



STATE OF HAWAII  
DEPARTMENT OF EDUCATION  
P.O. BOX 2360  
HONOLULU, HAWAII 96804

OFFICE OF SCHOOL FACILITIES AND SUPPORT SERVICES

December 23, 2013

OFFICE OF ENVIRONMENTAL  
QUALITY CONTROL  
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TO: Director  
Office of Environmental Quality Control  
Department of Health

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FROM: Michael Shigetani, Public Works Manager  
Project Management Section  
Facilities Development Branch

JAN 08 2014

FILE COPY

SUBJECT: **Draft Environmental Assessment and Anticipated Finding of No Significant Impact (DEA-AFONSI) for 'Ewa Elementary School, Eight-Classroom Building at 'Ewa, O'ahu, Hawai'i, Tax Map Key (1) 9-1-017: 002**

The State of Hawai'i, Department of Education, hereby transmits the attached Draft Environmental Assessment and Anticipated Finding of No Significant Impact (DEA-AFONSI) for the 'Ewa Elementary School, Eight-Classroom Building, TMK (1) 9-1-017: 002, in the District of 'Ewa, on the island of O'ahu for publication in the next edition of the Environmental Notice.

Enclosed is a completed OEQC Publication Form, two copies of the DEA-AFONSI, an Adobe Acrobat PDF file of the same, and an electronic copy of the publication form in MS Word. A summary of the action in a text file will be submitted concurrently by electronic mail to your office.

If there are any questions, please contact Ron Hagino, Project Coordinator, at 586-0434.

MS:RH:jl

Enclosures

**AGENCY ACTIONS  
SECTION 343-5(B), HRS  
PUBLICATION FORM (FEBRUARY 2013 REVISION)**

**Project Name:** 'Ewa Elementary School, Eight-Classroom Building

**Island:** O'ahu

**District:** 'Ewa

**TMK:** (1) 9-1-017: 002

**Permits:** National Pollutant Discharge Elimination System (NPDES), Community Noise Permit and/or Noise Variance, Building, Street Usage, Trenching, Storm Drain Connection, and Grading, Grubbing, and Stockpiling Permits

**Proposing/Determination Agency:**

State of Hawai'i, Department of Education, Facilities Development Branch

1151 Punchbowl Street, Room 431, Honolulu, Hawai'i 96813

Ron Hagino

(808) 586-0434

**Consultant:**

Belt Collins Hawaii LLC

2153 North King Street, Suite 200, Honolulu, Hawai'i 96819

John Chung

(808) 521-5361

**Status (check one only):**

DEA-AFNSI

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

FEA-FONSI

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

FEA-EISPN

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

Act 172-12 EISPN

Submit the proposing agency notice of determination on agency letterhead, an OEQC publication form, and an electronic word processing summary (you may send the summary to [oeqchawaii@doh.hawaii.gov](mailto:oeqchawaii@doh.hawaii.gov)). NO environmental assessment is required and a 30-day consultation period upon publication in the periodic bulletin.

DEIS

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

FEIS

The proposing agency simultaneously transmits to both the OEQC and the accepting authority, a hard copy of the FEIS, a completed OEQC publication form, a distribution list, along with an electronic word processing summary and PDF copy of the FEIS (you may send both the summary and PDF to [oeqchawaii@doh.hawaii.gov](mailto:oeqchawaii@doh.hawaii.gov)); no comment period ensues upon publication in the periodic bulletin.

Section 11-200-23  
Determination

The accepting authority simultaneously transmits its determination of acceptance or nonacceptance (pursuant to Section 11-200-23, HAR) of the FEIS to both OEQC and the proposing agency. No comment period ensues upon publication in the periodic bulletin.

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\_\_\_Section 11-200-27  
Determination

The accepting authority simultaneously transmits its notice to both the proposing agency and the OEQC that it has reviewed (pursuant to Section 11-200-27, HAR) the previously accepted FEIS and determines that a supplemental EIS is not required. No EA is required and no comment period ensues upon publication in the periodic bulletin.

