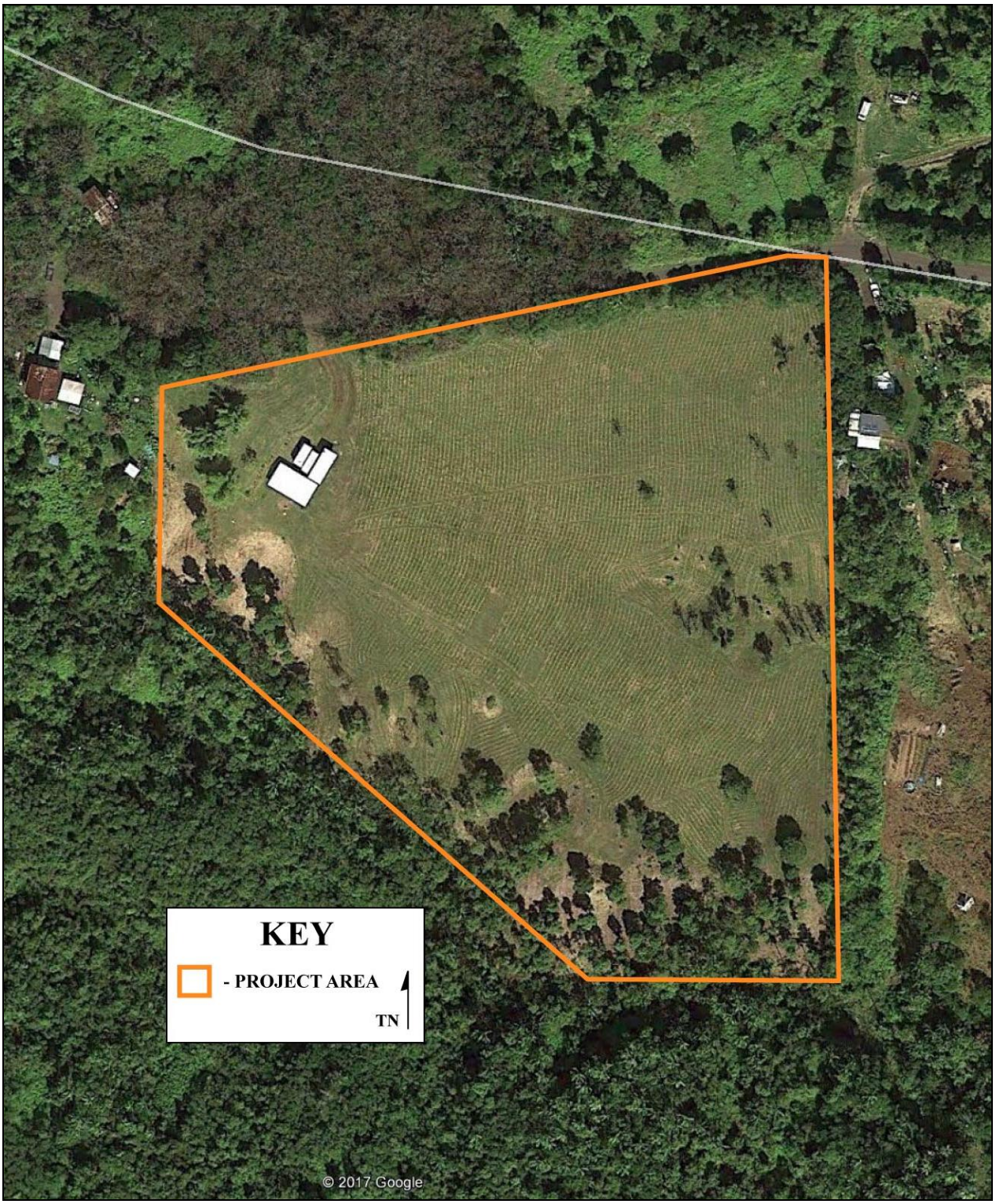
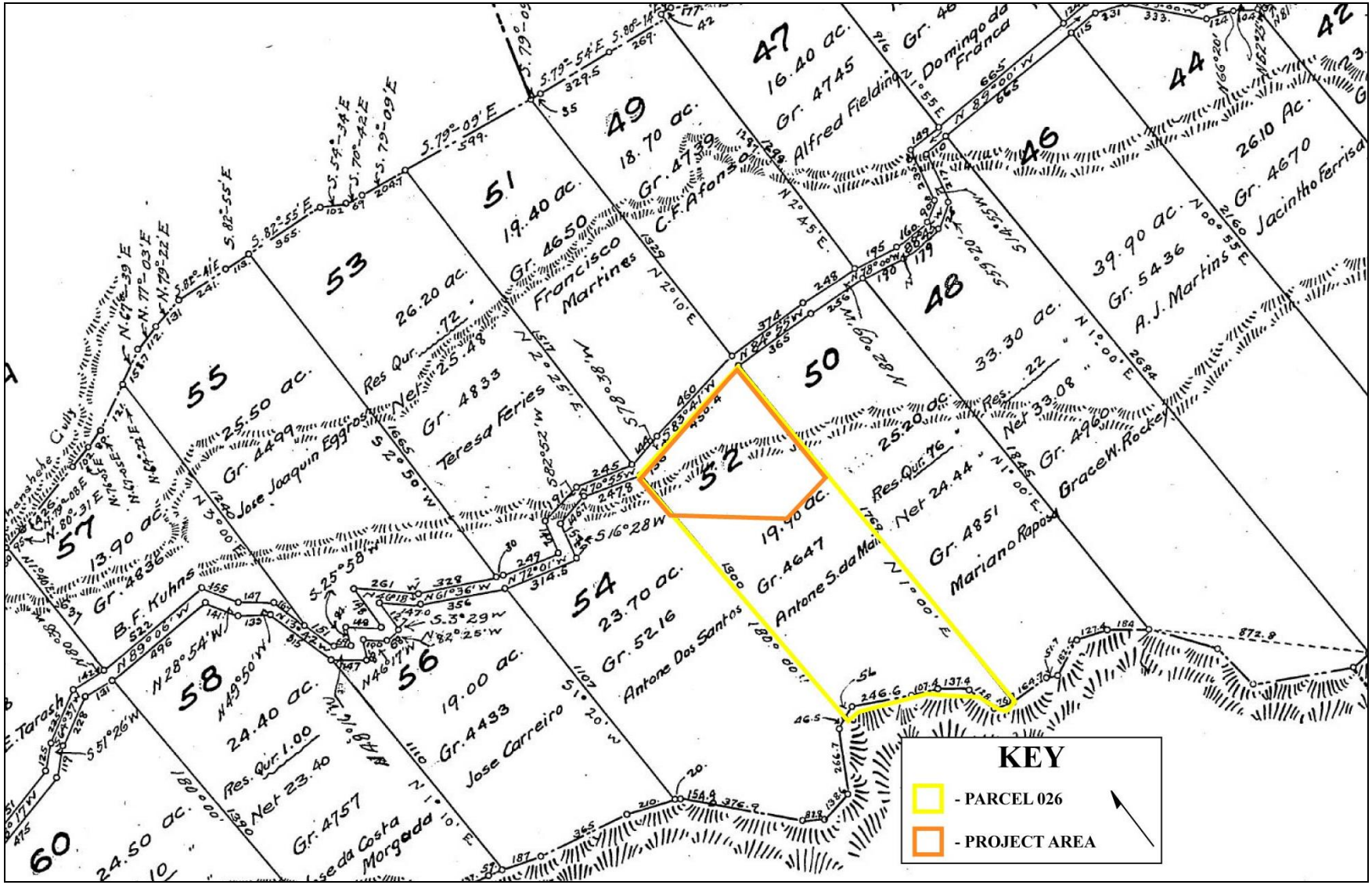


Enclosure 4: TMK: (3) 2-6-011 Map Showing Location of Parcel 026 and Field Inspection Survey Area (Hawai‘i County Planning Department, 2016).



Enclosure 5: Aerial Photograph Showing Location of Field Inspection Survey Areas (Google Earth 2017, Kaiwiki Homesteads, HI, 5Q 273419m E, 2186161m N, 2013 Image).



