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Ref. LM-GYT

May 5, 1994

Mr. Brian Choy, Director  
Office of Environmental Quality Control  
220 S. King Street, 4th Floor  
Honolulu, HI 96813

Dear Mr. Choy:

Subject: **Negative Declaration for Proposed Land Exchange Between the State of Hawai'i (Tax Map Key:3rd/2-3-27:04, Pi'ihonua, South Hilo, Hawai'i) and Harriet M. Wedeman (Tax Map Key:3rd/1-2-09:06 and 08, Kehena, Puna, Hawai'i)**

In accordance with the requirements of Chapter 343, Hawai'i Revised Statutes, and Chapter 200 of Title 11, Administrative Rules, a Final Environmental Assessment has been prepared for the subject property.

Notice of availability of the Draft Environmental Assessment for the project was published in the January 8, 1994 OEQC Bulletin. Comments to the land exchange were received by the department and addressed by the consultant, Dr. Ron Terry, Ph.D. dba GeoMetrician Associates. Copies of the comments and responses are included in the Final Environmental Assessment.

As the proposing agency, we are forwarding herewith, one copy of the OEQC Bulletin Publication form, and four copies of the Final Environmental Assessment. We have determined that there will be no significant impacts as a result of the project and, therefore, are filing the Final Environmental Assessment as a negative declaration. We respectfully request that public notice of the Final Environmental Assessment be published in the next scheduled OEQC Bulletin.

Very truly yours,

  
KEITH W. AHUE  
Chairperson

c: Hawai'i Land Board Member  
Land Management Administrator  
Hawai'i District Land Office

1994-05-23-H- FEA-Wedeman  
Land Exchange

MAY 23 1994

FINAL ENVIRONMENTAL ASSESSMENT (NEGATIVE DECLARATION)  
FOR PROPOSED EXCHANGE OF STATE OF HAWAII PARCEL TMK 2-3-27-4  
WITH WEDEMAN PARCELS TMKs 1-2-09-06 & 1-2-09-08  
HILO AND PUNA DISTRICTS, ISLAND OF HAWAII

Prepared By:

RON TERRY, Ph.D.  
HCR 9575, KEAAU, HAWAII 96749

March 17, 1994

APPLICANT:

Harriet V. Wedeman  
3066 La Pietra Circle  
Honolulu, Hawaii 96815

CONSULTANT:

Ron Terry Ph.D., dba GeoMetrician Associates  
HCR 1 Box 9575  
Keaau, Hawaii 96749

APPROVING AGENCY:

Land Management Division  
Department of Land and Natural Resources  
State of Hawaii  
75 Aupuni Street  
Hilo, Hawaii 96720

CLASS OF ACTION:

Use of State Lands

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PART 1: ACTION DESCRIPTION

1.1. Technical

1.1.1 Project Location

The proposed action involves an exchange of all or a portion of a State of Hawaii parcel (TMK 2-3-27-4) for two parcels of land belonging to Harriet M. Wedeman (TMKS 1-2-09-06 & 1-2-09-08; hereafter referred to collectively as the Wedeman parcels). This Environmental Assessment has been undertaken to comply with requirements of the Department of Land and Natural Resources pursuant to Chapter 343, HRS (see Attachment 1).

Wedeman Parcels

Parcel 1-2-09-06 contains 8.0 acres and parcel 1-2-09-08 contains 58.4 acres. These adjacent parcels are located 400 feet from County Highway 137 (Kaimu-Kapoho Road), mauka of Kehena Beach (see Attachment 2, Figures).

State Parcel

The State parcel contains 1.886 acres and is located 1000 feet above Hilo Hospital on the northeast corner of Waianuenue Avenue and Waiiau Street. The State parcel is composed of four lots.

1.1.2 Purpose and Objectives of Action

The Wedeman parcels contain a complex of functionally diverse archaeological features dating from historic and prehistoric times. This complex is adjacent and related to features found on a larger state parcel. Because the Wedeman parcels total over 66 acres, it is conceivable that space for a residence and driveway might be cleared without causing unmitigable damage to archaeological sites. Nevertheless, it is the desire of the Wedeman family, who obtained the land as a Royal Grant from the Kingdom of Hawaii in the nineteenth century, to preserve all historic features on the parcels if possible. Out of concern for the archaeology on the site, the family rejected a lucrative offer to harvest coconut trees from a landscaping company (see Attachment 5). The State Historic Preservation Division (SHPD) regards the complex as worthy of preservation and has urged a land exchange to effect this goal.

The purpose of the proposed land exchange, then, is to allow the Wedeman family the ability to make the highest and best

use of residentially-zoned property while at the same time preserving the valuable historic and archaeological resources of the Puna District.

1.1.3 Ownership

The State parcel is presently owned entirely and in fee by the State of Hawaii. The Wedeman parcels are owned entirely and in fee by Harriet M. Wedeman.

1.1.4 Consultation With Agencies and Groups

As part of the preparation of this Environmental Assessment (EA), the following government agencies and private organizations were consulted for their comments on the proposed action. The responses from the agencies are reproduced as Attachment 3 and are quoted and/or summarized in the appropriate sections of this EA.

Hawaii County Department of Water Supply  
Hawaii County Planning Department  
Hawaii County Public Works Department  
Hawaii State Division of Historic Preservation  
Sierra Club

A Draft Environmental Assessment for the proposed action was published in the "OEQC Bulletin" of 8 January 1993. Two comments were received. The comment letters and the response letters are reproduced in Attachment 3.

**PART 2: ENVIRONMENTAL SETTING**

2.1 Physical Environment Characteristics

2.1.1 Geology, Soils and Hazards

Wedeman Parcels

Lava flows of two different ages compose the geology of the Wedeman parcels (Moore and Trusdell 1991). The northern edge of the properties was overrun by the 1955 lava flow, which has left a surface of mostly barren a'a. The surface of the remainder of the properties is composed of soil-mantled lava between two to four centuries in age, significantly weathered and densely covered in vegetation. Both of these flows derive from the East Rift of Kilauea Volcano. The site extends from elevations 110 to 280 feet above sea level, and the slope averages five percent.

On the 1955 flow essentially no soil has developed. The remainder of the properties is covered by either Malama Extremely Stony Muck (rMAD, in the U.S. Soil Conservation Service Classification) or Opihikao Extremely Stony Muck (ROPE). Both soils are shallow, acidic mucks with abundant

stones and outcrops. Permeability is rapid, runoff is slow, and erosion hazard is slight (Sato et al 1973). The land is classified under the ALISH system (Agricultural Lands of Importance to the State of Hawaii) as "Other Important Agricultural Land" (as opposed to Prime, Unique, Urban or Unclassified).

The site, along with much of the Big Island, is subject to geologic hazards, especially lava flows and earthquakes. The location of the property adjacent to and downslope from the East Rift earns it a rating of Lava Flow Hazard Zone 2 (on a scale of ascending risk 9 to 1) (Wright et al 1992). Zone 2 areas have had 15 to 25% of their surfaces covered by lava since 1800, and 25 to 75% covered within the past 750 years. As such, there is considerable risk of lava inundation over relatively short time scales (Heliker 1990).

#### State Parcel

The surface geology of the State parcel is composed of prehistoric basalt flows of the Kahuku Series from Mauna Loa. Some of the surface has a covering of weathered Pahala Ash of variable thickness (MacDonald et al 1983:350). The elevation of the site is approximately 540 feet and slope averages six percent.

The soil that has developed on the ash-mantled lava is called Hilo Silty Clay Loam (HOD). This soil has a dark-brown, highly acidic surface layer about 12 inches thick overlying a subsoil that may be as deep as 48 inches. Rock outcrops are also present. On areas of steeper slopes, the soil erosion hazard changes from slight to moderate. Permeability is rapid and runoff is slow. Part of the parcel is Keaukaha Extremely Rocky Muck (rKFD), which is much rockier and less well-developed. Permeability is rapid in the cracks of the pahoehoe and the erosion hazard is slight. (Sato et al 1973). The land is classified under the ALISH system as Urban.

Just as with all development in Hilo, this project is subject to volcanic hazard, particularly lava inundation. The United States Geological Survey classifies the area as Lava Flow Hazard Zone 3, on a scale of ascending risk 9 to 1. Zone 3 is considered "less hazardous than zone 2 [which is adjacent to and downslope of active risk zones] because of greater distance from recently active vents and/or because the topography makes it less likely that flows will cover these areas" (Heliker 1990:23). The Northeast Rift Zone of Mauna Loa has been active in the last century, with eruptions that headed towards Hilo occurring in the years

1899, 1935, 1942, and 1984 (Macdonald et al 1986:64). Thus, although the risk is slightly less than on the Wedeman parcels, there is a chance of lava inundation on the State parcel.

#### 2.1.2 Climate

Both the Wedeman parcels and the State parcel possess a tropical rainforest climate, which is characterized by abundant rainfall year-round and average monthly temperatures between 70-80 degrees Fahrenheit. No effect on regional or local climatic factors would be expected as a result of the proposed land exchange, and no special climatic conditions or hazards exist that would merit consideration as concerns the exchange.

#### 2.1.3 Flora and Vegetation

##### Wedeman Parcels

A botanical reconnaissance of the Wedeman parcels was performed by botanist Linda Cuddihy, M.A., assisted by Ron Terry, Ph.D., on July 11, 1993.

Vegetation on the 1955 lava flow portion is sparse. Typical early colonizers such as lichens (e.g., Stereocaulon vulcani), 'ohi'a lehua (Metrosideros polymorpha) and sword ferns (Nephrolepis spp.) are found scattered on the surface. The interface between the 1955 flow and the older lava has been invaded by alien species including sourbush (Pluchea odorata), lantana (Lantana camara), morning glory (Ipomoea indica), Buddleia, and kukui (Aleurites moluccana), as well as the native species dodder (Cassytha filiformis) and mamaki (Pipturus albidus).

Most of the mauka sections of the parcels is covered in an extremely dense monoculture of roseapple (Syzygium jambos). Patches or individuals of wai'awi (Psidium cattleianum), ti (Cordyline fruticosa), mango (Mangifera indica), monkeypod (Samanea saman), guava (Psidium guajava), and coconut (Cocos nucifera) are present in places. Large, mature 'ohi'a trees (Metrosideros polymorpha) are occasionally present also, a relict of the early, natural vegetation.

The extreme makai sections of the parcel have an a'a substrate that appears somewhat younger than the rest of the parcels. Vegetation here is more open and includes breadfruit (Artocarpus altilis), coffee (Coffea arabica) in the transition zone between the older and the younger substrate. At the very apex of the makai triangular parcel

is an open 'ohi'a forest containing the native species naupaka (Scaevola sericea), 'uhaloa (Waltheria indica), 'akia (Wikstroemia sandwicensis), moa (Psilotum nudum), 'ala'alawainui (Peperomia leptostachya), huehue (Cocculus trilobus), koko'olau (Bidens hawaiiensis) and pukiawe (Styphelia tameiameia) present. Mixed in are aliens including christmas berry (Schinus terbinthifolius), autograph tree (Clusia rosea), Malaysian ground orchid (Spathoglottis plicata), bamboo orchid (Arundina graminifolia), laua'e (Phymatosorus scolopendria), broomsedge (Andropogon virginicus), java plum and lantana.

In summary, the vegetation of the Wedeman parcels is primarily highly disturbed alien forest, with small pockets and/or isolated individuals of native species.

A complete species list for the Wedeman parcels is included as part of Attachment 6.

#### State Parcel

A botanical reconnaissance of the State parcel was performed by Ron Terry, Ph.D., on August 5, 1993. The vegetation was discovered to consist almost entirely of alien vegetation of weedy and/or ornamental species. The interior of the parcel is a dense pasture of California grass (Brachiaria mutica) with patches of assorted alien grasses, thimble-berry (Rubus rosifolius), white shrimp-plant (Justicia betonica) and sleeping grass (Mimosa pudica) mixed in. Individual trees and small clumps of trees of such species as guava (Psidium guajava), wai'awi (Psidium cattleianum), melastoma (Melastoma candidum), and African tulip tree (Spathodea campunulata) were also present. Along the Waiiau Street frontage, a vigorous hedge of ornamental species has taken root, apparently derived from neighbors' dumping. The ornamental trees, shrubs, herbs and ground cover species present include various alien gingers (Hedychium spp., Costus speciosus, and Phaeomeria magnifica), elderberry (Sambucus mexicana), turk's cap (Malvaviscus penduliflorus) and wedelia (Wedelia trilobata). The vegetation on this parcel has little or no conservation value.

