ʻAiea Intermediate School – Erosion Control Project
Cultural Impact Assessment,
ʻAiea Ahupuaʻa, ʻEwa District, Oʻahu
TMK: [1] 9-9-005:001

Prepared for
Kimura International

Prepared by
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(Job Code: AIEA 2)

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Management Summary

Reference	‘Aiea Intermediate School – Erosion Control Project Cultural Impact Assessment, ‘Aiea Ahupua‘a, ‘Ewa District, O‘ahu, TMK: [1] 9-9-005:001 (Genz and Hammatt 2010)
Date	May 2010
Project Number (s)	Cultural Surveys Hawai‘i (CSH) Job Code AIEA 2
Project Location	‘Aiea Intermediate Schools is located on TMK: [1] 9-9-005:001 and is bounded by ‘Aiea Stream on the northeast, and Ali‘ipoe Street on the southeast. Several cul-de-sac streets are present to the northeast and southwest; however, they do not intersect with parcel boundaries. The parcel is present within ‘Aiea Ahupua‘a, ‘Ewa District, Island of O‘ahu.
Land Jurisdiction	Public
Agencies	State of Hawai‘i Department of Health / Office of Environmental Quality Control (DOH / OEQC)
Project Description	The purpose of the Project is to assess erosion of the stream bank and its effect on school utilities.
Project Acreage	30.78 acres
Area of Potential Effect (APE)	For purposes of this report, the Project area is defined as the entire school parcel, while the Area of Potential Effect (APE) is a 150-foot section of the ‘Aiea Stream corridor. While this investigation focused on the Project APE, the study area included the entire *ahupua‘a* (land division) of ‘Aiea.
Document Purpose	The Project requires compliance with the State of Hawai‘i environmental review process (Hawai‘i Revised Statutes [HRS] Chapter 343), which requires consideration of a proposed Project’s effect on cultural practices and resources. At the request of Kimura International, CSH is conducting this Cultural Impact Assessment (CIA). Through document research and ongoing cultural consultation efforts, this report provides information pertinent to the assessment of the proposed Projects’ impacts to cultural practices and resources (per the *Office of Environmental Quality Control’s Guidelines for Assessing Cultural Impacts*) which may include Traditional Cultural Properties (TCP) of ongoing cultural significance that may be eligible for inclusion on the State Register of Historic Places, in accordance with Hawai‘i State Historic Preservation Statute (Chapter 6E) guidelines for significance criteria (HAR §13–275 under Criterion E). The document is intended to support the Project’s environmental review and may also serve to support the Project’s historic preservation review under HRS Chapter 6E and Hawai‘i Administrative Rules (HAR) Chapter 13–275.
Consultation Effort	Hawaiian organizations, agencies and community members were

	contacted in order to identify potentially knowledgeable individuals with cultural expertise and/or knowledge of the Project area and the vicinity. The organizations consulted included the State Historic Preservation Division (SHPD), the Office of Hawaiian Affairs (OHA), the O‘ahu Island Burial Council (OIBC), Hui Mālama I Nā Kūpuna ‘O Hawai‘i Nei, the Pearl Harbor Hawaiian Civic Club, the ‘Aiea Neighborhood Board, community and cultural organizations in ‘Aiea and community members of ‘Aiea.
Results of Background Research	Background research indicates: 1. Several *wahi pana* (storied places) are located within ‘Aiea Ahupua‘a and nearby *ahupua‘a* (land division extending from the uplands to the sea). Some of these places are associated with *mo‘olelo* (stories and oral histories), such as Pōhaku o Ki‘i (Stone of Ki‘i), that place the Project site and surrounding area within a cultural context. 2. The coastal zone of ‘Aiea is part of Keawalau-o-Pu‘uloa, “the many harbored-sea of Pu‘uloa” (Pukui 1983:182). Pu‘uloa is where voyagers are said to have landed first on the island of O‘ahu, with many *ka lua* (caves) of the *‘ōlohe* (warriors who plucked their hairs and greased their bodies and were skilled in the art of *lua* or bone-breaking and wrestling) in the surrounding area (Beckwith 1970:343). Pu‘uloa is also the home of the shark goddess, Ka‘ahupahau (Beckwith 1970:138-39; Kamakau 1964:73), an *‘aumakua* (deified ancestor) that protects the ‘Aiea residents. 3. Pu‘uloa was rich in ocean resources and was named Pearl Harbor after the *pipi*, or pearl oysters of the family Pteriidae (mainly *Pinctada radiata*). These were once abundant on the harbor reefs, but were later decimated by over-harvesting. The *pipi* was supposedly brought from Kahiki, the Hawaiian ancestral lands, by a *mo‘o* (lizard or water spirit) named Kānekua‘ana (Handy and Handy 1972:470). The *pipi* was sometimes called “the silent fish,” or *i‘a hamau leo o ‘Ewa*, ‘Ewa’s silent sea creature (Handy and Handy 1972:471), since the collectors were supposed to stay quiet while harvesting the shells. In addition to the pearl oysters, Pu‘uloa was also abundant is several varieties of mullet (probably *Mugil cephalus*), mussels (possibly *Brachidontes cerebristriatus*), abalone (multiple species from the family Fissurellidae), and clams (multiple species from genus *Isognomon*). 4. The lowland area near the coast was filled with fresh water springs and *lo‘i kalo* (irrigated taro terraces). Further *mauka* (upland, towards the mountain) into the valley, *‘ō ‘ō* (*Moho*

	spp., honeyeaters) birds were caught for their highly prized feathers and the shrub *olonā* (*Touchardia latifolia*) was gathered for cordage (Fung and Cruz (2005). 5. ‘Aiea Ahupua‘a was renowned for the sweetness of the water, the cool, sweet-smelling breeze known as Kōnihinihi that comes down from the mountains and then sweeps back up the valley, and a refreshing rain known as ‘Āuānei (Fung and Cruz 2005). 6. An early archaeological reconnaissance survey of ‘Aiea Ahupua‘a identified Keaīwa Heiau (McAllister 1933), which was listed on the National and Hawai‘i State Registers of Historic Places in 1972 and 1979, respectively. Keaīwa Heiau was the only known memorial of the healing art. The temple was rededicated as a *heiau lapa‘au* or *heiau ho‘ola* (temple of healing) in 1951, during which an elder Hawaiian commented that the *heiau* was named Keaīwa after the medicinal god of early times (Larsen 1952). The *heiau* is located *mauka* of the current Project area on the mountain ridge on a slight slope facing eastwards towards the rising sun; this invokes the concept of rebirth and renewal, and so helped with the healing process. *Kāhuna* (priests) conducted and taught healing rituals in the enclosed ceremonial center, maintained a garden of over 400 medicinal plants at the *heiau*, and used a dense grove of *hau* (*Hibiscus tiliaceus*) as a steam bath, although the details of such an intricately woven structure to contain water is not clear (Fung and Cruz 2005). Renowned Maori anthropologist, physician and politician Te Rangi Hiroa, or Sir Peter Buck, delivered the last speech of his life at the rededication ceremony of Keaīwa Heiau (Larson 1952). 7. Community consultation previously determined Pōhaku o Ki‘i, a boulder *makai* (lowland, towards the ocean) of the current Project area, to be culturally significant (Napoka 1994). A *mo‘olelo* aout the creation of this *pōhaku* describes how a commoner named Ki‘i turned to stone while trying to reach his regal love, a woman named La‘a, at the Waiola‘a royal bathing pool. This *pōhaku* was relocated in 1994 to the ‘Aiea Post Office near the site of Waiola‘a Pond, once a royal bathing pool, due to the widening of Moanalua Road. Thus, the relocation of Pōhaku o Ki‘i near this pond has finally reunited the two lovers Ki‘i and La‘a. 8. There is no evidence of any cultural properties within the Project area. However, an oral history collected from Mr. Ka‘imikaua, a deceased *kumu hula* (hula teacher) and

	kama‘āina (native-born) of ‘Aiea, describes a *heiau* called Kaonohiokala that is located directly east of the Project area (Fukuda 1994). The last person to use the *heiau* was the wife of Chief Kaeo, who fled there during the battle of Kuki’iahu and died, only to be revived by her benevolent *‘aumakua*, a *pueo* (owl). 9. In 1899, the Honolulu Sugar Company built a sugar mill in ‘Aiea. Sugar cane cultivation and production continued under the Honolulu Plantation Company until it was absorbed into the Oahu Sugar Company in 1947 as a consequence of the decline of the Oahu Railway & Land Company following World War II. The mill was placed on the National and Hawai‘i State Register of Historic Places in 1996 and 1995, respectively; however, it was demolished in 1998. 10. No *ilina* (burials) have been documented near or within the Project area; however, it is possible that undocumented burials exist within or near the Project area.
Results of Community Consultation	CSH attempted to contact 38 community members, government agency and community organization representatives, and individuals, including residents, cultural and lineal descendants, and cultural practitioners. Twenty-six people responded and three *kama‘āina* were interviewed for more in-depth contributions to the CIA. This community consultation indicates: 1. The Project area is located near some of the most significant cultural places in ‘Aiea Ahupua‘a, including Keaīwa Heiau, Pōhaku o Ki‘i, and Waiola‘a Pond; however, the exact location of this royal bathing pool—now filled in—is difficult to determine. 2. *Wahi pana* and *mo‘olelo* of the area near the Project site reveal a strong connection to past traditions and a renewed salience of those traditions today. Community participant Mrs. Ching shares several *mo‘olelo*, including that of Waiola‘a—a spring-fed pool enjoyed by royalty that reveals a love story between a princess and a commoner. 3. Mr. Kāne discusses a *mo‘olelo* of the historic battle of Kuki’iahu, in which Kalanikapule decisively defeated Chief Kaeo with cannon support from the British. Kaeo, his wife, and his army all died in this battle. Their bodies were buried where they fell and that of Kaeo was taken and sacrificed in the mountainous region of of Pu‘uloa, possibly in ‘Aiea Ahupua‘a. 4. A strong connection to ancestral land is based on *mo‘olelo* of the vast lowland *lo‘i kalo* and the mountainous *‘ō‘ō* that were

	prized for their feathers, and on lived experiences of gathering *pipi*, clams, crabs and other marine resources on the shores and waters of Pu‘uloa prior to the mid-20th century military presence and later housing development. In addition, during the early 1960s in ‘Aiea, Mrs. Ching gathered *pōpolo* (Solanum nigrum) for the medicinal qualities of its leaves as well as small tomatoes that she would add as a natural sweetener to *lomilomi* salmon. 5. The identity of *kama‘āina* in ‘Aiea Ahupua‘a is also influenced by the historic era of sugar cane cultivation. Many participants recall their past with specific references to sugar cane fields, the ‘Aiea sugar mill, the ‘Aiea Stream that fed the mill, and a small vibrant community of plantation workers and their descendents. In particular, Mrs. Kekina describes a ditch and tunnel system she discovered near the source of ‘Aiea Stream that was most likely used during the historic sugar plantation era to divert water to the ‘Aiea sugar mill. 6. The community participants discuss tremendous changes to the landscape of ‘Aiea that transformed the vast sugar cane fields and open spaces that once covered the lowlands. Participants associate a decline of natural resources with the rise in residential and commercial development. For example, Mr. Kamelamela points to the loss of fish and oyster harvest from the waters of Pu‘uloa. He says although the community used to fish and crab, no one can eat from Pearl Harbor anymore because of the pollution from the military. Mrs. Ching can no longer find the medicinal *pōpolo* or the small sweet tomatoes she used to collect before the expansion of development. 7. A sense of place in ‘Aiea Ahupua‘a is rooted in a network of trails, both contemporary and historic, that connects the mountainous regions of ‘Aiea Ahupua‘a to the bordering valleys of Kalauao Ahupua‘a and Hālawa Ahupua‘a. Mrs. Kekina traces a network of trails and streams in the neighboring Hālawa Valley to a hidden *heiau* and remnants of former banana and taro plantations. 8. The flow of the ‘Aiea Stream connects most of the cultural and historic properties within the *ahupua‘a* of ‘Aiea to the current Project area through time and across space, as suggested by Mr. ‘Ailā. The stream starts in the mountainous regions above Keaīwa Heiau. It provided nourishment for hundreds of medicinal plants cultivated at the heiau, as well as for the lowland *lo‘i kalo*. Its descending waters later filled the sacred bathing pond of Waiola‘a, and eventually entered the coastal

	zone of Pu‘uloa, becoming part of an ecosystem in which *pipi*, crabs, clams and other marine resources once thrived. In more recent historical times, the stream fueled the sugar cane industry at the ‘Aiea sugar mill. 9. The respondents are not aware of any cultural or historic properties within or adjacent to the current Project area.
Summary of Community Recommendations	Based on the community consultations, there are five major concerns regarding potential adverse impacts on cultural, historic and natural resources, practices and beliefs as a result of the proposed ‘Aiea Intermediate School Erosion Control Project: 1. **Erosion**. Based on her own observation, Mrs. Kekina asserts that the erosion of the stream banks has been influenced by rain water run-off from subdivisions farther up ‘Aiea Stream in the gulch between ‘Aiea Heights and Hālawa Heights, and by heavy growth of mangroves which decrease flow at the mouth of the river near Pearl Harbor. Mrs. Kekina recommends consulting with an engineer to assess why the stream banks are eroding. Alterations in the flow of ‘Aiea Stream could be due to inadequate drainage systems upstream, excessive mangrove growth downstream, and excessive dumping of trash. 2. **Flooding.** Mrs. Ching is concerned that flooding of the stream onto the streets during heavy rains could lead to additional erosion downstream of the current Project area. 3. **Pollution**. Mrs. Mills contends that toxins and pollutants from the former sugar mill are still contaminating the ‘Aiea Stream next to the Project site and that adequate protection and precautions should be taken. 4. **Freshwater Resources**. Mr. ‘Ailā recommends planting native plants along the banks of ‘Aiea Stream after the stream sides have been stabilized in order to minimize erosion and promote native plant populations as a way to protect the stream. He also recommends monitoring freshwater resources. 5. **Timing**. Mr. Kamelamela recommends only commencing with the Project when there is little or no flow of ‘Aiea Stream.
Overall Recommendations	Based on the information gathered from archival documents, archaeological research and community consultation detailed in the

	CIA report, CSH recommends the following measures to mitigate potentially adverse effects of the proposed Project on cultural, historic and natural resources, practices and beliefs: 1. Cultural monitoring should be included in the Project. According to a previous oral testimony, a *heiau* named Kaonohiokala is located directly east of the Project area. As the exact location of the *heiau* is unknown, Project personnel should be informed of the possibility of finding this *heiau*. In addition, land-disturbing activities may uncover burials or other cultural resources. Should cultural or burial sites be identified during ground disturbance, all work should immediately cease and the appropriate agencies notified pursuant to applicable law. 2. Community members should be further consulted throughout the planning process, including the design and implementation of the proposed development. Addressing their concerns will minimize the impact of the Project on the cultural practices and traditions of the *kama‘āina* of ‘Aiea and allow them to continue their stewardship of ‘Aiea Stream and other natural resources, and Pōhaku o Ki‘i, Keaīwa Heiau and other historic and cultural and properties.

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Section 1 Introduction

1.1 Project Background

At the request of Kimura International, Cultural Surveys Hawai'i (CSH) prepared this cultural impact assessment (CIA) for the ‘Aiea Intermediate School Erosion Control Project, ‘Aiea Ahupua‘a, ‘Ewa District, O‘ahu. The school, located on TMK: [1] 9-9-005:001, is bounded by ‘Aiea Stream on the northeast, Ali‘ipoe Street on the southeast, and several cul-de-sac streets to the northeast and southwest; however, they do not intersect with parcel boundaries (Figure 1). The 30.78-acre Project area encompasses an eroded 150-foot portion of the ‘Aiea Stream corridor. The school's primary power electric manhole is located on top of the eroded stream bank which is connected to the backside access road and fire lane which houses the school's main waterline. The purpose of the Project is to assess erosion of the stream bank and its effect on school utilities, and to stabilize the stream bank for permanent erosion control (Figure 2). For purposes of this report, the Project area is defined as the entire school parcel, while the Area of Potential Effect (APE) is the 150-foot ‘Aiea Stream corridor.

CSH conducted a literature review and field inspection for the Project area. The results of this archaeological study are presented in a companion report titled, *Literature Review and Field Inspection Report for the ‘Aiea Intermediate School Erosion Control Project, ‘Aiea Ahupua‘a, ‘Ewa District, O‘ahu TMK: [1] 9-9-005:001* (Altizer et al 2009) (see Section 5.2).

1.2 Document Purpose

The Project requires compliance with the State of Hawai‘i environmental review process (Hawai‘i Revised Statutes [HRS] Chapter 343), which requires consideration of a proposed Project's effect on cultural practices. CSH is conducting this CIA at the request of Kimura International. Through document research and ongoing cultural consultation efforts this report provides information pertinent to the assessment of the proposed Project's impacts to cultural practices and resources (per the *Office of Environmental Quality Control's Guidelines for Assessing Cultural Impacts*), which may include Traditional Cultural Properties (TCP) of ongoing cultural significance that may be eligible for inclusion on the State Register of Historic Places, in accordance with Hawai‘i State Historic Preservation Statute (Chapter 6E) guidelines for significance criteria (HAR §13–275 under Criterion E) which states to be significant an historic property shall:

> Have an important value to the Native Hawaiian people or to another ethnic group of the state due to associations with cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts—these associations being important to the group's history and cultural identity.

The document is intended to support the Project's environmental review and may also serve to support the Project's historic preservation review under HRS Chapter 6E and Hawai‘i Administrative Rules Chapter 13–275.

1.3 Scope of Work

The scope of work for this CIA includes:

1. Examination of cultural and historical resources, including Land Commission documents, historic maps, and previous research reports, 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. Review of previous archaeological work at and near the subject parcel that may be relevant to reconstructions of traditional land use activities; and to the identification and description of cultural resources, practices, and beliefs associated with the parcel.
3. Consultation and interviews with knowledgeable parties regarding cultural and natural resources and practices at or near the parcel; present and past uses of the parcel; and/or other practices, uses, or traditions associated with the parcel and environs.
4. Preparation of a report that summarizes the results of these research activities and provides recommendations based on findings.

1.4 Environmental Setting

1.4.1 Natural Environment

The Project area elevation is approximately 61 meters above sea level. Annual rainfall in the vicinity ranges from 800-1000mm, with soils consisting primarily of Lahaina Series silty clay with seven to 15 percent slopes. Waipahu silty clay with zero to two percent slopes is also present (Figure 3) (Foote et al. 1972; Giambelluca et al. 1986). Lahaina silty clay is of good quality for producing pineapple and sugarcane, while Waipahu silty clay is of good quality for sugarcane and house lots (Foote et al. 1972). The majority of the school parcel area is characterized by Rock Land and Hanalei Series silty clay with two to six percent slopes. Vegetation present in the Project area consists of plumeria, *kiawe* (mesquite), cactus, and various tall riparian grasses.

1.4.2 Built Environment

The built environment of the Project area consists of school buildings and open fields used for sporting events. The school grounds are surrounded by urban housing subdivisions and streets, as well as ‘Aiea Stream (Figures 4-5).

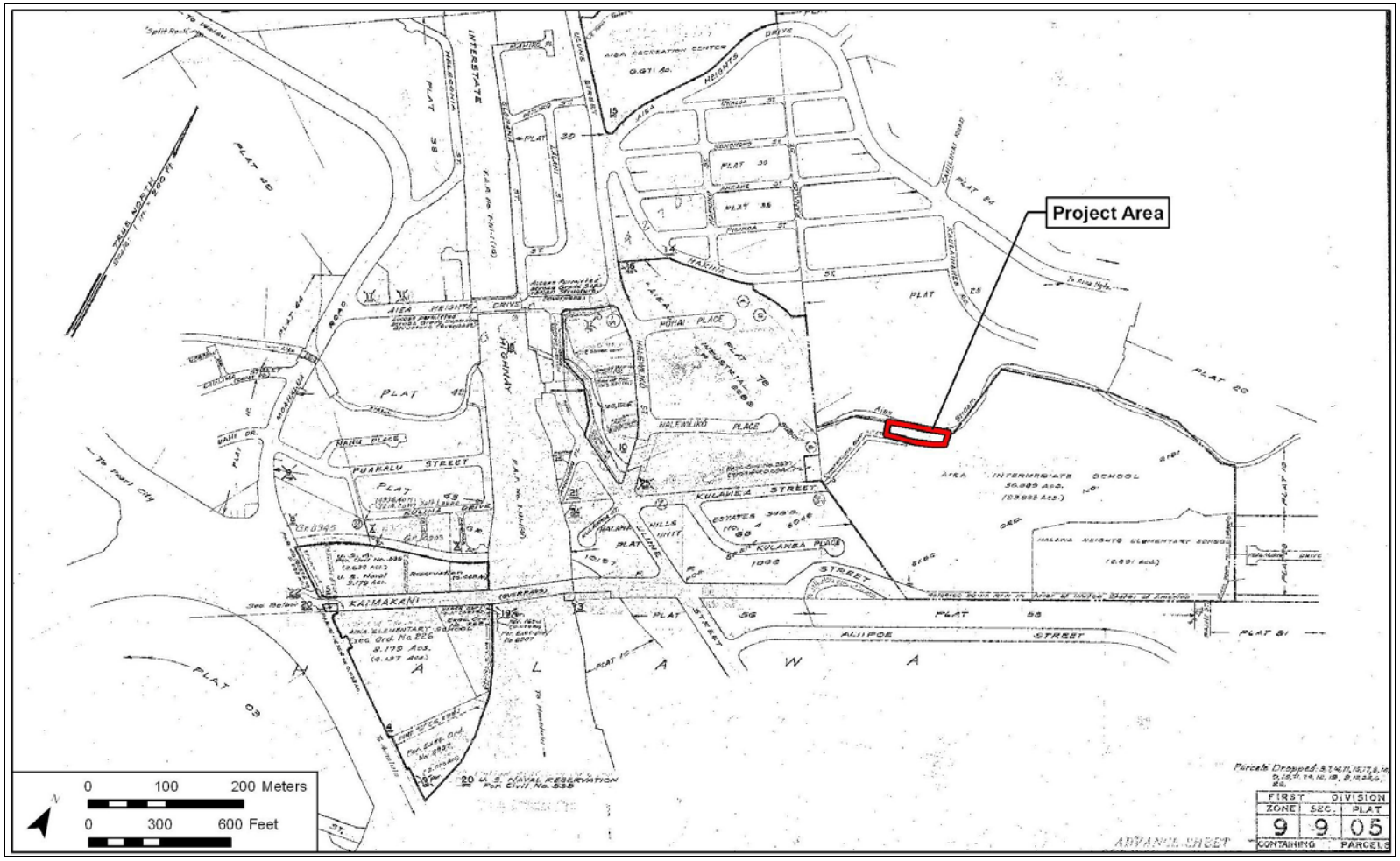

Figure 1. TMK [1] 9-9-005:001 showing Project area (Hawai‘i TMK Service 2009)

