DEPARTMENT OF PLANNING AND PERMITTING

CITY AND COUNTY OF HONOLULU

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KIRK CALDWELL MAYOR



March 11, 2015

GEORGE I. ATTA, FAICP DIRECTOR

ARTHUR D. CHALLACOMBE DEPUTY DIRECTOR

2014/ED-4 (NA)

Ms. Jessica Wooley. Director Office of Environmental Quality Control State of Hawaii 235 South Beretania Street, Room 702 Honolulu, Hawaii 96813

FILE COPY MAR 2 3 2015 aFC. OF ENVIRONMENTS

Dear Ms. Wooley:

SUBJECT:

Chapter 343, Hawaii Revised Statutes (HRS)

Final Environmental Assessment (EA)

Applicant/

Landowner:

Kunia Village Title Holding Corporation

Agent:

David M. Robichaux

Location:

92-1700 Kunia Road - Kunia

Tax Map Key:

9-2-5: 23

Zoning:

AG-1 Restricted Agricultural District

Request: Proposal:

HRS Chapter 201H Exemptions

To permit public service buildings to be located on land in the AG-1 Restricted Agricultural District, and to expand the number of permitted dwelling units at the Kunia Village from 121 to 200 units to meet the need for housing for agricultural workers in Central

Oahu.

Determination:

Finding of No Significant Impact

Attached and incorporated by reference is the Final EA prepared by the Applicant for the project. Based on the significance criteria outlined in Title 11, Chapter 200, Hawaii Administrative Rules, we have determined that the preparation of an Environmental Impact Statement is not required, and have issued a Finding of No Significant Impact. Please publish this in the <u>March 23, 2015</u>, issue of the Office of Environmental Quality Control (OEQC) <u>Environmental Notice</u>.

We have enclosed one hard copy of the Final EA, as well as a copy on compact disc. Also, we have attached a completed OEQC publication form and project summary, and will submit the same publication form and project summary via electronic mail to your office.

Ms. Jessica Wooley March 11, 2015 Page 2

Should you have any questions, please contact Nelson Armitage of our staff at 768-8016.

Very truly yours,

Jerry J. Atta George I. Atta, FAICP

Director

Enclosures: Final EA, one hard copy and one disk

One copy of OEQC Publication Form

cc: w/o enclosure: David M. Robichaux

APPLICANT ACTIONS SECTION 343-5(C), HRS PUBLICATION FORM (JANUARY 2013 REVISION)

Project Name:

Kunia Village and Agribusiness Complex Low-Income Housing

Redevelopment

Island: District: Oahu

TMK:

Kunia 9-2-5: 23

Permits:

Hawaii Revised Statutes Chapter 201H Exemptions

Approving Agency:

Department of Planning and Permitting

City and County of Honolulu 650 South King Street, 7th Floor

Honolulu, Hawaii 96813 Contact: Nelson Armitage Phone: (808) 768-8016

Applicant:

Kunia Village Title Holding Corporation

P.O. Box 100

Kunia, Hawaii 96759

Contact: David M. Robichaux

Phone: (808) 368-5352

Consultant:

North Shore Consultants

2333 Kapiolani Boulevard, Suite 3017

Honolulu, Hawaii 96826 Contact: David M. Robichaux Phone: (808) 368-5352

Status (check one only):

DEA-AFNSI

Submit the approving agency notice of determination/transmittal on agency letterhead, a hard copy of DEA, a completed OEQC publication form, along with an electronic word processing summary and a PDF copy (you may send both summary and PDF to oeqchawaii@doh.hawaii.gov; a 30-day comment period ensues upon publication in the periodic bulletin.

X FEA-FONSI

Submit the approving agency notice of determination/transmittal on agency letterhead, a hard copy of the FEA, an OEQC publication form, along with an electronic word processing summary and a PDF copy (send both summary and PDF to oeqchawaii@doh.hawaii.gov; no comment period ensues upon publication in the periodic bulletin.

FEA-EISPN

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consultation period ensues upon publication in the periodic bulletin.

__Act 172-12 EISPN

Submit the approving agency notice of determination on agency letterhead, an OEQC publication

form, and an electronic word processing summary (you may send the summary to

oeqchawaii@doh.hawaii.gov. NO environmental assessment is required and a 30-day consultation

period upon publication in the periodic bulletin.

__DEIS

FEIS

The applicant simultaneously transmits to both the OEQC and the approving agency, a hard copy of the DEIS, a completed OEQC publication form, a distribution list, along with an electronic word processing summary and PDF copy of the DEIS (you may send both the summary and PDF to oeqc@doh.hawaii.gov); a 45-day comment period ensues upon publication in the periodic bulletin. The applicant simultaneously transmits to both the OEQC and the approving agency, a hard copy of the FEIS, a completed OEQC publication form, a distribution list, along with an electronic word

of the FEIS, a completed OEQC publication form, a distribution list, along with an electronic wo processing summary and PDF copy of the FEIS (you may send both the summary and PDF to oeqc@doh.hawaii.gov); no comment period ensues upon publication in the periodic bulletin.

__ Section 11-200-23 Determination

The approving agency simultaneous transmits its determination of acceptance or nonacceptance (pursuant to Section 11-200-23, HAR) of the FEIS to both OEQC and the applicant. No comment

period ensues upon publication in the periodic bulletin.

Statutory hammer Acceptance	The approving agency simultaneously transmits its notice to both the applicant and the OEQC that it failed to timely make a determination on the acceptance or nonacceptance of the applicant's FEIS under Section 343-5(c), HRS, and that the applicant's FEIS is deemed accepted as a matter of law.
Section 11-200-27	
Determination	The approving agency simultaneously transmits its notice to both the applicant and the OEQC that it has reviewed (pursuant to Section 11-200-27, HAR) the previously accepted FEIS and determines that a supplemental EIS is not required. No EA is required and no comment period ensues upon publication in the periodic bulletin.
Withdrawal (explain)	chease apon pashoaton in the periodic sanotin.

Summary (Provide proposed action and purpose/need in less than 200 words. Please keep the summary brief and on this one page):

The Kunia Village is a former Del Monte Plantation Camp in Central Oahu, Hawaii. The Kunia Village Title Holding Corporation (KVTHC) has assumed ownership and operation of the village's housing and agribusiness infrastructure in order to provide affordable rental units to farm workers and farmers in Central Oahu. The housing and commercial infrastructure in the village are only allowed on land in the AG-1 Restricted Agricultural Zoning District under a variance (Zoning Variance No. 2008/VAR-26, which was approved by the Director of the Department of Planning and Permitting on November 13, 2008) to the City and County of Honolulu's Land Use Ordinance. KVTHC intends to apply to the Honolulu City Council for exemptions to certain planning and zoning requirements as authorized by Hawaii Revised Statutes (HRS) Chapter 201H. The requested exemptions will include height limits and setbacks, and would permit public service buildings to be located on land in the AG-1 Zoning District. The application made pursuant to HRS Chapter 201H will also seek to expand the allowable number of dwelling units in the village from 121 to 200 units in order to meet the growing demand for affordable housing for farm workers and farmers in Central Oahu. HRS Chapter 343 compliance is triggered because the Kunia Village is located on both the State and National Historic Registers.

The Proposed Action is not anticipated to result in significant impacts to environmental resource areas. The implementation of standard Best Management Practices will ensure no significant impacts occur.

The Proposed Action would have no indirect, secondary, or cumulative impacts to any environmental resource areas. A Finding of No Significant Impact has been issued.

Final Environmental Assessment

Kunia Village and Agribusiness Complex Affordable Housing Redevelopment Kunia, Oahu, Hawaii TMK # 9-2-005:023



Prepared for

The City and County of Honolulu Department of Planning and Permitting

February 2015

Final Environmental Assessment

Kunia Village and Agribusiness Complex Affordable Housing Redevelopment Kunia, Oahu, Hawaii TMK # 9-2-005:023

Approving Agency

Land Use Permits Division City and County of Honolulu Department of Planning & Permitting

Applicant



February 2015

PROJECT SUMMARY

This Environmental Assessment (EA) has been prepared in accordance with Chapter 343, Hawai'i Revised Statutes (HRS), to support an application under HRS Chapter 201-H for The Kunia Village and Agribusiness Complex, Affordable Housing Project on the Island of Oahu, Hawaii. The requirements for HRS 343 compliance are triggered because Kunia Village is on both the State and National Historic Registers. Following a review by agencies and interested parties, the proponent and Approving Agency recommends a Finding of No Significant Impacts.

Name: Kunia Village Affordable Housing Re-Development

Location: Kunia, Oahu, Hawaii

Judicial District: Ewa

Applicant and: Kunia Village Title Holding Corporation

Recorded Fee Owner PO Box 100

Kunia, Hawaii 96759 (808) 621-1350

Approving Agency: Dept. Of Planning and Permitting City and County of Honolulu

Land Use Permitting Division 650 S. King Street 7th Floor

Honolulu HI 96823

Agent: North Shore Consultants, LLC

2091 Round Top Dr. Honolulu, HI 96822

Attn: David Robichaux (808) 368-5352

Tax Map Key: TMK (1) 9-2-005:023

Land Area: 110.96 acres

Existing Use: Residential and commercial accessory to agriculture uses

Proposed Use: Renovation and increased density of the existing housing.

Land Use Designations: State Land Use: Agriculture District

Sustainable Communities Plan: Agriculture County Zoning: Ag-1 Restricted Agriculture

Special Management Area (SMA): Not within the SMA

Major Approvals Required: Approval of exemptions under HRS 201-H

Building permits Soil Conservation Plan

State Historic Preservation Division Review

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Appendix B: Archeological Inventory Survey, Kunia Village, Oahu, Hawaii

1.0 PROJECT LOCATION, PURPOSE AND NEED

1.1 Project Location

Kunia Village and Agribusiness Complex (KVAC) is located off of Kunia Road approximately 6 miles north of the intersection between Kunia Road and H-1 Freeway, at Latitude (north) 21 ° 18' 46, Longitude (west) 158° 05' 07 (See Figure 1-1). This location is approximately 2 miles south of the Wheeler Army Air Field in Central Oahu. The site elevation ranges from approximately 835 feet to 890 feet above Mean sea level (MSL). The subject property is accessed only by Kunia Road, and is within approximately 12,000 acres of agricultural land in Central Oahu (Figure 1-2). The subject property tax key map is shown in Figure 1-3.



Figure 1-1: Site location South of Schofield Barracks and west of Mililani.



Figure 1-2 Kunia Village Aerial Photograph from Google Earth 2013

1.2 Need for HRS 343 Environmental Assessment

HRS 343 requires public disclosure and environmental assessment for any proposed program or project that proposes one or more land uses or administrative acts that are identified in the Statute. Actions that involve use within any Historic Site or District as designated in the National or Hawaii Register of Historic Sites are covered by HRS 343. Kunia Village is on both the State and National Historic Registers. The proposed renovations will be partially funded using tax credits which constitute public funds. These two aspects of the proposed projects necessitate preparation of an Environmental Assessment.

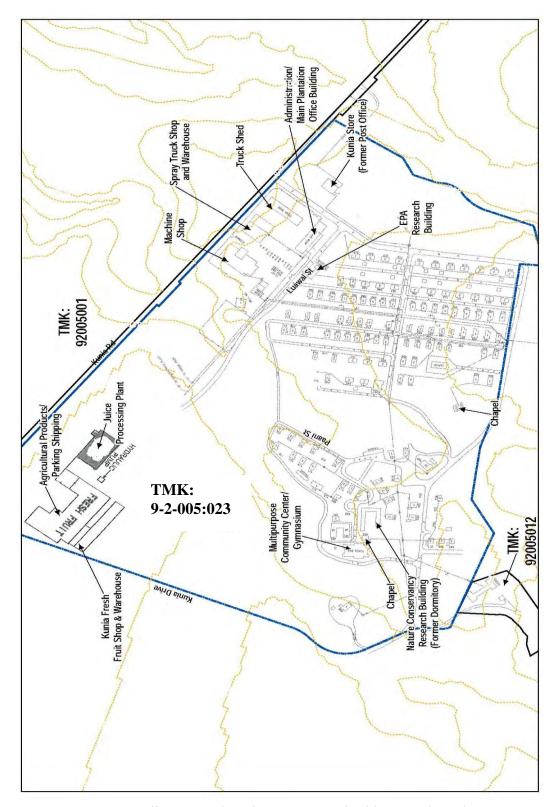


Figure 1-3 Kunia Village site plan showing major buildings and roadways

1.3 Site History

Kunia Village also known as Kunia Camp was originally established in the second decade of the 20th century by the predecessor of Del Monte Corporation. It was continuously used as a permanent residence for Del Monte farm workers between 1920 and 2009 when Del Monte withdrew from pineapple production in Hawaii. The Village then reverted to the landowner The James Campbell Company, which subdivided out the Village property from a larger parcel. It was deeded to Hawaii



Agriculture Research Center, (HARC) a 501 C (3) tax exempt organization in 2009, specifically to facilitate the preservation of housing for retired Del Monte agricultural workers.

HARC, formerly The Hawaiian Sugar Planters' Association, came into existence in 1895. It had operations on Oahu, Maui, Kauai and the Big Island. It manages private, state and federal grants; it manages its own rental property and maintains several facilities. It has survived and thrived during the downsizing of the sugarcane industry to continue serving its members while broadening its research scope and clientele. Education and outreach have been integral parts of HARC's mission. HARC is well recognized and respected by the agricultural community, and it has attracted 6 private sector partners who are contributing to the facility redevelopment and leasing space in this project.

HARC acquired The Kunia Village from The James Campbell Company, LLC in 2009 after Del Monte's lease expired and the Company withdrew from the Hawaii Market. By the action HARC prevented demolition of the residential and commercial agricultural infrastructure and continued its traditional functions for farm residences and agribusiness. Agricultural warehousing, mechanical shops, administrative areas processing buildings and cold storage facilities are badly needed in this rapidly growing market. The existing Kunia Camp residences are maintained for agricultural workers. The proposed action described in this assessment is to rehabilitate, replace and expand the Kunia Village residential capacity within its current boundaries.

HARC established a wholly-owned subsidiary The Kunia Village Title Holding Corporation (KVTHC) to own and operate the asset on HARC's behalf. By Ordinance 08-26 The deed has restrictions associated with it that require that a minimum of ninety (90) and up to one hundred and fifteen (115) of such residential units shall be used for affordable rental housing. The ordinance allows the James Campbell Company to offset the requirement for provision of affordable units in its Makaiwa Hills residential subdivision. Kunia Village will be kept as affordable rental housing for farm workers, in perpetuity through deed restrictions, and the proposed action will allow Kunia Village to exceed the requirements proposed by Ordinance 08-26.

1.4 Purpose and Need

The parcel retains its zoning as Ag-1, restricted agricultural land as is all of the surrounding land which is otherwise actively used for agriculture. Worker housing and agriculturally related structures are permitted on Ag-1 land by a farming operation. Because HARC is an agricultural

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research organization and not a commercial farm, a variance was obtained (#2008/VAR-26) to allow a higher density of farm dwellings on Ag-1 restricted land. Ag-1 land allows 1 farm dwelling per 5 acres. The property had 121 units per 119 acres. The variance was approved by the county for the existing 121 units so that they could be repaired or replaced.

Hawaii's economy depends on tourism, government spending and agriculture in that order. Whereas tourism is thought to have the greatest opportunity for growth, the growth in agricultural diversity has been surprisingly reliable and steady over the past 2 to 3 decades. As the 2 major agricultural businesses, sugarcane and pineapple, have reduced their contribution to the economy, specialty crops have risen substantially to form a stable economic contribution. This transition from a relatively few large-scale farms based on the

commodity crops of sugarcane and pineapple to many smaller scaled specialty agricultural businesses continues to occur. However, the pressures and future opportunities to convert prime agricultural lands to non-agricultural uses have increased during the downsizing of plantation-style agriculture. Nowhere in the State is this more evident than Central Oahu.

The region has been in an extended transition which began with the closing of Oahu Sugar in 1992 and continues today. The economic impact of Del Monte's closing was not published, but is likely to have reduced the agricultural economy by over 30 million dollars per year. Most of the plantations have given way to urban expansion or small and medium sized farming operations that supply local markets. The new agribusinesses are vertically integrated and like residential developers, they are aggressively seeking new areas for expansion.

With the closing of the Del Monte pineapple plantation over 550 workers were laid off. The conditions of the Del Monte lease required the return of the property to its former condition. This would mean that the houses, the infrastructure and the industrial complex as well as the irrigation distribution system would be destroyed and removed. The loss of this housing and agriculture infrastructure would minimize the opportunity for other agricultural enterprises to be

initiated due to the high costs associated with land and infrastructure in Hawaii.

There are approximately 12,000 acres in the Kunia area, significant portions being prime agricultural land suitable for row crops. Within this area there are or will be agricultural opportunities for employment as all the property west of Kunia Road has recently been purchased by agricultural based companies and much of the property on the east side of Kunia Road is



Figure 1-4: Pineapple plantation land near Kunia Village in 2007

currently leased to agricultural operations. The scale up of these operations is continuing. In addition, the Hawaii Department of Agriculture is establishing an agricultural park on 150 acres east of Kunia Road allowing more opportunities for small agricultural businesses. It is anticipated that there will be well over 1,300 agricultural positions available in this area as well as the opportunity for up to 100 new farm sites. The Kunia Village and Agribusiness Complex will serve these clients.

With the departure of Del Monte, James Campbell Company, LLC, the former owner of the subject property subdivided the housing and industrial portions of the property from the rest of the agriculturally zoned property. That subdivided portion, the subject property, consists of 119.086 acres comprised of: farm dwellings and accessory buildings on 48.368 acres; an office,



Figure 1-5: Typical 3 bedroom home in Kunia Village

warehouse and workshop area on 5.413 acres and a processing area on 16.095 acres; and two agricultural land areas which total 49.21 acres. The subject property is completely surrounded by agricultural lands which are leased to farming operations by Island Palms Communities (IPC) a partnership consisting of a private company and the military.

The early growth of the smaller agricultural operations has often been on what was available; relatively small areas of marginal land. As large blocks of land are marketed these smaller operations are either not suited to the larger areas and/or are unable to finance these large tracts of land. Consequently, it is difficult for small

agricultural businesses to acquire land or lease it under reasonable terms for production or processing of agricultural products. These issued directly impact the availability of locally produced agricultural products because much of the large corporate production is exported.

The availability of the subject property under KVTHC's ownership allows for the creation of a stable agribusiness residential and commercial center. It also facilitates affordable housing for farm labor and workforce development by providing a nucleus for these activities. This project fits into more than one economic area of opportunity:

- Provides affordable housing which is an impediment in agriculture;
- Provides facility infrastructure to produce value-added export marketing, import substitution, master branding-planning and workforce development; and
- Adds sustainable infrastructure which involves energy, water, and waste recycling.

Kunia Village was built prior to City zoning code standards. Plantation housing units date from 1910 to the 1920s, with the majority of the structures dating to the 1920s. Historical records and remaining infrastructure indicate that the Village contained more than 121 residential units and

two dormitories as recently as the 1970s. The existing limit of 121residentia-il units that are now permitted under variance #2008/VAR-26 only reflects the condition of the village in 2009 at the time it was sold to HARC. HARC's objective for this property is to retain badly needed infrastructure for agricultural operations evolving during the transition from plantation toward diversified agriculture. In order to implement this objective with the least risk to HARC's research mission, it created KVTHC, which is a 501C (2) tax exempt organization, a division of the tax code created to manage assets for a 501C (3).

The plantation houses currently in use in Kunia Village were never designed to withstand 50 to 75 years of service and many are beyond repair. KVTHC has struggled to maintain all the units in a safe condition, but the maintenance costs exceed practical rent to serve low-income farm workers. In March 2013 HARC, KVTHC, Rural Community Assistance Corporation (RCAC) and the new entity, the Kunia Village Development Corporation (KVDC), applied for and received funding commitments from a combination Low Income Housing Tax Credits,, Historic Tax Credits, federal loans and guarantees, bond sales and private and non-profit lenders which will allow for the redevelopment of 82 of the 112 habitable housing units. The redevelopment plan calls for 37 of the houses to be demolished and replaced with new units that fit the historical character and appearance of the existing units. The remaining 45 units will be fully renovated. The housing and infrastructure will be owned by Kunia Village Housing Partnership, I L.P. After 15 years, KVTHC will reacquire ownership of the units along with debt obligation. Rents for farm tenants will be indexed to the households income and be no more than 30% of the gross family income. The US Department of Agriculture (USDA) will provide rental assistance which will reduce the tenants rent to no more than 30% of the household's adjusted income. Under Federal Low Income Housing Tax Credit (LIHTC) requirements, a majority of the housing units must be restricted to households earning less than or equal to 60% of the median family income. The resultant reduction in allowable income will make many of the current residents ineligible, including some of the retirees who have resided in Kunia Village for decades.

The purpose and need for maintaining and expanding Kunia Village residential housing is to:

- 1. Continue to provide affordable housing to farm workers,
- 2. Maintain farm worker housing as rental units in perpetuity. Housing units will not be sold,
- 3. Provide housing to farm workers in the lower income brackets,
- 4. Meet the growing demand for farm worker housing,
- 5. Continue to provide housing for retirees of the former Del Monte Fresh Fruit Company, and other aging farm workers now residing in Kunia Village.

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Figure 1-6: Pineapple harvest circa 1950

1.4.1 Demand for Farm Worker Housing in Central Oahu

In March 2013 the Kunia Village Development Corporation commissioned a market study to determine the probable demand for low income farm worker housing. The study was done by Rick Cassiday at Data@Work, Inc. This study provides information on the probable demand for rental housing units for farm workers in Central Oahu. Notable conclusions from the Market Study include:

US Census data estimated there are 3,502 jobs in the agricultural labor sector on the island of Oahu. This however, would include some managerial positions, whose salaries would be sufficiently high so as to exclude them from qualifying. As such, we think that a conservative estimate for farm laborers on Oahu who qualify both by income and profession (laborers) for this project would number between 1,600 and 1,800. As explained in a subsequent section, we believe a large percentage of these employees would be attracted to a newly remodeled single family home in the center of Oahu's agricultural farmland, with an easy commute to work. Given there will be only 200 total units available, we think that there will be more than an ample demand from farm workers who qualify and apply.

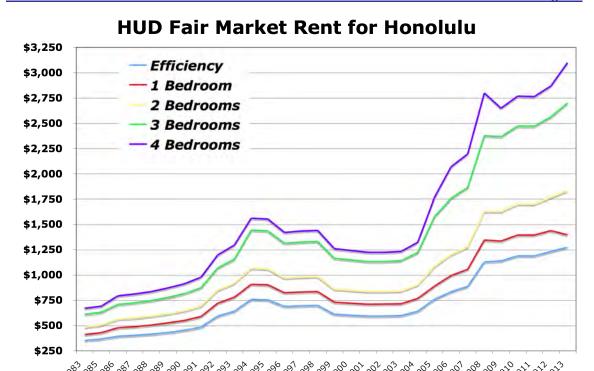
AFFORDABLE INVENTORY: In the universe of two, three and four bedroom affordable single family housing units on Oahu targeted on families making an AMI of 60% and 80%, there are no rental projects. There are two single-family projects targeting families making an AMI of 30%. For this segment, there are a total of 61 units. First, the long waiting list times for these projects indicate the market is very tight for these units. Second, the absolute number of units in the area is tiny, relative to the whole island demand. And, third, they only serve the lowest market segment, leaving the others making higher incomes, at the mercy of the open market.

Thus, we believe that the project, well located in the heart of the agricultural area of Oahu, close to modern amenities, in a renovated condition, at below market rates, should be able to capture a large percentage of the potential farm worker demand. This was previously estimated on a conservative basis at 1,600-1,800 employees. We believe at least a quarter of those workers would be attracted to the project, and that half of those will apply and qualify, or 200-250 applicants.

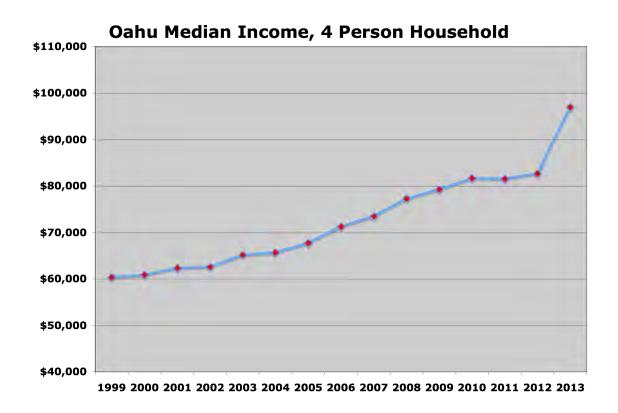
Finally, the project will be able to offer their units to the existing 115 households in Kunia Village, most of who meet the eligibility criteria, and who will have priority for occupancy in the 80 renovated or newly constructed units. This will result in a very short rent-up period. Given this, it is possible that none of these remodeled units will be offered to those who currently aren't residing in this plantation community. In the event that there are un-rented units, then we believe there are, as explained above, at least 200-250 qualified farm laborers who will apply for a unit. Thus, we foresee that this project will be able to achieve 100% occupancy within the first six to twelve months of availability.

Given the rapidly developing diversified agriculture industry on former James Campbell Estate lands and the lack of affordable housing in the area, this assessment concludes that there will be a high demand for single family homes in Central Oahu which are set aside for low-income farm workers and retirees. One major factor limiting the expansion of agriculture on Oahu may be the inability of farming families to find suitable accommodations. The new family farmers now working in agricultural parks bordering Kunia Village are not considered farm workers by the USDA. The USDA's definition does not change their basic need to find housing close to their farms. Additional housing units provided in the proposed action will serve these farmers as well as those workers employed by commercial farm companies.

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In addition the rise in the Fair Market Rental rates, the Honolulu Area Median Gross Income levels at the county level just were released for 2013, and show a noticeable increase from 2012, thanks to the economic recovery.



2.0 PROPOSED ACTION AND ALTERNATIVES

2.1 Proposed Action (Project Description)

The redevelopment of the village is planned to occur as 2 projects:

- PROJECT 1- the renovation and/or construction of 82 units with funding through state and federal Low Income Housing Tax Credits, Historic Tax Credits, USDA Rural Development Agriculture Housing 514 Program, conventional loans and self-financing;
- PROJECT 2- the processing of a 201-H Low Income Housing county application to legitimize the community service and related buildings located on Ag-1 land, and allow for expansion up to 200 agriculturally related worker housing units and community facilities.

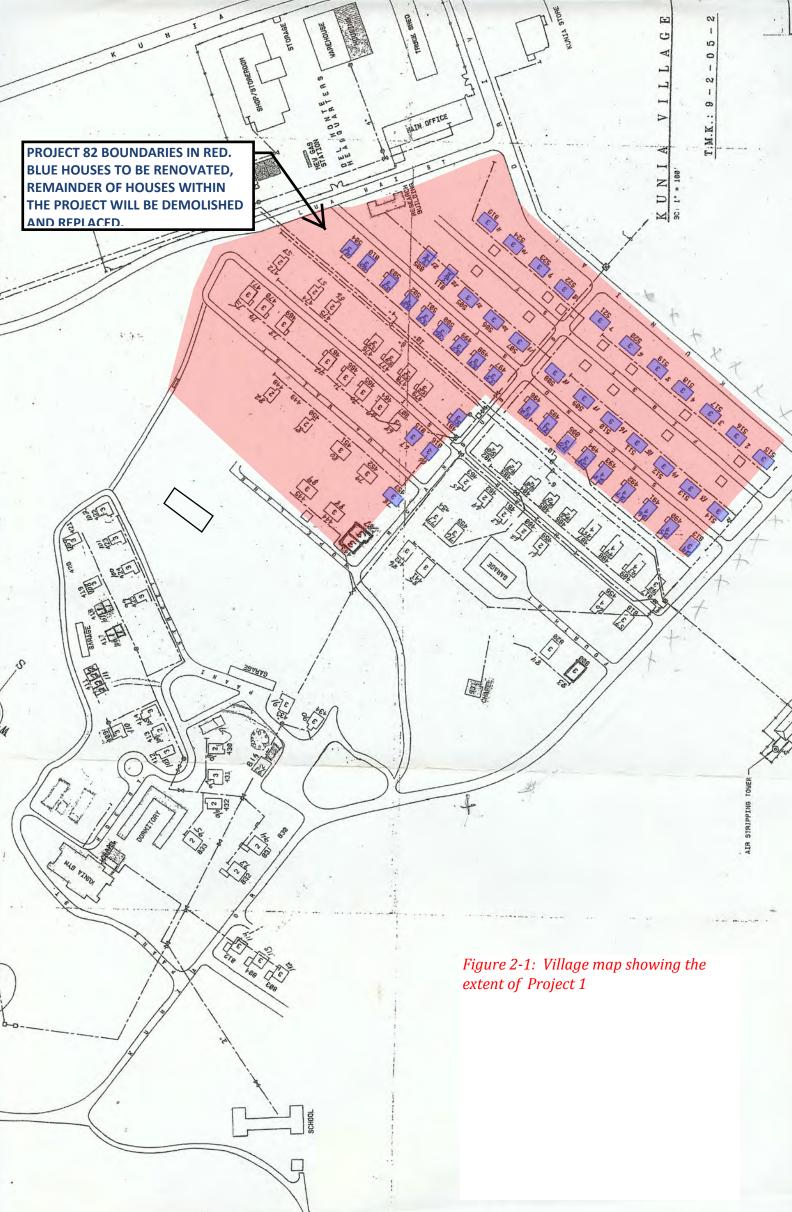
Project 1 (a.k.a. Project 82)

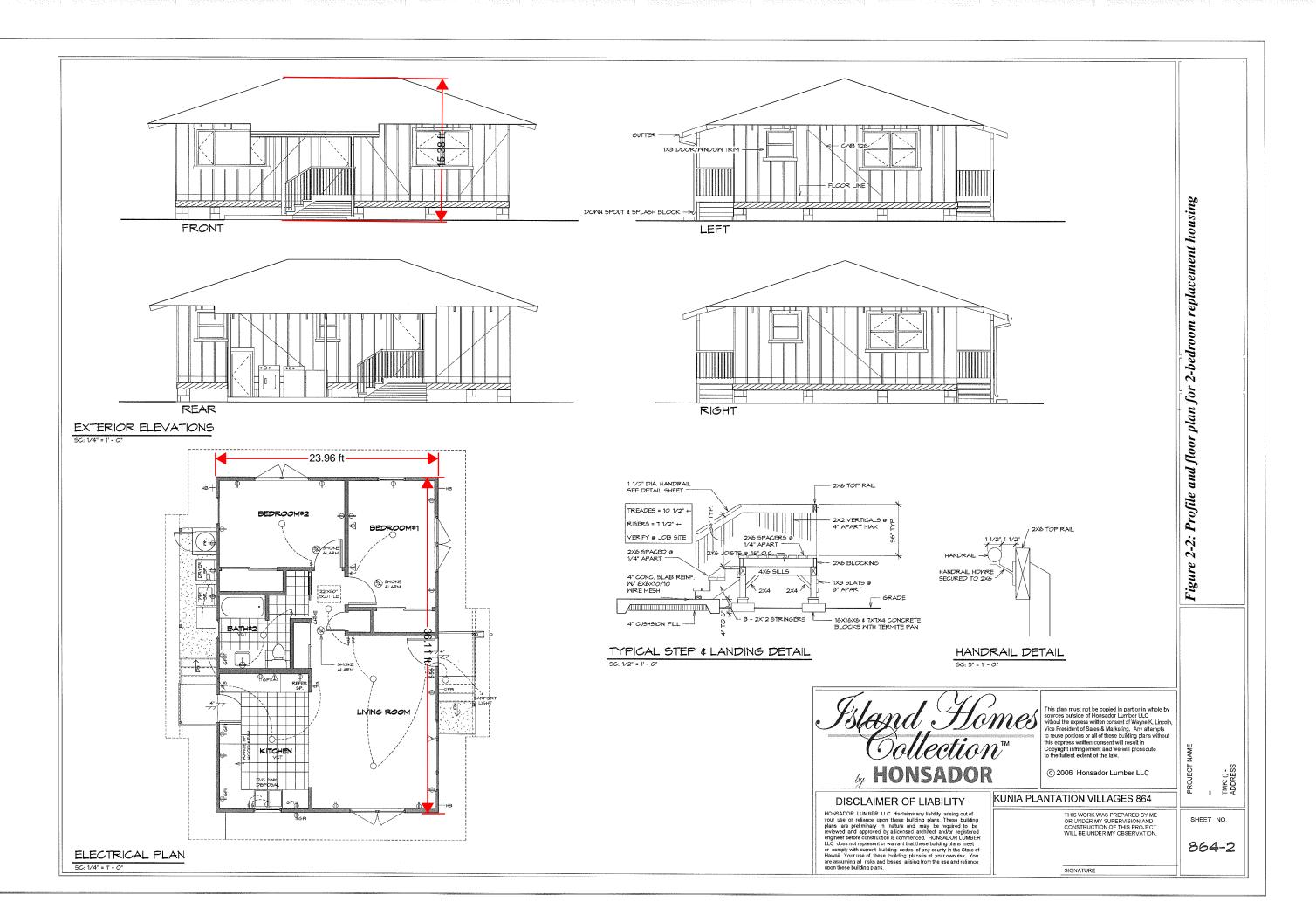
Project 1 is the first and most substantial renovation of the Village. It has been dubbed Project 82 because 82 of the 121 housing units will be either renovated or replaced with similar units. Forty-five of the existing single family homes will be completely renovated, and thirty-seven will be replaced with comparable new housing units (Figure 2-1). The project will also replace or renovate essential Village infrastructure including potable water distribution lines, wastewater collection piping and it will resurface some of the Village streets within the project.

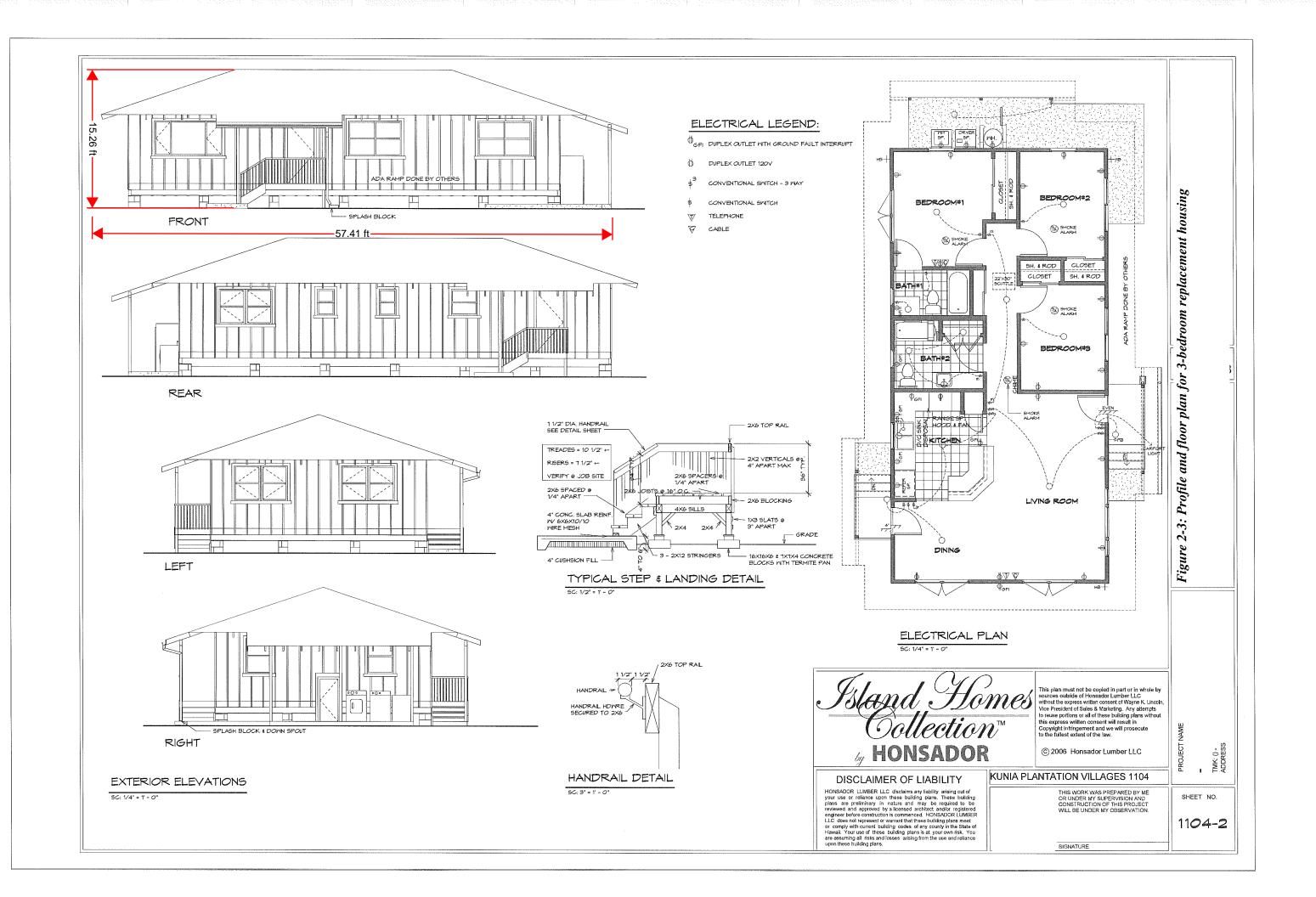
The construction characteristics of any new additions or renovations must be consistent with the historic character of the Village and plans <u>have been</u> approved by the State Historic Preservation Division (SHPD) of the Department of Land and Natural Resources (DLNR). Renovated and replacement housing will remain single story, wood-frame housing build on post and piers. Kunia Village has worked with Honsador to produce compatible models of the 2, 3, and 4 bedroom housing that have been approved by SHPD. Replacement housing within the project is shown in Figures 2-2 (2 bedroom units) Figure 2-3 (3 bedroom units), and Figure 2-4 (4 bedroom units). Replacement housing has been specifically designed and approved to match the existing architectural character of the Village.

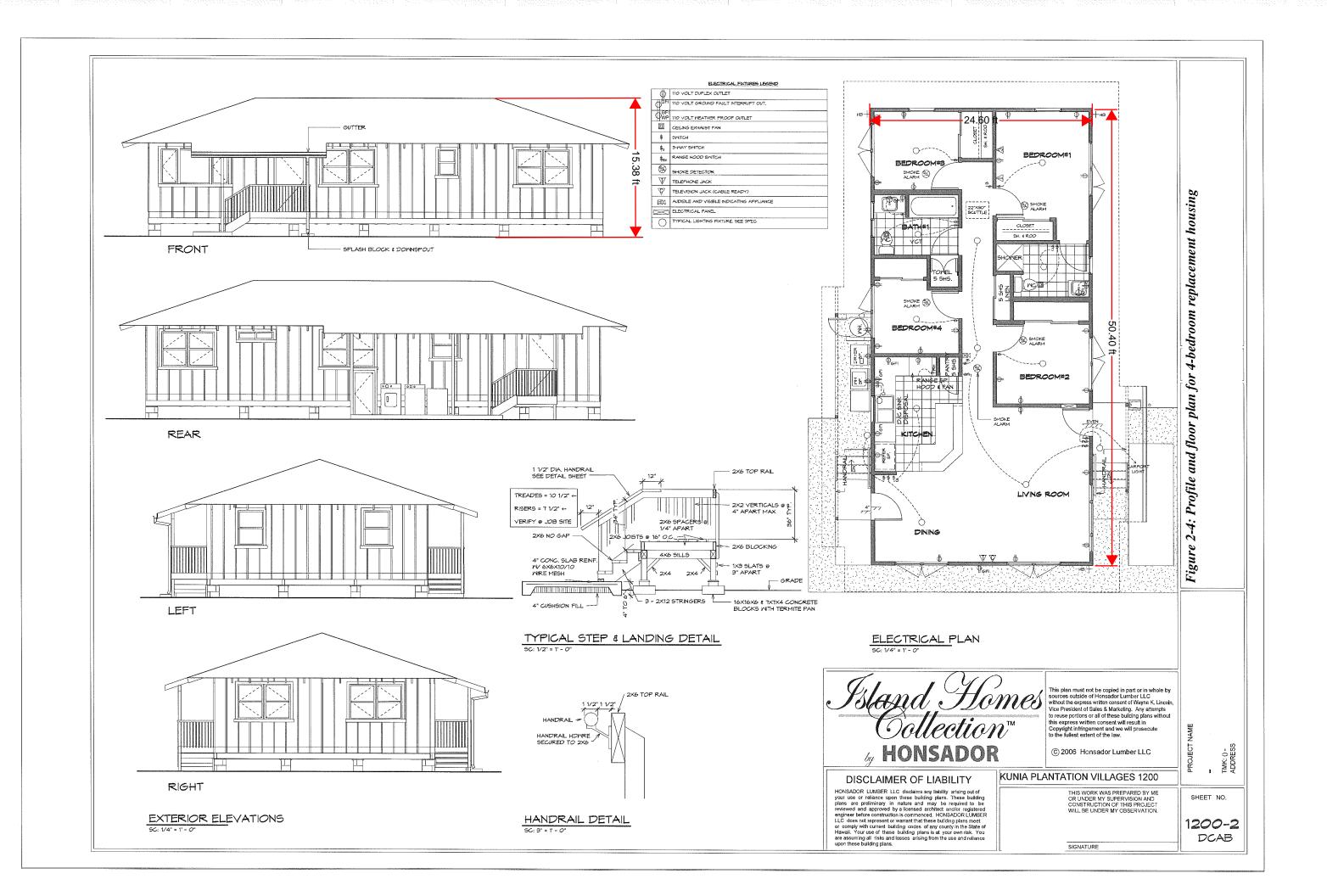
Housing to be renovated includes repair and replacement of flooring walls and beams that have been damaged by termites or wood rot. The internal spaces will be opened up to make the kitchen and living room into a single larger space. An additional bathroom will be added, and the units will get new electrical service, flooring, cabinets, countertops, kitchen and bathroom fixtures and roofing. Kunia Village expects that the quality of homes to be renovated is equivalent to that of the new homes to be constructed. Construction is expected to begin in early 2015 and continue for a period of 18 months. The majority of residents now living in these houses will be relocated within the village by keeping a block of existing units vacant for those that are displaced. The Village will be renovated 3 to 5 houses at one time.

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Funding for the Project 82 comes from:

•	Department of Agriculture (USDA) Section 514 1% loans	\$6,000,000
•	Commercial loan (Wells Fargo, Inc.)	\$9,110,000
•	Sale of Federal LIHTC \$1,080,375	\$16,205,625
•	Sale of State LIHTCs	\$8,222,820
•	Business Solar Tax credits	\$244,713
•	Federal and State Historic Tax Credits	\$1,424,160

Project 1 has completed the submittals for final approval by the federal agencies, including USDA Environmental Review; approval for 2 loans from USDA Agricultural Worker housing; and housing subsidies for up to 76 units for qualified tenants over the life of the project.

Approval of funding from HHFDC for state and federal Low-Income Housing Trust Corporation (LIHTC) requires a HRS 343 review under the public funding trigger. This document is intended to satisfy that requirement. Upon its completion the project will receive the final approval of construction financing totally approximately \$16 million for the 82 units.

Kunia Village has always been reserved for low income farm workers or farmers. KVTHC has monitored income and employment for Village residents since its inception. The USDA housing subsidies carry additional restrictions that make qualification more restricted than the Kunia Village in-house income qualifications. This project's two primary restrictions includes 76 units are reserved for tenants at or below 80% of the county's AMI. The Low Income Housing Tax Credit requires that 74 units are further restricted to 60% of the County's AMI. Income is adjusted based on the number of family members. Many of the Del Monte retirees to whom Kunia Village is obligated to provide housing have income levels above the 60% AMI range and will not qualify for this project. In addition, residents in this project must qualify under USDAs definition of "farm worker", which is restricted to employees of farm corporations or other entities. A person who is a sole proprietor farmer does not qualify under the USDA definition. Since most farm land available is leased and those leases do not allow for the farmers to live on their leased land, there is a need for housing for low income farmers and agricultural workers above the 60% AMI. These are the target groups necessitating the Project 2.

Project 2 (201-H Permit)

After 2/3 of the housing units are renovated or replaced under Project 82 KVTHC proposes to use internal returns from its assets or identify other sources of funding to renovate the remaining 39 existing units of the allowable 121 units in the existing Variance (2008/VAR-26) and construct additional housing units to in-fill existing vacant lots within the Village. The 201-H application will seek to expand the allowable number of housing units to 200. Increasing the number of housing units beyond the limit authorized in the village variance obtained in 2008 requires approval of the Honolulu City Council under State Statutes contained in the Hawaii Revised Statutes Section 201-H. One of the requirements of a 201-H permit application is an approved Environmental Assessment. Project 2 does not have a dedicated source of financing and will be completed over a longer period as funding is acquired. Portions of the money required for Project 2 have been provided by the ILWU through a HUD grant. Other portions will be derived from lease payments and note payments on Project 1. KVTHC will dedicate most

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of its in-house resources to the development of the Village, and other private sources of funding will be developed. The renovation of the remaining 39 units and construction of up to 79 new units may require more than 10 years for completion unless new sources of funding are identified.

The proposed action is to obtain a permit under the Hawaii Revised Statutes Chapter 201-(H) to expand the number of residential units within the existing footprint of the Village, allow for community service buildings within the Village, gain relief from certain other design standards and fees required in the Land Use Ordinance.

HRS Chapter 201-H was enacted into law to provide a process whereby an affordable housing project may be granted exemptions from any statutes, ordinances and rules of any governmental agency relating to planning, zoning and construction standards that do not negatively affect the health and safety of the general public. The City and County of Honolulu Department of Planning and Permitting (DPP) administers this law.

Exemptions from Development (or Sustainable Community) Plan designations and zoning district requirements such as allowing an apartment building in a residential district, or residential uses of agricultural land are considered under 201-H. Other exemptions include relief from park dedication requirements, and subdivision requirements. Building height or density exemptions are also typical requests.

Affordable housing projects are eligible for the 201-H process if at least half of the units are made affordable to income target groups established by City rules. These rules are based on guidelines established by the US Department of Housing and Urban Development (HUD). The target groups are defined as a percentage of the median income for Honolulu. Normally projects must contain at least 50 dwelling units, although there are exceptions for projects that cater to individuals with special needs. Project 82 is providing 76 affordable housing units which are more than the half requirement imposed by 201-H.

In order to qualify for the 201-H process a project developer must submit an application to DPP for review. Subsequent to a wider agency review, the application is delivered to the Honolulu City council for consideration along with DPP's recommendations. If approved by the City Council the project may obtain exemptions to certain development standards without rezoning or changing land-use designations contained in the County's planning documents. The purpose of the 201-H process is intended to facilitate qualifying affordable housing projects.

The proposed action is to obtain development exemptions under the 201-H permit in order to maintain the existing housing and commercial facilities within Kunia Village and increase the number of housing units through infill of now-vacant areas within the Village footprint.

KVTHC and HARC retained JAS Architects and Mason Architects to prepare a Village Master Plan that includes:

- Adding up to 79 new residential units to bring the capacity of the village to 200 family housing units and include multi-family units, such as, duplexes and quadraplexes. New Housing units will be placed within the existing residential footprint.
- Improving the green space and visual buffers within the community,
- Creating new space for community services such as administration area for community providers, classrooms, medical/dental clinic, cafeteria, community kitchen, restaurant, farmers' market, etc.

At full development the Village Plan is to contain 200 housing units. The Master Plan includes both Projects 1 and 2. Project 1 will consist of the rehabilitation or replacement of 82 housing units. Under USDA guidelines accepted as a condition of the project 76 of the 82 units will be reserved for families with incomes of 80% or less of the median income for Honolulu (AMI). Project 2 will include 39 existing housing units and an additional 79 to be constructed in the future. These Project 2 units will also be maintained for farm workers and farmers, but are intended to be used for a range of income families from with incomes of 140 percent or lower with a small fraction to be leased at market rate. The 201-H requirements for affordable housing are shown in Table 2-1.

Table 2-1: Income guidelines for qualifying housing units allowable under 201-H assuming that the final development contains 200 housing units.

Income Category of Resident	201-H %	Allowable # of Units for 201-H
Low Income households (≤ 60% AMI)	NA	NA
Lower income households (≤80% AMI)	10	20
Moderate Income households (81-120%)	20	40
Gap group households (121% - 140%)	30	40
Allowable Market Rate rentals	50	100
Total number of Housing units		200

The proposed income allocation within Kunia Village at full development are presented in Table 2-2.

Table 2-2: Income allocations for Kunia Village at full development of 200 housing units.

Category of resident	%	# of Units in Kunia Village
Low Income households (≤ 60% AMI)	37	74
Lower income households (<80% AMI)	20	39
Moderate Income households (81-120%)	23	45
Gap group households (121% - 140%)	11	22
Market Rate rentals	10	20
Total number of Housing units		200

Table 2-3 shows the distribution of 1 bedroom to 4 bedroom housing units within the Village. Note that the fraction of affordable units is higher in the 3 and 4 bedroom units than in the 1 and 2 bedroom units.

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Table 2-3: Kunia Vil	Π <i>ασο</i> μωτείμο εί <i>το</i>	αποςαπου ηστωσσυ	attoraanie ana	over_attoraanie
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Unit Size	#	size	% afford	# affordable	# above affordable
	units				
Studio	0				
1-BR	30	630	67%	20	10
2-BR	39	630	69%	27	12
3-BR	110	960-1200	85%	93	17
4-BR	21	1300	86%	18	3
Total	200			158	42

Figure 2-5 shows the number of housing units which are at or below each income category that are recognized by USDA, and Low Income Housing Tax Credit (LIHTC), and 201-H criteria of affordable housing.

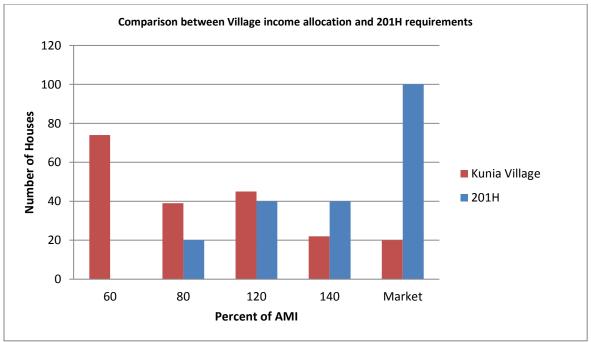


Figure 2-5: Bar Chart of proposed income allocation for housing units within Kunia Village and the minimum requirements for affordable housing. Note that 201-H has no requirement for (LIHTC defined) low income families ($\leq 60\%$), but the largest component of Kunia Village will be less than or equal to 60% AMI.