A complete species list for the State parcel is included as part of Attachment 6.

#### 2.1.4 Fauna

Native fauna in recent a'a in the disturbed coastal lowlands of Hilo and Puna is generally not abundant. No native passerine bird species are known to frequent the area. The two Hawaiian raptors, the Hawaiian hawk or 'io (Buteo

solitarius) and the Hawaiian owl or pueo (Asio flammeus sandwichensis) are often spotted in both areas. The Hawaiian hawk is an endangered species, and East Hawaii lowlands are part of its regular habitat. No hawk nests appear to be present on any of the parcels. Indigenous and migratory seabirds such as the Pacific golden plover or kolea (Pluvialis fulva) may also use the both locations. The only indigenous land mammal in Hawaii is the Hawaiian hoary bat (Lasiurus cinereus semotus), whose habits are little known. Bats are fairly frequently seen in both the Puna and Hilo areas. The impact to native fauna of the proposed land exchange, if any, would likely be beneficial, because a large area of habitat, however degraded, would be preserved.

#### 2.1.5 Protected Status of Biota

No listed, candidate or proposed endangered animal or plant species are found on any of the parcels. In terms of conservation value, no botanical or zoological resources requiring protection are present.

### 2.2 Social and Economic Setting

#### 2.2.1 Existing Land Uses

##### Wedeman Parcels

The parcels are zoned agriculture (A-3a) by the county, are designated for orchards in the Hawaii County General Plan Land Use Pattern Allocation Guide Map, and are located outside of the Special Management Area. They reside in the State Land Use Agricultural District. A single-family home is thus an appropriate and legal use of the property. The parcel is situated within 1000 feet of many other parcels with similar zoning, some of which contain houses. Immediately adjacent to the northeast is the Puna Beach Palisades subdivision, and to the southwest is Kehena Beach Estates.

##### State Parcel

The parcel is located in the Wailuku residential neighborhood of Hilo and is zoned RS-10 by the County. It lies outside of the Special Management Area and is designated for Low Density Urban in the Land Use Pattern Allocation Guide Map. It is classified as part of the Urban State Land Use District. Legal and appropriate uses for this land include single-family homes.

## 2.2.2 Public Facilities

### Wedeman Parcels

Access from County Highway 137 to the parcels is currently through parcel 1-2-09-7 and is subject to permission of the owners. The property is outside the service limits of the existing water system facilities of the Hawaii County Department of Water Supply (see Attachment 3), and any residence would have to rely on a catchment system. Electric power to the island of Hawaii is supplied by Hawaii Electric Light Company (HELCO). Currently, no electrical lines extend into the property. HELCO is in the early planning stages on a project to bring power to the area under their Special Subdivision Project Provision program, and the possibility exists for a utility hookup in the near future on reasonable terms.

### State Parcel

Electricity, telephone, water and cable services are accessible to this parcel. The parcel has County road frontage (Waiuanue Avenue and Waiiau street) on two sides.

The County Department of Water Supply has stated that water can be made available from a 16-inch waterline along Waiuanue or from a 6-inch waterline along Waiiau Street (see Attachment 3).

The County currently has three culverts which discharge rainfall runoff waters across the extreme northern portion of this parcel. This runoff is derived from ditches bordering both sides of Wailuku Drive, mauka of the parcel, and from the mauka side of Waiiau Street north of its intersection with Wailuku Drive. The culverts, which range in size from one to three feet, cross under Waiiau Street and empty into a heavily overgrown ditch which is located near or on the subject parcel's northern boundary. Water is conveyed along this ditch behind the First United Protestant Church of Hilo and thence to the Wailuku River.

A letter of 30 July 1993 from Galen Kuba, Acting Division Chief of the Engineering Division of the Hawaii County Department of Public Works states: "Should the exchange be granted, the County will request that a drainage easement be provided across this parcel as a condition of exchange" (see Attachment 3). The reservation of this easement would reduce only negligibly the buildable area of the parcel, since it would be located at the extreme northern end of the parcel.

## 2.3 Archaeology and Historic Sites

### Wedeman Parcels

An archaeological reconnaissance was performed on the Wedeman parcels by William Barrera, Jr., of Chiniago Inc. A report on this reconnaissance was prepared and is duplicated as Attachment 4 to this report. The purpose of the work was to "assess the general nature of the archaeological and historic remains on the property, so that the Historic Preservation Division could more accurately determine the potential of the property as an archaeological preserve" (Barrera 1993:4).

The report notes that during the course of State Historic Preservation Division (SHPD) investigations of the archaeology of the adjacent state parcel in 1987 and 1990, significant remains were found on the Wedeman parcels as well. By the time the land exchange was proposed, it was evident to SHPD that the Wedeman parcels required systematic reconnaissance.

The reconnaissance discovered numerous mounds, enclosures, platforms and stone walls. The most likely functions of these features include planting mounds, habitations, graves and corrals. The features date from both the prehistoric and historic periods. All the features are currently assessed significant for the information they may contain concerning prehistory or history. Several of the features are currently assessed significant for their association with broad patterns of history, as excellent examples of site types, and/or significant to an ethnic group.

The two sites identified as agricultural complexes have been singled about by SHPD as possessing special value. In a letter of 27 July 1992 to Ms. Wendelin Campbell, attorney for the applicants, Mr. Don Hibbard of SHPD stated:

These agricultural features are very significant for understanding broad patterns of Puna's prehistory for two reasons, firstly, the agricultural field systems of Kona and Kohala have been studied to a considerable extent whereas extremely little is known about these systems in Puna, and, secondly, very few undisturbed older flows of this type are left in Puna because of the region's active volcanic history and widespread bulldozing for modern agricultural ventures. Considering these factors, State acquisition of these agricultural complexes would benefit the State Historic Preservation Division's mandate to preserve representative examples of significant historic site

types throughout Hawaii (see Attachment 3).

Later, in a letter of 2 March 1993 to Glen Taguchi, Hawaii District Land Agent for DLNR, Mr. Hibbard reiterated:

Hence, our Division does support acquiring the Wedeman parcels in a land exchange. It is important that the parcel(s) the State of Hawaii will exchange for the Wedeman parcels is one that contains no significant historic sites or one in which such sites can be protected. Some discussion with our staff has occurred on possible exchange parcels in areas formerly under sugarcane which would have no significant sites. (see Attachment 3 for full text).

#### State Parcel

Staff from the State Historic Preservation Division researched the State parcel for archaeological site potential. Based on the absence of surface features and the fact that the entire site was long cultivated in sugar cane, SHPD concluded that no significant historic sites were present and that the land exchange would have "no effect" on significant historic sites on State-owned property (see Attachment 3, letter of 4 August 1993 from Don Hibbard to Glen Taguchi).

### **PART 3: ENVIRONMENTAL IMPACTS AND PROPOSED MITIGATION MEASURES**

#### **3.1 Short Term Impacts**

No short-term impacts, either adverse or beneficial, would result from the land exchange.

#### **3.2 Long Term Impacts**

##### *Adverse Impacts:*

No appreciable long-term adverse impacts can be expected as a result of the land exchange.

##### *Beneficial Impacts:*

The proposed land exchange would have the beneficial impact of protecting the archaeological sites which have been declared culturally significant for their preservation value by the State Historic Preservation Division.

### 3.3 Permits, Approvals and Conditions

The Board of Land and Natural Resources must approve the land exchange.

## **PART 4: ALTERNATIVES**

### 4.1 No Action

If no land exchange occurs, the Wedeman parcels will remain outside the direct control of the State government. Archaeological sites located on the parcel will enjoy less protection. The data recovery and interpretive value of these unique sites and features will be unused and may perhaps be lost. For the Wedemans, their attempts to enjoy the highest and best use of their property will continue to be frustrated.

### 4.2 Alternative State Parcels for Exchange

A land exchange involving a different State parcel is possible. At this time, no alternative sites have been proposed by either the applicants or the State. The environmental implications concerning the Wedeman parcels would be identical. The environmental implications concerning the State parcel cannot be examined until if and when an alternative site were proposed.

## **PART 5: DETERMINATION**

The proposed project will not significantly alter the environment and impacts will be minimal. Therefore, the Department of Land and Natural Resources has determined that a Negative Declaration is appropriate, and that the preparation of an Environmental Impact Statement is not warranted.

## **PART 6: FINDINGS AND REASONS**

1. The proposed project will not involve an irrevocable commitment or loss or destruction of any natural or cultural resources.
2. The proposed project will not curtail the range of beneficial uses of the environment.
3. The proposed project will not conflict with the State's long-term environmental policies.

4. The proposed project will not substantially affect the economic or social welfare of the community or State.
5. The proposed project will not involve substantial secondary impacts, such as population changes or effects on public facilities.
6. The proposed project will not involve a substantial degradation of environmental quality.
7. The proposed project will not substantially affect any rare, threatened or endangered species of flora or fauna or habitat. No endangered species of flora or fauna are known to exist on the project site.
8. The proposed project will not detrimentally affect air or water quality or ambient noise levels.
9. Although the proposed project is located in an zone exposed to lava flows, there are no reasonable alternatives. The proposed action would not expose any person to unreasonable risks.

For the reasons above, the proposed project will not have any significant effect in the context of Chapter 343, Hawaii Revised Statutes and section 11-200-12 of the State Administrative Rules.

#### REFERENCES

- Barrera, W.J. 1993. "Keauohana, Puna, Hawaii Island: Archaeological Reconnaissance of TMK: 1-2-09: 6 & 8." Kamuela, Hawaii: Chiniago Inc.
- Heliker, C. 1990. Volcanic and Seismic Hazards on the Island of Hawaii. Washington: U.S. GPO.
- Moore, R.B., and F.A. Trusdell. 1991. "Geologic Map of the Lower East Rift Zone of Kilauea Volcano, Hawaii." U.S. Geological Survey Misc. Investigation Series Map I-2225. Washington, D.C.
- Sato, H.H. et al. 1973. Soil Survey of Island of Hawaii, State of Hawaii. Washington: U.S.D.A. Soil Conservation Service.
- Wright, T.L. et al 1992. "Map Showing Lava-flow Hazard Zones, Island of Hawaii." U.S. Geological Survey Miscellaneous Field Studies Map MF-2193. Washington, D.C.