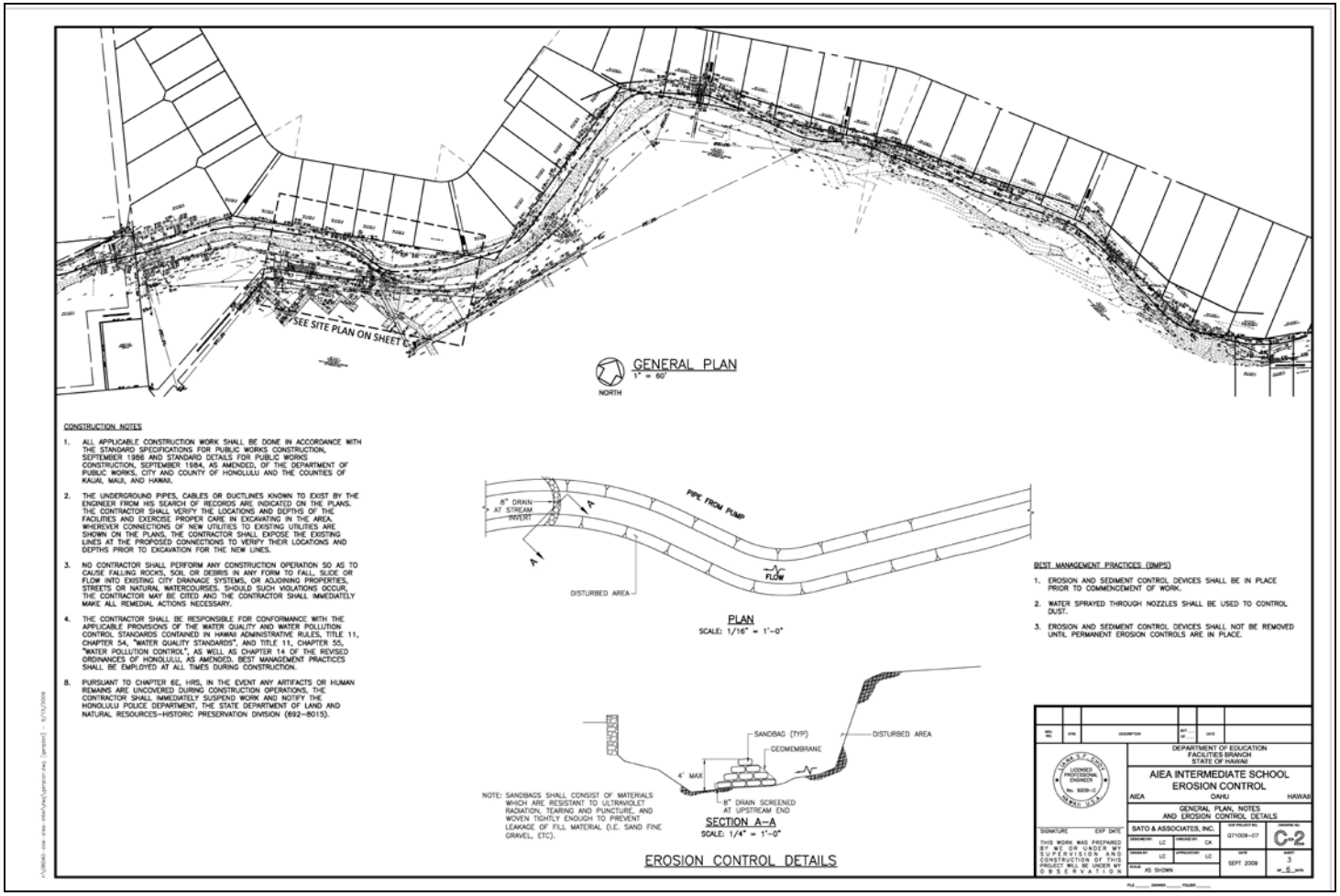

Figure 2. Erosion Control Plan (Kimura International 2009)

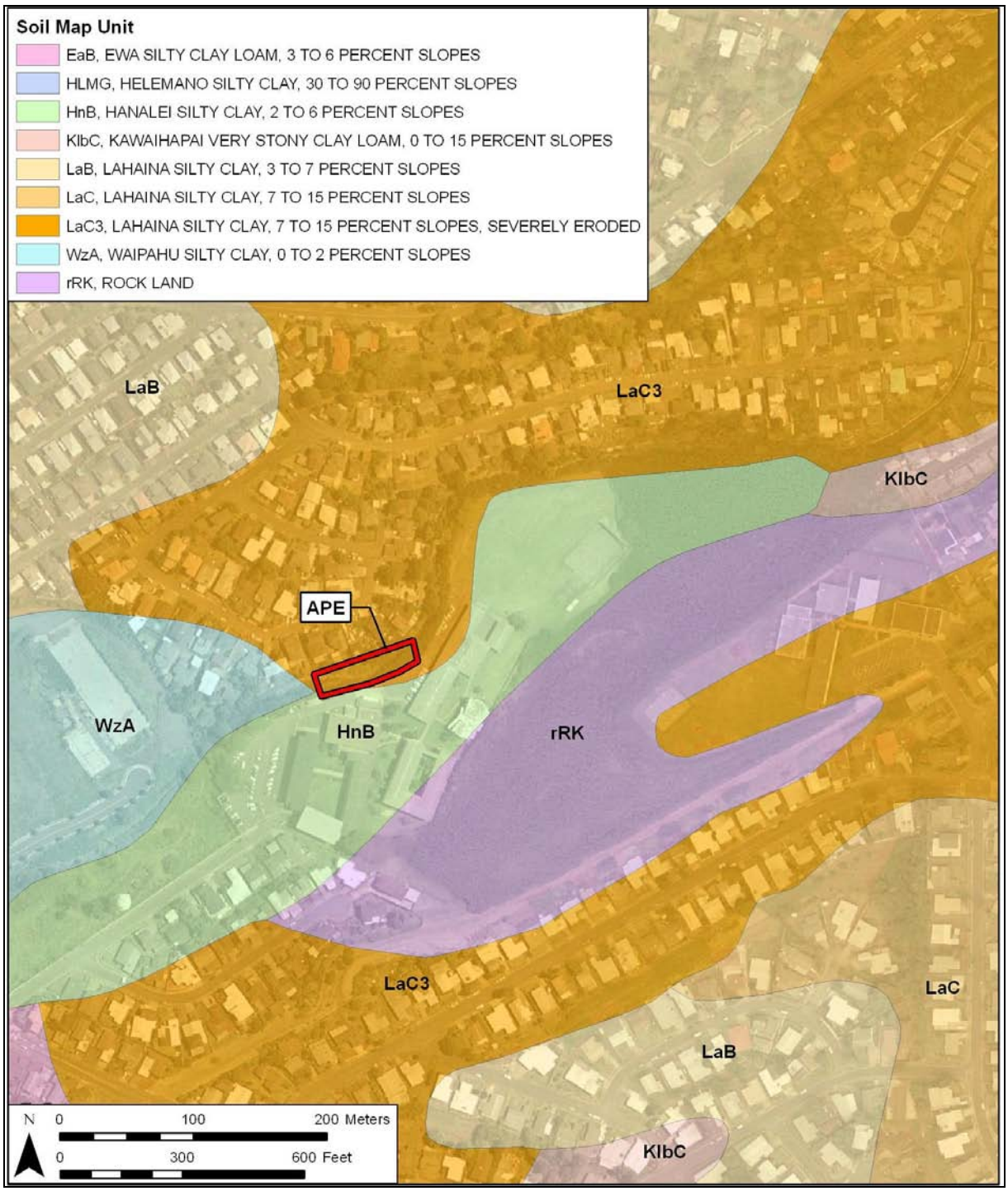

Figure 3. Portion of 1998 Waipahu USGS 7.5-minute series topographic quadrangle showing the Project area and school properties boundary with soil overlay (Foote et al. 1972)

Figure 4. Portion of the orthoimagery of the 2005 Waipahu USGS 7.5-minute topographic quadrangle showing the Project area

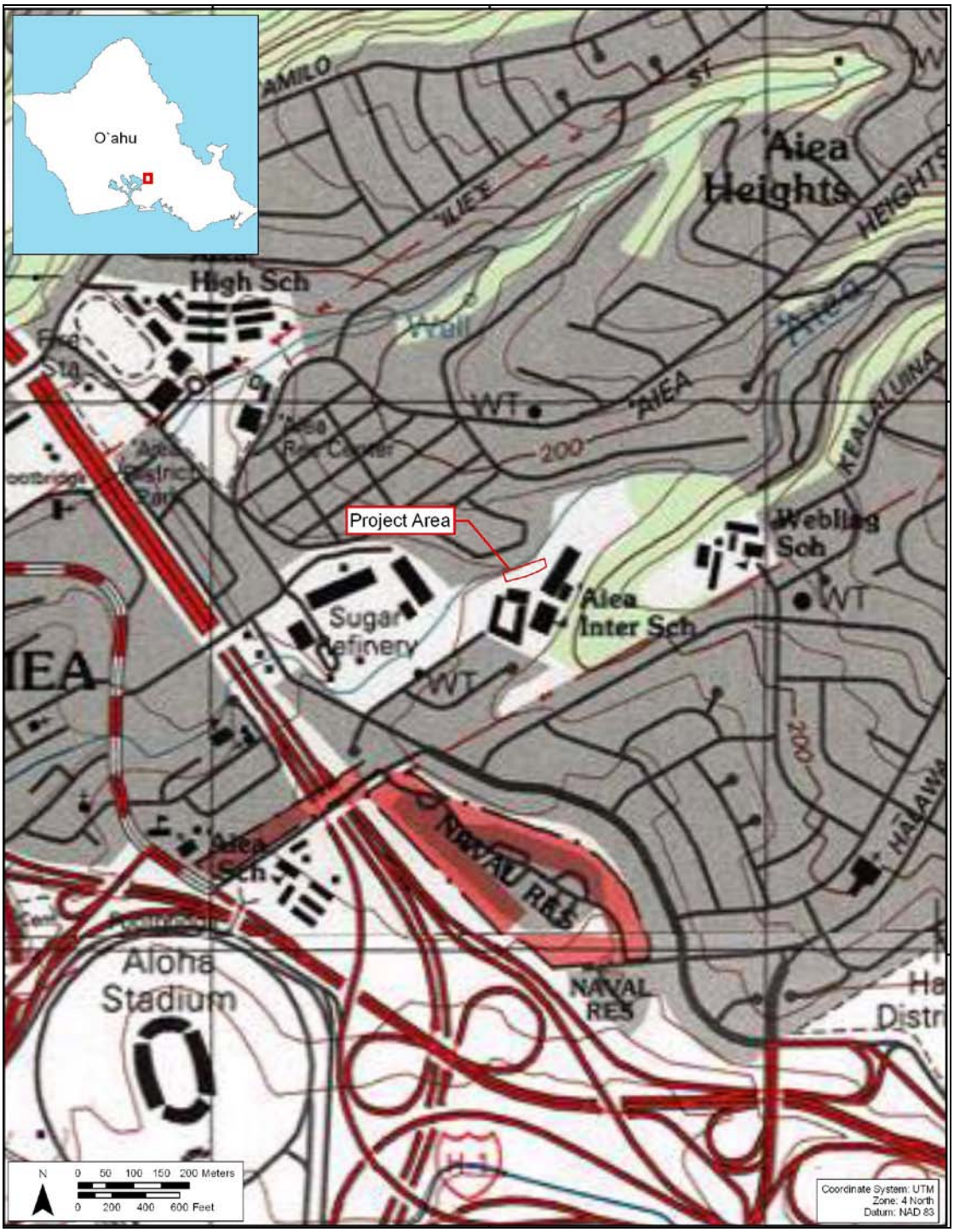

Figure 5. Portion of the 1998 Waipahu USGS 7.5-minute topographic quadrangle showing the Project area

Section 2 Methods

2.1 Archival Research

Historical documents, maps and existing archaeological information pertaining to ‘Aiea Ahupua‘a were researched at the CSH library and other archives including the University of Hawai‘i at Mānoa’s Hamilton Library, the State Historic Preservation Division library, the Hawai‘i State Archives, the State Land Survey Division, and the archives of the Bishop Museum. Previous archaeological reports, historic maps and photographs, and primary and secondary historical sources for the area were reviewed. Information on Land Commission Awards was accessed through Waihona ‘Aina Corporation’s Māhele Data Base (www.waihona.com) as well as a selection of CSH library references.

For cultural studies, research for the Traditional Background section centered on Hawaiian activities including: religious and ceremonial knowledge and practices; traditional subsistence land use and settlement patterns; gathering practices and agricultural pursuits; as well as Hawaiian place names and *mo‘olelo* (stories and oral histories), *mele* (songs), *oli* (chants), *‘ōlelo no‘eau* (proverbs) and more. For the Historic Background section research focuses on land transformation, development and population changes beginning in the early post–European Contact era to the present day (see Scope of Work above).

2.2 Community Consultation

2.2.1 Sampling and Recruitment

A combination of qualitative methods, including purposive, snowball, and expert (or judgment) sampling, were used to identify and invite potential participants to the study. These methods are used for intensive case studies, such as CIAs, to recruit people that are hard to identify, or are members of elite groups (Bernard 2006:190). Our purpose is not to establish a representative or random sample. It is to “identify specific groups of people who either possess characteristics or live in circumstances relevant to the social phenomenon being studied….This approach to sampling allows the researcher deliberately to include a wide range of types of informants and also to select key informants with access to important sources of knowledge” (Mays and Pope 1995:110).

We began with purposive sampling informed by referrals from known specialists and relevant agencies. For example, we contacted the State Historic Preservation Division (SHPD), Office of Hawaiian Affairs (OHA), O‘ahu Island Burial Council (OIBC), and community and cultural organizations in ‘Aiea Ahupua‘a for their brief response/review of the Project and to identify potentially knowledgeable individuals with cultural expertise and/or knowledge of the Project area and vicinity, cultural and lineal descendants of ‘Aiea Ahupua‘a, and other appropriate community representatives and members. Based on their in–depth knowledge and experiences, these key respondents then refered CSH to additional potential participants who were added to the pool of invited participants. This is snowball sampling, a chain referral method that entails asking a few key individuals (including agency and organization representatives) to provide their comments and referrals to other locally recognized experts or stakeholders who would be likely candidates for the study (Bernard 2006:192). CSH also employs expert or judgment sampling

which involves assembling a group of people with recognized experience and expertise in a specific area (Bernard 2006:189–191). CSH maintains a database that draws on over two decades of established relationships with community consultants: cultural practitioners and specialists, community representatives and cultural and lineal descendants. The names of new potential contacts were also provided by colleagues at CSH and from the researchers' familiarity with people who live in or around the study area. Researchers often attend public forums (e.g., Neighborhood Board, Burial Council and Civic Club meetings) in (or near) the study area to scope for participants. Please refer to Table 2, Section 5 for a complete list of individuals and organizations contacted for this CIA.

CSH focuses on obtaining in–depth information with a high level of validity from a targeted group of relevant stakeholders and local experts. Our qualitative methods do not aim to survey an entire population or subgroup. A depth of understanding about complex issues cannot be gained through comprehensive surveying. Our qualitative methodologies do not include quantitative (statistical) analyses, yet they are recognized as rigorous and thorough. Bernard (2006:25) describes the qualitative methods as "a kind of measurement, an integral part of the complex whole that comprises scientific research." Depending on the size and complexity of the project, CSH reports include in–depth contributions from about one–third of all participating respondents. Typically this means three to twelve interviews.

2.2.2 Informed Consent Protocol

An informed consent process was conducted as follows: (1) before beginning the interview the CSH researcher explained to the participant how the consent process works, the project purpose, the intent of the study and how his/her information will be used; (2) the researcher gave him/her a copy of the Authorization and Release Form to read and sign (Appendix A); (3) if the person agreed to participate by way of signing the consent form *or* providing oral consent, the researcher started the interview; (4) the interviewee received a copy of the Authorization and Release Form for his/her records, while the original is stored at CSH; (5) after the interview was summarized at CSH (and possibly transcribed in full), the study participant was afforded an opportunity to review the interview notes (or transcription) and summary and to make any corrections, deletions or additions to the substance of their testimony/oral history interview; this was accomplished either via phone, post or email or through a follow–up visit with the participant; (6) the participant received the final approved interview and any photographs taken for the study for record. If the participant was interested in receiving a copy of the full transcript of the interview (if there is one as not all interviews are audio-recorded and transcribed), a copy was provided. Participants were also given information on how to view the report on the OEQC website and offered a hardcopy of the report once the report is a public document.

2.2.3 Interview Techniques

To assist in discussion of natural and cultural resources and cultural practices specific to the study area, CSH initiated semi–structured interviews (as described by Bernard 2006) asking questions from the following broad categories: gathering practices of *mauka* (upland, towards the mountain) and *makai* (lowland, towards the ocean) resources, burials, trails, historic properties and *wahi pana* (storied place/s). The interview protocol is tailored to the specific natural and cultural features of the landscape in the study area identified through archival research and community consultation. For example, for this study agriculture and aquaculture were

emphasized over other categories less salient to project participants. These interviews and oral histories supplement and provide depth to consultations from government agencies and community organizations that may provide brief responses, reviews and/or referrals gathered via phone, email and occasionally face–to–face commentary.

2.2.3.1 In–depth Interviews and Oral Histories

Interviews were conducted initially at a place of the study participant's choosing (usually at the participant's home or at a public meeting place) and/or—whenever feasible—during site visits to the project area. Generally, CSH's preference is to interview a participant individually or in small groups (two–four); occasionally participants are interviewed in focus groups (six–eight). Following the consent protocol outlined above, interviews may be recorded on tape and in handwritten notes, and the participant photographed. The interview typically lasts one to four hours, and records the—who, what, when and where of the interview. In addition to questions outlined above, the interviewee is asked to provide biographical information (e.g., connection to the study area, genealogy, professional and volunteer affiliations, etc.).

2.2.3.2 Field Interviews

Field interviews are conducted with individuals or in focus groups comprised of *kūpuna* (elders) and *kama‘āina* (native born) who have a similar experience or background (e.g., the members of an area club, elders, fishermen, *hula* dancers) who are physically able and interested in visiting the project area. In some cases, field visits are preceded with an off–site interview to gather basic biographical, affiliation and other information about the participant. Initially, CSH researchers usually visit the project area to become familiar with the land and recognized (or potential) cultural places and historic properties in preparation for field interviews. All field activities are performed in a manner so as to minimize impact to the natural and cultural environment in the project area. Where appropriate, Hawaiian protocol may be used before going on to the study area and may include the offering of *ho‘okupu* (offering, gift), *pule* (prayer) and *oli* (chant). All participants on field visits are asked to respect the integrity of natural and cultural features of the landscape and not remove any cultural artifacts or other resources from the area.

2.3 Compensation and Contributions to Community

Many individuals and communities have generously worked with CSH over the years to identify and document the rich natural and cultural resources of these islands for cultural impact, ethno–historical and, more recently, Traditional Cultural Properties (TCP) studies. CSH makes every effort to provide some form of compensation to individuals and communities who contribute to cultural studies. This is done in a variety of ways: individual interview participants are compensated for their time in the form of a small honorarium and/or other *makana* (gift); community organization representatives (who may not be allowed to receive a gift) are asked if they would like a donation to a Hawaiian charter school or nonprofit of their choice to be made anonymously or in the name of the individual or organization participating in the study; contributors are provided their transcripts, interview summaries, photographs and—when possible—a copy of the CIA report; CSH is working to identify a public repository for all cultural studies that will allow easy access to current and past reports; CSH staff do volunteer work for community initiatives that serve to preserve and protect historic and cultural resources (for example in, Lāna‘i and Kaho‘olawe). Generally our goal is to provide educational

opportunities to students through internships, share our knowledge of historic preservation and cultural resources and the State and Federal laws that guide the historic preservation process, and through involvement in an ongoing working group of public and private stakeholders collaborating to improve and strengthen the Chapter 343 environmental review process.

Section 3 Traditional Background

3.1 Overview

Hawaiians recognize several land divisions, including the *moku* (island or district), the *kalana* (smaller land division than a *moku*) and the *ahupua‘a* (land division extending from the uplands to the sea) (Malo 1951:16). S. K. Kuhano wrote in 1873 (cited in Kame‘eleihiwa 1992:330) that O‘ahu was divided into six *kalana*—Kona, ‘Ewa, Wai‘anae, Waialua, Ko‘olauloa and Ko‘olaupoko. These *kalana* were further divided into 86 *ahupua‘a*. Within ‘Ewa, there were 12 *ahupua‘a*, including Hālawa, ‘Aiea, Kalauao, Waimalu, Waiau, Waimano, Mānana, Wai‘awa, Waipi‘o, Waikele, Hō‘ae‘ae and Honouliuli. Modern maps and land boundaries still generally follow this ancient system of land divisions.

The Project area lies within the plateau portion of ‘Aiea Ahupua‘a in eastern ‘Ewa. Considering its rich and varied environment—coastal and stream resources, central plains for *lo‘i* (irrigated terrace, especially for taro), and upland forest regions—information regarding pre-Contact and early post-Contact life in ‘Aiea is limited. The majority of the early historic references speak of the *loko i‘a* (fishponds) at Pu‘uloa (lit. “long hill,” Pukui et al. 1974:201), better known today as Pearl Harbor (Handy and Handy 1972:470), the coastal resources, and excursions by early visitors to the Pearl River. Most early references in the traditional literature are one-line passages that merely mention ‘Aiea in passing with little attention to detail. People traveled through ‘Aiea from ‘Ewa to Honolulu or vice versa, but most of these travels seem to have taken place nearer the lowland plains and shoreline. Discussion of the *ahupua‘a* in eastern ‘Ewa, including Waimano, Waiau, Waimalu, Kalauao, ‘Aiea, and Hālawa (Figure 6), may provide insights into the traditional lifestyle, settlement patterns and land usage during pre-Contact times.

Numerous cultural properties are located within the *ahupua‘a* of ‘Aiea, including *wahi pana*, *heiau*, *pōhaku* (stones), and *loko i‘a*. For clarity, the cultural properties within the *ahupua‘a* of ‘Aiea are bolded in the text of Section 3 and the known locations of many of these cultural properties are shown in Figure 7.

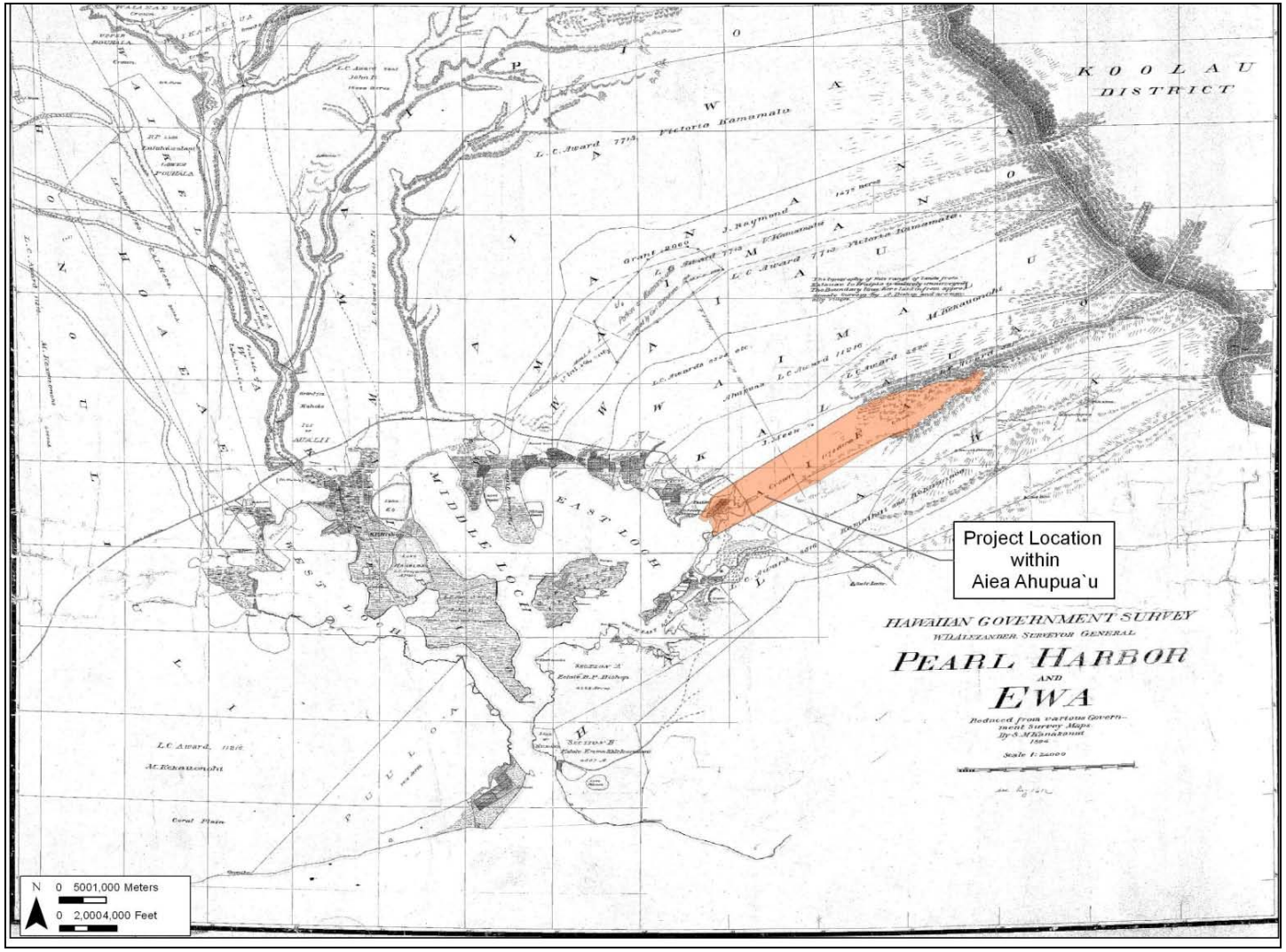

Figure 6. 1894 map of the *ahupua‘a* in eastern ‘Ewa, including ‘Aiea Ahupua‘a (Alexander 1894)