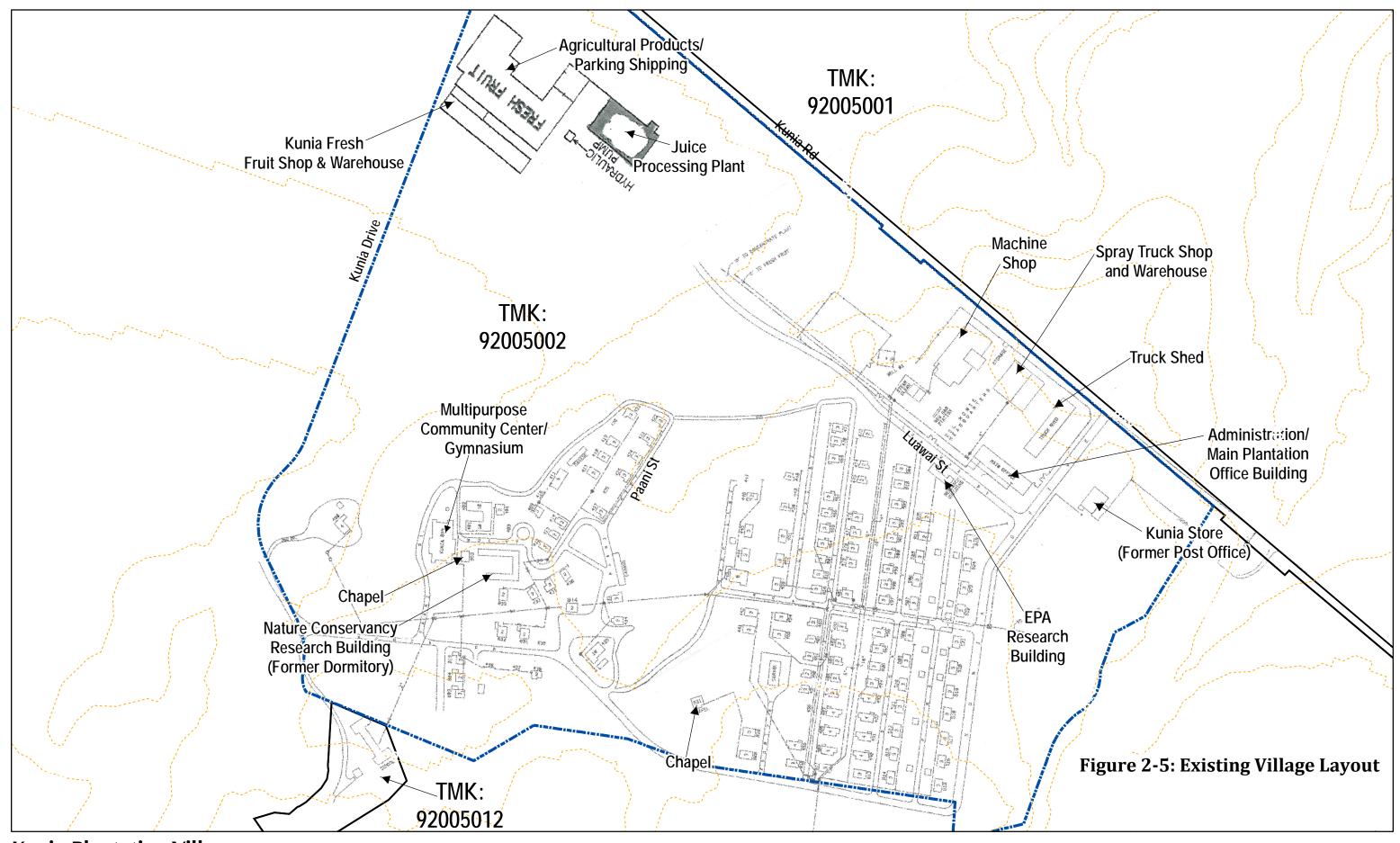
All improvements would be contained within the existing village footprint while maintaining its rural character and sense of community. Most additional units will be placed in vacant lots

within the Village or in formerly-used residential areas that are now vacant due to the demolition of older homes.

Future construction during Project 2 will begin by renovating the existing single family houses that are salvageable. Expansion housing will consist of single family units, duplexes and 4-plex units that are designed under consultation with a qualified historic architect and approved by SHPD. Some of the duplexes and quadraplexes are intended for older retirees, single farm workers and two person households.

Figure 2-6 is a map of the existing Kunia Village as permitted under Variance # 2008/VAR-26. Figure 2-7 is the proposed Master Plan showing the final layout of the Village at full development.

The proposed redevelopment in Project 2 will not occur in a single step or as a major construction project. The Kunia Village Title Holding Corporation will seek grants and use inhouse funding to add housing units as funding allows. The final build out may require more than 10 years for completion.



Kunia Plantation Village



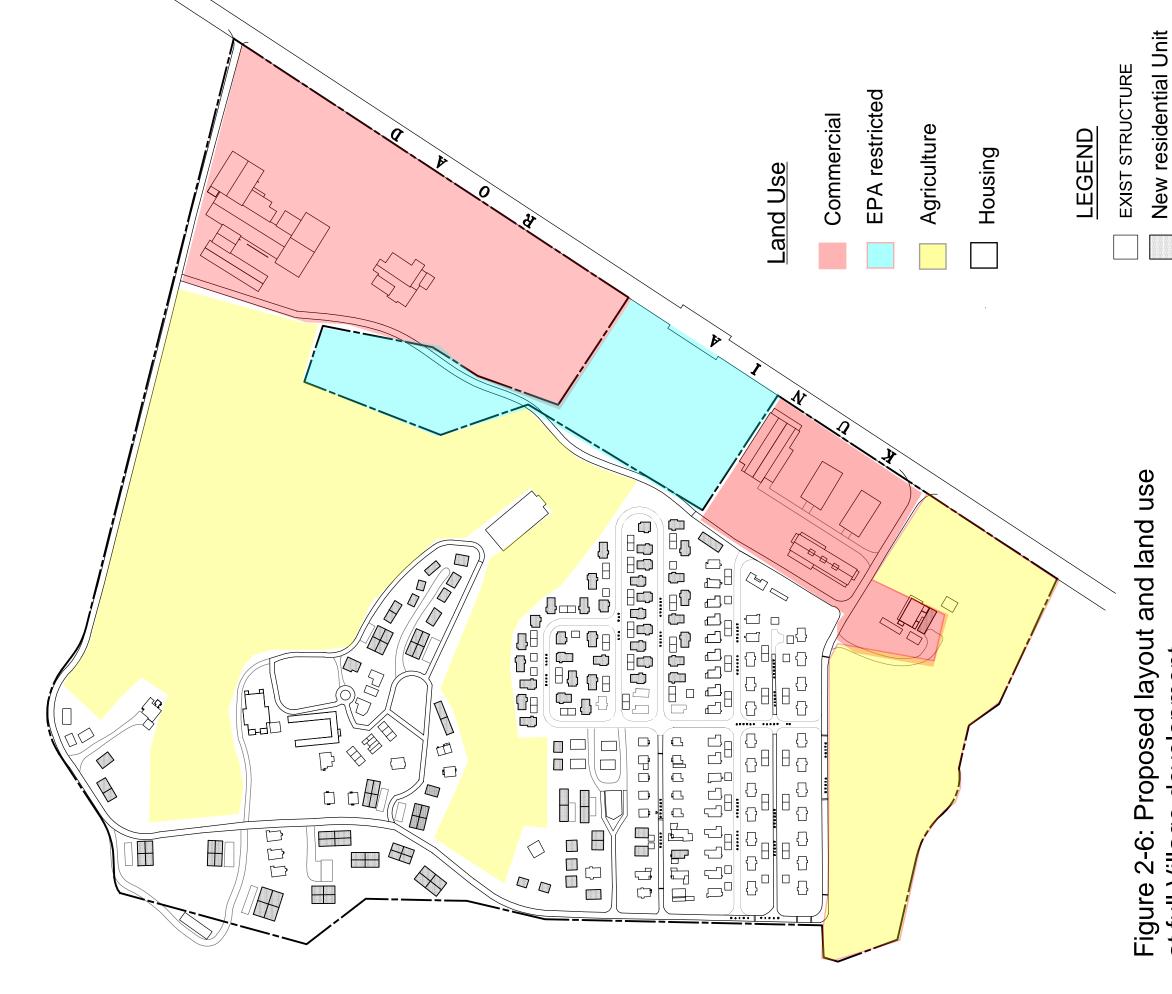


Figure 2-6: Proposed layout and land use at full Village development

2.3 Exemptions to LUO to be Requested

The proponent will request exemptions to the City land-Use Ordinance (LUO) through the 201-H permit application process. A preliminary list of exemptions to be requested includes:

(1) The existing dwelling units are not in compliance with LUO Section 21-3.50-2(b),- Site Standards:

(b) The maximum number of farm dwellings in an AG-1 district agricultural cluster shall not exceed one unit per five acres.

Expanding the maximum allowable number of residential units to 200 within the 119 acre site would result in a density of one unit per 0.595 acres, which exceeds the maximum density required by the LUO. KVTHC will request an exemption from LUO Section 21-3.50-2(b) through the 201-H permit application.

- (2) Existing uses that were established by Del Monte to provide essential services that are not specifically allowed by the Land-Use Ordinance (Table 21-3) include:
 - (1) gym/community center
 - (1) church
 - (2) temporary farm worker dormitory
 - (1) Post office
 - (1) Research building necessary to service the Superfund maintenance activities,
 - (1) wastewater treatment plant
 - (1) Village administration building
 - (1) Village Maintenance Shop
 - (1) Neighborhood store

Planned land uses which are not now in existence include:

- General purpose building to accommodate community services such as: Medical/dental clinic, administration areas for community providers, agricultural associations, day care, cafeteria for children and this community's elders,
- Housing Rental Office
- Housing Maintenance Shop
- Community Commercial Kitchen including shop with outdoor and indoor retail market areas
- Classrooms for job training for low income families- adult education, sustainable agricultural certifications, English as a second language, financial services and related community support services
- Solar voltaic fields to reduce the cost of water pumping
- Farmer's Market appurtenant to the Neighborhood Store

KVTHC will request an exemption from LUO Table 21-3 through the 201-H permit application.

- (3) The 201-H application will request an exemption from height limits specified in Section 21-3.50-4(1) for the existing and planned community service infrastructure.
 - (1) Height. The maximum height may be increased from 15 to 25 feet if height setbacks are provided

The existing Community Center exceeds the height limit imposed by the Land Use Ordinance. A request for exemption will be made to allow the existing buildings to remain taller than 25 feet.

Section 3.3.6.1 contains a more detailed discussion of land use constraints within agricultural zoned land.

2.4 Alternative Actions Considered and Rejected

Discussion of several alternatives was provided in Variance request #2008/VAR-26, including agricultural cluster, zone change, and historic site designation. These alternatives and the no action alternative have been considered.

Agricultural Cluster: According to Ord. 99-12 (May 1999), "agricultural clusters are permitted in any agricultural district to promote economy or services and utilities and the most efficient use of the remainder area for agricultural pursuits." For this request, an agricultural cluster alternative for Kunia Village is not feasible because the maximum number of farm dwellings in an Ag-1 district agricultural cluster is not allowed to exceed one unit per five acres, though the spirit of the Agricultural Cluster is present in the proposal. There are 115 existing farm dwelling structures (121 dwelling units) on the 119.086-acre Kunia Village site. The agricultural cluster alternative is not feasible because it would require more acreage per dwelling than allowed within the Ag-1 zoning. In addition, the agricultural cluster alternative requires each dwelling to be sited on a lot not to exceed 5,000 square feet. The majority of dwellings now and in the future will be located on 10,000 sf lots. These criteria make the Agricultural cluster alternative infeasible.

Zone Change: Kunia Village is located within the City and County of Honolulu's Ag-1 Restricted Agricultural zoning district and the State Agricultural district. The request of a zone change, for example to a residential district, for Kunia Village would not be feasible because rezoning would alter the essential character of the neighborhood and the intent and purpose of the zoning ordinance for this area. In addition, a zone change alternative would not be commensurate with the Central Oahu Sustainable Communities Plan (2002) for the area which states, "The existing rural forms and historic character exhibited within the villages should be preserved and enhanced. This includes the perpetuation of rural agriculture functions and activities in the surrounding area, in conjunction with village land uses." The zone change alternative would also require alteration of the Agricultural Lands of Importance to the State of Hawai'i (ALISH) because Kunia Village is located within unique and other agricultural lands. In addition, the essential purpose and intent of Kunia Village is related to that of the agricultural-zoned district as it is historically associated with agricultural activity by providing residences for agricultural workers and promoting diversified agricultural activities. A zone change request is

not consistent with the general plan and functional plans for the area and therefore, the zone change alternative is not feasible.

State Historic Landmark Designation: In Variance request #2008/VAR-26 a State Historic Landmark Designation was considered and rejected because it would not serve the objective of making the existing housing units compliant with the zoning ordinance. Since that time Kunia Village has been placed on the State and National historic registers. The redevelopment activities proposed for the Village are approved by the State Historic Preservation Division of DLNR. All future changes and additions will also require approval from SHPD. Therefore, the State Historic Landmark alternative will require additional permitting approvals for renovation and additions to the Village but is otherwise unrelated to the proposed action to expand the number of housing units.

No Action Alternative: The no-action alternative is to maintain the existing situation, which is limited to 121 residential units. The increase in the maximum number of residential units is needed to meet the expanding demand for affordable housing for farm workers and retirees to support Oahu's resurgent agriculture industry.

The proposed action is selected because it meets the increasing demand for farm worker housing, it is compatible with existing planning objectives, and consistent with the character of the existing community.

3.0 ENVIRONMENTAL SETTING AND IMPACTS

3.1 Physical Environment

3.1.1 Geology and Soils

The Island of Oahu covers 597 square miles, and is the third-largest island in the Hawaiian chain. The island was formed about 4 million years ago by two volcanoes: Waianae and Koolau. Waianae, the older of the two, created the mountain range on the western side of the island, whereas Koolau shapes the eastern side. Central Oahu is an elevated plateau bordered by the two mountain ranges, with Pearl Harbor to the south. Oahu's most famous natural landmarks, including Diamond Head and Hanauma Bay, are tuff rings and cinder cones formed during a renewed volcanic stage (roughly 1 million years ago).

The subject property has soils from the Wahiawa series (WaA) and Kolekole series (KuB). Both soil types are similar. The following soil description is from the Soil Survey of the Island of Hawaii (US Soil Conservation Service, 1972).

Wahiawa Series

This series consists of well-drained soils on uplands on the island of Oahu. These soils developed in residuum and old alluvium derived from basic igneous rock. They are nearly level to moderately steep. Elevations range from 500 to 1,200 feet. Rainfall amounts to 40 to 60 inches annually; most of it occurs between November and April. The mean annual soil temperature is 71° F. Wahiawa soils are geographically associated with Kunia, Lahaina, Leilehua, and Manana soils. These soils are used for sugarcane, pineapple, pasture, and homesites. The natural vegetation consists of bermudagrass, guava, honohono, koa haole, and lantana.

Wahiawa silty clay, 0 to 3 percent slopes (WaA).

This soil occurs on smooth, broad interfluves. Included in mapping were small areas of Kunia, Lahaina, and Leilehua soils. In a representative profile the surface layer is very dusky red and dusky red silty clay about 12 inches thick. The subsoil, about 48 inches thick, is dark reddish-brown silty clay that has subangular blocky structure. The underlying material is weathered basic igneous rock. The soil is medium acid in the surface layer and medium acid to neutral in the subsoil. Permeability is moderately rapid. Runoff is slow, and the erosion hazard is no more than slight. The available water capacity is about 1.3 inches per foot in the surface layer and about 1.4 inches per foot in the subsoil. In places roots penetrate to a depth of 5 feet or more.

Kolekole Series

This series consists of well-drained soils on uplands on the island of Oahu. These soils developed in old gravelly alluvium mixed with volcanic ash. They are gently sloping to moderately steep. Elevations range from 500 to 1,200 feet. The annual rainfall amounts to 35 to 50 inches, most of which occurs between November and April. The mean annual soil temperature is 71° F. Kolekole soils occur on the windward slopes of the Waianae Range. They are geographically associated with Kunia, Mahana, and Wahiawa soils. These soils are used for sugarcane, pineapple, and pasture. The natural vegetation consists of guava, lantana, Bermuda grass, and Natal redtop.

Kolekole silty clay loam, 1 to 6 percent slopes (KuB).

This soil occurs on smooth slopes. Included in mapping were small areas of Kunia and Mahana soils, small-eroded spots, and steep side slopes along drainageways.

In a representative profile the surface layer is dark reddish-brown silty clay loam about 12 inches thick. The subsoil, about 48 inches thick, is dark reddish-brown silty clay loam and silty clay that has subangular and angular blocky structure. The substratum is old gravelly alluvium. A compact, panlike layer typically occurs at a depth of 24 to 40 inches. The soil is extremely acid to strongly acid in the surface layer and medium acid to very strongly acid in the subsoil.

Permeability is moderate to the pan-like layer and moderate in the compact subsoil. Runoff is slow, and the erosion hazard is slight. The available water capacity is about 1.3 inches per foot of soil. Roots are restricted by the compact layer.

The soil at the subject property appears to support vegetation including grasses, weeds, shrubs and trees. Small gardens located within the Village have been productive for many years. These soil types tend to be quite slippery when wet and dusty when dry.

3.1.2 Surface Water

Kunia Village is roughly 7 miles upgradient from the Pacific Ocean at Pearl Harbor, 8 miles from the Waianae Coast, and 9 miles from the North Shore. All open Coastal waters are classified as Class A or AA Open Coastal Marine waters. Storm water is likely to drain into Waikele Gulch, and ultimately into the Middle Loch of Pearl Harbor. Pearl Harbor has a special classification for water quality standards. The nearest surface water body is Lake Wilson (Wahiawa Reservoir) approximately 2.5 miles to the northeast and upgradient from the subject property.

There are two branches of a normally dry stream bed which occur within the Village. The stream beds flood during extreme storm events; with flows normally lasting only a few hours. The site is located in FEMA flood zone D (not studied); however, it is outside the 100-year floodplain. A copy of the Flood Insurance Rate Map (FIRM) is not available for this site. It is also outside the Oahu Civil Defense Tsunami inundation zone. Kunia Village has existing erosion control measures in those locations that are prone to stormwater runoff. Construction contractors have obtained an NPDES and other required permits prior to the start of construction. Construction plans include building and maintaining a stormwater retention basin to minimize the silt loading originating within Project 82. During construction they will be required to use best management practices to control stormwater runoff

3.1.3 Groundwater Resources

The groundwater at the site is within the Ewa section of the Schofield High Level Water Body (SHLWB) aquifer system. This is a dike impounded aquifer which is maintained several hundred feet above the level of basal aquifers. Perched groundwater is known to be trapped at approximately 100 feet below ground surface atop a low permeable rock layer. The basal and perched aquifers beneath the site are contaminated with pineapple fumigants and trichloroethylene (TCE) due to past land uses. An active superfund remedial action continues on the subject property due to an accidental spill in the late 1970s. As part of the consent decree, Del Monte Hawaii operates a pump-and-treat system that removes approximately 750,000 gallons of groundwater per day. Water is stripped of volatile contaminants within an aeration

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tower and subsequently mixed with irrigation water for use by farmers in Central Oahu. Potable water at the site is being treated as a result of dumping or spill of trichloroethylene. After extensive environmental investigations no source was ever identified; however, the US Army garrison, Hawaii provides aeration for potable water in order to volatilize TCE levels to below acceptable drinking water standards.

The boundary between non-drinking water aquifers and underground sources of drinking water is generally referred to as the "UIC Line". Restrictions on injection wells differ, depending on whether the area is inland (*mauka*) or seaward (*makai*) of the UIC line. The subject property is inland of the UIC line, and therefore injection of domestic or industrial wastewater is prohibited.

3.1.4 Climate and Air Quality

The project site has a mild, semi-tropical climate of characteristic of most regions of Oahu. The average maximum daily temperature ranges from 78 °F to 87 °F, with an average minimum temperature ranging from 60 °F to 68 °F depending on the season (Atlas of Hawaii 1992). Rainfall for this area is averages 45 inches annually, with much of it occurring between November and April. Winds from the northeast, known as trade winds, are the most predominant over the Hawaiian Islands. Typical wind velocities range from 3 to 14 knots. There is an occasional shift in the wind patterns to the westerly "Kona" winds which are sometimes quite strong.

In Hawaii, both federal and state environmental health standards pertaining to outdoor air quality are generally met due to prevalent trade winds. Aircraft operations at Wheeler Army Airfield are likely the largest source of stationary air emissions in the vicinity, yet due to the consistent winds, the regulated air pollutants in the area are within the air quality limits established by the Clean Air Act.

There are no significant air emissions sources associated with Kunia Village. During construction there may be additional traffic with temporary contributions to air pollution from fugitive dust and automobile emissions. Automobile and fuel power construction equipment will be limited to that necessary to build the project, and fugitive dust will be managed under best management practices as defined by the State of Hawaii. The proposed action does not include construction and renovation of 82 units under the bond sale, as that has been previously assessed. Expansion of the remaining portions of the Village is expected to be completed in increments as funding is identified.

3.1.5 Noise and Odor

Kunia Village is relatively quiet. Ambient noise levels are characteristic of rural communities. Helicopter traffic into Wheeler Army Airfield is the largest source of ambient noise. Flight operations exist day and night. Noise associated with the proposed action to rebuild Kunia Village will include construction noise during business hours. This construction noise is expected to be intermittent, temporary, and confined to business hours during construction periods. Additional vehicular traffic is also expected to be minimal.

3.1.6 Scenic Value and View Plane

The topography of the area is gently sloping toward the east southeast. The land begins to slope much more rapidly about one mile to the west where the eastern flank of the Waianae range begins. There are limited ocean views from the upper (west) side of the property. View planes toward the west from the Village are of farmland and the back side of the Waianae range. Views to the north, east and south are also of farmland. The majority of which is used for corn production. The small farm plats to the south of the Village are particularly scenic due to the windbreaks and row crops that are seen on the hillsides immediately below the Village.

The proposed action consists of infill and subtle changes to the Village infrastructure. All new construction will be consistent with the Village character. The design of all major improvements will be subject to approval by the State and Federal Historic preservation agencies.

With the exception of those existing views that are created by having a vacant house lot nearby which is filled, the proposed actions covered within the proposed 201(H) exemptions are not expected to create noticeable changes in the view planes or scenic vistas from within or around the Village.

3.1.7 Hazardous Substances

Construction equipment using fossil fuels and hydraulic power will be used in grading and building the facility. There is some possibility of leaks, spills or accidents during construction. The construction contractors will be required to develop and maintain an emergency action plan for management and recovery of any release to the environment. Aging houses may also have asbestos containing materials and lead-based paint. Demolition and/or repair of the structures will be governed by the contractor's best management practices to reduce exposure of both workers and nearby residents to hazardous materials during construction and demolition.

3.2 Biological Environment

3.2.1 Vegetation

The subject property is slightly over 100 acres, rhomboidal (See Figure 3) with the eastern boundary along Kunia Road. Slopes along the stream bed are occasionally quite steep; otherwise the property is gently sloping with 40 to 60 foot maximum elevation difference. Most of the subject property is developed with roadways and paved work surfaces. Vegetation consists of grass and bare soil, with trees only where planted for fruit or shade. The stream bed and other depressions and other areas that are not actively managed support dense stands of guinea grass and invasive trees or shrubs. There are no natural lands within the subject property only those that are actively managed and those whose management has lapsed. During the period when the Plantation managed the property most undeveloped areas were mowed. The dominant vegetation types are Saint Augustine grass in lawns, with planted fruit, or ornamental trees, and vegetable gardens. Land that is not actively managed begins to grow Koa haole (*Leucaena leucocephala*) and kiawe (*Prosopis pallida*) are both introduced and considered invasive species.

3.2.2 Wildlife

The subject property has been residential for over 75 years. Wildlife that transits the property would originate primarily on the slopes of the Waianae Range in the conservation land to the west. Those areas may be relatively important habitat for endemic Hawaiian birds including the Oahu elepaio (*Chasiempis sandwichensis ibidis*), Apapane, (*Himatione sanguinea*) and Amakihi (*Hemignathus virens*). Other species common to the area include northern cardinal (*Cardinalis cardinalis*), spotted dove (*Streptopelia chinensis*), red-vented bulbul (*Pycnonotus cafer*), Indian myna (*Acridotheres tristis*) and gray francolin (*Francolinus pondicerianus*). Feral mammals include pigs (*Sus scrofa*), Indian mongoose (*Herpestes javanicus*), rats (*Rattus rattus or Rattus norvegicus*) and common mice (*mus musculus*) and cats (*Felis domesticus*).

3.2.3 Special-Status Species

The Hawaii Biodiversity and Mapping Program (HBMP) provided information for occurrences within one-half mile of the proposed site. Past reports have indicated that the general area may contain two varieties rare plants, the Ewa Plains Akoko and Red Ilima. The known locations of these plants are away from the subject property. A letter to the US Fish and Wildlife Service in October 2013 did not identify any special-status species or critical habitats located on the subject property. As referenced above the Waianae Range conservation land contains a relatively important habitat for endemic species of insect, and plants. These are separated from the subject property by more than one mile of farm land which is under relatively constant management for agricultural production.

3.3 Socioeconomic

Table 3-1 from the US Census Bureau shows the statistical description of Kunia Village. There are no other residential areas within the Zip code included in these statistics, therefore all housing units were owned and operated by Del Monte in 2000 and KVTHC in 2010. In 2000, the economics of pineapple were not favorable and Del Monte planned to close the Hawaii Plantation but had not announced the closing date. By 2010 Del Monte had withdrawn from the Hawaii Market and Kunia Village was in transition. Many of the former Del Monte employees had not yet found employment and many had moved away. Almost all of the Del Monte retirees remained and still reside in Kunia Village.

Table 3-1: 2000 to 2010 Census Comparison for ZIP Code 96759

SEX AND AGE	2000	2010	% Change
Total population	667	457	-31.48%
Median age (years)	32.6	34.9	+7.06%
HOUSEHOLDS BY TYPE	2000	2010	% Change
Total households	157	109	-30.57%
Family households (families) [7]	129	95	-26.36%

With own children under 18 years	65	39	-40.00%
Two adult family	98	70	-28.57%
With own children under 18 years	51	34	-33.33%
Single Female householder	18	14	-22.22%
With own children under 18 years	10	5	-50.00%
Nonfamily households [7]	28	14	-50.00%
Householder living alone		9	-57.14%
Households with individuals under 18 years		58	-32.56%
Households with individuals 65 years and over		37	-21.28%
Average household size	4.11	4.19	+1.95%
Average family size [7]	4.53	4.42	-2.43%
HOUSING OCCUPANCY	2000	2010	% Change
Total housing units	167	119	-28.74%
Occupied housing units		109	-30.57%
Vacant housing units		10	0%
For seasonal, recreational, or occasional use		0	0%
Homeowner vacancy rate (percent) [8]	0	0	0%
Rental vacancy rate (percent) [9]		8.5	+157.58%

Table 3-2: ZIP Code 96759 2010 Census Demographics

2010 Population:	457
Households per ZIP Code:	109
Average House Value:	\$0
Avg. Income Per Household:	\$31,875
Persons Per Household:	4.19

The population of the State of Hawaii was 1,360,301 in 2010, which represents an average annual growth rate of 1.2% from 2000 to 2010 (US Census Bureau 2010). This compares with an average annual growth of 0.9% for the remainder of the nation. The vast majority of Oahu neighborhoods lost population over the past decade. Few neighborhoods lost as many as Kunia (31.4%). During this decade Del Monte Hawaii left Hawaii and during 2010 the transition between Del Monte and HARC was still on-going. The James Campbell Estate was also liquidating assets but the new buyers had not made structural changes to allow them to put land back into service. Many farm workers left the area to look for new employment; in some cases it was the first time that Del Monte was not their employer and landlord.

3.3.1 Social Factors and Community Identity

Community identity is strong within Kunia Village, and some current residents have spent the majority of their lives within its boundaries. A significant fraction of Hawaii's local population

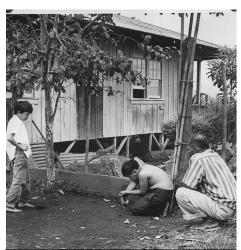


Figure 3-1: Kunia Village in the 1960s

either lived in a plantation camp or had relatives who did during their early years. This type of close-knit community recalls a simpler time in our history. During much of this period fathers, sons and daughters worked the same fields, staved close together and faced life's challenges as part of this community. It is a part of our history that was lost with the loss of the sugar and pineapple plantations. Many social support mechanisms were lost at the same time. Kunia Village has been a community of Pineapple workers since 1910. Most employees walked or rode a bicycle to assembly point for assignments. The Plantation paid the bills, ran the store, and clinic, provided church buildings and recreational facilities. This was a place where neighbors came together when one of their neighbors was sick or injured. The plantation lifestyle was lost as the price paid to support progress. Many wonder if the price was too high.

Kunia Village is now on the State and Federal Historic Registers as one of the few remaining intact plantation villages. It will be run as an agricultural village in perpetuity; supporting many farms instead of one. While not all of the amenities of the original village can be kept, KVTHC will maintain as much of the social fabric and community identity of Kunia Village as possible.

3.3.2 Public Services

Much of the infrastructure in the vicinity of the subject property is privately-owned by KVTHC. The infrastructure inherited from Del Monte, like the structures is in need of repair and maintenance. KVTHC owns, operates and maintains (through contracts) the roads, water distribution system, wastewater treatment plant, and some of the electrical distribution infrastructure.

3.3.2.1 Electricity

The majority of power poles and lines within Kunia Village belong to Hawaiian Electric Company. Electrical power is provided through a Hawaiian Electric Company (HECO) substation located on the East side of Kunia Road near the center of the Village. 46-kilovolt (kV) power is reduced and distributed to pole-mounted transformers for local distribution through a combination of 11.5 kV and 46 kV overhead power lines. Commercial areas are supplied with 480V three phase power, while residential areas have 115 and 220 volt single phase power.

Local generation activities are being considered, but are not designed or contracted at this time. The total demand for Kunia Village is less than 1 MW. The island Oahu total electric demand is

estimated at 1.3 GW. The proposed action may include local power generation which cannot be further specified at this time, but due to the small contribution is not expected to significantly affect the stability of the grid or impact the Utility's ability to provide quality electric service to its customers.

3.3.2.2 Telecommunications

Telephone systems in Kunia Village are currently owned and operated by Hawaiian Telephone or Oceanic Cable Company. No changes of the existing telephone services are planned. Cable and internet services may be obtained from various providers and is left to the discretion of tenants. No changes in the existing arrangement are planned for cable or internet.

3.3.2.3 Potable Water

The primary components of the existing potable water system are Del Monte Well 3 (aka: Navy Well), Del Monte Well 4, an air stripping tower, 305,000-gallon tank, distribution pipelines from the wells to the stripping tower, and transmission and distribution pipelines to service Kunia Village and the commercial buildings. Both wells and the distribution system to the air stripping tower are operated through Second City Property Management (SCPM) a service contractor for the Kunia Water Association. The air stripping tower is paid for by the United States Army, but operated by SCPM. The 305,000 gallon tank, fire suppression system for the village, and potable distribution system is owned by KVTHC and operated by SCPM.

Well 3 was drilled in 1959 to a depth of 1020 feet below ground elevation of 857 feet, and 661 feet of 16" solid casing and 226 feet of 16" perforated casing was installed in the well. The pump is a vertical line shaft pump driven by a 500 horsepower (HP), 2300 volt electric motor rated at 1500 gallons per minute (gpm) at 990 feet of head, and 1400 gpm at 1050 feet of head. The pump shaft is lubricated with food grade oil. Well 3 is the main source of potable water for Kunia Village and agricultural irrigation water for the entire area. It is activated only during the day and power turns off between 4:45 p.m. and 9:00 a.m. every day. Liquid sodium hypochlorite for disinfection is injected into the water at the well head before the water is pumped to the air stripping tower.

Well 4 was drilled in 1979 to a depth of 990 feet which is below sea level. Ground elevation is 872 feet above sea level. 830 feet of 16" solid casing was installed in the well. No perforated casing was installed. Until recently it was a driven by a 500 horsepower (HP) diesel engine. The engine was replaced with an electric motor in summer 2013 with vertical line shaft pump and the diesel engine is only used for standby via a right angle drive. Well 4 is mainly used to supply the agricultural irrigation system. However, the well can be used to supply the potable water system when needed.

The purpose of the air stripping tower is to remove contaminants (Trichloroethylene and 1, 2, 3 Trichloropropane) in the water from past activities by the United States Army at the adjacent Schofield Barracks. Therefore, all costs associated with this tower and its ancillary equipment, including operation and maintenance costs, are borne by the U.S. Army. The major ancillary equipment includes the fan that blows air into the tower and the generator that provides standby power for this fan. The stripping tower is rated for 1,300 gallons per minute (gpm) to 1,500 gpm and is activated when the Kunia Well pump is energized. Water from the well enters the top of the stripping tower and exits at the bottom for discharge into the adjacent 305,000 gallon potable water storage tank.

The 305,000 gallon tank is a rectangular structure with a corrugated sheet metal roof, with the majority of the structure being below grade. The tank is located next to the stripping tower. The outlet from the tank is a 10" PVC line that services Kunia Village.

The Village water distribution system has been installed and repaired many times and is in need of replacement. All buried pipelines are of iron, or polyvinyl chloride (PVC). The larger 10" and 12" transmission lines are a mix of PVC, iron, and IPS pipe of varying classes. The 3"



Figure 3-2: Kunia Village aeration tower and potable water reservoir in 2007

and smaller distribution lines are a mix of iron, PVC, and IPS pipe of varying classes.

A recent Preliminary Engineering Report by Austin Tsutsumi and Associates recommended that the water distribution system be replaced because of its age and improper installation depth. This action is required before a booster pump can be installed to bring Village water pressure up to a range that is considered acceptable by City and County standards. The report also pointed out other minor deficiencies in the systems, which are being addressed at the time of this writing. Improvement of the water and wastewater systems (section 3.3.2.4) is part of the proposed actions assessed in this document.

3.3.2.4 Wastewater

The Kunia Village Title Holding Corporation owns and, through subcontractors, operates wastewater collection and treatment systems.

Wastewater from Kunia Village is conveyed to the Kunia wastewater treatment plant (WWTP) for treatment to produce an effluent that is intended for irrigation use. Wastewater from the residential units of Kunia Village discharges into individual grease traps for removal of fats, oils and grease (FOG) and then into one of three septic tanks for removal of solids that can settle by gravity within these septic tanks, before continuing to flow by gravity to the WWTP.

The treatment process at the WWTP is an aerobic intermittent re-circulating reactor (AIRR) with a fixed media trickling filter, for which DOH approval for use was issued on October 2, 1991 for a design flow of 55,000 gallons per day (gpd). The quality of the effluent was originally intended to conform to what is now classified by DOH for reuse as R-2 Water. This classification allows for subsurface (mainly drip) irrigation with the effluent, and under controlled conditions inclusive of buffer areas, spray irrigation of non-edible crops during limited hours of the day. There are currently 32 acres of land near Kunia Village which is being used for forage and which is being sub-surface irrigated with effluent from the WWTP. Current plans are to remove 13 acres from this reuse area and add an area across Kunia Road to be used for banana production. The effluent is stored in a 1.4 million gallon (MG) reservoir near the WWTP. The treatment capacity and effluent quality were upgraded in 2003, primarily as a result of installing a duplex DynaSand Filter system and improving the chlorine contact tank. The capacity was increased to 70,000 gpd, with the intent of producing an R-1 water effluent, which allows for spray irrigation without the restrictions of R-2 Water. The ability to consistently produce R-1 Water is marginal, and thus, the effluent is considered to be R-2 Water. The Preliminary Engineering Report recommended that wastewater collection system be replaced in order to increase the slope of lines, and provide adequate cover over the drainage lines. The facility does experience increased flows during rainy periods as do municipal wastewater plants.

The subject property is located in the critical wastewater disposal area as determined by the Oahu Wastewater Advisory Committee. The proposed project is located in the No Pass Zone as defined by the Honolulu Board of Water Supply as an area where waste disposal facilities have the potential to contaminate Groundwater resources used of expected to be used for domestic water supplies. The construction of waste disposal facilities is closely regulated within the No Pass Zone. Disposal of effluent from the Kunai Wastewater Treatment Plant is done via subsurface drip irrigation at a design application rate that corresponds with the site-specific evapotranspiration rate. The disposal field is rated for 55,000 gallons per day.

Wastewater generation is now estimated to be around 27,000 gallons per day from all sources within Kunia Village. Assuming that 90% is generated from residences, the 85 occupied farm dwellings that are now in use generate less than 25,000 gallons per day or less than 295 gallons per household per day. Using a design figure of 300 gallons per day, the proposed addition of 79 housing units is expected to add a similar amount or a total of 23,700 gpd of wastewater. At full development the wastewater treatment plant will be operating at less than 50,000 gallons per day or approximately 90% capacity. The proposed increase wastewater volumes resulting from the proposed action will be within the design and operating capacity of the WWTP. Should the wastewater volumes increase beyond these design capacities the Wastewater treatment plant will be upgraded to handle additional flow requirements.

Kunia Village is expected to reinstall the wastewater disposal system in response to planned Village changes. Any modification will require a permit application renewal through the Hawaii Department of Health Wastewater Branch.

3.3.2.5 Solid Waste

Solid waste generated within the community is collected by the City and County of Honolulu. Waste generated by the commercial establishments within the Village is collected by various licensed contractors and disposed at a permitted disposal facility on Oahu in accordance with State and County requirements. No changes in this system are envisioned.

3.3.2.6 Drainage

Infiltration of stormwater at the project site is rapid until the saturation point is reached, at which time the project site is subject to relatively rapid runoff. The area is subject to heavy rainfalls on occasion. Stormwater from the site drains toward one of the two swales and small gulches within the Village area. These conveyances flow into Waikele gulch and ultimately to Pearl Harbor. All areas with exception of house gardens are consistently maintained with a grass covering in order to minimize erosion. Flooding is localized to the gulch bottom areas, but this can be significant during major storm events. No permanent structures or activities are contained within the gulches. Housing is all on post and pier. No flood damage has been reported within the Village due to its rolling topography and construction type.

The proposed action is not expected to have a major impact on stormwater drainage at the site or in the vicinity because the sum of new impervious surfaces are quite small in comparison to natural areas and the presence of gulches within and adjacent to the subject property.

During construction periods, best management practices will be employed to reduce soil erosion from wind and stormwater. All construction will be consistent with the requirements of the State's anti-degradation policy and the requirements of HAR 11-54. These practices may include minimized grading, soil mats, erosion-control socks, or silt fences as necessary. Engineers for the proposed action have obtained an NPDES construction stormwater permit in advance of the start of construction. Two separate stormwater retention basins will be constructed and maintained along the stormwater flow path. These basins will remain following the completion of construction.

3.3.3 Roads and Access

Access to the site is through the signalized intersection at Kunia Road, State Highway 750, and Kunia Drive, which is near the south end of the property. A commercial entrance exists on the north boundary of the property. This is used primarily by tenants of the north commercial area, and parents accessing the Head Start facility at the northwest corner of the subject property. Internal roadways include 8 paved residential roadways and 3 unimproved fire lanes and roadways. Roads will be patched or improved as funding allows. Some are in good condition and do not require resurfacing others may be resurfaced.

Construction related traffic will be light over an extended period to accommodate one to 3 renovation projects going on at any time until the Village is completely renovated. Construction will be accomplished primarily using the existing staff and supplemented by 2-3 specialty tradesmen during the construction period. The proposed action will not contribute significantly to local traffic impacts.

3.3.4 Archaeological and Historic Resources

An Archeological Inventory Survey (AIS) was completed in November 2014 to provide information for this environmental Assessment and to support the Village nomination for the National Register of Historic Places. The AIS conforms to the requirements of HRS 6E-42 and HAR 13-13-284. The Section 6 review was required by pending receipt of federal funding. That assessment has been accepted by the State Historic Preservation Office. Kunia Village was previously designated as a single state historical place as (SIHP #50-80-08-7729) for its cultural and architectural significance; representing an intact plantation camp.

The AIS performed by Cultural Surveys Hawaii recognized the existing historical site but identified no new features of archeological or historic significance and recommended no further archeological studies be performed in relation to the proposed action (Appendix B).

The ground surface across the entire parcel has been graded, filled and heavily disturbed over the past 100 years. No archaeological resources have been recorded or observed within the property boundaries. Given the extensive grading and development that exists, no such resources are expected to remain intact if any were ever present.

Kunia Village has sufficient historic value for placement on the State and Federal Historic Registers. The following draws heavily on or directly from Mason Architects' National Register of Historic Places nomination for Kunia Camp Historic District.

The proposed Kunia Camp Historic District is significant under Criterion A [Property is associated with events that have made a significant contribution to the broad patterns of our history] for its association with the pineapple industry, which during the mid-twentieth century was Hawaii's second largest industry. Kunia Camp is also associated with the California Packing Company (CPC later known as Del Monte), one of the major pineapple operators in Hawaii from its inception in 1916 until the closing of the Kunia facility in 2007.

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Throughout the 20th Century, the importance of pineapple in Hawaii's agricultural industry was second only to sugar... With plantations and/or canning facilities on almost every Hawaiian island, the industry was responsible for the cultivation of thousands of acres of land, the employment of thousands of workers, and the processing of millions of pineapples. In addition to the economic impact of the industry, the fruit became a powerful icon of the Territory and State of Hawaii.

Beginning around 1960, the Hawaiian pineapple industry began to lose both a portion of its world market share and its place as one of Hawaii's leading industries. This happened as countries such as Brazil, Mexico, the Philippines, and Thailand expanded their production of fresh and canned fruit, and as tourism and the military became the state's most valuable industries.

As canned pineapple from other countries began filling the market, Hawaiian canneries began to close and plantations, once located



Figure 3-3: Pineapple harvests circa 1950

on Maui, Oahu, Molokai, Lanai, and Kauai, began to shrink. Del Monte cannery closed in 1985, and Dole cannery in Iwilei closed in 1991. During the end of the 1990s and into the 21st century the value of fresh Hawaiian pineapple overtook the value of canned Hawaiian pineapple...

The proposed Kunia Camp Historic District is also significant under Criterion C as a concentration of Plantation Style residences. The residences display the distinctive



Figure 3-4: Kunia Drive showing houses to be restored near the entrance to Kunia Village

characteristics of the Hawaiian Plantation Style of architecture, which includes vertical boards (tongue-and-groove and board-and-batten) on the exterior, single-wall construction (some with girts), and pitched roofs [some hipped] with wide, overhanging eaves.

The single-wall construction of the camp is characteristic of Hawaiian Plantation Style houses... This construction method was perfected around 1917 by Japanese construction workers on the plantations in Hawaii. It is a structurally sophisticated method of construction that exemplifies economy of material and labor.

Single wall construction also reflected the difficulty of importing building materials from the mainland and the use of standardized components. Plans utilizing single wall design were subsequently codified by the Hawaii Sugar Plantation Association (HSPA) throughout the islands and ultimately migrated into urban construction.

The Period of Significance is ca. 1928 to ca. 1972, which is a span of time that reflects the initial development and prime functioning years of the camp, which loosely correlates with the peak of the pineapple industry in Hawaii. It begins with the first phase of construction at the Old Camp (pre-1928, 1928-1940), covers several decades of use and expansion as a pineapple plantation camp, and ends with the final build-out of the New Camp in 1972, when a grouping of residences was moved to the property and integrated into lots found within the existing street layout.

Still surrounded by agricultural land, Kunia Camp is the last intact pineapple plantation housing community under one ownership on Oahu... Its unique collection of plantation residences illustrating [the] architectural evolution of the single wall structure concept; and introduction of neighborhood planning features such as indoor plumbing, individual yards, grid street patterns, and community amenities (gymnasium, churches, and school) that were increasingly... provided by companies to workers desiring a stable, family-oriented workforce for the plantation.

The Kunia Camp Historic District is established under Criteria A and C; it retains its historic integrity; and the majority of its individual resources within the district are at least 50 years old.

3.3.5 Cultural Impacts

Cultural resources, as used in Chapter 343, HRS, refer to the "practices and beliefs of a particular cultural or ethnic group or groups". The types of cultural practices and beliefs to be assessed may include "subsistence, commercial, residential, agricultural, access-related, recreational, and religious and spiritual customs (OEQC 1997), and may also include traditional cultural properties or other historic sites that support such beliefs and practices.

Cultural impact assessment studies have been completed for the project site in 2006 (NRC, 2006) and the Military areas immediately north of the subject property in 1998 and again in 2005 (PACNAVFACENGCOM, 1998), (NAVFAC Pacific, 2005). These cultural impact assessment studies involved interviews with individuals and groups who are knowledgeable about the proposed project area, its resources and traditional uses. Archival research was also used to identify any traditional beliefs and customs. The findings of the cultural impact assessments include several significant features of the Central Oahu Plain but nothing of relevance within the project site.

The areas of the central plain were the site of many battles between competing Alii before the unification of Hawaii by Kamehameha I. These areas were thought to be continuously vegetated by grasslands with only sparse tree covering. They were probably chosen because of the open nature, which allows for unrestricted movement of foot soldiers, the distance from the coastline, and the space to amass people for battles. Kūkaniloko, the birthing stones are located 3.4 miles northeast of the project site. Kūkaniloko is a traditional birthing place which some historians describe as "one of the two famous places in the Hawaiian Islands for the birth of children of *tapu* chiefs" (McAllister, 1933). This tradition is believed to have been established at Kūkaniloko sometime during the 14th or 15th century by the chief Nanaka`oko and his wife, for the birth of their son Kapawa (Fornander, 1880). Today Kūkaniloko is a state monument managed by the State Office of Hawaiian Affairs. No culturally significant locations or traditional practices were identified within the boundaries or near the project site.

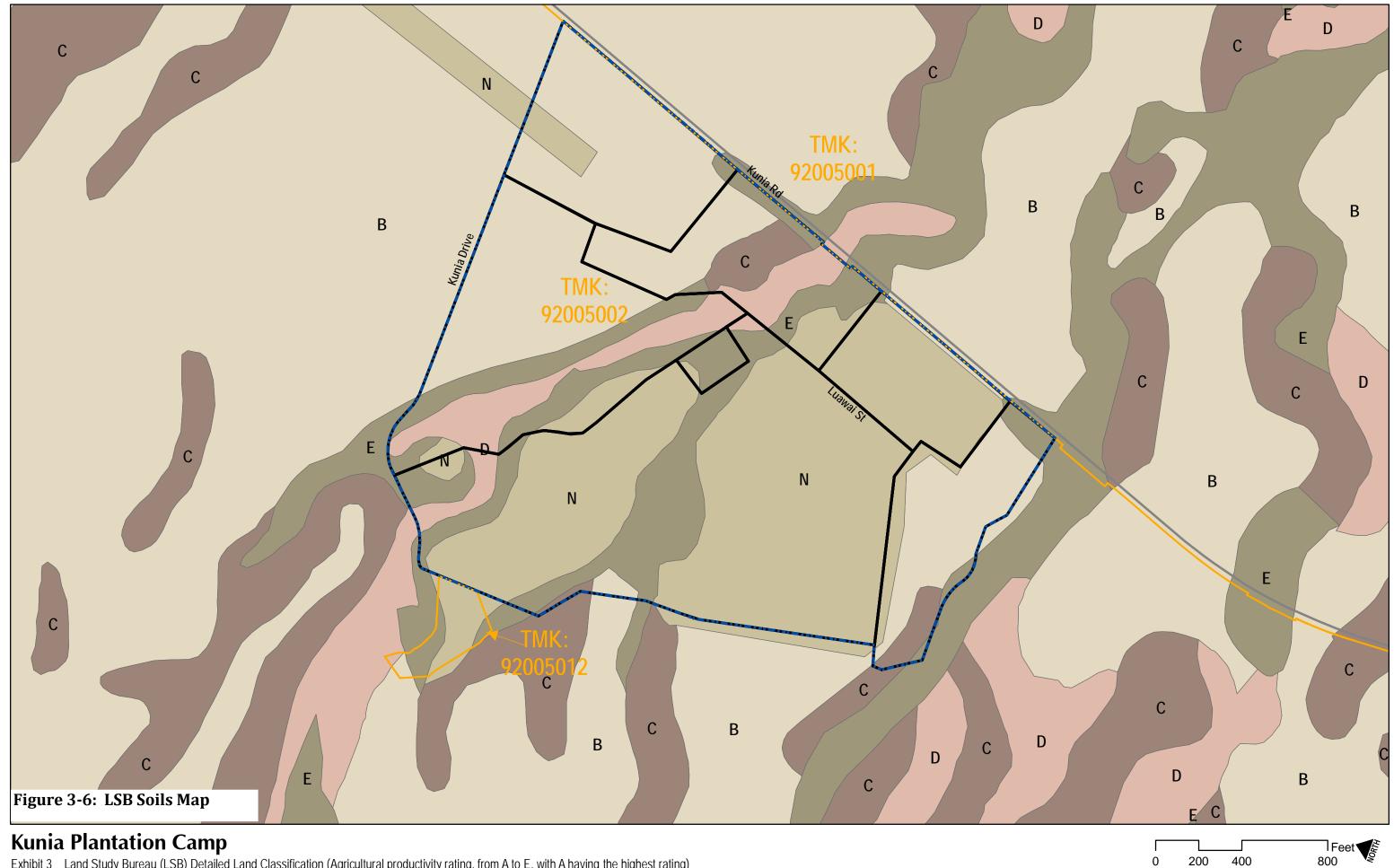
3.3.6 Land Use

Kunia Village is surrounded by unique and other agricultural lands which have been rated as potentially among the most productive lands in the State for diversified agriculture and as lands for production of specific high-value food crops of statewide or local importance. For example, the State Department of Agriculture's November 1977 study, Agricultural Lands of Importance to the State of Hawaii (Revised) (ALISH), indicates that the lands along Kunia Road north of Wahiawa and surrounding Mililani are uniquely suited for pineapple production. In



Figure 3-5: Kunia Drive near the entrance to Kunia Village

addition, the University of Hawaii Land Study Bureau's December 1972 bulletin, *Detailed Land Classification - Island of Oahu*, rated productive capacity of the former sugar fields along Kunia Road, north of Wahiawa, and surrounding Mililani as predominately "B." (An "A" rating was given to the lands with the highest productivity, "E" was given to the lowest and "N" was given to unclassified lands.) A soil classification of "N" was given to the Village because it was in use for residential purposes.



March 2008

Exhibit 3 Land Study Bureau (LSB) Detailed Land Classification (Agricultural productivity rating, from A to E, with A having the highest rating)

Kunia Village is located near the middle of 12,000 acres of prime agricultural land. When the former James Campbell Estate land was sold its Hawaii holdings in 2008 - 2011, it was sold to agricultural companies or groups that intended to place the land into agricultural service. The exception to this statement is Parcel 7 and 9, which was sold to a joint venture between Actus Lend lease and the US Army to possibly establish additional military housing at Schofield Barracks and a buffer between the Army Post and civilian



Figure 3-7: Pineapple plantation near Kunia Village in 2007.

development. All of the parcels, including Parcel 7 are now actively utilized for crop production. Kunia Village is bounded on all sides by farmland leased and farmed by Monsanto Corporation or tenants of the agricultural parks under its authority.

3.3.6.1 Land Use Constraints

The subject property is within the State agricultural district and is zoned restricted agriculture (AG-1) by the City and County of Honolulu. Land-use constraints originate from multiple sources:

- Title restriction placed on the parcel at the time of sale which requires that a number of units in the Village be dedicated to affordable rental units in perpetuity.
- Environmental restrictions placed on the property by consent decree between Del Monte Corporation and the United States Environmental Protection Agency.
- City Land-use Ordinances, some of which may be exempted under the 201-H permit exemptions, if the permit is approved by the Honolulu City Council.

