

DRAFT

ENVIRONMENTAL ASSESSMENT

**PORTABLE BUILDINGS
UNIVERSITY OF HAWAI'I AT HILO**



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December 2008

Prepared by



**Belt Collins Hawaii Ltd.
Honolulu, Hawaii**

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ACRONYMS AND ABBREVIATIONS

ADA	Americans with Disabilities Act
BLNR	Board of Land and Natural Resources, State of Hawai‘i
BMP	Best Management Practices
CIP	Capital Improvement Program
CZM	Coastal Zone Management
CZO	County Zoning Ordinance
DEM	Department of Environmental Management, County of Hawai‘i
DLNR	Department of Land and Natural Resources, State of Hawai‘i
DOH	Department of Health, State of Hawai‘i
DWS	Department of Water Supply, County of Hawai‘i
DPW	Department of Public Works, County of Hawai‘i
EA	Environmental Assessment
EIS	Environmental Impact Statement
EKH	Edith Kanaka‘ole Hall
ESL	English as a Second Language
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
GP	General Plan
HAR	Hawai‘i Administrative Rules
HAVO	Hawaiian Volcano Observatory
HawCC	Hawaii Community College
HRS	Hawai‘i Revised Statutes
MG	million gallon
NAAQS	National Ambient Air Quality Standards

NPDES	National Pollutant Discharge Elimination System
OHA	Office of Hawaiian Affairs
SHPD	State Historic Preservation Division, State of Hawai'i
SMA	Special Management Area
UH	University of Hawai'i
USDA	U.S. Department of Agriculture

1 SUMMARY

PROPOSING AGENCY:	University of Hawai'i at Hilo (UH Hilo)
APPROVING AGENCY:	UH Hilo
GENERAL PROJECT DESCRIPTION:	<p>The UH Hilo is proposing to construct four portable buildings on its main campus to house administrative and faculty offices. One of the buildings will be constructed as a stand-by classroom facility.</p> <p>The offices will initially serve as temporary accommodations for administration, faculty, and staff in the Edith Kanaka'ole Hall (EKH) while the building's air conditioning system is upgraded.</p> <p>In the long term, after the administration, faculty, and staff return to their offices in EKH, the portable buildings will be retained for other campus uses as the demand and need arises.</p>
PROJECT LOCATION:	The new portable buildings will be located in the western section of the UH Hilo campus near the newly constructed Student Life Center (Phase I).
PRELIMINARY DETERMINATION:	Anticipated Finding of No Significant Impact (FONSI)
CONSULTED AGENCIES:	<p>Federal Agencies</p> <p>U.S. Department of the Army U.S. Natural Resources Conservation Service</p> <p>State Agencies</p> <p>Department of Health (DOH) Department of Business, Economic Development and Tourism Department of Transportation Environmental Management Division, DOH</p>

Land Division, Department of land and Natural
Resources (DLNR)
Office of Environmental Quality Control
State Historic Preservation Division, DLNR

County Agencies

Department of Environmental Management
Department of Planning
Department of Public Works
Department of Water Supply
Fire Department
Police Department

2 DESCRIPTION OF PROPOSED ACTION

2.1 Project Objective

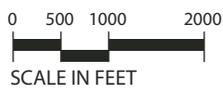
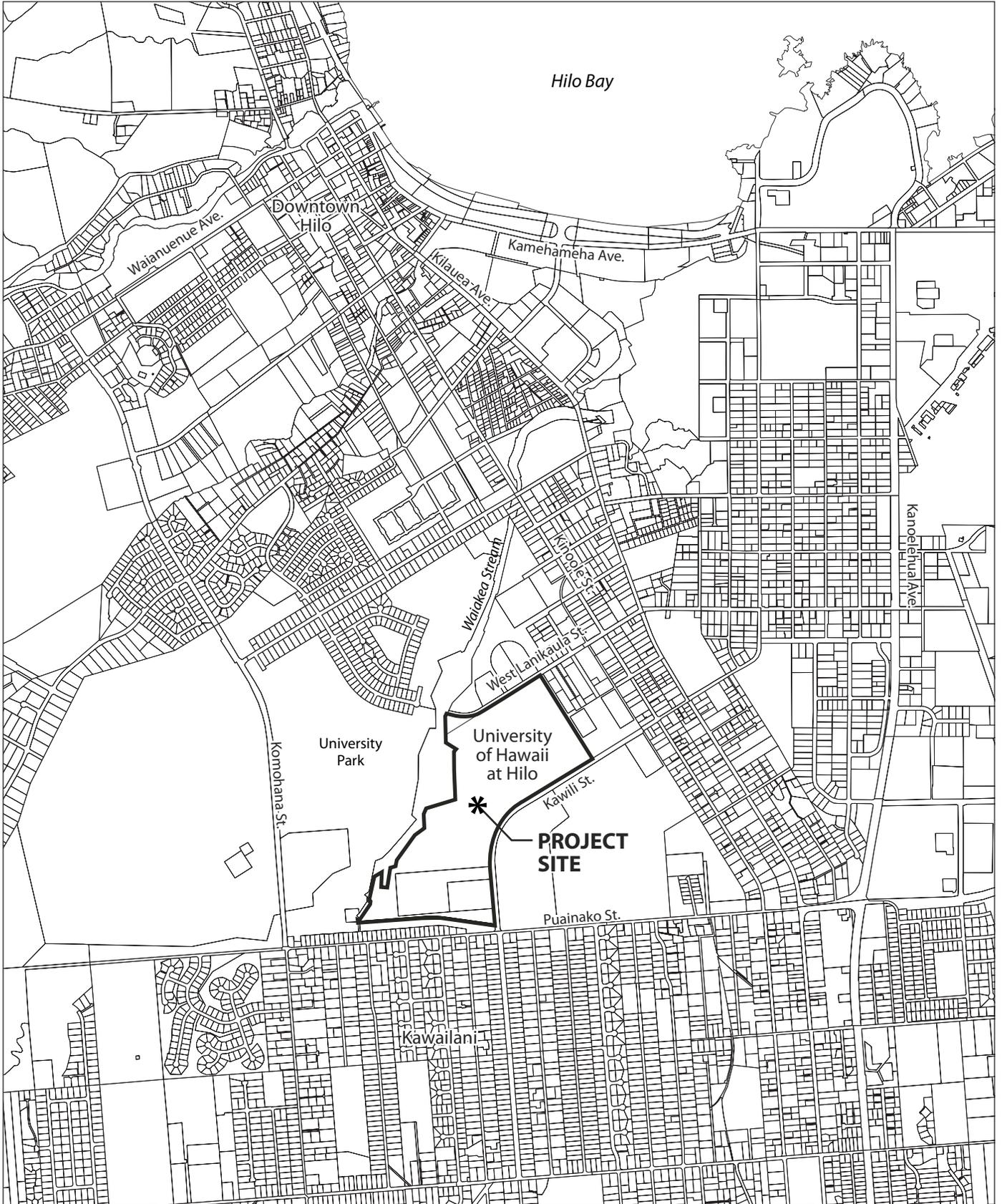
The University of Hawai'i (UH) at Hilo proposes to construct four portable buildings to provide temporary office accommodations for the administration, faculty, and staff in the Edith Kanaka'ole Hall (EKH) while their building's air conditioning system is being upgraded. This move would allow the EKH personnel to continue their operations and services with minimal interruption.

Upon completion of the AC upgrade and return of the administration, faculty, and staff to EKH, the portable buildings will be used as offices and/or classrooms over the long term for other campus uses as the demand and need arises.

2.2 Description of the Proposed Action

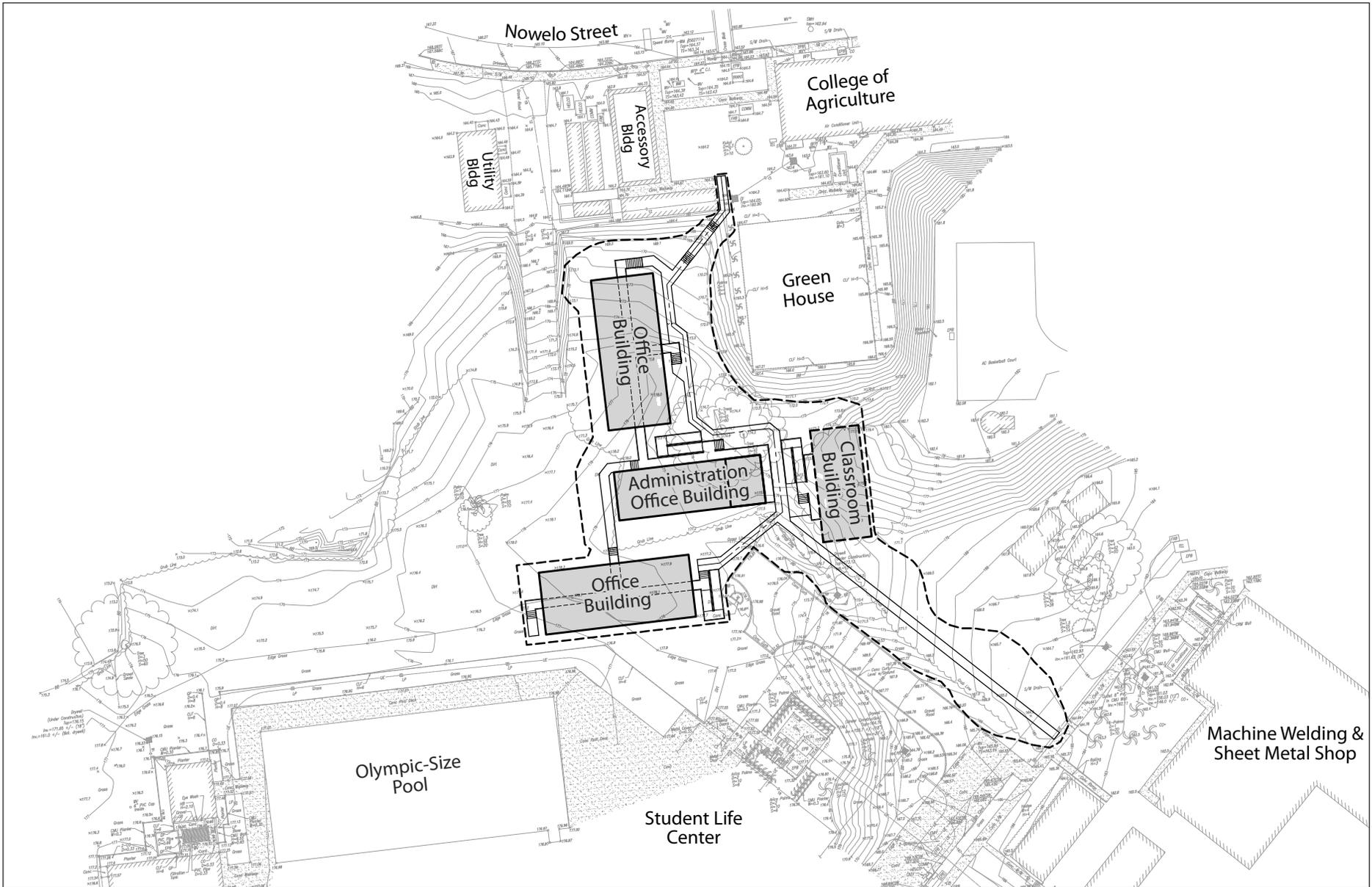
UH Hilo is proposing to construct four portable buildings on an approximately 1.6-acre site adjacent to the newly constructed Student Life Center – Phase I in the western section of its Hilo campus (see Figure 2-1 to Figure 2-3). The buildings will contain office space, stand-by classrooms, restrooms, and storage and utility rooms (see Figure 2-4 and Figure 2-5).

Current plans call for the new buildings to be factory-specified, wood-frame structures on post-and-beam foundations (see Figure 2-6). The exterior walls will be comprised of plywood sheathing, and the roof will be ribbed metal on felt and T & G plywood sheathing.



**Figure 2-1
LOCATION MAP**

University of Hawaii at Hilo
Hilo, Hawaii



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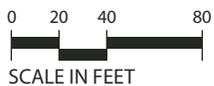
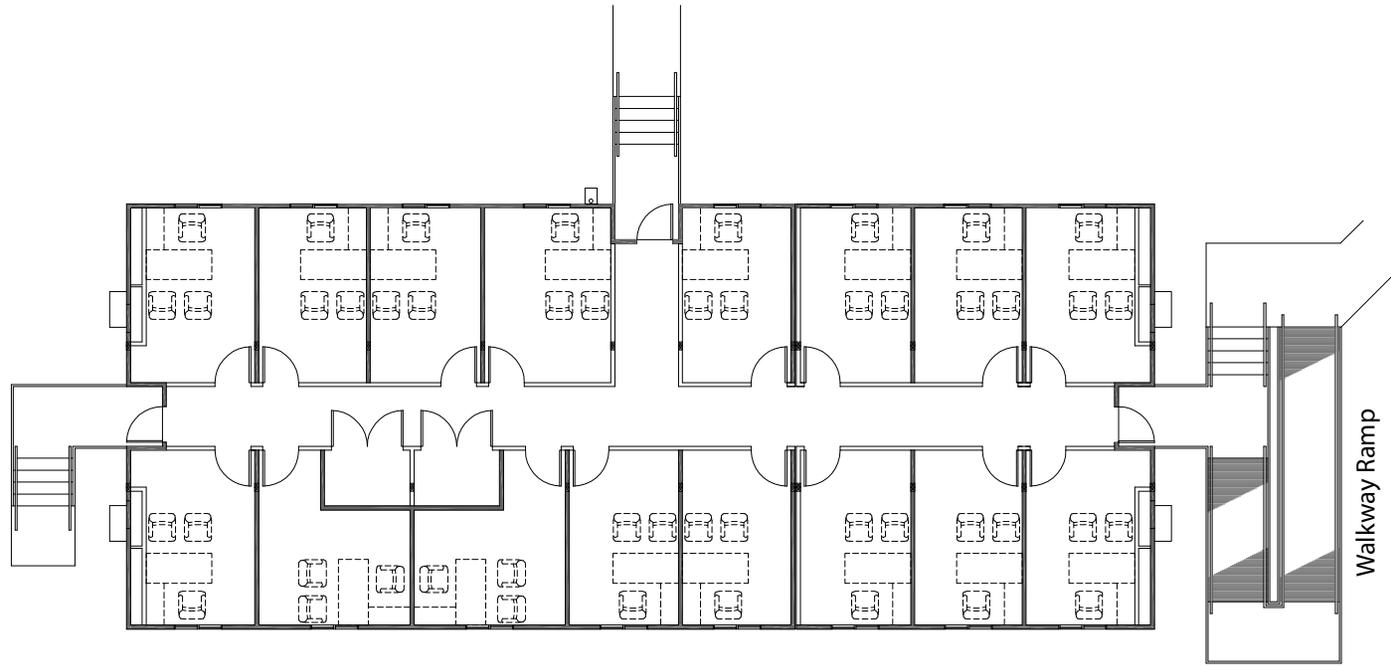


Figure 2-3
PROPOSED SITE PLAN

University of Hawaii at Hilo
Hilo, Hawaii



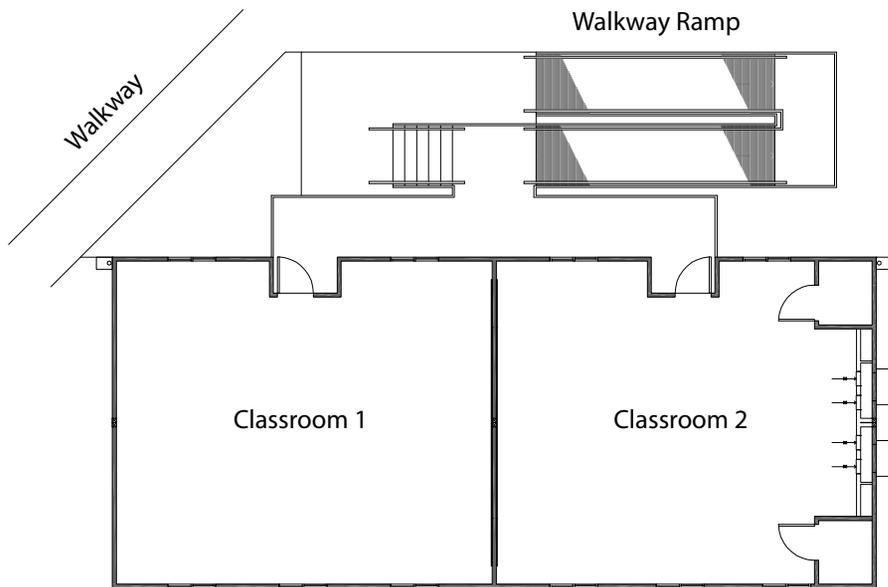
Floor Plan

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Figure 2-4
OFFICE BUILDING FLOOR PLAN

University of Hawaii at Hilo
Hilo, Hawaii



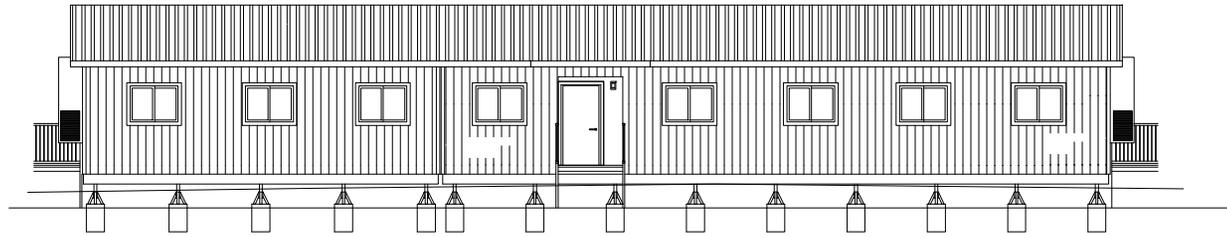
Floor Plan

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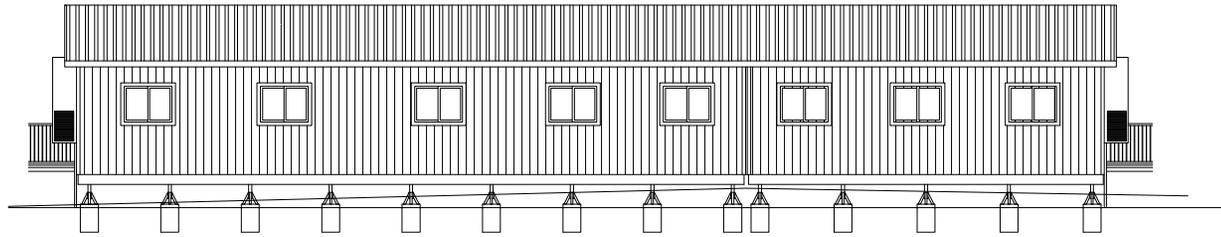


Figure 2-5
CLASSROOM FLOOR PLAN

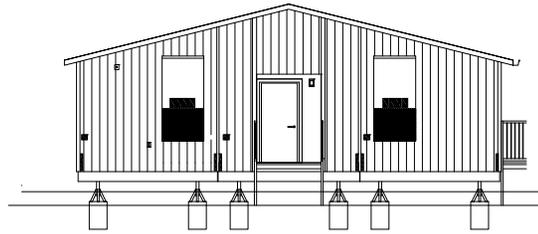
University of Hawaii at Hilo
Hilo, Hawaii



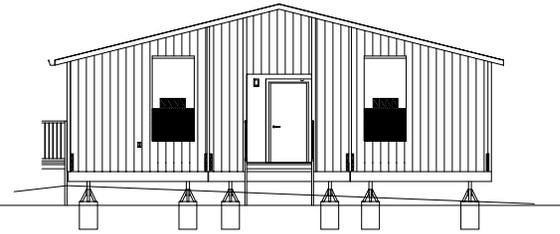
FRONT ELEVATION



REAR ELEVATION



SIDE ELEVATION 1



SIDE ELEVATION 2

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**Figure 2-6
TYPICAL BUILDING ELEVATION PLAN**

University of Hawaii at Hilo
Hilo, Hawaii

The proposed portable buildings will be interconnected with ground-level and elevated pedestrian walkways, ramps, and steps. The ramps will be designed to meet Americans with Disabilities Act (ADA) requirements.¹

The color of the buildings will match the overall color scheme of the UH Hilo campus.

A breakdown of the building dimensions, floor area, and functions is as follows:

PORTABLE BUILDING	OVERALL DIMENSIONS (APPROX. LENGTHS)	FLOOR AREA (APPROX. AREA)	FUNCTIONS
A	28 feet x 84 feet	2,350 square feet	Division chair office, clerical space, work space, reception area, restrooms, storage and utility rooms
B	36 feet x 87 feet	3,130 square feet	16 faculty offices and utility rooms
C	36 feet x 87 feet	3,130 square feet	16 faculty offices and utility rooms
D	28 feet x 64 feet	1,790 square feet	2 classrooms and utility rooms

Since the new facility will be used by existing UH Hilo faculty and staff, no additional parking will be required. On-campus faculty parking assignments may be temporarily reassigned to allow UH Hilo staff in the portable buildings to park closer to their temporary new offices.

Water service will be provided from an existing water line at the Student Life Center and a sewer connection will be available at Nowelo Street approximately 150 feet from the portable buildings. Both connections are within the campus. Electricity and telephone services will be available from adjacent campus facilities.

