Cultural Impact Assessment for the Proposed 345-Acre Kapolei Harborside Center, Honouliuli *Ahupua'a*, 'Ewa District, O'ahu Island

[TMK: (1) 9-1-14:027 & 034,035 & 9-1-15:001]

Prepared for

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(CSH Job Code: HONO 70)

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Exhibit "31"

Management Summary

Reference	Cultural Impact Assessment for the Proposed 345-Acre Kapolei Harborside Center, Honouliuli *Ahupua'a*, 'Ewa District, O'ahu Island
Date	May 2006
Project Number	Cultural Surveys Hawai'i Inc. (CSH) Job Code: HONO 70
Project Agencies	SHPD, possibly the U. S. Army Corps of Engineers (USACE) (related to drainage improvements) and/or other federal agencies
Project Funding and Land Jurisdiction	Private, Kalaeloa Property Development, LLC
Project Location	TMK: (1) 9-1-14: 027, 034, 035 & 9-1-15: 001 in Kalaeloa (Barbers Point), Honouliuli *Ahupua'a*, 'Ewa District, Island of O'ahu. This area is depicted on the 1998 'Ewa USGS 7.5-minute topographic quadrangle. Generally, the project area lies south of the O'ahu Railway and Land Company (O. R. & L.) Railway right-of-way, north of Malakole Road, west of Kalaeloa Boulevard, and east of the Kalaeloa Harbor.
Project Acreage and Description	The 345-acre project area is proposed predominantly for industrial development. Minimally, this development would include grading, building and structure construction, street and utility installation, and landscaping. Additionally, the installation of a substantial drainage conduit through the central portion of the project area may be part of the proposed project.
Document Purpose	The cultural impact assessment provides information pertinent to the assessment of the proposed project's cultural impacts [per Hawai'i Revised Statutes (HRS) Act 50, Chapter 343 and the Office of Environmental Quality's *Guidelines for Assessing Cultural Impacts*). This document was prepared to support the project's environmental review under HRS Chapter 343. The process for evaluating cultural impacts is constantly evolving. There continues to be gray areas and unresolved matters pertaining to traditional access, gathering rights, and other cultural issues. Act 50 is an attempt to balance between traditional lifestyles, development, and economic growth.

Identified Cultural Resources and Significance Evaluations[2]	This investigation identified the following cultural resources/historic properties[3] within or near the project area. These sites likely, or potentially, will be affected by the proposed project: State Inventory of Historic Properties (SIHP) # 50-80-12-6679, historic plantation-era drainage channel, a portion of which has already been determined Hawai'i Register-eligible under Criterion D. Numerous sinkhole features within the project area's archaeological/paleontological preserve area, likely National/Hawai'i Registers eligible under Criterion D, and, because of the potential for human burials, Criterion E (Hawai'i Register only) Stacked stone prehistoric or early historic enclosures and mounds, perhaps previously recorded, likely eligible to the National/Hawai'i Registers under Criterion D. SIHP # 50-80-12-2888, the Barbers Point Harbor Archaeological District, listed on the National Register. The O. R. & L. right-of-way, SIHP # 50-80-12-9714, immediately adjacent to the project area, currently listed on the National Register under Criteria A, B, and C.
Recommend-ations	It should be noted that significant cultural resources/historic properties will likely be affected by the proposed industrial development despite the extensive past disturbance within the project area. As a precautionary measure, personnel involved in future development should be informed of the possibility of inadvertent cultural finds, and should be made aware of the appropriate notification measures to follow. We also recommend that through out the duration of this project that you continue to consult with the community especially those mentioned in this report. We also feel that the project should incorporate the traditional place names of the surrounding area into the proposed development to sustain a connection to the past. Additionally, it was recommended in the Cultural Resource Literature Review and Field Inspection for this project (O'Leary and Hammatt 2006) that project proponents consult with the State Historic Preservation Division/Department of Land and Natural Resources (SHPD/DLNR) and develop an appropriate scope of work for an archaeological inventory survey.

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The cultural impact assessment provides information pertinent to the assessment of the proposed project's cultural impacts [per Hawai'i Revised Statutes (HRS) Act 50, Chapter 343 and the Office of Environmental Quality's Guidelines for Assessing Cultural Impacts]. This document was prepared to support the proposed project's environmental review under HRS Chapter 343.

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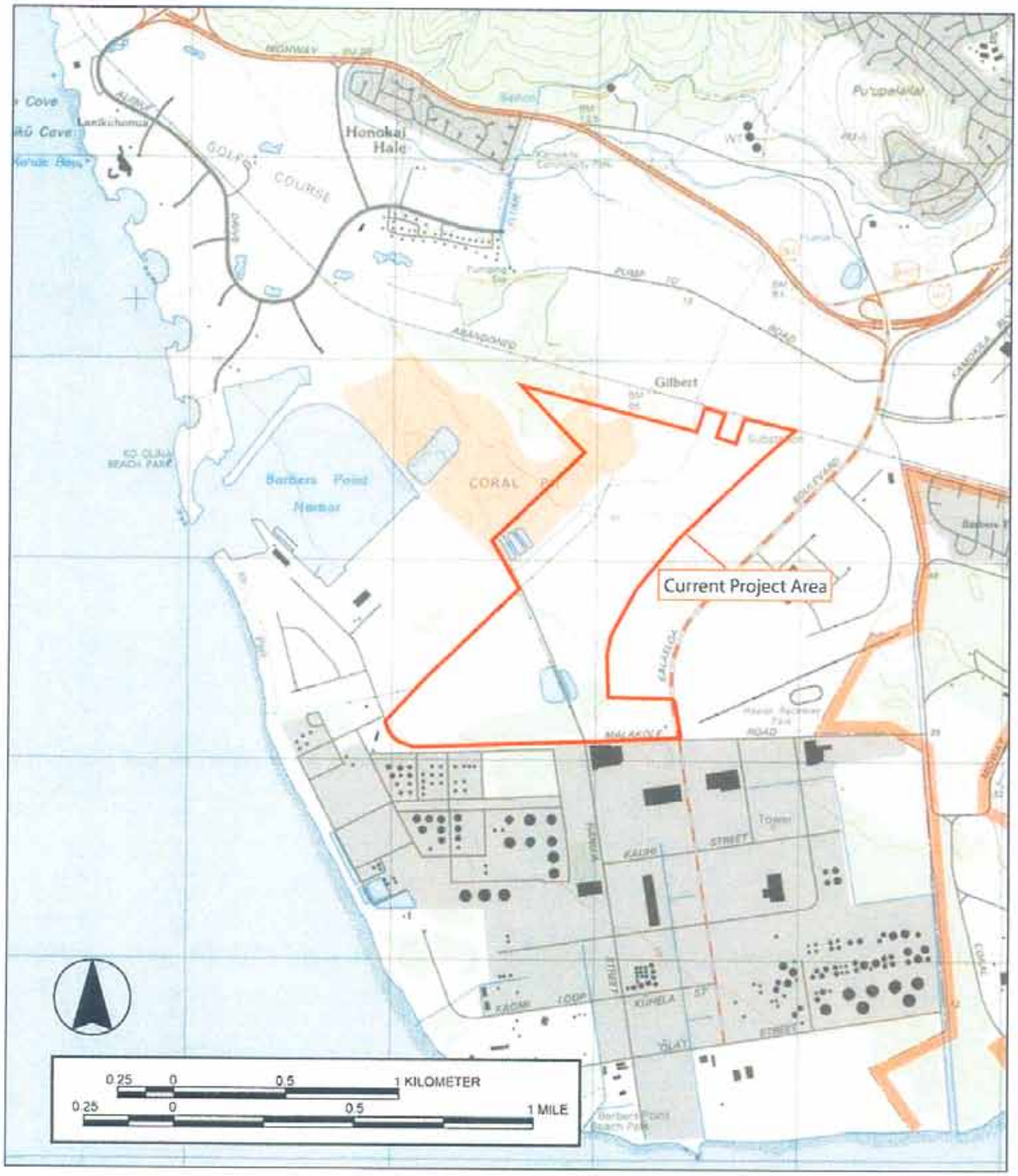

Figure 1. 2002 'Ewa USGS 7.5-minute topographic quadrangle, showing location of project area

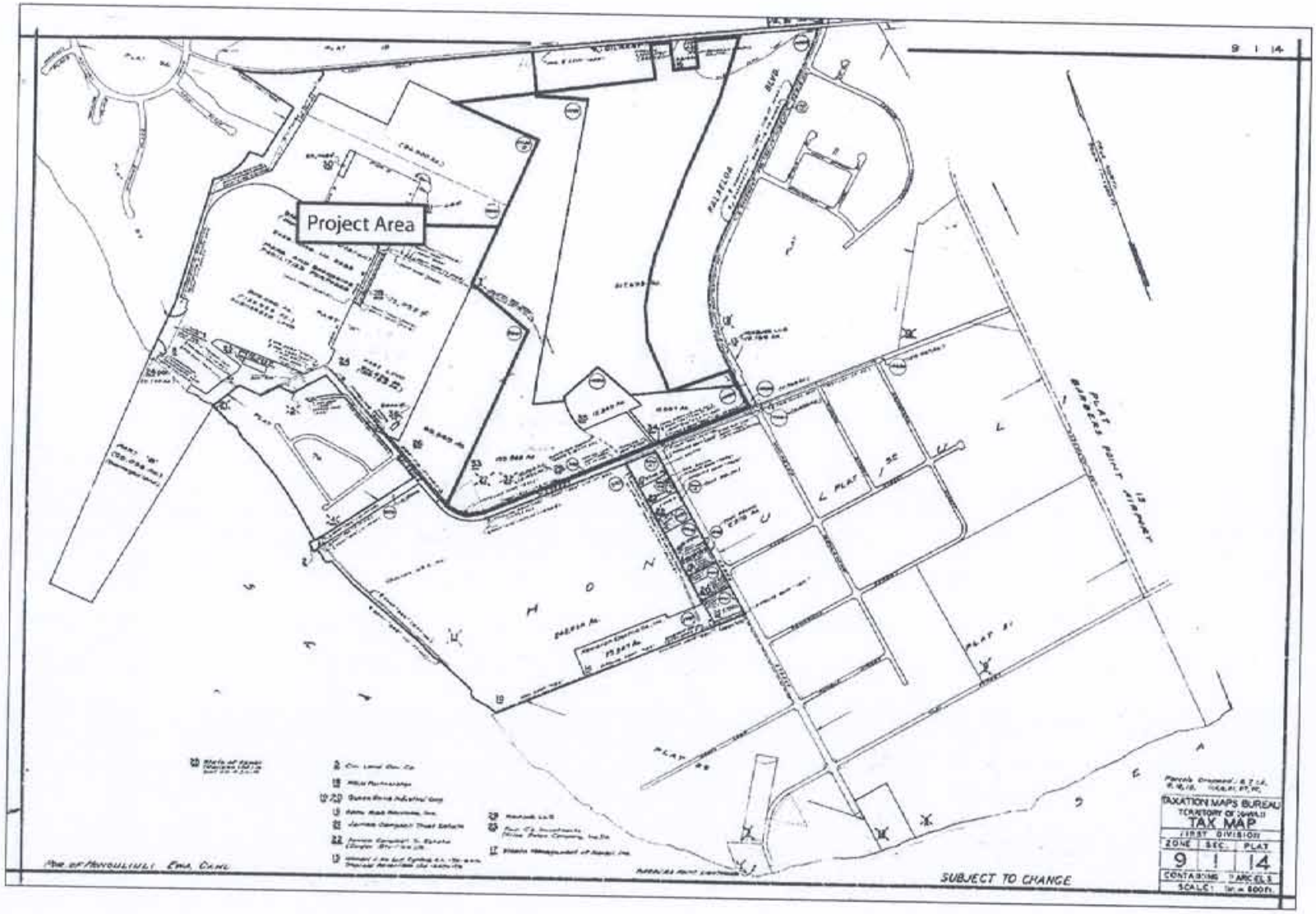

Figure 2. TMK 9-1-14 showing the location of the project area

Figure 3. Aerial photograph (2000) showing the location of the project area

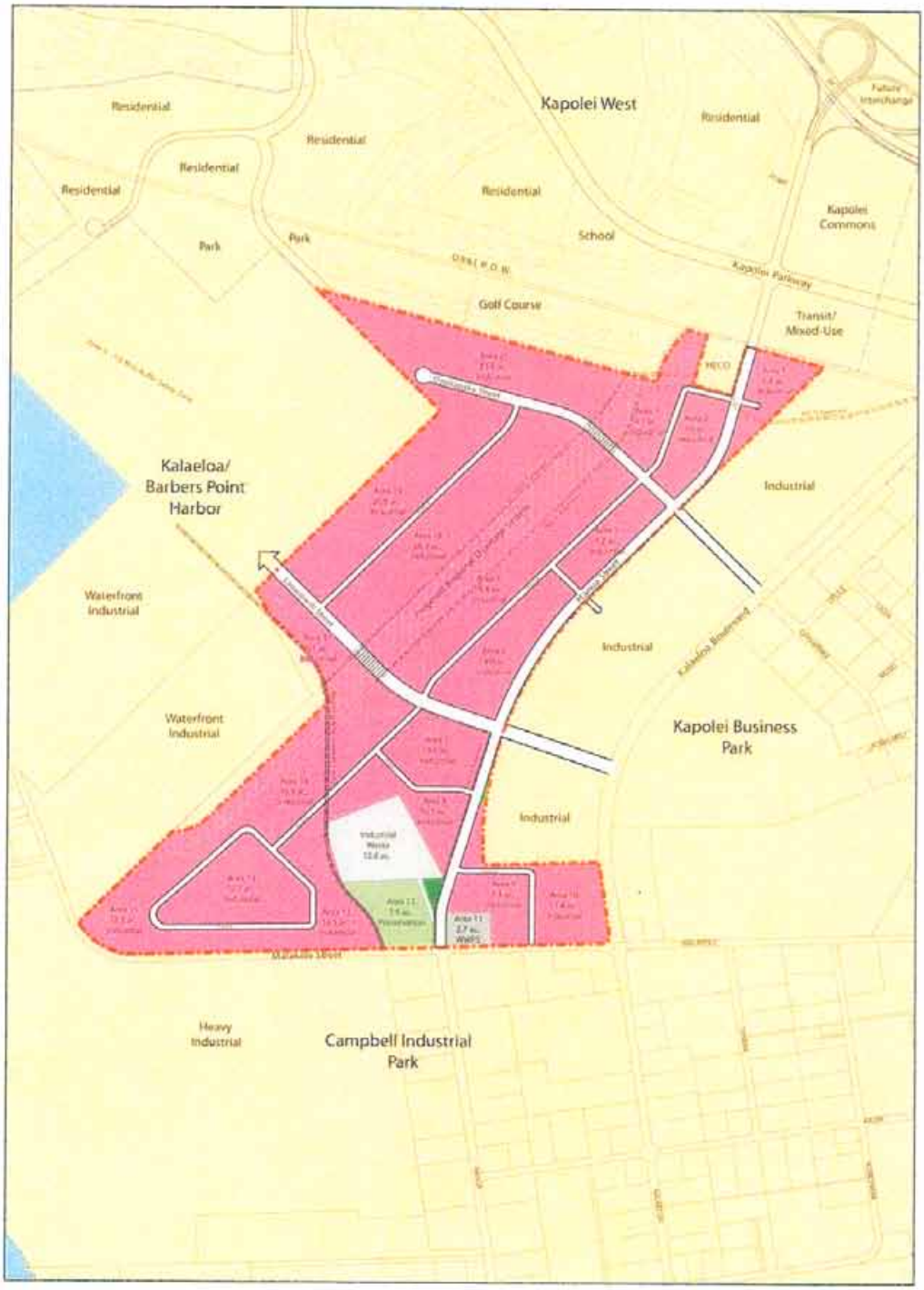

Figure 4. Kapolei Harborside Center Plan

1.2 Scope of Work

The suggested scope for the Cultural Impact Assessment is summarized as follows:

1) Examination of historical documents, Land Commission Awards, historic maps, with the specific purpose of identifying traditional Hawaiian activities including gathering of plant, animal and other resources or agricultural pursuits, as may be indicated in the historic record.

2) A review of the existing archaeological information pertaining to the sites on the property as they may allow us to reconstruct traditional land use activities and identify and describe the cultural resources, practices, and beliefs associated with the parcel and identify present uses, if appropriate.

3) Conduct oral interviews with persons knowledgeable about the historic and traditional practices in the project area and region. We anticipate both formal and informal interviews.

4) Preparation of a report on items 1-3 summarizing the information gathered related to traditional practices and land use. The report will assess the impact of the proposed action on the cultural practices and features identified.

1.3 Environmental Setting

1.3.1 Natural Environment

The project area is located on the 'Ewa plain, south of the Wai'anae Mountain Range in the southwest corner of O'ahu. The terrain is limestone and alluvial deposits, overlying flows of the Wai'anae volcanic series (Macdonald et al. 1983:423). The project area is generally quite level varying between 10 feet at the southern end of the project area and 70 feet elevation above sea level at the project area's northern (*mauka*) end.

Lying in the lee of the Wai'anae mountain range, the project area is one of the driest areas of O'ahu with most of the area averaging about 18 inches of rainfall annually (Juvik and Juvik 1998:56). In pre-contact Hawai'i the project area would have been mostly lowland dry shrub and grassland, but this area has been extensively disturbed and transformed by human activity with a variety of exotic grasses, weeds, and shrubs now dominating. These grasses and shrubs, along with pockets of *kiawe* forest, and a few scattered banyan trees are characteristic of the vegetation of the project area.

Based on USGS soil survey data, the project area is largely covered with thin clay soils including a moderately shallow 'Ewa silty clay loam, and Mamala stony silty clay loam overlying coral (limestone) outcrop (Foote et al. 1972). The surface of the Pleistocene limestone outcrop, where not covered by alluvium or stockpiled quarry material, has characteristic dissolution "pit caves" (Mylroie and Carew 1995), which are nearly universally, but erroneously, referred to as "sink holes" (Halliday 2005). These pit caves, or sink holes, vary widely in area extent and depth, with some of the more modest features comparable in volume to five-gallon buckets, while some of the larger features, although usually irregularly shaped, are several

expansion program.

On Figure 5, the quarrying and quarry-stockpiling activity is visible as the white areas along the project area's western side. These quarrying operations are more clearly visible in Figure 3.

The only portions of the current project area that have not been greatly altered by past land use are the approximately 7-acre archaeological/paleontological preserve of limestone sinkholes, located along the project area's southern boundary, and the northwestern tip of the project area. Both these areas have been moderately affected by *kiawe*-wood cutting activity and minor bulldozing in the past, but they still have the characteristic limestone land surface and *kiawe* thicket vegetation. The preserve area is enclosed within a chain-link fence, and contains scores of limestone sink holes

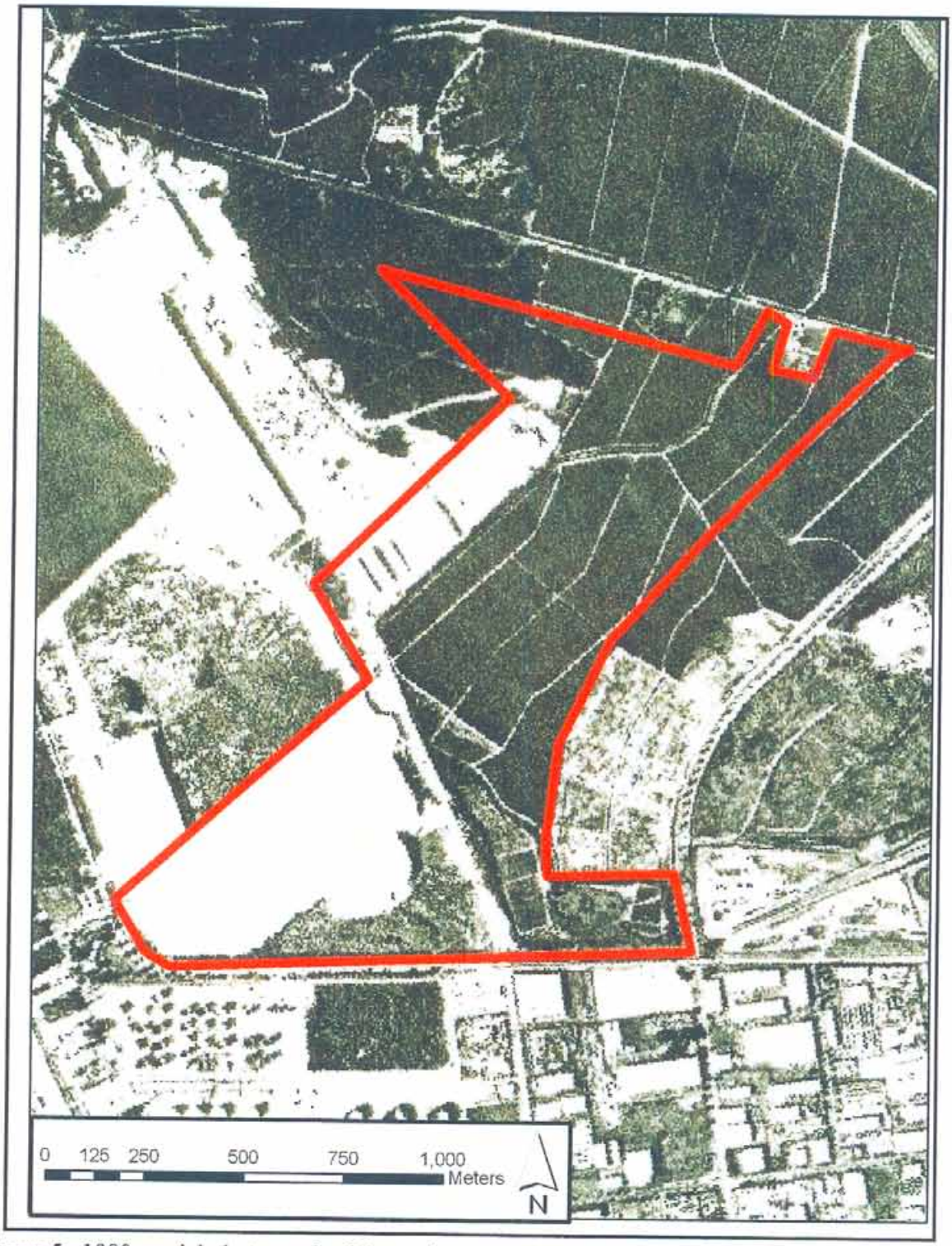

Figure 5. 1980s aerial photograph of the project area showing extensive modification from historic and modern land use

1.4 Methodology

1.4.1 Documentary Research

Background research included a review of previous archaeological studies on file at the State Historic Preservation Division, and a review of geology and cultural history documents at Hamilton Library at the University of Hawai'i, the Hawai'i State Archives, the Mission House Museum Library, the Hawai'i Public Library, and the Archives of the Bishop Museum. Further research included a study of historic photographs at the Hawai'i State Archives and the Archives of the Bishop Museum, a study of historic maps at the Hawai'i State Archives and the Archives of the Bishop Museum, and a study of historic maps at the Survey Office of the Department of Accounting and General Services. Information on LCAs was accessed through Waihona 'Āina Corporation's Māhele Data Base (www.waihona.com).