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Enclosure 7: Photograph of Project Area Looking North.

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Enclosure 17: Photograph of Project Area Mā‘ili Stream Northeast Bank Looking North.

Enclosure 18: Photograph of Project Area Looking Northeast.

Enclosure 19: Photograph of Project Area Looking East.

Enclosure 20: Photograph of Project Area Looking East.

Enclosure 21: Photograph of Project Area Looking Southeast.

Enclosure 22: Photograph of Project Area Looking South.

DAVID Y. IGE
GOVERNOR OF HAWAII

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

ROBERT K. MASUDA
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AQUATIC RESOURCES
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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

August 10, 2018

IN REPLY REFER TO:
LOG NO: 2018.01437
DOC NO: 1808SN07
Archaeology

Micheal Yee, Planning Director
County of Hawaii
101 Pauahi St., Suite 3
Hilo, HI 96720

Dear Mr. Yee:

SUBJECT: **Chapter 6E-42 Historic Preservation Review –**
Field Inspection Report and County of Hawaii Conservation District Use Application
Kaiwiki Ahupua'a, South Hilo District, Island of Hawai'i
TMK: (3) 2-6-011:026

Thank you for the opportunity to review the field inspection letter report titled *Archaeological Field Inspection Letter Report for 5.0-Acres of Mown Field TMK: (3) 2-6-011:026, Kaiwiki Ahupua'a, South Hilo District, Island of Hawai'i* (Escott, October 2017). In response to a County of Hawaii (COH) conservation district use application (CDUA) and in consultation with SHPD, a field inspection survey was requested to satisfy historic preservation review requirements. We received the field inspection report on June 18, 2018.

The field inspection report was prepared by Scientific Consulting Services (SCS) on behalf of the property owner, Mr. Jeffrey Huff. The applicant proposes to construct a single-family residence and associated infrastructure. The proposed project will consist of the residence, on a 5.0-acre portion of the 19.89-acre parcel. Ground disturbance will involve excavations for the foundations and infrastructure.

The report indicates that a single archaeological inventory survey (AIS) (Hammatt and Colin, 1998) was conducted within the ahupua'a of Kaiwiki. Only cement footings from a bridge were identified, no additional historic properties were identified. Three additional AIS were conducted in adjacent or nearby ahupua'a. A single historic property was identified in the Desilets et al. (2004) AIS which identified a section of a railroad grade and trestle abutment (SIHP 50-10-26-241212). The site was assessed as significant under Criterion 'd" and no further work was recommended for the site. No historic properties were identified in the Escott (2011 and 2017) reports.

The field inspection involved a pedestrian survey of 100% of the current project area. No archaeological features, remains or artifacts were identified within the project area. SHPD concurs with the findings in the field inspection report.

Based on this information, SHPD's determination is **no historic properties affected**. Permitting for the subject project may proceed.

Please contact Sean Nāleimaile at (808) 933-7651 or at Sean.P.Naleimaile@hawaii.gov if you have any questions or concerns regarding this letter.

Aloha, *Alan Downer*

Alan S. Downer, PhD
Administrator, State Historic Preservation Division
Deputy State Historic Preservation Officer

cc: Christian Kay (Christian.Kay@hawaiicounty.gov)
Glenn Escott (ggescott@yahoo.com)
Jeffrey Huff (jhuff@hawaiirr.com)

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Environmental Assessment
Huff Single-Family Residence
in the Conservation District at Kaiwiki

APPENDIX 3

Cultural Impact Assessment

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SCS Project 2324-CIA-1

A CULTURAL IMPACT ASSESSMENT OF UPLANDS IN KAIWIKI AHUPUA‘A, SOUTH HILO DISTRICT, ISLAND OF HAWAI‘I [TMK: (3) 2-6-011:026]

Prepared By:
Glenn G. Escott, M.A.

FINAL REPORT
APRIL 2019

Prepared For:
Jeffrey & Vanessa Huff
1639 Ala Makani Place
Honolulu, HI 96819

SCIENTIFIC CONSULTANT SERVICES Inc.
1347 Kapi‘olani Boulevard, Suite 408 Honolulu, HI 96814
Hawai‘i Island Office: PO Box 155 Kea‘au, HI 96749

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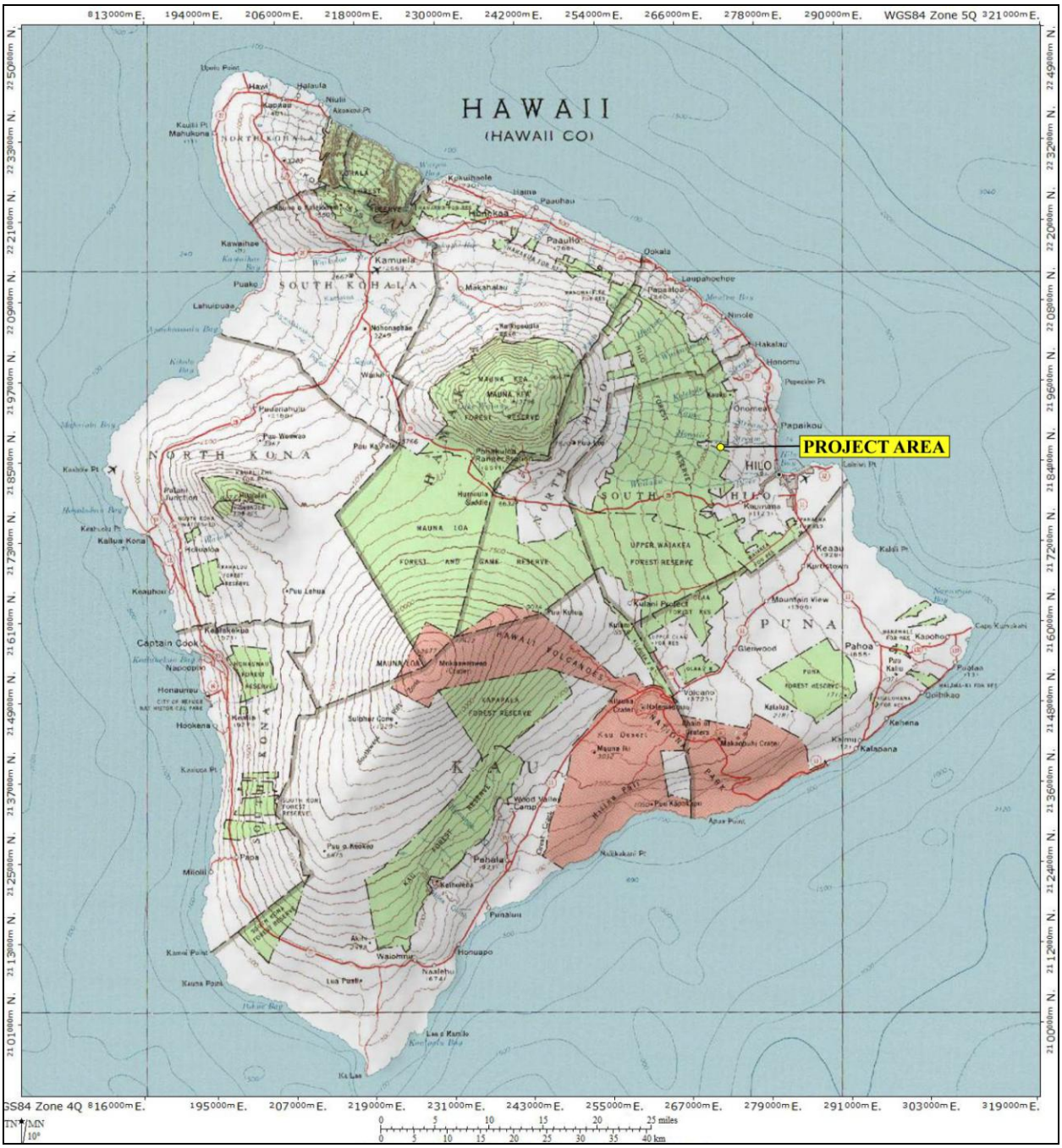
INTRODUCTION

At the request of Jeffrey and Vanessa Huff, Scientific Consultant Services, Inc. (SCS) conducted a Cultural Impact Assessment (CIA) of a 19.89-acre parcel [TMK: (3) 2-6-011:026] located in Kaiwiki Ahupuaʻa, South Hilo District, Island of Hawaiʻi (Figure 1 through Figure 5). The project area is located in the uplands of Kaiwiki between 1,720 to 1, 840 feet (524 to 561 meters) and is bounded to the north by Kaiwiki Road and by undeveloped land on all other sides. The parcel is currently undeveloped land with a small portion along Kaiwiki Road (north) that is mown grass. The property owner is proposing to build a single family home in the north portion of the property. The CIA was undertaken as part of the landowner's application for a Special Management Area (SMA) permit and Conservation District Use (CDUA) permit. The property owner's mailing address is 1639 Ala Makani Place Honolulu, HI 96819. Their email address is jhuff@hawaii.rr.com.