2.3 Estimated Cost

The preliminary construction cost estimate for the proposed portable buildings is \$2.6 million. This cost is expected to be financed by the State.

2.4 Construction Schedule

Construction of the new buildings is projected to begin in early 2009 after all land use, environmental, and construction permits are obtained. Construction would be completed approximately four months thereafter.

¹ Americans with Disabilities Act of 1990, as amended.

3 DESCRIPTION OF AFFECTED ENVIRONMENT

3.1 Regional Setting

The UH Hilo campus spans 115 acres and is located in a residential area approximately 1-1/2 miles south of Hilo's central business district.

Hilo is the largest population center and the county seat of government for the County of Hawai'i. According to the 2000 U.S. Census, there were 40,759 people and 14,577 households residing in this East Hilo town.

Hilo also serves as the island's commercial and transportation hub containing the largest deep-water commercial harbor and a major airport on the island. The major industries in East Hawai'i are farming, professional and business services, government, and tourism.

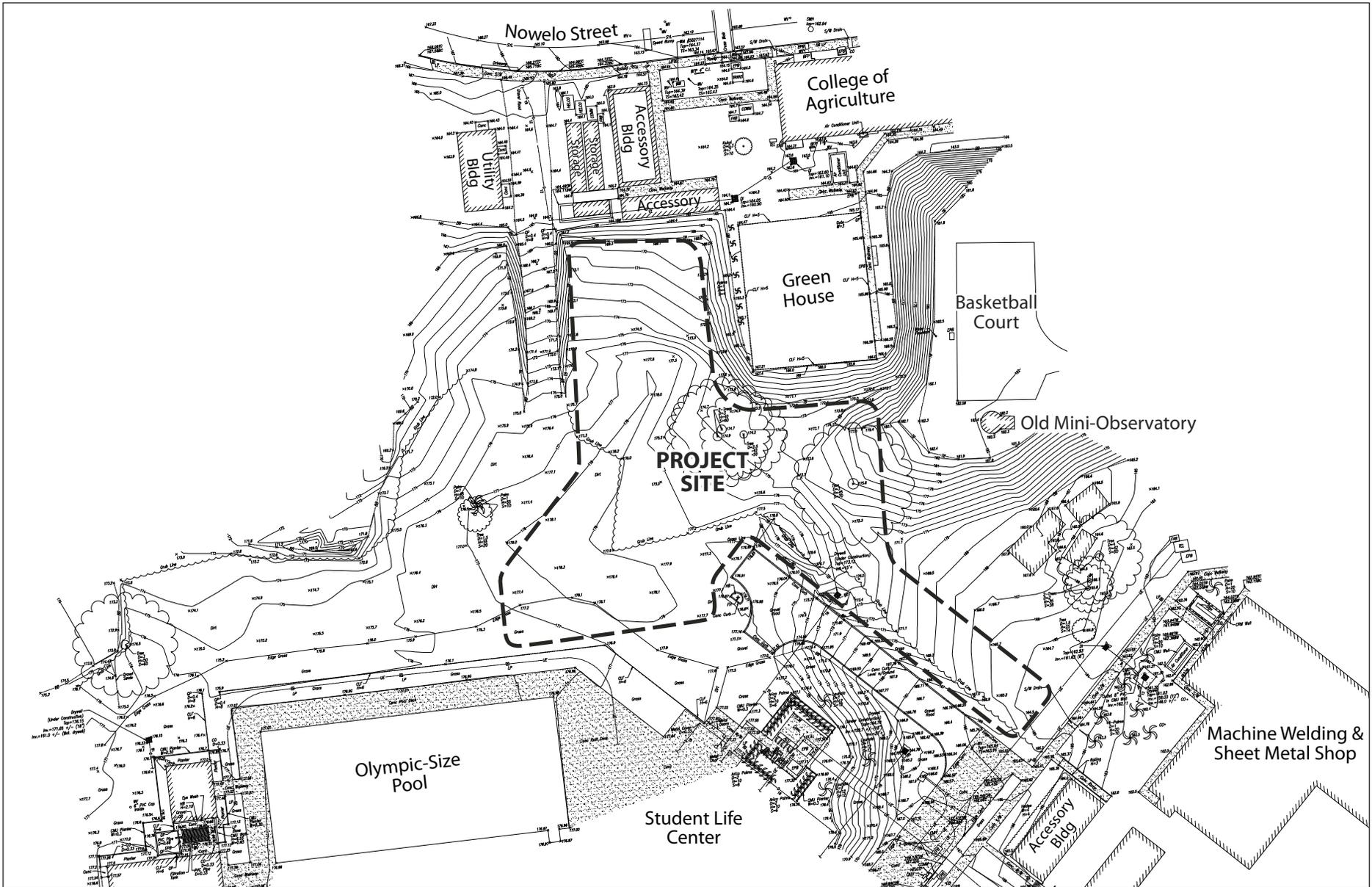
3.2 Existing Land Use and Land Tenure

UH Hilo is a four-year college within the University of Hawai'i System. With an enrollment of approximately 3,500 students, it offers baccalaureate and selected graduate degrees and certificate programs. It is comprised of a College of Agriculture, Forestry, and Natural Resource Management, College of Arts and Sciences, and College of Hawaiian Language. Its College of Continuing Education and Community Services offer special programs in English as a Second Language (ESL) and on- and off-campus credit and non-credit courses. The landowner of the UH Hilo campus is the University of Hawai'i.

The 1.6-acre project site is located at the western end of the UH Hilo campus adjacent to the recently completed Student Life Center – Phase I (see Figure 3-1). A portion of the project site was used as a construction staging area for the new student center. Another portion is being used as a perimeter landscaped slope for the adjacent green house operated by the University's College of Agriculture. Through the center portion of the site is a pedestrian pathway for students to travel between classrooms. The remaining portion of the site is overgrown with wedelia, ti plant, waist-high grass, and a variety of guava, avocado, gunpowder, and banana trees.

In addition to the Student Life Center, other facilities that surround the project site are the Machine Welding & Sheet Metal Shop, Auto Mechanic Building, College of Agriculture hall, green house, storage and utility buildings, and an old mini-observatory.

As a campus facility, the portable buildings will be integrated with and accessible from a network of existing pedestrian pathways serving the western section of the campus. An unimproved driveway from Nowelo Street to the Student Life Center construction staging area will remain and used as a service and maintenance vehicle access for the portable buildings.



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Figure 3-1
EXISTING PROJECT SITE
 University of Hawaii at Hilo
 Hilo, Hawaii

3.3 Topography

The general topography in the western section of the UH Hilo campus slopes from west to east. In the project area, however, there are natural topographic variations and some altered terrain as a result of developed campus facilities. The general elevation of the project site (around the proposed portable buildings) is 176 feet. The nearest section of the Student Life Center is at approximately 177 feet (see Figure 3-1). The old mini-observatory has a ground elevation of approximately 182 feet, and the adjacent green house has an elevation of 166 feet. Surface runoff presently occurs by sheetflow to the adjacent areas: north, east, and southeast of the project site, and discharges into existing drainage inlets and drywells.

The proposed portable buildings will require minor alterations to the existing grade. The buildings will be constructed on post and beam, which do not require a level ground such as would be required for a slab-on-grade building foundation. The proposed buildings, thus, will not alter the area's existing drainage pattern.

The proposed project will include drainage improvements to accommodate surface runoff generated by the new facility. Roof drains will be installed to connect directly with underground drainage lines that will convey the collected runoff to an outlet at the lower east end of the site. The discharge will then flow over a shallow grass swale to an existing inlet approximately 110 feet down slope from the project site. This inlet connects to a nearby existing drywell for the discharge's final disposal.

3.4 Geology and Soils

The island of Hawai'i is the youngest of all the islands in the Hawaiian Islands. It consists of five shield volcanoes: Mauna Kea, Mauna Loa, Kohala, Hualalai, and Kilauea. At least two, Mauna Loa and Kilauea, are still active and are contributing to the physical growth and configuration of the island. The UH Hilo campus is located on the lower northeastern flank of Mauna Loa which has a summit elevation of 13,680 feet.

According to the U.S. Department of Agriculture (USDA) Soil Conservation Service,² soils on the property consist of Keaukaha extremely rocky muck, 6 to 20 percent slopes (rKFD) and Pana'ewa very rocky silty clay loam, 0 to 10 percent slopes (PeC). These soils have a Capability Classification of VII and VI, respectively, which are considered unsuitable for crop agriculture, but acceptable for urban use.

A geotechnical study³ was conducted on the property to determine the suitability of the soil for the proposed buildings. In the western portion of the site, the soil is dark gray, medium dense to dense silty gravel extending to depths of about 3.5 to 8.5 feet. The remaining area is occupied by mottled brown to brown, medium stiff clayey silt extending to depths of about 0.5 to 3.5 feet.

² *Soil Survey of the Island of Hawaii, State of Hawaii*, prepared by the U.S. Department of Agriculture Soil Conservation Service in cooperation with University of Hawaii Agricultural Experiment Station, issued December 1973.

³ *Foundation Investigation, Portable Office Buildings, University of Hawaii at Hilo, Hilo, Hawaii*, prepared by Hirata & Associates, Inc., August 11, 2008.

The latter clayey silt is derived from volcanic ash, which is characterized by poor workability and moderate to high compressibility. Underlying both near-surface soils are moderately weathered, dark gray hard basalt. No groundwater or seepage water was encountered during the study's six test borings (depths 13 feet to 16 feet).

The proposed portable buildings will be constructed, per geotechnical study recommendations, with post piers to solid material beneath the surface. This form of footing would reduce the potential for excessive differential movement.

3.5 Hydrology

An average of approximately 127 inches of rain falls on Hilo (airport) annually.⁴ Some upland weather stations in Hilo report annual rainfalls of above 200 inches.

Approximately 300 feet to the west of the project site is Waiakea Stream, a water course classified as a major drainage way through the UH Hilo campus and Hilo town. Intermittent flow in the water course ultimately discharges into Hilo Bay.

As described in Section 3.4, the proposed project is not expected to encounter groundwater or seepage water within the property.

3.6 Natural Hazards

According to the Lava Flow Hazard Map, prepared by the Hawaiian Volcano Observatory (HAVO) of the U.S. Geological Survey, the island of Hawaii is classified into nine lava flow hazard zones with "Zone 1" representing the most hazardous area and "Zone 9" representing the least hazardous area. The zones are based solely on geologic criteria, including frequency of past lava flows and coverage, distance from eruptive vents, and topography that influences lava inundation. The project area is located in Lava Flow Hazard "Zone 3."

The last eruption on Mauna Loa occurred in 1984 when lava from the mountain's northeast rift flowed towards Hilo town. The flow was slow-moving and the city of Hilo immediately reacted with various emergency plans. The flow continued for several days, but eventually stopped after 21 days reaching down to approximately the 3,200-foot elevation, far above any residential areas.

Earthquakes have been experienced on the Big Island, but most are undetectable. Many of the quakes are associated with the magma or volcanic activity beneath the island. Since 1868, there have been 14 earthquakes greater than magnitude 6 on the Richter scale. Most of these occurring on the south flank of Kilauea or Mauna Loa. Honomu, Hualalai, and Kona have also experience big quakes.

The largest quakes to occur in recent years were in 1975 with a magnitude of 7.2, in 1983 with a magnitude of 6.6, and in 1989 with a magnitude of 6.1, all on the south flank of Kilauea or in the Kaoiki region. Lastly, in October 2006, a 6.7 quake hit off the coast of South Kohala.⁵ This

⁴ Climate data 1949-2007. National Oceanic and Atmospheric Administration (NOAA), National Weather Service Forecast Office, HILO WSO AP 87, HAWAII (511492), Period of Record Monthly Climate Summary

⁵ Hawaii County General Plan, 2005.

quake caused heavy damage in the northern and western sides of the island. Building structure assessments and, in some cases, building reconstruction were required for much of the damage. East Hawai'i and the project area received minor damages.

The Flood Insurance Rate Maps (FIRM), prepared by the U.S. Federal Emergency Management Agency (FEMA), identify the Waiakea Stream within the UH Hilo campus as located in "Zone AE" with a base flood elevation of approximately 166 feet near the project site. Bordering the designated "Zone AE" is a "Zone X Other Flood Areas" described as areas of 500-year flood, areas of 100-year flood with average depths of less than 1 foot or with a drainage area less than 1 square mile, and areas protected by levees from 100-year flood. The project site is situated just outside of the "Zone X Other Areas" which are determined to be outside 500-year flood plains.

Located more than 1 mile from the shoreline, the project site is not expected to be affected by flooding from tsunami inundation, as the project area is well above the High Hazard Coastal Zone⁶ of East Hawaii as well as the tsunami evacuation areas as identified on the County's Civil Defense maps for the Big Island.

Hurricanes are potential natural hazards for the project area as well as for the rest of the island. They could cause severe damage to life and property and be even more detrimental when combined with flooding. Early warning systems via the Civil Defense sirens, radio and television broadcasts, and news reports should provide students, faculty, and staff with ample preparation time to minimize or avoid life-threatening conditions.

The possibility of brush fire would be remote considering UH Hilo's urban setting and location from the dry west side of the island or upland forest reserves.

3.7 Flora and Fauna

A portion of the site is bare since it was formerly used as a construction staging area for the new Student Life Center. Another portion of the site comprises a grassy lawn or bank surrounding the College of Agriculture green house premises. The remaining portion is covered by wedelia, ti plant, waist-high grass, and a variety of guava, avocado, gunpowder, and banana trees. There are no rare, threatened, or endangered plant species.

Fauna consists of typical urban bird species, including common myna, zebra dove, spotted dove, house finch, house sparrow, Japanese white-eye, northern cardinal, and Java sparrow. Mammals would include stray dogs, feral cats, rats, mice, and mongoose. No rare, threatened, or endangered wildlife species are known to inhabit the project area. With the intensity of pedestrian use in the vicinity, the Hawaiian hoary bat and Hawaiian hawk, both classified as endangered, are not expected to occupy the project area, although they are known to roam or fly over the general Hilo vicinity.

The Newell's shearwater and dark-rumped petrel are also known for fly-overs in the Hilo area, but none have been recorded specifically around the project site.

⁶ Areas subject to potential high surf damage as identified by FIRM prepared by FEMA.

3.8 Air Quality and Noise

The quality of ambient air in the project vicinity is very good. There are no nearby land uses that typically pollute or produce poor quality air. Further, there are no major arterials or highways with heavy vehicular traffic that generates high-level emissions into the air.

Typical sounds generated by college campus daily operations are predominant in the project area including low-level noise from student and faculty traveling to and from class, vehicular parking activities, and low-volume traffic on Kawili Street and Nowelo Street. No noise is generated that would exceed the State's noise regulations.

3.9 Scenic Resources

The project site is located in a perimeter section of the UH Hilo campus. The new portable buildings will consist of module units similar to the temporary buildings housing the HawCC Nursing and Allied Health Program on Kapiolani Street. The visual color and overall design of the new buildings are expected to maintain the existing visual character of the project area. The low-profile buildings will not interfere with any long-range views of scenic natural resources or cultural amenities.

3.10 Archaeological and Cultural Resources

The State Historic Preservation Division (SHPD) indicated that a previous archaeological inventory survey was conducted on the property and that no historic sites were found.⁷ As a precaution, however, the agency indicated that in the event that historic resources, including human skeletal remains, cultural materials, lava tubes, and lava blisters/bubbles are identified during the project's construction, all work in the immediate vicinity of the find will need to cease. The find needs to be protected from additional disturbance and SHPD needs to be contacted immediately.

A Cultural Impact Assessment⁸ was conducted by Cultural Surveys Hawaii on the project area in late 2008. In a background review of the lands surrounding the UH Hilo, it was revealed that Waiākea with its rich natural resources of forests and sea, had long been a center of habitation for Hawaiians and their legends and folklore. Notably, many legends of Waiākea have been associated with Hawaiian royalty since the 16th century and as a gathering place for a number of ceremonies. Many Hawaiian gods and goddesses frequented Waiākea, including Pele, Hi'iaka, and Pana'ewa.

Based on historical documents and oral-historical information, Cultural Surveys believes that the project area was once part of an extensive upland agricultural zone which included agriculturally productive areas and scattered habitation sites.

⁷ SHPD letter to Belt Collins Hawaii Ltd., July 13, 2008.

⁸ *Cultural Impact Assessment for Proposed Portable Buildings at the University of Hawaii at Hilo, Waiākea Ahupua'a, South Hilo District, Hawaii Island TMK:[3] 2-4-001:167*. December 2008. (Draft)

In recent archaeological research of the project area and its immediate vicinity, results show no historic properties due to the extensive land modifications that have occurred with the establishment of the UH Hilo campus.

In interviews with long-time residents and persons familiar with the history and culture of the area, the following notes were made:

- a) The remaining native forested area adjacent to the proposed project is a gathering place for cultural practitioners and other students of Hawaiian course to easily access native plants.
- b) At least three heiau exist in the Waiākea region.
- c) There are a number of Hawaiian folklore of Waiākea.
- d) OHA has voiced the need to develop a “paradigm shift in assessments” that will identify the real impacts on cultural resources and practices.

To address any potential impact on cultural resources in the project area, Cultural Surveys recommended that Hale Kuamo‘o and/or Ka Haka ‘Ula O Ke‘elikōlani/College of Hawaiian Language at the UH Hilo be consulted in the project’s planning and design process.

4 SOCIO-ECONOMIC SETTING

4.1 Social Considerations

UH Hilo is located in the suburbs approximately 1-1/2 miles from the downtown district of Hilo. With its beginning in 1941 as Hawaii Vocational School, UH Hilo became in 1970 a part of the statewide University of Hawai‘i System.

The growth of Hilo has occurred in the direction of the campus. Residential homes now surround the campus on the north, east, and south sides. Waiakea Educational Complex is located to the southeastern border. To the west is the University Park and lands for future expansion of the UH Hilo.

Student housing is available on campus and in nearby off-campus apartments. Although many students’ personal needs are provided at student dorms, apartments, and student campus center, public and community services are provided as well in the central business district of town and in convenient nearby facilities. Access to these facilities and services are well established by roadways and public and private transportation systems. Hele-On bus, a County-operated bus system, has a bus stop at the main entrance of the UH Hilo campus.

4.2 Economic Considerations

The main industries in Hilo are tourism, agriculture, professional and business services, and government. The UH Hilo is a major employer with approximately 600 faculty, staff, and maintenance personnel. It has a day-time student population of 3,457, which generates secondary

beneficial effects on nearby as well as area-wide businesses and services. UH Hilo is a state facility supported by public revenues.

5 PUBLIC FACILITIES AND SERVICES

5.1 Circulation and Traffic

Access to UH Hilo is provided by West Kawili Street, West Lanikaula Street, and Kapiolani Street, all County public roads. A secondary access is provided to the campus by Nowelo Street from Komohana Street through University Park. On-site parking is provided throughout the campus and are accessible from any of the public roads.

Parking for the new portable buildings will be provided by existing parking lots within the UH Hilo campus. Since existing faculty and staff will occupy the new buildings, no additional parking spaces will be required. Parking spaces for the faculty and staff may be reassigned to locations nearer the portable buildings.

The Hawai'i County Mass Transit Agency provides public transportation in Hilo and around the island on its Hele-On bus. There are several bus lines in Hilo, and a number of them make stops at the entrance to the UH Hilo campus. The Transit Agency also offers a Shared Ride Taxi service that provides door-to-door transportation for as little as \$2.00 within the urbanized area of Hilo.

In the short-term, the portable buildings will be used temporarily by the relocated faculty and staff of the EKH who already have assigned on-campus parking. During this period, no additional traffic would be generated by the new buildings.

In the long-term, when the faculty and staff return to EKH and new uses occupy the portable buildings, traffic volumes on Kapiolani Street, West Kawili Street, and West Lanikaula Street may increase. The additional traffic, however, is expected to be nominal considering the minor size of the new facilities.

5.2 Water, Sewer, Electricity, and Telephone

Water to UH Hilo is provided by the County Department of Water Supply, electricity by the Hawaii Electric Light Co. Inc., sewer by County Department of Environmental Management, and telephone by Hawaiian Telcom. These services are located and available in West Kawili Street, West Lanikaula Street, and Kapiolani Street.

Although the County sewage treatment plant located in the airport industrial area is near capacity, the proposed portable buildings will have one men's room, one women's room, and a janitor's washroom. Water use and wastewater disposal are expected to be minor with no significant impact on the County's public utility system.

5.3 Solid Waste

Solid waste generated by UH Hilo is collected by a private contractor and hauled to the South Hilo Landfill operated by the County of Hawai'i. The solid waste that is generated by the portable offices will be nominal and will be combined with the main waste stream generated by the entire UH Hilo campus.

5.4 Public Services and Facilities

The County's Police Department is headquartered in Hilo and has substations throughout the island. The Police Department's Hilo Station provides security for the South Hilo District and UH Hilo.

The County's Fire Department provides fire protection services throughout the island. The Kawailani Fire Station, located on Kawailani Street approximately 1.0 mile from the UH Hilo, is the closest station to the campus and provides 24-hour full-time service. It has both fire protection and emergency medical services. There are three other stations located in the vicinity that could provide necessary back-up support, if needed.

The Hilo Medical Center, a full-service medical facility on Waianuenue Avenue, is the only hospital in town. It is located approximately 2.5 miles from the project site. There are also a number of clinics in the area to provide individuals and families with various medical and health care services. Private physicians specializing in different medical practices have offices in and around Hilo.