1.4.2 Identification of Knowledgeable Informants

As partial fulfillment for the Scope of Work (SOW), consultation with organizations and the community were conducted to identify *kūpuna* and other individuals with knowledge of the history of the project area and its surroundings. The organizations consulted included the Office of Hawaiian Affairs, the O'ahu Island Burial Council, 'Ahahui Siwila Hawai'i O Kapolei Hawaiian Civic Club, 'Ewa Neighborhood Board.

Based on recommendations from organizations and the community, the following individuals were contacted for information gathering sessions Arline Eaton, Rubellite Kawena Johnson, Shad Kane, Kawika McKeaque and many other talk story sessions. These sessions were conducted in-person or by telephone.

Section 2 Mythological and Traditional Accounts

Various legends and early historical accounts indicate that the *ahupua'a* of Honouliuli (Figure 6) was once heavily populated by pre-contact Hawaiians. This substantial settlement is attributable for the most part to the plentiful marine and estuarine resources available at the coast, as well as lowlands fronting the west loch of Pearl Harbor (Kaihuopala'ai) suitable for wetland taro cultivation. In addition, forest resources along the slopes of the Wai'anae Range, as suggested by E.S. and E.G. Handy, probably acted as a viable subsistence alternative during times of famine and/or low rainfall.

> The length or depth of the valleys and the gradual slope of the ridges made the inhabited lowlands much more distant from the *'wao*, or upland jungle, than was the case on the windward coast. Yet the *'wao* here was more extensive, giving greater opportunity to forage for wild foods during famine time [Handy and Handy 1972:469-470].

The upper valley slopes may have also been a resource for sporadic quarrying of basalt for the manufacturing of stone tools. At least one probable quarrying site (SIHP # 50-80-12-4322) is present in Makaīwa Gulch at 152 m (500 ft.) above mean sea level (Hammatt et al. 1991).

Some of the traditional themes associated with this area include connections with Kahiki, the traditional homeland of Hawaiians in central Polynesia. There are several versions of the chief Kaha'i leaving from Kalaeloa for a trip to Kahiki; on his return to the Hawaiian Islands he brought back the first breadfruit (Kamakau 1991a:110) and planted it at Pu'uloa, near Pearl Harbor in 'Ewa (Beckwith 1940:97). Several stories associate places in Honouliuli to the gods Kāne and Kanaloa, with the Hawaiian pig god Kamapua'a and the Hina family, and with the sisters of Pele, the Hawaiian volcano goddess, all of whom have strong connections with Kahiki (Kamakau 1991a:111; Pukui et al. 1974:200). The locations of traditional places names for Honouliuli are illustrated in (Figure 7).

2.1 The Naming of 'Ewa and Honouliuli

Honouliuli is the largest *ahupua'a* in the *moku* (district) of 'Ewa. One translation of the name for this district is given as "unequal" (*Saturday Press* Aug. 11, 1883). Others translate the word as "strayed" and associate it with the legends of the gods, Kāne and Kanaloa.

> When Kane and Kanaloa were surveying the islands they came to Oahu and when they reached Red Hill saw below them the broad plains of what is now Ewa. To mark boundaries of the land they would throw a stone and where the stone fell would be the boundary line. When they saw the beautiful land lying below them, it was their thought to include as much of the flat level land as possible. They hurled the stone as far as the Waianae range and it landed somewhere, in the Waimanalo section. When they went to find it, they could not locate the spot where it fell. So Ewa (strayed) became known by the name. The stone that strayed [Told to E.S. by Simeon Nawaa, March 22, 1954; cited in Sterling and Summers 1978:1].

Honouliuli means "dark water," "dark bay," or "blue harbor" and was named for the waters of Pearl Harbor (Jarrett 1930:22), which marks the eastern boundary of the *ahupua'a*. The Hawaiians called Pearl Harbor, Pu'uloa (*lit.* long hill). Another explanation for the names comes from the "Legend of Lepeamoa", the chicken-girl of Pālama. In this legend, Honouliuli is the name of the husband of the chiefess Kapālama and grandfather of Lepeamoa (Thrum 1923:164-184). "Her grandfather gave his name, Honouliuli to a land district west of Honolulu . . ." (Thrum 1923:170). Westervelt (1963:209) gives an almost identical account.

It seems likely the boundaries of the western-most *ahupua'a* of 'Ewa were often contested with Wai'anae people. The 'Ewa people could cite divine sanction that the dividing point was between two hills at Pili o Kahe:

> Eventually the stone was found at Pili o Kahe. This is a spot where two small hills of the Wai'anae Range come down parallel on the boundary between Honouliuli and Nānākuli ('Ewa and Wai'anae). The ancient Hawaiians said the hill on the 'Ewa side was the male and the hill on the Wai'anae side was female. The stone was found on the Waianae side hill and the place is known as Pili o Kahe Pili=cling to, Kahe=flow). The name refers, therefore, to the female or Waianae side hill. And that is where the boundary between the two districts runs [Told to E.S. by Simeon Nawaa, March 22, 1954; cited in Sterling and Summers 1978:1].

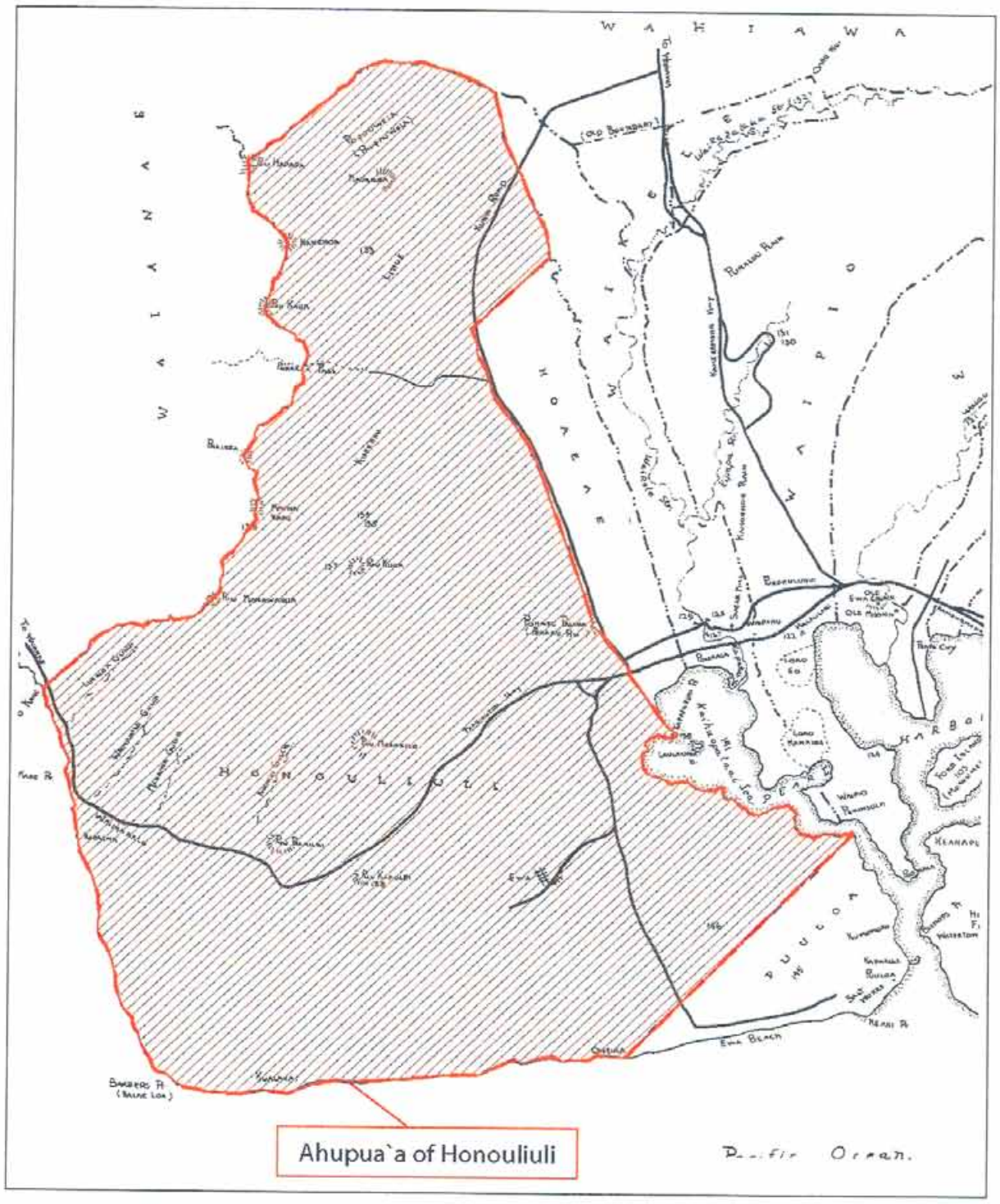

Figure 6. Map showing location of Honouliuli Ahupua'a in west O'ahu (adapted from Sterling and Summers 1978)

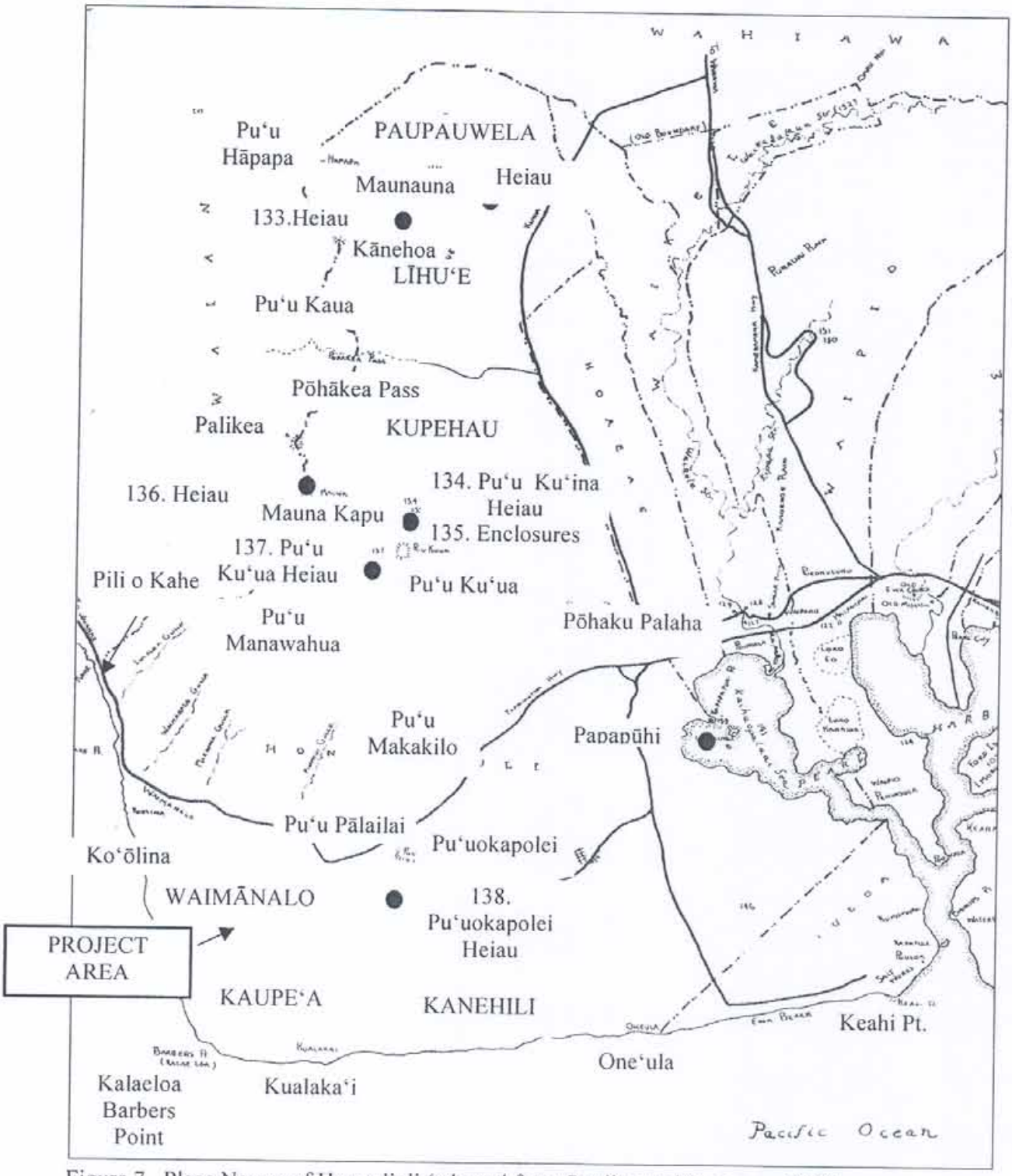

Figure 7. Place Names of Honouliuli (adapted from Sterling and Summers 1978)

2.2 Legends and Traditional Places in the Upland Hills of Honouliuli

Honouliuli is divided from Wai'anae Ahupua'a on the west by a ridge with several prominent hills. From north (*mauka*) to south (*makai*) these peaks are: Hāpapa, which means "rock stratum" (Pukui et al. 1974:42) or "shallow soil" (Sterling and Summers 1978:1); Kānehoa (which will be discussed in more detail below); Pu'ukaua, which means "war hill or fort hill" (Pukui et al. 1974:199); Palikea, which means "white cliff" (Pukui et al. 1974:177); Maunakapu, meaning "sacred mountain"(Pukui et al. 1974:148); and, Pu'umanawahua, which means "great grief hill or nausea hill" (Pukui et al. 1974:203).

The central section of 'Ewa is divided by a series of northeast-southwest trending gulches, that intermittently carry rainwater towards the coast. In this area there are several other notable hills; Pu'umakakilo, which translates as "observing eyes hill" (Pukui et al. 1974:201); Pu'ukapua'i, or "footprint hill" (Pukui et al. 1974:199); and, Pu'upālailai, probably meaning the young *lai* (*Scomberoides* sp.) fish (Pukui et al. 1974:205).

To the south (*makai*) is Kānehoa, which can be translated as "companion of Kāne" (Pukui et al. 1974:84), "Kāne, the divine companion or friend," or Kāne, the divine fire-maker" (Westervelt 1999:64). This peak was named for a god (Kane-hoa-lani), who was said to be the father of Pele (Emerson 1915:ix) in some versions, and the brother of Pele in others (Westervelt 1999:64). The hill Kānehoa is mentioned in the following hula chant.

Anklet Song	**Mele Ku-pe'e**
Fragrant the grasses of high Kanehoa.	*Aala kupukupu ka uka o Kane-hoa*
Bind on the anklets, bind!	*E ho-a!*
Bind with finger deft as the wind	*Hoa na lima o ka makani, he Wai- kaloa.*
That cools the air of this bower.	*He Wai-kaloa ka makani anu Lihue.*
Lehua blooms pale at my flower,	*Alina lehua i kau ka opua-*
O sweet heart of mine,	*Ku'u pua,*
Bud that I'd pluck and wear in my wreath.	*Ku'u puai'ini e ku-i a lei.*
If thou wert but a flower!	*Ina ia oe ke l*

[Emerson 1998:49]

A similar chant is found in the Legend of Pamano, which mentions the *kupukupu* (fern), a fragrant flowering shrub.

> The uplands of Kanehoa are scented with kupukupu.
> Bind on, the hands of the Waikoloa wind are binding,
> The Waikoloa wind is the cold wind of Lihue,
> Withering the branches in the uplands of Waiopua,
> My flower I said I would string into garlands. If you have it,
> You would have worn it.
>
> *Aala kupukupu ka uka o Kanehoa la!*
> *Hoa! Hoa na lima o ka makani Waikoloa,*
> *He Waikoloa ka makani anu, o Lihue,*
> *Weli no loha ka uka o Waiopua la,*
> *Kuu pua i i ai e kui e lei, I na ia oe ke lei ia ala*

[Fornander 1919, Vol. V, Part 2:310-311].

2.3 Pōhākea Pass

Pōhākea Pass lies between the peaks of Pu'u Kaua and Palikea along the Wai'anae Mountain range. Pōhākea Pass, *pōhākea* meaning "white stone" (Pukui et al. 1974:185).

2.3.1 Hi'iaka at the summit of Pōhākea Pass (Pele and Hi'iaka)

Pōhākea Pass was one of the resting places of Pele's sister, Hi'iaka, as she was returning from Kaua'i with Pele's lover Lohiau (Fornander 1918 Vol. V, Part 1:188 note 6). Hi'iaka elected to travel overland, while her companions traveled by canoe. A considerable number of *mele* (songs) and *pule* (prayers) are ascribed to Hi'iaka as she stood at the summit of Pōhākea (*Aluna au a Pōhākea, Kū au, nānā ia Puna . . .*) (Emerson 1915:162-168). From this vantage point Hi'iaka could see through her powers of vision that her beloved *lehua* groves and friend Hōpoe at Puna, Hawai'i Island had been blasted by Pele. She could also see that in her canoe, off the coast of Wai'anae, Lohiau was seducing her traveling companion Wahine'ōma'o.

2.3.2 Keahumoa, Residence of Māui's Grandfather

In the Legend of *Māui*'s Flying Expedition (Thrum 1923:252-259) *Māui*-kupua looked toward Pōhākea Pass and saw his wife, Kumulama, being carried away by chief Peapeamakawalu. After failing to recover her, *Māui* returned and told his problems to his mother, Hina. Hina instructed her son to go to Keahumoa and visit his grandfather, Kuolokele, who lived there in a large hut. The hump-backed Kuolokele returned home with a load of potato leaves, and *Māui* cured him by striking him in the back with a stone (which Kuolokele threw to Waipahū, where it remains). Kuolokele had *Māui* gather *kī* leaves, *'ie'ie* vines and bird feathers, from which the old man fabricated a "bird-ship" (*moku-manu*), which *Māui* used to defeat Peapeamakawalu and recover his wife. They returned to Kuolokele's house, where they feasted, and *Māui* ate Peapeamakawalu's eyeballs.

2.3.3 The Frightened Populace of Honouliuli

In the Legend of Palila (Fornander 1918, Vol. V, Part 1:136-153), the *kupua*, or demigod hero, of Kaua'i landed at Ka'ena Point with his fabulous war club (*lā'au pālau*), which required eighty men to carry, and crossed into Honouliuli through Pōhākea Pass. He traveled by throwing his supernatural war club and hanging on to one end. The first throw was to Ka'ena Point, Oahu.

> After leaving Kaena he came to Kalena, then on to Pohakea, then to Maunauna, then to Kanehoa, then to the plain of Keahumoa and looking toward Ewa. At this place he stood and looked at the dust as it ascended into the sky caused by the people who had gathered there; he then pushed his war club toward Honouliuli.
>
> *Haalele keia ia Kaena, hele mai la a Kalena, a Pohakea, maunauna, kanehoa, a ke kula o Keahumoa, nana ia Ewa. Ku keia I laila nana I ke ku a ka ea o ka lepo I na kanaka, e pahu aku ana keia I ka laau palau aia nei I kai o Honouliuli. . . .*
>
> [Fornander 1918, Vol. V, Part I:142-143]

He descended to the plain of Keahumoa:

At this place he stood and looked at the dust as it ascended to the sky caused by the people who had gathered there; he then pushed his war club toward Honouliuli. When the people heard something roar like an earthquake they were afraid and they all ran to Waikele . . .

Kū kēia i laila nānā i ke kū ka ea o ka lepo i nā kānaka, e pahu aku ana kēia i ka lā'au pālau aia nei i kai o Honouliuli, kū ka ea o ka lepo o ka honua, me he ōla'i la, maka'u nā kānaka holo a hiki i Waikele.

[Fornander 1918, Vol. V, Part I:142-143]

2.3.4 Kahalaopuna at Pōhākea Pass

One of the most popular legends of O'ahu is that of Kahalaopuna (or Kaha), a young woman of Mānoa who was slandered by others and then killed by her betrothed, Kauhi, a chief from Ko'olau. While the numerous accounts (Day 1906:1-11, Fornander 1918 Vol. V, Part 1:188-193, Kalākaua 1888:511-522, Nakuina 1904:41-45, Patton 1932:41-49, Skinner 1971:220-223, Thrum 1907:118-132, Westervelt 1987 127-137, Westervelt 1998:84-93) vary in details, they typically have Kahalaopuna slain and then revived repeatedly with the aid of a protective owl. Kauhi forced her to hike west from Mānoa through the uplands until they got to Pōhākea Pass through the southern Wai'anae Range in north Honouliuli. At Pōhākea Pass, Kauhi beat her with a stick until she was dead (*Ia hahau ana a Kauhi i ka lā'au, make loa o Kahalaopuna*). Her spirit (*'uhane*) flew up into a *lehua* tree and chanted for someone to go notify her parents:

E hai aku oukou ua make o Kahalaopuna;	And tell them that Kahalaopuna is dead
Aia la i ka uka o Pohakea,	For she lies in the uplands of Pohakea
I ke kumu lehua la o lalo iho.	Beneath the lehua tree.

[Fornander 1918, Vol. V, part 1:192

Upon hearing the news, her parents fetched Kahalaopuna back to Mānoa, and she was restored.

