Department of Water
County of Kaua'i

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Water has no substitute.....Conserve it

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OFFICE OF QUALITY CONTROL

February 19, 2009

Director
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, HI 96813

Dear Director:

Subject: Finding of No Significant Impact (FONSI) for Piwai 677' 0.5 Million Gallon Storage Tank, Lawai-Omao Water System, TMK: 2-5-01: Portion 2, Omao, Kauai, Hawaii

The County of Kauai Department of Water has reviewed the comments received during the 30-day public comment period which began on June 23, 2007. The agency has determined that this project will not have significant environmental effects and has issued a FONSI. Please publish this notice in the next available OEQC Environmental Notice.

We have enclosed a completed OEQC Publication Form, one copy of the document in pdf format, two copies of the FONSI, and the project summary on disk. Please contact Mr. Keith Fujimoto at (808) 245-5449 if you have any questions.

Sincerely,

Ushigome

Wynne M. Ushigome
Acting Manager and Chief Engineer

KF:mll
FEA OEQCtrm

Enclosures:

4398 Pua Loke St., P.O. Box 1706, Lihue, HI 96766 Phone: 808-245-5400
Engineering and Fiscal Fax: 808-245-5813, Operations Fax: 808-245-5402, Administration Fax: 808-246-8628

DEPARTMENT OF WATER
County of Kauai
Kauai, Hawaii

PIWAI 677' 0.5 MG STORAGE TANK
LAWAI-OMAO WATER SYSTEM

Final Environmental Assessment

Kauai, Hawaii
Tax Map Key: 2-5-01:por.2

February 2009

FUKUNAGA AND ASSOCIATES, INC.
Consulting Engineers
1388 Kapiolani Boulevard, Second Floor
Honolulu, Hawaii 96814
(808) 944-1821

Project Summary

Project:	Piwai 677' 0.5 MG Storage Tank – Lawai-Omao Water System
Proposing Agency:	County of Kauai, Department of Water
Proposed Action:	Construct a 0.5 million gallon storage tank to enhance storage in the existing Lawai-Omao Water System.
Anticipated Determination:	Finding of No Significant Impact
Tax Map Key:	2-5-1: por. 002
Property Owner:	Alexander & Baldwin, Inc. and its subsidiary, McBryde Sugar Company, Limited
State Land Use District:	Agriculture
County Zoning:	Agriculture
PreConsultation:	County of Kauai Department of Public Works County of Kauai Department of Water County of Kauai Housing Agency Office of Community Assistance County of Kauai Planning Department Department of Hawaiian Home Lands State Department of Agriculture State Department of Business, Economic Development & Tourism State Department of Land and Natural Resources Commission on Water Resource Management Division of Aquatic Resources Division of Forestry and Wildlife Engineering Division Historic Preservation Division, Kauai Office Kauai District Land Office Land Division Na Ala Hele Trails State Department of Health Clean Water Branch Environmental Planning Office Safe Drinking Water Branch Solid and Hazardous Waste Branch Office of Environmental Quality Control Office of Hawaiian Affairs A&B Properties, Inc. Hawaiian Telcom Kauai Island Utility Cooperative Kukuiula Development Company (Hawaii), LLC Ka Leo O Kauai Kauai Office of Community Assistance Kauai Planning and Action Alliance

	Koloa Neighborhood Center Omao Road Community UH Manoa Environmental Center UH Manoa Water Resource Research Center U.S. Department of Agriculture, Natural Resources Conservation Service U.S. Department of the Army, Army Corps of Engineers, Pacific Ocean Division U.S. Department of the Interior, Fish and Wildlife Service

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APPENDICES

A. Addendum To An: Archaeological Inventory Survey of Three Proposed Well Sites and Appurtenances in the Vicinity of the Piwai Reservoir, Koloa Ahupuaa, District of Kona, Island of Kauai (TMK 2-5-01: Por. 8), December 2004. Prepared by Cultural Surveys Hawaii, Inc.

Archaeological Inventory Survey of Three Proposed Well Sites and Appurtenances in the Vicinity of the Piwai Reservoir, Koloa Ahupuaa, District of Kona, Island of Kauai (TMK 2-5-01: Por. 8), December 2002. Prepared by Cultural Surveys Hawaii, Inc.

B. State Historic Preservation Division review letter December 22, 2006

C. Pre-Consultation Letters and Responses

D. Draft Environmental Assessment Comments and Responses

I. PROJECT DESCRIPTION

A. PROJECT BACKGROUND

The County of Kauai, Department of Water (DOW) proposes to construct a 0.5 million gallon (MG) water storage tank to enhance storage in the existing Lawai-Omao Water System, in accordance with the DOW comprehensive long-range plan, as put forth in the *Water Plan 2020*. The proposed tank will connect to the Piwai Well Complex project, constructed in conjunction with the Kukuiula development. The Kukuiula development and the Piwai Well Complex are being developed by Kukuiula Development Company (Hawaii), LLC (KDCH).

The 0.5 MG tank is proposed to be located adjacent to the KDCH Piwai 0.1 MG control tank, and would connect to the Piwai Well Complex project transmission mains. The Piwai Well Complex project is completed, and final issues are being addressed prior to dedication of the facilities to the DOW.

B. PROJECT LOCATION

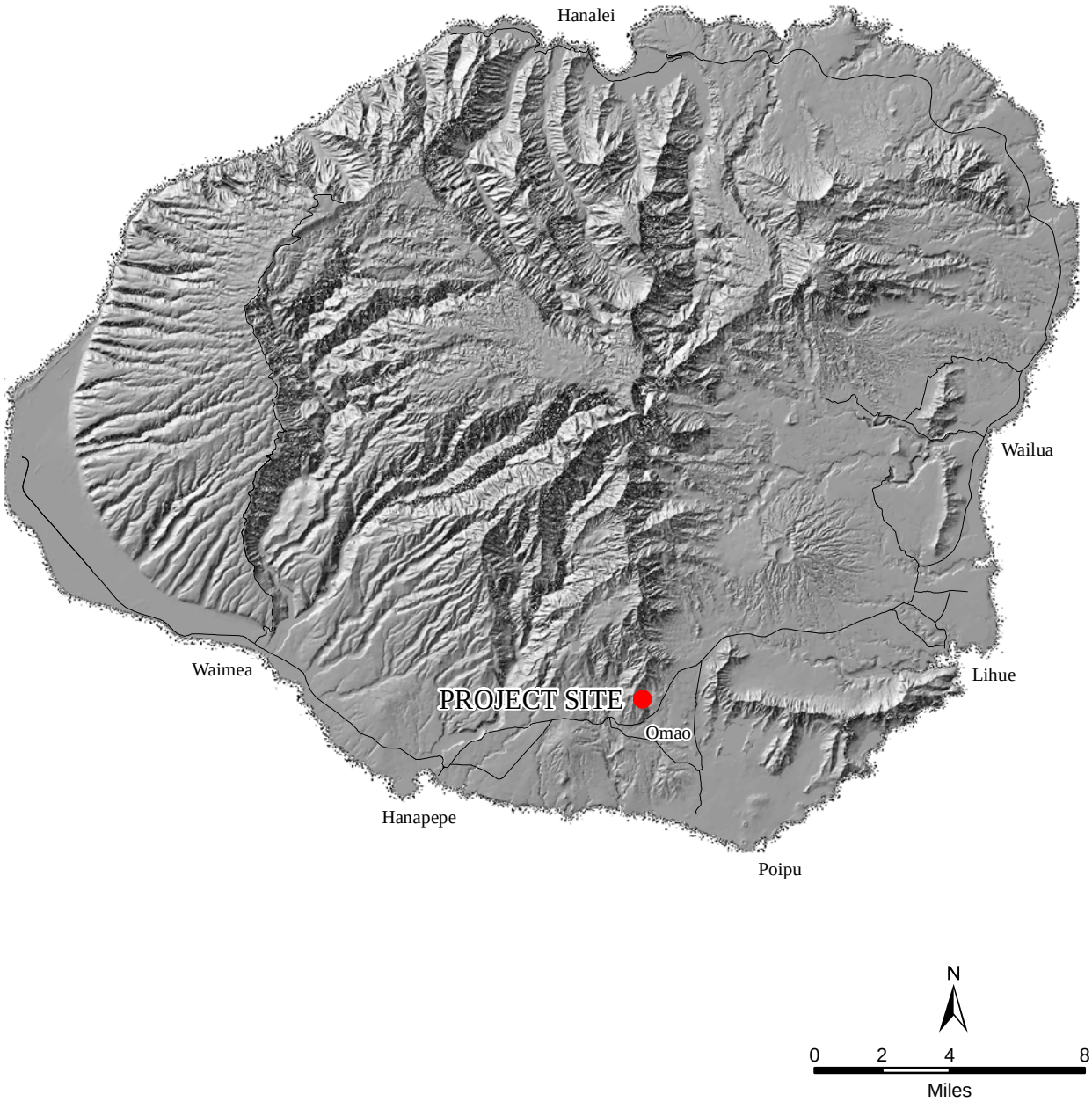
The project site is situated approximately one mile north of Omao, mauka (mountain side) of Kaumualii Highway, and 0.4 miles east of the Lihue-Koloa Forest Reserve, as shown on **Figures 1** and **2**. The proposed site is located within Tax Map Key (TMK) 2-5-1:002, approximately 122.5 acres of land owned by Alexander & Baldwin, Inc. and its subsidiary, McBryde Sugar Company, Limited. The area is currently undeveloped and covered with a variety of trees, shrubs and grasses.

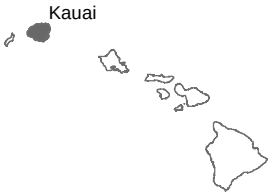
C. PROJECT SCOPE

The proposed project includes construction of a 0.5 MG reinforced concrete tank, connecting pipelines, access road, and appurtenant facilities for the DOW supervisory control and data acquisition (SCADA) system. The Piwai 0.1 MG control tank site will be expanded approximately 0.35 acres to accommodate the proposed tank and appurtenances. An additional 0.4 acres surrounding the site will require grading.

The proposed tank will be approximately 20 feet high and 70 feet in diameter, and will have a spillway elevation at 677.0 feet above mean sea level (msl). Chain link fence will be installed to secure the tank site in addition to intrusion alarms on the tank hatch and Piwai control tank site gate. **Figure 3** shows the preliminary site plan.

Sixteen-inch pipelines will interconnect the 0.5 MG tank to the 0.1 MG Piwai control tank inflow and outflow lines. Paved access will be extended from the Piwai tank service road to serve the proposed tank.





State of Hawaii

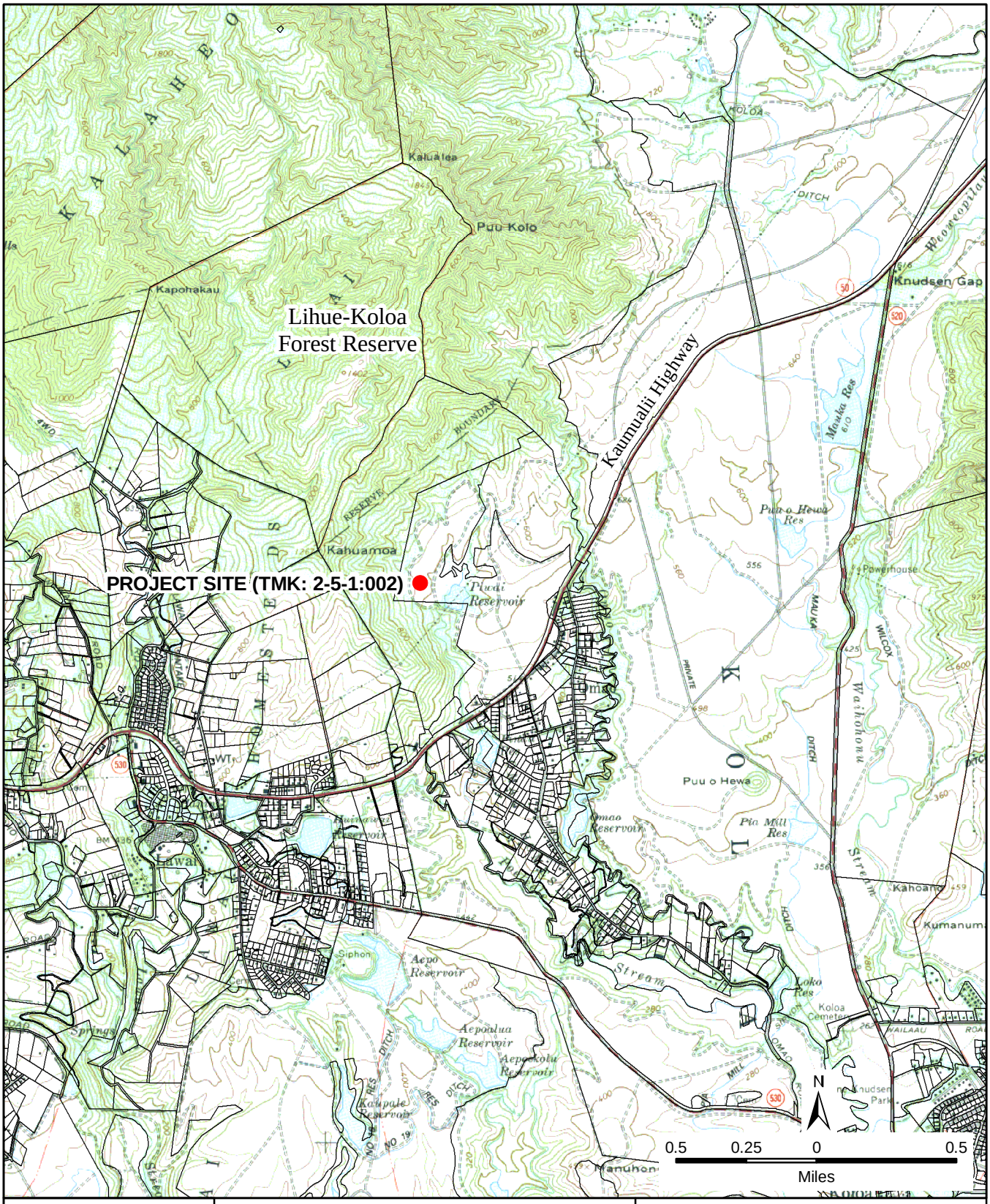
FIGURE 1

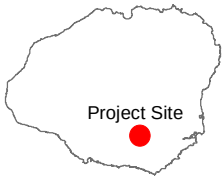
ISLAND OF KAUAI

County of Kauai
Department of Water

PIWAI 677' 0.5 MG
STORAGE TANK
LAWAI-OMAO
WATER SYSTEM

FUKUNAGA & ASSOCIATES, INC.
Consulting Engineers
1388 Kapiolani Boulevard, Honolulu, Hawaii 96814





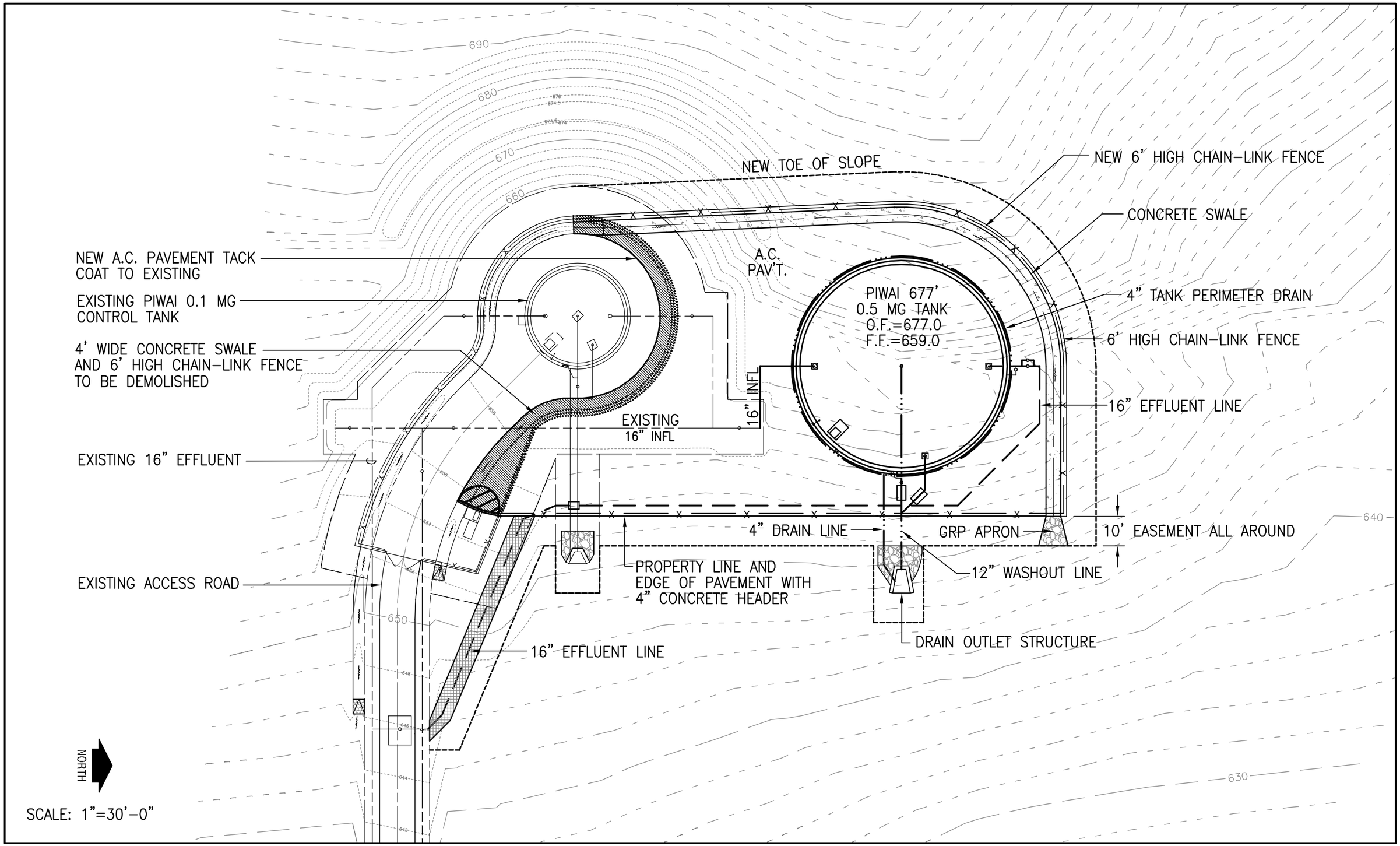
Island of Kauai

FIGURE 2

PROJECT LOCATION (TMK:2-5-1:002)

County of Kauai
Department of Water
PIWAI 677' 0.5 MG
STORAGE TANK
LAWAI-OMAO
WATER SYSTEM

FUKUNAGA & ASSOCIATES, INC.
Consulting Engineers
1388 Kapiolani Boulevard, Honolulu, Hawaii 96814



PIWAI 677' 0.5 MG STORAGE TANK LAWAI-OMAO WATER SYSTEM - PRELIMINARY SITE PLAN

FIGURE 3

Radio telemetry link between the proposed 0.5 MG tank and the DOW Central Operating Facility to allow remote operations and monitoring will be via the Piwai tank SCADA system.

The tank site and related easements will be subdivided and conveyed to DOW in accordance with subdivision conditions for Alexander & Baldwin Hawaii, Inc. Construction is anticipated to be in fiscal year 2008/2009, and will be funded by the County and/or the Drinking Water State Revolving Fund Program, if available.

II. DESCRIPTION OF THE ENVIRONMENT

A. LAND CLASSIFICATION AND ZONING

The State and County laws and regulations govern land use policies. The State Land Use Commission classifies all State lands as Urban, Rural, Agricultural, or Conservation. The project site is designated "Agricultural" by the State, as shown on **Figure 4**. The Kauai General Plan serves as a guide for the overall development of the island. More detailed land use zoning for the County designated land classifications is regulated by the County Comprehensive Zoning Ordinance (CZO), which should conform to the General Plan. The purpose of the CZO is to provide regulations and standards for land development and construction of structures in the County. The project site is within the CZO "Agriculture District," as shown on **Figure 5**.

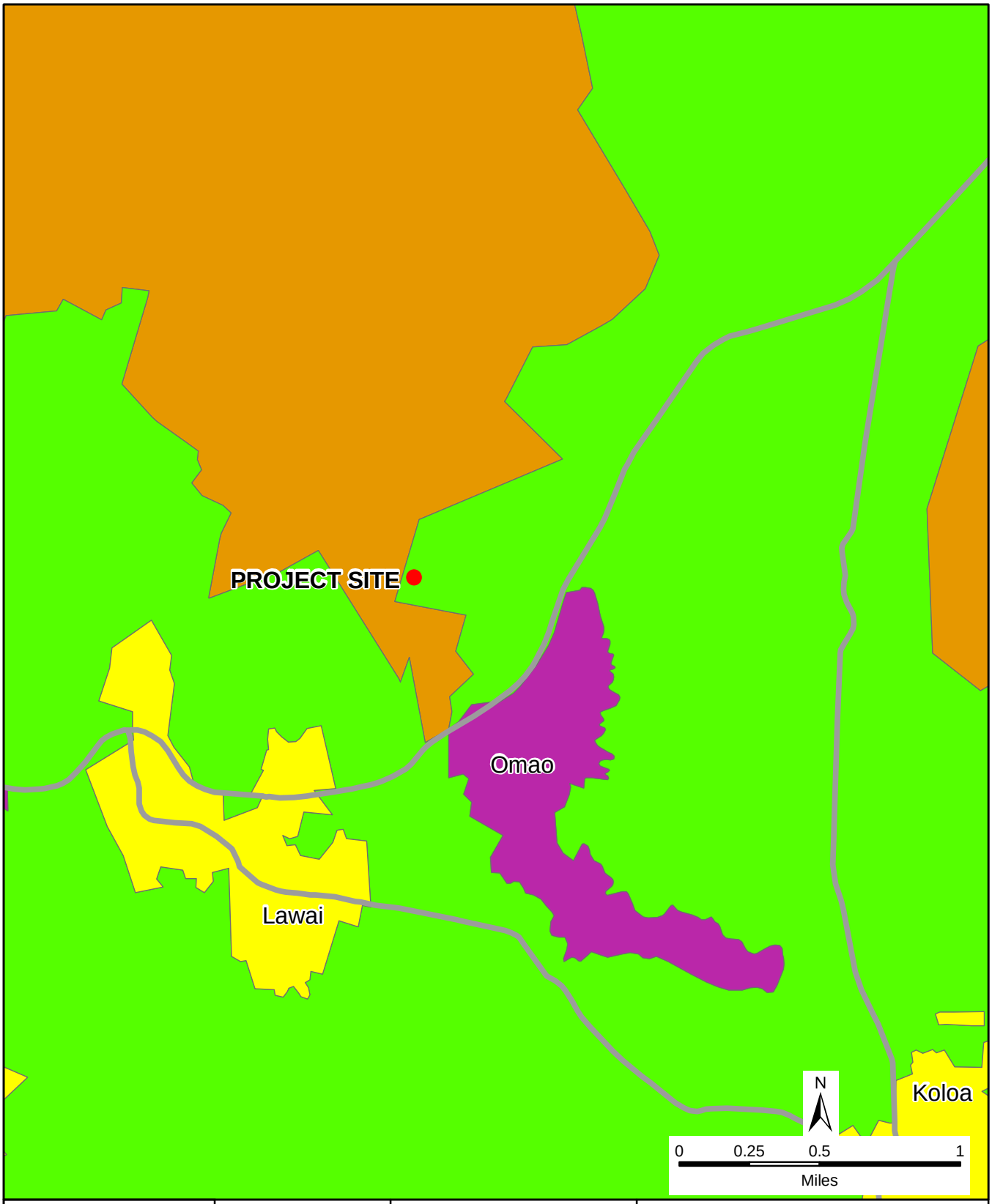
The University of Hawaii Land Study Bureau (LSB) rates all State land, except urban land, on its over-all or general quality, in terms of agricultural productivity. The *LSB Detailed Land Classification* map uses five class productivity ratings, from "A," representing the highest productivity to "E," the lowest. The project site is classified as "D" or medium low productivity rating. See **Figure 6**.

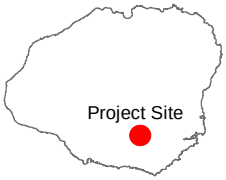
Based on the CZO and LSB classifications, the subject project will require a Special Permit, Use Permit and a Class IV Zoning Permit since the proposed project is not a generally permitted use within the Agricultural District of the County's CZO.

B. PHYSICAL FEATURES

1. Topography

The topography of the proposed tank site slopes at approximately 25 percent, ranging from about 660 feet to 690 feet above mean sea level. **Figure 3**, shown previously, depicts the existing site topography. The slope will be cut to provide a level area for the tank and the associated facilities.





Island of Kauai

FIGURE 4

STATE LAND USE

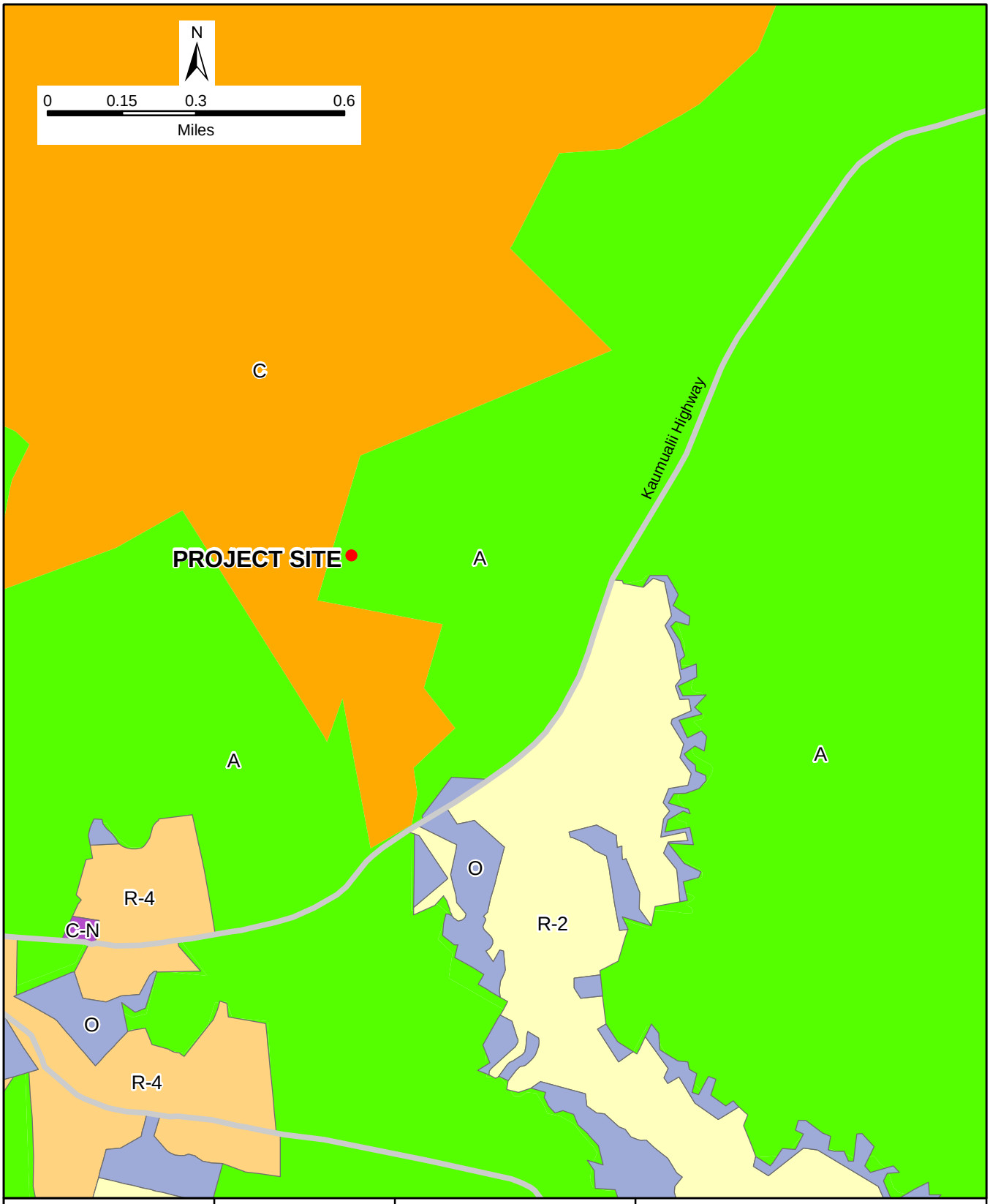
LEGEND

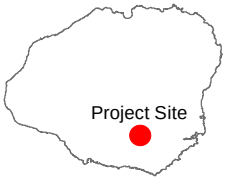
- AGRICULTURAL
- CONSERVATION
- RURAL
- URBAN
- Major Road

County of Kauai
Department of Water

PIWAI 677' 0.5 MG STORAGE TANK
LAWAI-OMAO WATER SYSTEM

FUKUNAGA & ASSOCIATES, INC.
Consulting Engineers
1388 Kapiolani Boulevard, Honolulu, Hawaii 96814





Island of Kauai

FIGURE 5

COMPREHENSIVE ZONING ORDINANCE

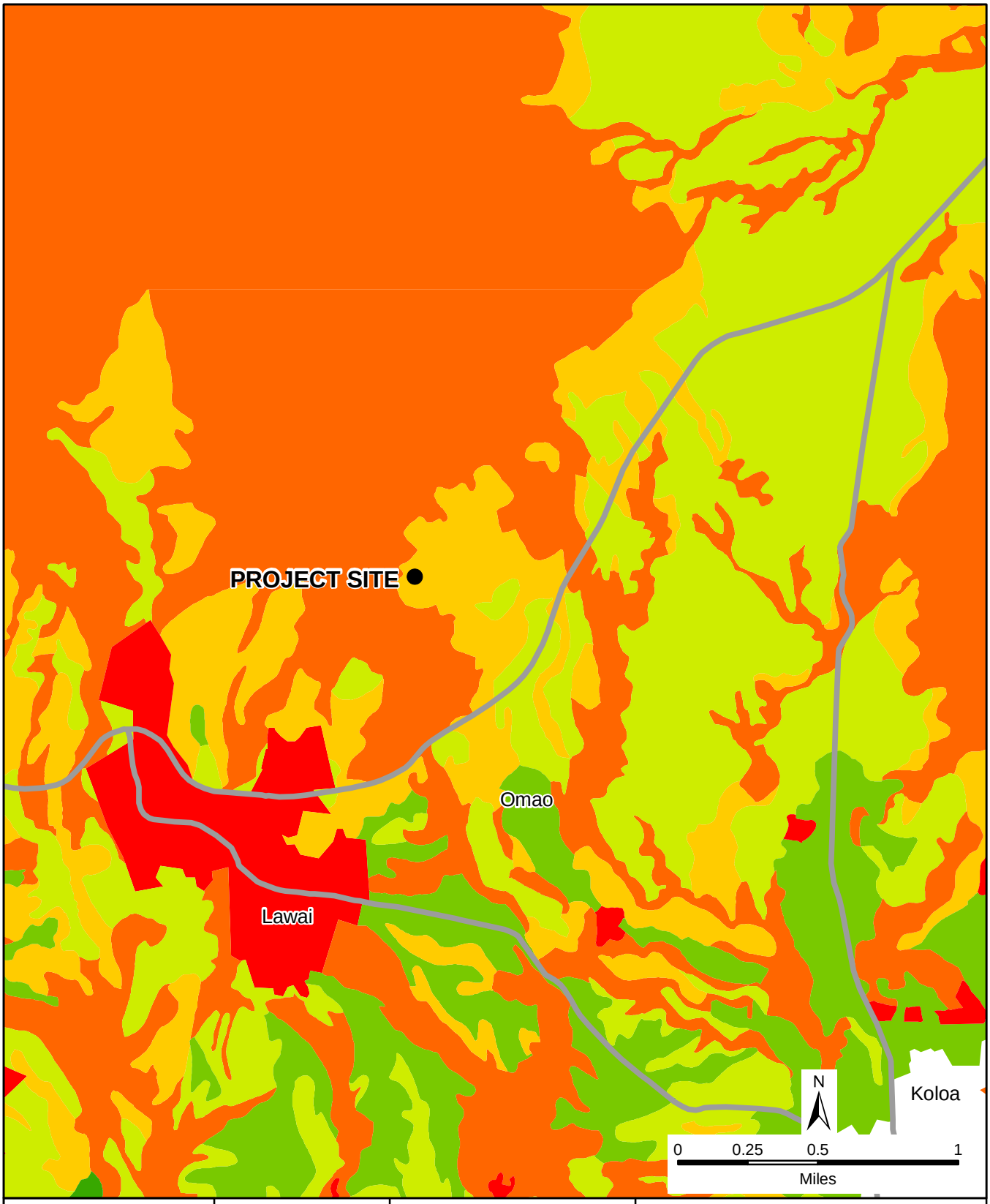
LEGEND

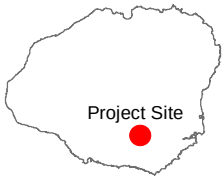
A: Agricultural District
C: Conservation District
O: Open District
R-2/R-4: Residential District
C-N: Commercial District
Road

County of Kauai
Department of Water

PIWAI 677' 0.5 MG STORAGE TANK
LAWAI-OMAO WATER SYSTEM

FUKUNAGA & ASSOCIATES, INC.
Consulting Engineers
1388 Kapiolani Boulevard, Honolulu, Hawaii 96814





Island of Kauai

FIGURE 6

LAND STUDY BEREAU (LSB) DETAILED LAND CLASSIFICATION

LEGEND

Agricultural Land Productivity Rating

- A: Highest
- B: Med. High
- C: Medium
- D: Med. Low
- E: Lowest
- N: Not Classified
- Major Road

County of Kauai
Department of Water

PIWAI 677' 0.5 MG STORAGE TANK LAWAI-OMAO WATER SYSTEM

FUKUNAGA & ASSOCIATES, INC.
Consulting Engineers
1388 Kapiolani Boulevard, Honolulu, Hawaii 96814

2. Soils

According to the *Soil Survey* published in 2005 by the U.S. Department of Agriculture, Natural Resources Conservation Service (USDA-NRCS), the soil in the area of the storage tank site is characterized as Kalapa Silty Clay, 20 to 40 percent slopes (KdE). The soil type provides rapid runoff, and there is severe erosion hazard. See **Figure 7**. A soil investigation was conducted and grading parameters provided to ensure slope stability. To reduce the effects of weathering and erosion, the slopes will be planted as soon as practicable upon completion of grading.