Public education is provided by the State Department of Education at elementary, middle, and high schools throughout the island. Students graduating from high school can apply to UH Hilo or the Hawaii Community College for higher education.

Recreational opportunities are available in a wide range of choices. On the UH Hilo campus, there is the UH Hilo athletic complex that contains a multi-purpose field, baseball and softball fields, and tennis complex. The first phase of the recently completed Student Life Center located next to the proposed portable buildings provides basketball courts, Olympic-size swimming pool, and a fitness center.

Located 1.3 miles from the UH Hilo campus, an auditorium, stadium, swimming pool, tennis courts, and baseball fields are all part of the 56-acre Ho'olulu Complex. There are a variety of neighborhood parks throughout Hilo town and public beach parks along the Hilo shoreline.

6 RELATIONSHIP TO PUBLIC LAND USE POLICIES

6.1 Hawai'i State Plan

The proposed project complies with relevant sections of the Hawai'i State Plan, under Hawai'i Revised Statutes (HRS) Chapter 226, which states that in order to achieve the State's educational objectives, it shall be the policy of the State to:

Support educational programs and activities that enhance personal development, physical fitness, recreation, and cultural pursuits of all groups. (HRS 226-21(b)(1))

Ensure the provision of adequate and accessible educational services and facilities that are designed to meet individual and community needs. (HRS 226-21(b)(2))

Explore alternatives for funding and delivery of educational services to improve the overall quality of education. (HRS 226-107 (8))

Additionally, the proposed project is unique in that it would fulfill short- and long-term objectives, utilize funds prudently, and ensure undisrupted services.

6.2 State Land Use Law

The UH Hilo campus is located on land designated by the State Land Use Commission (LUC) as “Urban.” Under HRS Chapter 205, which establishes the land use regulations for the LUC, the proposed portable office buildings are a permitted use.

6.3 State Environmental Policy

The Hawai‘i State Environmental Policy, as established by HRS Chapter 344, is intended to encourage productive and enjoyable harmony between people and their environment, promote efforts which will prevent or eliminate damage to the environment and biosphere, stimulate the health and welfare of humanity, and enrich the understanding of the ecological systems and natural resources important to the people of Hawai‘i.

Policy 1 of Section 344-3 states that it shall be the policy of the State through its programs, authorities, and resources to “conserve the natural resources, so that land, water, mineral, visual, air, and other natural resources are protected by controlling pollution, by preserving or augmenting natural resources, and by safeguarding the State’s unique natural environmental characteristics in a manner which will foster and promote the general welfare, create and maintain conditions under which humanity and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of the people of Hawaii.”

UH Hilo is a learning institution that educates and heightens awareness of the environment we live in. Many of UH Hilo’s academic programs utilize the island as a learning laboratory. The island of Hawai‘i is larger than all the other Hawaiian Islands combined (about the size of Connecticut), and is comprised of 13 different climate zones. The island also has two active volcanoes, a tropical rainforest, and is the premiere spot in the world for astronomy atop 13,796-foot Mauna Kea.

Faculty and students in certain degree programs engage in environmental projects that range from geology, marine coastal habitats, tropical rain forests, mesic and dry forests and shrublands, and rivers. Lessons in conservation help build ecological understanding and establish a foundation and awareness of real world environmental events and consequences.

6.4 Hawai'i County General Plan

The Hawai'i County General Plan (GP), updated and adopted in February 2005, designates the UH Hilo campus as "University," which is characterized by the GP as "public university, including ancillary public uses, residential, and support commercial uses." The proposed portable office buildings are consistent with the GP land use policies.

6.5 Hilo Community Development Plan

The County of Hawai'i Planning Department will be seeking funding for an update of the 1975 Hilo Community Development Plan, which is expected to be completed within a two-to-three year timeframe. The existing Hilo Community Development Plan integrated the stated objectives, policies, and goals of the 1971 General Plan and also stated as an objective, provisions for adequate public facilities, with a direct emphasis on the expansion of the UH-Hilo campus. According to the Hilo Community Development Plan, the project area is designated as Low-Density Urban Expansion.

6.6 County Zoning Ordinance

The County zoning for the project area is Single-Family Residential (RS-10). According to Section 25-2-61 of the Hawai'i County Zoning Ordinance, college facilities in the RS-10 zone are subject to a Use Permit Application and the review and approval of the Hawai'i County Planning Commission.

6.7 Special Management Area

The UH Hilo campus is located more than one mile from the ocean. It is not located in the Special Management Area (SMA) of the County of Hawai'i and is not subject to the SMA Rules and Regulations.

6.8 Required Permits and Approvals

The following are required State and County land use permits and approvals for the proposed project.

PERMITS/APPROVALS	APPROVING AGENCY
State of Hawai'i	
None	
County of Hawai'i	
Plan Approval	Planning Department
Building Permit	Planning Department
Grading Permit	Planning Department

7 SUMMARY OF MAJOR IMPACTS

7.1 Construction Methodology and Anticipated Impacts

Construction of the portable buildings will require minor site preparation and the installation of prefabricated module units. The foundation of the portable units will include on-site installation of posts and beams to support the units. The posts will be driven into the ground to solid rock or gravel for stability. With a post-and-beam foundation, very little site preparation and grading will be necessary. As a result, minor dust, erosion, and sedimentation are expected to occur. These impacts are temporary and will not result in a long-term degradation of the environment.

Noise will be generated by construction equipment during the site preparation stage as well as in the building construction phase. The noise, however, will be temporary and minor in scale considering the size of the construction project. Since the project is located in the midst of existing campus facilities, the contractor will provide safe passageways for pedestrians around the construction site.

7.2 Operations and Anticipated Impacts

Once completed, the new portable buildings will operate as a typical University office facility. Administrative and faculty members will occupy the offices with occasional visitations from students. Normal hours of operations would be from 7:45 a.m. to 4:30 p.m. Usual utilities would be required to support the operations of the building include water, sewer, electricity, and telephone. The generated demand on these utilities would be minor considering the modest number of building occupants. Irrigation water would be required for the building landscaping, but the quantity should be minor.

Parking for the new portable buildings will be provided by existing parking lots located throughout the UH Hilo campus. Since existing faculty and staff will occupy the new buildings, no additional parking spaces will be required. Parking spaces for the faculty and staff may be reassigned to locations nearer the portable buildings.

Maintenance of the portable buildings will be performed by the regular maintenance staff of the UH Hilo. No increase in maintenance staff is anticipated.

The portable buildings will operate under the University's regular operating budget.

8 MITIGATION MEASURES

During construction, the contractor would employ various mitigation measures to control fugitive dust. Possible measures include water sprinkling of exposed dirt areas, installation of dust screens, planting of groundcover immediately after completion of grading, covering of dirt stock piles, and refraining from earthwork activities during periods of strong winds. These measures could be specifically stated in the construction drawings and made a part of the construction contract.

Construction noise should be a minor impact for this construction project which involves the installation of prefabrication module units and minor grading for post and beam foundation. In any event, construction activities will comply with the provisions of HAR Chapter 11-46, *Community Noise Control*. Compliance with the DOH regulations will be part of the project's construction contract and the responsibility of the selected contractor.

Mitigation measures will be employed by the construction contractor to address potential stormwater runoff and sedimentation that might discharge to adjacent areas during construction. The contractor will develop, if necessary, a best management practices (BMP) plan for County review. The plan will describe how on-site generated runoff and sediment movement will be controlled and prevented from entering other areas, and how the applicant would implement the plan.

The grading plan will demonstrate how the project will meet all grading standards designed to safeguard life and limb, protect property, promote public welfare, and preserve and enhance the natural environment, including but not limited to, water quality.

Removal and disposal of construction debris generated by project construction will follow a debris management plan prepared by the contractor and reviewed by the County.

The project site is less than one acre in size and will not require a Nationwide Pollutant Discharge Elimination System Permit (NPDES) from the State DOH.

9 ALTERNATIVES CONSIDERED

9.1 No Action

One of the alternatives to the proposed action was "no action." Under this alternative, the proposed portable buildings would not be constructed and the existing site would remain in its existing condition. There would be no alteration to the terrain, no removal of vegetation, and no use of existing infrastructure in the area.

On the other hand, there would be no temporary quarters for the occupants of EKH who must vacate the premises in order for the building's AC system to be upgraded. Relocating to existing on-campus facilities could result in overcrowding and doubling up on available spaces. This may not be conducive to satisfactory working conditions that are appropriate to a University setting.

9.2 Alternative Location

An alternative site was explored and determined to be inferior to the present site. The alternative site is located on the lawn area fronting the College Hall and existing portable buildings on Kapiolani Street. Placement of the buildings on that site would have impinged on the visual quality of the UH Hilo campus. Its temporary appearance would be highly noticeable from West Lanikaula Street which is one of the main accesses to the campus. Further, pedestrian access to the site is limited due to its remote location compared to the more accessible present site.

9.3 Alternative Designs

Alternative building designs were considered during preliminary planning of the portable buildings. Standard wood frame module structures on post and beam was the original choice for construction. This building type was inexpensive and easy to build. However, after additional investigation, the UH Hilo found a more lasting structure that was easier to maintain and more economical to operate in the long term.

10 PRELIMINARY DETERMINATION

This EA demonstrates that the proposed action will have no significant adverse impacts on the environment and that an Environmental Impact Statement (EIS) would not be warranted. A Finding of No Significant Impact (FONSI) is, therefore, anticipated for this project.

11 FINDINGS AND REASONS SUPPORTING THE ANTICIPATED DETERMINATION

In accordance with Hawai'i Administrative Rules 11-200-12, the following findings and reasons demonstrate that the proposed action will have no significant adverse impact on the environment, and consequently, support the above-anticipated determination. The order in which these findings are presented follow the list of OEQC's "significance criteria" which is used in assessing a project's impact on the environment.

- (1) *Involves an irrevocable commitment to loss or destruction of any natural or cultural resource.*

Field surveys of the project site have found no significant natural or cultural resources. The site is located in the midst of the UH Hilo campus in an area that is surrounded by existing and recently constructed UH Hilo facilities

- (2) *Curtails the range of beneficial uses of the environment.*

The proposed action calls for the construction of portable buildings that would serve the UH Hilo campus. The proposed facility does not require changes that would curtail the range of beneficial uses of the environment.

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

As demonstrated in this document (Section 6.3), the proposed action is consistent with the State's long-term environmental policies and guidelines as expressed in HRS Chapter 344.

- (4) *Substantially affects the economic or social welfare of the community or state.*

The proposed action is expected to sustain and improve the positive economic effects that a public facility provides to a community. Moreover, the construction activity associated

with the proposed action will generate jobs and infuse business and personal income into the local economy. No negative effects on the social welfare of the local community are anticipated.

(5) *Substantially affects public health.*

The proposed action will not result in the use of hazardous materials or employ a construction methodology that would be detrimental to the public health and safety of the area residents.

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

There will be no significant adverse social impacts generated by the proposed action. The portable buildings would fulfill temporary as well as long-term plans for the UH Hilo campus. The proposed action would not generate any undue increase in campus population, negatively impact traffic, nor overburden existing public facilities and services.

(7) *Involves a substantial degradation of environmental quality.*

The proposed action will not involve major grading or alteration to the land. No long-term degradation of the natural environment is anticipated.

(8) *Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger action.*

The proposed action is a one-time development and not part of a multi-phased or larger development on the site. There are no commitments or future plans for expansion of the portable buildings, though usage may change over time.

(9) *Substantially affects a rare, threatened, or endangered species, or its habitat.*

No federally nor state-listed rare, threatened, or endangered wildlife or flora species will be affected by the proposed action.

(10) *Detrimentially affects air or water quality or ambient noise levels.*

The anticipated impacts associated with project construction, such as dust and noise, are minor and temporary. These impacts would be minimized by implementation of mitigation measures in accordance with applicable laws, statutes, ordinances, rules and regulations of the federal, state, and county governments. Erosion and sedimentation control measures and best management practices (BMPs) will be employed to prevent construction-related runoff from impacting adjacent properties. No State waters are located within or in close proximity to the property, hence no project impacts are expected to occur on such waters.

(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.*

Flooding from severe storm runoff would not be a hazard for the new facility. Additionally, the project site is not located in an identified tsunami inundation zone or a geologically hazardous area.

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

The selected location for the single-story structures will result in no visual impact on the general public.

(13) *Requires substantial energy consumption.*

The proposed action would not require substantial energy consumption during its operations. It does not involve manufacturing or other activities typical of substantial energy use.

12 REFERENCES

County of Hawai'i. 2005. *General Plan*.

Group 70 International, Inc. August 2006. *University of Hawai'i at Hilo Student Life Center – Phase I, Final Environmental Assessment*.

Hirata & Associates, Inc. August 11, 2008. *Foundation Investigation, Portable Office Buildings, University of Hawaii at Hilo, Hilo, Hawaii*.

National Oceanic and Atmospheric Administration, National Weather Service Forecast Office, HILO WSO AP 87, HAWAII (511492, Period of Record Monthly Climate Summary).

PBR Hawaii. May 2007. *University of Hawai'i at Hilo, Science Complex and Lanikaula Off-Site Parking Lot*

U.S. Department of Agriculture Soil Conservation Service. December 1973. *Soil Survey of the Island of Hawaii, State of Hawaii*.

U.S. Federal Emergency Management Agency, Flood Insurance Rate Maps.

APPENDICES

Appendix A
Preconsultation Letters

**Agency Comments Received for Present Project Site
Located Adjacent to the Student Life Center**

LINDA LINGLE
GOVERNOR OF HAWAII



RECEIVED

2008 JUL 21 PM 2:18

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

RUSSELL Y. TSUJI
FIRST DEPUTY

KEN C. KAWAHARA
DEPUTY DIRECTOR - WATER

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

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

July 13, 2008

Glen T. Koyama
Belt Collins Hawaii Ltd.
2153 North King Street, Suite 200
Honolulu, HI 96819-4554

LOG NO: 2008.2675
DOC NO: 0807MD39
Archaeology

Dear Mr. Koyama:

**SUBJECT: Chapter 6E-8 Historic Preservation Review –
Request for Comment on the Proposed Site for Portable Office/Classroom
Buildings at the University of Hawaii at Hilo
Waiakea Ahupua`a, South Hilo District, Island of Hawai`i
TMK: (3) 2-4-001:167 (por.)**

Thank you for the opportunity to comment on the aforementioned project, which we received on July 8, 2008.

We determine that **no historic properties will be affected** by this undertaking because:

- Intensive cultivation has altered the land
- Residential development/urbanization has altered the land
- Previous grubbing/grading has altered the land
- An accepted archaeological inventory survey (AIS) found no historic properties
- SHPD previously reviewed this project and mitigation has been completed
- Other: *SHPD has previously reviewed and approved an Archaeological Assessment (Corbin 2006) which found no historic properties for this site (Log No. 2006.2730, Doc No. 0608JT37).*

In the event that historic resources, including human skeletal remains, cultural materials, lava tubes, and lava blisters/bubbles are identified during the construction activities, all work needs to cease in the immediate vicinity of the find, the find needs to be protected from additional disturbance, and the State Historic Preservation Division, Hawaii Island Section, needs to be contacted immediately at (808) 981-2979.

If you have any questions about this letter please contact Morgan Davis at the Hawaii Island Section at (808) 981-2979.

Aloha,

Digitally signed by Nancy
A. McMahon
Date: 2008.07.13 16:40:51
-10'00'

Nancy McMahon,
Archaeology and Historic Preservation Manager
State Historic Preservation Division

Harry Kim
Mayor



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Christopher J. Yuen
Director

Brad Kurokawa, ASLA
LEED® AP
Deputy Director

2008 OCT 24 PM 1: 56

County of Hawaii
PLANNING DEPARTMENT

101 Pauahi Street, Suite 3 • Hilo, Hawaii 96720-4224
(808) 961-8288 • FAX (808) 961-8742

October 23, 2008

Mr. Glen T. Koyama
Belt Collins Hawaii Ltd.
2153 North King Street, Suite 200
Honolulu, HI 96819-4554

Dear Mr. Koyama:

SUBJECT: Environmental Assessment
Applicant: University of Hawaii at Hilo
Land Owner: State of Hawaii
Project: Updated Proposed Portable Buildings
TMK: 2-4-1:Portion of 167

This is in response to your request for comments on the above-referenced project.

We understand that the site for the proposed portable office/classroom buildings has changed and will now be located adjacent to the newly constructed Student Life Center (SLC).

The four inter-connecting modules will be situated on a vacant site between the SLC and College of Agriculture facilities.

We have no further comments to add to our October 5, 2007 letter.

If you have questions, please feel free to contact Esther Imamura of this office at 961-8288, extension 257.

Sincerely,

A handwritten signature in cursive script, appearing to read "Chris Yuen".

CHRISTOPHER J. YUEN
Planning Department

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Harry Kim
Mayor



RECEIVED

Bobby Jean Leithead Todd
Director

2008 OCT 29 PM 2:34

Nelson Ho
Deputy Director

BELT COLLINS HAWAII

County of Hawai'i

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

25 Aupuni Street • Hilo, Hawai'i 96720
(808) 961-8083 • Fax (808) 961-8086
http://co.hawaii.hi.us/directory/dir_envmng.htm

October 27, 2008

Mr. Glen T. Koyama
Belt Collins Hawai'i, Ltd.
2153 North King Street, Suite 200
Honolulu, HI 96819-4554

Re: Environmental Assessment
Updated Proposed Portable Buildings
University of Hawai'i at Hilo
South Hilo, Hawai'i

Dear Mr. Koyama,

We offer the following comments on the subject Environmental Assessment:

Wastewater Division

Wastewater flows from the portable buildings should be accounted for in the final sewer study.

If you have any questions regarding this correspondence, please contact Ms. Dora Beck, P.E.,
Wastewater Division Chief at 808-961-8513 (dbeck@co.hawaii.hi.us).

Thank you for offering the opportunity to comment on your project.

Sincerely,

Bobby Jean Leithead Todd
DIRECTOR

enclosure

cc: Dora Beck, WWD Chief

Harry Kim
Mayor



RECEIVED

Lawrence K. Mahuna
Police Chief

2008 OCT 20 PM 1:55

Harry S. Kubojiri
Deputy Police Chief

County of Hawaii BELT COLLINS HAWAII

POLICE DEPARTMENT

349 Kapiolani Street • Hilo, Hawai'i 96720-3998
(808) 935-3311 • Fax (808) 961-8865

October 16, 2008

Mr. Glen T. Koyama
Belt Collins Hawaii Ltd.
2153 North King Street, Suite 200
Honolulu, Hawaii 96819-4554

Dear Mr. Koyama:

**Subject: Environmental Assessment
Updated Proposed Portable Buildings
University of Hawaii at Hilo
South Hilo, Hawaii**

Staff, upon reviewing the provided documents and visiting the proposed site, does not anticipate any significant impact to traffic and/or public safety concerns.

Thank you for allowing us the opportunity to comment.

Sincerely,


DEREK D. PACHECO
ASSISTANT POLICE CHIEF
AREA I OPERATIONS

ST:lli

**Agency Comments Received for Initial Project Site
Located at the Corner of
West Lanikaula Street and Kapiolani Street**

LINDA LINGLE
GOVERNOR OF HAWAII



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

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2007 SEP 20 PM 2:07

BELT COLLINS HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

September 17, 2007

Belt Collins Hawaii Ltd.
2153 North King Street Suite 200
Honolulu, Hawaii 96819-4554

Attention: Mr. Glen Koyama

Gentlemen:

Subject: Environmental Assessment for Proposed Portable Buildings, University of
Hawaii at Hilo, South Hilo, Hawaii, Tax Map Key: (3) 2-4-1:portion 167

Thank you for the opportunity to review and comment on the subject matter. The Department of Land and Natural Resources has no comment to offer on the subject matter. Should you have any questions, please feel free to call our office at 587-0433. Thank you.

Sincerely,

A handwritten signature in black ink, appearing to read "Russell Y. Tsuji".

Russell Y. Tsuji
Administrator

PHONE (808) 594-1888



RECEIVED

FAX (808) 594-1865

2007 OCT -3 PM 1: 50

BELT COLLINS HAWAII

STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAII 96813

HRD07/3229

September 28, 2007

Glen T. Koyama
Belt Collins Hawai'i Ltd.
2153 North King St., Ste 200
Honolulu, HI 96819-4554

RE: Request for preliminary input on Environmental Assessment for construction of portable office buildings at the University of Hawai'i at Hilo.

Dear Glen T. Koyama,

The Office of Hawaiian Affairs (OHA) is in receipt of your September 14, 2007, request for preliminary comments on the above proposed project, which calls for the construction of five interconnecting portable buildings that will contain 40 offices. OHA offers the following comments.

OHA requests the applicant's assurances that should iwi kūpuna or Native Hawaiian cultural or traditional deposits be found during the construction of the portable buildings, work will cease, and the appropriate agencies will be contacted pursuant to applicable law.

Thank you for the opportunity to comment. If you have further questions, please contact Sterling Wong (808) 594-0248 or e-mail him at sterlingw@oha.org.

Sincerely,

A handwritten signature in black ink, appearing to read "Clyde W. Nāmu'o".