\_\_\_Withdrawal (explain)

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

The DOE proposes to build a new one-story, eight-classroom building at the existing 'Ewa Elementary School (9-1-017: 002). The new building will include six general education classrooms, one special education classroom, one computer lab, one faculty center, student restrooms, and various utility rooms and closets. In addition to the building, other improvements include walkways, a fire access road, utility connections, a drainage system, and trash enclosure relocation. New landscaping and an irrigation system are also incorporated into the project. The proposed building will be located on the west side of campus, in a grassy area currently utilized as a playfield.

'Ewa Elementary School is located in an area that continues to see significant growth in the residential population over the past several years. Several permanent classroom buildings and portables have been added, however, enrollment has continued to exceed the capacity of the school.



DRAFT ENVIRONMENTAL ASSESSMENT

‘Ewa Elementary School Eight-Classroom Building  
‘Ewa, O‘ahu, Hawai‘i

December 2013



Belt Collins Hawaii LLC  
2153 North King Street, Suite 200  
Honolulu, Hawai‘i 96819



# Project Profile

Proposed Action:	New Eight-Classroom Building 'Ewa Elementary School DOE Project No. Q81000-12
Street Address:	91-1280 Renton Road 'Ewa Beach, Hawai'i 96706
Proposing Agency:	Department of Education Facilities Development Branch, Planning Section State of Hawai'i 1151 Punchbowl Street Honolulu, Hawai'i 96813
Accepting Agency:	Department of Education Facilities Development Branch, Planning Section State of Hawai'i 1151 Punchbowl Street Honolulu, Hawai'i 96813
Tax Map Key:	9-1-017: 002 (proposed building on parcel 002) 9-1-017: 037
Land Area:	7.984 acres (parcel 002) 1.392 acres (parcel 037)
Landowner:	State of Hawai'i (parcel 002) City and County of Honolulu (parcel 037)
Existing Use: State Land Use District Designation: Land Use Ordinance Zoning: Development Plan (DP) Area: DP Urban Land Use Map: Special Management Area: Flood Insurance Rate Map (FIRM):  Requirement for Environmental Assessment:	Public Elementary School  Urban R-5 Residential 'Ewa Low and Medium Density Residential Not within Special Management Area  Zone D; areas in which flood hazards are undetermined, but possible.  Chapter 343, HRS, § 343-5(1); proposed use of State or County lands or use of State or County funds
Determination:	Anticipated Finding of No Significant Impact (FONSI)



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# Acronyms and Abbreviations

BLNR	Board of Land and Natural Resources (State of Hawai‘i)
BMP	Best Management Practices
BWS	Board of Water Supply (City and County of Honolulu)
CIA	Cultural Impact Assessment
City	City and County of Honolulu
DDC	Department of Design and Construction (City and County of Honolulu)
DLNR	Department of Land and Natural Resources (State of Hawai‘i)
DOE	Department of Education (State of Hawai‘i)
DOH	Department of Health (State of Hawai‘i)
DPP	Department of Planning and Permitting (City and County of Honolulu)
EA	Environmental Assessment
EIS	Environmental Impact Statement
EMS	Emergency Medical Service
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
HAR	Hawai‘i Administrative Rules
HRS	Hawai‘i Revised Statutes
msl	mean sea level
NPDES	National Pollutant Discharge Elimination System
OEQC	Office of Environmental Quality Control
SHPD	State Historic Preservation Division
SMA	Special Management Area
TCP	Traffic Control Plan
TMK	Tax Map Key

# 1 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

## 1.1 INTRODUCTION

The Department of Education (DOE), State of Hawai'i, is proposing to build an eight-classroom building at the existing 'Ewa Elementary School (see Figures 1 through 5). The existing school is located on Renton Road, approximately half a mile west of Fort Weaver Road, in 'Ewa, Oahu, Hawai'i. The new building will include six general education classrooms, one special education classroom, one computer lab, one faculty center, student restrooms, a general utility closet, mechanical room, electrical closet, and communications closet.

