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GOVERNOR OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
OFFICE OF CONSERVATION AND COASTAL LANDS
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AQUATIC RESOURCES
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CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

MEMORANDUM

TO: Genevieve Salmonson, Director
Office of Environmental Quality Control

FROM: Samuel J. Lemmo, Administrator
Office of Conservation and Coastal Lands

SUBJECT: Final Environmental Assessment (FEA)/Finding of No Significant Impact (FONSI) for Conservation District Use Application (CDUA) HA-3288

The Department has reviewed the Johnson CDUA HA-3288, and Final Environmental Assessment (FEA) for the construction of a Single Family Residence and Peach Palm Cultivation at Pāpa`ikou, South Hilo, Hawai`i, TMK: (3) 2-7-008:128 and 030:026. The Draft Environmental Assessment (DEA) for CDUA HA-3288 was published in OEQC's February 8, 2006 *Environmental Notice* for the subject project.

The FEA is being submitted to OEQC. We have determined that this project will not have significant environmental effects, and have therefore issued a FONSI. The FONSI does not constitute approval of the CDUA; authority to grant or deny the final permit lies with the Board of Land and Natural Resources. OCCL has an outstanding issue with the design of the residence; this will be worked out in the permit process.

Please publish this notice in OEQC's upcoming May 23, 2006 *Environmental Notice*. We have enclosed four copies of the FEA and CDUA HA-3288 for the project. The OEQC Summary and Bulletin Publication Form are included on disk. Comments on the draft EA were sought from relevant agencies and the public, and were included in the FEA.

Please contact Michael Cain of our Office of Conservation and Coastal Lands staff at 587-0380 if you have any questions on this matter.

RECEIVED
'06 MAY -4 A7:21
OFC. OF ENVIRONMENTAL QUALITY CONTROL

cc: Marissa Furfaro, PBR Hilo

Johnson Single-Family Residence

Final Environmental Assessment

TMK: (3) 2-7-008:128 and (3) 2-7-030:026
Pāpa‘ikou, South Hilo, Hawai‘i

Submitted to:
State of Hawai‘i
Department of Land and Natural Resources

Prepared by:

PBR HAWAII

April 2006

Johnson Single-Family Residence

Final Environmental Assessment

TMK: (3) 2-7-008:128 and (3) 2-7-030:026

Pāpa‘ikou, South Hilo, Hawai‘i

Submitted to:

State of Hawai‘i

Department of Land and Natural Resources

Prepared by:

PBR HAWAII

April 2006

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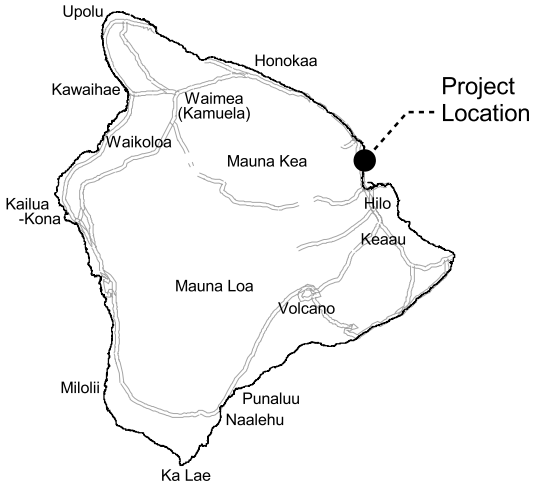
Appendix D Erosion Hazard Assessment Letter from Dr. Charles Fletcher, dated November 14, 2005
Appendix E Detailed Botanical Survey, Dr. Ron Terry, November 2005
Appendix F Draft Environmental Assessment Public Review Comment and Response Letters

1.0 INTRODUCTION

1.1 PROJECT SUMMARY

Project Name:	Johnson Single-Family Residence	
Applicant/Land Owner:	Richard and Lauree Johnson P.O. Box 365 Pepe‘eko, Hawai‘i 96783	
Location:	Pāpa‘ikou, South Hilo, Hawai‘i (see Figure 1)	
Tax Map Key:	(3) 2-7-8:128 and 2-7-30:26 (see Figure 2)	
Project Area:	Approximately 15.6 acres (2-7-8:128) Approximately 0.38 acres (2-7-30:26)	
Existing Use:	Agricultural and vacant	
Proposed Use:	Agricultural and residential	
Land Use Designations	State Land Use:	Urban (0.38 acres) Agricultural (11.633 acres) Conservation (3.967 acres) (see Figure 3)
	General Plan:	Low Density Urban and Open
	County Zoning	A-20a
	SMA:	Within the SMA, but exempt from the SMA permit process (see Appendix A)
Permits/Approvals Required:	Conservation District Use Permit Building Permit Grading Permit Wastewater Permit	
Accepting Authority:	State of Hawai‘i Department of Land and Natural Resources P.O. Box 621 Honolulu, Hawai‘i 96813	
Consultant:	PBR Hawai‘i – Hilo Office 101 Aupuni Street, Suite 310 Hilo, Hawai‘i 96720 Contact: Marissa Furfaro (808.961.3333)	



LEGEND

Project Site

Source: USGS Topographic Map (Papaikou)

Figure 1
Regional Location Map

Johnson Single-Family Residence

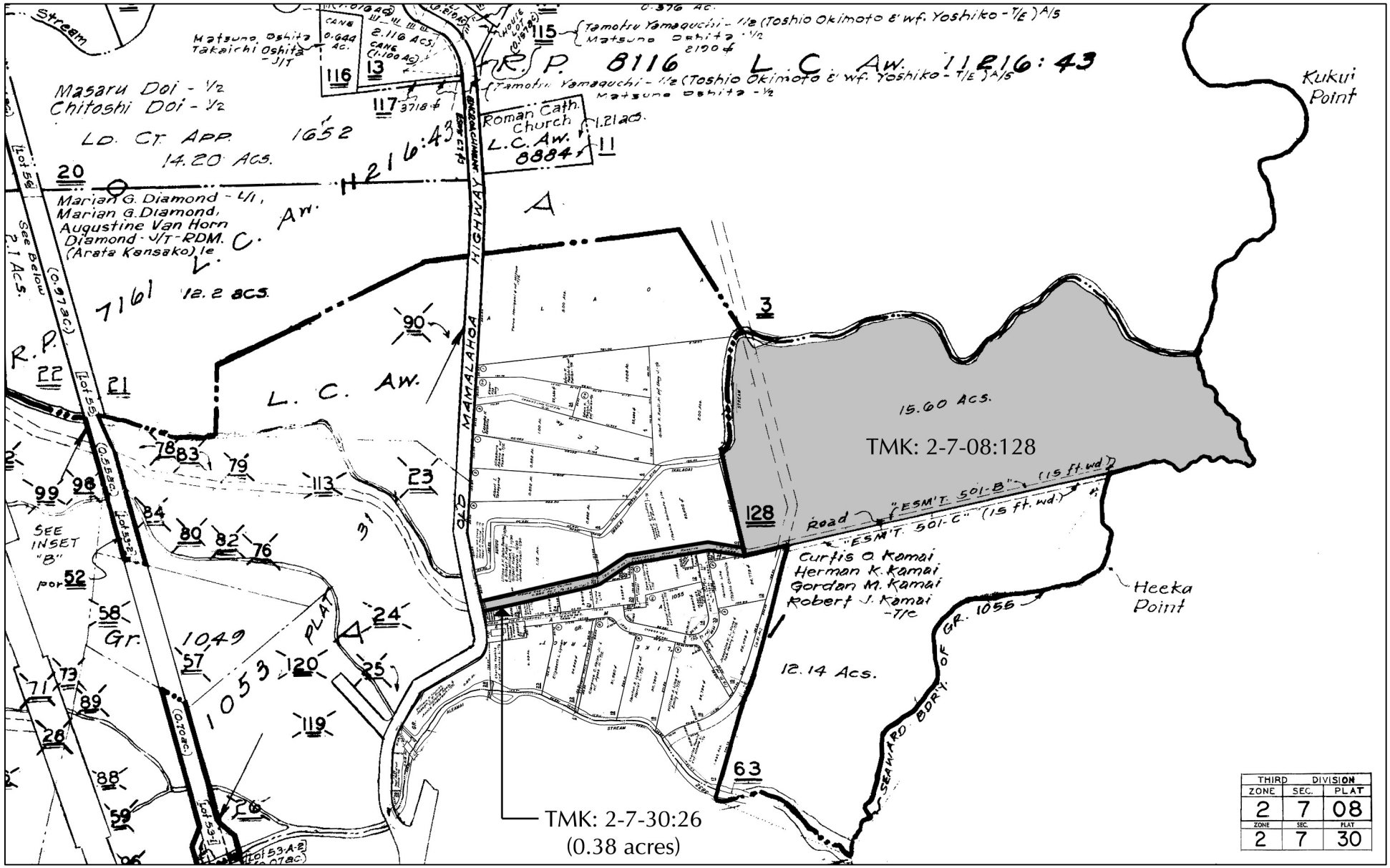
ISLAND OF HAWAII

NORTH

LINEAL SCALE (FEET)

0 750 1,500 3,000

PBR HAWAII



Source: Tax Map Bureau

Disclaimer:
This graphic has been prepared for general planning purposes only.

LEGEND

Project Site

Figure 2
Tax Map Key

Johnson Single-Family Residence

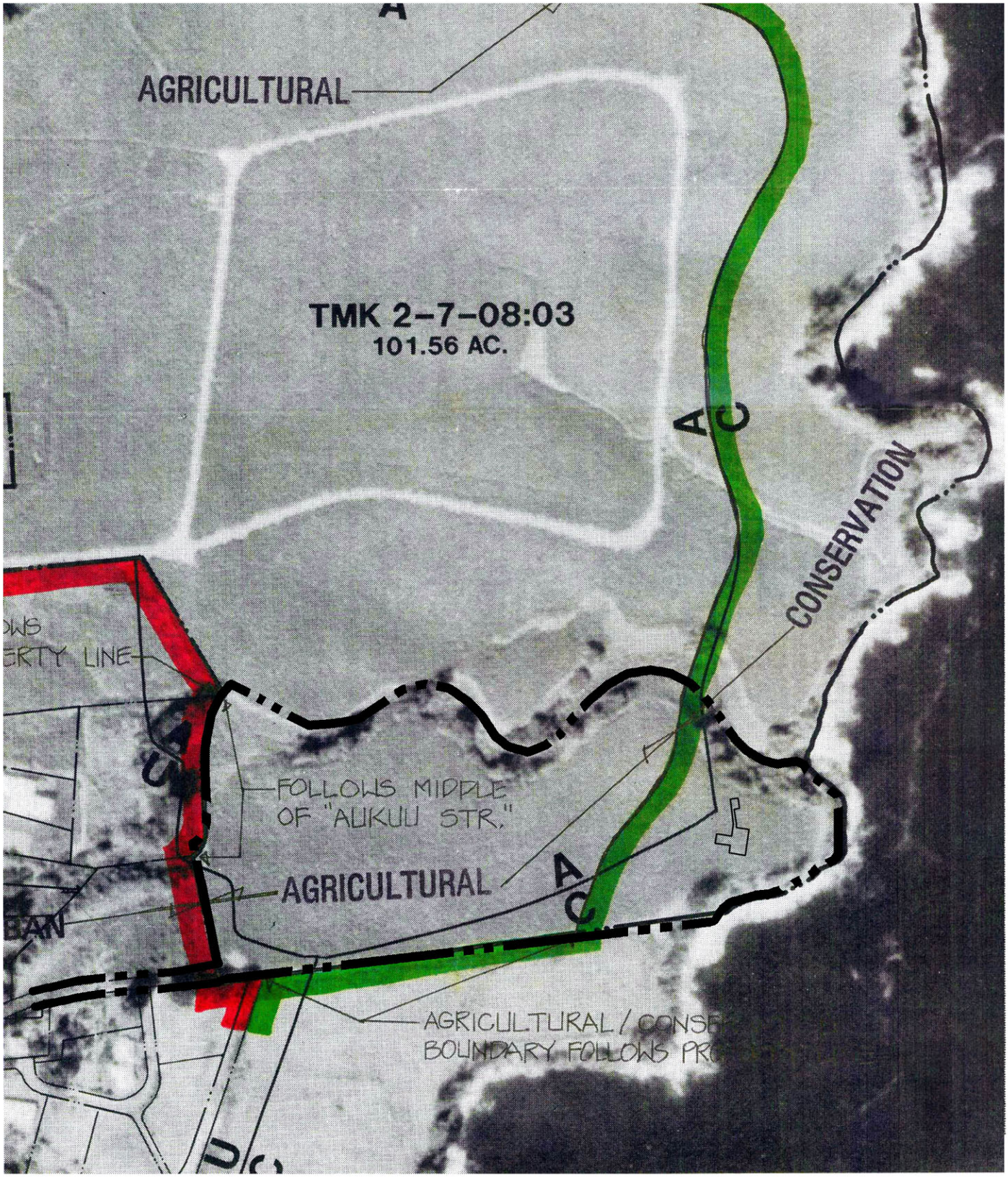
ISLAND OF HAWAII

NORTH

LINEAL SCALE (FEET)

0 200 400 800

PBR HAWAII



LEGEND

Project Site Boundary

Approximate Location of the Residence

Source: State Land Use Commission
Land Use District Boundary Interpretation Map
July 26, 1990

Figure 3
State Land Use Classification Boundary Interpretation
Johnson Single-Family Residence
ISLAND OF HAWAII

NORTH

LINEAL SCALE (FEET)

NOT TO SCALE

PBR HAWAII

Proposed Action: The applicants, Mr. and Mrs. Richard Johnson, seek to construct a single-family residence, associated utility and landscape improvements, agricultural crops, a shed (within the State Land Use Agricultural District) and fencing on an approximately 15.98-acre coastal property located near He‘eka Point, Pāpa‘ikou, South Hilo, Hawai‘i.

The single-story, three-bedroom residence will be located within the Conservation District and is 4,872 square feet in size including deck space, a garage with storage, a laundry and utility room, a lap pool and an outdoor spa. The main residence will have a post and pier foundation, and the semi-attached third bedroom/recreation will have a slab foundation.

Landscaping improvements will consist of accent plantings around the house site; accent shrubs along the cliff edge for slope stabilization; retaining walls for the grassed terraces, stone pavers, concrete stairs; lawn maintenance; removal of some trees and pruning of larger canopy trees, as well as partially filling in an eroded area on the property. The existing, unpaved driveway extending from Old Māmalahoa Highway to the house site will be either paved or graveled, with grass pavers near the house.

The project site is within the County Special Management Area (SMA) and the State Conservation District, Resource (R) Subzone. The property is accessed by way of an easement extending from the Old Māmalahoa Highway at a point adjacent to the currently unused Pāpa‘ikou Hawaiian Congregational Church.

Anticipated Determination: The proposed action is expected to have no significant impact on the environment; therefore, a Finding of No Significant Impact (FONSI) is anticipated, subject to the provisions of Section 11-200-9 of the Hawai‘i Administrative Rules (HAR).

1.2 ENVIRONMENTAL COMPLIANCE

This draft environmental assessment (DEA) has been prepared in compliance with the State of Hawai‘i, *Hawai‘i Revised Statutes* (HRS), Chapter 343, for the use of any land classified within the State Conservation District in accordance with the State Department of Health, *Hawai‘i Administrative Rules* (HAR), Title 11, Chapter 200.

1.3 IDENTIFICATION OF THE APPLICANT

The applicants are Richard and Lauree Johnson (hereafter referred to as “the Johnsons”). The contact information for the Johnsons is provided below:

Richard C. and Lauree J. Johnson
P.O. Box 365
Pepe‘ekeo, Hawai‘i 96783

1.4 IDENTIFICATION OF ACCEPTING AUTHORITY

In accordance with Chapter 343, HRS and Section 11-200-4, HAR, a Final EA must be approved by the government agency with permitting power over the project. Therefore, the State of Hawai‘i Department of Land and Natural Resources (DLNR) is the Accepting Authority for this Environmental Assessment.

1.5 IDENTIFICATION OF AGENCIES, ORGANIZATIONS, AND INDIVIDUALS CONSULTED

The following public agencies (or agency documents) were consulted during the preparation of this environmental assessment. Pre-assessment consultation letters were sent to various agencies in July 2005 to solicit comments on the project. Comment letters received and response letters are included in Appendix B.

Federal Agencies

- Federal Emergency Management Agency (FEMA)
- U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS)
- U.S. Department of the Interior, U.S. Geological Survey

State of Hawai‘i Agencies

- Department of Land and Natural Resources
    - Land Division (Honolulu and Hilo District Office)
        - Office of Conservation and Coastal Lands
        - Engineering Division
    - State Historic Preservation Division
- Office of Environmental Quality Control
- Department of Health
    - Environmental Planning Office
- Department of Business, Economic Development & Tourism
    - Office of Planning
- Office of Hawaiian Affairs

County of Hawai‘i Agencies

- Department of Planning
- Department of Environmental Management
- Department of Public Works
    - Building Division
- Department of Parks and Recreation
- Civil Defense Agency
- Department of Water Supply

2.0 PROJECT DESCRIPTION

2.1 PROJECT OBJECTIVES

The objectives of the proposed project are to construct a single-family residence including a garage, a laundry and utility room, a lap pool, an outdoor spa, a landscaped terrace, associated utility and landscape enhancements; expand an existing agricultural field of peach palms (for hearts of palm production); and construct a shed (within the State Land Use Agricultural District) and a fence to protect the palms from feral pigs.

Landscape improvements will consist of accent plantings around the house site; accent shrubs along the cliff edge for slope stabilization; retaining walls for the grassed terraces, stone pavers, concrete stairs; lawn maintenance; removal of some trees and pruning of larger canopy trees, as well as partially filling in an eroded area on the property. Improvements (either gravel or paving) will be made to the existing dirt roadway and access easement extending from Old Māmalahoa Highway to provide access to the house site, with grass pavers used near the house.

The project will be carried out in a manner that meets the applicable State and County regulations and, to the extent practical, minimizes potential impacts to the environment, existing agricultural uses and surrounding properties.

2.2 LOCATION

The proposed project is located at Pāpa‘ikou, South Hilo, Hawai‘i, Tax Map Keys (3) 2-7-8:128 and (3) 2-7-30:26 (roadway lot), approximately 5.5 miles north of Hilo Town. The project site is located within the County Special Management Area (SMA) and the State Conservation District, Resource (R) Subzone in an area between He‘eka Point and Kukui Point. The property is accessed by way of an unpaved roadway lot owned by the Johnsons and extending from the Old Māmalahoa Highway at a point adjacent to the currently unused Pāpa‘ikou Hawaiian Congregational Church. At the termination of the roadway lot, further access is gained by way of a 15-foot wide, unpaved easement. The 15-foot easement is a portion of TMK 2-7-8:128; the neighboring property owners also have access to this 15-foot easement.

2.3 EXISTING CONDITIONS AND USES

There are currently no structures on the site. Approximately 7 acres of the site are currently planted in peach palms (*Bactris gasipaes)* which will be harvested in the future for hearts of palm production. Approximately 8.6 acres are currently unused and covered with low growing grasses, clovers, and small shrubs up to a height of about 24 inches. Along the top of the cliff, fronting the coast, there are found concentrations of lauhala (*Pandanus sp.*), ti (*Cordyline fruiticosa*), and ironwood trees (*Casuarina equisetifolia*). The proposed house site is located approximately 70 feet from the edge of the cliff at its nearest point on the southern end of the property. The cliffs are steep, nearly vertical, and approximately 60 feet in height and not only topographically isolate the property from the shore, but also restrict access to the shore. No public roads or trails are known to provide access across the subject property to the shoreline (see Photographs 1 through 4).

Photograph 1
Existing, unpaved access looking *makai* (TMK: 2-7-008:128).

Photograph 2
View from the proposed house site, looking *mauka.*

Photograph 5
Drainage structure as defined by the Natural Resources Conservation Service (NRCS).

2.4 SURROUNDING AREAS AND USES

The subject property is bound by a gully and Aukuu Stream to the north and by the shoreline to the east. This stream is fed by a spring located approximately one mile *mauka* of the property, and is not a free-flowing perennial drainage system. To the north, beyond Aukuu Stream, are vacant pasture lands and areas in diversified agricultural uses. To the south and west of the property are other residential structures of various construction and age, the nearest of which is more than 1,000 feet from the proposed house site. In addition to the physical separation, the house site will be buffered from surrounding residential uses by the proposed expansion of agriculture uses occurring on the property, by large canopy trees and other proposed landscape improvements.

The Pāpa‘ikou Hawaiian Congregational Church, which is unused, is located near the access road at the intersection with Old Māmalahoa Highway.