3. Hydrology

Piwai Reservoir is approximately 800 feet east of the proposed tank site and intercepts a tributary of Waikomo Stream, as shown on **Figure 8**. There are no wetlands or water body in close proximity to the project site.

4. Climate

The mean annual rainfall in the vicinity of the project site, which is on the windward side of Puu Kolo Mountain in the Lihue-Koloa Forest Reserve, is approximately 100 inches per year. The average temperatures in the area range between the mid-60s to the mid-80s (^{o}F). The northeasterly trade winds prevail throughout the year.

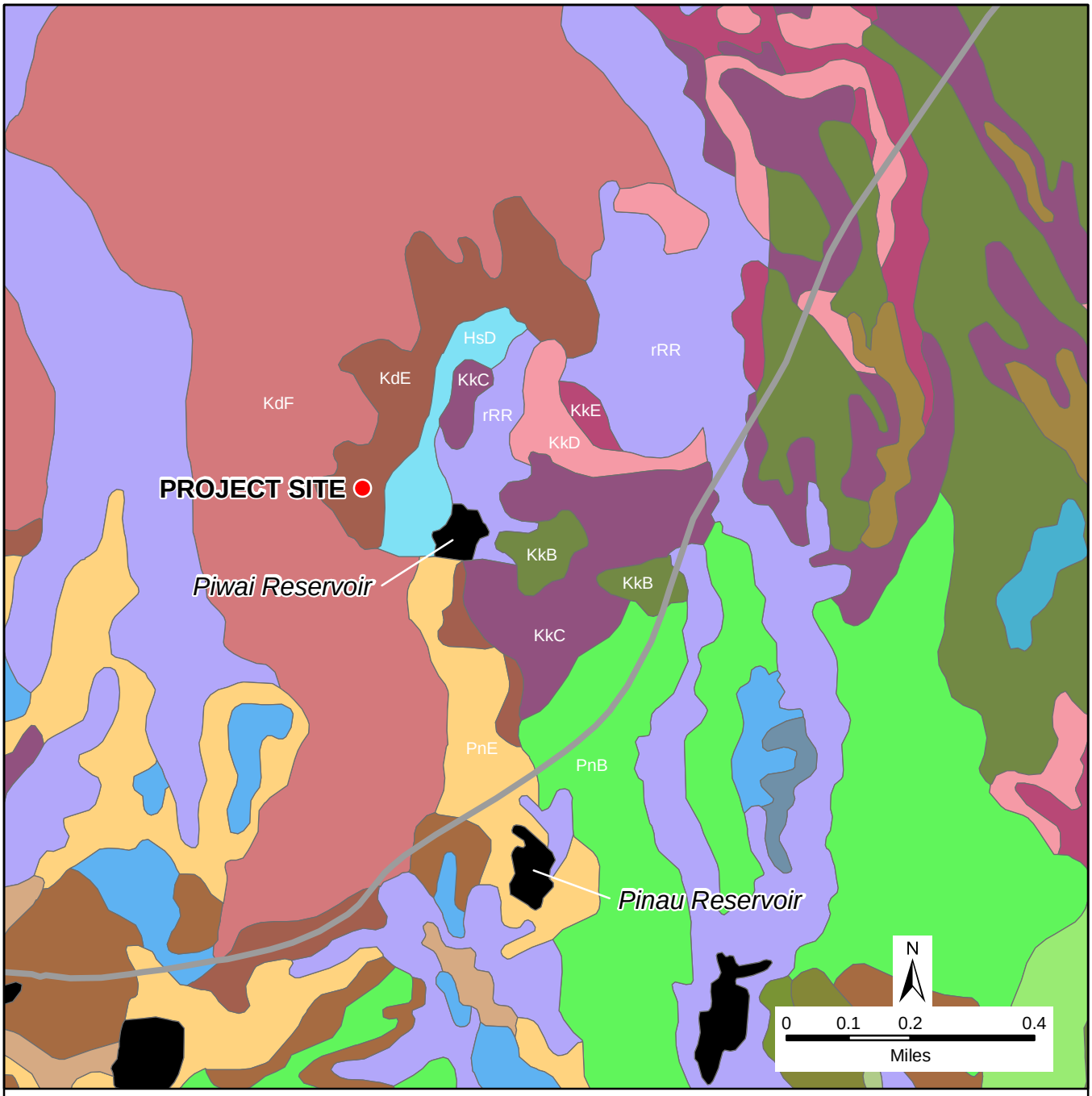
5. Flood and Tsunami

The Federal Emergency Management Agency Flood Insurance Rate Map (FIRM) panel 1500020311E, dated September 16, 2005 designates the project site within Zone X, areas determined to be outside the 0.2% annual chance floodplain.

The project site is more than 3 miles inland and at an elevation of approximately 660 feet; therefore, no tsunami impacts are expected.

6. Earthquake

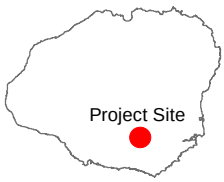
The Uniform Building Code (UBC) classifies seismic hazards into six seismic zones, which range from 0 (no chance of severe ground shaking) to 4 (10% chance of severe shaking in a 50-year interval. Kauai is within Zone 1. The proposed facility will be designed accordingly.



LEGEND

KkB	Kapaa Silty Clay 3-8 % Slopes	KdE	Kalapa Silty Clay 20-40 % Slopes		Major Road
KkC	Kapaa Silty Clay 8-15 % Slopes	KdF	Kalapa Silty Clay 40-70 % Slopes		
KkD	Kapaa Silty Clay 15-25 % Slopes	PnB	Puhi Silty Clay Loam 3-8 % Slopes		
KkE	Kapaa Silty Clay 25-40 % Slopes	PnE	Puhi Silty Clay Loam 25-40 % Slopes		
rRR	Rough Broken Land	HsD	Hanamaulu Silty Clay 15-25 % Slopes		

Source: USDA Natural Resources Conservation Service, Soils Survey, Island of Kauai, 1972.



Island of Kauai

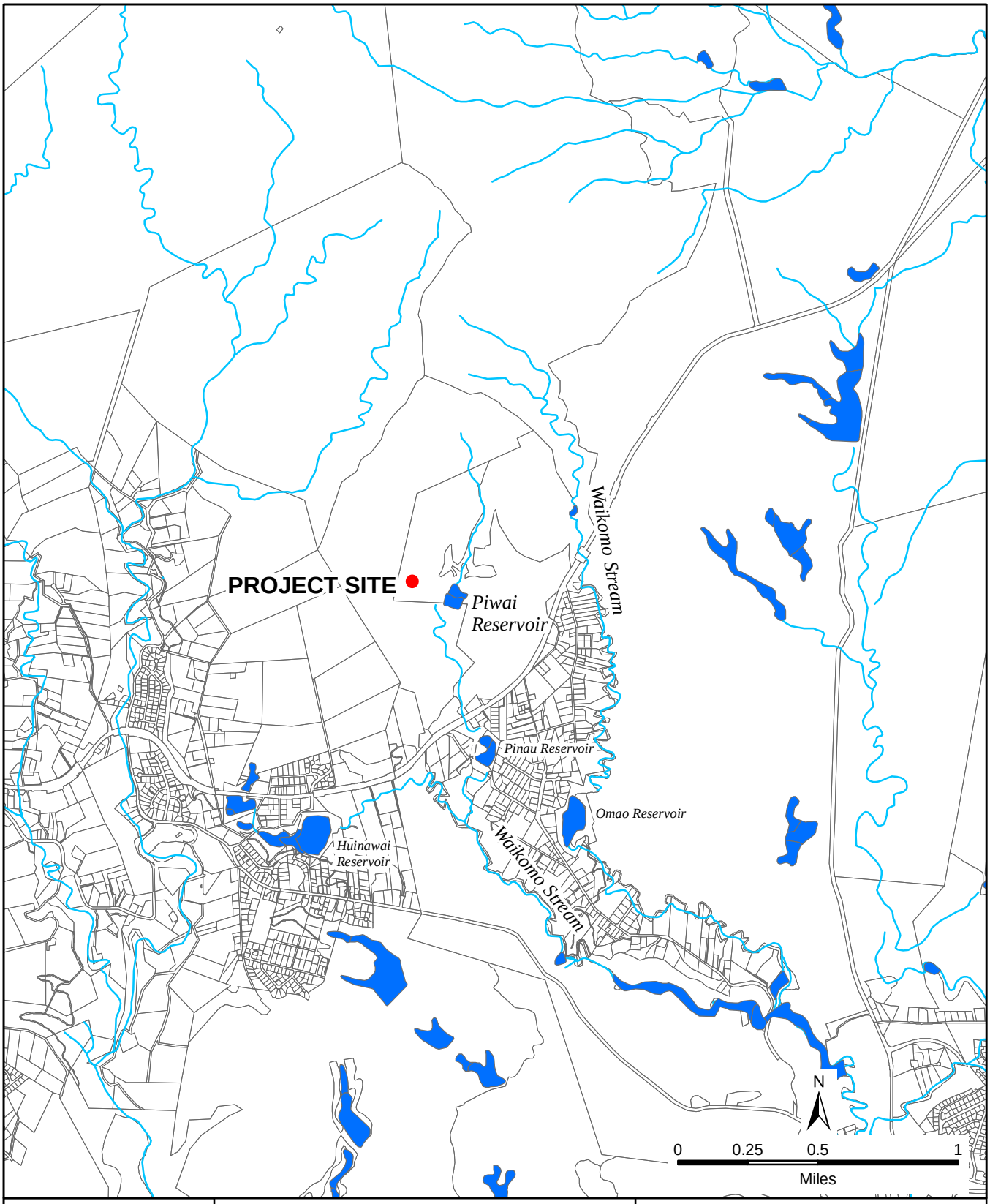
FIGURE 7

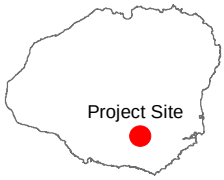
USDA-NRCS SOIL SURVEY MAP

County of Kauai
Department of Water

PIWAI 677' 0.5 MG STORAGE TANK
LAWAI-OMAO WATER SYSTEM

FUKUNAGA & ASSOCIATES, INC.
Consulting Engineers
1388 Kapiolani Boulevard, Honolulu, Hawaii 96814





Island of Kauai

FIGURE 8

HYDROLOGY (WETLAND AND PERENNIAL STREAMS)

County of Kauai
Department of Water
PIWAI 677' 0.5 MG
STORAGE TANK
LAWAI-OMAO
WATER SYSTEM

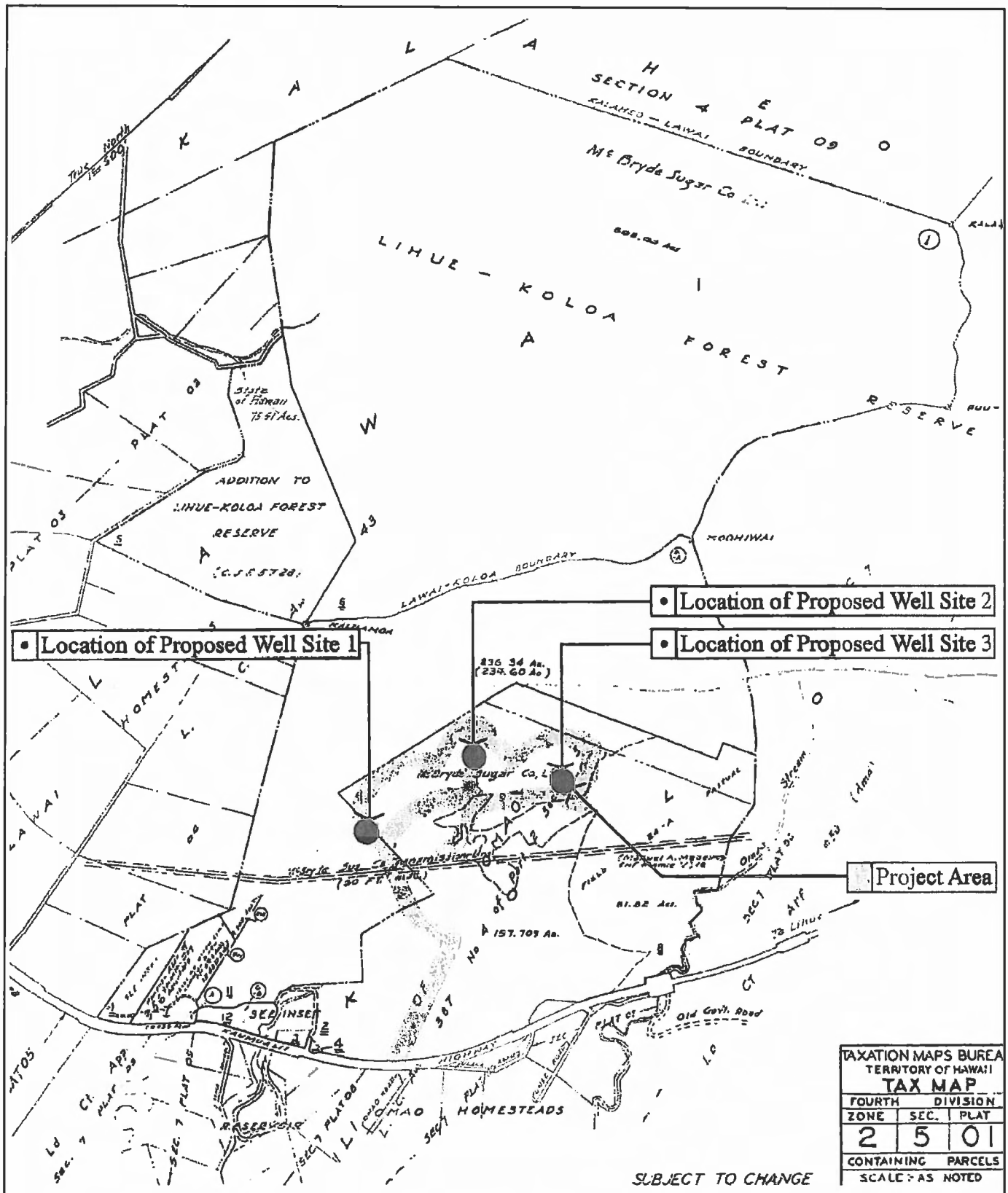
FUKUNAGA & ASSOCIATES, INC.
Consulting Engineers
1388 Kapiolani Boulevard, Honolulu, Hawaii 96814

C. ARCHAEOLOGICAL, HISTORICAL AND CULTURAL CONSIDERATIONS

Cultural Surveys Hawaii, Inc. (CSH) performed an archaeological inventory survey of three sites for Alexander and Baldwin Properties; these sites were used for the Piwai Well Complex project. The findings are documented in a report entitled, *Archaeological Inventory Survey of Three Proposed Well Sites And Appurtenances in The Vicinity of The Piwai Reservoir, Koloa Ahupuaa, District of Kona, Island of Kauai (TMK 2-5-01: Por.8[2])* (Appendix A), which was accepted by the State Department of Land and Natural Resources, Historic Preservation Division (SHPD) in January 2003. An addendum dated December 2004 was submitted and approved by SHPD on March 1, 2005 (Appendix A). The addendum covered alterations to the original proposed plan which primarily entailed a new location of Well 1 (the Piwai 0.1 MG Tank location) and modifications to the access road alignments. **Figure 9** shows the original project area covered by the initial survey, and **Figure 10** shows the revised project area.

The survey focused on the general background of the Koloa *ahupuaa* in the Kona District of the island of Kauai, and included a complete ground survey of the three sites and access roads, indicated on **Figures 9** and **10**. The Piwai 0.1 MG control tank is sited at the location described as "New Well 1 Site" on **Figure 10**. The proposed 0.5 MG tank site is immediately adjacent to the Piwai 0.1 MG control tank. Therefore, the findings of CSH cover the proposed project site. The State Historic Preservation Division (SHPD) believes that no historic properties will be affected on the site by this project because intensive cultivation has altered the land, and the CSH archaeological inventory survey found no historic properties.

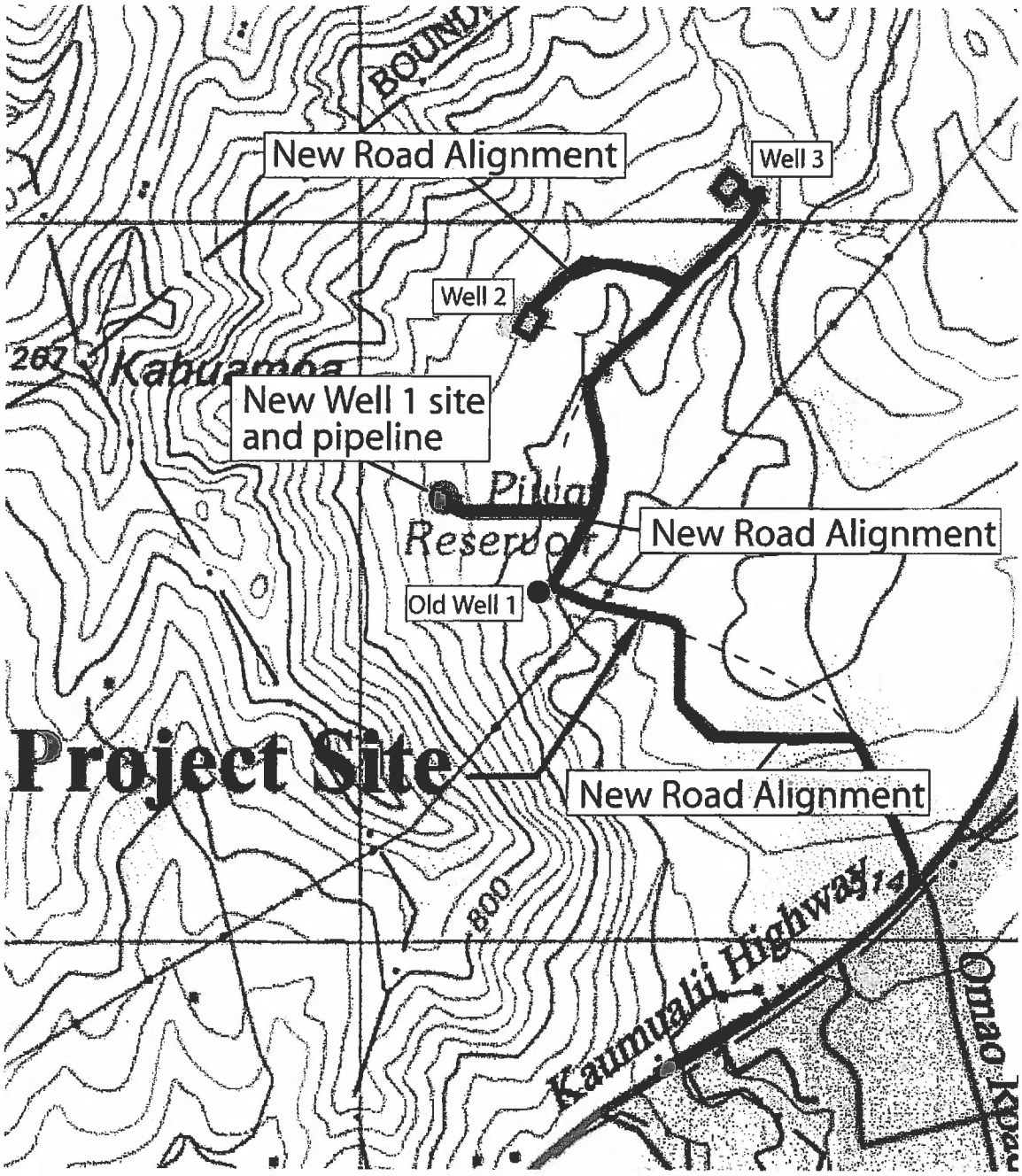
Koloa was once known as an important place for both culture and religion in traditional Hawaiian times. There were at least fourteen heiau in different sizes and functions documented in Koloa. Intensive sugar cane cultivation and macadamia nut farm agricultural activities had a great impact in the area. Koloa is documented as the first organized sugar plantation in Hawaii. A thousand acres of land was leased for the purpose of growing sugar cane. As the sugar cane plantation became predominant in the area, several reservoirs were developed in the early 1900's. The Piwai Reservoir was one of several small reservoirs developed in Koloa at a later time.



Reference: (Figure 2 Portion of TMK 2-5-01 Showing Project Area) Archaeological Inventory Survey of Three Proposed Well Sites and Appurtenances in the Vicinity of the Piwai Reservoir, December 2002.

ARCHAEOLOGICAL INVENTORY SURVEY (Original Project Area)

FIGURE 9



Reference: (Figure 2. Map showing four areas that have been altered from the original proposal; dashed lines shows approximate original proposed road alignments). Addendum To An: Archaeological Inventory Survey of Three Proposed Well Sites and Appurtenances in the Vicinity of the Piwai Reservoir, December 2004.

ADDENDUM TO ARCHAEOLOGICAL INVENTORY SURVEY
(Revised Project Area)

FIGURE 10

Excerpts from CSH predicative model section state the following:

> *From previous archaeological studies and historical accounts, it appears that most habitation and intensive agriculture were widespread in central and coastal Koloa utilizing the opportunity to develop an extensive irrigated complex (the Koloa Field System) off of Waikomo Stream. Evidence of intensive traditional Hawaiian use of lands well mauka of Koloa Town is generally lacking. As the Judd account given above asserts, it is likely environs like the present project area were used for less intensive cultivation of patches of sweet potato, pia, and wauke and the gathering of hala, kukui and other upland resources. Remnants of dry-land agriculture or temporary field shelters associated with upland gardening or gathering and processing of forest resources are certainly possible.*
>
> *One major constraint on the traditional Hawaiian use of this area would have been the absence of a perennial water source. The vicinity of the present project area would not have lent itself to irrigation or ponded field development...*
>
> *While clearly most of the infrastructure supporting historic agriculture lies well seaward of the present project area, during the later historic period the upper elevations of Koloa became important collection areas of irrigation water. It is possible that historic ditches, flumes, pipelines, and other features related to collection of irrigation water exist in the vicinity of the current project area.*

Based on the pedestrian ground survey of the sites conducted by CSH, the report offers the following conclusion:

> *No historic or indigenous sites or artifacts were encountered during the survey and none are believed to exist in the area of likely impact. Any indigenous activity that could have been observed probably would have been destroyed during the years when much of Koloa was used for sugar cane cultivation. Interestingly, no infrastructure related to this historic agricultural period were encountered during the inventory survey other than the unimproved access roads and the Piwai Reservoir.*

As stated earlier, the subject parcel is privately owned and was used for sugar cane cultivation, and is currently used for cattle grazing. Although the CSH predicative model indicates that the area may have been used for dry-land agriculture or to collect irrigation water, no evidence of historic features related to either was found on the proposed project site, as indicated on the topographical survey shown earlier on **Figure 3**. Access is controlled for security and public safety; therefore the area is not available for traditional practices or customary usage. Additionally, impacts to streamflow which might be used for cultural uses are not anticipated. In light of the above background, further Cultural Impact Assessment is not required for this project.

SHPD has reviewed the subject project and stated in their letter dated December 22, 2006 (included in Appendix B) that "no historic properties will be affected" because intensive cultivation has altered the land and an accepted archaeological inventory survey found no historic properties.

D. FLORA AND FAUNA

Similar to the archaeological inventory survey, Rana Productions, Ltd. conducted a survey of avian and terrestrial mammalian species and botanical species on the three sites and access road developed for the Piwai Well Complex project. The Piwai 0.1 MG control tank is sited at the location described as "Well Site #1." As stated earlier, the proposed 0.5 MG tank site is immediately adjacent to the Piwai 0.1 MG control tank, and is in the vicinity of "Well Site #1" location. Therefore, the findings of Rana Productions, Ltd. also cover the proposed project site. Fieldwork was performed, and a report was prepared entitled, *A Survey of Avian and Terrestrial Mammalian Species Conducted on Three Proposed Well Sites, at Piwai, Koloa District, Island of Kauai* (for KDCH, dated March 2005). The primary purpose of the survey was to determine if there were any avian or mammalian species, which are currently listed or proposed to be listed under Federal or State of Hawaii endangered species statutes, within the immediate vicinity of the project site. A reconnaissance level survey of botanical resources present within the project site was also conducted.

1. Botany

The botany within the area is typical of lands previously disturbed from intensive sugar cane cultivation, and currently overgrown and used as cattle pasture. The vicinity of the project site "is made of former agricultural lands separated by ironwood *(Casuarina equisetifolia)* wind-rows and dominated by a mix of Guinea grass *(Panicum maximum)*, and Moluccan albizia *(Paraserianthes falcataria)* with an understory of numerous weedy herbaceous species including, red pualele *(Emilia fosbergii),* creeping indigo *(Indigofera hendecaphylla),* Spanish needle *(Bidens pilosa)*, and garden spurge *(Chamaesyce hirta)*."

2. Avian and Mammalian

The report stated that scat (animal droppings) and signs of dog, horse, cow, pig, and rat were observed in the study area. The endangered Hawaiian hoary bat *(Lasiurus cinereus semotus)* was not detected during the survey; however, "it is likely that this endangered species forages for insects over the project area," because they are regularly seen in and around Koloa and the Omao area.

The following three avian species were commonly observed within the project site: Japanese White-eye *(Zosterops japonicus)*, Japanese Bush-warbler *(Cettia diphone)*, and Common Myna *(Acridotheres tristis)*. Other avian species detected include the following:

Common Name	***Scientific Name***
Red Junglefowl	*Gallus gallus*
Ring-necked Pheasant	*Phasianus colchicus*
Cattle Egret	*Bubulcus ibis*
Black-crowned Night-Heron	*Nycticorax nyticorax hoactli*
Spotted Dove	*Streptopelia chinensis*
Zebra Dove	*Geopelia striata*
Rose-ringed Parakeet	*Psittacula krameri*
White-rumped Shama	*Copsychus malabaricus indicus*
Hwamei	*Garrulax canorus*
Northern Mockingbird	*Mimus polyglottos*
Red-crested Cardinal	*Paroaria coronata*
Northern Cardinal	*Carinalis cardinalis*
House Finch	*Carpodacus mexicanus fontalis*

All of the avian species detected are alien species except the Black-crowned Night-Heron, which is an indigenous resident breeding species. No avian species currently protected were detected during this survey.

The U.S. Fish and Wildlife Service and the KDCH report indicate that the endangered Hawaiian Petrel (*Pterodroma sandwichensis*) and the threatened Newell's Shearwater (*Puffinus auricularis newelli*) likely fly over the project area towards the ocean in the fall season. These birds use the moonlight to navigate and can become disoriented by lights.

III. PROBABLE IMPACTS AND MITIGATIVE MEASURES

As discussed below, the proposed project is anticipated to have no significant impact on the environment.

A. SHORT-TERM IMPACTS

1. Air Quality

There will be an increase in dust and vehicular exhaust emissions in the vicinity of the project area during construction. Dust control measures, such as periodic sprinkling with water, will be used to reduce dust when needed. Exhaust emission should not have any significant effect on the area because prevailing winds should disperse any exhaust gas concentrations.

2. Erosion

Approximately one acre will be graded to accommodate the water storage tank and associated improvements. The disturbed area will be paved and grassed. The

Contractor will be required to implement erosion and sediment control measures during construction. Grading and soil disturbance will be minimized, and areas that are disturbed will be properly graded and re-vegetated to prevent erosion. The Contractor will be instructed to minimize the time of construction, retain ground cover until the latest practicable date to complete construction, and construct drainage control features early in the construction time schedule. Continued maintenance will be required for a period following the completion date of the planting period to ensure proper re-vegetation.

3. Excess Water Discharge

The Piwai Reservoir and tributary stream are approximately 800 feet east of the project site. Disposal of excess water generated from construction and storm water runoff will be accomplished by the Contractor in compliance with all applicable National Pollutant Discharge Elimination System (NPDES) requirements. An NPDES general permit will be obtained.

4. Traffic

A temporary increase of traffic on Kaumualii Highway is anticipated due to the ingress of construction workers and materials; however, the proposed project does not involve construction within any public roadway. Therefore, no significant traffic impacts are anticipated on Kaumualii Highway or any local public roadway.

5. Noise

There will be an increase in noise from the construction activity. All noise generated by the construction activity shall conform to the noise regulations established by the State Department of Health, and will be limited to normal working hours. The construction site is located 0.5 miles away from the highway and residential areas. Therefore, noise is not anticipated to be significant.

B. LONG-TERM IMPACTS

Long-term impacts generally are those impacts related to the operation of the proposed project. Any potential negative long-term impacts associated with the implementation of the project will be mitigated by appropriate and low profile design, and competent, efficient, and effective operations and maintenance.

1. Land Use

The proposed project site is designated for Agriculture by the State Land Use Commission. The total land area required is approximately one acre; therefore, this project will not have significant negative impacts on agricultural lands.

2. Flora and Fauna

The project area is highly disturbed having been previously cleared for sugarcane cultivation, and is currently used for cattle grazing. There is no indication of rare or endangered flora species in the project area.

The endangered Hawaiian hoary bat use ultrasonic echolocation and can avoid collision with obstacles. This species likely forages for insects in the project area; however only about one acre out of over 150 acres of similarly vegetated lands will be altered; therefore, this project will not have significant impact on the species.

The tank site will not be illuminated; therefore, there will be no lighting which would disorient the endangered Hawaiian Petrel (*Pterodroma sandwichensis*) and the threatened Newell's Shearwater (*Puffinus auricularis newelli*).

3. Air Quality

No long-term negative impacts on air quality resulting from the project are anticipated.

4. Visual Impacts

The visual impact of the proposed project is not expected to be significant. The proposed tank location is on private lands owned by Alexander & Baldwin, Inc. and its subsidiary, McBryde Sugar Company, Limited, and is surrounded by lands used for cattle grazing. The closest public road is Kaumualii Highway, which is 0.5 miles away. In addition, the tank will be painted an earthtoned color to match the surrounding environment as approved by Alexander & Baldwin, Inc.

5. Public Health and Safety

Public health and safety are of the utmost importance, and measures will be taken to ensure protection. The tank site facilities will be fenced and secured. The State DOH regulations will be followed; therefore, no public health or safety problems associated with the water system improvements are anticipated.

6. Archaeological, Historical and Cultural Impacts

No cultural impacts resulting from this project are anticipated. Sugarcane cultivation dominated the land use in this privately owned area throughout the twentieth century, thereby restricting the area from cultural usage. There is no indication of traditional practices or customary usage on the site. There are no known cultural, historical or archaeological remains on or in the vicinity of the project site.

No long-term negative impacts on historical and archaeological sites are anticipated. However, if unlikely historical or archaeological remains are encountered during the course of construction activities, all work in the immediate area will be stopped and the State Historic Preservation Division and the Kauai Island Burial Council will be contacted.

IV. ALTERNATIVES TO THE PROPOSED PROJECT

A. NO ACTION ALTERNATIVE

According to DOW *Water Plan 2020*, storage in the 677 pressure zone serving Omao and Lawai is deficient. Therefore, the No Action Alternative is unacceptable.

B. ALTERNATIVE SITES

The proposed tank site adjacent to the Piwai control tank is the most practicable. This site allows for consolidation of site facilities making the water system operation and maintenance more efficient.

V. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

There are several irreversible commitments of resources including land and financial resources to construct capital improvements, and to operate and maintain the storage tank and various controls. Land commitment for the tank is minimal, and financial commitment for capital improvements, operations and maintenance are necessary.

The long-term responsibility of the Department of Water to provide adequate water supplies to the Lawai-Omao Water System justifies the implementation of the proposed project; therefore, the commitment of land, labor, materials, energy, equipment and financial resources that are practically irreversible and irretrievable are warranted.

VI. HAWAII DRINKING WATER STATE REVOLVING FUND PROGRAM

This project may be funded by Federal Funds through the State of Hawaii's Drinking Water State Revolving Fund (DWSRF) program, which would constitute a federal action, and will require the project to meet all Hawaii DWSRF program requirements. The loan program requires compliance with the "Cross-Cutter" Regulations, which are the list of Federal regulations which have been determined as applying to the DWSRF loan program.

A. ARCHAEOLOGICAL AND HISTORIC PRESERVATION ACT OF 1974, 16 USC 469a-1.

No long-term negative impacts on historical and archaeological sites are anticipated. If construction work uncovers any archaeological or historical remains, work will stop immediately and the State Historic Preservation Division and the Kauai Island Burial Council will be contacted.

B. CLEAN AIR ACT, 42 USC 7401.

Anticipated short-term impacts are associated with construction activity. There will be an increase in dust and vehicular exhaust emissions in the vicinity of the project area during construction. Dust control measures such as periodic sprinkling with water will be used to reduce dust when needed. Exhaust emission should not have any significant effect on the area because prevailing winds should disperse any exhaust gas concentration. No long-term impacts on air quality are anticipated.

C. COASTAL ZONE MANAGEMENT ACT, 16 USC 1451.

The Hawaii Coastal Zone Management (CZM) Program mission statement is "*to balance marine and coastal resources protection and sustainable economic development, anticipating emerging issues and facilitating their resolution by coordinating among interests, developing and articulating appropriate management policies, and involving the public in resource management efforts.*"

The project site is located approximately 3 miles inland away from the coast at an approximate ground surface elevation of 660 feet. No impacts on the CZM resources and areas are anticipated; therefore, the project will be consistent with the CZM program.

D. ENDANGERED SPECIES ACT, 16 USC 1531.

The project area is highly disturbed having been previously cleared for sugarcane cultivation, and is currently used for cattle grazing. There is no indication of rare or endangered flora species in the project area.

The endangered Hawaiian hoary bat use ultrasonic echolocation and can avoid collision with obstacles. This species likely forages for insects in the project area; however only about one acre out of over 150 acres of similarly vegetated lands will be altered; therefore, this project will not have significant impact on the species.

The tank site will not be illuminated; therefore, there will be no lighting which would disorient the endangered Hawaiian Petrel (*Pterodroma sandwichensis*) and the threatened Newell's Shearwater (*Puffinus auricularis newelli*).

E. ENVIRONMENTAL JUSTICE, EXECUTIVE ORDER 12898.

This project will not have disproportionately high and adverse human health or environmental effects on minority populations and low-income populations. The proposed tank project will have no significant impact on the environment, and will benefit the general public in the area by providing needed additional storage of potable water.

F. FLOODPLAIN MANAGEMENT, EXECUTIVE ORDER 11988 (1977), as amended by Executive Order 12148 (1979).

The Federal Emergency Management Agency Flood Insurance Rate Map (FIRM) panel 1500020311E dated September 16, 2005, designates the tank site within Zone X, areas determined to be outside the 0.2% annual chance floodplain. Therefore, flood impact on the site is not anticipated.