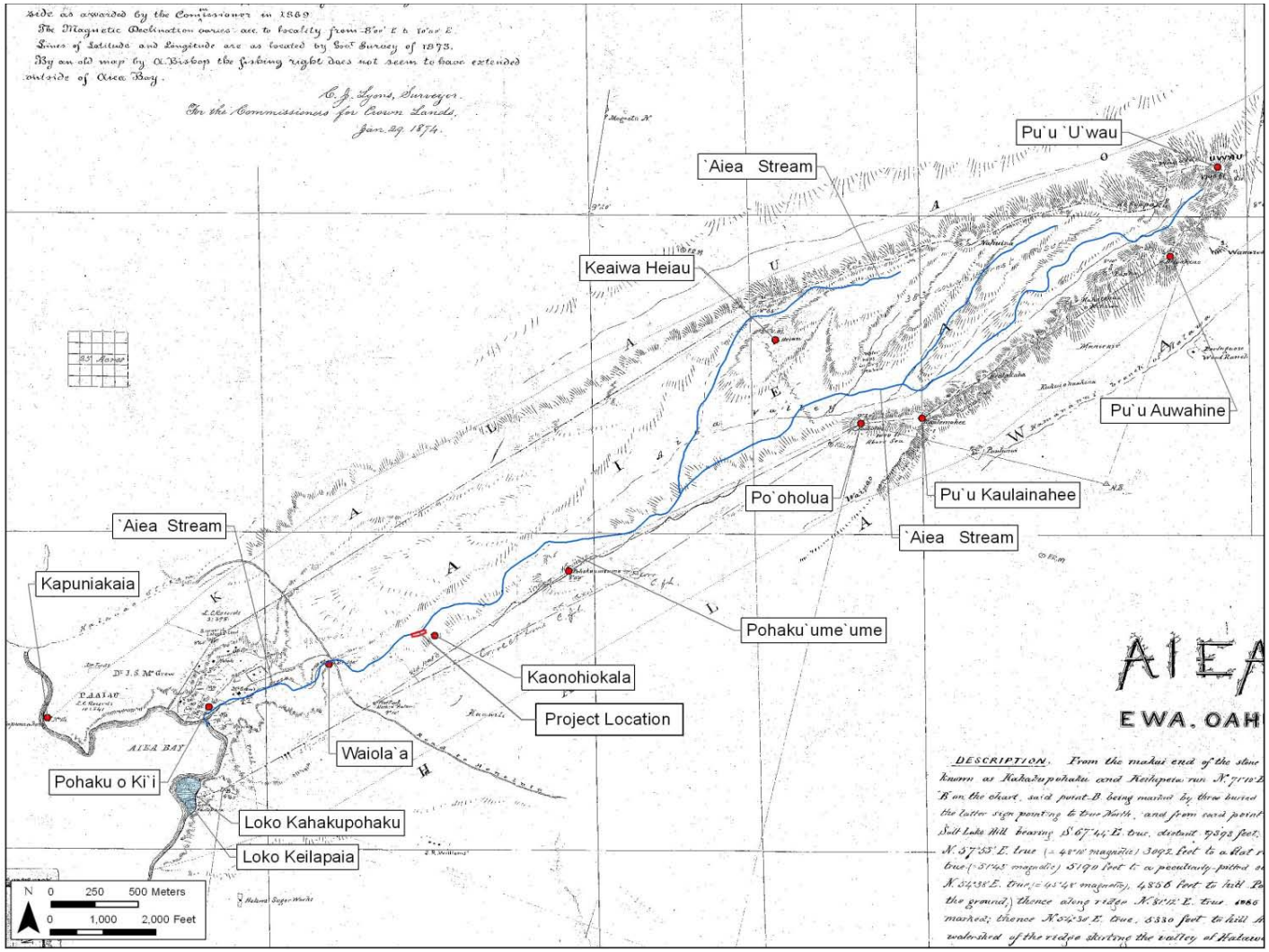

Figure 7. 1874 historic map showing ‘Aiea Ahupua‘a (Lyons 1874) with cultural properties

3.2 Wahi Pana

A Hawaiian *wahi pana*, also referred to as a place name, “physically and poetically describes an area while revealing its historical or legendary significance” (Landgraf 1994:v). *Wahi pana* can refer to natural geographic locations, such as streams, peaks, rock formations, ridges, and offshore islands and reefs, or they can refer to Hawaiian divisions, such as the *ahupua‘a* and *‘ili*, and man-made structues, such as fishponds. In this way, the *wahi pana* of the *moku* of ‘Ewa, the entire *ahupua‘a* of ‘Aiea, and the specific Project area tangibly link the *kama‘āina* of ‘Aiea to their past. All *wahi pana* meanings are cited from *Place Names of Hawaii* by Mary Kawena Pukui, Samuel Ebert, and Esther Mo‘okini (Pukui et al. 1974) unless otherwise noted.

3.2.1 Wahi Pana along the Main Trail through the ‘Ewa District

John Papa ‘Ī‘ī (1959:96-98) described a network of leeward O‘ahu trails, which in historic times encircled and crossed the Wai‘anae Range, by three different paths. The coastal trail ran west from the Honolulu Moku through the ‘Ewa Moku along the inward boundary of the Pu‘uloa floodplain and irrigated taro fields of Hālawa, ‘Aiea, Kalauao, Waiau, Waimano and Mānana, and then continued to the Wai‘anae Moku:

> From there the trail went to Kaleinakauhane [Moanalua Ahupua‘a in the Kona Moku], then to Kapukaki [Red Hill on the Moanalua/Hālawa boundary], from where one could see the irregular sea of Ewa; then down the ridge to Napeha [in Hālawa], a resting place for the multitude that went diving there at a deep pool. This pool was named Napeha (Lean Over), so it is said, because Kaulii, a chief of ancient Oahu, went there and leaned over the pool to drink water.
>
> The trail began again on the opposite side of the pool and went to the lowland of Halawa, on to Kauwamoa, a diving place and a much-liked gathering place. It was said to be the diving place of Peapea, son of Kamehamehanui of Maui who was swift in running and leaping. The place from which he dove into the water was 5 to 10 fathoms above the pool.
>
> There the trail led to the taro patches in Aiea and up the plain of Kukiiahu. Just below the trail was the spot where Kaeo, chief of Kaua‘i, was killed by Kalanikupule. From there the trail went along the taro patches to the upper part of Kohokoho and on to Kahuewai [in Kalauoa], a small waterfall. On the high ground above, a little way on, was a spring, also a favorite gathering place for travelers. From there it continued over a small plain down the small hill of Waimalu, and along the taro patches that lay in the center of the land. . . .
>
> The trail went down to the stream and up again, then went above the taro patches of Waiau, up to a *maika* [game with rolling stones] field, to Waimano, to Manana . . . and on to Waianae. (‘Ī‘ī 1959:95, 97)

3.2.2 Wahi Pana in the Chant for Kuali’i

The *ahupua‘a* of the ‘Ewa Moku are mentioned in a chant for the chief Kuali‘i, as dictated by Fornander (1917:400-401). Each phrase usually contains a play on words, as the place name and

one meaning of the word, or portion of the word, appears on each line (e.g. *kele* in Waikele means “slippery”). These word plays are not necessarily related to the actual place name meaning.

Uliuli ka poi e piha nei—o Honouliuli;	Blue is the poi which appeases [the hunger] of Honouliuli;
Aeae ka paakai o Kahuaiki—Hoaeae,	Fine the salt of Kahuaike—Hoaeae;
Pikele ka ia e Waikele—o Waikele;	Slippery the fish of Waikele—Waikele;
Ka hale pio i Kauamoa—o Waipio;	The arched house at Kauamoa—Waipio;
E kuu kaua i ka loko awa—o Waiawa;	Let us cast the net in the awa-pond—of Waiawa;
Mai hoomanana ia oe—o Manana.	Do not stretch yourself at—Mānana.
He kini kahawai,	Many are the ravines,
He lau kamano—o Waimano;	Numerous the sharks, at Waimano;
Ko ia kaua e ke au—o Waiau;	We are drawn by the current of Waiau;
Kukui malumalu kaua—Waimalu;	In the kukui grove we are sheltered—in Waimalu;
E ala kaua ua ao-e—o Kalauao;	Let us arise, it is daylight—at Kalauao;
E kipi kaua e ai-o Aiea;	Let us enter and dine-at Aiea;
Mai hoohalawa ia oe—O Halawa.	Do not pass by—Halawa.

3.2.3 Wahi Pana of ‘Aiea

‘Aiea Ahupua‘a was named after the shrub ‘*aiea* (Thrum 1922:626), which was used for thatching sticks and for fire-making (Pukui and Elbert 1986:10). ‘Aiea Ahupua‘a extends from the eastern loch of Pearl Harbor at **‘Aiea Bay** inland along each side of **‘Aiea Stream** and Gulch, as shown on an 1874 map of ‘Aiea (see Figure 7). The *ahupua‘a* does not extend to the Ko‘olau Mountain Range, but is “cut off” by Kalauao Ahupua‘a to the west and Hālawa Ahupua‘a to the east. At the point where these three *ahupua‘a* adjoin is a hill called **Pu‘u ‘Uua‘u.** The eastern boundary with Hālawa Ahupua‘a is marked by the peaks **Pu‘u Auwahine**, **Pu‘u Kaulainahe‘e, Pō‘ohōlua** and the “legendary rock” (Boundary Commission 24, 1:335, cited in Soehren 2009) **Pōhaku‘ume‘ume**. The correct spelling of Kaulainahe‘e may be Kaula‘ināhe‘e, meaning “dry the octopi” (Soehren 2009). The name *pō‘ohōlua* refers to the head of a *hōlua* (sledding) course (Soehren 2009; Pukui and Elbert 1986). The boundary with Kalauoa Ahupua‘a at the coast was marked at **Kapuniakaia** and the boundary with Hālawa Ahupua‘a was at the wall that separated **Loko Kahakupōhaku** and **Loko Keilapeia**.

Napoka (1994) collected the *mo‘olelo* of John Ka‘imikaua on the historical significance of **Pōhaku o Ki‘i**, or the Stone of Ki‘i (see Section 3.3.3) (Figure 8). This boulder was situated near the intersection of Moanalua Road and Nalopaka Place. Due to a widening of Moanalua Road in 1994, Pōhaku o Ki‘i was moved to the ‘Aiea post office and situated between two palm trees. This place was originally the site of a sacred pond named **Waiola‘a** that was reserved for royalty, but has since been filled in.

Figure 8. Pōhaku o Ki‘i flanked by two palm trees (CSH, September 25, 2009)

3.3 Mo‘olelo

Several *mo‘olelo* are associated with the *wahi pana* of ‘Ewa Moku and ‘Aiea Ahupua‘a.

3.3.1 ‘Ewa District

Some of the themes associated with ‘Ewa 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 1970:97). Several stories associate places in ‘Ewa 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).

‘Ewa literally means “crooked” or “unequal” (Pukui and Elbert 1986:42). Others interpret it as “strayed” in association of a story about the gods Kāne and Kanaloa, who threw a stone to determine the boundary of the district:

> 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)

‘Ewa was at one time the political center for O‘ahu chiefs. An endearing name for ‘Ewa was *‘Ewa, ka ‘āina o nā ali‘i* or ‘Ewa, land of chiefs, because it was a favorite residence of theirs (Sterling and Summers 1978:1). This was probably due to its abundant resources which supported the households of the chiefs; particularly, the many fishponds around the lochs of Pu‘uloa.

3.3.2 Ke awa lau o Pu‘uloa (The Many Harbors of Pu‘uloa)

The coastal zone of ‘Aiea is part of Keawalau-o-Pu‘uloa, “the many harbored-sea of Pu‘uloa” (Pukui 1983:182), or known today as Pearl Harbor. Pu‘uloa means “long hill” (Pukui et al. 1986:201) and it specifically refers to “the rounded area projecting into the sea at the long narrow entrance of the harbor” (Handy and Handy 1972:469). Early 19th century visitors often referred to Pu‘uloa as the “Pearl” or the “Pearl River” in reference to the pearl oysters which were so abundant there. Another poetic Hawaiian reference to the area is Awāwa Lei or “garland of harbors” (Handy and Handy 1972:469).

Clark (1977:70) says that its English name came from the name Waimomi, or “water of the pearl,” an alternate name for the Pearl River (Pearl Harbor). The harbor was named Pearl Harbor after the pearl oysters of the family Pteriidae (mainly *Pinctada radiata*), which were once

abundant on the harbor reefs, but were later decimated by over-harvesting (See Section 3.8). This oyster was supposedly brought from Kahiki, the Hawaiian ancestral lands, by a *mo‘o* (lizard or water spirit) named Kānekua‘ana (Handy and Handy 1972:470).

Kānekua‘ana was the *kia‘i* (food guardian) for ‘Ewa. When food was scarce, the descendants of Kua‘ana built *waihau heiau* (a *heiau* for *mo‘o*) for her and lit fires to plead for her blessings. For ‘Ewa the main *i‘a* (marine food) blessing was the famous *pipi*, or pearl oyster.

A clarification of the story of Kānekua‘ana and the pearl oysters of Pu‘uloa is given, in which it seems an overseer had set a ban on the *pipi* for several months a year so that they could increase. A poor widow, a relation of the *mo‘o*, took some of the *pipi* and hid them in a basket. The *konohiki* found the hidden shells, and took them from her, emptying them back into the sea, which was proper. However, after this he followed the woman home and also demanded that she pay a stiff fine in cash, which she did not have. The *mo‘o* thought this was unjust and the next night she took possession of a neighbor who was a medium.

> . . . After the overseer had gone back to Palea the lizard goddess possessed her aged keeper [a woman of ‘Ewa] and said to those in the house, “I am taking the pipi back to Kahiki and they will not return until all the descendants of this man are dead. I go to sleep. Do not awaken my medium until she wakes of her own accord.” The command was obeyed and she slept four days and four nights before she awoke. During the time that she slept the pearl oysters vanished from the places where they were found in great numbers, as far as the shore. The few found today are merely nothing . . . (*Ka Loea Kālai‘āina* 1899, translation in Sterling and Summers 1978)

This oyster, the *pipi*, was sometimes called “the silent fish,” or, *i‘a hamau leo o ‘Ewa*, ‘Ewa’s silent sea creature (Handy and Handy 1972:471), since the collectors were supposed to stay quiet while harvesting the shells, as in the sayings:

Ka i‘a hāmau leo o ‘Ewa. The fish of ‘Ewa that silences the voice.

This means the pearl oyster must be gathered in silence (Pukui 1983:144).

Haunāele ‘Ewa i ka Moa‘e. ‘Ewa is disturbed by the Moa‘e wind.

This is used about something disturbing, like a violet argument. When the people of ‘Ewa went to gather the *pipi*, they did so in silence, for if the spoke, a Moa‘e breeze would suddenly blow across the water, rippling it, and the oysters would disappear (Pukui 1983:59).

E hāmau o makani mai auane‘i. Hush, lest the wind rise.

This means that one should hold their silence or trouble will come. When the people went to gather pearl oysters at Pu‘uloa, they did so in silence, for they believed that if

they spoke, a gust of wind would ripple the water and the oysters would vanish (Pukui 1983:34).

Ka i‘a kuhi lima o ‘Ewa. The gesturing fish of ‘Ewa.

This means that fishermen did not speak when fishing for *pipi*, but gestured to each other like deaf-mutes (Pukui 1983:148).

In Hawaiian lore, Pu‘uloa is where humans are said to have landed first on the island of O‘ahu, with many *ka lua* (caves) of the *‘ōlohe* (warriors who plucked their hairs and greased their bodies and were skilled in the art of *lua* or bone-breaking and wrestling) in the surrounding area (Beckwith 1970:343). Pu‘uloa is also the home of the shark goddess, Ka‘ahupahau, the sister of Kānehunamoku, Kamohoali‘i and Kahi‘ukā, said to live in an underwater cave at the entrance to Pu‘uloa Harbor (Beckwith 1970:138-39; Kamakau 1964:73). She was born of human parents, with light hair and had the ability to change into shark form. Along with her brother, Kahi‘ukā, they were both friendly to man and were not known as man-eating sharks. Their *kahu* (guardian) fed them daily and kept their backs scraped clean from barnacles. It is said that the chiefess Papio reproached the *kahu* for wearing a beautiful *lei pāpahi* (adornment) of *‘ilima*. The *‘ilima* blossoms were sacred to Ka‘ahupahau. Papio wanted the *lei*, but the *kahu* refused to give it up. Papio threatened the *kahu* with death. It is said that Ka‘ahupahau retaliated by killing Papio. For this crime, Ka‘ahupahau was tried and punished. Years later, when Ka‘ahupahau got into some trouble, she received help from Kupiapia and Laukahi‘u, the sons of Kuhaimoana. Since that time, a *kanawai* (law) was established that the waters of O‘ahu, from Pu‘uloa to ‘Ewa, were protected from man-eating sharks by Ka‘ahupahau and her brother, Kahi‘ukā (Kamakau 1964:73; Beckwith 1970:138-39).

3.3.3 Pōhaku o Ki‘i (Stone of Ki‘i)

John Ka‘imikaua shared a *mo‘olelo* of Pōhaku o Ki‘i, or the Stone of Ki‘i (Napoka 1994:2), According to Mr. Ka‘imikaua, a beautiful woman of chiefly rank named La‘a fell in love with a handsome commoner named Ki‘i. Her father, a high chief, forbade the marriage, but would relent if Ki‘i could fulfill his wish. The high chief instructed Ki‘i to go into the Ko‘olau mountains and make a lei from the rare white *lehua* blossoms. If he returned before sunrise on the third day with the lei he could marry La‘a. Ki‘i gathered the *lehua* blossoms and rushed down to the high chief’s home near a sacred bathing pond on the third day. He was within sight of the pond when the first rays of the sun rose over the Ko‘olau mountains. He was turned to stone just above the pond, Pohaku o Ki‘i. La‘a never married. She became the *moo wahine* (demigoddess) of the pond, which was named Waiola‘a, or the waters of La‘a. She would pull down and drown any commoner who swam in the waters—only male chiefs could use the sacred pond, including Kakuhihewa and Kuali‘i, as well as the god Kamapua‘a. The last chief to bathe here was David Kalakaua while on his way to Honouliuli. Two palms were planted in historic times to mark the sacred pond, which now mark the entrance to the post office in ‘Aiea.

Pōhaku o Ki‘i was moved to the entrance of the ‘Aiea post office due to the widening of Moanalua Road in 1994. This final resting place of Pōhaku o Ki‘i is near the historic site of Waiola‘a pond. Thus, the two lovers Ki‘i and La‘a have finally been reunited (Aiea High School and Alumni and Community Association 2009).

3.4 Heiau

Keaīwa Heiau (Figure 9) is located at the head of ‘Aiea Stream, approximately 2.5 miles inland from the coast. It faces south, overlooking Pu‘uloa (McAllister 1933:103). A four-foot rock wall encloses an area 100 by 160 feet. In the early 1930s, the temple was still standing, although in bad shape, as the slope around it was extensively eroded. Thrum (1907:46) reported that its *kahuna* (priest) was named Keaīwa. Sterling and Summers (1978:11) learned that the name Ke-a-iwa came from an archaic word *aiwa-iwa*, meaning “mysterious or incomprehensible” in reference to the unexplainable powers of the priests or herbs used in healing practices. According to Taylor (1957), Keaīwa Heiau was the only known memorial of the healing art.

The temple was rededicated as a *heiau lapa‘au* or *heiau ho‘ola* (temple of healing) in 1951, during which an elder Hawaiian commented that the *heiau* was named Keaīwa after the medicinal god of early times (Larsen 1952). Significantly, renowned Maori anthropologist, physician and politician Te Rangi Hiroa, or Sir Peter Buck, delivered the last speech of his life at the rededication ceremony (Larson 1952). Keaīwa Heiau was listed on the National and Hawai‘i State Register of Historic Places in 1972 and 1979, respectively.

Another *heiau* may exist farther downstream near the current Project site. Fukuda (1994) recorded an interview with *kumu hula* (*hula* teacher) John Ka‘imikaua on sacred cultural places in ‘Aiea Ahupua‘a (see Section 4.6.1). Mr. Ka‘imikaua described a rock wall directly east of the ‘Aiea Intermediate School called Kaonohiokala. The last person to use the *heiau* was the wife of Chief Kaeo, who fled there during the battle of Kukiiahu and died, only to be revived by her benevolent *‘aumakua*, a *pueo* (owl).

There is also a record at the Bishop Museum of a *heiau* in ‘Aiea Ahupua‘a called Ki‘i Heiau. An image of the *heiau* was found in a rice field around 1905 and purchased in 1926. There is no other information available at the Bishop Museum.

Figure 9. Keaīwa Heiau facing Pu‘uloa (CSH, September 25, 2009)

3.5 Loko I‘a

Loko Kahakupōhaku was recorded by McAllister (1933:102-103) as a large three-acre coastal fishpond with a semicircular wall 1,050 feet long and three to five feet high. It was adjacent on the eastern side with Loko Keilapeia; the wall between the two marked the coastal *ahupua‘a* boundary of ‘Aiea and Hālawa. A small stream called Ka‘omuoiki was listed as the eastern boundary of Land Commission Award 2104 in the *‘ili* (land section that is subdivision of a *ahupua‘a*) of Kaluaopuu. The name means “the small lid, cover, or plug” (Soehren 2009; Pukui and Elbert 1986).

3.6 Ilina

There is no documented evidence from archaeological surveys, historical records or oral traditions of *ilina* (burials) within the Project area or the *ahupua‘a* of ‘Aiea.

3.7 Pre-Contact and Early History

Many references document that chiefs resided in ‘Ewa. Noted Hawaiian historian Samuel Kamakau provides oral accounts of chiefs and chiefesses that date to at least the 12th century. He tells us that:

> The chiefs of Līhu‘e [in ‘Ewa], Wahiawā, and Halemano on O‘ahu were called *lō ali‘i*. Because the chiefs at these places lived there continually and guarded their *kapu*, they were called *lō ali‘i* (from whom a “guaranteed” chief might be obtained, *loa‘a*). They were like gods, unseen, resembling men. (Kamakau 1991a:40)

In the mid-11th century, Māweke, a direct lineal descendant of the illustrious Nanaulu (ancestor of Hawaiian Royalty), was a chief of O‘ahu (Fornander 1996:47). Keaunui, the second of his three sons, became the head of the powerful ‘Ewa chiefs. Tradition tells of him cutting of a navigable channel through the Pearl River using his canoe. Keaunui’s son, Lakona, became the progenitor of the ‘Ewa chiefs.

> Maweke’s three sons each controlled major districts of Oahu . . . One, Keaunui, was the most powerful, controlling Ewa and its satellite districts of Waianae and Waialua. At this time the island apparently was not unified. . . .
>
> However, the descendants of the eldest of Maweke’s sons (Mulielealii) did unify and become kings of the island. Mulielealii controlled Kona. Of his three eldest sons, Fornander . . . says Kumuhonua could have become *Moi* (king) of the entire island. If he did not, his immediate descendants did. His great-great-grandson Kapae-a-Lakona (or Lakona) was *Moi* of the island. Kumuhonua himself, controlled the vital Ewa District (and Waianae and Waialua); thus the power base of Oahu seems to have stayed in Ewa. (Cordy 1981:204)

By circa A.D. 1320, ‘Ewa, along with Kona, and Ko‘olaupoko were the dominant polities, ruled by the sons of Māweke (Cordy 2002:21). Oral traditions speak of the reign of Mā‘ili-kūkahi, an *ali‘i kapu* who was born at Kūkaniloko in Wahiawā around the 14th century (Pukui et

al. 1974:113). Upon consenting to become *mō‘ī* at the age of 29, he was taken to Kapukapu-ākea *heiau* at Pa‘ala‘a-kai in Wai‘alua to be consecrated. Soon after becoming king, Mā‘ili-kūkahi was taken by the chiefs to live at Waikīkī. The story suggests he was one of the first chiefs to live there. Up until this time the chiefs had always lived at Wai‘alua and ‘Ewa. Under his reign, the land divisions were reorganized and redefined. In reference to the productivity of the land and the population during Mā‘ili-kūkahi’s reign, Kamakau writes:

> In the time of Mā‘ili-kūkahi, the land was full of people. From the brow, lae, of Kulihemo to the brow of Maunauna in ‘Ewa, from the brow of Maunauna to the brow of Pu‘ukea [Pu‘u Ku‘ua] the land was full of chiefs and people. From Kānewai to Halemano in Wai‘alua, from Halemano to Paupali, from Paupali to Hālawa in ‘Ewa the land was filled with chiefs and people. (Kamakau 1991:55)

Around 1400, the entire island was ruled by King La‘akona; chiefs within his line, the Māweke-Kumuhonua line, reigned until about 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 (Fornander 1996:88; Kamakau 1991:54). 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 circa 1740, and later conquered parts of Moloka‘i. He ruled O‘ahu until his death circa 1778 when Kahahana, of the ‘Ewa line of chiefs, was selected as the ruler of O‘ahu (Cordy 2002:24-41).