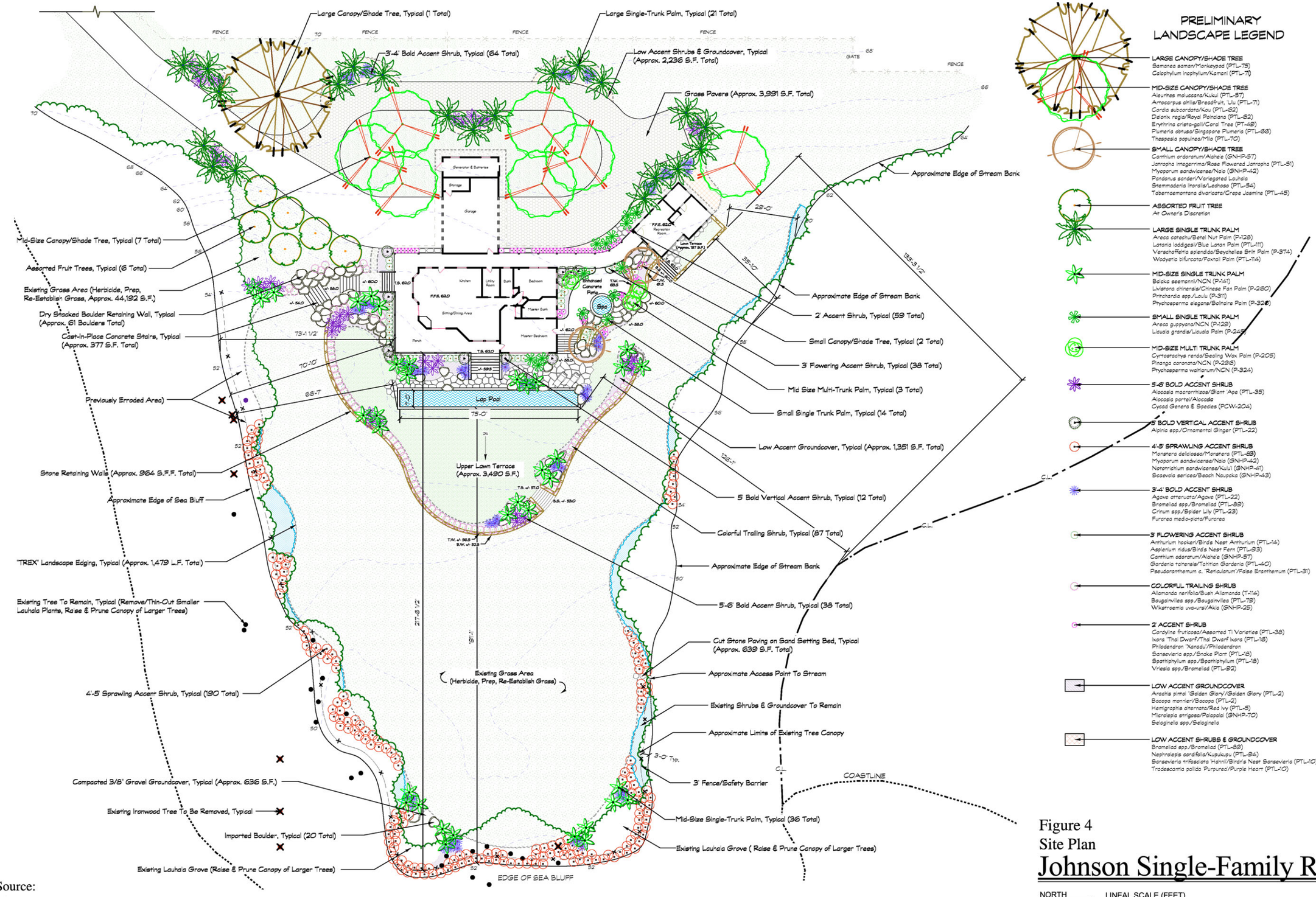
2.5 PROPOSED USES AND ACTIVITIES

The Johnsons seek to build an approximately 4,872 square foot, three bedroom residence including deck space, a garage with storage, a laundry and utility room, a lap pool, and an outdoor spa (Figure 4). Additional improvements include associated utility and landscape enhancements, expansion of existing agricultural crops, and construction of a shed (within the State Land Use Agricultural District) and fencing.

Landscape improvements include accent plantings around the house site; accent shrubs along the cliff edge for slope stabilization; retaining walls for the grassed terraces, stone pavers, concrete stairs; lawn maintenance; removal of some trees and pruning of larger canopy trees include trimming and removing some existing trees (see Section 3.1.9) as well as partially filling in an eroded area on the property (see Section 3.1.3). Improvements (either gravel or paving) will be made to the existing dirt roadway and access easement to provide access to the house site, with grass pavers used close to the house.

The main residence will have a post and pier foundation, and the semi-attached third bedroom/recreation room will have a slab foundation. The third bedroom/recreation room is attached to the main house via a covered walkway. The County of Hawai‘i Department of Public Works, Building Division considers this building design to be one (1) structure providing the two buildings are structurally attached, at minimum, by one (1) two-foot by four-foot piece of lumber (Personal Communication, July 1, 2005). The third bedroom/recreation room will not be used as a separate dwelling, rental unit, bed and breakfast, or for any other commercial purposes; there will be no cooking facilities provided in the third bedroom/recreation room.

The Johnsons intend to cultivate peach palms for commercial harvest on a portion of their property classified within the State Land Use Conservation District. The Johnsons are currently cultivating approximately 7 acres of peach palms on a portion of the property classified within the State Land Use Agricultural District; the plans to expand the crop into the conservation district make for a total of approximately 12 acres. They have been successfully farming in Hawai‘i for over five years and are well integrated into the Hawai‘i farming community. Mr. Johnson is the President of the state-wide organization of the Hawai‘i Tropical Fruit Growers, of which Mrs. Johnson is a Board Member. The Johnsons currently own and operate another farm on Hawai‘i Island, Onomea



PRELIMINARY LANDSCAPE LEGEND

LARGE CANOPY/SHADE TREE
Samanea saman/Monkeypod (PTL-75)
Calophyllum inophyllum/Kamani (PTL-71)

MID-SIZE CANOPY/SHADE TREE
Aleurites moluccana/Kukui (PTL-57)
Artocarpus altilis/Breadfruit, 'Ulu (PTL-71)
Cordia subcordata/Kou (PTL-62)
Delonix regia/Royal Poinciana (PTL-82)
Erythrina crista-galli/Coral Tree (PT-49)
Plumeria obtusa/Singapore Plumeria (PTL-88)
Thespesia populnea/Milo (PTL-70)

SMALL CANOPY/SHADE TREE
Canthium odoratum/Alahee (GNHP-57)
Jatropha integerrima/Rose Flowered Jatropha (PTL-51)
Myoporum sandwicense/Naio (GNHP-42)
Pandanus sander/Variegated Lauhala
Stemmadenia litoralis/Lechose (PTL-54)
Tabernaemontana divaricata/Crepe Jasmine (PTL-45)

ASSORTED FRUIT TREE
At Owner's Discretion

LARGE SINGLE TRUNK PALM
Areca catechu/Betel Nut Palm (P-128)
Latania loddigesii/Blue Latan Palm (PTL-111)
Verschaffeltia splendida/Seychelles Split Palm (P-374)
Wodyetia bifurcata/Foxtail Palm (PTL-114)

MID-SIZE SINGLE TRUNK PALM
Balaka seemanii/NCN (P-141)
Livistona chinensis/Chinese Fan Palm (P-280)
Pritchardia spp./Loulu (P-311)
Ptychosperma elegans/Solitaire Palm (P-320)

SMALL SINGLE TRUNK PALM
Areca guppyana/NCN (P-129)
Licuala grandis/Licuala Palm (P-245)

MID-SIZE MULTI TRUNK PALM
Cyrtostachys renda/Sealing Wax Palm (P-205)
Pinanga coronata/NCN (P-296)
Ptychosperma waitianum/NCN (P-324)

5-6' BOLD ACCENT SHRUB
Alocasia macrorrhizos/Giant 'Ape (PTL-35)
Alocasia portei/Alocasia
Cycad Genera & Species (PCW-204)

5' BOLD VERTICAL ACCENT SHRUB
Alpinia spp./Ornamental Ginger (PTL-22)

4'-5' SPRAWLING ACCENT SHRUB
Monstera deliciosa/Monstera (PTL-89)
Myoporum sandwicense/Naio (GNHP-42)
Natrichium sandwicense/Kului (GNHP-41)
Scaevola sericea/Beach Naupaka (GNHP-43)

3'-4' BOLD ACCENT SHRUB
Agave attenuata/Agave (PTL-22)
Bromeliad spp./Bromeliad (PTL-89)
Crinum spp./Spider Lily (PTL-23)
Furcrea medio-picta/Furcrea

3' FLOWERING ACCENT SHRUB
Anthurium hookeri/Bird's Nest Anthurium (PTL-14)
Asplenium nidus/Bird's Nest Fern (PTL-93)
Canthium odoratum/Alahee (GNHP-57)
Gardenia taitensis/Tahitian Gardenia (PTL-40)
Pseudoranthemum c. 'Reticulatum'/False Eranthemum (PTL-31)

COLORFUL TRAILING SHRUB
Allamanda nerifolia/Bush Allamanda (T-114)
Bougainvillea spp./Bougainvillea (PTL-79)
Wikstroemia uva-ursi/Akia (GNHP-25)

2' ACCENT SHRUB
Cordyline fruticosa/Assorted Ti Varieties (PTL-38)
Ixora 'Thai Dwarf'/Thai Dwarf Ixora (PTL-16)
Philodendron 'Xanadu'/Philodendron
Sansevieria spp./Snake Plant (PTL-18)
Spathiphyllum spp./Spathiphyllum (PTL-18)
Vriesia spp./Bromeliad (PTL-92)

LOW ACCENT GROUNDCOVER
Arachis pintoi 'Golden Glory'/Golden Glory (PTL-2)
Bacopa monnieri/Bacopa (PTL-2)
Hemigraphis alternata/Red Ivy (PTL-5)
Microlepia strigosa/Palapalai (GNHP-70)
Selaginella spp./Selaginella

LOW ACCENT SHRUBS & GROUNDCOVER
Bromeliad spp./Bromeliad (PTL-89)
Nephrolepis cordifolia/Kupukupu (PTL-94)
Sansevieria trifasciata 'Hahnii'/Bird's Nest Sansevieria (PTL-10)
Tradescantia pallida 'Purpurea'/Purple Heart (PTL-10)

Source:

LEONARD BISEL ASSOCIATES, LLC
Landscape Architecture & Site Planning

Figure 4
Site Plan

Johnson Single-Family Residence

ISLAND OF HAWAII

NORTH

LINEAL SCALE (FEET)
0 20 40 80

PBR HAWAII

Orchards, which is a 27-acre tropical fruit orchard. In addition, Onomea Orchards is a founding member of the Hawai‘i Tropical Fruit Cooperative, of which Mr. Johnson is a Board Member. Given the Johnsons' background, they are serious and experienced farmers whom know how to mitigate impacts related to agricultural activity. For example, harvesting will be done in phases to reduce the amount of soil exposed at any given time, as well as the quantity of harvest that needs to be transported from the site. There will be no large trucks transporting the harvest from the project site, and no buying or selling taking place on the project site.

Other proposed improvements include the extension of utilities (water, communication lines, etc.) to the house site, installation of a waste water disposal system (individual septic tank) meeting the approval of the State Department of Health, improvements (either gravel or paving) to the existing dirt roadway and access easement which will provide access to the house site, with grass pavers used close to the house. Landscaping improvements will consist of accent plantings around the house site; accent shrubs along the cliff edge for slope stabilization; retaining walls for the grassed terraces, stone pavers, concrete stairs; lawn maintenance; and removal of some trees and pruning of larger canopy trees. The proposed improvements for this residential construction are shown conceptually within Figure 4. Utilities will be provided to the site in the following manner:

> Water: Domestic water service will be provided by way of an extension from the existing six-inch County water line located along the Old Māmalahoa Highway, approximately 800 feet west of the project site. The County of Hawai‘i Department of Water Supply has confirmed that water is currently available for one 5/8-inch meter or an average of 400 gallons per day (see Appendix B).
>
> Power: A generator and photovoltaic device will be housed in an enclosed room attached to the garage. Additionally, solar energy will be used to heat water for the residence.
>
> Telephone: Telephone service will be provided by Hawaiian Telcom from existing communication lines located along Old Māmalahoa Highway.
>
> Wastewater: An individual septic system will be installed according to the standards of the State Department of Health. The septic tank will be located on the *makai* side of the residence (for gravity purposes), as far from the edge of the cliff as possible.
>
> Drainage: No requirements for additional drainage improvements are anticipated in conjunction with the proposed residential and agricultural uses and associated improvements. The Natural Resources Conservation Service (NRCS), Hawai‘i Resource Office determined by letter dated March 3, 2005 that the two existing drainage structures (terraces) are placed at strategic locations as to intercept storm runoff and carry excess water to the gulch on the northern border of the parcel. The NRCS determined that the drainage structures are adequate to handle runoff flows up to the 10-year/24-hour storm event (see Appendix C and Photograph 5).

The setbacks for Single-Family Residential Standards for lots over one acre (Chapter 13-5, HAR, Exhibit 4) are 25 feet from the front, sides, and back of the property line. The setbacks for the proposed single-family residence conform to the standard; they are:

Photograph 3
Existing peach palm (*Bactris gasipaes*) crop.

Photograph 4
Southern edge of sea cliff.

Front: ±217 feet **Sides:** ±29 feet (north) and ±70 feet (south) **Back:** ±1,200 feet

The Maximum Developable Area is the total floor area in square feet allowed under the approved land use. The floor area computation includes: all enclosed (on three sides minimum, with floor or roof structure above) living areas; above grade decks in excess of 4'-0" in width; garage or carport; swimming pools, saunas or other developed water features (excluding naturally existing ponds, tide pools, etc.); play courts; or any other standing structures, which are accessory to the approved land use. For lots larger than one (1) acre, the Maximum Developable Area is 5,000 square feet. The total floor area for the proposed residence is 4,872 square feet (s.f.) as calculated below:

Item	Area (s. f.)
Lanai of the main house	742.0251
Great room and kitchen	902.1416
Second bedroom and second bathroom	303.0147
Master bathroom and hallway	167.5964
Master bedroom	397.3889
Laundry/utility room	89.84
Third bedroom/recreation room and bathroom	519.5
Garage, storage area, and generator room	972.0
Lap pool	525.0
Spa	51.0
Outdoor stairs	203.0
TOTAL:	**4,875.51**

The square footage of all areas is calculated from the exterior of the walls.

The maximum height of the building shall not exceed twenty-five (25) feet measured from the highest point of the roof structure (excluding any allowed chimney, antenna, vents, or similar protrusions) down to the lower of the existing or finished grade at the lowest corner of the building. The highest point of the roof structure is twenty-four (24) feet, which is below the maximum allowable height.

Compatibility Provisions ensure compatibility with surrounding environs. All structures should be designed in accordance with standard conditions, including:

- Landscaping – screening of structures;
- Color of paint/surface of structure and roof – earth tones, or compatible with surrounding area;
- State Department of Health (DOH) wastewater permit/water collection system approval;
- Grading/contouring of property kept to minimum with consideration of slope; all structures connected, or best alternative;
- In conformance to applicable building and grading code and shoreline setback provisions; and
- One kitchen.

The landscape plan incorporates a blend of large, mid-size, and small canopy trees as well as accent shrubs and groundcover that will complement the area by nicely transitioning the structure with the natural environment. The large canopy trees that will be planted *mauka* of the garage will help to screen the residence from the surrounding homes at higher elevations. In addition, a non-structural rock wall will be used to mask the post and pier structure of the house. The grass block pavers used on the majority of the driveway near the house will soften the look of the hardscape, and reduce the amount of concrete surrounding the residence.

The proper procedures will be followed to obtain a DOH wastewater permit/water collection system approval. Best management practices will be utilized during ground preparation to keep grading to a minimum and also to prevent erosion.

The house is set back 70 feet from the cliff's edge on the south side of the property, which exceeds requirements.

The single-family residence will be served by only one kitchen.

2.6 DEVELOPMENT TIMETABLE

The Johnsons plan to start construction on the single-family home and associated improvements, expand the crop of palms, erect a shed (within the State Land Use Agricultural District), and install a fence 2 months after obtaining all required permits from the State and County agencies. It is anticipated that construction will be completed within one year.

3.0 DESCRIPTION OF THE AFFECTED ENVIRONMENT

3.1 ENVIRONMENTAL CHARACTERISTICS

3.1.1 Climate

The project site lies on the windward side of the island of Hawai‘i, approximately 5.5 miles north of Hilo. Rainfall along this coastline averages approximately 120 inches per year. Typical of windward areas, showers are more frequent during the night and early morning.

Annual temperature in this area averages in the mid 70’s, with relatively small daily and seasonal variations. Daytime temperatures above 85 degrees Fahrenheit or night time temperatures below 60 degrees Fahrenheit are uncommon. Northeast tradewinds are generally prevalent throughout the year, although winter Kona storms are accompanied by southerly winds and greater rainfall.

Potential Impacts and Mitigation Measures

The proposed project will not impact the area’s general climate.

3.1.2 Topography

Situated near the foot of Mauna Kea Volcano, the general topography of the property is dominated by gently sloping (1 - 5%) fields. The subject property is located on lava flows from Mauna Kea Volcano known as Hāmākua Volcanics. Hāmākua Volcanics are made up of alkalic basalt covered by a thin layer of volcanic ash. Elevations over the property range from 60 to 120 feet mean sea level (msl). There are 60 foot vertical cliffs along the southern and eastern edges of the property shoreline which topographically isolates the property from the shore and also restricts access to the ocean.

Potential Impacts and Mitigation Measures

No significant impacts on the geology and topography are anticipated as a result of the proposed project.

3.1.3 Soils and Agricultural Potential

Most of the Hilo area rests on volcanic or olivine basalt which is highly permeable and well drained. At times, lava formations outcrop at gulches or cliffs, but ash deposits of more recent origin tend to blanket the area.

Three soil suitability studies have been prepared for lands in Hawai‘i. These are the U.S. Department of Agriculture (USDA) *Soil Conservation Service Soil Survey (SCS)*, the University of Hawai‘i *Land Study Bureau Detailed Land Classification*, and the State of Hawai‘i Department of Agriculture’s *Agricultural Lands of Importance to the State of Hawai‘i (ALISH)*. The principal focus of these studies has been to describe the physical attributes of Hawai‘i’s lands and the relative productivity of different land types for agricultural production purposes.

According to the United States Department of Agriculture Soil Conservation Service, Soil Survey of the Island of Hawai'i, State of Hawai'i, 1973, the project site soils include: Hilo Silty Clay Loam, 0 to 10 percent slopes (HoC); Hilo Silty Clay Loam, 10 to 20 percent slopes (HoD); and Rough Broken Land (RB) (see Figure 5). Under the Soil Conservation Service's Land Capability Grouping, soil types are rated according to eight levels, ranging from the highest classification level, I, to the lowest level, VIII. Lower case letters following the classification level indicate specific subclasses. A brief description of these soils, along with their Land Capability Grouping rating follows:

Hilo Silty Clay Loam, 0 to 10 percent slopes (HoC). This soil type covers most of the site. It is characterized as having rapid permeability. Runoff is slow and the erosion hazard is slight. This soil is used mostly for sugarcane. Small areas are in truck crops, orchards, and pasture.

Approximately 11.6 acres of the project site contain HoC soils. HoC soils are rated IIIe, non-irrigated. Class III soils have severe limitations that reduce the choice of plants or that require moderate conservation practices, or both.

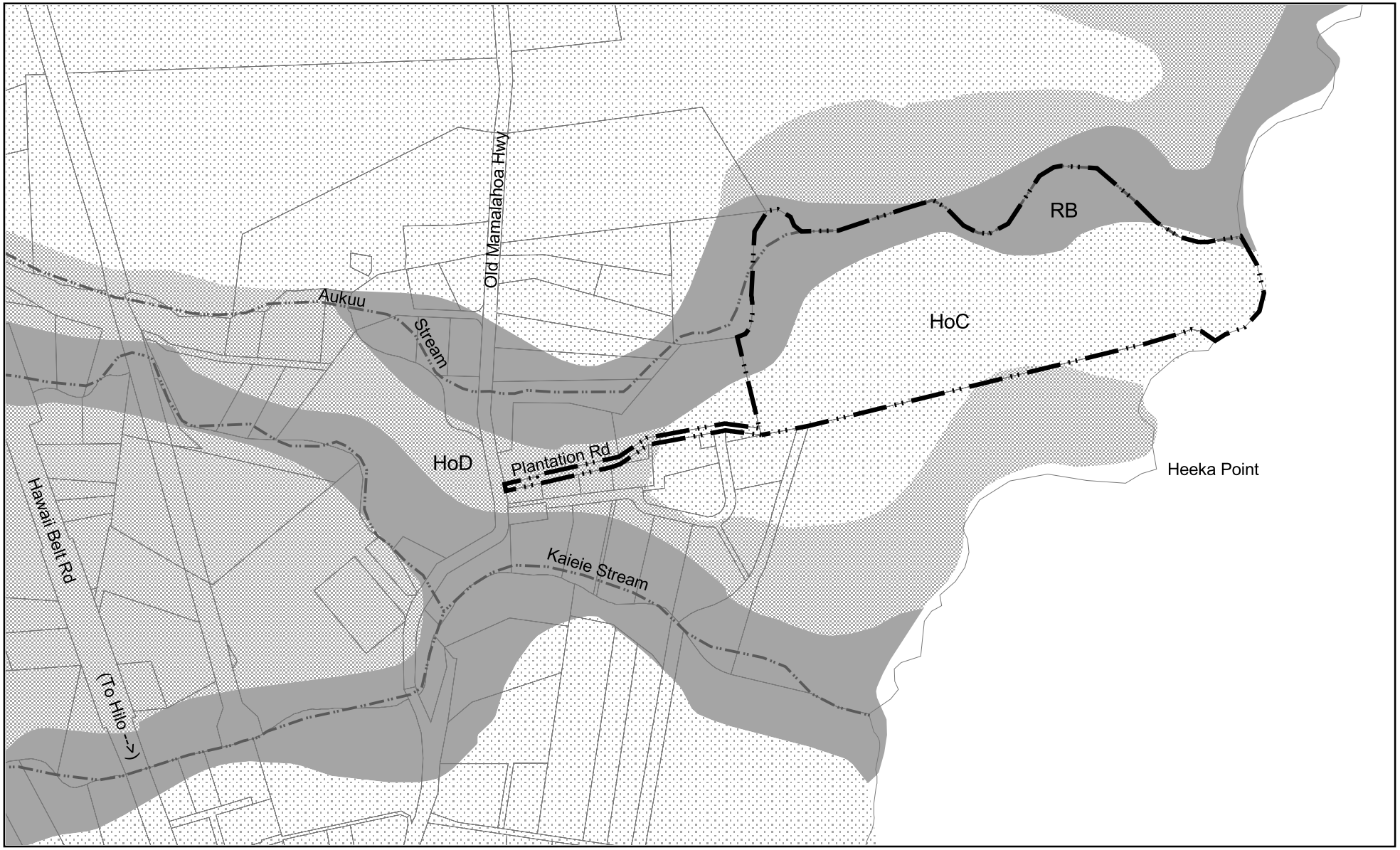
Hilo Silty Clay Loam, 10 to 20 percent slopes (HoD). This soil is similar to Hilo Silty Clay Loam, 0 to 10 percent slopes, but is steeper. Runoff is medium, and the erosion hazard is slight to moderate. This soil type is used for sugarcane.