An 11-acre portion of the subject property continues to be remediated by Del Monte Corporation after a pesticide spill in 1979 that contaminated the potable water source used by the Village. 201-H exemptions are allowed for any land-use restriction that does not impact public health or the environment. The activity use limitations and engineering controls established under consent decree between Del Monte and the EPA are, by definition, designed to protect public health and will not be appealed or requested for exemption.

Some land-use restrictions defined by The City and County of Honolulu Land-Use ordinance (LUO) may be appealed for exemption under Ch. 201-H The LUO describes the purpose and intent of agricultural zoning districts in Section 21-3.50 as:

- (a) The purpose of the agricultural districts is to maintain a strong agricultural economic base, to prevent unnecessary conflicts among incompatible uses, to minimize the cost of providing public improvements and services and to manage the rate and location of physical development consistent with the city's adopted land use policies. To promote the viability and economic feasibility of an existing agricultural operation, accessory agribusiness activities may be permitted on the same site as an adjunct to agricultural uses. These accessory activities must be compatible with the on-site agricultural operation and surrounding land uses.
- (b) The intent of the AG-1 restricted agricultural district is to conserve and protect important agricultural lands for the performance of agricultural functions by permitting only those uses which perpetuate the retention of these lands in the production of food, feed, forage, fiber crops and horticultural plants. Only accessory agribusiness activities which meet the above intent shall be permitted in this district.
- (c) The following guidelines shall be used to identify lands which may be considered for the AG-1 restricted agricultural district:
 - (1) Lands which are within the state-designated agricultural district and designated agricultural by adopted city land use policies;
 - (2) Lands which are predominantly classified as prime or unique under the agricultural lands of importance to the State of Hawaii system; and
 - (3) Lands where a substantial number of parcels are more than five acres in size.

The proposed action described herein is supported by the purpose and intent of LUO Section 21-3.50. By providing affordable housing that is reserved for agricultural workers within the agricultural zone, Kunia Village is promoting (a) the viability and economic feasibility of the existing agricultural operations in Central Oahu, and (b) perpetuating the retention of these lands by making it possible to afford to live on farm wages near the jobsite. All of the land surrounding Kunia Village is zoned AG-1, in large parcels and it is all actively farmed in part by current residents of Kunia Village.

The LUO also specifies the density of farm dwellings as follows:

Sec. 21-5.250 Farm dwellings.

- (a) In the AG-1 district, the number of farm dwellings shall not exceed one for each five acres of lot area. In the AG-2 district, the number of farm dwellings shall not exceed one for each two acres of lot area.
- (b) Each farm dwelling and any accessory uses shall be contained within an area not to exceed 5,000 square feet of the lot.

A primary reason for the 201-H application and this Assessment is to obtain an exemption from LUO Section 21-5.250, which restricts the number and density of farm dwellings allowed on the

subject property. The 121 existing farm dwelling units are not in compliance with LUO Sections 21-5.250, which requires a minimum of five acres per farm dwelling. The existing density allowed under Variance 2008/Var-26 allows an overall density of approximately 0.98 acres per dwelling. If 79 additional residential units are constructed the overall density would increase to 0.595 acres per dwelling. This will be a requested exemption in the 201-H application.

In addition the community service structures within the village such as the Community Center/Gym, Post Office, Administration Building and the Church may not be in compliance with LUO Section 21-3.5. Allowance for community service structures will be an exemption requested by the 201-H application.

Accessory to agriculture buildings may exceed the height limits or other construction standards. An exemption for the accessory buildings will be requested.

An exemption from property taxes and building permit fees commensurate with low-income housing will be requested through the 201-H process.

Hawaii Revised Statutes (HRS Chapter 205 Section 4.5 empowers the Land Use Commission to set the permissible uses within the State Agriculture Districts as follows:

§205-4.5 Permissible uses within the agricultural districts. (a) Within the agricultural district, all lands with soil classified by the land study bureau's detailed land classification as overall (master) productivity rating class A or B shall be restricted to the following permitted uses:

- (1) Cultivation of crops,
- (2) Game and fish propagation;
- (3) Raising of livestock,
- (4) Farm dwellings.
- (5) Public institutions necessary for agricultural practices;
- (6) Public and private open area types of recreational uses,
- (7) Public, private, and quasi-public utility lines and roadways;
- (8) Retention, of historic or scenic interest;
- (9) Agricultural-based commercial operations
- (10) Buildings directly accessory to agriculture or energy;
- (11) Agricultural parks;
- (12) Plantation community subdivisions,
- (13) Agricultural tourism conducted on a working farm,
- (14) Agricultural tourism activities,
- (15) Wind energy facilities;
- (16) Biofuel processing facilities,
- (17) Agricultural-energy facilities,
- (18) Construction and operation of wireless communication antennas;
- (19) Agricultural education programs
- (20) Solar energy facilities
- (21) Geothermal resources exploration and development,

- (b) Uses not expressly permitted in subsection (a) shall be prohibited, except the uses permitted as provided in sections 205-6 and 205-8, and construction of single-family dwellings on lots existing before June 4, 1976. Any other law to the contrary notwithstanding, no subdivision of land within the agricultural district with soil classified by the land study bureau's detailed land classification as overall (master) productivity rating class A or B shall be approved by a county unless those A and B lands within the subdivision are made subject to the restriction on uses as prescribed in this section and to the condition that the uses shall be primarily in pursuit of an agricultural activity.
- (c) Within the agricultural district, all lands with soil classified by the land study bureau's detailed land classification as overall (master) productivity rating class C, D, E, or U shall be restricted to the uses permitted for agricultural districts as set forth in section 205-5(b).
- (d) Notwithstanding any other provision of this chapter to the contrary, golf courses and golf driving ranges approved by a county before July 1, 2005, for development within the agricultural district shall be permitted uses within the agricultural district.
- (e) Notwithstanding any other provision of this chapter to the contrary, plantation community subdivisions as defined in this section shall be permitted uses within the agricultural district, and section 205-8 shall not apply.
- (f) Notwithstanding any other law to the contrary, agricultural lands may be subdivided and leased for the agricultural uses or activities permitted in subsection (a).
- §205-8 Nonconforming uses. The lawful use of land or buildings existing on the date of establishment of any interim agricultural district and rural district in final form may be continued although the use, including lot size, does not conform to this chapter; provided that no nonconforming building shall be replaced, reconstructed, or enlarged or changed to another nonconforming use and no nonconforming use of land shall be expanded or changed to another nonconforming use. In addition, if any nonconforming use of land or building is discontinued or held in abeyance for a period of one year, the further continuation of such use shall be prohibited.

The community service uses and structures detailed in Section 2.3 are not permitted uses under Chapter 205-4.5 (e.g. gym, church, future clinic). Section 205-4.5 (e) exempts Kunia Village from Section 205-8 so long as it is still considered a plantation community under the intent of the law. Based on the conclusion that Kunia Village remains a Plantation Community there is no requirement for an exemption from HRS 205 permitted uses.

3.4 Growth-Inducing, Cumulative, and Secondary Impacts

Indirect effects may include other impacts related to changes induced by the proposed action such as growth-induced changes in land-use patterns, or air and water quality impacts associated with population growth. Cumulative impacts may be defined as impacts on the environment which results from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes the action. A secondary impact is one that is caused by the proposed action but is removed in time or space from the project (Council on Environmental Quality, 1997).

An exemption to increase the maximum number of residential units to 200 would expand the population of Kunia Village by roughly 40%. All services would be required to expand by a similar amount. Cumulative and secondary impacts may be expected if services were inadequate to handle the increase in population. As discussed in the preceding sections, the existing capacity of roads, water, wastewater, solid waste disposal, telephone, cable and electric power are capable of increasing by more than 40% without stretching the limits of service. Water, wastewater and roads owned by Kunia Village were designed for the much higher use required by Del Monte's intensive industrial agribusiness as opposed to the current 121 housing units and small scale agribusiness which has replaced it. These are growth inducing factors within Kunia Village, but they are small in comparison to the overall population trends. The availability of additional rental housing is not expected to draw new farm workers from outside the State, but it may bring farm families closer to the jobsite from Waipahu, Pearl City, Ewa, Waipio, the North Shore and Waianae. The proposed development may reduce traffic along Kunia Road, or at least reduce the miles commuted by residents of Kunia Village.

This assessment finds the growth inducing, cumulative and secondary impacts to be manageable without significantly impacting the quality of life within the Village or surrounding communities.

3.5 Required Permits and Approvals

Discussion follows for of the major permit approvals required prior to the start of construction.

State of Hawaii HRS Chapter 201-H permit for low-income housing

HRS 201-H is administered by the City and County of Honolulu and requires a vote of the City Council. This is the major discretionary permit required for the proposed action. Approval allows certain exemptions from City ordinances or statutes.

City and County of Honolulu, Building and Grading. The proposed project will be required to obtain all building and grading permits from the City and County of Honolulu.

State of Hawaii NPDES Construction Stormwater Permit. The Clean Water Act regulates discharge of all types of water from industrial sources and construction sites as well as discharge of process waters of all types. An NPDES Construction Stormwater Discharge Permit is required of construction projects that are grading areas greater than one acre. If an area larger than 1 acre in total is disturbed, an NPDES Notice of Intent and Form C will be prepared and approved prior to the start of construction. There are no industrial discharges or construction dewatering associated with the project.

State Historic Preservation Division of DLNR. An approval for the Master Plan and overall improvements <u>has been</u> obtained the State Historic Preservation Division prior to the start of construction.

Although the project is within the approach zones to Wheeler Army Airfield, there are no developments that are expected to exceed the existing height limitations or the existing buildings. FAA authorization will not be required.

The proposed project does not involve stationary sources or air pollution and is not required to obtain Clean Air Act permits.

4.0 CONSISITENCY WITH PLANS, POLICIES, AND REGULATIONS

4.1 Federal Policies Supporting Low-income Housing on Agricultural Land

Kunia Village has been approved to receive grants and loans through USDA Rural Development to support the rehabilitation or replacement of 82 of the 121 housing units within Kunia Village. USDA supports redevelopment of low income housing for farm workers through the Section 514 Farm Labor Housing loans and Section 516 FLH grant program, USDA Rural Development awards loans and grants to increase the supply of available rental housing for domestic farm laborers. The housing is intended for any domestic farm laborer who receives a substantial portion of his/her income from the primary production of processed or unprocessed agricultural or aquacultural commodities.

4.2 Hawaii State Policies Supporting Low-income Housing on Agricultural Land

HRS 226 "The Hawaii State Planning Act" was originally prepared in 1978. The purpose of this chapter was to prepare the Hawaii State Plan which serves as a guide for the future long-range development of the State; identify the goals, objectives, policies, and priorities for the State. The Hawaii State Plan was further divided into 12 functional plans that addressed the priority subjects. At the time The State Agriculture Functional Plan was prepared the State's agricultural priorities addressed measures to support plantations. At that time the Plantation communities were thriving company towns which did not need preservation or much scrutiny from government at all. The functional plans do not directly address plantation communities or low-income housing, but the broader objectives contained in these plans are still quite relevant.

The objectives for agriculture that are outlined in HRS 226-7 include;

- (13) Promote economically competitive activities that increase Hawaii's agricultural self-sufficiency
- (15) Institute and support programs and activities to assist the entry of displaced agricultural workers into alternative agricultural or other employment.
- (16) Facilitate the transition of agricultural lands in economically nonfeasible agricultural production to economically viable agricultural uses.

<u>§226-19 Objectives and policies for socio-cultural advancement--housing. (a)</u>

<u>Planning for the State's socio-cultural advancement with regard to housing shall be directed toward the achievement of the following objectives:</u>

(1) Greater opportunities for Hawaii's people to secure reasonably priced, safe, sanitary, and livable homes, located in suitable environments that satisfactorily accommodate the needs and desires of families and individuals, through collaboration and cooperation between government and nonprofit and for-profit developers to ensure that more affordable housing is made available to very low-low- and moderate-income segments of Hawaii's population.

(2) The orderly development of residential areas sensitive to community needs and

other land uses.

- (3) The development and provision of affordable rental housing by the State to meet the housing needs of Hawaii's people.
- (b) To achieve the housing objectives, it shall be the policy of this State to:
- (1) Effectively accommodate the housing needs of Hawaii's people.
- (2) Stimulate and promote feasible approaches that increase housing choices for low income, moderate-income, and gap-group households.
- (3) Increase homeownership and rental opportunities and choices in terms of quality, location, cost, densities, style, and size of housing.
- (4) Promote appropriate improvement, rehabilitation, and maintenance of existing housing units and residential areas.
- (5) Promote design and location of housing developments taking into account the physical setting, accessibility to public facilities and services, and other concerns of existing communities and surrounding areas.
- (6) Facilitate the use of available vacant, developable, and underutilized urban lands for housing.
- (7) Foster a variety of lifestyles traditional to Hawaii through the design and maintenance of neighborhoods that reflect the culture and values of the community

The proposed action is consistent with the goals and objectives of HRS 226 agriculture and housing objectives by providing appropriate and affordable rental housing for farm workers in Central Oahu. The traditional plantation camp architecture and layout serves the objectives of m retaining the historical character of this important piece of Hawaii's history.

HRS Chapter 205 is the Statue which defines the four different land use districts used by State law, and describes the permissible uses within each district. HRS 205-4.5(a) includes as a permissible use of agricultural land:

- (4) Farm dwellings, employee housing, farm buildings or activities related to farming or animal husbandry..., and
- (5) Plantation community subdivisions, which as used in this paragraph means a cluster of employee housing, community buildings or acreage established on land currently or formerly owned, leased or operated by sugar or pineapple plantations and in residential use by employees or former employees of the plantation; provided that the employees or former employees shall have a property interest in the land.

HRS 205-4.5 16 (e) States:

Notwithstanding any other provision in this chapter to the contrary, plantation community subdivisions as defined in this chapter shall be

permitted uses within the Agriculture district, and Chapter 205-8 shall not apply.

Chapter 205-8 states that non-conforming uses may remain, but if non-conforming structures are demolished or non-conforming uses are discontinued they may not be replaced.

Coastal Zone Management requirements are address in HRS 205A-2, which defines the entire State as being within the Coastal Zone. Of the 11 CZM initiatives the majority apply to coastal resources which are at its closest point 9 miles to the north near Kaiaka Bay, and 6 miles to the south at the West Loch of Pearl Harbor. Drainage flows to the south and enters West Loch via Waikele Stream. The proposed action is consistent with the remaining initiatives:

Cumulative and secondary impacts associated with stormwater and coastal non-point source pollution: The project will have minimal grading but has obtained an NPDES construction stormwater permit due to trenching for water lines. In addition the community employs low maintenance landscaping techniques that do not rely on fertilizers. Best management practices are adopted by Village maintenance staff to reduce runoff from agricultural machinery and equipment.

Low impact Development: Plantation villages are among the original low-impact developments. Kunia Village is constrained in what it can change due to its historical nature, but little needs to be changed. Roadways are narrow, little pavement exists outside of the primary thoroughfares, lots are grassed and maintained, gulches are infrequently mowed to slow down stormwater and catch sediments. The wastewater treatment plant uses near R-1 treatment and disperses wastewater into a field growing hay.

<u>Project 1 will receive LEED certification.</u> The existing village and proposed improvements are consistent with the initiatives of the CZM.

The Office of State Planning has prepared guidelines for sustainable development that are based on the provisions of HRS 226 and HRS 205. Although the priority guidelines to promote sustainability are too general for detailed applicability, the 10 smart growth and livability principles are directly applicable to the proposed action.

1. Provide more transportation choices. Develop safe, reliable, and economical transportation choices to decrease household transportation costs, reduce Hawaii's dependence on foreign oil, improve air quality, reduce greenhouse gas emissions, and promote public health.7

Kunia Village provides housing that is close to the source of employment, which reduces the need for transportation.

2. Promote equitable, affordable housing. Expand location- and energy-efficient housing choices for people of all ages, incomes, races, and ethnicities to increase mobility and lower the combined cost of housing and transportation.

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<u>Kunia Village is designed and operated to provide affordable housing to farm workers that is</u> close to the farms.

3. Enhance economic competitiveness. Improve economic competitiveness through reliable and timely access to employment centers, educational opportunities, services and other basic needs by workers, as well as expanded business access to markets.

Same as above.

4. Support existing communities. Target infrastructure investment toward existing communities (through strategies like transit oriented and mixed-use development) to increase community revitalization and the efficiency of public works investments.

Sadly, Kunia Village is the last plantation camp that still functions in much the same way that it has since the 1920s.

5. Coordinate and leverage State, County, and Federal policies and investment. Align state, county, and federal policies and funding to remove barriers to collaboration, leverage funding, and increase the accountability and effectiveness of all levels of government to plan for future growth, including making smart energy choices such as locally generated renewable energy.

<u>USDA</u> has provided partial funding for the project which is leveraged to obtain low-income housing tax credits and other source to support affordable farm worker housing.

- 6. Value communities and neighborhoods. Enhance the unique characteristics of all communities by investing in healthy, safe, and walkable neighborhoods.

 As Above
- 7. Compact Building Design. Design communities to preserve more open space with compact building designs that make efficient use of land and resources.

Kunia Village was designed and built by Del Monte Corporation over the past 80 years. Its layout is preserved for the sake of traditional lifestyles.

8. Preserve open space, farmland, natural beauty, and critical environmental areas. Preserve natural areas that provide important community space, habitat for plants and animals, recreational opportunities, places of natural beauty, and critical environmental areas. Protect farm and agricultural lands and promote locally grown foods.

Kunia Village, where possible will provide additional common areas and use design principles to allow green spaces within neighborhoods. It promotes locally grown foods by providing housing that is in some cases within walking distance to the areas farmed by residents.

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9. Promote community and stakeholder collaboration in development decisions. Promote an inclusionary process with a common understanding among diverse stakeholders using effective communication techniques.

AS in Plantation camps the Village management is accessible to residents at all times. Regular Village meetings are held to discuss plans and listen to resident's concerns.

10. Preserve and perpetuate our island cultural values. Consider the ahupuaa management concept to integrate resource management decisions from the mountains to the sea.

Kunia Village is restricted to a small portion of land, but perpetuates post-contact plantation lifestyle and values.

4.3 City and County Policies Supporting affordable Housing on Agricultural Land

The Proposed 2013 **General Plan for Oahu** (DPP 2012) proposes overarching policies goals for Oahu. The proposed action is supported by the following policies:

Housing: Objective A: To ensure a wide range of housing opportunities, choices and prices for all residents.

Policy 2

Streamline approval and permit procedures for housing and other development projects.

Policy 7

Provide financial and other incentives to encourage the private sector to build homes for low and moderate-income residents.

Policy 8

Encourage and participate in joint public- private development of low- and moderate- income housing.

Policy 9

Encourage the preservation of existing housing which is affordable to low- and moderate-income persons.

Policy 10

Promote the construction of affordable dwellings which take advantage of Oahu's year-round moderate climate.

Policy 11

Encourage the construction of affordable homes within established low-density communities by such means as 'ohana' units, duplex dwellings, and cluster development.

Policy 12

Encourage the production and maintenance of affordable rental housing.

Policy 13

Encourage the provision of affordable housing designed for the elderly and the handicapped.

Objective C: To provide the people of Oahu with a choice of living environments which are reasonably close to employment, recreation, and commercial centers and which are adequately served by public utilities.

Policy 2

Encourage the fair distribution of low- and moderate-income housing throughout the island.

Policy 3

Encourage the co-location of residential development and employment centers, and provide commercial, educational, social and recreational amenities

Policy 7

Preserve and encourage re-investment in older communities through infrastructure upgrades, public amenity improvements, tax incentives, and other governmental programs

Each of the objectives and policies listed above are supported by maintenance of an adequate supply of affordable housing for farm workers in Central Oahu. In the section on Economic Activity the General Plan is clear.

Objective C: To ensure the long-term viability and continued productivity of agriculture on Oahu

Policy 1

Foster a positive business climate for agricultural enterprises and agricultural entrepreneurs to ensure the continuation of agriculture as an important component of Oahu's economy.

Policy 4

Remove unnecessary impediments to developing, marketing and distributing locally grown food and products.

Policy 5

Promote small-scale farming activities and other operations, such as truck farming, flower growing, aquaculture, livestock production, taro growing, and subsistence farms

The proposed action addresses affordable housing in proximity to employment by perpetuating the Plantation Camp models developed under Sugar and Pineapple industries. Among the primary impediments to successful agriculture, particularly on small farms is the availability of affordable housing for farm workers that are located in proximity to the farms.

The Policies for culture and recreation are defined as:

Objective B: To protect, preserve, and enhance Oahu's cultural, historic, architectural, and archaeological resources

Policy 2

Identify, and to the extent possible, preserve and restore buildings, sites, and areas of social, cultural, historic, architectural, and archaeological significance.

Objective B-2 is precisely the objective of the proposed action. Of the existing 121 housing units approximately 2/3 will be renovated to their original layout and quality, and 1/3 will be replaced with housing that is in character with the historic housing in the Village.

The City began revising the General Plan in 2010. One of the planning studies commissioned for the Plan is the Affordable Housing Trend Report (Helber, Hastert and Fee, 2010). It identifies four factors inhibiting the development of affordable housing in Hawaii:

- 1. Cost of production
- 2. Development risk
- 3. Maintenance cost, and
- 4. Regulatory and infrastructure barriers

The report provides examples of regulatory and infrastructure barriers which include:

- Lack of capacity and poor condition of existing infrastructure systems (e.g., sewer, drainage, water)
- Inappropriate development standards such as applying urban street standards in rural areas
- Inflexible building codes that require the use of expensive materials and building systems in low-rise housing units, and
- Zoning regulations that discourage redevelopment if the lot is small or nonconforming

Kunia Village has experienced all four of the factors inhibiting development of affordable housing. The 201-H permit application addresses these primary regulatory and infrastructure barriers

The **Central Oahu Sustainable Communities Plan** was adopted in 2002 with a planning horizon of 2025. The Plan's principals are valid and the recommendations support the proposed action.

At the present time, neither Kunia nor Poamoho seem at risk of significant changes in operation or management. They are likely to be maintained, at least to minimum levels, for the foreseeable future. However, their long term future currently depends on the future of pineapple production. The villages could also serve a function as affordable housing for workers from new diversified agricultural activities on lands along Kunia Road and north of Wahiawa.

Central Oahu's plantation era heritage and physical reminders of that period are important to preserve as the region becomes urbanized. The existing village structures in the two villages should be rehabilitated or adapted for reuse. Related affordable housing could be developed to support diversified agricultural employees.

PLANNING PRINCIPLES

Planning principles for the Kunia and Poamoho Plantation Villages include:

Historic Function and Character. The existing rural forms and historic character exhibited within the villages should be preserved and enhanced. This includes the perpetuation of rural agriculture functions and activities in the surrounding area, in conjunction with village land uses.

Preservation of Historic Structures. Existing buildings of historical, cultural and/or architectural significance should be preserved.

Housing Affordability. Where feasible, existing housing units should be retained and rehabilitated in a manner which allows them to remain affordable to the existing residents.

New Development Forms. The design, visual appearance and placement of any new structures within or adjoining the existing villages, should reflect and complement their original historic character and forms.

GUIDELINES

To implement the general policies and planning principles for the Central Oahu Plantation Villages, the following guidelines should be followed.

Method of Preservation

- Existing historic plantation houses should be rehabilitated as part of an assisted housing program.
- Rental dwellings should be rehabilitated and converted for sale, giving preference to existing residents to minimize displacement and retain the sense of community.
- The historic development pattern, architectural character and street appearance should be preserved by varying conventional subdivision and other development codes, as appropriate. Structures that must be razed should be replaced, and other vacant areas developed with new in-fill development that respects the historic character of the original village.

The Central Oahu Sustainable Communities Plan contains land use designation maps in Appendix A of the document. Kunia Village is identified on the land use designation maps as agriculture or agriculture and preservation land. Although it is a residential community, Kunia Village is an agricultural community. Its residents are farm workers, many are still picked up by a bus owned by the farm, and some can walk to their farm lots within the ag-parks adjacent to the Village. Kunia Village was designed by the plantation to allow farm workers a long-term stable and affordable housing within easy commute to the jobsite. This function is still intact.

The proposed action preserves and promotes agriculture by providing affordable housing to farm workers. The commercial areas are all accessory to agriculture use, with exception to the single retail area that remains from the Kunia Store. The proposed action is supported by Federal, State, and County policy declarations.

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5.0 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Affected Environment	Level of Concern	Impact and Mitigation
Water Resources and Drainage	Low	Impact: Potential stormwater runoff during construction Mitigation: NPDES construction permitting. BMPS in place prior to grading
Seismic and Geological	No	None
Soils and Agriculture	No	No new development outside footprint of the existing Village
Flora and Fauna	No	None: Area is residential, previously disturbed and dominated by landscaped areas
Air Quality	No	No emissions sources. Fugitive dust minimized by small-scale construction, little grading
Visual Character	No	No changes from the existing conditions
Noise	Low	Impact: construction noise (carpentry) during business hours
		Mitigation: small scale construction. Work time is restricted to business hours.
Odor	No	None
Social	Positive	Improved living conditions due to new or renovated housing.
Historical and Archaeological	No	Site is on historic registers. All development to be approved by SHPD
Economic	Positive	Provides affordable housing to more farming families in areas near to jobsite.
Cultural	No	No traditional practices or important cultural sites identified
Public Facilities and Services	No	Essential services are designed to accommodate proposed increase in local populations
Roads and Traffic	No	Roadways are designed to accommodate proposed increase in local populations. Positive
		impact on area traffic.
Consistency with Govt. Plans	Consistent	Plantation communities supported by Federal, State and Local Plans
and Policies		
Irretrievable Commitment of	Positive	Proposed action supports local agriculture to displace imports.
Resources		

5.1 Determination of Significance

In determining whether an action may have a significant effect on the environment under HRS 11-200, the proponent must consider every phase of a proposed action, the expected consequences, both primary and secondary, and the cumulative as well as the short-term and long-term effects of the action.

An action shall be determined to have a significant effect on the environment if it:

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

The proposed action would not result in an irrevocable commitment, loss or destruction of any protected natural resource. No threatened or endangered species were identified within the development area. Previous archeological studies concluded that there is no evidence of traditional practices or cultural artifacts within the area of the proposed action. Kunia Village is historically significant for its architecture and association with the pineapple industry. The historical character and architectural elements will be protected by its placement on both State and Federal Historic Registers.

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

Kunia Village has been in this location for nearly 100 years, and will continue in its function to provide affordable housing for Hawaii's farm workers and their families. The proposed action will benefit agriculture. Agriculture is a beneficial use of the environment. No new natural areas will be developed in the proposed action.

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;

Plantation communities are protected by state statutes and city ordinances, and supported by planning documents at all levels of the government. The proposed action is consistent with the County General Plan, and the Central Oahu Functional Plans.

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

The proposed action has beneficial impacts on the social and economic welfare of the County and State. The objective of the proposed action is to maintain a supply of affordable rental housing that is reserved for Oahu's farm workers.

5. Substantially affects public health;

Public facilities and services are adequate to manage the increase in population within Kunia Village. The proposed action benefits public health by supporting local agriculture.

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

Secondary impacts are defined as those displaced in time or space from the proposed action, yet resulting directly from the action. Population changes and increased use of public facilities and services resulting from the proposed action will be within the design capacities of the Village and will have negligible impacts on the quality of life within the target population. These impacts will be mitigated by improving the quality of housing and community support facilities.

7. Involves a substantial degradation of environmental quality;

Temporary impacts associated with construction will be mitigated through best management practices. Noise and fugitive dust are not expected to be substantial or lasting. During operations the level of use is not expected to result in degradation of the quality of life or the environment within the community.

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

Provision of farm-worker housing supports local agriculture and exerts positive impacts on the State's health and balance of trade. No commitment for larger actions is required.

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

A letter from the US Fish and Wildlife Service in June 2009 did not identify any special-status species or critical habitats located on the subject property.

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

Temporary impacts associated with construction will be small and mitigated through best management practices. During operations there are no sources of regulated emissions or noise. The proposed action is not expected to result in degradation of the quality of life or the environment within the community

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

The project site is within a traditionally used agricultural area. Land disturbance over more than 100 years has defined the biological communities that are present. These traditional farm lands are not normally considered environmentally sensitive areas.

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

The scenic vistas and unique view planes, and unique community character will be preserved by the proposed action.

13. Requires substantial energy consumption.

The proposed project will require fossil fuel consumption during construction and increase electrical power consumption during operation. The quantities of both sources are minimal by community standards and these services are available using existing infrastructure.

Based on analysis of the 13 significance criteria listed above, the proposed action is not expected to result in significant adverse environmental impacts when conducted within the constraints of the required plans and permits. Comments received from the public and various agencies during this DEA review period, <u>have provided</u> new information, <u>which has been considered</u> in the final conclusion of this assessment. <u>As a result of this assessment and a thorough review of comments received from agencies and interested parties the proponent has reached a finding of No Significant Impact.</u>

6.0 COMMENTS AND COORDINATION

6.1 Agencies and Organizations Contacted

The following agencies were contacted for assistance during preparation of the Draft Environmental Assessment.

Director State Historic Preservation Division, DLNR Kakuhihewa Building, 601 Kamokila Blvd., Suite 555, Kapolei, Hawai'i, 96707

Mr. George Atta and Mr. Jaime Pierson Department of Planning and Permitting City and County of Honolulu 650 S. King St. Honolulu, HI 96823

Wahiawa Neighborhood Board, Jean Ishikawa Chairman

Comments were received from the following agencies and interested parties who reviewed the Draft Environmental Assessment. Their comments and responses are found in Appendix A.

State of Hawaii Department of Health - Wastewater Branch
State of Hawaii Office of Planning
State of Hawaii Department of Health Environmental Planning Office
State Historic Preservation Division

6.2 Public Coordination and Individuals Consulted

The following individuals and public interest groups were contacted for assistance during preparation of the Environmental Assessment.

The Wahiawa Neighborhood Board November 18, 2013; January 27, 2014 Kunia Village residents on 12/17/2013

7.0 LIST OF DOCUMENT PREPARERS

This document was prepared under the direction of The Department of Planning and Permitting, City and County of Honolulu

Document preparation and technical research was done by:

Kunia Village Title Holding Corporation, David Robichaux, President

Hawaii Agriculture Research Center, Ms. Stephanie Whalen, Executive Director Ms. Cindy Pinnick

Rural Community Assistance Corporation Denise Boswell

The preparers also wish to thank the following for their contributions and advice:

George Atta, Director of the Department of Planning and Permitting, City and County of Honolulu, Jamie Peirson, Chief Planner, Department of Planning and Permitting, City and County of Honolulu, Nelson Armitage, Planner Department of Planning and Permitting, City and County of Honolulu, Ming-Yi Wang, Mason Architects, and Jessica L. Puff, State Historical Preservation Office

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Appendix A

Comments/Responses Received During Preparation of the DEA and the Public Comment Period Following Publication of the DEA



WAHIAWA-WHITMORE VILLAGE NEIGHBORHOOD BOARD NO. 26

c/o NEIGHBORHOOD COMMISSION • 530 SOUTH KING STREET ROOM 406 • HONOLULU, HAWAII, 96813 PHONE (808) 768-3710 • FAX (808) 768-3711 • INTERNET: http://www.honolulu.gov

February 12, 2014

Mr. David M. Robichaux President Kunia Village Title Holding Corporation P. O. Box 100 Kunia, Hawaii 96759

APPLICANT: KUNIA VILLAGE TITLE HOLDING COMPANY,
A Subsidiary of Hawaii Agriculture Research Center

Project: 201H Application to Increase the Number of Units in a Low Income Housing Project in Kunia Village 92-1700 Kunia Road Kunia, HI. 96759 (TMK: 92 005 0023) from 120 Units up to 200 Units

APPLICANT: ENVIRONET, INC.

Project: Installation of Photovoltaic Panels and System within Kunia Village 92-1700 Kunia Road Kunia, HI. 96759 (LCE 7, DPP File No. 2012/CUP-51(st).

Dear Mr. Robichaux: .

The "Applicants," yourself (Kunia Village Title Holding Company) and Stephanie Whalen (Hawaii Agriculture Research Center), made the initial presentation on the above-listed project to the Wahiawa-Whitmore Village Neighborhood Board No. 26 meeting on Monday, November 18, 2013. You returned with Colete Sakoda of Environet, Incorporated, to do an updated presentation at the Monday, January 27, 2014 Board meeting. There was good dialogue with the community and the Applicants ably addressed all concerns raised.

Following lengthy discussion and a review of the Applicants' requests, the Neighborhood Board No. 26 made the motion to vote simultaneously on the two applications:

At the January 27, 2014 Regular Meeting, the Wahiawa-Whitmore Village Neighborhood Board No. 26 voted simultaneously to: 1)SUPPORT the 201H Application Request to Increase the Number of Units in a Low Income Housing Project in Kunia Village from 120 Units up to 200 Units; and 2) SUPPORT the LCE 7, DPP File No. 2012/CUP-51(st) Application for the Installation of a Photovoltaic Panel System in Kunia Village.

This nine-member Board passed the motion with a vote of six (6) Ayes and two (2) Abstain.



The communities of Wahiawa, Whitmore Village, and Kunia Village are closely tied through their agricultural history, their families, and friendships, and we thank you for this opportunity to submit comments on these Applications for development projects in the neighboring community.

Neighborhood Board No. 26 will be forwarding this Letter of Support to the City's Department of Planning and Permitting for their records.

Sincerely,

Jeanne Ishikawa

Chair, Wahiawa-Whitmore Village Neighborhood Board No. 26

cc: Nelson Armitage, Department of Planning and Permitting

Stephanie Whalen, Hawaii Agriculture Research Center

Colete Sakoda, Environet



Ms. Jeanne Ishikawa, Chair Neighborhood Board No. 26 Neighborhood Board Commission 530 S. King Street Rm. 406 Honolulu, HI 96813 February 19, 2015

Dear Chair Ishikawa:

Support for the Kunia Village Redevelopment

Kunia Village Title Holding Corporation (KVTHC) wishes to thank you for your review and comments on the Draft Environmental Assessment for the proposed redevelopment of Kunia Village. This support is quite valuable in our long term planning and design. The Wahiawa-Whitmore Neighborhood Board is an asset to our community and we intend to stay connected going forward. Thank you again for your support.

Sincerely,

Kunia Village Title Holding Corporation

David M. Robichaux, President PO Box 100 Kunia, HI 96759

Was M. Roberton

CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
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DEPT, WEB SITE: <u>www.honoluludpp.org</u> • CITY WEB SITE: <u>www.honolulu.gov</u>

KIRK CALDWELL MAYOR



January 28, 2015

GEORGE I, ATTA, FAICP DIRECTOR

ARTHUR D. CHALLACOMBE DEPUTY DIRECTOR

2014/ED-4 (NA)

Mr. David M. Robichaux President Kunia Village Title Holding Corporation P.O. Box 100 Kunia, Hawaii 96759

Dear Mr. Robichaux:

SUBJECT: Chapter 343, Hawaii Revised Statutes

Draft Environmental Assessment File No. 2014/ED-4

Kunia Village and Agribusiness Complex Affordable Housing Redevelopment

Hawaii Revised Statutes Chapter 201H Exemptions

92-1700 Kunia Road – Kunia

Tax Map Key 9-2-5: 23

Attached please find additional comments from the Department of Planning and Permitting (DPP) on the above-referenced Draft Environmental Assessment (EA) for the subject site.

Civil Engineering Branch:

- Page ii: Grading permits are required.
- 2. For your information, the Civil Engineering Branch approved the mass grading plans for Phases I and II of the project on September 2, 2014 (Reference: DPP File No. 2013/CP-138). However, the DPP Director has not yet approved the drawings due to outstanding review comments from the Subdivision Branch.
- For your information, grading plans are currently being reviewed by the Subdivision and Civil Engineering Branches (Reference: DPP File No. 2014/CP-93).

Community Planning Branch:

The proposed project is to modernize and expand an existing community plantation village (farm dwellings) for existing farmers and farm workers and associated support structures and services. Providing the project continues to comply with the provisions of Hawaii Revised Statutes (HRS) Chapter 205 for a "plantation community subdivision"

no State Special Use Permit will be required. HRS Chapter 205-4.5(a) (12) permits the following:

Plantation community subdivisions, which as used in this chapter means an established subdivision or cluster of employee housing, community buildings, and agricultural support buildings on land currently or formerly owned, leased, or operated by a sugar or pineapple plantation; provided that the existing structures may be used or rehabilitated for use, and new employee housing and agricultural support buildings may be allowed on land within the subdivision as follows:

- (A) The employee housing is occupied by employees or former employees of the plantation who have a property interest in the land;
- (B) The employee housing units not owned by their occupants shall be rented or leased at affordable rates for agricultural workers; or
- (C) The agricultural support buildings shall be rented or leased to agricultural business operators or agricultural support services.

Development Plans/Zone Changes Branch:

- 1. Pages 47-48. The proposal is consistent with General Plan (GP) Objectives on Economic Activity (Objective C), Housing (Objective A), and Culture and Recreation (Objective B). Of the GP policies listed, we concur that proposal is consistent with GP policies to: (a) Assist the agricultural industry to ensure the continuation of agriculture as an important sources of income and employment (Economic Activity, Objective C, Policy 1); (b) Encourage the preservation of existing housing which is affordable to low- and moderate-income housing, promote the construction of affordable dwellings which take advantage of Oahu's year-round moderate climate, and encourage the production and maintenance of affordable rental housing (Housing, Objective A, Policies 9, 10, and 12); and (c) Identify, and to the extent possible, preserve and restore buildings, sites, and areas of social, cultural, historic, architectural, and archaeological significance (Culture and Recreation, Objective B, Policy 2).
- Pages 49-50. The Central Oahu Sustainable Communities Plan (CO SCP) was adopted in 2002 with a planning horizon of 2025. It is incorrect to say that it "was prepared in 2001 for the period expiring in 2025," and it is unclear what is meant by the "plans assumptions are out-dated." The plan contains a vision, planning principles, and guidelines for plantation villages (pages 3-48 to 3-53 of the CO SCP), which are basically sound and applicable today, but are being updated as part of the on-going CO SCP review program. The proposal is consistent with CO SCP policy calling for rehabilitation or adaptation or reuse of existing village structures and development of affordable housing to support diversified agricultural employees. As proposed, it generally conforms to the planning principles and guidelines for plantation villages (Sections 3.7.2 and 3.7.3) in the CO SCP.

- 3. <u>Project Summary, Page ii</u>. The site is within the Agricultural Areas, as conceptually indentified in the CO SCP, not Agriculture in the GP. The Tax Map Key (TMK) Number is 9-2-5: 23, not 9-4-5: 23.
- 4. Condition 7 of the Unilateral Agreement attached to Ordinance No. 08-26 (DPP File No. 2008/Z-1). The condition states, in part, that the affordable housing plan for Makaiwa Hills may include the use of 115 credits for household with incomes up to and including 80 percent of median income or less, representing existing affordable housing units located offsite in the Kunia Plantation Village. The EA should include a discussion on if and how the proposal is related to this condition.

Land Use Approval Branch:

Please redraw all exterior elevation drawings to show the heights of all proposed structures. Please ensure that all drawings include a graphic ("bar") scale in addition to or in lieu of a numerical scale. Also, please state the height of all proposed structures in the text of the Final EA.

Please include in the Final EA a formal and signed copy of the Wahiawa-Whitmore Village Neighborhood Board No. 26's letter in which it stated its position on the proposed project.

On Page 19 of the DEA, Figure 2-4 was erroneously labeled as Figure 2-5. Also, Figures 2-6 and 2-7 are referenced on Page 20, but the figures that follow on Pages 21-22 are denoted as Figures 2-4 and 2-5. Figure 3-6 also appears to have been mislabeled as Figure 3-7 on Page 41. Therefore, please amend the Final EA to ensure that all Figures and Tables are labeled correctly and contain the correct Tax Map Key (TMK) Number, which is 9-2-5: 23. For example, Figure 2-4 and Exhibit 3 contain an erroneous TMK Number of 9-2-5: 2.

Subdivision Branch:

No requirements on the proposal. It seems the TMK has not changed (9-2-5: 23), but there are typographical errors on the TMK listed on the Title Page and Pages i and ii that should be corrected.

Traffic Review Branch:

Vehicular access to this housing complex is from Kunia Road, which is under the jurisdiction of the State Department of Transportation In addition, the internal roadways appear to be privately owned and maintained.

Complete streets concepts should be encouraged, with regard to pedestrian, bicycle and transit facilities, wherever feasible and appropriate.

Mr. David M. Robichaux January 28, 2015 Page 4

Wastewater Branch

We have no objections to the proposed Kunia Village Re-Development. Kunia Village is serviced by a privately-owned wastewater treatment plant regulated by the State Department of Health. If you have any questions, please call Scott Gushi at 768-8207.

Attached please find your receipt for the application processing and permit review fees for this Draft EA. I hope that this information was helpful. Please contact Nelson Armitage at 768-8016 if you have any questions.

Very truly yours,

George I. Atta, FAICP

Enclosure: Receipt No. 100703



Mr. George I Atta, AICP, Director
Department of Planning and Permitting
City and County of Honolulu
650 S. King Street 7th Floor
Attn: No

Attn: Nelson Armitage

Honolulu, 96813

Dear Director Atta:

Comments Received: DEA for the Kunia Village Affordable Housing Redevelopment, Kunia Oahu.

February 20, 2015

Kunia Village Title Holding Corporation (KVTHC) wishes to thank you for your review and comments on the Draft Environmental Assessment for the proposed redevelopment of Kunia Village. These comments are very valuable considerations in our planning process. We have added statements to the Final EA which reflect the points raised. A summary of these appear in the responses below in the same numerical order as your letter of January 26, 2015.

Civil Engineering Branch;

1. We note that grading plans are required and pending approval, and have forwarded these comments to our engineer for action.

Community Planning Branch

1. Kunia Village will be operated consistently with HRS 205 – Plantation Community Subdivisions in perpetuity. Minor exceptions may be for (temporary) visiting scientists, Village maintenance staff and employees of the agribusinesses headquarter in the Village.

Development Plans/Zone Changes Branch

- 2. The SCP is generally applicable today but is incorrect in the assumption that sugar and pineapple plantations will continue to operate as a viable industry for the foreseeable future.
- 3. Ordinance 08-26 allows the developer of Makaiwa Hills residential subdivision to use the low-income rental units contained in Kunia Village as an offset against the requirements in the new development at such time as that development moves forward. The proposed action to expand Kunia Village to 200 units will exceed the

requirements imposed by Ordinance 08-26. A discussion of Ordinance 08-26 has been added to the background discussion of the FEA.

Land Use Approval Branch

- 1. Graphics showing elevation have been added to the figures in the FEA, and figure numbers have been corrected.
- 2. The final letter from the Wahiawa Neighborhood Board was received after publication of the DEA. The draft has been replaced.

Subdivision Branch

Typographical errors have been corrected in the FEA.

Traffic Review Branch

1. The redevelopment of Kunia Village includes upgrading streets, bus stops, and pedestrian ways, Thank you for reviewing the document.

Wastewater Branch

Thank you for reviewing our DEA. We will be working closely with the State DOH on our wastewater treatment systems.

Sincerely,

Kunia Village Title Holding Corporation

David M. Robichaux, President PO Box 100 Kunia, HI 96759

Was M. Roberton

DAVID Y. IGE Governor

SHAN S. TSUTSUI Lt. Governor



State of Hawaii

DEPARTMENT OF AGRICULTURE

1428 South King Street

Honolulu, Hawaii 96814-2512

January 21, 2015

SCOTT E. ENRIGHT
Chairperson, Board of Agriculture

PHYLLIS SHIMABUKURO-GEISER
Deputy to the Chairperson

Mr. David M. Robichaux Kunia Village Title Holding Corporation P.O. Box 100 Kunia, Hawaii 96759

Dear Mr. Robichaux:

Subject:

Draft Environmental Assessment

Kunia Village Title Holding Corporation

Kunia Village Affordable Housing Redevelopment Plan

TMK: 9-4-005:023

This is in response to your December 5, 2014 letter informing us of Kunia Village Title Holding Corporation (Applicant)'s Draft Environmental Assessment (DEA) regarding the Kunia Village and Agribusiness Complex Affordable Housing Redevelopment Plan (the Project) for Kunia Village.

Background:

Kunia Village is located off Kunia Road with a total land area of 110 acres entirely within the State Agricultural District, and is zoned Restricted Agriculture (AG-1) by the City and County of Honolulu. Kunia Village has 121 housing units that were built in the 1920's for the purpose of housing plantation employees in the area. The Applicant claims Kunia Village is a "plantation community" under section 205-4.5(12), Hawaii Revised Statutes (HRS) (Draft EA, section 3.3, p. 44).

Proposed Project:

The Kunia Village and Agribusiness Complex Affordable Housing Redevelopment Plan will be done in two phases. The first phase will renovate 45 of the existing family homes and demolish/replace 37 of the existing family homes. The second phase will renovate the remaining 39 existing housing units, and apply for a 201-H exemption that will allow an increase of the current variance from 121 units to 200 units. If granted the 201-H exemption, the Applicant plans to construct up to 79 new housing units.

Mr. David M. Robichaux January 21, 2015 Page 2

Comments:

The Department of Agriculture (DOA) notes that Kunia Village has a long history with providing affordable farm worker housing. Providing low-income housing on agricultural land is supported by federal, state, and county policies. Specifically, the Central Oahu Sustainable Communities Plan recognizes Kunia Village as a part of "Central Oahu's plantation era heritage and should be rehabilitated or adapted for reuse. Related affordable housing could be developed to support agricultural employees." (Central Oahu Sustainable Communities Plan, Section 3.7).

However, the DOA notes that leasing housing units at market rates does not appear to be consistent under Section 205-4.5(12), HRS, which states that "new employee housing and agricultural support may be allowed on land within the (plantation) subdivision as follows: (A) The employee housing is occupied by employees or former employees of the plantation who have a property interest in the land; [or (B),] The employee housing units not owned by their occupants shall be rented or leased at affordable rates for agricultural workers." Leasing housing units at market rates also appears to be inconsistent with the Central Oahu Sustainable Communities Plan which call for rehabilitation of the housing units for the purpose of affordable farmer housing.

The DOA strongly supports the establishment of low income and affordable rental housing for farm workers. We concur with the Project's purpose and need (Draft EA, section 1.4, p. 7) which is to provide affordable and low-income farm worker rental housing in perpetuity. The Project's proposed footprint is within an established plantation community subdivision, will increase the number of dwellings available to farm employees, and is located between the primary agricultural production areas of central and the north shore of Oahu. It is important that the two-step phasing of the redevelopment be done successfully and on a timely basis so as not to jeopardize the housing for current Kunia Village residents.

We look forward to providing additional comments as your work progresses.

Sincerely,

Scott E. Enright, Chairperson

Board of Agriculture

c: Nelson Armitage, C&C Department of Planning and Permitting



Mr. Scott Enright, Chairman Hawaii Department of Agriculture 1428 S. King Street Honolulu, HI 96759 February 19, 2015

Dear Chairman Enright:

Comments Received on the DEA Kunia Village Redevelopment

Kunia Village Title Holding Corporation (KVTHC) wishes to thank you for your review and comments on the Draft Environmental Assessment for the proposed redevelopment of Kunia Village. These comments are very valuable considerations in our long term planning and design. As you noted the vast majority of housing units currently and to be developed in Kunia Village are reserved for farmers and farm workers who are at or below the mean income. After having run the village for several years we have found that there are a few instances where market rate rentals are to the advantage of Kunia Village and the businesses headquartered therein. The Village maintenance staff and a few employees of companies that work in the Village commercial areas do not qualify on income, but are allowed to live in the Village at market rates. We do not intend to open Kunia Village to the general population so long as there are needs within the farming community. Thank you for your suppport.

Sincerely,

Kunia Village Title Holding Corporation

David M. Robichaux, President PO Box 100 Kunia, HI 96759

Was M. Roberton

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU 630 SOUTH BERETANIA STREET HONOLULU, HI 96843



KIRK CALDWELL, MAYOR

DUANE R. MIYASHIRO, Chair ADAM C. WONG, Vice Chair THERESIA C. McMURDO DAVID C. HULIHEE

ROSS S. SASAMURA, Ex-Officio FORD N. FUCHIGAMI, Ex-Officio

ERNEST Y. W. LAU, P.E. Manager and Chief Engineer

ELLEN E. KITAMURA, P.E. Deputy Manager and Chief Engineer

Mr. David M. Robichaux Kunia Village Title Holding Corporation P.O. Box 100 Kunia, Hawaii 96759

Dear Mr. Robichaux:

Subject: Your Letter Dated December 5, 2014 Requesting Comments on the Draft

Environmental Assessment for Kunia Village and Agribusiness Complex

Affordable Housing Redevelopment - Tax Map Key: 9-4-005: 023

Thank you for the opportunity to comment on the proposed affordable housing redevelopment.

The proposed development is served by a private water system.

This area is located in the No-Pass Zone. The ground disposal of wastewater could impact the underlying potable water aquifer and needs to be approved by the State Department of Health.

If you have any questions, please contact Robert Chun, Project Review Branch of our Water Resources Division at 748-5443.

Very truly yours,

Manager and Chief Engineer

cc: Nelson Armitage, DPP

Mr. Ernest Y.W. Lau, P.E. Chief Engineer Board of Water Supply 630 S. Beretania Street Honolulu, HI 96843 February 19, 2015

Dear Mr. Lau:

RE: Review of the DEA for the Kunia Village Affordable Housing Redevelopment. TMK 9-4-005:023

Kunia Village Title Holding Corporation (KVTHC) wishes to thank you for your review and comments on the Draft Environmental Assessment for the proposed redevelopment of Kunia Village. These comments are quite valuable in our long term planning and design. WE are currently operating the Kunia WWTP under permit from the Hawaii Department of Health and are working closely with the Wastewater Branch to remain in compliance.

Sincerely,

Kunia Village Title Holding Corporation

David M. Robichaux, President PO Box 100 Kunia, HI 96759

Was M. Roberton

DAVID Y. IGE GOVERNOR OF HAWAI



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

January 13, 2015

VIRGINIA PRESSLER, M.D.

In reply, please refer to: EMD/CWB

01011PGH.15

Mr. George I. Atta
Director
Department of Planning and Permitting
City and County of Honolulu
650 South King Street, 7th Floor
Honolulu, Hawaii 96813

Attention:

Jamie Peirson

Chief Planner

Dear Mr. Atta:

SUBJECT: Comments on Draft Environmental Assessment for

Kunia Village and Agribusiness Complex Affordable Housing

Redevelopment TMK: 9-2-005:023

The Department of Health (DOH), Clean Water Branch (CWB), acknowledges receipt of your letter, dated December 5, 2014, requesting comments on your project. The DOH-CWB has reviewed the subject document and offers these comments. Please note that our review is based solely on the information provided in the subject document and its compliance with the Hawaii Administrative Rules (HAR), Chapters 11-54 and 11-55. You may be responsible for fulfilling additional requirements related to our program. We recommend that you also read our standard comments on our website at: http://health.hawaii.gov/epo/files/2013/05/Clean-Water-Branch-Std-Comments.pdf.