The Constitution of the State of Hawaiʻi clearly states the duty of the State and its agencies is to preserve, protect, and prevent interference with the traditional and customary rights of native Hawaiians. Article XII, Section 7 requires the State to "protect all rights, customarily and traditionally exercised for subsistence, cultural and religious purposes and possessed by *ahupuaʻa* tenants who are descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778" (2000). In spite of the establishment of the foreign concept of private ownership and western-style government, Kamehameha III (Kauikeaouli) preserved the people's traditional right to subsistence.

As a result, in 1850 the Hawaiian Government confirmed the traditional access rights to native Hawaiian *ahupuaʻa* tenants to gather specific natural resources for customary uses from undeveloped private property and waterways under the Hawaiʻi Revised Statutes (HRS) 7-1. In 1992, the State of Hawaiʻi Supreme Court, reaffirmed HRS 7-1 and expanded it to include, "native Hawaiian rights…may extend beyond the *ahupuaʻa* in which a native Hawaiian resides where such rights have been customarily and traditionally exercised in this manner" (Pele Defense Fund v. Paty, 73 Haw.578, 1992). Act 50, enacted by the Legislature of the State of Hawaii (2000) with House Bill 2895, relating to Environmental Impact Statements, proposes that:

> …there is a need to clarify that the preparation of environmental assessments or environmental impact statements should identify and address effects on Hawaiʻi's culture, and traditional and customary rights… [H.B. NO. 2895].



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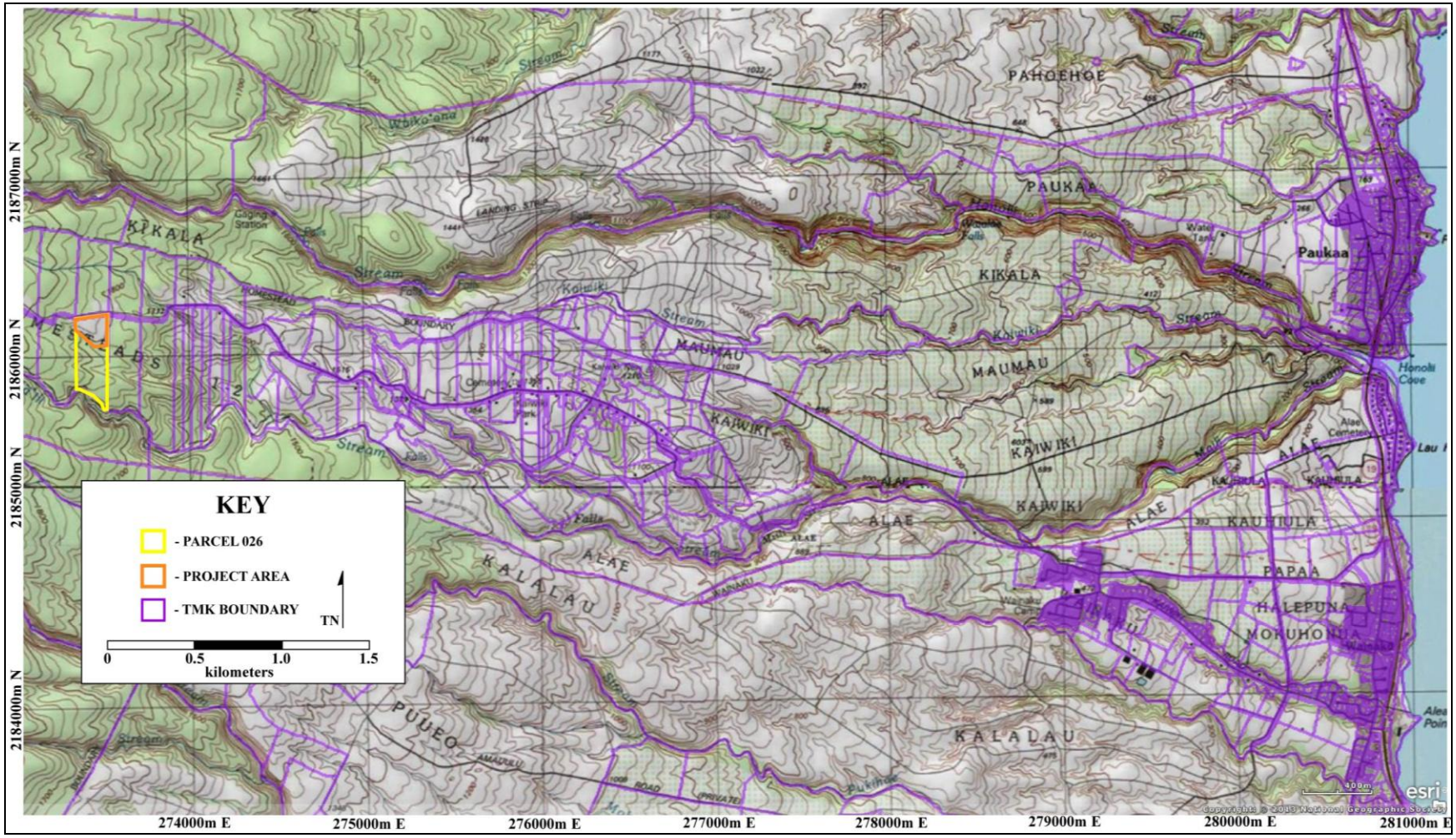