‘Ewa continued to be a political center until the 18th century when Kahahana, a Maui chief, was chosen by the O‘ahu chiefs to rule over the whole island. Between 1783-85, Kahahana was killed by Kahekili of Maui. Kahahana’s father ‘Elani, along with other O‘ahu chiefs, plotted to kill Kahekili and his chiefs who were residing at Kailua, O‘ahu, as well as his chiefs residing at ‘Ewa and Wai‘alua. The plot was discovered by Kahekili and a messenger was sent to warn Hū‘eu at Wai‘alua. For some reason, the messenger never reached Hū‘eu and he and his retinue were killed. This slaughter became known as the Waipi‘o Kīmopō or the Waipi‘o assassination because it originated there. Kahekili avenged the death of Hū‘eu by pillaging and destroying the districts of Kona and ‘Ewa. It is said that the streams of Makaho and Niuhelewai in Kona, as well as Hō‘ae‘ae in ‘Ewa, were “choked with the bodies of the dead” (Kamakau 1992:138). It was during this time that the O‘ahu chiefly lines were nearly exterminated. It is said that one of the Maui chiefs, Kalaikoa, used the bones of the slain to build a wall around his house at Lapakea in Moanalua. The house was known as Kauwalua and could be seen as one passed by the “old upper road to ‘Ewa” (Kamakau 1992:128-38).

Kahekili and the Maui chiefs retained control of O‘ahu until the 1790s. Kahekili died at Waikīkī in 1794. His son, Kalanikapule, was defeated the following year at the battle of Nu‘uanu by Kamehameha, who distributed the O‘ahu lands - including the ‘Ewa district - among his favorites: . . . “land belonging to the old chiefs was given to strange chiefs and that of old residents on the land to their companies of soldiers, leaving the old settled families destitute” (Kamakau 1992:376-377).

Even though Waikīkī was a favorite playground for the chiefs of Kona, as with ‘Ewa chiefs, there were no deep harbors where large ships could enter port. With the introduction of trade and foreign goods, along with Kamehameha’s unifying the islands, attention shifted to Kou (old name for Honolulu, used until about 1800 (Pukui et al. 1974:117)), which had a deep enough harbor for ships to pull in and anchor. Kou became the center of activity as royalty moved away from the outer districts toward the center of commerce. The general populace as well moved away from the rural areas as they, too, became dependent on a cash economy. Archibald Campbell writes about O‘ahu in 1809:

> Although only of secondary size, it has become the most important island in the group, both on account of its superior fertility, and because it possesses the only secure harbor to be met with in the Sandwich Islands.
>
> In consequence of this, and of the facility with which fresh provisions can be procured, almost every vessel that navigates the North Pacific puts in here to refit. This is probably the principal reason why the king has chosen it as his place of residence. (Campbell 1967:109-110)

3.8 Subsistence and Settlement

Archaeological and traditional sources suggest that the whole *moku* of ‘Ewa, including ‘Aiea, was prosperous, productive and heavily populated. ‘Ewa is depicted as an abundant and populated land where chiefs of distinguished lineages were born and resided. The land was fertile and well-fed by mountain streams that helped sustain the agricultural lifestyle needed to support the chiefs, their households and their people. In fact, six of the twelve *ahupua‘a* names in ‘Ewa begin with *wai*, the Hawaiian word for water (Waikele, Waipi‘o, Waiawa, Waimano, Waiau, and Waimalu).

Handy says about ‘Ewa:

> The salient feature of ‘Ewa, and perhaps its most notable difference, is its spacious coastal plain, surrounding the deep bays (“lochs”) of Pearl Harbor, which are actually the drowned seaward valleys of ‘Ewa’s main streams, Waikele and Waipi‘o . . . The lowlands, bisected by ample streams, were ideal terrain for the cultivation of irrigated taro. The hinterland consisted of deep valleys running far back into the Ko‘olau range. Between the valleys were ridges, with steep sides, but a very gradual increase of altitude. The lower parts of the valley sides were excellent for the culture of yams and bananas. Farther inland grew the ‘*awa* for which the area was famous. 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 in famine time. (Handy and Handy 1972:469)

Except for the numerous varieties of shellfish and abundance of mullet, Handy describes ‘Ewa as being like the rest of O‘ahu:

> In the interior was the same avifauna, including the birds whose feathers were prized for feather capes, helmets, and *lei* making. In fact this, with its spacious *wao* inland, was the region where these birds were most numerous. There were more extensive areas also where *wauke* and *mamaki*, which supplied bast for the making of *tapa*, grew in abundance. In fact, ‘Ewa was famous for its *mamaki*. There was, too, much *olona* grown in the interior, and wild bananas and yams flourished (Handy and Handy 1972:470)

The following *‘ōlelo no‘eau* (saying or proverb) refers to ‘Ewa’s reputation for being very dusty, such that the sea would be colored red from the dirt and mud during rainy seasons:

> *‘Ewa: ‘Āina koi ‘ula i ka lepo*. ‘Ewa, land reddened by the rising dust. (Pukui 1983:257)

‘Ewa was also known for a special and tasty variety of *kalo* (taro) called *kāī* which was native to the district. Handy (1940) collected four varieties; the *kāī ‘ula‘ula* (red *kāī*), *kāī koi* (*kāī* that pierces), *kāī kea* or *kāī ke‘oke‘o* (white *kāī*), and *kāī uliuli* (dark *kāī*). A *kama‘āina* (native) of ‘Ewa described the *kāī kea* as being very fragrant. The *kāī ke‘oke‘o* made an exceptionally good poi and was said to be reserved for the *ali‘i* (chiefs). An 1899 newspaper account says of the *kāī koi*, “That is the taro that visitors gnaw on and find it so good that they want to live until they die in ‘Ewa. The *poi* of *kāī koi* is so delicious” (*Ka Loea Kālai‘āina* 1899). So famous was the *kāī* variety that ‘Ewa was sometimes affectionately called *Kāī o ‘Ewa* (Handy and Handy 1972:471). Another *‘ōlelo no‘eau* that reflects the importance of the *kāī* is “*Ua ‘ai i ke kāī koi o ‘Ewa*,” said of someone who has eaten of this very choice *kalo* of ‘Ewa. The *kaona* (hidden meaning) of this proverb refers to a “sweetheart one can’t forget” (Pukui and Elbert 1986:115).

McAllister (1933:44) describes the agricultural area of ‘Aiea as:

> …The adjoining low country is overflowed both naturally and by artificial means, and is well stocked with tarrow plantations, bananas, etc. The land belongs to many different proprietors; and on every estate there is a fishpond surrounded by a stone wall…The neighborhood of the Pearl River is very extensive, rising backwards with a gentle slope toward the woods, but is without cultivation, except around the outskirts to about half a mile from the water. The country is divided into separate farms or allotments belonging to the chiefs, and enclosed with walls from 4 to 6 feet high, made of a mixture of mud and stone.

An early visitor, George Mathison (1825:416-417), described the general Aiea area as it was in 1821-1822.

> We passed over a long cultivated plain, varied by occasional ravines, for a distance of twenty miles, and about two o’clock reached Pearl River, so called from the pearls which are found in small quantities in its bed. . . . The sea here forms a small bay, which has the appearance of a salt-water lake, being landlocked on every side except at the narrow entrance. Two or three small

> streams, too insignificant to merit the appellation of rivers discharge their united waters into the bay, which is full six miles in length and two in breadth. The adjoining low country is overflowed both naturally and by artificial means, and is well stocked with tarrow-plantations, bananas, &c. The land belongs to many different proprietors; and on every estate there is a fishpond surrounded by a stone wall, where the fish are strictly preserved for the use of their rightful owners, or tabooed, as the native express it. One of particularly large dimensions belongs to the King.

McAllister (1933) observed that fishponds were more numerous along the shore of Pu‘uloa than any other location on O‘ahu. Most of these ponds have since been destroyed. Pu‘uloa was also famous for the *pipi* or pearl oysters which were eaten raw. Along with being a popular delicacy, the *pipi* shells were used as shanks for fish hooks. Some of the varieties of *pipi* included *pāpaua*, *‘owā‘owaka*, *nahawele*, *kupekala*, *mahamoe*, *‘ōkupe* and *‘ōlepe* (Handy and Handy 1972:470). Samuel Kamakau describes the *pipi* of Pu‘uloa:

> That was the oyster that came in from deep water to the mussel beds near shore, from the channel entrance of Pu‘uloa to the rocks along the edges of the fishponds. They grew right on the nahawele mussels and thus was this i‘a obtained. Not six months after the hau branches [that placed a kapu on these waters until the pipi should come up] were set up, the pipi were found in abundance-enough for all ‘Ewa-and fat with flesh. Within the oyster was a jewel (daimana) called a pearl (momi), beautiful as the eyeball of a fish, white and shining; white as the cuttle fish, and shining with the colors of the rainbow-reds and yellow and blues, and some pinkish white, ranging in size from small to large. They were of great bargaining value (he waiwai kumuku‘ai nui) in the ancient days, but were just “rubbish” (‘opala) in ‘Ewa. (Kamakau 1991:83)

Sereno Bishop, a resident of O‘ahu in 1836, wrote of the *pipi* and another edible clam, identified by Margaret Titcomb (1979:351) as probably *Lioconcha heiroglyphica*:

> The lochs or lagoons of Pearl River were not then as shoal as now. The subsequent occupation of the uplands by cattle denuded the country of herbage, and caused vast quantities of earth to be washed down by storms into the lagoons, shoaling the water for a long distance seaward. No doubt the area of deepwater and anchorage has been greatly diminished. In the thirties, the small oyster was quite abundant, and common on our table. Small pearls were frequently found in them. No doubt the copious inflow of fresh water favored their presence. I think they have become almost entire extinct, drowned out by the mud. There was also at Pearl River a handsome speckled clam, of a delicate flavor which contained milk white pearls of exquisite luster and perfectly spherical. I think the clam is still found in the Ewa Lochs. (Bishop 1901:87)

Older Hawaiians believed that the *pipi* disappeared around the time of the smallpox epidemic of 1850-1853, because Kānekua‘ana became displeased at the greed of some *konohiki* (overseer):

> The people of the place believe that the lizard was angry because the konohikis imposed kapus [bans], were cross with the women and seized their catch of oysters. So this “fish” was removed to Tahiti and other lands. When it vanished a white, toothed thing grew everywhere in the sea, of Ewa, which the natives of Ewa had named the pahikaua (sword). It is sharp edged and had come from Kauai-helanai, according to this legend. (Manu 1885, cited in Sterling and Summer 1978:50)

The *pipi* could still be found at Pu‘uloa until the end of the 20th century (Handy and Handy 1972:471; *Ka Loea Kālai‘Āina* 1899). The following story explains why the *pipi* of ‘Ewa vanished and can no longer be found at Pu‘uloa:

> The kahu of the sea and pipi lived at Palea. One day, a woman from Mānana (Pearl City) went crabbing in the sea of Kaholona. The pipi were thick and plentiful there. As she thought no one was watching, she grabbed some pipi at the same time as she reached for crabs. She was found out and her hulilau gourd container was broken and thrown into the sea. The kahu also fined her 25 cents. The woman consented to pay the fine saying, “The money is at home.” So the kahu went home with her to get the quarter. He knotted it in a flap of his malo and returned to Palea. When he reached his home, he discovered that he had lost the quarter and he was very disappointed.
>
> Kānekua‘ana was the famous mo‘o (lizard) god of ‘Ewa and it was Kānekua‘ana who was credited with bringing the pipi to Pu`uloa from Kahiki. Continuing the story, the kahu, after returning to Palea, became possessed by Kānekua`ana. The mo‘o god said to those in the house, “I am returning to Kahiki and am taking all the pipi with me. They will not return until all the descendants of this woman are dead. Only then shall the pipi be returned. I go to sleep. Do not awaken my medium until he wakes up of his own accord.” The kahu slept for four days and four nights. During that time, the pipi vanished from all the places where they were once so abundantly found. To this day, they have not returned to the shores of Pu‘uloa. (A paraphrased account taken from *Ka Loea Kālai‘Āina* 1899)

Section 4 Historical Background

4.1 Observations of Early Explorers and Foreign Residents

Captain Cook first sighted O‘ahu on January 18, 1778, but did not make a landing. Shortly after the death of Captain Cook, O‘ahu had its first contact with foreigners when the *Resolution* and the *Discovery* landed at Waimea Bay on February 27, 1779. It was not until 1786 that the next contact with foreign ships were made when the *King George* under Captain Portlock and the *Queen Charlotte* under Captain Dixon pulled in at Wai‘alae Bay for a brief, four-day stop to provision their ships. Visits by foreigners were much more frequent after 1786 (McAllister 1933:5).

During the first decades of the 19th century, several western visitors described the ‘Ewa landscape near Pearl Harbor. Archibald Campbell, an English sailor, spent some time in Hawai‘i from 1809-1810. He had endured a shipwreck off the Island of Sannack on the northwest coast of America. As a result, both his feet were frostbitten and had to be amputated. He spent over a year recuperating in the Hawaiian Islands. His narrative is considered noteworthy because it describes life before the missionaries arrived. During part of his stay, he resided with King Kamehameha I, who granted him 60 acres in Waimano Ahupua‘a in 1809. Campbell described his land:

> 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]. I immediately removed thither; and it being Macaheite time [Makahiki], during which canoes are tabooed, I was carried on men’s shoulders. 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 taro beds. Where there was no water, the land was under crops of yams and sweet potatoes. The roads and numerous houses are shaded by cocoa-nut trees, and the sides of the mountains are covered with wood to a great height. We halted two or three times, and were treated by the natives with the utmost hospitality. My farm, called Wymannoo [Waimano], was upon the east side of the river, four or five miles from its mouth. Fifteen people with their families resided upon it, who cultivated the ground as my servants. There were three houses upon the property; but I found it most agreeable to live with one of my neighbours, and get what I wanted from my own land. This person’s name was William Stevenson a native of Borrowstouness. (Campbell 1967:103-104)

Of the Pearl River area, Campbell wrote:

> Wymumme, or Pearl River, lies about seven miles farther to the westward. This inlet extends ten or twelve miles up the country. The entrance is not more than a quarter of a mile wide, and is only navigable for small craft; the depth of water on the bar, at the highest tides, not exceeding seven feet; farther up it is nearly two miles across. There is an isle in it, belonging to Manina, the king’s interpreter, in

> which he keeps a numerous flock of sheep and goats. The flat land along shore is highly cultivated; taro root, yams, and sweet potatoes, are the most common crops; but taro forms the chief object of their husbandry, being the principal article of food amongst every class of inhabitants. (Campbell 1967:114-115)

4.2 Missionary Stations and the Population Consensus

The first company of Protestant missionaries from America, part of the American Board of Commissioners of Foreign Missions (ABCFM), arrived in Honolulu in 1820. Although the missionaries were based in Honolulu, they traveled around the islands intermittently to preach to the rural Hawaiians and to check on the progress of English and Bible instruction schools set up by local converts.

The first mission in ‘Ewa was established in 1834 in Waiawa near Pearl Harbor. Two missionaries, Lowell and Abigail Smith, were assigned to the station, and were in charge of building a church and a house for themselves near the church (Hawaiian Mission Children’s Society 1969:3-9). The *ali‘i* of ‘Ewa, Kīna‘u, who was the daughter of Kamehameha I and an early Christian convert, offered the missionaries to “settle upon her land” (letter from Lowell Smith, 1833, cited in Frear 1934:69). Citing his wife’s poor health, the Smiths went to Moloka‘i instead. But at the General Meeting of the missionaries in June and July of 1834, the board decided that the Smith’s should be transferred to ‘Ewa to a place three miles from the king‘s favorite country seat (Frear 1934:93). The Smith’s congregation was spread out over an area of 20 miles, and Lowell Smith traveled to different areas to preach to crowds usually several hundred strong. He also established two schools, one for boys and one for girls, and treated the sick, especially inoculating his parishioners against smallpox.

One of the main contributions by the missionaries was their establishment of a census of the population. The reports left by Artemas Bishop of the Ewa Protestant Station in Wai‘awa sheds light on the massive impact disease was having on the Hawaiian people in the ‘Ewa district. In ca. 1832, the population of ‘Ewa was about 4,015, the third largest district on O‘ahu, and by the end of 1835 it had decreased to 3,423 (Ewa Station Report 1835:4). In this census, Hālawa was combined with ‘Aiea. For these two *ahupua‘a* there were 404 individuals: 163 males, 134 females, 72 male children and 35 female children (Schmitt 1977:19). The population stabilized in the 1830s and early 1840s, but then decreased with a measles epidemic in October of 1849. In January 1849, the population of ‘Ewa was 2,386 people. Sereno Bishop (1916:44) noted that many taro patches had been abandoned when his family lived in Waiawa. The smallpox epidemic of 1853-1854 shattered the remaining population:

> The people of Ewa are a dying people. I have not been able to obtain an exact count of all the deaths & births since the last general meeting. But my impression is that there have been as many as 8 or 10 deaths to one birth. I have heard of but 4 births on Waiawa during the year, & all of these children are dead. I have attended about 20 funerals on that one land, & 16 of these were adults. (Ewa Station Report 1860:8-9)

Although Bishop made an attempt to vaccinate as many individuals as possible, a smallpox epidemic killed upwards of 400 people in the ‘Ewa District in the year 1854. The comments of Bishop reflect the destitution people were suffering district-wide:

> It is not necessary that I go into detail of that season of sorrow and trial which we passed through, and from which I did not myself escape without feeling its influence in my own person. Let it suffice here, that not a house or family in Ewa escaped. In many cases, whole families were cut off. Husbands and wives parents and children, were separated by death. The whole state of society became disorganized, almost every family was broken up. In the whole district between July and October inclusive, upwards of half of the people died and of those who escaped, many are still enfeebled in consequence. In the church we have lost upwards of 400 members, including several of my best men. We feel ourselves very much crippled in consequence. Many sad and affected feelings, mingled with discouragement have followed my labors through the year, and that to a degree far beyond what I ever before suffered. (Ewa Station Report 1854)

In 1860, Artemas Bishop further reported:

> The people of the district are rapidly diminishing, and whole neighborhoods where in former years were numerous families and cultivated lands, there are now no inhabitants, and the land is left to run to waste. The fathers have died off, and the children wander into other parts, and there are none to fill their places. (Ewa Station Report 1860:1)

4.3 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* received their land titles. *Kuleana* (right or privilege) awards for individual land parcels within the *ahupua‘a* were subsequently granted in 1850. These awards were presented to tenants, native Hawaiians, naturalized foreigners, non-Hawaiians born in the islands, or long-term resident foreigners who could prove occupancy on the parcels before 1845. Historic maps and documents indicate that Land Commission Award (LCA) parcels in the present downtown Honolulu area were awards to a variety of native Hawaiians and foreign settlers who had moved into Honolulu as the city developed. The *ahupua‘a* of ‘Aiea was awarded to Charles Kanaina (LCA 8559) who relinquished it back to the government in 1850.

The census for O‘ahu in 1850 was 25,440, which shows a decline of 14.5% over eighteen years. This population decline has been attributed to several factors, including disease, high infant mortality and low fertility rates due to sexually transmitted diseases (Schmitt 1973:15). Decline is also probably due to people moving away from rural areas closer to Kou (Honolulu), which was the center of trade and economic activity. On the island of O‘ahu, a decrease in the population statistics is seen almost yearly until 1884 when the figures show an increase from then on into the 20th century (Schmitt 1977:11). The increase is probably related in part to the growth of the sugar industry and the imported labor that was needed to work the plantations.

4.4 Ranching and Sugar Plantations

In many *ahupua‘a*, the lands that were not claimed by *kuleana* claimants were leased out to entrepreneurs who started ranching and sugar plantations on a large scale (Conde and Best 1973). As the sugar industry throughout the Hawaiian kingdom expanded in the second half of the 19th century, the need for increased numbers of field laborers prompted passage of contract labor laws. In 1852, the first Chinese contract laborers arrived in the islands. As the demand for *kalo* declined and importation of Chinese laborers to the west coast of California and Hawai‘i increased, a market for rice developed. The Royal Hawaiian Agricultural Society encouraged rice as a new crop. The first rice harvest occurred in 1862. By the mid-1860s, much of the *lo‘i* of central ‘Ewa had been transformed into rice fields as Chinese immigrants began to lease and purchase ‘Ewa lands. Most of the land was ". . . near sea level—undrained areas at the mouths of streams: lowlands, which could be reclaimed without great expense" (Coulter and Chun 1937:11). By 1892, there were approximately 76 acres of land planted in rice in the lowlands of ‘Aiea and Kalauao (Coulter and Chun 1937:21).

In the 1850s, J.R. Williams cultivated sugar cane in the area of ‘Aiea; however, his endeavor was short lived, as there was no railroad in operation for transporting cane to the mill and the mill itself burned to the ground three times. After the third time, the land reverted back to ranching for approximately 25 years (Conde and Best 1973:327) with very little development (Figure 10).

The production of sugar cane succeeded that of cattle and pineapple with noticeably increased profits. Although sugar cane was already being grown as far back as the early 1800s, it wasn't until 1879 when the first artesian well was drilled in ‘Ewa that the industry revealed its economic potential (Ellis 1995:22). The availability of subsurface water resources enabled greater irrigation possibilities for expanding plantations besides the use of water diversions from the surrounding stream systems. This prompted the drilling of many other wells amongst the Hawaiian Islands, thereby commencing the Hawai‘i sugar plantation era. By the early 1900s, the entire main Hawaiian Islands had land devoted to the production of sugar cane.

The Honolulu Sugar Company leased the land in 1899 (Figure 11) and built a sugar mill in ‘Aiea (Figure 12). It became the Honolulu Plantation Company in 1900 and had an active refinery in operation next to the mill by 1905. The plantation expanded along the northern inshore and upland areas of Pearl Harbor. The expanse of the Honolulu Plantation Company lands extended from ‘Aiea westward as far as Mānana and Waiawa Streams. Additionally, several land sections lay southeast of Pearl Harbor, where the present Honolulu International Airport and Hickam Air Force Base are located (Klieger 1995).

By the early 1900s, virtually all of the ‘Ewa plains had been transformed and planted in sugar cane. In spite of this, the Honolulu Plantation Company kept expanding until the sugar harvest peaked in 1920 (Klieger 1995:93). By the mid-1930s, the Honolulu Plantation Company had more than 23,000 acres of land leased in and around ‘Aiea. Sugar cane planting also extended seaward and a sugar plantation community developed at Pu‘uloa Camp circa 1930. Eventually, the lower portions of ‘Aiea were transformed into the H-1 and H-3 Interchange and the Pearl Harbor Navy base. Sugar production continued into the 1950s and early 1960s by the Oahu Sugar Company. In the 1960s, these lower portions were re-zoned for residential housing and

industrial use. Major developments in the area included an animal quarantine and the Aloha stadium (Klieger 1995:96). Historic maps (Figures 13-16) through the early 1900s indicate limited development in the vicinity of the current Project corridor. Much of the lands are indicated to be planted in sugar cane, with plantation-related infrastructure in the area. Based on this significant history of agriculture and industry, the ‘Aiea sugar mill was placed on the National and Hawai‘i State Registers of Historic Places in 1996 and 1995, respectively; however, it was demolished in 1998.