ATTACHMENT 6  
 CHECKLIST OF VASCULAR PLANTS  
 FOR WEDEMAN PARCELS, TMK 1-2-09-06, 06, SURVEYED JULY 11, 1993  
 AND STATE PARCEL TMK 2-3-27-4, SURVEYED AUGUST 5, 1993

WEDEMAN PARCEL

	Status	Abundance
FERNS AND FERN ALLIES		
Aspleniaceae: Spleenwort Family		
<u>Asplenium nidus</u> L.	I	O
'Ekaha, birdsnest fern		
Blechnaceae: Blechnum Family		
<u>Sadleria cyatheoides</u> Kaulf	E	R (Dead)
'Ama'u		
Nephrolepidaceae: Swordfern Family		
<u>Nephrolepis exaltata</u> (L.) Schott	I	O
Kupukupu		
<u>Nephrolepis multiflora</u> (Roxb.)	A	C
Jarrett ex Morton		
Scaly swordfern		
Polypodiaceae: Polypody Family		
<u>Phymatosorus scolopendria</u> (N.L. Burm.)	A	C
Pichi. Serm.		
Laua'e		
<u>Lepisorus thunbergianus</u> (Kaulf.) Ching	I	R
Syn: <u>Pleopeltis thunbergiana</u>		
'Ekaha 'akolea		
Psilotaceae: Whisk fern Family		
<u>Psilotum nudum</u> (L.) Beauv.	I	O
Moa, whiskfern		
Thelypteridaceae: Thelypteris Family		
<u>Thelypteris parasitica</u> (L.) Fosberg	A	R
Syn: <u>Christella parasitica</u>		
Oak fern		
FLOWERING PLANTS - DICOTS		
Acanthaceae: Acanthus Family		
<u>Thunbergia fragrans</u> Roxb.	A	O
Anacardiaceae: Mango Family		
<u>Mangifera indica</u> L.	A	C
Mango		

WEDEMAN CHECKLIST OF VASCULAR PLANTS, P. 2

	Status	Abundance
Anacardiaceae (Continued)		
<u>Schinus terebinthifolius</u> Raddi Christmasberry	A	U
Asteraceae: Sunflower Family		
<u>Bidens hawaiiensis</u> A. Gray Ko'oko'olau	E	U,lc
<u>Erechtites valerianifolia</u> (Wolf) DC Valerian-leaved fireweed	A	R
<u>Pluchea symphatifolia</u> (Mill.) Gillis Sourbush	A	C
Buddlejaceae: Buddleia Family		
<u>Buddleia asiatica</u> Lour. Asiatic butterfly bush	A	O
Clusiaceae (Guttiferae): Mangosteen Family		
<u>Clusia rosea</u> Jacq. Autograph tree	A	U
Convolvulaceae: Morning-glory Family		
<u>Ipomoea indica</u> (J. Barm.) Merr. Koali 'awa, morning-glory	I	O
Epacridaceae: Epacris Family		
<u>Styphelia tameiameia</u> (Cham. & Schlechtend.) F.v. Muell. Pukiawe	I	R
Euphorbiaceae: Spurge Family		
<u>Aleurites moluccana</u> (L.) Willd. Kukui	P	U
<u>Phyllanthus debilis</u> Klein ex Willd. Niruri	A	R,lc
Fabaceae (Leguminosae): Pea Family		
<u>Chamaecrista nictitans</u> (L.) Moench. Partridge pea	A	U
<u>Desmodium sandwicense</u> E. Mey. Spanish clover	A	O
<u>Mucuna gigantea</u> (Willd.) DC Ka'e'e	I	C

WEDEMAN CHECKLIST OF VASCULAR PLANTS, P. 3

	Status	Abundance
Fabaceae (Continued)		
<u>Samanea saman</u> (Jacq.) Merr. Monkeypod	A	C
<u>Senna</u> sp.	A	U
Goodeniaceae: Naupaka Family		
<u>Scaevola sericea</u> Vahl Naupaka kahakai	I	R,lc
Lamiaceae (Labiatae): Mint Family		
<u>Plectranthus parviflorus</u> Willd. Spurflower	I	O
<u>Plectranthus scutellarioides</u> (L.) R. Br. Coleus	A	U,lc
Lauraceae: Laurel Family		
<u>Cassytha filiformis</u> L. Kauna'oa pehu	I	O,lc
<u>Persea americana</u> Mill. Avocado	A	U
Menispermaceae: Moonseed Family		
<u>Cocculus trilobus</u> (Thunb.) DC Huehue	I	O
Moraceae: Mulberry Family		
<u>Artocarpus altilis</u> (Parkins. ex Z.) Fosb. 'Ulu, breadfruit	P	R
Myrtaceae: Myrtle Family		
<u>Metrosideros polymorpha</u> Gaud. var. <u>incana</u> (H. Levl.) St. John 'Ohi'a lehua	E	O
<u>Psidium cattleianum</u> Sabine Waiawi, strawberry guava	A	A
<u>Psidium guajava</u> L. Common guava	A	C
<u>Syzygium cumini</u> (L.) Skeels Java plum	A	U,lc
<u>Syzygium jambos</u> (L.) Alston Rose apple	A	A

WEDEMAN CHECKLIST OF VASCULAR PLANTS, P. 4

	Status	Abundance
Passifloraceae: Passionflower Family <u>Passiflora edulis</u> Sims Liliko'i	A	O
Piperaceae: Black Pepper Family <u>Peperomia leptostachya</u> Hook. & Arnott 'Ala'alawainui	I	O
Rosaceae: Rose Family <u>Rubus rosifolius</u> Sm. Thimbleberry	A	O
Rubiaceae: Coffee Family <u>Coffea arabica</u> L. Coffee	A	U,lc
<u>Morinda citrifolia</u> L. Noni	P	U
Sterculiaceae: Cocoa Family <u>Melochia umbellata</u> (Houtt.) Stapf Melochia	A	R
<u>Waltheria indica</u> L. 'uhaloa	I	R,lc
Thymelaeaceae <u>Wikstroemia sandwicensis</u> Meisn. 'Akia	E	O
Urticaceae: Nettle Family <u>Pipturus albidus</u> (Hook. & Arnott) A. Gray Mamaki	E	O,lc
Verbenaceae: Verbena Family <u>Lantana camara</u> L. Lantana	A	C,lc

WEDEMAN CHECKLIST OF VASCULAR PLANTS, P. 5

	Status	Abundance
FLOWERING PLANTS - MONOCOTS		
Agavaceae: Agave Family		
<u>Cordyline fruticosa</u>	P	O
Ki, ti		
Arecaceae (Palmae): Palm Family		
<u>Cocos nucifera</u> L.	P	O
Niu, coconut		
Bromeliaceae: Bromeliad Family		
<u>Ananas comosus</u> (Stickm.) Merr.	A	R*
Pineapple		
Commelinaceae: Spiderwort Family		
<u>Commelina diffusa</u> N. L. Burm.	A	O
Dayflower, honohono		
Dioscoriaceae: Yam Family		
<u>Dioscorea pentaphylla</u> L.	P	O
Bitter yam		
Orchidaceae: Orchid Family		
<u>Arundina graminifolia</u> (D. Don) Hochr.	A	O
Bamboo orchid		
<u>Spathoglottis plicata</u> Blume	A	U,lc
Malyasian ground orchid		
Pandanaceae: Screwpine Family		
<u>Pandanus tectorius</u> S. Parkinson ex Z.	I	C
Hala		
Poaceae (Gramineae): Grass Family		
<u>Andropogon virginicus</u> L.	A	R
Broomsedge		
<u>Digitaria</u> sp.	A	R
Crabgrass		
<u>Oplismenus hirtellus</u> (L.) P. Beauv.	A	C
Basket grass		

WEDEMAN CHECKLIST OF VASCULAR PLANTS, P. 6

	Status	Abundance
Poaceae (Continued)		
<u>Paspalum conjugatum</u> Bergius Hilo grass	A	U
<u>Paspalum scrobiculatum</u> L. Ricegrass	I	R,lc
<u>Phyllostachys nigra</u> (Lodd.) Munro Bamboo	A	U,lc
<u>Schizachyrium condensatum</u> (Kunth) Nees Bush beardgrass	A	R,lc
Zingiberaceae: Ginger Family		
<u>Zingiber zerumbet</u> (L.) Sm. 'Awapuhi, shampoo ginger	P	O

Status:

E = Endemic, unique to Hawaiian Islands  
 I = Indigenous, native to Hawaiian Islands, also found elsewhere  
 P = Polynesian introduction  
 A = Not native to Hawaiian Islands, introduced

Abundance Ratings:

A = Abundant  
 C = Common  
 O = Occasional  
 U = Uncommon  
 R = Rare  
 lc = Localized, primarily on lava flows or forest/lava edges

Nomenclature of plants follows:

Wagner W.L., D. R. Herbst, and S. H. Sohmer. 1990. Manual of the Flowering Plants of Hawai'i. Honolulu: University of Hawaii Press and Bishop Museum Press.

Wagner, W.L and F. S. Wagner. Unpublished. Revised Checklist of Hawaiian Pteridophytes, July 1992.

CHECKLIST OF VASCULAR PLANTS  
STATE PARCEL TMK 2-3-27-4  
SURVEYED AUGUST 5, 1993

	Status	Abundance
FERNS AND FERN ALLIES		
Nephrolepidaceae: Swordfern Family		
<u>Nephrolepis exaltata</u>	I	O
Kupukupu		
<u>Nephrolepis multiflora</u>	A	O
Jarrett ex Morton		
Scaly swordfern		
Polypodiaceae: Polypody Family		
<u>Phymatosorus scolopendria</u>	A	O
Pichi. Serm.		
Laua'e		
FLOWERING PLANTS - DICOTS		
Acanthaceae: Acanthus Family		
<u>Justicia betonica</u>	A	A
White shrimp plant		
Araliaceae		
<u>Schefflera actinophylla</u>	A	O
Octopus tree		
Asteraceae		
<u>Ageratum conyzoides</u>	A	O
Ageratum	A	O
<u>Bidens pilosa</u>	A	A
Spanish needle		
<u>Wedelia trilobata</u>	A	A
Wedelia		
Balsaminaceae		
<u>Impatiens wallerana</u>	A	O
Impatiens, Busy Lizzy		
Bignoniaceae		
<u>Spathodea campanulata</u>	A	C
African tulip tree		
Caprifoliaceae		
<u>Sambucus mexicana</u>	A	C
Elderberry		
Clusiaceae (Guttiferae): Mangosteen Family		
<u>Clusia rosea</u>	A	U
Autograph tree		

STATE PARCEL CHECKLIST OF VASCULAR PLANTS, P. 2

Convolvulaceae: Morning-glory Family		
<u>Ipomoea indica</u>	I	U
Koali 'awa, morning-glory		
Fabaceae: Pea Family		
<u>Mimosa pudica</u>	A	O
Sensitive plant, sleeping grass		
Lauraceae: Laurel Family		
<u>Persea americana</u>	A	U
Avocado		
Malvaceae: Mallow Family		
<u>Malvaviscus penduliflorus</u>	A	A
Turk's cap		
Melastomaceae: Melastome Family		
<u>Melastoma candidum</u>	A	O
Melastoma		
Myrtaceae: Myrtle Family		
<u>Psidium cattleianum</u> Sabine	A	C
Waiawi, strawberry guava		
<u>Psidium guajava</u>	A	C
Common guava		
Rosaceae: Rose Family		
<u>Rubus rosifolius</u>	A	C
Thimbleberry		
Sterculiaceae: Cocoa Family		
<u>Melochia umbellata</u>	A	C
Melochia		
FLOWERING PLANTS - MONOCOTS		
Araceae: Aroid Family		
<u>Colocasia esculenta</u>	P	U
Taro		
<u>Philodendron</u> spp.	A	C
Arecaceae (Palmae): Palm Family		
<u>Cocos nucifera</u>	P	R
Niu, coconut		
Commelinaceae: Spiderwort Family		
<u>Commelina diffusa</u>	A	A
Dayflower, honohono		

STATE PARCEL CHECKLIST OF VASCULAR PLANT, P. 3

Musaceae: Banana Family		
<u>Musa x paridisiaca</u>	A	O
Banana		
Poaceae (Gramineae): Grass Family		
<u>Brachiaria mutica</u>	A	A
California grass		
<u>Digitaria sp.</u>	A	R
Crabgrass		
<u>Oplismenus hirtellus</u>	A	C
Basket grass		
<u>Paspalum conjugatum</u>	A	A
Hilo grass		
<u>Paspalum scrobiculatum</u>	I	R
Ricegrass		
<u>Saccharum officinarum</u>	A	O
Sugar cane		
<u>Setaria palmifolia</u>	A	R
Palmgrass		
Zingiberaceae: Ginger Family		
<u>Costus speciosus</u>	A	C
Crape ginger		
<u>Hedychium flavescens</u>	A	C
Yellow ginger		
<u>Phaeomeria magnifica</u>	A	C
Torch ginger		

Status:

- E = Endemic, unique to Hawaiian Islands  
 I = Indigenous, native to Hawaiian Islands, also found elsewhere  
 P = Polynesian introduction  
 A = Not native to Hawaiian Islands, introduced

Abundance Ratings:

- A = Abundant  
 C = Common  
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 Wagner, W.L and F. S. Wagner. Unpublished. Revised Checklist of Hawaiian Pteridophytes, July 1992.