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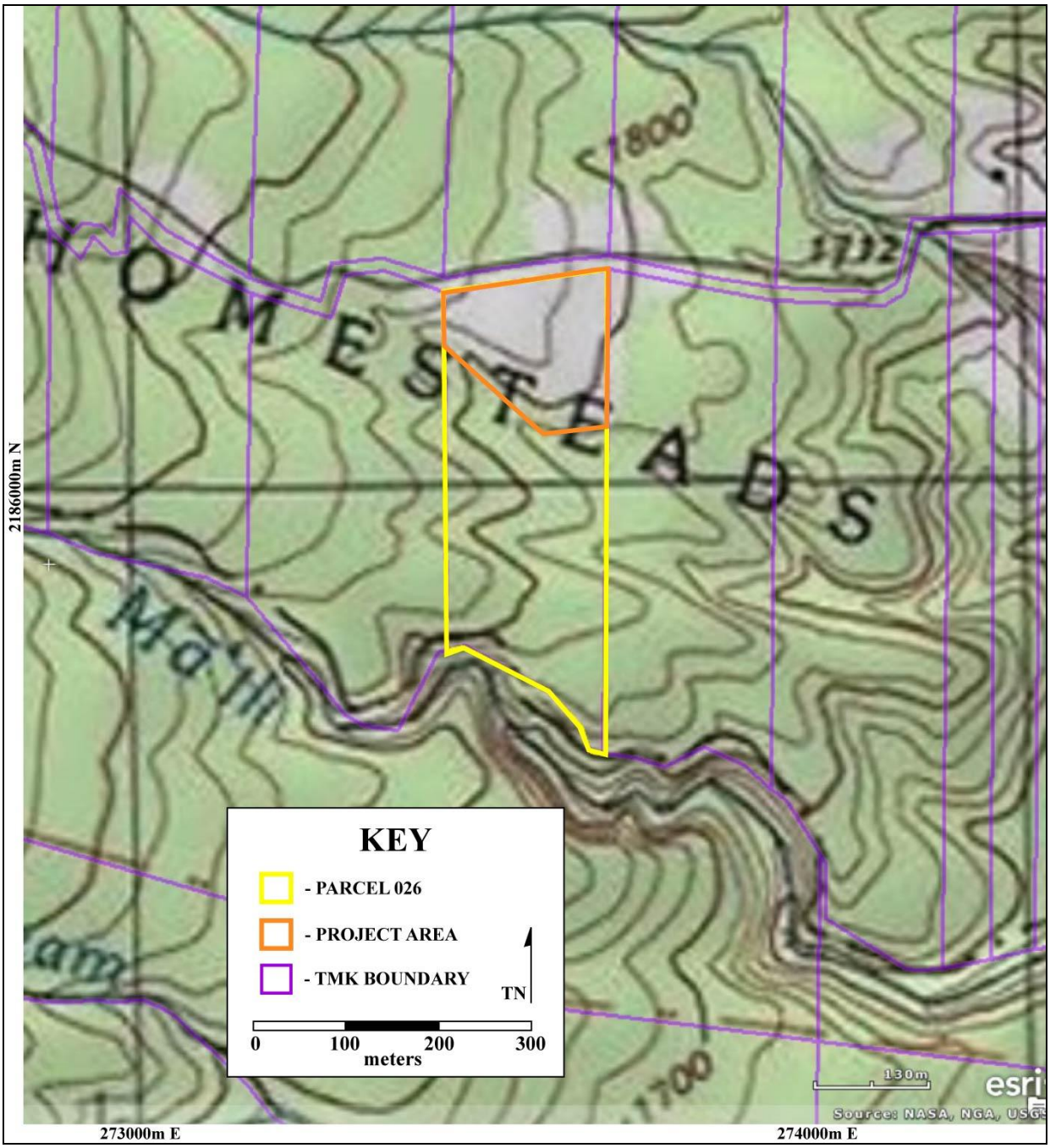

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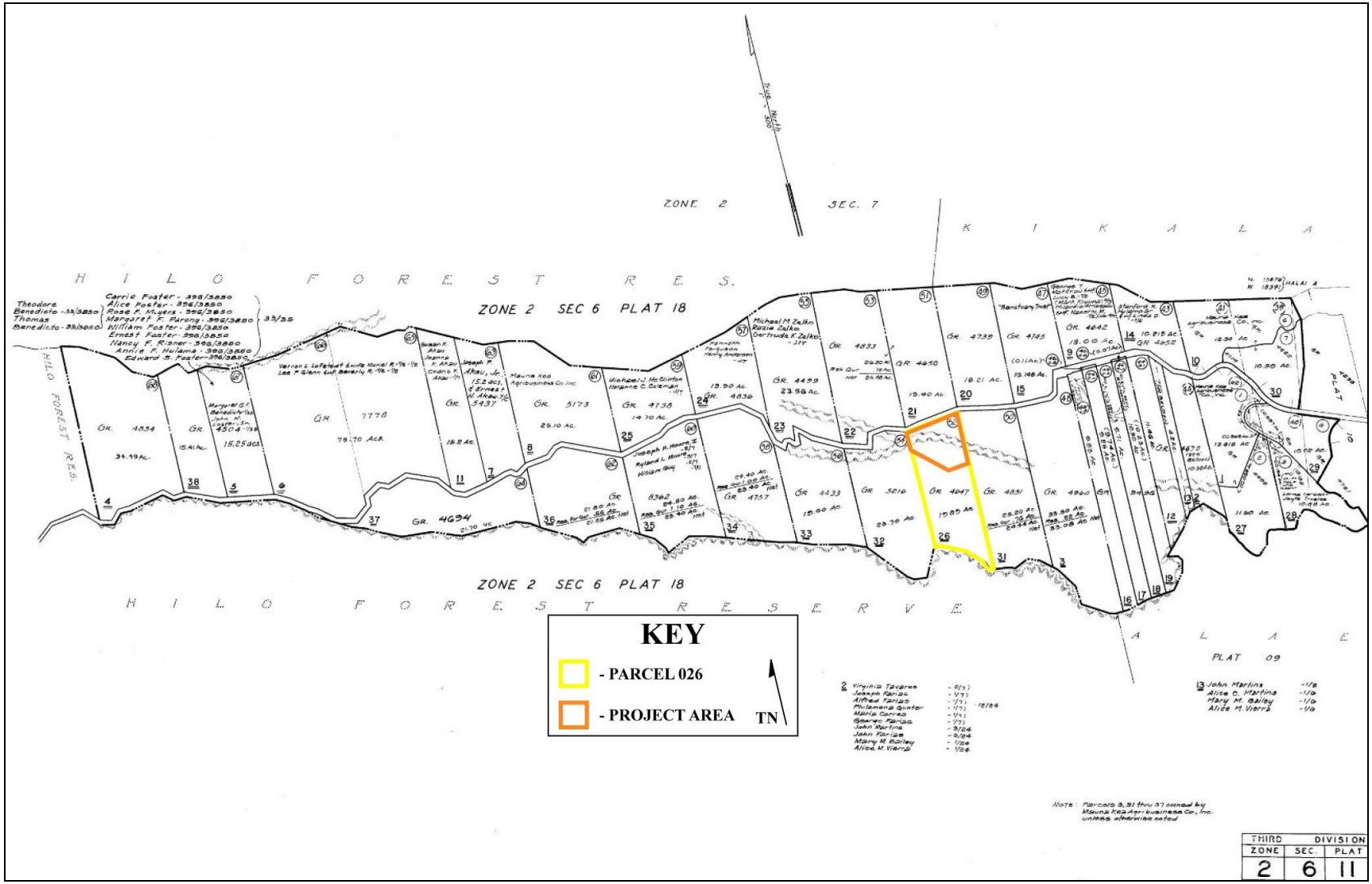

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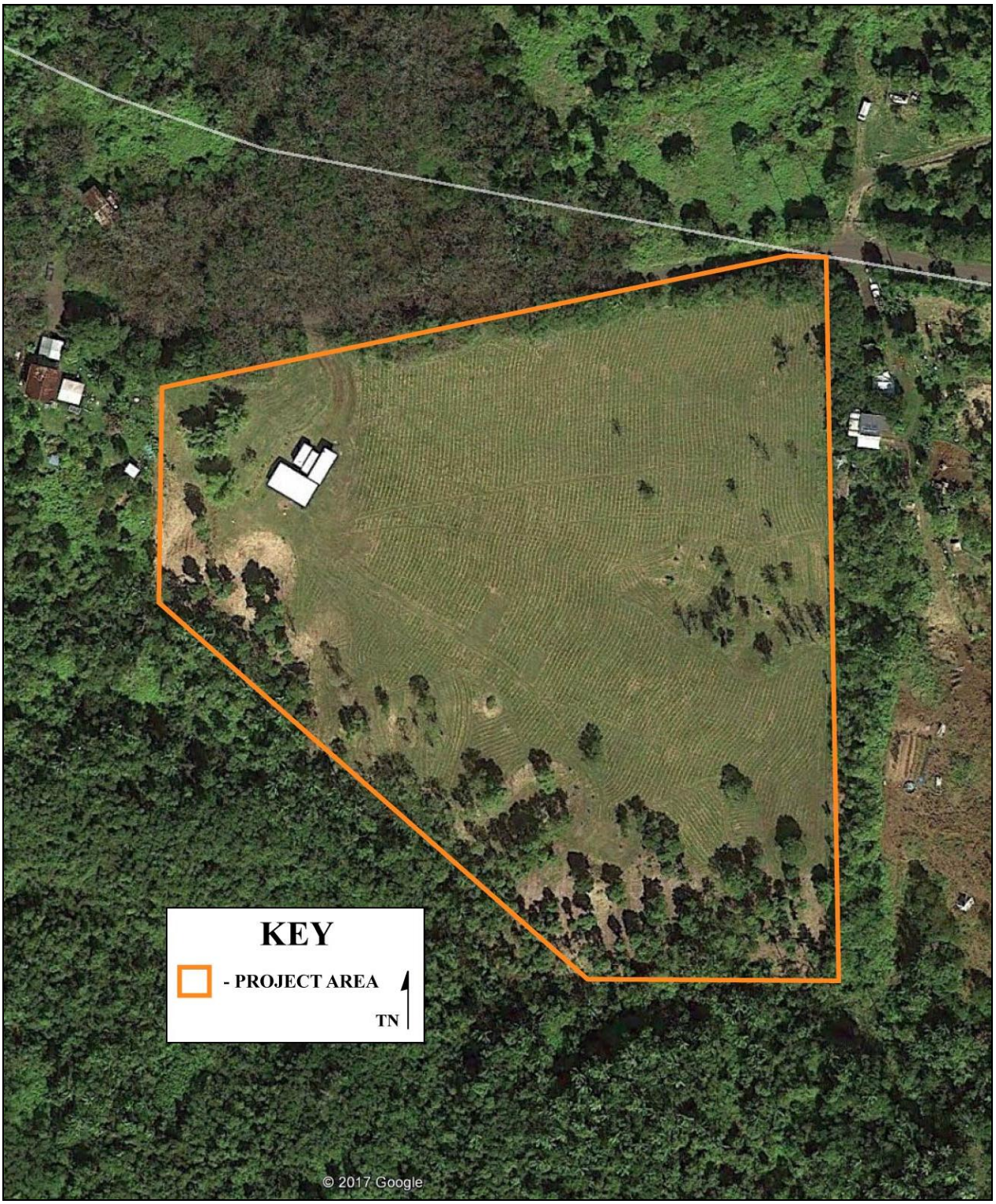