## 1.2 PROJECT JUSTIFICATION AND OBJECTIVES

'Ewa Elementary School is located in an area that has experienced considerable growth over the past several years. Population data from the City and County of Honolulu (City), Department of Planning and Permitting (DPP) shows the population of the 'Ewa Development Plan (DP) area increased at an average rate of approximately 4% per year from 2000 to 2010.<sup>1,2</sup> By comparison, the population of O'ahu increased at an average rate of approximately 0.9% during the same period. According to DPP projections, the 'Ewa DP population is anticipated to increase at a rate of 2% per year from 2010 to 2035, while O'ahu's population is expected to increase at a rate of less than 0.5% per year.<sup>2</sup>

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<sup>1</sup> Calculated from data from the City and County of Honolulu, Department of Planning and Permitting, "2010 Census PL94 Data by CDP within DP Area," obtained January 17, 2013.

<sup>2</sup> Calculated from data from the City and County of Honolulu, Department of Planning and Permitting, Research & Statistics website, accessed January 17, 2013, <http://dev.honolulu.dpp.org/Planning/ResearchStatistics.aspx>.



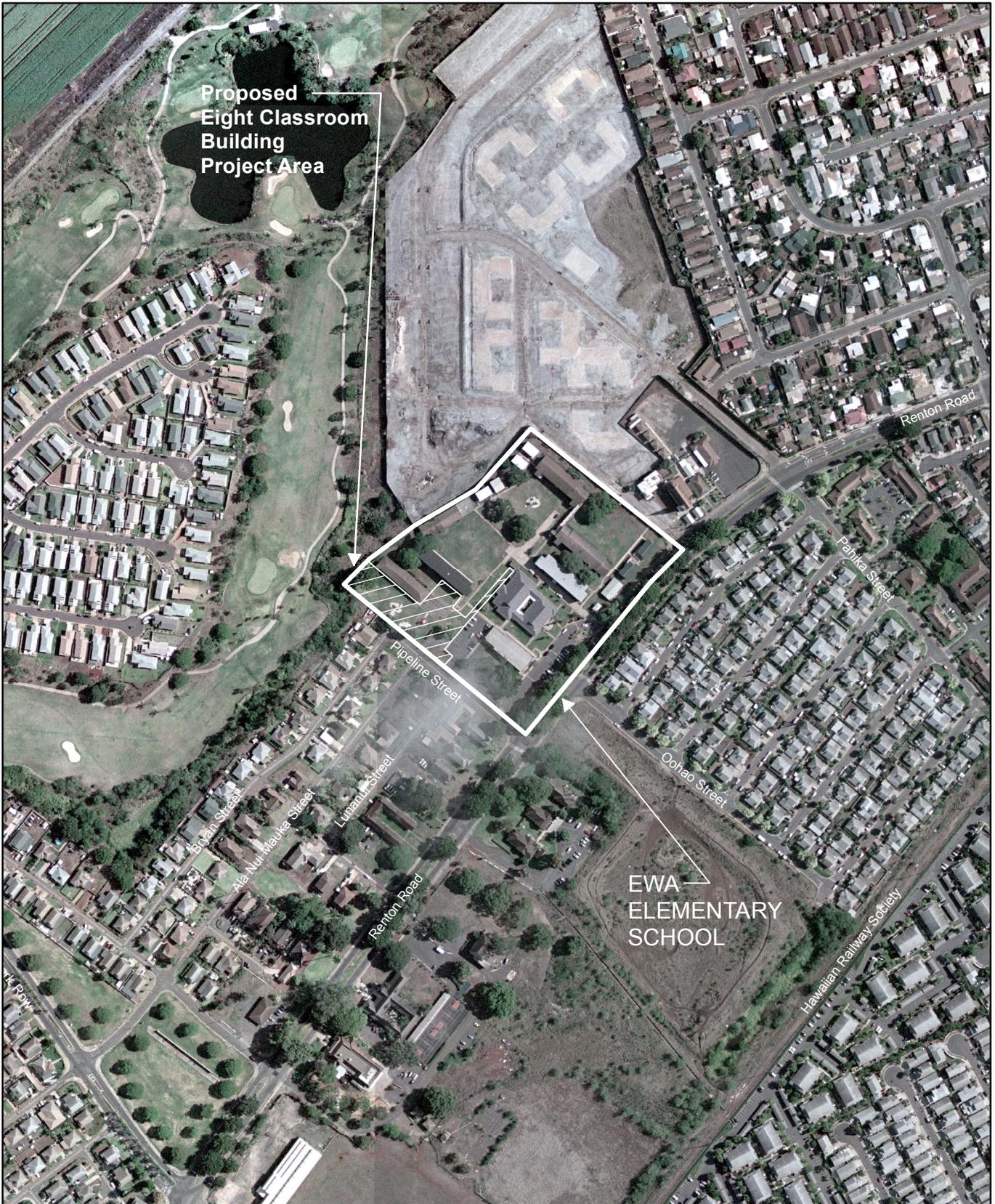
Prepared by: Belt Collins Hawaii LLC



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Feet

**FIGURE 1**  
Location Map

Ewa Elementary School  
Eight Classroom Building  
December 2013



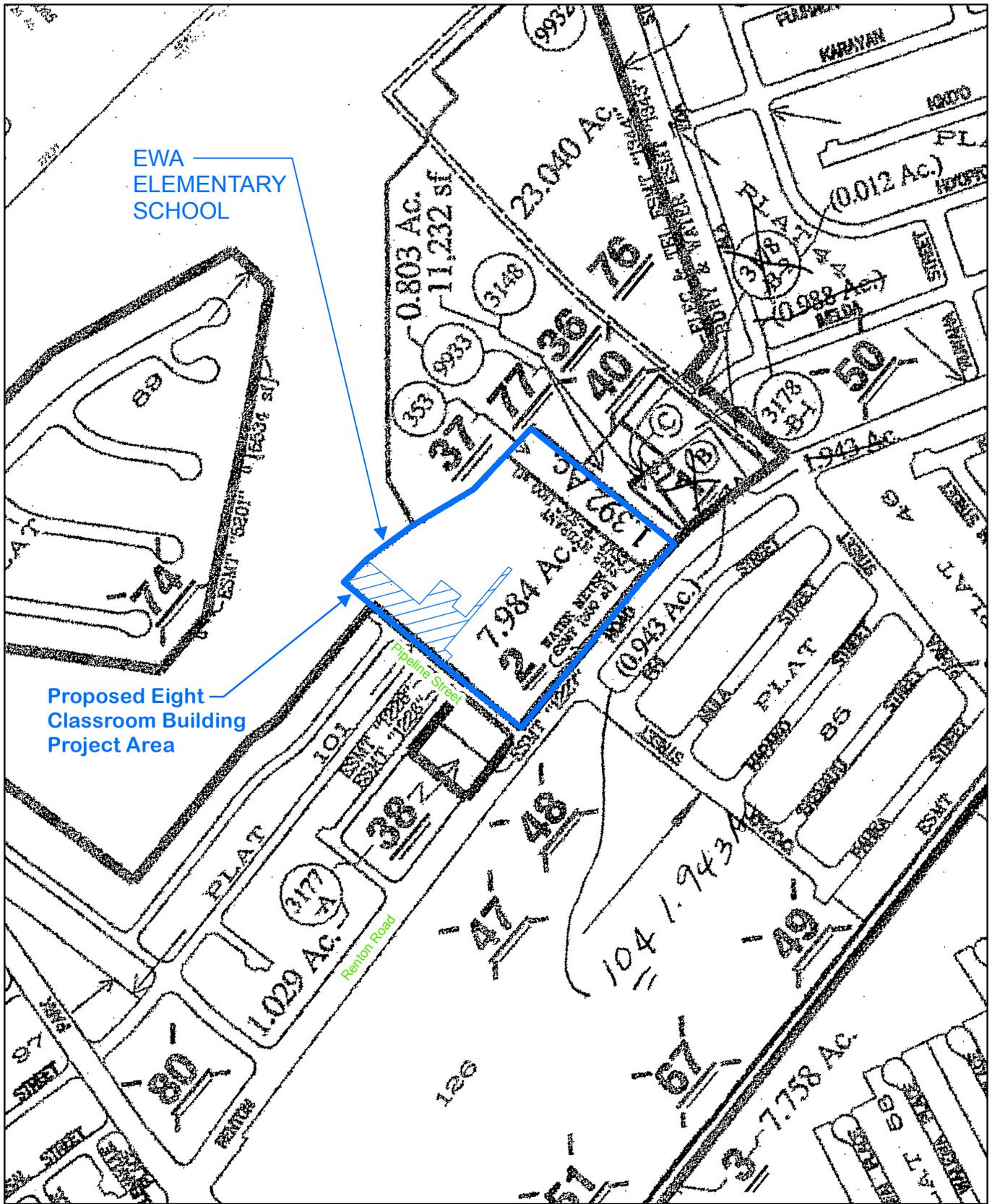
Prepared by: Belt Collins Hawaii LLC



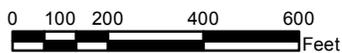
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**FIGURE 2**  
Project Area Map