Roughly 0.3 acres of the project site contains HoD soils. HoD soils are rated IVe, non-irrigated. Class IV soils have very severe limitations that reduce the choice of plants, require very careful management, or both.

Rough Broken Land (RB). This is a miscellaneous land type that consists of very steep, precipitous land broken by many intermittent drainage channels. Stone and rock outcrops are common along the rocky coastline and southerly ravine area. Rough broken land is used for pasture, woodland, wildlife habitat, and recreation areas.

Approximately 4.1 acres of the project site contain RB soils. RB soils are rated as VIIe, non-irrigated. Class VII soils have very severe limitations that make them unsuited to cultivation and that restrict their use largely to pasture or range, woodland, or wildlife.

Detailed Land Classification. The University of Hawai'i Land Study Bureau document titled *Detailed Land Classification, Island of Hawai'i (1965)* classifies non-urban areas based upon a five-class productivity rating system using the letters A, B, C, D, and E, where A represents the highest class of productivity and E the lowest. The entire project site is classified as Fair (C) (see Figure 6). This soil classification indicates fair suitability for agricultural purposes. Approximately 12.9 acres are classified as C42 (Hilo & Wailea), 2.7 acres as C43 (Hilo & Wailea) and 0.38 acres are classified as being Urban. The characteristics of the specific land types of the project site are detailed in Table 1 below.



Source:
Natural Resources Conservation Service (1970)

Disclaimer:
This graphic has been prepared for general planning purposes only.

LEGEND

Soil Types

- HoC: HILO Silty Clay Loam, 0-10% Slopes
- HoD: HILO Silty Clay Loam, 10-20% Slopes
- RB: Rough Broken Land

Project Site Boundary

Figure 5
Soils Map

Johnson Single-Family Residence

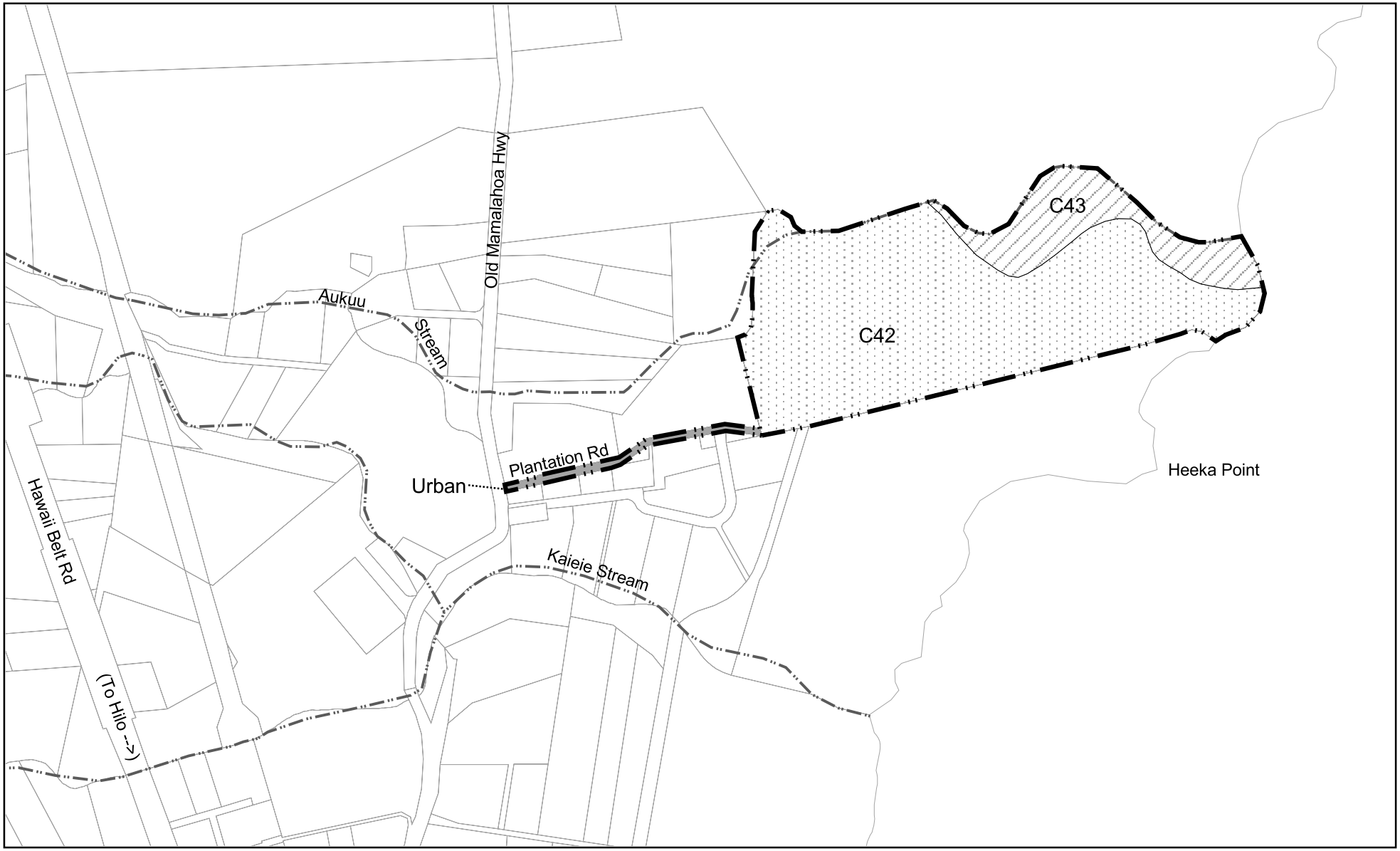
ISLAND OF HAWAII

NORTH

LINEAL SCALE (FEET)

0 200 400 800

PBR HAWAII



Source:
Land Study Bureau (1967)

Disclaimer:
This graphic has been prepared for general planning purposes only.

LEGEND

Agricultural Soil Ratings

- C42
- C43
- Urban

Project Site Boundary

Figure 6
Detailed Land Classification Map

Johnson Single-Family Residence

ISLAND OF HAWAII

NORTH

LINEAL SCALE (FEET)

0 200 400 800

PBR HAWAII

Table 1
Detailed Land Classification

Characteristic	**C42**	**C43**
Depth	Deep	Deep
Texture	Moderately fine	Moderately fine
Color	Dark brown	Dark brown
Parent Material	Volcanic Ash	Volcanic Ash
Stoniness	Nonstony	Nonstony
Drainage	Well drained but moist	Well drained but moist
Slope	0 - 10% with inclusions of steeper slopes	11 - 20% with undulating terrain
Clime	Warm, very humid, considerable cloudiness	Warm, very humid, considerable cloudiness
Mean Annual Rainfall	120 to 200 inches	120 to 200 inches
Elevation	Sea level to 800 feet	Sea level to 800 feet
Machine Tillability	Moderately well suited	Moderately well suited
District	North and South Hilo	North and South Hilo
Remarks	Smeary subsoil; dries irreversibly	Smeary subsoil; dries irreversibly

Agricultural Lands of Importance to the State of Hawai‘i. The State of Hawai‘i Department of Agriculture's *Agricultural Lands of Importance to the State of Hawai‘i (ALISH)* system of defining agricultural suitability classifies the project site soil as Prime Agricultural Land and lands "Not Classified" (see Figure 7).

Prime Agricultural Land is land best suited for the production of food, feed, forage, and fiber crops. When treated and managed, including water management, according to modern farming methods, the land has the soil quality, growing season, and moisture supply needed to economically produce sustained high yields of crops. Approximately 8.6 acres of the site is classified as Prime Agricultural Land.

Potential Impacts and Mitigation Measures

Impacts to the soils include the potential for soil erosion and the generation of dust during construction. Clearing and grubbing activities will temporarily disturb the soil retention values of the existing vegetation and expose soils to erosion forces. Some wind erosion of soils could

Source:
State Department of Agriculture (1977)

Disclaimer:
This graphic has been prepared for general planning purposes only.

LEGEND

ALISH type

Prime ALISH Lands

Not Classified

Project Site Boundary

Figure 7
Agricultural Lands of Importance to the State of Hawaii (ALISH)

Johnson Single-Family Residence

ISLAND OF HAWAII

NORTH

LINEAL SCALE (FEET)

0 200 400 800

PBR HAWAII

occur without a proper watering and re-vegetation program. Heavy rainfall could also cause erosion of soils within disturbed areas of land.

To the extent possible, improvements will conform to the contours of the land, further limiting the need for extensive grading of the site. In addition, graded areas will be limited to specific areas for short periods of time to reduce the amount of soil exposed to erosion forces.

Measures taken to control erosion during the site development period will include minimizing the time of construction and retaining existing ground cover as long as possible.

All construction activities will comply with all applicable Federal, State, and County regulations and rules for erosion control. All construction activities will also comply with the provisions of Hawai‘i Administrative Rules, Section 11-60.1-33, Fugitive Dust.

After construction, establishment of permanent landscaping will provide long-term erosion control. Adequate groundcover will be maintained under the tree canopies to help keep runoff and soil erosion to tolerance levels and reduce sediment, farm chemicals, and nutrients from impacting ground and surface waters.

The two drainage structures (terraces) aid runoff treatment on agricultural lands. The terraces will be maintained to keep runoff moving smoothly and prevent sediment from settling in the channel, preventing reduced capacity of the channel. The lower of the two terraces reduces runoff towards the house site, thus reducing erosion potential once the residence is constructed.

An eroded area south of the house site was a result of past agricultural use on the property and the previous drainage pattern. Since the current drainage pattern on the property now directs water towards the gulch on the northern border of the parcel, the eroded area to the south of the house site is no longer threatened by runoff from the agricultural lands above.

Dr. Charles Fletcher, Geology and Geophysics Professor at the University of Hawai‘i at Mānoa, assessed the property on November 10, 2005 for erosion hazards (See Appendix D). Dr. Fletcher’s assessment of the southern cliff near the previously eroded area was that it is unstable. However, Dr. Fletcher concluded that filling and grassing over the eroded area should not cause any impact, provided that the fill is kept heavily vegetated and is not allowed close to the edge of the cliff. Dr. Fletcher recommended that the fill activities be monitored by a professional landscaper and vegetation expert and concluded that no further erosion analysis of the property is necessary.

To mitigate impacts to the area that was eroded by the previous land use pattern, the Johnsons worked with a professional landscaper and the botanical consultant to come up with the following management and monitoring plan: the eroded area will be cleared of overgrown debris and partially filled to minimize the hazardous slope, while maintaining the general slope pattern that exists. The deepest fill will start at 8' on the inland side of the depression and gradually decline to the existing grade (zero) as it reaches the cliff face. The depressed area will remain, as it will not be filled in completely. By partially filling in the eroded area, it will allow the area to be landscaped, maintained and drained. Approximately 400 cubic yards of fill will be required. Once fill is complete, the area will be immediately seeded over with quick growing grass such as rye, mixed with another more permanent grass such as centipede or carpet grass to minimize soil loss. A strip of preferably native plants such as naupaka will be planted at the edge of the cliff to

promote further stabilization. The Johnsons' will maintain and monitor over time to determine if additional erosion is occurring. Due to its close proximity to the cliff, the area will remain as open space once fill and re-vegetation is complete.

The agricultural potential of the property will be preserved by locating the single-family residence within the State Conservation District portion of the property and utilizing the designated State Agricultural District portion of the property for farming.

3.1.4 Natural Hazards

Potential natural hazards to which the property could be subjected to are earthquakes, volcanic eruptions, hurricanes, erosion and flooding. In terms of volcanic threat, the project lands are designated as within Hazard Zone 8, the zone on the island of Hawai'i least likely to experience lava flows from potential eruptions.

The proposed residence is located approximately 29 feet from the edge of the northern slope, 70 feet from the edge of the southern cliff (where the previously eroded area exists), and 217 feet from the edge of the eastern cliff. The cliffs are approximately 60 feet in height and not only topographically isolate the property from the shore, but also restrict access to the shore.

The subject land is not indicated on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) as there are no flood hazards in the area. (Personal Communication, July 5, 2005). Floods due to rainwater surface runoff are unlikely to occur due to the well-drained nature of the land and soil types.

The 1946 tsunami, which originated in the Aleutian Islands, resulted in a run up height of 34 feet (msl) in the project area, but at a location well below the height of the cliffs and project site.

Potential Impacts and Mitigation Measures

Construction will not exacerbate any hazardous conditions. In accordance with the Building Code adopted by the County of Hawai'i, the residence will be constructed to prevent damage caused by earthquakes and the destructive winds and torrential rainfall of tropical hurricanes.

Dr. Fletcher's assessment of the northern side of the property is that it is a slope of a gully, which is fed by a spring located a mile or so *mauka* of the property. The spring is not a free-flowing perennial drainage system; therefore it does not appear to represent a flash-flood hazard. The northern slope is heavily vegetated with ground cover grasses, indicating that it has not experienced recent instability or mass wasting; it is a relatively stable feature and does not represent an immediate erosion threat. Dr. Fletcher's assessment of the southern cliff near the previously eroded area was that it is unstable. However, Dr. Fletcher concluded that filling and grassing over the eroded area should not cause any impact, provided that the fill is kept heavily vegetated and is not allowed close to the edge of the cliff; the fill activity will be monitored by a professional landscaper. It was concluded that no further erosion analysis of the property is necessary (Appendix D). In addition, the house is set back 70 feet from the cliff's edge on the south side of the property, which greatly exceeds requirements. Therefore, the proposed project should not have any adverse impacts on coastal recreational resources, coastal ecosystems, or beach protection.

Additionally, because of the relatively high elevation of the project site [60± feet mean sea level (msl)] and the distance from the shore (±217 feet from the eastern cliff and ±70 feet from the southern cliff), no potential threat from tsunami inundation is expected.

3.1.5 Botanical Resources

No rare, threatened or endangered plant species listed by the U.S. Fish and Wildlife Service were observed on or near the property, which appears to have been extensively disturbed for over a century. Prior to the closing of the sugar mills, nearly the entire property, excluding the area within the adjacent Aukuu Stream, was under sugar cultivation for over 150 years.

Dr. Ron Terry conducted a detailed botanical survey of the Conservation District portion of the property in November 2005 and concluded that most of the site in its current condition does not represent suitable habitat for threatened or endangered plant or animal species, and use of the property for a single-family residence is unlikely to adversely affect such species (Terry, 2005). A listing of species encountered can be found in Appendix E.

Dominant species are alien grasses and herbs including California grass (*Brachiaria mutica*) and Spanish clover (*Desmodium sandwicense*). Where roads, fences or other disturbance is present, weedy herbs predominate, including sensitive plant (*Mimosa pudica*), *Hyptis pectinata*, rattlepod (*Crotalaria pallida*), *Ageratum conyzoides*, and buttonweed (*Spermacoce assurgens*).

The coastal fringe and northern stream banks, however, have a healthy native forest of hala and naupaka with only limited invasion (Appendix E, Photo Figure 2). Invasive species are more prominent on the southeastern half of the coastal fringe (where ironwoods and Wedelia trilobata are common), and on the *mauka* parts of the stream bank, where the hala forest gives out and plants such as gunpowder tree (Trema orientalis), Melochia umbellata, rattoon sugar cane (Saccharum spp.), and bananas (Musa sp.) are common. The hala and naupaka help stabilize the sea cliffs and stream banks (Appendix E, Photo Figure 3), provide habitat for native invertebrates, and contribute to the scenic values of the Conservation District.

Ironwood trees have significant adverse effects on native ecosystems, agricultural land, scenic vistas and cliff erosion. Along the Hāmākua Coast, ironwood's shade and soil effects crowd out and kill native species such as hala, ʻōhiʻa, and naupaka. Ironwood tends to be more shallow-rooted and less stable than many other trees, and often falls over in high winds, exacerbating cliff erosion. Erosion appears to proceed faster on ironwood-dominated areas in cliffs that contain both native vegetation and ironwood-dominated faces. Organizations concerned with endangered species, such as the Big Island Invasive Species Committee and the University of Hawaiʻi at Mānoa Botany Department have repeatedly gone on record concerning the damaging effects of ironwood in Hawaiʻi (Terry, 2005).

Currently (November 2005), the agricultural district portion of the property is either cultivated in peach palm (used for making hearts of palm) or contains weedy vegetation similar to that found in the upper part of the Conservation District.

Several sterile or juvenile plants were not able to be identified to the species or even genus level; in particular, one tree that lacked any diagnostic flowers or fruit may be *Gmelina arbore,* an unusual introduced member of the Verbena family.

Potential Impacts and Mitigation Measures

The proposed project is not expected to have a significant negative impact on botanical resources since no threatened, endangered, or species of concern are known to occur on the site. The Johnsons propose to remove some ironwood trees near the top of the sea cliff, to prune but not remove selected ironwood trees on the sides of the cliff, and to trim selected mature hala to provide better coastal views.

Most existing hala trees will be retained and additional hala trees planted in areas where ironwoods are removed or reduced (a great stock of hala juveniles exist on property). Hala trimming will be done cautiously to ensure that any trimming does not remove an extent of foliage that is likely to lead to the death of the tree. Side branches may be removed as long as no more than 1/3 of the plant's vegetation is removed; tops should not be removed; and cuts should be vertical to allow water to drain and not to collect in the cuts. Removal of a few whole hala trees will take place in areas where they are sufficiently dense that their removal would not adversely affect slope stability or the integrity of the ecosystem (Terry, 2005). Given the implementation of these measures, the conservation values of the property can be preserved and enhanced as a result of the proposed use (Terry, 2005).

The residence will include new, appropriate landscaping such as drought-tolerant and hardy native and indigenous plants to minimize the need for irrigation. The vegetation removal plan is in accordance with the recommendations of both the erosion hazard assessment and the detailed botanical survey. In general, this plan provides for improved the ocean views from the site and, at the same time, improved soil stability along the cliffs and stream banks.

<u>Southern Cliff:</u>
Cut ironwoods below top of cliff (re-growth will be allowed from the stumps), prune lower hala branches in accordance with the botanical consultant's recommendations and fill eroded areas in a manner to avoid sedimentation into the ocean. Grading will include flattening old cane trash piles at the periphery of the property, filling the eroded area and contouring the land to allow it to be mowed and properly drained. Ironwood trees will be cut and lifted away from the sea cliff using a boom and hauling the logs up over the top of the cliff to avoid disturbance of the cliff. Vegetation to be pruned or removed from the southern cliff include:

Ironwood trees (cut below top of cliff)
6" diameter, 3 each
7 diameter, 2 each
8" diameter, 2 each
10" diameter, 3 each
12" diameter, 2 each
18" diameter, 1 each
36" diameter, 1 each

Legume trees
6" diameter, 2 each

Total to be removed from southern cliff: 16 trees

Eastern Cliff:
Cut ironwoods below top of cliff (re-growth will be allowed from the stumps) and prune lower branches of some hala in accordance with the botanical consultant's recommendations. Grading will include flattening old cane trash piles at the periphery of the property and contouring the land to allow it to be mowed and properly drained. Some small diameter ti and naupaka growing on the cane trash piles will be removed. Some of the small naupaka will be replanted on the southern cliff area to help stabilize the fill area. Trees to be pruned or removed from the eastern cliff include:

Ironwood Trees (cut at or below top of cliff):
6" diameter, 1 each
8" diameter, 2 each
12" diameter, 2 each
36" diameter, 2 each.

Total to be pruned or removed from eastern cliff: 7

Auku'u Stream Bank:
Prune the lower branches of some hala and thinning out the stands of Alexandra palms in accordance with the botanical consultant's recommendations. Grading will include flattening old cane trash piles at periphery of the property and contouring the land to allow it to be mowed and properly drained. Trees to be removed from Auku'u Stream bank include:

Alexandra Palms:
8" to 14" diameter, 10 each

Total to be removed from Auku'u Stream bank: 10

Total number of trees to be pruned or removed: 33

Remainder of Conservation Zone Area:
Grade land for driveway, house site and landscaping per landscape plan. Contour land for proper drainage and mowability. Replant grass in landscaped areas with a lawn grass appropriate for the site; otherwise allow native grasses to re-grow.

3.1.6 Mammalian and Avian Species

Fauna observed on the property consists mainly of introduced species that are transient in nature. These typically include mongoose, cardinal, barred dove, spotted dove, mynah bird, Pacific Golden Plover, and the house sparrow. Feral dogs, cats, pigs and rodents are also common to the area. Although not observed on the property, it is possible that endemic birds such as the short-eared owl or Pueo and the Hawaiian Hawk or 'Io may forage in the region.

Potential Impacts and Mitigation Measures

The project is not expected to impact threatened, endangered, or native species of wildlife, since none were observed on the site. All of the birds and mammals found on the site are alien species. New landscaping will provide suitable habitat for some species.

3.1.7 Cultural Resources

The following individuals were contacted via telephone as suggested by the Office of Hawaiian Affairs, Hilo Office: Mr. Norman K. Gonsalves (Kahu O Kahiko, Inc.), Mr. Reynolds Kamakawiwo‘ole, (President of the Hawaiian Civic Club of Hāmākua), Mr. Walter Victor, Jr., (President of the Laupāhoehoe Hawaiian Civic Club), and Ms. Mabel Tolentino (President of the Hawai‘i District Council of the Association of Hawaiian Civic Clubs).