Figure 5: Aerial Photograph Showing Location of Field Inspection Survey Area (Google Earth 2017, Kaiwiki Homesteads, HI, 5Q 273419m E, 2186161m N, 2013 Image).

Act 50 requires state agencies and other developers to assess the effects of proposed land use or shoreline developments on the "cultural practices of the community and State" as part of the HRS Chapter 343 environmental review process (2001).

Its purpose has broadened, "to promote and protect cultural beliefs, practices and resources of native Hawaiians [and] other ethnic groups, and it also amends the definition of 'significant effect' to be re-defined as "the sum of effects on the quality of the environment including actions that are…contrary to the State's environmental policies…or adversely affect the economic welfare, social welfare, or cultural practices of the community and State" (H.B. 2895, Act 50, 2000).

Thus, Act 50 requires an assessment of cultural practices to be included in the Environmental Assessments and the Environmental Impact Statements, and to be taken into consideration during the planning process. The concept of geographical expansion is recognized by using, as an example, "the broad geographical area, e.g. district or *ahupua'a*" (OEQC 1997). It was decided that the process should identify 'anthropological' cultural practices, rather than 'social' cultural practices. For example, *limu* (edible seaweed) gathering would be considered an anthropological cultural practice, while a modern-day marathon would be considered a social cultural practice.

> According to the Guidelines for Assessing Cultural Impacts established by the Hawaii State Office of Environmental Quality Control (OEQC 1997): The types of cultural practices and beliefs subject to assessment may include subsistence, commercial, residential, agricultural, access-related, recreational, and religious and spiritual customs. The types of cultural resources subject to assessment may include traditional cultural properties or other types of historic sites, both manmade and natural, which support such cultural beliefs.

This Cultural Impact Assessment involves evaluating the probability of impacts on identified cultural resources, including values, rights, beliefs, objects, records, properties, and stories occurring within the project area and its vicinity (H.B. 2895, Act 50, 2000).

METHODOLOGY

This Cultural Impact Assessment was prepared in accordance with the methodology and content protocol provided in the Guidelines for Assessing Cultural Impacts (OEQC 1997). In outlining the "Cultural Impact Assessment Methodology", the OEQC states: …information may be obtained through scoping, community meetings, ethnographic interviews and oral histories… (1997).

The report contains archival and documentary research, as well as communication with organizations having knowledge of the project area, its cultural resources, and its practices and beliefs. This Cultural Impact Assessment was prepared in accordance with the methodology and content protocol provided in the Guidelines for Assessing Cultural Impacts (OEQC 1997). The assessment concerning cultural impacts should address, but not be limited to, the following matters:

(1) a discussion of the methods applied and results of consultation with individuals and organizations identified by the preparer as being familiar with cultural practices and features associated with the project area, including any constraints of limitations with might have affected the quality of the information obtained;

(2) a description of methods adopted by the preparer to identify, locate, and select the persons interviewed, including a discussion of the level of effort undertaken;

(3) ethnographic and oral history interview procedures, including the circumstances under which the interviews were conducted, and any constraints or limitations which might have affected the quality of the information obtained;

(4) biographical information concerning the individuals and organizations consulted, their particular expertise, and their historical and genealogical relationship to the project area, as well as information concerning the persons submitting information or interviewed, their particular knowledge and cultural expertise, if any, and their historical and genealogical relationship to the project area;

(5) a discussion concerning historical and cultural source materials consulted, the institutions and repositories searched, and the level of effort undertaken, as well as the particular perspective of the authors, if appropriate, any opposing views, and any other relevant constraints, limitations or biases;

(6) a discussion concerning the cultural resources, practices and beliefs identified, and for the resources and practices, their location within the broad geographical area in which the proposed action is located, as well as their direct or indirect significance or connection to the project site;

(7) a discussion concerning the nature of the cultural practices and beliefs, and the significance of the cultural resources within the project area, affected directly or indirectly by the proposed project;

(8) an explanation of confidential information that has been withheld from public disclosure in the assessment;

(9) a discussion concerning any conflicting information in regard to identified cultural resources, practices and beliefs;

(10) an analysis of the potential effect of any proposed physical alteration on cultural resources, practices or beliefs; the potential of the proposed action to isolate cultural resources, practices or beliefs from their setting; and the potential of the proposed action to introduce elements which may alter the setting in which cultural practices take place, and;

(11) the inclusion of bibliography of references, and attached records of interviews, which were allowed to be disclosed.

Based on the inclusion of the above information, assessments of the potential effects on cultural resources in the project area and recommendations for mitigation of these effects can be proposed.

ARCHIVAL RESEARCH

Archival research focused on a historical documentary study involving both published and unpublished sources. These included legendary accounts of native and early foreign writers; early historical journals and narratives; historic maps and land records such as Land Commission Awards, Royal Patent Grants, and Boundary Commission records; historic accounts, and previous archaeological project reports.

INTERVIEW METHODOLOGY

Interviews are conducted in accordance with applicable state laws and guidelines. Individuals and/or groups who have knowledge of traditional practices and beliefs associated with a project area or who know of historical properties within a project area are sought for consultation. Individuals who have particular knowledge of traditions passed down from preceding generations and a personal familiarity with the project area are invited to share their relevant information. Often people are recommended for their expertise, and indeed, organizations, such as Hawaiian Civic Clubs, the Island Branch of Office of Hawaiian Affairs (OHA), historical societies, Island Trail clubs, and Planning Commissions are depended upon

for their recommendations of suitable informants. These groups are invited to contribute their input, and suggest further avenues of inquiry, as well as specific individuals to interview.

If knowledgeable individuals are identified, personal interviews are sometimes taped and then transcribed. These draft transcripts are returned to each of the participants for their review and comments. After corrections are made, each individual signs a release form, making the information available for this study. When telephone interviews occur, a summary of the information is often sent for correction and approval, or dictated by the informant and then incorporated into the document. Key topics discussed with the interviewees vary from project to project, but usually include: personal association to the *ahupua'a*, land use in the project's vicinity; knowledge of traditional trails, gathering areas, water sources, religious sites; place names and their meanings; stories that were handed down concerning special places or events in the vicinity of the project area; evidence of previous activities identified while in the project vicinity.