- 1. Any project and its potential impacts to State waters must meet the following criteria:
 - a. Antidegradation policy (HAR, Section 11-54-1.1), which requires that the existing uses and the level of water quality necessary to protect the existing uses of the receiving State water be maintained and protected.
 - Designated uses (HAR, Section 11-54-3), as determined by the classification of the receiving State waters.
 - c. Water quality criteria (HAR, Sections 11-54-4 through 11-54-8).
- You may be required to obtain National Pollutant Discharge Elimination System (NPDES) permit coverage for discharges of wastewater, including storm water runoff, into State surface waters (HAR, Chapter 11-55).

Mr. George I. Atta January 13, 2015 Page 2

For NPDES general permit coverage, a Notice of Intent (NOI) form must be submitted at least 30 calendar days before the commencement of the discharge. An application for a NPDES individual permit must be submitted at least 180 calendar days before the commencement of the discharge. To request NPDES permit coverage, you must submit the applicable form ("CWB Individual NPDES Form" or "CWB NOI Form") through the e-Permitting Portal and the hard copy certification statement with the respective filing fee (\$1000 for an individual NPDES permit or \$500 for a Notice of General Permit Coverage). Please open the e-Permitting Portal website located at:

https://eha-cloud.doh.hawaii.gov/epermit/. You will be asked to do a one-time registration to obtain your login and password. After you register, click on the Application Finder tool and locate the appropriate form. Follow the instructions to complete and submit the form.

 If your project involves work in, over, or under waters of the United States, it is highly recommended that you contact the Army Corp of Engineers, Regulatory Branch (Tel: 438-9258) regarding their permitting requirements.

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 <u>result</u> 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 of the Code of Federal Regulations, Section 122.2; and HAR, Chapter 11-54.

4. Please note that all discharges related to the project construction or operation activities, whether or not NPDES permit coverage and/or Section 401 WQC are required, must comply with the State's Water Quality Standards. Noncompliance with water quality requirements contained in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55, may be subject to penalties of \$25,000 per day per violation.

If you have any questions, please visit our website at: http://health.hawaii.gov/cwb/, or contact the Engineering Section, CWB, at (808) 586-4309.

Sincerely,

ALEC WONG, P.E. CHIEF Clean Water Branch

GH:np

c: DOH-EPO [via e-mail only]



Mr. Alec Wong, P.E. Chief Department of Health, Clean Water Branch PO 3378 Honolulu, HI 96801-3378

Dear Mr. Wong:

Comments Received on the DEA Kunia Village Redevelopment Ref: 01011PGH.15

Kunia Village Title Holding Corporation (KVTHC) wishes to thank you for your review and comments on the Draft Environmental Assessment for the proposed redevelopment of Kunia Village. These comments are very valuable considerations in our long term planning and design. Our contractors have obtained the required NPDES permits which comply with the existing requirements of the Clean Water Act as interpreted by State regulations and managed through your office. We look forward to continuing to work together to serve the needs of Oahu's farming families.

Sincerely,

Kunia Village Title Holding Corporation

David M. Robichaux, President PO Box 100 Kunia, HI 96759

Wal M. Roberton

HONOLULU FIRE DEPARTMENT

CITY AND COUNTY OF HONOLULU

636 South Street
Honolulu, Hawaii 96813-5007
Phone: 808-723-7139 Fax: 808-723-7111 Internet: www.honolulu.gov/hfd

KIRK CALDWELL MAYOR

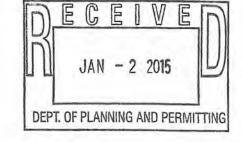


MANUEL P. NEVES FIRE CHIEF

LIONEL CAMARA JR. DEPUTY FIRE CHIEF

December 31, 2014

Mr. David Robichaux Kunia Village Title Holding Corporation P.O. Box 100 Kunia, Hawaii 96759



Dear Mr. Robichaux:

Subject: Draft Environmental Assessment

92-1700 Kunia Road

Tax Map Key: *-4-919: 083 (Formerly 9-2-005: 023)

In response to a letter from Mr. George Atta from the City and County of Honolulu's Department of Planning and Permitting dated December 5, 2014, regarding the above-mentioned subject, the Honolulu Fire Department (HFD) requires that the following be complied with:

 Fire department access roads shall be provided such that any portion of the facility or any portion of an exterior wall of the first story of the building is located not more than 150 feet from fire department access roads as measured by an approved route around the exterior of the building or facility. (National Fire Protection Association [NFPA] 1, Uniform Fire Code [UFC]TM, 2006 Edition, Section 18.2.3.2.2.)

A fire department access road shall extend to within 50 feet of at least one exterior door that can be opened from the outside and that provides access to the interior of the building. (NFPA 1, UFCTM, 2006 Edition, Section 18.2.3.2.1.)

2. A water supply approved by the county, capable of supplying the required fire flow for fire protection, shall be provided to all premises upon which facilities or buildings, or portions thereof, are hereafter constructed, or moved into or within the county. When any portion of the facility or building is in excess of 150 feet from a water supply on a Mr. David Robichaux Page 2 December 31, 2014

fire apparatus access road, as measured by an approved route around the exterior of the facility or building, on-site fire hydrants and mains capable of supplying the required fire flow shall be provided when required by the AHJ [Authority Having Jurisdiction]. (NFPA 1, UFCTM, 2006 Edition, Section 18.3.1, as amended.)

- The unobstructed width and unobstructed vertical clearance of a fire apparatus access road shall meet county requirements. (NFPA 1, UFC™, 2006 Edition, Section 18.2.3.4.1.1, as amended.)
- 4. Submit civil drawings to the HFD for review and approval.

Should you have questions, please contact Battalion Chief Terry Seelig of our Fire Prevention Bureau at 723-7151 or tseelig@honolulu.gov.

Sincerely,

SOCRATES D. BRATAKOS

verste DB ratafine

Assistant Chief

SDB/SY:bh

cc: Nelson Armitage ✓

Department of Planning and Permitting



Mr. Socrates D. Bratakos, Assistant Fire Chief Honolulu, Fire Department 636 South Street Honolulu, HI 96813-5007

Dear Chief Bratakos:

Comments Received on the DEA Kunia Village Redevelopment

Kunia Village Title Holding Corporation (KVTHC) wishes to thank you for your review and comments on the Draft Environmental Assessment for the proposed redevelopment of Kunia Village. These comments are valuable considerations in our long term planning and design. Our design team have been working closely with Fire Department planners in preparation for the renovations discussed in the DEA. Construction plans for the Village have been reviewed and approved by the Honolulu Fire Department. The Village will be in compliance with the NFP in for access to fire equipment and water supply as recommended in your letter. We look forward to continuing to work together to protect and serve the needs of Oahu's farming families.

Sincerely,

Kunia Village Title Holding Corporation

David M. Robichaux, President PO Box 100 Kunia, HI 96759

Was M. Roberton

POLICE DEPARTMENT

CITY AND COUNTY OF HONOLULU

801 SOUTH BERETANIA STREET HONOLULU, HAWAII 96813 TELEPHONE: (808) 529-3111 · INTERNET: www.honolulupd.org

RECEIVED

MAYOR 14 DEC 17 P1:19

DEPT OF PLANNING AND FERMITTING OUR REPORTER COMMEDIA PUNCEU.



LOUIS M KEALOHA

DAVE M KAJIHIRO MARIE A MCCAULEY DEPUTY CHIEFS

December 15, 2014

Mr. David M. Robichaux Kunia Village Title Holding Corporation P.O. Box 100 Kunia, Hawaii 96759

Dear Ms. Robichaux:

This is in response to your request for comments on a Draft Environmental Assessment for the Kunia Village and Agribusiness Complex Affordable Housing Redevelopment project.

This project should have no significant impact on the services or operations of the Honolulu Police Department. Precautionary measures should be taken to prevent the possibility of having any construction site debris (i.e., dust, soil, rocks, etc.) reach the roadways and cause a hindrance for motorists or pedestrians.

If there are any questions, please call Captain Larry Lawson of District 2 (Wahiawa) at 723-8703.

Thank you for the opportunity to review this project.

Sincerely,

LOUIS M. KEALOHA Chief of Police

By

MARK TSUYEMURA Management Analyst VI Office of the Chief

muse

cc: Mr. Nelson Armitage, Department of Planning and Permitting



Mr. Louis M. Kealoha, Chief of Police Honolulu, Police Department 801 S. Beretania Street Honolulu, HI 96813

Dear Chief Kealoha:

Comments Received on the DEA Kunia Village Redevelopment

ATTN: Mark Tsuyemura

Kunia Village Title Holding Corporation (KVTHC) wishes to thank you for your review and comments on the Draft Environmental Assessment for the proposed redevelopment of Kunia Village. These comments are very valuable considerations in our long term planning and design. Our contractors will utilize best management practices to minimize construction-related impacts as recommended. We look forward to continuing to work together to serve the needs of Oahu's farming families.

Sincerely,

Kunia Village Title Holding Corporation

David M. Robichaux, President PO Box 100 Kunia, HI 96759

War M. Roberton

NEIL ABERCROMBIE





STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION KAKUHIHEWA BUILDING 601 KAMOKILA BLVD, STE 555 KAPOLEI, HAWAII 96707

DATE:

TO:

October 27, 2014

David M. Robinchaux

President

Kunia Village Holding Corporation

PO Box 100 Kunia, HI 96759

SUBJECT:

Section: Survey & Inventory/Section 106 - Cultural Resource Management Review

Project: Draft Kunia Village Affordable Housing Environmental Assessment

Location: Kunia, Oahu, Hawaii Tax Map Key: (1) 9-4-005:023

Aloha Mr. Robinchaux,

Mahalo for the opportunity to review the Draft Kunia Village Affordable Housing Environmental Assessment (EA); which was received by the Hawai'i State Historic Preservation Division (SHPD) on September 14, 2014. SHPD understands that future development of Kunia Village will include the rehabilitation or replacement of 82 residential housing units, with the rehabilitation of an additional 39 existing historic units and construction of an additional 79 single and multi-family residential units at a later phase. The EA has been prepared in accordance with HRS §343 to support an application under HRS §201-H for the Kunia Village and Agribusiness Complex, Affordable Housing Project on the Island of Oahu, Hawai'i.

In addition, the Kunia Villages Affordable Housing project has received funding from the United States Department of Agriculture and has gone through the Section 106 consultation process, outlined in 36 CFR §800, per the National Historic Preservation Act [NHPA § 101.b(3)(E) and (F)].

The proposed project, as outlined within the EA, will not have an adverse effect on historic properties within the project's Area of Potential Effect (APE). All proposed work associated with this project will be reviewed and approved by the SHPD for appropriateness and consistency with the Secretary of Interiors Standards for Rehabilitation of Historic Resources.

We look forward to the opportunity to review and provide our concurrence with the final draft of the Kunia Village Affordable Housing Environmental Assessment. If you have any questions please contact Jessica Puff, SHPD Architectural Historian at (808) 692-8023 or by email at Jessica.L.Puff@hawaii.gov. Please reference our DOC number in all communication with this office regarding this undertaking.

Sincerely,

Dr. Alan Downer

Deputy State Historic Preservation Officer

WILLIAM J. AILA, JR. CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
MMISSION ON WATER RESOURCE MANAGEMENT

JESSE K. SOUKI

WILLIAM M. TAM

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 STATE PARKS

LOG: N/A DOC: 1410JLP24



Dr. Alan Downer, Deputy State Historic Preservation Officer State Historic Preservation Division 601 Kamokila Blvd. Suite 555 Kapolei, HI 96707

Dear Dr. Downer:

Comments Received on the DEA Kunia Village Redevelopment. Ref: 1410JLP24

Kunia Village Title Holding Corporation (KVTHC) wishes to thank you, and Ms. Puff for your review and comments on the Draft Environmental Assessment for the proposed redevelopment of Kunia Village. The advice provided during Ms. Puff's site visit were very valuable in preparation of the DEA and your letter concluding that the proposed action will not have an adverse effect on the area of potential effect (APE) is good news for the farming community who will benefit from the proposed action. We look forward to continuing discussion with your staff, and appreciate your timely attention to our project. Sincerely,

Kunia Village Title Holding Corporation

David M. Robichaux, President PO Box 100 Kunia, HI 96759

(Wal M. Roberton)

DAVID Y. IGE GOVERNOR OF HAWAI



VIRGINIA PRESSLER, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH

P. O. BOX 3378 HONOLULU, HI 96801-3378

January 16, 2015

In reply, please refer to

LUD – 1 9 2 005 023 Kunia Village Title H Corp-ID2014

Mr. George I. Atta, Director
Department of Planning & Permitting
City & County of Honolulu
650 South King Street 7th Floor
Honolulu, Hawaii 96813

Dear Mr. Atta:

Subject:

Draft Environmental Assessment – Kunia Village Title Holding Corporation 92-1700 Kunia Rd, Oahu 96759 110.96 acres TMK (1) 9-2-005: 023

Thank you for allowing us the opportunity to provide comments on the above subject project. We have the following information to offer.

The subject project is located in the critical wastewater disposal area as determined by the Oahu Wastewater Advisory Committee. The proposed project is located in the No Pass Zone as defined by the Honolulu Board of Water Supply as an area where waste disposal facilities have the potential to contaminate groundwater resources used or expected to be used for domestic water supplies. The construction of waste disposal facilities is generally prohibited in areas in the No Pass Zone.

The Department does not have enough information at this time to make the determination that the existing Kunia Wastewater Treatment Plant is capable of handling the additional wastewater flows from the proposed project. Please be informed that future expansion of the treatment plant may not be allowed as the project is located in the No Pass Zone area.

All wastewater plans must conform to applicable provisions of the Hawaii Administrative Rules, Chapter 11-62, "Wastewater Systems."

Should you have any questions, please contact Mr. Mark Tomomitsu at 586-4294.

Sincerely,

SINA PRUDER, P.E., CHIEF

Wastewater Branch

LM/MST:lmj



Ms. Sina Pruder, Chief c/o Mr. Mark Tomomitsu Department of Health, Wastewater Branch PO 3378 Honolulu, HI 96801-3378

Dear Ms. Pruder and Mr. Tomomitsu:

Comments Received on the DEA Kunia Village Redevelopment Ref: 1 9 2 005 023

Kunia Village Title Holding Corporation (KVTHC) wishes to thank you for your review and comments on the Draft Environmental Assessment for the proposed redevelopment of Kunia Village. These comments are very valuable considerations in our long term planning and design. We have added statements to the Final EA which reflect the possible requirement to update the wastewater permits prior to expansion of the Village beyond the currently permitted limits. We look forward to continuing this discussion as our plans develop.

Sincerely,

Kunia Village Title Holding Corporation

David M. Robichaux, President PO Box 100 Kunia, HI 96759

Was M. Roberton





STATE OF HAWAII DEPARTMENT OF HEALTH P. O. BOX 3378

HONOLULU, HI 96801-3378

January 7, 2015

EPO 14-261

Mr. David M. Robichaux Kunia Village Title Holding Corporation P.O. Box 100 Kunia, Hawaii 96759

Dear Mr. Robichaux:

SUBJECT: DEA, Kunia Village Title Holding Corporation

The Department of Health (DOH), Environmental Planning Office (EPO), acknowledges receipt of your letter to our office dated December 5, 2014. Thank you for allowing us to review and comment on the proposed project. The DEA was routed electronically (via OEQC link) to the Wastewater Branch, Clean Water Branch, Hazard Evaluation & Emergency Response Office, Clean Air Branch and Solid & Hazardous Waste Branch. They will provide specific comments to you if necessary. EPO recommends that you review the standard comments at: http://health.hawaii.gov/epo/home/landuse-planning-review-program/. Projects are required to adhere to all applicable standard comments.

We encourage you to examine and utilize the Hawaii Environmental Health Portal. The portal provides links to our e-Permitting Portal, Environmental Health Warehouse, Groundwater Contamination Viewer, Hawaii Emergency Response Exchange, Hawaii State and Local Emission Inventory System, Water Pollution Control Viewer, Water Quality Data, Warnings, Advisories and Postings. The Portal is continually updated. Please visit it regularly at: https://eha-cloud.doh.hawaii.gov

You may also wish to review the recently revised Water Quality Standards Maps that have been updated for all islands. The new Water Quality Standards Maps can be found at: http://health.hawaii.gov/cwb/site-map/clean-water-branch-home-page/water-quality-standards/.

The EPO suggests that you examine the many sources available on strategies to support sustainable and healthy design, including the:

2014 Climate Change Impacts in Hawaii: http://seagrant.soest.hawaii.edu/sites/seagrant.soest.hawaii.edu/files/publications/smfinalhawaiiclimatechange.pdf

We request you share all of this information with others to increase community awareness on healthy, sustainable, innovative, inspirational, and healthy community design. We would appreciate a reply to this response to ensure delivery.

Mahalo nui loa.

Laura Leialoha Phillips McIntyre, AICP

Program Manager, Environmental Planning Office

c: Nelson Armitage, C&C Honolulu, DPP, LUPD, LUAB (via email only: narmitage@honolulu.gov) WWB, CWB, HEER, CAB, SHWB (via email only with OEQC link to document)



Ms. L.L.P. McIntyre, AICP Program Manager Department of Health, Environmental Planning Office PO 3378 Honolulu, HI 96801-3378

Dear Ms. McIntyre:

Comments Received on the DEA Kunia Village Redevelopment. Ref: EPO 14-261

Kunia Village Title Holding Corporation (KVTHC) wishes to thank you for your review and comments on the Draft Environmental Assessment for the proposed redevelopment of Kunia Village. The links provided are very valuable considerations in our long term planning and design. We look forward to continuing discussion with your office as our plans develop.

Sincerely,

Kunia Village Title Holding Corporation

David M. Robichaux, President PO Box 100 Kunia, HI 96759

Was M. Roberton



OFFICE OF PLANNING STATE OF HAWAII

DAVID Y. IGE GOVERNOR

LEO R. ASUNCION ACTING DIRECTOR OFFICE OF PLANNING

235 South Beretania Street, 6th Floor, Honolulu, Hawaii 96813 Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

Telephone: (808) 587-2846 Fax: (808) 587-2824 Web: http://planning.hawaii.gov/

Ref. No. P-14631

January 20, 2015

Mr. David M. Robichaux Kunia Village Title Holding Company P.O. Box 100 Kunia, Hawaii 96759

Dear Mr. Robichaux:

Subject: Draft Environmental Assessment for the Kunia Village and Agribusiness

Complex Affordable Housing Redevelopment, Kunia, Oahu;

TMK: (1) 9-4-005:023

Thank you for the opportunity to provide comments on the Draft Environmental Assessment (Draft EA) for the Kunia Village Affordable Housing Redevelopment project. It is our understanding that this project calls for the renovation and expansion of the Kunia Village residential housing in two phases. This project calls for the redevelopment of 82 of the 112 habitable housing units, through demolition of 37 housing units and replacing them with new units, and the full refurbishment of the remaining 45 housing units slated for redevelopment.

The Office of Planning (OP) has reviewed the Draft EA which was forwarded to us by the City and County of Honolulu, Department of Planning and Permitting in a letter dated December 5, 2014. We have the following comments to offer:

The Draft EA did not include an analysis on the project's conformity with the Coastal Zone Management (CZM) objectives and policies found in Hawaii Revised Statutes (HRS) § 205A-2. HRS § 205A-1 defines the entire state as being within coastal zone management area. The Final Environmental Assessment (Final EA) should include a statement in a section that addresses how this proposal conforms or is in conflict with state and county plans, policies, and controls. This statement should include a discussion of the proposed project's ability to meet all of the objectives and policies set forth in HRS § 205A-2. Where a conflict or inconsistency exists, the statement must describe the extent to which the applicant has reconciled its proposed action with this statute. These objectives and policies include: recreational resources, historic resources, scenic and open space resources, coastal ecosystems, economic uses, coastal hazards, managing development, public participation, beach protection, and marine resources.

Mr. David M. Robichaux January 20, 2015 Page 2

2. The Draft EA did not address the Hawaii State Plan, HRS Chapter 226. The Hawaii State Plan provides goals, objectives, priorities, and priority guidelines for growth, development, and the allocation of resources throughout the State. The Hawaii State Plan includes diverse policies and objectives of state interest including but not limited to the economy, agriculture, the visitor industry, federal expenditure, the physical environment, facility systems, socio-cultural advancement, affordable housing, climate change adaptation, and sustainability.

The Final EA should include a statement in a section that addresses how the proposed project conforms or is in conflict with the various state and county plans, policies, and controls listed in HRS Chapter 226. The analysis should include a discussion on the project's ability to meet these objectives and policies or clarifies where it is in conflict with them.

- 3. The Final EA should examine the priority guidelines on sustainability. Section 1.4, page 6 of the Draft EA states that this project will provide affordable housing in every industry cluster, provides facility infrastructure, and adds sustainable infrastructure which involves energy, water, and waste recycling. The priority guidelines on sustainability are applicable to this proposal because these provisions correspond to a number of its principles and objectives. This project appears to correspond to sustainable development, smart growth/livability principles, resource conservation, and green building standards. The Final EA should expand on what has been stated in the Draft EA and address these principles in a statement on how this project is consistent with the Priority Guidelines on Sustainability listed in HRS § 226-108. The Sustainability Guidelines can be viewed or downloaded from the Office of Planning website at http://files.hawaii.gov/dbedt/op/docs/OP_TAM_2013-12-03.pdf
- 4. The issue of damaging stormwater impact was overlooked in the Draft EA. The weather patterns for central Oahu are subject to flashy and unstable weather conditions during the winter that may lead to heavy rainfall and water runoff. The Kunia region has some environmentally vulnerable areas near the project site that include freshwater wetlands and a perineal stream. The release of stormwater from this housing site upon the surrounding areas has the potential to be detrimental to the surrounding area. Therefore, please consider utilizing OP's Stormwater Impact Assessment to identify and evaluate information on hydrology, stressors, sensitivity of aquatic and riparian resources, and management measures to control runoff occurrences. The management measures listed in this document are applicable to this project as a whole. In particular, please examine the section on Low-Impact Development Concepts (on pages 14-16), which include decentralized micro-scale

Mr. David M. Robichaux January 20, 2015 Page 3

controls that infiltrate, filter, store, re-use, evaporate, and detain runoff close to its source.

This guidance document will assist in integrating stormwater impact assessment within your review process. The purpose of this document is to provide guidance on assessing stormwater impacts in the planning phase of project development. The goal is to provide a suggested framework and various tools for integrating stormwater impacts assessment. This document can be downloaded from the OP website at: http://files.hawaii.gov/dbedt/op/czm/initiative/stomwater_imapct/final_stormwater_impact_assessments_guidance.pdf.

5. The Draft EA does not indicate if there are any people who currently live in Kunia Village and the 82 habitable housing units. Additionally, the Draft EA does not indicate the number of farm workers who may be displaced once renovation to the habitable housing units are complete. Also, there is no indication of plans for the remaining 40 habitable housing units. The Draft EA states that due to changing income requirements and restrictions of rental assistance programs, many of the current residents will be ineligible for the remaining new units. The Draft EA does not indicate whether there will be assistance for those ineligible residents, and how that may impact the need to provide housing to farm workers in lower income brackets.

The Final EA should clarify and address the above mentioned items.

If you have any questions regarding this comment letter, please contact Josh Hekekia of our office at 587-2845.

Sincerely,

Leo R. Asuncior Acting Director

c: Nelson Armitage, City and County of Honolulu, Department of Planning and Permitting

Mr. Leo R. Ascuncion, Acting Director Mr. Josh Hekekia Office of Planning PO 2359 Honolulu, HI 96804 February 18, 2015

Dear Mr. Asuncion and Mr. Hekekia:

Comments Received: DEA for the Kunia Village Affordable Housing Redevelopment, Kunia Oahu. Ref P-14631

Kunia Village Title Holding Corporation (KVTHC) wishes to thank you for your review and comments on the Draft Environmental Assessment for the proposed redevelopment of Kunia Village. These comments are very valuable considerations in our planning process. We have added statements to the Final EA which reflect the points raised. A summary of these appear in the responses below in the same numerical order as your letter of January 20, 2015.

- 1. The FEA has been amended to include a discussion of the relevant portions of the CZMA, most particularly the secondary and cumulative impacts of non-point source pollution and low-impact developments. Thank you for pointing out that Central Oahu is still within the coastal zone management area.
- 2. The EA did addresses the Hawaii State Plan contained in HRS 226. That discussion was the lead discussion under Section 4.2. A paragraph has been added to the FEA describing how the proposed action is consistent with the Hawaii State Plan.
- 3. A discussion of OP's sustainability guidelines has been added to the FEA as requested.
- 4. 4. The issue of "damaging Stormwater" was addressed in the DEA under Section 3.3.2.6 entitled Drainage. This section has been expanded in the FEA to specify potential stormwater mitigation measures to be taken during construction as required by our NPDES permit.
- 5. Comment 5 reflects the readers confusion over the two projects within Kunia Village that occur and covered by this assessment.

The Draft EA specifies that the 82 units are occupied on pages 4, 7, 11, 16, 17 and other locations.

The Draft EA does indicates that no qualifying residents will be displaced on Page 16 which states: Residents now living in these houses will be relocated within the village by keeping a block of existing units vacant for those that are displaced. The Village will be renovated 3 to 5 houses at one time.

The Draft EA does indicate plans for the remaining 40 habitable units in the project description of Project 2. The Draft EA explains the necessity for Project 2 because of USDA income limits that may displace some long-time residents from Project 1 due to the income and other guidelines attached to federal funding. Under USDA guidelines only farm workers are eligible, farmers are not. Thus several independent farmers in the lowest income bracket who now reside in Kunia Village will be ineligible in the 82 houses renovated using federal funding but accommodated in the remaining housing areas covered in Project 2, which does not rely on federal funding. We have reviewed the FEA and made editorial changes to make it easier to distinguish between the two components. I hope this clears things up.

Sincerely,

Kunia Village Title Holding Corporation

David M. Robichaux, President PO Box 100 Kunia, HI 96759

Was M. Robertany

DAVID Y. IGE GOVERNOR OF HAWAII





STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION KAKUHIHEWA BUILDING 601 KAMOKILA BLVD, STE 555 KAPOLEI, HAWAII 96707

CARTY S. CHANG INTERIM CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

W. ROY HARDY

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 PARKS

LOG NO: 2015.00509

DOC NO: 1502SL17

Archaeology

February 13, 2015

Glenn Mason, President Mason Architects, Inc. 119 Merchant Street, Suite 501 Honolulu, HI 96813

Dear Mr. Mason:

SUBJECT: Chapter 6E-42 Historic Preservation Review —

Archaeological Inventory Survey Report for the Kunia Village Housing Development Project

Honouliuli Ahupua'a, 'Ewa District, Island of O'ahu

TMK: (1) 9-2-005:023 por.

Thank you for the opportunity to review your revised draft report titled Archaeological Inventory Survey Report for the Kunia Village Housing Development Project, Honouliuli Ahupua'a, 'Ewa District, O'ahu TMK: [1] 9-2-005:023 por. (Krause et al., February 2015). We received this submittal on February 8, 2015. The archaeological inventory survey (AIS) was conducted at the request of Mason Architects, Inc.

The AIS indicates that the 22.4-acre project area is within a 119-acre property owned by Kunia Village Title Holding Company. The property contains 153 structures, but only about 50 acres and 128 structures are considered part of the Kunia Camp Historic District. The project area is located within the boundaries of Kunia Camp (SIHP 50-80-08-7729) within TMK: (1) 9-2-005:023. It is located on the west side of Kunia Road Hwy 750, southeast of the Kunia School and just east of Kunia Drive. The Camp is described as consisting of Old Camp (portion built between 1928 and 1940) and New Camp (portion built after 1940). The proposed project involves structural rehabilitation of some existing dwellings, moving of others, and demolishing/deconstructing of still others. It also involves grading, installation of new utilities lines, and construction of several detention basins. Of the 112 habitable housing units, 82 units will be redeveloped as part of this project. Thirty-seven houses will be demolished and replaced with 37 new units that fit the historical character of the existing units and the village at large. The remaining 45 units (of the 82) will be fully renovated. Any new housing construction will likely be infill housing.

The AIS involved a 100% coverage pedestrian survey and excavation of five backhoe trenches (T-1 through T-5). No archaeological surface or subsurface historic properties were identified. Within the five test locations, the upper stratigraphy consists of an alluvial A horizon (Stratum I). Two natural layers were identified below this A horizon in two trenches (T-1 and T-2). In T-1, Stratum II consists of a thicker layer of weaker red silt loam and Stratum III is a dark reddish brown silty clay. In T-2, Stratum II consists of a band of dark red sandy loam and Stratum III is a strong brown sandy loam. A single aluminum food can was found in T-3.

The AIS indicates that Kunia Camp (SIHP 50-80-08-7729) was assessed as significant pursuant to Hawai'i Administrative Rules (HAR) §13-284-6 under Criteria "a" (associated with events that have made an important contribution to the broad patterns of our history) and "c" (embody the distinctive characteristics of a type, period, or method of construction, represent the work of a master, or possess high artistic value). It is significant under "a" for its historic association with the development of the pineapple industry in Hawaii, and under "c" as a concentration of Plantation Style residences displaying the distinctive characteristics of the Hawaiian Plantation Style. The report Mr. Mason February 13, 2015 Page 2

also indicates that a 50-acre portion of the 119-acre Kunia Camp property was nominated for the National Historic Places (National Register). The National Register Nomination for Kunia Camp recommended eligibility to the National Register under Criteria A and C. Kunia Camp is the last pineapple plantation housing community still extant. It was originally constructed in 1928 to house the workforce of the California Packing Company, later known as Del Monte.

The project effect recommendation presented in the report states "effect, with proposed mitigation commitments" per HAR §13-284-7. The archaeological mitigation recommendation is no further archaeological work due to negative archaeological findings. The recommended architectural mitigation measures are (1) National Register (NR) nomination, (2) Preservation and restoration following Secretary of Interior (SOI) standards, and (3) Demolition and deconstruction including salvaging of materials for reuse within the Kunia Village Housing Development project. We concur.

The revisions adequately address the issues and concerns raised in our earlier correspondence (January 30, 2015; Log No. 2014.05305, Doc. No. 1501SL21). This report meets the requirements of HAR §13-276-5. It is accepted by SHPD. Please send one hardcopy of the document, clearly marked **FINAL**, along with a copy of this review letter and a text-searchable PDF version on CD to the Kapolei SHPD office, attention SHPD Library.

Please contact Jessica Puff at (808) 692-8023 or at Jessica.L.Puff@hawaii.gov if you have any questions regarding architectural resources. Please contact me at (808) 692-8019 or Susan.A.Lebo@hawaii.gov if you have any questions regarding archaeological resources or this letter.

Aloha,

Susan A. Lebo, PhD Oahu Lead Archaeologist

Acting Archaeology Branch Chief

Susan A. Lebo

cc: David Shideler, Cultural Surveys Hawai'i, Inc. (dshideler@culturalsurveys.com)



Dr. Susan A. Lebo, Ph.D, Archaeology Branch Chief State Historic Preservation Division 601 Kamokila Blvd. Suite 555 Kapolei, HI 96707

Dear Dr. Lebo:

Comments Received on the DEA Kunia Village Redevelopment. Ref: 1410JLP24

Kunia Village Title Holding Corporation (KVTHC) wishes to thank you, for your timely review and acceptance of the Archaeological Inventory Survey of Kunia Village that was prepared by Cultural Surveys Hawaii, Inc. The AIS and your comment letter have been included in the Final Environmental Assessment for the proposed redevelopment of Kunia Village. Your recommendations were very valuable and have been accepted by our construction contractor for action during demolition and construction within the Village. We are also in contact with Ms. Jessica Puff of your office who has provided input to the Draft Environmental Assessment. We look forward to continuing discussion with you and the staff of the SHPD going forward.

Sincerely,

Kunia Village Title Holding Corporation

David M. Robichaux, President PO Box 100 Kunia, HI 96759

Was M. Roberton

Appendix B

Archaeological Inventory Survey Kunia Village

Final

Archaeological Inventory Survey Report for the Kunia Village Housing Development Project, Honouliuli Ahupua'a, 'Ewa District, O'ahu TMK: [1] 9-2-005:023 por.

Prepared for Mason Architects, Inc.

Prepared by
Layne Krause, B.A.,
Scott A. Belluomini, B.A.,
David W. Shideler, M.A.,
and
Hallett H. Hammatt Ph. D.

Cultural Surveys Hawai'i, Inc. Kailua, Hawai'i (Job Code: HONOULIULI 108)

February 2015

Oʻahu Office P.O. Box 1114 Kailua, Hawaiʻi 96734 Ph.: (808) 262-9972

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Maui Office 1860 Main St. Wailuku, Hawai'i 96793

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Management Summary

1		
Reference	Archaeological Inventory Survey Report for the Kunia Village Housing Development Project, Honouliuli Ahupua'a, 'Ewa District, O'ahu TMK: [1] 9-2-005:023 por. (Krause et al. 2014)	
Date	February 2015	
Project Number(s)	Cultural Surveys Hawai'i, Inc. (CSH) Job Code: HONOULIULI 108	
Investigation Permit Number	CSH completed the archaeological inventory survey (AIS) fieldwork under archaeological permit number 14-04, issued by the Hawai'i State Historic Preservation Division (SHPD) per Hawai'i Administrative Rules (HAR) §13-13-282.	
Agencies	SHPD	
Land Jurisdiction	Kunia Village Title Holding Company	
Project Funding	Mason Architects Inc.	
Project Location	The project area is located within TMK: [1] 9-2-005:023 in Kunia Village, Honouliuli Ahupua'a, 'Ewa District, Island of O'ahu. This area is depicted on the 1998 Schofield Barracks U.S. Geological Survey (USGS) topographic quadrangle. Generally, this project area is located on the west side of Kunia Road Hwy 750, southeast of the Kunia School and just east of Kunia Drive.	
Project Description	Mason Architects Inc. proposes to develop the 22.4-acre parcel as part of a development project for new housing and rehabilitation. Minimally, this would include grading, dwelling construction, and street and utility installation.	
Project Acreage	The project area includes 22.4 acres.	
Area of Potential Effect (APE)	The proposed project, based on available information, lacks potential to affect historic properties outside of the project area. As a result, the project's APE is the same as the project area.	
Historic Preservation Regulatory Context	This AIS investigation fulfills the requirements of Hawai'i Revised Statutes (HRS) §6E-42 and HAR §13-13-284 and was conducted to identify, document, and assess significance of any historic properties. This document is intended to support the proposed project's historic preservation review under HRS §6E-42 and HAR §13-13-284 as well as the project's environmental review under HRS §343. This AIS has been revised to address comments on a previous (November 2014) draft received in a review dated 30 January 2015 (LOG NO.: 2014.05305, DOC NO.: 1501SL21.)	

Fieldwork Effort	Fieldwork was conducted on 27 and 28 October 2014 by CSH archaeologists Scott Belluomini, B.A., Layne Krause, B.A, Richard Stark, Ph.D., and Trevor Yucha, B.S. All fieldwork was conducted under the direction of the principal investigator Hallett H. Hammatt, Ph.D. This work required approximately 7 person days to complete.
Historic Properties Identified	The project area is located within the boundaries of one historic property, Kunia Camp (SIHP # 50-80-08-7729), an architectural complex including 128 features. No architectural or archaeological features of SIHP # -7729 were newly identified during the AIS and no archaeological historic properties were identified. SIHP # -7729 is assessed as significant under Hawai'i state historic property significance criteria "a" (associated with events that have made an important contribution to the broad patterns of our history) and "c" (embody the distinctive characteristics of a type, period, or method of construction, represent the work of a master, or possess high artistic value) pursuant to HAR §13-284-6. SIHP # -7729 is evaluated as eligible to the National Register of Historic Places under Criteria A (associated with events that have made a significant contribution to the broad patterns of our history) and C (embody distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction).
Effect Recommendation	The results of this AIS investigation support a Hawai'i State historic preservation project effect recommendation of "effect, with proposed mitigation commitments" as specified in HAR§13-284-7. The recommended mitigation measures include:
	 National Register (NR) nomination, Preservation and restoration following Secretary of Interior (SOI)
	standards, and
	3) Demolition and deconstruction including salvaging of materials for reuse within the Kunia Village Housing Development project.
Mitigation Recommendations	No further archaeological fieldwork is recommended for the current project. In 2011, Mason Architects, Inc. carried out an architectural assessment survey and subsequently completed a National Register Nomination (Appendix A). This would appear to be appropriate and sufficient mitigation to any adverse impacts to Kunia Camp (SIHP # 50-80-08-7729), an architectural complex including 128 features. Thus appropriate mitigation appears to have been concluded.

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Section 1 Introduction

1.1 Project Background

At the request of Mason Architects Inc., Cultural Surveys Hawai'i, Inc. (CSH) completed this archaeological inventory survey (AIS) investigation for the Kunia Village Housing Development Project, Honouliuli Ahupua'a, 'Ewa District, O'ahu TMK: [1] 9-2-005:023 por. The irregularly shaped project area is located on the west side of Kunia Road Hwy 750, southeast of the Kunia School and to the east of Kunia Drive (TMK: [1] 9-2-005:023). The project area is depicted on a portion of the 1998 Schofield Barracks U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle (Figure 1), a tax map plat (Figure 2), and a 2013 aerial photograph (Figure 3).

The Kunia Village Housing Development project, as proposed by Mason Architects, is designed to structurally rehabilitate existing lodgings within the Kunia Village, construct new lodgings, as well as add utility lines and reservoirs to the existing infrastructure. The project area consists of 22.4 acres of primarily residential housing (Figure 4 through Figure 7). Of the 112 habitable housing units, 82 units will be redeveloped (in this New Housing and Rehabilitation project). Thirty-seven of the houses will be demolished and replaced with 37 new units that fit the historical character of the existing units and the village at large. The remaining 45 units (of the 82) will be fully renovated. There is no intention to demolish any additional historic houses and existing houses will be renovated as necessary, in keeping with the historic character of the village. Any new housing construction will likely be infill housing. Figure 5 shows the site plan for new housing and rehabilitation units. The four highlighted units in Figure 6 are being proposed for relocation. These units are in relatively good condition and the owners are proposing to relocate these four units in the area outside of the 82-unit project area as infill housing. Figure 7 shows the demolition plan for the Kunia Camp Historic District showing 37 to-be-demolished units.

In addition to the housing rehabilitation, two new detention basins will be constructed in the northeastern portion of the project area, and two CPR lines are proposed for installation along the length of the fire lane between Second Street and Third Street, extending adjacent to the detention basins within the northeastern portion of the project area (see Figure 4). The construction of the detention basins and CPR lines will likely require extensive digging and grading within the project area.

1.2 Historic Preservation Regulatory Context

This AIS investigation fulfills the requirements of Hawai'i Administrative Rules (HAR) §13-13-276 and was conducted to identify, document, and make significance assessments of any historic properties within the project area. This document is intended to support the proposed project's historic preservation review under Hawai'i Revised Statutes (HRS) §6E-42 and HAR §13-13-284, as well as the project's environmental review under HRS §343.

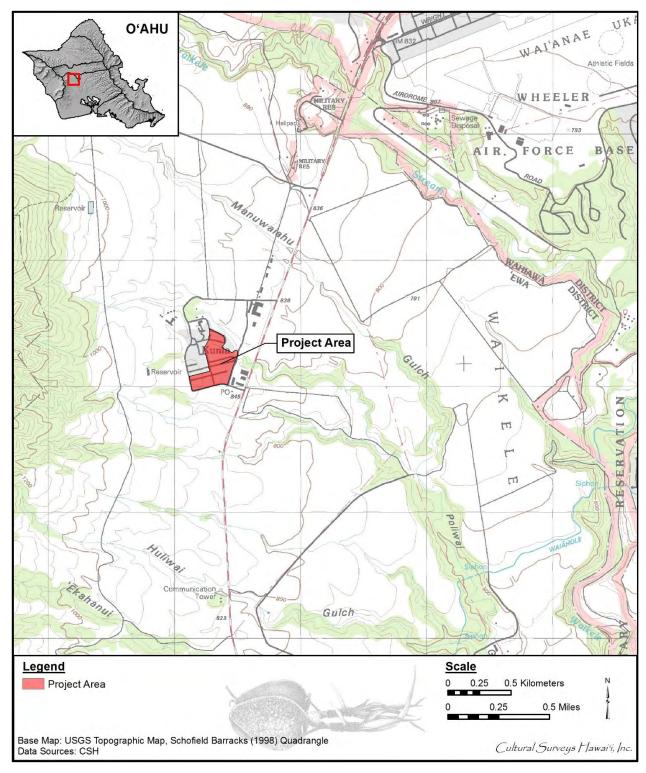


Figure 1. Portion of the 1998 USGS 7.5-minute Schofield Barracks topographic quadrangle showing the location of the project area

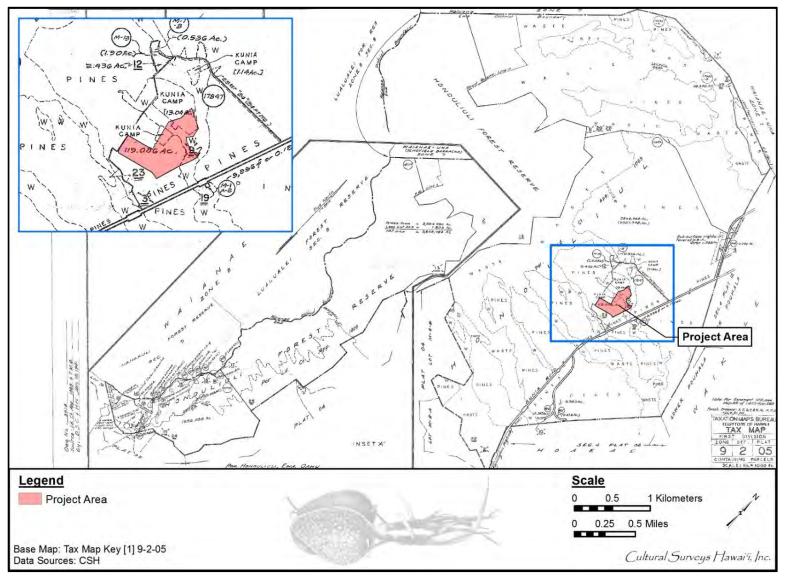


Figure 2. Tax Map Key (TMK) [1] 9-2-005 showing the project area (Hawai'i TMK Service 2014)

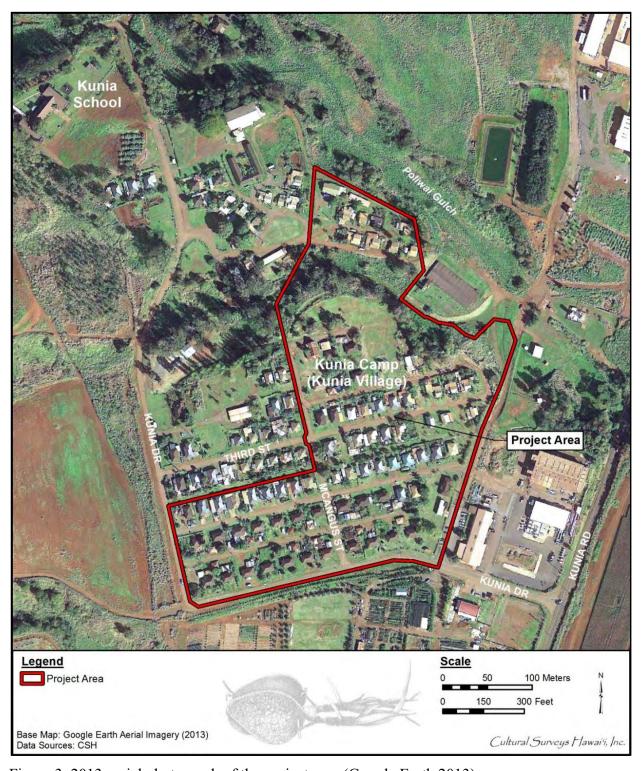


Figure 3. 2013 aerial photograph of the project area (Google Earth 2013)

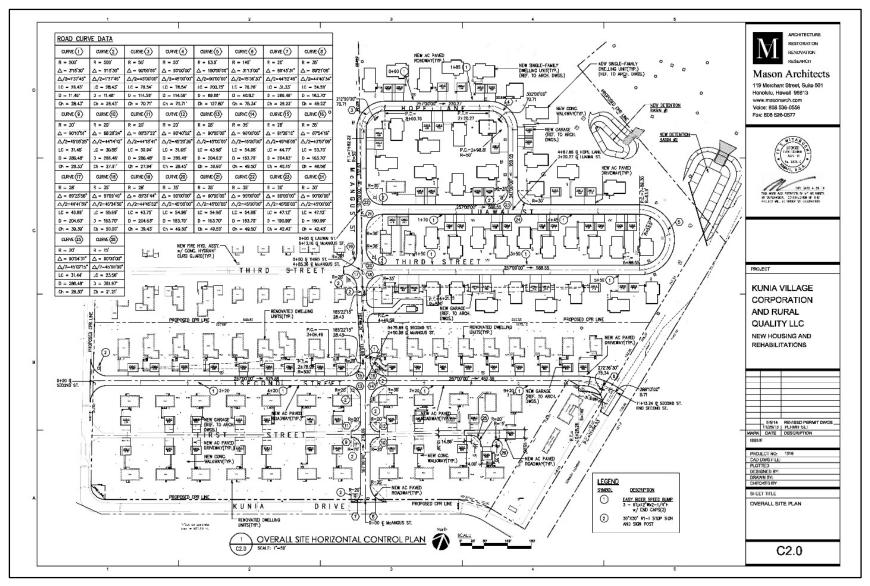


Figure 4. Development plans for the Kunia Village project area (Mason Architects 2014)

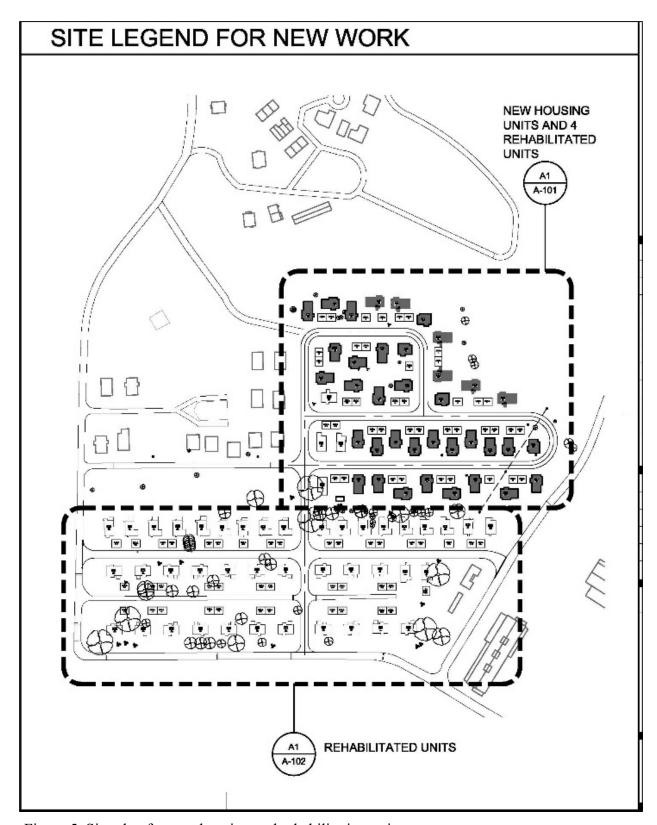


Figure 5. Site plan for new housing and rehabilitation units

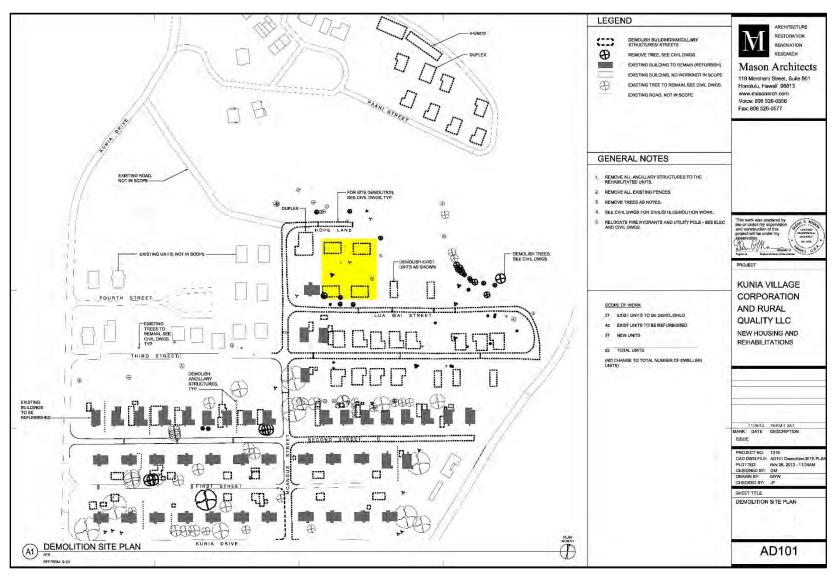


Figure 6. Demolition site plan showing the four units being proposed for relocation (highlighted in yellow)

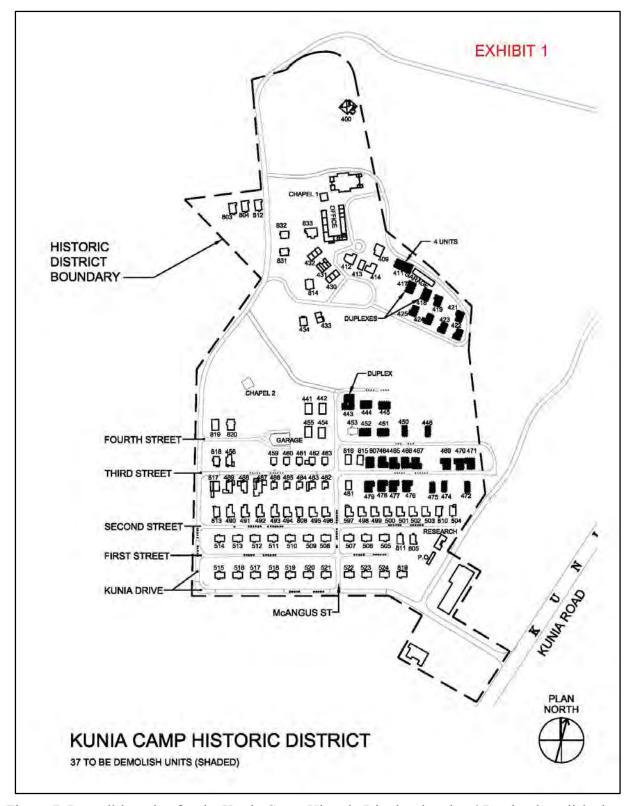


Figure 7. Demolition plan for the Kunia Camp Historic District showing 37 to-be-demolished units

1.3 Environmental Setting

1.3.1 Natural Environment

According to the U.S. Department of Agriculture (USDA) Soil Survey Geographic (SSURGO) database (2001) and soil survey data gathered by Foote et al. (1972), the vast majority of the project area's soils consist of Kolekole silty clay loam, 1 to 6% slopes, (KuB), with a small area of Helemano silty clay, 30 to 90% slopes (HLMG) in the north portion of the project area, and a small area of Kunia silty clay, 0 to 3% slopes (KyA) in the southeast corner (Figure 8).