G. PROTECTION OF WETLANDS, EXECUTIVE ORDER 11990 (1977), as amended by Executive Order 12608 (1997).

The project site is not in or near any wetland; therefore, there will be no affect on wetlands.

H. FARMLAND PROTECTION POLICY ACT, 7 USC 4201.

Although the State and County zoning is for Agriculture, use for a public utility facility is permitted by code with a Use Permit. In addition, this project will alter approximately one acre; therefore, this project will not have a substantial effect on agricultural lands.

I. FISH AND WILDLIFE COORDINATION ACT, 16 USC 661.

The proposed project will not impact fish. Significant impact to wildlife is anticipated to be minimal because the proposed project will alter only one acre of land within a parcel of over 150 acres of similar environment.

J. NATIONAL HISTORIC PRESERVATION ACT, 16 USC 470.

No long-term negative impacts on historical and archaeological sites are anticipated. If construction work uncovers any archaeological or historical remains, work will stop immediately and the State Historic Preservation Division and the Kauai Island Burial Council will be contacted.

K. SAFE DRINKING WATER ACT, 42 USC 300f .

The Department of Water is committed to providing a safe water supply to the County of Kauai and strives to meet all requirements of the Safe Drinking Water Act. This tank project will not affect the aquifer.

L. WILD AND SCENIC RIVERS ACT, 16 USC 1271.

There are no designated wild and scenic rivers in the state of Hawaii.

M. ESSENTIAL FISH HABITAT CONSULTATION PROCESS UNDER THE MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT, 16 USC 1801.

Essential fish habitat means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. For the purpose of interpreting the definition of essential fish habitat: "waters" includes aquatic areas and their associated physical, chemical, and biological properties that are used by fish, and may include areas historically used by fish where appropriate; "substrate" includes sediment, hard bottom, structures underlying the waters, and associated biological communities; "necessary" means the habitat required to support a sustainable fishery and a healthy ecosystem; and "spawning, breeding, feeding, or growth to maturity" covers a species' full life cycle.

The project site is approximately 800 feet west of the Piwai Reservoir which intercepts a tributary of Waikomo Stream and more than 3 miles inland. Therefore, the project will not affect any fish habitats.

N. NATIONAL ENVIRONMENTAL POLICY ACT 1969, as amended, 42 USC 4321 et seq.

VII. PERMITS AND APPROVALS REQUIRED

A. APPROVALS

1. State Office of Environmental Quality Control
   Environmental Assessment for Piwai 677' 0.5 MG Storage Tank, Lawai-Omao Water System

2. County of Kauai Department of Water
   Environmental Assessment for Piwai 677' 0.5 MG Storage Tank, Lawai-Omao Water System

B. REVIEWS

1. State Commission on Persons with Disabilities
   Plans and Specifications conformance with American Disabilities Act

C. PERMITS

1. Use Permit, Special Permit and Class IV Zoning Permit, County of Kauai, Planning Department

2. National Pollutant Discharge Elimination System Permit, State of Hawaii, Department of Health

3. Grading Permit, Building Permit, Department of Public Works, County of Kauai.

D. LEGAL REQUIREMENTS

1. The requirements of Section 8-19.6 of the Kauai County Code pertaining to public hearing notification needs to be satisfied.

VIII. AGENCIES AND ORGANIZATIONS CONSULTED

A. FEDERAL GOVERNMENT
U.S. Department of Agriculture, Natural Resources Conservation Service
U.S. Department of the Army, Army Corps of Engineers, Pacific Ocean Division
U.S. Department of the Interior, Fish and Wildlife Service

B. STATE GOVERNMENT
Department of Agriculture
Department of Business, Economic Development & Tourism
Department of Land and Natural Resources
Department of Hawaiian Home Lands
Department of Health
Office of Environmental Quality Control
Office of Hawaiian Affairs

C. COUNTY GOVERNMENT
Department of Water
Department of Public Works
Housing Agency
Planning Department

D. COMMUNITY ASSOCIATIONS
Ka Leo O Kauai
Kauai Office of Community Assistance
Kauai Planning and Action Alliance
Koloa Neighborhood Center
Omao Road Community

E. OTHER ORGANIZATIONS
A&B Properties, Inc.
Hawaiian Telcom
Kauai Island Utility Cooperative
Kukuiula Development Company (Hawaii), LLC
UH Manoa Environmental Center
UH Manoa Water Resource Research Center

IX. FINDINGS AND DETERMINATION

A. FINDINGS

Based upon the guidelines and provisions of Title 11, Chapter 200, Environmental Impact Statement Rules and Chapter 343, HRS, the findings of this environmental assessment are as follows:

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

   The project site is on privately owned land, and there is no indication of traditional practices or customary usage on the site; therefore no impacts on cultural resources are anticipated.

   There is an irrevocable commitment of approximately one acre of land for the project; however, the long-term responsibility of the Department of Water to provide adequate water supplies to the Lawai-Omao Water System justifies the implementation of the proposed project.

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

   The proposed project will alter approximately one acre of privately owned land, which is currently overgrown and used for cattle grazing. The parcel encompasses over 150 acres of similarly vegetated lands for grazing. Therefore, this project will not curtail the range of beneficial uses of the environment.

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

   The proposed project does not conflict with the state's long-term environmental policies and guidelines as expressed in chapter 344, HRS. As assessed earlier in detail, this project is not anticipated to have significant impact on the environment, and will be implemented so as to conserve the natural resources and enhance quality of life.

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

   The proposed project will not have substantial negative effects on economic welfare, social welfare and cultural practices. The proposed water storage tank is necessary to address the storage deficiency of the Lawai-Omao Water System, thereby enhancing economic and social welfare of the community. In addition, there are no

known cultural practices that will be affected by the project and alteration of the one acre of land.

5. Substantially affects public health;

   The proposed project will not affect public health in a negative way.

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

   The DOW *Water Plan 2020* used population projections developed and adopted in the *Kauai General Plan (2000)* to plan for facility needs. In accordance with *Water Plan 2020*, additional storage is necessary to address existing and anticipated future storage deficiency in the water system. Additionally, the proposed project will connect to the existing water distribution system; therefore, public facility improvements will be limited to the site.

7. Involves a substantial degradation of environmental quality;

   The proposed project will not involve any substantial degradation of environmental quality. As described in this assessment, the impacts on the environment are minimal.

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

   As described in this assessment, the proposed project does not have any significant impacts or effects upon the environment or involve any commitment for larger actions.

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

   The project area is highly disturbed having been previously cleared for sugarcane cultivation, and is currently used for cattle grazing. There is no indication of rare or endangered flora species in the project area.

   The endangered Hawaiian hoary bat use ultrasonic echolocation and can avoid collision with obstacles. This species likely forages for insects in the project area; however only about one acre out of over 150 acres of similarly vegetated lands will be altered; therefore, this project will not have significant impact on the species.

   The tank site will not be illuminated; therefore, there will be no lighting which would disorient the endangered Hawaiian Petrel (*Pterodroma sandwichensis*) and the threatened Newell's Shearwater (*Puffinus auricularis newelli*).

10. Detrimentally affect air or water quality or ambient noise levels;

    The proposed project will store and provide potable groundwater for human use and consumption. The project will not detrimentally affect air or water quality, or ambient noise levels.

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

    As discussed in detail in this assessment, the proposed project does not detrimentally affect any environmentally sensitive areas, nor is it likely to suffer damage.

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

    The proposed project does not affect any scenic vistas or view planes identified in county or state plans or studies.

13. Requires substantial energy consumption;

    The proposed project will not require substantial energy consumption for operation. The storage tank will be equipped with level monitors and SCADA equipment, which require little energy.

B. DETERMINATION

Based upon the data and analyses, the proposed project is not anticipated to have significant adverse impacts on the coastal waters, local ecology, hydrology, and atmosphere. Mitigative measures will be implemented as deemed necessary and as required by the governmental agencies. A Finding of No Significant Impact determination (Environmental Impact Statement document is not required) is issued.

X. REFERENCES

Alexander and Baldwin Properties, Archaeological Inventory Survey of Three Proposed Well Sites and Appurtenances in the Vicinity of the Piwai Reservoir, Koloa Ahupuaa, District of Kona, Island of Kauai (TMK 2-5-01: Por.8), December 2002. Prepared by Cultural Surveys Hawaii, Inc.

Department of Water, County of Kauai, Water Plan 2020, March 2001. Prepared by RW Beck and CH2MHill in association with Kodani and Associates, Plan Pacific, and MacDougal and Associates.

Kukuiula Development Company (Hawaii), LLC, Addendum to An: Archaeological Inventory Survey of Three Proposed Well Sites and Appurtenances in the Vicinity of the Piwai Reservoir, Koloa Ahupuaa, District of Kona, Island of Kauai (TMK 2-5-01: Por.8), December 2004. Prepared by Cultural Surveys Hawaii, Inc.

Kukuiula Development Company (Hawaii), LLC, Engineering Report Piwai Well Nos. 2 and 3 New Potable Water Sources for the Department of Water County of Kauai Poipu-Koloa Water System Koloa, Kauai, Hawaii, August 2005. Prepared by Tom Nance Water Resource Engineering.

Kukuiula Development Company (Hawaii), LLC, Potable Water System Master Plan Report – Kukuiula, May 2004. Prepared by Austin Tsutsumi & Associates, Inc. and R.M. Towill Corporation.

Kukuiula Development Company (Hawaii), LLC, A Survey of Avian and Terrestrial Mammalian Species Conducted on Three Proposed Well Sites, at Piwai, Koloa District, Island of Kauai, March 2005. Prepared by Rana Productions, Ltd.

U.S. Department of Agriculture, Natural Resources Conservation Service, Hawaii State Office, "Soil Survey, Kauai, Koloa Quadrangle," January 10, 2006. <http://www.ctahr.hawaii.edu/soilsurvey/5is/kauaimaps/koloa/index.html>.

University of Hawaii, Department of Geography, Atlas of Hawaii, Third Edition, University of Hawaii Press, 1998.

APPENDIX A

ADDENDUM TO AN: ARCHAEOLOGICAL INVENTORY SURVEY OF THREE PROPOSED WELL SITES AND APPURTENANCES IN THE VICINITY OF THE PIWAI RESERVOIR, KOLOA AHUPUAA, DISTRICT OF KONA, ISLAND OF KAUAI (TMK 2-5-01: POR. 8), DECEMBER 2004

ARCHAEOLOGICAL INVENTORY SURVEY OF THREE PROPOSED WELL SITES AND APPURTENANCES IN THE VICINITY OF THE PIWAI RESERVOIR, KOLOA AHUPUAA, DISTRICT OF KONA, ISLAND OF KAUAI (TMK 2-5-01: POR. 8), DECEMBER 2002

Addendum To An: Archaeological Inventory Survey Of Three Proposed Well Sites And Appurtenances in the Vicinity of the Pīwai Resevoir, Kōloa Ahupua'a, District of Kona, Island of Kaua'i (TMK 2-5-01: Por. 8).

By:

Yorck, Jesse,

David W. Shideler,

and

Hallet H. Hammatt (2002)

Prepared for:

Kukui Ula Development Company (Hawaii), LLC

By:

Cultural Surveys Hawai'i Inc.

Kailua, Hawai'i

December 2004

LINDA LINGLE
GOVERNOR OF HAWAII

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

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

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

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

March 1, 2005

Hal Hammatt, Ph.D.
Cultural Surveys Hawaii
P.O. Box 1114
Kailua, HI 96734

LOG NO: 2005.0370
DOC NO: 0501NM12

Dear Dr. Hammatt:

SUBJECT: **Historic Preservation Review – Addendum to an Archaeological Inventory Survey of Three Proposed Well Sites and Appurtenances in the Vicinity of the Piwai Reservoir, Koloa Ahupua'a, Kona District, Island of Kauai (Yorck, Shideler and Hammatt, CSH, 2004)**
TMK: 2-5-01: pr. 8
Poipu, Koloa, Kauai

Thank you for submitting the above monitoring report. We received the report on January 13, 2005. No historic properties were found in the new alterations to the original plan. No further archaeological work is recommended. We concur with your recommendation. The report is acceptable.

If you have any questions, please call Nancy McMahon 742-7033.

Aloha,

Nathan Napoka

for Melanie Chinen, Administrator
State Historic Preservation Division

NM:jen

c. Ian Costa, Planning Department

Addendum To An: Archaeological Inventory Survey Of Three Proposed Well Sites And Appurtenances in the Vicinity of the Pīwai Resevoir, Kōloa Ahupua'a, District of Kona, Island of Kaua'i (TMK 2-5-01: Por. 8).

By:

Yorck, Jesse,

David W. Shideler,

and

Hallet H. Hammatt (2002)

By:

Cultural Surveys Hawai'i Inc.

Kailua, Hawai'i

December 2004

and Kauai Bible Church

in the vicinity of

ADDENDUM

In November 2002, Cultural Surveys Hawai'i, Inc. conducted an archaeological inventory survey for three proposed wells and/or reservoir areas, proposed access roads, and a proposed pipeline/water course ~~down to~~ Piwai Reservoir all located in the uplands of Kōloa, Kaua'i (TMK 2-5-01: por. 8) on Alexander and Baldwin (A & B Properties) lands. Figure 1 shows the location of the project area. The inventory survey report (Yorck et al. 2002) was accepted by the SHPD/DLNR in January 2003 (Log No. 31315; Doc. No. 0212NM10). Since that time, the proposed plans for the project area have been altered. The purpose of this addendum document is to discuss these alterations in terms of their potential impact on cultural resources.

No archaeological sites were identified in the project area during the 2002 inventory survey, and Yorck et al. (2002) note that any observable indigenous activity in the area probably would have been destroyed during the years when much of Kōloa was used for sugar cane cultivation. No further work was recommended for the project area, as intensive agriculture associated with both sugar cane cultivation and the establishment of a macadamia nut farm has greatly impacted the area. Thus, due to lack of archaeological sites and the very low potential for encountering archaeological material in this area, we feel that an addendum to the original inventory survey report is appropriate to address any historic preservation concerns for the alterations to the original proposed project.

Alterations to the original proposed plan include (Figure 2):

1. The proposed location of Well 1 has been moved northwest of its original location. Two pipelines (influent and effluent) will be added running east from the well to the dirt access road.
2. The access alignment to Well 2 has been curved to the north.
3. A portion of the access road (east of Well 1) has been curved to the east.
4. A portion of the lower access road and 16" transmission line has been re-routed to curve to the south.

A field survey of the revised project area was accomplished by Cultural Surveys Hawai'i archaeologist Gerald Ida on December 16, 2004. This survey was conducted to ensure that there are no archaeological sites in the area. Fieldwork consisted of a pedestrian ground survey, and photography of proposed construction sites in the project area (Figures 3-5). The project area contains former sugar cane fields, former macadamia nut orchards and pastureland. Dominant vegetation includes an over story of *Albizia lebbeck* with a variety of grasses, some *hala* (*Pandanus tectorius*), *kukui* (*Aleurites moluccana*), monkeypod (*Albizia saman*), several windbreak plantings of ironwood (*Casuarina equisetifolia*), some Norfolk pine (*Arucaria heterophylla*), *uluhe* staghorn fern, lantana (*Lantana camara*), and guava (*Psidium guajava*). No historic or indigenous sites or artifacts were encountered during the survey and none are believed to exist in the area of likely impact.

In sum, alterations to the proposed construction plans in this area are expected to have "no effect" on cultural or historical properties. As always, if in the unlikely event that any human remains or other significant subsurface deposits are encountered during the course

of development activities all work in the immediate area should stop and the State Historic Preservation Division should be promptly notified.

References Cited

Yorck, Jesse, David W. Shideler, and Hallet H. Hammatt
2002 *Archaeological Inventory Survey of Three Proposed Well Sites and Appurtenances in the Vicinity of the Pīwai Resevoir, Kōloa Ahupua'a, District of Kona, Island of Kaua'i (TMK 2-5-01: Por. 8)*. Cultural Surveys Hawai'i Inc. Kailua, Hawai'i

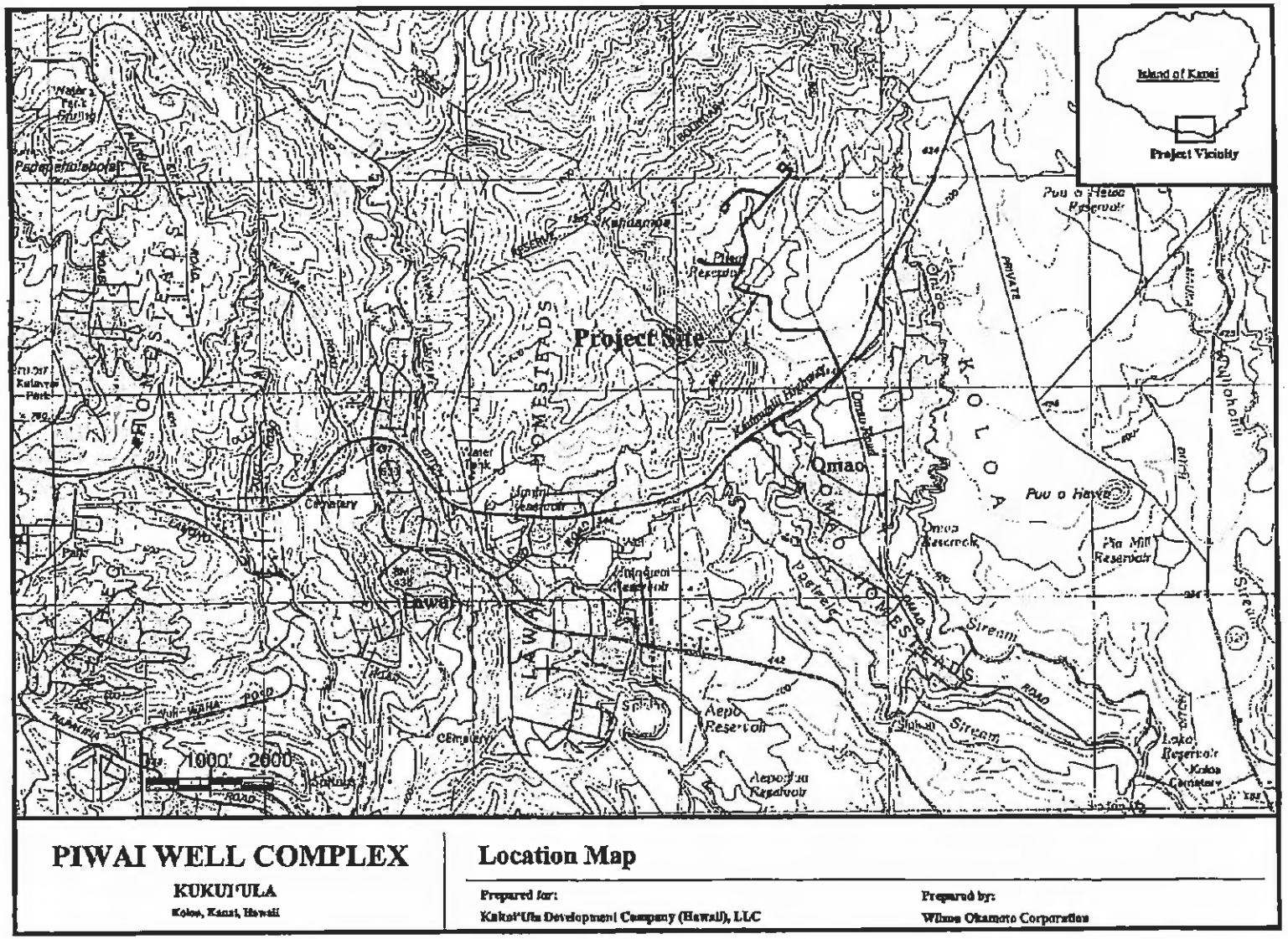

Figure 1. Map showing location of project area with revised construction areas

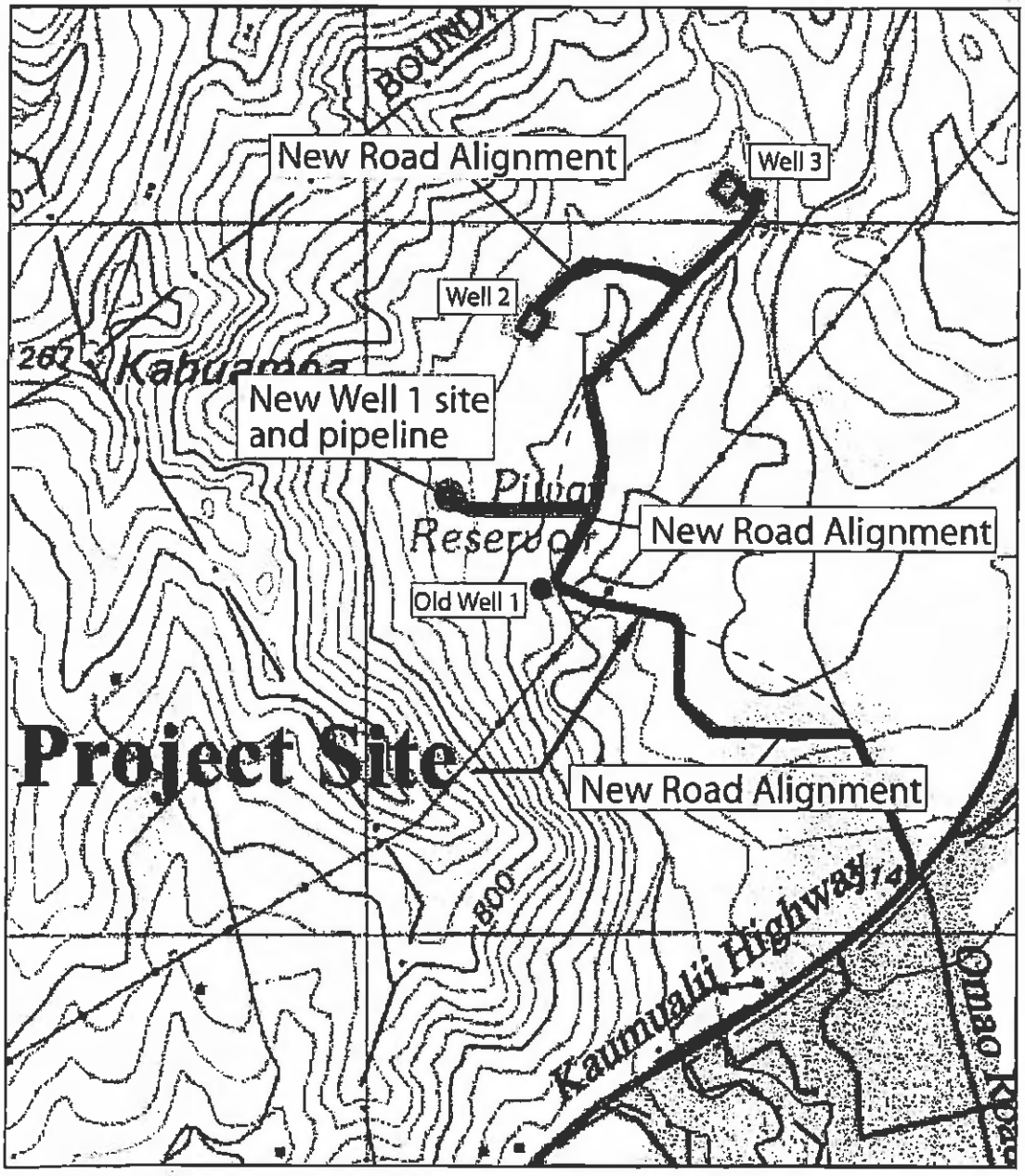

Figure 2. Map showing four areas that have been altered from the original proposal; dashed lines show approximate original proposed road alignments

Figure 3. New well and tank site

Figure 4. New pipeline location

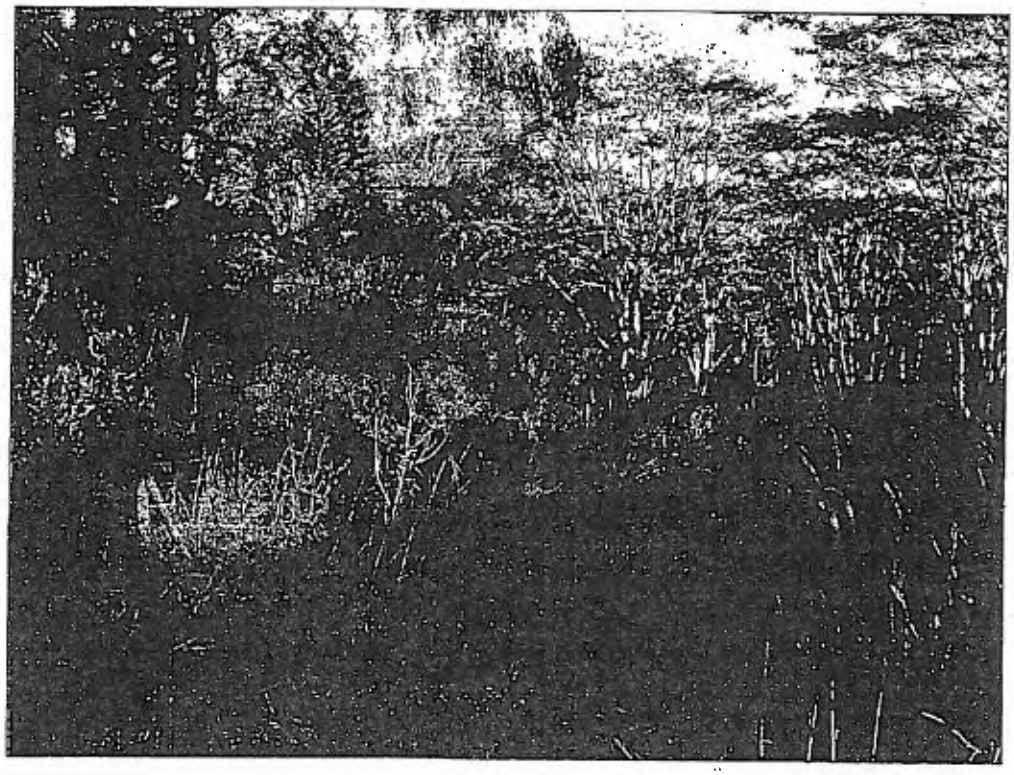

Figure 5. New road alignment

ARCHAEOLOGICAL INVENTORY SURVEY OF THREE PROPOSED WELL SITES AND APPURTENANCES IN THE VICINITY OF THE PĪWAI RESERVOIR, KŌLOA *AHUPUA`A*, DISTRICT OF KONA, ISLAND OF KAUA`I (TMK 2-5-01: Por. 8).

by

Jesse Yorck, B.A.
David W. Shideler, M.A.
and
Hallett H. Hammatt, Ph. D.

Prepared for

Alexander and Baldwin Properties

Cultural Surveys Hawai`i, Inc.

December 2002

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GOVERNOR OF HAWAII

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BOARD OF LAND AND NATURAL RESOURCES
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BOATING AND OCEAN RECREATION
COMMISSION ON WATER RESOURCE MANAGEMENT
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FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND
STATE PARKS

January 16, 2003

Dr. David Shideler
Cultural Surveys Hawaii
733 North Kalaheo Avenue
Kailua, Hawaii 96734

LOG NO: 31315
DOC NO: 0212NM10

Dear Dr. Shideler:

SUBJECT: Chapter 6E Historic Preservation Review -- Archaeological Inventory Survey for a Well Construction/Pump Installation Permit Application Piwai Well No . 5629-01 (A&B), TMK: 2-5-01: 22
Omao, Koloa, Kauai

This letter reviews this report which was submitted on December 7, 2002 (Yorck, Shideler and Hammatt, 2002. *Archaeological Inventory Survey of Three Proposed Well Sites and Appurtenances in the Vicinity of the Piwai Reservoir, Koloa Ahupua'a, District of Kaua'i*, Cultural Survey Hawaii, ms.) The background and archaeological summary information of this report was very good and complete. The survey of the project area seems to have been acceptable. No historic sites were found in the area. We find the report to be acceptable. No historic properties will be impacted by the proposed well construction. This concludes the historic preservation review process for this project.

If you have any questions, please call Nancy McMahon 742-7033.

Aloha,

P. Holly McEldowney

P. Holly McEldowney, Acting Administrator
State Historic Preservation Division

c. Dan Yasui, A&B Properties fax 525-6652
Dean Nakano, Water Resource Management

NM:ak

ARCHAEOLOGICAL INVENTORY SURVEY 0F THREE PROPOSED WELL SITES AND APPURTENANCES IN THE VICINITY OF THE PĪWAI RESERVOIR, KŌLOA *AHUPUA`A*, DISTRICT OF KONA, ISLAND OF KAUA`I (TMK 2-5-01: Por. 8).

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I. INTRODUCTION

A. Project Background

Cultural Surveys Hawai`i, Inc. conducted this archaeological inventory survey for three proposed wells and/or reservoir areas, proposed access roads, and a proposed pipeline/water course down to Kaumuali`i Highway (Figures 1 & 2) all located in the uplands of Kōloa, Kaua`i (TMK 2-5-01: por. 8) on Alexander and Baldwin (A & B Properties) lands. The proposed project includes some grading of a pad and a possible water diversion cut at well location 2, grading of an access road up from an existing dirt road and possible improvements to the dirt access road to facilitate access for a drill rig and construction equipment. Water from well location 2 will be pumped up and then flow through a pipeline to the highway. Well locations 1 and 3 may be developed at a later time. It is understood that development of these areas and any appurtenances such as access roads and pipelines will follow the existing dirt roads which were included in this survey.

B. Project Area Description

The study area is located on the *mauka* or northwest side of Kaumuali`i Highway, north of `Ōma`o Town in the immediate vicinity of the Pīwai Reservoir. The general area is bounded on the southeast by Kaumuali`i Highway, on the west and north by the Līhu`e-Kōloa Forest Reserve, and on the east by former sugar cane fields of McBryde Sugar Company.

The project area is located in the *ahupua`a* of Kōloa, in the Kona District of the island of Kaua`i. Kōloa is a fairly large *ahupua`a* (9,500 ac.), bounded on the east by Weliweli *Ahupua`a,* and on the west by Lāwa`i *Ahupua`a*. The perennial Waikomo Stream traverses most of Kōloa *Ahupua`a*. The project area lies east of an eastern unnamed tributary of Pō`ele`ele Stream and west of the upper reaches of `Ōma`o Stream.

The elevation within the project area ranges from approximately 500-750 ft. The soils in the project area are mostly silty clays of the Kapa`a (KkB & KkC), Kalapa (KdE & KdF) and Hanamaulu (HsD) series with some silty clay loam of the Puhi (PnB) soil series (Foote *et al.* 1972; Kaua`i Island, Sheet 23). Rock outcrops (large boulders) accounted for less than 1% of the project area. These are generally well-drained soils with moderately rapid permeability but they vary considerably in run-off (slow to very rapid) and erosion hazard (slight to very severe). The project area receives approximately 2,500 mm (100 inches) of rainfall (Giambelluca *et al.* 1986:86).