Mr. Kamakawiwo‘ole and Mr. Victor were not familiar with the area and had no information to offer regarding cultural resources on the project site. Mr. Gonsalves and Ms. Tolentino were unable to be reached for comment.

Potential Impacts and Mitigation Measures

No impacts to cultural resources, practices, and beliefs are anticipated as a result of the proposed residence.

3.1.8 Archaeological Resources

The property is not listed as a historic property in the Hawai‘i Register or the National Register of Historic Places, and no historic resources are known to exist on the property. Since the property, including the proposed house site, has been subject to agricultural cultivation for more than 150 years, it is highly unlikely that any significant historic sites remain on the project site.

Potential Impacts and Mitigation Measures

In their review of the previously proposed action for this project site, the DLNR State Historic Preservation Division (SHPD) had the following comments by letter dated June 1, 1998. The SHPD confirmed these comments on July 20, 2005 during the pre-assessment consultation period.

> "We have no record of historic sites on the subject property, which is old sugar cane cropland subsequently used to plant ti and other ornamental plants. Because of the long history of ground disturbance it is highly unlikely that any significant historic sites would be found on this property. We thus believe that the proposed residence will have 'no effect' on significant historic sites." (See Appendix B)

Should any archaeological, cultural, or historic sites be uncovered during construction, all work in the vicinity will cease and the DLNR Historic Preservation Officer will be notified immediately. The treatment of any uncovered objects will be conducted in strict compliance with the requirements of the DLNR, SHPD.

3.1.9 Noise

Ambient noise levels in the project area are very low and reflect the rural-agricultural character of lower Kalaoa.

Potential Impacts and Mitigation Measures

Temporary noise impacts will occur from the construction of the single-family dwelling; however, construction will be short-term and will occur during daylight hours. Once construction is complete, no long-term adverse impacts are anticipated.

3.1.10 Visual Resources

Currently, the Conservation District portion of the property is in open space and seven (7) acres of the upper, Agriculture District portion of the property is planted in peach palms.

Potential Impacts and Mitigation Measures

The proposed use will have some visual impact since a residence will be built on currently vacant land. However, height of the proposed residence is 24 feet, below the maximum height allowed with in the Conservation District. The closest residential structures are more than 1,000 feet *mauka* of the proposed house site and are at higher elevations, therefore, the neighboring property owners will be looking over the proposed residence. The large canopy trees that will be planted *mauka* of the garage will also help to screen the residence from the surrounding homes at higher elevations. Given these reasons, the current view planes out toward the ocean should not be hindered from existing residences.

In addition, the high cliffs on the shoreline perimeter of the parcel, combined with the setback of the residence from the cliff edge, will limit the sight of the residence from view plains at adjacent coastline areas.

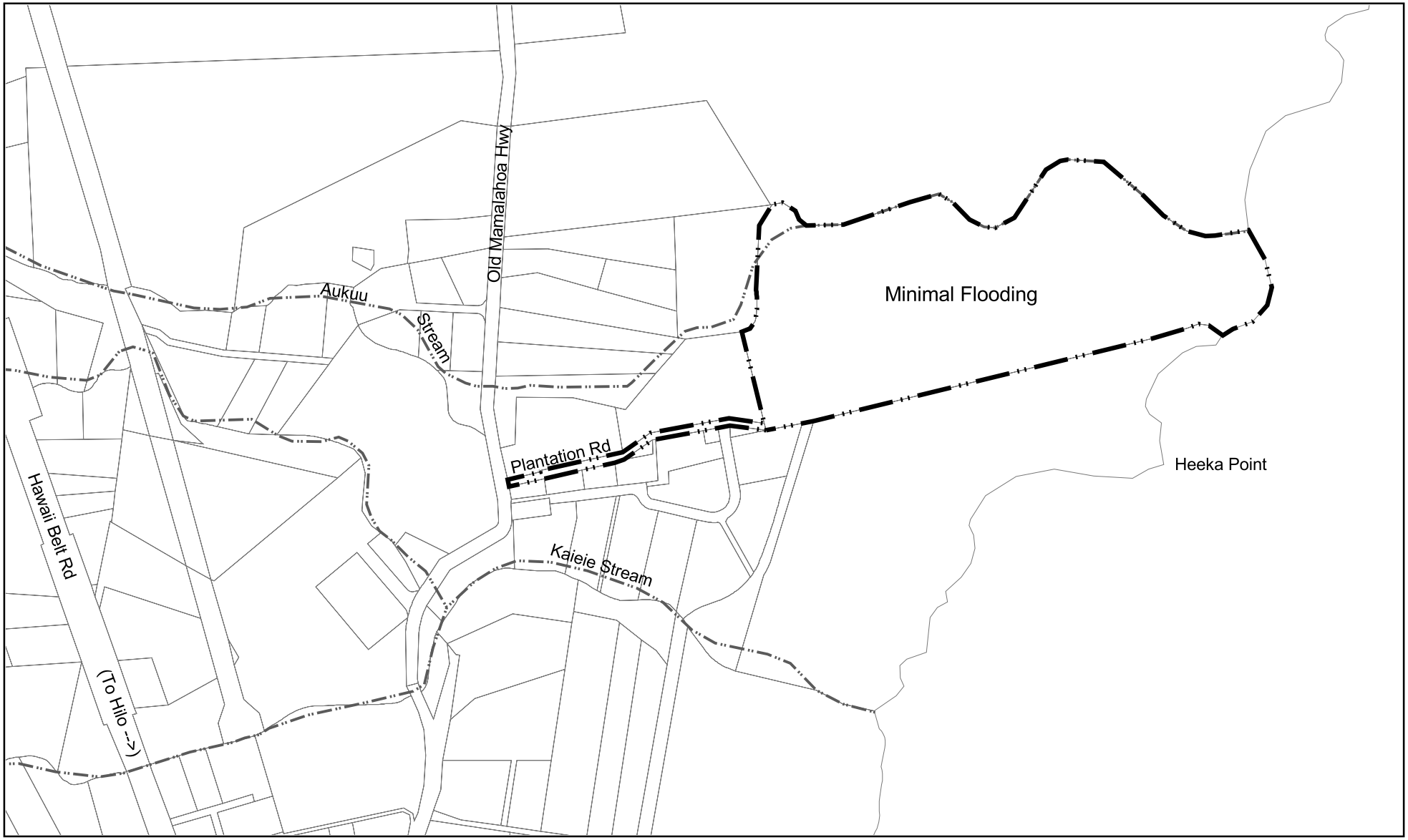
3.1.11 Drainage and Grading

The subject land is not indicated on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) as there are no flood hazards in the area. (Personal Communication, July 5, 2005). Floods due to rainwater surface runoff are unlikely to occur due to the well-drained nature of the land and soil types (see Figure 8).

The NRCS Hawai‘i Resource Office determined by letter dated March 3, 2005 that the two existing drainage structures (terraces) are placed at strategic locations as to intercept storm runoff and carry excess water to the gulch on the northern border of the parcel, away from the house site. The NRCS determined that the drainage structures are adequate to handle runoff flows up to the 10-year/24-hour storm event (see Appendix C).

Potential Impacts and Mitigation Measures

No requirements for additional drainage improvements are anticipated in conjunction with the proposed residential and agricultural uses and associated improvements. The two existing drainage structures (terraces) will be maintained in order to continue the current storm runoff pattern. Additionally, grass block pavers will be used on approximately 3,991 square feet of the driveway to increase ground water permeability around the house site (see Figure 4).



Source:
Federal Emergency Management Agency

Disclaimer:
This graphic has been prepared for general planning purposes only.

LEGEND

Flood Zone

Areas of Minimal Flooding

Project Site Boundary

Figure 8
Flood Insurance Rate Map

Johnson Single-Family Residence

ISLAND OF HAWAII

NORTH

LINEAL SCALE (FEET)

0 200 400 800

PBR HAWAII

3.2 SOCIAL ECONOMIC CHARACTERISTICS

The subject property was historically cultivated for sugar cane, then later for dracaena (a foliage plant), and most recently for peach palms. The property is not known to be significant for cultural and/or historical purposes. The project site is situated in an area consisting of scattered residential and agricultural uses in a rural setting. Several other residential lots with single-family dwellings abut the subject property, especially in the area of the Old Māmalahoa Highway.

The proposed improvements will add to the economic activity in the area by increasing the productivity of the agricultural land with the expansion of the peach palm crop. Additionally, some short-term employment will be provided for local designers and building contractors in the development of the single-family dwelling and related improvements.

3.3 PUBLIC SERVICES

Protective Services: The County Fire Department is located at 466 Kino‘ole Street, approximately 5.5 miles south of the project site. The County Police Department Headquarters are located in Hilo at 349 Kapi‘olani Street, approximately 6.25 miles south of the project site.

Health Care Facilities: The health care facility nearest to the project site is the Hilo Medical Center located at 1190 Waiānuenue Avenue, approximately 7.0 southwest of the project site. Hilo Medical Center is a full service hospital providing emergency care and medivac transport capabilities.

Potential Impacts and Mitigation Measures

No significant impacts to the provision of public services are anticipated as a result of the proposed single-family residence and agricultural crop expansion.

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4.0 LAND USE CONFORMANCE

4.1 STATE OF HAWAI'I

4.1.1 State Environmental Impact Statement Law, Chapter 343, Hawai'i Revised Statutes

The State Land Use Law (Chapter 205, HRS) establishes the State Land Use Commission (LUC), which has the authority to designate all lands in the State into one of four categories: Urban, Rural, Agricultural, and Conservation. A portion of the subject property, including the proposed single-family residence site, is within the Conservation District. The State Environmental Impact Statement (EIS) Law (Chapter 343, HRS), pursuant to Section 343-5, requires an environmental assessment for the use of any land classified within the State Conservation District by the State Land Use Commission. This Environmental Assessment has been prepared to fulfill these requirements.

4.1.2 Chapter 205A, Hawai'i Coastal Zone Management

The objectives of the Hawai'i Coastal Zone Management (CZM) Program as set forth in Chapter 205A, Hawai'i Revised Statutes, include the protection and maintenance of the State's coastal resources. Accordingly, the Special Management Area (SMA) Map and the Flood Insurance Rate Map (FIRM) are utilized to protect coastal resources. A more detailed discussion of the project site as it relates to the Hawai'i CZM Program is included in Section 4.2.2.

4.1.3 State Administrative Rules Governing Land Uses within Conservation Districts

The purpose of the Conservation District Rules (according to Section 13-5-1 of the Rules) is "to regulate land use in the conservation district for the purpose of conserving, protecting, and preserving the important natural resources of the State through appropriate management and use to promote their long-term sustainability and the public health, safety, and welfare." The DLNR, under HAR Section 13-5-1, established five Subzones within the Conservation District: Protective, Limited, Resource, General, and Special. Those portions of the subject property within the Conservation District have been designated within the Resource (R) Subzone. The objective of this Subzone, as described in HAR Section 13-5-13, "is to develop, with proper management, areas to ensure sustained use of the natural resources of those areas."

Provided the Board of Land and Natural Resources (BLNR) approves a Conservation District Use Permit, identified land uses within the (R) Subzone, as described under Section 13-5-24, include:

- A single-family residence that conforms to the design standards as outlined in HAR Section 13-5-24;
- Landscaping, defined as alterations of plant cover, including trees, in an area of more than ten thousand square feet.

In addition, all identified land uses listed for the Protective (P) (HAR Section 13-5-22) and Limited (L) (HAR Section 13-5-23) Subzone also apply to the Resource (R) Subzone, including:

- Agriculture defined as the planting, cultivating, and harvesting of horticultural crops, floricultural crops, or forest products, or animal husbandry. A management plan is required for areas larger than one acre.

In evaluating the merits of a proposed land use, the Board of Land and Natural Resources applies the criteria listed under Section 13-5-30 of the Rules. Each of the criteria is listed below, followed by discussion of how the proposed Johnson single-family residence effectively conforms to each.

(1) The proposed land use is consistent with the purpose of the conservation district;

Discussion: The proposed Johnson single-family residence is consistent with the purpose of the Conservation district in that a single-family residence is an identified use in the Resource subzone and that the resources of the site will be conserved, protected, and preserved after the residence is constructed. As specified in the Rules, the developable area for a single-family residence in the Conservation District is limited to a maximum of 5,000 square feet (including any decks, garages, swimming pools, or other structures).

The design of the Johnson residence will be sensitive to the site with measures taken to minimize environmental impacts. Considering that the total area of the site is 15.98 acres, the residence will occupy less than one percent of the total site. Therefore the majority of the site will be left in its open space condition. Relative to the existing vacant state of the site, a residence will allow for the owner to maintain careful monitoring of site conditions, in effect providing stewardship of the site.

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

Discussion: The objective of the Resource (R) subzone is to "develop, with proper management, areas to ensure sustained use of the natural resources of those areas." The Johnson single-family residence will implement this objective. Relative to the existing vacant state of the site, a residence will allow for the owner to maintain careful monitoring of site conditions, in effect providing stewardship of the site. The proposed residential structure will be 4,872 square feet (including all above grade buildings, decks, carports, and other standing structures.), thereby maintaining the majority of the 15.98-acre site in its open space condition. The proposed agricultural expansion will utilize the natural resources of the area to its fullest extent while utilizing Best Management Practices (BMPs) to ensure those natural resources are maintained over time.

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

Discussion: The proposed Johnson single-family residence complies with provisions and guidelines contained in Chapter 205A, HRS, entitled "Coastal Zone Management," by:

a) Protecting, preserving, or improving the quality of coastal scenic and open space resources;

b) Protecting valuable coastal ecosystems and minimizing adverse impacts on all coastal ecosystems;

The Johnson property is within the Special Management Area (SMA) of the County of Hawai'i. However, under Section 205A-22, *Hawai'i Revised Statutes*, construction of a single-family residence is exempt from the SMA requirements. Please refer to Section 4.2.2 for a more detailed discussion.

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

Discussion: The Johnson single-family residence will not cause substantial adverse impact to existing natural resources within the surrounding area, community, or region. The design and construction of the residence will be sensitive to the site with measures taken to minimize environmental impacts. The relative small area of the residence will minimize the need for extensive grading or contouring of the site. Mitigative measures will be implemented to ensure that no impacts to the surrounding marine resources occur due to alterations in storm run-off conditions.

In addition, the general topography of the area puts the Johnson residence at a lower elevation than the surrounding residences, therefore minimizing the obstruction of ocean views from surrounding areas.

(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.

Discussion: The Johnson single-family residence will be compatible with the locality and surrounding areas. The design and construction of the residence will be sensitive to the site. The location of the residence on the property is on a portion of the parcel that is considerably set back from the property line on all sides.

In accordance with the Conservation District Rules the residence will be limited to a maximum height of 25 feet and a maximum area of 5,000 square feet (including any decks, garages, swimming pools, or other structures). Considering that the total area of the site is 15.98-acres, the residence will occupy less than one percent of the total site. The landscape plan incorporates a good blend of large, mid-size, and small canopy trees as well as accent shrubs and groundcover that will complement the area by nicely transitioning the structure with the natural environment. In addition, a non-structural rock wall will be used to mask the post and pier structure of the house. The grass block pavers used on the majority of the driveway will soften the look of the hardscape, and will reduce the amount of concrete surrounding the residence.

(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.

Discussion: The Johnsons propose to: 1) remove some ironwood trees near the top of the cliff; 2) prune selected ironwood trees on the sides of the cliff; 3) trim selected mature hala to provide better coastal views; 4) remove a few mature hala trees; and 5) relocate several juvenile hala trees.

Ironwood trees have significant adverse effects on native ecosystems, agricultural land, scenic vistas and cliff erosion. Along the Hāmākua Coast, ironwood's shade and soil effects crowd out and kill native species such as hala, 'ōhi'a, and naupaka. Ironwood tends to be more shallow-rooted and less stable than many other trees, and often falls over in high winds, exacerbating cliff erosion. Erosion appears to proceed faster on ironwood-dominated areas in cliffs that contain both native vegetation and ironwood-dominated faces. Organizations concerned with endangered species, such as the Big Island Invasive Species Committee and the University of Hawai'i at Mānoa Botany Department have repeatedly gone on record concerning the damaging effects of ironwood in Hawai'i (Terry, 2005).

Most existing hala trees will be retained and additional hala trees planted in areas where ironwoods are removed or greatly reduced (a great stock of hala juveniles exist on property). Hala trimming will be done cautiously to ensure that any trimming does not remove an extent of foliage that is likely to lead to the death of the tree. Side branches may be removed as long as no more than 1/3 of the plant's vegetation is removed; tops should not be removed; and cuts should be vertical to allow water to drain and not to collect in the cuts. Removal of a few whole hala trees will take place in areas where they are sufficiently dense that their removal would not adversely affect slope stability or the integrity of the ecosystem (Terry, 2005).

Regarding Dr. Fletcher's recommendations for the previously eroded area, the depression will not be filled to the edge of the cliff, in order to avoid sedimentation into the ocean. Once the fill is complete, the disturbed area will be immediately seeded over with a quick growing grass such as rye, mixed with another more permanent grass such as centipede or carpet grass. A strip of preferably native plants such as naupaka will be planted at the edge of the cliff to promote further stabilization. Given the implementation of these measures, the conservation values of the property can be preserved and enhanced as a result of the proposed use (Terry, 2005).

Additionally, the proposed house site is on a relatively low portion of the property and the height of the proposed residence is 24 feet, which serves to preserve the rural character of the area. Because the residence will occupy less than one percent of the total site, there will not be significant impacts to the open space characteristics of the site. In addition, the high cliffs on the shoreline perimeter of the parcel, combined with the setback of the residence from the cliff edge, will limit the sight of the residence from view plains at adjacent coastline areas.

(7) Subdivision of land will not be utilized to increase the intensity of land uses in the conservation district; and

Discussion: The proposed action does not involve the subdivision of land in the Conservation District. Constructing one (1) single family residence will not significantly increase the intensity of land uses within the Conservation District. The expanded agricultural use of the property will increase the intensity of cultivation on the property, but will not surpass the level of intensity of the previous agricultural use on the property.

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

Discussion: The Johnson single-family residence will not be detrimental to the public health, safety and welfare as all phases of design and construction will comply with all appropriate government requirements with regard to environmental and public health concerns. Subsequent portions of the Draft Environmental Assessment identify all potential impacts and discuss appropriate mitigative measures to ensure that no significant detrimental effects on public health, safety, or welfare result from the construction of the Johnson single-family residence.

4.2 COUNTY OF HAWAI'I

County of Hawai'i land use policies and plans related to the proposed project include the Land Use Pattern Allocation Guide (LUPAG) map in *The General Plan – Hawai'i County* (*General Plan*) and the Hawai'i County Code (Comprehensive Zoning Ordinance).

4.2.1 The General Plan – Hawai'i County

The *General Plan*, adopted by ordinance in February 2005, is the policy document for the long-range development of the island of Hawai'i. The *General Plan* provides direction for the future growth of Hawai'i County and contains a series of land use maps referred to as the Land Use Pattern Allocation Guide (LUPAG) maps. The project site is designated for Low Density Urban and Open Area use by the LUPAG map.

Low Density Urban designations are for residential, with ancillary community and public uses, and neighborhood and convenience-type commercial uses; overall residential density may be up to six units per acre. Open Area designations are for parks and other recreational areas, historic sites, and open shoreline areas. The proposed use of the property is in accordance with the designations for the area in the County General Plan.

4.2.2 County Special Management Area (SMA)

The objectives of the Hawai'i Coastal Zone Management (CZM) Program, as set forth in Chapter 205A, Hawai'i Revised Statutes (HRS), include the protection and maintenance of the State's coastal resources. Accordingly, under the provisions of Chapter 205A, a Special Management Area (SMA) is designated and regulated by the County. The subject property is located within the Special Management Area (SMA) as defined by Chapter 205A, HRS, and Rule 9 of the County of Hawai'i Planning Commission Rules of Practice and Procedure. Pursuant to the requirements of Section 9-10A, the Johnsons submitted a request to the Hawai'i County Planning Department to determine if the proposed single-family residence will be exempted from further SMA review. By letter dated March 28, 2005, the Hawai'i County Planning Department determined that an SMA Assessment Application is not required and subsequently approved the single-family residential development for TMK: 2-7-8:128 (see Appendix A). However, since the entire island is designated within the Hawai'i Coastal Zone Management Area, the following discusses the project's relation to the objectives and policies of the Coastal Zone Management (CZM) Program.

The objectives of the CZM Program include the following (HRS 205A-2): recreational resources, historic resources, scenic and open space resources, coastal ecosystems, ecomonic uses, coastal hazards, managing development, public participation, beach protection, and marine resources.

At its nearest points to the edge of the property, the proposed residence is located approximately 29 feet from the edge of the northern slope and 70 feet from the edge of the southern cliff. Dr. Fletcher's assessment of the northern side of the property is that it is a slope of a gully, which is fed by a spring located a mile or so *mauka* of the property. The spring is not a free-flowing perennial drainage system; therefore it does not appear to represent a flash-flood hazard. The northern slope is heavily vegetated with ground cover grasses, indicating that it has not experienced recent instability or mass wasting. Dr. Fletcher's opinion of the northern slope of the property is that it is a relatively stable feature and does not represent an immediate erosion threat. The cliffs fronting the eastern and southern sides of the property are approximately 217 feet and 70 feet away, respectively. Those cliffs are approximately 60 feet in height and not only topographically isolate the property from the shore, but also restrict access to the shore. Therefore, the proposed project should not have any adverse impacts on **Coastal Recreational Resources, Coastal Ecosystems**, or **Beach Protection**. For the same reason, the site will not be subject to potential impacts from **Coastal Hazards**.