In this case, letters with maps and descriptions the project area were sent to individuals and organizations whose jurisdiction includes knowledge of the area with an invitation for consultation. Consultation was sought from Kamaile Puluole-Mitchell, OHA East Hawai'i Representative; Shane Palacat-Nelsen, OHA West Hawai'i Representative; Jordan Kea Calpito, SHPD Burial Sites Specialist; Sean Naleimaile, State Historic Preservation Division (SHPD) Assistant Archaeologist; Nalei Pate-Kahakalau, Chairman of the Hawai'i Island Burial Council (HIBC); Randy Waiola Higa, HIBC Member; Kalena Blakemore, HIBC Member; Jackson Bauer, Nā Ala Hele Trail and Access Specialist; Moana Rowland, Nā Ala Hele Abstractor; and longtime Kaiwiki resident Noe Noe Wong-Wilson.

If cultural resources are identified based on the information received from these organizations and/or additional informants, an assessment of the potential effects on the identified cultural resources in the project area and recommendations for mitigation of these effects can be proposed. Public notices were published in the Honolulu Star-Advertiser, and the Hawai'i Tribune Herald on February 20th, 21st and 24th (Appendix A). Public notice was also published in the March issue of the Office of Hawaiian Affairs Ka Wai Ola Newspaper.

PROJECT AREA NATURAL ENVIRONMENT

The property is located at 1,720 feet (524 meters) to 1,840 feet (561 meters) above mean sea level on a single Mauna Kea lava flow dated to the Pleistocene Era more, than 10,000 years before present (Wolfe and Morris 1996). Soil in the project area is Akaka (rAK) series moderately well drained silty clay loam with 3 to 20% slope (Sato 1973:11). The United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (WSS) lists soil in the project area as primarily Kaiwiki silty clay loam. The project area ground surface is level to rolling mown grass with a moderate southeasterly slope. Annual rainfall at the property ranges from 200 to 240 inches. Māʻili Stream forms the south boundary of the project area and serves as the main drainage for the project area.

A 1965 USDA aerial photograph shows that the northern portion of the property was cleared and was a field prior to 1965 (Figure 6). It is possible that it is the uppermost sugarcane field, similar to the sugarcane fields further east. However, there is no remnant sugarcane in the project area, as is evident further east, and area residents stated that cane was not grown on the property. There were no structures on the property when the 1965 aerial photograph was taken and it is likely the field was used to pasture cattle.

Plants currently in the project are dominated by grass varieties, *ʻuluhe* fern (*Dicranopteris linearis*), and scattered *ʻohia* (*Metrosideros plymorpha*), *waiwi* (*Psidium sp*.), *koa* (*Acacia koa*), bamboo (*Bambusa sp*.), and palm trees (Starr Environmental 2016). The southern portion of the property is dominated by guava and *ʻuluhe* fern with smaller number of *ʻohia* and *koa*.

HISTORICAL AND CULTURAL CONTEXTS

Archaeologists have long thought Hawaiʻi Island was first settled between around A.D. 700 by people sailing from the Marquesas (Cordy 2000:104-109). Recently, there has been debate surrounding the archaeological dating of the initial settlement of Hawaiʻi. An article published in the Journal of Archaeological Science reviewing radiocarbon dates recovered at archaeological sites on the Island of Hawaiʻi suggests that, by relying on only carbon samples from short-lived plant remains, the most reliable dates point to initial Polynesian colonization of Hawaiʻi Island occurring between AD 1220 and 1261 (Rieth et al. 2011:2747).

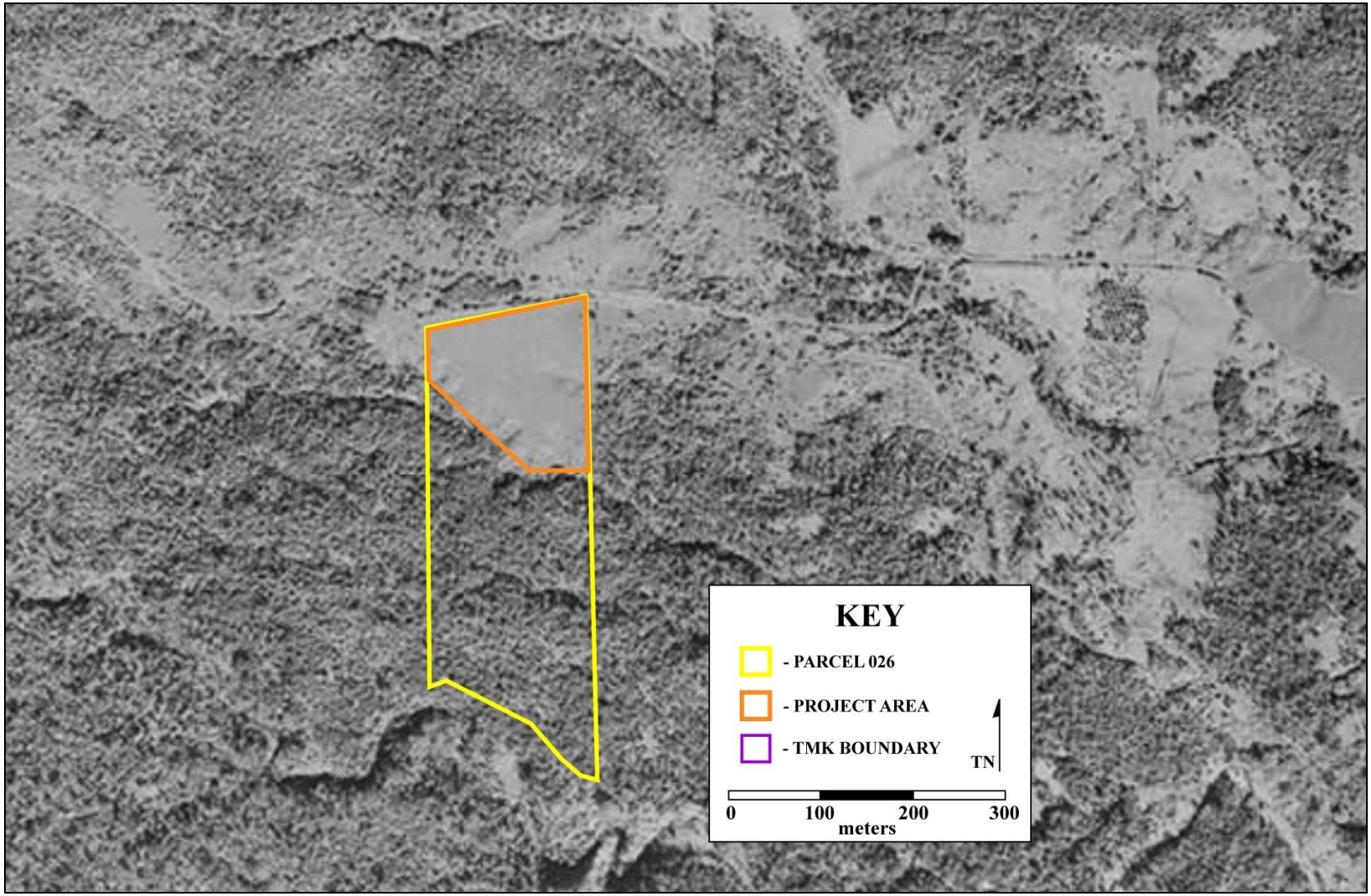

Figure 6: 1965 USDA Aerial Photograph Showing Parcel 026 and Archaeological Field Inspection Project Area (USDA 1965).

Early settlers established settlements on the windward shores in likely places such as Waipiʻo, Waimanu, and Hilo Bay. People at these locations were able to sustain themselves through inshore and pelagic fishing, gathering shellfish from the shore and strand, plant and animal husbandry, and the utilization of natural terrestrial flora and fauna (Kirch and Kelly 1975; Pearson *et al*. 1971; Kirch 1985). The pattern of this early settlement is thought to have consisted of widely spaced, permanent home bases that gradually expanded to form a nearly continuous zone of permanent settlement along the windward coasts as local populations grew.