The project area contains former sugar cane fields, former macadamia nut orchards and pasture land. Dominant vegetation includes a dominant over story of *Albizia lebbeck* with a variety of grasses, some *hala* (*Pandanus tectorius*), *kukui* (*Aleurites moluccana*), monkeypod (*Albizia saman*),several windbreak plantings of ironwood (*Casuarina*

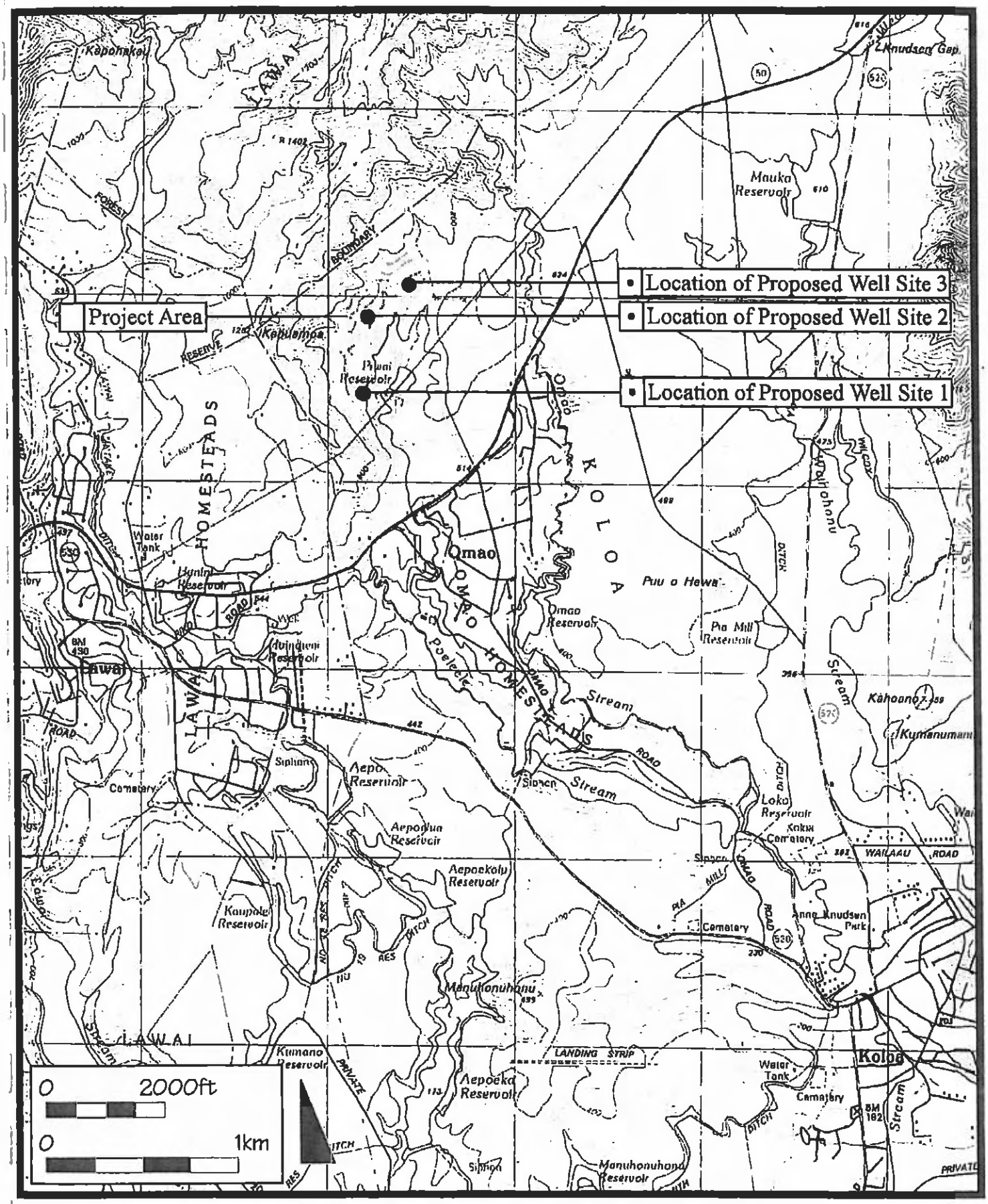

Figure 1 Portion of USGS Koloa Quadrangle, Showing Location of Project Area

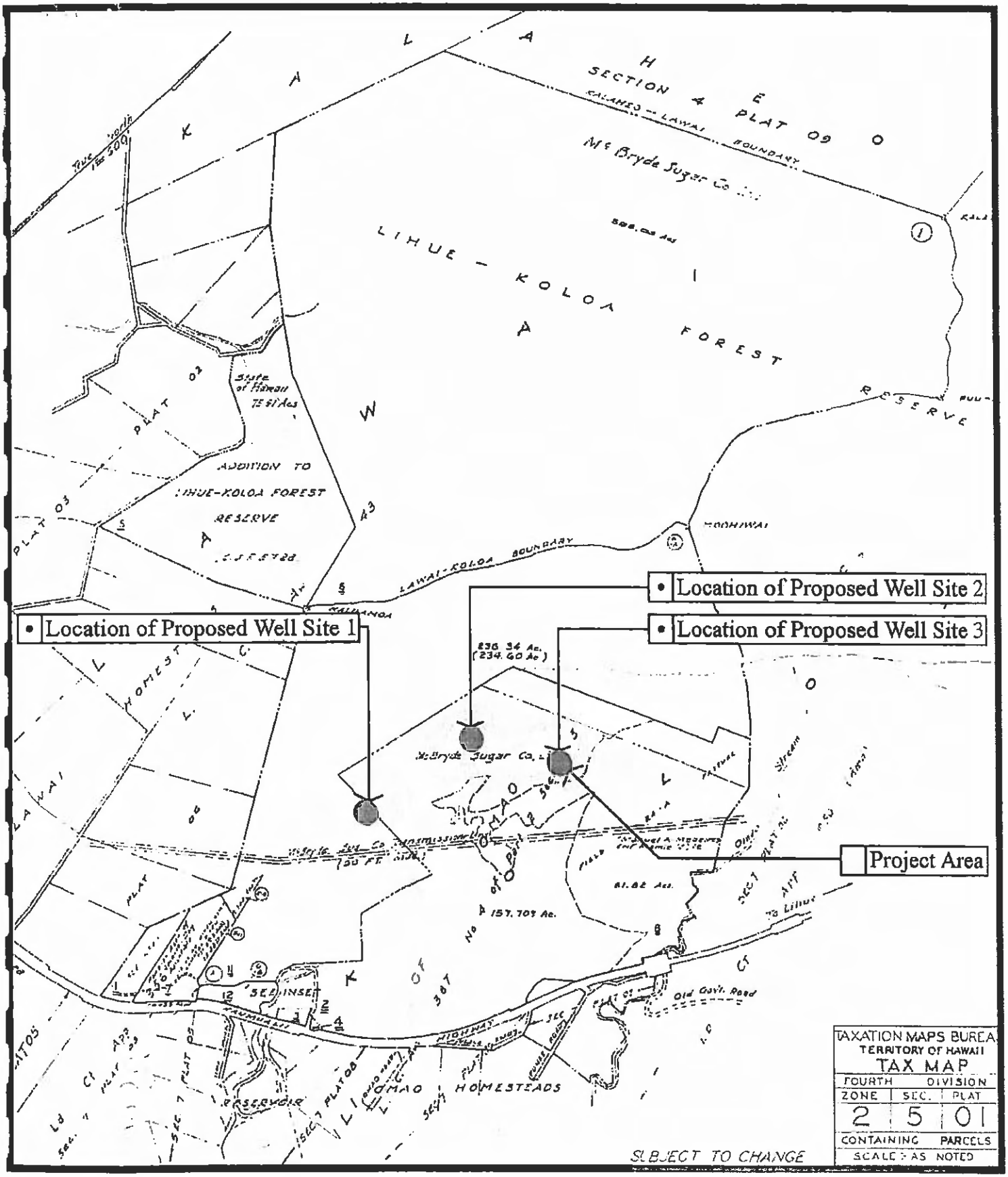

Figure 2 Portion of TMK 2-5-01 Showing Project Area

equisetifolia), some Norfolk pine (*Arucaria heterophylla*), *uluhe* staghorn fern, lantana (*Lantana camara*), and guava (*Psidium guajava*). The environment is generally park-like with the shade of the *Albizia* limiting the growth of the under story. Remnants of sugar cane and macadamia nut plantings were observed.

C. Scope of Work

The following archaeological inventory survey scope of work was utilized:

1. A complete ground survey of the all three potential well locations and any proposed access roads and/or pipeline alignments for the purpose of site inventory. All sites will be located, described, and mapped with evaluation of function, interrelationships, and significance. Documentation will include photographs and scale drawings of selected sites and complexes. All sites will be assigned State site numbers.

2. Limited subsurface testing by hand if appropriate, to determine if subsurface deposits are located in the project area, and, if so, evaluate their significance.

3. Research on historic and archaeological background, including search of historic maps, written records, and Land Commission Award documents. This research will focus on the specific area with general background on the *ahupua`a* and district and will emphasize settlement patterns.

4. Preparation of a survey report which will include the following:

    a. A topographic map, if available, of the survey area showing all archaeological sites and site areas;

    b. Description of all archaeological sites with selected photographs, scale drawings, and discussions of function;

    c. Historical and archaeological background sections summarizing prehistoric and historic land use as they relate to the archaeological features;

    d. A summary of site categories and their significance in an archaeological and historic context;

    e. Recommendations based on all information generated which will specify what steps should be taken to mitigate impact of development on archaeological resources - such as data recovery (excavation) and preservation of specific areas. These recommendations will be developed in consultation with the client and the State agencies.

This scope of work also includes full coordination with the State Historic Preservation Division, and County relating to archaeological matters.

D. Methods

Background research included a review of previous archaeological studies on file at the State Historic Preservation Division of the Department of Land and Natural Resources, a review of geology and cultural history documents at Hamilton Library at the University of Hawai`i, the Hawai`i State Archives, the Mission House Museum Library, the Hawai`i Public Library, and the Archives of the Bishop Museum. Further research included a study of historic photographs at the Hawai`i State Archives and the Archives of the Bishop Museum, a study of historic maps at the Hawai`i State Archives and the Archives of the Bishop Museum, and a study of historic maps at the Survey Office of the Department of Accounting and General Services.

Information on Land Commission Awards was accessed through Waihona Aina Corporation's *Māhele* Data Base (Waihona `Aina Corporation <www.waihona.com>).

The survey of the project area was accomplished by Cultural Surveys Hawai`i archaeologists David Shideler, M.A. and Jesse Yorck, B.A. under the overall supervision of Hallett H. Hammatt, Ph.D. Field work consisted of a pedestrian ground survey, and photography of proposed well sites in the project area. The field work for this project was conducted in one working day, November 13th , 2002 .

The survey started with identifying the boundaries of the proposed construction. This was done by locating survey markers of the three wells which were located west, northwest and north of the Pīwai Reservoir. In the background research, it was ascertained that much of the property had previously been used as sugar cane fields, and thus remnants of any archaeological value were likely to have been bulldozed. Pedestrian sweeps of the proposed well sites and access roads were completed with 10-15 foot spacing.

Areas that contained native *hala (Pandanus tectorius)*, as well as the Polynesian introduced species of *kukui (Aleurites moluccana)*, were surveyed particularly intensely for the possibility of traditional Hawaiian habitation.

II. HISTORICAL BACKGROUND

A. Historical Setting: Pre-Contact Kōloa

The project area is in the *ahupua`a* of Kōloa in the Kona District on the island of Kaua`i. Few records exist that document traditional Hawaiian life in the *ahupua`a* of Kōloa. While settlement by westerners with religious and commercial interests make the area a focus of documentation after the first quarter of the nineteenth century, the accounts generated generally focus on the lives and concerns of the westerners themselves with only anecdotal references to the Hawaiian population. Two nineteenth century documents (Boundary Commission Testimony of 1874 and a Lahainaluna manuscript of 1885), however, did provide two Hawaiians an opportunity to speak for themselves and thus offer a possible insight into the life of Kōloa before the arrival of westerners.

A dispute over the northern boundary of Kōloa *ahupua'a* in 1874 led to a hearing before Duncan McBryde, the Commissioner of Boundaries for Kaua'i. One native witness, Nao (who describes himself as born in Kōloa but presently living in Ha`ikū), in order to show that Hoaea (the area in dispute) was indeed at the northern boundary of Kōloa, testifies: "At Hoaea tea [*sic*] leaves were hung up to show that there were battles going on" (Boundary Commission, Kaua`i, vol. 1, 1874:124). That there was a traditional "warning system" --well-known to all natives--suggests that Kōloa, throughout its history, may well have been the scene of some serious conflicts--serious enough and often enough to warrant devising such a system.

Additional evidence of a rich history within Kōloa is offered in a Lahainaluna document produced eleven years later. This document appears to be based on an oral historical project. On September 7, 1885 a student from Lahainaluna Schools (HMS 43 #17) interviewed Makea – "a native who is well acquainted with Kōloa" -- and recorded "what she said about the well-known places in the olden times." More than sixty-four years after the abolition of the *kapu* system and almost as many years of contact with westerners, Makea was able to describe in detail fourteen *heiau* within the Kōloa area; for example:

> Maulili was the first *heiau* of south Kōloa. Kapulauki was the first chief of Kōloa, Kiha came next. That is the chief I know of. He was a ruling chief of Kaua`i in the olden days, when the *heiau* was standing there. It had already been built and men had been sacrificed on its altars. This Kiha was called Kiha-of-the-luxuriant-hair. Another name for him was Kakae and another was Ka-pueo-maka-walu (Right-eyed-owl).
>
> This *heiau* was also famous for this reason -- it was the first *heiau* to which Kawelo was carried after he had swooned in Wahiawa, in the battle where stones were used as missiles.
>
> The location of this *heiau* was not known, but a deaf mute knew and it was he who pointed it out to the chiefs, and that is how it was rediscovered in the olden days.

Kiha lived on the eastern side of the *heiau* and Aikanaka lived on the northeastern side. This chief, Aikanaka, was the one with whom Kawelo fought and he was the owner of this *heiau* at that time.

B. Mythological and Traditional Accounts

Clearly Kōloa was a particularly important *ahupua`a* in traditional Hawaiian times. That at least fourteen *heiau*–of varying sizes and functions–have been documented in the Kōloa area (Thrum 1907, Bennett 1931) and the association of legendary-historic figures such as Kawelo and Aikanaka with the *heiau*, suggests a heightened cultural richness of the *ahupua'a*.

Further confirmation of a rich traditional life within Kōloa is furnished by the presence of a *hōlua* slide on the slopes of Pu`u o Hewa in the *mauka* reaches of the *ahupua`a* and by the myriad legends attached to Maulili Pool, a sacred place once located in the present Kōloa Town. J. K. Farley (1907) describes the pool and its legendary associations:

> The pool of Maulili, on Waikomo stream...is a few hundred feet south of the Maulili road bridge. The gods Kane, and his brother, Kanaloa, are said to have once slept above it, on its eastern bank and left the impress of their forms as can be seen in the *apapa*...The *apapa* in this vicinity is called an '*Unu*.' and a '*Heiau*,' but was never walled in, it is said. [This *heiau* may be the Maulili *Heiau* described by Makea above.] On the nights of Kane the drums are heard to beat there, also at the sacred rocks, or *unu's*, of Opuokahaku and Kanemilohae, near the beach of Po`ipū...
>
> In the Maulili pool lived a large *Mo`o*, named 'Kihawahine'...The eastern wall of the pool, just below the resting places of Kane and Kanaloa, for a short distance, only, is called the 'Pali of Kōloa.' The District of Kōloa is named for this Pali, we are told by old Hawaiians. To the south of the Pali o Kōloa, in the wall is a rock named 'Waihanau'...as one of their *meles* has it:
>
> *"Aloha wale ka Pali o Kōloa,*
> *Ke Ala huli i Waihānau e, hānau."*
>
> To the south of Waihānau is a projecting rock named `*Ke elelo o ka Hawai`i*' - - the tongue of Hawai`i, said to have been wrested and brought from Hawai`i by the Kaua`i warrior Kawelo, of Wailua.
>
> At the southern end of the Maulili pool started two large `*auwai*'s, that watered the land east and west of Kōloa (Farley 1907:93).

Thus, this sacred legend-imbued locus was the source that gave life to the lowland taro patches of Kōloa. These special associations would not have been lost on the Hawaiians dependent upon those waters. While taro would have been essential to the life of the *ahupua`a*, other resources were available. Bernice Judd, writing in 1935, summarizes

most of what was known -- into the first decades of this century -- of the traditional Hawaiian life of Kōloa:

> In the old days two large *`auwai* or ditches left the southern end of the Maulili pool to supply the taro patches to the east and west. On the *kuaunas* or embankments the natives grew bananas and sugar cane for convenience in irrigating. Along the coast they had fish ponds and salt pans, ruins of which are still to be seen. Their dry land farming was done on the *kula*, where they raised sweet potatoes, of which both the tubers and the leaves were good to eat. The Hawaiians planted *pia* (arrowroot) as well as *wauke* (mulberry) in patches in the hills wherever they would grow naturally with but little cultivation. In the uplands they also gathered the leaves of the *hala* for mats and the nuts of the *kukui* for light (Judd 1935:53).

It appears that the relatively good situation for the development of irrigated agriculture (the Kōloa Field System) focused agriculture and habitation at elevations well below the present project area. As the Judd account given above asserts, it is likely environs like the present project area were used for less intensive cultivation of patches of sweet potato, *pia*, and *wauke* and the gathering of *hala*, *kukui* and other upland resources.

C. Early Historic Period

Accounts by visitors and settlers at Kōloa *Ahupua`a* focus on these westerners' own concerns--religious and commercial--as these concerns appropriate the historical record of Kōloa in the 1800's. However, scattered throughout the accounts are occasional references to the Hawaiians of the *ahupua`a* which may give some insights into their lives.

The American Board of Commissioners for Foreign Missions (ABCFM) missionary Samuel Whitney described, in an article in the *Missionary Herald* (June 1827:12), a visit to Kōloa with Kaikio`ewa, the governor of Kaua`i, in 1826:

> The people of this place were collected in front of the house where the old chief lodged in order to hear his instructions. After a ceremony of shaking hands with men, women, and children they retired...
>
> Our company consisted of more than a hundred persons of all ranks. The wife of the chief, with her train of female attendants, went before. The governor, seated on a large white mule with a Spaniard to lead him, and myself by his side, followed next. A large company of *aipupu*, [*`āīpu`upu`u*] cooks, attendants came on in the rear (p. 284).

Whitney's account suggests something of the deference paid to the *ali`i* by the local populations and the scale at which the *ali`i* carried out their functions. An even grander view of that deference is provided in an account of a later visit by an *ali`i* to Kōloa. John Townsend, a naturalist staying in Kōloa in 1834, described a visit by Kamehameha III (In Palama and Stauder 1973:18):

> In the afternoon, the natives from all parts of the island began to flock to the king's temporary residence. The petty chiefs, and head men of the villages, were mounted upon all sorts of horses from the high-headed and high-mettled California steed, to the shaggy and diminutive poney [sic] raised on their natives hills; men, women, and children were running on foot, laden with pigs, calabashes of *Poe* [sic], and every production of the soil; and though last certainly not least, in the evening there came the troops of the island, with fife and drum, and 'tinkling cymbal' to form a body guard for his majesty, the king. Little houses were put up all around the vicinity, and thatched in an incredibly short space of time, and when Mr. Nuttall, and myself visited the royal mansion, after nightfall, we found the whole neighborhood metamorphosed; a beautiful little village had sprung up as by magic, and the retired studio of the naturalists had been transformed into a royal banquet hall... (In Palama and Stauder 1973:18)

On December 31, 1834, Peter Gulick and his family arrived in Kōloa. Apparently the first foreigners to settle in the *ahupua`a*, they initiated the process of rapid change that would re-shape the life of Kōloa in the nineteenth century. In 1835, a 30 by 60 ft. grass house was erected as a meeting house and school (probably located at Kōloa Town). Mr. Gulick initiated sugar cane cultivation and collected a cattle herd for the Protestant Mission. In 1837 a 45 by 90 ft. adobe church was built (probably at the same ABCFM site) and the first mission doctor, Thomas Lafon, arrived to assist Mr. Gulick (Damon 1931:179, 187). The Kōloa mission station apparently flourished immediately; Charles Wilkes, a member of the U.S. Exploring Expedition visiting Kōloa in 1840, recorded:

> The population in 1840, was one thousand three hundred and forty-eight. There is a church with one hundred and twenty-six members, but no schools. The teachers set apart for this service were employed by the chiefs, who frequently make use of them to keep their accounts, gather in their taxes &c. The population is here again increasing partly by immigration, whence it was difficult to ascertain its ratio (Wilkes 1845:64).

Other sources, however, give different population figures for Kōloa during the first half of the nineteenth century. In 1834, according to a report by missionaries on Kaua`i, the inhabitants of the *ahupua`a* numbered 2,166. An article in the *Pacific Commercial Advertiser* of December 21, 1867 estimated that the population in 1838 was about 3,000 (though, by 1867, it had been reduced to a third of that number). James Jackson Jarves, who visited Kōloa and Kaua`i for nine months during the early 1840's, recorded:

> Kōloa is now a flourishing village. A number of neat cottages, prettily situated amid shrubbery have sprung up, within two years past. The population of the place, also, has been constantly increasing, by emigration from other parts of the island. It numbers, now, about two thousand people, including many foreigners, among whom are stationed a missionary preacher, and physician, with their families (Jarves, 1844:100).

The arrival of "many foreigners" was the cause of, and the native emigration to Kōloa was the result of, the many commercial activities that burgeoned beginning in the 1830's. In 1835 Ladd and Company gained from the king and local chiefs the lease of about one thousand acres at Kōloa for 50 years at $300 a year and "allowed the use of the waterfall and an adjoining mill site at Maulili pool, not far from the thousand acres, together with the right to build roads, the privilege of unrestricted buying and selling and freedom from local harbor dues" (Judd, 1935:57). Ladd and Company was not the first to mill sugar cane in the area: there was a Chinese-operated granite roller mill in operation at Māhā`ulepū, Kōloa, in 1830; it was, however, the first plantation-organized industry in Hawai`i (Damon, 1931:176, 198). Judd notes the following:

> The company was permitted to hire natives to work on the plantation provided they paid Kauikeaouli, the king, and Kaikio`ewa, the governor of Kaua`i, a tax for each man employed and paid the men satisfactory wages. The workers were to be exempt from all taxation except the tax paid by their employers (*Op. cit.*:57).

Judd further described the revolutionary implication of this arrangement:"The significance of Ladd & Co.'s lease lay in the fact that it was the first public admission by the Hawaiian chiefs that their subjects had rights of personal property backed with a guaranty of protection to that property" (*Op cit.*:58). Local chiefs, fearful of an usurpation of their power, resisted the company's first efforts to recruit workers, forcing the king's intervention.

Another missionary, Dr. James W. Smith, who was stationed at Kōloa for forty-five years, beginning in 1842, mentioned in his journal a visit to "the school at Kukui`ula." If there was a second school in Kōloa outside the population center of Kōloa Town, Kukui`ula may have warranted the placing of a school there because of a sufficiently large population in the area.

A long-known history of severe flooding in the central flood plain of Kōloa provided an impetus for the native Hawaiians to develop an irrigated field network well off that plain. In a typical Hawaiian valley such as Pō`ele`ele it is difficult to get off the flood plain and in Kōloa a large percentage of homes and agricultural fields are located in the large volcanic terrace *makai* of the project area that is not susceptible to flooding. Thus the extensive *lo`i* network within the *makai* portion of Kōloa may have been, in part, a clearly thought-out use of a fortuitous land configuration to avoid the force of occasional floods that might, elsewhere on the island, have had disastrous effects. The project area was better suited for forest cultivations and gathering of upland resources.

D. Mid-1800's (Land Commission Awards)

The *Māhele* records of Kōloa give a picture of what had evolved by the middle of the nineteenth century when Kōloa *Ahupua`a*--8,620 acres--was awarded (LCA 7714-B) to Moses Kekūāiwa, the brother of Alexander Liholiho (Kamehameha IV), Lot Kapuāiwa (Kamehameha V), and Victoria Kamāmalu. (The awarding of the *ahupua`a* to Kekūāiwa

was an outcome of an event twenty-five years in the past: the crushing--by forces loyal to Kamehameha II--of the 1824 revolt on Kaua`i when Kaua`i lands were divided up among the chiefs of the other islands.)

Eighty-eight other *kuleana* awards were given to individuals within Kōloa *Ahupua`a*. The majority of these Land Commission Awards (LCAs) were located in or around Kōloa Town itself. This concentration of awards around the town area may reflect both the traditional land settlement pattern, a focus on the resources of Maulili Pool and Waikomo Stream (a permanent stream), and a more recent movement of the populace to the plantation and missionary centers. An 1891 map by M.D. Monsarrat shows the location of these awards.

The only LCA known to encompass the Pīwai Reservoir is that which was awarded to American Board of Commissioners for Foreign Missions (ABCFM); this was LCA. 387, No. 4, Part 2, Section 3. This portion of LCA 387 is only a small share of the Commission Award holdings given to ABCFM on the island of Kaua`i.

E. Late 1800's To Present

Kōloa became the scene of the confrontation of the traditional social structure with commercially-impelled forces of change. The cane growing activity of Ladd and Company would inevitably affect the lives of the inhabitants of the rest of the *ahupua`a*. Traditional settlement patterns (*e.g.* permanent and temporary habitation interspersed throughout the irrigated agricultural fields near the coastal zone and traditional farming along streams) would have been distorted by a shift to Kōloa Town where sugar cane milling activities were located, and a shift to cash crops other than taro.

Although Ladd and Company would go bankrupt in 1845, its earlier success was an impetus for other entrepreneurial attempts within Kōloa. Silkworm farming, oil extraction from *kukui* nuts, cigar manufacturing, sago raising, and tapioca manufacturing were all attempted with varied success during the middle third of the nineteenth century.

Another major area of commercial enterprise was associated with the whaling industry at Kōloa Landing. Accounts of visitors suggest that the inhabitants of Kōloa, took advantage of their nearness to the landing to participate in the booming trade of the port. An article in the *Pacific Commercial Advertiser* of Feb. 19, 1857 described the salient characteristics of the port at mid-century and mentions:

> From the landing there is a good carriage road to the town, distant about two miles. Large quantities of firewood, bullocks and sweet potatoes are furnished to whalers in this port, and these chattels can no where be procured cheaper or better. It is estimated that 10,000 barrels of sweet potatoes are cultivated annually here, which are thought to be the best on the islands. Nearly all the potatoes furnished for the California market are produced here...Sweet potatoes, sugar and molasses constitute the chief trade of the port.

Kōloa became the official port of entry for Kaua`i in the 1850's and participated in the profitable trade with the whaling industry whose peak years ran from the 1830's to the 1860's. It seems likely the demand for firewood, bullocks, sweet potatoes, sugar and molasses at Kōloa Landing was met to at least some small degree by activities in the *mauka* regions of Kōloa in the vicinity of the present project area. A map of Kōloa by M.D. Monsarrat in 1891 (R.M.1694; Figure 3) shows cane cultivation in the immediate vicinity of the present project area but the extent of cane in this area is uncertain.

Koloa Plantation began a program of developing water storage c. 1904. Clearly the development of the larger reservoirs such as the Waita Reservoir (also known as the Koloa Reservoir and combining the former Hauiki Reservoir and the Marsh Reservoirs) and Alexander Reservoir were not only major engineering feats but were matters of significant social impact involving repeated armed confrontations (Wilcox 1996:77-84). The Pīwai Reservoir within the project area was one of several seemingly similar small reservoirs developed within a radius of a couple of kilometers (including Aepo, Aepoalua, Aepoakolu, Huinawai, Loko, Mauka, `Ōmao, Pia Mill, Pinau, Pu`u o Hewa reservoirs). The development of these modest reservoirs is not well documented in the readily available literature. The 1910 USGS Lihue Quad Map (Figure 4) and the 1912 USGS Topographic Map of the Island of Kaua`i (Figure 5) show most of the reservoirs in the immediate vicinity (including the Huinawai, Loko, Mauka, `Ōmao, Pinau, and Pia Mill, reservoirs) already developed but not the Pīwai Reservoir. The Pīwai Reservoir must have been developed at a later date.

Kōloa Landing was phased out around 1925 when McBryde Sugar Company and Kōloa Sugar Company began using Port Allen. Soon after, McBryde ceased to use several of the Kōloa fields. Much of the present study area remained under sugar cane cultivation until at least as late as the 1970s when these cane lands were converted into pasture.

The Pīwai Reservoir is shown on the 1963 series USGS map (Figure 6) but this map does not show the road network west and north of the Pīwai Reservoir shown on the 1983 USGS Koloa Quad map (Figure 7). Possibly this road network was developed as part of an attempt to establish a macadamia nut tree farm within the present study area but this appears to have been effectively wiped out by hurricanes. The road network is not shown on contemporary USGS maps (Figure 1)

F. Summary of Historical Background

Although much of the seaward portion of Kōloa is a relatively dry area with approximately 30 in. of rain per year, the perennially flowing streams provided a resource for the development of a rather expansive agricultural system. Accounts of the early history of Kōloa (Farley, 1907; Jarves, 1844; Townsend, 1839; and Judd, 1935) describe in the lands *mauka* of Kōloa Town a seemingly continuous, well-maintained, agricultural complex of taro, yams, sweet potato, and sugar cane that was irrigated by an extensive *`auwai* system siphoned off of Waikomo and Pō`el`ele streams. This system had a significant influence on later commercial endeavors in Kōloa.

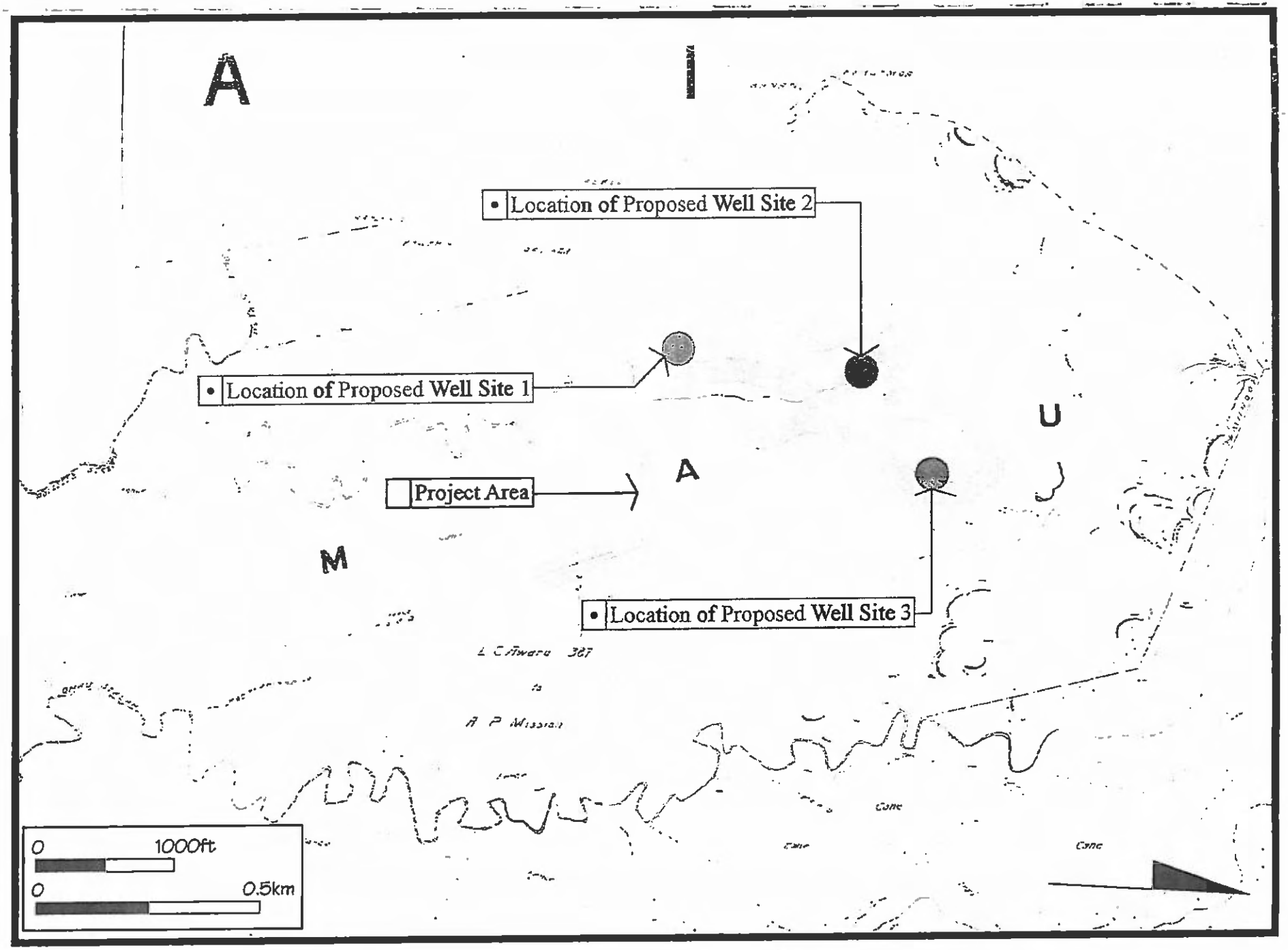

Figure 3 Portion of M.D. Monsarrat (1891) Map (R.M. 1694) Showing Project Area (Approximate boundaries of the project area are indicated)

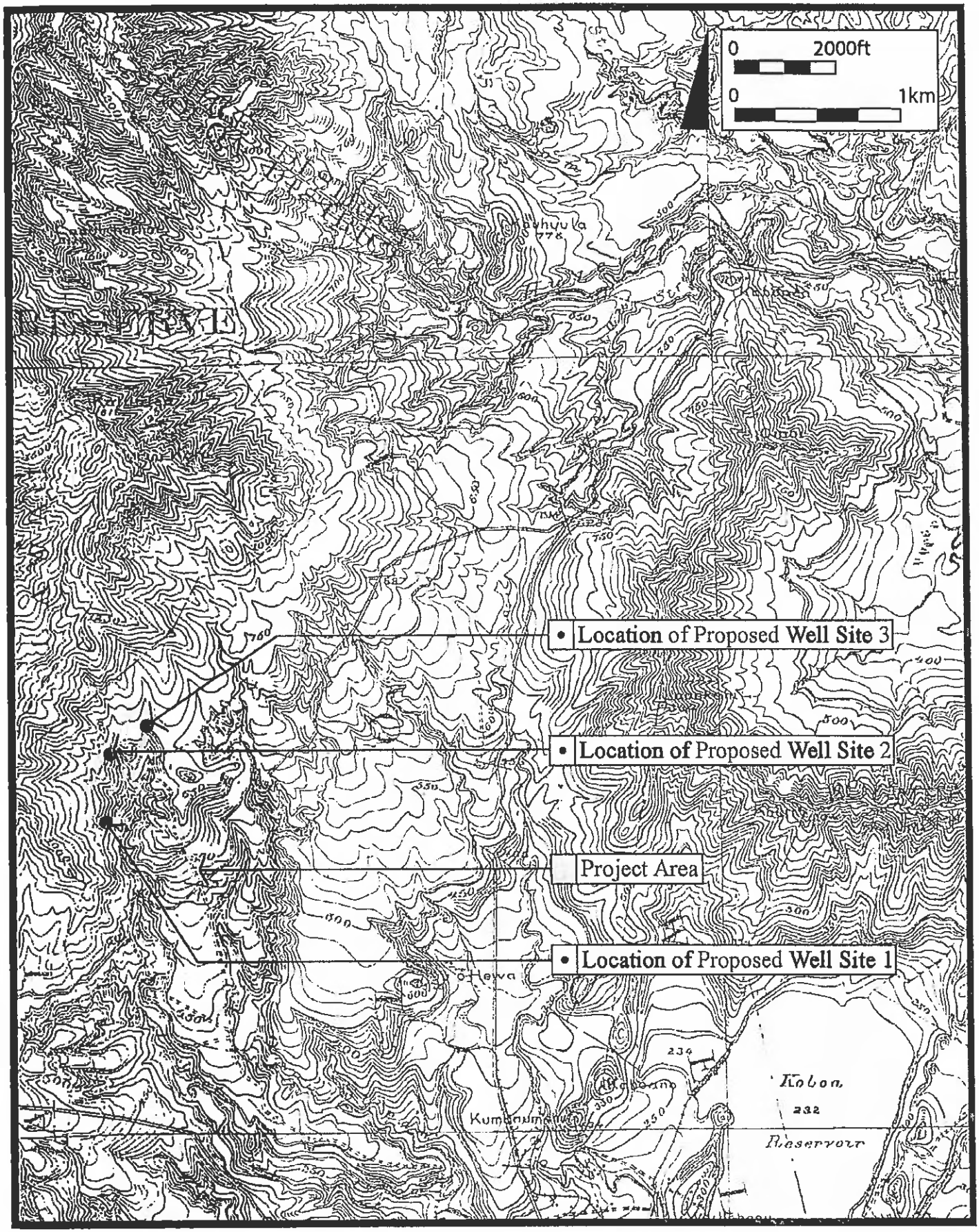

Figure 4 Portion of 1910 USGS Lihue Quad Map Showing Project Area

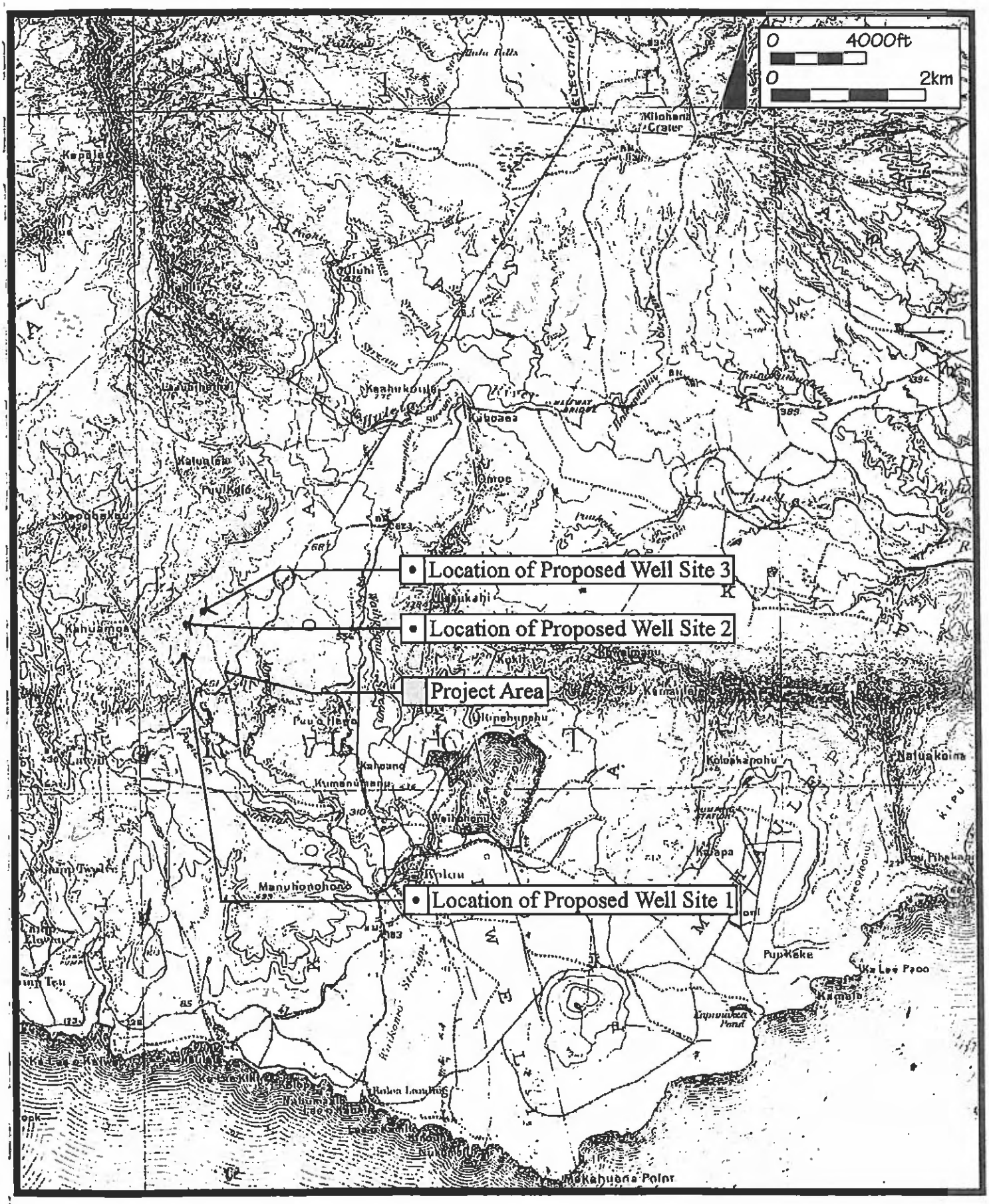

Figure 5 Portion of 1912 USGS Topographic Map of the Island of Kaua'i Showing Project Area