Soils on the Kolekole series are described as follows:

This series consists of well-drained soils on uplands on the island of Oahu. These soils developed in old gravelly alluvium mixed with volcanic ash. They are gently sloping to moderately steep. Elevations range from 500 to 1,200 feet. The annual rainfall amounts to 35 to 50 inches, most of which occurs between November and April. The mean annual soil temperature is 71°F. Kolekole soils occur on the windward slopes of the Waianae Range. They are geographically associated with Kunia, Mahana, and Wahiawa soils.

These soils are used for sugarcane, pineapple, and pasture. The natural vegetation consists of guava, lantana, Bermuda grass, and Natal redtop. [Foote et al. 1972:73]

The Helemano series soils are described as follows:

This series consists of well-drained soils on alluvial fans and colluvial slopes on the sides of gulches. These soils are on the island of Oahu. They developed in alluvial and colluvium derived from basic igneous rock. They are steep to extremely steep. Elevations range from 500 to 1,200 feet. The annual rainfall dominantly amounts to 30 to 60 inches but ranges to 75 inches at the highest elevations. The mean annual soil temperature is 72° F. Helemano soils are geographically associated with Lahaina, Leilehua, Manana, Molokai, and Wahiawa soils.

These soils are used for pasture, woodland, and wildlife habitat. The natural vegetation consists of Bermuda grass, Christmas berry, eucalyptus, Formosa koa, guava, Japanese tea, Java plum, and koa haole. [Foote et al. 1972:40]

The Kunia series soils are described as follows:

This series consists of well-drained soils on upland terraces and fans on the island of Oahu. These soils developed in old alluvium. They are nearly level to moderately sloping. Elevations range from 700 to 1,000 feet. The mean annual rainfall amounts to 30 to 40 inches, most of which occurs from November to April. The mean annual soil temperature is 71°F. Kunia soils occur on the foot slopes of the Waianae Range, near Schofield Barracks. They are geographically associated with Kolekole, Lahaina, and Wahiawa soils.

These soils are used for sugarcane, pineapple, home sites, and military reservations. Most areas are cultivated, and the natural vegetation is not significant. [Foote et al. 1972:77]

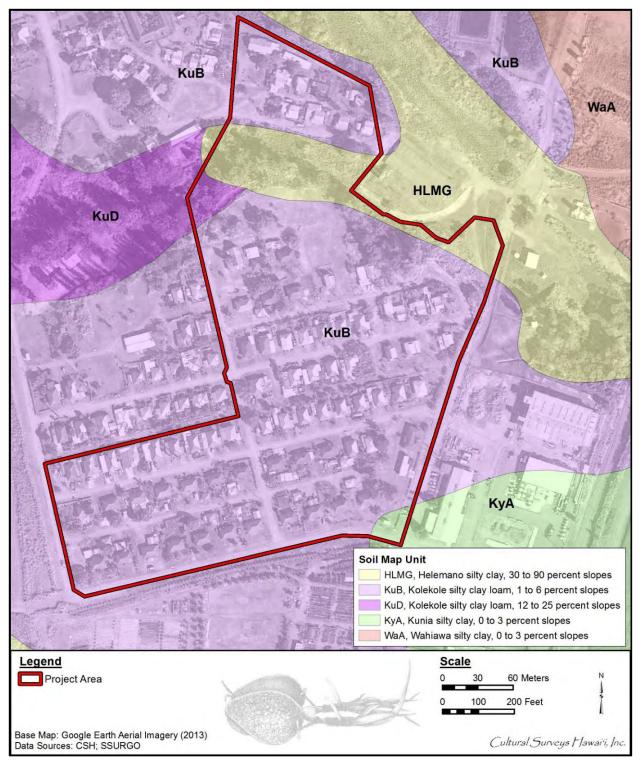


Figure 8. Overlay of *Soil Survey of the State of Hawaii* (Foote et al. 1972), indicating soil types within and surrounding the project area (U.S. Department of Agriculture Soils Survey Geographic Database [SSURGO] 2001)

1.3.2 Built Environment

Kunia Camp is located in the State of Hawai'i, on the island of O'ahu, in the County of Honolulu, and lies along Hawai'i Route 750, which runs northwest of Pearl Harbor. Historically the area surrounding the village has been used for large-scale pineapple and sugar cane cultivation. The areas outside of Kunia Village that have not been impacted by agricultural activities have been utilized for ranching or historic military purposes.

Based on an architectural review in the National Register of Historic Places Registration Form for Kunia Village (Appendix A), the camp can be divided into two distinct areas, Old Camp and New Camp. The Old Camp comprises the northern portion of the project area with the New Camp to the southeast. In the Old Camp are the Kunia School and associated administrative buildings, Kunia Gymnasium, and Kunia Chapel. In the new camp are the Kunia Store, Agricultural Research Building, and the Main Office Building.

Section 2 Methods

2.1 Field Work Methods

CSH completed the fieldwork component of this AIS under archaeological permit number 14-04, issued by the SHPD pursuant to HAR §13-13-282. Fieldwork was conducted on 27 and 28 October 2014 by CSH Scott Belluomini, B.A., Layne Krause, B.A, Richard Stark, Ph.D., and Trevor Yucha, B.S. All fieldwork was conducted under the direction of the principal investigator Hallett H. Hammatt, Ph. D. This work required approximately 7 person-days to complete.

Fieldwork consisted of an initial 100% coverage pedestrian survey and GPS data collection followed by a subsurface testing program.

2.1.1 Pedestrian Survey

The pedestrian survey was conducted by archaeologists on the streets of the village typically viewing private residences from the street. The survey confirmed there were no surface historic properties within the Kunia Village Housing Development project area. As there were no surface historic properties identified, the archaeological inventory survey focused on a program of subsurface testing to locate any buried cultural deposits and to facilitate a thorough examination of stratigraphy within the project area.

2.1.2 Subsurface Testing

The subsurface testing program was backhoe assisted and involved five test excavations (T-1 through T-5). In general, linear trenches measuring approximately 6 m (20 feet) long and 0.6 m (2 feet) wide were excavated within the project area. The sampling strategy was detailed in map and text to the SHPD in advance of the fieldwork (Shideler to Lebo email of 16 October 2014) with targeting of relatively large proposed excavations for two detention basins in the northeast portion of the housing redevelopment area and two connecting drain lines (30-inch and 42-inch in diameter) and a proposed pump house understood to involve grading and sewer line connections.

A stratigraphic profile of each test excavation was drawn and photographed. The observed sediments were described using standard USDA soil description observations/terminology. Sediment descriptions included Munsell color; texture; consistence; structure; plasticity; cementation; origin of sediments; descriptions of any inclusions such as cultural material and/or roots; lower boundary distinctiveness and topography; and other general observations. Where stratigraphic anomalies or potential cultural deposits were exposed, these were carefully represented on test excavation profile maps.

2.2 Laboratory Methods

Materials collected during AIS fieldwork were identified and catalogued at CSH's laboratory facilities on O'ahu. Analysis of collected materials was undertaken using standard archaeological laboratory techniques. Materials were washed, measured, weighed, described, and photographed.

2.2.1 Artifact Analysis

In general, artifact analysis focused on establishing, to the greatest extent possible, material type, function, cultural affiliation, and age of manufacture. As applicable, artifacts were washed,

sorted, measured, weighed, described, photographed, and catalogued. Diagnostic (dateable or identifiable) attributes of artifacts were researched.

Historic artifacts were identified using standard reference materials (e.g., Elliott and Gould 1988; Fike 1987; Godden 1964; Kovel and Kovel 1986; Lehner 1988; Lindsey 2014; Millar 1988; Munsey 1970; Toulouse 1971; Whitten 2009; and Zumwalt 1980), as well as resources available on the internet.

2.2.2 Disposition of Materials

All project records and all non-burial materials collected during the current AIS are stored at the CSH office in Waimānalo, Oʻahu. Final disposition of the collected materials will be determined in consultation with the landowner and SHPD, in accordance with HAR §13-276-6(a).

2.3 Research Methods

Background research included a review of previous archaeological studies on file at the SHPD; review of documents at Hamilton Library of the University of Hawai'i, the Hawai'i State Archives, the Mission Houses Museum Library, the Hawai'i Public Library, and the Bishop Museum Archives; study of historic photographs at the Hawai'i State Archives and the Bishop Museum Archives; and study of historic maps at the Survey Office of the Department of Land and Natural Resources. Historic maps and photographs from the CSH library were also consulted. In addition, Māhele records were examined from the Waihona 'Aina database (Waihona 'Aina 2000).

This research provided the environmental, cultural, historic, and archaeological background for the project area. The sources studied were used to formulate a predictive model regarding the expected types and locations of historic properties in the project area.

Section 3 Background Research

3.1 Traditional and Historical Background

3.1.1 Traditional and Historical Background

Various Hawaiian legends and early historical accounts indicate the *ahupua'a* (large land division) of Honouliuli was once widely inhabited by pre-Contact populations, including the Hawaiian *ali'i* (chiefly class). This would be attributable for the most part to the plentiful marine and estuarine resources available at the coast, where several sites interpreted as permanent habitations and fishing shrines were located. Other attractive subsistence-related features of the *ahupua'a* include irrigated lowlands suitable for wetland taro cultivation (Hammatt and Shideler 1990), as well as the lower forest area of the mountain slopes for the procurement of forest resources.

Exploitation of the forest resources along the slopes of the Wai'anae Range—as suggested by E.S. and EG. Handy—probably acted as a viable subsistence alternative during times of famine:

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

These upper valley slopes may have also been a significant resource for sporadic quarrying of basalt for the manufacturing of stone tools. This is evidenced in part by the existence of a probable quarrying site (SIHP # 50-80-12-4322) in Makaiwa Gulch at 152 m. (500 feet) AMSL (Hammatt et al. 1991).

The Hawaiian *ali'i* were also attracted to the region, which is steeped in myth. An extensive summary of various legends and historical accounts of Honouliuli can be found in Sterling and Summers (1978:31-44).

John Papa 'Ī'ī describes a network of Leeward O'ahu trails (Figure 9) which in later historic times encircled and crossed the Wai'anae Range, allowing passage from Lualualei to Honouliuli via Pōhākea Pass ('Ī'ī 1959:96-98). A map with an overlay of traditional Hawaiian place names for Honouliuli Ahupua'a and the McAllister archaeological sites (Figure 10) also shows these trails. Following 'Ī'ī's description, the trail to Pōhākea Pass would have passed through the present project area. An account of the use of the trail through Pōhākea Pass is described in 'Ī'ī's Fragments of Hawaiian History:

It was at this time that the king, chiefs, and court members left Honolulu and sailed by canoe to Waianae. Liholiho, the heir to the kingdom, went overland with Papa and others from Honolulu and spent the night at Kumelewai in Ewa . . . The travelers stopped only one night and spent the following night on the other (Wai'anae) side of Pohakea. The elders and the children who went with them slept above Kunia, on the other side of Pohakea. ['Ī'ī 1959:23]

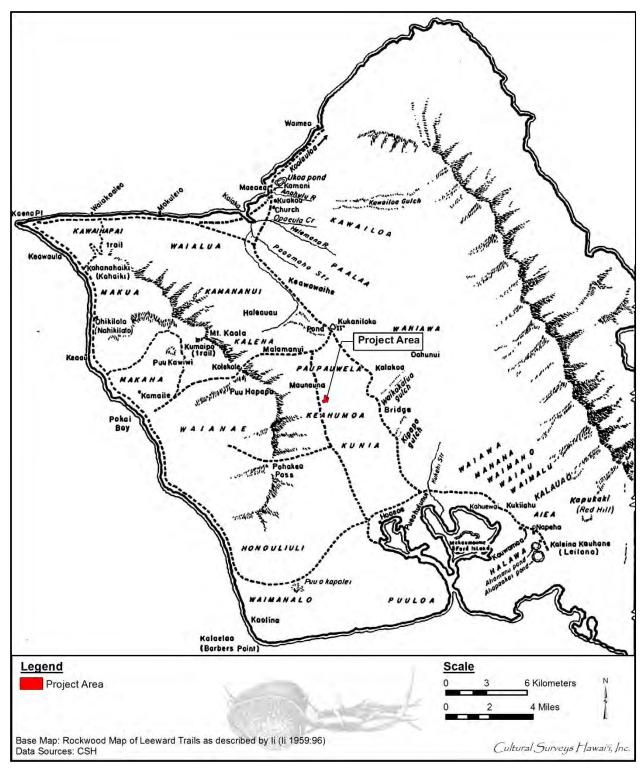


Figure 9. Overlay of the Kunia Village project area on the Rockwood map of leeward trails as described by 'Ī'ī ('Ī'ī 1959:96)

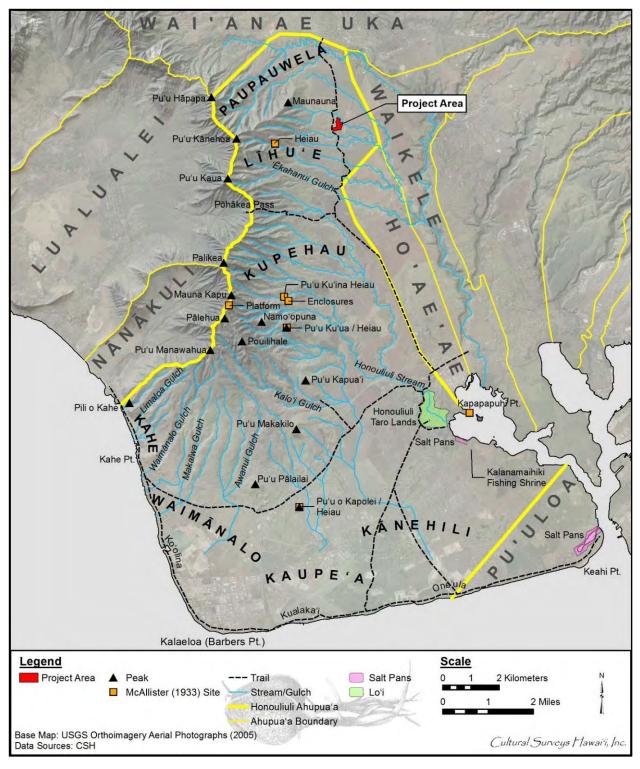


Figure 10. Overlay of traditional Hawaiian place names for Honouliuli Ahupua'a, McAllister archaeological sites, and the Kunia Village project area on a (2005) USGS orthoimagery aerial photograph

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

Barbers Point is named after Captain Henry Barber whose vessel ran aground on 31 October 1796. Subsequent to Western Contact in the area, the landscape of the 'Ewa plains and Wai'anae slopes was adversely affected by the removal of the sandalwood forest, and the introduction of domesticated animals and new vegetation species. Domesticated animals including goats, sheep, and cattle were brought to the Hawaiian Islands by Vancouver in the early 1790s, and allowed to graze freely on the land for some time after. It is unclear when domesticated animals were brought to O'ahu. However, L.A. Henke reports the existence of a longhorn cattle ranch in Wai'anae prior to 1840 (Frierson 1972:10). During this same time, perhaps as early as 1790, exotic vegetation species were introduced to the area. These typically included vegetation best suited to a terrain disturbed by the logging of sandalwood forest and eroded by animal grazing. The following dates of specific vegetation introduced to Hawai'i are given by R. Smith and outlined by Frierson (1972:10-11):

- 1) "early", c. 1790: Prickly pear cactus, *Opuntia tuna* Haole koa, *Leucaena glauca* Guava, *Psidium guajava*
- 2) 1835-1840 Burmuda [sic] grass, Cynodon dactylon Wire grass, Eleusine indica
- 3) 1858 Lantana, *Lantana camara*

The *kiawe* tree was also introduced during this period, either in 1828 or 1837 (Frierson 1972:11).

3.1.2 Mid- to Late 1800s

During the Māhele of 1848, 99 individual land claims in the *ahupua* 'a of Honouliuli were registered and awarded by King Kamehameha III. Within the project area, however, it is important to note there were no *kuleana* (native) land claims awarded to commoners. Most of the commoner *kuleana* claims were in the lower portions of Honouliuli Ahupua 'a near Pearl Harbor. Kekau 'onohi acquired a deed to all unclaimed land within the *ahupua* 'a (including the current project area) which totaled 43,250 acres.

Kekau'onohi was one of Liholiho's (Kamehameha II's) wives, and after his death she lived with her half-brother, Luanu'u Kahala'i'a, who was governor of Kaua'i (Hammatt and Shideler 1990:19-20). Subsequently, Kekau'onohi ran away with Queen Ka'ahumanu's stepson, Keli'i-ahonui, and then became the wife of Chief Levi Ha'alelea. Upon her death on 2 June 1851, all her property passed on to her husband and his heirs. When Levi Ha'alelea died, the property (including the current project area) went to his surviving wife, who in turn leased it to James Dowsett and

John Meek in 1871 for stock running and grazing. The location of the cattle ranch is within the vicinity of the project area as seen on a 1873 W.D. Alexander map (Figure 11).

In 1877, James Campbell purchased most of Honouliuli Ahupua'a, including the current project area, for a total of \$95,000. He then drove off 32,347 head of cattle belonging to Dowsett, Meek, and James Robinson and constructed a fence around the outer boundary of his property (Bordner and Silva 1983:C-12). In 1879, Campbell brought in a well-driller from California to search the 'Ewa plains for water, and a "vast pure water reserve" was discovered (Armstrong 1983). Following this discovery, plantation developers and ranchers drilled numerous wells in search of the valuable resource. By 1881, the Campbell property of Honouliuli prospered as a cattle ranch with "abundant pasturage of various kinds" (Briggs in Haun and Kelly 1984:45). Within ten years of the first drilled well in 'Ewa, the addition of a series of artesian wells throughout the island was supplying most of Honolulu's water needs (Armstrong 1983).

In 1889, Campbell leased his property to Benjamin Dillingham, who subsequently formed the Oahu Railway and Land Company (OR&L) in 1890. To attract business to his new railroad system, Dillingham subleased all land below 200 feet elevation to William Castle who in turn sublet the area to the Ewa Plantation Company for sugar cane cultivation (Frierson 1972:15). Dillingham's Honouliuli lands above 200 feet elevation suitable for sugar cane cultivation were sublet to the Oahu Sugar Company.

Ewa Plantation Company was incorporated in 1890 and continued in full operation up into modern times. The plantation grew quickly with the abundant artesian water. As a means to generate soil deposition on the coral plain and increase arable land in the lowlands, the Ewa Plantation Company installed ditches running from the lower slopes of the mountain range to the lowlands and then plowed the slopes vertically just before the rainy season to induce erosion (Frierson 1972:17).

The Oahu Sugar Company was incorporated in 1897, and included lands in the foothills above the 'Ewa plain and Pearl Harbor. The sprawling plantation "covered some 20 square miles . . . ranging in elevation from 10 feet at the Waipio Peninsula . . . to 700 feet at the Waiphole Ditch" (Condé and Best 1973:313). Prior to commercial sugar cultivation, the lands occupied by the Oahu Sugar Company were described as being "of near desert proportion until water was supplied from drilled artesian wells and the Waiphole Water project" (Condé and Best 1973:313). The Oahu Sugar Company took control over the Ewa Plantation lands in 1970 and continued operations into the 1990s.

Around 1896, Harry Von Holt, Superintendent of the OR&L Ranch Department, was actively constructing a fence around the *mauka* (inland, toward the mountains) Honouliuli lands. This established the Honouliuli Forest Reserve, within which Von Holt planted "experimental trees" to reforest areas damaged by sandalwood harvesting and livestock grazing (Von Holt 1985:142). During this time, Von Holt set up a camp for his family at Akupu, approximately 3 km southwest of the current project area. The camp was later moved to Pālehua, also southwest of the current project area. The camp site and forest reserve were accessed by a horse trail which began near the mouth of Kalo'i Gulch. Several additional trails were constructed in the Honouliuli uplands, as mentioned in the following account:

New trails were built—"Over the Hills and Far Away," "Punahuna" to the tunnel, where one went in a long way with a candle, and where we all hunted for small

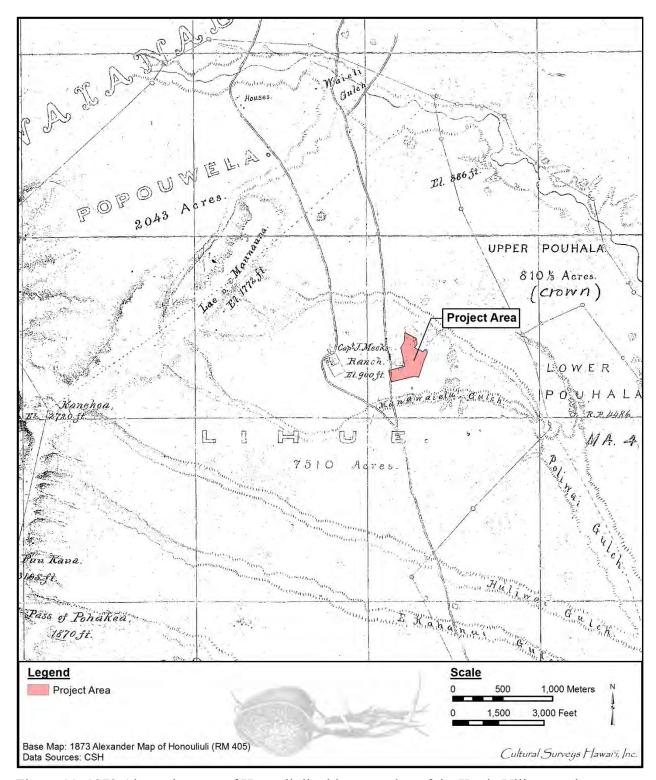


Figure 11. 1873 Alexander map of Honouliuli with an overlay of the Kunia Village project area

kukui nuts; "Glen Ida" trail to Akupu, the "Golden Stairs" joining Glen Ida to the ridge trail, and the "Hog Back" trail where we went to watch the hunters . . . Later on the Schuyler Trail was built . . . The Schuyler Trail connected our mountains with Schofield . . . [Von Holt 1985:150]

3.1.3 1900s

Located on O'ahu's central plain along Hawai'i Route 750, amidst some 3,000 acres of farmland leased and cultivated by Del Monte Fresh Produce, Kunia Camp was the last village in O'ahu designated exclusively for Del Monte Corporation's workers who processed pineapples from the adjacent pineapple fields. The father of the corporation, "Pineapple King" James Dole, initially began planting pineapples in 1903, after paying \$4,000 for just over 60 acres of homestead land in Wahiawā in 1900 (Larsen and Marks 2010:168). Such was Dole's success that by the late 1950s, Hapco (Hawaiian Pineapple Company), had so grown in size and scope that it could boast production of 80% of the pineapple bought by consumers world-wide (Bolante 2006).

At the time, prior to commercial and residential development, towns such as 'Ewa, 'Aiea, and Waipahu were company towns, encompassing the plantations that the workers farmed and the camps where they and their families resided (Bolante 2006). As of 2006, the small agricultural community of Kunia Camp was comprised of 200 pineapple workers and their families, living on 119 acres in cottages that numbered close to 120.

According to United States Department of the Interior (Mason Architects 2014:7:5), all the residential houses in the Kunia Camp "have the distinctive characteristics of the Hawaiian Plantation Style of architecture, which includes walls a single board thick, . . . set against a backdrop of pineapple fields, and provided housing . . . for pineapple field workers . . . from the years 1928 until 2007."

The 1916 Harrison map of the Hawaii Preserving Company shows the outline of the project area in its original position in 1916, centered in a pasture (Figure 12). The 1919 U.S. Army War Department fire control map (Figure 13) shows the same area, only slightly more developed. Newly built roads, dwellings, and a section of railway are shown running near the current project area. The 1928 Schofield Barracks USGS topographic quadrangle (Figure 14) shows Kunia Camp a bit later in development. This map again shows the Oahu Railroad running through the vicinity. The 1935 and 1943 U.S. Army War Department terrain maps, Schofield Barracks quadrangle, both show the same area, only slightly further along in development, with access and country roads now surrounding the camp (Figure 15 and Figure 16). A 1951 USGS aerial photograph, 1953 USGS topographic map, 1969 USGS topographic map, and 1977 USGS orthophotograph all show Kunia Village more or less in its modern state (Figure 17 through Figure 20).

Beyond residential housing, the Kunia Camp was in actuality a small town. With a chapel, gymnasium and store all patronized by the resident workers and their families. The atmosphere of Kunia Camp was that of a tight-knit community, with most homes housing family members from multiple generations. The links among families and the surrounding neighbors of the camp forged a strong sense of community-inspired trust, where people seldom locked the doors to their homes, and where residents were generally familiar with one another, "Everybody know each other. No one complain if you cook and get any kine smell. Get plenty parties at the gym, ... graduation, birthday, baptismal. You invite the whole camp" (Bolante, 2006).

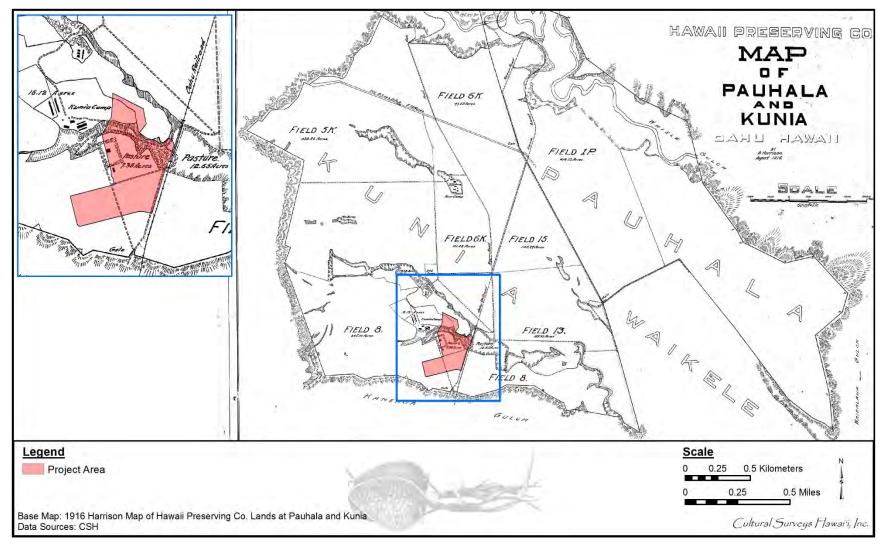


Figure 12. 1916 Harrison map of Hawaii Preserving Company Lands at Pauhala and Kunia

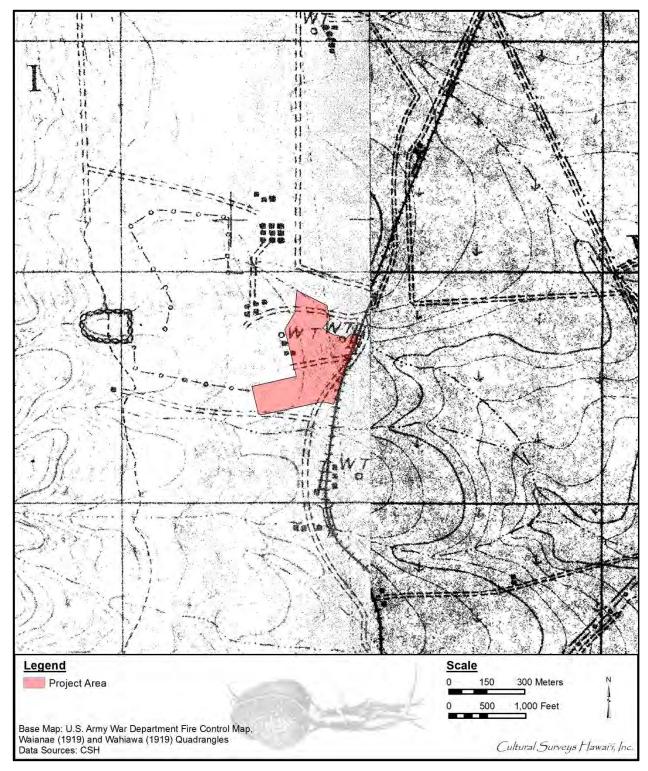


Figure 13. 1919 U.S. Army War Department fire control maps, Waianae (1919) and Wahiawa (1919) quadrangles showing the Kunia Village project area and vicinity

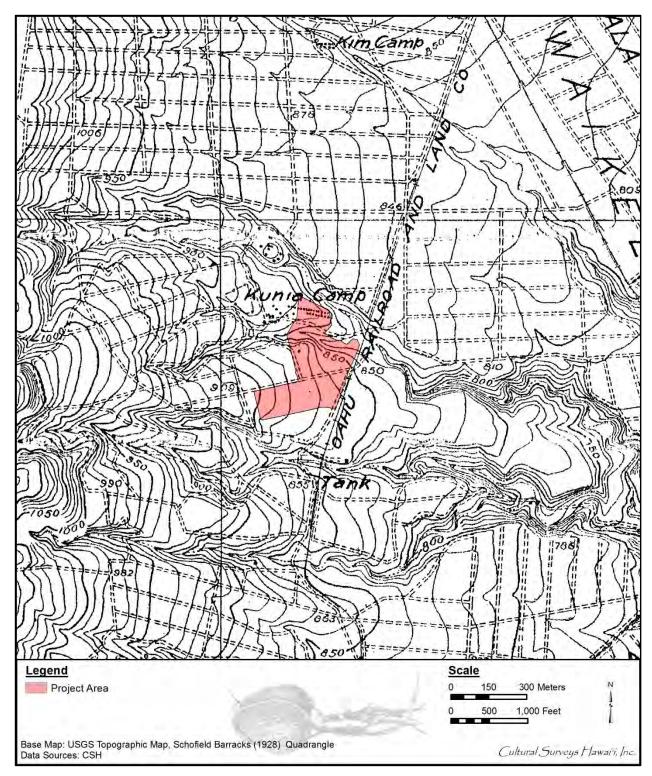


Figure 14. Portion of 1928 Schofield Barracks USGS topographic quadrangle showing the Kunia Village project area and vicinity

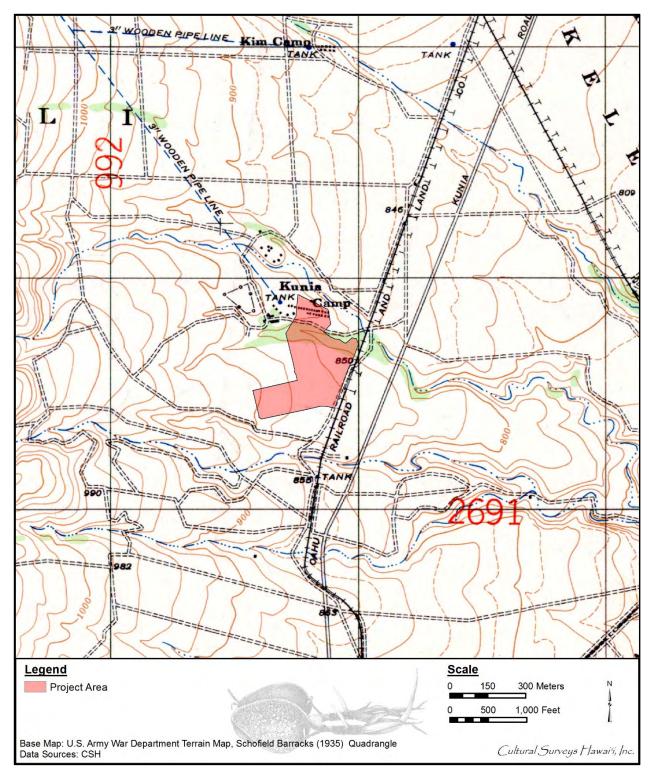


Figure 15. Portion of 1935 U.S. Army War Department terrain map, Schofield Barracks quadrangle showing the Kunia Village project area and vicinity

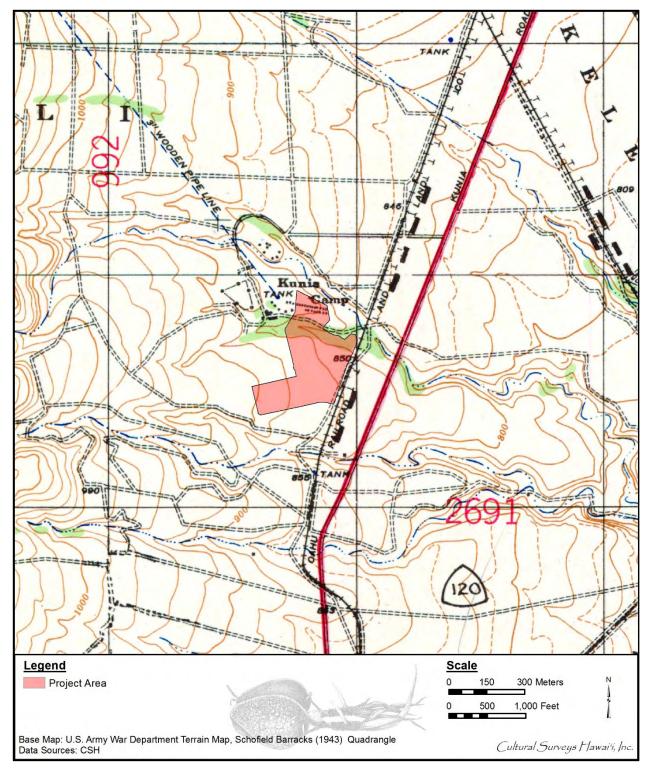


Figure 16. Portion of 1943 U.S. Army War Department Terrain map, Schofield Barracks quadrangle showing the Kunia Village project area and vicinity

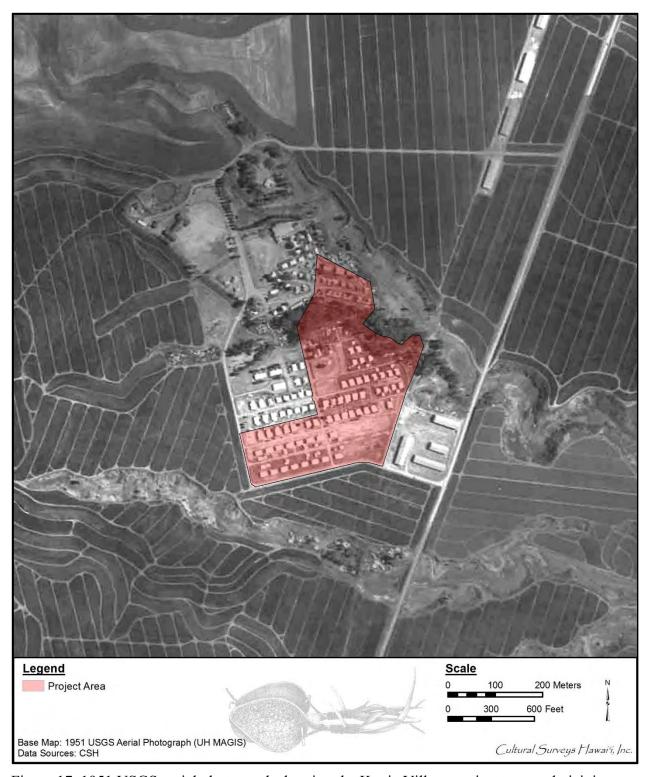


Figure 17. 1951 USGS aerial photograph showing the Kunia Village project area and vicinity

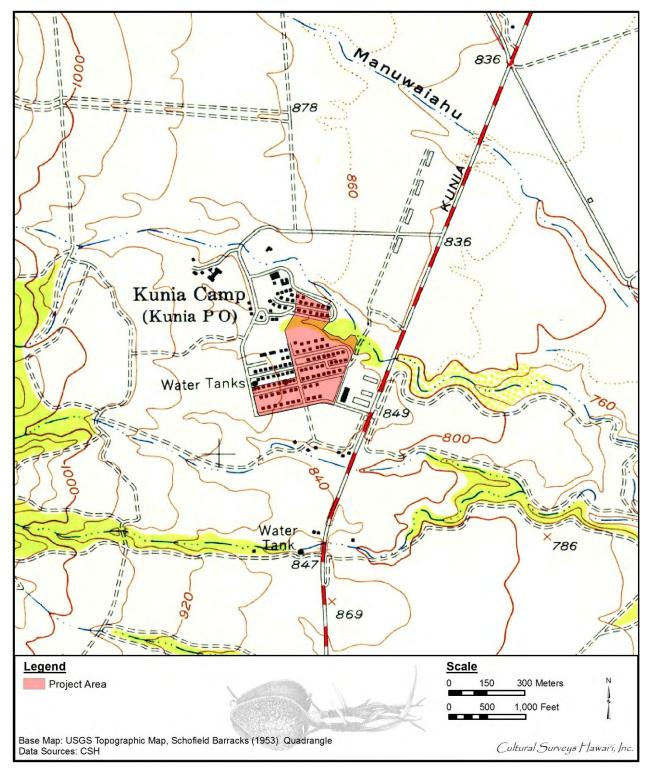


Figure 18. Portion of 1953 Schofield Barracks USGS topographic quadrangle showing the Kunia Village project area and vicinity

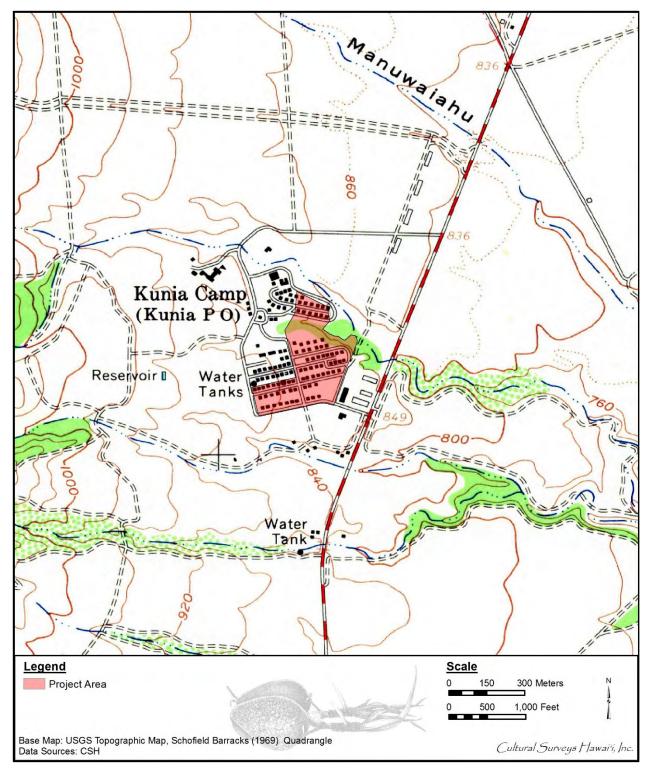


Figure 19. Portion of 1969 Schofield Barracks USGS topographic quadrangle showing the Kunia Village project area and vicinity

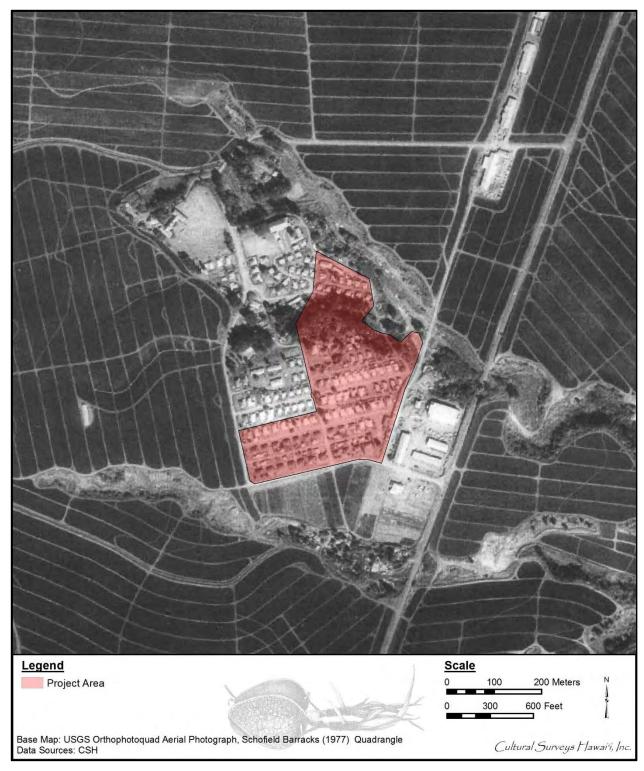


Figure 20. 1977 USGS Orthophotograph, Schofield Barracks quadrangle showing the Kunia Village project area and vicinity

3.1.4 Contemporary Land Use

In February 2006 Del Monte revealed that their last crop had been planted, and that they would be closing pineapple production operations in Hawai'i within two years. Nine months later, Del Monte announced that operations would draw to a close in January 2007, although the terms of their lease stated they would retain jurisdiction of the grounds that Kunia Camp sat on throughout the remainder of their lease. In December 2008 proprietorship was transferred to the Campbell Estate, and less than a year later in November 2009 the Kunia camp was under the ownership of the Hawaii Agriculture Research Center (HARC). Finally, in April 2011, ownership of the Kunia Camp was appropriated by the Kunia Village Title Holding Company, where it currently remains.

Based on observations made in the field during this survey it is clear that little has changed in Kunia Camp since ownership of the village was appropriated by the Kunia Village Title Holding Company. The residential houses in the Kunia Camp still show distinct characteristics of the Hawaiian plantation style of architecture, with little having been done in the way of renovations and remodeling in subsequent years. The atmosphere is still very much that of a tight-knit community. The main draw to the camp for those who are not residents of the camp itself appears to be a United States Post Office located just southeast of the project area.

Kunia Store is located in the New Camp area and is situated in the southern and eastern-most portion of the district, near the entrance to Kunia Camp from Kunia Road, and is comprised of a variety of different establishments.

Kunia Country Farms, a landscaping business and tropical nursery, can also be found directly southeast of the project area on Kunia Road Hwy 750 and is perhaps the largest commercial establishment located near the camp. The nursery opened in 2010 and is spread over 10 acres of former pineapple plantation land, presumably once owned by Del Monte. Kunia Country Farms is a subsidiary of the Takenaka Landscaping Company and provides various groundcovers, shrubs, fruit trees, and palms, as well as residential and commercial landscaping services to central and leeward Oʻahu areas including Mililani, Waipiʻo, Pearl City, ʻAiea, 'Ewa Beach, Waipahu, Kapolei, and Makakilo (Takenaka Landscaping Company Inc. 2014).

3.2 Previous Archaeological Research

The coral plains of 'Ewa have been the focus of more than 50 archaeological studies over the last two decades, largely as the result of required compliance with county, state, and federal legislation. The Kalaeloa (Barbers Point) area is one of the most studied places in Polynesia. However, relatively little research has been conducted in the lower slopes and upland areas of Honouliuli, near Kunia Village. The previous archaeological studies conducted within the vicinity of the project area are shown on Figure 21, summarized in Table 1, and are described in detail in the following text.

3.3 Pu'u Ku'ua: Inland Settlement

Documentation of inland settlement in Honouliuli Ahupua'a is rather problematic as there are relatively few historical or archaeological sources. This is unlike the coral plains of 'Ewa and nearby Barbers Point to the south, which have been extensively studied. However, it is probable that the area around Pu'u Ku'ua, on the east side of the Wai'anae Ridge, 7 miles inland, was a Hawaiian place of some importance.

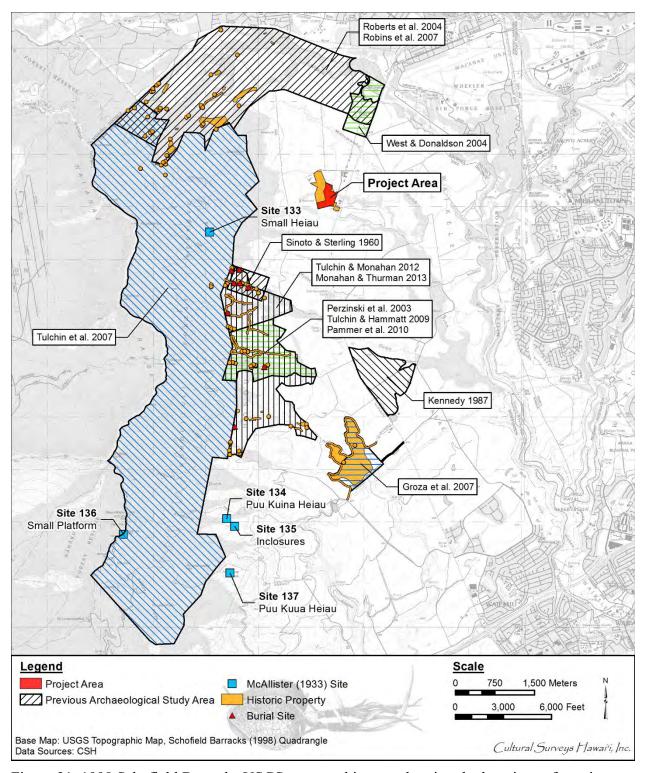


Figure 21. 1998 Schofield Barracks USGS topographic map showing the locations of previous archaeological studies in the vicinity of the project area as well as nearby historic properties

Table 1. Previous Archaeological Studies in the Vicinity of the Project Area

Reference	Type of Study	Location	Results
McAllister 1933	Reconnaissance survey	Island-wide	Documented sites in general vicinity include Site 133, a small <i>heiau</i> ; Site 134, Pu'u Kuina Heiau; Site 135 Inclosures; Site 136 a small platform; and Site 137 Pu'u Ku'ua Heiau
Kennedy 1987	Archaeological reconnaissance survey	203.171-acre area in Hōʻaeʻae Ahupua'a, TMK: [1]-9-4-004	No historic properties or cultural materials identified
Sinoto and Sterling 1960 cited in Sterling and Summers (1978:37)	Archaeological literature review/site review	'Ēkaha Nui Gulch area, approx. 2 km SW of project area	Agricultural terraces, house sites along the sides of the stream, pavings, platforms, a burial platform and a possible <i>heiau</i> (non-Christian place of worship) (No SIHP #s believed to have been assigned)
Perzinski et al. 2003	Archaeological inventory survey	Approx. 250-acre parcel for proposed Kunia Land Fill, TMK: [1] 9-2-004: 5 por.	Six archaeological sites documented that represent habitation, transportation, and storage activities as well as religious/ceremonial practices (SIHP #s 50-80-12-6456 through - 6461)
Roberts et al. 2004	Archaeological reconnaissance survey	U.S. Army Schofield Barracks Military Reservation, South Range Land acquisition	43 sites comprised of 129 features, some with pre-Contact components as well as historic sites, related to military and plantation activities (see following Table 2 for SIHP #s)
West and Donaldson 2004	Archaeological inventory survey	Naval Computer and Telecommunications Area Master Station Pacific (NCTAMS PAC) and vicinity, Wahiawa, TMK: [1] 7- 1-002:007	No historic properties or cultural materials identified
Groza et al. 2007	Pedestrian survey	143-acre Mauka Detention Basin located west of Kunia Rd, TMK: [1] 9-2- 001:001	Three sites documented, SIHP #s 50-80-06-6892 a historic bridge, -6893 a historic bridge, and -6894 a plantation agricultural complex

Reference	Type of Study	Location	Results
Robins et al. 2007	GPS relocation report/pedestrian survey	Northern portion of Honouliuli Ahupua'a bounded by Schofield Barracks west of Kunia Rd, TMK: [1] 9-2-005	28 archaeological sites, with habitation, ceremonial, and possible burial components were documented (see following Table 2 for SIHP #s)
Tulchin et al. 2007	Archaeological literature review and field inspection	Approx. 4,600-acre property at Honouliuli Forest Reserve, TMKs: [1] 9-2-004:001 por., 005 por.; 9-2-005:013 por., 016, 018	8 historic properties were identified including mounds and platforms of a SIHP # 50-80-08-6497 a traditional Hawaiian agricultural complex, a possible grinding stone, an airplane crash site, a terrace, a wall, and a mound.
Tulchin and Hammatt 2009	GPS relocation survey of three sites (total approximately 1 acre)	Kunia Loa Ridge Farmlands, TMK: [1]- 9-2-004:005 por.	SIHP #s 50-80-12-6457, -6458, and -6461 confirmed; new features of SIHP #6461 documented
Pammer et al. 2010	Archaeological inventory survey	Approx. 294-acre parcel for proposed Kunia Loa Ridge Farmlands, TMK: [1] 9-2-004:005 por.	Eight historic properties identified: SIHP #s 50-80-12-6456 terrace, mound, and trail; -6457 enclosure and associated terraces; -6458 cobble filled crevices; -6459 U-shaped structure and alignment; -6460 leveled cobbles; -6461 historic road improvements; -7125 petroglyph; and -7126 mound
Tulchin and Monahan 2012	Archaeological reconnaissance survey	162-acre project area on eastern side of Wai'anae Mountain Range, approx. 1.5 km east of Hawai'i Country Club, TMK: [1] 9-2-004:013 por.	Documented SIHP #s 50-80-08-7328, -7339, -7340, -7341 and -7344, associated with traditional Hawaiian land use
Monahan and Thurman 2013	Archaeological inventory survey		23 new historic properties identified including a platform <i>heiau</i> , a lithic scatter, plantation infrastructure, and a burial (see following Table 2 for SIHP #s)

Table 2. Designated State Inventory of Historic Properties (SIHP) Sites in the Vicinity

SIHP#	Site Type	Site Age	Source
50-80-09-02268	Improved irrigation ditch (Waiahole Ditch)	Post- Contact	Groza et al. 2007
50-80-08-05436	Agricultural/habitation complex	Pre- Contact	Robins et al. 2007
50-80-08-05437	Mound	Pre- Contact	Robins et al. 2007
50-80-08-05438	Irrigation ditch	Pre- Contact	Robins et al. 2007
50-80-08-05439	Mound	Pre- Contact	Robins et al. 2007
50-80-08-05440	Mound	Pre- Contact	Robins et al. 2007
50-80-08-05441	Mound	Post- Contact	Robins et al. 2007
50-80-08-06456	Terrace and alignment	Both	Pammer et al. 2010, Monahan and Thurman 2013
50-80-08-06457	Enclosure (possible <i>heiau</i>) complex	Both	Pammer et al. 2010, Monahan and Thurman 2013
50-80-08-06458	Filled crevices and alignment	Both	Pammer et al. 2010, Monahan and Thurman 2013
50-80-08-06459	Enclosures and alignment	Post- Contact	Pammer et al. 2010, Monahan and Thurman 2013
50-80-08-06459	Alignment	Post- Contact	Tulchin and Monahan 2012
50-80-08-06460	Cobble paving	Unknown	Pammer et al. 2010, Monahan and Thurman 2013
50-80-08-6461	Historic road and appurtenances	Post- Contact	Pammer et al. 2010, Monahan and Thurman 2013
50-80-08-06462	Earthen dam complex	Post- Contact	Robins et al. 2007
50-80-08-06463	Historic structure complex	Post- Contact	Robins et al. 2007
50-80-08-06464	Historic structure foundation	Post-Contact	Robins et al. 2007
50-80-08-06465	Plantation dump	Post- Contact	Robins et al. 2007
50-80-08-06466	Road/retaining wall	Post- Contact	Robins et al. 2007
50-80-08-06467	Military-related complex	Post- Contact	Robins et al. 2007
50-80-08-06468	Historic structure foundation	Post- Contact	Robins et al. 2007
50-80-08-06469	Agricultural complex	Both	Robins et al. 2007
50-80-08-06470	Road/culvert system	Post- Contact	Robins et al. 2007
50-80-08-06471	Historic road	Post- Contact	Robins et al. 2007
50-80-08-06472	Agricultural/habitation complex	Pre- Contact	Robins et al. 2007
50-80-08-06473	Agricultural complex	Pre- Contact	Robins et al. 2007
50-80-08-06474	Historic structure foundation	Post- Contact	Robins et al. 2007