ATTACHMENT 1

JOHN WAIHEE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
DIVISION OF LAND MANAGEMENT  
P.O. BOX 936  
HILO, HAWAII 96721-0936

AQUACULTURE DEVELOPMENT  
PROGRAM  
AQUATIC RESOURCES  
CONSERVATION AND  
ENVIRONMENTAL AFFAIRS  
CONSERVATION AND  
RESOURCES ENFORCEMENT  
CONVEYANCES  
FORESTRY AND WILDLIFE  
LAND MANAGEMENT  
STATE PARKS  
WATER AND LAND DEVELOPMENT

June 7, 1993

Mr. Donald Hibbard, Administrator  
State Historic Preservation Division  
33 South King Street, 6th Floor  
Honolulu, HI 96813

Ms. Wendelin Campbell, Esq.  
Campbell & Campbell, Attorneys at Law  
Haina Cottage - Opelo Road  
P.O. Box 6844  
Kamuela, HI 96744

Dear Mr. Hibbard and Ms. Campbell

Subject: Proposed Land Exchange Between the State of Hawai'i and  
Mrs. Harriet M. Wedeman

Reference is made to Mrs. Harriet M. Wedeman's request for a land exchange and the State Historic Preservation Division's (SHPD) support for the acquisition of Mrs. Wedeman's properties.

We have completed the preliminary review of the potential land exchange of the Wedeman's properties identified as Tax Map Keys:3rd/1-2-09:06 & 08 and the State-owned parcel identified as Tax Map Key:3rd/2-3-27:04. We have identified the following tasks that are required in any exchange process and must determine whether the parties are willing to assume the responsibility for the cost of the exchange and its timely submission.

The task includes but may not be limited to:

1. Compliance with Chapter 343, Hawai'i Revised Statutes, relating to Environmental Impact Statements;
2. Survey, stake out and submission of maps and description by a Registered Professional Land Surveyor and all attendant costs thereto;
3. The cost of the services of an independent appraiser to establish the fair market value of the affected parcels subject to Section 171-50, Hawai'i Revised Statutes;
4. The cost to publish a Public Notice of Disposition Through a Land Exchange in accordance with Section 171-16(d), Hawai'i Revised Statutes;
5. Miscellaneous costs attendant to a land disposition, i.e., document costs, conveyance tax, recording fees, etc.

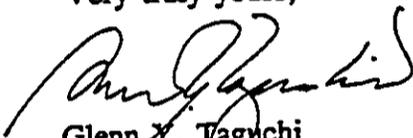
Mr. Donald Hibbard, Administrator  
Ms. Wendelin Campbell, Esq.  
June 7, 1993  
Page 2

Should the parties agree to assume all of the costs and responsibilities outlined above, enclosed for your use are the following items:

1. Notice regarding Act 241, SLH '92;
2. Guidelines for Preparing Environmental Assessments;
3. Environmental Assessment Checklist.

Should there be any questions, please call me at 933-4245.

Very truly yours,

  
Glenn Y. Taguchi  
Hawai'i District Land Agent

GYT:src  
Encls.

c: Hawai'i Land Board Member  
Land Management Administrator

We wish to pursue the land exchange

We do not wish to pursue the land exchange

\_\_\_\_\_  
(Mrs.) Harriet M. Wedeman

\_\_\_\_\_  
Date

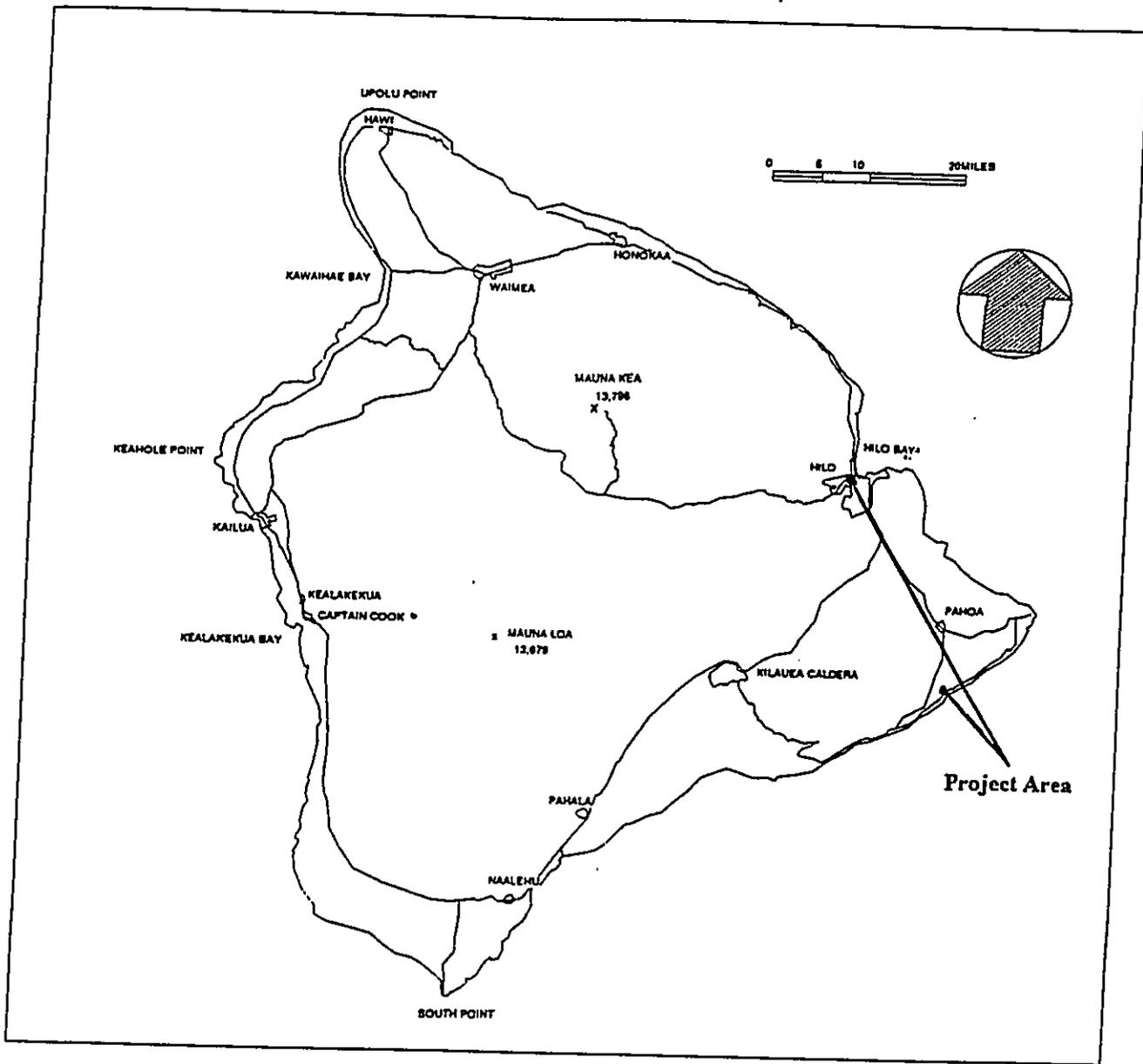
STATE HISTORIC PRESERVATION DIVISION

\_\_\_\_\_  
By Its:

\_\_\_\_\_  
Date

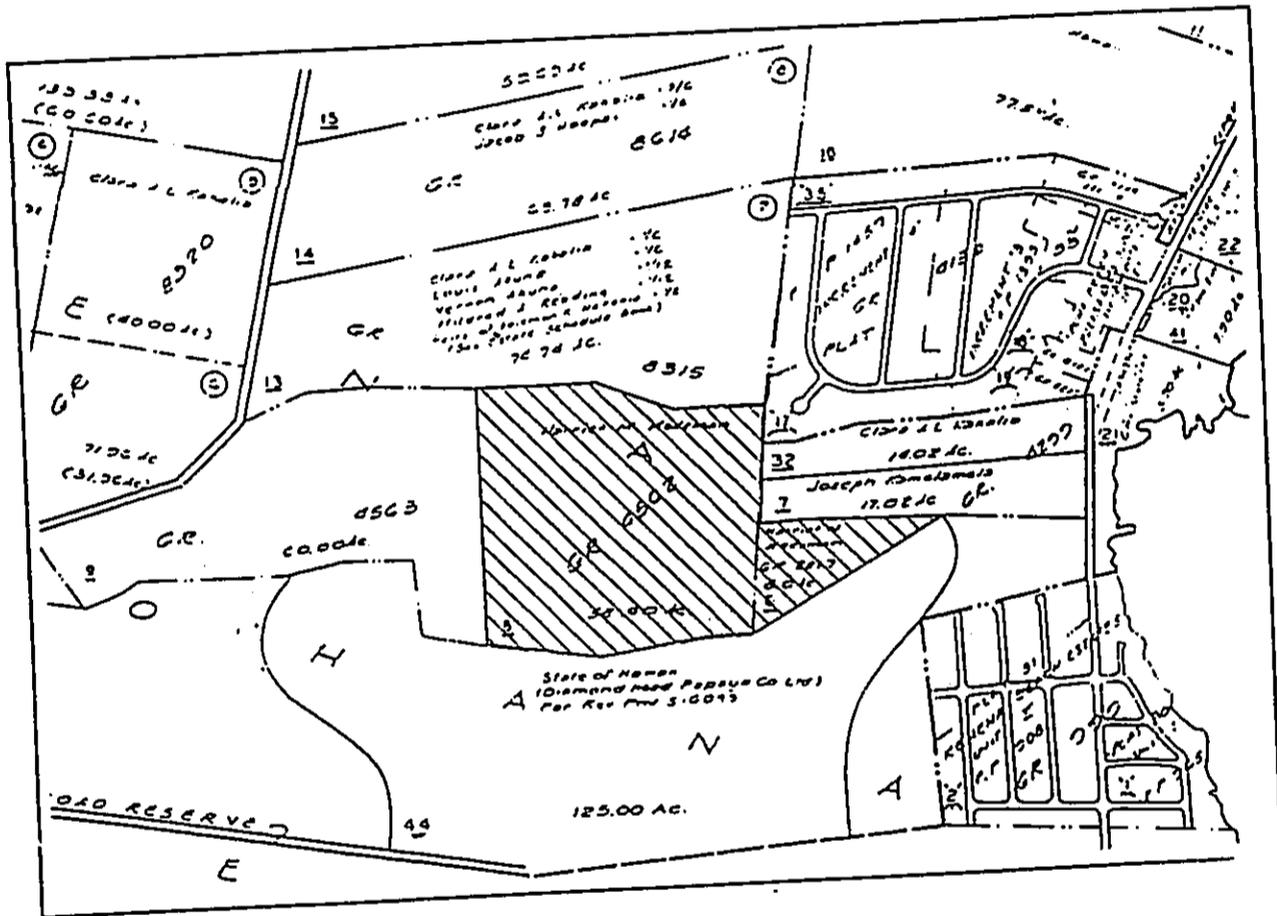
ATTACHMENT 2-A

Location of Parcels Involved in Proposed Land Exchange



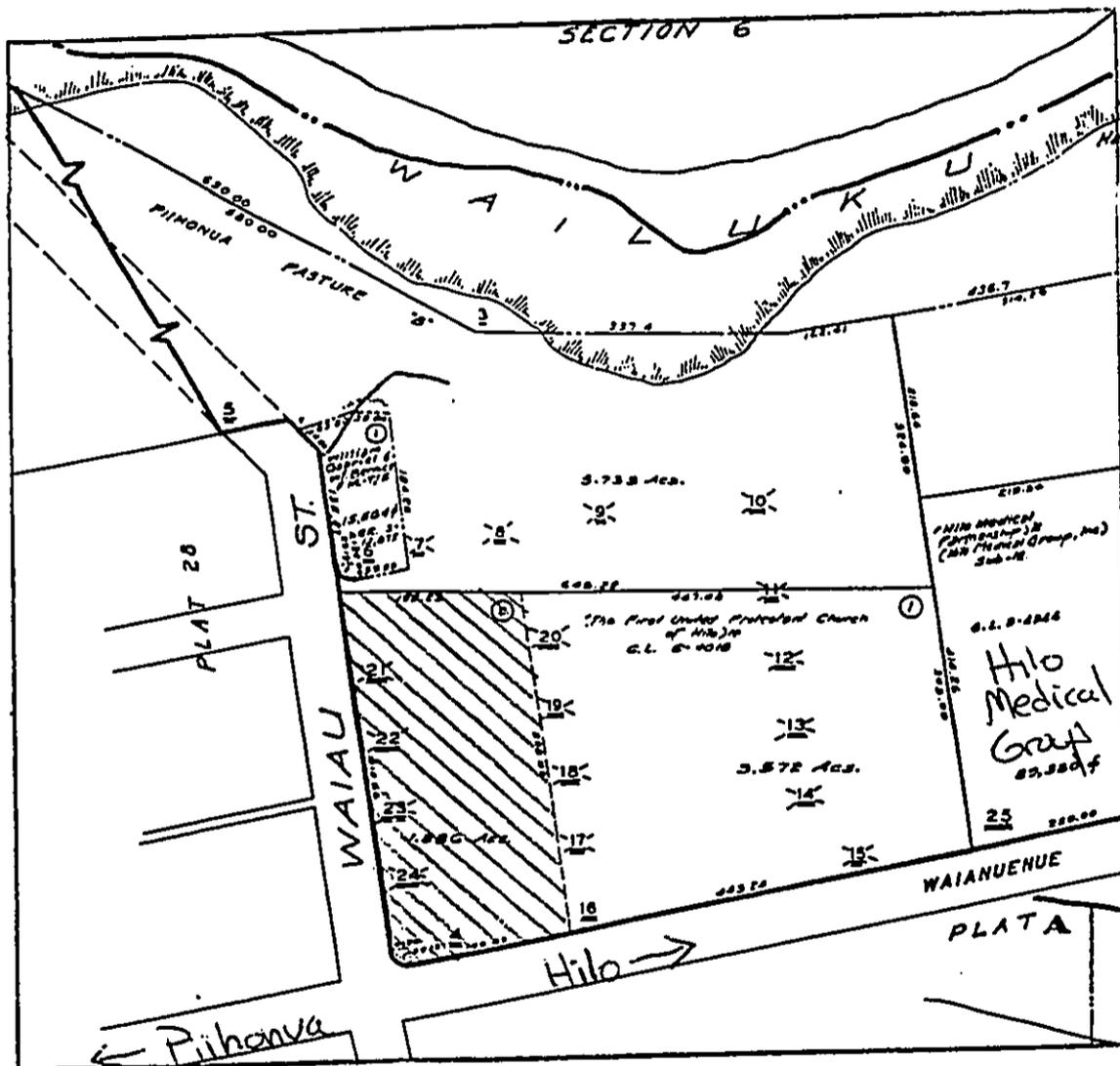
ATTACHMENT 2-B

Portion of TMK 1-2-09, Showing Location of Wedeman Parcels



ATTACHMENT 2-C

Portion of TMK 2-3-27, Showing Location of State Parcel



JOHN WAIHILE  
GOVERNOR OF HAWAII

ATTACHMENT #



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION  
33 SOUTH KING STREET, 8TH FLOOR  
HONOLULU, HAWAII 96813

July 27, 1992

Ms. Wendelin Campbell  
Campbell & Campbell, Attorneys at Law  
Haina Cottage - Opelo Road  
P.O. Box 6844  
Kamuela, Hawaii 96743

Dear Ms. Campbell:

**SUBJECT: Chapter 6E (H.R.S.) Compliance -- Assessment of Historic Sites on Parcels Proposed for State Land Exchange (Wedeman) Keauohana, Puna, Hawaii Piihonua, South Hilo, Hawaii**  
**TMK: 1-2-9: 6 and 8; 2-3-27: 4**

Thank you for your letter of July 1, 1992, requesting information on historic sites located on two parcels in Puna which the owner, Mrs. Harriet Wedeman, wishes to exchange for a State-owned parcel near Hilo. As noted in the letter attached to your correspondence (Ltr. Landgraf to Wedeman, November 28, 1989), our office must also determine if significant historic sites are located on the State-owned land Mrs. Wedeman wishes to acquire and if the proposed exchange would have an adverse effect on such historic sites should any exist.

The field inspection conducted of the two parcels owned by Mrs. Wedeman in November 1990 by our office was too brief to provide sufficient information to determine the significance of all historic sites on these parcels nor can we adequately evaluate which sites would be considered for preservation or for data recovery if the parcels were to be developed. During the inspection, our staff member, Holly McEldowney, was able to traverse only two sections of the 66 acres included in these parcels. This coverage was, however, sufficient to suggest that both parcels contain numerous archaeological features which probably extend over most of the area encompassed by both parcels.

Most features are the remains of past agricultural activities, including a series of low stone walls and enclosures and numerous, less formal features such as stone mounds or outcrops modified by stone constructions.

WILLIAM W. PATY, CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES

DEPUTIES

JOHN P. KEPPELER, II  
DONA L. HANAKE

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HISTORIC PRESERVATION  
DIVISION

LAND MANAGEMENT  
STATE PARKS  
WATER AND LAND DEVELOPMENT

LOG NO: 5915  
DOC NO: 2000o

Wendelin Campbell  
Page 2

The more formalized complexes, including at least one possible residential enclosure, are on parcel number 8 which lies on an older lava flow with relatively deep soil deposits. The surface of parcel number 6 appears younger, soil deposits are shallower and most features observed were scattered stone wall segments, mounds and modified outcrops.

The complexes of low walls on parcel 8 resemble Site No. 10,931 and 10,932 described by Ross Cordy on the neighboring parcel to the south (1987 Archaeological Reconnaissance, Keauohana Ahupua'a, Puna, Hawaii Island) and probably represent a continuation of the same, larger agricultural system that developed in this kipuka composed of older lava flows. As noted in the 1987 report (p. 16), these agricultural features are very significant for understanding broad patterns of Puna's prehistory for two reasons. Firstly, the agricultural field systems of Kona and Kohala have been studied to a considerable extent whereas extremely little is known about these systems in Puna and, secondly, very few undisturbed, older flows of this type are left in Puna because of the region's active volcanic history and widespread bulldozing for modern agricultural ventures. Considering these factors, State acquisition of these agricultural complexes would benefit the State Historic Preservation Division's mandate to preserve representative examples of significant historic site types throughout Hawaii.

As for the State-owned parcel near Hilo, we believe that relinquishing this parcel will have "no effect" on historic sites. The parcel was under cultivation for sugar cane for many years and we do not expect any sites to have survived.

You may submit this letter to Mr. Glen Taguchi, Land Agent for Hawaii Island, as our official comments concerning the proposed land exchange. Please call Holly McEldowney at 587-0008 if you have any further questions.

Sincerely,



Don Hibbard, Administrator  
State Historic Preservation Division

HIM:amk

JOHN WAIHEE  
GOVERNOR OF HAWAII

BOARD OF LAND AND NATURAL RESOURCE

DEPUTIES

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DONA L. HANAKE

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STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION  
33 SOUTH KING STREET, 8TH FLOOR  
HONOLULU, HAWAII 96813

March 2, 1993

LOG NO: 7525  
DOC NO: 9302ks28

**MEMORANDUM**

TO: Glenn Taguchi, Hawaii District Land Agent, Land Management

FROM: Don Hibbard, Administrator  
State Historic Preservation Division 

SUBJECT: Review of "Keauohana, Puna, Hawaii Island: Archaeological Reconnaissance of  
TMK: 1-2-09: 6 & 8" (Barrera 1993). Chiniago Inc.  
Report for Proposed Land Exchange  
between the State of Hawaii and Harriet M. Wedeman  
Kehena and Keauohana, Puna, Island of Hawaii  
TMK: 1-2-09: 006 and 008

Our office has reviewed the archaeological reconnaissance survey report which you sent on February 9, 1993. The results does show that historic sites are present, and actually some of these sites we had incorrectly thought to be on adjacent State land which you helped our Division remove from a potential papaya lease a few years ago. These parcels do contain historic sites that are significant under multiple criteria and that are excellent examples of Puna site types such as formal and informal agricultural mounds and mound complexes and walled rectangular enclosures which as are yet not sufficiently preserved in Puna. We believe that it is desirable to exchange for these parcels and then to set them aside along with the adjacent State parcel portions (which were identified as important several years ago) into a historic preserve.

Hence, our Division does support acquiring the Wedeman parcels in a land exchange. It is important that the parcel(s) the State of Hawaii will exchange for the Wedeman parcels is one that contains no significant historic sites or one in which such sites can be protected. Some discussion with our staff has occurred on possible exchange parcels in areas formerly under sugarcane which would have no significant sites. Once a potential exchange parcel is selected, we will be glad to conduct a field check to resolve the historic preservation concerns.

If you should have any further questions, please contact Kanalei Shun at 587-0007.

KS:amk

JOHN WAHEE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
STATE HISTORIC PRESERVATION DIVISION  
33 SOUTH KING STREET, 6TH FLOOR  
HONOLULU, HAWAII 96813

August 4, 1993

KEITH AIBU, CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCE

DEPUTIES

JOHN P. KEPPELER II  
DONA L. HANAKE

AQUACULTURE DEVELOPMENT  
PROGRAM

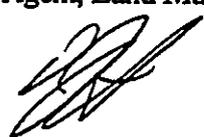
AQUATIC RESOURCES  
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ENVIRONMENTAL AFFAIRS  
CONSERVATION AND  
RESOURCES ENFORCEMENT  
CONVEYANCES

FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
DIVISION  
LAND MANAGEMENT  
STATE PARKS  
WATER AND LAND DEVELOPMENT

MEMORANDUM

LOG NO: 8925  
DOC NO: 9307ks08

TO: Glenn Taguchi, Hawaii District Land Agent, Land Management

FROM: Don Hibbard, Administrator  
State Historic Preservation Division 

SUBJECT: **Chapter 6E (HRS) Compliance—Proposed Land Exchange Between the State of Hawaii and Mrs. Harriet M. Wedeman  
Kahena/Keauohana, Puna, Island of Hawaii  
TMK: 1-2-09: 006 and 008**

In response to your letter of June 7, 1993, to both our office and Ms. Wendelin Campbell, Esq., of Campbell and Campbell, Attorneys at Law, concerning the subject land exchange, our office concurs with the tasks you identified as required to complete the land exchange process. It is our understanding that the State's Surveys Office will survey and stake out the State land in Piihonua and that the only task our office is responsible for in the subject exchange is to bear one-half (1/2) the cost of the services of an independent appraiser to establish the fair market value of the affected parcels subject to Section 171-50, Hawai'i Revised Statutes (with you anticipating this cost to be but a few thousand dollars, half of which would be our cost). With this understanding, our office is agreeable to pursuing the land exchange and the signing document to that effect is enclosed.

Ms. Holly McEldowney from our office has reviewed the State land in Piihonua, South Hilo ((TMK: 3-2-3-27: 004), being proposed for the exchange for Wedeman's Puna land. The Piihonua property has been extensively cultivated for sugar cane, under which circumstances no significant historic sites are expected to be present. Hence, the land exchange will have "no effect" on significant historic sites in the State-owned property.

Attachment

c: Wendelin Campbell, Esq.  
Ron Terry, GeoMetrician Assoc.

KS:lll

Stephen K. Yamashiro  
Mayor



Donna Fay K. Kiyosaki  
Chief Engineer

Riley W. Smith  
Deputy Chief Engineer

**County of Hawaii**  
**DEPARTMENT OF PUBLIC WORKS**  
25 Aupuni Street, Room 202 • Hilo, Hawaii 96720-4252  
(808) 961-8321 • Fax (808) 969-7138

July 30, 1993

RON TERRY PhD  
GEOMETRICIAN ASSOCIATES  
HCR 9575  
KEAAU HI 96749

SUBJECT: ENVIRONMENTAL ASSESSMENT PREPARATION FOR  
LAND EXCHANGE OF TMK: 1-2-09: 06, 08  
WITH TMK: 2-3-27: 4 (OWNER: STATE OF HAWAII)

The County currently has three (3) culverts which discharge rainfall runoff waters across a portion of this parcel. Should the exchange be granted, the County will request that a drainage easement be provided across this parcel as a condition of exchange.

Should you have any questions, please contact Stanley Takemura at 961-8327.

A handwritten signature in black ink, appearing to read "Galen M. Kuba".

GALEN M. KUBA, Acting Division Chief  
Engineering Division

STT:byf

cc: Glenn Taguchi, DLNR



DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAII

25 AUPUNI STREET • HILO, HAWAII 96720  
TELEPHONE (808) 969-1421 • FAX (808) 969-6996

July 19, 1993

Mr. Ron Terry, PhD.  
GeoMetrician Association  
HCR 9575  
Kea'au, HI 96749

ENVIRONMENTAL ASSESSMENT PREPARATION  
FOR LAND EXCHANGE WITH STATE OF HAWAII  
TAX MAP KEY 1-2-9:6, 8; 2-3-27:4

This is in response to your letter of July 5, 1993.