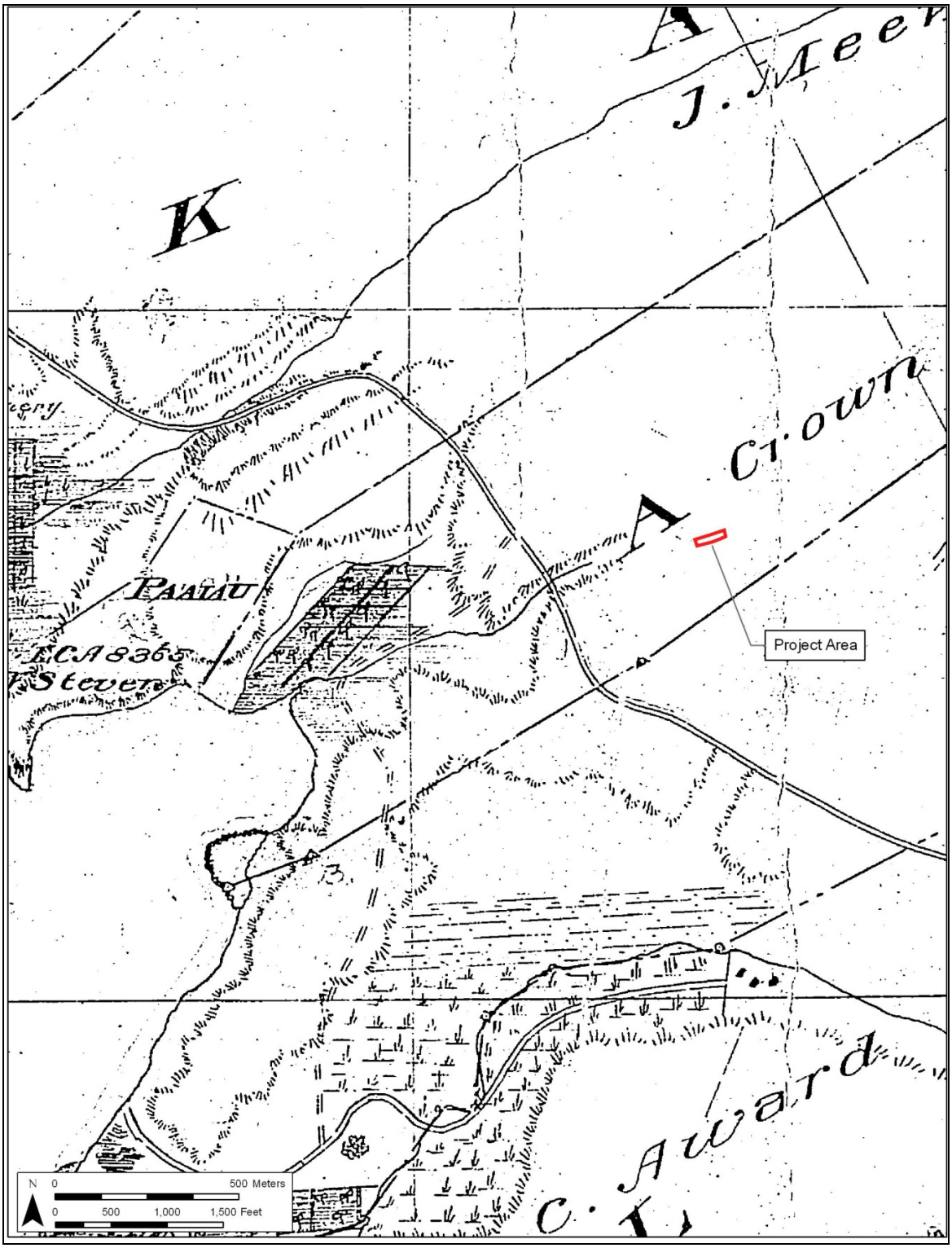

Figure 10. Portion of 1894 map of ‘Aiea showing the Project area (Alexander 1894)

Figure 11. 1899 map of ‘Aiea showing the Project area (Beasley 1899)

Figure 12. 1932 photograph of Pearl Harbor with the ‘Aiea sugar mill in the foreground (Scott 1968:822)

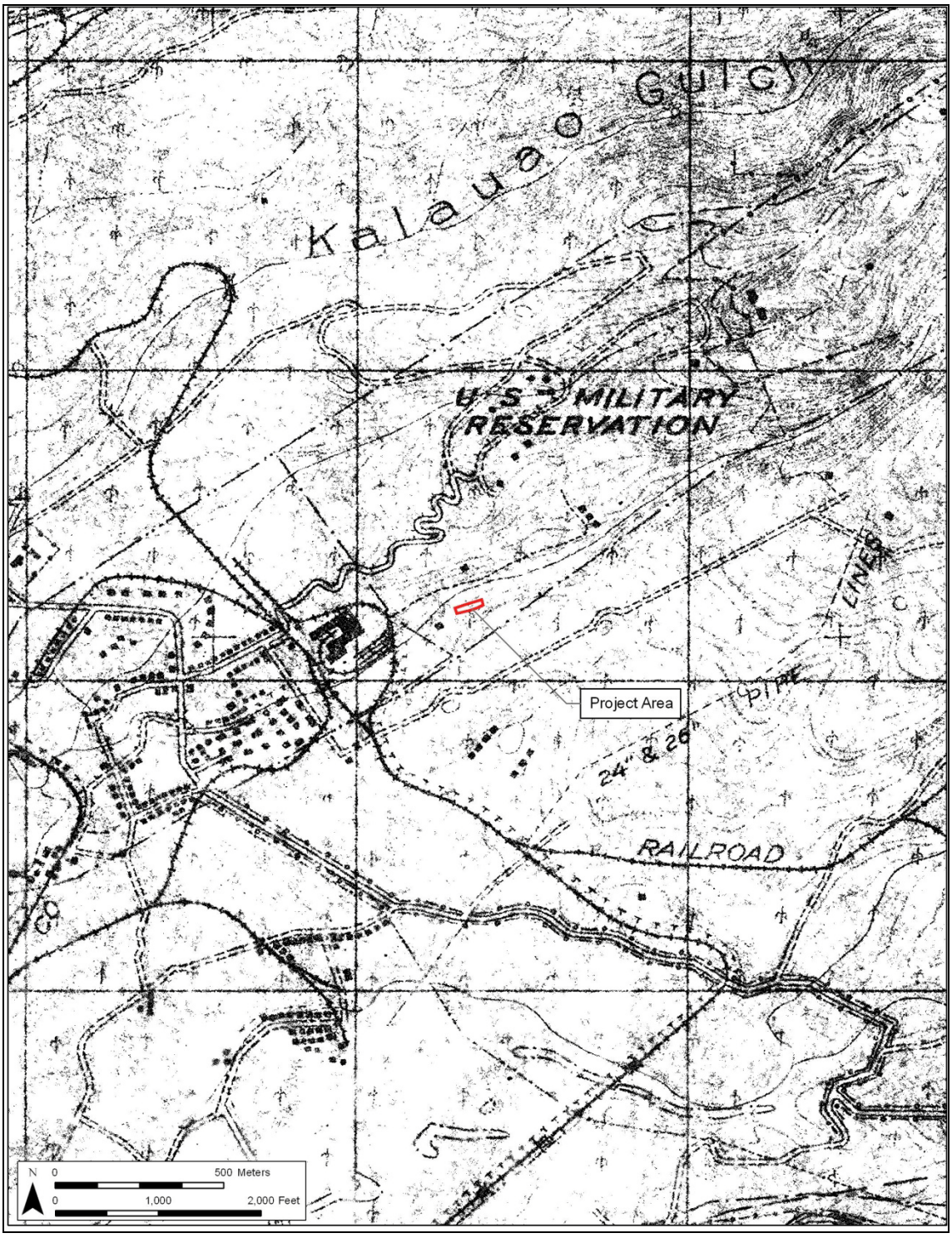

Figure 13. Portion of 1919 U.S. War Department map showing the Project area

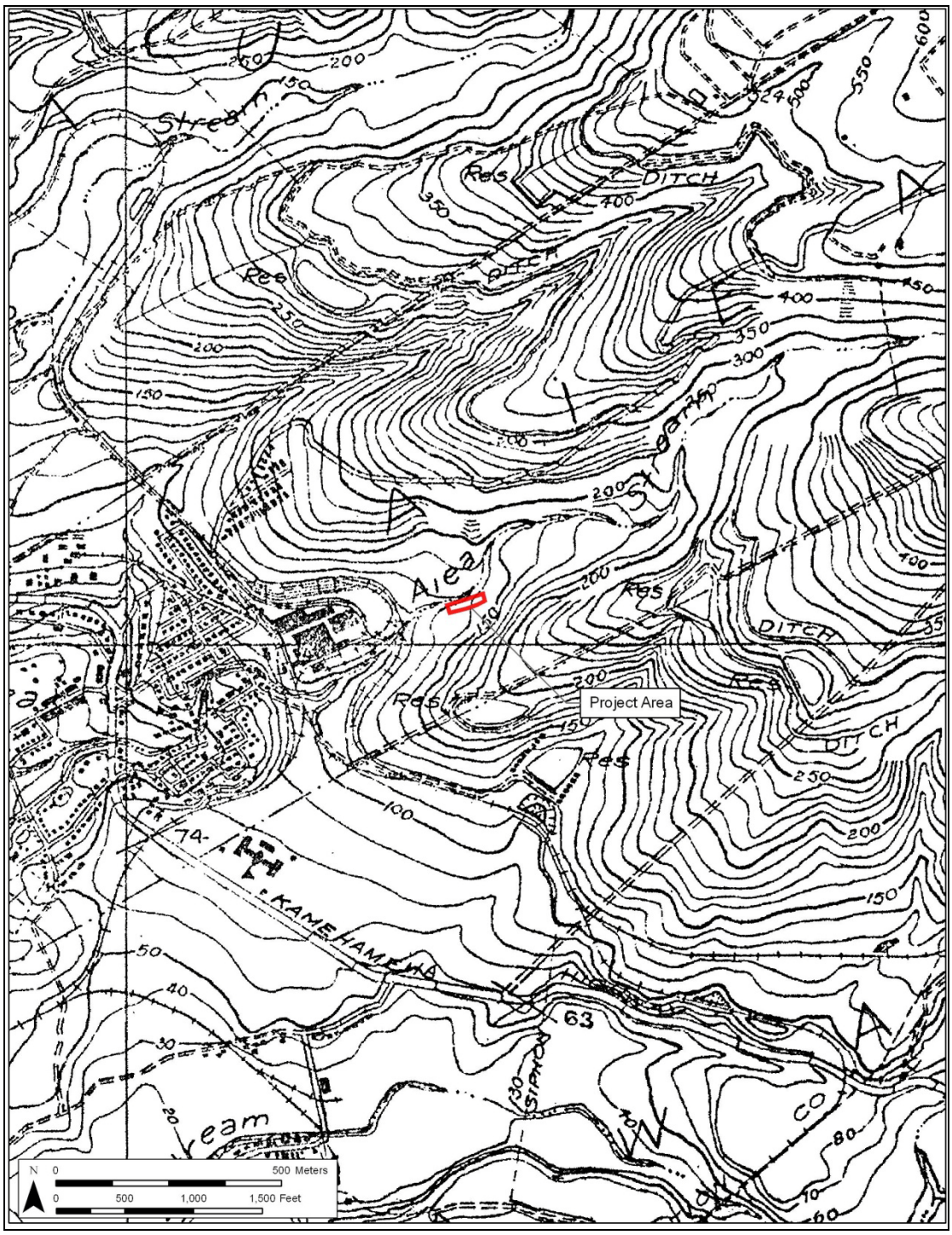

Figure 14. Portion of 1927-1928 Waipahu USGS 7.5-minute topographic quadrangle showing the Project area

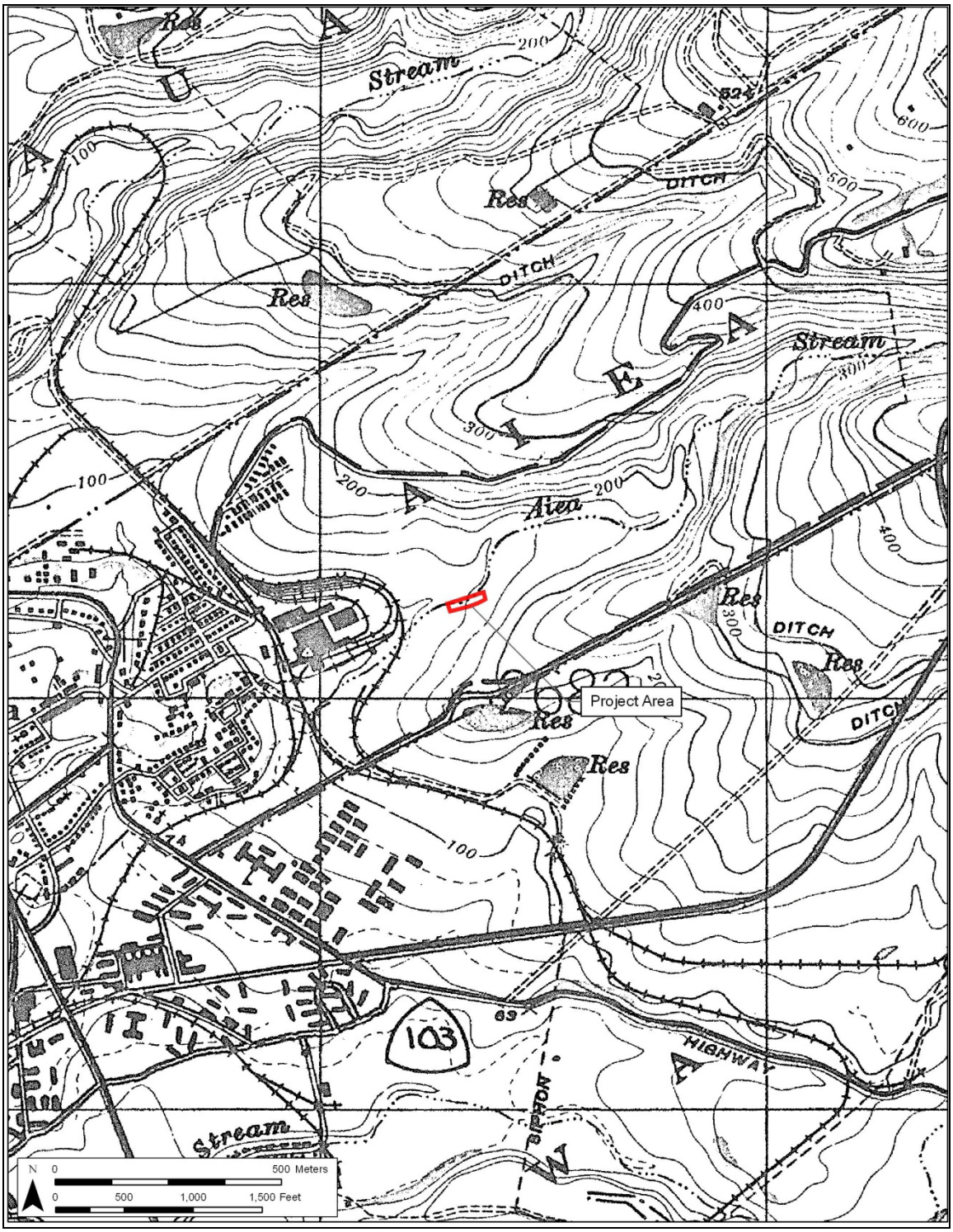

Figure 15. Portion of 1943 U.S. War Department map showing the Project area

Figure 16. Portion of 1954 AMS Waipahu 7.5-minute series topographic quadrangle showing the Project area

4.5 Oahu Railway and Land Company

The increased productivity of the sugar cane industry relied heavily on transporting the raw product from the field to the mills and then taking the processed sugar to port for loading onto ships or to storage facilities. B. Franklin Dillingham established rail lines in the Honolulu Plantation Company fields by financing the Oahu Railway & Land Company (O. R. & L.) in 1901. This provided a means to transport material, workers, and goods in an adequate amount of time.

During the last decade of the 19th century, the railroad extended 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. By 1910, the network of railway circumnavigated about the plantation with over 36 miles of main railroad, utilizing four locomotives and 500 cane cars (Conde and Best 1973:328). This transportation system greatly enhanced the plantation’s product output and economic growth, having taken in 900 tons of raw sugar per week and producing 1100 tons of processed sugar daily.

Operations at the O. R. & L. began to slow down in the 1920s, when electric streetcars were built for public transportation within the city of Honolulu and families began to use automobiles for transportation outside the city (Chiddix and Simpson 2004:185). The build-up to World War II turned this decline around, as the US military utilized the O. R. & L. lines to transport materials to build defense projects around the island. Historians have noted that one of the most serious mistakes made by the Japanese in their 1941 attack on Pearl Harbor was their decision not to bomb the railway infrastructure. Soon after the attack, the O. R. & L. operated 24 hours a day, transporting war materials and troops from Honolulu to the new and expanded army, naval, and air bases. The Navy base at Pearl Harbor had its own rail lines that connected to the O. R. & L. rail lines.

In August of 1945, the war ended, and so did the O. R. & L.’s heyday as a military transport line:

> She had served her country well and proudly during the war, but operating round-the-clock on what little maintenance could be squeezed in, had taken a prodigious hit on the locomotives and track. Traffic stayed steady for a short time, but soon dropped precipitously as soldiers and sailors went home, military posts were shrunk or razed, and civilians could again get tires, gasoline and new cars. (Chiddix and Simpson 2004:257)

There was no choice but to abandon the O. R. & L. main line, and in 1946 Water F. Dillingham, son of B.F. Dillingham, wrote:

> The sudden termination of the war with Japan changed not only the character of our transportation, but cut the freight tonnage to a third and the passenger business to a little above the pre-war level. With the increased cost of labor and material and the shrinkage in freight tonnage and passenger travel, it was definite that the road could not be operated as a common carrier. With no prospect of increased tonnage, and the impossibility of increasing rates against truck

> competition, your management has applied to the Interstate Commerce for authority to abandon its mainline. (Walter Dillingham, cited in Chiddix and Simpson 2004:257)

After the war, most of the 150 miles of O. R. & L. track were pried up, locomotives were sold to businesses on the US mainland, and railway cars were scrapped. In 1947, the US Navy took over a section of the O. R. & L. track for their own use, to transport bombs, ammunition, and torpedoes from the ammunition magazines at Lualualei, West Loch in Pearl Harbor, and Waikele on O. R. & L.'s Wahiawā Branch to Pearl Harbor Naval Base (Treiber 2005:25-26). The track to Waipahu was abandoned in the 1950s, but the line from the magazines in Lualualei to the wharves in West Loch at Peal Harbor remained open until 1968. As a result of the removal of the rail lines, the Honolulu Plantation Company went out of business in 1947 and its remaining assets were liquidated and absorbed by the Oahu Sugar Company.

In 1970, the Hawaiian Railway Society was formed to save and restore the remaining O. R. & L. railway tracks and stock. The federal government donated the tracks and right-of-way to the State of Hawai‘i in 1974, and the Society was able to place the Navy's Lualualei-Pearl Harbor track on the National Register of Historic Places on December 1, 1975. The Highway Railway Society has currently restored about 6.5 miles of this track, on which they run weekly tourist train rides from Ewa Station to Nānākuli, pulled by restored O. R. & L. locomotives (Chiddix and Simpson 2004:273).

4.6 Previous Oral History Interviews

4.6.1 John Ka‘imikaua

On September 20, 2005, Hawai‘i Pacific University students of Christopher Fung and Lynette Cruz visited Keaīwa Heiau on a class fieldtrip with *kumu hula* John Ka‘imikaua (Figure 17), who grew up in ‘Aiea Ahupua‘a and was a resident there until his passing in 2006. According to Mr. Ka‘imikaua, only four ancient sites remain in ‘Aiea Ahupua‘a today—Honomano Bay, Pōhaku o Ki‘i, a *heiau* by ‘Aiea Intermediate School and Keaīwa Heiau. The following notes from the fieldtrip are published electronically by Fung and Cruz (2005):

> [Keaīwa Heiau] is a healing heiau located in the mountains at the top end of the ahupua‘a of Aiea. Its name is pronounced *Ke-ai-wa* although some people pronounce it *Kea-i-wa*.
>
> Kumu John grew up in Aiea and still lives here. He used to come to this site when he was a student in high school. It was very near here that he met his teacher. When he first saw her house he was looking for the kahuna ti plant which he knew had crinkled leaves. The house was completely surrounded by ti plants with crinkly leaves, he knew that these must be the kahuna ti plant. He was going to just grab one branch and run off, but a voice inside him told him that he should knock at the door and ask for permission to take a branch instead, and it was in this way that he met the elder who would become his teacher.
>
> The ahupua‘a of Aiea is one of the smallest on O‘ahu, and this is a testament to the richness of its environment in ancient times. The ahupua`a extended down to Honomana (known today as McGrew Point) on Aiea Bay, and included some very fine fresh water springs (located in the area now covered by the Aiea Shopping Center). These springs were in turn responsible for the renowned lo‘i kalo of Aiea. Among the other natural riches of the ahupua‘a were the marine resources of Pu‘uloa (now called Pearl Harbor) which included many species of mullet, numerous species of mussels, abalone and clams…
>
> Aiea was renowned for several things: the sweetness of the water, the cool, sweet-smelling breeze known as Kōnihinihi that comes down from the mountains and then sweeps back up the valley, and the refreshing rain known as ‘āuānei. In the forests on the mountains there used to be numerous ‘Ō‘ō birds from whose feathers the great yellow cloaks of the chiefs were made. In ancient times, thousands of feathers would be given each year as tribute to the reigning chiefs. In the waters of Pu‘uloa lives the great shark goddess Ka‘ahupahau and her younger brother Kahi‘ukā. These sharks are aumakua to the people of Aiea and would protect them from man-eating sharks and other dangers. When the ‘ō‘ō birds’ song was heard on the coast, the people of Aiea knew that it was time to feed Kahi‘ukā at Honomano. They would bring down vegetable foods for the god to eat including bananas, sweet potato, and sometimes dog. The waters of the bay would be churned up by the wings of the many hihimanu (stingrays) that always accompanied Kahi‘ukā wherever he went.

Kumu John tells a story that was related to him by a kupuna who used to live in the Pu‘uloa area. She says that three days before the Japanese attacked the US naval base at Pearl Harbor, she was out in the bay fishing with her mother. All of a sudden, a huge 20-foot shark appeared beside the boat and swam backwards and forwards upside down beside the boat. The mother began chanting as soon as she saw the shark for she knew that it was Ka‘ahupahau. After the shark left, the mother gave a great “Aue” of sadness, and said that the goddess had told her that a great dying would occur in these waters. Three days later, the Japanese airplanes attacked the base and many people were killed.

Until 50 years ago, Aiea was fairly rural, with much of the area being covered in sugar plantation. Land modification by sugar companies starting in the 1870s with the Honolulu Plantation Company and then urban development in the last 50 years, particularly the Pearl Ridge Shopping Center have both contributed a great deal to the destruction of ancient sites in the Aiea area. However, the area was devastated in the 1840s when cattle were introduced into the area. The cattle destroyed the forest and thus deprived Hawaiians of the forest resources that they had used before this time...

The site [of Keaiwa Heiau] is a broad stone enclosure with surrounding gardens and houses (most of which have now been destroyed). Like other healing heiau, Keaiwa is in the mountains in a quiet area on a slight slope facing eastwards towards the rising sun which invoked the concept of rebirth and renewal, and so helped with the healing process. Kumu John stressed the importance of tranquility as a requirement for situating a healing heiau.

Today the walls are less than two feet tall in most places. This is because the army used the stones from the heiau to build roads in the area during the Second World War. There used to be traces of other walls and gardens around the heiau but these were removed also. The heiau has also been altered in more recent times. Outsiders came into the site and built a stone circle in the middle of the heiau. This is a consequence of the site being out in the open without adequate protection and care. Also the hau groves which existed as a part of the original heiau have also been cut down quite recently. The area could be replanted with young hau bushes, but John pointed out that the mother tree had been destroyed and that this was grievous damage to the site.

The heiau was built some time in the 10th century, it thrived until the 15th century when the practice of la‘auapalau [sic. *la‘aulapa‘au*] diminished owing to the good health of all the people. In the 16th century however, the chiefs began a series of bloody wars which led to a decline in health for the people and so the healing practices were revived.