Clyde W. Nāmu'o
Administrator

Harry Kim
Mayor



RECEIVED

2007 OCT -9 PM 1:30

Christopher J. Yuen
Director

Brad Kurokawa, ASLA
LEED® AP
Deputy Director

County of Hawaii
PLANNING DEPARTMENT

101 Pauahi Street, Suite 3 • Hilo, Hawaii 96720-4224
(808) 961-8288 • FAX (808) 961-8742

October 5, 2007

Mr. Glen T. Koyama
Belt Collins Hawaii Ltd.
2153 North King Street, Suite 200
Honolulu HI 96819-4554

Dear Mr. Koyama:

SUBJECT: Pre-Environmental Assessment Consultation
Applicant: University of Hawaii at Hilo
Land Owner: State of Hawaii
Project: Portable Buildings
TMK: 2-4-1:Portion of 167

This is in response to your request for comments on the above-referenced project.

According to your submittal, the University of Hawaii at Hilo proposes to construct 5 one-story interconnecting buildings containing 40 offices. It will be located in the northeastern section of the campus along Kapiolani Street.

Although initially it will be used for faculty and staff while the Edith Kanaka'ole Hall's air-conditioning system is upgraded, the proposed new structures will remain for use by other staff personnel.

We have the following to offer on the subject parcel:

1. This parcel is designated Urban by the State Land Use Commission.
2. The General Plan designation is University, which is characterized as "Public university, including ancillary public uses, residential, and support commercial uses".
3. The County zoning is Single-Family Residential (RS-10).

Mr. Glen T. Koyama
Belt Collins Hawaii Ltd.
Page 2
October 5, 2007

4. The project is not located within the County's Special Management Area.
5. Plan Approval is required to establish the proposed structures.

Please provide us with a copy of the Draft Environmental Assessment for our review and file.

If you have questions, please feel free to contact Esther Imamura of this office at 961-8288, extension 257.

Sincerely,



CHRISTOPHER J. QUEN
Planning Department

ETI:pak

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Harry Kim
Mayor

Bobby Jean Leithhead-Todd
Director

Nelson Ho
Deputy Director

County of Hawai'i
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
25 Aupuni Street • Hilo, Hawai'i 96720
(808) 961-8083 • Fax (808) 961-8086
http://co.hawaii.hi.us/directory/dir_cemmg.htm

October 5, 2007

Mr. Glen T. Koyama
BELT COLLINS HAWAII LTD.
Belt Collins Hawai'i Ltd.
2153 North King Street, Suite 200
Honolulu, HI 96819-4554

Re: Environmental Assessment
Proposed Portable Buildings
University of Hawai'i at Hilo
South Hilo, Hawai'i

Dear Mr. Koyama,

Our department offers the following comment:

- Wastewater flows from the portable buildings should be accounted for in the final sewer study.

Thank you for allowing us to review and comment on the subject Environmental Assessment.

Sincerely,

Bobby Jean Leithhead-Todd
DIRECTOR

cc: TSS
WWD

County of Hawai'i is an Equal Opportunity Provider and Employer.



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DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAII 11: 24
345 KEKŪANAŌ'A STREET, SUITE 20 • HILO, HAWAII 96720
TELEPHONE (808) 961-8050 • FAX (808) 961-8657
Belt Collins Hawaii

October 4, 2007

Mr. Glen T. Koyama
Belt Collins Hawaii, Ltd.
2153 North King Street, Suite 200
Honolulu, HI 96819-4554

**PRE-ENVIRONMENTAL ASSESSMENT CONSULTATION
PROPOSED PORTABLE BUILDINGS AT THE UNIVERSITY OF HAWAII AT HILO
TAX MAP KEY 2-4-001:167 (PORTION)**

This is in response to your Pre-Environmental Assessment letter dated September 14, 2007.

Water can be made available from an existing 8-inch waterline within West Lanikaula Street fronting the proposed project site. Prior to issuing a water commitment for the project, the Department would request estimated maximum daily water usage calculations prepared by a professional engineer licensed in the State of Hawai'i for review. After review of the calculations, the Department will determine the water commitment deposit amount, facilities charges due, and other conditions for final approval.

Please be informed that the proposed facility will require that 2,000 gallons per minute be available at the site for fire protection.

In addition, any meter(s) serving the proposed project will require the installation of a reduced pressure type backflow prevention assembly within five feet of the meter on private property. The Department must inspect and approve its installation prior to commencement of water service.

Should there be any questions, please contact Mr. Finn McCall of our Water Resources and Planning Branch at 961-8070, extension 255.

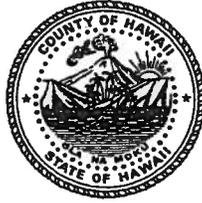
Sincerely yours,


for Milton D. Pavao, P.E.
Manager

FM:dfg

... Water brings progress...

Harry Kim
Mayor



RECEIVED

Lawrence K. Mahuna
Police Chief

2007 SEP 27 PM 1: 56

Harry S. Kubojiri
Deputy Police Chief

County of Hawaii BELT COLLINS HAWAII

POLICE DEPARTMENT

349 Kapiolani Street • Hilo, Hawaii 96720-3998
(808) 935-3311 • Fax (808) 961-8869

September 24, 2007

Mr. Glen T. Koyama
Belt Collins Hawaii Ltd.
2153 North King Street, Suite 200
Honolulu, Hawaii 96819-4554

Dear Mr. Koyama:

**Subject: Environmental Assessment
Proposed Portable Buildings
University of Hawaii at Hilo
South Hilo, Hawaii**

Staff, upon reviewing the provided documents and visiting the proposed site, does not anticipate any significant impact to traffic and/or public safety concerns.

Thank you for allowing us the opportunity to comment.

Sincerely,


JAMES M. DAY
ASSISTANT POLICE CHIEF
AREA I OPERATIONS

KV:lli

Harry Kim
Mayor



RECEIVED

2007 SEP 21 PM 2: 10

Darryl J. Oliveira
Fire Chief

Glen P. I. Honda
Deputy Fire Chief

BELT COLLINS HAWAII
County of Hawaii

FIRE DEPARTMENT

25 Aupuni Street • Suite 103 • Hilo, Hawai'i 96720
(808) 981-8394 • Fax (808) 981-2037

September 18, 2007

Mr. Glen Koyama
Belt Collins Hawaii Ltd.
2153 North King Street
Suite 200
Honolulu, Hawaii 96819-4554

SUBJECT: ENVIRONMENTAL ASSESSMENT
PROPOSED PORTABLE BUILDINGS
UNIVERSITY OF HAWAII AT HILO
SOUTH HILO, HAWAII

In regards to the above-mentioned environmental assessment, the following shall be in accordance:

Fire apparatus access roads shall be in accordance with UFC Section 10.207:

"Fire Apparatus Access Roads

"Sec. 10.207. (a) General. Fire apparatus access roads shall be provided and maintained in accordance with the provisions of this section.

"(b) Where Required. Fire apparatus access roads shall be required for every building hereafter constructed when any portion of an exterior wall of the first story is located more than 150 feet from fire department vehicle access as measured by an unobstructed route around the exterior of the building.

"EXCEPTIONS: 1. When buildings are completely protected with an approved automatic fire sprinkler system, the provisions of this section may be modified.

"2. When access roadways cannot be installed due to topography, waterways, nonnegotiable grades or other similar conditions, the chief may require additional fire protection as specified in Section 10.301 (b).



"3. When there are not more than two Group R, Division 3 or Group M Occupancies, the requirements of this section may be modified, provided, in the opinion of the chief, fire-fighting or rescue operations would not be impaired.

"More than one fire apparatus road may be required when it is determined by the chief that access by a single road may be impaired by vehicle congestion, condition of terrain, climatic conditions or other factors that could limit access.

"For high-piled combustible storage, see Section 81.109.

"(c) **Width.** The unobstructed width of a fire apparatus access road shall meet the requirements of the appropriate county jurisdiction.

"(d) **Vertical Clearance.** Fire apparatus access roads shall have an unobstructed vertical clearance of not less than 13 feet 6 inches.

"EXCEPTION: Upon approval vertical clearance may be reduced, provided such reduction does not impair access by fire apparatus and approved signs are installed and maintained indicating the established vertical clearance.

"(e) **Permissible Modifications.** Vertical clearances or widths required by this section may be increased when, in the opinion of the chief, vertical clearances or widths are not adequate to provide fire apparatus access.

"(f) **Surface.** Fire apparatus access roads shall be designed and maintained to support the imposed loads of fire apparatus and shall be provided with a surface so as to provide all-weather driving capabilities." (20 tons)

"(g) **Turning Radius.** The turning radius of a fire apparatus access road shall be as approved by the chief." (45 feet)

"(h) **Turnarounds.** All dead-end fire apparatus access roads in excess of 150 feet in length shall be provided with approved provisions for the turning around of fire apparatus.

"(i) **Bridges.** When a bridge is required to be used as access under this section, it shall be constructed and maintained in accordance with the applicable sections of the Building Code and using designed live loading sufficient to carry the imposed loads of fire apparatus.

"(j) **Grade.** The gradient for a fire apparatus access road shall not exceed the maximum approved by the chief." (15%)

"(k) **Obstruction.** The required width of any fire apparatus access road shall not be obstructed in any manner, including parking of vehicles. Minimum required widths and clearances established under this section shall be maintained at all times.

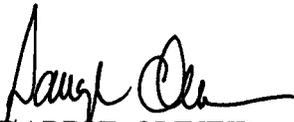
"(l) **Signs.** When required by the fire chief, approved signs or other approved notices shall be provided and maintained for fire apparatus access roads to identify such roads and prohibit the obstruction thereof or both."

Water supply shall be in accordance with UFC Section 10.301(c):

"(c) **Water Supply.** An approved water supply capable of supplying required fire flow for fire protection shall be provided to all premises upon which buildings or portions of buildings are hereafter constructed, in accordance with the respective county water requirements. There shall be provided, when required by the chief, on-site fire hydrants and mains capable of supplying the required fire flow.

"Water supply may consist of reservoirs, pressure tanks, elevated tanks, water mains or other fixed systems capable of providing the required fire flow.

"The location, number and type of fire hydrants connected to a water supply capable of delivering the required fire flow shall be protected as set forth by the respective county water requirements. All hydrants shall be accessible to the fire department apparatus by roadways meeting the requirements of Section 10.207.


DARRYL OLIVEIRA
Fire Chief

PBE:lpc

Appendix B
Cultural Impact Assessment

DRAFT FOR REVIEW

**A Cultural Impact Assessment for Proposed Portable
Buildings at the University of Hawai‘i at Hilo, Waiākea
Ahupua‘a, South Hilo District, Hawai‘i Island**

TMK: [3] 2-4-001:167

**Prepared for
Belt Collins Hawai‘i, Ltd.**

**Prepared by
Momi Wheeler, B.S.
and
Hallett H. Hammatt, Ph.D.**

**Cultural Surveys Hawai‘i, Inc.
Kailua, Hawai‘i
(Job Code: WAIAKEA 1)**

December 2008

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Management Summary

Reference	A Cultural Impact Assessment for Proposed Portable Buildings at the University of Hawai'i at Hilo, Waiākea Ahupua'a, South Hilo District, Hawai'i Island, TMK(3) 2-4-001:167 (Wheeler and Hammatt 2008)
Date	December 2008
Project Number (s)	Cultural Surveys Hawai'i (CSH) Job Code: WAIAKEA 1
Project Location	The proposed portable buildings will include four interconnecting modules located at the University of Hawai'i at Hilo between the newly constructed Student Life Center (SLC), Hale Kuamo'o, and the College of Agriculture, Forestry, and Natural Resources Management (CAFNRM) facilities.
Land Jurisdiction	The project area is owned by the University of Hawai'i.
Agencies	State of Hawai'i Department of Health/Office of Environmental Quality Control (OEQC), State of Hawai'i Department of Land and Natural Resources/State Historic Preservation Division (DLNR/SHPD)
Project Description	The proposed four interconnecting portable buildings are intended to facilitate the temporary move of faculty and staff from the UHH's Edith Kanaka'ole Hall (EKH), while its air-conditioning system is being upgraded. Once the upgraded air-conditioning system for EKH is completed, the faculty and staff will move back to their home EKH offices. The four interconnecting modules, however, will remain and continue to be used by UHH for other campus purposes.
Project Acreage	Approximately 35,000 square feet
Area of Potential Effect (APE) and Survey Acreage	For the purposes of this CIA, the Area of Potential Effect (APE) includes approximately 35,000 square feet and encompasses all or portions of the following Tax Map parcel: (3) 2-4-001:167. While this investigation focused on the project APE, for the purposes of this CIA, the study area included the entire Waiākea Ahupua'a.
Document Purpose	The project requires compliance with the State of Hawai'i environmental review process [Hawai'i Revised Status (HRS) Chapter 343], which requires consideration of proposed project's effect on cultural practices and resources. CSH is undertaking this CIA at the request of Belt Collins Hawai'i, Ltd. Through document research and (ongoing) cultural consultation efforts, this report provides preliminary information pertinent to the assessment of the proposed project's impacts to cultural practices (per the OEQC's Guidelines for Assessing Cultural Impacts). The document is intended to support the project's environmental review and may also serve to support the project's historic preservation review under HRS Chapter 6E-42 and Hawai'i Administrative Rules Chapter 13-284.

Consultation Effort	<p>Hawaiian organizations, agencies and community members were contacted in order to identify potentially knowledgeable individuals with cultural expertise and/or knowledge of the project area and the vicinity. The organizations consulted included the State Historic Preservation Division (SHPD), the Office of Hawaiian Affairs (OHA), the Hawai'i Island Burial Council (HIBC), and community and cultural organizations in the Hilo area.</p>
Results of Background Research	<p>Background research shows:</p> <ol style="list-style-type: none"> 1. The State Historic Preservation Division (SHPD) has previously reviewed and approved an Archaeological Assessment (Corbin 2006) which found no historic properties for this proposed site. 2. Waiākea, with its rich natural resources of the forests and the sea, has long been a center of habitation for Hawaiians and is often mentioned in Hawaiian folklore and legends. According to many legends, Waiākea has also been associated with Hawaiian royalty (<i>ali'i</i>) since the 16th century and was a gathering place for many ceremonies. The rich mountain resources of taro and sweet potato and the abundant marine resources particularly shrimp and fish made Waiākea very valuable to the Hawaiian people. At least three <i>heiau</i> (temple) of various sizes and class, stood within Waiākea. Many Hawaiian gods and goddesses frequented Waiākea including Pele, Hi'iaka and Pana'ewa. 3. Based on relatively abundant records of historical documents and oral-historical information, there is little doubt that the proposed project area was once part of an extensive upland agricultural zone, which had more agriculturally productive areas and scattered habitation sites. 4. Previous archaeological research in the immediate vicinity of the proposed project area did not identify any historic properties due to extensive land modifications associated with urban development.

<p>Results of Preliminary Community Consultation</p>	<ol style="list-style-type: none"> 1. A total of eleven people were contacted for the purposes of this CIA; three people responded as of this writing. Efforts at obtaining additional testimony from the remaining individuals contacted for this CIA are ongoing. Preliminary community consultation for this project yielded the following results: <ol style="list-style-type: none"> 1. The remaining native forested area adjacent to the project area remains a gathering place for cultural practitioners and other students in the Hawaiian courses to easily access native plants (native <i>'ōhi'a</i> [<i>Metrosideros, macropus</i>], ferns etc.). 2. There are at least three heiau in Waiākea, one being Kapa'ie'ie Heiau, possibly belonging to the <i>luakini</i> class. 3. The project area and environs, is featured prominently in Hawaiian folklore, including Kūlilikaua as a god of the thick forest mists of Waiākea, upper Puna and Keauhou and the landscape feature of Pu'u Kūlani which marks the southwest boundary of Waiākea Ahupua'a. 4. OHA voiced the need to develop a "paradigm shift in assessments" that will identify the real impacts on cultural resources and practices, and noted that "all parties bear a responsibility to work towards building successful working relationships with individuals, organizations and communities throughout Hawai'i which will result in a true understanding of what resources and practices are important to the Hawaiian people."
<p>Recommendations</p>	<p>A good faith effort to address the following recommendations may help mitigate potential adverse effects of the proposed project on Hawaiian cultural practices and resources in and near the project area.</p> <ol style="list-style-type: none"> 1. Cultural Surveys Hawai'i recommends that future consultation with Hale Kuamo'o and/or Ka Haka 'Ula O Ke'elikōlani/College of Hawaiian Language at the University of Hawai'i at Hilo may be in order if the adjacent native forested area is impacted by construction activities. This native forested area should be incorporated into the natural landscape of the proposed project area.

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Section 1 Introduction

1.1 Project Background

At the request of Belt Collins Hawai'i, Ltd., Cultural Surveys Hawai'i, Inc. has conducted this Cultural Impact Assessment (CIA) for the proposed portable buildings at the University of Hawai'i at Hilo (UHH), District of Hilo, Hawai'i Island, TMK(3) 2-4-001: 167 (Figure 1, Figure 2, Figure 3 & Figure 4). This proposed project, approximately 35,000 square feet, will include four interconnecting modules located between the newly constructed Student Life Center (SLC), Hale Kuamo'o, and the College of Agriculture, Forestry, and Natural Resources Management (CAFNRM) facilities. The proposed portable buildings are intended to facilitate the temporary move of faculty and staff from the UHH's Edith Kanaka'ole Hall (EKH), while its air-conditioning system is being upgraded. The proposed project site is presently occupied by a section of a staging area used for the recently constructed SLC, a portion of a grass lawn, overgrown vegetation, and a pedestrian pathway. Once the upgraded air-conditioning system for EKH is completed, the faculty and staff will move back to their home EKH offices. The four interconnecting modules, however, will remain and continue to be used by UHH for other campus purposes.

For the purposes of this CIA, the Area of Potential Effect (APE) includes approximately 35,000 square feet and encompasses all or portions of the following Tax Map parcel: (3) 2-4-001:167.

The State Historic Preservation Division (SHPD) has previously reviewed and approved an Archaeological Assessment (Corbin 2006) which found no historic properties for this proposed site.

1.2 Document Purpose

The project requires compliance with the State of Hawai'i environmental review process [Hawai'i Revised Statutes (HRS) Chapter 343], which requires consideration of a proposed project's effect on cultural practices and resources. At the request of Belt Collins Hawai'i, Ltd., CSH undertook this CIA. Through document research and (ongoing) cultural consultation efforts, this report document provides information pertinent to the assessment of the proposed project's impacts to cultural practices (per the OEQC's Guidelines for Assessing Cultural Impacts). The document is intended to support the project's environmental review and may also serve to support the project's historic preservation review under HRS Chapter 6E-42 and Hawai'i Administrative Rules Chapter 13-284.

1.3 Scope of Work

The agreed upon scope of work for the CIA is as follows:

1. Examination of historical documents, Land Commission Awards, and historic maps. The specific purpose of using these documents would be to identify historic and present Hawaiian activities that includes the gathering of plant, animal and other resources or agricultural pursuits in the region, as may be indicated in the historic record.
2. Review of the existing archaeological information pertaining to archaeological sites within the study area to reconstruct traditional land use activities and to identify and describe the cultural resources, practices, and beliefs associated with the parcel and identify present uses, if appropriate.

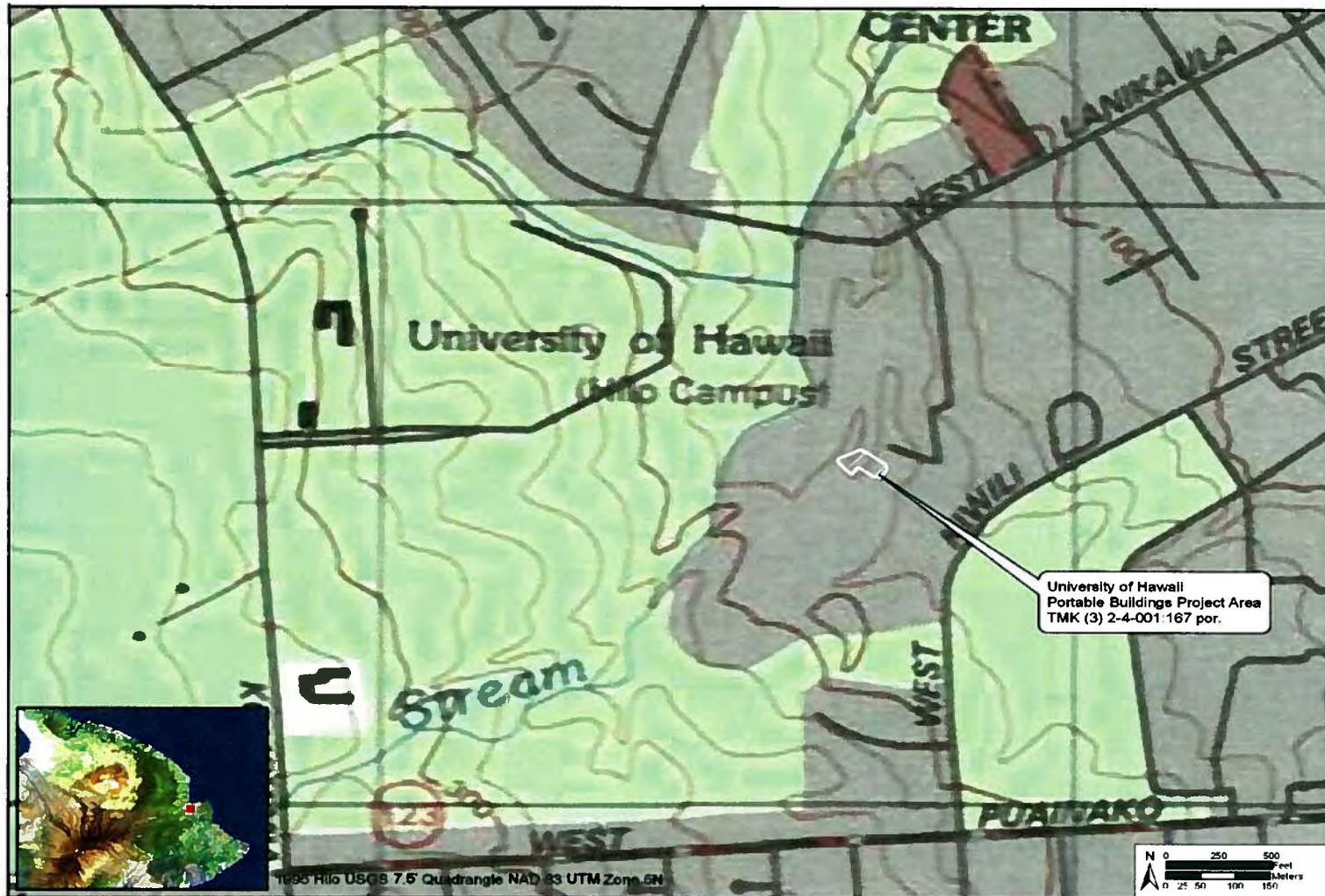


Figure 1. Portion of U. S. Geological Survey 7.5 - Minute Series Topographic Map, Hilo Quadrangle (1195), showing the location of the proposed project area at the University of Hawai'i Hilo.