Please be informed that Tax Map Key 1-2-9:6 and 8 is outside the Department's existing water system facilities.

Water can be made available for Tax Map Key 2-3-27:4 from a 16-inch waterline along Waianuenue Avenue and a 6-inch waterline along Waiiau Street fronting the property.

  
J.H. William Sewake  
Manager

WA

*... Water brings progress...*

Stephen K. Yamashiro  
Mayor



Virginia Goldstein  
Director

Norman Olesen  
Deputy Director

## County of Hawaii

### PLANNING DEPARTMENT

25 Aupuni Street, Room 109 • Hilo, Hawaii 96720-4252  
(808) 961-8288 • Fax (808) 961-9615

August 3, 1993

Dr. Ron Terry  
GeoMetrician Association  
HCR 9575  
Keaau, HI 96749

Dear Dr. Terry:

Environmental Assessment Preparation for Land Exchange  
Tax Map Key: 1-2-9: 6 & 8; and 2-3-27: 4

This is in response to your letter dated July 5, 1993, regarding the above-referenced properties. We provide you with the following information.

Land Use Designation

Tax Map Key

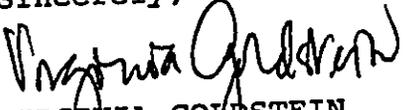
General Plan LUPAG Map  
State Land Use  
County Zoning  
Special Management Area

1-2-9: 6 and 8  
Orchards  
Agriculture  
A-3a  
No

2-3-27: 4  
Low Density Urban  
Urban  
RS-10  
No

Should you have any questions, please feel free to contact Alice Kawaha of this office at 961-8288.

Sincerely,

  
VIRGINIA GOLDSTEIN  
Planning Director

AK:mjh  
0245D

DIVISION OF  
LAND MANAGEMENT  
**KA LAHUI HAWAII'I**  
Moku OJN<sup>28</sup>OWAI<sup>10</sup> PM '94

District of North Kona  
Post Office Box 4851  
Kailua-Kona, Hawaii 96745

District of South Kona  
Post Office Box 801  
Honolulu, Hawaii 96726

Mr. Glenn Toguchi  
Department of Land and Natural Resources  
P.O. Box 936  
Hilo, Hawaii 96720

Jan. 26, 1994

Dear Mr. Toguchi:

I would like to thank you once again for taking your time to speak with me over the phone last Friday, and for sharing your views with regards to my concerns on the sale, lease or exchange of ceded lands. As you recall we discussed in particular three ceded actions listed in the January 8, 1994 OEQC bulletin. They are 1) Lease of ceded lands to HCEOC, 2) Lease of land which may be ceded lands for easement to Hawaii county and 3) Exchange of ceded lands in Pihonua for private lands in Kehena. The merits of the proposed actions are obvious however in my opinion they may not necessarily meet all the criteria for the disposition of ceded lands as stated in the state constitution. The desire of the DLNR to act in behalf of the "public good" is without question but in examining each of the proposals on their individual merits I would like to offer the following comments and would greatly appreciate your thoughts and guidance on how certain determinations are made within the scope of the DLNR's policies and procedures.

TMK 2-3-32:04

The subject property is 5.28 acres or thereabouts and was formerly planted in cane. The applicant is the HCEOC, a private non-profit Community Action Agency. The proposal for development calls for a fairly large construction project of buildings, parking lots, motorpool etc. It appears that the HCEOC is prepared to invest a sizable amount of capital. In a situation where improvements to the property are made does the lease rent reflect the fair market value as improved property or as cane land? If as a business HCEOC should fail, what mechanisms are employed to safeguard the public's interest from investment loss. I suppose I have a view that if the property is leased to the applicant then a reasonable profit should be expected by the lessor. This is a business risk that a lessor undertakes in binding the property under contract and therefore a profit is justified. Should the lessee default that would constitute a loss to the lessor and in this case to the beneficiaries.

I would also appreciate understanding how the DLNR determines how long leases should run and how that policy would apply to this applicant.

TMK 7-5-05:07

It is unclear as to whether the subject property is ceded lands or

not. I assume this will be determined prior to the granting of easement. Again the merits of granting the easement are obvious. My question would be more on procedure. I have observed construction already underway on the Queen Liliuokalani development which would seem inappropriate if the easement has not yet been granted. In a situation such as this how is the value of the easement determined. The trust is investing to make profit, as above is this value reflected in the grant of easement.

TMK 2-3-27:4

The site of the Wedeman property contains important archeological sites and thus is of historical significance. As such there are laws already in existence which protect those sites from destruction. It would appear that the development of the property would be very difficult if not inappropriate. It would be preferable if the DLNR were to purchase the site and designate it for preservation but lacking the funds to do so they are proposing a trade or exchange. I can see the logic to that approach but here again how do we value the exchange. The Wedeman property has a current net worth i.e. fair market value. They will be given a parcel of equal value in exchange. The new parcel however has much higher potential for development and should the Wedemans decide to develop the Piionua site, does the DLNR receive a fair share of the profits?

In our conversation we discussed the issue of "public good". This is impossible to measure and difficult to audit. In the three cases above I definitely see three individuals or entities benefitting in measurable terms, all three will profit. How will the public or more specifically the native hawaiians benefit? What guidelines are used?

I greatly appreciate your assistance in helping me to understand the DLNR's policies and procedures with regard to the disposition of the ceded lands.

Sincerely,

*Charles Young*  
Charles Young

P.S.

I would also ask that you reconsider putting me on your mailing list when you notify other interested parties on pending proposals.

*Mahalo*

Ron Terry, Ph.D.  
GeoMetrician Associates  
HCR 9575  
Kea'au, Hawai'i 96749  
March 17, 1994

Charles Young  
Ka Lahui Hawaii  
District of North Kona  
P.O. Box 4551  
Kailua-Kona Hawai'i 96745

Dear Mr. Young:

We are the consultants for the Environmental Assessment for the proposed Wedeman Land Exchange, notice of which was published in the 8 January 1994 OEQC Bulletin. As you know, this involves exchanging the Wedeman's parcels at TMK 1-2-09-06, 08 (Puna) with State of Hawai'i TMK 2-3-27-4 (South Hilo). We recently received a copy of your letter of 26 January 1994 to Glen Taguchi of DLNR regarding the proposed action.

Since you commented on several different projects in your letter, you may have received a response from me regarding the HCEOC project. My response to your basic comment is the same here: In our Environmental Assessment we have relied upon the Department of Land and Natural Resources to determine the proper disposition of State Lands. They have indicated that State of Hawai'i law permits dispositions such as the one proposed.

As for your specific points:

- o Is the State parcel proposed for exchange ceded land?

Our understanding is that it is indeed ceded land, and that State law permits dispositions of ceded land such as the one proposed.

- o The fact that the Piihonua [State] parcel has a higher potential for development makes its value greater than the Wedeman's parcel, meaning that the exchange is unbalanced from the standpoint of economic value.

First of all, after the Environmental Assessment process is complete the properties will be appraised by a party of the State's choosing. Development potential is taken into account during the appraisal process.

Furthermore, the Wedeman parcel does have potential for development. Some areas of the parcel are void of archaeological features and could be developed without risk to the resource. Other areas contain features that may be deemed "Significant for Information Purposes Only", meaning that after the proper study they could be dismantled and development could be allowed to proceed with clearance from the proper state agencies. The

Wedemans have consistently rejected lucrative offers to harvest live coconut palms or sell out to papaya farmers, even though the activity would have been perfectly legal, out of concern for the archaeological resource.

- o Laws already in existence protect these sites from destruction.

Actually, laws have protected very few sites belonging to small property owners throughout the island. Carelessness, neglect, vandalism or willful destruction have led to the disappearance of many valuable archaeological sites. In this case, it has been the stewardship of the Wedeman family rather than laws or public agencies that has actually preserved the sites.

- o Because the State has become aware of the archaeological resource on the property, the existing development options are limited for the landholder. Thus, it might be possible to preserve the remains without a land exchange.

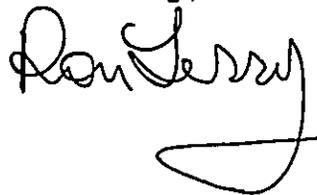
While this is correct to a degree, you might be interested to learn that it is only through the voluntary disclosure of Mrs. Harriet Wedeman that the State came to know about the resource. Mrs. Wedeman's family has owned the land for well over a century, and she is descended from a Native Hawaiian family from the Puna District.

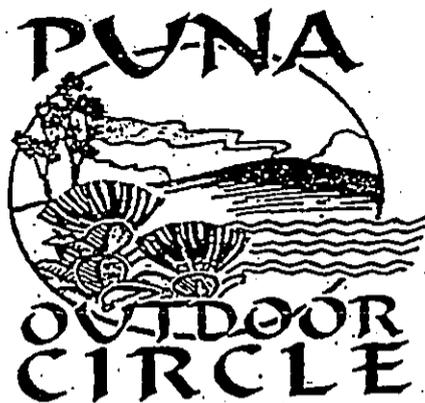
Her scruples in regard to preserving Hawaiian archaeology prevented her from bulldozing the property - an action which has occurred countless times in the Puna District as landowners through ignorance or guile rid themselves of stone remains which may limit their ability to use the property. Even today, careful development of the parcel in coordination with the State Office of Historic Preservation might be possible, as discussed above; Mrs. Wedeman, however, prefers to allow the property to remain undisturbed.

In summary, we believe that the proposed exchange offers a substantial benefit to the general population of Hawai'i and especially the Native Hawaiian community. It establishes a means to preserve the interesting and significant archaeological remains found on the site.

Thank you for your thoughtful review of this proposal and your comments. In response to your request, I will add your name to the mailing list of individuals and agencies that are pre-consulted during the preparation of Environmental Assessments.

Sincerely,





January 10, 1994

OFFICE OF ENVIRONMENTAL QUALITY CONTROL  
220 South King Street  
Central Pacific Plaza, Suite 400  
Honolulu, HI 96813

RE: WEDEMAN LAND EXCHANGE WITH THE STATE  
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To Whom It May Concern:

The Puna Outdoor Circle applauds the proposed action and the intent to preserve this rich complex of archaeological features.

We hope that the DLNR's State Historic Preservation Division will seek our organization's input and assistance when planning the future historic preserve.

Thank you for being pro-active on this issue.

Sincerely,

René Siracusa, President  
PUNA OUTDOOR CIRCLE

P. O. Box 1085   ★   Pāhoa   ★   Hawaii, 96778   ★   (808) 965-6626

Ron Terry, Ph.D.  
GeoMetrician Associates  
HCR 9575  
Kea'au, Hawai'i 96749  
March 17, 1994

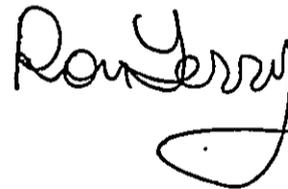
Rene Siracusa, President  
Puna Outdoor Circle  
P.O. Box 1085  
Pahoa, Hawai'i 96778

Dear Ms. Siracusa:

Thank you for your comments regarding the Environmental Assessment published in the 8 January 1994 OEQC Bulletin on the proposed exchange of the Wedeman's parcels at TMK 1-2-09-06, 08 (Puna) with State of Hawai'i TMK 2-3-27-4 (South Hilo).

The action stands to preserve a small but significant remnant of the fast-disappearing archaeological resource of the Puna District. It is very gratifying to see citizen groups such as yours enthusiastically volunteering to assist in planning historic preserves. We suggest that you contact Ross Cordy of the State Historic Preservation Division of DLNR if you have not already done so to communicate your offer.

Sincerely,

A handwritten signature in cursive script that reads "Ron Terry". The signature is written in dark ink and is positioned below the typed name "Ron Terry".