The stone used to make the heiau is the next grade of stone from alā [dense waterworn volcanic stone], and is not found in the immediate area. The heiau was built by a human chain of people passing rocks from one to another over many

> miles. The human chain that built Keaiwa stretched over the ridge and up the Kalawao Valley against the wall of the Ko‘olau mountains. The rocks are known for their hardiness and longevity. The use of these stones reflect the Hawaiians' hope that the heiau would last forever.
>
> Keaiwa was one of 12 healing heiau on this side of the island (two in each moku). Students would come from other islands and districts to the heiau to learn how to be healers. In Hawaiian, healing is ho‘ola (ola = life). The training process was very rigorous and would take 20 to 40 years to complete.
>
> When the heiau was in use, the walls were 15 to 20 feet high and enclosed the area in which the kahuna would do ceremonies and teach their students about the healing arts. No one else was allowed inside. There was a garden which contained 400 different varieties of medicinal plants which were used in healing, now only six or seven remain. There were also dense groves of hau trees which were used as steam baths. The kahuna and their students lived outside the heiau in the area surrounding and tended the gardens for the medicinal plants. As Keaiwa was a healing heiau, no human sacrifices took place here.

On May 4, 1994, University of Hawai‘i student Cynthia Fukuda (1994) interviewed John Ka‘imikaua. The notes of their conversation, which are paraphrased and edited below, add further details to the sacred cultural places in ‘Aiea Ahupua‘a:

> Waiola‘a is the site of a spring that was previously a royal bathing area. This bathing pool was only used by the high-ranking male chiefs, the last of which was David La‘amea Kalakaua. La‘a, a *kāpua* (demigoddess) whose form was that of a *mo‘o* (lizard), prevented anyone else from entering the pool. The *mo‘olelo* of Waiola‘a connects with a *pōhaku*. Waiola‘a, the daughter of an *ali‘i,* wanted to marry a commoner. The father issued his daughter's suitor a test: to accomplish a certain task in the mountains and return home before sunrise at the bathing pond. He returned only as the first rays of the sun rose above the horizon, and he was instantly turned to stone. The spring Waiola‘a was covered in the 1930s, but is still marked by two royal palm trees near the ‘Aiea Soto Mission.
>
> Most of the names of the *ahupua‘a* in this region start with *wai,* which signifies the numerous fresh water springs. Many *ali‘i* lived in these lands due to the spring-fed *kalo lo‘i*. In addition, the entire region of Pu‘uloa was known for its mullet and shellfish.
>
> A small *heiau* called Kaonohiokala is located behind the ‘Aiea Intermediate School in the bushes. The last one to use this *heiau* was the wife of Kaeo. She fled and died there during the battle of Kaeo, but a *pueo,* the family *‘aumakua*, came and flapped its wings to revive her.
>
> Keaīwa Heiau was a place to study medicine. It should be pronounced ke-ai-wa, which means "a place of fasting." Now there are only about seven medicinal

plants remaining at the *heiau*. The medicinal gardens used to be located where the entrance to the park exists today. A stone wall near the existing parking later has survived. The walls of Keaīwa Heiau were much higher before World War II, but the rocks of the *heiau* walls were taken and used by the military for constrution. The Hawaiians in the area warned that the gods would not be pleased with this. Indeed, an unexplained explosion in Pearl Harbor wounded 400 and took the lives of 127 men.

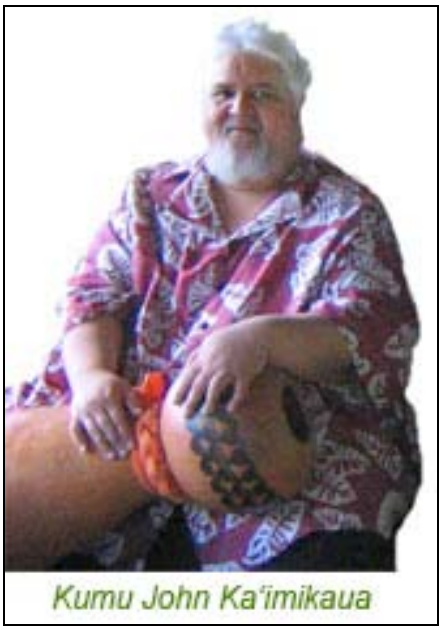

Figure 17. *Kumu hula* and ‘Aiea *kama‘āina* John Ka‘imikaua (Fung and Cruz 2005)

Section 5 Archaeological Research

5.1 Previous Archaeology

Several archaeological surveys and investigations have been conducted in ‘Aiea Ahupua‘a; however, only a few archaeological sites have been located (Figure 18). In summary, these studies indicate little possibility of cultural material related to pre-Contact agricultural practices and plantation-era agricultural and ranching activities. Further, there is no documented evidence of *ilina* near or within the Project area.

McAllister conducted the first comprehensive survey of archaeological sites on the island of O‘ahu in 1930. He identified Keaiwa Heiau in the northeast section of ‘Aiea and he noted the ‘Ewa coral plains, of which ‘Aiea is a part, as a large extent of old stone walls (McAllister 1933:199). McAllister did not identify Pōhaku o Ki‘i, but, Napoka’s (1994) consultation with ‘Aiea *kama‘āina* Mr. Ka‘imikaua revealed a *mo‘olelo* of the sacred boulder that connected it to Wailoa‘a Pond. More recently, Athens (2000) conducted sediment core sampling in order to investigate the development of fishponds along the coastal areas in and around Pu‘uloa. This fishpond Loko Kahakupohaku in ‘Aiea Ahupua‘a had been filled in and now resembles a small peninsula protruding into the East Loch on the eastern side of ‘Aiea Bay. Possible hazardous waste contamination of the overlying fill precluded field investigations (Athens 2000). With so few archaeological sites in ‘Aiea Ahupua‘a, it is important to review archaeological research in the neighboring *ahupua‘a* of Hālawa and Kalauao, as well as the nearby *moku* (island) of Moku‘ume‘ume (Ford Island) in Pu‘uloa.

Archaeological surveys in the nearby *ahupua‘a* of Hālawa in the late 20th century revealed very few archaeological sites. An intense survey for the construction of the Hālawa Interchange of Interstate H-1 in 1970 revealed eight features, including a stone house platform, several grave structures, and a possible site of a *heiau* (Cluff 1970). During the construction of the Aloha Stadium, William Barrera (1971) described marked and unmarked graves in a letter written to the DLNR, but no other archaeological resources were encountered during the investigation. It is possible that this letter report could be referring to the historic, in-use, State of Hawai‘i-owned ‘Aiea Cemetery immediately west of the Aloha Stadium. In 1981, the Division of State Parks conducted an archaeological reconnaissance survey at Rainbow Bay State Park on the East Loch of Pu‘uloa in which no archaeological resources were observed (Yent and Ota 1981). In 1994, a survey for a non-potable well to supply water for irrigation purposes revealed very little evidence of pre-Contact or early historic Hawaiian activity within this area (Hammatt and Winieski 1994). A 1998 archaeological assessment of an approximately 7.6 kilometer section of the Interstate H-1 from Hālawa to the H-1/H-2 interchange at Waiawa Ahupua‘a did not identify any archaeological sites (Hammatt and Chiogioji 1998). Finally, a 1999 survey for the Hālawa Bridge Replacement Environmental Assessment did not identify archaeological resources most likely due to extensive land modifications, including drainage pipe installation (Dye 1999).

The nearby *ahupua‘a* of Kalauao similarly revealed very few archaeological sites during recent surveys. A surface survey for the Pearl Promenade Project revealed no archaeological resources due to extensive land alterations (Sinoto 1986). A later survey did not identify any archaeological sites or evidence of subsurface cultural material (Hammatt 1996). A literature-

review assessment of the Ford Island Causeway warranted in situ preservation of Loko Pa‘aiau, a fishpond in Kalauao Ahupua‘a (Sinoto 1989). Finally, a survey of the northeastern end of Moku‘ume‘ume did not identify any archaeological resources (Erkelens 1995).

Table 1. Archaeological Studies in the Vicinity of ‘Aiea Intermediate School, ‘Aiea Ahupua‘a

Source	Nature of Study	Location
McAllister 1933	Island Wide Survey	‘Ewa District
Cluff 1970	Inventory Survey	Hālawa Interchange
Barrera 1971	Archaeological Site Survey	Honolulu Stadium
Yent and Ota 1981	Reconnaissance Survey	Proposed Rainbow Bay State Park
Sinoto 1986	Archaeological Surface Survey	Proposed Pearl Promenade, Kalauao
Sinoto 1989	Cultural Resources Reassessment	Ford Island Causeway Study
Avery, et al. 1994	Paleo-environmental Study	Hālawa Stream Mouth
Hammatt and Wineski 1994	Reconnaissance Survey	Proposed Hālawa Well – two acres
Erkelens 1995	Archaeological Study	Ford Island Bridge
Hammatt 1996	Archaeological Reconnaissance	Four-acre parcel in the *ahupua‘a* of Kalauao, O‘ahu
Hammatt and Chiogioji 1998	Assessment	Approximately 7.6 kilometer-long portion of the H-1 from Hālawa to the H-1/H-2 Interchange
Dye 1999	Archaeological Resources Survey	Hālawa Bridge, Hālawa
Athens 2000	Hawaiian Fishpond Study	U.S. Navy Lands Pearl Harbor

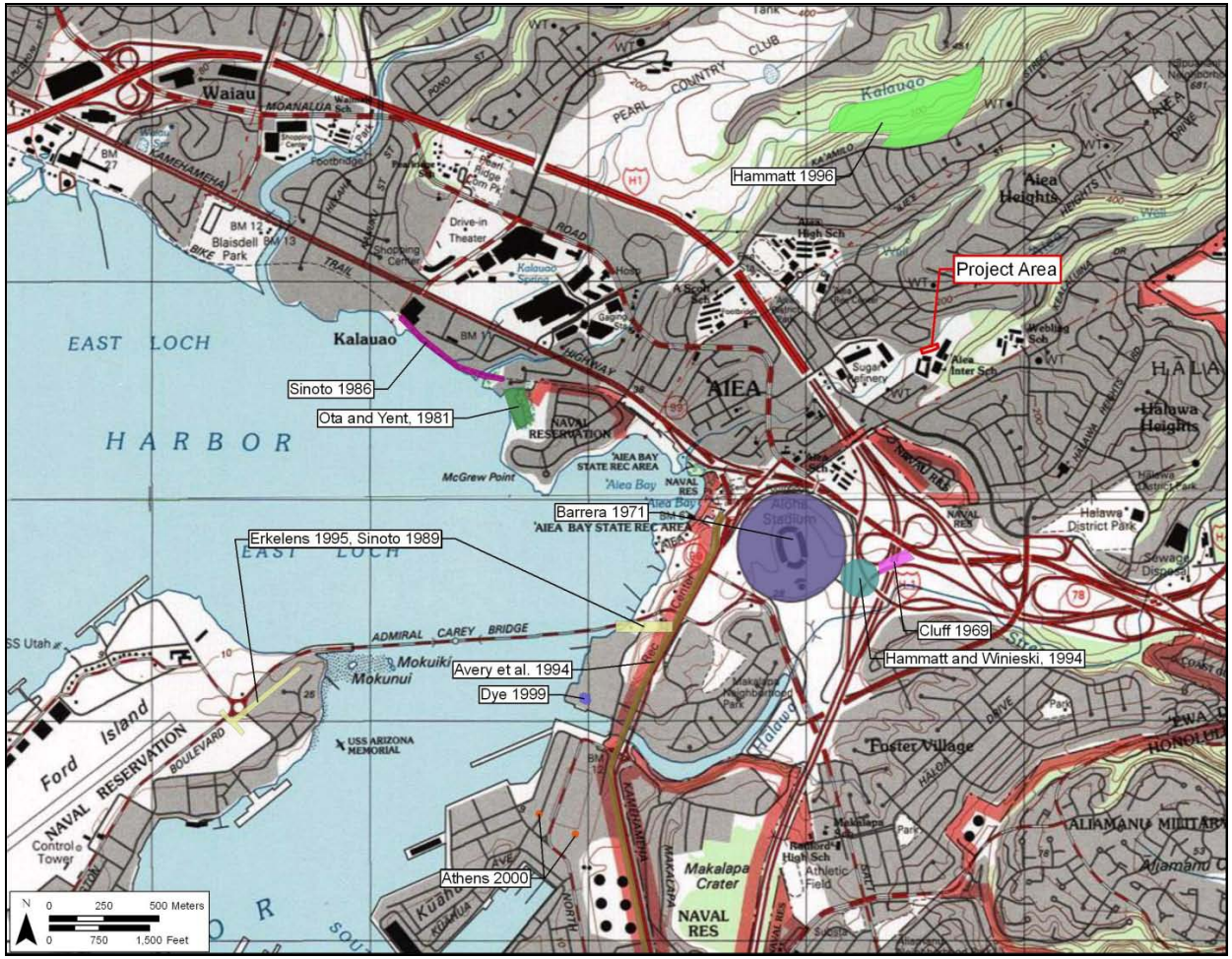

Figure 18. Portion of 1998 Waipahu USGS 7.5-minute series topographic quadrangle showing previous archaeology in the vicinity of the current Project area

5.2 CSH Field Inspection

CSH archaeologists conducted a field inspection of the Project area on July 28, 2009 (Altizer et al 2009). Archaeologists inspected the 150-foot portion of the ‘Aiea stream by visually inspecting both sides of the cut bank, as well as the stream bed, for evidence of cultural material. No cultural or historic properties were observed. As anticipated, the Project area showed signs of extensive erosion. The stream wall contains a substantial layer of large stream boulders and cobbles that are presently eroding out of the wall (Figure 19). The stream bed held approximately 30 cm of water at the time of the field visit, and was covered with tall riparian grasses.

Figure 19. Streambed view of the Project area, view northeast (CSH, July 28, 2009)

Section 6 Community Consultation

6.1 Community Consultation Effort

Throughout the course of this cultural impact assessment 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 cultural resources and practices specifically related to the Project area. The community consultation effort was made by letter, e-mail, telephone and in-person contact. In the majority of cases, letters along with a map and aerial photograph of the Project area were mailed with the following text:

> At the request of Kimura International, Cultural Surveys Hawai‘i (CSH) is conducting a Cultural Impact Assessment (CIA) for the ‘Aiea Intermediate School Erosion Control Project in ‘Aiea Ahupua‘a, ‘Ewa District, Island of O‘ahu (TMK [1] 9-9-005:001). The 30.78 Project area encompasses an eroded 150 foot portion of the ‘Aiea Stream corridor.
>
> The distressed stream bank area located along the northwesterly perimeter of the school has progressively retreated through the years due to erosion. The stream bank erosion has resulted in the loss of at least several feet of land atop the stream bank bluff between the stream and the roadway adjacent to the school cafeteria. The erosion and retreat of the stream bank towards the roadway has undermined an electrical manhole box housing the main electrical power supply line to the school in the vicinity of the cafeteria. Furthermore, a portion of the fence along the top of the stream bank bluff was partially undermined and was relocated away from the stream in the vicinity of the electrical manhole box. It is currently proposed by the State Department of Education to protect the distressed stream bank and its adjacent roadway from further erosion and retreat and to restore support to the undermined electrical manhole.
>
> The purpose of this CIA is to evaluate potential impacts to cultural practices and resources as a result of the proposed development in ‘Aiea Ahupua‘a. We are seeking your *kōkua* and guidance regarding the following aspects of our study:
>
> - General history and present and past land use of the Project area.
> - Knowledge of cultural sites which may be impacted by future development of the Project area - for example, historic sites, archaeological sites, and burials.
> - Knowledge of traditional gathering practices in the Project area both past and ongoing.
> - Cultural associations of the Project area, such as legends and traditional uses.

- Referrals of *kūpuna* or elders and *kama‘āina* who might be willing to share their cultural knowledge of the Project area and the surrounding *ahupua‘a* lands.

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

Several (two-five) attempts were made by mail, e-mail and telephone to contact individuals, organizations, and agencies apposite to the subject CIA. The results of all consultations are presented in Table 2. A summary of the responses of the State Historic Preservation Division (SHPD), Hui Mālama I Na Kūpuna O Hawai‘i Nei, and the Office of Hawaiian Affairs (OHA), and a written response from Shad Kane follow the table.

Table 2. Results of Community Consultation

Name	Background, Affiliation	Comments
Ching, Arlene	‘Aiea Public Library Librarian	August 7, 2009 CSH sent initial letter. August 16, 2009 CSH phoned, an oral history project Mrs. Ching is working on is available at the ‘Aiea Library reference desk. September 2, 2009 CSH sent follow-up letter. September 23, 2009 CSH sent follow-up letter by email.
‘Ailā, William	Hui Mālama I Nā Kūpuna ‘O Hawai‘i Nei	July 9, 2009 CSH sent initial letter. August 11, 2009 CSH sent follow-up letter by email. August 12, 2009 Mr. ‘Ailā responded by email, see Section 6.4.1.
Bell, Charlene	Kama‘āina of ‘Aiea	September 28, 2009 CSH sent initial letter. September 30, 2009 CSH phoned and left message. October 11, 2009 Mrs. Bell responded and referred Ishmael Stagner.
Cayan, Coochie	SHPD History and Culture Branch Chief of SHPD	July 9, 2009 CSH sent initial letter. July 23, 2009 Mrs. Coochie responded, see Section 6.2.
Ching, Lavaina	Kama‘āina of ‘Aiea	September 30, 2009 CSH Phoned. Oct 6, 2009 Interview, see Section 7.1.1. Mrs. Ching referred Aloha Linda and Keoma Akau, but they were not contacted due to time limitations.
Clark, William	‘Aiea Neighborhood Board, No. 20, Chair	September 2, 2009 CSH sent initial letter.
Colburn, Pua and John	Fishermen	September 2, 2009 CSH sent initial letter.
Collier, Kealii	Kama‘āina of ‘Aiea	July 22, 2009 CSH phoned and left message.
Decampos, Duane	Park Ranger	September 30, 2009 CSH Phoned, Mr. Decampos does not know of any cultural practitioner that visits or uses Keaīwa Heaiu.
Fujita, Mitsuko	Kama‘āina of ‘Aiea and Pearl City, Family Historian and Researcher	July 2, 2009 CSH sent initial letter. September 11, 2009 Mrs. Fujita responded by email.
Higa, Karen	‘Aiea Community Association	July 14, 2009 CSH sent initial letter. July 31, 2009, Mrs. Higa responded by email and referred Claire Tamamoto.
Kamelamela, Jonah	Former resident of ‘Aiea	August 6, 2009 CSH phoned. August 16, 2009 Interview, see Section 7.1.2. August 28, 2009 CSH contacted Mr. Kamelamela about contact information for Lei Lee.
Kāne, Shad	OIBC, Nā Koa ‘O Pālehua and ‘Ahahui Siwila Hawai‘i	July 9, 2009 CSH sent initial letter. July 29, 2009 Mr. Kāne responded by email,

Name	Background, Affiliation	Comments
	‘O Kapolei Hawaiian Civic Club	see Section 6.4.2.
Keli‘ia‘a, Sam and Betty	Kama‘āina of ‘Aiea	September 28, 2009 CSH phoned and left message.
Kekina, Mabel	‘Aiea resident	September 14, 2009 CSH phoned and left message. September 16, 2009 CSH sent initial letter. September 18, 2009 CSH phoned. September 28, 2009 Interview, see Section 7.1.3. Mrs. Kekina referred Charlene Bell and Mariona de Buska, who was not contacted due to time limitations.
Kekoolani, Terri	Community Activist	August 12, 2009 CSH sent initial letter by email. August 12, 2009 Mr. Kehoolani responded and referred Vicki Takamine.
Khan, Leimomi	President of the Association of Hawaiian Civic Clubs	August 12, 2009 CSH sent initial letter by email. August 12, 2009 Mrs. Khan responded and referred Aunty Aggie, Leatrice Kauahi and Kai Markel, who were not contacted due to time limitations.
Kurishige, Tom	‘Aiea Intermediate School principal	July 9, 2009 CSH sent initial letter. July 28, 2009 CSH phoned and left message. August 19, 2009 Mr. Kurishige responded that there are no cultural properties and that erosion is caused by excessive trash.
Lee, Aggie	‘Aiea resident	August 28, 2009 CSH phoned, Ms. Lee described the *heiau* and birthing stones, and referred senior citizens at Lanikila and Lei Lee.
Lee, Toni	Pearl Harbor Hawaiian Civic Club	July 9, 2009 CSH sent initial letter. September 9, 2009 CSH sent second letter. September 30, 2009 CSH phoned, Mr. Lee referred Sam and Betty Keli‘ia‘a, Lavaina Ching, and Joe and Kuulei Reyes, who were not contacted due to time limitations.
Lindsey, Keola	OHA	October 9, 2009 CSH sent follow-up letter by email. Nov 20, 2009 CSH responded, see Section 6.3.
Marsh, John	‘Aiea Kama‘āina	September 9, 2009 CSH phoned and Mr. Marsh did not comment.
McElroy,Wendy	Archaeologist	August 11, 2009 CSH sent initial letter by email.
McKeague, Kawika	OIBC Leeward area representative	July 23, 2009 CSH sent initial letter by email. August 12, 2009 Mr. McKeague responded that the Pa‘i Foundation does not have a

Name	Background, Affiliation	Comments
		caretaking relationship with Keaīwa Heiau anymore.
Mills, Kimberly	Department of Land and Natural Resources, Planner	August 18, 2009 CSH phoned and recommended looking up MAGIS for old pictures.
Minerbi, Luciano	Professor of Department of Urban and Regional Planning, UH Mānoa	August 12, 2009 CSH sent initial letter by email. August 12, 2009 Mr. Minerbi responded and explained he does not know about Project area, and he referred Kimberly Mills.
Nāmu‘o, Clyde	OHA	July 9, 2009 CSH sent initial letter.
Oba, Ron	Kama‘āina of ‘Aiea	September 18, 2009 CSH sent initial letter.
Pena, Uluwehi	Kama‘āina of ‘Aiea	September 18, 2009 CSH sent initial letter. December 7, 2009 Mr. Pena responded that he does not know of any culturally significant history for this area.
Perry, Lahela	University of Hawai‘i Mānoa	August 12, 2009 CSH sent initial letter sent, September 10, 2009 Mrs. Perry responded and referred Vicky Holt Takamine and Kawika McKeague.
Stagner, Ishmael	Kama‘āina of ‘Aiea and Pearl City, Historian and Author	September 2, 2009 CSH sent initial letter by email. September 4, 2009 Mr. Stagner responded that does not know of any culturally significant history for this area.
Sugimura, Yuriko	‘Aiea Neighborhood Board	July 9, 2009 CSH sent initial letter. July 28, 2009 CSH phoned. September 9, 2009 CSH sent second letter.
Tabilo, Terry	Vice Principal, ‘Aiea Intermediate School	September 4, 2009 CSH met with Mr. Tabilo, who is not not aware of any *kūpuna* that are knowledgeable about the area.
Takamine, Vicky	Pa‘i Foundation	August 12, 2009 CSH sent initial letter. September 14, 2009 CSH sent follow-up letter by email.
Tamamoto, Claire	‘Aiea Community Association	July 14, 2009 CSH sent initial letter. July 28, 2009 CSH sent follow-up letter by email. August 7, 2009 CSH sent second letter. September 2, 2009 CSH sent third letter.
Turner, Dayle	Leeward Community College professor, hiker	July 14, 2009 CSH sent initial letter. July 28, 2009 CSH sent follow-up letter by email.
Wong, Lynn	‘Aiea Rest Home	July 9, 2009 CSH sent initial letter. July 28, 2009 CSH phoned and left message. July 29, 2009 CSH sent second letter. August 11, 2009 CSH phoned and left message.

Name	Background, Affiliation	Comments
Yim, Kamuela	Leeward area resident	July 22, 2009 CSH phoned and left message. July 22, 2009 Mr. Yim responded and will provide references.

6.2 State Historic Preservation Division (SHPD)

CSH contacted Phyllis “Coochie” Cayan, History and Culture Branch Chief of SHPD, on July 9, 2009. In a written response sent to CSH on July 20, 2009 (see Appendix B), Ms. Cayan states that the ‘Aiea Stream has a lot of overgrowth along the stream’s path which may or may not shelter some cultural resources in spite of changes of its route. She notes ‘Aiea’s rich cultural and historical history including Keaīwa Heiau, significant boulders like the one near the Post Office and the Pearl River area. She also speaks of ‘Aiea’s abundant *lo‘i* prior to the sugar cane cultivation. Remnants of *lo‘i* can still be found today in the area. She also adds that traditionally, the stream would have played a significant role in agriculture, *kapa* making, medicinal and healing practices, spiritual practices and other activities. She also reminds CSH of the fishing and shoreline activities below the Project area.

SHPD recommends cultural monitoring for this proposed Project as the land disturbing activities may uncover burials or other cultural resources (i.e. related to agriculture, Hawaiian spirituality). SHPD also is concerned that public access not to be hampered by the Project and that toxins not be introduced into the stream by the Project.