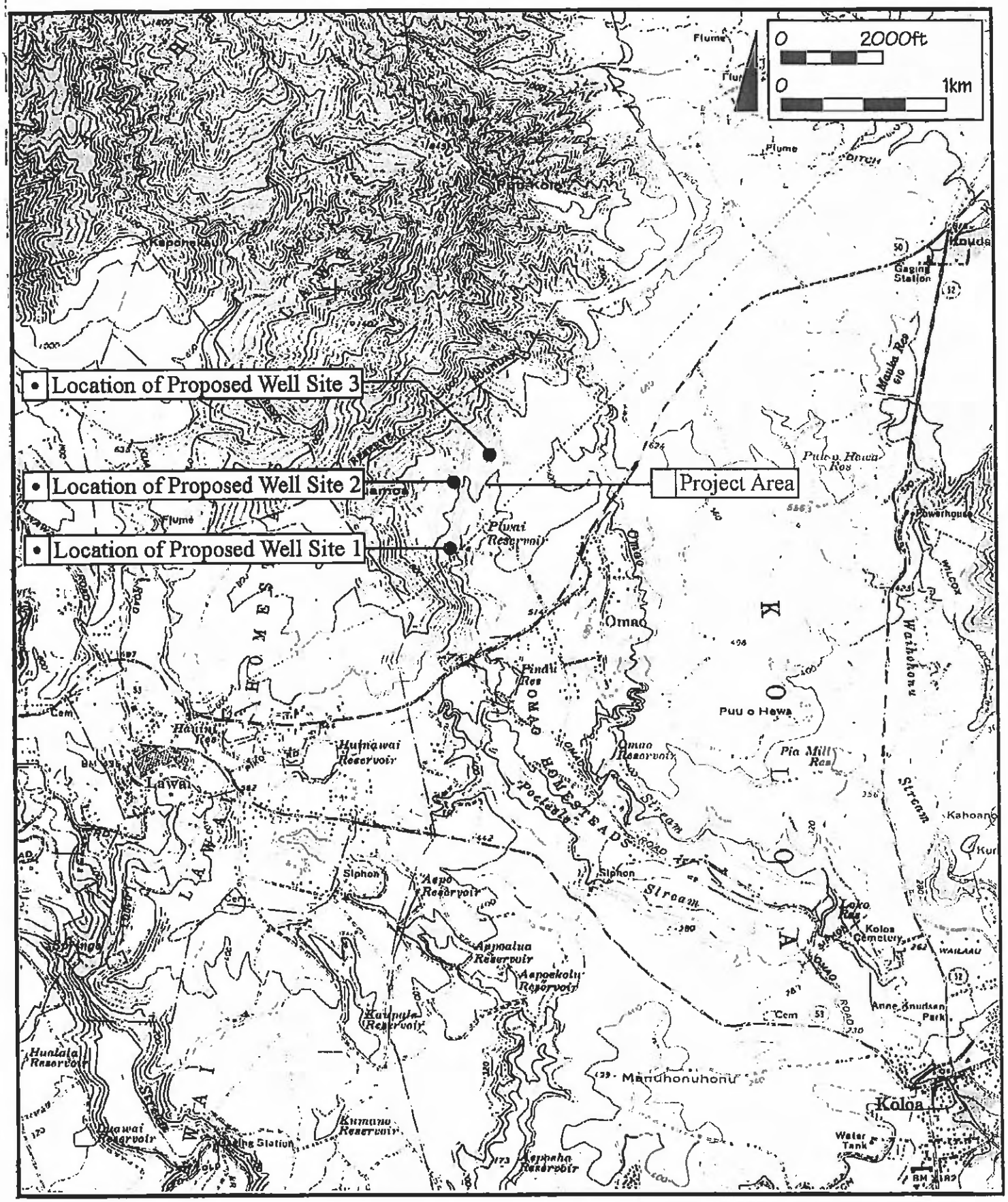

Figure 6 Portion of 1963 USGS Koloa Quad Map Showing Location of Project Area

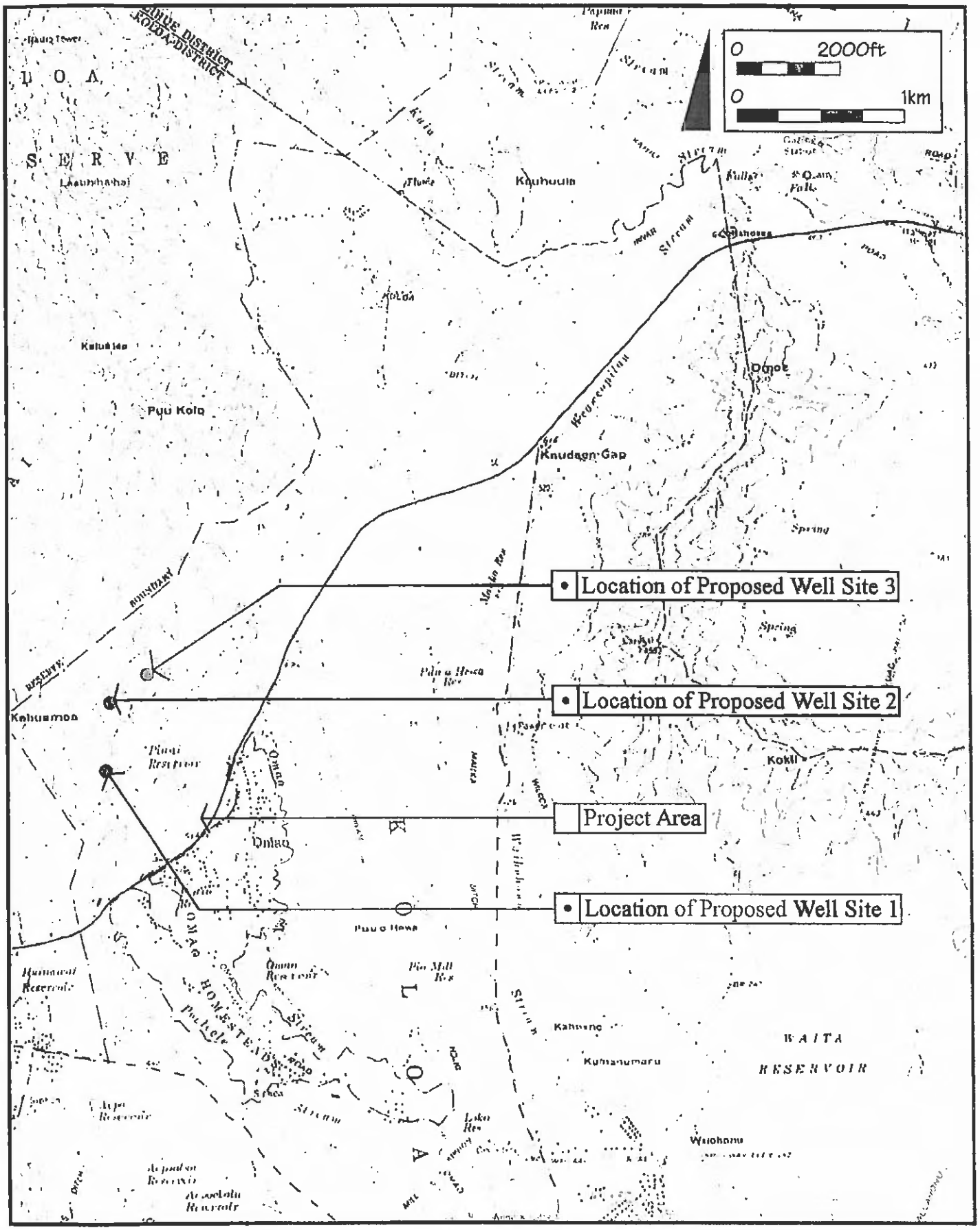

Figure 7 Portion of 1983 USGS Koloa Quadrangle, Showing Location of Project Area

Kōloa is the site of the first organized sugar plantation in Hawaii. Ladd and Company leased about a thousand acres for the sole purpose of growing sugar cane (Palama and Stauder 1973:18, from Judd, 1935). The commercialization of sugar cane in Kōloa had widespread social effects. The traditional view of the *`āina* being a responsibility of the *ali`i* was being transformed.

Kōloa Town, and Kōloa Landing, at the mouth of Waikomo Stream, became prominent commercial centers during the mid to late 1800's, exporting a variety of products such as sweet potatoes, sugar and molasses. Whalers also stopped for provisions of squash, salt, salt beef, pigs, and cattle (Palama and Stauder 1973:20). This heightened activity dramatically altered the social structure and landscape of Kōloa.

Kōloa soon reflected the effects of a traditional social structure in conflict with commercially-impelled forces of change. Traditional settlement patterns (*e.g.* permanent and temporary habitation interspersed throughout the irrigated agricultural fields near the coastal zone and along streams in the steeper valleys inland) would have been significantly changed by a flux to Kōloa Town where sugar cane milling activities were located. Later land use in the study area (*i.e.* sugar cane, pasture, and macadamia nut farm development) also had detrimental impacts on any surviving traditional structures.

III. PREVIOUS ARCHAEOLOGY

A. Introduction

Table 1 arrays the previous archaeology conducted in Kōloa and vicinity. A brief overview follows.

Table 1 Previous Archaeology of Kōloa and Vicinity.

NAME	YEAR	LOCATION	TYPE/STUDY
Bennett, Wendell C.	1931	Kukui`ula Valley, Prince Kūhiō Park, walls, enclosures and house sites in the cactus country	General Survey
Kikuchi, William	1963	East of Kukui`ula Bay Kamaloula *Heiau* Kōloa *Ahupua`a*	General Survey Subsurface Testing
Palama, Stephen & Stauder, Catherine	1973	Cane Haul Road-Kōloa Mill Kōloa & Weliweli *Ahupua`a*	Reconnaissance Survey
Sinoto, Aki	1975	Knudsen Trust Lands Kōloa *Ahupua`a*	Reconnaissance Survey
Bordner, Richard	1977	Kukui`ula *`Auwai*, -1934 Kōloa *Ahupua`a*	Reconnaissance Survey
Hammatt, Hallett Bordner, Richard Tomonari-Tuggle, Myra	1978	Kīahuna Complex Kōloa *Ahupua`a*	General Survey
Kikuchi, William	1981	Weliweli *Ahupua`a*	Reconnaissance Survey
Connolly III, Robert	1982	Kōloa-Po`ipū Bypass Road, Kōloa- Weliweli *Ahupua`a*	Reconnaissance Survey
Ching, Francis	1983	Kukui`ula-Kualu Kōloa *Ahupua`a*	Reconnaissance Survey
Landrum III, James	1984	Kukui`ula Kōloa *Ahupua`a*	Reconnaissance Survey
Hammatt, Hallett Borthwick, Douglas Shideler, David	1985	Kōloa-Po`ipū Bypass Road Kōloa-Weliweli *Ahupua`a* Boundary	Survey and Subsurface Testing
Kikuchi, William	1988	Pa`anau Sugar Camp Kōloa *Ahupua`a*	Reconnaissance Survey

Hammatt, Hallett Borthwick, Douglas Shideler, David Stride, Mark	1988	Kukui`ula Kōloa *Ahupua`a*	Inventory Survey
Hammatt, Hallett	1990	Pa`anau Kōloa *Ahupua`a*	Inventory Survey
Hammatt, Hallett	1991	Po`ele`ele Stream, Kōloa *Ahupua`a*	Archaeological Reconnaissance
Hammatt, Hallett Folk, William Stride, Mark	1991	Po`ipū lani Kōloa *Ahupua`a* Weliweli Boundary	Inventory Survey
Hammatt, Hallett	1992	Kīahuna Kōloa *Ahupua`a*	Inventory Survey
Hammatt, Hallett H.	1992	Po`ipū Road and Lāwa`i Road Junction, Kōloa, *Ahupua`a*	*Archaeological Reconnaissance*
Hammatt, Hallett Ida, Gerald Folk, William	1993a	Po`ipū Road, Kōloa *Ahupua`a*	Inventory Survey
Hammatt, Hallett Ida, Gerald Folk, William Shideler, David Colin, Brian	1993b	Po`ipū Beach Park Kōloa *Ahupua`a*	Subsurface Testing and Monitoring
Creed, Victoria Ida, Gerald Hammatt, Hallett	1995	Po`ipū Road Kōloa *Ahupua`a*	Inventory Survey
Bushnell, Tina & Hallett Hammatt	1996	`Ōmao Bridge in `Ōmao Homestead, Kōloa *Ahupua`a*	Archaeological Investigation
Hammatt, Hallett Creed, Victoria Ida, Gerald	1996	Waiohai Resort Kōloa *Ahupua`a*	Assessment Survey
McMahon, Nancy	1996	Sheraton Kauai Hotel, Kōloa *Ahupua`a*	Reconnaissance Survey
Ida, Gerald Creed, Victoria Hammatt, Hallett	1997	Po`ipū Bypass Road Kōloa-Weliweli *Ahupua`a*	Inventory Survey

Hammatt, Hallett *et al.*	1998	Kukui`ula Planned Community Phase I, Kōloa and Lāwa`i *Ahupua`a*	Data Recovery
Hammatt, Hallett *et al.*	1999	Kukui`ula Planned Community Phase II, Kōloa *Ahupua`a*	Data Recovery
Ida, Gerald K., K. W. Bushnell and Hallett H. Hammatt	2000	Kukui`ula Planned Community , Kōloa *Ahupua`a*	Data Recovery
Jones, Bush, Folk, Chiogioji, Shideler, and Hammatt,	2002	260 ac. parcel (TMK 2-7-03:5) at `Ōma`o just seaward of Kaumuali`i Highway.	Inventory Survey

B. Overview of Archaeological Studies at Kōloa

The earliest systematic archaeological survey on the Island of Kaua`i was conducted by Wendell Bennett in the late 1920's. Bennett examined and recorded 202 sites on the island. The following are sites recorded within Kōloa *Ahupua`a* (see Bennett 1931:116-117, 120):

Site 72 — Niu Kapukapu *Heiau* - on the top of Niu Kapukapu Hill on the east bluff of Lāwai Valley. Bennett describes the site:

Site 73 — Stone work on the hill just in-land from Site 72"

Site 74 — Fishing shelter on the shore near the mouth of Kukui`ula valley.

Site 75 — Kūhiō Park, west of Waikomo Stream with taro patches, a small heiau, an oven, paved house platform, fish pond, game ground with seats and a fishing shrine.

Site 76 — Salt pans east of Waikomo Stream

[Sites 77-84] — Located east of Kōloa *Ahupua`a*

Site 85 — Walls, enclosures and house sites in the cactus covered country around the Kōloa reservoir and extending to the sea.

Site 86 — House site in the area described in Site 85

All of these seven sites are well seaward of the present survey study area.

William Kikuchi (1963) conducted a general survey of the Kona District of Kaua`i including all *ahupua`a* from Hanapēpē, eastward to Kīpū Kai. Information from Thrum

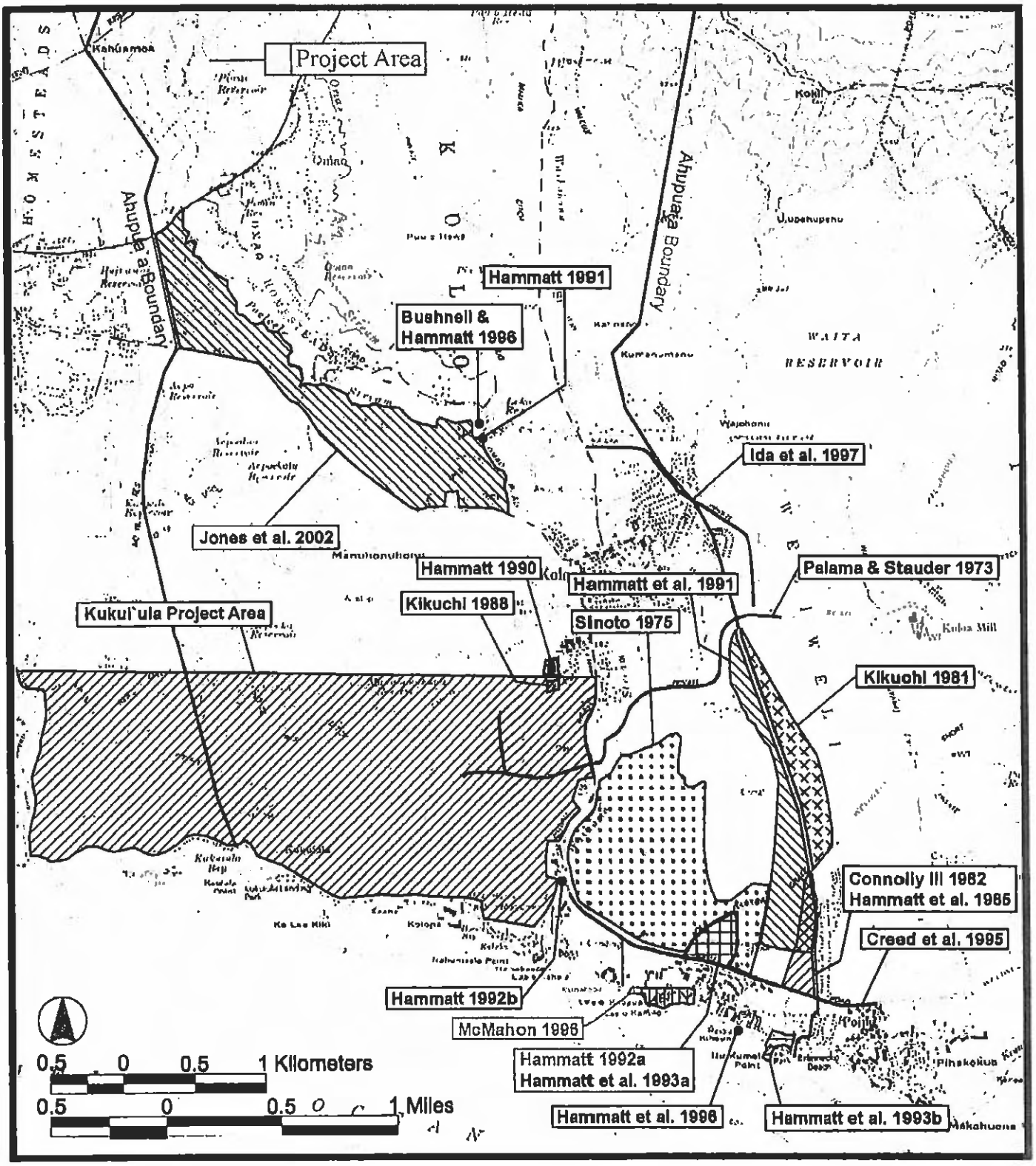

Figure 8 Map Showing Areas of Previous Archaeological Research in the Vicinity of the Current Project Area

(1907), Bennett (1931), a Lahainaluna School manuscript (1885), and other sources was instrumental in helping to locate major archaeological sites during the field survey. Kikuchi's survey was selective since it was not designed to be a complete inventory, and focused on generally larger or more coastal sites. No sites were noted by Kikuchi in the present study area.

Palama and Stauder conducted a reconnaissance survey along the route of the then-proposed main cane haul road to the Kōloa mill site. The proposed new section of road extended from Weliweli Road, southwestward across Po`ipū Road, connecting to an existing cane haul road. The section west of Po`ipū Road is approximately 3,000 ft. long with a north/south oriented branch approximately 1,500 ft. long. A total of 18 sites were recorded along the road corridor. All of these sites are south of the present study. Although the Palama and Stauder study was limited in scope to the proposed road right of way, it included a short but thorough historical summary of the place of archaeological sites within the context of the Kōloa and Weliweli *Ahupua`a*. An extensive *`auwai* system was observed east of Po`ipū Road. The following comments on this system and the sites in general are relevant to understanding the archaeological significance of the area as a whole, and the historic processes at work:

> Our reconnaissance revealed that the most significant archaeological feature located within the study area is the extensive *`auwai* system. Remnants of this irrigation system were observed on both sides of the Waikomo Stream. ...[This] network of watering canals proved to be the key to the success of the prehistoric Hawaiian Culture in turning these marginal lands into flourishing wet and dry agricultural fields. From information gathered from local informants and preliminary historical investigation of this area it is evident that the early commercial growers of sugar cane utilized the existing *`auwai* system. Gradually as more and more fields came under sugar cane production these replaced the wet and dry fields of an earlier day. Today the archaeological sites remaining stand as islands as these marginal cane lands were taken out of production and turned into pasture (Palama and Stauder 1973:4).

Bordner and Ching (1977) conducted a one-day reconnaissance survey of a specific *`auwai* located in Kukui`ula and corresponding to the major *`auwai* system assigned State Site # 50-30-10-1934. The *`auwai* traverses Kukui`ula from northeast to southwest and includes a number of associated remnant fields. A portion of this *`auwai*, the raised "aqueduct" type section, is slated for preservation (Bordner and Ching 1977:26).

Hammatt, *et al.* 1978, as part of Archaeological Research Center of Hawaii (ARCH), reported on a general survey of 460 ac. for the then proposed Kīahuna Golf Village (Hammatt, Bordner, and Tomonari-Tuggle 1978) located on the east side of Waikomo Stream and Po`ipū Road. The Kīahuna survey recorded 583 archaeological sites including 175 stone enclosures and 108 stone house platforms, some of which are clustered as family compounds. The water channels (*`auwai*), ponded fields, terrace plots, and mound fields all indicate extensive wet and dry land agriculture (Hammatt, Bordner & Tomonari-Tuggle 1978:5). The water source for this highly integrated agricultural system was Waikomo

Stream which was tapped upstream. Additional sites included 10 occupation caves and a *heiau*.

William Kikuchi (1981) conducted a reconnaissance survey of Weliweli Tract (TMK 2-8-22-06) in the *ahupua`a* of Weliweli, abutting the *ahupua`a* of Kōloa. The survey included the railroad causeway, which "historically connected the Kōloa Sugar Mill to Kōloa Landing" (Kikuchi 1981:2), *`auwai*, walls, terraces, alignments, and habitation sites. Kikuchi states that "the sites...were probably an extension of the vast, prehistoric habitation and agricultural sites of the adjacent Kīahuna (see Hammatt, Bordner & Tomonari-Tuggle, 1978) property" (1981:17)

Connolly (1982) conducted a reconnaissance survey of sections (310 acres)in the *ahupua`a* of Kōloa and Weliweli in 1982 for the Kōloa-Po`ipū Bypass Road. The sites that Connolly encountered were predominantly wall remnants, a few rock mounds, a hole, two complexes, a railway causeway, and an enclosure.

Francis Ching (1983) conducted a reconnaissance survey, and an historical investigation of sections of the *ahupua`a* of Kōloa and Lāwa`i. According to Ching, three-fourths of the study area was bulldozed and rocks re-located, however, remnants of walls, *lo`i*, *`auwai*, flumes, terraces, *kula* and an historic railroad berm were still discernable. These remnants are evidence of the expansiveness of the Kōloa Field System.

James Landrum (1984), of the Bishop Museum, conducted a reconnaissance survey of a 200+ acre portion of Kukui`ula. Landrum recognized that his survey area was once part of an extensive irrigated agricultural complex developed in the prehistoric period with superimposed historic-era occupation (Landrum 1984:24).

Hallett Hammatt, Douglas Borthwick, and David Shideler (1985) conducted a survey with subsurface testing for the proposed Kōloa-Po`ipū Bypass Road which extends 9,000 ft. along the boundary of Kōloa and Weliweli *Ahupua`a*. The road corridor was proposed to connect Po`ipū Road (the beach road) to Weliweli Road, southeast of Kōloa Town. A total of 47 archaeological features were located along the corridor. These were concentrated at the *makai* or southern end of the corridor and included the southeastern portion of the "Kīahuna Complex" documented by Hammatt *et al.* in 1978 (see above).

William Kikuchi (1988) conducted a reconnaissance level survey of the former Pa`anau Sugar Camp. The camp was located just *makai* (south) of the present day Kōloa Elementary School. The survey recorded a number of cement foundations, ditches, and portable historic artifacts. Kikuchi states that archaeologically the site is interesting because it contains remnants of an early (1910-1950) plantation camp, even though the vast majority of its structures have been destroyed or removed.

Hallett Hammatt (1990) conducted an inventory survey of a 4.6 ac. parcel at the west end of Pa`anau Road, Kōloa. The historical segment of this report indicates the previous existence of the Pa`anau Camp, and a railroad and *`auwai* irrigation ditch which traversed the study area. However, the survey revealed the absence of any traces of pertinent features.

Hallett H. Hammatt (1991) carried out an archaeological reconnaissance for a proposed waterline stream crossing of Pō`ele`ele Stream noting extensive modern land modification and no significant findings.

Hallett H. Hammatt, William Folk, and Mark Stride (1991) conducted an archaeological inventory survey of 160 ac. within Kōloa along the Kōloa-Weliweli *ahupua`a* boundary. They located, mapped, described, and evaluated a total of 75 sites and observed a wide range of site types. Their survey indicates that the (never built) Po`ipūlani project area was associated with what is referred to as the Kōloa Field System.

Hallett H. Hammatt (1992a) carried out an Archaeological Inventory Survey of a 3.8 Acre Property at Kīahuna, (TMK 2-8:014-026) but the entire parcel had been previously graded and there were no significant findings.

Hallett H. Hammatt (1992b) carried out an Archaeological Reconnaissance of the Po`ipū Road and Lāwa`i Road Junction, but again there were no significant findings owing to prior land disturbance.

Hallett H. Hammatt, Gerald Ida, and William Folk (1993) conducted an inventory survey, with limited subsurface testing, of 7.6 ac. (TMK 2-8-14:30) in the *Kiahuna area, mauka* of Po`ipū Road. Site 3758 was re-mapped, and three new sites were recorded. According to Hammatt *et al.*, these sites are remnants of traditional *`auwai*, walls, fields, enclosures and habitation platforms, and appear to be a part of the larger Kōloa Field System which encompassed over 1000 acres (Hammatt 1993:21).

Hallett Hammatt, Gerald Ida, William Folk, David Shideler and Brian Collin (1993) conducted an assessment survey, subsurface testing and monitoring at Po`ipū Beach Park in the *ahupua`a* of Kōloa. Wave action during Hurricane `Iniki in 1992 had exposed a cultural layer (Site 50-30-10-745) which needed to be preserved and monitored during the reconstruction and restoration of the park. Auger testing (1993:11) revealed charcoal, and both traditional and historic midden and artifacts (*i.e.* basalt flakes and fragments, nails, glass, *kukui* shells, and mollusk shells). A cemetery (State Site 50-30-10-1871), located in the middle of Po`ipū Beach Park, and other sections of the buried cultural layer beneath the park, were also monitored during the removal of several cement slabs, remnants of a pavilion, picnic tables, and barbecues. The rich cultural layer, supported by radiocarbon dating, indicates that this shoreline occupation is contemporaneous with the development of the Kōloa Field System. This cultural layer is the "single largest coastal beach deposit in the *ahupua`a*...of Kōloa" (Hammatt *et al.* 1993:65, 66) and greatly contributes to the information bank regarding the cultural development of the Kōloa district.

Victoria Creed, Gerald Ida and Hallett H. Hammatt (1995) report on an inventory survey within a 1.4-mile corridor along Po`ipū Road (TMK 2-8-15, 16, 17 & 18) in the *ahupua`a* of Kōloa and Weliweli. Three sites, including enclosures, a terrace, and the Kōloa-Weliweli boundary wall, survived previous bulldozing of the area and were understood as components of the Kōloa Field System.

Tina Bushnell and Hallett H. Hammatt (1996) carried out an archaeological investigation of `Ōmao Bridge in `Ōmao Homestead but the only objects of historical interest noted were the existing bridge and features associated with an old railroad.

Hallett Hammatt, Victoria Creed, and Gerald Ida (1996) conducted an assessment survey of an exposed cultural layer in undisturbed sand deposits at Waiohai Hotel. This layer was disturbed by high wave action during Hurricane `Iniki which completely destroyed the associated reconstructed Kiha Houna *Heiau* (Site 50-30-10-80). The exposed cultural layer supports the potential existence of widespread intact cultural areas along the general shoreline (Hammatt *et al.*, 1996:39).

Nancy McMahon, (1996) at the time an independent archaeological consultant, completed a reconnaissance survey of TMK 2-08-16:3 (8.444 acres), property known as Sheraton Kaua`i in the *ahupua`a* of Kōloa. No surface sites or cultural deposits were reported.

Gerald Ida, Victoria Creed and Hallett H. Hammatt (1997) conducted a reconnaissance survey on a 1.2 mile corridor of a proposed bypass road within the *ahupua`a* of Kōloa and Weliweli (TMK 2-8-02:3, 2-8-03:1, 2-8-04:1, 2-8-05:2) that had previously been bulldozed. This survey did not reveal any archaeological sites, and further study was not recommended.

Cultural Surveys Hawai`i, Inc. (Hammatt, Chiogioji, Shideler, Borthwick, McDermott and Masterson, 1998) reported on data recovery of the Kukui`ula Planned Community Project Phase 1 area encompassing approximately 219 acres. The project included excavations at 20 different sites which encompassed 64 individual features. There was a total of 212 excavation units (212 m^2.) and 19 backhoe trenches (only 14 backhoe trenches were chosen for study). Large quantities of midden (approx. 23.7 kg.) and artifacts (10,635 items) were recovered and are reported on. The artifacts include a wide range of types with both indigenous (2,592 items) and historic (8,043 items) represented. Radiocarbon (C14) dates range from ca. A.D. 1050 onward. The earliest date comes from the habitation/burial cave Site 50-30-10-1927A. In addition to the habitation sites and features dated, seven (7) dating samples from agricultural features were also analyzed.

Cultural Surveys Hawai`i, Inc. (Hammatt, Bushnell, Ida, Chiogioji, Creed and Shideler 1999) reported on data recovery work just *makai* and southwest of Kōloa Town on the west side of Waikomo Stream in the northeastern portion of the Kukui`ula Planned Community Phase II Area. The study area is comprised of approximately 33 ac. and has been used as a buffer zone between canelands/pastures and the residential lots bordering Po`ipū Road. While some ten land commission awards lie partially or entirely within the project area most of these properties were bulldozed in the course of sugar cane cultivation. There were however areas which appeared undisturbed by sugar cane cultivation or heavy machinery. Excavations were conducted within five archaeological sites (thirteen features). These excavations yielded 264.8 g. of midden; 53 indigenous artifacts (including 43 volcanic glass flakes, 9 basalt flakes, and one coral manuport); and 877 late-historic artifacts (*e.g.* glass, metal, ceramics, plastic, leather, and slate). Twelve charcoal samples were dated.

Cultural Surveys Hawai`i Inc. (Jones, Bush, Folk, Chiogioji, Shideler, and Hammatt, 2002; under review) conducted an archaeological inventory survey with subsurface testing on an approximately 260 acre parcel (TMK 2-7-03:5) along Pō`el`ele Stream at `Ōma`o just seaward of Kaumuali`i Highway. Two sites were identified, terrace remnants of LCA 3229 awarded to Eke `Opunui for the cultivation of *taro* and sugar cane and a sugar plantation irrigation ditch feature. Two carbon dates are reported of *ca.* A.D. 1010 - 1180 understood to shortly predate wall construction.

C. Previous Archaeology Summary

Previous archaeological work concerning the Kōloa district has, until recently, been mostly surface surveys. The Kōloa area began to be documented by subsurface testing of sub-surface cultural deposits within the proposed Kīahuna Golf Course area in 1979. Information gleaned from intensive excavations in the *ahupua`a* of Kōloa, Weliweli, and Pa`a, combined with the inventory surveys in these *ahupua`a*, clearly indicate an expansive irrigated agricultural complex and associated temporary and permanent habitation features. The focus of this integrated Kōloa Field System was Waikomo Stream which was utilized as the main source of irrigation. However, the full extent of the Kōloa Field System is hard to estimate because of the widespread historic land modifications (mainly for sugar cane).