SIHP#	Site Type	Site Age	Source
50-80-08-06475	Agricultural/habitation complex	Pre-Contact	Robins et al. 2007
50-80-08-06477	Agricultural/habitation complex	Both	Robins et al. 2007
50-80-08-06478	Japanese homestead	Post-Contact	Robins et al. 2007
50-80-08-06479	Platform complex	Both	Robins et al. 2007
50-80-08-06480	Cistern	Post-Contact	Robins et al. 2007
50-80-08-06481	Agricultural/ceremonial complex	Both	Robins et al. 2007
50-80-08-06482	Agricultural complex	Pre-Contact	Robins et al. 2007
50-80-08-06483	Clearing mounds	Post-Contact	Robins et al. 2007
50-80-08-06484	Agricultural complex	Both	Robins et al. 2007
50-80-08-06485	Possible burial complex	Pre-Contact	Robins et al. 2007
50-80-08-06486	Agricultural/habitation complex	Both	Robins et al. 2007
50-80-08-06487	Enclosure	Pre-Contact	Robins et al. 2007
50-80-08-06488	Agricultural complex	Pre-Contact	Robins et al. 2007
50-80-08-06489	Wall	Post-Contact	Robins et al. 2007
50-80-08-06490	Wall segment	Post-Contact	Robins et al. 2007
50-80-08-06491	Agricultural complex	Pre-Contact	Robins et al. 2007
50-80-08-06492	Agricultural complex	Pre-Contact	Robins et al. 2007
50-80-08-06493	Mound	Unknown	Robins et al. 2007
50-80-08-06494	Agricultural complex	Pre-Contact	Robins et al. 2007
50-80-08-06495	Historic building foundation	Post-Contact	Robins et al. 2007
50-80-08-06496	Agricultural complex	Pre-Contact	Robins et al. 2007
50-80-08-06497	Agricultural/ceremonial complex	Both	Robins et al. 2007
50-80-08-06498	Terrace	Pre-Contact	Robins et al. 2007
50-80-08-06651	Agricultural complex	Pre-Contact	Robins et al. 2007
50-80-08-06652	Agricultural complex	Pre-Contact	Robins et al. 2007
50-80-02-06653	Habitation/agricultural complex	Pre-Contact	Robins et al. 2007
50-80-06-06892	Historic bridge	Post-Contact	Groza et al. 2007
50-80-06-06893	Historic bridge	Post-Contact	Groza et al. 2007
50-80-06-06894	Plantation agricultural complex	Post-Contact	Groza et al. 2007

SIHP#	Site Type	Site Age	Source
50-80-08-07125	Petroglyph	Post-Contact	Pammer et al. 2010, Monahan and Thurman 2013
50-80-08-07126	Mound	Unknown	Pammer et al. 2010, Monahan and Thurman 2013
50-80-08-07323	Mound and wall	Post-Contact	Tulchin and Monahan 2012, Monahan and Thurman 2013
50-80-08-07324 A	Wall	Post-Contact	Tulchin and Monahan 2012, Monahan and Thurman 2013
50-80-08-07324 B	Wall	Post-Contact	Tulchin and Monahan 2012, Monahan and Thurman 2013
50-80-08-07325	Terraces and mound	Unknown	Tulchin and Monahan 2012, Monahan and Thurman 2013
50-80-08-07326	Wall	Unknown	Tulchin and Monahan 2012, Monahan and Thurman 2013
50-80-08-07327	Теттасе	Unknown	Tulchin and Monahan 2012, Monahan and Thurman 2013
50-80-08-07328	Cobble pavement	Both	Tulchin and Monahan 2012, Monahan and Thurman 2013
50-80-08-07329	Enclosure	Post-Contact	Tulchin and Monahan 2012, Monahan and Thurman 2013
50-80-08-07330	Wall and modified outcrops	Post-Contact	Tulchin and Monahan 2012, Monahan and Thurman 2013
50-80-08-07331	Enclosure	Post-Contact	Tulchin and Monahan 2012, Monahan and Thurman 2013
50-80-08-07332	Wall	Post-Contact	Tulchin and Monahan 2012, Monahan and Thurman 2013
50-80-08-07333	Terrace	Post-Contact	Tulchin and Monahan 2012, Monahan and Thurman 2013
50-80-08-07334	Historic road	Post-Contact	Tulchin and Monahan 2012, Monahan and Thurman 2013
50-80-08-07335	Historic road	Post-Contact	Tulchin and Monahan 2012, Monahan and Thurman 2013
50-80-08-07336	Mound complex	Unknown	Tulchin and Monahan 2012, Monahan and Thurman 2013
50-80-08-07337	Petroglyphs	Post-Contact	Tulchin and Monahan 2012, Monahan and Thurman 2013
50-80-08-07338 A	Culvert	Post-Contact	Tulchin and Monahan 2012, Monahan and Thurman 2013

SIHP#	Site Type	Site Age	Source
50-80-08-7338 B	Mound	Post-Contact	Tulchin and Monahan 2012, Monahan and Thurman 2013
50-80-08-07339	Agricultural complex	Pre-Contact	Tulchin and Monahan 2012, Monahan and Thurman 2013
50-80-08-07340	Platform	Pre-Contact	Tulchin and Monahan 2012, Monahan and Thurman 2013
50-80-08-07341	Platform	Pre-Contact	Tulchin and Monahan 2012, Monahan and Thurman 2013
50-80-08-07341	Terrace complex	Pre-Contact	Tulchin and Monahan 2012
50-80-08-07342	Terrace/trail	Unknown	Tulchin and Monahan 2012, Monahan and Thurman 2013
50-80-08-07343	Теттасе	Post-Contact	Tulchin and Monahan 2012, Monahan and Thurman 2013
50-80-08-07344	Modified outcrops	Pre-Contact	Tulchin and Monahan 2012, Monahan and Thurman 2013
50-80-08-07345	Mound	Post-Contact	Tulchin and Monahan 2012, Monahan and Thurman 2013
50-80-08-07346 A	Irrigation ditch	Post-Contact	Tulchin and Monahan 2012, Monahan and Thurman 2013
50-80-08-07346 B	Irrigation siphon	Post-Contact	Tulchin and Monahan 2012, Monahan and Thurman 2013
50-80-08-07347	Wall	Post-Contact	Tulchin and Monahan 2012, Monahan and Thurman 2013
50-80-08-07348 A	Mound	Unknown	Tulchin and Monahan 2012, Monahan and Thurman 2013
50-80-08-07348 B	Mound	Unknown	Tulchin and Monahan 2012, Monahan and Thurman 2013
50-80-08-07349	Wall	Post- Contact	Tulchin and Monahan 2012, Monahan and Thurman 2013
50-80-08-07350	Alignment	Unknown	Tulchin and Monahan 2012, Monahan and Thurman 2013
50-80-08-07351	Rock shelter	Unknown	Tulchin and Monahan 2012, Monahan and Thurman 2013
50-80-08-07437	Possible small rock shelter	Unknown	Monahan and Thurman 2013
50-80-08-07438	Possible rock shelter	Unknown	Monahan and Thurman 2013
50-80-08-07439	Lithic scatter and core tools (basalt)	Pre-Contact	Monahan and Thurman 2013
50-80-08-07440	Bulldozed dirt road	Post-Contact	Monahan and Thurman 2013
50-80-08-07441	Dry-stacked boulder culvert	Post-Contact	Monahan and Thurman 2013

SIHP#	Site Type	Site Age	Source
50-80-08-07442	Concrete flume section	Post-Contact	Monahan and Thurman 2013
50-80-08-07443	Irrigation complex	Post-Contact	Monahan and Thurman 2013
50-80-08-07444	Concrete and mortared rock sluice gate complex	Post-Contact	Monahan and Thurman 2013
50-80-08-07445	Concrete flume section	Post-Contact	Monahan and Thurman 2013
50-80-08-07446	Mortared rock sluice gate	Post-Contact	Monahan and Thurman 2013
50-80-08-07447	Platform <i>heiau</i> and associated features	Pre-Contact	Monahan and Thurman 2013
50-80-08-07448	Dirt road	Post-Contact	Monahan and Thurman 2013
50-80-08-07449	Modified outcrops	Both?	Monahan and Thurman 2013
50-80-08-07450	Concrete flume section	Post-Contact	Monahan and Thurman 2013
50-80-08-07451	Bulldozed dirt road	Post-Contact	Monahan and Thurman 2013
50-80-08-07452	Concrete flume section	Post-Contact	Monahan and Thurman 2013
50-80-08-07453	Ditch with natural spring and associated features	Post-Contact	Monahan and Thurman 2013
50-80-08-07454	Modified outcrops, terraces, alignments	Both ?	Monahan and Thurman 2013
50-80-08-07455	Massive clearing pile	Post-Contact	Monahan and Thurman 2013
50-80-08-07456	Terrace	Unknown	Monahan and Thurman 2013
50-80-08-07457	Modified outcrops	Both ?	Monahan and Thurman 2013
50-80-08-07458	Wall remnant	Post-Contact	Monahan and Thurman 2013
50-80-08-07459	Modified outcrop/ mound	Both ?	Monahan and Thurman 2013
No SIHP (CSH 3)	Possible grinding stone	Unknown	Tulchin et al. 2007
No SIHP (CSH 4)	Historic plane wreckage	Post- Contact	Tulchin et al. 2007
No SIHP (CSH 7)	Terrace	Unknown	Tulchin et al. 2007
No SIHP (CSH 8)	Agricultural complex	Unknown	Tulchin et al. 2007

In 1899, the Hawaiian language Newspaper *Ka Loea Kālai 'āina* relates a story of Pu'u Ku'ua as "a place where chiefs lived in ancient times" and a "battle field," "thickly populated." The article summarizes.

- 1) This place was entirely deserted and left uninhabited and it seems that this happened before the coming of righteousness to Hawai'i Nei. Not an inhabitant is left.
- 2) The descendants of the people of this place were so mixed that they were all of one class. Here the gods became tired and returned to Kahiki. [Sterling and Summers 1978:33]

McAllister recorded three sites in this area, two *heiau* (Site 134 [Pu'u Kuina] and Site 137 [Pu'uku'ua]; both destroyed) and a series of enclosures in Kukuilua which he calls "*kuleana* sites" (McAllister 1933). Cordy states that on the opposite side of the Wai'anae Range along the trail to Pōhākea Pass "Kākuhihewa was said to have built (or rebuilt) Nīoi'ula, a *po'okanaka heiau* (1,300 sq. m.) in Hālona in upper Lualualei, along the trail to Pōhākea Pass leading into 'Ewa, ca. A.D. 1640-1660" (Cordy 2002:36). To the authors' knowledge, there is no direct archaeological evidence available that intensive Hawaiian settlement occurred along the Pōhākea Pass trail but it is considered as a place of higher probability for traditional Hawaiian sites, based on the above indications. John Papa 'Ī'ī (1959) described a journey that Liholiho took which led him and an entourage through inland Honouliuli and over Pōhākea Pass. Geographically, the area receives sufficient quantities of water and would have had abundant locally available forest resources.

3.3.1 McAllister's Sites

In his surface survey of 1930, archaeologist J. Gilbert McAllister recorded the specific locations of important sites, and the general locations of less important sites (at least at Honouliuli). Archaeological investigations by McAllister along the slopes of the Wai'anae Range identified a number of sites west and southwest of the current project area (see Figure 21). Although the sites are well outside the bounds of the project area, they are described here for the purposes of supplementing the archaeological context for Kunia Village.

McAllister's Site 133 is the nearest of his sites to the current project area. Site 133 is described as a small enclosure reported to be a *heiau*. The site is within Huliwai Gulch, below Pu'u Kānehoa, southwest of the current project area. McAllister records the following:

My informant, Reiney, recalls the respect the old Hawaiians had for the place when he was punching cattle with them in his youth. It is a walled inclosure 25 by 30 feet. On the inside the walls are between 2 and 3 feet high, and on the outside they range from 2 to 5 feet, depending upon the slope of the land. On three sides the walls are 2 feet wide, but the fourth is 3 feet wide. The walls are evenly faced with a fill of smaller stones. At present the site is surrounded with a heavy growth of Lantana; but only a thick growth of grass and two small guava bushes are in the interior, which is most unusual unless human hands keep the interior clear. Possibly this is not a heiau but a small inclosure considered sacred for some reason. [McAllister 1933:107]

McAllister's Site 134 is in Ka'aikukui Gulch, below Mauna Kapu, roughly 5 km south of the of the current project area. The site is described as Pu'u Kuina Heiau, which was apparently

destroyed prior to McAllister's visit to the site. McAllister explains that "the suggestion of a terrace is about all that remains, and no idea of the size of the heiau or the number of terraces can be obtained" (McAllister 1933:107).

McAllister's Site 135 is described as a series of enclosures in the Kukuilua area near Site 134. The site was described as leveled areas with low enclosing walls, with the largest measuring 100 by 85 feet, and suggested the features were "probably *kuleana* sites" (McAllister 1933:107).

McAllister's Site 136 is near Mauna Kapu, approximately 6 km southwest of the current project area. The site is described as a small platform on the ridge dividing the 'Ewa and Wai'anae districts. The 4 to 6 square foot platform was constructed of coral and basalt stones, was believed to be an altar, and was considered to be sacred by Hawaiians (McAllister 1933:107). It had been destroyed by the time of Sterling and Summers' work in the late 1950s (Sterling and Summers 1978:32).

McAllister's Site 137 is at Pu'u Ku'ua, a prominent landmark approximately 6 km south of the current project area. Pu'u Ku'ua Heiau is described by McAllister as follows:

The heiau was located on the ridge overlooking Nanakuli, as well as Honouliuli, at the approximate height of 1800 feet. Most of the stones of the heiau were used for a cattle pen located on the sea side of the site. That portion of the heiau which has not been cleared for pineapples has been planted in ironwoods. [McAllister 1933:108]

3.3.2 Previous Archaeological Research in Upland Honouliuli

3.3.2.1 Pōhākea Pass and 'Ēkaha Nui Gulch (Sinoto and Sterling 1960)

Sterling and Summers (1978:37) provide an account that in 1960, Sinoto and Sterling visited traditional Hawaiian agricultural and habitation sites in the 'Ēkaha Nui Gulch area, approximately 2 km southwest of the project area. It was noted that at approximately the 1,200 ft elevation, the remains of agricultural terraces and house sites were present along the sides of the stream. Additional features included pavings, platforms, and a burial platform. Also described was a platform measuring 9 by 15 ft, interpreted to be a possible *heiau* (Sinoto and Sterling 1960 in Sterling and Summers 1978:37).

3.3.2.2 Kennedy Survey, Hō'ae'ae Ahupua'a (Kennedy 1987)

A brief archaeological survey was conducted to cross-examine information found on three documents relating to the Hō'ae'ae Ahupua'a in the 'Ewa district. The documents, the W.H. Pease map (1850), the Alexander map of Honouliuli (1873), and the Pearl Lochs map (1897), showed symbols indicating cultivation and some human activity (Kennedy 1987). The survey coincided with the cultivation of a sugar cane field which overlay the project area, thus there was no ground vegetation to inhibit the archaeological survey.

The results of the survey were that no above ground archaeological features were observed and the area was determined to offer little to no chance of any subsurface recovery.

3.3.2.3 Kunia Landfill Project (Perzinski et al. 2003; Tulchin and Hammatt 2009)

In October 2002, CSH was contracted by DRS Corporation to provide an archaeological inventory survey of approximately 250 acres for a proposed landfill project in Kunia, at Honouliuli

(TMK: [1] 9-2-004). The project was located in western Oʻahu on the southeastern flank of the Waiʻanae Range. The archaeological inventory survey included a complete surface survey, site identification, mapping, and limited subsurface testing of select archaeological sites.

The project area was situated on the eastern side of the Wai'anae Mountains in the Palikea Deeply Dissected Uplands and extended up to the Honouliuli Forest Reserve boundary just downslope of Pohakea Pass. (Perzinski et al. 2003)

Six archaeological sites (SIHP #s 50-80-12-6456 through -6461) were discovered in this area as a result of the survey, all of varied archaeological significance. Of the six, two were recommended to undergo a process for data recovery (SIHP #s -6458 and -6461). SIHP # -6458 consisted of filled crevices, and SIHP # -6461 consisted of a series of historic roads and bunkers.

Only one site was recommended for preservation, a possible *heiau* (SIHP # -6457) located in the central gulch directly downslope from Pohakea Pass (Perzinski et al. 2003). The site consisted of an enclosure with a three-tiered retaining terrace and ramp leading into the interior of the enclosure. The walls of the structure were documented to have been up to 2 m in thickness and were well built with chinking, facing, and core filling.

At the request of the James Campbell Company, CSH conducted GPS relocation of three previously identified archaeological sites (SIHP #s 50-80-12-6457, -6458, and -6461) located within Honouliuli Ahupua'a, TMK: [1] 9-2-004:005 por. (reported in Tulchin and Hammatt 2009.)

In 2003, CSH was hired by URS Corporation to prepare an archaeological inventory survey of an approximately 250-acre parcel for the proposed Kunia Landfill project (this Perzinski et al. 2003 AIS was never completed as the project died). The study identified six sites. Three of the sites were recommended for "no further work." CSH recommended preservation for SIHP # 50-80-12-6457, a *heiau*. Data recovery was recommended for SIHP #s -6458, indeterminate filled crevices, and -6461, historic military roads and storage bays. The purpose of the (Tulchin and Hammatt 2009) archaeological site relocation was to accurately locate specific areas of archaeological concern within the former study area.

During the site relocation, some ten additional features associated with SIHP # -6461 were identified. No new archaeological sites or historical properties were discovered.

3.3.2.4 Schofield Barracks (Roberts et al. 2004)

An archaeological reconnaissance survey was conducted on an approximately 1,400-acre area for proposed expansion of the Schofield Barracks South Range (Roberts et al. 2004). The study area included the lower slopes of the Wai'anae Range, approximately 2 km north of the northern boundary of the current project area. The reconnaissance survey identified 43 sites comprised of 129 features. Twenty-nine sites were interpreted to have pre-Contact components. Traditional Hawaiian feature types included walls, alignments, terraces, irrigation ditches, platforms, mounds, enclosures, and possible burial mounds. Historic sites, related to military and plantation activities, included building foundations, historic roads, cisterns, a reservoir complex, and a plantation camp. It was noted that all sites were within gulches, and "It is likely that historic and modern land alterations have contributed to increases in slope erosion, accelerated siltation and downcutting of stream channels that have affected site formation processes and integrity within the valleys" (Roberts et al. 2004:85).

At the request of the U.S. Army Corps of Engineers, Garcia and Associates conducted an archaeological survey to document and evaluate 45 previously identified sites (Robins et al. 2007) within the 1,400-acre South Range Land Acquisition (SRLA) project area. The project area is located in the northern portion of Honouliuli Ahupua'a, bounded by Schofield Barracks west of Kunia Road. The survey skirts the lower elevations of the eastern flank of the Wai'anae Range and extends into the former Kunia pineapple fields.

Twenty-eight of the project sites were evaluated as having been traditional Hawaiian in origin. Twenty-six of these were designated as agricultural features. The sites showed signs of habitation, ceremonial, and possible burial components (Robins et al. 2007).

It was also noted that pineapple plantation activities had deeply scarred the landscape in these areas, likely disturbing other archaeological sites.

3.3.2.5 Hawaii Regional Security Operations Center (HRSOC) and Access Road (West and Donaldson 2004)

Department of the Navy, Naval Facilities Engineering Command, Pacific (NAVFAC PACIFIC) conducted an archaeological survey of a project area located at Naval Computer and Telecommunications Area Master Station Pacific (NCTAMS PAC) and vicinity, Wahiawa (TMK: [1] 7-1-002:007). The survey was conducted in preparation for the construction of a proposed Hawaii Regional Security Operations Center (HRSOC) and a new access road.

The archaeological investigations included both surface surveys and test pit excavations. Test units at two of the proposed construction sites confirmed the project area had been previously graded and most of the area was likely disturbed. Modern refuse and old abandoned cars were also found in select trenches (West and Donaldson 2004).

No traditional Hawaiian archaeological resources were located during the course of this fieldwork. The survey found that much of the area had been and/or continues to be disturbed by agricultural or landscaping activities.

3.3.2.6 Ho'opili Project, Mauka Detention Basin (Groza et al. 2007)

In 2006, at the request of PBR Hawai'i, Inc. CSH completed an archeological inventory survey for the Ho'opili project, Mauka Detention Basin, Honouliuli Ahupua'a, TMK: [1] 9-2-001:001 (Groza et al. 2007). The proposed project area is west of Kunia Road and was generally bound on the north and west by the Waiahole Ditch, and on the south by Kupehau Road (an unpaved road).

During the project, the entire 143-acre Mauka Detention Basin was surveyed on foot. The pedestrian survey revealed three historic properties, one of which consisted of 31 features. All three sites were associated with water control, the Waiahole Ditch, and the Oahu Sugar Company. Two concrete slab bridges (SIHP #s 50-80-06-6892 and -6893) with four to six courses of dressed, faced, rectangular stone were identified. One of the bridges, SIHP # -6892, was inscribed with the date 9.27.1929; the other bridge, SIHP # -6893, was similar in appearance. SIHP # -6894 (plantation infrastructure) is associated with the Waiahole Ditch and consisted of scattered plantation infrastructure features. No artifacts were found in the vicinity of the recorded sites and the only artifacts found within the project area consisted of modern trash.

3.3.2.7 Honouliuli Forest Reserve (Tulchin et al. 2007)

An archaeological literature review and limited field inspection was conducted for the entire 4,600-acre Honouliuli Forest Reserve to develop data on the nature, density, and distribution of archaeological resources and to make cultural resource management recommendations (Tulchin et al. 2007). The Honouliuli Forest Reserve lies roughly 2 km west of the current project area. Based on the settlement pattern developed from background research, the eastern slope of the Wai'anae Range was determined to be rich forest land utilized for seasonal dryland planting and foraging for wood, birds, feathers, etc. In addition, because of the suitable topography (i.e., broad and gently sloping ridges) and geographic location at the tip of the Wai'anae Range, the ridge areas along the southern slope provide excellent views of the surrounding area. Along with available spring water, the southern slope would have been an attractive area for upland settlement.

Brief pedestrian inspections were conducted at Kalua'a Gulch and 'Ēkaha Nui Gulch. These areas were selected based on previous archaeological research and historical documentation indicating they were likely to contain archaeological sites. Archaeological sites observed within Kalua'a Gulch were stone mounds and platforms likely of pre-Contact origin with agriculture and burial being possible functions. Historic plane wreckage was also observed. Archaeological sites observed within 'Ēkaha Nui Gulch were agricultural mounds and terraces of both pre-Contact and historic origin. A stacked stone wall, possibly a traditional boundary marker, was also observed.

3.3.2.8 Kunia Mauka Loa Ridge Farmlands Project (Pammer et al. 2010; Tulchin and Monahan 2012; Monahan and Thurman 2013)

An archaeological inventory survey was conducted on an approximately 294-acre parcel for a proposed agricultural subdivision (Pammer et al. 2010). The study area included the ridges and gulches from 800-1,200 ft elevation in the vicinity of Pōhākea Pass, approximately 3 km southwest of the project area. Eight historic properties were identified: SIHP #s 50-80-12-6456, terrace, mound, and trail; -6457, enclosure and associated terraces; -6458, cobble-filled crevices; -6459, U-shaped structure and alignment; -6460, leveled cobbles; -6461 historic road improvements; -7125, petroglyph; and -7126, mound.

Functional types included temporary habitation, agriculture, and transportation. In addition, SIHP #-6457 was interpreted to be a heiau. Radiocarbon dating from samples recovered from the site yielded date ranges of AD 1290-1420 and AD 1510-1810. It was also noted that, with the exception of SIHP #s -6459, -7125, and -7126, all sites were within the gulches in the upslope portion of the study area (Pammer et al. 2010).

In 2012, at the request of C&C Farmlands, LLC, CSH conducted an archaeological reconnaissance survey for the Kunia Mauka Loa Ridge Farmlands project (Tulchin and Monahan 2012). The project area was on the eastern side of the Wai'anae Mountain Range and abutted the eastern edge of the Honouliuli Forest Reserve. Kunia Road ran roughly parallel to the project area's eastern boundary.

Most of the identified archaeological sites were in the northern portion of the project area within and between 'Ēkaha Nui and Huliwai gulches. The relative absence of sites south of 'Ēkaha Nui Gulch was attributed to pineapple cultivation which involved extensive grading of ridge tops.

A majority of the historic properties identified within 'Ēkaha Nui Gulch were of historic ranching origin. Archaeological sites associated with traditional Hawaiian land use included SIHP #s 50-80-08-7328, -7339, -7340, -7341 and -7344.

TCP Hawaii, LLC (Monahan and Thurman 2013) completed an archaeological inventory survey of the entire 854-acre C&C Farmlands LLC project lands. This study identified new and additional features at many of the previously identified sites and identified another 23 new historic properties for a grand total of 60 historic properties in the C&C Farmlands LLC project lands.

While

- ... many of the 23 new sites are less than spectacular plantation infrastructure, dirt roads and remnant features of relatively little value. However, several new finds of major significance were made:
- 1. First, the Kāne heiau (Site 7447) on a prominent ridge in the south-central portion of the project area has produced a lot of interest and excitement from the consulting parties,
- 2. Second, Site 7457, a nearly two-acre area of relatively undisturbed landscape near the west (mauka) boundary of the project area (Lot 1), appears to contain numerous burials in modified outcrops.
- 3. Third, a lithic scatter with flaked cores and core tools in 'Ēkaha Nui Gulch firmly establishes a pre-Contact presence in this important landscape feature.
- 4. Fourth, at the top of this gulch, closer inspection of the large agricultural complex, Site 7326, yielded a traditional petroglyph, firmly establishing the antiquity of this site as well.
- 5. Fifth, a new rockshelter (Site 7438) just south of 'Ēkaha Nui Gulch likely contains important subsurface evidence of human occupation of the upper project area.
- 6. Sixth, the discovery of human skeletal remains at Site 7331—which does not resemble a burial site, and likely was not constructed for the purpose of burial—helped focus attention on the possibility that other features require a closer consideration of their potential for representing burials as well. Based on this find, a more careful and cautious appraisal of all sites in the project area has led to an expansion of the list of possible burials.
- 7. Finally, on this list of exciting new finds, the agricultural complex at the bottom of a unique little drainage in Lot 7 (Site 7449) illustrates a very subtle and sustainable traditional use of the land. [Monahan and Thurman 2013:383]

3.4 Architectural Documentation

Mason Architects was hired by the owners of Kunia Village in August 2011 at the request of SHPD to do two tasks: first, to conduct an historic inventory survey, and secondly to have the rehabilitation cost of the houses studied by a preservation professional. Mason Architects conducted that survey and did that evaluation.

In summary, it was found that most of the houses did retain sufficient integrity to qualify as contributing features to a historic district. Exceptions to that finding were those homes that had received major additions to the front of the homes, generally obscuring their original design. These homes were primarily in the Old Camp area (upper north area of site). The structural survey done by Mason Architects provided support for the fact that many of the homes could be adequately rehabilitated.

This architectural survey and evaluation formed the basis for the National Register of Historic Places nomination form prepared by Mason Architects. Kunia Village was listed on the National Register of Historic Places in Hawaii on 1 December 2014 by the National Park Service. The Historic Preservation Tax Credit application was also based on the above information and the application was accepted by the National Park Service on 11 July 2014.

3.5 Background Summary and Predictive Model

In general, the distribution of traditional Hawaiian archaeological sites near the project area is likely concentrated at the base on the eastern side of the Wai'anae Mountain Range, where suitable arable land and adequate rainfall could support seasonal dryland agriculture. It is likely the intensity of traditional agricultural development, and therefore density of archaeological features, increases with higher precipitation rates in the northernmost portions of the Wai'anae Mountain Range. Research into previous archaeological studies revealed that many sites in this region contain agricultural features with associated habitation as well as religious/ceremonial features.

Additionally, historic ranching and military archaeological sites may be present throughout the gulches to the west of the project area, as both feature types were previously identified during former inventory surveys (Pammer et al. 2010). However, the likelihood of similar features and archaeological evidence being found near the Kunia Camp itself are very slim. Of note is the likely absence of historic agricultural features near or within the project area, as the primary cultivated crop of the region was pineapple, which typically did not require intensive agricultural infrastructure (i.e., ditches, flumes, siphons). However, it should be noted that pineapple cultivation does require extensive grading of ridge tops, which would have removed any surface or subsurface archaeological sites that may have been present.

Section 4 Results of Fieldwork

The fieldwork component of this archaeological inventory survey was conducted on 27 and 28 October 2014. CSH archaeological field personnel consisted of Scott Belluomini, B.A., Layne Krause, B.A, Richard Stark, Ph.D., and Trevor Yucha, B.S. All fieldwork was conducted under the direction of the principal investigator Hallett H. Hammatt, Ph.D.

Surface architectural features of Kunia Camp (SIHP # 50-80-08-7729) were observed throughout the project area. These features are thoroughly documented in the Kunia Camp National Register Nomination form (see Appendix A). As there were no surface archaeological historic properties identified, the archaeological inventory survey focused on a program of subsurface testing to locate any potential buried cultural deposits and to facilitate a thorough examination of stratigraphy within the project area.

4.1 Pedestrian survey results

A 100%-coverage pedestrian survey of the project area was undertaken for the purpose of archaeological historic property identification and documentation. CSH archaeologists surveyed the Kunia Camp with transects spaced approximately 5.0 m apart. No subsurface archaeological historic properties were identified in the project area. Accordingly, fieldwork focused on a program of subsurface testing.

4.2 Subsurface Testing Results

Five backhoe (T-1 through T-5) were trenches excavated in locations of proposed detention basins and new utility lines (Figure 22). Each test trench measured 1.8 m long by 0.6 m wide, and reached a depth of 2 m below surface. In T-5, active utility lines prohibited the complete excavation of the trench. In addition, T-5 could not be shifted due to the several utility lines within the fire lane proximate to the original test location. All unexcavated areas beneath utility lines or utility jackets are accurately represented in the trench profiles.

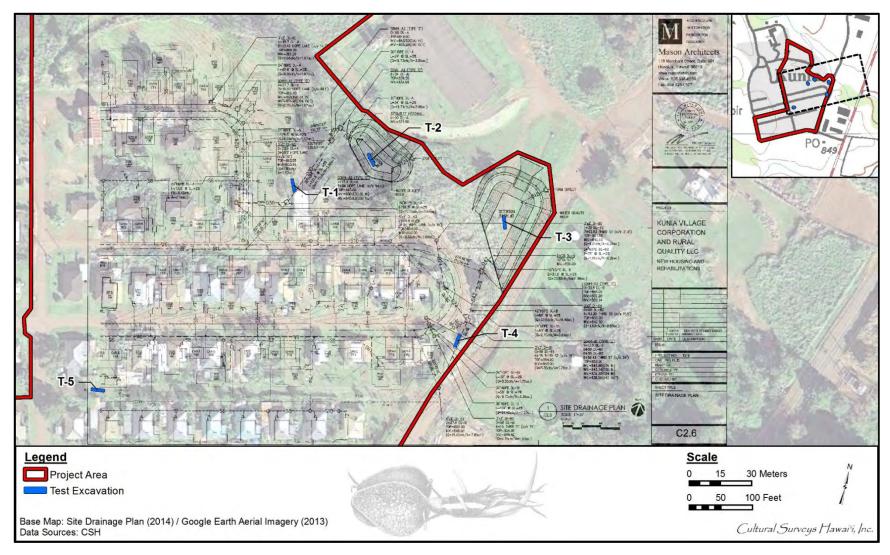


Figure 22. 2013 aerial photograph (2013) with an overlay of the site drainage plan showing the locations of T-1 through T-5

4.2.1 Test Excavation 1 (T-1)

T-1 is located in the central portion of the project area north of Luawai Street. The test excavation is located along a proposed utility line. T-1 measured 6.5 m long by 0.7 m wide and was oriented in a northwest-southeast direction. The base of excavation was determined to be at 2 m below surface. No water table was observed. The stratigraphic profile of T-1 consists of a naturally deposited silty clay loam alluvium (Stratum I), overlying a layer of oxidized silt loam (Stratum II), and decomposing basalt (Stratum III) (Figure 23, Figure 24, and Table 3). No cultural material was observed.



Figure 23. T-1, oblique view, southwest sidewall; view to southeast

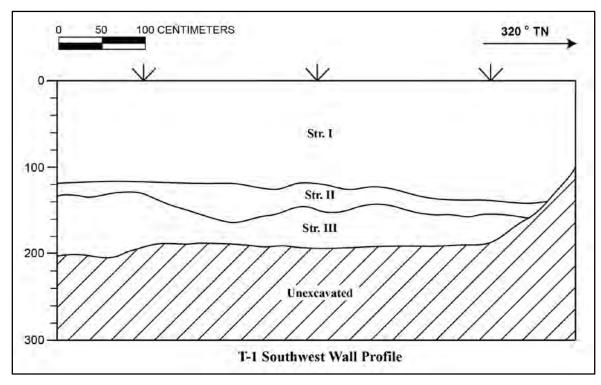


Figure 24. T-1 southwest sidewall profile

Table 3. Stratigraphic Description of T-1

Stratum	Depth (cmbs)	Description of Sediment
I	0–140	Natural; 2.5YR 2.5/4, dark reddish brown; silty clay loam; moderate, medium, granular structure; moist, friable consistence; no cementation; non-plastic; terrigenous origin; clear, wavy lower boundary; naturally deposited silty clay loam alluvium
II	120–160	Natural; 2.5YR 4/6, red; silt loam; weak, very fine, granular structure; moist, friable consistence; no cementation; slightly plastic; terrigenous origin; diffuse, wavy lower boundary; layer of oxidized silt loam
III	150–210 (BOE)	Natural; 2.5YR 3/3, dark reddish brown; silty clay; strong, coarse, blocky structure; moist, extremely firm consistence; strong cementation; plastic; terrigenous origin; lower boundary not visible; naturally deposited decomposing basalt

4.2.2 Test Excavation 2 (T-2)

Test Excavation 2 (T-2) is located in the northeast portion of the project in a gulch, east of the current wastewater treatment center. The test excavation is located within a proposed drainage basin. T-2 measured 5.8 m long by 0.8 m wide and was oriented in a northwest-southeast direction. The base of excavation was determined to be at 2.1 m below surface. No water table was observed. The stratigraphic profile of Test Excavation 2 consists of naturally deposited loamy sand alluvium (Stratum I) overlying two layers of naturally deposited sandy loam alluvium (Strata II and III) (Figure 25, Figure 26, and Table 4). No cultural material was observed.



Figure 25. T-2, oblique view, northeast sidewall; view to north

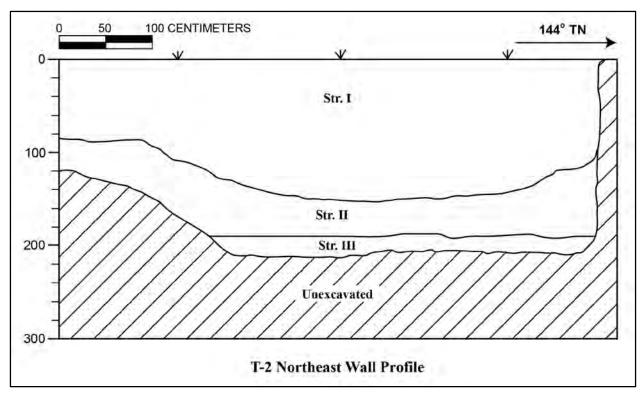


Figure 26. T-2 northeast sidewall profile

Table 4. Stratigraphic Description of T-2

Stratum	Depth (cmbs)	Description of Sediment
I	0–150	Natural; 2.5YR 3/3, dark reddish brown; loamy sand; weak, fine, granular structure; moist, loose consistence; no cementation; non-plastic; terrigenous origin; clear, smooth lower boundary; naturally deposited loamy sand alluvium
II	90–150	Natural; 2.5YR 3/6, dark red; sandy loam; weak, fine, granular structure; moist, loose consistence; no cementation; non-plastic; terrigenous origin; clear, smooth lower boundary; naturally deposited sandy loam alluvium
III	90–210 (BOE)	Natural; 7.5YR 4/6, strong brown; sandy loam; weak, fine, granular structure; moist, loose consistence; no cementation; non-plastic; terrigenous origin; lower boundary not visible; naturally deposited sandy loam alluvium

4.2.3 Test Excavation 3 (T-3)

Test Excavation 3 (T-3) is located in the northeast portion of the project in a gulch, between the current wastewater treatment center and Luawai Street. T-3 measured 6.5 m long by 0.7 m wide and was oriented in a northwest-southeast direction. The test excavation was located within a proposed drainage basin. The base of excavation was determined to be at 2.0 m below surface. No water table was observed. The stratigraphic profile of T-3 consists of naturally deposited loamy sand alluvium (Stratum I) (Figure 27, Figure 28, and Table 5). A metal can (Acc. #1) was observed and collected in Stratum I at a depth of approximately 200 cm. For more detailed information regarding (Acc. #1), refer to Section 5.1.



Figure 27. T-3, oblique view, northeast sidewall; view to north

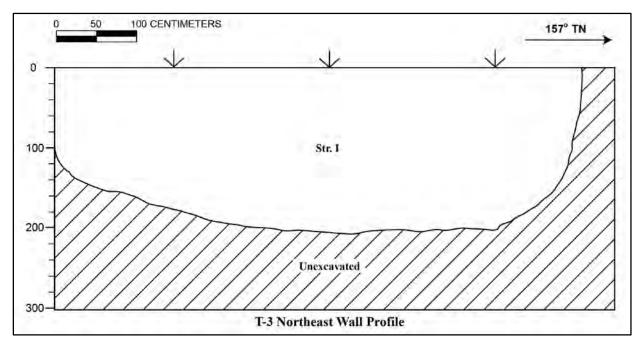


Figure 28. T-3 northeast sidewall profile

Table 5. Stratigraphic Description of T-3

Stratum	Depth (cmbs)	Description of Sediment
I	(BOE)	A horizon; 2.5YR 3/3, dark reddish brown; loamy sand; weak, fine, granular structure; moist, friable consistence; no cementation; non-plastic; terrigenous origin; lower boundary not visible; naturally deposited loamy sand alluvium; contains metal can (Acc. #1)

4.2.4 Test Excavation 4 (T-4)

Test Excavation 4 (T-4) is located in the northeast portion of the project along Luawai Street. T-4 measured at 6.0 m long by 0.5 m wide and was oriented in a north-south direction. The test excavation was located along a proposed utility line. The base of excavation was determined to be at 1.5 m below surface. No water table was observed. The stratigraphic profile of T-4 consists of naturally deposited silty clay loam alluvium (Stratum I) (Figure 29, Figure 30, and Table 6). No cultural material was observed.



Figure 29. T-4, oblique view, south sidewall; view to southeast

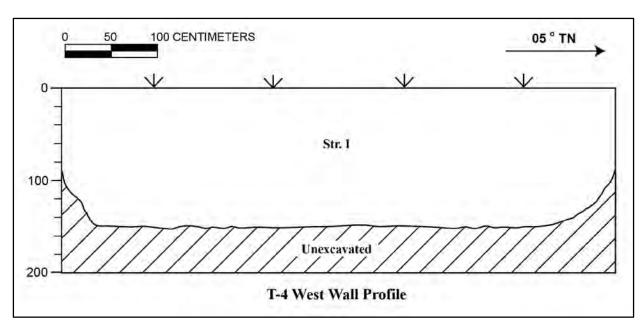


Figure 30. T-4 west wall profile

Table 6. Stratigraphic Description of T-4

Stratum	Depth	Description of Sediment
	(cmbs)	
I	0-130	A horizon; 2.5YR 2.5/3, dark reddish brown; silty clay loam; moderate,
	(BOE)	medium, granular structure; moist, firm consistence; no cementation;
		slightly plastic; terrigenous origin; lower boundary not visible

4.2.5 Test Excavation 5 (T-5)

Test Excavation 5 (T-5) is located in the west portion of the project within a fire lane between 2nd Street and 3rd Street. T-5 measured 6.6 m long by 1.2 m wide and was oriented in an east-west direction. The test excavation was located along a proposed utility line. A water utility line was encountered along the entire extent of the original test excavation approximately 63 cm below surface. Thus, T-5 was relocated to the southwest. A large PVC utility pipe was encountered 1 m below surface along the entire extent of the new trench. According to the groundskeeper, several additional utility lines run along the fire lane, prohibiting further relocation of the test excavation to a nearby location (Figure 31 and Figure 32). The base of excavation was 1.0 m below surface. No water table was observed. The stratigraphic profile of T-5 consists only of locally procured silty clay loam fill (Stratum I) associated with the installation of the modern utility pipes (Figure 33, Figure 34, and Table 7). No cultural material was observed.



Figure 31. T-5, overview of utilities; view to east

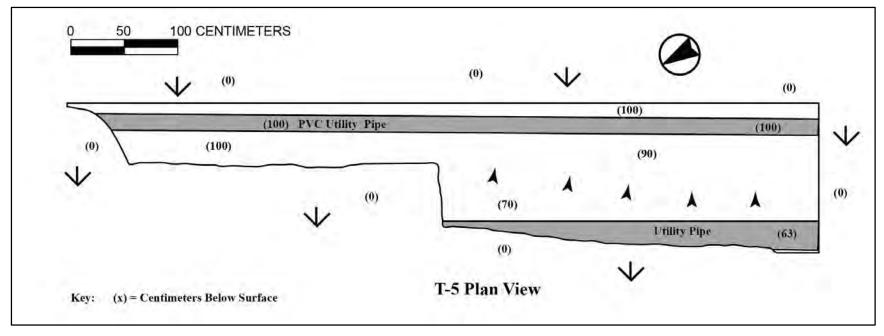


Figure 32. Plan view of T-5 showing utilities running through the extent of the test excavation



Figure 33. T-5, oblique view, south sidewall; view to southwest

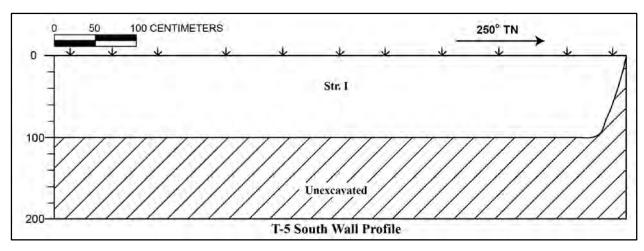


Figure 34. T- 5 south sidewall profile

Table 7. Stratigraphic Description of T-5

Stratum	Depth	Description of Sediment
	(cmbs)	
I	0-100	Locally procured fill; 2.5YR 2.5/3, dark reddish brown; silty clay loam;
	` /	moderate, medium, granular structure; moist, loose consistence; no cementation; slightly plastic; terrigenous origin; lower boundary not
		visible; locally procured silty clay loam fill associated with installation of utilities

Section 5 Results of Laboratory Analysis

5.1 Artifact Analysis

A single artifact was collected (Acc. # 1) during the AIS. It was found at the base of T-3 which was excavated at the base of a steep gulch in the northeastern portion of the project area. T-3 was placed to test between the current wastewater treatment center and Luawai Street. The artifact is a metal can (Figure 35, through Figure 37), likely associated with the modern occupation of the Kunia Camp settlement.

The can is approximately 57 mm (2.24 inches) in diameter at its base and 58 mm (2.28 inches) tall. The measurements may not reflect the original dimensions of the can, as it is slightly dented. The can is made of aluminum, which sheds some light on the possible date of manufacture. Aluminum cans were first manufactured in 1957 (IMACS User's Guide 2001).

The can consists of a single walled band of aluminum, now minus its original label. The top of the can is not cut, suggesting the lid was opened by either a key, tab, or similar mechanism. A pressed groove around the opening also reflects this. This is typical of cans containing foodstuffs. There is also a black stamp on the base of the can which reads B4, E8, 1 (Figure 38).



Figure 35. Lateral view of can (Acc. #1) collected from Str. I in T-3 showing glue residue on the can's surface where the label once adhered



Figure 36. Lateral view of can (Acc. #1) collected from Str. I in T-3 showing dent in aluminum wall



Figure 37. Superior view of can showing a grooved aperture, typical of cans with keys or tabs for opening



Figure 38. Inferior view of can (Acc. #1) showing stamp which reads B4, E8, 1

Section 6 Historic Property Descriptions

6.1 SIHP # 50-80-08-7729

FORMAL TYPE:	Kunia Camp
FUNCTION:	Habitation
NUMBER OF FEATURES:	128
AGE:	Historic to modern (1928-present)
TAX MAP KEY:	TMK: [1] 9-2-005:023 por.
LAND JURISDICTION:	Kunia Village Title Holding Company
PREVIOUS	N/A
DOCUMENTATION:	

SIHP # -7729 is Kunia Camp, the last pineapple plantation housing community still intact on O'ahu. Kunia Camp is located along Hawai'i Route 750 and is surrounded by former pineapple farmland that is now utilized to grow a variety of crops. The 119-acre property contains 153 structures; however, only approximately 50 acres and 128 structures are considered part of the Kunia Camp Historic District. The present project area of 22.4 acres lies in the southern and eastern portions of the 50-acre Kunia Camp (Figure 39).

The Kunia Camp Historic District's 128 contributing resources include 106 residences (single family homes, duplexes, and a four-plex) in the Old Camp (early historic period) and the New Camp (later historic period) areas; 15 associated residential garages in both camps (two in Old Camp and 13 in New Camp); as well as seven non-residential resources, including Kunia Gymnasium and Kunia Chapel (within Old Camp), and the Agricultural Research Building, the Main Office Building, the Kunia Store, a flagpole, and an open-sided, flat-roofed structure on a concrete slab that may have served as a Refueling Station (New Camp).

The boundary of the Kunia Camp Historic District is based on the boundaries of the camp's historic period and does not conform to present day property lines. The boundaries are based on contributing resources within the camp that support Criteria A and C of the NRHP as a historic district with a residential community/camp theme. The residences and community buildings within the camp are united by their physical development as a village for plantation workers provided by the California Packing Company for its employees. The relationship of the homes and associated buildings, the scale and materials of the buildings, and layout of the houses provides an intact, accurate example of a pineapple plantation camp.

Other buildings on the Kunia Village Title Holding Company property were evaluated and are not included in the historic district. The group of industrial buildings along Kunia Road at the east side of the property was an integral part of the functioning plantation. These include a Well, Shop/Storeroom, Storage, Warehouse, Juice, Fresh Fruit Packing, and Waste Water Treatment Buildings. However, these buildings have been altered, and a few recently demolished, rendering this area insufficient integrity for inclusion in the District. The school and its associated administration building are not part of the district because they are not on Kunia Village Title

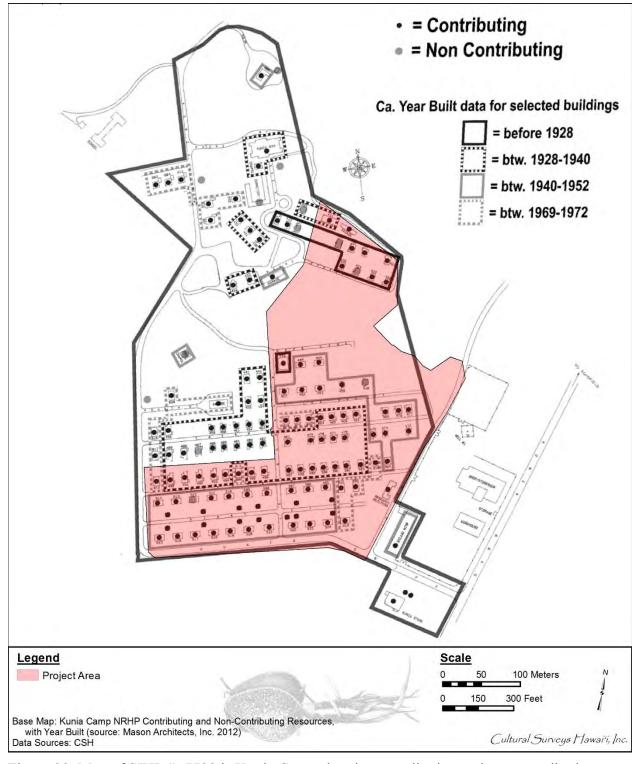


Figure 39. Map of SIHP # -7729 is Kunia Camp showing contributing and non-contributing elements in relationship to the present project area (shown in red)

Holding Company property. These buildings retain integrity and could be added to the District in the future.

The vast majority of the buildings within the proposed Historic District are residences. The 113 residences (106 contributing residences) have the distinctive characteristics of the Hawaiian Plantation Style of architecture, which includes walls a single board thick, (either board-and-batten, or tongue-and-groove with horizontal girts), and roofs, often hipped, with wide, overhanging eaves. These residences, community buildings/structures, and industrial/agricultural buildings were set against a backdrop of pineapple fields and provided housing and other amenities for pineapple field workers (the majority of the time for the California Packing Company [CPC]) from the years 1928 until 2007.

Seven non-residential resources contribute to the District. They are the Kunia Gymnasium, Kunia Chapel, Kunia Store, a flagpole, an open-sided, flat-roofed structure on a concrete slab (that possibly served as a refueling station), the Agricultural Research Building, and the Main Office Building. Two of these fall under the category of community/amenity buildings/resources (gymnasium and the chapel); two are Industrial/Agricultural (the agricultural and main office buildings); one is both a community/amenity and an Industrial/Agricultural type of building (Kunia Store); and two of the non-residential resources fall outside of these areas (the flagpole and the possible refueling station).

The camp was initially constructed in 1928 to house the workforce for the California Packing Company, later known as Del Monte, which operated within Kunia from 1916 to 2007. The Kunia Camp is characterized by its single wall structures situated on lots within grid-patterned streets. The camp itself has gone through many different changes over time. The area of the camp which was constructed between 1928 and 1940 is considered Old Camp while the expanded portion built after 1940 is called New Camp (Figure 39).

SIHP # -7729, Kunia Camp, is a habitation complex consisting of 128 architectural features. This archaeological inventory survey provides no new data pertinent to the assessment of significance for SIHP # -7729 which is understood as significant for a district nomination primarily for its extant architecture (including 126 contributing buildings). The National Register Nomination for Kunia Camp (see Appendix A) recommended eligibility to the National Register of Historic Places under Criteria A (associated with events that have made a significant contribution to the broad patterns of our history) and C (embody distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction). By inference and on the basis of the data supplied in the National Register Nomination, SIHP # -7729 is assessed here as significant under Hawai'i state historic property significance criteria "a" (associated with events that have made an important contribution to the broad patterns of our history) and "c" (embody the distinctive characteristics of a type, period, or method of construction, represent the work of a master, or possess high artistic value) pursuant to HAR §13-13-284-6. SIHP # -7729 is significant under criteria "a" for its historic association with the development of the pineapple industry in Hawai'i. SIHP # -7729 is significant under criteria "c" as a concentration of Plantation Style residences displaying the distinctive characteristics of the Hawaiian Plantation Style (see Appendix A).