The proposed action is not likely to have a negative impact to the area's **Historic Resources** as the SHPD determined that due to the long history of agricultural use on the property, it is highly unlikely that any significant historic sites would be found on the subject property.

The proposed action will not greatly affect **Scenic and Open Space** quality as portions of the lot dedicated to agricultural use will enhance the scenic and open space value of the project. In addition, some of the large, overgrown canopy trees along the cliff will be trimmed to open up view planes toward the ocean. The house will also be screened from the lots at elevations higher than the proposed residence by large canopy trees that will be planted just *mauka* of the garage.

With regard to the **Economic Use** of the property, the proposed action will help stimulate the local economy by increasing the productivity of the agricultural land with the expansion of the peach palm crop. Additionally, some short-term employment is anticipated for local designers and building contractors for the design and construction of the single-family dwelling and related improvements.

Regarding the CZM's goals to promote **Public Participation**, the public review phase of the Draft EA will allow for public comments on the subject project.

Managing Development is appropriately the role of those State and County agencies assigned the responsibility of implementing the provisions of Chapter 205A, HRS, and the Coastal Zone Management Program.

Based on the above, the proposed project complies with the policies and objectives of the Coastal Zone Management Program, as delineated within Chapter 205A-2, HRS, and Section 9-6 of the Hawai'i County Planning Commission Rules of Practice and Procedure.

4.3 APPROVALS AND PERMITS REQUIRED

A list of permits and approvals required for the proposed project is shown below.

Permit/Approval	**Responsible Agency**
Chapter 343, HRS Compliance	State Department of Land and Natural Resources
Conservation District Use Permit	State Department of Land and Natural Resources
Grading/Building Permits	Hawai‘i County Department of Public Works

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5.0 IDENTIFICATION OF MAJOR IMPACTS AND ALTERNATIVES CONSIDERED

5.1 MAJOR IMPACTS

Due to the limited scope of the project and setting considerations, the proposed improvements are not expected to result in any significant adverse economic, social, or environmental impacts. In addition, no major long-term impacts are anticipated since the proposed agricultural expansion and single-family residence are permitted uses within the (R) Subzone, and County SMA.

Minor dust and noise impacts may occur during the construction period, however, in that the proposed single-family residence would be located more than 1,000 feet from the nearest residence, which is buffered by the surrounding agricultural uses, such impacts are expected to be negligible.

The project site, located at least ±217 feet from the eastern cliff and ±70 feet from the southern cliff and is not expected to have potential impacts to the shoreline or shoreline process.

An individual wastewater disposal system (septic tank) will be constructed meeting all State Department of Health regulations, which will provide further protection against shoreline impacts.

5.2 ALTERNATIVES TO THE PROPOSED ACTION

5.2.1 No Action Alternative

The Johnsons acquired the subject property with the intent of propagating peach palms and also utilizing it for the construction of a single-family dwelling. The "no-action alternative" would not result in a desirable use of the Johnsons' property.

5.2.2 Alternative Site

Alternatives to the proposed project that would meet the project objectives could include the use of an alternate site within the property or use of alternate designs to the proposed residential structure. However, such alternatives would not diminish the potential impacts of the planned use to the affected lands or surrounding uses. Although alternate sites for the proposed single-family residence were initially considered, the proposed site is located to minimize impacts to: 1) the shoreline; 2) existing and future agricultural activities; and 3) surrounding uses. Additionally, the proposed site will allow the expansion of the agricultural field from an existing seven (7) acres to approximately 12 acres.

5.2.3 Alternative Development Concept

The alternative of pursuing other uses of the property would not meet the project objective nor would they assure greater protection of existing natural resources of these lands.

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6.0 DETERMINATION, FINDINGS, AND REASONS FOR SUPPORTING DETERMINATION

6.1 SIGNIFICANCE CRITERIA

The State Department of Health, Hawai'i Administrative Rules, Title 11, Chapter 200 (Environmental Impact Statement Rules) establishes a "significance criteria" for determining whether an action may have a significant impact on the environment. Based on the significance criteria and its relation to the proposed project (described as follows), a Finding of No Significant Impact (FONSI) is anticipated for the proposed project.

1. *Involves an irrevocable commitment to loss or destruction of any natural or cultural resource;*

Discussion: The proposed action will be confined to the construction of a single-story, three-bedroom residence, including deck space, a garage with storage, a laundry and utility room, a lap pool and an outdoor spa. Additional improvements include associated utility and landscape enhancements, expansion of existing agricultural crops, and construction of a shed (within the State Land Use Agricultural District) and fence. Landscaping improvements will consist of accent plantings around the house site; trimming and removing of some existing trees; planting shrubs along the cliff edge for slope stabilization; a retaining wall for the grassed terraces, stone pavers, concrete stairs; lawn maintenance; and removal of some trees and pruning of larger canopy trees, as well as partially filling in an eroded area on the property. Improvements (either gravel or paving) will be made to the existing dirt roadway and access easement to provide access to the house site. Grass pavers will be used for the driveway near the house to increase permeability of the driveway.

Because the project site has historically been in agricultural use, the plants and wildlife found on the project site include mostly exotic species. The nearest areas of potential biological sensitivity include the Aukuu Stream, the center point of which is approximately 133 feet north of the proposed house site, and the shoreline, which is approximately 217 feet from the site. The project site is topographically separated from the stream and from the shoreline by cliffs that are 60 feet in height. The potential threat to the biological resources within or near the stream and shoreline will be mitigated through the implementation of erosion and sedimentation control measures prior to and during all grading and earthwork activity, and strict adherence with the requirements of Chapter 10, Erosion and Sedimentation Control, of the Hawai'i County Code.

As noted in Section 2.3, no public trails or roads providing access to the shoreline or across the property are known to exist, nor were any identified through consultation with the DLNR, SHPD and County Planning Department.

Regarding the potential impacts to sites of historical or cultural significance, in their review of the previously proposed action for this project site, the DLNR State Historic Preservation Division (SHPD) had the following comments by letter dated June 1, 1998 and confirmed these comments on July 20, 2005: "Because of the long history of ground disturbance it is highly unlikely that any significant historic sites would be found on this property. We thus believe the proposed residence will have "no effect" on significant historic sites." Should any archaeologically significant artifacts, bones, or other indicators of previous on-site activity be

uncovered during the construction of the residence, their treatment will be conducted in strict compliance with the requirements of the DLNR, SHPD.

2. *Curtails the range of beneficial uses of the environment;*

Discussion: The site for the proposed single-family residence consists of approximately 0.11 acres on a relatively level portion of the property, making the site very suitable for home construction. The construction of the single-family residence on this portion of the property will foreclose other uses on the site, however, the benefits derived from the proposed residential use outweigh other potential uses, such as agriculture. Additionally, the house site was selected so as not to impact the other agricultural activities occurring on the property, or areas of potential environmental sensitivity such as the shoreline.

The proposed project will increase the range of beneficial uses of the environment. The proposed single-family residence will be designed to blend with surrounding uses and will comply with height restrictions of the State Conservation District. Landscaping will be developed to enhance the aesthetic environment.

3. *Conflicts with the state's long-term environmental policies or goals and guidelines as expressed in chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders;*

Discussion: The proposed single-family residential and agricultural uses are consistent with the long-term environmental policies, goals, and guidelines of Chapter 344, HRS and "encourage productive and enjoyable harmony between people and their environment, promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of humanity, and enrich the understanding of the ecological systems and natural resources important to the people of Hawai'i."

4. *Substantially affects the economic welfare, social welfare, and cultural practices of the community or State;*

Discussion: The proposed project would positively affect the economic and social welfare of the community and state. No impacts to cultural resources, practices, and beliefs are anticipated as a result of the proposed residence.

5. *Substantially affects public health;*

Discussion: Construction activities may result in short-term noise and air quality impacts; however the project is not anticipated to substantially affect public health. Construction equipment would be equipped with mufflers, as required under State Department of Health (DOH) regulations. In the event that construction noise exceeds, or is expected to exceed, the maximum permissible noise level allowable at property line limits, a permit would be obtained from the DOH to allow these activities and to mitigate potential short-term construction noise impacts. All construction activities will comply with the provisions of Hawai'i Administrative Rules, §11-60.1-33 on Fugitive Dust, and dust and debris control measures will be implemented to mitigate potential short-term air quality impacts. Over the long term, the proposed action is not expected to result in noise, air quality, or other impacts that may affect public health.

6. *Involves substantial secondary impacts, such as population changes or effects on public facilities;*

Discussion: The proposed action would not involve substantial secondary impacts, such as population changes or effects on public facilities.

7. *Involves a substantial degradation of environmental quality;*

Discussion: Potential environmental impacts of the proposed action, as well as possible mitigation measures, have been discussed previously in this DEA. No substantial degradation of environmental quality is expected to result from the proposed action.

8. *Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions;*

Discussion: The proposed action does not involve a commitment for larger actions and is not expected to have a considerable effect on the existing environment. Construction-related impacts would be short-term.

9. *Substantially affects a rare, threatened, or endangered species, or its habitat;*

Discussion: There are no known rare, threatened, or endangered species, or habitats for such species, on or near the project site.

10. *Detrimentally affects air or water quality or ambient noise levels;*

Discussion: Potential short-term air quality and noise impacts could result from construction activities; however, such impacts are not expected to be detrimental. No water quality impacts are anticipated, and all site work will be performed in accordance with applicable standards, rules, and regulations.

11. *Affects or is likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters;*

Discussion: The proposed action does not substantially affect an environmentally sensitive area such as a flood plain, tsunami zone, erosion prone area, geologically hazardous land, estuary or coastal waters.

The project site is not located within an environmentally-sensitive area. The site is located outside of the tsunami evacuation zone and is not indicated on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) as there are no flood hazards in the area.

12. Substantially affects scenic vistas and view planes identified in county or state plans or studies;

Discussion: The proposed action does not affect scenic vistas and view planes identified in County or State plans or studies.

13. Requires substantial energy consumption.

Discussion: The proposed action does not require substantial energy consumption.

6.2 ANTICIPATED DETERMINATION

The proposed action is compatible with the physical conditions and capabilities of the surrounding area. The existing physical and environmental aspects of the project area will be preserved to the extent possible, and the proposed action is not expected to result in any significant or adverse effects to the environment. Based on the significance criteria established by the *Hawai'i Administrative Rules* and the assessment of potential environmental impacts, a Finding of No Significant Impact (FONSI) is anticipated to be issued by the DLNR (Accepting Authority), pursuant to Chapter 343, HRS.

7.0 CONSULTATION

7.1 PARTIES CONSULTED DURING THE PRE-ASSESSMENT CONSULTATION PERIOD

The following parties were consulted in July 2005 during the pre-assessment phase of the Draft Environmental Assessment. Each agency was sent a copy of a project summary and location map with a request for their written comments on the project. Six (6) parties that formally replied during the pre-assessment period, as indicated by the **+** below. All written comments and responses are reproduced in Appendix B.

State of Hawai'i Agencies

Department of Land and Natural Resources
+ State Historic Preservation Division
+ Office of Environmental Quality Control
+ Department of Health, Environmental Planning Office
Department of Business, Economic Development & Tourism, Office of Planning
+ Office of Hawaiian Affairs

County of Hawai'i Agencies

Department of Planning
+ Department of Environmental Management
Department of Public Works
Department of Parks and Recreation
Civil Defense Agency
+ Department of Water Supply

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Appendix A

Approval Letter from the
County of Hawai‘i Planning Department
Regarding the Special Management Area
Dated March 28, 2005

Harry Kim
Mayor

Christopher J. Yuen
Director

Roy R. Takemoto
Deputy Director

County of Hawaii
PLANNING DEPARTMENT
101 Pauahi Street, Suite 3 • Hilo, Hawaii 96720-3043
(808) 961-8288 • Fax (808) 961-8742

March 28, 2005

Mr. and Mrs. Richard Johnson
P. O. Box 365
Pepeekeo, HI 96783

Dear Mr. and Mrs. Johnson:

Status of SMAA 98-5
Applicant: Kent T. Lucien
Current Landowners: Richard & Lauree Johnson
Tax Map Key: 2-7-8:128, South Hilo, Hawaii

This is in response to a March 15, 2005 facsimile from Sheryl Fletcher concerning the status of a decision made on Special Management Area Assessment Application (SMAA 98-5) for a single-family residential development on the subject parcel.

On March 21, 2005, Ms. Fletcher submitted a copy of the site plan for the proposed development. She also requested that all correspondences be directed to you.

A determination was made for Special Management Area Use Permit Assessment Application (SMAA 98-5) that the proposed single family dwelling and related improvements was exempt from the definition of "development". Although the approval was granted for TMK: 2-7-8:3, a determination of pre-existing lots resulted in the project area subsequently being designated as TMK: 2-7-8:128.

We understand that you are the current landowners. After reviewing the site plan, we have no objections to this proposed development as we consider it to be a revision of the original site plan. Therefore, another Special Management Area Assessment Application is not required and our approval of a single-family residential development for the subject parcel still stands.

Hawai'i County is an equal opportunity provider and employer.

In reviewing the site plan, however, it appears that the *"Proposed Pavillion; Compacted 3/8" Gravel Groundcover, Typical (Approx. 454 S.F.; Existing Ironwood Tree to be Removed, Typical; Existing Lauhala Grove (Remove/Thin-Out Smaller Lauhala Plants, Raise & Prune Canopy of Larger Trees"* and the "*3' Fence/Safety Barrier*" may be close to or within the 40 feet shoreline setback area.

For your information, according to Planning Commission Rule 11, Shoreline Setback, *"all lots which abut the shoreline shall have a minimum shoreline setback line of forty feet"*. Within this area, certain activities are allowed or permitted if a determination of minor structure or activity is made or a variance granted. Planning Commission Rule No. 8, Shoreline Setback, defines activity as *"any landscaping, excavating, grubbing, grading, filling or stockpiling of earth materials, including sand, coral, coral rubble, rocks, soil, or marine deposits"*.

Please note that for any activity proposed within this 40 feet shoreline setback area, you must secure a prior written determination of minor structure or activity pursuant to Rule 11-8 from the Planning Director or approval of a Shoreline Setback Variance from the Planning Commission.

Finally, rubbish or debris from any landscaping activity must be contained on land and no discharge allowed onto the shoreline setback area or into the ocean.

If you have questions, please feel free to contact Esther Imamura or Larry Brown of this office at 961-8288.

Sincerely,

CHRISTOPHER J. YUEN
Planning Director

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Appendix B

Pre-Assessment Consultation Comment and Response Letters

LINDA LINGLE
GOVERNOR OF HAWAII

GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186
E-mail: oeqc@health.state.hi.us

July 14, 2005

Marissa Furfaro
PBR - Hilo
101 Aupuni St. #310
Hilo, HI 96720

Dear Ms. Furfaro:

Subject: **Johnson Single Family Residence draft EA pre-consultation**

We are in receipt of your letter of July 8th, 2005 requesting comments on this project. We are concerned about two issues:

Peach palms cultivation: Does the applicant have any intention of cultivating peach palms for commercial harvest? If so, then the ramifications of commercial harvest need to be fully disclosed in the draft EA

Single family residence: Once completed, does the applicant intend to open up his home for transient accommodations, such as a bed & breakfast? If so the EA needs to contain a full discussion of impacts and related mitigation measures for this sort of commercial activity.

We will reserve further comments until the draft EA is submitted. If you have any questions call Nancy Heinrich at 586-4185.

Sincerely,

Genevieve Salmonson

Genevieve Salmonson
Director

PBR HAWAII

LAND PLANNING
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August 5, 2005

Ms. Genevieve Salmonson, Director
State of Hawai'i
Office of Environmental Quality Control
235 S. Beretania Street, Suite 702
Honolulu, Hawai'i 96813

SUBJECT: Johnson Single-Family Residence
TMK: (3) 2-7-08:128
Draft Environmental Assessment Pre-Assessment Consultation

Dear Ms. Salmonson:

Thank you for your letter of July 14, 2005 received during the subject Environmental Assessment (EA) Pre-Assessment Consultation. We offer the following responses in the respective order of your comments:

1. The applicants have been successfully farming in Hawai'i for the past five years and intend to cultivate the peach palms for commercial harvest. They are experienced farmers that currently own and operate a 27-acre farm in nearby Onomea and know how to mitigate impacts related to agricultural activity. For example, harvesting will be done in phases to reduce the amount of soil exposed at any given time, as well as the quantity of harvest that needs to be transported from the site at any given time. There will be no large trucks transporting the harvest from the project site, and no buying or selling taking place on the project site.

2. Once completed, the applicant does not intend to open up his home for transient accommodations.

We understand that you have reserved further comments until the Draft EA is submitted. We appreciate your interest and participation in the pre-assessment consultation phase of the environmental review process. Your letter will be reproduced in the forthcoming Draft EA.

Should you have any questions or comments regarding this letter, please do not hesitate to contact me at 808.961.3333.

Sincerely,
PBR HAWAII

Marissa Furfaro
Planner

cc: Sidney Fuke, Planning Consultant

LINDA LINGLE
GOVERNOR OF HAWAII

CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

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

In reply, please refer to:
EPO-05-063

July 18, 2005

Ms. Marissa Furfaro, Planner
PBR Hawaii-Hilo Office
101 Aupuni Street
Hilo Lagoon Center, Suite 310
Hilo, Hawaii 96720-4262

Dear Ms. Furfaro:

SUBJECT: Pre-assessment Consultation for Johnson Single-Family Residence
Papaikou, South Hilo, Hawaii, TMK: (3) 2-7-08:128

Thank you for allowing us to review and comment on the subject document. It seems that the location has no wastewater connection to the City of Hawaii's sewer system and please pay attention to the wastewater treatment planning. Please also refer to our website for the Standard Comments (http:// www.state.hi.us/health/environmental/env-planning/landuse/landuse.html). If there are any questions about these standard comments please contact Jiacai Liu with the Environmental Planning Office at 586-4346.

Sincerely,

June F. Harrigan-Lum

JUNE F. HARRIGAN-LUM, MANAGER
Environmental Planning Office

c: EPO

Environmental Planning Office Updated 5/13/05

The Environmental Planning Office (EPO) is responsible for several surface water quality management programs mandated by the federal Clean Water Act or dictated by State policy. (http://www.state.hi.us/doh/eh/epo/wqm/wqm.htm). Among these responsibilities, EPO:

- maintains the *List of Impaired Waters in Hawaii Prepared under Clean Water Act §303(d)* (http://www.state.hi.us/doh/eh/epo/wqm/303dpcfinal.pdf);
- develops and establishes Total Maximum Daily Loads (TMDLs) for listed waters (suggesting how much existing pollutant loads should be reduced in order to attain water quality standards, please see http://www.epa.gov/owow/tmdl/intro.html);
- writes TMDL Implementation Plans describing how suggested pollutant load reductions can be achieved; and
- conducts assessments of stream habitat quality and biological integrity.

To facilitate TMDL development and implementation, and to assist with our assessment of the potential impact of proposed actions upon water quality, pollutant loading, and biological resources in receiving waters, we suggest that environmental review documents, permit applications, and related submittals include the following standard information and analyses:

Waterbody type and class

1. Identify the waterbody type and class, as defined in Hawaii Administrative Rules Chapter 11-54 (http://www.state.hi.us/health/about/rules/11-54.pdf), of all potentially affected water bodies[1].

Existing water quality management actions

2. Identify any existing National Pollutant Discharge Elimination System (NPDES) permits and related connection permits (issued by permittees) that will govern the management of water that runs off or is discharged from the proposed project site or facility. Please include NPDES and other permit numbers; names of permittees, permitted facilities, and receiving waters (including waterbody type and class as in 1. above); diagrams showing drainage/discharge pathways and outfall locations; and note any permit conditions that may specifically apply to the proposed project.

3. Identify any planning documents, groups, and projects that include specific prescriptions for water quality management at the proposed project site and in the potentially affected waterbodies. Please note those prescriptions that may specifically apply to the proposed project.

Pending water quality management actions

4. Identify all potentially affected water bodies that appear on the current *List of Impaired Waters in Hawaii Prepared under Clean Water Act §303(d)* including the listed

waterbody, geographic scope of listing, and pollutant(s) (See Table 5 at http://www.hawaii.gov/health/environmental/env-planning/wqm/303dpcfinal.pdf).

5. If the proposed project involves potentially affected water bodies that appear on the current *List of Impaired Waters in Hawaii Prepared under Clean Water Act §303(d)*, identify and quantify expected changes in the following site and watershed conditions and characteristics:
   - surface permeability
   - hydrologic response of surface (timing, magnitude, and pathways)
   - receiving water hydrology
   - runoff and discharge constituents
   - pollutant concentrations and loads in receiving waters
   - aquatic habitat quality and the integrity of aquatic biota

Where TMDLs are already established they include pollutant load allocations for the surrounding lands and point source discharges. In these cases, we suggest that the submittal specify how the proposed project would contribute to achieving the applicable load reductions.

Where TMDLs are yet to be established and implemented, a first step in achieving TMDL objectives is to prevent any project-related increases in pollutant loads. This is generally accomplished through the proper application of suitable best management practices in all phases of the project and adherence to any applicable ordinances, standards, and permit conditions. In these cases we suggest that the submittal specify how the proposed project would contribute to reducing the polluted discharge and runoff entering the receiving waters, including plans for additional pollutant load reduction practices in future management of the surrounding lands and drainage/discharge systems.

Proposed Action and Alternatives Considered

We suggest that each submittal identify and analyze potential project impacts at a watershed scale by considering the potential contribution of the proposed project to cumulative, multi-project watershed effects on hydrology, water quality, and aquatic and riparian ecosystems.