2.4 Legends and Traditional Places in Upland Honouliuli

2.4.1 Paupauwela and Līhu'e

Paupauwela, also spelled Popouwela (derivation unknown), is the name of the land area in the extreme *mauka* section of Honouliuli *Ahupua'a*. The land area of Līhu'e is just *makai* of this land, and extends into the *ahupua'a* of Waipi'o (adjacent to the eastern border of Honouliuli). Both place names are mentioned in a chant recorded by Abraham Fornander, which was composed as a *mele* for the O'ahu king, Kūali'i, as he was preparing to battle Kuiaia, the chief of Wai'anae:

Where? Where is the battle field	*Ihea, ihea la ke kahua,*
Where the warrior is to fight?	*Paio ai o ke koa-a?*
On the field of Kalena,	*I kai i kahua i Kalena,*
At Manini, at Hanini,	*I Manini, i Hanini*
Where was poured the water of the god	*I ninia i ka wai akua,*
By your work at Malamanui;	*I ko hana i Malamanui*

On the heights of Kapapa, at Paupauwela,	*Ka luna o Kapapa, i Paupauwela,*
Where they lean and rest;	*I ka hilinai i ke kalele,*
At the hala trees of indolent Halahalanui,	*Ka hala o Halahalanui maauea,*
At the ohia grove of Pule-e	*E kula ohia ke Pule-e,*
The god of Lono, of Makalii	*Ke 'kua o Lono o Makalii*
Thr fragrant branch of the Ukulonoku,	*Ka lala aalao Ukulonoku,*
Mayhap from Kona, from Lihue,	*No Kona paha, no Lihue.*
For the day at Maunauna	*No ka la i Maunauna,*
For the water at Paupauwela.	*No ka wai i Paupauwela.*

. . . [Fornander 1917, Vol. IV, Part 2:384-386].

Red is the water of Paupauwela,	*Ula ka wai i Paupauwela,*
From the slain at Malamani,	*Ke kilau o Malamani,*
The slain on the ridge at Kapapa.	*Ka moo kilau I Kapapa.*

The derivation of the place name Līhu'e (meaning "cold chill") is illustrated in the following poem; all other places names mentioned in this poem are in Waipi'o:

The icy wind of Lihue plied its spurs,
Pulling up the bridle of Haleauau,
Speeding headlong over Kalena
And running over the plain of Kanoenoe
[*Ka Loea Kālai'āina*, July 22, 1899, translated in Sterling and Summers 1978:21].

This explains the meaning of a Hawaiian saying "*Hao na kēpā o Līhu'e i ke anu.* The spurs of Līhu'e dig in with cold" [Pukui 1983:#479].

The icy winds of Honouliuli are also noted in a *mele* for the high king Kūali'i. In this *mele*, the cold winds of Kumomoku and Leleiwe, near Pu'uloa in Honouliuli are compared unfavorably to the god Kū.

Not like these are thou, Ku	*Aole i like Ku.*
[Nor] the rain that brings the land breeze,	*Ia ua hoohali kehau,*
Like a vessel of water poured out.	*Mehe ipu wai ninia la,*
Nor to the mountain breeze of Kumomoku,	*Na hau o Kumomoku;*
[The] land breeze coming round to Leleiwi.	*Kekee na hau o Leleiwi,*
Truly, have you not known?	*Oi ole ka oe i ike*
The mountain breezes, that double up your back,	*I ka hau kuapuu.*
[That make you] sit crooked and cramped at Kaimohala,	*Kekee noho kee, o Kaimohala,*
The Kanehili at Kaupea?	*O Kanehili i Kaupea-la*
Not like these are thou, Ku.	*Aole i like Ku.*

[Fornander 1917, Vol. IV, Part II:390-391]

In the Legend of Halemano (Fornander 1919, Vol. V, Part II:252), the romantic O'ahu anti-hero chanted a love song with a reference to the winds of Līhu'e:

Search is made to the top of Ka'ala,	*Huli a'e la Ka'ala kau i luna,*
The lower end of Pōka'ī is plainly seen.	*Waiho wale kai o Pōka'ī,*

Love looks in from Honouliuli,
The dew comes creeping, it is like the wind of Līhu'e...

Nānā wale ke aloha i Honouliuli,
Kokolo kēhau he makani no Līhu'e.

The wind of Līhu'e and others in the region are also named by Moses K. Nakuina, as follows:

Moa'e-kū is of 'Ewaloa
Kēhau is of Waiopua
Waikōloa is of Līhu'e
Kona is of Pu'uokapolei
Maunuunu is of Pu'uloa
[Nakuina 1992:43]

The *ali'i* (chiefly class) were closely associated with Līhu'e, which had habitation areas and playing grounds set aside for their sports. 'Ewa

> Lolale was the father and Keleanohoapiapi the mother of Ka-lo-kaholi-a-Lale. He was born in the land of Lihue and there he was reared into manhood. He excelled in good looks and greatly resembled his mother.
>
> In the olden days the favorite occupation of Lihue chiefs was spear throwing and the best instructors hailed from this locality [*Ka Nūpepa Kū'oko'a*, Aug. 26, 1865, translation in Sterling and Summers 1978:23].

Līhu'e was also the home of a famous cannibal king-man, Kaupe, who overthrew the ruling chiefs to become the paramount power between Nu'uanu and the sea. He had a home and a *heiau* in Līhu'e. Kaupe was a *kapua*, a supernatural being who could take the form of a man or a dog; this type of dog man was known as an *'ōlohe*. Although he left the O'ahu *ali'i* alone, he killed many commoners in the area, and eventually sailed to the island of Hawai'i on a raid, where he captured a chief's son; he planned to sacrifice this boy at his *heiau* in Līhu'e. The father came to O'ahu, and with the help of the priests of the Hawaiian hero, Kahanaiakeakua, was able to free his son, escape back to Hawai'i, and eventually kill the dog-man, Kaupe (Westervelt 1963:90-96).

2.4.2 Hill of Maunauna

The hill Maunauna lies between the lands Paupauwela and Līhu'e. one translation of Maunauna is "mountain sent [on errands]. Two servant *mo'o* who lived here had no keepers to supply their needs" (Sterling and summers 1:178a. in Pukui *et al* 1974:149). It was at Maunauna, according to one tradition, that the forces of the chiefs Kūali'i and Kuiaia of Wai'anae met to do battle, but was averted when a *mele* honoring the god Kū was chanted (see previous section). (Fornander 1917, Vol IV, Part 2:348). In the Legend of Ke-ao-melemele, a woman named Paliuli traveled in this area.

> In a very short time she [Paliuli] walked over the plain of Ewa; Ewa that is known as the land of the silent fish [pearl oysters] . . . She went on to the plain of Punalu'u and turned to gaze at Maunauna point and the plain of Lihue [Manu 1885, translation in Sterling and Summers 1978:21].

Certain place names in the uplands, including Maunauna, are also mentioned in the story of Lo-lae's Lament. The place of Lolale's residence is given in King Kalākaua's version of this story. According to him (Kalākaua 1990:232): "There lived there at that time in Lihue, in the district of 'Ewa, on the island of Oahu, a chief named Lo-lale, son of Kalona-iki, and brother of Piliwale, the *alii-nui*, or nominal sovereign, of the island, whose court was established at Waialua."

> In this story, Lolale was a chief of O'ahu who asked his friend Kalamakua to find him a bride (Kalākaua 1990:228-246; Skinner 1971:217-219). Kalamakua traveled to Maui and chose Kelea, the chief's sister, and returned with her to O'ahu; during this time the two grew close. Kelea lived with Lolale for a while, but he was a silent type that was often away from home playing sports and walking in the woodlands. Longing for Kalamakua, Kelea decided to leave her husband, Lolale voiced no "spoken bitterness;" however, after she left, he sang this lament:
>
> Farewell, my partner of the lowland plains,
> On the waters of Pohakeo, above Kanehoa,
> On the dark mountain spur of Mauna-una!
> O, Lihue, she is gone!
> Sniff the sweet scent of the grass,
> The sweet scent of the wild vines
> That are twisted by Waikoloa,
> By the winds of Waiopua,
> My flower!
> As if a mote were in my eye.
> The pupil of my eye is troubled.
> Dimness covers my eyes. Woe is me!
> [Kalākaua 1990:244-245].

2.4.3 Pu'uku'ua

Makai of the land of Līhu'e was the land of Kupehau, which was itself *mauka* of Pu'uku'ua. Divine sanction was also given to social stratification and the designation of a land for *kauwā* (outcastes, pariahs), a low, slave caste of Hawai'i, in the vicinity of Pu'uku'ua:

> . . . If you are above Puuloa, you wil see Pu'u-o-Kapolei, a small hill. Lying below and back of that hill is the government road going to Waianae. Above that is also a small hill and back of that, is a big hill and above it is a large hollow. That is Pu'u-Kuua where the very dirty ones lived [*Ka Loea Kālai'āina* July 15, 1899, translation in Sterling and Summers 1978:32].

The creation of the *kauwā* class is told in a tradition of the gods Kāne and Kanaloa:

> *A penei na'e i kauwā loa [sic. "loa'a"] ai. Aia a mana'o ke Ali'i Nui (Mō'ī) e 'au'au kai i Waikīkī. Eia ka nīnau a ke Ali'i Nui i ke ali'i ma lalo iho ona, "Pehea āu mau wahi lepo kanu o Pu'u Ku'ua? 'A'ole paha he mau wahi pōhuli?" Eia ka*

pane a ke ali'i ma lalo iho ona, "He Pōhuli nō. 'O ke kauoha ia akula nō ia e ki'i. 'Oiai ko kāne me ka wahine e nanea ana me nā keiki, a hiki 'ana ke ki'i i mau keiki. 'O ke kū a'ela nō ia o ka makuakāne a lawe 'ana i kāna mau keiki a hiki i Waikīkī. Aia ho'i a hiki i ka wā a ke Ali'i e hele ai i ka 'au'au kai, a laila, hoouna 'ia mai ke kahu e ki'i mai i ua keiki a lawe aku ia ma kahi pāpa'u o ke kai, ma kahi a ke Ali'i nui e hele kū 'ana, a laila kau nā lima o ka Mō'ī i luna o kahi keiki a me kahi keiki, ma nā 'ā'ī o nā keiki a pa'a ai. 'O ka hua 'ōlelo ma ka waha o ke Ali'i nui e 'ōlelo ai, "'A'ole pau ku'u loa! 'A'ole pau ku'u loa!" 'Oiai 'o ia e 'au ana me ka pa'a nō o nā lima i nā keiki a hiki i ka umauma ke kai o ke ali'i. Ua lana a'ela nā keiki i luna o ka 'ilikai, aia ke alo i lalo. Eia ho'i ka 'ōlelo a ka makuakāne ma kula aku nei, "Moe mālie i ke kai o ko Haku," a pēlā aku.

'O ke kai o Waikīkī ke kai i 'ōlelo 'ia he kai lumaluma'i kanaka o ka lua, aia i Kualoa [*Ka Loea Kālai'āina*, July 8, 1899].

Translation:

The chiefs of old, who lived at that time, were of divine descent. The two gods [Kāne and Kanaloa] looked down on the hollow [vicinity of Pu'u Ku'ua] and saw how thickly populated it was. The mode of living here was so that chiefs and commoners mixed freely and they were so like the lowest of people (*kauwā*). That is what these gods said and that was the time when the term *kauwā* was first used, and was used for many years afterwards. . . . This was how they were made to be *kauwā*. When the ruling chief wished to go to Waikīkī for sea bathing he asked the chief just below him in rank, "How are my planting places at Pu'u Ku'ua, have they not produced young suckers?" The chief next to him answered, "There are some suckers," and sent someone for them. When the men, women and children least expected it, the messenger came to get some of the children. The father stood up and took his sons to Waikīkī. Then, when the ruling chief went sea bathing, he sent an attendant to get the boys and take them to a shallow place where the ruling chief would come. Then the ruler placed a hand on each of the boys, holding them by the necks. The words he uttered were, "My height has not been reached! My height has not been reached!" He advanced and held onto the boys until the sea was up to his chest. The boys floated on the water face down. The father on shore called out, "Lie still in the sea of your Lord," and so on.

The Sea of Waikīkī is said to have been used to kill men in and the other place is Kualoa. The inhabitants of Pu'u-Kuua were so mixed, like taro beside an imu [translation in Sterling and Summers 1978:32-33].

A Hawaiian saying concerning 'Ewa suggests that this drowning also took place in this *ahupua'a*.

'Ewa of the drowning sea *'Ewa kai lumaluma'i*

An epithet applied to 'Ewa, where kauwā were drowned prior to offering their bodies in sacrifice [Pukui 1983:#385].

On Hi'iaka's journey as she leaves 'Ewa and descends to the coast, she sees some women stringing *lei* and offered a chant, naming several place names in the area:

Rising in the presence of the cliff of Pu'uku'ua	*Ke ku no i ke alo o pali o Pu'uku'ua*
The land is indeed a chief	*He ali'i nona'e ka 'āina*
Man is indeed a slave	*He kauwā no na'e kanaka*
I am indeed a slave to *aloha* – love	*I kauwā no na'e wau i ke aloha*

[*Ka hōkū o Hawai'i* February 22, 1927, translation in Maly 1997:17]

The great fisherman, Nihookeki, was born in Keauhou, Kona, but traveled to O'ahu and lived in Wai'anae and became a great chief. Fornander (1917, Vol. IV, Part 3:488) places his home at Pu'uku'ua, in Pu'uokapolei in Wai'anae, possibly during one of the times that both Wai'anae and 'Ewa were ruled by one chief.

> *O Keauhou, i Kona, Hawaii, ka aina hanau o Nihooleki, a malaila mai ka hele* ana *a noho i Kuukuua, i Puuokapolei ma Waianae, no laila ka wahine.*
>
> Keauhou in Kona, Hawaii, was the birthplace of Nihooleki and it was from this place that he moved to Kuukuua, in Puuokapolei at Waianae, where he took unto himself a wife [Fornander 1917, Vol. IV, Part 3:488-489].

Keahaikiaholeha, the paramount chief of Wai'anae, owned a famous mother-of-pearl fishhook, called Pahuhu, which he used to catch many *aku* (bonito, *Katsuwonus pelamis*). He later sailed to Waimea, Kaua'i, where his wife had been born, and there also became the ruling chief of Kaua'i. When Keahaikiaholeha died, his body was brought back to Kuukuua and placed in a *pu'āo* (*A make o Kaehaikiaholeha, hoihoi ia mai a Kuukuua, i Waianae, waiho ia kona kino kupapau; i loko o ka hale, puoa . . .*). A *pu'āo* is an open, small, temporary cone-shaped structure, of poles; in this case, this *pu'āo* was used as his tomb. The parents of the chief worshiped the spirit (*'uhane*) of their son, until it became strong enough to go about in the form of a live person. The spirit took the name of Nihooleki, traveled to Kaua'i, and married his wife, although she was unaware that this was the spirit of her dead husband. Nihooleki used his magic fishhook to catch canoes full of *aku* until it became the wonder of the islands. The piles of fish that he caught and gave away came to the ears of Kamapua'a, who was then living at Waiohuli, sick with dropsy.

Nihooleki told his wife that if a man with dropsy came to the door, to ask him in because he was a friend. But when Kamapua'a arrived, the wife would not let him in since he was so dirty. Kamapua'a had to wait in the pig pen for the return of his friend. Nihooleki was angry about the treatment of his friend when he returned and left the island with Kamapua'a.

> *Lohe aku la na 'lii, a me na kaikoeke, o ke 'lii no keia, alualu mai la lakou, luu laua nei i ke kai, a ea ana i Kuukuua, ma Waianae. . . .*
>
> *A kokoke laua i ka hale o na mauka a me ke kaikuahine, a e ku ana hoi ka puoa hale o ke kino kupapau ona. ". . . A o ke kaikuahine o kaua, o kau wahine no ia, no ka mea, he wahine maikai, ua nui no ke kino."*
>
> *O Kaehaikiaholeha, oia o Nihooleki, komo aku la ia i kona puoa kupapau a nalo iho la, oia ka pau o kona kaao ana.*

> He [Nihooleki] and his friend [Kamapua'a] then dove into the sea and swam under water until they came up at Kuukuua, at Waianae. . .. As they drew near to the house where the parents and sister of Nihooleki were living and near to the tomb where his dead body was laid, Nihooleki then turned to his friend. " . . . Take our sister and make her your wife as she is fair to look upon and is also of proper age." . . . Keahaikiaholeha, who was Nihooleki, entered the tomb and disappeared. Thus ends the story [Fornander 1917, Vol. IV, Part 3:496].

This legend suggests associations with Pu'uku'ua to Pu'uokapolei, worship of the dead, and wandering souls, all of which are prominent themes associated with Pu'uokapolei, as seen in the next section. It also ties the pig god Kamapua'a to Pu'uokapolei in 'Ewa.

2.5 Pu'uokapolei and the Plains of Kaupe'a

Pu'uokapolei is a prominent hill at the *mauka* edge of the coastal 'Ewa Plains and was the primary landmark for travelers on the trail that ran from Pearl Harbor west to Wai'anae ('Ī'ī 1959:27, 29; Nakuina 1992:54; E.M. Nakuina 1904, in Sterling and Summers 1978:34).

2.5.1 Pu'uokapolei, Astronomical Marker and Heiau

Pu'u means hill and Kapolei means "beloved Kapo," a reference to the sister of the Hawaiian volcano goddess, Pele Samuel Kamakau (1976:14) says that the Hawaiians used Pu'uokapolei as an astronomical marker to designate the seasons. Samuel Kamakau (1870 *Mo'olelo Hawai'i* Vol. I, Chap. 2, p. 23) relates:

> . . . the people of O'ahu reckoned from the time when the sun set over Pu'uokapolei until it set in the hollow of Mahinaona and called this period Kau [summer], and when it moved south again from Pu'uokapolei and it grew cold and the time came when young sprouts started, the season was called from their germination (*'ōilo*) the season of Ho'oilo [winter, rainy, season].

A *heiau* was once on Pu'uokapolei, but had been destroyed by McAllister's (1933:108) survey of the island in the early 1930s. The hill was used as a point of solar reference or as an observation place for such observations (Fornander 1919, Vol. VI, Part 2:292). Pu'uokapolei may have been regarded as the gate of the setting sun, just as the eastern gate of Kumukahi in Puna is regarded as the rising sun; both places are associated with the Hawaiian goddess Kapo (Emerson 1915:41). This somewhat contradicts some Hawaiian cosmologies, in which Kū was the god of the rising sun, and Hina, the mother of Kamapua'a was associated with the setting sun. Fornander (Fornander 1919, Vol. VI, Part 2:292) states that Pu'uokapolei may have been a jumping off place (also connected with the setting sun) and associated with the wandering souls who roamed the plains of Kaupe'a and Kānehili, *makai* of the hill.

2.5.2 Pu'uokapolei and the Plains of Kaupe'a and Kānehili

Hi'iaka sang this bitter chant addressed to Lohiau and Wahine-oma'o, which uses the association of the Plains of Kaupe'a as a place for the wandering of lost souls:

> *Ku'u aikana i ke awa lau o Pu'uloa,*
> *Mai ke kula o Pe'e-kaua, ke noho oe,*
> *E noho kaua e kui, e lei i ka pua o ke kauno'a,*

I ka pua o ke akuli-kuli, o ka wili-wili;
O ka iho 'na o Kau-pe 'e i Kane-hili,
Ua hili au; akahi no ka hili o ka la pomaika 'i;
E Lohiau ipo, e Wahine-oma 'o,
Hoe 'a mai ka wa 'a i a 'e aku au.

We meet at Ewa's leaf-shaped lagoon, friends;
Let us sit, if you will on this lea
And bedeck us with wreaths of Kauno'a,
Of akuli-kuli and wili-wili,
My soul went astray in this solitude;
It lost the track for once, in spite of luck,
As I came down the road to Kau-pe'a.
No nightmare dream was that which tricked my soul.
This way, dear friends; turn the canoe this way;
Paddle hither and let me embark
[Emerson 1915:162-163].

Several other Honouliuli places are mentioned in this chant, including Pe'e-kaua, which may be a variation of Kau-pe'e or Kaupe'a, and the plains of Kānehili, the last of which again refers to wandering, as the word *hili* means "to go astray" (Emerson 1915:162). In the chant, Hi'iaka is moving downhill from Kaupe'a, probably the plains adjacent to Pu'uokapolei, toward the coast, the plain of Kānehili.

2.5.3 The plains of Kaupe'a and Pu'uokapolei and the Realm of Homeless Souls

There are several places on the 'Ewa coastal plain that are associated with *ao kuewa*, the realm of the homeless souls. Samuel Kamakau (1991b:47-49) explains the Hawaiian beliefs in the afterlife:

> . . . There were three realms (*ao*) for the spirits of the dead. . . There were, first, the realm of the homeless souls, the *ao kuewa*; second, the realm of the ancestral spirits, the *ao 'aumakua*; and third, the ream of Milu, *ke ao o Milu* . . .
>
> The *ao kuewa*, the realm of homeless souls, was also called the *ao 'auwana*, the realm of wandering souls. When a man who had no rightful place in the *'aumakua* realm (*kanaka kuleana 'ole*) died, his soul would wander about and stray amongst the underbrush on the plain of Kama'oma'o on Maui, or in the *wiliwili* grove of Kaupe'a on Oahu. If his soul came to Leilono [in Halawa, 'Ewa near Red Hill], there he would find the breadfruit tree of Leiwalo, *ka 'ulu o Leiwalo*. If it was not found by an *'aumakua* soul who knew it (*i ma 'a mau iaia*), or one who would help
>
> it, the soul would leap upon the decayed branch of the breadfruit tree and fall down into endless night, *the pō pau 'olo o Milu*. Or, a soul that had no rightful place in the *'aumakua* realm, or who had no relative or friend (*makamaka*) there who would watch out for it and welcome it, would slip over the flat lands like a

wind, until it came to a leaping place of souls, a *leina a ka 'uhane*. . . [Kamakau 1991b:47].

On the plain of Kaupe'a beside Pu'uloa [Pearl Harbor], wandering souls could go to catch moths (*pulelehua*) and spiders (*nanana*). However, wandering souls could not go far in the places mentioned earlier before they would be found catching spiders by 'aumakua souls, and be helped to escape. . . . [Kamakau 1991b:49].

The breadfruit tree Leilono was said to have been located on the 'Ewa-Kona border, above Āliamanu. In another section of his account of the dead, Kamakau calls the plain of wandering souls the "plain at Pu'uokapolei."

There are many who have died and have returned to say that they had no claim to an 'aumakua [realm] (*kuleana 'ole*). These are the souls, it is said, who only wander upon the plain of Kama'oma'o on Maui or on the plain at Pu'uokapolei on Oahu. Spiders and moths are their food [Kamakau 1991b:29].

This association of Pu'uokapolei and Kānehili with wandering souls is also illustrated in a lament on the death of Kahahana, the paramount chief of O'ahu, who was killed by his father, Kahekili, after Kahahana became treacherous and killed the high priest Kaopulupulu.