PRE-CONTACT ERA

Situated along the windward coast of Hawaiʻi Island, Kaiwiki is a verdant and abundant district with good rainfall, rich soils, and flowing streams. Kaiwiki Ahupuaʻa is a traditional Hawaiian land division in Hilo *Moku* situated along the 200 foot high cliffs of the Hāmākua coast up to 1500 feet amsl (W.E. Wall Map 1928). Kaiwiki is translated as quick sea (Pukui *et al*.1974:71). Traditional settlement patterns in Kaiwiki are more characteristic of those along the Hāmākua coast than of lowland Hilo (Cordy 2000:44). There are no legendary places mentioned in *moʻolelo* concerning Kaiwiki and its immediate environs.

According to Maly,

> The lands of Kaiwiki were named for Kaiwi-kî-a-ola an *ʻôlohe* instructor, who was the husband of Honoliʻi, and grandfather of Kîkoʻoakapuna. Kaiwiki's foremost students were: Pau and Kekaʻa (brothers whose names combined to become Paukaʻa), Pueopâkû, Pâpaʻi-nui-a-kou (Pâpaʻikou), Waiâhole, and Kaʻieʻie-lulu-ka-iʻa (Kaʻieʻie). *Ahupuaʻa* and site features along this coastline are named for these *ʻôlohe*, and it was their custom to waylay all who traveled along their trails. [Maly 1993:59].

POST-CONTACT ERA

No published prehistoric accounts of Kaiwiki are recorded by Kamakau (1992), Iʻi (1993), Kalakaua (1990), or Fournander (1996). As for early historic accounts, there is mention of a battle fought along the coast in neighboring ʻAlae Ahupuaʻa, the *ahupuaʻa* south of Kaiwiki. The battle was one of many between Kamehameha and his allies against Keōua Kūʻahuʻula and his allies for control of Hawaiʻi Island. Angered that his uncle Keawemaʻuhili had aided Kamehameha by sending men and canoes to fight on Maui, Keōua invaded Hilo slaying Keawemaʻuhili and many of his warriors at Alae in 1790 (Cordy 2000:333; Kamakau 1992:151).

William Ellis later passed by Kaiwiki while travelling by canoe from Hilo to Laupāhoehoe where he disembarked and continued on foot to Humuʻula along the tree line at the northern foot of Mauna Kea (Ellis 2004:341-344). Ellis travelled by canoe because the road along the cliffs was too rough and passed through many deep gulches. He states that the cliffs between Hilo and Laupāhoehoe were dotted with plantations. Their canoe passed more than fifty ravines in the several hours it took them to travel the twenty-five or so miles between Hilo and Laupāhoehoe. He noted that none of ravines had a place for their canoe to land without being swamped in the surf. No mention is made of Kaiwiki Ahupuaʻa, though he passed it by canoe on the way to Laupāhoehoe.

THE *MĀHELE* OF 1848 AND LAND COMMISSION AWARDS

With the Māhele of 1848 and the two Acts of 1850, authorizing the sale of land in fee simple to resident aliens and the award of *kuleana* lands to native tenants, land tenure in Hawaii arrived at a significant turning point (Chinen 1961:13). Three small coastal wards were made to Pakele (LCA9928), Kaainoa (LCA5007), and Kaheana (LCA7852). No Land Commission awards were made within or near the project area parcel. The project area parcel and the surrounding lands were all land grants awarded primarily to farmers of Portuguese descent (see Figure 4). The 19.89-acre parcel where the project area is located was awarded in October 1902 to Antones Swaris Da Mail, Jr. for $159.12 as Land Grant 4647.

MODERN LAND-USE

Hawaiʻi County Planning records show that the property was owned by the Mauna Kea Agribusiness Company, Inc, then by C. Brewer and Company, and was then sold to private owners. The current owner, Mr. and Mrs. Huff bought the property recently from the previous owner who had owned the property for eleven years. The previous owner stated that the mown field was there when he purchased the parcel. The field is evident in a 1965 USDA aerial photograph (see Figure 6).

PREVIOUS ARCHAEOLOGICAL STUDIES

Early archaeological studies conducted in the area by Thrum and Stokes (Thrum 1907 and 1908, and Stokes and Dye 1991), and by A.E. Hudson (Hudson 1932) did not locate any *heiau* or significant cultural resources in the area within or around the current project area.

A single archaeological inventory survey (AIS) was conducted by Hammatt and Colin (1998) within the Ahupuaʻa of Kaiwiki 3 on the slopes of Kolekole Gulch, under and

surrounding the Kolekole bridge, including the 100 feet of slopes *mauka* and *makai* of the bridge. Cement footings from the previous bridge were recorded in their report. No other cultural resources were identified during the study.

In May of 2004, Rechtman Consulting, LLC conducted an AIS on 4.5 acres [(3) 2-9-03:13, 29, and 60] in coastal Wailea Ahupuaʻa, over one kilometer northeast of the current project area (Desilets *et* al. 2004). A single site (SIHP 50-10-26-24212) consisting of a section of railroad grade and a trestle abutment were recorded. Both features were recorded as significant under Criterion D and no further work was recommended at the site (Desilets *et* al. 2004:20).

SCS, Inc. conducted an archaeological inventory survey of 3.5 acres in Kaiwiki 3 Ahupuaʻa along the Kolekole stream (Escott 2011). There were no archaeological or cultural sites identified on the project area.

An archaeological field inspection (AFI) was conducted by SCS for the 5.0-acre proposed project area (Escott 2017). There were no archaeological sites or cultural properties identified in the project area.

SCS conducted an AFI of 0.496 acres of TMK: (3) 2-6-011:033, two lots west of Parcel 026 (Escott 2018). There were no archaeological sites or cultural properties identified in the project area.

CULTURAL INFORMANT INTERVIEWS

SCS, Inc contacted ten individuals who, either work for the Office of Hawaiian Affairs, are SHPD personnel, are familiar with the project area lands through cultural, professional, or historical work, or are long-time residents of the area (Table 1). Two OHA representatives, two SHPD staff members, three members of the Hawai‘i Island Burial Council (HIBC), two members of Nā Ala Hele, and a long time resident familiar with Kaiwiki were contacted to for information about cultural practices in the Kaiwiki area.

Table 1: Individuals Responding to CIA.

Name	Affiliation	Responded	Has Knowledge	Cultural Practices
Jackson Bauer	Nā Ala Hele	No	-	-
Kalena Blakemore	HIBC	Yes	No	No
Jordan Kea Calpito	SHPD Burial Sites	Yes	No	No
Randy Waiola Higa	HIBC	Yes	No	No
Sean Naleimaile	SHPD Archaeologist	No	-	-
Shane Nelson	OHA	Yes	No	No
Nalei Pate-Kahakalau	HIBC	Yes	No	No
Kamaile Puluole-Mitchell	OHA	Yes	No	No
Moana Rowland	Nā Ala Hele	No	-	-
Noe Noe Wong-Wilson	Long-Time Resident	No	-	-

Six individuals responded to inquires but were not aware of cultural practices associated with Kaiwiki. SHPD Burial Sites Specialist Jordan Calpito spoke with a friend who is familiar with the history of Kaiwiki, but he did not offer any information concerning Kaiwiki. The public notices also did not generate responses. The lack of information regarding cultural practices in upland Kaiwiki is not surprising, as the upland region of Kaiwiki are far from known habitation centers along the coast. The project area is 7.5 kilometers west of the coast, at an elevation of 1,800 feet amsl.

The uplands at this location were densely wooded prior to European contact. Upland Kaiwiki remained an isolated forest area until after the Māhele when the land was subdivided and sold for cattle ranching, sugarcane agricultural and homesteads. Even then, the project area is at the upper reaches of the Kaiwiki Homesteads lots. Sugarcane was never cultivated near the project area, but was cultivated at lower elevations east of the project area.

Prior to European contact, it is possible that this upland region was infrequently visited by bird hunters, canoe builders and those collecting upland forest plants. The lack of trails depicted on early Historic era survey maps suggest the area was only visited infrequently. In

addition, it is likely that canoe builders could find *koa* trees to carve their canoes at lower elevations, making it possible to port the finished canoes from areas closer to the coast.