6.3 Office of Hawaiian Affairs (OHA)

CHS contacted Clyde Nāmu‘o, Administrator of OHA, on July 9, 2009. In a written response sent to CSH on Nov 20, 2009 (see Appendix C), Mr. Nāmu‘o states that OHA recognizes the importance of the Project to protect utilities related to the school and to improve the safety for students and stuff, but OHA does not have any comments concerning the impact of the Project on historical, cultural or natural resources.

6.4 Written Responses from Project Participants

6.4.1 William ‘Ailā

CSH contacted William ‘Ailā, member of Hui Mālama I Nā Kūpuna ‘O Hawai‘i Nei, on July 9, 2009. In a written response sent by email on August 12, 2009, Mr. ‘Ailā states that he is not aware of any cultural properties along the ‘Aiea stream, but that the stream may have cultural significance in and of itself.

6.4.2 Shad Kāne

CSH contacted Shad Kāne, member of the OIBC, Nā Koa ‘O Pālehua and ‘Ahahui Siwila Hawai‘i ‘O Kapolei Hawaiian Civic Club on July 7, 2009. In a written response sent by email on July 29, 2009, Mr. Kāne states that he is not familiar with the Project area; however, he shares some general knowledge about the area, including the Battle of Kuki’iahu, as well as his thoughts about the Project:

> I do have some knowledge of the broader cultural history however not aware of any cultural resources in the immediate area or if there were at one time. I am also aware of the Battle of Kuki’iahu between the forces of the Chief Kaeo and Kalanikapule of O’ahu during the time when Maui controlled O’ahu. This was also a historic battle in that it was the first time a British Ship under the command of Captain Brown entered the waters we know of today as Pearl Harbor. He provided cannon support for the ground forces of Kalanikapule. It served as a

decisive defeat of Kaeo and a victory for Kalanikapule. Kaeo, his wife and his army all died in this battle. Their bodies were buried where they fell and that of Kaeo was taken and sacrificed. I am aware of a swimming hole a short distance from your Project that was known to be frequented by Chiefs anciently. However the natural alignment of streams have been diverted into concrete culverts and difficult to determine where this swimming hole was once located. Are there anything cultural visible within or in close proximity to the footprint of the Project? Judging from the photo it seems to be in an area of substantial ground disturbance.

Section 7 Summaries of *Kama‘āina* Interviews

7.1 Overview

Kama‘āina and *kūpuna* with knowledge of the proposed Project and study area participated in "talk story" sessions for this CIA. Interviews for this study were conducted from July through October, 2009. CSH attempted to contact 38 individuals for this final CIA report; of those, 26 responded; and three participated in formal interviews. CSH initiated the interviews with questions from the following five broad categories: Resource Gathering and Hunting, Ritual and Ceremonial Practices, Freshwater and Marine Resources, Burials, Trails, and Cultural and Historic Properties. Participants' biographical backgrounds (in brief), comments and concerns about the proposed development and Project area and environs are presented below.

7.2 *Kama‘āina* Interviews

7.2.1 Lavaina Ching

CSH met with Lavaina Ching (Figure 20) on October 6, 2009 at Sizzler's restaurant in the Pearlridge Shopping Center in ‘Aiea. Mrs. Ching, now 78 years old, was born in Honolulu on February 17, 1931 to her parents William L. Kahele and Louise Guerrero. The *‘ohana* (family) lived in Kapahulu until they moved to Waimānalo in 1938. Mrs. Ching's father was a musician with the Royal Hawaiian Band and after retirement he continued to play music for various groups both at home and abroad. When the position of park keeper with the City and County of Honolulu for the Waimānalo Beach Park presented itself, her parents both agreed to become stewards of the park. After re-settling in Kapahulu in 1945, Mrs. Ching moved to ‘Aiea in 1963.

Mrs. Ching's early childhood memories center on her life along the beaches of Waimānalo. She remembers that the park area was mostly rolling sand dunes with pine trees, lantana, wild daisies, purple flower morning glories, *naupaka*, seagrapes, spider lilies, wild cherry tomatoes, *pōpolo* and many other types of plants that grew wild in the dunes and the high water mark.

Mrs. Ching's father was an avid fisherman. He taught her and her siblings how to throw net, pound squid, clean fish, and *pūlehu* (broil) the *lāwalu* (fish bound in *ti* leaves for cooking). Her mother taught the children how to pick *limu* (seaweed) and to identify the different kinds of edible seaweed. Her father rose early in the mornings, and she often strolled the beach looking for glass balls and shells while her father threw net to catch fish. In addition, she learned how to play the *‘ukulele* and guitar by watching her father. He passed away a month before World War II started.

Mrs. Ching's childhood was punctuated dramatically with the Japanese attack on Pearl Harbor on December 7, 1941. She recalls her mother driving her older sister to work at the Mutual Telephone Company in Honolulu (later the Hawaiian Telephone Company). Her sister, a telephone operator, learned that the Japanese bombed Pear Harbor and that the United States was at war with Japan. They had just passed the Governor's residence when a bomb fell on Beretenia Street. They motored slowly through all the frenzy until reaching her aunt's home in Kapahulu where another bomb fell in their neighbor's yard. A cousin of hers was injured by the shrapnel, which narrowly missed Mrs. Ching. Their journey home to Waimānalo was postponed for a few days when they learned that Marshall Law had been declared and traveling was restricted.

At the start of the war the U.S. Navy bulldozed the Waimānalo sand dunes to create an amphibious training facility. This has altered the shoreline dramatically, as the shore used to extend much farther seaward than today. After the start of the war, Mrs. Ching witnessed the 298th Infantry conducting military training exercises on a field in Waimānalo (now the polo field). Her family continued to live at a small section of the Waimānalo Beach Park. When the war ended, the park was restored to what it is today. In 1945, the *‘ohana* moved back to Kapahulu until Mrs. Ching met and married her husband Reuben Ching. In 1963, they bought a home in ‘Aiea in an area called Enchanted Hills, also known as Harbor Heights.

Mrs. Ching has witnessed tremendous land use changes in ‘Aiea. Most significantly, housing development and subdivision growth have replaced the vast sugar cane fields that once covered the lowland portions of ‘Aiea *mauka* of the current HI Interstate. Prior to the development that swept through ‘Aiea, community life centered on the sugar mill and the plantation fields. Mrs. Ching will probably never forget the smell of soot that blew into her house when plantation workers regularly burned the sugar cane fields. A small community developed to support these sugar workers. Located *mauka* of the ‘Aiea shopping plaza today, this community consisted of a few small shops, a supermarket named Speedy’s, another supermarket, a poolroom, a tailor shop, a beauty shop, Bank of Hawaii, Bishop National Bank, a theatre, Chevron and Shell gas stations, and numerous plantation homes. During the construction of the H1 Interstate in the 1970s, Mrs. Ching experienced a tremendous increase in traffic congestion in ‘Aiea.

In her youth, Mrs. Ching and her family gathered *pōpolo* in Waimānalo for its medicinal qualities. They ate the leaves of the plant raw to treat several ailments, including an upset stomach. When Mrs. Ching moved to ‘Aiea in the early 1960s, she found *pōpolo* there, as well as small tomatoes that she would add as a natural sweetener to *lomilomi* salmon. Now, however, she can find neither *pōpolo* nor these small wild tomatoes in ‘Aiea. Mrs. Ching also learned in her youth how to net mullet with her father along the shores of Waimānalo. After Mrs. Ching moved to ‘Aiea, her children accompanied her brother-in-law on trips to hunt for crabs and clams in the waters of Pearl Harbor. He taught them how to catch, clean and eat the crabs raw.

After retiring from sales at the Princeville Resort of Hanalei, Mrs. Ching became involved in the Kupuna Program for the Central District DOE. Through a series of workshops, local *kūpuna* served as resources for teachers and often visited classrooms. Mrs. Ching learned extensively about ‘Aiea from deceased ‘Aiea *kama‘āina* and *kumu hula* John Ka‘imikaua. Over the course of several workshops, Mr. Ka‘imikaua taught Mrs. Ching a chant, a *hula*, and several *mo‘olelo* of the area, as well as *mele* of Hawai‘i. Regrettably, she cannot remember them in detail. Mrs. Ching had previously visited Keaīwa Heiau and later helped to clean and maintain it under the direction of the Pearl Harbor Hawaiian Civic Club. Through Mr. Ka‘imikaua, she learned of its role as a center for traditional medicine healing.

Mrs. Ching shared several *mo‘olelo* that she learned from Mr. Ka‘imikaua, but regrets that much of the knowledge has been lost with his passing. One *mo‘olelo* describes a spring-fed pool that was reserved as a royal bath. This pool, now filled in, was located close to the present-day ‘Aiea post office and is marked by two royal palms. Another *mo‘olelo* tells of the ill-fated love between a princess and a commoner. Her parents did not wish their regal daughter to marry a boy of non-noble lineage. They made him take a test and when he failed, he instantly turned into a stone boulder. This *pōhaku* was once located across the street from the Alvah Scott Elementary

School entrance, but with the recent widening of Moanalua Road it was relocated to the entrance of the ‘Aiea Post Office.

Mrs. Ching is not aware of any historic, cultural, or archaeological sites within or next to the current Project site. Further, Mr. Ka‘imikaua did not mention any significant cultural properties within or near the current Project site as part of the local *kūpuna* program. Mrs. Ching’s main concern for the current Project is to understand the flow of ‘Aiea Stream – where its waters flows and the possibility that it could cause further erosion.

7.2.2 Jonah Kamelamela

CSH met with Jonah K. Kamelamela Jr. on July 16, 2009 at his home in Waimalu, two *ahupua‘a* over from ‘Aiea. He has lived at this house since 1989 with his family, wife and two daughters. He moved to this location in order to be closer to his alma mater ‘Aiea High School, his job and to provide educational opportunities for his daughters. Mr. Kamelamela currently is the President and operator of J&A Kamelamela trucking company located near Foster Village, Moanalua. He drives, bikes or walks to work which is less than three miles from his home everyday going through the *ahupua‘a* of Waimalu, Kalauao, ‘Aiea and Hālawa. He prefers to stay near his home.

Growing up, Mr. Kamelamela lived in Hālawa Housing with his mother, father, four brothers and sister. He moved back to O‘ahu at the age of thirteen after living in Kalapana and Hilo, Hawai‘i with his *tutu* (grandmother). He attended ‘Aiea Intermediate School when it was part of ‘Aiea Elementary School on Moanalua Road. Mr. Kamelamela was the third class (1966) to graduate from ‘Aiea High School, which opened in 1961. During his attendance at ‘Aiea High School, Mr. Kamelamela got a job servicing vehicles at Wally’s Service Station, located on Kamehameha Highway across the street from Pearl Harbor. Mr. Kamelamela still services his company trucks and personal vehicles at Wally’s Service Station in Kalauao. Wally’s Service Station is located next to ‘Aiea Stream, which runs through the Project area.

There have been many changes to ‘Aiea that Mr. Kamelamela has seen, including the loss of the sugar plantation, the loss of fish and oyster harvest from Pearl Harbor, and an influx in residential housing development. As a longtime resident in the area, he has knowledge of land-use change and their impacts on the community.

During his childhood, Mr. Kamelamela remembers sugarcane throughout ‘Aiea, from the H-1 ‘Aiea off ramp in Hālawa to the current location of Pearlridge Shopping Center. The road to Camp Smith was already built. The only houses around the sugar mill were the old plantation houses for the C&H Sugar Company. These houses were *mauka* of the mill area. Most the residential development occurred in the 1960s and 1970s. Sugarcane was gathered and consumed as a snack. The watercress farm near Pearlridge Shopping Center has always been there and the same parcel size. Mr. Kamelamela remembers eating fish and oysters from Pearl Harbor. People from the community used to fish and crab. No one can eat from Pearl Harbor anymore because of the pollution from the military.

The stream under review, as Mr. Kamelamela remembers, was used to facilitate the milling of sugarcane for C&H Sugar Company. The water used to wash the sugarcane would empty into the stream. There was no water above the mill unless there was rain. He does not remember fish in the stream. He only recalls sugarcane in riparian areas, or the interface between land and a

stream. He pointed out two reservoirs located below Webling School. There was a third reservoir located on the Camp Smith road next to the Hālawa Store by the houses. Water from the windward side would feed these reservoirs or rain.

Mr. Kamelamela is not aware of any burial or other culturally significant sites in the Project area. He recommends that if work is to commence in the stream, it be done during times of low to no flow. He notes that the stream in the Project area is usually dry but water appears again near Wally's Service Station. Mr. Kamelamela is not sure why this is.

7.2.3 Mabel Kekina

CSH met with Mabel Kekina on September 25, 2009 at her home in ‘Aiea Heights. Mrs. Kekina, now 81 years old, was born in the *ahupua‘a* of Pālolo in 1928. Her parents were both Japanese. Her father, who worked as a boat builder, came to Hawai‘i as an infant and her mother, who worked in the pineapple cannery, was born in Hawai‘i. They moved to the community of Mō‘ili‘ili in the *ahupua‘a* of Mānoa when Mrs. Kekina was a small child. Around 1955, she moved farther west to Waimalu Ahupua‘a, but construction of the H-1 Interstate directly above her property forced her to move and since 1969, she has resided near the top of ‘Aiea Heights. She worked at the Bank of Hawaii for 36 years. In 1981, she discovered her passion for hiking. After reading about a Kahana Valley hike organized by the Hawaiian Trail and Mountain Club (HTMC), Mrs. Kekina became an avid hiker with the group. After her second hike, which took place in Mānoa Valley, she became steadfast in her commitment to improve the hiking trails, and began her volunteer work cleaning and maintaining trails around O‘ahu. Since then she has spent most of her weekends hiking with the HTMC on the many marked trails and unmarked trails on O‘ahu and neighboring islands. Now, she coordinates these trail clearing and maintenance hikes with a large contingent of volunteers.

Mrs. Kekina's childhood memories center on her wanderings throughout Mānoa Ahupua‘a and neighboring *ahupua‘a*. She regularly walked on trails from Mō‘ili‘ili down to the Natatorium in Waikīkī by crossing a cow pasture (now the Ala Wai Golf Course), out to Hanauma Bay, and up in the Ko'olau mountains. She recalls these early days of her life with fond memories of her family life, such as using a kerosene stove, keeping food cold with an ice box, and using a wooden scrub board to do laundry.

Mrs. Kekina has witnessed tremendous land use changes since her childhood. Most significantly, housing development and subdivisions have replaced the vast sugar cane fields that once covered the lowland portions of ‘Aiea and neighboring *ahupua‘a*. However, Mrs. Kekina's memories of the sugar plantation era are often triggered by seeing small tracts of remnant sugar cane. Today, Mrs. Kekina regularly visits the Pearl Ridge Shopping Center by driving on Moanalua Road; however, in her youth she traversed this same area, from ‘Aiea to Waimalu, by walking along a small dirt road.

Mrs. Kekina's pursuit in hiking with HTMC has never been to simply reach a final destination, but rather to enjoy each moment of every hike. As such, each hike has afforded Mrs. Kekina opportunities to make observations of the natural, historic and cultural resources along the way. In addition, her curiosity and sense of wonderment has prompted her on numerous occasions to inquire about such resources with other hikers, archaeologists and other professionals. As a result, Mrs. Kekina is very knowledgeable about streams, hiking trails,

agricultural resources, habitation sites and historic architecture in the mountainous regions of O‘ahu, including ‘Aiea and its neighboring *ahupua‘a* of Kalauao and Hālawa, as well as the other main Hawaiian islands.

Mrs. Kekina has observed that the ‘Aiea Steam starts as a tiny flow of water in the gulch between ‘Aiea Heights and Hālawa Heights near the lower section of the ‘Aiea Loop Trail. She pointed to this low area between the two mountain ridges in Stuart Ball’s (2000) *The Hiker’s Guide to Oahu*. She has noticed that the stream is dry for most of the year, but easily floods with heavy rains.

During one of her hikes along the ‘Aiea Loop Trail, Mrs. Kekina noticed a ditch near the source of the ‘Aiea Stream in the gulch. From its distinctive shape and size she reasoned the ditch must be artificial. By following its path, she discovered that it leads to a man-made tunnel. Upon further inquires, she learned that the sugar company (Honolulu Sugar Company; later called the Honolulu Plantation Company and finally the O‘ahu Sugar Company), built a system of tunnels in the mountains regions of ‘Aiea to divert water from the main stream toward the ‘Aiea sugar mill and refinery. The modified landscape Mrs. Kekina discovered—the ditch and tunnel system—is thus most likely an artifact of the historic sugar plantation era.

The main hiking trail in ‘Aiea Ahupua‘a is the ‘Aiea Loop Trail, which connects *mauka* to the ‘Aiea summit trail and *makai* to the Kalauao and Hālawa valleys. Several years ago, Mrs. Kekina discovered a small trail on the western side of ‘Aiea that led down to Kalauao Valley. She observed that the trail was very faint and thus reasoned that it was most likely used by pig hunters. Under her guidance, the HTMC widened this narrow trail to better connect the summit of ‘Aiea with the valley of Kalauao and to create a better view of the waters of Pearl Harbor during the hike’s descent. Mrs. Kekina also explored the area east of ‘Aiea. She traced the stream in Hālawa Valley to a hidden *heiau*. The *heiau* has been privately maintained, unlike Keaīwa Heiau, which is maintained by the State Park system. Farther upstream, Mrs. Kekina discovered a waterfall that fed a small pool. At the pool she discovered a man-made tunnel similar to the one near ‘Aiea Stream. Several years ago the crew constructing the H3 Interstate spent some of their work time swimming in the pool. As a result, the boss decided to fill in the pool.

On the other side of the Hālawa ridge in Moanalua Valley, Mrs. Kekina found bananas and taro, which, in conjunction with the *heiau*, provide definitive evidence to Mrs. Kekina of former Hawaiian habitation sites. She has learned that archaeologists have surveyed the mountainous regions of the *ahupua‘a* of ‘Aiea and neighboring Hālawa and Kalauao, but she feels that their cursory inventories have missed some significant cultural artifacts and sites. For example, a smooth stone bowl was recently discovered near the *heiau* in Hālawa that had previously not been documented. Mrs. Kekina has also discovered unexplained signs of habitation in the distant *ahupua‘a* of Waiau and Pauoa. During hiking excursions in the valleys of these two *ahupua‘a* she came across old reservoirs and circular cone-like rock structures. While the rock piles do not fit the shape of known archaeological sites, they suggest to Mrs. Kekina the presence of habitation far back in those valleys.

In contrast to the various signs of human activity in the mountainous regions of Hālawa Ahupua‘a and other distant *ahupua‘a*, Mrs. Kekina has not come across similar signs of Hawaiian habitation or cultural activities in the upper mountainous regions of ‘Aiea or Kalauao during her hiking excursions, with the one exception of the well-documented Keaīwa Heiau at

the trailhead of the ‘Aiea Loop Trail. Mrs. Kekina is not aware of any historic, cultural, or archaeological sites within or next to the current Project site. At the same time, she commented that while she has not observed any signs of Hawaiian habitation on *makua* trails of ‘Aiea, she hasn’t explored enough of the area to know for certain that cultural resources are not present.

Mrs. Kekina’s main concerns for the current Project are to understand why erosion is taking place and to take appropriate measures to mitigate the underlying problems. She mentions several factors that could be contributing to the erosion of the stream banks. First, the subdivisions farther up ‘Aiea Stream in the gulch between ‘Aiea Heights and Hālawa Heights might be responsible for the erosion farther downstream at the ‘Aiea Intermediate School. During her many hiking excursions, Mrs. Kekina has not noticed any erosion near the source of ‘Aiea Stream where it crosses the ‘Aiea Loop Trail. Yet, even a little rainfall results in flooding of most of the roads in ‘Aiea and that when there are heavy rains, “Aiea Heights Road becomes a river.” From these observations, she speculates that bridges in the subdivisions with inadequate drainage systems might alter the flow of the stream during heavy rains and this could have contributed to erosion of the stream banks farther downstream.

Second, heavy growth of mangroves at the mouth of the river near Pearl Harbor might restrict the flow of water, such that the stream backs up as far as the school. This is based on Mrs. Kekina’s observations of other streams in neighboring *ahupua‘a*. Mrs. Kekina has also observed that the stream near its source in the gulch is wide with little growth of grasses and trees, but that farther down in the subdivisions there is heavy growth of vegetation. This could block the flow of the stream during heavy rains and the resulting higher water levels would then erode the stream banks. The potential blockage is particularly acute immediately downstream of the current Project site, as the stream bed *makai* of the school is currently dry with excessive plant growth and debris. Mrs. Kekina recommends consulting an engineer to assess these potential underlying factors that could be contributing to the altered flow of water and subsequent erosion of the stream banks.

Figure 20. Lavaina Ching (CSH, October 6, 2009)

Figure 21. Mabel Kekina (CSH February 5, 2010)

Section 8 Cultural Landscape of ‘Aiea

8.1 Overview

Discussions of specific aspects of traditional Hawaiian culture as they may relate to the Project area are presented below. This section examines cultural resources and practices identified within or in proximity to the subject Project area in the broader context of the encompassing ‘Aiea landscape. Here, information from Sections 3-7 is integrated and summarized, anticipating the final analysis and overall recommendations to follow in Section 9.

8.2 *Wahi Pana* and *Mo‘olelo*

Wahi pana and *mo‘olelo* reveal that the Project area exists within a cultural context, a complex network of sacred sites, connecting ‘Aiea with neighboring *ahupua‘a* and the waters of Pu‘uloa. Contemporary residents of ‘Aiea connect to their past through these *wahi pana* and *mo‘olelo*. Of particular salience to the living and recently deceased *kama‘āina* of ‘Aiea is the story of Pōhaku o Ki‘i, which was recently moved to the former site of Waiola‘a Pond (Napoka 1994), and the mid-20th century rededication of the healing temple Keaīwa Heiau (Larsen 1952). Such explicit stewardship of Pōhaku o Ki‘i and Keaīwa Heiau is a testament to their past and current importance to the community.

8.3 Habitation, Agriculture and Plant Resources

Deceased ‘Aiea *kama‘āina* and *kumu hula* John Ka‘imikaua suggested that the small size of the *ahupua‘a* of ‘Aiea is a testament to its rich resources, including fresh water springs that made ‘Aiea renowned for its *lo‘i kalo* and *‘ō ‘ō* birds in the mountains that were prized for their yellow feathers. Mr. Ka‘imikaua’s statement suggests that the *kama‘āina* of ‘Aiea did not need a large area to cultivate *kalo* and other crops, as the lowland areas of ‘Aiea and the waters of Pu‘uloa were very productive and could easily support the population. Mr. Ka‘imikaua also mentioned two distinctive and attractive features of this *ahupua‘a*: Kōnihinihi, the cool, sweet-smelling breeze that comes down from the mountains and then sweeps back up the valley; and ‘Āuānei, a refreshing rain. Mr. Ka‘imikaua further elaborated that the *kahuna* of Keaīwa Heiau maintained over 400 medicinal plants for healing in an extensive garden, but that only six or seven remain today. In the early 1960s in ‘Aiea Mrs. Ching gathered *pōpolo* for the medicinal qualities of its leaves as well as small tomatoes that she would add as a natural sweetener to *lomilomi* salmon, but she can no longer find these plants.

The traditional use of the land shifted from *lo‘i kalo* cultivation to cattle ranching in the 1840s, then to sugar cane cultivation in the 1870s, and finally to housing developments in the 1950s. Many of the respondents recall with fond memories the vast sugar cane fields that covered the hillsides. Mr. Kamelamela specifically recalls gathering and consuming sugar cane prior to the residential development, while Mrs. Kekina continues to discover small remnant patches of sugar cane today. Mrs. Ching’s memories focus less on the consumption of sugar cane than on the vibrant community life that centered around the ‘Aiea sugar mill until the influx of urban and housing development in the 1960s.

8.4 Marine and Freshwater Resources

Mr. Ka‘imikaua’s recollections of the past point to the abundant marine resources of Pu‘uloa. Mr. Kamelamela specifically remembers gathering and consuming the famous *pipi*, or the pearly oyster, of Pu‘uloa, which has been well documented (Bishop 1901:87; Handy and Handy 1972:471; *Ka Loea Kālai‘Āina* 1899; Kamakau 1991:83; Pukui 1983:34, 59, 144), while Mrs. Ching’s family hunted crabs and gathered clams until very recently. According to Mr. Ka‘imikaua, the significance of Pu‘uloa to the *kama‘āina* of ‘Aiea extends beyond subsistence to beliefs of *aumakua*, as they believe the sharks of these waters are their deified ancestors.