Go carefully lest you fall dead in the sun,	*E newa ai o hea make i ka la,*
The god that dwells on Kapolei hill.	*Akua noho la i Puuokapolei.*
The sun is wailing on account of the women of Kamao,	*E hanehane mai ana ka la i na wahine o Kamao,*
A hiding god, blossoming ohai of the banks,	*Akua pee, pua ohai o ke kaha,*
Contented among the stones-	*I walea wale i ke a-*
Among the breadfruit planted by Kahai.	*I ka ulu kanu a Kahai.*
Thou wast spoken of by the oo-	*Haina oe e ka oo-*
By the bird of Kanehili.	*E ka manu o Kanehili.*

[Fornander 1919, Vol. VI, Part 2:297]

Fornander provides some notes on this lament. The god dwelling at Kapolei is the god Kahahana, stating that this is where his soul has gone. Kamao is one of the names of the door to the underworld. This lament draws an association with wandering souls and the place where the first breadfruit tree was planted by Kahai at Pu'uloa (Fornander 1919, Vol. VI, Part 2:304).

Pukui (1983:180) offers this Hawaiian saying, which places the wandering souls in a *wilwili* grove at Kaupe'a.

The wiliwili grove of Kaupe'a	*Ka wiliwili of Kaupe'a.*

In 'Ewa, O'ahu. Said to be where homeless ghosts wander among the trees. [Pukui 1983:#1666].

Beckwith (1940:154) has stressed that "the worst fate that could befall a soul was to be abandoned by its '*aumakua* and left to stray, a wandering spirit (*kuewa*) in some barren and desolate place." These wandering spirits were often malicious, so the places that they wandered were avoided.

2.5.4 The Plain of Pukaua

The Hawaiian language newspaper *Ka Loea Kālai'āina*, (January 13, 1900) relates that near Pu'uokapolei, on the plain of Pukaua, on the *mauka* side of the road, there was a large rock. This legend suggests that the plain around Pu'uokapolei was called Pukaua. The legend is as follows:

> If a traveler should go by the government road to Waianae, after leaving the village of gold, Honouliuli, he will first come to the plain of Puu-ainako and when that is passed, Ke-one-ae. Then there is a straight climb up to Puu-o-Kapolei and there look seaward from the government road to a small hill, That is Puu-Kapolei. . . . You go down some small inclines, then to a plain. This plain is Pukaua and on the mauka side of the road, you will see a large rock standing on the plain. . . . There were two supernatural old women or rather peculiar women with strange powers and Puukaua belonged to them. While they were down fishing at Kualaka'i [near Barbers Point] in the evening, they caught these things, *'a'ama* crabs, *pipipi* shellfish, and whatever they could get with their hands. As they were returning to the plain from the shore and thinking of getting home while it was yet dark, they failed for they met a one-eyed person [bad omen]. It became light as they came near to the plain, so that passing people were distinguishable. They were still below the road and became frightened lest they be seen by men. They began to run - running, leaping, falling, sprawling, rising up and running on, without a thought of the *'a'ama* crabs and seaweeds that dropped on the way, so long as they would reach the upper side of the road. They did not go far for by then it was broad daylight. One woman said to the other, "Let us hide lest people see us," and so they hid. Their bodies turned into stone and that is one of the famous things on this plain to this day, the stone body. This is the end of these strange women. When one visits the plain, it will do no harm to glance on the upper side of the road and see them standing on the plain [*Ka Loea Kālai'āina*, January 13, 1900, translation in Sterling and Summers 1978:39].

In another version of this story, the two women met Hi'iaka as she journeyed toward the 'Ewa coast. The women were *mo'o* (supernatural beings) and were afraid that Hi'iaka would kill them, so they changed into their lizard form. One of the lizards hid in a little space on a stone beside the coastal trail, and the other hid nearby (*Ka Hōkū o Hawai'i*, February 15, 1927, translated in Maly 1997:19). From that time on the stone was known as *pe'e-kāua*, meaning "we two hidden." Hi'iaka greeted the two women but did not harm them, and passed on.

When she reached Pu'uokapolei, she also greeted two old women who lived at a *'ohai* grove on the hill. These women were named Pu'uokapolei and Nāwaineokama'oma'o (*Ka Hōkū o Hawai'i*, February 22, 1927, translated in Maly 1997:19). As she continued her travels, she looked to the ocean and saw the canoe carrying Lohi'au.

My man on the many harbored sea of Pu'uloa	*Ku'u kāne i ke awa lau o Pu'uloa*
As seen from the plain of Pe'ekāua	*Mai ke kula o Pe'ekāua ke noho*
Let us dwell upon the 'ōhai covered shore	*E noho kāua i ke kaha o ka 'ōhai*
Where the noni blossoms are twisted together	*I ka wiliwili i ka pua o ka lau noni*

Descending along Kānehili	*O ka ihona i Kānehili la*
I am winding along	*Ua hili ho'i au-e*

[*Ka Hōkū o Hawai'i*, February 22, 1927, translated in Maly 1997:20].

2.5.5 Pu'uokapolei and Kamapua'a

Pu'uokapolei's was the home of Kamapua'a's grandmother, Kamaunuaniho, who was one of the three migrants from Kahiki that were ancestors to the people of O'ahu (Fornander 1919, Vol. V, Part 2:318; Kahiolo 1978:81, 107). Kamapua'a, the Hawaiian pig god once lived in Kaluanui on the windward side, but escaped to 'Ewa when he was pursued by the chief Olopana.

> Kamapua'a subsequently conquered most of the island of O'ahu, and, installing his grandmother [Kamaunuaniho] as queen, took her to Pu'uokapolei, the lesser of the two hillocks forming the southeastern spur of the Wai'anae Mountain Range, and made her establish her court there. This was to compel the people who were to pay tribute to bring all the necessities of life from a distance, to show his absolute power over all [Nakuina 1904:50-51].

Emma Nakuina goes on to note: "A very short time ago [prior to 1904] the foundations of Kamaunuaniho's house could still be seen at Pu'uokapolei." Another account (*Ka Loea Kālai'āina* January 13, 1900, from Sterling and Summers 1978:34) speaks of Kekeleaiku, the older brother of Kamapua'a, who also lived on Pu'uokapolei.

2.5.6 The Strife at Honouliuli; Kūali'i unites Hawai'i *nei* (*Mo'olelo o Kūali'i*)

The celebrated chief, Kūali'i, is said to have led an army of twelve thousand (*'ekolu mano*) against the chiefs of Ko'olauloa with an army of twelve hundred (*'ekolu lau*) upon the plains of Keahumoa (Fornander 1917 Vol. IV, Part 2:364-401). Perhaps because the odds were so skewed the battle was called off and the *ali'i* of Ko'olau ceded (*ha'awi a'e*) the districts of Ko'olauloa, Ko'olaupoko, Waialua and Wai'anae to Kūali'i. When the *ali'i* of Kaua'i heard of this victory at Honouliuli they gave Kaua'i to Kūali'i as well and thus he became possessed of all the islands (*a lilo a'e la nā moku a pau ia Kūali'i mai Hawai'i a Ni'ihau*). The strife at Honouliuli was the occasion of the recitation of a song for Kūali'i by a certain Kapa'ahulani (*Ka Pule Ana a Kapa'ahulani*). This *mele* compares the king to certain places and objects in the islands, in this instance to the first breadfruit planted by Kahai at Pu'uloa, and a pig and a woman on Pu'u Kapolei, possibly a reference to Kamapua'a and his grandmother.

Not like these art thou, Ku.	*Aole I like Ku.*
Not like the pig	*Aole I like i ka puaa,*
Discerning the progeny of the god;	*I ka weke lao a ke akua,*
[Or] The breadfruit planted by Kahai.	*Ka ulu kanu a Kahai;*
Truly, have you not known	*Oi ole ka oe i ike,*
The woman with the dyed garment,	*Ka wahine pau mao*
On the top of Puuokapolei?	*I ka luna o Puuokapolei-la?*

[Fornander 1917, Vol. IV, Part 2:392-393].

A later section of this *mele* also refers to Pu'uokapolei and makes mention of the famous blue poi of Honouliuli.

O Kawelo! Say, Kawelo!	*O Kawelo-e, e Kawelo-e,*

Kawelokiki, the sharp-ponted hill,
Hill of Kapolei.
Blue is the poi which appeases
[the hunger] of Honouliuli.
[Fornander 1917, Vol. IV, Part 2:400-401].

O Kaweloiki puu oioi,
Puu of Kapolei-e-
Uliuli ka poi e piha nei-o Honouliuli;

2.6 Coastal Honouliuli

The coastal area of Honouliuli is a triangular area that stretches from Pili o Kahe on the northwestern corner that marks the boundary with the Wai'anae District to Kalaeloa (now Barbers Point) on the southwestern corner, to Keahi Point on the southeastern corner at the mouth of Pearl Harbor. There were likely Hawaiian settlements at Ko'ōlina on the west side, at Kualaka'i on the south, at the royal residence in Pu'uloa near the mouth of the harbor, and at Honouliuli town at the upper end of West Loch, surrounding Kapapapūhi Point, north of the current study area.

Kalaeloa literally means "the long point" (Pukui et al. 1974:72), but Raphaelson (1925) has a different translation. He says the name of the point is Kalaiekao, meaning "sky rocket cape," because it was on this point that signal fires were set to signal canoes to go out to meet European boats during the early historic period. Kalaeloa Point was the home of Uhu makaikai, a *kupua* (supernatural being) who could take the form of a man or a giant parrotfish (*uhu).* He is mentioned in several legends concerning the hero Kawelo and with Kawelo's struggles with the ruling chief of Kaua'i, Aikanaka.

> This friend was Kauahoa also an alii of Wailua (Kauai). Their king, Aikanaka, in the time of Kākuhihewa of Oahu and Lonoikamakahiki of Hawaii. Aikanaka got offended with Kawelo and sent him to live at Waikiki. Cause. The king at a surf bathing told Kawelo to get a calabash of water for him to wash off with, but on Kawelo's failing to do it, he took a calabash of soft poi and threw it over Kawelo and sent him off as already stated. At Waikiki, Kawelo studied the art of fighting to be revenged on Aikanaka. A *kupua*, Uhu makaikai, a fish was his teacher. Makuakeke was his helper in the canoe. The fish lived at Pōhaku o Kawai near Kalailoa (Kalaeloa), Oahu (Barbers Point) . . . . [Hawaiian Ethnological Notes, Bishop Museum Vol. II:114, translation in Sterling and Summers 1978:41].

One historical account of particular interest refers to an *ali'i* residing in Ko'ōlina, within Waimānalo (meaning "brackish water").

> Ko'ōlina is in Waimānalo near the boundary of 'Ewa and Wai'anae. This was a vacationing place for chief Kākuhihewa and the priest Napuaikamao was the caretaker of the place. Remember reader, this Ko'ōlina is not situated in the Waimānalo on the Ko'olau side of the island but the Waimānalo in 'Ewa. It is a lovely and delightful place and the chief, Kākuhihewa loved this home of his [*Ke Au Hou* July 13, 1910, from Sterling and Summers 1978:41].

Between Pili o Kahe and Kalaeloa there is Kahe Point, which was formerly marked by two drainage ditches called Keone'ō'io and Limaloa, which may explain the name Kahe, which means "flow" (Pukui et al. 1974:64). Keone *'ō'io* means "the *'ō'io* sand; this area once had large schools of *'ō'io* (bonefish; Albulidae), a fish usually found on sandy-bottom areas (Clark

1977:77). Kalaeloa, meaning "the long point," got its present name Barbers Point from Captain Henry Barber of the brig *Arthur*, who ran his ship aground on October 31, 1796 on a shoal west of the entrance to Pearl Harbor. Hawaiians, under the command of Kamehameha I, salvaged the cannon from the ship and used them to man a new fort on Lāhainā, Maui (Clark 1977:75-76).

Kualaka'i is the name of the beach area on the south ocean coast of Honouliuli. Clark (1977:74) says it is named for a type of sea cucumber that squirts a purple fluid when squeezed, but, the book *Hawaiian Place Names* (Pukui et al. 1974:119) identifies the sea creature as 'tethys," a member of the invertebrate family Aplysiidae, commonly called sea hares. In the legend of Hi'iaka, there was a spring located at Kualaka'i named Hoaka-lei (*lei* reflection) where Hi'iaka picked *lehua* flowers to make a *lei* and saw her reflection in the water (*Ka Hōkū o Hawai'i*, February 22, 1927, translated in Maly 1997:20).

Keahi Point, at the entrance to Pearl Harbor, has already been noted as the surf spot for the chiefess Pāpio who was killed by the queen shark of Peark Harbor, Ka'ahupāhau. It was also known as a good fishing spot for the *'ō'io* (bonefish, *Albula vulpes*). The *'ō'io* from Keahi were famed for their fragrance, like that of the *līpo'a* (*Dictyopteris* spp.) seaweed (Pukui 1943:56).

In pre-Contact times, Pu'uloa was an *'ili* of Honouliuli, but sometime after 1868, it was designated as a separate *ahupua'a* (Maly 1997:9). Pu'uloa was a royal habitation area, and according to one tradition, was the first place that "human beings" landed on O'ahu (Beckwith 1940:343). Within Pu'uloa (meaning "long hill") on the seashore side was a beach area called One'ula, which means "red sand," possibly named for a large drainage ditch which carried red dirt from the inlands to the seashore (Clark 1977:73).

2.6.1 The Strife of Nāmakaokapāo'o and Puali'i (*Ka'ao no Nāmakaokapāo'o*)

In the Legend of Nāmakaokapāo'o (Fornander 1919, Vol. V, Part 2:274-277), the brave boy, Nāmakaokapāo'o, and his mother, Pokai, appear to have been living near the coast but were quite destitute (*'ilihune loa*). His mother met Puali'i when he came from Līhu'e to fish at Honouliuli, the two married, and the new family went to live on the plains of Keahumoa (*ke kula o Keahumoa*). Puali'i kept sweet potato patches (*māla uala*) and fished for *ulua*. Following a dispute over sweet potatoes, Nāmakaokapāo'o defeated his step-father, Puali'i and:

> Nāmakaokapāo'o picked up Puali'i's head and threw it towards Waipouli, a cave situated on the beach at Honouliuli (a distance of about five miles).
>
> *Lālau aku la o Nāmakaokapāo'o i ke po'o o Puali'i a kiola aku la i kai o Waipouli, he ana ma kahakai o Honouliuli, o kona loa, 'elima mile ka loa* [Fornander 1919, Vol. V, Part 2:276-277].

2.6.2 Coastal Village of Kualaka'i

In the Legend of the Children, is a tale that foretold the later breaking of the eating *kapu* by the *ali'i*. A young brother and sister always fished at Kualaka'i, a beach area on the southern coast of Honouliuli. One day they laid out their nets, but all they caught was one *palani* (surgeonfish), a fish that was *kapu* (tabu) for men; only women could eat it.

> . . . They fished again and again until the afternoon and nothing was caught. The children were weary and went home without fish. When they came as far as

> Pu'u-o-Kapolei where the blossoms of the ma'o looked golden in the sunlight, the sister sat
>
> ...down to make ma'o leis for themselves. When the leis were made they went across the breadth of Kaupe'a to Waipio [*Ka Loea Kālai'āina*, July 22, 1899:15; translation in Sterling and Summers 1978:7].

They stopped at the stream of Ka'aimalu on the way to their home, and the sister convinced her brother to share the fish between the two, thus breaking the *kapu*. "Because these children ate fish secretly, the spot is called Ka'ai-malu (Secret eating) to this day" (Sterling and Summers 1978:7). This legend also shows the relation of several landmarks on the coastal plain, as the children travel from the coast at Kualaka'i, across the plain of Kaupe'a to Waipi'o, passing next to Pu'uokapolei.

2.6.3 Pu'uloa and the Breadfruit

Pu'uloa was noted as one of the first places to have breadfruit. It was brought to the islands by Kaha'i, son of Ho'okamali'i and grandson of Moikehā, who brought the plant from Upolu (central Polyneisa) to Hawai'i and planted it at Pu'uloa (Beckwith 1940:97).

Two other versions can be found in Fornander. In the first, the location of the first planting is in Pu'uloa, but the story does not mention Kaha'i (Fornander 1919, Vol. V, Part 3:678):

> At Puuloa, Oahu. Its breadfruit plant came from Kanehunaamoku [a mythical land supposed to have been hidden by the god Kāne], brought by two men at Puuloa who were out fishing and were blown off by a heavy wind and rainstorm and landed at the uninhabited land, save gods only. Therefore by them it was introduced at Puuloa and planted in a large excavation where it grew and bore fruit, which they ate.
>
> *Ma Puuloa i Oahu. Ko laila ulu no Kanehunamoku mai, na kekahi mau kanaka o Puuloa i hele i ka lawaia a pūhia e ka ino nui, makani a me ka ua, a pae i keia aina kanaka ole, he akua wale no; nolaila mai ka laua lawe ana mai i keia ulu a hiki i Puuloa, kanu a ulu i kekahi lua niu a hua, ai keia mau kanaka.*
>
> [Fornander 1919, Vol. V, Part 3:678-679].

A second version associates the breadfruit tree in 'Ewa to the chief Namaka-o-ka-paoo, the Hawaiian born son of Ka-ulu-o-kaha'i, which means "Breadfruit of Kaha'i." Kauluokaha'i had left O'ahu to return to his ancestral lands of Kahiki (Hawaiian ancestral land). Once Namakaokapa'o had conquered the island of O'ahu, he wanted to travel to Hawai'i in secret to spy on the land.

> . . . He [Namakaokapaoo] then went and got a small gourd wherein to place his garments which his father had left him. This gourd was deposited at Kualakai, where a breadfuit tree is standing to this day. This is the breadfruit impersonation of his father, Kahaiulu. When the real person went home the breadfruit tree remained, being in the supernatural state.

. . .Alaila, kii aku la ia he wahi hokeo waiho kapa nona, na kona makuakane i waiho nona. O kahi i waiho ai ua wahi hokeo la, makai o Kualakai, oia kela ulu e ku nei a hiki i keia la ma Kualakai. Oia ke kino ulu o kona makuakane o Kahaiulu. Hoi ke kino maoli, koe ke kino ulu, ma ke ano akua keia kino [Fornander 1919, Vol. V, Part 2:279-280].

Section 3 Historical Background

3.1 Pre-Contact and Early Post-Contact Period

By ca. A.D. 1320, 'Ewa, along with Kona, and Ko'olaupoko were the dominant polities, ruled by the sons of a chief named Māweke (Cordy 2002:21). 'Ewa at this time included the traditional districts of 'Ewa, Wai'anae, and Waialua (Fornander 1880:48). Around A.D. 1400, the entire island was ruled by King La'akona; chiefs within his line, the Māweke-Kumuhonua line, reigned until about A.D. 1520-1540, with their major royal center in Līhu'e, in 'Ewa. (Cordy 2002:24). Haka was the last chief of the Māweke-Kumuhonua line; he was slain by his men at the fortress of Waewae near Līhu'e (Kamakau 1991a:54-54; Fornander 1880:88). Power shifted between the chiefs of different districts from the 1500s until the early 1700s, when Kūali'i achieved control of all of O'ahu by defeating the Kona chiefs, then the 'Ewa chiefs, and then expanding his control on windward Kaua'i. Peleiholani, the heir of Kūali'i, gained control of O'ahu ca. 1740, and later conquered parts of Moloka'i. He was ruler of O'ahu until his death in ca. 1778, when Kahahana, of the 'Ewa line of chiefs was selected as the ruler of O'ahu (Cordy 2002:24-41).

After Kamehameha's O'ahu victory, he gave the *ahupua'a* of Honouliuli to Kalanimōkū as part of the *panalā'au*, or conquered lands, with the right to pass the land on to his heirs rather than having it revert to Kamehameha (Kame'eleihiwa 1992:58, 112). Kalanimōkū subsequently gave the *ahupua'a* to his sister, Wahinepi'o.

John Papa 'Ī'ī describes a network of Leeward O'ahu trails (figure 8), which in historic times encircled and crossed the Wai'anae Range, allowing passage from Lualualei to Honouliuli by three different trails ('Ī'ī 1959:96-98). The coastal trail skirted Pearl Harbor, passing by Pu'uokapolei; this would have been the nearest of three Honouliuli trails to the current project area. Following 'Ī'ī's description, a portion of this trail network would have passed close to the existing Farrington Highway, near the north border of the project area, as seen in an 1825 map (Figure 9) map of the south coast of O'ahu by Charles Malden of the British ship the *Blonde*.

The trail is described by 'Ī'ī as:

The trail went down to the stream and up again, then went above the taro patches of Waiau, up to a *makai* field, to Waimano, to Manana, and to Waiawa; then to the stream of Kukehi and up to two other *makai* fields, Pueohulunui and Haupuu. At Pueohulunui was the place where a trail branched off to go Waialua and down to Honouliuli and on to Waianae. As mentioned before, there were three trails to Waianae, one by way of Pu'u o Kapolei, another by way of Pohakea, and the third by way of Kolekole ['Ī'ī 1959:97].

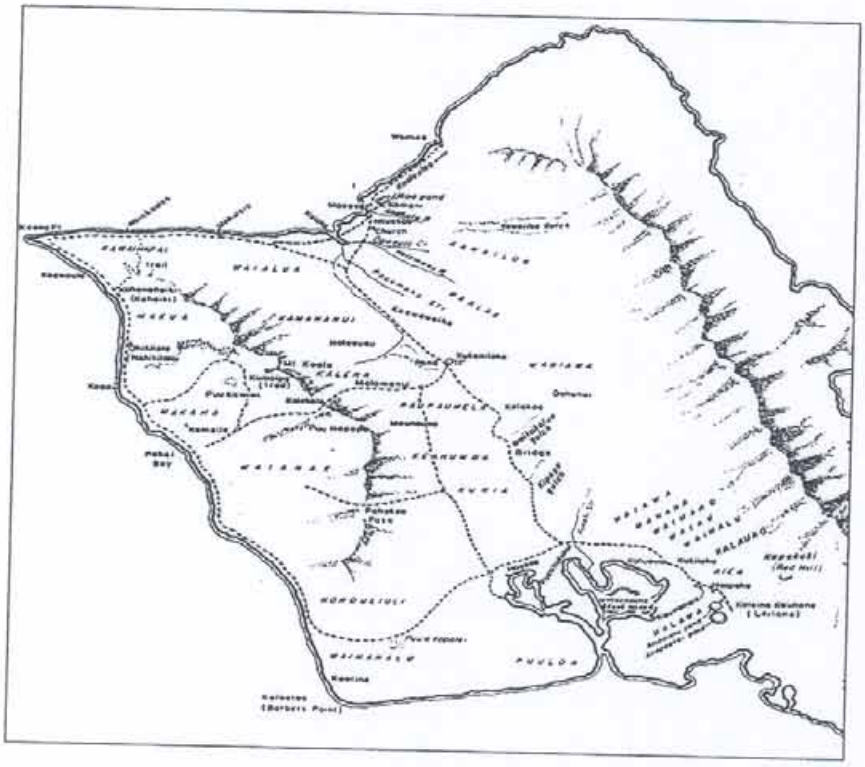

Figure 8. Trails of Leeward Oahu. Map by Paul Rockwood. ('Ī'ī 1959:96)

Early historical accounts of the general region typically refer to the more populated areas of the 'Ewa district, where missions and schools were established and subsistence resources were perceived to be greater. However, the presence of archaeological sites along the barren coral plains and coast of southwest Honouliuli Ahupua'a, indicate that prehistoric and early historic populations also adapted to less inviting areas, despite the environmental hardships.