ATTACHMENT 5

KOHALA PLANTS, INC.  
P. O. Box 69  
Kapaau, Hawaii 96753  
Contractor's License C-14548

November 20, 1990

Ms. Harriet Wedeman  
3066 La Pietra Circle  
Honolulu, Hawaii 96815

TMK: 3-1-2-9-5, Kehena, Hawaii

Dear Ms. Wedeman:

We are a licensed landscape contractor. We are looking for large mature coconut palm trees to relocate to our landscape projects. On your property, listed above, we have identified many of these trees. We would like to buy these trees from you and dig and remove them.

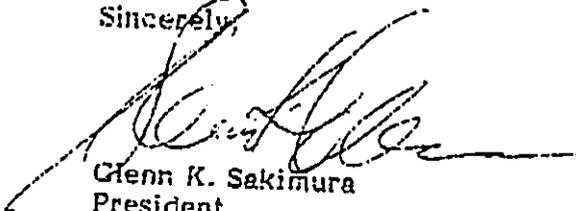
If you agree, we will pay you in advance, inform you when we will commence and complete the work, dig and remove these trees, clean up and remove all rubbish, fill the holes and return the surrounding area to its original or better state. We will assume all liabilities associated with our work and obtain any permits, if required. We will pay, in advance, around \$400 per tree, depending on its size, condition, surrounding location, and number of trees. We will replant smaller plants in their place, if desired. If the surrounding area is brush or forested we can clean this area for you.

Kohala Plants is a reputable firm and together with our associated company, Kohala Nursery, Inc., we have over 350 acres of plant nursery and have been in business for almost 20 years. Over the past years we have purchased and relocated many thousands of trees from properties such as yours. Our workmanship is of the highest quality. Please be assured that we will not enter and remove anything from your property unless we have your prior written permission to do so.

For your convenience we have enclosed a short form for you to complete and return to us, postage prepaid.

Thank you, in advance, for your prompt consideration to this matter. However, please pardon any inconvenience we may have caused you if you are not interested in selling your trees.

Sincerely,

  
Glenn K. Sakimura  
President

GKS:lc  
Enclosures

D. V. (Joe) Wedeman  
3966 La Luce Circle  
Honolulu, Hawaii 96815

December 4, 1990

Mr. Glenn K. Sakimura, President  
Kohala Plants Inc.  
P.O. Box 69  
Kapaau, Hawaii 96755

Subject: TMK 3-1-2-9-6

Dear Mr. Sakimura:

Thank you for your letter to my wife, Harriet Wedeman, with regard to harvesting trees from the subject property.

We would have an interest in your proposal except for the fact that the entire property is criss-crossed by numerous rock walls and trails evidencing what was once a large Hawaiian community. There are also ancient Hawaiian gravesites on the property.

The heavy equipment necessary to harvest and haul out the large trees would be very destructive to the sites.

For this reason we must decline your offer.

Respectfully,

D. V. Wedeman  
D. V. Wedeman

**KEAUOHANA, PUNA, HAWAII ISLAND:  
ARCHAEOLOGICAL RECONNAISSANCE OF TMK: 1-2-09: 6 & 8**

**Prepared for:**

**R. G. M. Trust  
1000 Bishop Street  
Suite 504  
Honolulu, Hawaii 96813**

**Prepared by:**

**William Barrera, Jr.  
CHINIAGO INC.  
P. O. Box 2649  
Kamuela, Hawaii 96743**

**JANUARY 1993**

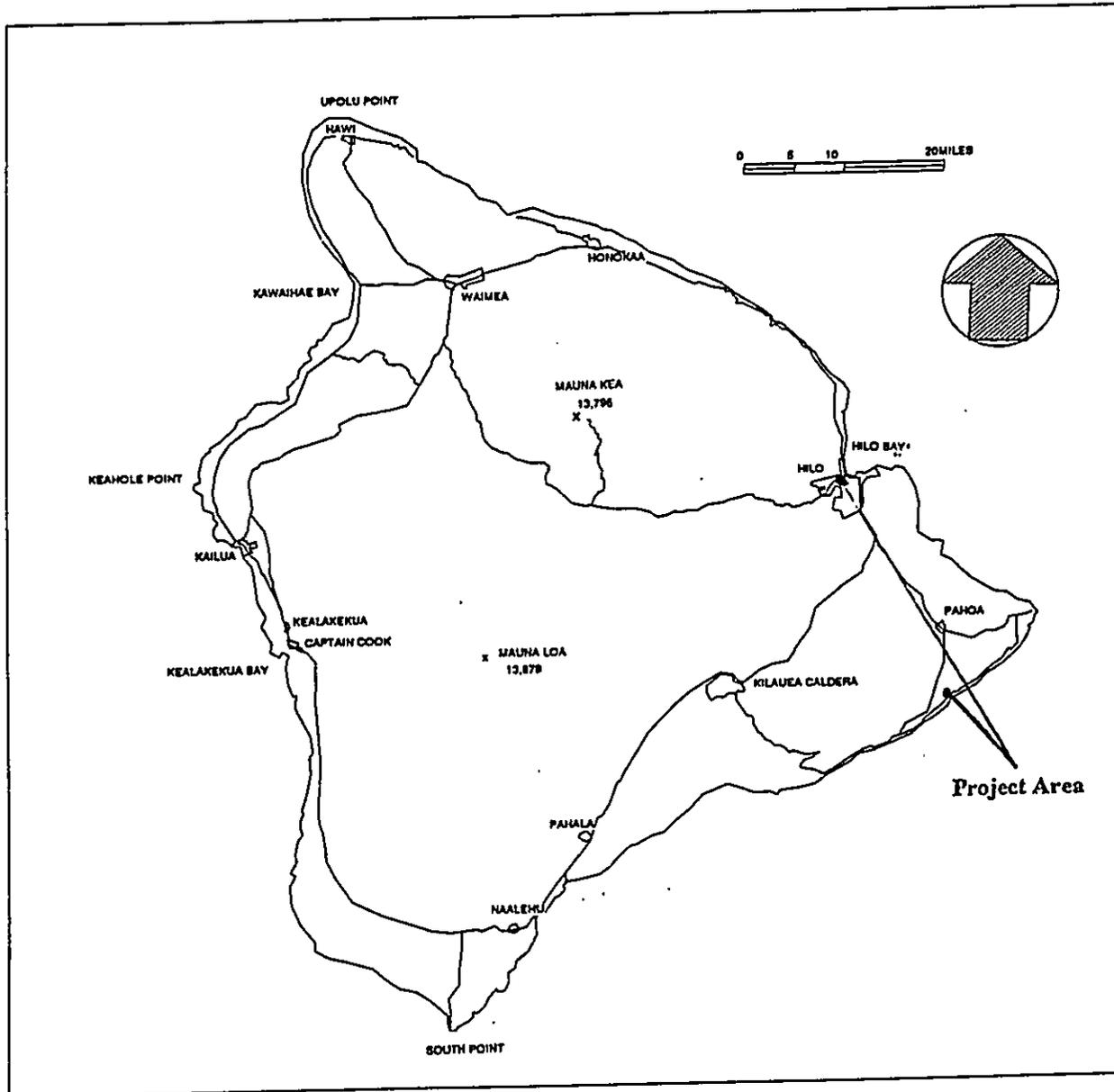
## I. INTRODUCTION

A brief archaeological reconnaissance was conducted on approximately 66 acres at Keauohana, Puna, Hawaii Island [TMK: 1-2-09: 6 and 8] which the owner wishes to exchange for land owned by the State of Hawaii near Hilo. The purpose of the work was to assess the general nature of the archaeological and historic re-

mains on the property, so that the Historic Preservation Division could more accurately determine the potential of the property as an archaeological preserve.

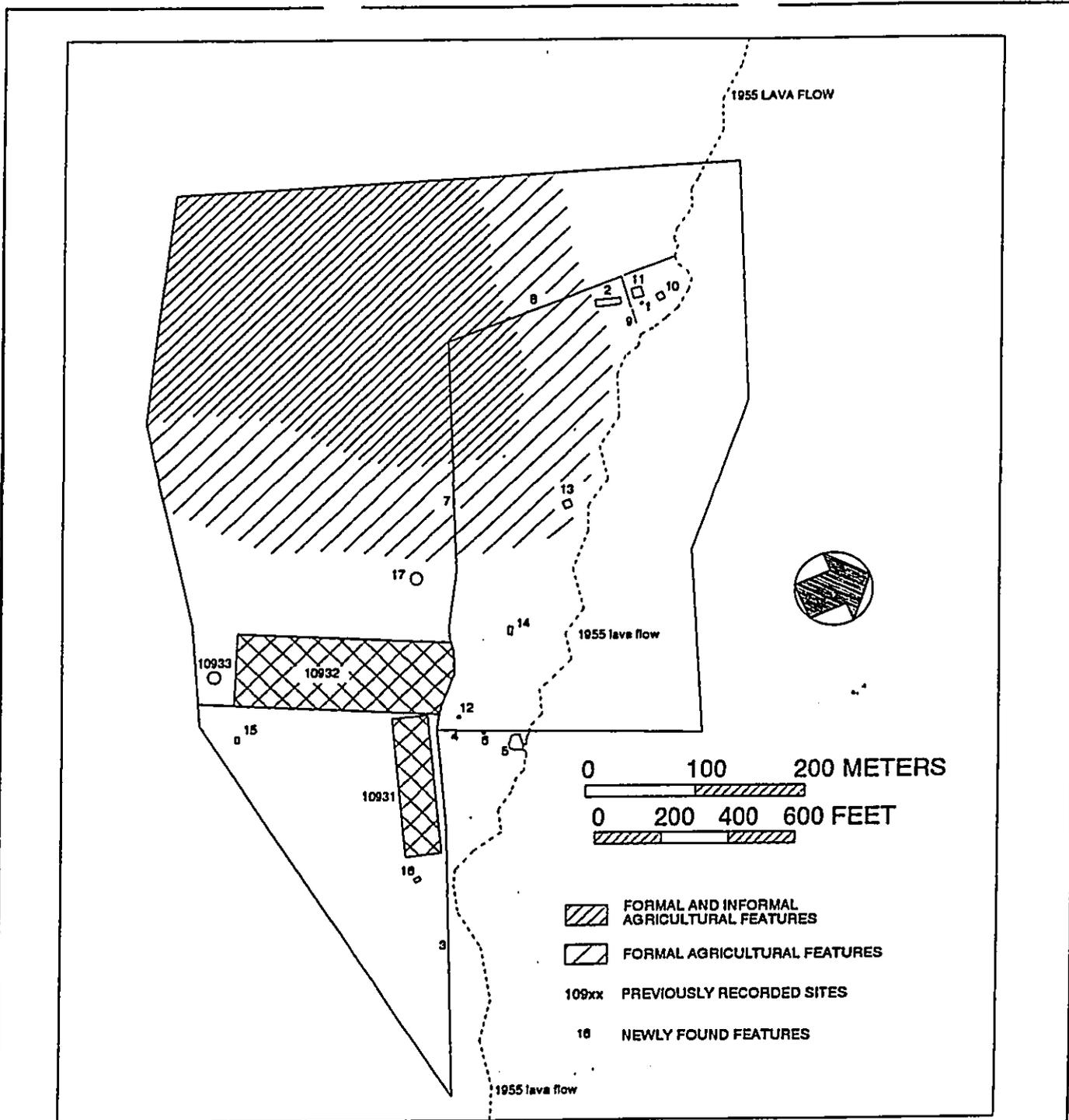
The project area is located approximately one-half mile from the ocean at Kehena, at an elevation of between 120 and 300 feet. It is for the most part situated in a *kipuka*, or older lava

flow surrounded by more recent flows. The Soil Conservation Service of the United States Department of Agriculture recognizes two soil types in the project area. Most of the two parcels are included in the Malama extremely stony muck, but a small portion along the northeast boundary has been covered by the



1. Hawaii Island, Showing Location of Project Area





4. Map of Project Area, Showing Approximate Locations of Archaeological Features Discussed in Text

lava flow of 1955. The USDA soil descriptions are as follows:

"Malama extremely stony muck, 3 to 15 percent slopes (rMAD).— This soil overlies relatively young Aa flows on the windward side of Kilauea Crater.

"In a representative profile the surface layer is very dark brown extremely stony muck about 3 inches thick. It is underlain by fragmental Aa lava. This soil is strongly acid.