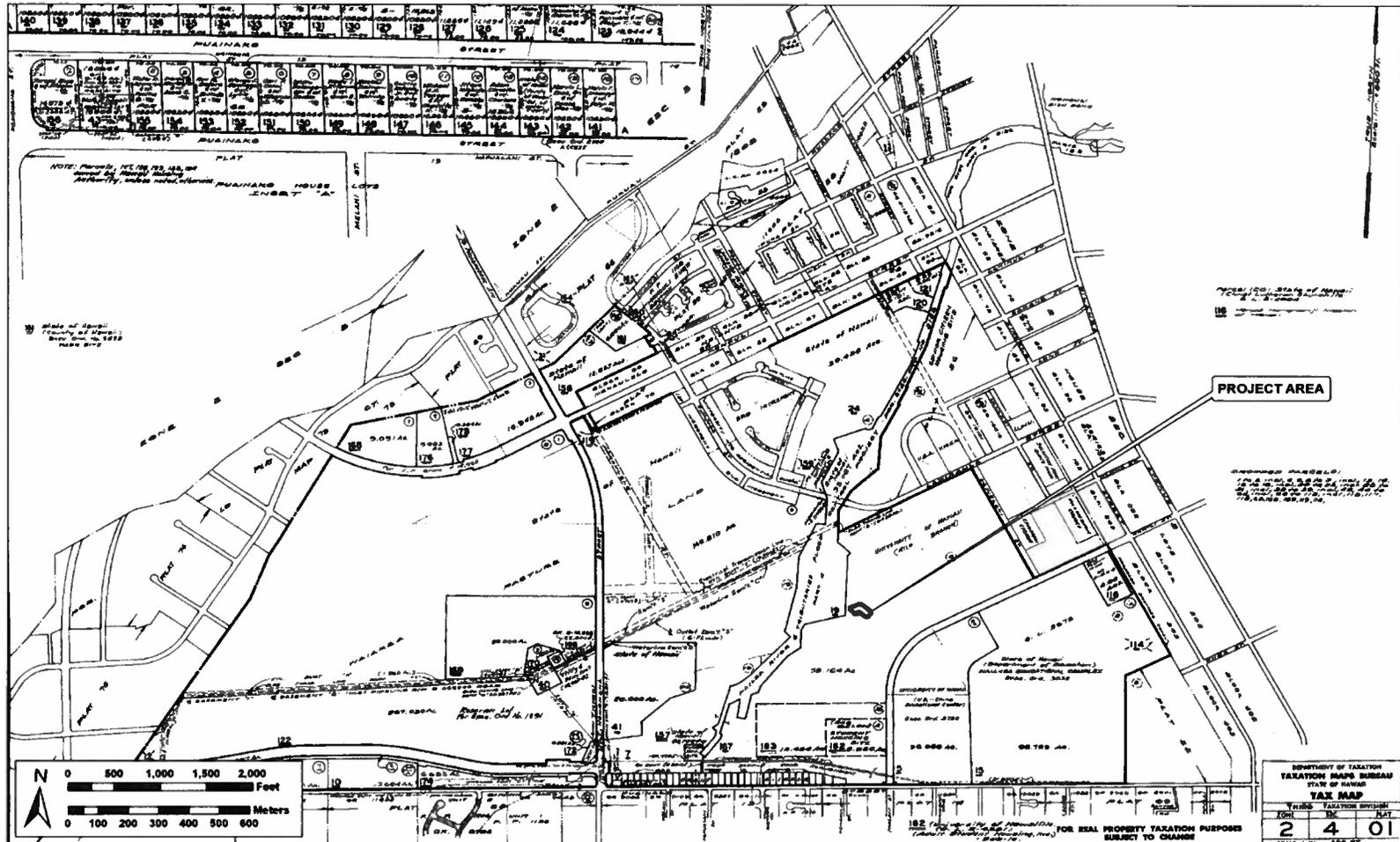


Figure 2. Tax Map Key (TMK) [3] 2-4-001:167, showing the location of the proposed project area at the University of Hawai'i at Hilo.



Figure 3. Aerial map of proposed project area at the University of Hawai'i at Hilo.

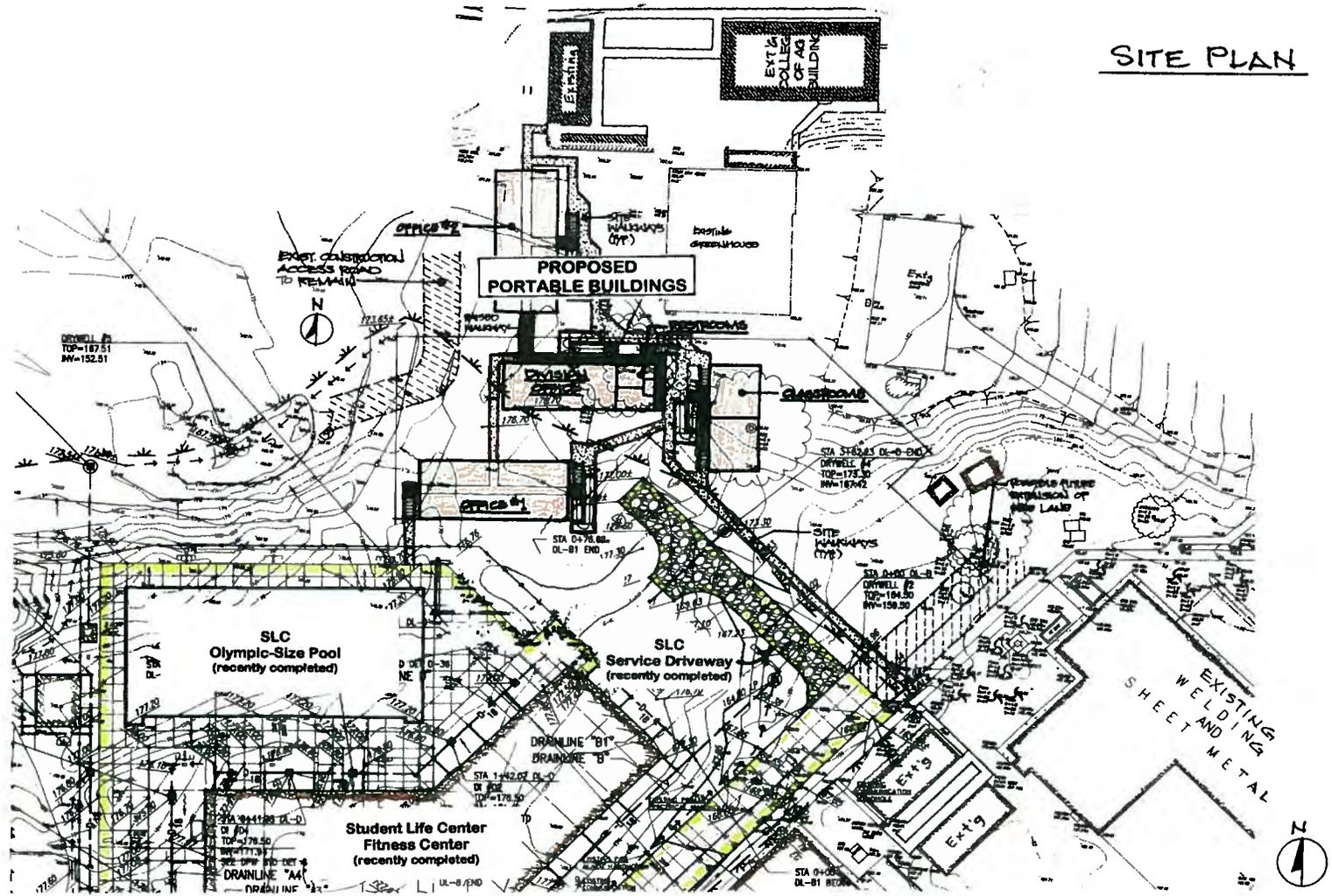


Figure 4. Client, Belt Collins Hawai'i Ltd., site plan.

3. Coordination and consultation with 4 – 6 agencies or groups. These entities would include the State Historic Preservation Division (SHPD), the Office of Hawaiian Affairs (OHA), the appropriate Island Burial Council (IBC), and other Hawaiian and local community organizations knowledgeable about cultural or practices of the region. This would be done to assist in the identification of cultural resources, alternative actions, and potential mitigation measures.
4. Brief, informal telephone interviews with 1 – 4 (depending on the complexity of the project) key individuals. These individuals may include cultural practitioners, *kūpuna* (elders) and *kama'āina* (community residents of long-standing).
5. Preparation of a CIA report. This report, based on the above items, will include a summary of the research and an evaluation of the impact of the proposed development project, relating to cultural practices, land use, and identified features of the project area.

1.4 Environmental Setting

1.4.1 Natural Environment

The project area is located approximately 5 miles southeast of Hilo Bay near the eastern coastline of the island of Hawai'i. According to U.S. Department of Agricultural (USDA) soil survey website (<http://www.ctahr.hawaii.edu/soilsurvey/soils.htm>), the sediments within the project area consist entirely of Pana'ewa very rocky silty clay loam (PeC) (Figure 11). The Pana'ewa series consists of shallow, moderately well-drained silty clay loams that formed in volcanic ash. Lands within the project area are level to gently sloping, with elevations ranging from 91.44 to 304.8 m (300 to 1,000 feet).

The project area receives an average of 100 to 175 in. of annual rainfall (Juvik and Juvik 1998:58). In pre-contact times the vegetation in the vicinity of the project area would have consisted of 'ōhi'a (*Metrosideros polymorpha* or *M. macropus*), tree fern, hilo grass (*Paspalum conjugatum*), california grass (*Brachiaria mutica*), and guava (*Psidium guajava* L.). Presently the vegetation in the vicinity of the project area has been reforested with native Hawaiian plants consisting of koa (*Acacia koa*), kukui (*Aleurites moluccana*), kī (*Cordyline terminalis*), pūhala (*Pandanus odoratissimus*), mai'a (banana), and milo (*Thespesia populnea*) (Figure 5, Figure 6, Figure 7, Figure 8, Figure 9 and Figure 10).



Figure 5. *Koa* (*Acacia koa*) and *Kī* (*Cordyline terminalis*).



Figure 6. *Kukui* (*Aleurites moluccana*).



Figure 7. *Pūhala* (*Pandanus odoratissimus*).



Figure 8. *Mai'a* (banana).



Figure 9. *Kī (Cordyline terminalis)*.



Figure 10. *Milo (Thespesia populnea)*.

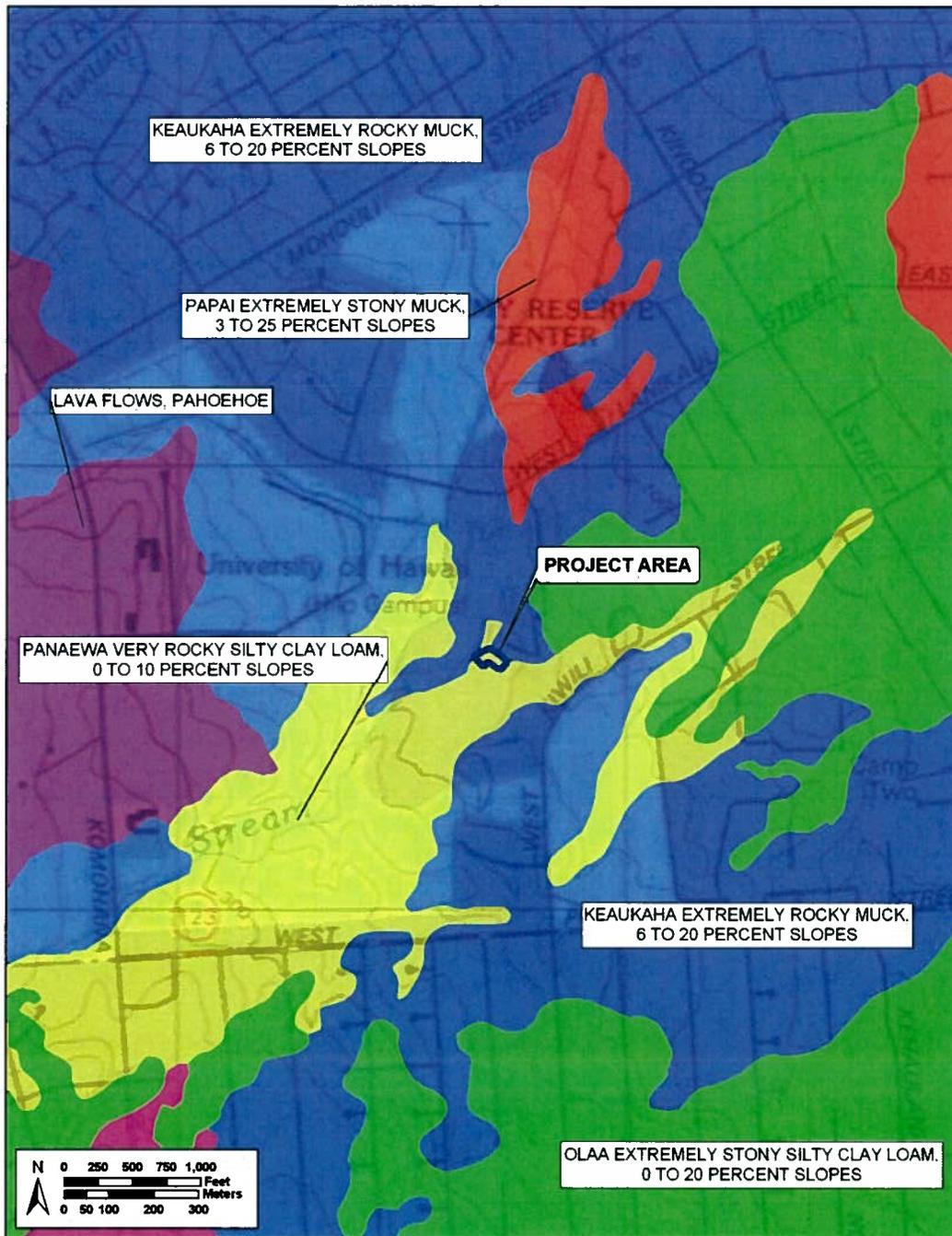


Figure 11. Overlay of Soil Survey of the State of Hawai'i indicating sediment types within the project area, Pana'ewa Series (PeC).

Section 2 Methods

2.1 Document Review

Historic and archival research included information obtained from the University of Hawai'i at Mānoa (UHM) Hamilton Library, the State Historic Preservation Division Library, the Hawai'i State Archives, the State Land Survey Division, and the Archives of the Bishop Museum. Previous archaeological reports for the area were reviewed, as were historic maps and primary and secondary historical sources. Information on Land Commission Awards was accessed through Waihona 'Āina Corporation's Māhele Database (www.waihona.com).

Section 3 Background Research

3.1 Traditional and Historical Background

3.1.1 Traditional Hawaiian Folklore of Waiākea

Waiākea literally means broad waters (Pukui et al. 1974:221), but is also a type of taro (*kalo*) grown in Kona, Hawai'i (*lehua ke'o ke'o*, a variety of taro called *waiākea*) (Pukui & Elbert 1986:377). Waiākea, with its rich natural resources of the forests and the sea, has long been a center of habitation for Hawaiians and is often mentioned in Hawaiian folklore and legends. According to many legends, Waiākea was also associated with the Hawaiian royalty (*ali'i*).

In *Native Planters in Old Hawai'i*, Handy and Handy (1972) record the agricultural methods used to grow taro, sweet potatoes, and sugar cane in Waiākea. Handy and Handy describe the natural habitat and agricultural development of Waiākea and South Hilo:

In lava-strewn South Hilo there were no streams whose valleys or banks were capable of being developed in terraces, but [taro] cuttings were stuck into the ground on the shores and islets for many miles along the course of the Wailuku River far up into the forest zone. In the marshes surrounding Waiākea Bay, east of Hilo, taro was planted in a unique way known as *kanu kipi* (mounded taro patches)...On the lava-strewn plain of Waiākea and the slopes between Waiākea and the Wailuku River, dry taro was formerly planted wherever there was enough soil. There were forest plantations in Pana'ewa and in the lower fern-forest zone above Hilo town and along the course of the Wailuku River. (Handy and Handy 1972:538-539)

Handy and Handy cite the Hawaiian language newspaper, *Ka Nūpepa Kū'oko'a*, in a 1922 article which refers to planting sweet potatoes and sugar cane on *pāhoehoe* (smooth lava) lava fields:

...There are *pāhoehoe* lava beds walled in by the ancestors, in which sweet potatoes and sugar cane were planted and they are still growing today. Not only one or two but several times forty (*mau ka'au*) of them. The house sites are still there, not one or two but several times four hundred in the woods of Pana'ewa.

Our indigenous bananas are growing wild, these were planted by the hands of our ancestors. (Handy and Handy 1972:131-132)

There are abundant references to Waiākea in the myths and legends of Hawai'i recorded by the early ethnographers Thrum, Emerson, Westervelt, and Fornander. An early account of the Hawaiian chiefdom Waiākea is told by Samuel Kamakau (1961:15-17) in a story of the unification of the Island of Hawai'i under chief 'Umi-a-Liloa, beginning with the chiefly residences of Waiākea in the 16th century. The legend establishes Waiākea as a relatively early residence of Hawaiian royalty (*ali'i*). Hilo's Kanoa Heiau, where human sacrifices were offered, was also mentioned in the story, indicating its early existence (Kelly, Nakamura and Barrère 1981:1).

Table 1 is a comprehensive list of Hawaiian tales which include Waiākea as a place setting. These legends were primarily found in the *Hawaiian Legends Index* (Revised Edition) compiled by Lillian Ching and edited by Dr. Masae Gotanda, Director of Hawai'i State Library (1989).

Table 1. Legends of Waiākea, Hawai'i

Author	Original Publication and Year	Legend Title
Emerson, Nathaniel	<i>Pele and Hi'iaka</i> (1915)	"Pele and Hi'iaka"
Fornander, Abraham	<i>Fornander Collection of Hawaiian Antiquities and Folk lore</i> , v. 1 (1916-1919)	"The Story of Umi"
Fornander, Abraham	<i>Fornander Collection of Hawaiian Antiquities and Folk lore</i> , v. 2 (1916-1919)	"Legend of Kuapakaa"
Fornander, Abraham	<i>Fornander Collection of Hawaiian Antiquities and Folk lore</i> , v. 2 (1916-1919)	"Legend of Halemano"
Fornander, Abraham	<i>Fornander Collection of Hawaiian Antiquities and Folk lore</i> , v. 1 (1916-1919)	"Legend of Kapuaokaoheloi"
Fornander, Abraham	<i>Fornander Collection of Hawaiian Antiquities and Folk lore</i> , v. 1 (1916-1919)	"Legend of Kaipalaoa, the Hoopapa Youngster"
Fornander, Abraham	<i>Fornander Collection of Hawaiian Antiquities and Folk lore</i> , v. 2 (1916-1919)	"Famous Men of Early Days"
Fornander, Abraham	<i>Fornander Collection of Hawaiian Antiquities and Folk lore</i> , v. 2 (1916-1919)	"Legend of Pamano"

Author	Original Publication and Year	Legend Title
Fornander, Abraham	<i>Fornander Collection of Hawaiian Antiquities and Folklore</i> , v. 2 (1916-1919)	"Brief Stories of Ghosts and Cunning"
Gowen	<i>Hawaiian Idylls of Love and Death</i> (n.d.)	"Keala"
Green	<i>Folk tales from Hawaii</i> (n.d.) also in <i>Hawaiian Stories and Wise Sayings</i> (n.d.)	"The Story of Pele and Hi'iaka"
Hale'ole, S. N.	<i>The Hawaiian Romance of Laieikawai</i> (n.d.)	"Kaipalaoa"
Thrum, Thomas G.	<i>More Hawaiian Folk Tales</i> (1923)	"Umi's Necklace War Tradition"
Thrum, Thomas G.	<i>More Hawaiian Folk Tales</i> (1923)	"Kai a Kahinali'i"
Thrum, Thomas G.	<i>More Hawaiian Folk Tales</i> (1923)	"Ulu's Sacrifice"
Thrum, Thomas G.	<i>More Hawaiian Folk Tales</i> (1923)	"The Hinas of Hawaiian Folklore"
Thrum, Thomas G.	<i>Hawaiian Folk Tales</i> (1998)	"Stories of the Menehunes: As Heiau Builders"
Westervelt, William	<i>Legends of Gods and Ghosts</i> (1915)	"Keaomelemele, The Maid of the Golden Cloud"
Westervelt, William	<i>Legends of Gods and Ghosts</i> (1915)	"Keaunini"

Many of the above stories merely mention Waiākea in passing, including Fornander's "Legend of Pamano" (1916-1919:304-305) and "Brief Stories of Ghosts and Cunning" (1916-1919:422-423) and Green's "The Story of Pele and Hi'iaka" (n.d.:25). The "Legend of Halemano" tells of love between Halemano and his wife Kamalalawalu and their home in Waiākea, in an area called 'Uluomālama, apparently above the cliffs of Pana'ewa, Hilo. Halemano looked at his wife, and when he saw the tears in her eyes his love for her again welled up within him as he remembered how they had lived at 'Uluomālama in Waiākea, Hilo; so he chanted as follows:

We once lived in Hilo, in our own home,
Our home that was in Panaewa...