Ewa Elementary School  
Eight Classroom Building  
December 2013



Prepared by: Belt Collins Hawaii LLC



**FIGURE 3**  
TMK Map

Ewa Elementary School  
Eight Classroom Building  
December 2013

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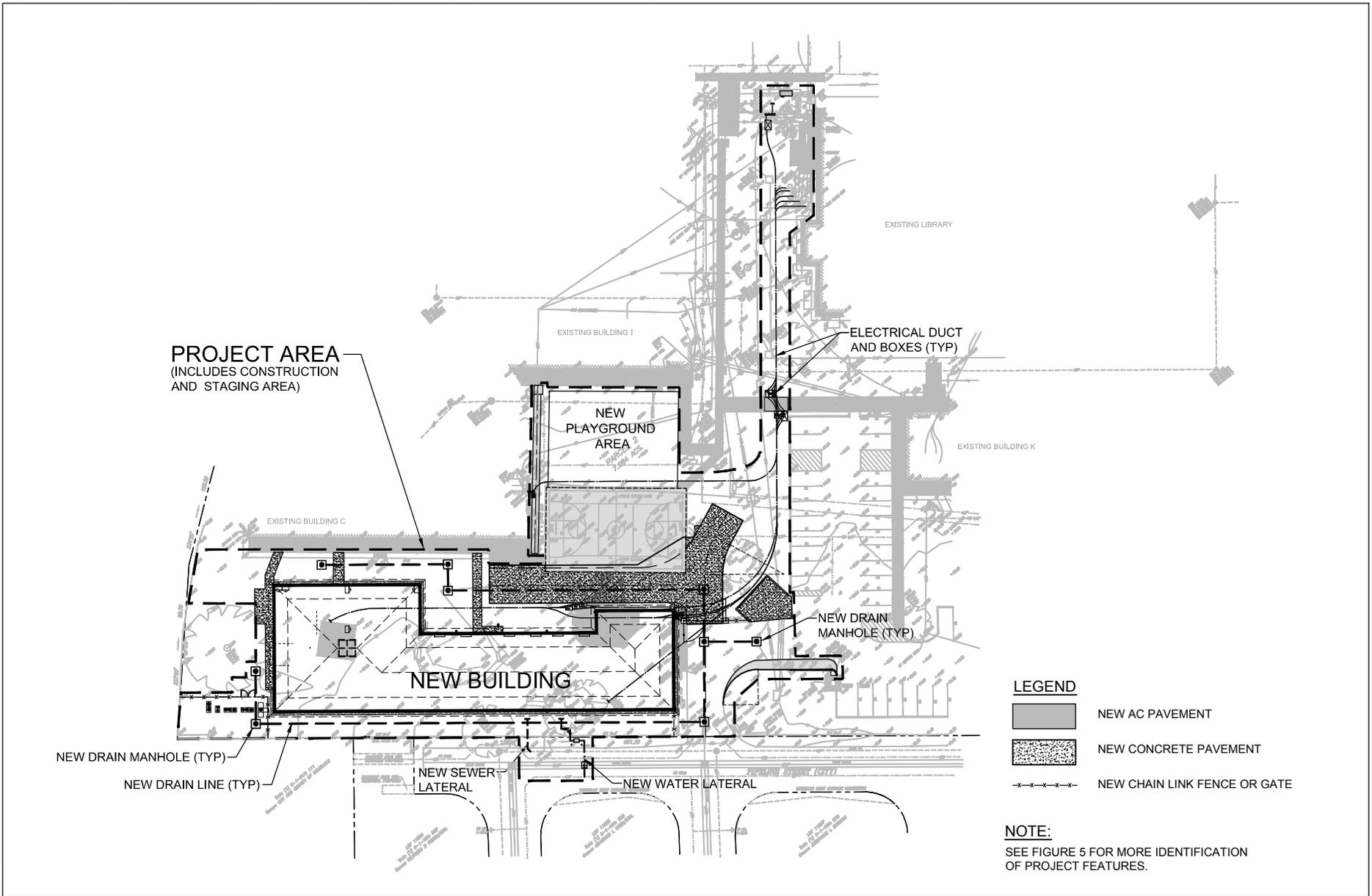
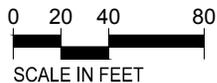
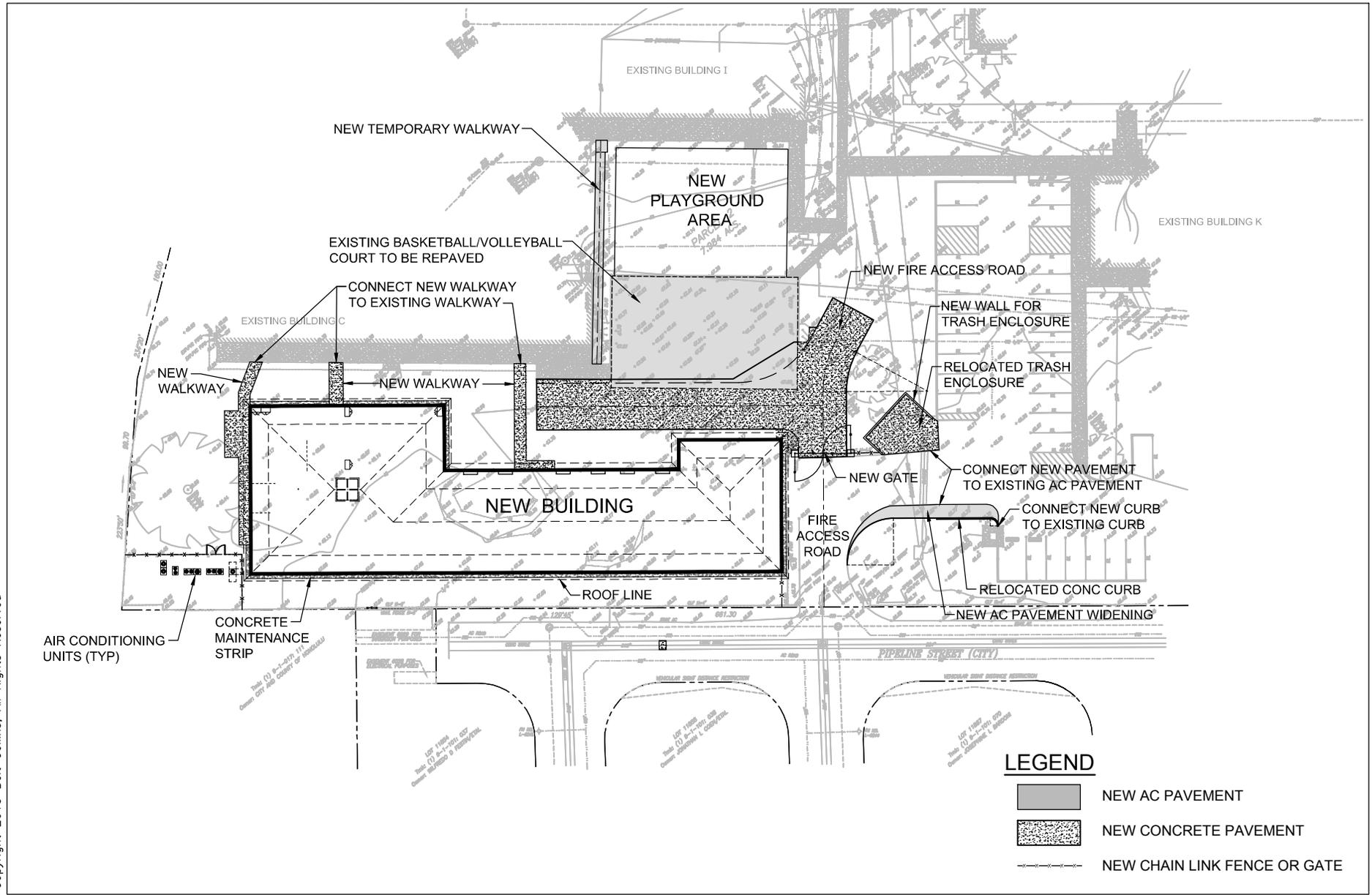