Section 7 Summary and Interpretation

CSH completed the fieldwork component of this AIS under archaeological permit number 14-04, issued by the SHPD pursuant to HAR §13-13-282. Fieldwork was conducted on 27 and 28 October 2014 by CSH archaeologists Scott Belluomini, B.A., Layne Krause, B.A, Richard Stark, Ph.D., and Trevor Yucha, B.S. and included a pedestrian survey and archaeological excavation and documentation of five backhoe trenches within the project area.

A 100%-coverage pedestrian survey of the project area was undertaken for the purpose of historic property identification and documentation. The pedestrian survey confirmed there were no surface archaeological historic properties within the Kunia Village Housing Development project area. Surface architectural features of Kunia Camp (SIHP # -7729) were observed throughout the project area. These features are thoroughly documented on the Kunia Camp National Register Nomination form (see Appendix A).

A 50-acre portion of the 119-acre Kunia Camp property was nominated for the National Register of Historic Places. Kunia Camp (SIHP # -7729) is the last pineapple plantation housing community still intact. The camp was initially constructed in 1928 to house the workforce for the California Packing Company, later known as Del Monte, which operated within the Kunia area from 1916 to 2007. The Kunia Camp is characterized by many single wall structures situated on lots within grid-patterned streets. Some larger community structures, as well as main office buildings and a store are located within the Kunia Camp Historic District.

CSH conducted backhoe trench test excavations (T-1 through T-5) to investigate the subsurface deposits within the locations of several planned detention basins and new utility lines. These five locations correlate with where significant subsurface disturbance is expected to occur as part of the project development activities. Each excavation exposed the same locally procured alluvial sediment (Stratum I) that consists of a reddish brown clay loam. Stratum I extended to the base of excavation in three test excavations (T-3 through T-5). However, the stratigraphy within T-1 and T-2 was slightly more complex. T-1 contained below the Stratum I alluvial layer a thin layer of weaker red silt loam that appeared to be oxidized (Stratum II), below which occurred a dark reddish brown silty clay (Stratum III). This lower deposit extended to the base of excavation. Similarly, T-2 contained below the Stratum I alluvial layer a band of dark red sandy loam (Stratum II) that overlay a strong brown sandy loam that extended to the base of excavation. No imported fill layers were identified. Also not identified were any cultural layers, features, or artifact assemblages. The single buried artifact consisted of a modern aluminum food can collected from T-3.

The stratigraphy and absence of cultural deposits in the five test excavations (T-1 through T-5) confirmed the background research findings that indicate low potential existed for encountering traditional Hawaiian archaeological historic properties within the project area. This research indicated that such sites likely were concentrated at the base of the eastern side of the Waianae Mountain Range, as this is where suitable arable land and adequate rainfall could support seasonal dryland agriculture and, in consequence, support Hawaiian settlement. Kunia Camp is quite far from the eastern side of this range and would not have been as attractive for settlement.

Section 8 Significance Assessments

Historic property significance is evaluated and assessed based on the five State of Hawai'i historic property significance criteria. To be considered significant, a historic property must possess integrity of location, design, setting, materials, workmanship, feeling, and/or association and meet one or more of the following broad cultural/historic significance criteria (in accordance with HAR §13-13-284-6):

- a. Be associated with events that have made an important contribution to the broad patterns of our history;
- b. Be associated with the lives of persons important in our past;
- c. Embody the distinctive characteristics of a type, period, or method of construction, represent the work of a master, or possess high artistic value;
- d. Have yielded, or is likely to yield, information important for research on prehistory or history; or
- e. Have an important value to the native Hawaiian people or to another ethnic group of the state due to associations with cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts—these associations being important to the group's history and cultural identity.

SIHP # -7729, Kunia Camp, is a habitation complex consisting of 128 features. This archaeological inventory survey provides no new data pertinent to the assessment of significance for SIHP # -7729 which is understood as significant for a district nomination primarily for its extant architecture (including 126 contributing buildings). The National Register Nomination for Kunia Camp (see Appendix A) recommended eligibility to the National Register of Historic Places under Criteria A (associated with events that have made a significant contribution to the broad patterns of our history) and C (embody distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction). By inference and on the basis of the data supplied in the National Register Nomination, SIHP # -7729 is assessed here as significant under Hawai'i state historic property significance criteria "a" (associated with events that have made an important contribution to the broad patterns of our history) and "c" (embody the distinctive characteristics of a type, period, or method of construction, represent the work of a master, or possess high artistic value) pursuant to HAR §13-13-284-6. SIHP # -7729 is significant under criteria "a" for its historic association with the development of the pineapple industry in Hawai'i. SIHP # -7729 is significant under criteria "c" as a concentration of Plantation Style residences displaying the distinctive characteristics of the Hawaiian Plantation Style (see Appendix A).

Section 9 Project Effect and Mitigation

9.1 Project Effect

The results of this AIS investigation support a Hawai'i State historic preservation project effect of "effect, with proposed mitigation commitments" as specified in HAR §13-284-7. The recommended mitigation measures will reduce the project's potential effect on significant historic properties.

9.2 Mitigation Recommendations

In 2011 Mason Architects, Inc. carried out an architectural assessment survey and subsequently completed a National Register Nomination. (included here as Appendix A).

An approach to saving the neighborhood while allowing for some redevelopment was arrived at through negotiations with SHPD, particularly with Angie Westfall, who was the head of the Architectural Branch in that office. The overall approach required, wherever possible, saving historic houses along primary roadways (Kunia Drive and McAngus Street), from the entry to the site all the way to the Gymnasium in the Old Camp area. Any new housing was to be built in areas away from those streets. In discussions with SHPD, houses in the Old Camp and New Camp were chosen to be demolished in order to make room for new housing.

It was understood that the remaining historic houses and all other historic buildings in the neighborhood, including the Gymnasium, the Chapel, former store, and the administration building are to be rehabilitated. The Owner is looking at the possibility of adding infill units to the neighborhood to more closely approximate the original number of housing units on the site. However, this will require the approval of both the County Planning and Permitting Department and SHPD.

The new housing units are designed with many of the characteristics that define the Hawaiian Plantation Style of architecture in this district. The new houses are all single story construction on raised post and pier foundations, with board and batten as the exterior siding. All the houses have hipped asphalt shingle roofs with wide overhanging eaves that match the existing plantation houses. Both front and rear door entries have small wood porches and the floor plan of these new houses are similar to the rehabilitated homes—a rectangular floor plan with the living room and kitchen located at the front end of the house with the bedrooms and bathrooms in the rear. All the new and rehabilitated homes will be painted in the same color scheme.

The units in the New Camp area slated for demolition were primarily selected for their location away from the visibility of the main roadways in Kunia Village. The condition of these units vary from severe damage (not suitable for occupation) to relatively decent conditions. Because there was a higher concentration of poor units in this area the decision was made, with SHPD concurrence, to concentrate demolitions in this area and preserve more visible areas in their entirety. Historic features from the demolished units such as doors and windows will be salvaged for reuse in the rehabilitation of other buildings in this project.

The remaining buildings in the district outside the scope of this project will remain—currently there is no work planned for those buildings; these residential units are currently occupied by agricultural workers. No plans for the commercial buildings have been discussed. Currently, there

is no significant rehabilitation work planned for the other historic buildings in the district in the immediate future. However, all work on the other historic buildings will be reviewed by SHPD in accordance with State law.

This would appear to be appropriate and sufficient mitigation to any adverse impacts to Kunia Camp (SIHP # 50-80-08-7729), an architectural complex including 128 features.

No further archaeological fieldwork is recommended for the current project. Thus appropriate mitigation appears to have been concluded.

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Appendix A National Register Nomination

National Register of Historic Plac	es Registration Form
his form is for use in nominating or requesting determinations for individual p ulletin, How to Complete the National Register of Historic Places Registratio ocumented, enter "N/A" for "not applicable." For functions, architectural cla ategories and subcategories from the instructions.	n Form. If any item does not apply to the property being
1. Name of Property	
Historic name: Kunia Camp	
Other names/site number: California Packing Com	pany (CPC) Pineapple Plantation and
Processing Operations Name of related multiple property listing:	
N/A (Enter "N/A" if property is not part of a multiple pro	perty listing
2. Location	
Street & number: Buildings and structures roughly	bounded by Kunia & Pu'u Drives,
Pa'ani & Lua Wai Streets, and Kunia Road. City or town: Kunia State: Hawaii Not For Publication: Vicinity: X	_ County: _Honolulu
3. State/Federal Agency Certification	
As the designated authority under the National Histo	aric Preservation Act as amended
I hereby certify that this nomination reques	
the documentation standards for registering propertical Places and meets the procedural and professional recording the standards for registering propertical procedural and professional recording the standards for registering properties.	es in the National Register of Historic
In my opinion, the property meets does not recommend that this property be considered signific level(s) of significance: national statewidelower the considered significance:national statewide lower the considered significance:national statewide lower the considered significance:national statewide lower the considered significance: statewide	
<u>X</u> A <u>B</u> <u>X</u> C <u>D</u>	
Signature of certifying official/Title:	Date
State or Federal agency/bureau or Tribal Go	ernment
In my opinion, the property meets does	not meet the National Register criteria.
	Date
Signature of commenting official:	

Kunia Camp lame of Property		Honolulu, Hawai County and State
4. National Park Service C I hereby certify that this prop entered in the National R determined eligible for th determined not eligible for removed from the Nation other (explain:)	eerty is: egister de National Register or the National Register al Register	
Signature of the Keeper		Date of Action
5. Classification Ownership of Property (Check as many boxes as app. Private: x Public – Local Public – State Public – Federal	1	
Category of Property (Check only one box.) Building(s) District Site Structure Object]]]]	
	Sections 1-6 page 2	

Kunia Camp Name of Property		Honolulu, Hawaii County and State
Number of Resources withi (Do not include previously lise Contributing 126		ngs
	sites	
1	<u>3</u> structu	ıres
1	objects	s
128	14 Total	
6. Function or Use Historic Functions (Enter categories from instructional Housing Commerce/Trade/department Recreation and Culture/sports	store	
Historic Functions (Enter categories from instructional Housing)	store s facility	
Historic Functions (Enter categories from instructional Housing Commerce/Trade/department Recreation and Culture/sports Religion/ religious facility	store s facility all ctions.) ng ore s facility	

PS Form 10-900	OMB No. 1024-0018	
Kunia Camp		Honolulu, Hawaii
ame of Property		County and State
7. Description		
7. Description		
7. Description Architectural Cla	ssification	

Materials: (enter categories from instructions.) Principal exterior materials of the property:

Wood/Weatherboard; Metal (Corrugated)/Aluminum, Composite Shingle

Narrative Description

(Describe the historic and current physical appearance and condition of the property. Describe contributing and noncontributing resources if applicable. Begin with a summary paragraph that briefly describes the general characteristics of the property, such as its location, type, style, method of construction, setting, size, and significant features. Indicate whether the property has historic integrity.)

Summary Paragraph

Kunia Camp is located in the State of Hawaii, on the Island of Oahu, in the County of Honolulu, and lies along Hawaii Route 750, which runs northwest of Pearl Harbor. The property consists of 119 acres which includes 153 resources (buildings, structures, and an object). Approximately 50 acres of the 119 acres and 142 of the 153 resources on the property are included in the boundary for the Kunia Camp Historic District. Of these 142 resources, 128 are considered contributing resources while 14 are non-contributing resources to the district.

The proposed Kunia Camp Historic District's 128 contributing resources include 106 residences (single family homes, duplexes, and a four-plex) in the Old Camp (early historic period) and the New Camp (later historic period) areas; 15 associated residential garages in both camps (2 in Old Camp and 13 in New Camp); as well as 7 non-residential resources, including: Kunia Gymnasium and Kunia Chapel (within Old Camp); and the Agricultural Research Building, the Main Office Building, the Kunia Store, a flagpole, and an open-sided, flat roofed structure on a concrete slab that may have served as a Refueling Station (New Camp). It is important to note that there are actually 113 residences within the proposed Kunia Camp historic district (as tabulated in Table 1), but 7 of these are non-contributing resources as they lack integrity due to large additions that were added to each of the residences.

Kunia Camp Name of Property Honolulu, Hawaii

The proposed boundary of the Kunia Camp Historic District is based on the boundaries of the camp's historic period and does not conform to present day property lines. The boundaries are based on contributing resources within the camp that support Criteria A and C of the NRHP as a historic district with a residential community/camp theme. The residences and community buildings within the camp are united by their physical development as a village for plantation workers provided by the California Packing Company for its employees. The relationship of the homes and associated buildings, the scale and materials of the buildings, and layout of the houses provides an intact, accurate example of a pineapple plantation camp. 1

Other buildings on the Kunia Village Title Holding Company property were evaluated and are not included in the historic district.. The group of industrial buildings along Kunia Road at the east side of the property were an integral part of the functioning plantation. These include a Well, Shop/Storeroom, Storage, Warehouse, Juice, Fresh Fruit Packing, and Waste Water Treatment Buildings. However, these buildings have been altered, and a few recently demolished, rendering this area with insufficient integrity for inclusion in the District. The school and its associated administration building are not part of the district because they are not on Kunia Village Title Holding Company property. These buildings retain integrity and could be added to the District in the future.

The vast majority of the buildings within the proposed Historic District are residences. The 113 residences (106 contributing residences) have the distinctive characteristics of the Hawaiian Plantation Style of architecture, which includes walls a single board thick, (either board-and-batten, or tongue-and-groove with horizontal girts), and roofs, often hipped, with wide, overhanging eaves. These residences, community buildings/structures, and industrial/agricultural buildings were set against a backdrop of pineapple fields, and provided housing and other amenities for pineapple field workers (the majority of the time for the California Packing Company (CPC) from the years 1928 until 2007. In 1967, CPC changed its name to Del Monte.

In a 2008 report on the camp by Group 70 International, the residences were classified into twenty-five design types, according to their floor plans. Some of the differences between these types are simple, such as reversing an otherwise identical plan, but the wide variety of plans reflects both the time span over which these houses were added to the camp, and the varied origins of the houses, as many were brought in from other camps as those camps were closed. Table 1 below summarizes the residential design types found within the camp³. The map provided in Figure 4 is a site plan of the camp, with the individual residences keyed to each of the twenty-five building types.

All residences within these design types include a living room, a kitchen, and a laundry area, but have variations in the number of bedrooms from 1 to 4 and the number of bathrooms (1 or 2 bathrooms). All residences have foundations consisting of wood posts and concrete or stone

¹ Mason Architects, Inc. "Kunia Camp Historic Evaluation", P. 18.

² Mason Architects, Inc. "Kunia Camp Historic Evaluation", P.21.

³ Mason Architects, Inc. "Kunia Camp Historic Evaluation", Pgs. 7-8.

Kunia Camp Name of Property Honolulu, Hawaii
County and State

footings, are of single-wall construction, and have a pitched roof with overhanging eaves (most are wide and some have narrow eaves). They vary in materials (tongue-and-groove or board-and-batten walls), roof styles (hipped or gabled), and in roofing materials (corrugated metal and/or asphalt shingles). Additionally, front and rear-entry porches have either concrete masonry or wood frame foundations (centered or off-set). Windows within all the design types vary widely, and include original two or three light double-sliding glass; one-over-one double-hung; two-over-two double-hung; six-over-one, two, or six double-hung; and modern, replacement jalousie windows. Despite these variations, with few exceptions the houses fall into three basic types, which are discussed in more detail in the "General Discussion of Three General Housing Construction Types" which begins on page 12.

All of the carport-style garages were added by residents at later dates and are not considered to be character-defining features of the district since most were built after the period of significance. Some of the homes (Type C2) have small attached garages and two-car garages were built between some of the homes in the New Camp area. These garages are contributing features to the District.

Seven non-residential resources contribute to the District. They are the Kunia Gymnasium, Kunia Chapel, Kunia Store, a flagpole, an open-sided, flat roofed structure on a concrete slab (that possibly served as a refueling station), the Agricultural Research Building, and the Main Office Building. Two of these fall under the category of *community/amenity* buildings/resources (gymnasium and the chapel); two are *Industrial/Agricultural* (the agricultural and main office buildings); one is both a *community/amenity* and an *Industrial/Agricultural* type of building (Kunia Store); and two of the non-residential resources fall outside of these areas (the flagpole and the possible refueling station).

The gymnasium is a large, two-story wood framed building with a gable roof. There are single-story shed-roofed sections on the rear and the two sides. It was built sometime between 1928 and 1940. The roofing is corrugated metal and the building is built on a wood post-and-concrete pier foundation. It is sided with vertically oriented corrugated metal panels. The gable roof has wide overhanging eaves, about 4'; the shed roof eaves have less overhang, about 2'. Windows in the building are a combination of six-over-six light double hung, six-light sliding, and six and nine light fixed sash. Wide bands of screened openings are at the side gable and shed roof eaves. The front entry to the gymnasium is recessed and additionally protected by a shed roof canopy of corrugated metal supported by metal pipe posts. The wide main entry (approximately 9' wide) is centered in the recessed area and has double wood doors. Three other standard width wood doors (approximately 2'-6" wide) provide access into the building from the recessed area.

The chapel, built sometime between 1928 and 1940, is located immediately adjacent to the gymnasium. It is a one-story wood-framed building that has a hipped roof with a small gable topped with a cross over the main entry. The roofing is corrugated metal and the building is built on a wood post-and-concrete pier foundation. The chapel appears to originally have had six-light windows, but many of the windows have been in-filled with wood boards or have glass jalousie

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replacement windows. The chapel is attached to the gymnasium via a partially covered walkway area, visible from the exterior.

Kunia Store, built sometime in the late 1950s to 1960, is located in the New Camp area. It is situated in the southern and eastern-most portion of the district, near the entrance to Kunia Camp from Kunia Road. This store is not the original camp store. The original store was located in Old Camp, and is no longer extant. It is likely the original structure was made of wood, like other buildings in Old Camp. The current store is built of CMU (concrete masonry units) on a concrete foundation, and has a curved roof made of large, ribbed metal panels fastened together with metal bolts. The walls at the front and rear facades extend in a stepped pattern above the curved roof line, and a series of 4-light windows stretch in a side-by-side band across almost the entire north side of the structure (the south side was not accessible to view). A band of boarded-up windows extends across the front wall of the store, with the entry area at the north-east corner of the building. Adjacent to Kunia Store is an old metal flag pole, and across from the flag pole is an open-sided, flat roofed structure supported by two wooden posts on a concrete pad. This may have served as a gas/refueling station or as a waiting/rest area for the camp.

The final 2 non-residential buildings that serve as contributing resources to the district include the Agricultural Research Building and the Main Office Building. Both are located in the New Camp area and are considered *Industrial/Agricultural* structures. The Agricultural Research Building is a one-story, wood-framed structure, with a hipped, composition shingle roof with wide, overhanging eaves, and a wood post-and-concrete pier foundation. The walls are made of vertical boards with a double girt, and the windows are double-hung and sliding glass. It is a U-shaped *Plantation Style* structure, with the main entry area to the building located within the inner U-shaped area. The overhanging eaves provide cover for a porch with wood tongue and groove flooring. The porch wraps around and within the inner U-shaped area, and runs between the three doors that access the building in this area. The year built is unknown, but it is likely that it was a moved structure that was placed onsite sometime between 1962 and 1968.

The Main Office Building is a large, one-story, gable-roofed structure, most likely built on site for the California Packing Company between 1940 and 1952. Together with the nearby Kunia Store, it is one of the few buildings in the camp built on a concrete pad foundation. The exterior is currently composed of vertical boards, plywood panels with wide grooves, and vinyl siding. Three vent stacks project out of the gabled, corrugated metal panel roof, which has louvered gable vents and both closed and overhanging eaves. There are multiple entries to the building, most of the doors being flush, with the main entry area having double glass, storefront-type doors. The windows are plate glass or double hung, although the structure gives the impression of being primarily windowless. Adjacent to the southwest corner of the Main Office Building is a metal framed carport with a low slope corrugated metal roof. This 5-car structure was not yet built ca. 1968 and it is a non-contributing feature.

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Table 1. Summary of Residential Design Types

NOTE: Year built dates were determined from the following sources: 1928 USGS topographical map,
Ca. 1939-40 aerial photo, (Hawaii State Archives)

Ca. 1939-40 aerial photo, (Hawaii State Archives) November 18, 1952 aerial photo, (Hawaii State Archives)

1972 map "Kunia Camp Old & New," (Del Monte Archives, HARC office, Kunia)

	Type	Number of Buildings	Estimated Year Built Dates	Exterior Material
1.	A-1	2	Ca. 1928	Board and batten
2.	B-1	10	Between 1928 - 1940	Tongue and groove
3.	B-2	5	Between 1940 - 1952	Tongue and groove
4.	B-3	1,	Between 1928 - 1940	Tongue and groove
5.	B-4	2	Between 1969 – 1972 (bldgs in	Plywood
			this date range moved onto site)	
6.	B-5	2	Between 1969 – 1972 (bldgs in	Plywood
		-	this date range moved onto site)	
7.	B-6	2	Between 1928 - 1940	Board and batten
8.	B-7	1	Ca. 1928	Board and batten
9.	C-1	34	4 Ca. 1928, 25-between 1940 –	Tongue and groove
			1952, 5-between 1969 – 1972	
			(bldgs in this date range moved onto	
			site)	
10.	C-2	3	Between 1928 - 1940	Tongue and groove
11.	C-3	19	16-between 1928 -1940, 3-	16-tongue and groove,
			between 1940 - 1952	3-board and batten
12.	C-4	3	Between 1969 – 1972 (bldgs in	Tongue and groove
			this date range moved onto site)	
13.	C-5	3	3-between 1969 – 1972 (bldgs in	3-tongue and groove
101.0			this date range moved onto site)	
14	C-5a	1	1-between 1940 – 1952	1-board and batten
15.	C-6	6	Ca. 1928	Board and batten
16.	C-7	3	Between 1969 – 1972 (bldgs in	Tongue and groove
	~ ~		this date range moved onto site)	
17.	C-8	1,	Between 1928 - 1940	Board and batten
18.	C-9	1	Ca. 1928	Board and batten
19.	C-10	1	Ca. 1928	Board and batten
20.	C-11	1	Between 1928 - 1940	Board and batten
21.	C-12	1	Between 1928 - 1940	Board and batten
22.	C-13	1	Between 1928 - 1940	Tongue and groove
23.	C-14	1	Ca. 1928	Tongue and groove
24.	C-15	1	Between 1969 – 1972 (bldgs in	Tongue and groove
			this date range moved onto site)	m ·
25.	C-16	1	Between 1940 -1952	Tongue and groove
26.	D-1	8	Between 1928 - 1940	Tongue and groove

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Narrative Description

Kunia Camp is situated in a rural, open setting, surrounded by agricultural lands formerly used as pineapple fields. These fields now yield different crops, ranging from corn to herbs. To the immediate northwest of the proposed camp district, with a large, open field in front of it, are the one-story, wooden Kunia School and Administration buildings. The property is owned by the State of Hawaii and the two buildings are not included in the proposed Kunia Camp district nomination. There are wide, open stretches of land between Kunia Camp and a military installation to the north, and between the camp and the nearest residential subdivision of Royal Kunia to the southeast. Surrounding and running through the camp from the east are gulches, part of the Manuwaiahu Gulch system, and a large water reservoir is located to the immediate west of the camp.

The proposed boundary of the Kunia Camp Historic District (see Figure 2) generally follows its evolution over time, from 1928 to 1972. The district includes the residences and garages or carports (contributing and non-contributing resources) in the Old Camp (primarily built during the years 1928 to 1940) located in the northern part of the district, along with the Gymnasium and Chapel. Southeast of the Old Camp is the New Camp (primarily built during the years 1940 to 1972) located in the Southern part of the district. The New Camp area includes residences and garages (contributing and non-contributing resources), along with the Agricultural Research Building, the Main Office Building, the Kunia Store, the flagpole, and the open-sided, flat roofed structure on a concrete slab, that may have served as a refueling station (see Figure 3). Three non-contributing school bus stop shelters are located in Kunia Camp, one in the Old and two in New Camp. These are of the same wooden, open sided design, with partial end panels and corrugated metal roofs. Residents state that they were used for school children, not as stops to gather field workers. They do not show up on any maps or plans of the camp, and are not visible on a 1969 aerial photo of the site. Two were constructed within the last 5 years by community members. They were not constructed within the period of significance of the site.

The Old Camp area includes 21 residences and 2 carports, and 2 non-residential buildings (for a total of 26 buildings) considered contributing resources to the district (see Table 2). The Old Camp had components constructed roughly from the period 1928 through 1940, and is the oldest residential area within the district. The general layout of the neighborhood is a little more informal than the New Camp area, with curving roads and wider open spaces between homes. This character is partly formed by the fact that 9 of the homes are built on a promontory between gullies, which influenced the shape of this part of the camp. It is not known why this site was chosen over other areas. The greater open space of the Old Camp is also due to the fact that at least 8 residences have been demolished in this area since 1967. Given that this area has the school, gymnasium, church, and was also the location of dormitory housing, it has a greater mix of uses than the New Camp, which is almost entirely housing.

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Table 2. Contributing Resources (25) at Old Camp to the Proposed Kunia Camp Historic District

	Camp	Building Number/Name	Type of Building	Year Built/Moved To Kunia Camp
1.	Old	400	Residential	ca 1940-1952
2.	Old	411	Residential	ca 1928-1940
3.	Old		Garage	?
4.	Old	412	Residential	Before 1928
5.	Old	413	Residential	Before 1928
6.	Old	418	Residential	Before 1928
7.	Old	419	Residential	Before 1928
8.	Old	421	Residential	Before 1928
9.	Old	422	Residential	Before 1928
10.	Old	423	Residential	Before 1928
11.	Old	425	Residential	Before 1928
12.	Old	430	Residential	ca 1928-1940
13.	Old	431	Residential	ca 1928-1940
14.	Old	432	Residential	ca 1928-1940
15.	Old		Garage	ca 1940-1952
16.	Old	433	Residential	ca 1928-1940
17.	Old	434	Residential	ca 1928-1940
18.	Old	803	Residential	ca 1969-1972
19.	Old	804	Residential	ca 1969-1972
20.	Old	812	Residential	ca 1969-1972
21.	Old	831	Residential	ca 1969-1972
22.	Old	832	Residential	ca 1969-1972
23.	Old	833	Residential	ca 1969-1972
24.	Old	Gymnasium	Community/Amenity	ca 1928-1940
25.	Old	Chapel (Bldg 933)	Community/Amenity	ca 1928-1940

The New Camp area includes 85 residences and 13 garages, and 5 non-residential buildings (for a total of 103 buildings) considered contributing resources to the district (see Table 3). The New Camp was primarily built between the years 1940 to 1972 and is the younger of the two main residential areas of the district. The general layout of the neighborhood is a more formal grid, with straight, parallel streets and narrower spaces between the homes oriented on North-South and East-West axis.

Despite their names, it should be noted that today there are some newer houses in the Old Camp area (e.g. 831 and 832) and older homes in the New Camp area, notably 448 and 450. Units 448 and 450 are very similar to the oldest homes in the Old Camp, and may have been moved into the New Camp area from the Old Camp. These homes have simple gable roofs, a kitchen and bathroom constructed in the back as an addition, and they are built of board and batten

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construction instead of tongue and groove boards. They also have virtually no overhangs on the gable ends.

Table 3. Contributing Resources (103) at New Camp to the Proposed Kunia Camp Historic District

	Camp	Building Number/Name	Type of Building	Year Built/Moved To Kunia Camp
1.	New	443	Residential (1)	Before 1928
2.	New	441, 442, 454, 455, 456,	Residential (40)	ca 1928-1940
	1,0,1	459-467, 476-479, 481-	Residential (40)	Cu 1720-1740
		486, 488-494, 495-503		
3.	New	444, 445, 450-453, 469-	Residential (32)	ca 1940-1952
	2.10.17	472, 474, 475, 504-511,	(02)	***************************************
		513-524		
4.	New	Between 505 & 811;	Garage (13)	ca 1940-1952
		between 506 & 507;		
		between 508 & 509;		
		between 509 & 510;		
		between 511 & 513;		
		between 513 & 514;		
		between 515 & 516;		
		between 517 & 518;		
		between 519 & 520;		
		between 520 & 521;		
		between 522 & 523;		
		between 524 & 819;		
		at end of 4 th St.		
5.	New	Main Office Building	Industrial/Agricultural (1)	ca 1940-1952
6.	New	805, 806, 807, 810, 811,	Residential (12)	ca 1969-1972
		813, 815-820		
7.	New	Agricultural	Industrial-Agricultural/	?
		Research Bldg, Store,	Community Amenity/	
		flagpole, covered	Other (4)	
		structure(refuel sta.)		

To understand the historic appearance of Kunia Camp and whether or not today's proposed Kunia Camp Historic District retains its historic integrity, it is essential to know the various periods of development of the camp over its roughly 85 year history. The earliest known record of the existence of Kunia Camp as a neighborhood is a USGS topographic map from 1928 (see Figure 5). The map shows buildings in an arrangement that is in keeping with today's Old Camp layout. It shows a double row of residence-sized buildings that roughly correspond to current

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Old Camp residences 412 through 425. This 1928 map is the first record that supports a ca. 1928 date for the establishment of the Kunia Camp neighborhood.

A series of undated aerial photographs, likely ca. 1939-40, show the continued evolution of Kunia Camp (see Figure 6). The Old Camp appears fully built-out by ca. 1940. Residences are closely spaced in the double row between the curving arms of Pa'ani Street, and by this time the residences also extended in a cluster to the west and north, filling much of the space between the double row and gymnasium. The Chapel (Bldg. 933, extant) was also built by this time (next to the gymnasium), as was the School building. The New Camp area was constructed by ca. 1940 with 47 residential buildings and double-width garage north of Second Street. At this time there were no buildings south of Second Street and the future Kunia Village Title Holding Company Main Office Building area was planted in pineapple.⁵

Another aerial photograph, this one dated November 18, 1952 (see Figure 7) shows the expansion of the New Camp area with houses built between Second Street and Kunia Drive. Several additional houses also appear at the east end of Second and Third Streets, and north of Lua Wai Street. According to one of the residents interviewed, four houses on Lua Wai Street (#448, #450, #451, #452, and #453) were not built at Kunia Camp but were houses moved in from a nearby, disbanded Camp that was located by the reservoir south of Kunia. Also, as of this date, four buildings in the commercial area (adjacent to the camp area) have been built, including the Main Office Building (extant), truck shed (now demolished), and buildings on the sites of the warehouse and shop/storage building. This indicates that by late-1952 Kunia Camp had begun to function in support of growing and processing operations in addition to housing workers.

General Discussion of Three General Housing Construction Types:

The oldest homes are simple gable-roofed structures with shed roof extensions to shield the front porch and to house the bathroom and kitchen at the back. They are of post and beam construction, with the foundations consisting of single basalt stone footers. Both the porch and the kitchen/bathroom extensions are a step lower than the main floor of the house, but even with that drop down, the ceiling height is as low as 6'-2" at the back wall of the kitchen. These oldest houses are all single wall with no posts, the exterior and interior walls being formed by 7/8" x 12" boards with battens on both sides of the walls. The ceilings were also 1 x 12 boards with battens. The floors were 1 x 12s supported on 2 x 4 floor joists originally spaced about 24" on center and supported by 4 x 4 beams, in turn supported by 4 x 4 posts coming down on single stones that act as footings. The corrugated metal roof is similarly lightly framed, with rafters also 2 x 4s with 2 x 3 or 2 x 4 purlins at about 5 feet on center. Windows were originally double hung 6/6 light but most have been replaced by jalousie windows. Nineteen of the residential buildings that exist today meet this construction description.

⁴ U.S. Geological Survey, Schofield Hawaii Quadrangle, 1928.

⁵ Mason Architects, Inc. "Kunia Camp Historic Evaluation", P. 12.

⁶ Parilla, Henry. Interview with Monica Bacon, 26 Dec, 2012.

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The second general category of homes have similar framing, except the floor joists are supported by 4×6 beams instead of 4×4 s, and the flooring is a tongue and groove board. The footings of this type are usually concrete instead of stone. The walls are 1×6 tongue and groove boards, usually with a single horizontal girt, used for all interior and exterior walls. The corrugated metal roofs of these homes are all hipped, with at least 3-foot overhangs and are supported by 2×4 rafters at about 5 feet on center. Ceiling joists are installed at 24 inches on center, but there is no connection between the rafters and the horizontal ceiling members that resembles a truss. Forty-nine of the residential buildings that exist today were built this way. Unit 803 (type C-7) is included in this category even though it has rafters at 5° on center at the ends and rafter tails at the sides at 30 inches on center.

The third category of homes includes almost all of the homes in the 500 number series (except 504). These 500 series homes, generally built during the last phase of major development of the village, are of post and pier construction with concrete footings. Walls are constructed of single layers of 1 x 6 tongue and groove boards for walls with either a single or double girt. The same 1 x 6 material is used for flooring and roof sheathing. All of these homes have hipped roofs covered with asphalt shingles. The roof structures of these homes are much sturdier, with carpenter trusses at 24 inches on center. There are 37 homes exist today that match this description, including units 831, 832 and 833, which are similar except the walls are made of a single layer of plywood. Unit 400 (Type C-16 is also placed in this category because the structural characteristics and basic forms of this type are identical. However, Unit 400 is the former plantation manager's house, is isolated from the rest and much larger.

There are several homes that fall outside these typologies and they are worth mentioning separately. Five homes (units 472, 474, 475, 448, and 450) are gabled roofed versions of the second category above, with tongue and groove siding, girts, and corrugated metal roofing. In addition to their having gable roofs, the other notable characteristic is that while the roof framing itself is at 5 feet on center with no ridge member at all, the eave rafters are spaced at 24 to 30 inches on center, making at least half of the eave rafters more decorative than structural.

Unit 504, mentioned above, has the sturdier construction of the third category of homes discussed above. However, it has walls and ceilings of board and batten and it has a hipped corrugated metal roof and is the only type to have combined these two features. At the same time, it uses tongue and groove flooring, and has double and even one tripled set of double hung windows, again the only house in the camp with this characteristic. It also has one of the larger porches of the house types.

Unit 411 (Type B-3) is the only four-unit building in the group and has gable ends. Otherwise the construction is the same as the described in the second general category of residential buildings.

Unit 443, the sole Type 14, is the only duplex of its kind. It has a prominent gable roof and a large porch on one side and another on one end. The construction typology is similar to the second general category with the notable difference of its tongue and groove siding being 1 x 10

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in lieu of the otherwise standard 1×6 tongue and groove siding used on all other non-board and batten houses in the camp.

Integrity Analysis

The proposed Kunia Camp Historic District retains a majority of the seven aspects of integrity (Location, Design, Setting, Materials, Workmanship, Feeling, and Association) which help to make it eligible as a Historic District.

Location: The majority of the resources within the district have remained in their original locations. The residences and associated structures within the Old Camp and New Camp retain their same positions within Kunia, the boundaries of the neighborhoods having expanded over the years when pineapple production was at its peak, from the years 1928 to 1940.

Design: The buildings retain their original design, as does the plan of the camp as a whole. Various open carports have been added to some homes but this does not detract from the appearance of the homes that are considered contributing features to the district.

Setting: The proposed Kunia Camp Historic District also retains most of its original setting, as the district is still today surrounded by agricultural open space, and is adjacent to a two-lane highway.

Materials and Workmanship: The contributing resources within the district appear to retain a majority of their original exterior materials. This applies to both the earliest buildings built (prior to 1928) and those that were built post World War II. These buildings have wooden exteriors (tongue-and-groove or board-and-batten), corrugated metal roofs, and post and pier (wooden posts on concrete footings) foundations. With Plantation Style residences comprising the majority of the proposed district, the workmanship aspect of integrity is evident in the simple, plain, non-decorative materials and finishes used in their construction. The use of vertical boards and the single-wall construction technique of residences within the camp are characteristic of Hawaiian Plantation Style houses.

Feeling: The district also retains a feeling of a pineapple plantation neighborhood, as its design, materials, workmanship, and setting all help to contribute to the *feeling* that the area is still a plantation camp.

Association: The residences in the proposed Kunia Camp Historic District are all associated with the early history of the pineapple industry in Hawaii, as the buildings were occupied by plantation workers and their families, who worked the fields in what was the second largest industry for most of the mid-twentieth century in Hawaii. The agricultural setting is entirely preserved and the housing is currently, and will continue to be used by agricultural workers and their families.

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	,
8. Statement of Significance	
Applicable National Register Criteria	
(Mark "x" in one or more boxes for the criteria q listing.)	ualifying the property for National Register
A. Property is associated with events the broad patterns of our history.	at have made a significant contribution to the
B. Property is associated with the lives of	of persons significant in our past.
construction or represents the work of	aracteristics of a type, period, or method of f a master, or possesses high artistic values, guishable entity whose components lack
D. Property has yielded, or is likely to y history.	ield, information important in prehistory or
Criteria Considerations (Mark "x" in all the boxes that apply.)	
A. Owned by a religious institution or u	sed for religious purposes
B. Removed from its original location	
C. A birthplace or grave	
D. A cemetery	
E. A reconstructed building, object, or s	tructure
F. A commemorative property	
G. Less than 50 years old or achieving s	ignificance within the past 50 years
Areas of Significance	
(Enter categories from instructions.) Agriculture	
Architecture	
Community Planning and Development	

1.0	
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Period of Significance	
<u>1928 - 1972</u>	_
Significant Dates	
	_
St. 10 D	
Significant Person (Complete only if Criterion B is marked above.)	
N/A	
	
Cultural Affiliation N/A	
****	<i>-</i> -
	-
Architect/Builder	
Unknown	_
	_
atement of Significance Summary Paragraph (Provide a s	summary paragraph that includes
rel of significance, applicable criteria, justification for the pe	riod of significance, and any
plicable criteria considerations.)	
ll surrounded by agricultural land, Kunia Camp is the last in	THE TAX TO SERVE THE TA
mmunity under one ownership on Oahu. The proposed Kuni	
mmunity under one ownership on Oahu. The proposed Kuni inificant at the state level for its historic association with the	development of the pineapple
mmunity under one ownership on Oahu. The proposed Kuni mificant at the state level for its historic association with the dustry in Hawaii (which was the second largest agriculture-bar much of the mid-twentieth century). The Period of Significant	development of the pineapple assed income generator in Hawaii ance is ca. 1928 to ca. 1972,
mmunity under one ownership on Oahu. The proposed Kuni mificant at the state level for its historic association with the dustry in Hawaii (which was the second largest agriculture-ba	development of the pineapple based income generator in Hawaii rance is ca. 1928 to ca. 1972, d prime functioning years of the

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use and expansion as a pineapple plantation camp, and ends with the final build-out of the New Camp in 1972, when a grouping of residences was moved to the property and integrated into lots found within the existing street layout. Kunia camp is also significant for its specific association with the California Packing Company, from 1916 until 2007; its unique collection of plantation residences illustrating architectural evolution of the single wall structure concept; and introduction of neighborhood planning features such as indoor plumbing, individual yards, grid street patterns, and community amenities (gymnasium, churches, and school) that were increasingly demanded by workers and provided by companies desiring a stable, family-oriented workforce for the plantation.

The proposed Kunia Camp Historic District is eligible under Criteria A and C; it retains its historic integrity; and the majority of its individual resources within the district are at least 50 years old. Under Criteria Consideration G, the final era of community building (1969-72) is included to provide a complete representation of the historic evolution of worker plantation construction and community building on Oahu.

Narrative Statement of Significance (Provide at least one paragraph for each area of significance.)

The proposed Kunia Camp Historic District is significant under Criterion A for its association with the pineapple industry, which during the mid-twentieth century was Hawaii's second largest industry. Kunia Camp is also associated with the California Packing Company (CPC, later known as Del Monte), one of the major pineapple operators in Hawaii from its inception in 1916 until the closing of the Kunia facility in 2007.

Throughout the 20th Century, the importance of pineapple in Hawaii's agricultural industry was second only to sugar. For the first half of the twentieth century Hawaii was the world's largest producer of pineapples. With plantations and/or canning facilities on almost every Hawaiian island, the industry was responsible for the cultivation of thousands of acres of land, the employment of thousands of workers, and the processing of millions of pineapples. In addition to the economic impact of the industry, the fruit became a powerful icon of the Territory and State of Hawaii.⁸

"Pineapple has been inextricably linked during much of the twentieth century to the selling of Hawaii to tourists. The Island's larger agricultural industry was sugar, but when it came to marketing the Islands, pineapple held sway over its elder colleague. Sugar, ultimately, was a commodity. Pineapple was something different. It was a fruit with the colors of sunset. It was luscious and juicy. It had that remarkable crown, which led to all kinds of metaphors. Pineapple captured

⁷ Mason Architects, Inc. "Kunia Camp Historic Evaluation", P. 20.

⁸ Mason Architects, Inc. "HAER HI-79, Kahului Cannery, Plant No. 28", P.6.

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the imagination of a nation, of a world, and helped create one image of the Hawaiian Islands."

Kunia Camp is the last intact pineapple plantation housing camp on Oahu. There are no longer any existing properties that are comparable. On Oahu, most of the pineapple cultivation during the 20th century was concentrated in the Leilehua Plateau area north and south of Waihiawa, between the Koolau and Waianae Mountain ranges. California Packing Co. (CPC), Hawaiian Pineapple Co., Ltd (HAPCo), and Libby, McNeill & Libby were the major producers there. Libby began operations on windward Oahu in 1909, but by 1923 had transferred much of its production to the Leilehua Plateau. HAPCo had the most extensive system of plantation camps of the three large producers. Before the mid 1950s they had sixteen labor camps on the Leilehua Planteau, from Waimea Camp and Opaeula Camp in the north to Kipapa #1 and Robinson #1 & #2 in the south. Some of these camps were very small, consisting of only a few houses in a gulch, but some, such as Brodie Camp #2 had more houses laid out on streets, similar to Kunia Camp. Beginning ca. 1950 these camps were closed and the workers re-located to Whitmore Village, along with many of the better houses. Whitmore Village itself was on a larger scale than Kunia Camp, and most of it was new construction in 1957. Whitmore Village houses and lots were sold to HAPCo employees. ¹⁰

The primary worker housing areas for CPC/ Del Monte were Kunia and Poamoho Camp, which was located northwest of Wahiawa. By the late 1920s, Poamoho consisted of about fifteen houses configured in a large circle just off Kamehameha Highway. On USGS and War Department maps, it was originally called Camp 9. Sometime after World War II, the name changed to Poamoho Camp and additional streets and houses were added to the west of the original circle of houses. Poamoho Camp was considerably smaller than Kunia Camp, with only about fifty-five houses. In addition, Poamoho did not include the community amenities included at Kunia such as gymnasium, post office, and school. Poamoho had a community center that had a church, but this burned down ca. 2010. In 2003, Del Monte began to divest itself of its pineapple lands surrounding Poamoho. That year it did not renegotiate its leases for about 2,100 acres of surrounding land. Acres of pineapple land were plowed to fallow and the Del Monteowned homes of Poamoho Village were offered for sale to residents in 2005. The change in ownership of the houses at Poamoho began the transformation of the community as individual owners made changes to their buildings that were formerly under company purview. This resulted in alterations to the houses in the neighborhood, which no longer retains integrity.

Libby, McNeill & Libby concentrated on acquiring smaller Oahu pineapple operations that were in financial trouble. Libby's principal cannery was in Iwilei where it processed fruit from its scattered Oahu acreage. This dispersed system of cultivation kept Libby from developing the centralized kind of worker camps the other major growers had. Libby's best prospect for a

Jan Ten Bruggencate, Hawaii's Pineapple Century, (Honolulu: Mutual Publ.) 2004. P. viii-ix.
 Jack L. Larsen and Dr. Thomas A. Marks, Hawaiian Pineapple Entrepreneurs, 1894-2010,
 private publ. 2010. P. 267-68.

private publ., 2010. P. 267-68.

11 Larsen, Hawaiian Pineapple Entrepreneurs, 2010. P. 520.

¹² Larsen, Hawaiian Pineapple Entrepreneurs, 2010. P. 99-104.

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worker camp similar to Kunia would have been at its Libbyville operation at Kahaluu on windward Oahu, where it maintained a cannery until 1923. The Laenani neighborhood has been built on the Kahaluu site of Libbyville, obliterating above ground traces of former activity.

Early Pineapple Cultivation on Oahu and the California Packing Co. (CPC)

The 1898 annexation of Hawaii by the United States and subsequent organization two years later as a territory gave its economy protection under American tariffs. An increasing measure of investment in the pineapple industry resulted. Pineapples were introduced to Hawaii very early after contact and quickly became a "prized commodity." 13 The fruit thrived in the warm and relatively dry conditions on the leeward sides of the Hawaiian Islands. Early pineapple cultivation efforts on Oahu were located in Manoa Valley, Waipahu, and Ewa. Some of the earliest commercial pineapple cultivation in central Oahu began during the 1890s with J.P. Keppler's irrigated patches at Wahiawa in 1893 and Hawaiian Fruit and Plant Co. fields in 1899, also at Wahiawa. In 1898 and 1899, Byron O. Clark had pineapple cultivation in mind when he organized the Wahiawa Settlement Association to "bring California farmers to homestead the land."14 James Dole began Hawaiian Pineapple Co. (Hapco), growing the fruit at Wahiawa in 1901 and starting packing operations there in 1903. Alfred W. Eames, who was an original Clark homesteader, began Hawaiian Islands Packing in Wahiawa in 1905. He expanded his firm's pineapple cultivation from Wahiawa to the Poamoho area in 1912. That year Hawaiian Islands Packing built a cluster of about 20 homes at Poamoho for worker's housing, called Poamoho Village or Camp 9. Camp 7 and Camp 8 were built at Poamoho in 1914. Pineapples were cultivated at Kunia since at least 1909, when a Mr. Fukuoka and seven other growers planted about 100 acres in what eventually became Del Monte field No. 5¹⁵ adjacent to the northwest of Kunia Camp.

The complex of buildings at Kunia Camp was part of the California Packing Company (CPC) pineapple plantation and processing operations. CPC was formed in 1916 with the merging of five canning operations in California and Alaska. The following year, 1917, CPC added the pineapple growing and packing operations of the Hawaiian Islands Packing Co. and Hawaiian Preserving Co. to its subsidiaries. CPC would adopt the name of "Del Monte" in 1967, but the company began using Del Monte as its primary brand name in 1917. The holdings of the Hawaiian Preserving Co. that were amalgamated into CPC included a small settlement at Kunia Camp (in the area referred to now as the Old Camp), and surrounding pineapple fields that amounted to over 1500 acres. The Kunia Camp settlement became an important worker housing area for CPC, providing homes in close proximity to the fields. It is not known why this site was chosen for the settlement at Kunia Camp.

In 1919, two years after CPC absorbed Hawaiian Preserving Co. and Hawaiian Islands Packing Co., there were about 6,600 acres of CPC pineapple under cultivation in Hawaii. The following

¹³ Jan Ten Bruggencate, Hawaii's Pineapple Century," (Honolulu: Mutual Publ.) 2004. P. 2.

¹⁴ Larsen, Hawaiian Pineapple Entrepreneurs, 2010, p. 68, 70.

¹⁵ Robert Kehlor, *The History of Del Monte Pineapple in Hawaii*. Hawaii: PPI Del Monte Fresh Produce. 1992., p. 90.

¹⁶ Larsen, Hawaiian Pineapple Entrepreneurs, 2010. P. 98.

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year, CPC's production of canned pineapple was the highest in Hawaii, beating James Dole's Hapco, which began scrambling to acquire additional land for cultivation in order to regain its preeminence.¹⁷

Pineapple Workers

As the pineapple cultivation and processing industries grew in Hawaii, shortages of laborers to work plantations and canneries became severe. The sugar industry in Hawaii was experiencing the same problems, and in 1919 the Hawaiian Pineapple Growers Association (established 1909), and the Hawaiian Sugar Planters Association, agreed to share the expenses involved in bringing Filipino laborers to Hawaii. This resulted in the Philippine Islands supplying the largest national group of workers in the pineapple industry. The policy of active recruitment of workers from the Philippines was essentially ended in 1927 when the plantations' labor needs were met. After 1927, some men immigrated to Hawaii on their own and the associations brought the families of some who had emigrated earlier.

During World War II the number of regular year-round employees of the pineapple industry in Hawaii dropped from about 12,250 to about 7,500. Planted acreage and cannery operations continued with much labor being provided by seasonal and student labor. In 1946, more full-time employees were needed and the pineapple industry, along with sugar planters, again looked to the Philippines to supply workers. About 2,000 men were brought to Hawaii, primarily from northern Luzon, to work in pineapple. Wives and children accompanied some of those men.

The company-designed aspects of Kunia Camp were similar to other plantations' efforts to provide a stable workforce within a controlled neighborhood. Often, employees found the companies rules a bit oppressive, resulting in an environment that was "far from ideal, "with "plantation rules regulat[ing] almost every aspect of their lives." Before World War II, it was common for camps to be racially segregated.

Those pineapple plantation workers in Hawaii who lived in company owned housing did so because it was generally more convenient than finding housing on their own. Most camps were sited in proximity to their workplace in the fields. The layout of camps varied widely, often dictated by the terrain. Occasionally the camp might be laid out with a flair, such as the original circular layout of Poamoho Camp. Often the layout of the camp could reflect the management hierarchy of the labor force, with overseer's housing placed in a more favorable site within the camp, sometimes upslope of the workers. ¹⁹

Interviews with residents who arrived at Kunia Camp in the early 1940s revealed that there were no ethnic divisions with regards to placement of families within the camp's houses. One resident shared that the various ethnic groups in fact got along, as it was post-World War II and working

¹⁷ Richard A. Hawkins, "James D. Dole and the 1932 Failure of the Hawaiian Pineapple Company," *Hawaiian Journal of History*, Volume 41, 2007, p. 151.

¹⁸ Hawkins, James D. Dole, p. 153.

¹⁹ Ronald Takaki, Pau Hana, Plantation Life and Labor in Hawaii, 1835-1920. (Honolulu: University of Hawaii Press) 1983. P. 92.

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well together better ensured success out in the fields.²⁰ Although Kunia Camp did not separate workers by ethnicity, there were earlier camps before Kunia Camp that were divided by ethnic groups. Some of the names of these camps included: Leilehua Camp (located near Schofield); #84 Camp (located near the reservoir south of Kunia Camp); and Eloy Camp (located just north of Kunia Camp). The residents interviewed did not always specify which camps included which ethnic groups, but two residents recalled that Eloy Camp was specifically for Filipino workers and their families. Additionally, during World War II, Eloy Camp was used as a temporary Medical Company for the military.²¹

One resident shared that, with regard to separation of housing by work/job position within the camp, the row of houses on Kunia Drive (Buildings #515 to #524) was where the supervisors lived, with the Camp Manager living in the largest house (Building #400).²² This same resident now lives in one of these houses.