We also suggest that each submittal broadly evaluate project alternatives by identifying more than one engineering solution for proposed projects. In particular, we suggest the consideration of "alternative," "soft," and "green" engineering solutions for channel modifications that would provide a more environmentally friendly and aesthetically pleasing channel environment and minimize the destruction of natural landscapes.

If you have any questions about these comments or EPO programs, please contact Jiacai Liu at 586-4346.

---

[1]"Potentially affected waterbodies" means those in which proposed project activity would take place and any others that could receive water discharged by the proposed project activity or water flowing down from the proposed project site. These waterbodies can be presented as a chain of receiving waters whose top link is at the project site upslope and whose bottom link is in

Pacific Ocean "oceanic waters," with all receiving waters named according to conventions established by Chapter 11-54 and the *List of Impaired Waters in Hawaii Prepared under Clean Water Act §303(d)*. For example, a recent project proposed for Nuhelewai Stream, Oahu (a tributary of Kapalama Canal) might potentially affect Nuhelewai Stream, Kapalama Canal, Honolulu Harbor and Shore Areas, and the Pacific Ocean.

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August 5, 2005

Ms. June F. Harrigan-Lum, Manager
State of Hawai'i
Department of Health
Environmental Planning Office
P.O. Box 3378
Honolulu, Hawai'i 96801-3378

SUBJECT: Johnson Single-Family Residence
TMK: (3) 2-7-08:128
Draft Environmental Assessment Pre-Assessment Consultation

Dear Ms. Harrigan-Lum:

Thank you for your letter of July 18, 2005 (your reference number EPO-05-063) received during the subject Environmental Assessment (EA) Pre-Assessment Consultation. We offer the following responses in the respective order of your comments:

1. We acknowledge that the subject property does not have a wastewater connection to the County of Hawai'i's sewer system. The applicant will be installing an individual septic system. All rules of the County of Hawai'i and the State of Hawai'i regarding individual wastewater systems will be followed.

2. We have reviewed the Standard Comments on the Department of Health website. Aukuu Stream runs along the north side of the property and is not on the *List of Impaired Waters in Hawai'i*. The house site will be setback approximately 127-feet from the center of Aukuu Stream at its closest point. Best Management Practices (BMPs) will be utilized to prevent any construction related pollutants from entering Aukuu Stream. There will be no construction in the stream itself.

We appreciate your interest and participation in the pre-assessment consultation phase of the environmental review process. Your letter will be reproduced in the forthcoming Draft EA.

Should you have any questions or comments regarding this letter, please do not hesitate to contact me at 808.961.3333.

Sincerely,
PBR HAWAII

Marissa Furfaro
Planner

cc: Sidney Fuke, Planning Consultant

LINDA LINGLE
GOVERNOR OF HAWAII

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DEPUTY DIRECTOR - LAND

DEAN NAKANO
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
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LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING, ROOM 555
601 KAMOKILA BOULEVARD
KAPOLEI, HAWAII 96707

DATE 7/20/05

TO: Melissa Furfan
PBR Hawaii

FAX# 961-4989

# of pages: Cover + 1

FROM: Mary Anne Maigret

HAWAII ISLAND OFFICE
74-383 KEALAKEHE PARKWAY
KAILUA-KONA, HI 96740
327-3690 327-3691
327-3692 (Burial Sites Program)

FAX# 327-3693

REMARKS: Correspondence re. (3) 2-7-008:003

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

MICHAEL D. WILSON, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

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LAND DIVISION
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WATER AND LAND DEVELOPMENT

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
33 SOUTH KING STREET, 6TH FLOOR
HONOLULU, HAWAII 96813

June 1, 1998

MEMORANDUM

LOG NO: 21543
DOC NO: 9805PM12

TO: Dean Uchida, Administrator
Land Division

FROM: Don Hibbard, Administrator
State Historic Preservation Division

SUBJECT: Conservation District Use Permit Application HA-2893 Applicant: Kent T. Lucien Request: Construction of a Single Family Residence and Associated Improvements Papaikou, South Hilo, Hawaii Island TMK: 2-7-08:03

We have no record of historic sites on the subject property, which is old sugar cane cropland subsequently used to plant ti and other ornamental plants. Because of the long history of ground disturbance it is highly unlikely that any significant historic sites would be found on this property. We thus believe that the proposed residence will have "no effect" on significant historic sites.

PM:amk

JUN 1 1998

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August 5, 2005

Ms. Melanie Chinen, Administrator
State of Hawai'i
Historic Preservation Division
Kakuhihewa Building
601 Kamokila Blvd., Suite 555
Kapolei, Hawai'i, 96707

SUBJECT: Johnson Single-Family Residence
TMK: (3) 2-7-08:128
Draft Environmental Assessment Pre-Assessment Consultation

Dear Ms. Chinen:

In response to the subject Environmental Assessment (EA) Pre-Assessment Consultation, Mary Anne Maigret of your office (Hawaii Island Archaeologist) advised that the previous determination made by your office on June 1, 1998 (Doc. No. 9805PM12) for the subject property was still valid (Personal communication, July 20, 2005). Please note that the parcel was previously identified as TMK: (3) 2-7-008:003.

We acknowledge your determination that intensive cultivation has altered the land. Therefore, we understand that you believe no historic properties will be affected by this undertaking. However, should any archaeological, cultural, or historic sites be uncovered during construction, all work in the vicinity will cease and the State Department of Land and Natural Resources Historic Preservation Officer will be notified immediately. The treatment of any uncovered objects will be conducted in strict compliance with the requirements of the DLNR, SHPD.

We appreciate your interest and participation in the pre-assessment consultation phase of the environmental review process. Your letter will be reproduced in the forthcoming Draft EA.

Should you have any questions or comments regarding this letter, please do not hesitate to contact me at 808.961.3333.

Sincerely,
PBR HAWAII

Marissa Furfaro
Planner

cc: Sidney Fuke, Planning Consultant
Mary Anne Maigret, Hawaii Island Archaeologist

Marissa Furfaro

From: Ululani Sherlock [ululanis@oha.org]
Sent: Monday, July 11, 2005 4:50 PM
To: marissafpbrhilo@lava.net
Subject: RE: Pre-Assessment Consultation
Importance: High

Sorry just got through my email, I'll be out of the office for the rest of the week. But, yes, I do recall this one. i recommend you contact the following who represented the Hamakua Coast area which includes Papa`ikou:

Normal K. Gonsalves, he is with an agency called Kahu O Kahiko, Inc., he can be reached at 776-1319; both telephone and fax; Reynolds Kamakwiwo`ole, President of the Hawaiian Civic Club of Hamakua; I think his telephone number is in the book; Walter Victor, Jr., President of the Laupahoehoe Hawaiian Civic Club, at 775-0466; and Mabel Tolention, President, Hawai`i District Council of the AOHCC [Association of Hawaiian Civic Clubs], P. O. Box 6305, Kamuela, HI 96743.

These are the environmental/culture groups that, if concerned, you would want to hear from before hand. Sorry couldn't give you more and couldn't get back sooner. I know it went through the Board with no problems, but just incase, at least a call or perhaps you can ask if they would like to get the information via mail.

Say hello to Sidney!

Take care
Ulu
PS I'll try to follow up with you when I get back next Monday.

Mahalo

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August 5, 2005

Ms. Ululani Sherlock
Community Resource Coordinator
Office of Hawaiian Affairs
162-A Baker Avenue
Hilo, Hawai'i 96720-4869

SUBJECT: Johnson Single-Family Residence
TMK: (3) 2-7-08:128
Draft Environmental Assessment Pre-Assessment Consultation

Dear Ms. Sherlock:

Thank you for your electronic letter (e-mail) of July 11, 2005 received during the subject Environmental Assessment (EA) Pre-Assessment Consultation. Following your suggestion, we will be contacting the four representatives of the various Hāmākua Coast cultural groups to obtain information about cultural resources, practices and knowledge associated with the project site.

We appreciate your interest and participation in the pre-assessment consultation phase of the environmental review process. Your letter will be reproduced in the forthcoming Draft EA.

Should you have any questions or comments regarding this letter, please do not hesitate to contact me at 808.961.3333.

Sincerely,
PBR HAWAII

Marissa Furfaro
Planner

cc: Sidney Fuke, Planning Consultant

Harry Kim
Mayor

Barbara Bell
Director

Nelson Ho
Deputy Director

County of Hawaii

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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http://co.hawaii.hi.us/directory/dir_envmng.htm

July 29, 2005

Marissa Furfaro
Planner
PBR Hawaii
101 Aupuni Street
Hilo Lagoon Center Suite 310
Hilo, HI 96720

SUBJECT: Johnson Single-Family Residence
TMK: (3) 2-7-08:128
Environmental Assessment

We have reviewed the subject Draft Environmental Assessment and offer the following comments:

- SOLID WASTE
  - Commercial operations, State and Federal agencies, religious entities and non-profit organizations may not use transfer stations for disposal.
  - Aggregates and any other construction/demolition waste should be responsibly reused to its fullest extent.
  - Ample room should be provided for implementation of a recycling program.
  - Greenwaste may be transported to the green waste sites located at the Kailua and Hilo transfer stations, or other suitable diversion programs.
  - Construction and demolition waste is prohibited at all County Transfer Stations.

- TECHNICAL SERVICES
  No County sewer is planned for this area. Check with Wastewater Division for comments on nearby Papaikou Sewerage system.

Thank you for giving us the opportunity to comment and we request your cooperation regarding our comments.

Barbara Bell
DIRECTOR

cc: Planning Dept.

7235A

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August 5, 2005

Ms. Barbara Bell, Director
County of Hawai'i
Department of Environmental Management
25 Aupuni Street, Room 210
Hilo, Hawai'i 96720-4252

SUBJECT: Johnson Single-Family Residence
TMK: (3) 2-7-08:128
Draft Environmental Assessment Pre-Assessment Consultation

Dear Ms. Bell:

Thank you for your letter of July 29, 2005 received during the subject Environmental Assessment (EA) Pre-Assessment Consultation. We offer the following responses in the respective order of your comments:

1. Solid Waste
   a. We acknowledge that commercial operations, such as the proposed agricultural expansion, may not use transfer stations for disposal.
   b. Aggregates and any other construction waste will be responsibly reused to its fullest extent.
   c. A recycling program will be explored if it is warranted by the materials used at the project site.
   d. We acknowledge that greenwaste may be transported to the green waste sites located at the Hilo transfer station, or other suitable diversion programs.
   e. We acknowledge that construction waste is prohibited at all County transfer stations.
2. Technical Services
   a. An individual septic system will be installed according o the standards of the State Department of Health

We appreciate your interest and participation in the pre-assessment consultation phase of the environmental review process. Your letter will be reproduced in the forthcoming Draft EA.

Should you have any questions or comments regarding this letter, please do not hesitate to contact me at 808.961.3333.

Sincerely,
PBR HAWAII

Marissa Furfaro
Planner

cc: Sidney Fuke, Planning Consultant

DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAI'I
345 KEKŪANAŌ'A STREET, SUITE 20 • HILO, HAWAI'I 96720
TELEPHONE (808) 961-8050 • FAX (808) 961-8657

July 25, 2005

Ms. Marissa Furfaro
PBR Hawaii
101 Aupuni Street, Suite 310
Hilo, HI 96720-4262

ENVIRONMENTAL ASSESSMENT
JOHNSON SINGLE-FAMILY RESIDENCE
TAX MAP KEY 2-7-008:128

We have reviewed your request for comments, and the subject parcel does not have water service with the Department. Water is currently available for one 5/8-inch meter or an average of 400 gallons per day from the 6-inch waterline in Mamalahoa Highway located approximately 800 feet west of Parcel 128. The water service will be located on Mamalahoa Highway with a signed "Policy & Conditions for Water Service (Premises Not Within Service Limits of the Department)" and requires that a backflow preventer be installed. The applicant shall have a licensed contractor install a backflow preventer (reduced pressure type) on the applicant's property just after the meter. The backflow preventer shall be operated and maintained by the customer. A copy of our backflow preventer handout is being forwarded to the applicant to help them understand this requirement. Please be informed that water availability is subject to change depending on the water situation.

The following prevailing charges, which are subject to change, are due when applying for water service:

1. Facilities Charge (One 1st service @ $1,190.00)	$1,190.00
2. Service Lateral Installation Charge (Install one meter on Mamalahoa Highway, a County road)	2,600.00
3. Temporary Deposit (If applicant currently has no credit history with the Department.)	50.00
Total **(Subject to Change)**	$3,840.00

Should there be any questions, please contact Ms. Shari Komata of our Water Resources and Planning Branch at 961-8070, extension 252.

Sincerely yours,

Milton D. Pavao, P.E.
Manager

SHK:sco

Enc.

copy - (w/o enc.) DWS Customer Service Section (Hilo)
(w/o enc.) DWS Cross Connection Section, DWS Microbiology Laboratory

... *Water brings progress...*

The Department of Water Supply is an Equal Opportunity provider and employer. To file a complaint of discrimination, write: USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington DC 20250-9410. Or call (202) 720-5964 (voice and TDD)

DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAI'I
345 KEKŪANAŌ'A STREET, SUITE 20 • HILO, HAWAI'I 96720
TELEPHONE (808) 961-8050 • FAX (808) 961-8657

So you'll need a backflow prevention assembly.

What
A backflow prevention assembly prevents the return of water into the public water system from the consumer's premises.

Why
Backflow prevention assemblies are required by Federal, State, and County agencies to protect the public water system from possible contamination.

Who
Consumers who meet any of the following conditions are required to install a backflow prevention assembly:

- Agricultural activities
  Note: The installation of a backflow prevention assembly does not automatically constitute approval for agricultural rates – contact customer service for further requirements.
- Auxiliary water sources including, but not limited to, swimming pools, catchment tanks, and irrigation/sprinkler systems
- Commercial activities
- Government facilities
- Non-residential facilities including, but not limited to churches and community parks
- Residential facilities with potential hazards (eg. pressurized systems)

How
Consumers applying for a meter requiring a backflow prevention assembly need to hire, at their expense, a licensed plumber to install a typical backflow prevention assembly as shown on the back of this handout. The installation will have to be inspected and approved by the Department of Water Supply (DWS) before water service is granted. The operation, maintenance, and periodic testing of the backflow prevention assembly will be the responsibility of the consumer.

Where
A backflow prevention assembly can be purchased locally. Your plumber will know where. Your plumber needs to make sure that it meets the requirements of the DWS.

Contact
Please contact personnel at the **Cross-Connection Control section, phone number 961-8670,** for approval once the backflow prevention assembly has been installed or should you have any questions. **Your meter will remain locked until your backflow prevention assembly has been inspected and approved.**

03/05

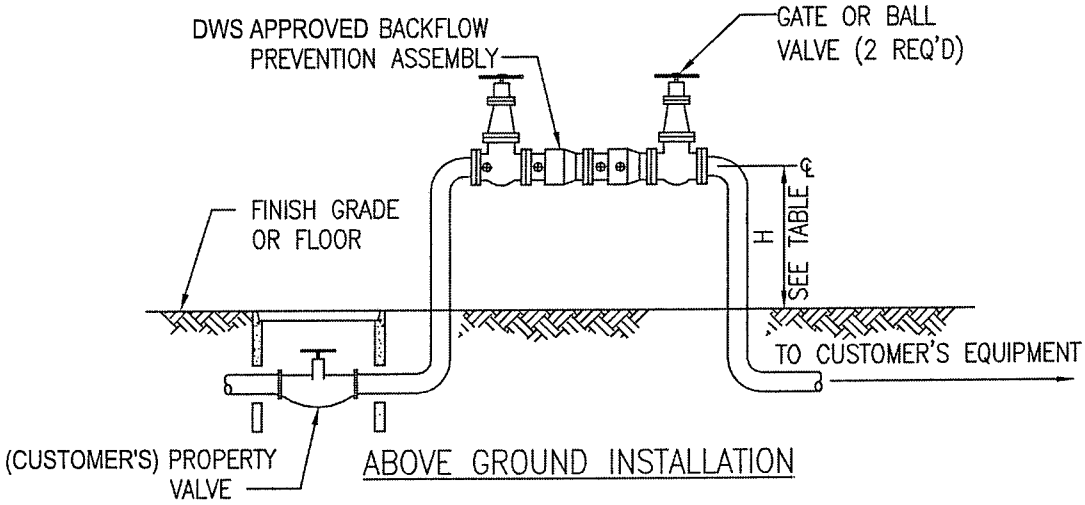
... Water brings progress...

The Department of Water Supply is an Equal Opportunity provider and employer. To file a complaint of discrimination, write: USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington DC 20250-9410. Or call (202) 720-5964 (voice and TDD)

BACKFLOW PREVENTION ASSEMBLY

TYPICAL INSTALLATION

SIZE (INCHES)	H (INCHES)
3/4 TO 1-1/2	18
2 TO 3	24
4 TO 6	30
8 TO 10	36



NOTES:

1. ANY CONNECTIONS OR TEES BETWEEN METER AND BACKFLOW PREVENTION ASSEMBLY MUST HAVE WRITTEN APPROVAL BY THE MANAGER.
2. A DWS APPROVED BACKFLOW PREVENTION ASSEMBLY SHALL BE INSTALLED WHENEVER THE MANAGER DEEMS NECESSARY TO PREVENT POTENTIAL CONTAMINATION TO THE PUBLIC WATER SYSTEM. THE TYPE OF BACKFLOW PREVENTION ASSEMBLY SHALL BE DETERMINED BY THE MANAGER.
3. AT NO TIME SHALL THE BOTTOM OF THE BACKFLOW PREVENTION ASSEMBLY BE LESS THAN 12" ABOVE GROUND, FLOOR, OR FLOOD LEVEL NOR MORE THAN 48" ABOVE AFOREMENTIONED GRADES.
4. THE BACKFLOW PREVENTION ASSEMBLY SHALL BE INSTALLED AFTER THE WATER METER PRIOR TO ANY TEES AND BRANCHES.
5. WHENEVER BACKFLOW PREVENTION ASSEMBLY IS LOCATED 5' OR MORE FROM THE WATER METER, INSTALL CONCRETE JACKET BETWEEN WATER METER AND BACKFLOW PREVENTION ASSEMBLY TO AVOID POTENTIAL CROSS CONNECTION.
6. THE BACKFLOW PREVENTION ASSEMBLY SHALL BE INSTALLED PRIOR TO ISSUANCE OF WATER METER OR ACTIVATION OF WATER SERVICE.
7. REFER TO DIVISION 100, SECTION 107.1, OF THE WATER SYSTEM STANDARDS 2002, FOR ADDITIONAL REQUIREMENTS AND TYPE OF BACKFLOW PREVENTER NEEDED.

REVISED 11/03

PBR HAWAII

LAND PLANNING
LANDSCAPE ARCHITECTURE
ENVIRONMENTAL STUDIES

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WAILUKU, HAWAI'I 96793-2204
TEL: (808) 242-2878
FAX: (808) 242-2902
EMAIL: pbrmaui@lava.net

August 5, 2005

Mr. Milton d. Pavao, P.E., Manager
County of Hawai'i
Department of Water Supply
345 Kekūanaō'a Street, Suite 20
Hilo, Hawai'i 96720

SUBJECT: Johnson Single-Family Residence
TMK: (3) 2-7-08:128
Draft Environmental Assessment Pre-Assessment Consultation

Dear Mr. Pavao:

Thank you for your letter of July 25, 2005 received during the subject Environmental Assessment (EA) Pre-Assessment Consultation. We acknowledge that water is currently available for one 5/8-inch meter or an average of 400 gallons per day from the 6-inch waterline in Māmalahoa Highway, located approximately 800 feet west of the subject parcel.

We further acknowledge that a backflow preventer must be installed by a licensed contractor on the applicant's property.

We appreciate your interest and participation in the pre-assessment consultation phase of the environmental review process. Your letter will be reproduced in the forthcoming Draft EA.

Should you have any questions or comments regarding this letter, please do not hesitate to contact me at 808.961.3333.

Sincerely,
PBR HAWAII

Marissa Furfaro
Planner

cc: Sidney Fuke, Planning Consultant

Appendix C

Determination letter from the
Natural Resources Conservation Service
Hawai‘i Resource Office
Dated March 3, 2005

NRCS
Natural Resources Conservation S e
154 Waianuenue Ave. Room 305
Hilo, HI 96720-2452
808-933-8355

United States Department of Agriculture

Our People...Our Islands...In Harmony

3 March 2005

Lauree J. Johnson
P.O. Box 365
Pepeekeo, HI 96783

Dear Mrs. Johnson,

Upon your request, I have performed a site evaluation for potential soil erosion and storm runoff on the parcel of land in lower Kalaoa that you are developing. (TMK (3) 2-7-008: 128) The land is moderately sloped and almost completely covered with low growing grasses, clovers, and small shrubs up to a height of about 24 inches. As you further develop your planned orchards, maintaining adequate groundcover under the tree canopies will help you to keep runoff and soil erosion to tolerance levels and reduce sediment, farm chemicals, and nutrients from impacting ground and surface waters.

There are two existing drainage structures (terraces) placed at strategic locations that function to intercept storm runoff and carry excess water to the gulch on the northern border of the parcel. After performing profile surveys on both terraces and doing intermittent cross-sectional readings, I believe that both structures will adequately handle runoff flows up to the 10-yr/24-hr storm event.

Having designed, laid out, and certified miles of these types of structures in my career, they are typical of what the Natural Resources Conservation Service specifies for treating runoff on agricultural lands. I would recommend that you maintain them by mowing often enough to keep the height of vegetation in the channel and on the berms between 2 – 6 inches. This is especially necessary on the lower terrace which has a softer grade than the mauka terrace. This will keep runoff moving smoothly and prevent sediment from settling in the channel, thus reducing its capacity. The lower terrace also provides protection to the old sugarcane haul road and reduces runoff in your land area fronting the ocean between Heeka Point and Kukui Point. Thank you for your interest in the conservation of natural resources.