The streams of Hilo are innumerable,
 The high cliffs was the home where we lived...
 From the waters of Wailuku where the people are carried under,
 Which we had to go through to get to the many cliffs of Hilo,
 Those solemn cliffs that are bare of people...

Noho i Hilo i o maua hale-e,

He hale noho i Panaewa e;...

He kini, he lehu, kahawai o Hilo e,

Pali kui ka hale a ke aloha i alo ai. ...

Mai ka wai lumalumai kanaka o Wailuku,

A kua i alo aku ai i na pali kinikini o Hilo,

O ia mau pali anoano kanaka ole, ...

(Fornander 1916-1919:250-251, vol. V, part II)

Another brief mention of Waiākea is found in Green's "The Story of Pele and Hi'iaka" in Hawaiian Stories and Wise Sayings. Hi'iaka, Pele's sister, "slept at Waiakea, Hilo, and in the morning kept on as far as Kukui-lau-mania, where she turned to gaze back over the country, then continued her journey toward the cliffs of Hilo" (Green n.d.:25). Waiākea was often visited by Hawaiian chiefs of high rank. In Westervelt's "Keaomelemele, The Maid of the Golden Cloud," chief Kahanai-a-ke-Akua (adopted son of the gods), and his friend Waiola (water of life), "went down to Waiākea, a village by Hilo...The men were invited to sport, but only Waiola went because Kahanai himself was of too high rank" (1915:133).

In the legend "Keala" (Gowen n.d.:43-50), "well-known landmarks" of Waiākea are viewed by Ahi, a Hawaiian priest, in his spirit form:

The green water below was the bay of Hilo, the mountain was the terrible Kilauea, where in Halemaumau, the house of everlasting fire, the goddess Pele was wont to ride the red surges with her sisters and tilt with lances of flaming lava. The road was the mountain-path from Waiakea to Kapapala... (Gowen n.d.:47)

John Papa 'Ī'i makes two general references to Waiākea, Hilo. According to 'Ī'i, at the time of Kamehameha I (circa 1800):

The lands of the chief of Kau were divided within their own district, each being given a portion and each asking for what he wanted. For this reason, a skilled war leader whose name I have forgotten said to Keoua Kuahuula, son of Kalaniopuu and half brother of Kiwalao, perhaps you should go to the chief and ask that these lands be given us. Let Waiākea and Keaau be the container from whence our food is to come and Olaa the lid. ('Ī'i 1959:13-14)

‘Īī’s second reference notes the well-known surf of “Kanukuokamanu in Waiākea, Hilo” (‘Īī 1959:134). Kanukuokamanu, on the western side of Wailoa River, was also mentioned in the 16th-century story by Kamakau (1961:15-17) as a beach where chiefs and people gathered “at night ... to amuse themselves with hula dancing, chanting, and the playing of games calling for forfeits of entertainment or sexual favors” (Kelly et al. 1981:1). This summary was likely drawn from two legends: “Story of Umi” and “Umi’s Necklace War Tradition.”

The “Story of Umi” describes the chiefly residences at Hilo and the king of Hilo, Kulukulua. The legend tells of the chiefs of Hilo gathering at a place called Kanukuokamanu, in Waiākea: “One night there was a grand entertainment for all the chiefs of Hilo at Kanukuokamanu, in Waiākea; there was dancing and games of *papahene*, *kilu* and *lōkū*. (A *he po lealea nui no na ‘lii o Hilo a pau ma Kanukuokamanu ma Waiākea, he hula, he papahene, a he kilu, a me a ka loku*.)” (Fornander 1916-1919:220-221)

A similar story “Umi’s Necklace War Tradition” also mentions the festive night at Kanukuokamanu, Waiākea, and ‘Umi’s marriage to ‘Īiwalani, the daughter of the king of Hilo (Thrum 1923).

The “Legend of Kapuaokaokeloi” makes a passing reference to Waiākea as a place where the people of “high chief rank of Hilo” lived (*O Waiākea, i Hilo ka aina, o ka mua ke kaikunane, o ka muli ke kaikuahine, he mau alii lakou no Hilo*) (Fornander 1916-1919:540-541).

Again, this passage reiterates the importance of Hilo as a chiefly residence. This story is also told in “The Hina’s of Hawaiian Folklore” (Thrum 1923).

Another reference to the associated royalty of Waiākea can be found in the “Legend of Kaipalaoa, the Hoopapa Youngster” (Fornander 1916-1919:574-575). According to the legend, “Kaipalaoa” (a relative of Kukuipahu, the king of Kona) “was born in Waiākea, Hilo.”

3.1.2 Resources of Waiākea

The rich resources of Waiākea were well known and sought after by many. According to the legend, “Ulu’s Sacrifice,” Waiākea was the home of ‘Ulu (breadfruit) (Thrum 1923). During a famine, ‘Ulu died of starvation and he was laid to rest near a stream. The following morning, there was a breadfruit tree standing where he was buried, ending the famine (Pukui et al. 1974:219-220).

Many legends tell of the abundant fish and shrimp of Waiākea. The fishpond of Waiākea was so valued that Kamehameha I sent runners from Kawaihae and Kailua to fetch live mullet from Waiākea. Fornander’s work describes Kamehameha I sending his fastest runners, Makoa and Kāneaka‘ehu, to “Hilo to get mullet from the pond of Waiākea, on the boundary adjoining Puna” (*o ka nanawa ia o Makoa e holo ai i Hilo i ka ana e o ka loko o Waiākea, aia ma ka palena e pili la me Puna*) (1916-1919:490-491).

Westervelt’s story “Keaunini” tells of the abundant mullet of Lolakea and Waiākea. “The people feasted on the mullet of Lolakea and the baked dogs of Hilo and the humpbacked mullet of Waiakea and all the sweet things of Hawai‘i” (1915:191).

In the “Legend of Kuapakaa,” the shrimps of Waiākea are mentioned, suggesting their value as a resource. The king of Hilo, Kulukulua, is also mentioned again in a chant as follows:

Our chief of Hilo, Kulukulua, is not a chief [by birth];

He is a snarer of the shrimps of Waiākea;

After the snaring,

He places the outside covering of the coconut on his ears.

O ua lii o makou o Hilo, o Kulukulua, aohe alii;

He pahahehele opae no Waiākea;

A pau ke pahahehele ana,

Kau ae la i ka pulu niu i ka pepeiao.

(Fornander 1916-1919:84-85)

This chant suggests that the chief of Hilo participated in tasks of the commoners and plainly states that he was not a chief by birth. The chant also may be the source of the saying “Waiākea of the ears that hold coconut-fiber snares” (*Waiākea pepeiao pulu ‘aha*) explained below.

There are two passages which mention Waiākea in Pukui’s *‘Ōlelo No‘eau Hawaiian Proverbs & Poetical Sayings* (1983). The first passage (passage 2901) is a proverbial saying which refers to the small fish, shrimp, and crab resources of Waiākea: “Waiākea of the ears that hold coconut-fiber snares” (*Waiākea pepeiao pulu ‘aha*). The saying is further explained:

Snares for small fish, shrimp, or crabs were made of a coconut midrib and the fiber from the husk of the nut. When not in use the snare was sometimes placed behind the ear as one does a pencil. This saying is applied to one who will not heed - he uses his ears only to hold his snare. (1983:318)

The second saying is a common expression used in chants of Hilo and refers to “The sparkling sand of Waiolama” (*Ke one ‘anapa o Waiolama*) “a place between Waiākea and the town of Hilo. It was said to have sand that sparkled in the sunlight” (passage 1773).

“Kai a Kahinalii” is the tale of a disastrous flood which devastated the island of Hawai‘i. After the waters ebbed, two survivors, a fisherman and his wife descended “the gentle slope that leads to the bay of Waiākea. There they built a temple and offered sacrifices to the gods” (Thrum 1923:234). Perhaps this temple is one of the recorded *heiau* described below.

3.1.3 *Heiau* of Waiākea

According to Hunt & McDermott who turned to Thrum for their source, there were “16 *heiau* for Hilo District. Of these, three were located near the coastline in the *ahupua‘a* (land division) of Waiākea (1994:11).” The three *heiau* within Waiākea are: Kapa‘ie‘ie *Heiau* (unknown class, Site 50-10-35-18883), Makaokū *Heiau* (*luakini*, sacrificial temple, class, Site - 188843) on the shore opposite of Coconut Island (Mokuola), and Ohele *Heiau* (*luakini* class, Site - 18884). Research by Rosendahl of Waiākea *Ahupua‘a* is thorough and includes mention of one specific

heiau within Waiākea: Kapa'ie'ie (Rosendahl 1994:5). Kapa'ie'ie Heiau was originally recorded by A. E. Hudson in a 1932 manuscript of archaeological and historical literature research of east Hawai'i (Hudson 1932). According to Rosendahl, Kapa'ie'ie Heiau was located "along the old Hilo – 'Ōla'a trail (not far from the route of modern-day Kīlauea Avenue)" (Rosendahl 1994:5). Hudson writes:

There was a *heiau* named Kapaieie near Honokawailani in Waiākea. Bloxam who passed the site on his way from Hilo to the volcano say that its center was marked by a single coconut tree. At the time of his visit nothing remained but ruined walls choked with weeds. He was told that the priests would lie in wait for passersby and dispatch them with clubs. Thrum [1908:40] states that the site was famed in the Hilo-Puna wars but its size and class are unknown. No remains of any kind could be found and no Hawaiians with whom I talked had ever heard of it.(Hudson 1932:240)

According to Thrum, Makaokū Heiau was located "on the shore opposite Cocoanut Island, Hilo, of *luakini* class, connected with the noted Mokuola place of refuge; dimensions unknown, though it is said to have had a high pyramid of stone as if for a place of observation. The stones of this *heiau* were taken by Capt. Spencer in the sixties for a boat landing" (1907a:40). Thrum further notes: "...the area of [Mokuola] included also a portion of the mainland adjoining. The *heiau* connected with it, named Makaoku, was of the *luakini* class" (1907b:56).

Thrum also had information on Ohele Heiau which was located in Waiākea near the old Pitman store. It was reportedly "a *luakini* class *heiau* measuring 60 feet square. It was destroyed before Pitman's time" (Stokes and Dye 1991:155).

3.1.4 Waiākea Myths and Legends Summary

Waiākea, with its rich natural resources of the forests and the sea, has long been a center of habitation for Hawaiians and is often mentioned in Hawaiian folklore and legends. According to many legends, Waiākea has also been associated with Hawaiian royalty (*ali'i*) since the 16th century and was a gathering place for many ceremonies. The rich mountain resources of taro and sweet potato and the abundant marine resources particularly shrimp and fish made Waiākea very valuable to the Hawaiian people. At least three *heiau* of various sizes and classes, stood within Waiākea. Many Hawaiian gods and goddesses frequented Waiākea including Pele, Hi'iaka and Pana'ewa.

3.2 Historic Background

The *ahupua'a* (land division extending from the mountains to the sea) of Waiākea, South Hilo, is large, encompassing some 95,000 acres. It extends from the coast to approximately the 6,000 foot elevation on the windward slope of Mauna Loa. In 1979 Holly McEldowney prepared an "Archaeological and Historical Literature Search and Research Design," as part of a "Lava Flow Control Study" (McEldowney 1979). In her report, McEldowney describes five zones of land use and associated resources. The five zones, which are applicable to Waiākea, include: I. Coastal settlement; II. Upland Agricultural; III. Lower Forest; IV. Rain forest; and V. Sub-

Alpine or Montaine (McEldowney 1979). The current project area exists entirely within Zone II, or the Upland Agricultural zone. Thus, only this zone is described in depth here.

Zone II is defined as ranging from 50 - 1,500 ft in elevation. The zone was described by early visitors to Hilo Bay as "open parkland gently sloping to the base of the woods...an expanse broken by widely spaced cottages, neatly tended gardens, and small clusters of trees" (McEldowney 1979).

The present study area is situated within the lower elevations of this upland agricultural zone. Though described as a vast "expanse", it would appear that only the more agriculturally productive areas were intensively farmed. In the 1820s, it was "estimated that 1/20 of the expanse (i.e., zone of cultivation) in N. and S. Hilo was planted in crops" (Goodrich 1826:4 cited in McEldowney 1979:21). The reasons for what appeared to the early visitors as a "lack of more extensive planting" (McEldowney 1979:21) include the need for fallow periods especially in soils where nutrients are rapidly leached out. More important to intensive agricultural use in the Hilo area is soil type or lack thereof. Intensive agricultural in Zone II was focused on areas with a soil mantle leaving younger exposed lava areas for plants not needing continuous care (e.g. grasses, ferns).

Habitation within the upland agricultural zone (i.e. Zone II) apparently included some permanent occupation sites but was still dominantly temporary. The description of habitations refer to "scattered huts" with adjacent "garden plots" or "cottages" with "neatly tended gardens" (McEldowney 1979: 18-19), but include no descriptions of village complexes like those along the coast.

Over time the upland agricultural zone was converted from forest to "open parkland" where plantings occurred on soil mantled lava flows. Habitation for most part was probably temporary with a few scattered permanent occupation complexes.

3.2.1 Late Prehistoric - Early Historic ca. 1790-1840

The rich and varied resources that Waiākea offered made it one of the most important locales on Hawai'i Island. Traditional accounts concerning Waiākea include references to it being the seat of chiefly residences as early as ca. A.D. 1550 (Kelly, Nakamura, Barrère 1981). Chiefly associations with Waiākea continued through traditional times and into the historic era. Kamehameha retained Waiākea after he had conquered all of the islands (ca. 1800), and at "his death he personally held Hilo lands, including Pi'i-honua, Punahoa, and Waiākea, descended to Liholiho, his son and heir to the kingdom..." In addition, "Kamehameha had given the *'ili kūpono* (independent subdivision of an *ahupua'a*) of Pi'opi'o to his favorite wife Ka'ahumanu" (Kelly, Nakamura, Barrère 1981: 11). The *'ili* of Pi'opi'o is in Waiākea and is situated between Hilo Bay and Wailoa River and its associated fishponds.

Land use during the early historic period was still essentially subsistence-based though major changes were occurring. The sandalwood trade, establishment of the American Board of Commissioners for Foreign Missions (ABCFM) station in Hilo, and the arrival of whalers began the shift away from subsistence to a market-based economy. Settlement was still focused on the coastal zone as was most of the agricultural production of both indigenous food crops and newly introduced plants.

During this early historic period the land use of the Forest and Sub-Alpine Zones was changing. The more traditional land use activities in the upper zones, such as the procurement of timber products and bird feathers (McEldowney 1979:35), was replaced by the hunting of cattle, goats, and sheep in the upper zones. These animals were introduced in the 1790s and after an imposed 10 year prohibition on their killing had spread over large portions of the interior of Hawai'i Island, especially the Waimea area. However, "by the 1830s substantial amounts of hides, jerked meat, and tallow were exported from Hilo" (McEldowney 1979:36).

3.2.2 Mid-1800s

By the middle of the 19th century, traditional land tenure changed with the privatization of land ownership. Generally referred to as the "Great Māhele" privatization actually included a number of government acts from the late 1840s to the mid 1850s. The Kamehameha dynasty's control over the valuable Waiākea Ahupua'a was affirmed in the *ahupua'a*'s status as Crown Land, with the *'ili* of Pi'opi'o awarded to Victoria Kamāmalu (LCA 7713:16), a granddaughter of Kamehameha I and heir to Ka'ahumanu as well.

Twenty-six (26) Land Commission Awards (LCAs) were granted within Waiākea. None of these LCAs are within the present study area. The LCAs were all within the coastal zone, except for two (2663 and 2402) which were in the lower portion (i.e. ca. 100 ft. AMSL) of the upland agricultural zone. The LCAs or *kuleana*(s) were for the most part focused around the edges of the large fishponds of Waiākea. Land use information of the *kuleana* generally refer to cultivated fields with house lots indicating habitation and agricultural production within the same zone, unlike leeward Hawai'i Island where in many cases *kuleana* included coastal house lots with associated upland agricultural lots, because of elevation dependent rainfall.

Interior land use during this period was progressing toward more organized ranching, especially cattle ranching. Timber for firewood and housing was also still being exploited, as Hilo was being transformed into an entirely wooden-framed "New Bedford type Whaling Town" (McEldowney 1979:37).

The coastal zone still contained the vast majority of the population. Houses and stores were concentrated in the northern half of Hilo Bay, somewhat removed from Waiākea, because at the time, the main pier for Hilo was at the mouth of the Wailuku River.

3.2.3 Late 1800s

During this period commercial sugar cane became the economic mainstay of the Hilo area with Waiākea Mill Company becoming one of the largest operations. Plantation operations generally developed ca. 1860s and for Waiākea this was on leased Crown lands. The Waiākea Mill Company was in operation by the late 1870s and through its agents, Theo H. Davies and Alexander Young, had procured the lease of all of Waiākea by 1888 (Kelly, Nakamura, Barrère 1981:89). The mill was located at the head (*mauka*, upland, end) of Waiākea Fishpond and sugar was transported by barge through the pond and down Wailoa River to Hilo Bay. McEldowney describes other land usage activities in Waiākea: "Other examples of business, not directly related to sugar cultivation, were the continued use of the Waiākea fishponds, an active Chinese fish market, small pastures above Hilo supporting dairy cattle, and scattered vegetable gardens" (McEldowney 1979:39).

Isabella Bird describes the country area around Hilo in 1873 and the variety of crops grown: "Above Hilo, broad lands sweeping up cloudwards with their sugar-cane, *kalo*, melons, pine-apples, and banana groves suggest the boundless liberality of nature" (Bird 1964:38, also in Handy and Handy 1972:538).

3.2.4 Early 1900s to the Present

Sugar and its associated industries continued to expand during this period. The Hawai'i Consolidated Railway was built eventually extending "from Waiākea Mill and wharf through Puna, most of 'Ōla'a and along the N and S Hilo coast" (McEldowney 1979:41). Many of the immigrant laborers from the late 1800s moved off the plantation, being replaced by new Filipino laborers. Hilo continued to grow and became the second largest urban center in the new Territory of Hawai'i. Historic 1915, 1919 & 1920 maps show the project area located at the outskirts of the Waiākea Mill (Figure 12, Figure 13, Figure 14, and Figure 15).

Ranching in the Hilo area, but not specifically in Waiākea, came under the control of two large enterprises: the Parker and Shipman ranches. In Waiākea a large portion of Zone II (Upland Agricultural Zone) that was too rocky for sugar cane cultivation became available for lease as Waiākea pasture lands. The specific use of the pasture land is not known but McEldowney notes: "A substantial amount of grazing land adjacent to Hilo or to sugarcane fields supported dairy cows for Hilo's several dairies" (McEldowney 1979:41). In 1918 the 30-year lease of the Waiākea Mill Co. expired and, because Hawai'i had become a territory, the "land fell under homesteading laws that required the government to put some of it up for lease to homesteaders who would be willing to grow sugar cane on it. Waiākea Mill was used to grind the crop for them. A total of about 700 acres of land was divided into cane lots (between 10 and 76 acres each) and house lots ranging from 1 to 3 acres..." (Kelly, Nakamura, Barrère 1981:121). The homestead and cane lots eventually reverted to the overall mechanized cultivation and the homestead and cane lot "experiment was declared a failure" (Kelly, Nakamura, Barrère 1981:121).

By the 1920s the Waiākea Mill Co. had some 7,000 acres in cane production. Also, in the 1920s large tracts of remaining forest in Waiākea were "designated as forest reserve" (McEldowney 1979:42). The main reason appears to have been the maintenance of the "forest as a 'watershed' to capture, retain, and support the continuous flow of water necessary to the sugar industry" (McEldowney 1979:42). Clearly, sugar was the dominant economic factor during this period including the formation of settlements (i.e. camps).