SUMMARY

The "level of effort undertaken" to identify potential effect by a project to cultural resources, places or beliefs (OEQC 1997) has not been officially defined and is left up to the investigator. A good faith effort can mean contacting agencies by letter, interviewing people who may be affected by the project or who know its history, research identifying sensitive areas and previous land use, holding meetings in which the public is invited to testify, notifying the community through the media, and other appropriate strategies based on the type of project being proposed and its impact potential.

In the case of the present parcel, letters of inquiry were sent to organizations and individuals whose expertise would include the project area. Consultation was sought from Kamaile Puluole-Mitchell, OHA East Hawai‘i Representative; Shane Palacat-Nelsen, OHA West Hawai‘i Representative; Jordan Kea Calpito, SHPD Burial Sites Specialist; Sean Naleimaile, State Historic Preservation Division (SHPD) Assistant Archaeologist; Nalei Pate-Kahakalau, Chairman of the Hawai‘i Island Burial Council (HIBC); Randy Waiola Higa, HIBC Member; Kalena Blakemore, HIBC Member; Jackson Bauer, Nā Ala Hele Trail and Access Specialist; Moana Rowland, Nā Ala Hele Abstractor; and longtime Kaiwiki resident Noe Noe Wong-Wilson.

Public notices were published in the Office of Hawaiian Affairs Ka Wai Ola Newspaper, and were published in the Honolulu Star-Advertiser and the Hawai‘i Tribune Herald.

Historical and cultural source materials were extensively used and can be found listed in the References Cited portion of the report. Such scholars as I‘i, Kamakau, Chinen, Kame‘eleihiwa, Fornander, Kuykendall, Kelly, Handy and Handy, Puku‘i and Elbert, Thrum, and Cordy have contributed, and continue to contribute to our knowledge and understanding of Hawai‘i, past and present. The works of these and other authors were consulted and incorporated in the report where appropriate. Land use document research was supplied by the Waihona ‘Aina 2007 Data Base.

CIA INQUIRY RESPONSE

As suggested in the "Guidelines for Accessing Cultural Impacts" (OEQC 1997), CIAs incorporating personal interviews should include ethnographic and oral history interview procedures, circumstances attending the interviews, as well as the results of this consultation. It is also permissible to include organizations with individuals familiar with cultural practices and features associated with the project area.

As stated above, consultation was sought from ten individuals. Four people responded to consultation requests, but none of the individuals knew of past or ongoing cultural practices in Kaiwiki. Analysis of the potential effect of the project on cultural resources, practices or beliefs, its potential to isolate cultural resources, practices or beliefs from their setting, and the potential of the project to introduce elements which may alter the setting in which cultural practices take place is a requirement of the OEQC (No. 10, 1997). To our knowledge, the project area was not used for cultural practices. Based on historical research and the responses from the above listed contacts, it is reasonable to conclude that, as Hawaiian rights related to gathering, access or other customary activities are protected by law, and as the current project property owner will not prevent access, traditional cultural practices within the project area will not be affected and there will be no direct adverse effect upon cultural practices or beliefs. There will also be no visual impact of the project from surrounding vantage points.

CULTURAL ASSESSMEMNT

Based on the results of an Archaeological Field Inspection of the project area, the results of previous archaeological studies, as well as organizational response, individual cultural informant responses, and archival research, it is reasonable to conclude that, pursuant to Act 50, the exercise of native Hawaiian rights, or any ethnic group, related to gathering, access or other customary activities will not be affected by development activities on this parcel. The property owner will not restrict access for gathering purposes, as is protected by law. No cultural activities were identified within the project area, and the proposed undertaking will not produce adverse effects to any native Hawaiian cultural practices.

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APPENDIX A: PUBLIC NOTICES AND AFFIDAVITS

CULTURAL IMPACT ASSESSMENT NOTICE

Information requested by Scientific Consultant Services, Inc. of cultural resources or ongoing cultural practices on lands of mauka Kaiwiki Ahupua'a, South Hilo District, Island of Hawai'i, TMK: (3) 2-6-011: 026 & 033. Please respond within 30 days to Glenn Escott at (808) 938-0968.

Ka Wai Ola Public Notice.

AFFIDAVIT OF PUBLICATION

IN THE MATTER OF
CULTURAL IMPACT ASSESSMENT NOTICE - Kaiwiki

STATE OF HAWAII }
} SS.
City and County of Honolulu }

Doc. Date: FEB 25 2019 **# Pages:** 1
Notary Name: Patricia K. Reese First Judicial **Circuit**
Doc. Description: Affidavit of Publication
Notary Signature FEB 25 2019 Date

PATRICIA K. REESE NOTARY PUBLIC No. 86-467 STATE OF HAWAII

CULTURAL IMPACT ASSESSMENT NOTICE
Information requested by Scientific Consultant Services, Inc. of cultural resources or ongoing cultural practices on lands of *mauka* Kaiwiki Ahupua'a, South Hilo District, Island of Hawai'i, TMK: (3) 2-6-011: 026 & 033. Please respond within 30 days to Glenn Escott at (808) 938-0968.
(SA1175246 2/20, 2/21, 2/24/19)

Gwyn Pang being duly sworn, deposes and says that she is a clerk, duly authorized to execute this affidavit of Oahu Publications, Inc. publisher of The Honolulu Star-Advertiser, MidWeek, The Garden Island, West Hawaii Today, and Hawaii Tribune-Herald, that said newspapers are newspapers of general circulation in the State of Hawaii, and that the attached notice is true notice as was published in the

Honolulu Star-Advertiser 3 times on:
02/20, 02/21, 02/24/2019
MidWeek 0 times on:

The Garden Island 0 times on:

Hawaii Tribune-Herald 0 times on:

West Hawaii Today 0 times on:

Other Publications: 0 times on:

And that affiant is not a party to or in any way interested in the above entitled matter.

Gwyn Pang
Gwyn Pang

Subscribed to and sworn before me this 25 day of February A.D. 2019

Patricia K. Reese, Notary Public of the First Judicial Circuit, State of Hawaii
My commission expires: Oct 07, 2022

Ad # 0001175246

PATRICIA K. REESE NOTARY PUBLIC No. 86-467 STATE OF HAWAII

SP.NO.: _____ L.N.

Honolulu Star-Advertiser Public Notice Affidavit.

AFFIDAVIT OF PUBLICATION

IN THE MATTER OF
CULTURAL IMPACT ASSESSMENT NOTICE - Kaiwiki

STATE OF HAWAII }
} SS.
City and County of Honolulu }

FEB 25 2019
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PATRICIA K. REESE NOTARY PUBLIC No. 86-467 STATE OF HAWAII

CULTURAL IMPACT ASSESSMENT NOTICE

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(HTH1175252 2/20, 2/21, 2/24/19)

Gwyn Pang being duly sworn, deposes and says that she is a clerk, duly authorized to execute this affidavit of Oahu Publications, Inc. publisher of The Honolulu Star-Advertiser, MidWeek, The Garden Island, West Hawaii Today, and Hawaii Tribune-Herald, that said newspapers are newspapers of general circulation in the State of Hawaii, and that the attached notice is true notice as was published in the

Honolulu Star-Advertiser 0 times on:

MidWeek 0 times on:

The Garden Island 0 times on:

Hawaii Tribune-Herald 3 times on:
02/20, 02/21, 02/24/2019

West Hawaii Today 0 times on:

Other Publications: 0 times on:

And that affiant is not a party to or in any way interested in the above entitled matter.

Gwyn Pang
Gwyn Pang

Subscribed to and sworn before me this 25 day of February A.D. 2019

Patricia K. Reese, Notary Public of the First Judicial Circuit, State of Hawaii
My commission expires: Oct 07, 2022

Ad # 0001175252 SP.NO.: _____ L.N.

PATRICIA K. REESE NOTARY PUBLIC No. 86-467 STATE OF HAWAII

Hawai'i Tribune-Herald Public Notice Affidavit.