Sincerely,

Noel Ide

Noel Ide
Resource Conservationist, Island of Hawaii
NRCS, Hawaii Resource Office

The Natural Resources Conservation Service provides leadership in a partnership effort to help people conserve, maintain, and improve our natural resources and environment.

An Equal Opportunity Provider and Employer

Appendix D

Erosion Hazard Assessment

Dr. Charles Fletcher

November 14, 2005

CHARLES FLETCHER, PH.D.
UNIVERSITY OF HAWAII
DEPARTMENT OF GEOLOGY AND GEOPHYSICS
1680 EAST-WEST ROAD, HONOLULU, HI 96822
(808) 956-2582ph; (808) 956-5512fx
fletcher@soest.hawaii.edu

November 14, 2005

Marissa Furfaro, Planner
PBR Hawaii - Hilo Office
101 Aupuni Street
Hilo Lagoon Center, Suite 310
Hilo, Hawai'i 96720

Dear Ms. Furfaro,

This is a report on my assessment of erosion hazards at the Johnson single family residence TMK: (3) 2-7-8.128 at Onomea, Hawaii.

The property is located on a peninsula of volcanic origin north of Hilo on the windward side of Hawaii. The proposed single family home will be located approximately 28 ft from a stable vegetated slope on the north side of the property. Topographic sheets of the area, and the home owner testimony, suggest that that gully forming this slope is fed by a spring located a mile or so uphill. Because it is spring fed it is not a free-flowing perennial drainage system. Hence, the gully does not appear to represent a flash-flood hazard. This slope is heavily vegetated with ground cover grasses indicating that it has not experienced recent instability or mass wasting. In my opinion, it is a relatively stable feature and does not represent an immediate erosion threat. The slope is unlikely to present an erosion hazard unless the vegetation is poorly managed and human landscaping is not conducted with care and attention aimed at enhancing slope stability. Additional erosion analysis is not warranted at this time.

The south side of the peninsula is located ~60 to 70 ft from the planned dwelling. This slope is an unstable coastal cliff that shows fresh rock falls, slide scars, and tree trunk curvature indicating recent episodes of soil creep. Immediately landward of the cliff is a depression in the property that the owner plans to fill and grass over. This should not cause any impact provided that the fill is kept heavily vegetated and not allowed close to the edge of the cliff. Dirt fill at the edge of the cliff under heavy rains has the potential to fail and create a fluidized mudflow onto the coastline below. I recommend that a professional landscaper and vegetation expert be used to guide any fill activities including adequate drainage placement. Dr. Ron Terry is employed by Mr. Johnson at the time of this report. I recommend Dr. Terry provide guidance on the nature of landscaping and draining this depression to minimize potential impacts.

In conclusion, no additional erosion analysis is necessary. I do emphasize that careful attention to the landscaping and revegetation of these slopes is key to minimizing the potential for negative impacts, and so a well-regarded landscaper and vegetation expert should be involved. Dr. Terry is just such a person.

Charles Fletcher, Ph.D.
Geology and Geophysics Department
Professor and Chair

1680 EAST-WEST RD. • HONOLULU/HAWAII • 96822
PHONE: 808-956-2582 • FAX: 808-956-5512

Appendix E

Detailed Botanical Survey

Dr. Ron Terry

November 2005

BOTANICAL RECONNAISSANCE, TMKs 2-7-8:128, ALEAMAI, SOUTH HILO, ISLAND OF HAWAI‘I

By Ron Terry, Ph.D. and Layne Yoshida, B.A.
Geometrician Associates, LLC
November 2005

Introduction

This report describes the results of a botanical reconnaissance of the portion (approximately 3-acres) of a 15.6-acre property with split Agricultural/Conservation zoning that lies within the State Land Use Conservation District (CD). This portion is planned for use as a single-family home, with accessory features such as driveways and paths, individual septic sewage system, and landscaping. The property is accessed via the Old Mamalahoa Highway (Scenic Route) near Papa‘ikou, about eight miles north of Hilo.

Purpose and Methodology

The objectives of the survey were to: 1) describe the vegetation; 2) list all plant species encountered; 3) identify threatened or endangered species, if any; and 4) assess the value of the parcel for conservation of rare, threatened or endangered native plant. The area was surveyed on foot by L. Yoshida, G. Knopp and R. Terry in November 2005. All accessible portions of the Conservation District were surveyed, including the gulch on the northern side. Aside from downwards or sideways visual survey from safe vantages, the seacliffs were not systematically surveyed, as this would require rappelling gear. No rare species were seen in this area, and as it is assumed that project activities will not adversely affect the cliff environment, where rare species may occasionally be found, this omission should be acceptable. Species were identified in the field and, as necessary, collected and keyed out in the laboratory. Special attention was given to the possible presence of any federally (USFWS 2000) listed endangered plant species.

In addition to the botanical survey of the Conservation District, we were asked to provide a general assessment of the vegetation in the Agricultural District portion of the properties, as well as a discussion of the environmental issues, both benefits and risks, associated with the removal or trimming of ironwood and hala trees on or near the seacliffs, and filling in of a depression between the proposed house site and cliff.

Vegetational Setting

Based on rainfall, geologic substrate, and existing vegetation, prior to human disturbance, the general area probably supported a Lowland Wet Forest (Gagne and Cuddihy 1990), with ‘ohi‘a (*Metrosideros polymorpha*) as the dominant tree. The coastal fringe on this coast is naturally dominated by hala (*Pandanus tectorius*) and naupaka (*Scaevola*

sericea). Traditional Hawaiian agriculture, sugar plantations, and other activities have extensively transformed the vegetation, although traces of the original structure remain in those locations in the coastal fringe where invasives such as ironwood (*Casuarina equisetifolia*) have failed to displace the natural communities.

Vegetation and Flora

Most of the CD portion of the property is covered by the ruderal (weedy) vegetation typical of the early stages abandoned sugar cane or other agricultural fields (***Photo Figure 1***). Dominant species are alien grasses and herbs including California grass (*Brachiaria mutica*) and Spanish clover (*Desmodium sandwicense*). Where roads, fences or other disturbance is present, weedy herbs predominate, including sensitive plant (*Mimosa pudica*), *Hyptis pectinata*, rattlepod (*Crotalaria pallida*), *Ageratum conyzoides*, and buttonweed (*Spermacoce assurgens*).

The coastal fringe and northern stream banks, however, have a healthy native forest of hala and naupaka with only limited invasion (***Photo Figure 2***). Invasives are more prominent on the southeastern half of the coastal fringe (where ironwoods and *Wedelia trilobata* are common), and on the mauka parts of the stream bank, where the hala forest gives out and plants such as gunpowder tree (*Trema orientalis*), *Melochia umbellata*, rattoon sugar cane (*Saccharum* spp.), and bananas (*Musa* sp.) are common. The hala and naupaka help stabilize the sea cliffs and stream banks (***Photo Figure 3***), provide habitat for native invertebrates, and contribute to the scenic values of the Conservation District.

A full list of species encountered is included in Table 1, at the end of this report. Several sterile or juvenile plants were not able to be identified to the species or even genus level; in particular, one tree that lacked any diagnostic flowers or fruit may be *Gmelina arbore*, an unusual introduced member of the Verbena family.

No rare, threatened or endangered plant species listed by the U.S. Fish and Wildlife Service was observed on or near the property, which appears to have been extensively disturbed for over a century. Most of the site in its current condition does not represent suitable habitat for threatened or endangered plant or animal species, and use of the property for a single-family home is unlikely to adversely affect such species.

General Assessment of Vegetation in the Agricultural District

Currently (November 2005), the agricultural district portion of the property is either cultivated in peach palm (used for making hearts of palm) or contains weedy vegetation similar to that found in the upper part of the Conservation District. Aside from the caution to continue the current sound land management practices and refrain from adversely affecting the stream gulch on the northern boundary of the property, the current or proposed use of the Agricultural District portion of the property should not have any effect on native vegetation, flora or habitat.

Seacliff Vegetation Removal

According to discussions with landowner Richard Johnson, he plans to remove some ironwood trees near the top of the pali, to cut but not remove selected ironwood trees on the sides of the pali, to trim selected mature hala to provide better coastal views, and to remove several whole mature and juvenile hala trees in areas of heavy canopy cover on the stream bank. A professional landscape plan is also under development, which will call for landscaping with a mixture of many native, Polynesian and alien plants.

Removing trees from any area in the CD, even if they are to be replaced by other vegetation, is always bound to generate concern. Trees are rightfully seen as vital parts of the ecosystem, as key elements of scenery, and as components of the historical and cultural landscape. It is important to examine the particular and distinct cases of ironwood and hala trees on the coast in Hawaiʻi.

Ironwood is a common element along the coasts of the South Hilo, North Hilo, Hamakua, North Kohala and Puna Districts. According to the *Manual of the Flowering Plants of Hawaiʻi* (Wagner, Herbst and Sohmer 1990:52), ironwood was probably introduced to Hawaiʻi by P. Isenberg in plantings at Kilohana Crater on Kauaʻi. By 1895 it was being collected on Oʻahu. It was planted throughout the territory as a windbreak. Ironwood on the island of Hawaiʻi is often associated with forester A.J. Mackenzie, an enthusiastic proponent of the species, after whom a State Park on the Puna coast with a near monoculture of ironwood is named.

Ironwoods, along with all types of trees, have certain positive attributes. They are viewed by some as generally scenic and picturesque, and by others as attractive in certain locations. The soft carpet of needles and the whistling sound of the needle-like leaves in the wind are often cited as pleasant. They sometimes provide shade for fishermen on the edge of the cliffs. Perhaps most importantly, although they are quite alien to the Hawaiian Islands, they have become a familiar part of the landscape.

These positive attributes need to be weighed against the significantly adverse effects ironwood has on native ecosystems, agricultural land, scenic vistas and cliff erosion.

The University of Hawaii's Botany Department has an online forum that promotes public awareness and exchange of information about the spread of alien plant species (http://www.botany.hawaii.edu/faculty/cw_smith/cas_equ.htm). According to the website:

> "This rapidly growing tree can reach heights of 40 m or more. It forms monotypic stands under which little else grows. The lack of undergrowth beneath trees suggests the release of an allelopathic agent, although Neal (1965) suggested that they exhaust the nutrients in the soil. The seeds are wind-dispersed. The lack of undergrowth prevents very hot fires from burning in the vicinity of these trees. When fires do sweep through stands, trees regenerate rapidly from basal shoots. The species has not been evaluated for biological

control because it is still considered a beneficial tree for windbreaks, erosion control, and nitrogen fixation."

A National Park Service website (http://www.nps.gov/plants/alien/fact/caeq1.htm) discusses the invasive character of ironwood (also called Australian pine) in a number of locations throughout the U.S. and the threat it poses to native ecosystems in National Parks:

"**ECOLOGICAL THREAT:** Australian pine is fast-growing (5-10 feet per year), produces dense shade and a thick blanket of leaves and hard, pointed fruits, that completely covers the ground beneath it. Dense thickets of Australian pine displace native dune and beach vegetation, including mangroves and many other resident, beach-adapted species. Because its roots are capable of producing nitrogen through microbial associations, Australian pine can colonize nutrient-poor soils. Once established, it radically alters the light, temperature, and soil chemistry regimes of beach habitats, as it outcompetes and displaces native plant species and destroys habitat for native insects and other wildlife. Chemicals in the leaves of Australian pine may inhibit the growth of other plants underneath it.

The ground below Australian pine trees becomes ecologically sterile and lacking in food value for native wildlife. Unlike native shrubbery, the thick, shallow roots of Australian pine make it much more susceptible to blow-over during high wind events, leading to increased beach and dune erosion and interference with the nesting activities of sea turtles.

CURRENT MANAGEMENT APPROACHES: No biological controls are currently available for management of Australian pine. For new or small infestations, manual removal of Australian pine seedlings and saplings is recommended. For heavier infestations, application of a systemic type herbicide to bark, cut stumps, or foliage is likely to be the most effective management tool. Prescribed fire has also been used for large infestations in fire-tolerant communities. Raking and removal of leaf litter, cones and seeds should be done whenever possible. Impacts to native plants should be minimized during any control activities. Whenever possible, efforts should be taken to prevent the introduction or encroachment of Australian pine. For example, recently disturbed beach habitat may be planted with native vegetation to prevent Australian pine from invading.

SUGGESTED ALTERNATIVE PLANTS: Locally native plants that are adapted to the harsh conditions of the coastal environment should be used for landscape planting and beach restoration projects."

Along the Hamakua Coast, ironwood's shade and soil effects crowd out and kill native species such as hala, 'ohi'a, and naupaka. Ironwood tends to be more shallow-rooted and less stable than many other trees, and often falls over in high winds, exacerbating

cliff erosion. Erosion appears to proceed faster on ironwood-dominated areas in cliffs that contain both native vegetation and ironwood-dominated faces (Dr. John P. Lockwood, geologist, pers. comm.). Organizations concerned with endangered species, such as the Big Island Invasive Species Committee and the University of Hawai‘i at Manoa Botany Department have repeatedly gone in record concerning the damaging effects of ironwood in Hawai‘i.

The applicant plans to remove ironwoods (or drastically trim them, reducing their vigor) using a boom and hauling the logs up over the top of the cliff, so that no disturbance of the cliff would occur. This action would be environmentally appropriate, and could be substantially beneficial if accompanied by replanting with native species such as hala and naupaka.

Hala, in contrast to ironwood, is a native species that has co-evolved with other elements of the native biota. Preservation of hala stands in coastal forests is a key element of conservation biology in these areas, as hala is often a dominant species that appears to promote the sustenance of other native species. Furthermore, its sturdy, many-branching adventitious roots and the carpet of slender, long-lasting leaves it sheds play a vital role in preventing soil erosion and mass wasting on steep cliffs.

We recommend that most existing hala trees be retained and additional hala trees be planted in areas where ironwoods are removed or greatly reduced. The property has a great stock of hala juveniles. Hala trimming should be done cautiously to ensure that any trimming does not remove an extent of foliage that is likely to lead to the death of the tree. Furthermore, the volume of foliage trimmed should not be so great as to alter the light regime in such a way that alien species are encouraged to sprout and outcompete the hala. The applicant has stated that he is familiar with pruning and trimming trees, including hala. In his opinion, these goals may be met by specifying that side branches may be removed as long as no more than 1/3 of the plant’s vegetation is removed; tops should not be removed; and cuts should be designed to allow water to drain and not to collect in the cuts (i.e. vertical cuts rather than horizontal cuts). Removal of a few whole hala trees may be acceptable in areas where they are sufficiently dense that their removal would not adversely affect slope stability or the integrity of the ecosystem.

Concerning the proposal to fill in the California grass/honohono-filled depression on the southern part of the peninsula, Dr. Charles Fletcher made the following observations in a November 21, 2005 letter to PBR planner Marissa Furfaro:

> “This slope is an unstable coastal cliff that shows fresh rock falls, slide scars, and tree trunk curvature indicating recent episodes of soil creep. Immediately landward of the cliff is a depression in the property that the owner plans to fill and grass over. This should not cause any impact provided that the fill is kept heavily vegetated and not allowed close to the edge of the cliff. Dirt fill at the edge of the cliff under heavy rains has the potential to fail and create a fluidized mudflow onto the coastline below. I

> recommend that a professional landscaper and vegetation expert be used to guide any fill activities including adequate drainage placement."

Based on the setting and Dr. Fletcher's recommendations, I would recommend the following:

- The depression area should not be filled to the edge of the pali, in order to avoid sedimentation into the ocean;
- When the fill is complete, the disturbed area should be immediately over-seeded with a quick growing grass such as rye, mixed with another more permanent grass such as centipede or carpet grass; and
- A strip of preferably native plants such as naupaka should be planted at the edge of the pali.

Given implementation of the recommendations of this report, the conservation values of the property can be preserved and perhaps even enhanced as a result of the proposed use.

Literature Cited

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

U.S. Fish and Wildlife Service (USFWS). *Threatened and endangered plants in Hawai'i*. Washington: GPO.

W.L. Wagner, D.R. Herbst, and S.H. Sohmer, eds. 1990. *Manual of the Flowering Plants of* Hawai'i. 2 vols. Honolulu: University of Hawai'i Press.

Table 1
Plant Species Observed on Site

Species	Family	Common Name	Form	Status
Ageratum conyzoides	Asteraceae	Maile honohono	Herb	A
Archontophoenix alexandrae	Arecaceae	Palm	Tree	A
Begonia sp.	Begoniaceae	Begonia	Herb	A
Bidens pilosa	Asteraceae	Nehe	Herb	A
Brachiaria mutica	Poaceae	California Grass	Herb	A
Casuarina sp.	Casuarinaceae	Ironwood	Tree	A
Chamaecrista nictitans	Fabaceae	Partridge Pea	Herb	A
Chamaesyce hirta	Euphorbiaceae	Hairy Spurge	Herb	A
Christella dentata	Thelypteridaceae	Pai'i'iha	Herb	A
Coix lacryma-jobi	Poaceae	Job's Tears	Herb	A
Commelina diffusa	Commelinaceae	Honohono	Herb	A
Conyza bonariensis	Asteraceae	Hairy Horseweed	Herb	A
Cordyline fruticosa	Agavaceae	Ti	Shrub	A
Crotalaria pallida	Fabaceae	Rattlepod	Herb	A
Cyperus halpan	Cyperaceae	Cyperus	Herb	A
Cyrtomium caryotideum	Dryopteridaceae	Ka'ape'ape	Herb	I
Desmodium sandwicense	Fabaceae	Spanish clover	Herb	A
Desmodium triflorum	Fabaceae	Desmodium	Herb	A
Digitaria af. setigera	Poaceae	Crabgrass	Herb	I?
Digitaria violascens	Poaceae	Smooth crabgrass	Herb	A
Diplazium esculentum	Athyriaceae	Paca	Herb	A
Drymaria cordata	Caryophyllaceae	Pipili	Herb	A
Eleusine indica	Poaceae	Wiregrass	Herb	A
Emilia sonchifolia	Asteraceae	Flora's paintbrush	Herb	A
Ficus microcarpa	Moraceae	Banyan	Tree	A
Fimbristylis dichotoma	Cyperaceae	Fimbristylis	Herb	I
Hedychium sp.	Zingiberaceae	White or Yellow Ginger	Herb	A
Hedyotis corymbosa	Rubiaceae	Hedyotis	Herb	A
Hibiscus furcellatus	Malvaceae	Hau hele	Shrub	I
Hippobroma longiflora	Campanulaceae	Star-of-Bethlehem	Herb	A
Hyptis pectinata	Lamiaceae	Comb Hyptis	Shrub	A
Indigofera suffruticosa	Fabaceae	Indigofera	Herb	A
Ipomoea alba	Convolvulaceae	Moon Flower	Vine	A
Ipomoea triloba	Convolvulaceae	Little Bell	Vine	A
Kyllinga brevifolia	Cyperaceae	Kaluha	Herb	A
Lepisorus thunbergianus	Polypodiaceae	Ekaha akolea	Herb	I
Lindernia crustacea	Scrophulariaceae	Lindernia	Herb	A
Ludwigia octovalvis	Onagraceae	Kamole	Herb	A
Ludwigia palustris	Onagraceae	Marsh Purslane	Herb	A
Melochia umbellata	Sterculiaceae	Melochia	Tree	A
Miconia calvescens	Melastomataceae	Miconia	Shrub	A
Mimosa pudica	Fabaceae	Sleeping Grass	Herb	A
Momordica charantia	Cucurbitaceae	Balsam pear	Vine	A
Musa sp.	Musaceae	Banana	Tree	A
Nephrolepis exaltata	Nephrolepidaceae	Sword Fern	Herb	I
Oplismenus hirtellus	Poaceae	Basketgrass	Herb	A
Oxalis corniculata	Oxalidaceae	Wood Sorrel	Herb	A
Oxalis corymbosa	Oxalidaceae	Wood Sorrel	Herb	A

Table 1, cont'd

Species	**Family**	**Common Name**	**Form**	**Status**
Paederia foetida	Rubiaceae	Maile Pilau	Vine	A
Pandanus tectorius	Pandanaceae	Hala	Tree	I
Panicum maximum	Poaceae	Guinea Grass	Herb	A
Panicum repens	Poaceae	Quack Grass	Herb	A
Paraserianthes sp.	Fabaceae	Albizia	Tree	A
Paspalum conjugatum	Poaceae	Hilo Grass	Herb	A
Paspalum urvillei	Poaceae	Vasey Grass	Herb	A
Passiflora foetida	Passifloraceae	Love-in-a-mist	Vine	A
Phyllanthus debilis	Euphorbiaceae	Niruri	Herb	A
Phymatosorus grossus	Polypodiaceae	Maile Scented Fern	Herb	A
Pluchea symphytifolia	Asteraceae	Sourbush	Shrub	A
Polygala paniculata	Polygalaceae	Bubble gum plant	Herb	A
Psidium guajava	Myrtaceae	Guava	Tree	A
Pycreus polystachyos	Cyperaceae	Cyperus	Herb	I
Rubus rosifolius	Rosaceae	Thimbleberry	Herb	A
Saccharum sp.	Poaceae	Sugar cane	Herb	A
Sacciolepis indica	Poaceae	Glenwood grass	Herb	A
Scaevola sericea	Goodeniaceae	Beach Naupaka	Shrub	I
Solanum af. torvum	Solanaceae	Pea aubergine	Shrub	A
Spathodea campanulata	Bignoniaceae	African Tulip	Tree	A
Spermacoce assurgens	Rubiaceae	Buttonweed	Herb	A
Sphenomeris chinensis	Lindsaeaceae	Pala'a	Herb	I
Sporobolus sp.	Poaceae	Sporobolus	Herb	I
Thunbergia fragrans	Acanthaceae	White Thunbergia	Vine	A
Torenia sp.	Scrophulariaceae	Ola'a beauty	Herb	A
Trema orientalis	Ulmaceae	Charcoal Tree	Tree	A
Wedelia trilobata	Asteraceae	Wedelia	Herb	A
Zingiber zerumbet	Zingiberaceae	Awapuhi	Herb	A

E = Endemic species, I = Indigenous species, A = Alien species

Figure 1 Typical weedy vegetation on property

Figure 2 Coastal fringe vegetation

Figure 3 Hala on steep banks of stream, near coast

Appendix F

Draft Environmental Assessment
Public Review
Comment and Response Letters

LINDA LINGLE
GOVERNOR OF HAWAII

GENEVIEVE SALMONSON
DIRECTOR

RECEIVED

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

'06 MAR 10 A10:27

235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186
E-mail: oeqc@health.state.hi.us

DEPT. OF LAND & NATURAL RESOURCES STATE OF HAWAII

RECEIVED OFFICE OF CONSERVATION AND COASTAL LANDS
2006 MAR 13 A 9:17
DEPT. OF LAND & NATURAL RESOURCES STATE OF HAWAII

February 6, 2006

Mr. Peter Young, Chair
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawai'i 96809

Dear Mr. Young:

Subject: Draft Environmental Assessment for the Johnson Single Family Residence, Pāpa'ikou, Hawai'i

Thank you for the opportunity to review the subject document. We have no comments.