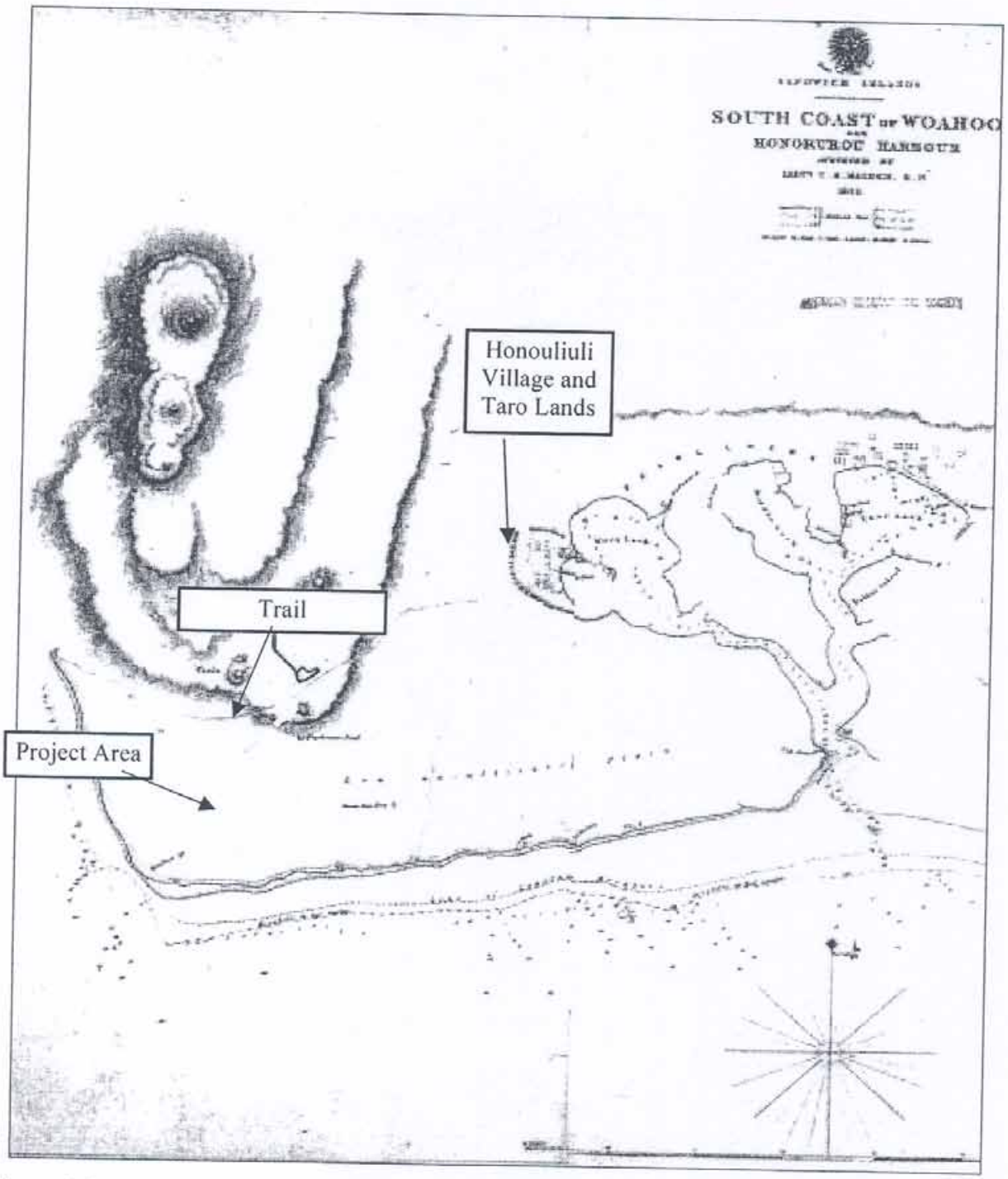

Figure 9. Portion of 1825 Map of the South Coast of Woahoo (O'ahu) and Honolulu by Lieut. C.R. Malden from the British ship the *Blonde*

3.2 Observations of Early Explorers and Foreign Residents

Captain Vancouver sailed by Kalaeloa (Barbers Point) in 1792, and recorded his impression of the small coastal village of Kualaka'i and the arid Honouliuli coast.

> The point is low flat land, with a reef round it. . . Not far from the S.W. point is a small grove of shabby cocoa-nut trees, and along these shores are a few struggling fishermen's huts [Vancouver 1798, Vol. I:167].
>
> . . .from the commencement of the high land to the westward of Opooroah [Pu'uloa], was composed of one very barren rocky waster, nearly destitute of verdure, cultivation of inhabitants, with little variation all the way to the west point of the island . . . [Vancouver 1798, Vol. II:217].
>
> . . .This tract of land was of some extent but did not seem to be populous, nor to possess any great degree of fertility; although we were told that at a little distance from the sea, the soil is rich, and all necessaries of life are abundantly produced . . . [Vancouver 1798, Vol. III:361-363].

Archibald Campbell, an English seamen who was given some land in Waimano Ahupua'a by King Kamehameha in 1809, described his land around Pearl Harbor:

> In the month of November the king was pleased to grant me about sixty acres of land, situated upon the Wymummee [traditional Hawaiian name for Pearl River], or Pearl-water, an inlet of the sea about twelve miles to the west of Hanaroora [Honolulu]. . . .We passed by footpaths, winding through an extensive and fertile plain, the whole of which is in the highest state of cultivation. Every stream was carefully embanked, to supply water for the taro beds. Where there was not water, the land was under crops of yams and sweet potatoes [Campbell 1967:103-104].
>
> Pearl and mother of-pearl shells are found here in considerable quantity. Since the king has learned of their value, he has kept the fishing to himself, and employs divers for the purpose [Campbell 1967:114-115].

Subsequent to western contact in the area, the landscape of the 'Ewa plains and Wai'anae slopes was adversely affected by the removal of the sandalwood forest, and the introduction of domesticated animals and new vegetation species. Domesticated animals, including goats, sheep and cattle, were brought to the Hawaiian Islands by Vancouver in the early 1790s, and allowed to graze freely about the land for some time after. It is unclear when the domesticated animals were brought to O'ahu; however, L.A. Henke reports the existence of a longhorn cattle ranch in Wai'anae by at least 1840 (Frierson 1972:10). During this same time, perhaps as early as 1790, exotic vegetation species were introduced to the area. These typically included vegetation best suited to a terrain disturbed by the logging of sandalwood forest and eroded by animal grazing. Within the current project area, the majority of the vegetation is comprised of introduced species, mainly grasses.

At contact, the most populous *ahupua'a* on the island was Honouliuli, with the majority of the population centered on Pearl Harbor. In 1832, a missionary census of Honouliuli recorded the

population as 1,026. Within four years the population was down to 870 (Schmitt 1973:19, 22). In 1835, there were eight to ten deaths for every birth (Kelly 1991:157-158). Between 1848 and 1853, there was a series of epidemics of measles, influenza, and whooping cough that often wiped out whole villages. In 1853, the population of 'Ewa and Wai'anae combined was 2,451 people. In 1872, it was 1,671 (Schmitt 1968:71). The inland area of 'Ewa was probably abandoned by the mid-nineteenth due to population decline and consolidation of the remaining people in the town of Honouliuli (at Papapūhi Point, north of the project area). A detailed discussion of the historic population counts in the 'Ewa District has been presented by Charvet-Pond and Davis (1992).

The first mission station in 'Ewa was established in 1834 at Kalua'aha near Pearl Harbor. Charles Wilkes, of the U.S. Exploring Expedition visited the missionary enclave at Honouliuli town in 1840.

> At Ewa, Mr. Bishop has a large congregation. The village comprises about fifty houses, and the country around is dotted with them. . . . The natives have made some advance in the arts of civilized life; there is a sugar-mill which, in the season, makes two hundred pounds of sugar a day. . . . In 1840, the church contained nine hundred members, seven hundred and sixty of whom belonged to Ewa, the remainder to Waianae; but the Catholics have now established themselves at both these places, and it is understood are drawing off many from their attendance on Mr. Bishop's church [Wilkes 1970:80-81].

The earliest detailed map of the area (Alexander 1873) shows no habitation closer than the western edge of West Loch in the vicinity of Pāpapūhi Point. A Monsarrat survey map of 1878 documents substantial settlement at the "Honouliuli Taro Land" in the Pāpa*pūhi* Point area, and it seems clear that in early historic time's that this was the focus of the population of Honouliuli. The amenities of the area - including fishponds, taro *lo'i*, abundant shellfish, and saltpans - would have focused population there in pre-Contact times as well.

3.3 Mid-Nineteenth Century and the Māhele

The Organic Acts of 1845 and 1846 initiated the process of the *māhele* - the division of Hawaiian lands, which introduced private property into Hawaiian society. In 1848 the crown and the *ali'i* (chiefly class) received their land titles. The common people received their *kuleana* (individual parcels) in 1850.

During the *Māhele* of 1848, 72 individual land claims in the *ahupua'a* of Honouliuli were registered and awarded by King Kamehameha III (Tuggle and Tomonari-Tuggle 1997:34).

Maly (1997:52) compiled a list of all of the fishponds listed for Honouliuli (including Pu'uloa) mentioned in the Land Commission Award texts. Nine fishpond names were mentioned: Kapāākule, 'Oko'ookilepe, Pāmoku (also called Kapāmuku), Laulaunui, Kaihuopal'ai, Kalokoloa, Loko'eli, Ka'aimanō, and Nihola; it is possible that some ponds had more than one name. Maly (1997, Table 3, pp. 38-42) also provides a table recording information on each award, including awardees, *'ili*, and land use of the awarded *'āpana* (lot). A summary of the information on houses, agricultural fields, and boundary landmarks noted for each *'ili* is given below (Table 1).

Table 1. Summary of land use and boundary landmarks recorded in Honouliuli LCA awards

'Ili	Land Use and Boundary Landmarks
Hiwalalo	kou trees
Ka'aumakua	houselots, *kalo* (taro) patches; *kula* (pasture/dryland agriculture), two fishponds called Mokumeha; landmarks - *kula ālialia* (salt plains), land division wall, Pānāhāhā *loko* (fishpond), Kalahu fishpond, Naholowaa pond, Honouliuli Stream (called stream of Makai'i), or *'aka'akai* (bulrush growth) of Kamo'okahi
Kaihuopala'ai	*mo'i* (arable land in a long strip); on lot bounded by *'auwai* (irrigation ditch) called Panaenui
Ka'ilikahi	houselot and *kalo* patches; landmarks – highway, Kauhipuna cliff, *lapalapa* (*panax*) thickets,meeting house
Kamilomilo	houselot and *kalo* patches
Kamoku	fenced *mo'o kalo*, *lo'i* (irrigated fields) *kalo*, houselot; landmarks – Kauhipuna pali
Kamo'okahi	bulrushes
Kapāpahi	houslets, *kalo* patches; bounded by ponds of Healani
Kapapapūhi	houselots, vineyard, *kula*, pond, trails, hog pens, and salt beds; a church and cemetery are shown on Figure 8 but not mentioned in testimony; therefore it was probably built in the post-Māhele period
Ka'ula'ula	*mo'o* next to Kaulaula (cliff) with a houselot and a wall
Loloulu	*kalo* patches, 1/3 of a fishpond (in land of Kahakuli'ili'i), hala grove, pig pens, breadfuit, bulrushes
Maka'u	houselot and *kalo* patches
Maui	kalo patches, *kula*, houselots, bounded by *pā'āina a ke Aupini* (land division wall of the government)
Mokumeha	2 fishponds, salt beds (western one called Kohumakahou)
Niuke'e	*kalo* patches, *kula*, potato field, houselots; landmarks - *loko kalo* (taro/ fishpond) of Nihola, Loko'eli pond, Kehewanakawalu pond, Kalokoiki pond, *pali* of Kihewamakawela; Ka'akau pali; Ka'akau community, meeting house, prison plot, cattle fences
Polapola	*kalo* patches; houselots, school house, prison plot; some bounded by *pā'āina a ke Aupini,* or high road from the sea, or Catholic Chapel yard
Pō'ohilo	*kula*, *kalo* patches, *loko kalo*, houselots; landmarks - *pā'āina,* Ka'aimanō fishpond, *kula* of Kahakai, *loko kalo* of Kalokoloa, Aimea Pond, Waianu pond, Kahui pond, Ka'aimano fishpond, *pupulu* cave (wet cave?), prison plot, Makaakua pali, Puehuehu Stream, Puehuehu road
Pua'alu'u	*lo'i*, houselot
Pu'uloa	houslots; boundaries include the sea, a *kula* called Waioipu, and the plain of Kaluanohu

In 1855 the Land Commission awarded all of the unclaimed lands in Honouliuli, 43,250 acres, to Miriam Ke'ahikuni Kekau'ōnohi (Royal Patent #6971 in 1877; Parcel #1069 in the Land Court office), a granddaughter of Kamehameha I, and the heir of Kalanimōkū, who had been given the land by Kamehameha after the conquest of O'ahu (Indices of Awards 1929; Kame'eleihiwa 1992). Kekau'ōnohi was also awarded the *ahupua'a* of Pu'uloa, but she sold this land in 1849 to a man named Isaac Montgomery, a British lawyer.

> Kekau'ōnohi was one of Liholiho's (Kamehameha II's) wives, and after his death, she lived with her half-brother, Luanu'u Kahalai'a, who was governor of Kaua'i (Hammatt and Shideler 1990:19-20:20). Subsequently, Kekau'ōnohi ran away with Queen Ka'ahumanu's stepson, Keli'iahonui, and then became the wife of Chief Levi Ha'alelea. Upon her death on June 2, 1851, all her property was passed on to her husband and his heirs. A lawsuit (Civil Court Case No. 348) was brought by Ha'alelea in 1858, to reclaim the fishing rights of the Pu'uloa fisheries from Isaac Montgomery, and the court ruled in Ha'alaea's favor. In 1863, the owners of the *kuleana* lands deeded their lands back to Ha'alelea to pay off debts owed to him (Frierson 1972:12). In 1864, Ha'alealea died, and his second wife, Anadelia Amoe, transferred ownership of the land to her sister's husband, John Coney (Yoklavich et al 1995:16).

3.4 Early Ranching in on the 'Ewa Plain

John Coney rented the land to James Dowsett and John Meek in 1871, which used the land for cattle grazing. In 1877, the land, except for the *'ili* of Pu'uloa, was sold to James Campbell. He drove off 32,237 head of stock belonging to Dowsett and Meek and to James Robinson and constructed a fence around the outer boundary of his property (Bordner and Silva 1983:C-12). He let the land rest for one year and then began to restock the ranch, so that he had a head of 5,500 head after a few years (Dillingham 1885, cited in Frierson 1972:14)

In 1880-81, the Honouliuli ranch was described as:

> . . . Acreage, 43,250, all in pasture, but possessing fertile soils suitable for agriculture; affords grazing for such valuable stock. The length of this estate is noless than 18 miles. It extends to within less than a mile of the sea coast, to the westward of the Pearl River inlet. . . . There are valuable fisheries attached to this estate . . . . [Bowser 1880:489].

> From Mr. Campbell's veranda, looking eastward, you have one of the most splendid sights imaginable. Below the house there are two lochs, or lagoons, covered with water fowl, and celebrated for their plentiful supply of fish, chiefly mullet. . . . Besides Mr. Campbell's residence, which is pleasantly situated and surrounded with ornamental and shade trees, there are at Honouliuli two churches and a school house, with a little village of native huts [Bowser 1880:495].

Most of Campbell's lands in Honouliuli were used exclusively for cattle ranching. At that time, one planter remarked "the country was so dry and full of bottomless cracks and fissures that water would all be lost and irrigation impracticable" (Ewa Plantation Co. 1923:6-7). In 1879, Campbell brought in a well-driller from California to search the 'Ewa plains for water, and

the well, drilled to a depth of 240 feet near Campbell's home in 'Ewa, resulted in ". . . a sheet of pure water flowing like a dome of glass from all sides of the well casing" (The Legacy of James Campbell n.d., cited in Pagliaro 1987:3). Following this discovery, plantation developers and ranchers drilled numerous wells in search of the valuable resource.

3.5 History of the Ewa Sugar Plantation

In 1886, Campbell and B. F. Dillingham put together the "Great Land Colonization Scheme," which was an attempt to sell Honouliuli land to homesteaders (Thurm 1886:74). This homestead idea failed, but with the water problem solved by the drilling of artesian wells, Dillingham decided that the area could be used instead for large-scale cultivation (Pagliaro 1987:4).

In 1889, Campbell leased his property to Benjamin Dillingham, who subsequently formed the Oahu Railway & Land Co. (O.R. & L) in 1890. During the last decade of the nineteenth century, the railroad would reach from Honolulu to Pearl City in 1890, to Wai'anae in 1895, to Waialua Plantation in 1898, and to Kahuku in 1899 (Kuykendall 1967:100). This railroad line eventually ran across the center of the 'Ewa Plain at the lower boundary of the sugar fields. An 1895 tourist guide noted development of the West Loch of Pearl Harbor in association with the railway:

> COAL TRAFFIC. – Another outcome of the Oahu railway enterprise is the erection of a coal depot, on the west side of the harbor, where cargoes of coal are rapidly discharged by an apparatus known as the Boston coal elevator, which had been doing good work in unloading and loading ships during the past two or three years. The coal is stored in sheds erected for it, and can be put on board vessels in the same way, whenever required for coaling steamships or for shipment to other ports [Whitney 1895:39-40]. To attract business to his new railroad system, Dillingham subleased all land below 200 ft elevation to William Castle, who in turn sublet the area to the newly-formed Ewa Plantation Company (Frierson 1972:15). Dillingham's Honouliuli lands above the 200 ft elevation, those suitable for sugar cane cultivation, were sublet to the Oahu Sugar Company. Throughout this time, and into modern times, cattle ranching continued in the area, and Honouliuli Ranch - established by Dillingham was - the "fattening" area for the other ranches (Frierson 1972:15)

Ewa Plantation Company (Figure 10) was incorporated in 1890 for sugar cane cultivation. The first crop, 2,849 tons of sugar, was harvested in 1892 at the Ewa Plantation. 'Ewa was the first all-artesian plantation, and it gave an impressive demonstration of the part artesian wells were to play in the later history of the Hawaiian sugar industry (Kuykendall 1967:69). As a means to generate soil deposition on the coral plain and increase arable land in the lowlands, the Ewa Plantation Company installed ditches running from the lower slopes of the mountain range to the lowlands. When the rainy season began, they plowed ground perpendicular to the slope so that soil would be carried down the drainage ditches into the lower coral plain. After a few years, about 373 acres of coral wasteland were reclaimed in this manner (Immisch 1964). By the 1920s, Ewa Plantation was generating large profits and was the "richest sugar plantation in the world" (*Paradise of the Pacific,* Dec. 1902:19-22, cited in Kelly 1985:171).

During the twentieth century, the Ewa Plantation would continue to grow and, by the 1930s, would encompass much of the eastern half of Honouliuli Ahupua'a. This growth impelled the creation of plantation villages to house the growing immigrant labor force working the fields. In the decade of the 1890s, the plantation built 72 houses, cottages or dwellings; in the first decade of this century, 536; in the second decade, 132; in the 1920s, 285; in the 1930s, 168; and in the 1940s, only 35. Censuses of the Ewa Plantation population record 4,967 persons in 1928, 4,477 in 1929, and 4,100 in 1932. After the outbreak of World War II, which siphoned off much of the plantation's manpower, along with the changeover to almost complete reliance on mechanical harvesting in 1938, there was little need for the large multi-racial (Japanese, Chinese, Okinawan, Korean, Portuguese, Spanish, Hawaiian, Filipino, European) labor force that had characterized most of the early history of the plantation.

Just north of Ewa Plantation was the equally sprawling O'ahu Sugar Company which "covered some 20 square miles . . . ranging in elevation from 10 feet at the Waipi'o Peninsula . . . to 700 feet at the Waiahole Ditch" (Condé and Best 1973:313). The Oahu Sugar Company was incorporated in 1897. Prior to commercial sugar cultivation, the lands occupied by the Oahu Sugar Company were described as being "of near desert proportion until water was supplied from drilled artesian wells and the Waiahole Water project" (Condé and Best 1973:313). The Oahu Sugar Company took control of the Ewa Plantation lands in 1970 and continued operations until 1995, when they decided to shut down sugar cane production in the combined plantation area (Dorrance and Morgan 2000:45, 50).

During the subsequent decades of the twentieth century, sugar cane operations in 'Ewa phased out and, more recently, former cane lands have been rezoned for residential development. Structures in the area of the former plantation villages have fallen into disrepair or have been demolished. However, portions of the area - including Varona Village, Tenney Village, and Renton Village - have been designated the 'Ewa Villages Historic District (State site 50-80-12-9786), which has been nominated for National Historic Landmark status. Additionally, the still-extant O.R. &L. rail line through Honouliuli has been placed on the National Register of Historic Places (Site 50-80-12-9714).