‘Aiea Stream has historical significance, according to Mr. Kamelamela and Mrs. Kekina. They recall how the stream facilitated the milling of sugar cane at the ‘Aiea mill. During one of Mrs. Kekina’s many hiking excursions on the ‘Aiea Loop Trail, she discovered man-made tunnels and a system of ditches. She learned that these most likely diverted the stream near its source to feed the sugar mill.

8.5 Trails

Mrs. Kekina’s descriptions of hiking in ‘Aiea Ahupua‘a evoke a strong sense of place and connection to the land through her physical journeys on contemporary and historic trails. The *kama‘āina* of ‘Aiea are connected to the neighboring *ahupua‘a* through these trails that descend from the ‘Aiea Loop Trail into the valleys of Kalauao and Hālawa. Mrs. Kekina determined that a trail descending to the valley of Kalauao had previously been used by pig hunters, while a trail ascending the stream of Hālawa Valley leads to a hidden *heiau* and remanants of banana and taro plantations.

8.6 Cultural and Historic Properties

Many of the respondents feel great remorse that much of the knowledge of cultural properties in ‘Aiea was recently fragmented with the passing of ‘Aiea *kama‘āina* and *kumu hula* Mr. Ka‘imikaua. Documented oral histories from Mr. Ka‘imikaua reveal several salient cultural properties in the *ahupua‘a* of ‘Aiea, including Pōhaku o Ki‘i, Keaīwa Heiau and a *heiau* named Kaonohiokala (Fukuda 1994; Fung and Cruz 2005; Napoka 1994). In particular, Mr. Ka‘imikaua elaborated on the significance of the healing temple Keaīwa Heiau. According to Mr. Ka‘imikaua, the eastward-facing orientation of the *heiau* helps to create a sense of tranquility, as views of the rising sun invoke the concepts of re-birth and renewal. The *kāhuna* conducted and taught healing rituals in the enclosed ceremonial center, tended a garden with over 400 medicinal plants, and used an impenetrable thicket of a *hau* grove as a steam bath. Another dimension to the significance of the *heiau* is the type of volcanic rocks used in its construction. Mr. Ka‘imikaua describes how the dense rocks symbolize the enduring character of the *heiau* and how their origin—the Kalauao Valley in the Ko‘olau Mountains—signifies strong links to the neighboring *ahupua‘a* of Kalauao.

The significance of Keaīwa Heiau as a cultural property has been acknowledged outside of Hawai‘i. Renowned Maori anthropologist, physician and politician Te Rangi Hiroa, or Sir Peter Buck, delivered the last speech of his life at the rededication ceremony of Keaīwa Heiau (Larson 1952). Further, Keaīwa Heiau was listed on the National and Hawai‘i State Registers of Historic Places in 1972 and 1979, respectively.

McAllister (1933) conducted an archaeological reconnaissance survey of O‘ahu, including the current Project area in ‘Aiea. He only identified Keaīwa Heiau in the northeast section of ‘Aiea (McAllister 1933:199). Archaeological surveys conducted in the nearby *ahupua‘a* of Hālawa and Kalauao, as well as Moku‘ume‘ume (Ford Island) in the late 20th century similarly revealed very few archaeological sites (Barrera 1971; Cluff 1970; Dye 1999; Erkelens 1995; Hammatt 1996; Hammatt and Chiogioji 1998; Hammatt and Winieski 1994; Sinoto 1986, 1989; Yent and Ota 1981).

Recently, the significance of Pōhaku o Ki‘i as a cultural property became apparent through a *mo‘olelo* given to Napoka (1994) by Mr. Ka‘imikaua. Mr. Ka‘imikaua’s previous oral history interviews also revealed a *heiau* called Kaonohiokala that is located between the ‘Aiea Intermediate School and the Gus Webling Elementary School (Fukuda 1994). According to Mr. Ka‘imikaua, this *heiau* is located directly behind the fields of the school, placing it very close to the current Project area.

The former ‘Aiea sugar mill was a significant historic property in connection to early 20th century agriculture and industrial development. The mill was placed on the National and Hawai‘i State Registers of Historic Places in 1996 and 1995, respectively; however, it was demolished in 1998.

Mr. ‘Ailā contends that the ‘Aiea Stream may have cultural significance in and of itself. Indeed, one of the common links among the significant cultural and historic properties in the *ahupua‘a* of ‘Aiea is the ‘Aiea Stream. The stream starts in the mountainous regions above Keaīwa Heiau. It provided nourishment for hundreds of medicinal plants cultivated at the *heiau*, as well as for the lowland *lo‘i kalo*. Its descending waters later filled Waiola‘a, which was the sacred bathing pond of the regal daughter La‘a and is now the final resting place of her petrified lover Pōhaku o Ki‘i. Finally, the stream’s waters entered the coastal zone of Pu‘uloa, becoming part of an ecosystem in which *pipi*, crabs, clams and other marine resources once thrived. In more recent historical times, the stream fueled the sugar cane industry at the ‘Aiea sugar mill. Thus, while there is only one cultural or historic property located near the Project site (the *heiau* called Kaonohiokala), the flow of the ‘Aiea Stream connects all the cultural and historic properties within the *ahupua‘a* of ‘Aiea to the current Project area through time and across space.

Section 9 Summary and Recommendations

CSH conducted this CIA at the request of Kimura International. The CIA includes the *ahupua‘a* of ‘Aiea and the *moku* of ‘Ewa on the island of O‘ahu and focuses more specifically on a portion of TMK: (1) 9-9-005:041. The purpose of the Project is to assess erosion of the ‘Aiea Stream bank and its effect on school utilities at the ‘Aiea Intermediate School. For purposes of this report the Project area is defined as the entire school parcel, while the area of potential effect is the 150-foot ‘Aiea Stream corridor.

The Project requires compliance with the State of Hawai‘i environmental review process (Hawai‘i Revised Statutes [HRS] Chapter 343), which requires consideration of a proposed Project’s effect on cultural practices. Through document research on the traditional and historic importance of the Project area and consultation with community members and organizations, this report provides information pertinent to the assessment of the proposed Project’s impacts to cultural practices and resources (per the OEQC’s *Guidelines for Assessing Cultural Impacts*). The final document is intended to support the Project’s environmental review and may also serve to support the Project’s historic preservation review under HRS Chapter 6E-42 and Hawai‘i Administrative Rules Chapter 13-284.

9.1 Summary of Background Research

Background research on the Project area in ‘Aiea Ahupua‘a and the surrounding eastern ‘Ewa landscape indicates:

1. Several *wahi pana* re located within ‘Aiea Ahupua‘a and nearby *ahupua‘a*. Some of these places are associated with *mo‘olelo*, such as Pōhaku o Ki‘i, that place the Project site and surrounding area within a cultural context.
2. The coastal zone of ‘Aiea is part of Keawalau-o-Pu‘uloa, “the many harbored-sea of Pu‘uloa” (Pukui 1983:182). Pu‘uloa is where voyagers are said to have landed first on the island of O‘ahu, with many *ka lua* of the *‘ōlohe* in the surrounding area (Beckwith 1970:343). Pu‘uloa is also the home of the shark goddess, Ka‘ahupahau (Beckwith 1970:138-39; Kamakau 1964:73), an *‘aumakua* that protects the ‘Aiea residents.
3. Pu‘uloa was rich in ocean resources and was named Pearl Harbor after the *pipi*, or pearl oysters of the family Pteriidae (mainly *Pinctada radiata*). These were once abundant on the harbor reefs, but were later decimated by over-harvesting. The *pipi* was supposedly brought from Kahiki, the Hawaiian ancestral lands, by a *mo‘o* named Kānekua‘ana (Handy and Handy 1972:470). The *pipi* was sometimes called “the silent fish,” or *i‘a hamau leo o ‘Ewa*, ‘Ewa’s silent sea creature (Handy and Handy 1972:471), since the collectors were supposed to stay quiet while harvesting the shells. In addition to the pearl oysters, Pu‘uloa was also abundant is several varieties of mullet (probably *Mugil cephalus*), mussels (possibly *Brachidontes cerebristriatus*), abalone (multiple species from the family Fissurellidae), and clams (multiple species from genus *Isognomon*).
4. The lowland area near the coast was filled with fresh water springs and *lo‘i kalo*. Further *mauka* into the valley, *‘ō ‘ō* (*Moho* spp., honeyeaters) birds were caught for their highly

prized feathers and the shrub *olonā* (*Touchardia latifolia*) was gathered for cordage (Fung and Cruz (2005).

5. ‘Aiea Ahupua‘a was renowned for the sweetness of the water, the cool, sweet-smelling breeze known as Kōnihinihi that comes down from the mountains and then sweeps back up the valley, and a refreshing rain known as ‘Āuānei (Fung and Cruz 2005).
6. An early archaeological reconnaissance survey of ‘Aiea Ahupua‘a identified Keaīwa Heiau (McAllister 1933), which was listed on the National and Hawai‘i State Registers of Historic Places in 1972 and 1979, respectively. Keaīwa Heiau was the only known memorial of the healing art. The temple was rededicated as a *heiau lapa‘au* or *heiau ho‘ola* in 1951, during which an elder Hawaiian commented that the *heiau* was named Keaīwa after the medicinal god of early times (Larsen 1952). The *heiau* is located *mauka* of the current Project area on the mountain ridge on a slight slope facing eastwards towards the rising sun; this invokes the concept of rebirth and renewal, and so helped with the healing process. *Kāhuna* conducted and taught healing rituals in the enclosed ceremonial center, maintained a garden of over 400 medicinal plants at the *heiau*, and used a dense grove of *hau* (*Hibiscus tiliaceus*) as a steam bath, although the details of such an intricately woven structure to contain water is not clear (Fung and Cruz 2005). Renowned Maori anthropologist, physician and politician Te Rangi Hiroa, or Sir Peter Buck, delivered the last speech of his life at the rededication ceremony of Keaīwa Heiau (Larson 1952).
7. Community consultation previously determined Pōhaku o Ki‘i, a boulder *makai* of the current Project area, to be culturally significant (Napoka 1994). A *mo‘olelo* aout the creation of this *pōhaku* describes how a commoner named Ki‘i turned to stone while trying to reach his regal love, a woman named La‘a, at the Waiola‘a royal bathing pool. This *pōhaku* was relocated in 1994 to the ‘Aiea Post Office near the site of Waiola‘a Pond, once a royal bathing pool, due to the widening of Moanalua Road. Thus, the relocation of Pōhaku o Ki‘i near this pond has finally reunited the two lovers Ki‘i and La‘a.
8. There is no evidence of any cultural properties within the Project area. However, an oral history collected from Mr. Ka‘imikaua, a deceased *kumu hula* and *kama‘āina* of ‘Aiea, describes a *heiau* called Kaonohiokala that is located directly east of the Project area (Fukuda 1994). The last person to use the *heiau* was the wife of Chief Kaeo, who fled there during the battle of Kuki’iahu and died, only to be revived by her benevolent *‘aumakua*, a *pueo*.
9. In 1899, the Honolulu Sugar Company built a sugar mill in ‘Aiea. Sugar cane cultivation and production continued under the Honolulu Plantation Company until it was absorbed into the Oahu Sugar Company in 1947 as a consequence of the decline of the Oahu Railway & Land Company following World War II. The mill was placed on the National and Hawai‘i State Register of Historic Places in 1996 and 1995, respectively; however, it was demolished in 1998.
10. No *ilina* have been documented near or within the Project area; however, it is possible that undocumented burials exist within or near the Project area.

9.2 Results of Community Consultation

9.2.1 Consultation Efforts

Hawaiian organizations, agencies and community members were contacted in order to identify potentially knowledgeable individuals with cultural expertise and/or knowledge of the Project area and the vicinity. The organizations consulted included the State Historic Preservation Division (SHPD), the Office of Hawaiian Affairs (OHA), the O‘ahu Island Burial Council (OIBC), Hui Mālama I Nā Kūpuna ‘O Hawai‘i Nei, the Pearl Harbor Hawaiian Civic Club, the ‘Aiea Neighborhood Board, community and cultural organizations in ‘Aiea and community members of ‘Aiea. CSH attempted to contact 38 individuals. Twenty-six people responded and three *kama‘āina* were interviewed for more in-depth contributions to the CIA. This community consultation indicates:

1. The Project area is located near some of the most significant cultural places in ‘Aiea Ahupua‘a, including Keaīwa Heiau, Pōhaku o Ki‘i, and Waiola‘a Pond; however, the exact location of this royal bathing pool—now filled in—is difficult to determine.
2. *Wahi pana* and *mo‘olelo* of the area near the Project site reveal a strong connection to past traditions and a renewed salience of those traditions today. Community participant Mrs. Ching shares several *mo‘olelo*, including that of Waiola‘a—a spring-fed pool enjoyed by royalty that reveals a love story between a princess and a commoner.
3. Mr. Kāne discusses a *mo‘olelo* of the historic battle of Kuki’iahu, in which Kalanikapule decisively defeated Chief Kaeo with cannon support from the British. Kaeo, his wife, and his army all died in this battle. Their bodies were buried where they fell and that of Kaeo was taken and sacrificed in the mountainous region of of Pu‘uloa, possibly in ‘Aiea Ahupua‘a.
4. A strong connection to ancestral land is based on *mo‘olelo* of the vast lowland *lo‘i kalo* and the mountainous *‘ō‘ō* that were prized for their feathers, and on lived experiences of gathering *pipi*, clams, crabs and other marine resources on the shores and waters of Pu‘uloa prior to the mid-20th century military presence and later housing development. In addition, during the early 1960s in ‘Aiea, Mrs. Ching gathered *pōpolo* (*Solanum nigrum*) for the medicinal qualities of its leaves as well as small tomatoes that she would add as a natural sweetener to *lomilomi* salmon.
5. The identity of *kama‘āina* in ‘Aiea Ahupua‘a is also influenced by the historic era of sugar cane cultivation. Many participants recall their past with specific references to sugar cane fields, the ‘Aiea sugar mill, the ‘Aiea Stream that fed the mill, and a small vibrant community of plantation workers and their descendents. In particular, Mrs. Kekina describes a ditch and tunnel system she discovered near the source of ‘Aiea Stream that was most likely used during the historic sugar plantation era to divert water to the ‘Aiea sugar mill.
6. The community participants discuss tremendous changes to the landscape of ‘Aiea that transformed the vast sugar cane fields and open spaces that once covered the lowlands. Participants associate a decline of natural resources with the rise in residential and commercial development. For example, Mr. Kamelamela points to the loss of fish and

oyster harvest from the waters of Pu‘uloa. He says although the community used to fish and crab, no one can eat from Pearl Harbor anymore because of the pollution from the military. Mrs. Ching can no longer find the medicinal *pōpolo* or the small sweet tomatoes she used to collect before the expansion of development.

7. A sense of place in ‘Aiea Ahupua‘a is rooted in a network of trails, both contemporary and historic, that connects the mountainous regions of ‘Aiea Ahupua‘a to the bordering valleys of Kalauao Ahupua‘a and Hālawa Ahupua‘a. Mrs. Kekina traces a network of trails and streams in the neighboring Hālawa Valley to a hidden *heiau* and remnants of former banana and taro plantations.
8. The flow of the ‘Aiea Stream connects most of the cultural and historic properties within the *ahupua‘a* of ‘Aiea to the current Project area through time and across space, as suggested by Mr. ‘Ailā. The stream starts in the mountainous regions above Keaīwa Heiau. It provided nourishment for hundreds of medicinal plants cultivated at the *heiau*, as well as for the lowland *lo‘i kalo*. Its descending waters later filled the sacred bathing pond of Waiola‘a, and eventually entered the coastal zone of Pu‘uloa, becoming part of an ecosystem in which *pipi*, crabs, clams and other marine resources once thrived. In more recent historical times, the stream fueled the sugar cane industry at the ‘Aiea sugar mill.
9. The respondents are not aware of any cultural or historic properties within or adjacent to the current Project area.

9.2.2 Community Recommendations

Based on these consultations, there are 5 major concerns regarding potential adverse impacts on cultural, historic and natural resources, practices and beliefs as a result of the proposed ‘Aiea Intermediate School Erosion Control project:

1. **Erosion**. Based on her own observation, Mrs. Kekina asserts that the erosion of the stream banks has been influenced by rain water run-off from subdivisions farther up ‘Aiea Stream in the gulch between ‘Aiea Heights and Hālawa Heights, and by heavy growth of mangroves which decrease flow at the mouth of the river near Pearl Harbor. Mrs. Kekina recommends consulting with an engineer to assess why the stream banks are eroding. Alterations in the flow of ‘Aiea Stream could be due to inadequate drainage systems upstream, excessive mangrove growth downstream, and excessive dumping of trash.
2. **Flooding.** Mrs. Ching is concerned that flooding of the stream onto the streets during heavy rains could lead to additional erosion downstream of the current Project area.
3. **Pollution**. Mrs. Mills contends that toxins and pollutants from the former sugar mill are still contaminating the ‘Aiea Stream next to the Project site and that adequate protection and precautions should be taken.
4. **Freshwater Resources**. Mr. ‘Ailā recommends planting native plants along the banks of ‘Aiea Stream after the stream sides have been stabilized in order to minimize erosion and promote native plant populations as a way to protect the stream. He also recommends monitoring freshwater resources.

5. **Timing**. Mr. Kamelamela recommends only commencing with the Project when there is little or no flow of ‘Aiea Stream.

9.3 General Recommendations

Based on background research and community consultation detailed in the CIA report, CSH recommends the following measures to mitigate potentially adverse effects of the proposed Project on cultural, historic and natural resources, practices and beliefs:

1. Cultural monitoring should be included in the Project. According to a previous oral testimony, a *heiau* named Kaonohiokala is located directly east of the Project area. As the exact location of the *heiau* is unknown, Project personnel should be informed of the possibility of finding this *heiau*. In addition, land-disturbing activities may uncover burials or other cultural resources. Should cultural or burial sites be identified during ground disturbance, all work should immediately cease and the appropriate agencies notified pursuant to applicable law.
2. Community members should be further consulted throughout the planning process, including the design and implementation of the proposed development. Addressing their concerns will minimize the impact of the Project on the cultural practices and traditions of the *kama‘āina* of ‘Aiea and allow them to continue their stewardship of ‘Aiea Stream and other natural resources, and Pōhaku o Ki‘i, Keaīwa Heiau and other historic and cultural and properties.

Section 10 Acknowledgements

The authors and researchers of this report extend our deep appreciation to everyone who took time to speak and share their *mana‘o* (thoughts) with CSH whether in interviews or brief consultations. We request that if these interviews are used in future documents, the words of contributors are reproduced accurately and not in any way altered, and that if large excerpts from interviews are used, report preparers obtain the express written consent of the interviewee/s.

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Appendix A Consent Release Form

AUTHORIZATION AND RELEASE FORM

Cultural Surveys Hawai‘i (CSH) appreciates the generosity of the *kūpuna* and *kama‘āina* who are sharing their knowledge of cultural and historic properties, and experiences of past and present cultural practices in the ‘Aiea Ahupua‘a for the Cultural Impact Assessment CSH is preparing for the proposed ‘Aiea Intermediate School-Erosion Control Project.

We understand our responsibility in respecting the wishes and concerns of the interviewees participating in our study. Here are the procedures we promise to follow:

You will have the opportunity to review the written notes of our interview with you. At that time you may make any additions, deletions or corrections you wish.

You will be given a copy of the interview notes for your records.

You will be given a copy of this release form for your records.

You will be given any photographs taken of you during the interview.

For your protection, we need your written confirmation that:

You consent to the use of the complete transcript and/or interview quotes for reports on cultural sites and practices, historic documentation, and/or academic purposes.

You agree that the interview shall be made available to the public.

If a photograph is taken during the interview, you consent to the photograph being included in any report/s or publication/s generated by this cultural study.

I, _____, agree to the procedures outlined above and, by my signature, give my consent and release for this interview to be used as specified.

_____

(Signature)

_____

(Date)

Appendix B SHPD Response Letter

LINDA LINGLE
GOVERNOR OF HAWAII

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

RUSSELL Y. TSUJI
FIRST DEPUTY

KEN C. KAWAHARA
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

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

July 20, 2009

LOG NO: 2009.3171
DOC. NO: 0907PC009

MEMORANDUM

TO: Mishalla Spearing, Cultural Researcher
Cultural Surveys Hawai'i, P.O. Box 1114, Kailua, Hawai'i 96734

FROM: Phyllis Coochie Cayan, History and Culture Branch Chief

Subject: 'AIEA 2: A Cultural Impact Assessment (CIA) for the 6E/106 Review Process for the 'Aiea Intermediate School Erosion Control Project in 'Aiea Ahupua'a, 'Ewa District, Island of O'ahu. TMK: [1] 9-9-005:001.

Aloha kaua. This memo is in response to your letter of July 9, 2009 to help assess potential impacts to cultural practices or resources for the 6E/Sec. 106 review process for the 'Aiea Intermediate School Erosion Control project at the above TMK parcels for a 30.78 project area which encompasses an eroded 150 foot portion of the 'Aiea Stream corridor.

As you may know, the 'Aiea stream starts from the top of the mountain and then along the gulch to the lower 'Aiea shoreline ending at the Pearl Harbor environs. There is a lot of overgrowth along the stream's path which may or may not shelter some cultural resources despite recent changes along its route. 'Aiea has a rich cultural and historical history from Keaiwa Heiau atop the heights to various significant boulders throughout the area (i.e. legendary boulder framed by two palm trees at the 'Aiea Post Office) to the Pearl River area where na ali'i once spent leisurely days. 'Aiea was similar to the adjacent ahupua'a of Halawa with its rich cultural history and the abundant lo'i lands which flourished prior to sugar cane cultivation. Remnant s of taro agriculture and other cultural resources still remain in patches that exist between homes and the light industrial areas throughout this district. The 'Aiea stream would be in itself significant for its role in agricultural activities throughout the ahupua'a which would be supported by other cultural practices such as kapa making, medicinal and healing practices, spiritual practices and so on. These daily activities of an ahupua'a focusing on its agriculture aspects are important to consider in your CIA without forgetting the fishing and shoreline activities below the project area.

SHPD's History and Culture branch recommends cultural monitoring for this proposed project area whereby land disturbing activity may uncover burials or other cultural resources (i.e., related to agriculture, Hawaiian spirituality). The department is also concerned that public access to the stream is not hampered during the project nor that toxins are introduced into the stream by the project.

Other resource folks or venues you may find helpful to gather information as you begin this process are:

1. Kawika McKeague, O'ahu Island Burial Council chairman and 'Ewa District representative — Phone: 523-5866 or kawikam@hawaii.rr.com
2. 'Aiea Neighborhood Board — check City & County schedule of board meetings
3. UH Manoa Oral History Department — University of Hawaii @ Manoa

Any questions, please call me at 808-692-8025 or via email to Phyllis.L.Cayan@hawaii.gov

c: Nancy McMahon, Deputy SHPO/ State Archaeologist

Appendix C OHA Response 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

HRD09/4651B

November 9, 2009

Joe Genz
Cultural Surveys Hawai'i
P.O. Box 1114
Kailua, Hawai'i 96734

RE: Cultural Impact Assessment Consultation
'Aiea Intermediate School Erosion Control project
'Aiea Ahupua'a, 'Ewa District, O'ahu
Tax Map Key (1) 9-9-005:001

Aloha e Joe Genz,

The Office of Hawaiian Affairs (OHA) is in receipt of your October 9, 2009 letter continuing consultation ahead of a cultural impact assessment (assessment) for the proposed 'Aiea Intermediate School Erosion Control project. It is our understanding that the stream bank located along the northwest perimeter of the school has retreated through years of erosion, undermining utilities and adversely impacting a fence line in the area. This erosion also has the potential to adversely impact a roadway in the area. The State of Hawai'i-Department of Education is proposing to establish erosion control measures in the area to protect the roadway and restore undermined utilities.

OHA recognizes the importance of this project to protect utilities related to the school and to improve the safety for students and staff and looks forward to seeing the erosion control measures fully implemented. We have no comments on the CIA at this time. We will rely on your assurances that all appropriate best management practices will be employed in order to protect stream water quality and resources during project activities. Thank you for initiating consultation at this early stage and we look forward to the opportunity to review the completed assessment. Should you have any questions, please contact Keola Lindsey, Lead Advocate-Culture at 594-1904 or keolal@oha.org.

'O wau iho nō me ka 'oia'i'o,

Clyde W. Nāmu'o
Administrator