Should you have any questions, please call Jeyan Thirugnanam at 586-4185.

Sincerely,

Genevieve Salmonson
Director

c: Johnson
PBR

PBR HAWAII

LAND PLANNING
LANDSCAPE ARCHITECTURE
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MANAGING DIRECTOR
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RAYMOND T. HIGA, ASLA
ASSOCIATE

KEVIN NISHIKAWA, ASLA
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ASSOCIATE

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FAX: (808) 523-1402
E-MAIL: sysadmin@pbrhawaii.com

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2123 KAOHU STREET
WAILUKU, HAWAI'I 96793-2204
TEL: (808) 242-2878
FAX: (808) 242-2902
EMAIL: pbrmaui@lava.net

April 5, 2006

Ms. Genevieve Salmonson, Director
State of Hawai'i
Office of Environmental Quality Control
235 South Beretania Street
Honolulu, Hawai'i 96813

SUBJECT: JOHNSON SINGLE-FAMILY RESIDENCE
TMKs: (3) 2-7-08:128 and (3) 2-7-30:26
DRAFT ENVIRONMENTAL ASSESSMENT

Dear Ms. Salmonson:

Thank you for your letter dated February 6, 2006, indicating that you have no comments to offer on the subject Draft Environmental Assessment (EA).

We appreciate your interest and participation in the public review phase of the environmental review process. Your letter and this response will be included in the forthcoming Final EA.

Should you have any questions, please do not hesitate to contact me at 808.961.3333.

Sincerely,

PBR HAWAII

Marissa Furfaro
Planner

cc: Richard and Jenny Johnson
Sam Lemmo, DLNR-OCCL

LINDA LINGLE
GOVERNOR OF HAWAII

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

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA
DEPUTY DIRECTOR

DEAN A. NAKANO
ACTING DEPUTY DIRECTOR - WATER

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BOATING AND OCEAN RECREATION
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LAND
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OFFICE OF CONSERVATION
AND COASTAL LANDS
2006 JAN 30 A 10: 06
DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

REF:OCCL:MC

FILE NO.: HA-3288

180 Day Expiration Date: July 16, 2006
Suspense Date: 21 Days from stamped date

JAN 24 2006

MEMORANDUM:

TO: Harry Yada, Hawai`i District Land Agent
Land Division
Department of Land and Natural Resources

FROM: Samuel J. Lemmo, Administrator
Office of Conservation and Coastal Lands

SUBJECT: REQUEST FOR COMMENTS
Conservation District Use Application HA-3288
BOARD PERMIT
Single Family Residence, Pāpa`ikou, South Hilo, Hawai`i

RECEIVED
LAND DIVISION
HILO, HAWAII
2006 JAN 25 A 11: 00

APPLICANT: Marissa Furfaro, Planner
for Mr. and Mrs. Richard and Lauree Johnson

TMKs: (3) 2-7-008:128

LOCATION: Pāpa`ikou, South Hilo, Hawai`i

PUBLIC HEARING: YES **X** **NO X**

Please contact Michael Cain at 587-0048, should you have any questions on this matter.

If no response is received by the suspense date, we will assume there are no comments. The suspense date starts from the date stamp.

( ) Comments Attached
(✓) No Comments

Signature

Attachments: *Conservation District Use Application*
Draft Environmental Assessment

PBR HAWAII

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SCOTT ABRIGO
ASSOCIATE

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April 5, 2006

Mr. Harry Yada, Hawai'i District Land Agent
State of Hawai'i
Department of Land and Natural Resources
Land Division - Hawai'i District Branch
75 Aupuni Street, Room 204
Hilo, Hawaii 96720

SUBJECT: JOHNSON SINGLE-FAMILY RESIDENCE
TMKs: (3) 2-7-08:128 and (3) 2-7-30:26
DRAFT ENVIRONMENTAL ASSESSMENT

Dear Mr. Yada:

Thank you for your letter dated January 30, 2006, indicating that you have no comments to offer on the subject Draft Environmental Assessment (EA).

We appreciate your interest and participation in the public review phase of the environmental review process. Your letter and this response will be included in the forthcoming Final EA.

Should you have any questions, please do not hesitate to contact me at 808.961.3333.

Sincerely,

PBR HAWAII

Marissa Furfaro
Planner

cc: Richard and Jenny Johnson
Sam Lemmo, DLNR-OCCL

LINDA LINGLE
GOVERNOR OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

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CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
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HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

REF:OCCL:MC
CDUA: HA-3288

Acceptance Date: January 11, 2006
180-Day Expiration Date: July 16, 2006

MAR 30 2006

Ms. Marissa Furfaro
PBR Hawaii
101 Aupuni Street
Hilo Lagoon Center, Suite 310
Hilo, Hawai`i 96720-4262

Dear Ms. Furfaro:

SUBJECT: Conservation District Use Application (CDUA) HA-3288
Johnson Single Family Residence (SFR)
He`ekea Point, Pāpa`ikou, South Hilo, Hawai`i
TMK: (3) 2-7-008:128 and TMK: (3) 2-7-030:026.

This letter is regarding the processing of CDUA HA-3288. The public and agency comment period on your client's application has closed (January 23, 2006). Attached to this letter are copies of the comments received by the Office of Conservation and Coastal Lands (OCCL) regarding the CDUA.

OCCL staff have additional concerns regarding the semi-attached third bedroom / recreation room. Our concern is that it could be used immediately or in the future as a separate dwelling, which would violate Conservation District rule guidelines. The presence of internal walls – creating separate sleeping and living spaces – the wet bar, and the detached nature of the structure from the main house all contribute to this. This could be ameliorated through the removal of the internal walls and wet bar, and / or the relocation of the structure nearer the main residence.

Please send copies of your responses to the questions raised in these letters directly to the authoring agency as well as to the OCCL. Please submit six paper copies of the Final EA to us by March 10, 2006 so it can be submitted for the March 23, 2006 *Environmental Notice*. Also include an Office of Environmental Quality Control (OEQC) Publication Form for the Final EA,

and if the project summary has changed a new summary on diskette. We also request that you include the entire CDUA with the Final EA on a compact disk for your submittal. Your CDUA will be placed on the agenda of the Board of Land and Natural Resources (BLNR) for their consideration. Early submittal of your response to comments will expedite the review process.

Should you have any questions, please contact Michael Cain of our Office of Conservation and Coastal Lands at 587-0048.

Aloha,

Samuel J. Lemmo, Administrator
Office of Conservation and Coastal Lands

PBR HAWAII

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April 25, 2006

Mr. Samuel J. Lemmo, Administrator
State of Hawai'i
Department of Land and Natural Resources
Office of Conservation and Coastal Lands
P.O. Box 621
Honolulu, Hawai'i 96809

SUBJECT: JOHNSON SINGLE-FAMILY RESIDENCE
TMKs: (3) 2-7-08:128 and (3) 2-7-30:26
DRAFT ENVIRONMENTAL ASSESSMENT

Dear Mr. Lemmo:

Thank you for your letter dated March 30, 2006 (CDUA HA-3288) regarding the subject Draft Environmental Assessment (EA).

We acknowledge your additional concerns regarding the semi-attached third bedroom / recreation room. Although it is not the applicant's intent to use it as a separate swelling in the future, the applicant has revised the floor plan to reflect your requested change of removing the wet bar. Please see the enclosed revised floor plan. The substantial internal walls are related to the bathroom, and you determined that a bathroom was an approved facility for this third bedroom / recreation room, therefore no internal walls were removed.

We appreciate your interest and participation in the public review phase of the environmental review process. Your letter and this response will be included in the forthcoming Final EA.

Should you have any questions, please do not hesitate to contact me at 808.961.3333.

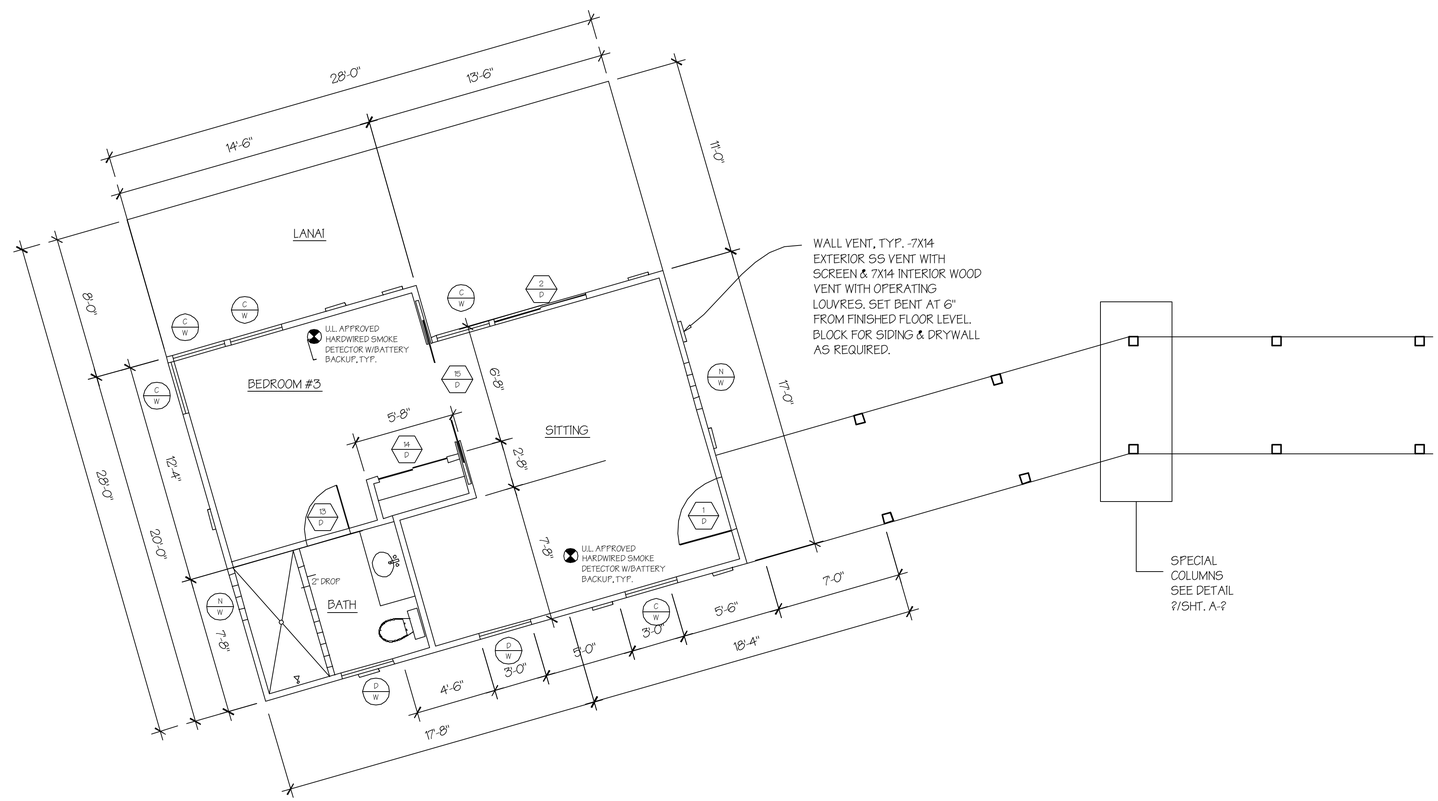
Sincerely,

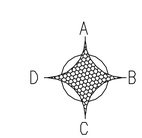
PBR HAWAII

Marissa Furfaro
Planner

cc: Richard and Jenny Johnson

Enclosure





KEY TO INTERIOR ELEVATIONS

A
***

BEDROOM #3 FLOOR PLAN

$\frac{1}{4}$" = 1'-0"

0 1 2 4 8 12

GRAPHIC SCALE: 1/4"=1'-0"

BOONE MORRISON, ARCHITECT
BOONE MORRISON ARCHITECTS, INC.
VOLCANO, HAWAII 96785-0131 * Phone (808) 967-7512 * Fax (808) 967-7581

JOHNSON RESIDENCE
Onomea, Island of Hawaii
T.M.K.: (3) 2-7-08: 128

A-*

PHONE (808) 594-1888

FAX (808) 594-1865

STATE OF HAWAI'I
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAI'I 96813

RECEIVED
OFFICE OF CONSERVATION
AND COASTAL LANDS
2006 FEB 13 A 8 27
HBD05/22
DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

February 9, 2006

Samuel Lemmo
Department of Land and Natural Resources
Office of Conservation and Coastal Lands
P.O. Box 621
Honolulu, HI 96809

RE: Draft Environmental Assessment and Conservation District Use Application for the Proposed Johnson Single-Family Residence, Pāpa'ikou, Hawai'i Island, TMK (3) 2-7-008: 128.

Dear Mr. Lemmo,

The Office of Hawaiian Affairs (OHA) is in receipt of your January 25, 2006 request for comment on the above listed proposed project, TMK (3) 2-7-008: 128. OHA offers the following comments:

The applicant proposes to develop 4.872 square feet of Conservation District land. The development will also include installation of appurtenant utilities, i.e., underground drainage/water and fence installation. Although the area has been heavily modified by years of commercial agriculture use, our staff recommends that a Monitoring Plan be drafted in support of the proposed project. The plan will call for 'on-call' and 'on-site' monitoring as is appropriate. Periodic spot-checking by a qualified archaeologist should be carried out at a minimum.

OHA further requests your assurances that if the project goes forward, should iwi or Native Hawaiian cultural or traditional deposits be found during ground disturbance, work will cease, and the appropriate agencies will be contacted pursuant to applicable law.

Thank you for the opportunity to comment. If you have further questions or concerns, please contact Jesse Yorck at (808) 594-0239 or jessey@oha.org.

'O wau iho nō,

Clyde W. Nāmu'o
Administrator

CC: Lukela Ruddle
OHA Community Affairs Coordinator (Hilo)
162 A Baker Avenue
Hilo, HI 96720-4869

PBR HAWAII
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FAX: (808) 242-2902
EMAIL: pbrmaui@lava.net

April 5, 2006

Mr. Clyde W. Nāmu'o, Administrator
State of Hawai'i
Office of Hawaiian Affairs
711 Kapi'olani Boulevard, Suite 500
Honolulu, Hawai'i 96813

SUBJECT: JOHNSON SINGLE-FAMILY RESIDENCE
TMKs: (3) 2-7-08:128 and (3) 2-7-30:26
DRAFT ENVIRONMENTAL ASSESSMENT

Dear Mr. Nāmu'o:

Thank you for your letter dated February 9, 2006, commenting on the subject Draft Environmental Assessment (EA). We offer the following responses in the respective order of your comments:

1. We acknowledge your staff's recommendation that a Monitoring Plan be drafted in support of the proposed project. We further acknowledge that you wish the plan to include provisions for 'on-call' and 'on-site' monitoring as appropriate and periodic spot-checking by a qualified archaeologist. However, the State Historic Preservation Division (SHPD) has stated that they have no record of historic sites on the subject property and that it is "unlikely that any significant historic sites would be found." Given SHPD's opinion and the long history of ground disturbance related to old sugar cane cropland and subsequent farming, we thus believe that it is highly unlikely that any significant historic sites would be found on this property; therefore, a monitoring plan will not be pursued. All work related to the subject project will be done in compliance with applicable laws.

2. Please be assured that all work will cease and the appropriate agencies will be contacted, should *iwi*, Native Hawaiian cultural, or traditional deposits be found during ground disturbance.

We appreciate your interest and participation in the public review phase of the environmental review process. Your letter and this response will be included in the forthcoming Final EA.

Should you have any questions, please do not hesitate to contact me at 808.961.3333.

Sincerely,

PBR HAWAII

Marissa Furfaro, Planner

cc: Richard and Jenny Johnson
Sam Lemmo, DLNR-OCCL

Harry Kim
Mayor

Christopher J. Yuen
Director

Brad Kurokawa, ASLA
LEED™ AP
Deputy Director

County of Hawaii
PLANNING DEPARTMENT
101 Aupuni Street, Suite 3 • Hilo, Hawaii 96720-3043
(808) 961-8288 • FAX (808) 961-8742

February 10, 2006

RECEIVED
OFFICE OF CONSERVATION
AND COASTAL LANDS
2006 FEB 17 A 11:43
DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

Mr. Samuel J. Lemmo, Administrator
Department of Land and Natural Resources
Office of Conservation and Coastal Lands
P. O. Box 621
Honolulu HI 96809

Dear Mr. Lemmo:

Subject: CDUA HA-3288
Owners: Richard & Lauree Johnson
Request: Single Family Residence and Agricultural Use
Tax Map Key: 2-7-8:128, Papaikou, South Hilo, Hawaii

This is in response to the above-referenced application by Richard and Lauree Johnson for the proposed construction of a single family dwelling and related improvements as well as expansion of an agricultural activity on the subject parcel.

This is a coastline parcel with portions of the property located at the bottom of the sea cliff.

Additional uses and changes have been proposed since our letter dated March 28, 2005. Included with some minor changes, we note the following:

1. Agricultural use is proposed on the subject parcel. According to Chapter 205A-22, Hawaii Revised Statutes and Planning Commission Rule 9-4(10)B(viii) relating to Special Management Area, "development" does not include *"Use of any land for the purpose of cultivating, planting, growing, and harvesting plants, crops, trees, and other agricultural, horticultural, or forestry products or animal husbandry, or aquaculture or mariculture of plants or animals or other agricultural purposes."*

Therefore, the expansion of an existing agricultural field of peach palms is exempt from the definition of development and determined to be a permitted activity.

2. This document mentions a third bedroom attached to the main house via a covered walkway. According to the two site plans we have in our file, the structure is denoted as a "Recreation Room".

3. The shoreline setback area cannot be determined because no certified shoreline survey was submitted. Proposed improvements which may occur within this area include "3' Fence/Safety Barrier", "Imported Boulder, Typical (20 Total)" and "Compacted 3/8" Gravel Groundcover, Typical (Approx. 636 s.f.)" as well as the pruning/removal of trees. Please refer to our March 28, 2005 letter regarding Rules 8 and 11, Shoreline Setback.

4. The "Proposed Pavilion" was deleted from the current site plan.

Should you have questions, please feel free to contact Esther Imamura or Larry Brown of our office at 961-8288.

Sincerely,

CHRISTOPHER J. YUEN
Planning Director

ETI:cd
P:\WPWIN60\ETI\CDUA\LemmoJohnson2-7-8-128.doc

PBR HAWAII

LAND PLANNING
LANDSCAPE ARCHITECTURE
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FAX: (808) 242-2902
EMAIL: pbrmaui@lava.net

April 5, 2006

Mr. Christopher J. Yuen, Director
County of Hawai'i
Planning Department
101 Aupuni Street, Suite 3
Hilo, Hawai'i 96720

SUBJECT: JOHNSON SINGLE-FAMILY RESIDENCE
TMKs: (3) 2-7-08:128 and (3) 2-7-30:26
DRAFT ENVIRONMENTAL ASSESSMENT

Dear Mr. Yuen:

Thank you for your letter dated February 10, 2006, commenting on the subject Draft Environmental Assessment (EA). We offer the following responses in the respective order of your comments:

1. We acknowledge that agricultural use of the property is exempt from the Hawai'i Revised Statutes Chapter 205A-22 and the County of Hawai'i Planning Commission Rule 9-4(10)B(viii) definition of "development" and it is determined to be a permitted activity.

2. We would like to clarify that the third bedroom attached to the main house via a covered walkway will either be used as a bedroom or a recreation room.

3. In speaking with Mr. Larry Brown of your department we understand that when a property is on a sea cliff, in lieu of a certified shoreline survey you determine the top of the sea cliff to be the "shoreline" for the purposes of determining the shoreline setback area (minimum of 40 feet from the determined shoreline). Therefore, a certified shoreline survey will not be submitted and the applicant accepts the top of the sea cliff as the "shoreline".

   We also understand that in order for the applicant to proceed with the proposed improvements (landscaping improvements) within the shoreline setback area, your department needs to be provided with information that these improvements will not promote erosion of the shoreline. Enclosed please find copies of the erosion hazard assessment letter Dr. Charles Fletcher provided after a site visit to the subject property, and a Management Plan that were included in the Draft EA specifically to address potential erosion concerns.

We appreciate your interest and participation in the public review phase of the environmental review process. Your letter and this response will be included in the forthcoming Final EA.

Should you have any questions, please do not hesitate to contact me at 808.961.3333.

Sincerely,

PBR HAWAII

Marissa Furfaro
Planner

cc: Richard and Jenny Johnson
Sam Lemmo, OCCL