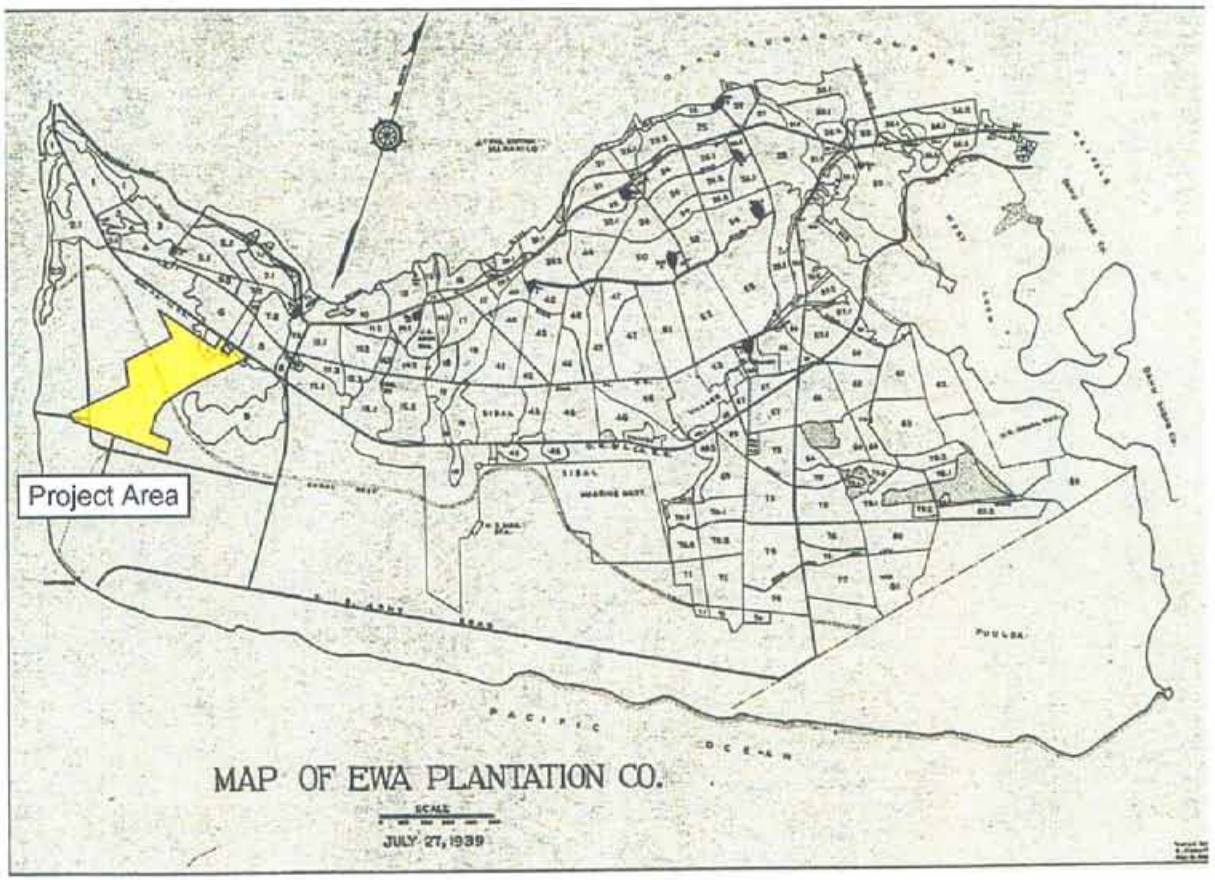

Figure 10. 1939 map of Ewa Plantation Co., with current project area outlined in yellow (figure from Condé and Best 1973)

Section 4 Review of Past Archaeological/Paleontological Studies

4.1.1 Overview of Archaeological Studies in Western Honouliuli

An overview of archaeological studies in the west half of Honouliuli Ahupua'a is presented in Table 2 and Figure 11. A discussion of archaeological findings germane to the present project area follows.

Table 2. Archaeological and Related Studies in Western Honouliuli Ahupua'a

Reference	Nature of Study	General Location of Study
Thrum 1907	*Heiau* study	Hawaiian Islands
McAllister 1933	All island survey	O'ahu Island
Kikuchi 1959	Site letter report	Barbers Point
Lewis 1970	Reconnaissance survey	Barbers Point (harbor area)
Frierson 1972	Study of land use & vegetation change	Honouliuli
Barrera 1975	Reconnaissance survey	Barbers Point (harbor area)
Clark and Connolly 1975	Reconnaissance survey	Barbers Point (harbor area)
Oshima 1975	Reconnaissance survey	Barbers Point
Sinoto 1976	Cultural resources survey	Barbers Point (harbor area)
Bordner 1977	Reconnaissance survey	Kalo'i Gulch
Davis 1978	Scholarly paper	Barbers Point (harbor area)
Davis and Griffin 1978	Archaeological Survey	Barbers Point (harbor area)
Hawai'i Marine Research Inc. 1978	Geoarchaeological reconnaissance	Barbers Point (harbor area)
Kirch 1978	Land snail study	Barbers Point (harbor area)
Sinoto 1978	Archaeological & Paleontological salvage	Barbers Point (harbor area)
Barrera 1979	Archaeological Survey	West Beach
Clark 1979	Reconnaissance survey	Barbers Point (harbor area)
Cleghorn 1979	Reconnaissance survey	Barbers Point
Davis 1979a	Emergency excavations	Barbers Point (harbor area)
Davis 1979b	Emergency excavations	Barbers Point (harbor area)
Davis 1979c	Emergency excavations	Barbers Point (harbor area)
Komori and Dye 1979	Archaeological testing	West Beach
Sinoto 1979	Cultural resources survey	Barbers Point (harbor area)
Davis 1980	Research design	Barbers Point
Kirch and Christensen 1980	Land snail study	Barbers Point (harbor area)
Christensen and Kirch 1981	Land snail study	Barbers Point (harbor area)
Hammatt and Folk 1981	Archaeological and Paleontological Investigation	Barbers Point (harbor area)
Davis 1982	Academic paper	Barbers Point
McCoy et al. 1982	Proposal for investigations	Barbers Point (harbor area)
Neller 1982	Scholarly study	Barbers Point

Reference	Nature of Study	General Location of Study
Ahlo and Homon 1983	Reconnaissance survey	Barbers Point (harbor area)
Barrera 1984	Archaeological Status Report	West Beach
Bordner and Silva 1983	Reconnaissance survey	Waimānalo Gulch
Ahlo and Homon 1984	Test excavations	Barbers Point (harbor area)
Hammatt 1984	Reconnaissance survey	Kahe Point
Haun and Kelly 1984	Research resign	Naval Air Station
Tuggle 1984	Survey report	Naval Air Station
Neller 1985	Review and evaluation	West Beach
Barrera 1986	Archaeological Investigations	West Beach
Davis and Haun 1986	Intensive survey and test excavations	West Beach
Davis et al. 1986 a and b	Research design	West Beach
Haun 1986a	Reconnaissance survey	Kapolei Town
Haun 1986b	Reconnaissance survey	Kapolei Town
Davis and Haun 1987	Intensive survey & test excavations	West Beach
Rosendahl 1987a	Reconnaissance survey	Kapolei Town
Rosendahl 1987b	Survey report	Kapolei Town
Welch 1987	Reconnaissance survey	Naval Air Station
Bath 1989a	Petroglyph study	Waimānalo Gulch
Bath 1989b	Burial documentation	Kahe
Burgett and Rosendahl 1989	Subsurface archaeological testing	North of O.R.&L.
Hammatt and Shideler 1989a	Archaeological assessment	Barbers Point (harbor area)
Hammatt and Shideler 1989b	Reconnaissance survey	Kahe
Carlson and Rosendahl 1990	Inventory survey	Kaomi Loop Subdivision
Cleghorn and Davis 1990	Archaeological and paleontological investigation	Barbers Point (harbor area)
Davis 1990b	Archaeological and paleontological investigation	Barbers Point (HECO area)
Davis 1990a	Archaeological and paleontological study (Ph.D. dissertation)	Barbers Point (harbor area)
Rosendahl 1990	Letter report	Kapolei Town
Kennedy 1991	Subsurface testing	Pu'uokapolei
Hammatt et al. 1991	Inventory survey	Makaiwa Hills
Hammatt and Shideler 1991	Archaeological assessment	Barbers Point (harbor area)
Haun et al. 1991	Survey report	Naval Air Station
Burgett and Rosendahl 1992	Inventory survey	Barbers Point (harbor area)
Hammatt and Folk 1992	Subsurface testing	Barbers Point (harbor area)
Glidden et al. 1993	Data recovery excavations	Paradise Cove
Jones 1993	Fossil coral reefs study (Ph.D. dissertation)	Hawaiian Islands

Reference	Nature of Study	General Location of Study
Landrum 1993	Reconnaissance and subsurface testing	Naval Air Station
Miller 1993	Data recovery	Barbers Point (harbor area)
Hammatt and Shideler 1994	Archaeological assessment	Barbers Point (harbor area)
Hammatt et al. 1994	Inventory survey	Barbers Point (harbor area)
Davis 1993	Archaeological and paleontological investigation	Barbers Point (harbor area)
Erkelens 1992	Archaeological survey	Naval Air Station
Hammatt and Shideler 1995	Data recovery plan	Barbers Point (harbor area)
Jourdane 1995	Burial documentation	Paradise Cove
O'Hare et al. 1996	Intensive survey and testing	Naval Air Station
Wulzen and Rosendahl 1996	Subsurface testing & data recovery	Naval Air Station
Athens et al. 1997	Cultural resource inventory, paleoenvironmental investigation	'Ewa Plain:Naval Air Station
Tuggle 1997a	Cultural resource inventory	Naval Air Station
Tuggle 1997b	Synthesis	'Ewa Plain
Tuggle and Tomonari 1997a	Cultural resource inventory survey	Naval Air Station
Wickler and Tuggle 1997	Cultural resource inventory, Inventory Survey	Naval Air Station
McDermott et al. 2000	Data recovery	Barbers Point (harbor area)
Cordy and Hammatt 2003	Archaeological assessment	Barbers Point, North of O.R.&L.
O'Hare et al. 2004	Documentation of Plantation Infrastructure	North of O.R.&L.
Terry et al. 2004	Archaeological Inventory Survey of Two Sinkholes	North of O.R.&L.
Hoffman et al. 2005	Archaeological Inventory Survey	South of O.R.&L.

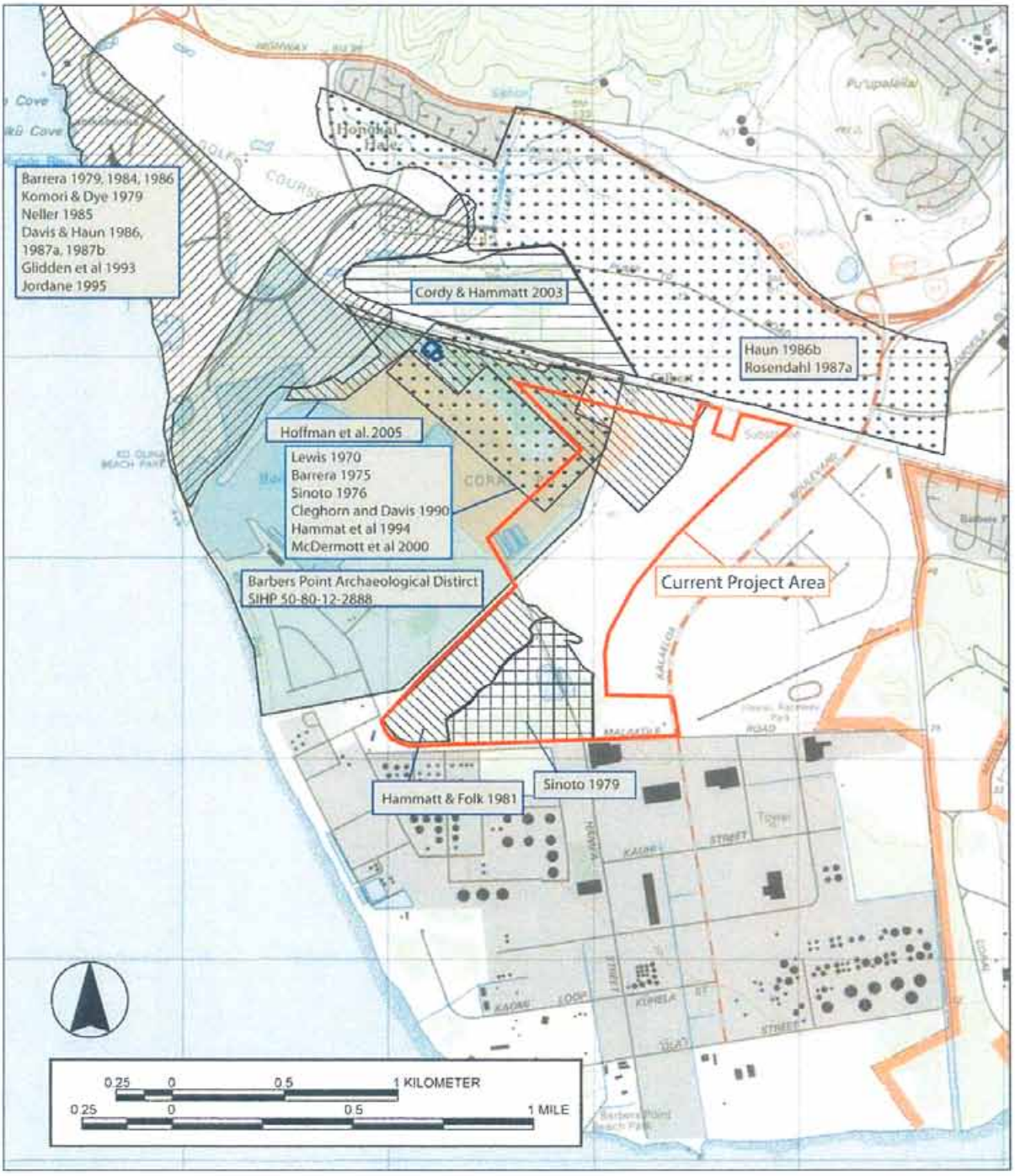

Figure 11. 2002 'Ewa USGS 7.5-minute topographic quadrangle, showing general areas of archaeological study near the project area

The first effort to record archaeological sites in Honouliuli was by Thrum (1907:46), who references "a *heiau* on Kapolei hill, 'Ewa - size and class unknown. Its walls thrown down for fencing." This *heiau*, Pu'u Kapolei, is east of the present study area.

In his 1930 surface survey of the island of O'ahu, archaeologist J. Gilbert McAllister recorded the specific locations of important archaeological and cultural sites, and the general locations of some sites of lesser importance. McAllister (1933:107-108) recorded seven specific sites at Honouliuli (numbered 133-139) and these became the first seven sites in the Bishop Museum's Site Numbering System (OA-B6-1 through OA-B6-7). The nearest of these specific sites to the present project area is McAllister Site 138, including the Pu'u Kapolei Heiau and an adjacent rock shelter. McAllister (1933:109), however designated his site 146 to include archaeological features covering a large but poorly defined area along the coast. His impressions of site 146 are recorded as follows:

> 'Ewa coral plains, throughout which are remains of many sites. The great extent of old stone walls, particularly near the Pu'uloa Salt Works belongs to the ranching period of about 75 years ago [c. 1850s]. It is probable that the Hawaiians formerly used the holes and pits in the coral. Frequently the soil on the floor of larger pits was used for cultivation, and even today one comes upon bananas and Hawaiian sugar cane still growing in them. They afford shelter and protection, but I doubt if previous to the time of Cook there was ever a large population here.

These archaeological sites of the 'Ewa coral plains would be the subject of some 40 or so archaeological reports in the 1970s and 1980s.

From the period between McAllister's 1930 study and the flurry of work that began in 1969, there are only a few sporadic pieces of poorly documented research. "In 1933, Dr. Kenneth P. Emory examined a well-preserved house site and a possible *heiau* in the western part of the coral plain; these sites were later destroyed by sugar-cane planting" (Sinoto 1976:1). In 1959, William Kikuchi removed a number of burials from a burial cave site (Bishop Museum Site OA-B6-10) at the Standard Oil Refinery, which was subsequently destroyed (Barrera 1975:1). Kikuchi recovered 12-16 incomplete primary and/or secondary burials cached in a sinkhole or crevice exposed during construction activities near the big bend in Malakole Road, south of the present project area (Kikuchi 1959; Davis 1990:146, 147). In 1960, Yoshi Sinoto and Elspeth Sterling made note of a house site (Bishop Museum Site OA-B6-8). "In 1962, Lloyd Soehren recorded another secondary human burial in a sinkhole at the Barbers Point Naval Air Station" (Davis 1990a:147). In 1966 (per Sinoto 1960), Lloyd Soehren "carried out salvage excavations at BPBM Site # 50-OA-B6-13 (a possible fishing shrine.)" The site was reported as destroyed by construction (Barrera 1975:1) but Davis (1990a:148) relocated the shrine and performed additional excavations in 1982. In 1969, artifacts were recovered by Roger Green from a beach midden site (B6-14), south of the barge harbor.

This resulted in a number of visits by Dr. Sinoto and student volunteers in late 1969 and early 1970. A University of Hawaii graduate student, Ernest Lewis did a preliminary survey and test excavations for a graduate seminar in Polynesian Archaeology and donated his report to the Bishop Museum. Lewis was the first to document sites within the present project area.

As Barrera (1975:3) points out there are "a number of discrepancies and inconsistencies" in Lewis' report. "For example, some sites mentioned in the [Lewis] text are not indicated on any

of his maps, and some sites shown on his maps are not discussed in the report" (Barrera 1975:3). However, taken for what it professes to be: "a preliminary report of a preliminary survey" (Lewis 1970:3), the survey is useful. Lewis provides a good summary of historical accounts (pages 4-18) and early maps of the region and a summary of significant aspects of the geography and geology of the study area. Lewis also provided an extensive bibliography suggesting directions for further historical research.

Lewis conducted a surface survey that located some 22 archaeological sites of the types that are typical for the Kalaeloa region, including various types of enclosures and mounds, as well as walls, made of the locally available stacked limestone cobbles and boulders. Lewis' site map indicates that four of these sites existed within the current project area (Lewis 1970: Fig. 21). Three were interpreted as house sites B6-15, 16, and 17. They were located in the southeastern corner of the project area. The fourth site (B6-36) is comprised two stone walls 30 m apart that extended in an east-west direction for 400 m.

In 1975, William Barrera of the Bishop Museum, under contract with the U.S. Army Corps of Engineers (USACE), conducted an archaeological reconnaissance survey for the proposed Barbers Point Harbor. Barrera recorded twelve previously unidentified sites, of which two are believed to be located within the current project area. The first is a 15 m long wall (T-10). The second is an additional wall section of the west of site B6-36.

The USACE continued the archaeological research in 1976 by requesting another survey (Sinoto 1976) of the cultural remains in the area previously surveyed in 1970 (Lewis) and 1975 (Barrera). Sinoto designated four survey areas (A, B, C, and D) but only a small portion of Area D lies within the current project area. Sinoto's work included mapping of 68 new archaeological sites and more complete mapping of 30 previously recorded sites. In the course of this research, two excavations were conducted in the large, presently fenced, sinkhole site 9545, located west of the current project area. This large sinkhole yielded archaeological remains and a radiocarbon date from a hearth feature, as well as bones of extinct bird species.

Aki Sinoto considered his 1976 work a reconnaissance survey and recommended an inventory level survey with location and plan mapping in addition to test excavation and mapping of any areas in which sites may remain extant.

An important aspect of this first research (1976) by Sinoto was the identification of the presence of numerous avifaunal skeletal remains within limestone sinkholes, which led to the contacting of Storrs Olson, Associate Curator of Birds at the Smithsonian Institution. After a field inspection of sites in the vicinity of the project area and a brief review of the recovered material he knew that many extinct endemic species, new species, and even new genera were present. Olson stated that:

> The various limestone sinks...contain probably the most extensive fossil avifauna in Hawaii with many new species endemic to the island. Such fossils have not and probably cannot be found anywhere else on the island. Furthermore, the nature of preservation is such as to insure that virtually complete skeletons can probably be assembled for most species. Thus, there is much highly significant and totally new biological and paleontological information that can be obtained at the Barbers Point site.
>
> Destruction of any of the potential fossil sinks would result in the loss of many specimens, some possibly unique, since one sinkhole might contain species absent

> in another. Also, the fauna of one sinkhole might not be coetaneous with that of another, the age of a deposit being determined by when a sinkhole first formed. Therefore, an investigation of the fauna of different sinks might show changes in species composition and changes in morphology within a species through time. Finally, it would also be desirable to retain some sinks intact as fossil "banks" should some new technique or different information be desired in the future. The fossil deposits at Barbers Point are a unique and irreplaceable resource. (Olson in Sinoto, 1976:74)

In 1980, Storrs Olson extended the test pit of Aki Sinoto in the large sinkhole site # 9545 and conducted extensive excavation of this area in 1981 (Olson, 1982:27).

In 1977, Aki Sinoto (1978) undertook salvage archaeological and paleontological excavations in the proposed barge harbor area (in Areas A and E). These investigations were just west and south (outside) of the proposed Barbers Point Harbor Expansion Area.

Sinoto's work for the Corps of Engineers (1978) included preliminary sampling and analytical studies of avifaunal remains and terrestrial gastropods (land snails) and a geological study of the emerged coral reef based on the excavation of one sinkhole.

In late 1977 and early 1978 archaeological survey was conducted by the Archaeological Research Center of Hawaii in the deep draft port facility area. This research (Davis and Griffin, 1978) identified one site (numbered -2716) including 44 archaeological features lying in or near the south portion of the present project area. No excavation was accomplished until Davis' emergency excavations of 1979 (Davis 1979a, 1979b).

In 1977, Barbers Point Archaeological District was assigned Site # 50-80-12-2888 and listed on the National Register of Historic Places, based on the SHPD's Hawai'i/National Register web site (http://www.hawaii.gov/dlnr/hpd/hpgreeting.htm). A portion of this district overlaps with the current project area (Figure 11).

To complete the archaeological survey of the entire area to be affected by the harbor and support facilities, the USACE contracted for survey of the areas designated as Optional Area 1 and Study Area 1a (Davis, 1978) and Area 1b (Sinoto 1979) located in the southern portion of the present study area. Those surveys by Davis and Sinoto located numerous archaeological sites, as well as sinks of late Pleistocene to early Holocene age that are of considerable paleontological interest.

Sinoto's (1979) work shows that, although sinks containing remains of extinct species are dispersed throughout his study area, only 3 out of 19 sinks tested (or 16%) contained extinct species. However, this amounts to a considerable number of sinks as Sinoto estimated the total number of testable sinks in the 1979 study area as between 1,100 and 2,500 (Sinoto, 1979:34). The majority of Sinoto's New Disposal Site Area has been utilized for chemical dumps and coral stockpiling. That portion which remains is the site of the proposed Sinkhole Reserve and Park, comprising approximately 7 acres of the southern portion of the current project area.