"Representative profile, Kalapana Quadrangle, lat. 19°28'05" N. and long. 154°51'15" W.:

"O2—3 inches to 0, very dark brown (7.5YR 2/2) extremely stony muck; moderate, medium and fine, subangular blocky structure; friable, slightly sticky, slightly plastic, and weakly smeary; many roots; many fine pores; Aa lava fragments the size of cobbles and stones make up 40 to 80 percent of the soil mass; strongly acid; abrupt, smooth boundary. (2 to 6 inches thick)

"IIC—0 to 10 inches, fragmented Aa lava; little soil material in voids.

"The depth to fragmental Aa lava ranges from 2 to 8 inches. The hue of the O2 horizon ranges from 7.5YR to 10YR.

"Included in mapping are small areas of Opihikao soils. "Permeability is rapid, runoff is very slow, and the erosion hazard is slight. Roots can extend to a depth of 24 inches into cracks of the lava.

"This soil is used for woodland, pasture, and orchards. (Capability subclass VIIs, nonirrigated; pasture group 7; woodland group 13)" [USDA 1973: 37]

#### "Lava Flows, Aa

"Lava flows, Aa (rLV), has been mapped as a miscellaneous land type. This lava has practically no soil covering and is bare of vegetation, except for mosses, lichens, ferns, and a few small ohia trees. It is at an elevation ranging from near sea level to 13,000 feet and receives from 10 to 250 inches of rainfall annually. It is associated with pahoehoe lava flows and many soils.

"This lava is rough and broken. It is a mass of clinkery, hard, glassy, sharp pieces piled in tumbled heaps. In areas of high rainfall, it contributes substantially to the underground water supply and is used for watershed. (Capability subclass VIIIs, nonirrigated)" [Ibid: 34]

Four archaeological investigations have taken place in the vicinity. The first was an intentionally brief reconnaissance of a proposed highway in 1972. According to the description of the project, its area of interest was a 2,000 foot wide corridor paralleling the coast. It therefore would have included only a small portion of the present project area. However, the map accompanying that report indicates a corridor only 1,000 feet wide, in which case it would have entirely missed the present project area. In any event, that project recorded no sites in the vicinity [Bevacqua and Dye 1972].

The next investigation was a brief reconnaissance by Cordy in 1987. He reported the presence of significant archaeological features including walls, enclosures, graves [including two cemeteries] and trails on the adjoining State of Hawaii owned parcel, and three sites on the subject property, consisting of two agricultural complexes and a cluster of graves.

A representative of the State Historic Preservation Division visited the parcels briefly in November 1990 and reported numerous archaeological features, most of which were agricultural in nature. These included walls, mounds, enclosures and modified lava outcrops [Hibbard 1992].

Most recently, Barrera [1993] conducted a survey of 25 acres at Kamali, approximately two miles to the northeast. Two small concentrations of roughly circular depressions and one linear feature were recorded, although their identification as cultural features was not certain.

## II. RESULTS

The property was searched by one person in three days. After first establishing the boundaries of the property

by plotting stone fences with tape and compass, parallel sweeps were walked across the property at intervals of between 50 and 75 meters. This level of intensity was sufficient for the degree of investigation required, as it allowed a determination of the general location and nature of the archaeological remains. Feature concentrations for the unseen areas were extrapolated from the remains found on the sweeps. Major concentrations of agricultural features were given a single number, and noted in terms of their type and distribution. Features such as house sites, platforms, graves and possible graves were also numbered, their general characteristics and approximate dimensions were recorded, and their location roughly plotted on a map of the property. This information is in the accompanying table. A few features located close to the property boundary, but possibly just outside of it, were similarly noted.

Agricultural features of three sorts were found. The first [Feature 18] is a concentration of informal planting mounds measuring between 2 and 4 meters in length and standing to a height of about 0.5 meter. The densest concentration of these is in the inland portion of the project area, although isolated examples are found throughout the property. There are probably 100 to 150 of these features on the property. The second type of agricultural feature [also included in Feature 18] consists of formal linear mounds measuring between 1.8 and 2.5 meters in width and between 0.5 and 1.0 meter in height. The extent of these features is somewhat greater than that of the informal mounds, but they are still generally restricted to the inland portion of the project area. There are probably in the neighborhood of 30 of these features on the property. Both of these agricultural feature types are indistinguishable from equivalent features of the well-studied Kona Field System on the western slope of the island. One apparent deviation from that pattern is that on the subject parcel the inland-coastal tending features do not meet cross-

SITE	TYPE	Length	Width	Height	SIGNIFICANCE CRITERIA						
					A	B	C	D	E NLS	NS	
10931	Agricultural Complex	130	30		X		X	X			
10932	Agricultural Complex	200	70		X		X	X			
10933	Graves	?	?		X		X	X	X		
Feat. 1	Possible Grave	2.5	1.8	0.7				X		X	
Feat. 2	Platform	23	6	0.5			X	X			
Feat. 3	Stone Fence	350	0.9	0.8				X			
Feat. 4	Stone Fence	80	1.0	1.0				X			
Feat. 5	Pos. Habitation Enclosure	15	12	0.9				X			
Feat. 6	Platform	3.3	3.3	0.5				X			
Feat. 7	Stone Fence	375	0.9	0.7				X			
Feat. 8	Stone Fence	220	0.9	0.7				X			
Feat. 9	Stone Fence	48	0.9	0.8				X			
Feat. 10	Habitation Enclosure	6.6	6.6	0.7				X			
Feat. 11	Possible Corral	10.0	10.0	0.7				X			
Feat. 12	Grave	2.5	2.5	0.5				X	X		
Feat. 13	Pos. Habitation Enclosure	7.0	7.0	0.6				X			
Feat. 14	Pos. Habitation Enclosure	7.6	3.7	0.9				X			
Feat. 15	Pos. Habitation Enclosure	6.6	3.7	1.0				X			
Feat. 16	Platform	6.6	3.7	0.9				X		X	
Feat. 17	Possible Grave	2.5	2.5	1.0				X		X	
Feat. 18	Agricultural Complex	Covers virtually the entire property						X	X		

**SIGNIFICANCE CRITERIA**

A - Association with Broad Patterns of History  
 B - Association with Significant Persons  
 C - Excellent Example of a Site Type  
 D - Contains Important Information on Prehistory or History  
 E - Culturally Significant to an Ethnic Group  
 F - Provisionally Significant, Further Work Needed to Confirm Significance  
 NLS - No Longer Significant, Sufficient Information Has Been Recovered  
 NS - Not Significant

Table 1. Sites and Significance Assessments

walls to form intersections, but instead make right angle turns and run for a distance along the slope, and then turn back toward the ocean.

The third type of agricultural feature consists of Cordy's Site 10932, which are large square to rectangular low-walled enclosures on the order of 30 to 50 meters on a side located in the south-central portion of the project area. The boundary between these features and the inland formal agricultural features, and the nature of the meshing or joining of these two feature types, was not identified. The regular outlines of these features deteriorate as they extend into the broken and steeper terrain of Parcel 6, where they become low meandering walls adjacent to, and making up, Cordy's Site 10931. There are probably in the neighborhood of eight to twelve of these features on the property.

Six features [5, 10, and 13 through 16] are identified as possible habitations. Most are enclosures, and most measure approximately 3 to 4 by 6 to 7 meters and stand to a height of between 0.5 and 0.8 meter. Feature 5 measures approximately 12 by 15 meters, and may represent a historic habitation enclosure. Feature 16 is a platform measuring approximately 3.5 by 6 meters and standing to a height of 0.9 meter. No pattern is discernible in the locations of these features, but it seems fairly clear that habitations in this area were relatively isolated, and were not clustered in nucleated settlements of any kind. If the reconnaissance located a representative sample of such features, there may be as many as fifteen located on the property.

Two platforms were recorded [Features 2 and 6]. Feature 2 measures approximately 6 by 23 meters and stands to a height of between 0.35 and

0.5 meter. A broken aqua colored bottle and a fragment of a flat water-worn basalt boulder with evidence of battering on its perimeter were the only artifacts seen. The second platform, Feature 6, measures about 3 by 3 meters and stands to a height of 0.5 meter. It abuts a free-standing stone wall on one side, and may be historic in age.

Five features [3, 4, and 7 through 9] are free-standing stone walls or fences, distinguished from the similar formal agricultural features by their relatively narrower and higher profile. These measure about 0.9 meter in width and stand to heights of between 0.5 and 1.0 meter. There may be four or five more such features on the property, and they probably served as boundary markers.

A single feature [Feature 11] may have been a corral or animal enclosure of some sort. It measures about

10 by 10 meters, and its 0.7 meter high wall includes sections of bed-rock ledge. It is likely that this is the only feature of this type on the property.

Two features [Features 1 and 17] were identified as possible graves, and one [Feature 12] is definitely a grave. These are roughly square platforms measuring approximately 2.5 meters on a side and standing to a height of between 0.7 and 1.0 meter. A section in the center of Feature 12 has collapsed, revealing the presence of an internal cyst, in which no bones were observed. In addition to these, six or so similar platform graves were observed in the vicinity of Cordy's Site 10933, near the south boundary of the property. No definite pattern in their distribution was observed, although the fact that Features 1 and 12 are close to possible habitation sites is suggestive. If this observation is valid, then one might expect habitations to be found in the vicinity of Site 10933. Perhaps some lie beneath the relatively recent lava flow that forms the south boundary of the property. In any event, the density of the graves that were located suggests that there may be as many as twenty on the entire property.

Only one group of features [Features 1, 2, 9, 10 and 11] was found that could be described as a feature complex. This was adjacent to the 1955 lava flow in the north end of the property, and might represent a habitation complex dating from the historic period.

### III. SIGNIFICANCE

The remains found constitute significant evidence of prehistoric Hawaiian agriculture, habitation, and burial practices, and are therefore significant for their information content.

The definite grave [Feature 12] is significant for its importance to an ethnic group, and several possible graves [Features 1 and 17, and Site 10933] must be at least tentatively included in this same category.

Sites 10931, 10932 and 10933, and Feature 18, are all excellent examples

of a site type, and the Historic Preservation Division has also determined that these are significant for their association with broad patterns of history.

The agricultural remains are especially significant not only because of the resemblance of certain of them to the Kona Field System, but also because of the dissimilarity of certain others of them to that same site. There is little doubt that the agricultural remains on the subject parcel would be much more extensive in this region of Puna were it not for their having been covered by recent lava flows. In this regard they must be considered to be at least as significant as the Kona Field System, the considerable archaeological importance of which is attested to by the fact that it was declared eligible to the National Register of Historic Places in 1977. The following paragraph from the nomination form is therefore of interest in the present situation:

"The Kona Field System is without equal in Hawaii, and probably in the nation in terms of the extensiveness of a prehistoric modification of the land. It is quite comparable in terms of complexity and size with the well known field systems of Central and South America, although differing in specific characteristics. It is a physical demonstration of the highly developed farming economy of ancient Hawaii and illustrates the complexity and advanced state of aboriginal Hawaiian culture. The system is so extensive that it cannot be seen in its entirety except from extremely high altitudes, but the physical remains are sufficiently well preserved and in such generally good condition that they may still be detected on the ground, although it is difficult to re-align what is viewed is part of such a massive system" [Newman 1974].

Speaking of Sites 10931 and 10932 in particular, the State Historic Preservation Division has stated: "...these agricultural features are very significant for understanding broad patterns of Puna's prehistory for two reasons. Firstly, the agricultural field systems of Kona and Ko-

hala have been studied to a considerable extent whereas extremely little is known about these systems in Puna and, secondly, very few undisturbed, older flows of this type are left in Puna because of the region's active volcanic history and widespread bulldozing for modern agricultural ventures. Considering these factors, State acquisition of these agricultural complexes would benefit the State Historic Preservation Division's mandate to preserve representative examples of significant historic site types throughout Hawaii" [Hibbard 1992: 2].

In conclusion, the remains located on the subject parcels as a whole are an excellent candidate for acquisition by the State of Hawaii, and their invaluable merit as a data bank for future research should not be underestimated.

### References

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Hibbard, Don

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LOG NO: 5915, DOC NO:  
2000o. State of Hawaii De-  
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Newman, T. Stell

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Land and Natural Re-  
sources. Honolulu.

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ment Printing Office.  
Washington, D. C.