In 1931, the Hawaiian Cane Products Co., Ltd. started a firm that organized to produce a fiber board product called "Canec" which was made from bagasse, the fibrous residue of sugar cane crushing. The Canec plant usually burned as fuel in sugar factories. Originally the Waiākea Mill burned their bagasse but in 1931 they sold their bagasse to the Canec plant which was built approximately 200 yards from Waiākea Sugar Mill. In May of 1948, Waiākea Mill & Plantation Company was liquidated (Condé and Best 1973:119).

During this period major construction jobs started in the 1920s were completed. These major construction jobs, in part, included Hilo Bay, wharfs and breakwater and bridges. Some of these projects were actually major reconstruction work on damages during the winter of 1923, which

included storm surf in January and a tidal wave in February (Kelly, Nakamura and Barrère 1981:171). During the World War II period in Hilo, expansion and designation of Hilo airport as General Lyman Field and the construction of the Saddle Road were major projects undertaken as part of the military presence on the island, which was very substantial.

After statehood (1959) and with the closing of the mill and the Canec plant, tourism was looked at as the next economic mainstay. In Waiākea, C. Brewer & Co. built a hotel complex at the site of the old Canec plant. Other hotels were built along the Hilo Bay frontage of Waiākea near Coconut Island or Mokuola. Large tracts of former Waiākea Homestead and Cane lots were converted to housing or sub-division tracts.

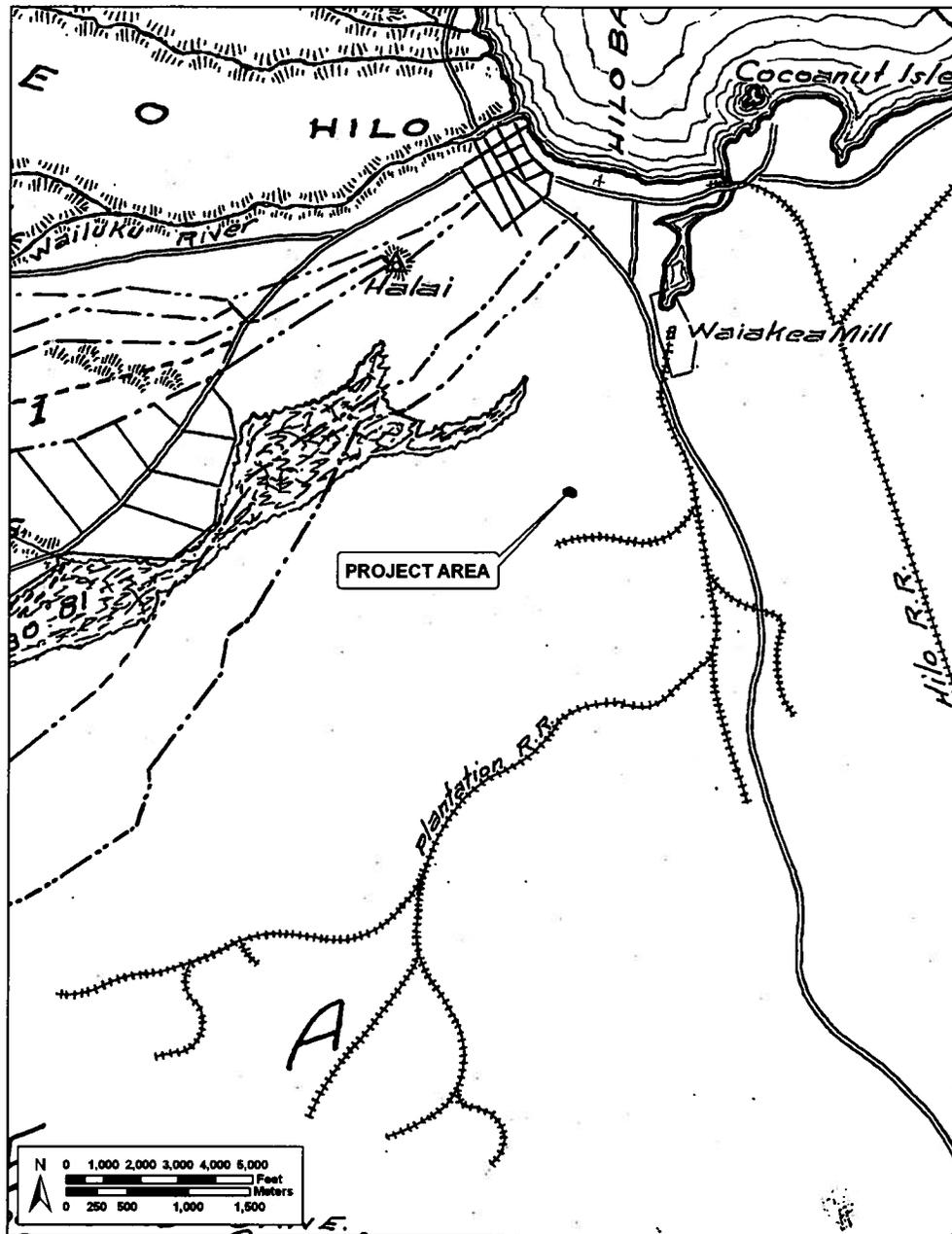


Figure 12. Historic 1915 map showing the proposed project area.

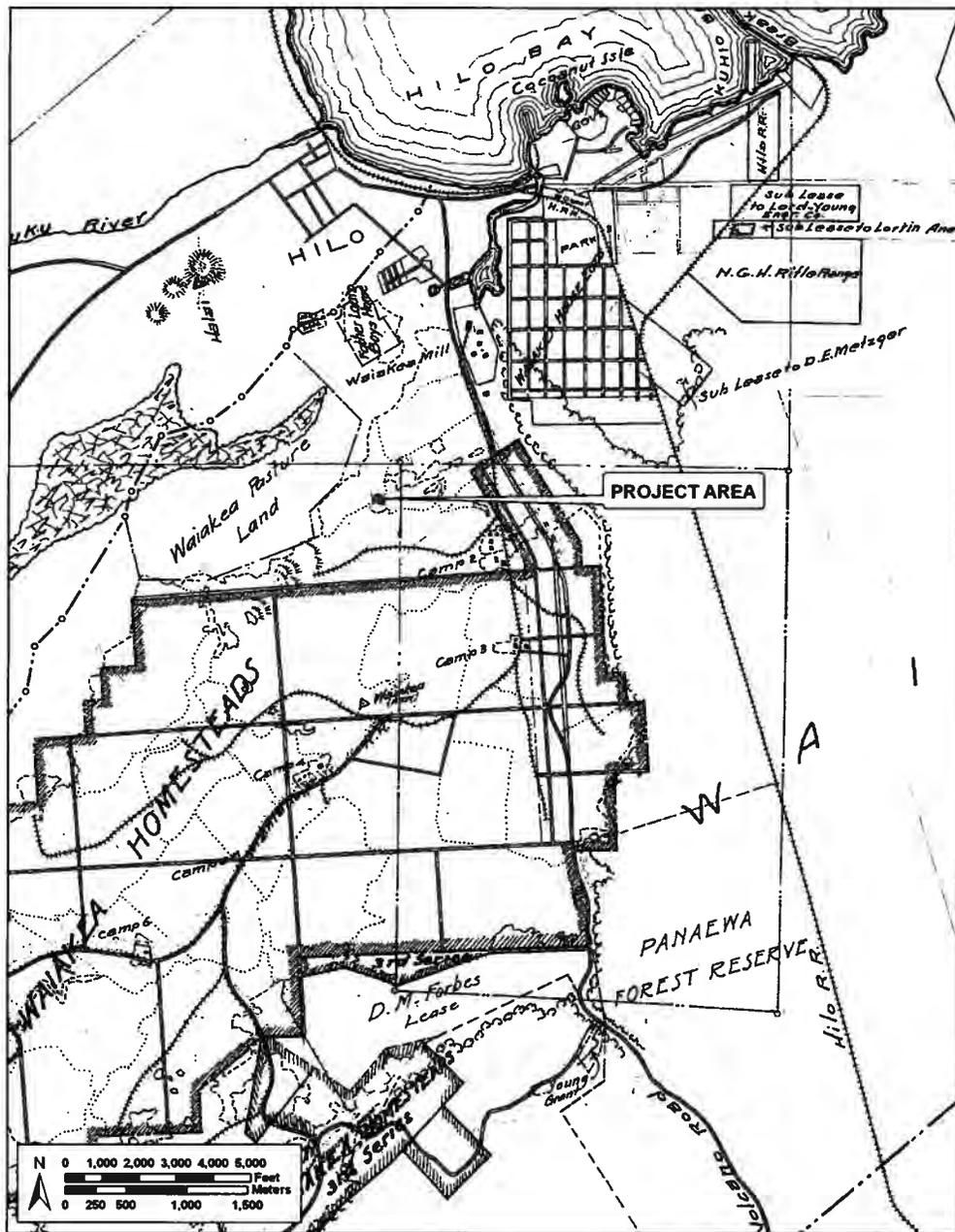


Figure 13. Historic 1915 map showing proposed project area.

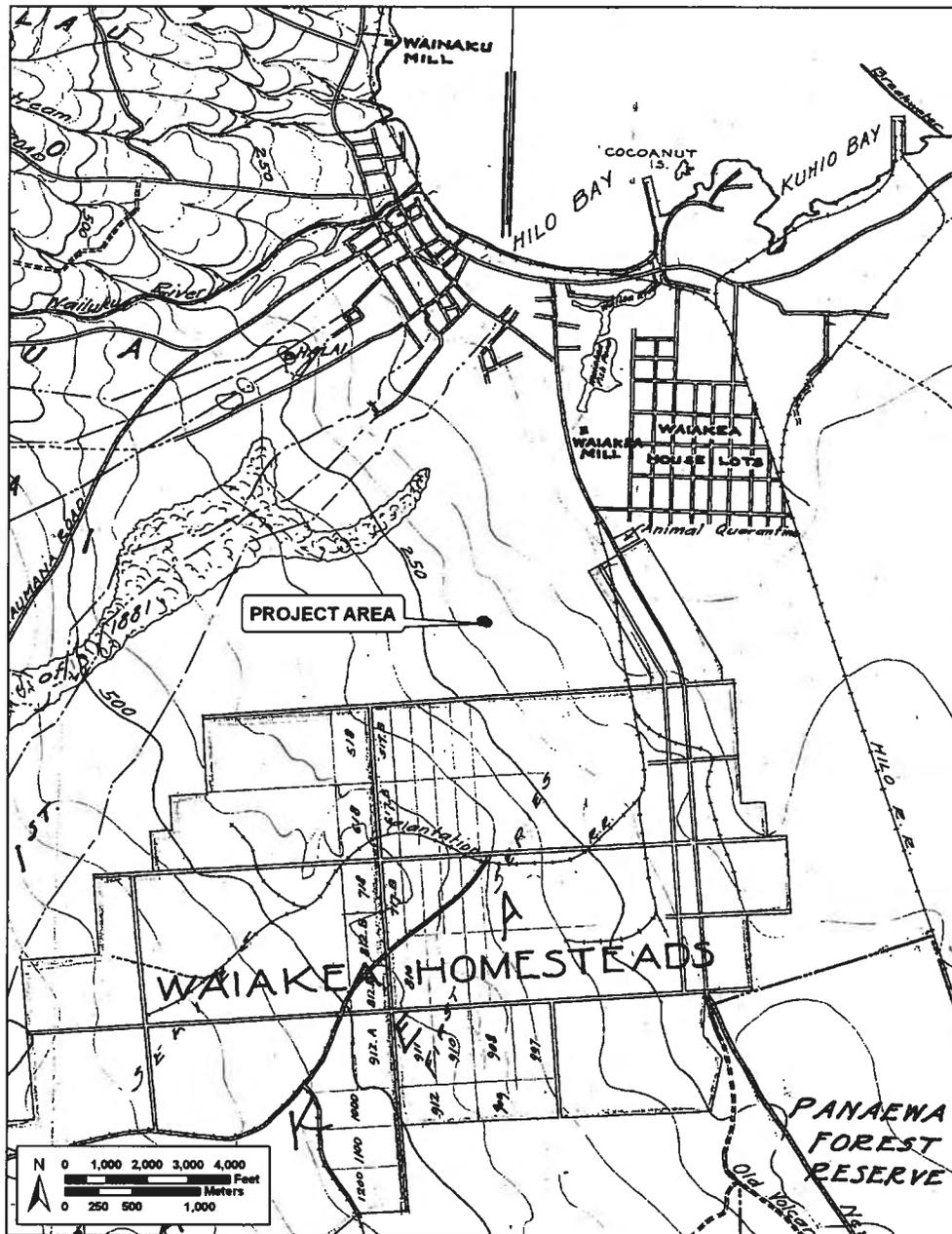


Figure 15. Historic 1920 map showing proposed project area.

3.3 Previous Archaeological Research

An overview of previous archaeological studies in Waiākea Ahupua'a is presented in Table 2 and Figure 16. A discussion of archaeological findings relevant to the current project area follows.

Table 2. Previous archaeological studies conducted in the Waiākea Ahupua'a

Source	Nature of Study	Location	Findings
Smith 1991	Site Inspection	University of Hawai'i, Hilo: Perimeter Road Alignment, Research and Technology Park Phase I, Waiākea, TMK: [3] 2-4-001:007	One property on the 1500-750 year old flow; inventory survey recommended
Hunt 1992	Interim Report: Archaeological Inventory Survey	Puainako Street Extension Project, Lands of Waiākea, Kūkūau 1 and 2, and Ponahawai	Field inspection findings – 31 features identified within the project area - walls, mounds, platforms, and faced terraces
Smith 1992	Field Inspection for State Land Disposition of the Proposed Dept. of Water Supply Office Site in Hilo	Waiākea Cane Lots, Waiākea, (TMK: [3] 2-4-57:001)	Several stacked stone walls, mounds, a large rectangular enclosure, and several C-shapes
Borthwick and Hammatt 1993	Archaeological Survey and Testing	Proposed University of Hawai'i at Hilo Expansion Area (TMK 2-4-01:7 and 41)	4 historic rock clearance mounds and 1 stacked boulder wall – constructed and maintained by Waiākea Mill
Borthwick et al. 1993	Archaeological Survey and Testing	Proposed for Research and Technology Lots at the University of Hawai'i at Hilo TMK [3] 2-4-001:007 & 041; 163-acres	Four properties found all thought to be related to historic sugar cane agriculture

Source	Nature of Study	Location	Findings
Hunt & McDermott 1994	Archaeological Inventory Survey	Lands of Waiākea, Kūkūau 1 and 2; Ponahawai, South Hilo (Puainako Street Extension Project)	Inventory survey (final report of Hunt 1992). Historical, oral interview, and archaeological data combine to demonstrate that the numerous stack stone features in the project area, comprising of 13 properties, are all related to historic sugar cane agriculture.
Kennedy & Ireland 1994	Archaeological Inventory Survey	Proposed Hilo Forestry Office Complex Extension Located at TMK: [3] 2-2-27:01 (Portion) in Waiākea Ahupua'a corner of Kawili & Kīlauea, 0.5 acres	No finds
Rosendahl 1994	Archaeological Inventory Survey	Waiākea Cane Lots, Portion of Parcel 6, Hilo, TMK [3] 2-4-057:001	Four properties with 47+ components were recorded; these were all probably historic features associated with sugar cane cultivation and transportation.
Spear 1995	Report on Data Recovery Excavations	SIHP #s 50-10-35-19431, 19432, 19433, and 19434, Land of Waiākea, TMK [3] 2-4-057:001	Data recovery of the Maly et al. (1994) parcel. SIHP #s 50-10-35-19431, 19432, 19433, and 19434; all features post-contact, a few temporary habitations but most related to sugar cane agriculture.
Winieski et al. 1996	Archaeological Survey	Proposed Reservoir and Waterline Easement for the University of Hawai'i at Hilo TMK: [3] 2-4-001:012 & [3] 2-4-003:026	No properties

Source	Nature of Study	Location	Findings
Robins et al. 1996	Archaeological Inventory Survey	Proposed Mohouli Connector Road Ahupua'a of Kūkuau 1 and 2, Ponahawai and Punahoa, <i>mauka</i> central Hilo	No properties found
Robins and Spear 1996	Archaeological Inventory Survey	Puainako Street Realignment/Extension Project Expanded Corridor, Waiākea, Kūkuau 1 and 2, and Ponahawai	Additional historic sugar cane agricultural features were located in the expansion of the Hunt & McDermott (1994) corridor study area.
Walker and Rosendahl 1996	Archaeological Assessment	TMK: [3] 2-6-015:001,002; [3] 2-6-016:002; [3] 2-4-049:018,019; [3] 2-2-015:033; [3] 2-4-001:012; [3] 2-3-036:003; [3] 2-3-032:001; [3] 2-4-057:001	Four previously identified historic properties relocated: SIHP -19431 through SIHP -19434, consisting of 47+ features associated with historic sugar cultivation (Maly et al. 1994). One newly identified historic property: SIHP -21133, a sugar cane mill.
Rechtman and Henry 1998	Archaeological Inventory Survey	University of Hawai'i-Hilo Kawili Street Development (TMK: [3] 2-4-01:5)	4 previously identified historic properties 50-10-35-19431, -19432, -19433, -19434, & new site -21461; 117 features all related to commercial sugar cane agriculture.
McGerty and Spear 1999	Inventory Survey	An Additional Unsurveyed Portion of TMK: [3] 2-4-57:1, Land of Waiākea, South Hilo District.	4 previously identified sites 50-10-35-19431, -19432, -19433, -19434; 13 features all related to commercial sugar cane agriculture.
Bush et al. 2000	Archaeological Inventory Survey	Approx. 20-Acre Parcel Proposed for the USDA Pacific Basin Ag. Research Center near the Intersection of Komohana and Puainako St. TMK [3] 2-4-001:122	SIHP 50-10-35-22,080, one isolated human femur in sinkhole

Source	Nature of Study	Location	Findings
Hammatt et al. 2002	Traditional and Cultural Practices Assessment	Proposed U.S.D.A. Pacific Basin Agricultural Research Facility (TMK 2-4-01: por. 122)	No cultural properties identified
Corbin 2006	Archaeological Assessment	University of Hawai'i at Hilo (TMK: [3] 2-4-001: por. 167)	No historic properties identified.

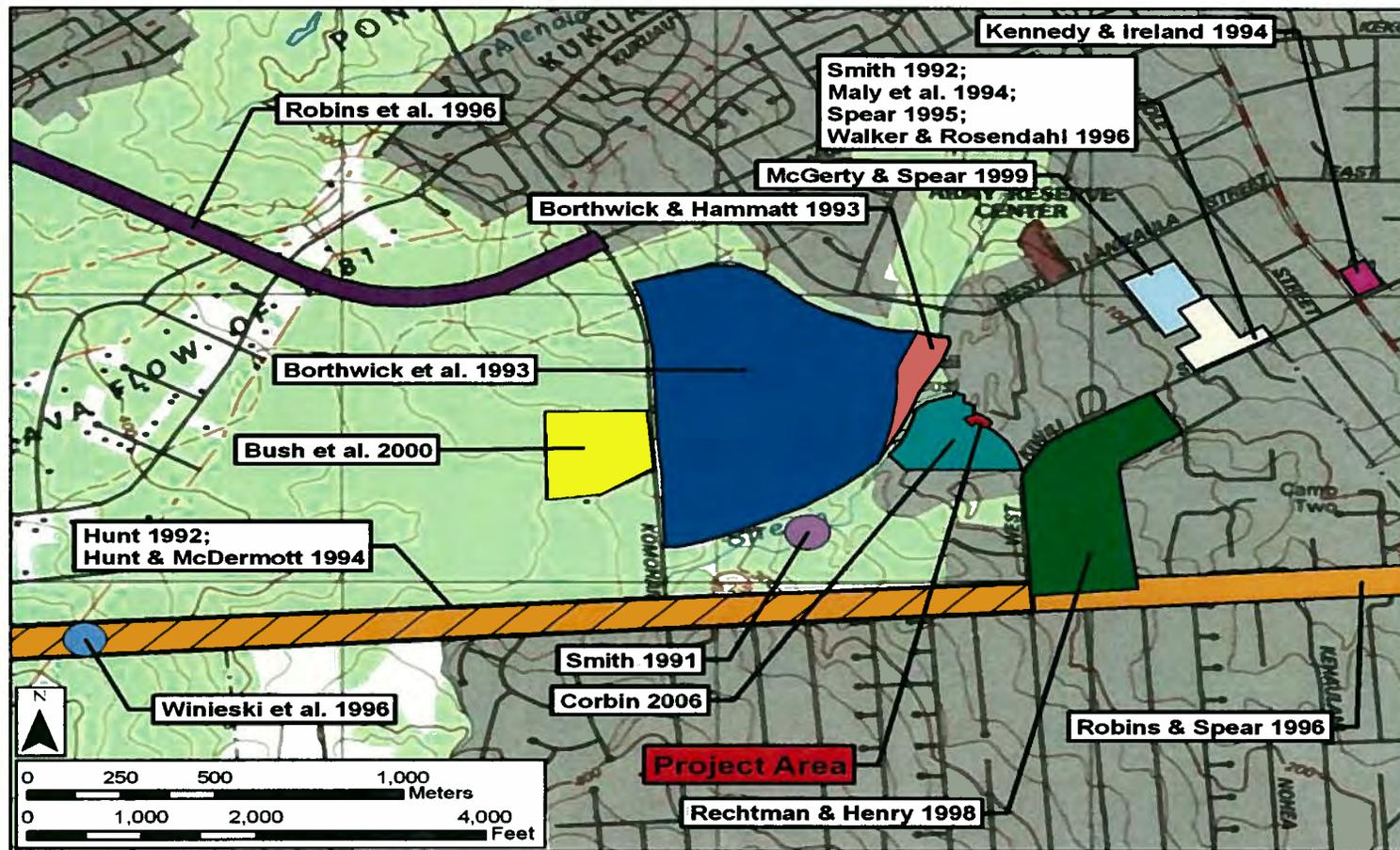


Figure 16. Previous archaeological studies conducted in the Waiākea Ahupua'a.