In 1979, Bertell Davis carried out "emergency excavations" (Davis, 1979; a, b, c,) within the area he had previously designated as Area II, located east of the easternmost corner (the *mauka*, Diamond Head corner) of the present harbor open water. These excavations were carried out in advance of the quarry expansion operation (which preceded the harbor expansion) and it is

believed that all sites in this area were salvaged or lost. This work was conducted to the west of the current project area.

Also in 1979, an archaeological reconnaissance survey of a proposed waterline route down the east side of Kalaeloa Blvd. and then east along the north side of Malakole Rd. "No archaeological sites were found along the proposed waterline route." and it was noted that "this area is either presently in sugar cane cultivation or has been used for this purpose in the past" (Cleghorn, 1979:5).

Hammatt and Folk (1981) undertook archaeological testing and salvage excavations in three adjoining parcels designated Study Areas 1A, 1B and Optional Area. Of 138 archaeological sites, 88 sites were tested and 26 were excavated. Associated paleontological studies show that the limestone solution sinks and surrounding terrain were a major habitat of many fossil birds. Appendix 1 of their report, by Storrs Olson and Helen James, lists over 30 species of extinct fossil birds identified at Barbers Point. A total of ten new archaeological sites were identified. All of these sites were located within the present project area. This work was conducted in the southwest corner of the current study area.

The most voluminous study (Cleghorn and Davis 1990) started in 1982 and concentrated in Stockpile Area III, as well as the marsh area to the east. The project area from this earlier work is partially included by the northwest corner of the current study area. A "final draft" (Davis 1993) report documenting that research and Dr. Bertell Davis' Ph.D. dissertation (1990) were also produced.

Lynn Miller produced a report (1993) on her findings in a 31-acre parcel located just to the southeast of the present Deep Draft Harbor. Her research covers some 20 features at two state sites (2710 and 2711) that included enclosures, sinkhole caves, and a single burial.

The extensive archaeological and paleontological research conducted prior to development of West Beach (Ko'olina) to the west of the current project are is certainly relevant to the work accomplished within the project area. It is the second area of the 'Ewa Plain in which major data recovery was accomplished. Barrera (1979, 1984, 1986) conducted preliminary surveys and Davis (1986) undertook intensive survey and data recovery. Over 600 sinkholes were identified in the area along with around 180 surface sites, many of them similar in function to those at Barbers Point.

In 1985, Haun reported on a survey of the Naval Air Station at Barbers Point (Haun 1985) which lies along the coast to the southeast of the harbor area. In 1991, Hammatt et al. conducted an archaeological inventory survey on a 1,915-acre parcel located 1.5 kms to the north, identifying 34 sites.

Haun's (1986) archaeological reconnaissance survey for the 'Ewa Town Center/Secondary Urban Center study covered an area of approximately 1,400 acres north of the present project area. A study by Burgett and Rosendahl (1989) involved the excavation of seventy-two backhoe test trenches in a 360-acre portion of the Haun study area. There were no significant finds relevant to the current study.

A preliminary reconnaissance survey conducted by Haun (1986a) covered approximately 200 acres on the *mauka* side of Farrington Highway. Only one site was identified, an irrigation ditch that extended from the northwestern edge of his project area to a quarry at the northeastern edge. The ditch was described as "constructed of concrete and stone. Elevated flumes constructed of

timbers and galvanized steel bridge the gulches" (Haun 1986a:3). This site was later designated SIHP 50-80-12-4341.

Haun's (1986b) preliminary reconnaissance survey of a 1,400-acre parcel was conducted on both the *mauka* and *makai* side of Farrington Highway, and surrounded the 200-acre parcel surveyed in earlier in 1986. One previously recorded site was known to have once been in the project area, a portion of the Oahu Railroad and Land Company right-of-way (Site 50-80-12-9714). One portion of Haun's project area *makai* of Farrington Highway is adjacent to the northern boundary of the current study area (Figure 10). Haun's (1986b) project area also extended up the eastern slope of Pu'u Palailai (this is not shown on Figure 10). The additional sites Haun (1986b) identified included an irrigation ditch (a portion of the same site –4341 identified during the 200-acre survey), a military structure, and a rock wall that paralleled the irrigation ditch. This wall was later designated SIHP 50-80-12-4314. The military structure consisted of two features at the summit of Pu'u Palailai: a ferro-concrete structure with a "stair-case-like series of rooms" identified as a WWII military structure, and an associated small, circular dry-laid stone masonry enclosure, also identified as a WWII military structure. The ferro-concrete structure is Fire Station B, built in the 1920s and 1930s but used into WWII, and the masonry structure is a USGS benchmark structure on the summit of Pu'u Palailai.

Between 1989 and 1994 Hammatt and Shideler produced a number of archaeological assessments of the Barbers Point area. An archaeological assessment was conducted of the entire current project area (Hammatt and Shideler 1989). A detailed discussion of the creation of the preserve area that is centrally located along the southern edge of the current project area is included in the report (Hammatt and Shideler 1989:33-36). At the time the authors stated:

> "We agree whole-heartedly with the principle of such a sinkhole park and reserve. The scientific merit of the proposition is very high." (Hammatt and Shideler 1989: 23).
>
> "The authors of this report are of the opinion that there are no other areas of the 'Ewa Plain where sinkholes containing fossil bird bones survive in accessible locations... We favor the use of the 8-acre Malakole area as an educational/scientific reserve." (Hammatt and Shideler 1989: 34).

To the west of the project area, Paradise Cove, Lanikūhonua, and West Beach have been the subject of numerous archaeological studies (Barrera 1979, 1984, 1986; Komori & Dye 1979; Neller 1985; Davis & Haun 1986, 1987; Glidden et al. 1993; and Jourdane 1995).

To the west of the current project area Hammatt et al. (1994) and McDermott et al. (2000) conducted an archaeological inventory survey and a large archaeological data recover project respectively. This work resulted in the creation of two archaeological preserve areas. SIHP site 50-80-12-9633 is a cave that was found to contain human created rock piles and wall, human remains, and part of a wooden canoe (Hammatt et al. 1994:93-94). Because of its function as a burial site, the cave was not excavated and the remains were protected in the state in which they were discovered. Just east of that fenced preserve is another smaller preserve area surrounding SIHP site 50-80-12-9545.

Cordy and Hammatt (2003) made a study of a land parcel north of the current project area, across the O.R.&L. Several sinkholes were noted as of potential archaeological interest. The study also documented the presence of a historic chicken farm as well as other twentieth century

architectural remains, including a Quonset hut. Two follow-up studies of plantation infrastructure (O'Hare et al. 2004) and two of these sinkholes (Terry et al. 2004) further addressed cultural resources north across the O.R.&L. alignment from the present study area.

Most recently, Hoffman (et al. 2005) identified several archaeological and historic sites as part of an archaeological inventory survey that covered portions of the northwest corner of the current project area. This investigation noted that this northwest portion of the current project area had been greatly affected by past land use; particularly the limestone quarry operation; however, there were still remnant archaeological features preserved within the less disturbed *kiawe* thicket portions of the project area. The types of features documented included sinkholes and stacked limestone wall segments and enclosures.

Section 5 Community Contact Process

Throughout the course of this study, an effort was made to contact and consult with Hawaiian cultural organizations, government agencies, and individuals who might have knowledge of and/or concerns about traditional cultural practices specifically related to the project area. CSH made this effort by letter, e-mail, telephone, and in personal contact. In the majority of cases, a letter along with a TMK map and a USGS topographical map of the project area were mailed with the following text:

> In collaboration with Environmental Communications, Inc., Cultural Surveys Hawai'i (CSH) is conducting a Cultural Impact Assessment for the proposed West Kalaeloa Industrial Area 'Ewa District, Honouliuli Ahupua'a, O'ahu Island (TMK [(1) 9-1-14: 027, 034, 035 & 9-1-15: 001) A map of the project area is enclosed for your reference.
>
> The purpose of this assessment is to identify any traditional cultural practices associated with the project area, past or present, pursuant to Hawaii revised Statutes 343. We are seeking your *kōkua* and guidance regarding the following aspects of our study:
>
> General history and present and past land use of the study area;
>
> Knowledge of cultural sites that may be impacted by the project, for example historic sites, archaeological sites, and burials;
>
> Knowledge of traditional gathering practices in the study area, both past and on-going;
>
> Cultural associations with the study area through legends, traditional use or otherwise;
>
> Referrals of *kūpuna* or anyone else who might be willing to share their general cultural knowledge of the study area; and,
>
> Any other cultural concerns the community might have related to cultural practices in the 'Honouliuli area.
>
> The focus of this study is to document the potential impacts to cultural practices or resources of the proposed project area. If you wish to voice any cultural concerns or provide input on any of the above, please contact Kēhaulani Souza of Cultural Surveys Hawai'i at (808) 262-9972. Ms. Souza may also be contacted by e-mail at ksouza@culturalsurveys.com.

The individuals, organizations, and agencies attempted to be contacted and the results of any consultations are presented in the table below.

Table 3. Community Contact List

Name	Affiliation	Comments
Aila, William	Hawaii Community Development Authority (HCDA)	Mr. Aila is aware of many sinkholes in the 'Ewa coral plains including the project area. He strongly recommends that the sinkhole preserve is protected and not disturbed in anyway.
Amaral, Annelle	'Ahahui Siwila Hawaii O Kapolei Hawaiian Civic Club	See Appendix A for letter sent by 'Ahahui Siwila Hawaii O Kapolei Hawaiian Civic Club
Cope, Aggie	Hale O Na'auao Society	No cultural Concerns
Eaton, Arline	*Kūpuna* at Iroquois Elementary School	See Traditional Cultural Practices below for response
Johnson, Rubellite Kawena	Professor at University of Hawaii	Mrs. Johnson mentioned her father Ernest Kinney and uncle Richard would fish along the coast of Honouliuli on to Wai'anae. They would gather *nehu* from Pu'uloa for bait before it was restricted. She suggested Aunty Arline Eaton as another contact.
Kane, Shad	Makakilo, Kapolei, Honokai Hale Neighborhood Board Member and 'Ahahui Siwila Hawaii O Kapolei Hawaiian Civic Club member	See Appendix A
Makaiwi, Martha	Makakilo, Kapolei, Honokai Hale Neighborhood Board No. 34	Made referral: Maeda Timson and Shad Kane
McKeaque, Kawika	O'ahu Island Burial Council	See Traditional Cultural Practices below for response
McKinzie, Edith	Kawananakoa Foundation	No response left message a number of times
Nāmu'o, Clyde	Administrator at Office of Hawaiian Affairs	Made referral: Shad Kane and Nettie Tiffany. OHA stated: The 'Ewa plain has historically been known to contain sinkholes in which human skeletal and avi-faunal remains have been encountered. These sinkholes can continue to exist in areas that have been graded or heavily cultivated for agricultural use. See Appendix B for letter.
Tiffany, Nettie	Kahu of Lanikūhonua and member O'ahu Island Burial Council	See Traditional Cultural Practices below for response
Timson, Maeda	Makakilo, Kapolei, Honokai Hale Neighborhood Board No. 34 and President of Ua au O Kapolei	Made referrals: Nettie Tiffany and Shad Kane

Section 6 Traditional Cultural Practices

The project area is situated on the extensive 'Ewa limestone plain, which was, according to Honouliuli settlement predictions, probably never permanently inhabited. It did have temporary habitations for resource gatherers and fisherman traveling to the coast. A relatively barren and waterless area, it nonetheless might have been occasionally traversed, as the project area is situated between the greater populated and watered uplands and marine resource rich coast and near shore waters. The limestone plain would have been used for bird catching, seasonal planting in limestone sinks. In general the project area lies in a region that would have been less than bountiful, and therefore sparsely utilized, even in ancient times.

Discussions of specific aspects of traditional Hawaiian culture during interviews and talk story sessions are incorporated through this section as they may relate to the project area. The interviewees are represented by first and last initials with CSH denoting the Cultural Surveys Hawai'i interviewer. Some of these interviews were conducted previously but the interviewees all agreed to allow the reuse of their interviews for this project.

6.1 Limestone Sink Features

Limestone sink features are valuable because of a build-up of natural and cultural deposits over time which may inform on past environmental conditions. It is also a known fact that burials in sinks and limestone features were a fairly common Hawaiian mortuary practice. Mrs. Nettie Tiffany mentioned that she is aware of many burials in sinkholes near and around the project area therefore there is a possibility of encountering burials in remaining sink features. William Aila is also concerned about the traditional burial practices in the limestone sink features in the project area.

During a field inspection in November 1989 of the project area numerous limestone sink formations were documented (Hammatt and. Shideler 1989). Based on this research a sinkhole preserve encompassing approximately seven acres is situated on the southern edge of the project boundary (O'Leary and Hammatt 2006). Documentation regarding the creation of the sinkhole preserve is difficult to find, it appears that the preserve was created in the early 1990s through the efforts of Dr. Alan Ziegler, a noted Hawai'i Zoologist with a long history of research in the Barbers Point area.

Through consultation between Dr. Ziegler, the property owner, Campbell Estate, and apparently the State Senate, and the City and County of Honolulu, the sinkhole preserve was established (Haliday 2005; Ziegler 1990a and b). At the time of the present field inspection report (McDermott *et al* 2006) was prepared, the status and permanence of the sinkhole preserve could not be determined. A chain link fence bounded the sinkhole preserve area in which 40+ sinkholes remain. The sinkhole features vary greatly in size and shape with many over three meters deep and most are irregular in shape. Some of the sinkhole features within the project area have been partially or completely filled by past bulldozing activity. Other sinkhole features have apparently been the focus of controlled stratigraphic excavation in the relatively recent past, as denoted by the back dirt piles adjacent to the sinkhole features. These features have potential to contain both paleontological avian and land snail deposits as well as cultural deposits related to traditional Native Hawaiian land-use and burials.

Based on above information, it is possible that the proposed project will impact the sinkhole features and other historic properties, cultural, and/or paleontological deposits which may be contained within the sink features themselves.

6.2 Gathering for Plant Resources

Given the environmental constraints within this portion of the Honouliuli *ahupua'a*, it is likely that the major traditional cultural practice associated with the present project area would have been the gathering of native plant resources. Barbara Frierson (1973) compiled a list of native plant species present in Honouliuli before 1790. Additionally plant use data based on I. Abbott (1992) was added to the table. Table 4 list Honouliuli lowland plants and uses with columns for common/Hawaiian name, scientific name and use.

Table 4. Native Plants in Honouliuli

Common/Hawaiian Name	Scientific Name	Use
Hala, pandanus	Pandanus odoratissimus	Weaving
Hau, hibiscus	Hibiscus tiliaceus	Cordage
Milo	Thespesia paradisiaca	Wood used for bowls
Neneleau, Sumac	Rhus sandwicensis Rhus chinensis	Unknown
'Ilima	Sida cordifolia S. fallax	Leis, medicine
Kou	Cordia subcordata	Bowls
Makaloa, sedge	Cyperus laevigatus	Mats (Abbott)
Pili grass	Heteropogon contortus	Thatch
Kakonakona, grass	Panicum torridum	Unknown
Honohonowai	Commelina nudiflora	Unknown
Ma'o, cotton	Gossypium tomentosum Abutilon incanum	Flowers used as dye for kapa (Abbott)
'Ūlei	Osteomeles anthyllidifolia	Branches used for fishing nets (Abbott)
'Uhaloa	Waltheria americana	Medicine (Abbott)
Koali'ai	Ipomoea cairica	Cordage (Abbott)
Pā'ū o Hiiaka	Jacquemontia sandwicensis	Unknown
Ko'oko'olau	Bidens sp.	Use as tea (Abbott)

Common/Hawaiian Name	Scientific Name	Use
'Ulu, breadfruit	Artocarpus incisus	Food
Taro	Colocasia esculenta	Food
Niu, coconut	Cocos nucifera	Food, liquid

The accessibility of Honouliuli lands, including the present project area, to the Hawaiians for gathering or other cultural purposes would be radically curtailed during the second half of the nineteenth century. As noted above in this evaluation, by the 1870s, herds of cattle grazing across the 'Ewa Plain likely denuded the landscape of much of the native vegetation. Subsequently, during the last decade of the nineteenth century, the traditional Hawaiian landscape was further distorted by the introduction and rapid development of commercial sugar cane cultivation. Throughout the twentieth century sugar cane cultivation was the dominating land use activity within the project area. Cane cultivation – and the sense that the project area was private property – restricted access inside the project area to employees of Ewa Plantation.

Mrs. Nettie Tiffany noted that she and her brother were taken down to the 'Ewa Coral Plains around the project areas for medical attention. She specially commented:

> When we were young children, my brother and I were taken there by our mother. There were still people living there during the 1950s. The people there were Hawaiian and had the powers of healing and they were very black people. Both my brother and I were healed by those people. I do not remember any kind of gathering only that my mother brought things to exchange with the people of Honouliuli. I remember being shown some cultural sites further south of Malakole Street. My mother did tell me that most of this area was the dry plain and later cultivated for sugar cane. I know my mother knew the medicines and what grew close to the beach of Kalaeloa, like the morning glory, and what they gathered from the mountains.
>
> My main concern is that when the project has been started those involved should be very careful when bulldozing, it should be monitored. I also feel that they should take soil samples of that area. The soils used to cultivate sweet potato in the ancient times were also the same soil used in burials and are very rich in nutrients. The soil was taken from various sinkholes in the *āina*. Just be very careful.

6.3 Historic Properties

The Cultural Resource Literature Review and Field Inspection for the proposed 345-Acre Kapolei Harborside Center (O'Leary and Hammatt 2006) investigation identified the following cultural resources/historic properties within or near the project area. These sites likely, or potentially, will be affected by the proposed project:

1) State Inventory of Historic Properties (SIHP) # 50-80-12-6679, historic plantation-era drainage channel, a portion of which has already been determined Hawai'i Register-eligible under Criterion D.
2) Numerous sinkhole features within the project area's archaeological/paleontological preserve area, likely National/Hawai'i Registers eligible under Criterion D, and, because of the potential for human burials, Criterion E (Hawai'i Register only)
3) Stacked stone prehistoric or early historic enclosures and mounds, perhaps previously recorded, likely eligible to the National/Hawai'i Registers under Criterion D.
4) SIHP # 50-80-12-2888, the Barber's Point Harbor Archaeological District, listed on the National Register.

The O. R. & L. right-of-way, SIHP # 50-80-12-9714, immediately adjacent to the project area, currently listed on the National Register under Criteria A, B, and C.

6.4 Trails

Trails served to connect the various settlements throughout the District of 'Ewa. Based on nineteenth and twentieth century maps the primary transportation routes *mauka/makai* correlated closely to the existing major roadways. John Papa 'I'ī describes a network of Leeward O'ahu trails that in later historic times encircled and crossed the Wai'anae Range, allowing passage from West Loch to the Honouliuli lowlands, past Pu'uokapolei and Waimānalo Gulch to the Wai'anae coast and onward, circumscribing the shoreline of O'ahu ('I'ī 1959:96-98). Following 'I'ī's description, a portion of this trail network would have passed close to the presently existing Farrington Highway.

It seems clear that a major east/west artery from 'Ewa and Kona O'ahu to Wai'anae ran just upslope (northern side) of Pu'uokapolei roughly along the Farrington Highway alignment (see figure 8). To our knowledge, no clear remnant of this east/west trail or associated site has been identified. It seems likely that there would have been a spur trail off of this major artery descending down to the sea near Kalaeloa approximating modern Kalaeloa Blvd. but again no remnants of this possible spur trail or associated sites have ever been identified. No trail has been identified within the project area.

6.5 Pa'akai (Salt Making)

Pa'akai (salt) was one of the condiments used by Hawaiians for curing fish and other foods. Out of all Polynesia, Hawaiians were the only group of people to produce salt from the sea by properly constructing salt pans. These salt pans were noticed and described by Reverend William Ellis:

> We saw a number of their pans, in the disposition of which they display great ingenuity. They have generally one large pond near the sea, into which the water

> flows by a channel cut through the rocks, or is carried thither by natives in large calabashes. After remaining there some time, it is conducted into a number of smaller pans, about six to eight inches in depth, which are made with great care, and frequently lined with large evergreen leaves, in order to prevent absorption. Along the narrow banks or partitions between the different pans, we saw a number of large evergreen leaves placed. They were tied up at each end, so as to resemble a shallow dish, and filled with sea water, in which the crystals of salt were abundant [Ellis 1839 in Buck 1964:71].

Salt making was intensively undertaken in coastal Honouliuli, as documented on old maps. Aunty Arline Eaton also mentioned that they never had to worry about not having enough salt growing up as a child:

> AE: during that period of time they had salt works in the area (looking at the 1927 map). . . . yeah that's what it was, and there's that flume. We used to ride on this thing. . .you go right under here . . . but they don't have the salt works anymore, sad yeah? Yeah that had the salt pans, all the way down to Kualaka'i, all the way to Kalaeloa, the whole thing. From Pu'uloa, which is Pearl Harbor, working all the way around pass Keone'ula, all the way down past where Kualaka'i is. That's almost the ending, though they maybe had one or two close to Kalaeloa. Because a lot of the boats came in there. I think, like how they have, [on the map]. That's true, exactly what you have over there. See it has Ewa Plantation, but there was water all in this area. The salt pans are really, actually, no more pan, but its coral, and you can see. But they called it that ["salt pans"]. But now that's all made out of the reef, the coral, all in that area.
>
> CSH: *So your family would gather salt?*
>
> AE: Oh, yeah. We never worried about salt, because right there. And had the *'alaea* [type of ocherous earth, mixed with the salt] down at Keone'ula, we go pick that up too. Because the water comes all in here it [the map] doesn't show you that. But water used to come all in that area. I tell people, this whole area here had water before we even had the *paniolo* here. Yeah that had those things (salt pans), all the way down to Kualaka'i, all the way to Kalaeloa, the whole thing. From Pu'uloa, which is Pearl Harbor, working all the way around pass Keoneula, all the way down past where Ku'alaka'i is. That's almost the ending though they maybe had one or two close to Kalaeloa. Because a lot of the boats came in there.