Chronological analysis from the neighboring three *ahupua`a* suggests an early initial occupation within the Pa`a *Ahupua`a ca.* A.D. 535 (Walker and Rosendahl, 1990b:131). No coinciding early dates have been found within Kōloa *Ahupua`a*, which is probably due to vagaries of sampling since most of the shoreline area of Kōloa has been heavily impacted by commercial, residential, and resort development. Initial occupation probably was characterized by temporary and/or recurrent occupation developed into permanent settlement within an integrated (both irrigated and *kula* or dryland) agricultural system by *ca.* A.D. 1200 (*Ibid.*; see also dating analysis section of this report). Portions of this Kōloa Field System functioned well into historic times (*ca.* 1880's) and co-existed with commercial sugar cane cultivation.

Relatively little archaeological study has been conducted in the *mauka* portions of Kōloa *Ahupua`a* (*mauka* of Kōloa Town). The Hammatt (1991) study and the Bushnell and Hammatt (1996) archaeological investigation both in the `Ōmao Bridge area in `Ōmao Homestead noted substantial historic land modification but no significant findings. The recent Cultural Surveys Hawai`i Inc. (Jones, *et al.*, 2002; under review) archaeological inventory survey on an approximately 260 ac. parcel at `Ōma`o does however indicate the potential of locating pre-contact sites in these heavily modified *mauka* lands of Kōloa *Ahupua`a*.

D. Predicative Model

From previous archaeological studies and historic accounts it appears that habitation and intensive irrigated agriculture were widespread in central and coastal Kōloa utilizing the opportunity to develop an extensive irrigated complex (the Kōloa Field System) off of Waikomo Stream. Evidence of intensive traditional Hawaiian use of lands well *mauka* of Kōloa Town is generally lacking. As the Judd account given above asserts, it is likely environs like the present project area were used for less intensive cultivation of patches of sweet potato, *pia*, and *wauke* and the gathering of *hala*, *kukui* and other upland resources. Remnants of dry-land agriculture or temporary field shelters associated with upland gardening or gathering and processing of forest resources are certainly possible.

One major constraint on the traditional Hawaiian use of this area would have been the absence of a perennial water source. The vicinity of the present project area would not have lent itself to irrigation or ponded field development. Another major constraint on the development of an archaeological record in the vicinity of the present project area is the general absence of rock. The silty clay and silty clay loam soils of the vicinity are almost stone free and any traditional Hawaiian constructions likely to endure in this environment would have to have been constructed of rock imported from some distance away.

While clearly most of the infrastructure supporting historic agriculture lies well seaward of the present project area, during the later historic period the upper elevations of Kōloa became important collection areas of irrigation water. It is possible that historic ditches, flumes, pipelines, and other features related to collection of irrigation water exist in the vicinity of the current project area. Ranching may have also left physical remains within the current project area. Barbed wire fences, wooden or stacked stone enclosures, water troughs, and historic habitation deposits, including structure foundations and refuse dumps, could potentially be found within the project area vicinity.

IV. SURVEY RESULTS

The survey of the project area was accomplished by Cultural Surveys Hawai`i archaeologists David Shideler, M.A. and Jesse Yorck, B.A. under the overall supervision of Hallett H. Hammatt, Ph.D. Field work consisted of a pedestrian ground survey, and photography of proposed well sites in the project area. The field work for this project was conducted in one working day, November 13th , 2002 .

The survey was carried out on areas including: the three well sites, existing unimproved access roads, an access alignment connecting well location 2 to existing access roads, and a proposed pipeline/ water course from well location 2 down to Kaumuali`i Highway (see photo appendix). Ground visibility was generally good. The pedestrian inventory of the project area was done at 100%.

No historic or indigenous sites or artifacts were encountered during the survey and none are believed to exist in the area of likely impact. Any indigenous activity that could have been observed probably would have been destroyed during the years when much of Kōloa was used for sugar cane cultivation. Interestingly, no infrastructure related to this historic agricultural period were encountered during the inventory survey other than the unimproved access roads and the Pīwai Reservoir.

V. SIGNIFICANCE AND RECOMMENDATIONS

A. Significance

No archaeological sites were identified in the project area or vicinity. The Pīwai Reservoir was not given a State Site Number because: 1) it is not clear it is more than fifty years old (although it pre-dates 1963), 2) because it is not particularly early or particularly unique but rather is one of several seemingly similar small reservoirs in the immediate vicinity (including Aepo, Aepoalua, Aepoakolu, Huinawai, Loko, Mauka, `Ōmao, Pia Mill, Pinau, and Pu`u o Hewa reservoirs) and 3) because of the general absence of associated constructed features.

B. Recommendations

No further work is recommended for the three proposed well sites, adjoining roads; or the proposed pipeline/ water course route down to Kaumuali`i Highway. Intensive agriculture associated with both sugar cane cultivation and the establishment of a macadamia nut farm appears to have greatly impacted the area.

Road construction and grading are expected to have "no effect" on cultural or historical properties. As always, if in the unlikely event that any human remains or other significant subsurface deposits are encountered during the course of development activities all work in the immediate area should stop and the State Historic Preservation Division should be promptly notified.

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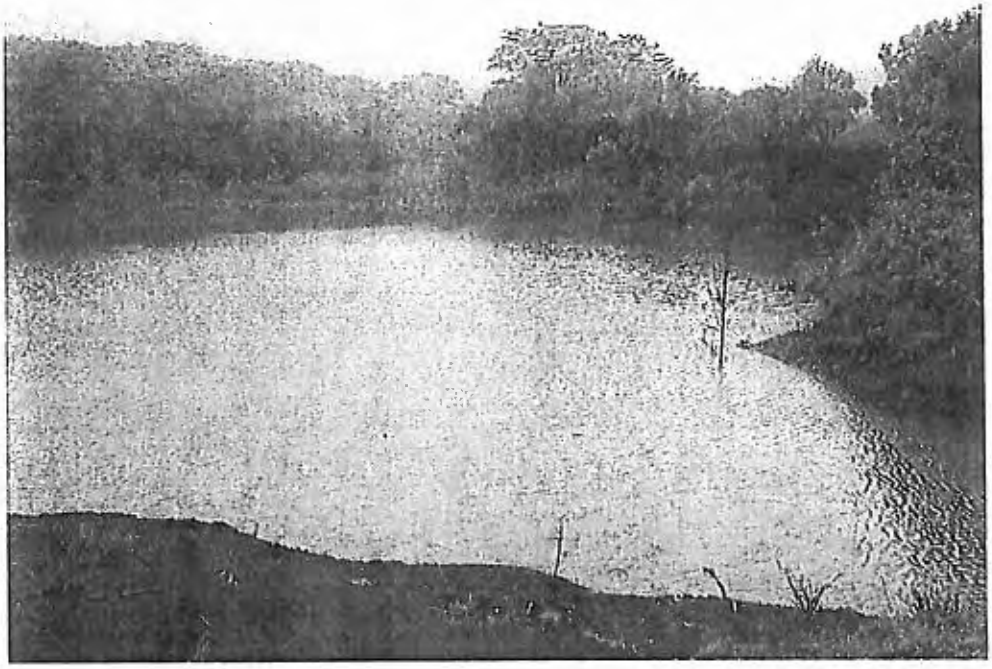
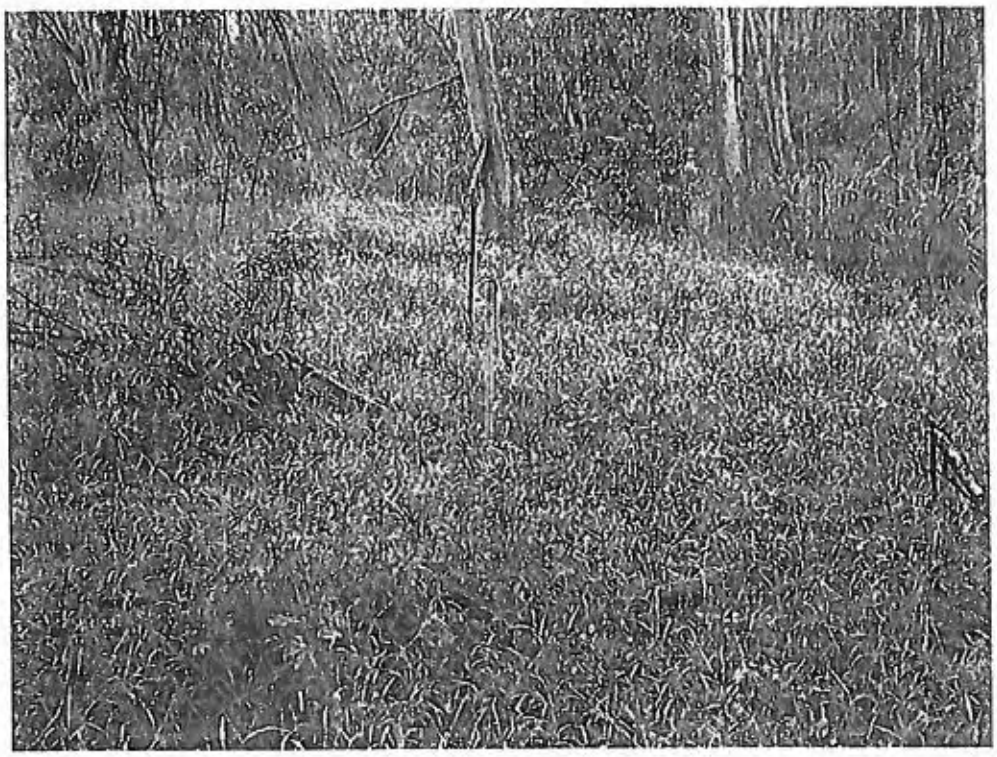
VII. PHOTO APPENDIX



General View of Reservoir



Location of Proposed Well 1, View to NW

Location of Proposed Well 2, View to NW

Location of Proposed Well 3, View to NW

APPENDIX B

STATE HISTORIC PRESERVATION DIVISION REVIEW

DECEMBER 22, 2006

LINDA LINGLE
GOVERNOR OF HAWAII

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

ROBERT K. MASUDA
DEPUTY DIRECTOR - LAND

DEAN NAKANO
ACTING 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

December 22, 2006

Lynn Malinger
Fukunaga & Associates,Inc.
1388 Kapioloani Blvd, 2nd Floor
Honolulu, Hawaii 96814

LOG NO: 2006.4299
DOC NO: 0612NM10
Archaeology

Dear Ms. Malinger:

SUBJECT: Chapter 6E-42 Historic Preservation Review –6.5 Million Gallon Omao Water Storage Tank Construction (County/Department of Water)
Omao, Koloa, Kauai
TMK: (4) 2-5-001: 002

The aforementioned project is for a new water tank.

We believe that "**no historic properties will be affected**," because:

- ☒ Intensive cultivation has altered the land
- ☐ Residential development/urbanization has altered the land
- ☐ Previous grubbing/grading has altered the land
- ☒ An accepted archaeological inventory survey (AIS) found no historic properties
- ☐ SHPD previously reviewed this project and mitigation has been completed
- ☒ Other: Yorck, Shideler and Hammatt, *Archaeological Inventory Survey of Three Proposed Well Sites and Appurtenances in the Vicinity of Piwai reservoir, Koloa Ahupuaa, District of Kona, Island Of Kauai. CSH, 2002. No sites. Approved (Log No 31315/Doc No 0212NM10).*

In the event that historic resources, including human skeletal remains, are identified during routine construction activities, all work needs to cease in the immediate vicinity of the find, the find needs to be protected from additional disturbance, and the State Historic Preservation Division, Kauai Section, needs to be contacted immediately at (808) 742-7033.

Aloha,

Melanie Chinen, Administrator
State Historic Preservation Division

NM:gvf

APPENDIX C

PRE-CONSULTATION LETTERS AND RESPONSES

INDEX TO PRE-CONSULTATION LETTERS

Review Agency/Organization	Response provided
Kauai County Department of Public Works	☑
Kauai County Housing Agency	☑
Kauai County Planning Department	
Department of Hawaiian Home Lands	☑
State Department of Agriculture	
State Department of Business, Economic Development & Tourism	
DLNR Commission on Water Resource Management	☑
DLNR Division of Aquatic Resources	
DLNR Division of Forestry and Wildlife	☑
DLNR Engineering Division	
DLNR Land Division	
DLNR Land – Kauai District Land Office	
DLNR Historic Preservation Division, Kauai Office	☑
DLNR Na Ala Hele Trails	
DoH Clean Water Branch	☑
DoH Environmental Planning Office	
DoH Office of Environmental Quality Control	
DoH Safe Drinking Water Branch	☑
DoH Solid and Hazardous Waste Branch	
Office of Hawaiian Affairs	
A&B Properties, Inc.	☑
Hawaiian Telecom	☑
Kauai Island Utility Cooperative	
Kukuiula Development Company, LLC	☑

Review Agency/Organization	Response provided
Ka Leo O Kauai	
Kauai Office of Community Assistance	
Koloa Neighborhood Center	
Kauai Planning and Action Alliance	
Omao Road Community	☑
UH Manoa Water Resource Research Center	
UH Manoa Environmental Center	
USDA Natural Resource Conservation Service	
U.S. Army Corps of Engineers Pacific Ocean Division	
U.S. Fish and Wildlife Service	

1388 KAPIOLANI BLVD. / 2ND FLOOR / HONOLULU, HI 96814 / PH. (808) 944-1821 / FAX (808) 946-9339 / office@fainc.org / www.fainc.org

September 18, 2006

Mr. Donald M. Fujimoto, County Engineer
Kauai County Department of Public Works
4444 Rice Street
Lihue, HI 96766

SUBJECT: Pre-Assessment Consultation for Draft Environmental Assessment
0.5 Million Gallon Omao Water Storage Tank Construction

Dear Mr. Fujimoto:

We are presently preparing the Draft Environmental Assessment for the Omao Water Storage Tank project for the County of Kauai Department of Water (DOW). The DOW proposes to construct a 0.5 million gallon Omao water storage tank to enhance storage in the Lawai-Omao Water System. The project site, identified as TMK: 2-5-1:002, is approximately one mile north of Omao, east of the Lihue-Koloa Forest Reserve, and mountain side of Kaunualii Highway. See the attached figure for the location.

There are currently two wells and a 0.1 million gallon water storage tank being constructed by a private developer in the vicinity of this Omao water storage tank project. This draft environment assessment covers only the 0.5 million gallon Omao water storage tank proposed for the site by the County DOW. The project site is classified as "Agricultural" by the State Land Use Commission and Kauai County General Plan. Development of the water tank will involve installing a 70-foot diameter and 20-foot high concrete water reservoir and 16-inch piping.

Please provide us with any comments you may have regarding this project. Your early response would be greatly appreciated.

Please call us at (808) 944-1821 if you have any questions.

Sincerely,
FUKUNAGA & ASSOCIATES, INC.

Lynn Malinger

Lynn Malinger
Attachment

RSF/LKM/lm

FUKUNAGA & ASSOCIATES, INC.

BRYAN J. BAPTISTE
MAYOR

GARY K. HEU
ADMINISTRATIVE ASSISTANT

DONALD M. FUJIMOTO
COUNTY ENGINEER
TELEPHONE 241-6600

DEPUTY COUNTY ENGINEER
TELEPHONE 241-6600

AN EQUAL OPPORTUNITY EMPLOYER
COUNTY OF KAUA'I
DEPARTMENT OF PUBLIC WORKS
4444 RICE STREET
MO'IKEHA BUILDING, SUITE 275
LIHU'E, KAUA'I, HAWAI'I 96766-1340

October 2, 2006

Fukunaga & Associates, Inc.
1388 Kapiolani Blvd
Honolulu, HI 96814
ATTENTION: MS. LYNN MALINGER

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT- 0.5 MG 'ŌMA'O WATER STORAGE TANK CONSTRUCTION TMK: 2-5-1-002 PW 9.06.115

Dear Ms. Malinger,

We have reviewed the subject project and location map forwarded by your letter dated September 18, 2006. We offer the following comments:

- We believe the construction activities of the new water storage tank will required Best Management Practices (BMPs) to be incorporated with your grading plans. BMPs shall be employed at all times to the maximum extent practicable to prevent damage by sedimentation, erosion or dust to streams, watercourses, natural areas and the property of others.
- A grading permit may be required for the subject project and for its borrow site. Grading plans will need to be submitted for our review and approval.

Should you have any questions, please call me at (808)241-6498.

Very truly yours,

Wallace Kudo

Wallace Kudo, P.E.
Chief, Engineering Division

CONCUR:

DONALD M. FUJIMOTO, P.E.
County Engineer

WK
cc Design and Permitting

D:WALLACE KUDO\Fukunaga Associates Inc RE Pre-Assessment Consultation for Draft Environmental Assessment o 5 MG 'Oma'o Water STorage Tank TMK 2-5-1-002 PW 9.06.115

1388 KAPIOLANI BLVD. / 2ND FLOOR / HONOLULU, HI 96814 / PH. (808) 944-1821 / FAX (808) 946-9339 / office@lainc.org / www.lainc.org

September 18, 2006

Kauai County Housing Agency
Pi'ikoi Building
4444 Rice Street, Suite 330
Lihue, HI 96766

SUBJECT: Pre-Assessment Consultation for Draft Environmental Assessment
0.5 Million Gallon Omao Water Storage Tank Construction

We are presently preparing the Draft Environmental Assessment for the Omao Water Storage Tank project for the County of Kauai Department of Water (DOW). The DOW proposes to construct a 0.5 million gallon Omao water storage tank to enhance storage in the Lawai-Omao Water System. The project site, identified as TMK: 2-5-1:002, is approximately one mile north of Omao, east of the Lihue-Koloa Forest Reserve, and mountain side of Kaumualii Highway. See the attached figure for the location.

There are currently two wells and a 0.1 million gallon water storage tank being constructed by a private developer in the vicinity of this Omao water storage tank project. This draft environment assessment covers only the 0.5 million gallon Omao water storage tank proposed for the site by the County DOW. The project site is classified as "Agricultural" by the State Land Use Commission and Kauai County General Plan. Development of the water tank will involve installing a 70-foot diameter and 20-foot high concrete water reservoir and 16-inch piping.

Please provide us with any comments you may have regarding this project. Your early response would be greatly appreciated.

Please call us at (808) 944-1821 if you have any questions.

Sincerely,
FUKUNAGA & ASSOCIATES, INC.

Lynn Malinger

Lynn Malinger
Attachment

RSF/LKM/tm

FUKUNAGA & ASSOCIATES, INC.

Bryan J. Baptiste
Mayor

Gary K. Heu
Administrative Assistant

OFFICES OF COMMUNITY ASSISTANCE
KAUAI COUNTY HOUSING AGENCY

Bernard P. Carvalho Jr.
Director

Kenneth N. Rainforth
Executive on Housing

September 21, 2006

Lynn Malinger
Fukunaga & Associates, Inc.
1388 Kapi'olani Blvd., 2nd Floor
Honolulu HI 96814

Subject: Pre-Assessment Consultation for Draft Environmental Assessment
0.5 Million Gallon Omao Water Storage Tank Construction

Dear Lynn:

In response to your letter of September 18, 2006, the Kaua'i County Housing Agency supports the proposed new Omao Water Tank. The new tank will enhance the water infrastructure for the neighborhood and enable the community to increase the number of dwelling units.

Very truly yours,

Kenneth N. Rainforth
Executive on Housing

KNR/sk

Development Section (808) 241 4444 FAX (808) 241 4495
TDD (808) 241 4411

Pi'ikoi Building 4444 Rice Street Suite 330
Lihue Hawaii 96766

Section 8 (HUD) (808) 241 4440 FAX (808) 241 4496

1388 KAPIOLANI BLVD. / 2ND FLOOR / HONOLULU, HI 96814 / PH. (808) 944-1821 / FAX (808) 946-9339 / office@fainc.org / www.fainc.org

September 18, 2006

Kauai County Planning Department
4444 Rice Street
Lihue, HI 96766

SUBJECT: Pre-Assessment Consultation for Draft Environmental Assessment
0.5 Million Gallon Omao Water Storage Tank Construction

We are presently preparing the Draft Environmental Assessment for the Omao Water Storage Tank project for the County of Kauai Department of Water (DOW). The DOW proposes to construct a 0.5 million gallon Omao water storage tank to enhance storage in the Lawai-Omao Water System. The project site, identified as TMK: 2-5-1:002, is approximately one mile north of Omao, east of the Lihue-Koloa Forest Reserve, and mountain side of Kaunualii Highway. See the attached figure for the location.

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Please call us at (808) 944-1821 if you have any questions.

Sincerely,
FUKUNAGA & ASSOCIATES, INC.

Lynn Malinger

Lynn Malinger
Attachment

RSF/LKM/tm

1388 KAPIOLANI BLVD. / 2ND FLOOR / HONOLULU, HI 96814 / PH. (808) 944-1821 / FAX (808) 946-9339 / office@fainc.org / www.fainc.org

September 18, 2006

Mr. Micah Kane, Chairman
Department of Hawaiian Home Lands
P.O. Box 1879
Honolulu, HI 96805

SUBJECT: Pre-Assessment Consultation for Draft Environmental Assessment
0.5 Million Gallon Omao Water Storage Tank Construction

Dear Mr. Kane:

We are presently preparing the Draft Environmental Assessment for the Omao Water Storage Tank project for the County of Kauai Department of Water (DOW). The DOW proposes to construct a 0.5 million gallon Omao water storage tank to enhance storage in the Lawai-Omao Water System. The project site, identified as TMK: 2-5-1:002, is approximately one mile north of Omao, east of the Lihue-Koloa Forest Reserve, and mountain side of Kaunualii Highway. See the attached figure for the location.

There are currently two wells and a 0.1 million gallon water storage tank being constructed by a private developer in the vicinity of this Omao water storage tank project. This draft environment assessment covers only the 0.5 million gallon Omao water storage tank proposed for the site by the County DOW. The project site is classified as "Agricultural" by the State Land Use Commission and Kauai County General Plan. Development of the water tank will involve installing a 70-foot diameter and 20-foot high concrete water reservoir and 16-inch piping.

Please provide us with any comments you may have regarding this project. Your early response would be greatly appreciated.

Please call us at (808) 944-1821 if you have any questions.

Sincerely,
FUKUNAGA & ASSOCIATES, INC.

Lynn Malinger

Lynn Malinger
Attachment

RSF/LKM/tm

FUKUNAGA & ASSOCIATES, INC.

LINDA LINGLE
GOVERNOR
STATE OF HAWAII

MICAH A. KANE
CHAIRMAN
HAWAIIAN HOMES COMMISSION

BEN HENDERSON
DEPUTY TO THE CHAIRMAN

KAULANA H. PARK
EXECUTIVE ASSISTANT

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
P.O. BOX 1879
HONOLULU, HAWAII 96805

September 27, 2006

Ms. Lynn Malinger
Fukunaga & Associates, Inc.
1388 Kapiolani Boulevard
Second Floor
Honolulu, Hawaii 96814

Dear Ms. Malinger:

Thank you for the opportunity provide comments in the early consultation phase of the proposed 0.5 MG Omao Water Storage Tank on Kauai in preparation of a draft environmental assessment report. The Department of Hawaiian Home Lands has no comments.

Should you have any questions, please call the Planning Office at (808) 586-3836.

Aloha and mahalo,

for Micah A. Kane, Chairman
Hawaiian Homes Commission

1388 KAPIOLANI BLVD. / 2ND FLOOR / HONOLULU, HI 96814 / PH. (808) 944-1821 / FAX (808) 946-9339 / office@fainc.org / www.fainc.org

September 18, 2006

Ms. Sandra Lee Kunimoto, Chairperson
State Department of Agriculture
1428 South King Street
Honolulu, HI 96814-2512

SUBJECT: Pre-Assessment Consultation for Draft Environmental Assessment
0.5 Million Gallon Omao Water Storage Tank Construction

Dear Ms. Kunimoto:

We are presently preparing the Draft Environmental Assessment for the Omao Water Storage Tank project for the County of Kauai Department of Water (DOW). The DOW proposes to construct a 0.5 million gallon Omao water storage tank to enhance storage in the Lawai-Omao Water System. The project site, identified as TMK: 2-5-1:002, is approximately one mile north of Omao, east of the Lihue-Koloa Forest Reserve, and mountain side of Kaunualii Highway. See the attached figure for the location.

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Sincerely,
FUKUNAGA & ASSOCIATES, INC.

Lynn Malinger
Attachment

RSF/LKM/tm

1388 KAPIOLANI BLVD. / 2ND FLOOR / HONOLULU, HI 96814 / PH. (808) 944-1821 / FAX (808) 946-9339 / office@fainc.org / www.fainc.org

September 18, 2006

Mr. Theodore E. Liu, Director
Department of Business, Economic Development & Tourism
P.O. Box 2359
Honolulu, Hawaii 96804

SUBJECT: Pre-Assessment Consultation for Draft Environmental Assessment
0.5 Million Gallon Omao Water Storage Tank Construction

Dear Mr. Liu:

We are presently preparing the Draft Environmental Assessment for the Omao Water Storage Tank project for the County of Kauai Department of Water (DOW). The DOW proposes to construct a 0.5 million gallon Omao water storage tank to enhance storage in the Lawai-Omao Water System. The project site, identified as TMK: 2-5-1:002, is approximately one mile north of Omao, east of the Lihue-Koloa Forest Reserve, and mountain side of Kaunualii Highway. See the attached figure for the location.

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Please provide us with any comments you may have regarding this project. Your early response would be greatly appreciated.

Please call us at (808) 944-1821 if you have any questions.

Sincerely,
FUKUNAGA & ASSOCIATES, INC.

Lynn Malinger
Attachment

RSF/LKM/tm

1388 KAPIOLANI BLVD. / 2ND FLOOR / HONOLULU, HI 96814 / PH. (808) 944-1821 / FAX (808) 946-9339 / office@fainc.org / www.fainc.org

September 18, 2006

Ms. Lenore Nakama
DLNR Commission on Water Resource Management
1151 Punchbowl Street, Room 227
Honolulu, HI 96813

SUBJECT: Pre-Assessment Consultation for Draft Environmental Assessment
0.5 Million Gallon Omao Water Storage Tank Construction

Dear Ms. Nakama:

We are presently preparing the Draft Environmental Assessment for the Omao Water Storage Tank project for the County of Kauai Department of Water (DOW). The DOW proposes to construct a 0.5 million gallon Omao water storage tank to enhance storage in the Lawai-Omao Water System. The project site, identified as TMK: 2-5-1:002, is approximately one mile north of Omao, east of the Lihue-Koloa Forest Reserve, and mountain side of Kaunualii Highway. See the attached figure for the location.

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Please provide us with any comments you may have regarding this project. Your early response would be greatly appreciated.

Please call us at (808) 944-1821 if you have any questions.

Sincerely,
FUKUNAGA & ASSOCIATES, INC.

Lynn Malinger
Attachment

RSF/LKM/tm

FUKUNAGA & ASSOCIATES, INC.

LINDA LINGLE
GOVERNOR OF HAWAII

PETER T. YOUNG
CHAIRPERSON

MEREDITH J. CHING
JAMES A. FRAZIER
NEAL S. FUJIWARA
CHIYOME L. FUKINO, M.D.
LAWRENCE H. MIKE, M.D., J.D.
STEPHANIE A. WHALEN

DEAN A. NAKANO
ACTING DEPUTY DIRECTOR

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

September 22, 2006

REF: Omao Storage Tank.dea.dr

Ms. Lynn Malinger
Fukunaga & Associates, Inc.
1388 Kapiolani Blvd., 2nd Floor
Honolulu, HI 96814

Dear Ms. Malinger:

SUBJECT: Pre-Assessment Consultation for Draft Environmental Assessment
0.5 Million Gallon Omao Water Storage Tank Construction

FILE NO.:

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

Our comments related to water resources are checked off below.

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

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

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

Permits required by CWRM: Additional information and forms are available at *www.hawaii.gov/dlnr/cwrm/forms.htm*.

☐ 4. The proposed water supply source for the project is located in a designated ground-water management area, and a Water Use Permit is required prior to use of ground water.

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

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

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

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

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

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

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

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

☐ 13. We recommend that the report identify feasible alternative non-potable water resources, including reclaimed wastewater.

☐ OTHER:

If there are any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

W. Roy Hardy
for

DEAN A. NAKANO
Acting Deputy Director

LN:ss

1388 KAPIOLANI BLVD. / 2ND FLOOR / HONOLULU, HI 96814 / PH. (808) 944-1821 / FAX (808) 946-9339 / office@fainc.org / www.fainc.org

September 18, 2006

Mr. Dan Polhemus, Administrator
DLNR Division of Aquatic Resources
1151 Punchbowl Street, Room 330
Honolulu, HI 96813

SUBJECT: Pre-Assessment Consultation for Draft Environmental Assessment
0.5 Million Gallon Omao Water Storage Tank Construction

Dear Mr. Polhemus:

We are presently preparing the Draft Environmental Assessment for the Omao Water Storage Tank project for the County of Kauai Department of Water (DOW). The DOW proposes to construct a 0.5 million gallon Omao water storage tank to enhance storage in the Lawai-Omao Water System. The project site, identified as TMK: 2-5-1:002, is approximately one mile north of Omao, east of the Lihue-Koloa Forest Reserve, and mountain side of Kaunualii Highway. See the attached figure for the location.

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Please provide us with any comments you may have regarding this project. Your early response would be greatly appreciated.

Please call us at (808) 944-1821 if you have any questions.

Sincerely,
FUKUNAGA & ASSOCIATES, INC.

Lynn Malinger

Lynn Malinger
Attachment

RSF/LKM/tm

1388 KAPIOLANI BLVD. / 2ND FLOOR / HONOLULU, HI 96814 / PH. (808) 944-1821 / FAX (808) 946-9339 / office@fainc.org / www.fainc.org

September 18, 2006

Mr. Michael G. Buck, Administrator
DLNR Division of Forestry and Wildlife
1151 Punchbowl Street, Room 325
Honolulu, HI 96813

SUBJECT: Pre-Assessment Consultation for Draft Environmental Assessment
0.5 Million Gallon Omao Water Storage Tank Construction

Dear Mr. Buck:

We are presently preparing the Draft Environmental Assessment for the Omao Water Storage Tank project for the County of Kauai Department of Water (DOW). The DOW proposes to construct a 0.5 million gallon Omao water storage tank to enhance storage in the Lawai-Omao Water System. The project site, identified as TMK: 2-5-1:002, is approximately one mile north of Omao, east of the Lihue-Koloa Forest Reserve, and mountain side of Kaunualii Highway. See the attached figure for the location.

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Please call us at (808) 944-1821 if you have any questions.

Sincerely,
FUKUNAGA & ASSOCIATES, INC.

Lynn Malinger

Lynn Malinger
Attachment

RSF/LKM/tm

FUKUNAGA & ASSOCIATES, INC.

LINDA LINGLE
GOVERNOR OF HAWAII

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

ROBERT K. MASUDA
DEPUTY DIRECTOR-LAND

DEAN NAKANO, Acting
DEPUTY DIRECTOR FOR
THE COMMISSION ON
WATER RESOURCE MANAGEMENT

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF FORESTRY AND WILDLIFE
1151 PUNCHBOWL STREET
HONOLULU, HAWAII 96813

September 22, 2006

Ms. Lynn Malinger
Fukunaga & Associates, Inc.
1388 Kapiolani Boulevard, 2nd Floor
Honolulu, Hawaii 967814

Dear Ms. Malinger:

Subject: Pre-Assessment Consultation for Draft Environmental Assessment 0.5 Million-Gallon Omao Water Storage Tank Construction. TMK: 2-5-1:002.

We appreciate the opportunity to comment on your subject request. DOFAW does not have any objections to your proposed project. Thank you for allowing us to review your pre-consultation notice for this project.

Sincerely yours,

Paul J. Conry
Administrator
For

C: Kauai DOFAW

1388 KAPIOLANI BLVD. / 2ND FLOOR / HONOLULU, HI 96814 / PH. (808) 944-1821 / FAX (808) 946-9339 / office@fainc.org / www.fainc.org

September 18, 2006

Mr. Eric T. Hirano, Chief Engineer
DLNR Engineering Division
1151 Punchbowl Street, Room 221
Honolulu, HI 96813

SUBJECT: Pre-Assessment Consultation for Draft Environmental Assessment
0.5 Million Gallon Omao Water Storage Tank Construction

Dear Mr. Hirano:

We are presently preparing the Draft Environmental Assessment for the Omao Water Storage Tank project for the County of Kauai Department of Water (DOW). The DOW proposes to construct a 0.5 million gallon Omao water storage tank to enhance storage in the Lawai-Omao Water System. The project site, identified as TMK: 2-5-1:002, is approximately one mile north of Omao, east of the Lihue-Koloa Forest Reserve, and mountain side of Kaunualii Highway. See the attached figure for the location.

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Please provide us with any comments you may have regarding this project. Your early response would be greatly appreciated.

Please call us at (808) 944-1821 if you have any questions.

Sincerely,
FUKUNAGA & ASSOCIATES, INC.

Lynn Malinger
Attachment

RSF/LKM/tm

1388 KAPIOLANI BLVD. / 2ND FLOOR / HONOLULU HI 96814 / PH (808) 944-1821 / FAX (808) 946-9339 / office@fainc.org / www.fainc.org

September 18, 2006

Ms. Dierdre S. Mamiya, Administrator
DLNR Land Division
1151 Punchbowl Street, Room 220
Honolulu, HI 96813

SUBJECT: Pre-Assessment Consultation for Draft Environmental Assessment
0.5 Million Gallon Omao Water Storage Tank Construction

Dear Ms. Mamiya:

We are presently preparing the Draft Environmental Assessment for the Omao Water Storage Tank project for the County of Kauai Department of Water (DOW). The DOW proposes to construct a 0.5 million gallon Omao water storage tank to enhance storage in the Lawai-Omao Water System. The project site, identified as TMK: 2-5-1:002, is approximately one mile north of Omao, east of the Lihue-Koloa Forest Reserve, and mountain side of Kaunualii Highway. See the attached figure for the location.