In 1993 Cultural Surveys Hawai'i (CSH) conducted an archaeological inventory survey for lands proposed for the expansion of the University of Hawai'i at Hilo (Borthwick *et al.* 1993). Four historic properties were identified: SIHP No. 50-10-35-18667 (agricultural field complex), SIHP No. -18668 (enclosure), SIHP No. -18669 (enclosure), and SIHP No. -18670 (agricultural field complex). All four properties were determined to be associated with historic sugar cane agriculture.

In 1994 Archaeological Consultants of Hawai'i, Inc. conducted an archaeological inventory survey for the proposed Hilo Forestry Office Complex Extension (Kennedy & Ireland 1994). No historic properties were identified due to extensive land modifications associated with the urban development of Hilo. However, one historic property, SIHP No. 50-10-35-19626 (stone wall), was identified bordering the perimeter of the study area. The property consists of a bi-faced, core filled wall constructed of stacked, and, in some sections, mortared basalt boulders. The property was determined to be of historic origin.

In 1998 PHRI conducted an archaeological inventory survey for the University of Hawai'i at Hilo Kāwili Street Development (Rechtman & Henry 1998). One historic property was identified: SIHP No. 50-10-35-21461, an agricultural field complex associated with historic sugar cane agriculture, consisting of piled rock mounds, stacked rock walls, and enclosures.

3.4 Background Summary

Waiākea, with its rich natural resources of the forests and the sea, has long been a center of habitation for Hawaiians and is often mentioned in Hawaiian folklore and legends. According to many legends, Waiākea has also been associated with Hawaiian royalty (*ali'i*) since the 16th century and a gathering place for many ceremonies. The rich mountain resources of taro and sweet potato and the abundant marine resources particularly shrimp and fish made Waiākea very valuable to the Hawaiian people. At least three *heiau* of various sizes and class, stood within Waiākea. Many Hawaiian gods and goddesses frequented Waiākea including Pele, Hi'iaka and Pana'ewa.

The present study area is situated within the lower elevations of what McEldowney defined as an upland agricultural zone (McEldowney 1979). The zone was described by early visitors to Hilo Bay as "open parkland gently sloping to the base of the woods...an expanse broken by widely spaced cottages, neatly tended gardens, and small clusters of trees" (McEldowney 1979). Over time the upland agricultural zone was converted from forest to "open parkland" where plantings occurred on soil mantled lava flows. Habitation for the most part was probably temporary with a few scattered permanent occupation complexes.

During the mid-17th century sugar cane agriculture and ranching became prominent in Waiākea Ahupua'a. Both of these enterprises flourished until their gradual decline in the early 20th century. A 1915 map shows the proposed project area located at the outskirts of the Waiākea Mill Company sugar plantation (Figure 6).

The 20th century brought the onset of urban development to the district of South Hilo. Major construction jobs started in the 1920s were completed. These major construction jobs, in part,

included Hilo Bay, wharfs and breakwater and bridges. During the World War II period in Hilo, expansion and designation of Hilo airport as General Lyman Field and the construction of the Saddle Road were major projects undertaken as part of the military presence on the island, which was very substantial.

After statehood (1959) and with the closing of the Waiākea Mill, tourism was looked at as the next economic mainstay. In Waiākea, C. Brewer & Co. built a hotel complex at the site of the old Canec plant. Large tracts of former Waiākea Homestead and Cane lots were converted to housing or sub-division tracts.

Historic background research has also placed the project area within the outskirts of the Waiākea Mill Company sugar plantation. Additionally, previous archaeological research in the immediate vicinity of the project area did not identify any historic properties due to extensive land modifications associated with urban development. Surface remnants of traditional Hawaiian occupation (habitation and agriculture) are not likely to be present in the project area. Any surface properties present would more likely be associated with historic sugar agriculture. These properties could include clearing mounds, flumes, irrigation ditches, or the remnants of plantation camps.

Section 4 Community Consultation Process

Throughout the course of this CIA, an effort was made to contact and consult with Hawaiian cultural organizations, government agencies, and individuals who might have knowledge of and/or concerns about cultural resources and practices specifically related to the project area. At this writing, a number of attempts (2-4) were made to contact individuals, organizations, and agencies apposite to the subject CIA. Community consultation is ongoing. This effort was made by letter, e-mail, telephone and in person. In the majority of cases, letters along with a map and aerial photograph of the project area were mailed with the following text:

At the request of Belt Collins Hawai'i, Ltd., Cultural Surveys Hawai'i Inc., is conducting the Cultural Impact Assessment (CIA) for the proposed portable buildings at the University of Hawai'i at Hilo (UHH), South Hilo District, Hawai'i Island, TMK(3) 2-4-001: 167. Please see the enclosed maps.

The proposed portable buildings are intended to facilitate the temporary move of faculty and staff from the UHH's Edith Kanaka'ole Hall (EKH), while its air-conditioning system is being upgraded. These portable buildings will include four interconnecting modules located between the newly constructed Student Life Center (SLC), Hale Kuamo'o, and the College of Agriculture, Forestry, and Natural Resources Management (CAFNRM) facilities.

The proposed project site is presently occupied by a section of a staging area used for the recently constructed SLC, a portion of a grass lawn, overgrown vegetation, and a pedestrian pathway. Once the upgraded air-conditioning system for EKH is completed, the faculty and staff will move back to their home EKH offices. The four interconnecting modules, however, will remain and continue to be used by UHH for other campus purposes.

The purpose of this cultural study is to assess potential impacts to cultural practices as a result of the proposed development in Waiākea Ahupua'a. We are seeking your *kōkua* and input on any of the following aspects of this study:

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

Knowledge of cultural sites- for example, historic sites, archaeological sites, and burials.

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

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

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

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

The preliminary results of the ongoing community consultation effort are presented in Table 3 and succeeding sections below. The individuals, organizations and agencies attempted to be contacted are presented in the table below. Responses provided by Mr. Clyde Nāmu'ō (OHA), Ms. Phyllis "Coochie" Cayan (SHPD) and Ms. Helen Wong-Smith (UH-Hilo Mo'okini Library) are presented in full below the table.

Table 3. Summary of Community Consultation

Name	Background Affiliation	Comments
Ailā, Mr. William	Hui Mālama I Nā Kūpuna 'O Hawai'i Nei	CSH emailed a copy of Community Outreach Letter, USGS map, aerial map and site plan map on Dec. 4 and Dec. 5, 2008.
Ayau, Mr. Halealoha	Hui Mālama I Nā Kūpuna 'O Hawai'i Nei	CSH emailed a copy of Community Outreach Letter, USGS map, aerial map and site plan map on Dec. 4 and Dec. 5, 2008.
Cayan, Ms. Phyllis "Coochie"	History & Culture Branch Chief, State Historic Preservation Division (SHPD)	CSH mailed & emailed a copy of Community Outreach Letter, USGS map, aerial map and site plan map on Nov. 4, 2008. CSH conducted a telephone interview on Nov. 19. See below for statement.
Donaghy, Mr. Joseph N. "Keola"	Assistant Professor, Ka Haka 'Ula O Ke'elikōlani/College of Hawaiian Language at the University of Hawai'i at Hilo	CSH emailed a copy of Community Outreach Letter, USGS map, aerial map and site plan map on Nov. 19 and Nov. 28, 2008.
Donham, Ms. Theresa	Hawai'i Archaeologist, State Historic Preservation Division (SHPD)	CSH mailed & emailed a copy of Community Outreach letter, USGS map, aerial map and site plan map on Nov. 4, Nov. 19, and Nov. 28, 2008. CSH left a phone message on Nov. 19, at the SHPD Hilo office.

Josephides, Mr. Analu	Cultural Historian, State Historic Preservation Division (SHPD)	CSH mailed & emailed a copy of Community Outreach letter, USS map, aerial map and site plan map on Nov. 7, Nov. 19, and Nov. 28, 2008. CSH left a phone message on Nov. 19, at the SHPD Hilo office.
Kawai'ae'a, Ms. Keiki	Assistant Professor, Kahuiwaiola Teacher, Ka Haka 'Ula O Ke'elikōlani/College of Hawaiian Language at the University of Hawai'i at Hilo	CSH emailed a copy of Community Outreach Letter, USGS map, aerial map and site plan map on Nov. 19 and Nov. 28, 2008.
Keli'ikoa-Sherlock, Ms. Ululani	Vice-Chair, Big Island Burial Council (BIBC)	CSH emailed a copy of Community Outreach Letter, USGS map, aerial map and site plan map on Nov. 7, Nov. 19, and Nov. 28, 2008. CSH left a cell phone message on Nov. 19.
Nāmu'o, Mr. Clyde	Administrator, Office Of Hawaiian Affairs (OHA)	CSH emailed a copy of Community Outreach Letter, USGS map, aerial map and site plan map on Nov. 4, 2008. CSH left a phone message with Mr. Nāmu'o's secretary on Nov. 19. See below for statement.
Silva, Dr. Kalena	Director, Ka Haka 'Ula O Ke'elikōlani/College of Hawaiian Language at the University of Hawai'i at Hilo	CSH emailed a copy of Community Outreach Letter, USGS map, aerial map and site plan map on Nov. 19 and Nov. 28, 2008.
Wong-Smith, Ms. Helen	Librarian/Archivist at the University of Hawai'i at Hilo Edwin H. Mo'okini Library	CSH emailed a copy of Community Outreach Letter, USGS map, aerial map and site plan map on Nov.4, 2008. CSH conducted a telephone interview on Nov. 19. See below for statement.

4.1 Office of Hawaiian Affairs Response Letter

CSH received a response letter from Mr. Clyde Nāmu'o of OHA on December 4, 2008:

The Office of Hawaiian Affairs (OHA) is in receipt of your November 4, 2008 letter initiating consultation and seeking comments ahead of a cultural impact assessment for the proposed placement of portable buildings on the University of Hawai'i at Hilo

campus. Based on the information included within your letter, the area where the portable buildings will be placed is currently occupied by a staging area, portion of grass lawn, overgrown vegetation and a pedestrian pathway.

OHA recommends consultation with the following individuals and/or organizations who may be willing to share their cultural knowledge of the assessment area with you: Ka Haka 'Ula O Ke'elikōlani, Nā Pua No'eau – UH-Hilo office, William Ke'alahi Meyers, Jenö Enocencio and Ululani Sherlock.

While the proposed project area is situated within a developed portion of the UH-Hilo campus, your consultation effort may provide some insight into the history and traditional cultural significance of Waiākea Ahupua'a. OHA is aware of certain accounts which identify Kūlilikaua as a god of the thick forest mists of Waiākea, upper Puna and Keauhou. The gods of these upland areas are very active in their domain and numerous careless travelers who are unfocused and do not follow appropriate protocol become hopelessly lost in this wao kele. Pu'u Kūlani is a prominent landscape feature which is described in chants and mo'olelo and marks the southwest boundary of Waiākea Ahupua'a. Historical references identify Kapaieie Heiau and Honokawailani in Waiākea as possibly being of the luakini class.

OHA hopes to continue working with you to develop a paradigm shift in assessments which will truly identify the impacts proposed undertakings will have on cultural resources and traditional practices. OHA respectfully maintains the position that all parties bear a responsibility to work towards building successful working relationships with individuals, organizations and communities throughout Hawai'i which will result in a true understanding of what resources and practices are important to the Hawaiian people.

Thank you for initiating consultation at this early stage and we look forward to the opportunity to review the draft assessment and provide additional comments.

4.2 State Historic Preservation Division (SHPD) Response Letter

CSH received a response letter from Ms. Phyllis "Coochie" Cayan of the SHPD on November 25, 2008:

This is in response to your letter dated November 4, 2008 for the Proposed Buildings at the University of Hawaii at Hilo (UHH), South Hilo District, Hawaii Island where the proposed portable buildings are intended to facilitate the temporary move of faculty and staff from the UHH's Edith Kanakaole Hall (EKH) while its air-conditioning system is being upgraded.

As you noted, the proposed project site has been used as a staging area for the newly built Student Life Center (SLC) which is abutted by a partial grass lawn, overgrown vegetation and a pedestrian walkway. Also you note that these portable buildings will remain on site for continued use by the UHH for other campus activities.

Having a general familiarity with the UHH campus and in speaking with a Hawaiian UHH employee, we would concur there is no significant cultural impact on the proposed project site due to the recent construction of the SLC which has changed the forested area previously there. We do note that the remaining adjacent forested area (native 'ohia, ferns etc.) to the UHH is a place for cultural practitioners and other students in the Hawaiian courses to easily access for gathering purposes.

You may want to contact the following for more input on the proposed site and any cultural impacts:

Dr. Kekuhi Kanahale, Ph.D. at Hawaii Community College

Dr. Pualani Kanahale, Ph.D. at the Edith Kanakaole Foundation, Keaukaha
Hilo Branch of the Office of Hawaiian Affairs

Mr. Charles Young of the Hawaii Island Burials Council (contact him at Maunaloa Macadamias, Inc.

4.3 Other Statements and Brief Responses from Project Participants

4.3.1 Ms. Helen Wong-Smith of the University of Hawai'i at Hilo Mo'okini Library.

CSH conducted a telephone interview with Ms. Helen Wong-Smith, Librarian/Archivist at the University of Hawai'i at Hilo, on Nov. 19, 2008:

"I have no cultural information at this time. I will refer you to Keiki Kawai'ae'a, Dr. Kalena Silva, and Keola Donaghy. They would have more cultural information and/or concerns regarding this proposed project area at the University of Hawai'i at Hilo."

Section 5 Cultural Landscape of the Project Area

5.1 Overview

Traditional cultural practices are based on a profound awareness concerning harmony between man and our natural resources. The Hawaiians of old depended on these cultural practices for survival. Based on their familiarity with specific places and through much trial and error, Hawaiian communities were able to devise systems that fostered sustainable use of nature's resources. Many of these cultural practices have been passed down from generation to generation and are still practiced in some of Hawai'i's communities today.

This project seeks to assess traditional cultural practices as well as resources pertaining to the project area within Waiākea Ahupua'a. This section will assess the different types of traditional practices, cultural resources associated within the vicinity.

Discussion of specific aspects of traditional Hawaiian culture as they may relate to the project area and Waiākea Ahupua'a are presented below.

5.2 Marine and Freshwater Resources

The sea is a rich resource and the Hawaiian people were traditionally expert fishermen. Fish of all types supplied the Hawaiian diet with a rich source of protein. Hawaiian women practiced the gathering of seaweeds and salt. According to Fornander (1916), the fishponds of Waiākea were abundant with mullet, shrimps and crabs highly valued by Kulukulua and Kamehameha I.

The present project area is located well *mauka* of the Waiākea shoreline and fishponds. Additionally, no streams, ponds or other freshwater sources are identified within the project area. Thus no ongoing traditional cultural practices related to marine and freshwater resources occur in the present project area.

5.3 Gathering of Plant Resources

Hawaiians utilized upland resources for a multitude of purposes. Forest resources were gathered, not only for the basic needs of food and clothing, but for tools, weapons, canoe building, house construction, dyes, adornments, hula, medicinal and religious purposes. According to Handy & Handy (1972), there were recorded agricultural methods used to grow taro, sweet potatoes, and sugar cane in Waiākea.

During this assessment, interviewee Phyllis "Coochie" Cayan of the SHPD mentioned in her response letter to CSH: "Having a general familiarity with the UHH campus and in speaking with a Hawaiian UHH employee, we would concur there is no significant cultural impact on the proposed project site due to the recent construction of the SLC which has changed the forested area previously there. We do note that the remaining adjacent forested area (native 'ohia, ferns etc.) to the UHH is a place for cultural practitioners and other students in the Hawaiian courses to easily access for gathering purposes."

5.4 Traditional Hawaiian Sites

According to Hunt & McDermott (1994), three *heiau* were located near the coastline in the *ahupua'a* of Waiākea. The three *heiau* within Waiākea are: Kapa'ie'ie Heiau (unknown class) located along the old Hilo – 'Ōla'a trail (not far from the route of modern-day Kīlauea Avenue), Makaokū Heiau (*luakini* class) on the shore opposite of Coconut Island (Mokuola), and Ohele Heiau (*luakini* class) located in Waiākea near the old Pitman store.

During this assessment there were no traditional Hawaiian sites identified within the present project area. None of the individuals attempted to be contacted for this assessment identified any traditional Hawaiian sites within the present project area.

5.5 Burials

During this assessment there were no burials identified within the present project area. None of the individuals attempted to be contacted for this assessment identified any burials within the present project area.

5.6 Hawaiian Trails

During this assessment there were no Hawaiian trails identified within the present project area. None of the individuals attempted to be contacted for this assessment identified any Hawaiian trails within the present project area.

Section 6 Summary and Recommendations

At the request of Belt Collins Hawai'i, Ltd., Cultural Surveys Hawai'i, Inc. has conducted this Cultural Impact Assessment (CIA) for the proposed portable buildings at the University of Hawai'i at Hilo (UHH), District of Hilo, Hawai'i Island, TMK(3) 2-4-001: 167 (Figure 1, Figure 2, Figure 3 & Figure 4). This proposed project, approximately 35,000 square feet, will include four interconnecting modules located between the newly constructed Student Life Center (SLC), Hale Kuamo'o, and the College of Agriculture, Forestry, and Natural Resources Management (CAFNRM) facilities. The proposed portable buildings are intended to facilitate the temporary move of faculty and staff from the UHH's Edith Kanaka'ole Hall (EKH), while its air-conditioning system is being upgraded. The proposed project site is presently occupied by a section of a staging area used for the recently constructed SLC, a portion of a grass lawn, overgrown vegetation, and a pedestrian pathway. Once the upgraded air-conditioning system for EKH is completed, the faculty and staff will move back to their home EKH offices. The four interconnecting modules, however, will remain and continue to be used by UHH for other campus purposes.

In addition to conducting background research into the traditional and historic importance of the project area, in the context of Waiākea Ahupua'a, including results from previous archaeological studies, CSH also made an effort to consult with community members and organizations. A total of eleven people were contacted for the purposes of this CIA; three people responded at this writing. Efforts at obtaining additional testimonies from community contacts are ongoing.

Background research shows:

1. The State Historic Preservation Division (SHPD) has previously reviewed and approved an Archaeological Assessment (Corbin 2006) which found no historic properties for this proposed site.
2. Waiākea, with its rich natural resources of the forests and the sea, has long been a center of habitation for Hawaiians and is often mentioned in Hawaiian folklore and legends. According to many legends, Waiākea has also been associated with Hawaiian royalty (*ali'i*) since the 16th century and a gathering place for many ceremonies. The rich mountain resources of taro and sweet potato and the abundant marine resources particularly shrimp and fish made Waiākea very valuable to the Hawaiian people. At least three *heiau* (temple) of various sizes and class, stood within Waiākea. Many Hawaiian gods and goddesses frequented Waiākea including Pele, Hi'iaka and Pana'ewa.
3. Based on relatively abundant records of historical documents and oral-historical information, there is little doubt that the proposed project area was once part of an extensive upland agricultural zone, which had more agriculturally productive areas and scattered habitation sites.
4. Previous archaeological research in the immediate vicinity of the proposed project area did not identify any historic properties due to extensive land modifications associated with urban development.

A total of eleven people were contacted for the purposes of this CIA; three people responded as of this writing. Efforts at obtaining additional testimony from the remaining individuals contacted for this CIA are ongoing. Preliminary community consultation for this project yielded the following results:

1. The remaining native forested area adjacent to the project area remains a gathering place for cultural practitioners and other students in the Hawaiian courses to easily access native plants (native 'ōhi'a [*Metrosideros macropus*], ferns etc.).
2. There are at least three heiau in Waiākea, one being Kapa'ie'ie Heiau, possibly belonging to the *luakini* class.
3. The project area and environs, is featured prominently in Hawaiian folklore, including Kūlilikaua as a god of the thick forest mists of Waiākea, upper Puna and Keauhou and the landscape feature of Pu'u Kūlani which marks the southwest boundary of Waiākea Ahupua'a.
4. OHA voiced the need to develop a "paradigm shift in assessments" that will identify the real impacts on cultural resources and practices, and noted that "all parties bear a responsibility to work towards building successful working relationships with individuals, organizations and communities throughout Hawai'i which will result in a true understanding of what resources and practices are important to the Hawaiian people."

A good faith effort to address the following recommendations may help mitigate potential adverse effects of the proposed project on Hawaiian cultural practices and resources near the project area.

1. Cultural Surveys Hawai'i recommends that future consultation with Hale Kuamo'o and/or Ka Haka 'Ula O Ke'elikōlani/College of Hawaiian Language at the University of Hawai'i at Hilo may be in order if the adjacent native forested area is impacted by construction activities. This native forested area should be incorporated into the natural landscape of the proposed project area.

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