One of the first enterprises in Honouliuli in the post-Contact period was the making of salt. Soon after Kekau'ōnohi sold the land of Pu'uloa to Isaac Montgomery in 1849, the king (Kamehameha III) and Montgomery entered into a partnership to run the salt works in Pu'uloa. Kamakau (1961:409) reported "The king and Isaac of Pu'uloa are getting rich by running the salt water into patches and trading salt with other islands." The salt was also sent to Russian settlements in the Pacific Northwest, where it was used to pack salmon (*Hawaiian Gazette,* January 29, 1897). An 1853 newspaper article (*Polynesian,* August 20, 1853) on the "Puuloa Salt Works" says that this was the only place "where large quantities of salt were manufactured." Kelly (1991:160) says that there was another salt works at Kualaka'i (Nimitz Beach) south of project area, but does not give a reference for this claim.

The project area is just back from the coast therefore the environment is not conducive to the "old" style of salt making.

6.6 Marine Resources

The sea is a rich resource and the Hawaiian people were traditionally expert fishermen. Fish, shellfish, and other invertebrates of all types supplied the Hawaiian diet with a rich source of protein. Myths and legends support the abundant marine life in Honouliuli documented in the legend above of Pukaua "While they were down fishing at Kualaka'i in the evening, they caught these things, *'a'ama* crabs, *pipipi* shellfish, and whatever they could get with their hands." This area was also noted for the abundance of *moi*. Below is another story that gives evidence of fishing south of the project area at Kualaka'i: In the Legend of the Children, is a tale that foretold the later breaking of the eating *kapu* by the *ali'i*. A young brother and sister always fished at Kualaka'i. One day they laid out their nets, but all they caught was one *palani* (surgeonfish), a fish that was *kapu* (tabu) for men; only women could eat it.

> . . . They fished again and again until the afternoon and nothing was caught. The children were weary and went home without fish. When they came as far as Pu'u-o-Kapolei where the blossoms of the ma'o looked golden in the sunlight, the sister sat down to make ma'o leis for themselves. When the leis were made they went across the breadth of Kaupe'a to Waipio [*Ka Loea Kālai'āina*, July 22, 1899:15; translation in Sterling and Summers 1978:7].

They stopped at the stream of Ka'aimalu on the way to their home, and the sister convinced her brother to share the fish between the two, thus breaking the *kapu*. "Because these children ate fish secretly, the spot is called Ka'ai-malu (Secret eating) to this day" (Sterling and Summers 1978:7). This legend also shows the relation of several landmarks on the coastal plain, as the children travel from the coast at Kualaka'i, across the plain of Kaupe'a to Pu'uokapolei and on to Waipi'o.

Limu was very important in the Hawaiian diet and is defined by Pukui & Elbert (1971) "A general name for all kinds of plants living under water, both fresh and salt, also algae growing in any damp place in the air, as on the ground, on rocks and other plants." Honouliuli was well known for its abundance of edible limu people from all over the island would come to gather limu along the coastal beaches such as Kalaeloa and Kualaka'i which is south of the project area. Aunty Arline spoke of the different types of *limu* in the Honouliuli area:

> AE: This whole area was known as the house of the *limu*. You can imagine the smell, but we never bothered. And now no more *limu*. Had plenty . . . and now no more. Well you know, there was a heavy influx of immigrants coming in. First they look at it, oh this is plenty, lets pick em (*limu)* all up, and they'd go and sell em. They'd never think about just pick their part, no they'd take the whole thing. So when they'd go, they'd pick up everything. Oh no, had in the lochs, in Hō'ae'ae, had to have *limu* over here, all the way out. You know, maybe not as much as you see out there, but they did have *limu* in there because you had the fish. As long as you have the fish inside there, gotta have the *limu* inside there. That's why I said the *limu* is very important. That's why we were teaching the

children. Had *līpo'a*, plentiful, but not as much as you would find in Pu'uloa, because of the changing of the ocean and the tide.

You need to have lots of running water back and forth, like waves coming in, going out. That's how that *limu* is strong and fresh. But we also had it in here too, all into this area. Mostly, the kind of *limu* you would find in here is *'ele'ele*. They had, cause of the water, there was a lot of fresh water that went in there. You would find it close up into an area where there is a lot of running water. That's how we knew there had fresh water coming out, can't live without fresh water, all of it needs it.

The project area is back from the coast therefore the marine resources will not be affected.

6.7 *Wahi Pana* (Storied Places)

The concept of *wahi pana* (a place with a story or legend attached to it) is very important in the Hawaiian culture because it is a connection to the past and, therefore, the ancestors. From the name of a place one can know intimate details about the people who lived there, the environment, cultural practices, and historical events that took place. In Hawaiian culture, if a particular spot is given a name, it is because an event occurred there that has meaning for the people of that time. Because Hawaiian culture was based on oral traditions, place names and their stories were an important way of remembering these traditions and ensuring these stories would be passed on to future generations. In Hawaiian thinking, the fact that a place has a name deems it important. Often, spiritual power or *mana* is attached to a place, which increases its importance. On the subject of *wahi pana*, Edward Kanahele writes:

As a native Hawaiian, a place tells me who I am and who my extended family is. A place gives me my history, the history of my clan, and the history of my people. I am able to look at a place and tie in human events that affect me and my loved ones. A place gives me a feeling of stability and of belonging to my family, those living and dead. A place gives me a sense of well-being and of acceptance of all who have experienced that place [Kanahele, in James 1995:6].

Below Kawika McKeaque gives light and goes even deeper into what is the meaning of *wahi pana* and how the Hawaiian culture is strongly rooted to the ancestors and the *'āina*. Mr. McKeaque feels that these connections need to be considered and incorporated into the project design:

1) Spiritual transcendence imbued into physical landscape- there is a fine line of existence and being within the worlds of the ethereal and "reality" within the entire Honouliuli ahupua'a. This fine line between two worlds of knowing, perceiving, and attaining life essence creates a cultural/spiritual foundation for this area to provide the means for moments of revelation through various sensories. These ho'ike reveal themselves through 'ike papalua, secondary sight/knowledge, hihi'o, akaku, and ho'ike na ka po.

Even the name of the ahupua'a is suggestive of the deep well of knowledge and understanding that comes from the time of Po. Some of the supporting elements to this line of thought of extrasensory "enlightenment" to delve into different plains of being and existence include:

a) Kapo'ulakina'u- (Kapo of the red streaked with dark) the female akua that provides inspiration and insight only through one's dreams- her presence demarked by the ula rays of the setting sun, which also belongs to Hina/Papa/Haumea;

b) the area of Kaupe'a- the plains of the ao auana, where unsettled souls wander and dwell

c) Hoakalei- area near White Plains Beach- where it it said that Hi'iaka receives vision of the death of Hopoe and the burning groves of lehua on Hawai'i island

d) Pu'uomakakilo- any term with kilo- indicative of being able to read ho'ailona, second sighters, if you will

e) Mo'olelo of Kamapua'a- foretells or gives Kamaunaaniho the ho'ailona that will reveal his death at Pu'uokapolei- the smelling burning bristles-

2) Sensory exploits of the female persona- you look at the natural landscape and you begin to understand some of the place names are related to physical, emotional, and spiritual cycles that are a natural part of a wahine's passage through and during childbirth. There's multiple loaded kaona in these place names but there is commonality again in sensory experiences that sustain the cyclic nature between life and death, ignorance and enlightenment, po to ao-

a) Pu'umanawahua- discomfort of the stomach, nausea; to suffer great grief; also jealousy

b) Pu'ukapua'i- to cause to flow, to bubble, gurgle; to vomit; to appear, as a color; variation on the work kapua'i also means to tread

c) Pu'umo'opuna- grandchild; offspring; relative or descendant two generations later

d) Puuku'ua- to release; let go; discharge

e) Pu'upoulihale- again the reference to uli- any dark color, richness of vegetation, of seed banks; also female akua of certain sorcery; short for 'ouli- study of omens; also the name for the developmental stage of a fetus, as the body begins to form. Pouli can mean darkness, sometimes ignorance (modern mental ascription to the night but a more traditional line of thinking could be that of Po, of knowledge beyond the sensory experiences of ao, of being awake, in the light; the knowledge that stems from such a time of antiquity.

f) Akupu- to sprout; germinate; supernatural

g) Awanui gulch- could reference the "large passage", indicative of birthing passage or "outburst" (alluding to Papahanaumoku/Haumea's birth of the island- geologically one of the main outvents of Wai'anae volcanic eruption);

h) Pohakea- where Pele receives the cloud omens; where Kauhi kills Kahalaopuna who is resuscitated by her pueo 'aumakua. I've been taught that

name ascribed is Poha a Kea- the bursting forth (as thunder) of Kea (or Wakea)- presence of all the childbearing qualities and emotions; the ability of a woman to bring life into the world; of Papa to give birth to the islands, Wakea's presence must be the balance. However, some traditions cite that Papa and Lua mated to birth O'ahu in Papa's jealousy of Wakea and Ho'ohokukalani's relationship. In Pele and Hi'iaka epic, Hi'iaka undergoes a long period of visions and mo'olelo/oli are iterated (so much so Emerson's says there's too much going on that he purposefully does not include it in his account).

i) Palehua- I disagree with Pukui; I don't believe it's only meaning is the lehua enclosure; I see two other words prominent- pale and hua, the idea that this place is where the hua is protected or perhaps in another meaning one is protected by hua, by jealousy

j) Palikea- the cliff of Kea (Wakea)- he is detached from the processes of the childbearing activities that are evident with the form of these pu'u- this distinguished "setting aside" of place for Kea further support that the mountainscape down to Pu'uokapolei is female, is lifebearing, is transcending between this life and others yet to be or that have passed before.

k) Palailai- I disagree with Pukui; I don't believe it's the "young of the lai fish"- my hale is on the northeast corner of its kahua- I believe it's to "experience or be in a state of being calm and clear"- again sensory; having clear vision or thought as something is born in thought through experience

l) Mauna Kapu- I know some say this is regards to Kakuhihewa's kapu. Could be- my mana'o is that this point clearly defines what is Wakea and what is Papa, my mana'o only...Papa giving birth- woman giving birth-probably the strongest period where Haumea thrives and is more "powerful" or omniscient than Wakea- kapu had to be established to protect both male/female sources of identity.

m) Makaiwa- I think it's a shortened version of-Maka a aiwa, as in the face (essence) of complete mystery, incomprehensible (as in caught in a wake between two worlds- again transitional, balancing between two worlds).

Understanding the meanings of these traditional place names is important to the consciousness of the Hawaiian people and the culture, it gives light to what was going on in this area in regards to the spiritual and physical nature of the whole ahupua'a.

Section 7 CONCLUSION AND RECOMMENDATIONS

7.1 Conclusion

Honouliuli is associated with a number of legendary accounts. Many of these concern the actions of gods or demi-gods such as Kāne, Kanaloa, Māui, Kamapua'a, the reptile deity (*mo'o*) Maunauna, the shark deity Ka'ahupāhau, and the demigod hero Palila. While there are several references to chiefly lineages and references to the ruling chiefs Hilo-a-Lakapu and Kūali'i, there is no clear reference to powerful chiefs living permanently in Honouliuli

The project area lies just back from the coast, on the extensive 'Ewa limestone plain, which was, based on Honouliuli settlement patterns and archaeological investigations of the *ahupua'a*, probably never permanently inhabited. It could have, however, provided temporary habitation for gatherers and fisherman traveling to the coast. A relatively barren and waterless area, it nonetheless might have been occasionally traversed, as the project area is situated between the relatively well-watered uplands and *makai* resources. Based on ethnographic accounts and past archaeological investigations in the project area and its vicinity, limestone sink holes on the 'Ewa Plain were used for agriculture and burial interment, with the largest shelters used for temporary shelter. With the spread of Western land use in the 19th century, the project area was used for ranching first, then intensive commercial agriculture. In general the project area lies in a region that would have been less than bountiful, and therefore sparsely utilized, even in pre-contact times.

Hawaiian organizations, government agencies, community members, and cultural and lineal descendants with ties to Honouliuli were contacted to: (1) identify potentially knowledgeable individuals with cultural expertise and knowledge of the project area and its surroundings, and (2) identify cultural concerns and potential impacts within the project area. An effort was made to locate informants with ties to Honouliuli and neighboring *ahupua'a* who live or had lived in the region or who, in the past, used the area for traditional and cultural purposes. For this assessment, Arline Eaton, Rubellite Johnson, and Nettie Tiffany and other *kūpuna* and community members such as Kawika McKeaque and Shad Kane were interviewed for this assessment. They mentioned that in the past there was traditional gathering of native plants, *limu* and salt along with fish such as *pāpio*, and *moi*, near the project area. The people contacted were not aware of any on-going cultural practices, archaeological sites, or trails within the project area. However, OHA, Nettie Tiffany and William Aila mentioned that the 'Ewa plains is a well known place of sinkhole burials. Most of the people contacted mentioned that the project area was heavily altered by plantation and ranching activities. However, OHA noted "Furthermore, the nature of documented interments in the 'Ewa area (stone pits, sinkholes, crypts, etc.) could lead to the survival of these sites despite intensive agricultural activities on the surface".

Based on what was gathered from the consultation process and the evidence of LCA's and lack of resources, the vast majority of the project area was utilized less intensively during traditional times. Additionally the years of sugar cane cultivation and ranching left no reason for access. Most of the resources such as salt farming and gathering of marine resources were on the coastal fringe outside of the project area.

7.2 Recommendations

It should be noted that significant cultural resources/historic properties will likely be affected by the proposed industrial development despite the extensive past disturbance within the project area. As a precautionary measure, personnel involved in future development should be informed of the possibility of inadvertent cultural finds, and should be made aware of the appropriate notification measures to follow. We also recommend that through out the duration of this project that you continue to consult with the community especially those mentioned in this report. We also feel that the project should incorporate the traditional place names of the surrounding area into the proposed development to sustain a connection to the past. Additionally, it was recommended in the Cultural Resource Literature Review and Field Inspection for this project (O'Leary and Hammatt 2006) that project proponents consult with the State Historic Preservation Division/Department of Land and Natural Resources (SHPD/DLNR) and develop an appropriate scope of work for an archaeological inventory survey

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Appendix A Ahahui Siwila Hawaii O Kapolei Letter

March 30, 2006

Kehaulani Souza

Cultural Surveys Hawaii, Inc.

P.O. Box 1114

Kailua, Hawaii 96734

Dear Ms. Souza:

The Ahahui Siwila Hawaii O Kapolei (Ahahui) is one of fifty component organizations throughout the State of Hawaii and seven states on the continent, linked under the Association of Hawaiian Civic Clubs. The first civic club was founded in 1918 and, since then, the movement to preserve and protect all aspects of the native culture has continued to develop and expand.

Our Ahahui was established and chartered in Kapolei in 1993 and, among others, we have concentrated our efforts on the identification, preservation and restoration of historic sites in the ahupua`a of Honouliuli. This area includes, but is not limited to, the Ewa Plains, Kalaeloa, Ko Olina, Kapolei, Makakilo, Honokai Hale, Makaiwa, Waimanalo, Ka Lo`i and Palehua.

General history and present and past land use of the project area

The area identified as the "West Kalaeloa Industrial Area Project Honouliuli Ahupua`a, Ewa District, O`ahu Island" is identified as former sugar lands and previously open grazing lands for cattle. Prior to that it was a traditional cultural landscape identified by Vancouver as a sea of gold referring to the abundance of native Ilima. Due to the destruction of the cultural landscape by agriculture it is difficult to determine the actual Ili boundaries. It is perhaps safe to say that 2 ancient geographical areas came together in this approximate area. They were Kaupe`a and Pukaua.

Knowledge of cultural sites which may be impacted by future development of the project area – for example, historic sites, archaeological sites, and burials.

Much of the cultural landscape has been destroyed by agriculture. Native wild plants can still be found throughout the area and especially in areas of dissection along the coral plains.

Knowledge of traditional gathering practices in the project area – both past and ongoing.

It is not known what kind of traditional gathering practices may have occurred in the project area although there is no question that it did occur. It is not known whether traditional gathering practices are presently ongoing within the project area.

Cultural associations of the project area, such as legends and traditional uses.

The project area lies in an area between 2 notable ancient places historically known as Kualaka`iand Pukaua. From the following story it appears that the project area may have been a place where the Po`e Kahiko may have passed through in support that an ancient trail may have once existed. Following is that story:

".....That is Pu`uokapolei. It is this hill that hides Ewa from view. When you go to that side of Waimanalo, you see no more of the sight back here. You go down some small inclines, then to a plain. This plain is Pukaua and on the mauka side of the road, you will see a large rock standing on the plain. This stone has a legend that made this plain noted. This is a noted legend of this plain. There were two supernatural old women or rather peculiar women with strange powers and Pukaua belonged to them. While they were down fishing at Kualaka`i in the evening, they caught these things, aama crabs, pipipi shell fish and whatever they could get with their hands. As they were returning to the plain from the shore and thinking of getting home while it was yet dark, they failed for they met a one-eyed person. It became light as they came near to the plain, so that passing people were distinguishable. They were still below the road and became frightened lest they be seen by men. They began to run, running, leaping, falling sprawling, rising up and running on, without a thought of the aama crabs and seaweeds that dropped on the way. So long as they would reach the upper side of the road. They did not go far for by then it was broad daylight. One woman said to the other, "Let us hide lest people see us," and so they hid. Their bodies turned into stone and that is one of the famous things on this plain to this day, the stone body. This is the end of these strange women. When one visits the plain, it will do no harm to glance on the upper side of the road and see them standing on the plain."

....this article appeared in the January 13, 1900 Ka Loea Kalaaina newspaper under the article of Na Wahi Pana O Ewa.

Referrals of Kupuna or elders who might be willing to share their cultural knowledge of the project area and the surrounding ahupua`a lands.

There are none living today that have first hand cultural knowledge of the project area prior to sugar.

Any other cultural concerns the community might have related to Hawaiian cultural practices within or in the vicinity of the project area.

There are none that I am aware of.

We appreciate the opportunity to comment whenever possible. Please feel free to contact me at_____.

Mahalo nui loa,

Annelle Amaral, President
Ahahui Siwila Hawaii O Kapolei

Appendix B The Office of Hawaiian Affairs Letter

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

HRD06/2270

March 7, 2006

Kēhaulani Souza
Cultural Surveys Hawaii, Inc.
P.O. Box 1114
Kailua, HI 96734

RE: Cultural Impact Assessment for the West Kalaeloa Industrial Area Project, 'Ewa, O'ahu, TMK: 9-1-14: 33 por. 35 and 9-1-15: 20.

Dear Kēhaulani,

The Office of Hawaiian Affairs (OHA) is in receipt of your February 9, 2006 request for comment on the above listed proposed project. OHA offers the following comments:

The 'Ewa plain has historically been known to contain sinkholes in which human skeletal and avi-faunal remains have been encountered. These sinkholes can continue to exist in areas that have been graded or heavily cultivated for agricultural uses.

According to records at the Bishop Museum pertaining to inventories conducted for compliance with the Native American Graves Protection and Repatriation Act of 1990, burial sites in Honouliuli and in 'Ewa in general have been documented in the past including:

> *In 1938, human remains representing six individuals from Honouliuli, 'Ewa, O'ahu were collected by Kenneth P. Emory and William A. Lessa and acquired by the Bishop Museum. Museum documentation indicates these remains were in a shallow crypt burial one mile from the coast;*
>
> *In 1933, human remains representing three individuals from stone pits at 'Ewa, O'ahu were collected by J.W. Barrington and Edwin H. Bryan;*
>
> *In 1942, human remains representing two individuals from Kualakai, 'Ewa Beach, O'ahu were donated to the Bishop Museum;*
>
> *In 1959, human remains representing seven individuals from 'Ewa, O'ahu were donated to the Bishop Museum by the Anthropology Club of the University of Hawaii (from Standard Oil Refinery land);*

Kailua, HI 96734

RE: Cultural Impact Assessment for the West Kalaeloa Industrial Area Project, 'Ewa, O'ahu, TMK: 9-1-14: 33 por. 35 and 9-1-15: 20.

Dear Kēhaulani,

The Office of Hawaiian Affairs (OHA) is in receipt of your February 9, 2006 request for comment on the above listed proposed project. OHA offers the following comments:

The 'Ewa plain has historically been known to contain sinkholes in which human skeletal and avi-faunal remains have been encountered. These sinkholes can continue to exist in areas that have been graded or heavily cultivated for agricultural uses.

According to records at the Bishop Museum pertaining to inventories conducted for compliance with the Native American Graves Protection and Repatriation Act of 1990, burial sites in Honouliuli and in 'Ewa in general have been documented in the past including:

> *In 1938, human remains representing six individuals from Honouliuli, 'Ewa, O'ahu were collected by Kenneth P. Emory and William A. Lessa and acquired by the Bishop Museum. Museum documentation indicates these remains were in a shallow crypt burial one mile from the coast;*
>
> *In 1933, human remains representing three individuals from stone pits at 'Ewa, O'ahu were collected by J.W. Barrington and Edwin H. Bryan;*
>
> *In 1942, human remains representing two individuals from Kualakai, 'Ewa Beach, O'ahu were donated to the Bishop Museum;*
>
> *In 1959, human remains representing seven individuals from 'Ewa, O'ahu were donated to the Bishop Museum by the Anthropology Club of the University of Hawaii (from Standard Oil Refinery land);*

In 1980, human remains representing nine individuals from Honouliuli, O'ahu were collected and donated to the Bishop Museum by Albert, Borthwick and Folk. Donor information indicates these human remains were recovered from coral sinkholes.

In the last decade, unmarked burial sites have been found in the area of St. Francis West, West Loch Estates, Old Fort Weaver Road, Kalaeloa, One'ula Beach, Campbell Estate, Ko'Olina and other areas in the vicinity of this project.

The depth of grading activities and the likelihood of adversely impacting any sub-surface cultural sites or deposits is contingent upon understanding the original surface grade as it may have existed prior to agricultural activities such as sugarcane.

Native Hawaiian burial sites have been found just on and under the surface to depths of eight or nine feet depending upon the nature of the terrain. Furthermore, the nature of documented interments in the 'Ewa area (stone pits, sinkholes, crypts, etc.) could lead to the survival of these sites despite intensive agricultural activities on the surface.

As for the future consultation process, OHA recommends contacting two individuals in particular: Shad Kane and Nettie Tiffany. Both individuals have served as cultural resources on past projects and would likely aid in the community consultation process.

OHA asks that, In accordance with Section 6E-46.6, Hawaii Revised Statutes and Chapter 13-300, Hawaii Administrative Rules, if any significant cultural deposits or human skeletal remains are encountered, work shall stop in the immediate vicinity and the State Historic Preservation Division (SHPD/DLNR) shall be contacted.

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

'O wau iho nō,

Clyde W. Nāmu'o
Administrator