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1388 KAPIOLANI BLVD. / 2ND FLOOR / HONOLULU, HI 96814 / PH. (808) 944-1821 / FAX (808) 946-9339 / office@fainc.org / www.fainc.org

September 18, 2006

Mr. Michael Lauretz
DLNR Land - Kauai District Land Office
3060 Eiwa Street, Room 306
Lihue, HI 96766

SUBJECT: Pre-Assessment Consultation for Draft Environmental Assessment
0.5 Million Gallon Omao Water Storage Tank Construction

Dear Mr. Lauretz:

We are presently preparing the Draft Environmental Assessment for the Omao Water Storage Tank project for the County of Kauai Department of Water (DOW). The DOW proposes to construct a 0.5 million gallon Omao water storage tank to enhance storage in the Lawai-Omao Water System. The project site, identified as TMK: 2-5-1:002, is approximately one mile north of Omao, east of the Lihue-Koloa Forest Reserve, and mountain side of Kaunualii Highway. See the attached figure for the location.

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Lynn Malinger

Lynn Malinger
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FUKUNAGA & ASSOCIATES, INC.

1388 KAPIOLANI BLVD. / 2ND FLOOR / HONOLULU, HI 96814 / PH. (808) 944-1821 / FAX (808) 946-9339 / office@fainc.org / www.fainc.org

September 18, 2006

Ms. Nancy McMahon
DLNR Historic Preservation Division, Kauai Office
5532 Tapa Street
Koloa, HI 96756

SUBJECT: Pre-Assessment Consultation for Draft Environmental Assessment
0.5 Million Gallon Omao Water Storage Tank Construction

Dear Ms. McMahon:

We are presently preparing the Draft Environmental Assessment for the Omao Water Storage Tank project for the County of Kauai Department of Water (DOW). The DOW proposes to construct a 0.5 million gallon Omao water storage tank to enhance storage in the Lawai-Omao Water System. The project site, identified as TMK: 2-5-1:002, is approximately one mile north of Omao, east of the Lihue-Koloa Forest Reserve, and mountain side of Kaumualii Highway. See the attached figure for the location.

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FUKUNAGA & ASSOCIATES, INC.

Lynn Malinger
Attachment

RSF/LKM/tm

FUKUNAGA & ASSOCIATES, INC.

LINDA LINGLE
GOVERNOR OF HAWAII

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

ROBERT K. MASUDA
DEPUTY DIRECTOR - LAND

DEAN NAKANO
ACTING 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

October 2, 2006

Lynn Malinger
Fukunaga & Associates, Inc.
1388 Kapioloani Blvd, 2nd Floor
Honolulu, Hawaii 96814

LOG NO: 2006.3208
DOC NO: 0610NM01
Archaeology

Dear Ms. Malinger:

SUBJECT: Chapter 6E-42 Historic Preservation Review – Pre-Assessment Consultation on Draft EA for 6.5 Million Gallon Omao Water Storage Tank Construction
Omao Ahupuaa, Koloa District, Kauai
TMK: (4) 2-5-001: 002

The aforementioned project is for a new water tank.

We believe that **"no historic properties will be affected,"** because:
- ☒ Intensive cultivation has altered the land
- ☐ Residential development/urbanization has altered the land
- ☐ Previous grubbing/grading has altered the land
- ☒ An accepted archaeological inventory survey (AIS) found no historic properties
- ☐ SHPD previously reviewed this project and mitigation has been completed
- ☐ Other:

In the event that historic resources, including human skeletal remains, are identified during routine construction activities, all work needs to cease in the immediate vicinity of the find, the find needs to be protected from additional disturbance, and the State Historic Preservation Division, Kauai Section, needs to be contacted immediately at (808) 742-7033.

Aloha,

Melanie Chinen, Administrator
State Historic Preservation Division

NM:jen

1388 KAPIOLANI BLVD. / 2ND FLOOR / HONOLULU, HI 96814 / PH. (808) 944-1821 / FAX (808) 946-9339 / office@fainc.org / www.fainc.org

September 18, 2006

Mr. Craig Koga
DLNR Na Ala Hele Trails
3060 Eiwa Street, Room 306
Lihue, HI 96766-1875

SUBJECT: Pre-Assessment Consultation for Draft Environmental Assessment
0.5 Million Gallon Omao Water Storage Tank Construction

Dear Mr. Koga:

We are presently preparing the Draft Environmental Assessment for the Omao Water Storage Tank project for the County of Kauai Department of Water (DOW). The DOW proposes to construct a 0.5 million gallon Omao water storage tank to enhance storage in the Lawai-Omao Water System. The project site, identified as TMK: 2-5-1:002, is approximately one mile north of Omao, east of the Lihue-Koloa Forest Reserve, and mountain side of Kaunualii Highway. See the attached figure for the location.

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Lynn Malinger
Attachment

RSF/LKM/tm

1388 KAPIOLANI BLVD. / 2ND FLOOR / HONOLULU, HI 96814 / PH. (808) 944-1821 / FAX (808) 946-9339 / office@fainc.org / www.fainc.org

September 18, 2006

Mr. Denis R. Lau, Chief
DoH Clean Water Branch
919 Ala Moana Boulevard, Room 301
Honolulu, HI 96814

SUBJECT: Pre-Assessment Consultation for Draft Environmental Assessment
0.5 Million Gallon Omao Water Storage Tank Construction

Dear Mr. Lau:

We are presently preparing the Draft Environmental Assessment for the Omao Water Storage Tank project for the County of Kauai Department of Water (DOW). The DOW proposes to construct a 0.5 million gallon Omao water storage tank to enhance storage in the Lawai-Omao Water System. The project site, identified as TMK: 2-5-1:002, is approximately one mile north of Omao, east of the Lihue-Koloa Forest Reserve, and mountain side of Kaunualii Highway. See the attached figure for the location.

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Sincerely,
FUKUNAGA & ASSOCIATES, INC.

Lynn Malinger
Attachment

RSF/LKM/tm

FUKUNAGA & ASSOCIATES, INC.

LINDA LINGLE
GOVERNOR OF HAWAII

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

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

In reply, please refer to
EHD / CWB

10013PKP.06

October 4, 2006

Ms. Lynn Malinger
Fukunaga & Associates, Inc.
1388 Kapiolani Boulevard, 2nd Floor
Honolulu, Hawaii 96814

Dear Ms. Malinger:

Subject: Pre-Assessment Consultation for Draft Environmental Assessment
0.5 Million Gallon Omao Water Storage Tank Construction

The Department of Health (DOH), Clean Water Branch (CWB), acknowledges receipt of your letter, dated September 18, 2006, and associated documents. The CWB has reviewed the limited information contained in the subject document and offers the following comments:

1. The Army Corps of Engineers should be contacted at (808) 438-9258 for this project. Pursuant to Federal Water Pollution Control Act (commonly known as the "Clean Water Act" (CWA) Paragraph 401(a)(1), a Section 401 Water Quality Certification (WQC) is required for "[a]ny applicant for Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may **result** in any discharge into the navigable waters ..." (emphasis added). The term "discharge" is defined in CWA, Subsections 502(16), 502(12), and 502(6); Title 40, Code of Federal Regulations (CFR), Section 122.2; and Hawaii Administrative Rules (HAR), Chapter 11-54.

2. In accordance with HAR, Sections 11-55-04 and 11-55-34.05, the Director of Health may require the submittal of an individual permit application or a Notice of Intent (NOI) for general permit coverage authorized under the National Pollutant Discharge Elimination System (NPDES).

   a. An application for an NPDES individual permit is to be submitted at least 180 days before the commencement of the respective activities. The NPDES application forms may also be picked up at our office or downloaded from our website at http://www.hawaii.gov/health/environmental/water/cleanwater/forms/indiv-index.html.

   b. An NOI to be covered by an NPDES general permit is to be submitted at least 30 days before the commencement of the respective activity. A separate NOI is needed for coverage under each NPDES general permit. The NOI forms may be picked up at our office or downloaded from our website at: http://www.hawaii.gov/health/environmental/water/cleanwater/forms/genl-index.html.

      i. Storm water associated with industrial activities, as defined in Title 40, CFR, Sections 122.26(b)(14)(i) through 122.26(b)(14)(ix) and 122.26(b)(14)(xi). [HAR, Chapter 11-55, Appendix B]

      ii. Construction activities, including clearing, grading, and excavation, that result in the disturbance of equal to or greater than one (1) acre of total land area. The total land area includes a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale. **An NPDES permit is required before the commencement of the construction activities.** [HAR, Chapter 11-55, Appendix C]

      iii. Discharges of treated effluent from leaking underground storage tank remedial activities. [HAR, Chapter 11-55, Appendix D]

      iv. Discharges of once through cooling water less than one (1) million gallons per day. [HAR, Chapter 11-55, Appendix E]

      v. Discharges of hydrotesting water. [HAR, Chapter 11-55, Appendix F]

      vi. Discharges of construction dewatering effluent. [HAR, Chapter 11-55, Appendix G]

      vii. Discharges of treated effluent from petroleum bulk stations and terminals. [HAR, Chapter 11-55, Appendix H]

      viii. Discharges of treated effluent from well drilling activities. [HAR, Chapter 11-55, Appendix I]

      ix. Discharges of treated effluent from recycled water distribution systems. [HAR, Chapter 11-55, Appendix J]

      x. Discharges of storm water from a small municipal separate storm sewer system. [HAR, Chapter 11-55, Appendix K]

      xi. Discharges of circulation water from decorative ponds or tanks. [HAR, Chapter 11-55, Appendix L]

3. In accordance with HAR, Section 11-55-38, the applicant for an NPDES permit is required to either submit a copy of the new NOI or NPDES permit application to the State Department of Land and Natural Resources, State Historic Preservation Division (SHPD), or demonstrate to the satisfaction of the DOH that the project, activity, or site covered by the NOI or application has been or is being reviewed by SHPD. If applicable, please submit a copy of the request for review by SHPD or SHPD's determination letter for the project.

4. Any discharges related to project construction or operation activities, with or without a Section 401 WQC or NPDES permit coverage, shall comply with the applicable State Water Quality Standards as specified in HAR, Chapter 11-54.

The Hawaii Revised Statutes, Subsection 342D-50(a), requires that "[n]o person, including any public body, shall discharge any water pollutants into state waters, or cause or allow any water pollutant to enter state waters except in compliance with this chapter, rules adopted pursuant to this Chapter, or a permit or variance issued by the director."

If you have any questions, please contact Mr. Alec Wong, Supervisor of the Engineering Section, CWB, at 586-4309.

Sincerely,

DENIS R. LAU, P.E., CHIEF
Clean Water Branch

KP:np

1388 KAPIOLANI BLVD. / 2ND FLOOR / HONOLULU, HI 96814 / PH. (808) 944-1821 / FAX (808) 946-9339 / office@fainc.org / www.fainc.org

September 18, 2006

Ms. June F Harrigan, Manager
DoH Environmental Planning Office
919 Ala Moana Boulevard, Room 312
Honolulu, HI 96814

SUBJECT: Pre-Assessment Consultation for Draft Environmental Assessment
0.5 Million Gallon Omao Water Storage Tank Construction

Dear Ms. Harrigan:

We are presently preparing the Draft Environmental Assessment for the Omao Water Storage Tank project for the County of Kauai Department of Water (DOW). The DOW proposes to construct a 0.5 million gallon Omao water storage tank to enhance storage in the Lawai-Omao Water System. The project site, identified as TMK: 2-5-1:002, is approximately one mile north of Omao, east of the Lihue-Koloa Forest Reserve, and mountain side of Kaunualii Highway. See the attached figure for the location.

There are currently two wells and a 0.1 million gallon water storage tank being constructed by a private developer in the vicinity of this Omao water storage tank project. This draft environment assessment covers only the 0.5 million gallon Omao water storage tank proposed for the site by the County DOW. The project site is classified as "Agricultural" by the State Land Use Commission and Kauai County General Plan. Development of the water tank will involve installing a 70-foot diameter and 20-foot high concrete water reservoir and 16-inch piping.

Please provide us with any comments you may have regarding this project. Your early response would be greatly appreciated.

Please call us at (808) 944-1821 if you have any questions.

Sincerely,
FUKUNAGA & ASSOCIATES, INC.

Lynn Malinger
Attachment

RSF/LKM/tm

1388 KAPIOLANI BLVD. / 2ND FLOOR / HONOLULU, HI 96814 / PH. (808) 944-1821 / FAX (808) 946-9339 / office@fainc.org / www.fainc.org

September 18, 2006

Ms. Genevieve Salmonson, Director
DoH Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, HI 96813

SUBJECT: Pre-Assessment Consultation for Draft Environmental Assessment
0.5 Million Gallon Omao Water Storage Tank Construction

Dear Ms. Salmonson:

We are presently preparing the Draft Environmental Assessment for the Omao Water Storage Tank project for the County of Kauai Department of Water (DOW). The DOW proposes to construct a 0.5 million gallon Omao water storage tank to enhance storage in the Lawai-Omao Water System. The project site, identified as TMK: 2-5-1:002, is approximately one mile north of Omao, east of the Lihue-Koloa Forest Reserve, and mountain side of Kaunualii Highway. See the attached figure for the location.

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Please provide us with any comments you may have regarding this project. Your early response would be greatly appreciated.

Please call us at (808) 944-1821 if you have any questions.

Sincerely,
FUKUNAGA & ASSOCIATES, INC.

Lynn Malinger

Lynn Malinger
Attachment

RSF/LKM/tm

1388 KAPIOLANI BLVD. / 2ND FLOOR / HONOLULU, HI 96814 / PH. (808) 944-1821 / FAX (808) 946-9339 / office@fainc.org / www.fainc.org

September 18, 2006

DoH Safe Drinking Water Branch
919 Ala Moana Boulevard, Room 308
Honolulu, HI 96814

SUBJECT: Pre-Assessment Consultation for Draft Environmental Assessment
0.5 Million Gallon Omao Water Storage Tank Construction

We are presently preparing the Draft Environmental Assessment for the Omao Water Storage Tank project for the County of Kauai Department of Water (DOW). The DOW proposes to construct a 0.5 million gallon Omao water storage tank to enhance storage in the Lawai-Omao Water System. The project site, identified as TMK: 2-5-1:002, is approximately one mile north of Omao, east of the Lihue-Koloa Forest Reserve, and mountain side of Kaunualii Highway. See the attached figure for the location.

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Please provide us with any comments you may have regarding this project. Your early response would be greatly appreciated.

Please call us at (808) 944-1821 if you have any questions.

Sincerely,
FUKUNAGA & ASSOCIATES, INC.

Lynn Malinger

Lynn Malinger
Attachment

RSF/LKM/tm

FUKUNAGA & ASSOCIATES, INC.

LINDA LINGLE
GOVERNOR OF HAWAII

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

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

In reply, please refer to
EMD/SDWB

September 25, 2006

Ms. Lynn Malinger
Fukunaga & Associates, Inc.
1388 Kapiolani Boulevard, 2nd Floor
Honolulu, Hawaii 96814

Dear Ms. ~~Malinger~~ LYNN:

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT: 0.5 MG OMAO WATER STORAGE TANK (LETTER DATED SEPTEMBER 18, 2006)

We are in receipt of your above referenced request and offer the following comment. Please make sure that any physical relationship between the County's proposed tank and the private developer's system is clearly identified, i.e. emergency connection only, no connection - private developer will create his own regulated public water system separate from Lawai-Omao system, future turnover of private developer system to KDOW, etc.

We have no further comments at this time and look forward to reviewing the draft environmental assessment. The Draft EA should be mailed to the Environmental Planning Office (EPO) at 919 Ala Moana Boulevard, Rm 312, Honolulu, Hawaii 96814, Attention: Mr. Jiacai Liu. If you have any questions regarding this response, please call Michael Miyahira at 586-4258.

Sincerely,

STUART YAMADA, P.E., CHIEF
Safe Drinking Water Branch
Environmental Management Division

MM:slm

1388 KAPIOLANI BLVD. / 2ND FLOOR / HONOLULU, HI 96814 / PH. (808) 944-1821 / FAX (808) 946-9339 / office@fainc.org / www.fainc.org

September 18, 2006

Mr. Steven Chang
DoH Solid and Hazardous Waste Branch
919 Ala Moana Boulevard, Room 212
Honolulu, HI 96814

SUBJECT: Pre-Assessment Consultation for Draft Environmental Assessment
0.5 Million Gallon Omao Water Storage Tank Construction

Dear Mr. Chang:

We are presently preparing the Draft Environmental Assessment for the Omao Water Storage Tank project for the County of Kauai Department of Water (DOW). The DOW proposes to construct a 0.5 million gallon Omao water storage tank to enhance storage in the Lawai-Omao Water System. The project site, identified as TMK: 2-5-1:002, is approximately one mile north of Omao, east of the Lihue-Koloa Forest Reserve, and mountain side of Kaunualii Highway. See the attached figure for the location.

There are currently two wells and a 0.1 million gallon water storage tank being constructed by a private developer in the vicinity of this Omao water storage tank project. This draft environment assessment covers only the 0.5 million gallon Omao water storage tank proposed for the site by the County DOW. The project site is classified as "Agricultural" by the State Land Use Commission and Kauai County General Plan. Development of the water tank will involve installing a 70-foot diameter and 20-foot high concrete water reservoir and 16-inch piping.

Please provide us with any comments you may have regarding this project. Your early response would be greatly appreciated.

Please call us at (808) 944-1821 if you have any questions.

Sincerely,
FUKUNAGA & ASSOCIATES, INC.

Lynn Malinger
Attachment

RSF/LKM/tm

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September 18, 2006

Office of Hawaiian Affairs
3100 Kuhio Highway, Suite C4
Lihue, HI 96766

SUBJECT: Pre-Assessment Consultation for Draft Environmental Assessment
0.5 Million Gallon Omao Water Storage Tank Construction

We are presently preparing the Draft Environmental Assessment for the Omao Water Storage Tank project for the County of Kauai Department of Water (DOW). The DOW proposes to construct a 0.5 million gallon Omao water storage tank to enhance storage in the Lawai-Omao Water System. The project site, identified as TMK: 2-5-1:002, is approximately one mile north of Omao, east of the Lihue-Koloa Forest Reserve, and mountain side of Kaumualii Highway. See the attached figure for the location.

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Please provide us with any comments you may have regarding this project. Your early response would be greatly appreciated.

Please call us at (808) 944-1821 if you have any questions.

Sincerely,
FUKUNAGA & ASSOCIATES, INC.

Lynn Malinger

Lynn Malinger
Attachment

RSF/LKM/tm

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September 29, 2006

Mr. Tom H. Shigemoto, Vice President
A&B Properties, Inc.
P.O. Box 430
Koloa, HI 96756

SUBJECT: Pre-Assessment Consultation for Draft Environmental Assessment
0.5 Million Gallon Omao Water Storage Tank Construction

Dear Mr. Shigemoto:

We are presently preparing the Draft Environmental Assessment for the Omao Water Storage Tank project for the County of Kauai Department of Water (DOW). The DOW proposes to construct a 0.5 million gallon Omao water storage tank to enhance storage in the Lawai-Omao Water System. The project site, identified as TMK: 2-5-1:002, is approximately one mile north of Omao, east of the Lihue-Koloa Forest Reserve, and mountain side of Kaumualii Highway. See the attached figure for the location.

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Please provide us with any comments you may have regarding this project. Your early response would be greatly appreciated.

Please call us at (808) 944-1821 if you have any questions.

Sincerely,
FUKUNAGA & ASSOCIATES, INC.

Lynn Malinger

Lynn Malinger
Attachment

RSF/LKM/tm

FUKUNAGA & ASSOCIATES, INC.

A&B PROPERTIES, INC.
A SUBSIDIARY OF ALEXANDER & BALDWIN INC

822 Bishop Street
Honolulu, Hawaii 96813
P.O. Box 3440
Honolulu, Hawaii 96801-3440
www.abprop.com
Tel (808) 525-6611
Fax (808) 525-8447

October 13, 2006

Ms. Lynn Malinger
Fukunaga & Associates, Inc.
1388 Kapiolani Blvd. 2nd Floor
Honolulu, HI 96814

Dear Ms. Malinger:

Subject: Pre-Assessment Consultation for Draft Environmental Assessment for 0.5 MG Omao Water Storage Tank

As the landowner of the subject property on which the proposed water storage tank is to be located, we appreciate the opportunity to comment on the proposed project.

Please be advised that we are currently undertaking preliminary subdivision planning for this area (TMK 2-5-01: 2 and 8). Also, as noted in your letter of September 29, 2006, there is currently a 0.1 mg tank and two potable water wells being constructed in the vicinity of this proposed project by Kukui'ula Development Company (Hawaii), LLC, with the intent of ultimate dedication to the County of Kauai. In view of these circumstances, we would encourage the consideration of a service elevation for the proposed 0.5 mg tank which could also serve our planned subdivision. Please note that we have had previous discussions with the County Department of Water regarding this matter.

Thank you for the opportunity to comment and we look forward to receiving the DEA for review.

Sincerely,

Tom H. Shigemoto
Vice President

cc: Mr. Lindsay Crawford, Kukui'ula Development Company (Hawaii), LLC
Mr. Clyde Kodani, Kodani & Associates, Inc.

1388 KAPIOLANI BLVD. / 2ND FLOOR / HONOLULU, HI 96814 / PH. (808) 944-1821 / FAX (808) 946-9339 / office@lainc.org / www.lainc.org

September 18, 2006

Mr. Jimmy Sone
Hawaiian Telecom
4040 Halau Street
Lihue, HI 96766

SUBJECT: Pre-Assessment Consultation for Draft Environmental Assessment
0.5 Million Gallon Omao Water Storage Tank Construction

Dear Mr. Sone:

We are presently preparing the Draft Environmental Assessment for the Omao Water Storage Tank project for the County of Kauai Department of Water (DOW). The DOW proposes to construct a 0.5 million gallon Omao water storage tank to enhance storage in the Lawai-Omao Water System. The project site, identified as TMK: 2-5-1:002, is approximately one mile north of Omao, east of the Lihue-Koloa Forest Reserve, and mountain side of Kaunualii Highway. See the attached figure for the location.

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Please provide us with any comments you may have regarding this project. Your early response would be greatly appreciated.

Please call us at (808) 944-1821 if you have any questions.

Sincerely,
FUKUNAGA & ASSOCIATES, INC.

Lynn Malinger
Attachment

RSF/LKM/tm

MEMORANDUM

TO: FILES

FROM: Lynn Malinger

DATE: September 21, 2006

RE: Pre-Assessment Consultation for Draft EA
0.5 MG Omao Water Storage Tank Construction

Paul Togeoka, Hawaiian Telcom Kauai Engineer, left a message stating that they have no comment. Telephone Number: 241-5054

1388 KAPIOLANI BLVD. / 2ND FLOOR / HONOLULU, HI 96814 / PH. (808) 944-1821 / FAX (808) 946-9339 / office@fainc.org / www.fainc.org

September 18, 2006

Mr. Ferdinand Pascual, Distribution Planning Coordinator
Kaua'i Island Utility Cooperative
4463 Pahe'e Street, Suite 1
Lihue, Kauai HI 96766-2032

SUBJECT: Pre-Assessment Consultation for Draft Environmental Assessment
0.5 Million Gallon Omao Water Storage Tank Construction

Dear Mr. Pascual:

We are presently preparing the Draft Environmental Assessment for the Omao Water Storage Tank project for the County of Kauai Department of Water (DOW). The DOW proposes to construct a 0.5 million gallon Omao water storage tank to enhance storage in the Lawai-Omao Water System. The project site, identified as TMK: 2-5-1:002, is approximately one mile north of Omao, east of the Lihue-Koloa Forest Reserve, and mountain side of Kaunualii Highway. See the attached figure for the location.

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Please provide us with any comments you may have regarding this project. Your early response would be greatly appreciated.

Please call us at (808) 944-1821 if you have any questions.

Sincerely,
FUKUNAGA & ASSOCIATES, INC.

Lynn Malinger

Lynn Malinger
Attachment

RSF/LKM/tm

FUKUNAGA & ASSOCIATES, INC.

1388 KAPIOLANI BLVD. / 2ND FLOOR / HONOLULU, HI 96814 / PH. (808) 944 1821 / FAX (808) 946-9339 / office@fainc.org / www.fainc.org

September 18, 2006

Kukuiula Development Company, LLC
P.O. Box 280
Koloa, HI 96756

SUBJECT: Pre-Assessment Consultation for Draft Environmental Assessment
0.5 Million Gallon Omao Water Storage Tank Construction

We are presently preparing the Draft Environmental Assessment for the Omao Water Storage Tank project for the County of Kauai Department of Water (DOW). The DOW proposes to construct a 0.5 million gallon Omao water storage tank to enhance storage in the Lawai-Omao Water System. The project site, identified as TMK: 2-5-1:002, is approximately one mile north of Omao, east of the Lihue-Koloa Forest Reserve, and mountain side of Kaumualii Highway. See the attached figure for the location.

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Please call us at (808) 944-1821 if you have any questions.

Sincerely,
FUKUNAGA & ASSOCIATES, INC.

Lynn Malinger

Lynn Malinger
Attachment

RSF/LKM/tm

FUKUNAGA & ASSOCIATES, INC.

Kukui'ula
KAUA'I'S LIVING GARDEN

October 2, 2006

Lynn Malinger
Fukunaga & Associates, Inc.
1388 Kapiolani Blvd., 2nd Floor
Honolulu, HI 96814

Re: Pre-Assessment Consultation for Draft Environment Assessment 0.5 Million Gallon Omao Water Storage Tank Construction

Dear Lynn:

We acknowledge receipt of your letter September 18, 2006 on the subject Draft EA and appreciate the opportunity to provide comments.

As the developer of the adjacent 0.1 MG tank and 16" transmission main we simply request that you coordinate your design with our proposed facilities to assure that it does not adversely impact our installations. Construction of our adjacent tank and transmission line are currently ongoing and upon completion and acceptance will be dedicated to the DOW.

We look forward to receiving the Draft EA. If you have any questions please call Lindsay Crawford at 742-6304.

Sincerely,

Lindsay Crawford
Project Manager

LC/tk

KUKUIULA DEVELOPMENT COMPANY, (HAWAII), LLC
A DMB and A&B Community P.O. Box 280, Koloa, Kaua'i, HI 96756 • Ph 808.742.6304 www.kukuiula.com

1388 KAPIOLANI BLVD. / 2ND FLOOR / HONOLULU, HI 96814 / PH. (808) 944-1821 / FAX (808) 946-9339 / office@fainc.org / www.fainc.org

September 18, 2006

Ms. Catherine Stovall
Ka Leo O Kauai
4444 Rice Street, Suite 150
Lihue, HI 96766

SUBJECT: Pre-Assessment Consultation for Draft Environmental Assessment
0.5 Million Gallon Omao Water Storage Tank Construction

Dear Ms. Stovall:

We are presently preparing the Draft Environmental Assessment for the Omao Water Storage Tank project for the County of Kauai Department of Water (DOW). The DOW proposes to construct a 0.5 million gallon Omao water storage tank to enhance storage in the Lawai-Omao Water System. The project site, identified as TMK: 2-5-1:002, is approximately one mile north of Omao, east of the Lihue-Koloa Forest Reserve, and mountain side of Kaunualii Highway. See the attached figure for the location.

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Sincerely,
FUKUNAGA & ASSOCIATES, INC.

Lynn Malinger
Attachment

RSF/LKM/tm

1388 KAPIOLANI BLVD. / 2ND FLOOR / HONOLULU, HI 96814 / PH. (808) 944-1821 / FAX (808) 946-9339 / office@fainc.org / www.fainc.org

September 25, 2006

Mr. Bernard Carlvaho, Director
Kauai Office of Community Assistance
4444 Rice Street, Suite 330
Lihue, HI 96766

SUBJECT: Pre-Assessment Consultation for Draft Environmental Assessment
0.5 Million Gallon Omao Water Storage Tank Construction

Dear Mr. Carlvaho

We are presently preparing the Draft Environmental Assessment for the Omao Water Storage Tank project for the County of Kauai Department of Water (DOW). The DOW proposes to construct a 0.5 million gallon Omao water storage tank to enhance storage in the Lawai-Omao Water System. The project site, identified as TMK: 2-5-1:002, is approximately one mile north of Omao, east of the Lihue-Koloa Forest Reserve, and mountain side of Kaunualii Highway. See the attached figure for the location.

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FUKUNAGA & ASSOCIATES, INC.

Lynn Malinger
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RSF/LKM/tm

FUKUNAGA & ASSOCIATES, INC.

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September 18, 2006

Center Manager
Koloa Neighborhood Center
3461 Weliweli Road
Koloa HI 96756

SUBJECT: Pre-Assessment Consultation for Draft Environmental Assessment
0.5 Million Gallon Omao Water Storage Tank Construction

We are presently preparing the Draft Environmental Assessment for the Omao Water Storage Tank project for the County of Kauai Department of Water (DOW). The DOW proposes to construct a 0.5 million gallon Omao water storage tank to enhance storage in the Lawai-Omao Water System. The project site, identified as TMK: 2-5-1:002, is approximately one mile north of Omao, east of the Lihue-Koloa Forest Reserve, and mountain side of Kaunualii Highway. See the attached figure for the location.

There are currently two wells and a 0.1 million gallon water storage tank being constructed by a private developer in the vicinity of this Omao water storage tank project. This draft environment assessment covers only the 0.5 million gallon Omao water storage tank proposed for the site by the County DOW. The project site is classified as "Agricultural" by the State Land Use Commission and Kauai County General Plan. Development of the water tank will involve installing a 70-foot diameter and 20-foot high concrete water reservoir and 16-inch piping.

Please provide us with any comments you may have regarding this project. Your early response would be greatly appreciated.

Please call us at (808) 944-1821 if you have any questions.

Sincerely,
FUKUNAGA & ASSOCIATES, INC.

Lynn Malinger

Lynn Malinger
Attachment

RSF/LKM/tm

1388 KAPIOLANI BLVD. / 2ND FLOOR / HONOLULU, HI 96814 / PH. (808) 944-1821 / FAX (808) 946-9339 / office@fainc.org / www.fainc.org

September 18, 2006

Kauai Planning and Action Alliance
2959 Umi Street
Lihue, HI 96766

SUBJECT: Pre-Assessment Consultation for Draft Environmental Assessment
0.5 Million Gallon Omao Water Storage Tank Construction

We are presently preparing the Draft Environmental Assessment for the Omao Water Storage Tank project for the County of Kauai Department of Water (DOW). The DOW proposes to construct a 0.5 million gallon Omao water storage tank to enhance storage in the Lawai-Omao Water System. The project site, identified as TMK: 2-5-1:002, is approximately one mile north of Omao, east of the Lihue-Koloa Forest Reserve, and mountain side of Kaunualii Highway. See the attached figure for the location.

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Please call us at (808) 944-1821 if you have any questions.

Sincerely,
FUKUNAGA & ASSOCIATES, INC.

Lynn Malinger

Lynn Malinger
Attachment

RSF/LKM/tm

FUKUNAGA & ASSOCIATES, INC.

1388 KAPIOLANI BLVD. / 2ND FLOOR / HONOLULU, HI 96814 / PH. (808) 944-1821 / FAX (808) 946-9339 / office@fainc.org / www.fainc.org

September 18, 2006

Ms. Yvonne Johnson
Omao Road Community
3857 Omao Road
Koloa, HI 96756

SUBJECT: Pre-Assessment Consultation for Draft Environmental Assessment
0.5 Million Gallon Omao Water Storage Tank Construction

Dear Ms. Johnson:

We are presently preparing the Draft Environmental Assessment for the Omao Water Storage Tank project for the County of Kauai Department of Water (DOW). The DOW proposes to construct a 0.5 million gallon Omao water storage tank to enhance storage in the Lawai-Omao Water System. The project site, identified as TMK: 2-5-1:002, is approximately one mile north of Omao, east of the Lihue-Koloa Forest Reserve, and mountain side of Kaumualii Highway. See the attached figure for the location.

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Please provide us with any comments you may have regarding this project. Your early response would be greatly appreciated.

Please call us at (808) 944-1821 if you have any questions.

Sincerely,
FUKUNAGA & ASSOCIATES, INC.

Lynn Malinger

Lynn Malinger
Attachment

RSF/LKM/lm

FUKUNAGA & ASSOCIATES, INC.

MEMORANDUM

TO: FILES

FROM: Lynn Malinger

DATE: October 9, 2006

RE: Pre-Assessment Consultation for Draft EA
0.5 MG Omao Water Storage Tank Construction

Yvonne Johnson of the Omao Road Community called to confirm that no work is required in the public right of way.

1388 KAPIOLANI BLVD. / 2ND FLOOR / HONOLULU, HI 96814 / PH. (808) 944-1821 / FAX (808) 946-9339 / office@fainc.org / www.fainc.org

September 18, 2006

UH Manoa Water Resource Research Center
2540 Dole Street
Homes Hall, Room 283
Honolulu, HI 96822

SUBJECT: Pre-Assessment Consultation for Draft Environmental Assessment
0.5 Million Gallon Omao Water Storage Tank Construction

We are presently preparing the Draft Environmental Assessment for the Omao Water Storage Tank project for the County of Kauai Department of Water (DOW). The DOW proposes to construct a 0.5 million gallon Omao water storage tank to enhance storage in the Lawai-Omao Water System. The project site, identified as TMK: 2-5-1:002, is approximately one mile north of Omao, east of the Lihue-Koloa Forest Reserve, and mountain side of Kaunualii Highway. See the attached figure for the location.

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Please provide us with any comments you may have regarding this project. Your early response would be greatly appreciated.

Please call us at (808) 944-1821 if you have any questions.

Sincerely,
FUKUNAGA & ASSOCIATES, INC.

Lynn Malinger

Lynn Malinger
Attachment

RSF/LKM/tm

1388 KAPIOLANI BLVD. / 2ND FLOOR / HONOLULU, HI 96814 / PH. (808) 944-1821 / FAX (808) 946-9339 / office@fainc.org / www.fainc.org

September 18, 2006

UH Manoa Environmental Center
2550 Campus Road
Crawford 317
Honolulu, HI 96822

SUBJECT: Pre-Assessment Consultation for Draft Environmental Assessment
0.5 Million Gallon Omao Water Storage Tank Construction

We are presently preparing the Draft Environmental Assessment for the Omao Water Storage Tank project for the County of Kauai Department of Water (DOW). The DOW proposes to construct a 0.5 million gallon Omao water storage tank to enhance storage in the Lawai-Omao Water System. The project site, identified as TMK: 2-5-1:002, is approximately one mile north of Omao, east of the Lihue-Koloa Forest Reserve, and mountain side of Kaunualii Highway. See the attached figure for the location.

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Please provide us with any comments you may have regarding this project. Your early response would be greatly appreciated.

Please call us at (808) 944-1821 if you have any questions.

Sincerely,
FUKUNAGA & ASSOCIATES, INC.