All four of the residents interviewed for this nomination indicated that outhouses were gone by the time they arrived in the early 1940s, and that worker housing had indoor bathrooms, plumbing, and electricity. One resident remembered that at one time there were bathhouses in the Old Camp area, designed in the Japanese *furo* style of bathing. This same resident also recalled that gulches in the area also historically served as cesspools, and that the present day Sewage Treatment Plant was constructed in the 1990s (specifically after 1992).²³

The residents interviewed recalled that most of the residential housing was meant for workers and their families; three of the four residents described there also being housing for unmarried workers. These structures were called "Single Men Houses" or "Long Block Houses", likely in reference to their shape. These structures were rectangular, post and pier wooden houses, with two rows of rooms in the center (on both sides of the building) and a bathroom and a kitchen flanking both ends of the building. Open-air verandas, accessible from the rooms, were situated on both sides of each building. There were six of these structures at the camp – three near the gymnasium, one across the street and west from Building #430 in Old Camp, and two on Fourth Street, adjacent and east of Building #820 in New Camp. None of these structures are extant today.

Transportation to other urbanized areas was first provided at Kunia by the Oahu Railway and Land Company (OR&L). The railroad line ran parallel to, and on Waianae side of the present Kunia Road. According to interviews with four long-time residents of the camp, trucks carried the harvested fruits from the fields in pineapple bins, wooden crates that could hold approximately 10-12 pineapples, with each pineapple weighing approximately 3 pounds.²⁴ These trucks then delivered pineapples to the OR&L stop located north of Old Camp and just

²⁰ Gamponia, Benjamin. Interview with Monica Bacon, 26 Dec, 2012.

²¹ Iwatane, Samson and Pasco, Gilbert. Interview with Monica Bacon, 17 Jan, 2013.

²² Iwatane, Samson. Interview with Monica Bacon, 17 Jan, 2013.

²³ Parilla, Henry. Interview with Monica Bacon, 26 Dec 2012.

²⁴ Parilla, Henry. Interview with Monica Bacon, 26 Dec, 2012.

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south of the warehouses, where the pineapples were loaded onto freight trains.²⁵ All four of the residents interviewed described "Vans", which were areas where pineapples were offloaded/loaded onto trucks. Van 1 was located near the OR&L stop and Van 6 located south of Kunia Camp, in an area close to a nearby camp.

The warehouses located in the industrial area were not used to store pineapples—they were used to store fertilizer for the crops and feed for the horses. According to one resident who arrived at Kunia Camp in 1944, at that time horses were still being used by the managers to haul fertilizer and feed, as the plantation trucks were needed to transport pineapples and deliver workers to and from the fields. ²⁶ Lastly, the 1952 photograph also shows that by this time several small outbuildings that were located along the OR&L tracks to the northeast of Kunia Camp were replaced with four very large buildings, each approximately 200' long.

In 1960 the Kunia Store was built. According to several long time residents, the present Kunia Store building was not the original store at the camp. Benjamin Gamponia, a resident who arrived at Kunia in 1943, remembered the original Kunia Store building was located at the site of Building #814 (now demolished) in Old Camp and was run by Mildred Iwatane Nishiyama, sister of longtime resident Samson Iwatane. Mr. Gamponia recalled that the store was moved to its new and present location sometime in the late 1950s. ²⁷ By 1968 the present shop/storehouse buildings were built, and the last major additions to the neighborhood were undertaken sometime between 1969 and 1972 when 18 houses were added. The 18 residences currently bear address numbers in the 800s and according to some residents, were relocated from Wahiawa to Kunia Camp. ²⁸ These houses, whose construction dates are unknown, were the last major additions to the neighborhood.

Post World War II and Later Operations

After World War II, the major Hawaiian pineapple firms, including CPC, concentrated on producing and marketing canned fruit. A shipping ban on fresh pineapple to the mainland was in effect from 1947 to 1950, due to fruit fly larvae found in shipments. Fumigation of fresh fruit was used for mainland-bound pineapples from 1950 until 1953 when the requirement was removed. Even though these restrictions made fresh pineapple difficult to supply to the mainland and caused CPC to focus on canned product, a small amount of fresh fruit was exported by a private firm (Aloha Papaya Co.) operating out of CPC's Kunia facility. This CPC fruit was specially selected by Aloha and was packed at Kunia.²⁹

A supply of fresh fruit had always made its way out of the plantations to the local market. Field workers at Hapco (Dole) and probably other plantations were allowed to carry home whatever

²⁵ Gamponia, Benjamin; Parilla, Henry; Iwatane, Samson; Pasco, Gilbert. Interviews with Monica Bacon, 26 Dec, 2012 & 17 Jan, 2013

²⁶ Gamponia, Benjamin. Interview with Monica Bacon, 26 Dec, 2012.

²⁷ Gamponia, Benjamin. Interview with Monica Bacon, 26 Dec, 2012.

²⁸ Gamponia, Benjamin. Conversation with Architectural Historians Lesleigh Jones and Monica Bacon, 31 Aug, 2011.

²⁹ Larsen, Pineapple Entrepreneurs, p. 535-536.

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pineapples they wanted. By the late 1950s this lead to employees taking 8-10 fruit daily and selling them to local markets. When Hapco became aware of this, they instituted a 35 cent price for each pine that left with an employee. This still amounted to a profit for Hapco, who got an average of \$33 per ton for these pines without any associated processing cost.

In 1976, Del Monte (formerly CPC) expanded its production of fresh fruit in an attempt to secure a portion of that market from Dole, which had maintained a large presence in the mainland fresh market since 1963. Del Monte purchased Aloha Papaya Co. in early 1976 which included their small, fresh pineapple packing operation in Del Monte's Kunia facility. During this time, Del Monte began to extensively market fresh fruit over its canned product. The period of 1960 to about 1976 was a time of diminishing income for the Hawaiian pineapple industry as production in Taiwan, Philippines, Thailand and other locations over took canned Hawaiian pineapple in the marketplace. By 1984 Del Monte had built the large fresh fruit packing and pineapple juicing buildings at the north end of their Kunia property.

As canned pineapple from other countries began filling the market, Hawaiian canneries began to close and plantations, once located on Maui, Oahu, Molokai, Lanai, and Kauai, began to shrink. Del Monte cannery closed in 1985, and Dole cannery in Iwilei, the last cannery on Oahu, closed in 1991. During the end of the 1990s and into the 21st century the value of fresh Hawaiian pineapple overtook the value of canned Hawaiian pineapple, which pressured processors to reduce their cannery operations.³¹

In 2003, Del Monte (formerly CPC) allowed the lapse of its lease on over 2,000 acres of land at Poamoho, which had been under pineapple cultivation for 100 years. 1,400 acres of plants were removed and the land plowed to fallow. Maui Pineapple Co. purchased some of the remaining fruit and transported it to Kahului for canning. Plantation worker homes at Poamoho Village were sold to occupants. In early 2006, Del Monte stated that it would close its Kunia operations at the end of the 2008 harvest however the facilities at Kunia actually closed in January of 2007. An occupant buyout proposal similar to Poamoho was expected for Kunia, but this did not come to fruition. Del Monte destroyed much of the planted acreage in anticipation of leaving Hawaii. In December 2008 ownership passed to Campbell Estate, and in November 2009 ownership of Kunia Camp passed to the Hawaii Agriculture Research Center (HARC). In April 2011 the Kunia Village Title Holding Company (a separate legal organization under HARC) assumed ownership.

Two of the most important characteristics of this district are its isolation from other urban development and that it is occupied by agricultural workers, and will continue to be occupied by agricultural workers, under the mission of the current land owner. On the heavily populated island of Oʻahu, similar rural settings have been replaced by residential subdivisions and commercial developments. The combination of a community situated in relative isolation from populated areas, and whose residents all share the same vocation, contribute to the importance of

³⁰ Larsen, Pineapple Entrepreneurs, p. 547, 548, 554, and Bruggencate, Pineapple Century, p. 156, 157.

Mason Architects, "HAER HI-79, Kahului Cannery, Plant No. 28", P.7-8.

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this proposed district. The residents' use of yards for gardens and a more informal yard treatment also sets the district apart from other remaining former agricultural worker housing.

The proposed Kunia Camp Historic District is also significant under Criterion C as a concentration of Plantation Style residences. The residences display the distinctive characteristics of the Hawaiian Plantation Style of architecture, which includes vertical boards (tongue-and-groove and board-and-batten) on the exterior, single-wall construction (some with girts), and pitched roofs with wide, overhanging eaves.

The single-wall construction of the camp is characteristic of Hawaiian Plantation Style houses. This construction method is a structurally sophisticated method of construction that maximizes economy of material and labor.³² Single wall construction also reflected the difficulty of importing building materials from the mainland and the use of standardized components. Plans utilizing single wall design were subsequently codified by the Hawaii Sugar Plantation Association (HSPA) throughout the islands and ultimately migrated into urban construction.

During the 1920s, Hawaii plantations were implementing a paternalistic system of benevolent control over their employees. Years of neglecting the welfare of workers resulted in work strikes and labor unrest. This led to the plantation's realization that they needed to make "at least minimal efforts" to create better living conditions and a sense of community for the workers "in order to cope with the labor force problems." The Hawaiian Sugar Planters Association (HSPA) began a program in 1919 to "reduce the manifest discontent found in the industry" through improvements in employee housing." The close association of sugar and pineapple industries in Hawaii provided a good opportunity for these ideas to migrate between plantations. By 1920 the HSPA had a number of standardized plans for single-wall employee homes that were recommended for new construction along with improved worker's camp sanitation and recreational facilities.

The single-wall construction of the buildings at Kunia Camp is typical of plantation housing. Single wall construction was also extensively utilized in most other residential construction in Hawaii. These single wall houses are typically either of board-and batten construction, as typically found at Kunia's old camp, or the more common configuration of tongue-and-groove (T&G) boards as typically found in the newer camp area. As T&G boards become readily available as a building material, they tended to be utilized more frequently over board and batten construction. For plantation housing "the recommended standard was a single-family house with not less than two bedrooms, on a lot of five thousand square feet," 35 with a wash house, bath

³² Barbara Shideler, "Hawaii's Plantation Village: History, Interpretation and Design of an Outdoor History Museum," (Submitted to the Faculty of the Department of American Studies In Partial Fulfillment of The Requirements For The Graduate Certificate in Historic Preservation) 1993. P. 27.

³³ Beechert, Working in Hawaii, 1985. P. 192.

³⁴ Beechert, Working in Hawaii, 1985. P. 193.

³⁵ Shideler, "Hawaii's Plantation Village," 1993. p. 25.

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house and other sanitary provisions. "The size of houses increased, kitchens were generally within or attached to the houses and sanitary facilities improved."36

The houses built for plantation laborers were remarkable for more than just their small size: the structures built were a study in economy of material and labor. The construction system utilized a single thickness of vertical board siding (usually 3/4" to 1-1/4" thick) for bearing the roof and dead loads, thus eliminating the need for an internal structural frame. The wall is tied at the top and bottom plates, with a single girt at mid-span to prevent buckling. A hipped or gable roof caps the assembly, providing additional lateral stability.37

This single-wall construction system was a common building technique on Hawaiian plantations through the 1960s. By eliminating the structural framing in wood buildings, carpenters created a system which utilized a bearing-wall of thin boards. Antecedents of Hawaii's single-wall construction lie in rural buildings in the western US mainland. Other forms of single-wall, or "plank" construction, were common on the United States mainland in the nineteenth century, in places where milled lumber was expensive, builders had limited financial resources, and construction was transitory. This included mining towns in California. Single wall construction is simple and economic, which gave it a wide appeal "among rural, pioneer and working class builders."38 The least expensive type of construction available in Hawaii through most of the early twentieth century was single-wall construction, with T&G boards or the alternative boardand-batten type.

³⁶ Ibid.

³⁷ Ibid.

³⁸ Peter Schultz and Andrea Sue Morrison, "Architecture as Material Culture: A Survey of Residential and Commercial Structures in a Western Ghost Town," California Archaeology: California Dept. of Parks and Recreation. 1995. pp. 105 & 106.

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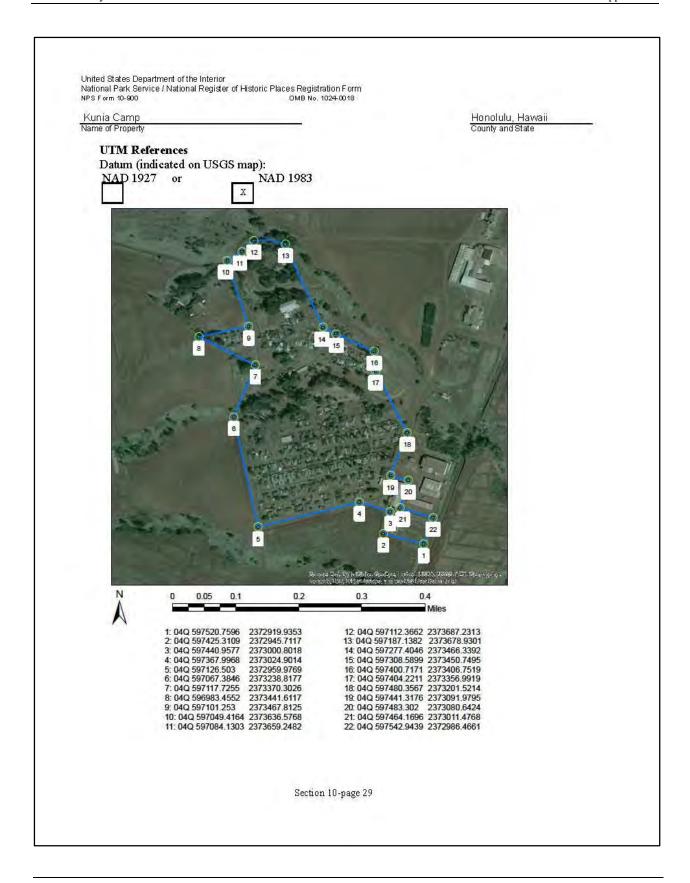
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U.S. Department of the Interior, Nation Register Criteria for Evaluation." Was		
U.S. Geological Survey Topographic I Archives. 1928, 1935, 1940.	Map (USGS). Schofield Quadra	ngle. From Hawaii State

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designated a National I	Historic Landmark	
recorded by Historic A	merican Buildings Survey # merican Engineering Record #	
recorded by Historic A	merican Landscape Survey #	
Primary location of addition	nal data:	
State Historic Preserva		
Other State agency		
Federal agency		
Local government University		
Other		
Historic Resources Survey	Number (if assigned):	
10. Geographical Data		
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Use either the UTM system of	or latitude/longitude coordinates	
Latitude/Longitude Coordi	inates	
Datum if other than WGS84		
(enter coordinates to 6 decim	nal places)	
1. Latitude:	Longitude:	
2. Latitude:	Longitude:	
3. Latitude:	Longitude:	
4. Latitude:	Longitude:	
Or		



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Verbal Boundary Description (Describe the boundaries of the property.)

The proposed boundary for the district on the south and west is Kunia Drive. Continuing clockwise, the boundary extends northwest, following Kunia Drive until it angles sharply to the northwest (going off of Kunia Drive) until it intersects the far west portion of Pa'ani Street, where it then angles to the east, following Pa'ani Street until it once again intersects Kunia Drive. Continuing northwest along Kunia Drive, it then and wraps to the east along Pu'u Drive on the northern most portion of the boundary before reaching south to Pa'ani Street on the north and east sides of the Old Camp area. From the sharp ninety degree bend of Pa'ani Street (at its south corner) the boundary angles southeast to Lua Wai Street. It follows Lua Wai southwest until it extends east and south to contain the Main Office Building, main entrance on Kunia road, and the Kunia Store before returning west and north to run along Kunia Drive.

Boundary Justification (Explain why the boundaries were selected.)

The proposed boundaries of the Kunia Camp Historic District incorporates the residences in the Old Camp and the New Camp, as well as other associated buildings, such as the Gymnasium, Chapel, Agricultural Research Building, the Main Office Building, and the Store. All of these structures contribute to the significance of the district, were built during the period of significance of the district, and they retain historic integrity in the majority of their aspects to convey that significance. The school, although historically intact and associated with the camp, is not included in the proposed district because it is not on Kunia Village Title Holding Company property.

name/title: Monica K. Bacon		
organization: Wa Kahiko RSL, for Mas	on Architects, Inc.	
street & number: 1620 Anapuni St.		
city or town: Honolulu	state: Hawaii	zip code: 96822
e-mail mbacon@hawaiiantel.net		
telephone: 808-391-0381		
date: 10/11/12		

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Kunia Camp

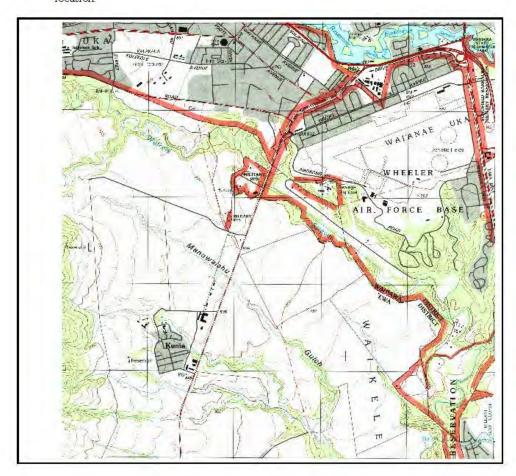
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Additional Documentation

Submit the following items with the completed form:

 Maps: A USGS map or equivalent (7.5 or 15 minute series) indicating the property's location.



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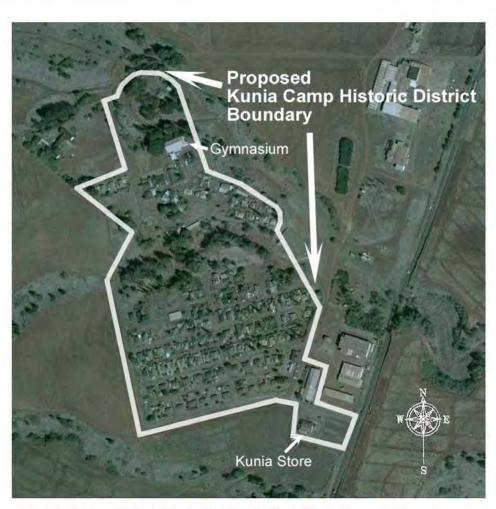
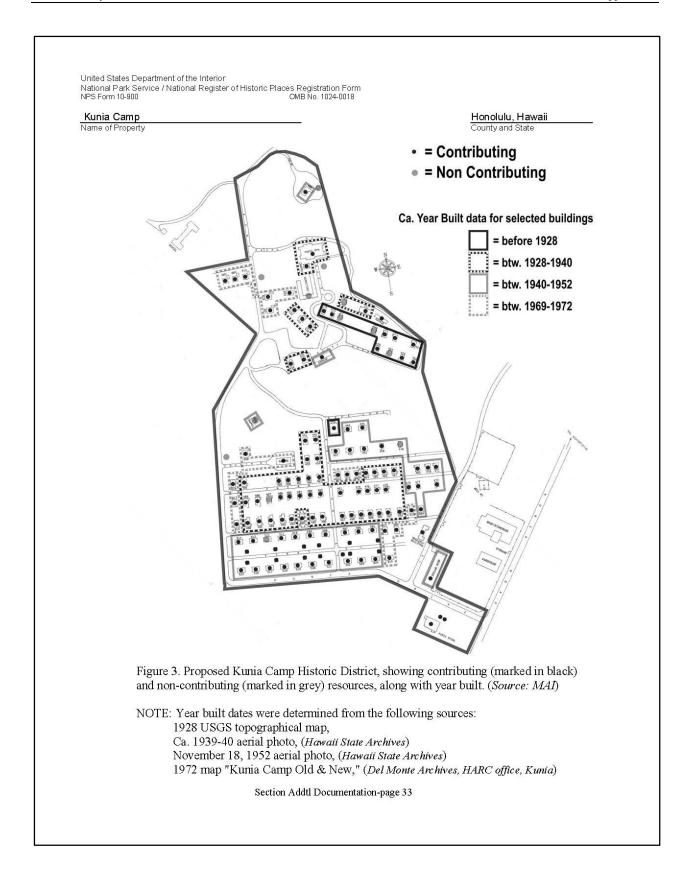
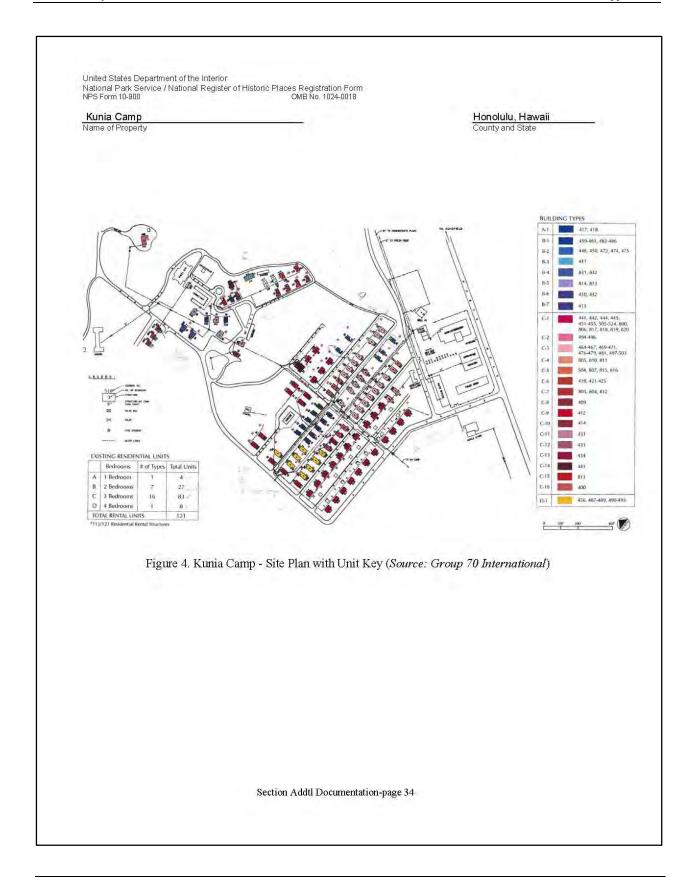


Figure 2. Proposed Historic District Boundary for Kunia Camp. (Source:MAI)





United States Department of the Interior National Park Service / National Register of Historic Places Registration Form NPS Form 10-900 OMB No. 1024-0018 Honolulu, Hawaii Kunia Camp Name of Property County and State Kunia Camp Figure 5. 1928 USGS topographical map showing "Kunia Camp" in what is known today as the Old Camp (Source: Hawaii State Archives.)

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Figure 6. Ca. 1939-40 aerial photo showing the Old Camp fully built-out, and the first phase of the New Camp completed. (Source: Hawaii State Archives)



Figure 7. November 18, 1952 aerial photograph showing the expanded New Camp. (Source: Hawaii State Archives)

Kunia Camp Name of Property Honolulu, Hawaii

• **Sketch map** for historic districts and properties having large acreage or numerous resources.

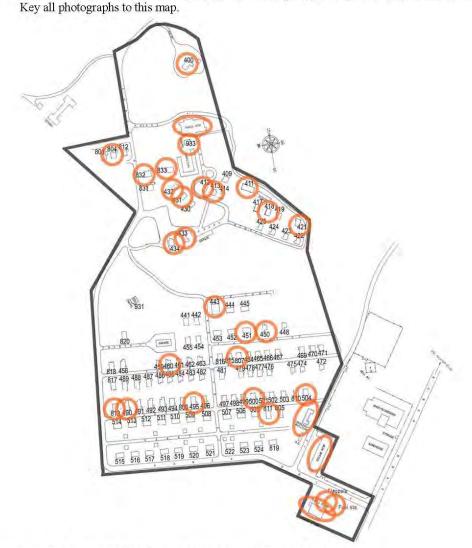


Figure 8. Photo key map for buildings in Kunia Camp Historic District.

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Table 4. Photo Log for Kunia Camp Historic District

Building	Photo
418	1 of 31
460	2 of 31
0404.040	
450	3 of 31
411	4 of 31
832	5 of 31
833	6 of 31
432	7 of 31
413	8 of 31
451	9 of 31
495	10 of 31
500	11 of 31
811	12 of 31
807	13 of 31
504	14 of 31
421	15 of 31
804	16 of 31
412	17 of 31
431	18 of 31
433	19 of 31
434	20 of 31
443	21 of 31
813	22 of 31
400	23 of 31
490	24 of 31
933 Chapel	25 of 31
Gymnasium	26 of 31
Ag Research	27 of 31
Main Office	28 of 31
Kunia Store	29 of 31
Flagpole	30 of 31
Fuel Sta.	31 of 31

Additional items: (Check with the SHPO, TPO, or FPO for any additional items.)

Photographs

Submit clear and descriptive photographs. The size of each image must be 1600×1200 pixels (minimum), 3000×2000 preferred, at 300 ppi (pixels per inch) or larger. Key all photographs to the sketch map. Each photograph must be numbered and that number must correspond to the photograph number on the photo log. For simplicity, the name of the photographer, photo date, etc. may be listed once on the photograph log and doesn't need to be labeled on every photograph.

Kunia Camp Name of Property

Honolulu, Hawaii

County and State

Photo Log

Name of Property: Kunia Camp Historic District

City or Vicinity: Kunia

County: Honolulu State: Hawaii

Photographer: Dee Ruzicka

Date Photographed: September, 2011 Residential Design Type: A-1

Description of Photograph(s) and number, include description of view indicating direction of camera: Building/Residence #418, view looking Northwest.



1 of 31. No floor plan available for this building type.

Kunia Camp Name of Property

Honolulu, Hawaii

County and State

Name of Property: Kunia Camp Historic District

City or Vicinity: Kunia

County: Honolulu State: Hawaii

Photographer: Dee Ruzicka

Date Photographed: September, 2011 Residential Design Type: B-1

Description of Photograph(s) and number, include description of view indicating direction of camera: Building/Residence #460, view looking Northeast.



2 of 31. No floor plan available for this building type.

Kunia Camp

Name of Property

Honolulu, Hawaii

County and State

Name of Property: Kunia Camp Historic District

City or Vicinity: Kunia

County: Honolulu State: Hawaii

Photographer: Dee Ruzicka

Date Photographed: September, 2011 Residential Design Type: B-2

Description of Photograph(s) and number, include description of view indicating direction of camera: Building/Residence #450, view looking Northeast.



3 of 31. No floor plan available for this building type.

Kunia Camp Name of Property

Honolulu, Hawaii

County and State

Name of Property: Kunia Camp Historic District

City or Vicinity: Kunia

County: Honolulu State: Hawaii

Photographer: Dee Ruzicka

Date Photographed: September, 2011 Residential Design Type: B-3

Description of Photograph(s) and number, include description of view indicating direction of camera: Building/Residence #411, view looking Southeast.



4 of 31. No floor plan available for this building type.

Kunia Camp Name of Property

Honolulu, Hawaii

County and State

Name of Property: Kunia Camp Historic District

City or Vicinity: Kunia

County: Honolulu State: Hawaii

Photographer: Dee Ruzicka

Date Photographed: September, 2011 Residential Design Type: B-4

Description of Photograph(s) and number, include description of view indicating direction of camera: Building/Residence #832, view looking Southeast.



5 of 31. No floor plan available for this building type.

Kunia Camp

Name of Property

Honolulu, Hawaii

County and State

Name of Property: Kunia Camp Historic District

City or Vicinity: Kunia

County: Honolulu State: Hawaii

Photographer: Dee Ruzicka

Date Photographed: September, 2011 Residential Design Type: B-5

Description of Photograph(s) and number, include description of view indicating direction of camera: Building/Residence #833 view looking Southeast.



6 of 31. No floor plan available for this building type.

Kunia Camp Name of Property

Honolulu, Hawaii

County and State

Name of Property: Kunia Camp Historic District

City or Vicinity: Kunia

County: Honolulu State: Hawaii

Photographer: Dee Ruzicka

Date Photographed: September, 2011 Residential Design Type: B-6

Description of Photograph(s) and number, include description of view indicating direction of camera: Building/Residence #432 view looking East.



7 of 31. No floor plan available for this building type.

Kunia Camp Name of Property

Honolulu, Hawaii

County and State

Name of Property: Kunia Camp Historic District

City or Vicinity: Kunia

County: Honolulu State: Hawaii

Photographer: Dee Ruzicka

Date Photographed: September, 2011 Residential Design Type: B-7

Description of Photograph(s) and number, include description of view indicating direction of camera: Building/Residence #413 view looking Northeast.



8 of 31. No floor plan available for this building type.

Kunia Camp Name of Property

Honolulu, Hawaii

County and State

Name of Property: Kunia Camp Historic District

City or Vicinity: Kunia

County: Honolulu State: Hawaii

Photographer: Dee Ruzicka

Date Photographed: September, 2011 Residential Design Type: C-1

Description of Photograph(s) and number, include description of view indicating direction of camera: Building/Residence #451, view looking North.



9 of 31. No floor plan available for this building type.

Kunia Camp

Name of Property

Honolulu, Hawaii

County and State

Name of Property: Kunia Camp Historic District

City or Vicinity: Kunia

County: Honolulu State: Hawaii

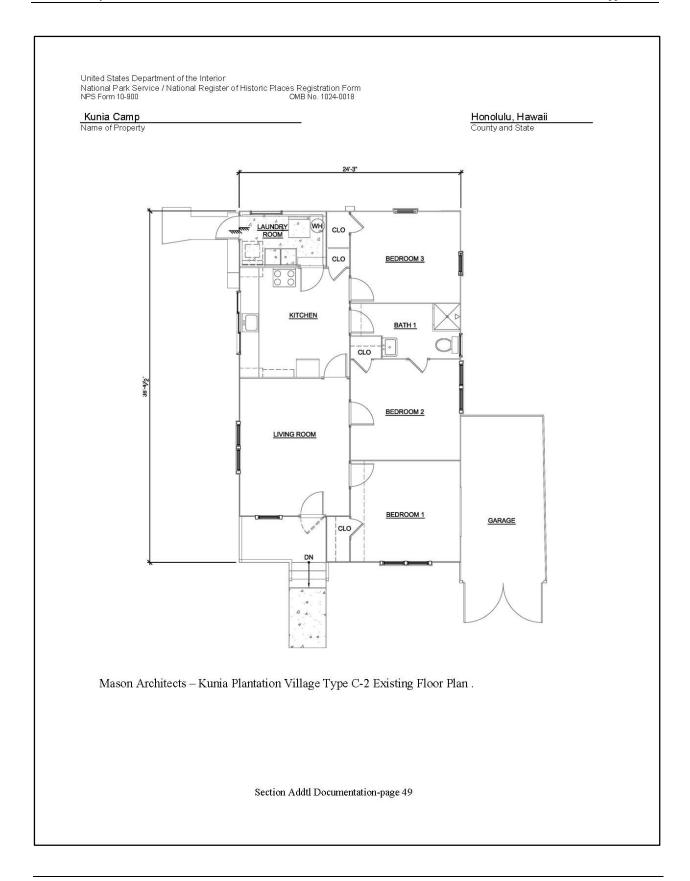
Photographer: Dee Ruzicka

Date Photographed: September, 2011 Residential Design Type: C-2.

Description of Photograph(s) and number, include description of view indicating direction of camera: Building/Residence #495 view looking Northeast.



10 of 31. Floor plan on next page.



Kunia Camp Name of Property

Honolulu, Hawaii

County and State

Name of Property: Kunia Camp Historic District

City or Vicinity: Kunia

County: Honolulu State: Hawaii

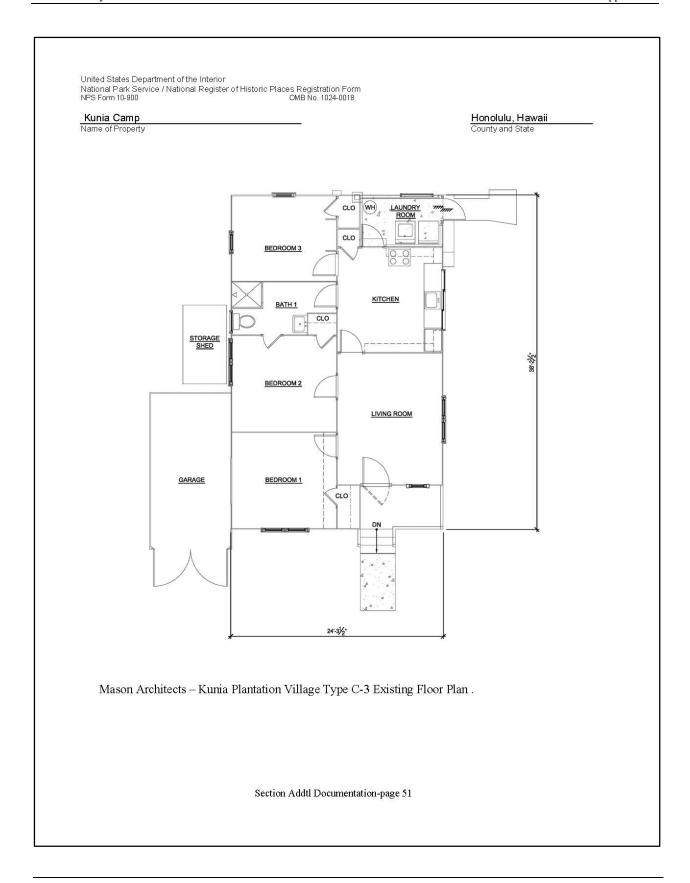
Photographer: Dee Ruzicka

Date Photographed: September, 2011 Residential Design Type: C-3

Description of Photograph(s) and number, include description of view indicating direction of camera: Building/Residence #500, view looking Northeast.



11of 31. Floor plan on next page.



Kunia Camp Name of Property

Honolulu, Hawaii

County and State

Name of Property: Kunia Camp Historic District

City or Vicinity: Kunia

County: Honolulu State: Hawaii

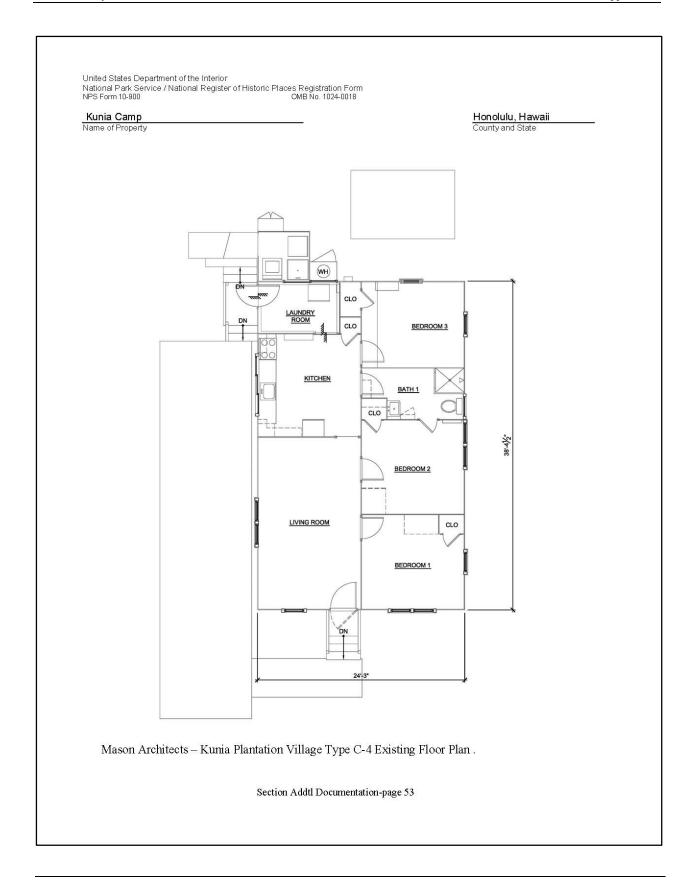
Photographer: Dee Ruzicka

Date Photographed: September, 2011 Residential Design Type: C-4

Description of Photograph(s) and number, include description of view indicating direction of camera: Building/Residence #811, view looking south.



12of 31. Floor plan on next page.



Kunia Camp Name of Property

Honolulu, Hawaii

County and State

Name of Property: Kunia Camp Historic District

City or Vicinity: Kunia

County: Honolulu State: Hawaii

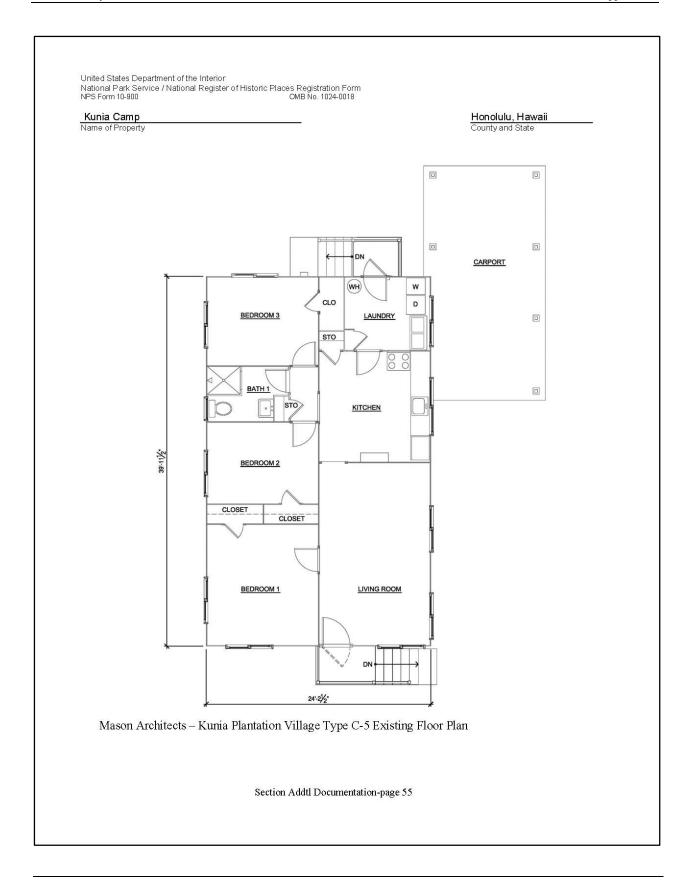
Photographer: Dee Ruzicka

Date Photographed: September, 2011 Residential Design Type: C-5

Description of Photograph(s) and number, include description of view indicating direction of camera: Building/Residence #807, view looking southwest.



13 of 31. Floor plan on next page.



Kunia Camp Name of Property

Honolulu, Hawaii

County and State

Name of Property: Kunia Camp Historic District

City or Vicinity: Kunia

County: Honolulu State: Hawaii

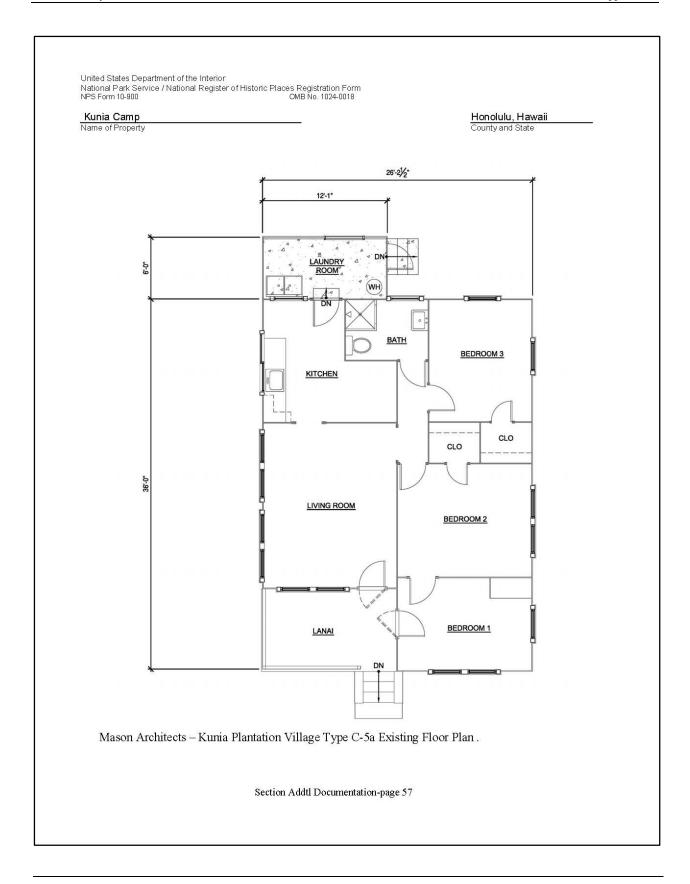
Photographer: Dee Ruzicka

Date Photographed: September, 2011 Residential Design Type: C-5a

Description of Photograph(s) and number, include description of view indicating direction of camera: Building/Residence #504, view looking Northeast.



14of 31. Floor plan on next page.



Kunia Camp Name of Property

Honolulu, Hawaii

County and State

Name of Property: Kunia Camp Historic District

City or Vicinity: Kunia

County: Honolulu State: Hawaii

Photographer: Dee Ruzicka

Date Photographed: September, 2011 Residential Design Type: C-6

Description of Photograph(s) and number, include description of view indicating direction of camera: Building/Residence #421, view looking North.



15of 31. No floor plan available for this building type.

Kunia Camp

Name of Property

Honolulu, Hawaii

County and State

Name of Property: Kunia Camp Historic District

City or Vicinity: Kunia

County: Honolulu State: Hawaii

Photographer: Dee Ruzicka

Date Photographed: September, 2011 Residential Design Type: C-7.

Description of Photograph(s) and number, include description of view indicating direction of camera: Building/Residence #804 view looking south.



16 of 31. No floor plan available for this building type.

Note that type C-8 and Type C-10 each have only 1 building that are non-contributing, so no photo of these types is included.

Kunia Camp

Name of Property

Honolulu, Hawaii

County and State

Name of Property: Kunia Camp Historic District

City or Vicinity: Kunia

County: Honolulu State: Hawaii

Photographer: Dee Ruzicka

Date Photographed: September, 2011 Residential Design Type: C-9.

Description of Photograph(s) and number, include description of view indicating direction of camera: Building/Residence #412 view looking northeast.



17 of 31. No floor plan available for this building type.

Note that type C-8 and Type C-10 each have only 1 building that are non-contributing, so no photo of these types is included.

Kunia Camp Name of Property

Honolulu, Hawaii County and State

Name of Property: Kunia Camp Historic District

City or Vicinity: Kunia

State: Hawaii County: Honolulu

Photographer: Dee Ruzicka

Date Photographed: September, 2011 Residential Design Type: C-11

Description of Photograph(s) and number, include description of view indicating direction of camera: Building/Residence #431, view looking east.



18of 31. No floor plan available for this building type.

Kunia Camp

Name of Property

Honolulu, Hawaii

County and State

Name of Property: Kunia Camp Historic District

City or Vicinity: Kunia

County: Honolulu State: Hawaii

Photographer: Dee Ruzicka

Date Photographed: September, 2011 Residential Design Type: C-12.

Description of Photograph(s) and number, include description of view indicating direction of camera: Building/Residence #433 view looking south.



19 of 31. No floor plan available for this building type.

Kunia Camp

Name of Property

Honolulu, Hawaii

County and State

Name of Property: Kunia Camp Historic District

City or Vicinity: Kunia

County: Honolulu State: Hawaii

Photographer: Dee Ruzicka

Date Photographed: September, 2011 Residential Design Type: C-13.

Description of Photograph(s) and number, include description of view indicating direction of camera: Building/Residence #434 view looking east.



20 of 31. No floor plan available for this building type.

Kunia Camp Name of Property

Honolulu, Hawaii

County and State

Name of Property: Kunia Camp Historic District

City or Vicinity: Kunia

County: Honolulu State: Hawaii

Photographer: Dee Ruzicka

Date Photographed: September, 2011 Residential Design Type: C-14.

Description of Photograph(s) and number, include description of view indicating direction of camera: Building/Residence #443 view looking southeast.



21 of 31. No floor plan available for this building type.

Kunia Camp Name of Property

Honolulu, Hawaii

County and State

Name of Property: Kunia Camp Historic District

City or Vicinity: Kunia

County: Honolulu State: Hawaii

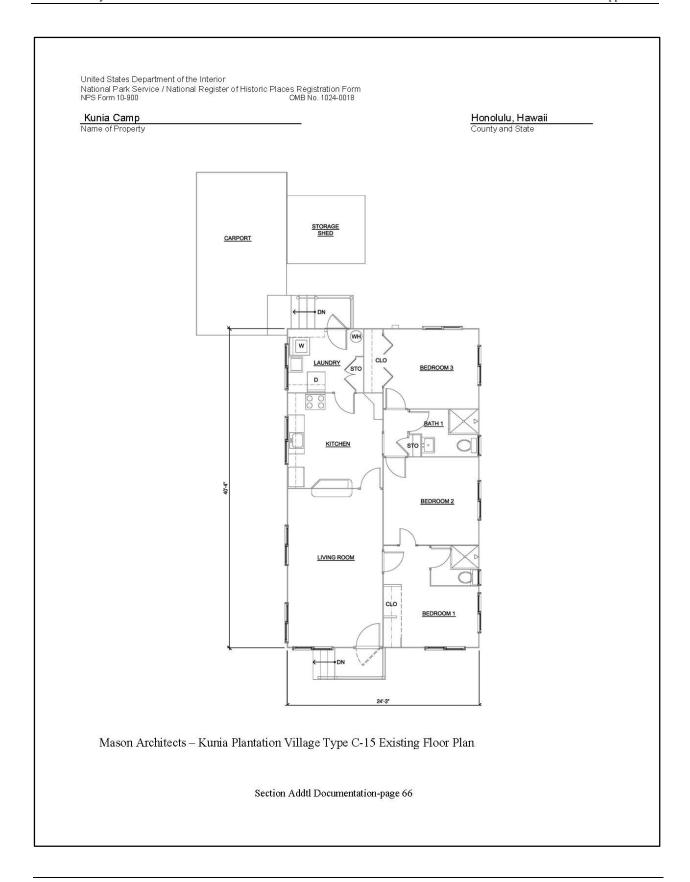
Photographer: Dee Ruzicka

Date Photographed: September, 2011 Residential Design Type: C-15

Description of Photograph(s) and number, include description of view indicating direction of camera: Building/Residence #813, view looking northeast.



22of 31. Floor plan on next page.



Kunia Camp Name of Property

Honolulu, Hawaii

County and State

Name of Property: Kunia Camp Historic District

City or Vicinity: Kunia

County: Honolulu State: Hawaii

Photographer: Dee Ruzicka

Date Photographed: September, 2011 Residential Design Type: C-16.

Description of Photograph(s) and number, include description of view indicating direction of camera: Building/Residence #400 view looking south.



23 of 31. No floor plan available for this building type.

Kunia Camp Name of Property

Honolulu, Hawaii

County and State

Name of Property: Kunia Camp Historic District

City or Vicinity: Kunia

County: Honolulu State: Hawaii

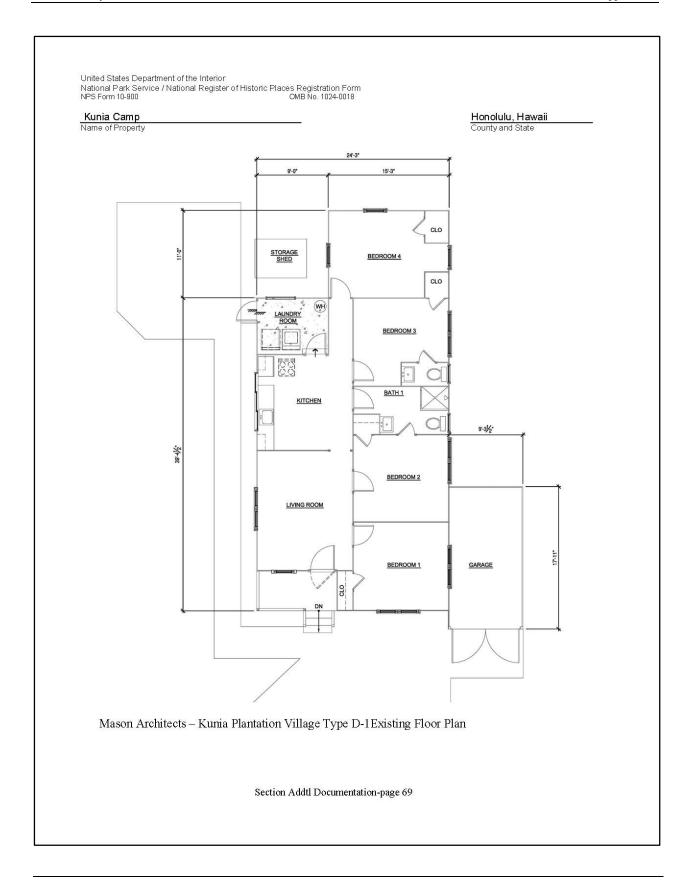
Photographer: Dee Ruzicka

Date Photographed: September, 2011 Residential Design Type: D-1.

Description of Photograph(s) and number, include description of view indicating direction of camera: Building/Residence #490 view looking northeast.



24 of 31. Floor plan on next page.



Kunia Camp Name of Property Honolulu, Hawaii County and State

Name of Property: Kunia Camp Historic District

City or Vicinity: Kunia

County: Honolulu State: Hawaii

Photographer: Dee Ruzicka

Date Photographed: September, 2011

Description of Photograph(s) and number, include description of view indicating direction of camera: Building/Chapel #933 view looking east.



25 of 31.

Kunia Camp Name of Property Honolulu, Hawaii County and State

Name of Property: Kunia Camp Historic District

City or Vicinity: Kunia

County: Honolulu State: Hawaii

Photographer: Dee Ruzicka

Date Photographed: September, 2011

Description of Photograph(s) and number, include description of view indicating direction of camera: Gymnasium view looking south.



26 of 31.

Kunia Camp Name of Property

Honolulu, Hawaii

County and State

Name of Property: Kunia Camp Historic District

City or Vicinity: Kunia

County: Honolulu State: Hawaii

Photographer: Dee Ruzicka

Date Photographed: September, 2011

Description of Photograph(s) and number, include description of view indicating direction of camera: Agricultural Research Building view looking northwest.



27 of 31.

Kunia Camp Name of Property

Honolulu, Hawaii

County and State

Name of Property: Kunia Camp Historic District

City or Vicinity: Kunia

County: Honolulu State: Hawaii

Photographer: Dee Ruzicka

Date Photographed: September, 2011

Description of Photograph(s) and number, include description of view indicating direction of camera: Main Office Building view looking northeast.



28 of 31.

Kunia Camp Name of Property

Honolulu, Hawaii

County and State

Name of Property: Kunia Camp Historic District

City or Vicinity: Kunia

County: Honolulu

State: Hawaii

Photographer: Dee Ruzicka

Date Photographed: September, 2011

Description of Photograph(s) and number, include description of view indicating direction of camera: Kunia Store, view looking southeast.



29 of 31.

Kunia Camp Name of Property

Honolulu, Hawaii

County and State

Name of Property: Kunia Camp Historic District

City or Vicinity: Kunia

County: Honolulu State: Hawaii

Photographer: Monica Bacon

Date Photographed: February, 2013

Description of Photograph(s) and number, include description of view indicating direction of

camera: Flagpole view looking southwest.



30 of 31.

Kunia Camp Name of Property Honolulu, Hawaii County and State

Name of Property: Kunia Camp Historic District

City or Vicinity: Kunia

County: Honolulu State: Hawaii

Photographer: Monica Bacon

Date Photographed: February, 2013

Description of Photograph(s) and number, include description of view indicating direction of camera: open-sided, flat roofed structure on a concrete slab (possible Refueling Station) view looking northeast.



31 of 31.

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C.460 et seq.). Estimated Burden Statement: Public reporting burden for this form is estimated to average 100 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Office of Planning and Performance Management. U.S. Dept. of the Interior, 1849 C. Street, NW, Washington, DC.