Lynn Malinger

Lynn Malinger
Attachment

RSF/LKM/tm

FUKUNAGA & ASSOCIATES, INC.

1388 KAPIOLANI BLVD. / 2ND FLOOR / HONOLULU, HI 96814 / PH. (808) 944-1821 / FAX (808) 946-9339 / office@fainc.org / www.fainc.org

September 18, 2006

Mr. Lawrence Yamamoto, Acting State Conservationist
USDA Natural Resource Conservation Service
P.O. Box 50004
Honolulu, HI 96850

SUBJECT: Pre-Assessment Consultation for Draft Environmental Assessment
0.5 Million Gallon Omao Water Storage Tank Construction

Dear Mr. Yamamoto:

We are presently preparing the Draft Environmental Assessment for the Omao Water Storage Tank project for the County of Kauai Department of Water (DOW). The DOW proposes to construct a 0.5 million gallon Omao water storage tank to enhance storage in the Lawai-Omao Water System. The project site, identified as TMK: 2-5-1:002, is approximately one mile north of Omao, east of the Lihue-Koloa Forest Reserve, and mountain side of Kaunualii Highway. See the attached figure for the location.

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Please call us at (808) 944-1821 if you have any questions.

Sincerely,
FUKUNAGA & ASSOCIATES, INC.

Lynn Malinger
Attachment

RSF/LKM/tm

1388 KAPIOLANI BLVD. / 2ND FLOOR / HONOLULU, HI 96814 / PH. (808) 944-1821 / FAX (808) 946-9339 / office@fainc.org / www.fainc.org

September 18, 2006

Commander & Division Engineer
U.S. Army Corps of Engineer Pacific Ocean Division
U.S. Army Engineer District, Honolulu
Building 230
Fort Shafter, HI 96858-5440

SUBJECT: Pre-Assessment Consultation for Draft Environmental Assessment
0.5 Million Gallon Omao Water Storage Tank Construction

We are presently preparing the Draft Environmental Assessment for the Omao Water Storage Tank project for the County of Kauai Department of Water (DOW). The DOW proposes to construct a 0.5 million gallon Omao water storage tank to enhance storage in the Lawai-Omao Water System. The project site, identified as TMK: 2-5-1:002, is approximately one mile north of Omao, east of the Lihue-Koloa Forest Reserve, and mountain side of Kaunualii Highway. See the attached figure for the location.

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Please provide us with any comments you may have regarding this project. Your early response would be greatly appreciated.

Please call us at (808) 944-1821 if you have any questions.

Sincerely,
FUKUNAGA & ASSOCIATES, INC.

Lynn Malinger
Attachment

RSF/LKM/tm

FUKUNAGA & ASSOCIATES, INC.

1388 KAPIOLANI BLVD. / 2ND FLOOR / HONOLULU, HI 96814 / PH (808) 944-1821 / FAX (808) 946-9339 / office@fainc.org / www.fainc.org

September 18, 2006

Pacific Islands Administrator
U.S. Department of Interior
Fish and Wildlife Service
300 Ala Moana Boulevard, Room 3-122
Honolulu, HI 96813

SUBJECT: Pre-Assessment Consultation for Draft Environmental Assessment
0.5 Million Gallon Omao Water Storage Tank Construction

We are presently preparing the Draft Environmental Assessment for the Omao Water Storage Tank project for the County of Kauai Department of Water (DOW). The DOW proposes to construct a 0.5 million gallon Omao water storage tank to enhance storage in the Lawai-Omao Water System. The project site, identified as TMK: 2-5-1:002, is approximately one mile north of Omao, east of the Lihue-Koloa Forest Reserve, and mountain side of Kaumualii Highway. See the attached figure for the location.

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Please provide us with any comments you may have regarding this project. Your early response would be greatly appreciated.

Please call us at (808) 944-1821 if you have any questions.

Sincerely,
FUKUNAGA & ASSOCIATES, INC.

Lynn Malinger

Lynn Malinger
Attachment

RSF/LKM/tm

APPENDIX D

DRAFT ENVIRONMENTAL ASSESSMENT COMMENTS AND RESPONSES

DRAFT ENVIRONMENTAL ASSESSMENT COMMENTS RECEIVED

Review Agency/Organization	Response provided
Kauai County Department of Public Works	No comment
DLNR Commission on Water Resource Management	☑
DLNR Division of Aquatic Resources	No significant impact
DLNR Division of Forestry and Wildlife	No objections
DLNR Engineering Division	Confirmed Flood Zone X
DLNR Land Division	No comment
U.S. Army Engineer District, Civil Works Technical Branch	Confirmed Flood Zone X
U.S. Fish and Wildlife Service	☑
A&B Properties, Inc.	☑
DoH Office of Environmental Quality Control	☑

BRYAN J. BAPTISTE
MAYOR

GARY K. HEU
ADMINISTRATIVE ASSISTANT

DONALD M. FUJIMOTO
COUNTY ENGINEER
TELEPHONE 241-6600

KYLAN K. DELA CRUZ
DEPUTY COUNTY ENGINEER
TELEPHONE 241-6640

AN EQUAL OPPORTUNITY EMPLOYER
COUNTY OF KAUA'I
DEPARTMENT OF PUBLIC WORKS
4444 RICE STREET
MO'IKEHA BUILDING, SUITE 275
LIHU'E, KAUA'I, HAWAI'I 96766-1340

June 29, 2007

Fukunaga & Associates, Inc.
1388 Kapi'olani Blvd 2nd floor
Honolulu, HI 96814
ATTENTION: Ms. Lynn Malinger

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (DEA)
Piwai 677' 0.5 MG Storage Tank, TMK: 2-5-1-002
Lāwa'i -'Ōma'o Water System PW 6.07.196

We reviewed the subject Draft Environmental Assessment (DEA). We have no further comments at this time. The Department supports the proposed project.

Thank you for this opportunity to provide our comments on the subject Draft Environmental Assessment. Should you have any questions, please contact me at (808)241-6498.

Very truly yours,

Wallace Kudo, P.E.
Chief, Engineering Division

CONCUR:

for DONALD M. FUJIMOTO, P.E.
County Engineer

WK
cc: Design and Permitting
Construction Inspection

LINDA LINGLE
GOVERNOR OF HAWAII

ALLAN A. SMITH
INTERIM CHAIRPERSON

MEREDITH J. CHING
JAMES A. FRAZIER
NEAL S. FUJIWARA
CHIYOME L. FUKINO, M.D
DONNA FAY K. KIYOSAKI
LAWRENCE H. MIIKE, M.D., J.D.

KEN C. KAWAHARA, P.E
DEPUTY DIRECTOR

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

July 9, 2007

REF:

Ms. Lynn Malinger
Fukunaga & Associates
1388 Kapiolani Boulevard
Honolulu HI 96814

Dear Ms. Malinger:

SUBJECT: Piwai 677 0.5 mg Water Storage Tank DEA

FILE NO.:

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

Our comments related to water resources are checked off below.

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

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

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

Permits required by CWRM: Additional information and forms are available at *www.hawaii.gov/dlnr/cwrm/forms.htm*.

☐ 4. The proposed water supply source for the project is located in a designated ground-water management area, and a Water Use Permit is required prior to use of ground water.

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

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

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

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

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

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

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

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

☐ 13. We recommend that the report identify feasible alternative non-potable water resources, including reclaimed wastewater.

☒ OTHER:

Piwai Well Construction Permits for Well Nos. 5629-01 & -02 have been extended three times and have expired as of May 1, 2007. Any work underway should be suspended pending reapplication, subject to fines of up to $5000 per day.

The project should not affect surface water.

If there are any questions, please contact Charley Ice at 587-0251.

Sincerely,

W. Roy Hardy
for
KEN C. KAWAHARA, P.E.
Deputy Director

DRF-IA 04/15/2005

1388 KAPIOLANI BLVD. / 2ND FLOOR / HONOLULU, HI 96814 / PH. (808) 944-1821 / FAX (808) 946-9339 / office@fainc.org / www.fainc.org

February 19, 2009

Mr. Ken Kawahara, Deputy Director
DLNR Commission on Water Resource Management
1151 Punchbowl Street, Room 227
Honolulu, HI 96813

Attention: Mr. Charley Ice

Dear Mr. Kawahara:

Subject: Final Environmental Assessment (FEA)
Piwai 677' 0.5 MG Storage Tank
Lawai-Omao Water System

Thank you for your comment letter dated July 9, 2007 in response to the Draft Environmental Assessment (copy enclosed for your reference). The County will incorporate this project into the Water Use and Development Plan. With respect to Piwai Wells 2 and 3 (5629-01 and 02), the Well Completion Report – Part II for the wells were completed March 21, 2008. We hope these responses are to your satisfaction. The Final Environmental Assessment will be forthcoming.

Sincerely,
FUKUNAGA & ASSOCIATES, INC.

Lynn Malinger
Lynn Malinger

encl.
cc: Keith Fujimoto, KDOW

LINDA LINGLE
GOVERNOR OF HAWAII

ALLAN A. SMITH
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

KEN C. KAWAHARA
DEPUTY DIRECTOR - WATER

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF AQUATIC RESOURCES
1151 PUNCHBOWL STREET, ROOM 330
HONOLULU, HAWAII 96813

July 23, 2007

Ms. Lynn Malinger
Fukunaga & Associates, Inc.
1388 Kapiolani Blvd.
Honolulu, HI 96814

Dear Ms. Malinger:

Subject: Draft Environmental Assessment (DEA)
Piwai 677' 0.5 MG Storage Tank
Lawai-Omao Water System

Thank you for the opportunity to review and comment on Draft Environmental Assessment for the subject project. Our comments are attached.

Please call Mr. Glenn Higashi of my staff at (808) 587-0112 if you have any questions.

Sincerely,

DAN A. POLHEMUS, Administrator

encl.

Post-it® Fax Note 7671	Date 7/23/07	# of pages ▶ 2
To LYNN MALINGER	From GLENN HIGASHI	
Co/Dept. FUKUNAGA & ASSC. INC	Co DLNR/DAR	
Phone #	Phone # 587-0112	
Fax # (808) 946-9339	Fax #	

STATE OF HAWAII
Department of Land and Natural Resources
DIVISION OF AQUATIC RESOURCES

MEMORANDUM

TO: Dan A. Polhemus, Administrator DP
FROM: Glenn R. Higashi, Aquatic Biologist GRH
SUBJECT: Draft Environmental Assessment for Piwai Storage Tank Lawai-Omao Water System
Comments Lynn Malinger
Requested By: Fukunaga & Associates, Inc.
Date of Request: 6/28/07 Date Received: 7/23/07

Summary of Project

Title: **Draft Environmental Assessment for Piwai 677' 0.5 MG Storage Tank Lawai-Omao Water System**
Project By: **Department of Water County of Kauai**
Location: **Omao, Kauai – TMK: 2-5-1:002**

Brief Description:

The applicant, County of Kauai, Department of Water (DOW) proposes to construct a 0.5 million gallon (MG) water storage tank to enhance storage in the existing Lawai-Omao Water System. The proposed tank will connect to the Piwai Well Complex project, which currently is under construction in conjunction with the Kukuiula development. The Kukuiula development and the Piwai Well Complex are being developed by Kukuiula Development Company (Hawaii), LLC (KDCH).

This project site is situated approximately one mile north of Omao, mauka (mountain side of Kaumualii Highway, and 0.4 miles east of the Lihue-Koloa Forest Reserve. The proposed site is located with Tax Map Key (TMK) 2-5-1:002, approximately 122.5 acres of land owned by Alexander & Baldwin, Inc. and its subsidiary, McBryde Sugar Company, Limited. The area is currently undeveloped and covered with a variety of trees, shrubs, and grasses.

The proposed project involves the construction of a 0.5 MG reinforced concrete tank, connecting pipelines, access road, and appurtenant facilities for the DOW supervisory control and data acquisition (SCADA) system.

The proposed tank will be approximately 20 feet high and 70 feet in diameter, and will have a spillway elevation at 677.0 feet above mean sea level (msl). Chain link fence will be installed to secure the tanks site in addition to intrusion alarms on the tank hatch and Piwai control tank site gate.

Sixteen-inch pipelines will interconnect the 0.5 MG tank to the 0.1 MG Piwai control tank inflow and outflow lines. Paved access will be extended from the Piwai tank service road to serve the proposed tank. Radio telemetry link between the proposed 0.5 MG tank and the DOW Central Operating Facility to all remote operation and monitoring will be via the Piwai tank SCADA system.

Comments:

The proposed project is not expected to have any significant impact on the aquatic resource values in this area.

LINDA LINGLE
GOVERNOR OF HAWAII

ALLAN A. SMITH
INTERIM CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

July 26, 2007

Fukunaga & Associates, Inc.
1388 Kapiolani Blvd 2nd Floor
Honolulu, Hawaii 96814

Attention: Ms. Lynn Malinger

Gentlemen:

Subject: Draft Environmental Assessment for County of Kauai, Department of Water Lawai-Omao Water System, Koloa, Kauai, Tax Map Key: (4) 2-5-1:portion 2

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

Other than the comments from Division of Forestry & Wildlife, the Department of Land and Natural Resources has no other comments to offer on the subject matter. Should you have any questions, please feel free to call our office at 587-0433. Thank you.

Sincerely,

Charlene E Unoki
for Russell Y. Tsuji
Administrator

LINDA LINGLE
GOVERNOR OF HAWAII

ALLAN A. SMITH
INTERIM CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

RECEIVED
'07 JUL -2 P3:01
FORESTRY & WILDLIFE
STATE OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

June 29, 2007

MEMORANDUM

TO: **DLNR Agencies:**
__Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
x Engineering Division
x Div. of Forestry & Wildlife
__Div. of State Parks
x Commission on Water Resource Management
__Office of Conservation & Coastal Lands
x Land Division Kauai District

FROM: Russell Y. Tsuji
SUBJECT: Draft Environmental Assessment, Lawai-Omao Water System
LOCATION: Koloa, Kauai, Tax Map Key: (4) 2-5-1:portion 2
APPLICANT: Fukunaga & Associates, Inc. on behalf of the County of Kauai, Department of Water

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by July 15, 2007.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

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

Signed: [signature] for
Date: _____

PAUL J. CONRY, ADMINISTRATOR
DIVISION OF FORESTRY AND WILDLIFE

JUN 3 2007

LINDA LINGLE
GOVERNOR OF HAWAII

ALLAN A. SMITH
INTERIM CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

PETER T. YOUNG
DEPUTY DIRECTOR

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

ENGINEERING DIVISION
POST OFFICE BOX 373
HONOLULU, HAWAII 96809

JUL - 3 2007

Ms. Lynn Malinger
Fukunaga & Associates, Inc.
1388 Kapiolani Blvd., 2nd Floor
Honolulu, Hawaii 96814

Dear Ms. Malinger:

Draft Environmental Assessment
Piwai 677' 0.5 MG Storage Tank, Lawai-Omao Water System
Kauai, Hawaii

We reviewed the subject document and we confirm that the project site according to the Flood Insurance Rate Map (FIRM) panel 1500020311E, dated September 16, 2005, is located in Zone X. The National Flood Insurance Program does not have any regulations for developments within Zone X.

Should you have any questions, please call Ms. Suzie Agraan of the Planning Branch at 587-0258.

Sincerely,

ERIC T. HIRANO
Chief Engineer

SA:ek

LINDA LINGLE
GOVERNOR OF HAWAII

ALLAN A. SMITH
INTERIM CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

July 18, 2007

Fukunaga & Associates, Inc.
1388 Kapiolani Blvd 2nd Floor
Honolulu, Hawaii 96814

Attention: Ms. Lynn Malinger

Gentlemen:

Subject: Draft Environmental Assessment for County of Kauai, Department of Water Lawai-Omao Water System, Koloa, Kauai, Tax Map Key: (4) 2-5-1:portion 2

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

Other than the comments from Engineering Division, Commission on Water Resource Management, the Department of Land and Natural Resources has no other comments to offer on the subject matter. Should you have any questions, please feel free to call our office at 587-0433. Thank you.

Sincerely,

Russell Y. Tsuji
Administrator

LINDA LINGLE
GOVERNOR OF HAWAII

ALLAN A. SMITH
INTERIM CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

June 29, 2007

'07 JUL 03 AM 09:23 ENGINEERING

RECEIVED
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MEMORANDUM

TO: **DLNR Agencies:**
__Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
x Engineering Division
x Div. of Forestry & Wildlife
__Div. of State Parks
x Commission on Water Resource Management
__Office of Conservation & Coastal Lands
X Land Division ~~Kauai~~ District

FROM: Russell Y. Tsuji
SUBJECT: Draft Environmental Assessment, Lawai-Omao Water System
LOCATION: Koloa, Kauai, Tax Map Key: (4) 2-5-1:portion 2
APPLICANT: Fukunaga & Associates, Inc. on behalf of the County of Kauai, Department of Water

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by July 15, 2007.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

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

Signed: [signature]
Date: 7/16/07

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LA/NAV

Ref.: DEALawaiOmaoPiwai677'Tank
Kauai.57

COMMENTS

( ) We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone ___.

( ) Please take note that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Zone X. The National Flood Insurance Program (NFIP) does not have any regulations for development within these areas.

( ) Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is ___.

( ) Please note that the project must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR), whenever development within a Special Flood Hazard Area is undertaken. If there are any questions, please contact the State NFIP Coordinator, Ms. Carol Tyau-Beam, of the Department of Land and Natural Resources, Engineering Division at (808) 587-0267.

Please be advised that 44CFR indicates the minimum standards set forth by the NFIP. Your Community's local flood ordinance may prove to be more restrictive and thus take precedence over the minimum NFIP standards. If there are questions regarding the local flood ordinances, please contact the applicable County NFIP Coordinators below:

( ) Mr. Robert Sumimoto at (808) 523-4254 or Mr. Mario Siu Li at (808) 523-4247 of the City and County of Honolulu, Department of Planning and Permitting.
( ) Mr. Kelly Gomes at (808) 961-8327 (Hilo) or Mr. Kiran Emler at (808) 327-3530 (Kona) of the County of Hawaii, Department of Public Works.
( ) Mr. Francis Cerizo at (808) 270-7771 of the County of Maui, Department of Planning.
( ) Mr. Mario Antonio at (808) 241-6620 of the County of Kauai, Department of Public Works.

( ) The applicant should include project water demands and infrastructure required to meet water demands. Please note that the implementation of any State-sponsored projects requiring water service from the Honolulu Board of Water Supply system must first obtain water allocation credits from the Engineering Division before it can receive a building permit and/or water meter.

( ) The applicant should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update.

(X) **Additional Comments: Our previous comments dated July 3, 2007 (Copy attached), which was mailed directly to Ms. Lynn Malinger, still apply.**

( ) Other: _____

Should you have any questions, please call Ms. Suzie Agraan of the Planning Branch at 587-0258.

Signed: [signature]
ERIC T. HIRANO, CHIEF ENGINEER

Date: 7/16/07

LINDA LINGLE
GOVERNOR OF HAWAII

ALLAN A. SMITH
INTERIM CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

PETER T. YOUNG
DEPUTY DIRECTOR

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

ENGINEERING DIVISION
POST OFFICE BOX 373
HONOLULU, HAWAII 96809

JUL - 3 2007

Ms. Lynn Malinger
Fukunaga & Associates, Inc.
1388 Kapiolani Blvd., 2nd Floor
Honolulu, Hawaii 96814

Dear Ms. Malinger:

Draft Environmental Assessment
Piwai 677' 0.5 MG Storage Tank, Lawai-Omao Water System
Kauai, Hawaii

We reviewed the subject document and we confirm that the project site according to the Flood Insurance Rate Map (FIRM) panel 1500020311E, dated September 16, 2005, is located in Zone X. The National Flood Insurance Program does not have any regulations for developments within Zone X.

Should you have any questions, please call Ms. Suzie Agraan of the Planning Branch at 587-0258.

Sincerely,

ERIC T. HIRANO
Chief Engineer

SA:ek

LINDA LINGLE
GOVERNOR OF HAWAII

ALLAN A. SMITH
INTERIM CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

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

June 29, 2007

MEMORANDUM

TO: **DLNR Agencies:**
__Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
x Engineering Division
x Div. of Forestry & Wildlife
__Div. of State Parks
x Commission on Water Resource Management
__Office of Conservation & Coastal Lands
X Land Division Kauai District

FROM: Russell Y. Tsuji
SUBJECT: Draft Environmental Assessment, Lawai-Omao Water System
LOCATION: Koloa, Kauai, Tax Map Key: (4) 2-5-1:portion 2
APPLICANT: Fukunaga & Associates, Inc. on behalf of the County of Kauai, Department of Water

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by July 15, 2007.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

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

Signed: Edwin T. Sakoda
Date: 7/2/07

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HONOLULU
BUILDING 223
FORT SHAFTER, HAWAII 96858-5440

REPLY TO
ATTENTION OF: CEPOH-EC-T

July 5, 2007

Civil Works Technical Branch

Ms. Lynn Malinger
Fukunaga and Associates
1388 Kapiolani Boulevard, 2nd Floor
Honolulu, Hawaii 96814

Dear Ms. Malinger:

Thank you for the opportunity to review and comment on the Draft Environmental Assessment (DEA) for the Piwai Storage Tank Lawai-Omao Water System Project, Kauai (Tax Map Key 2-5-1: 2). The following comments are provided in accordance with Corps of Engineers authorities to provide flood hazard information and to issue Department of the Army (DA) permits. We concur with the flood hazard information provided on page 9 of the DEA.

Should you require additional information, please contact Ms. Jessie Dobinchick of my staff at (808) 438-8876.

Sincerely,

James Pennaz

James Pennaz, P.E.
Chief, Civil Works Technical Branch

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122, Box 50088
Honolulu, Hawaii 96850

In Reply Refer To:
2007-FA-0121

JUL 23 2007

Lynn Malinger
Fukunaga & Associates, Inc.
1388 Kapiolani Blvd., 2nd Floor
Honolulu, Hawaii 96814

Subject: Lawai-Omao Water System Draft Environmental Assessment

Dear Ms. Malinger:

This letter acknowledges the U.S. Fish and Wildlife Service's (Service) June 27, 2007, receipt of your letter and enclosure, requesting review of the Draft Environmental Assessment (DEA) for the "Piwai 677' 0.5 MG Storage Tank Lawai-Omao Water System." While the DEA states that "light fixtures which minimize light attraction by the endangered Hawaiian Petrel (*Pterodoma sandwichensis*) and the threatened Newell's Shearwater (*Puffinus auricularis newelli*) will be used," no specific details are provided. Therefore, we recommend that only fully shielded lights be used. We further recommend that the tank itself not be illuminated, i.e., light output should be controlled in order to keep the light in the intended area and not upwards or on the tank. We suggest you consult with Andrea Erichsen, Kauai Seabird Habitat Conservation Plan Coordinator at telephone (808)-346-3489 for a review of the final fixture types selected. For further information, please contact Bill Standley at (808)792-9400.

Sincerely,

for Patrick Leonard
Field Supervisor

cc:
Paul Conry, DLNR-DOFAW
Andrea Erichsen, DLNR-DOFAW, Kauai District
Thomas Kaiakapu, DLNR-DOFAW, Kauai District

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1388 KAPIOLANI BLVD. / 2ND FLOOR / HONOLULU, HI 96814 / PH. (808) 944-1821 / FAX (808) 946-9339 / office@fainc.org / www.fainc.org

February 19, 2009

Mr. Patrick Leonard, Field Supervisor
U.S. Fish and Wildlife Service
300 Ala Moana Boulevard, Room 3-122, Box 50088
Honolulu, HI 96850

Dear Mr. Leonard:

Subject: Final Environmental Assessment (FEA)
Piwai 677' 0.5 MG Storage Tank
Lawai-Omao Water System

Thank you for your comment letter on the Draft Environmental Assessment dated July 23, 2007 (copy enclosed for your reference). The tank site will not be illuminated; lights will not be installed. In the event that lighting is installed in the future, we note your recommendation that they should be fully shielded and that the tank itself not be illuminated. The Final Environmental Assessment will be forthcoming.

Sincerely,
FUKUNAGA & ASSOCIATES, INC.

Lynn Malinger

encl.
cc: Keith Fujimoto, KDOW

FUKUNAGA & ASSOCIATES, INC.

A&B PROPERTIES, INC.
A SUBSIDIARY OF ALEXANDER & BALDWIN, INC.

P. O. Box 430
Koloa, Hawaii 96756
www.abprop.com
Tel (808) 335-2749
Fax (808) 335-9708

July 18, 2007

Fukunaga & Associates, Inc.
1388 Kapiolani Blvd., 2nd Floor
Honolulu, HI 96814

ATTN: Ms. Lynn Malinger

Subject: DRAFT ENVIRONMENTAL ASSESSMENT (DEA)
PIWAI 677' 0.5 MG STORAGE TANK LAWAI-OMAO WATER SYSTEM

Dear Ms. Malinger:

The subject DEA does not adequately addressed comments we made during the Pre-Assessment Consultation regarding the location of the proposed tank. As we noted, we are undertaking an agricultural subdivision of this same property and asked your consideration in siting the tank so as to benefit the subdivision. In order to adequately serve the subdivision, a tank at an elevation above 760 feet msl would be required. Section IV of the DEA "Alternatives to the Proposed Project", provides only a cursory discussion and does not adequately examine alternatives to the proposed location.

Although the DEA concludes that there will be no significant impacts for the proposed tank project, we are concerned with the longer term impact from the well that will be drilled to serve the proposed facility. In particular, the DOH has a rule that prohibits individual wastewater treatment facilities within a 1,000-foot radius of a potable well. Such a well will have substantial adverse impacts to the adjacent property on which our development is to occur. We understand that the subject DEA is not for the well but since the well is a related project, it is very important that the consequences be considered.

The DEA does not indicate the development timetable nor funding source for the proposed tank and associated well. While the DEA indicates that the proposed project is situated on private lands owned by Alexander & Baldwin, Inc., there is no discussion as to how the land is to be acquired for the proposed project. Section VII of the DEA does not indicate the need for a subdivision of the property.

Thank you for the opportunity to comment.

Sincerely,

Tom H. Shigemoto
Vice President

Department of Water
County of Kaua'i

Water has no substitute.....Conserve it

January 26, 2009

Mr. Tom H. Shigemoto, Vice President
A&B Properties, Inc.
P.O. Box 430
Koloa, HI 96756

Dear Mr. Shigemoto:

Subject: Draft Environmental Assessment (DEA) Comment Letter
Piwai 677' 0.5 MG Storage Tank
Lawai-Omao Water System

Thank you for your letter dated July 18, 2007 commenting on the DEA being processed by Fukunaga & Associates, our consultants for the subject project, and apologize for our late response. As you know, we were reviewing options to the tank overflow level which surfaced as a result of the completion to Kukuiula's Piwai 0.1 MG control tank. We offer the following responses to your comments:

1. Tank Location/Elevation: As stated in your letter, recent A&B planning has determined that a tank at an elevation above 760 feet msl would be required to serve A&B's agricultural subdivision. Locating the County of Kauai, Department of Water's (DOW), proposed tank at a higher elevation is not a cost-effective alternative for the Department and the Lawai-Omao community. The Piwai 0.5 MG Storage Tank is needed to address existing storage deficiency in DOW Zone 677 of the Lawai-Omao Water System. The subject project was conceived prior to and is documented in the long-range plan, *Water Plan 2020*, published in March 2001. Furthermore, the 677' 0.5 MG Storage Tank will be supplied by the two 1,000 gpm wells, which have since been completed by Kukuiula Development Company, and awaiting final approvals, subject to the resolution of the control tank issue. From an operational perspective, it is not cost-effective to install and operate a booster pump station to boost the water from the two new well sources and store it higher than 677' when the source water and storage are intended to serve the 677 Zone. Department of Water invites A&B to discuss and coordinate the additional tank required to meet A&B's projected needs.

2. Future DOW well: Previous discussion with A&B Properties lead the Department to believe that you did not have objections with a future well at this location, and we would like to further discuss this matter with you. However, this Environmental Assessment (EA) is for the tank project, although we would like to have the well site reserved at this time. The future well will have a separate environmental review process and will address the Department of Health's concerns of individual wastewater treatment facilities within 1,000 feet of a potable well at that time.

3. Development Time Table: Construction of the subject tank is anticipated to be in fiscal year 08/09.

4. Funding Source: Funding for the tank construction will be from County funds and/or the Drinking Water State Revolving Fund Program, if available.

5. Land Acquisition: Subdivision of the property and related easements will be required. As communicated in the Tentative Approval from the Planning Department for subdivision S-2007-15 dated February 14, 2007, prior to final subdivision approval, A&B must complete the conveyance to DOW of the Kukuiula wells and tank sites, water and roadway easements, and the proposed DOW tank site, related waterline and access easements. The Department of Water would also like to reserve an area around the site for the future well.

If there are any questions or concerns, please contact Keith Fujimoto at kfujimoto@kauaiwater.org.

Sincerely,

Ushigome

Wynne M. Ushigome
Acting Manager and Chief Engineer

KF:emi
c: Ms. Lynn Malinger, Fukunaga & Associates ✓

4398 Pua Loke St., P.O. Box 1706, Lihue, HI 96766 Phone: 808-245-5400
Engineering and Fiscal Fax: 808-245-5813, Operations Fax: 808-245-5402, Administration Fax: 808-246-8628

LINDA LINGLE
GOVERNOR OF HAWAII

LAURENCE K. LAU
ACTING DIRECTOR

STATE OF HAWAI'I
DEPARTMENT OF HEALTH
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
235 SOUTH BERETANIA STREET
LEIOPAPA A KAMEHAMEHA, SUITE 702
HONOLULU, HAWAI'I 96813
Telephone (808) 586-4185
Facsimile (808) 586-4186
Electronic Mail: OEQC@doh.hawaii.gov

July 23, 2007

Ms. Wynne Ushigome, Acting Manager and Chief Engineer
Department of Water
County of Kaua'i
P.O. Box 1706
Lihu'e, Hawai'i 96766
Attention: Mr. Bruce Inouye

Dear Ms. Ushigome:

Subject: Draft Environmental Assessment (DEA) for Piwai 677' 0.5 Million Gallon Storage Tank, Lawa'i-Omao Water System, TMK 2-5-001: Portion 2, Omao, Kaua'i, Hawai'i

Our office has reviewed the DEA for the project noted above. We have the following comments:

Project Summary page (page behind front cover), Pre-Consultation: Please list each specific office within each County, State or Federal department that was consulted.

Page 9, Section II. C. ARCHAEOLOGICAL, HISTORICAL AND CULTURAL CONSIDERATIONS: Please include a copy of the archaeological report by Cultural Surveys, Hawaii, Inc. as an appendix to the Final Environmental Assessment (FEA) or include the URL of a website where the archaeological report can be accessed.

Page 12, paragraph 1, lines 4-5: Please provide graphics in the FEA which delineate the extent of the archaeological ground survey as the area to be disturbed is approximately .75 (3/4) acre.

Page 12, paragraph 3, third quote, lines 3-5: In reference to the sentence, *It is possible that historic ditches, flumes, pipelines, and other features related to collection of irrigation water exist in the vicinity of the current project area.*, please show evidence that research was done to determine whether the specific resources exist within the project area.

Page 13, Section II. C. ARCHAEOLOGICAL, HISTORICAL AND CULTURAL CONSIDERATIONS, paragraph 2 on page 13, lines 2-6: Please include a discussion relating to the possibility that the project site was used for cultural practices before access to the site was controlled.

Page 17, Section III. PROBABLE IMPACTS AND MITIGATIVE MEASURES, B. LONG-TERM IMPACTS, Item 6. Archaeological, Historical and Cultural Impacts: Please refer to the comments above for page 12, paragraph 1, lines 4-5; page 12, paragraph 3, third quote, lines 3-5 and page 13, paragraph 2, lines 2-6.

Page 18, Section VI. HAWAI'I DRINKING WATER STATE REVOLVING FUND PROGRAM: Please add the National Environmental Policy Act 1969 (as amended (42 U.S.C. 4321, et seq.) to the list of Federal regulations which would have to be complied with if Federal funds are utilized for this project.

Appendix: Pre-Assessment Consultation (pages after page 26): Please include an index here of the pre-consultation letters that are included in the DEA.

Should you have any questions, please call me or Leslie Segundo, Environmental Health Specialist at 586-4185.

Sincerely,

George Casen

George Casen
Planner

c: Ms. Lynn Malinger, Fukunaga & Associates

Department of the
Water
County of Kaua'i

Water has no substitute.....Conserve it

February 19, 2009

Director
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, HI 96813

Dear Director:

Subject: Draft Environmental Assessment for Piwai 677' 0.5 Million Gallon Storage Tank
Lawai-Omao Water System, TMK: 2-5-01: Portion 2, Omao, Kauai, Hawaii

Thank you for your comment letter on the Draft Environmental Assessment dated July 23, 2007. We offer the following responses to your comments:

1. The Project Summary page, Pre-Consultation section will be revised to list each specific office within each governmental department.
2. *Archaeological Inventory Survey [AIS] of Three Proposed Well Sites and Appurtenances in the Vicinity of the Piwai Reservoir, Koloa Ahupuaa, District of Kona, Island of Kauai (TMK: 2-5-01: Por. 8)*, December 2002, and *Addendum To An: AIS*, December 2004, prepared by Cultural Surveys Hawaii, Inc. (CSH) will be included in Appendix A.
3. A sketch from the CSH AIS and the Addendum showing the project area for the AIS will be included as Figure 9 and Figure 10.
4. No specific resources/features related to collection of irrigation water exist on the project area as indicated in the topographical survey shown on Figure 3.
5. The excerpt from the CSH AIS predicative model section will be expanded to include discussion on possible past land use in the area:

   As the Judd account given above asserts, it is likely environs like the present project area were used for less intensive cultivation of patches of sweet potato, pia, and wauke and the gathering of hala, kukui, and other upland resources. Remnants of dry-land agriculture or temporary field shelters associated with upland gardening or gathering and processing of forest resources are certainly possible.
6. Although the site historically may have been used for dry-land agriculture and gathering, because sugar cultivation dominated the land use and the area has been privately owned and restricted throughout the twentieth century, cultural usage of the area has been and continues to be restricted and therefore would not be impacted.

7. NEPA will be added to the list of cross-cutter regulations for the Hawaii State Drinking Water Revolving Fund.
8. Index to the Pre-Assessment Consultation letters will be included.

We hope that these responses are to your satisfaction. Please contact Mr. Keith Fujimoto at (808) 245-5449 if you have any questions.

Sincerely,

Wynne M. Ushigome
Acting Manager and Chief Engineer

KF:mll
FEA.OEQC response