Figure 4  
GENERAL SITE PLAN

EWA ELEMENTARY SCHOOL  
EIGHT CLASSROOM BUILDING  
December 2013





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**Figure 5**  
**PRELIMINARY SITE PLAN**

EWA ELEMENTARY SCHOOL  
 EIGHT CLASSROOM BUILDING  
 December 2013

Villages of Moa'e Kū, a proposed 192-unit low income rental project is located next to the school. In October 2012, tenants started moving in to the first 64-unit phase.<sup>5</sup> A blessing for the start of construction of the second phase was held in April 2013 and the 76-unit phase is expected to be completed in May 2014.<sup>6</sup> The first two phases of the project are anticipated to boost enrollment by approximately 60 students in 2014.

The objective of the project is to provide more space to accommodate existing enrollment and additional students from the new housing project.

## 1.3 TECHNICAL CHARACTERISTICS

### 1.3.1 Site Plan and Building

The new building will be located in the western corner of the existing 'Ewa Elementary School campus, next to Building C and the basketball court (see Figure 5). The proposed building site is currently grass with a concrete slab and play structures. In addition to the building, other improvements will include walkways, fire access road, utility connections, drainage system, and trash enclosure relocation. The proposed building and related improvements will cover approximately 40,000 square feet.

The new classroom building will be one-story with an approximate 13,000 square-foot building footprint. Preliminary floor plans are shown on Figure 6 (Sheet A201). The height of the structure is planned to be less than 25 feet measured from the highest existing grade in the buildable area to the highest point on the roof. See Figure 7 (Sheet A301). Walls will typically consist of grouted concrete masonry units.

The computer lab, faculty center, special education classroom, and conference room will be air conditioned. The remaining classrooms will have the option to utilize ceiling fans or air conditioning.

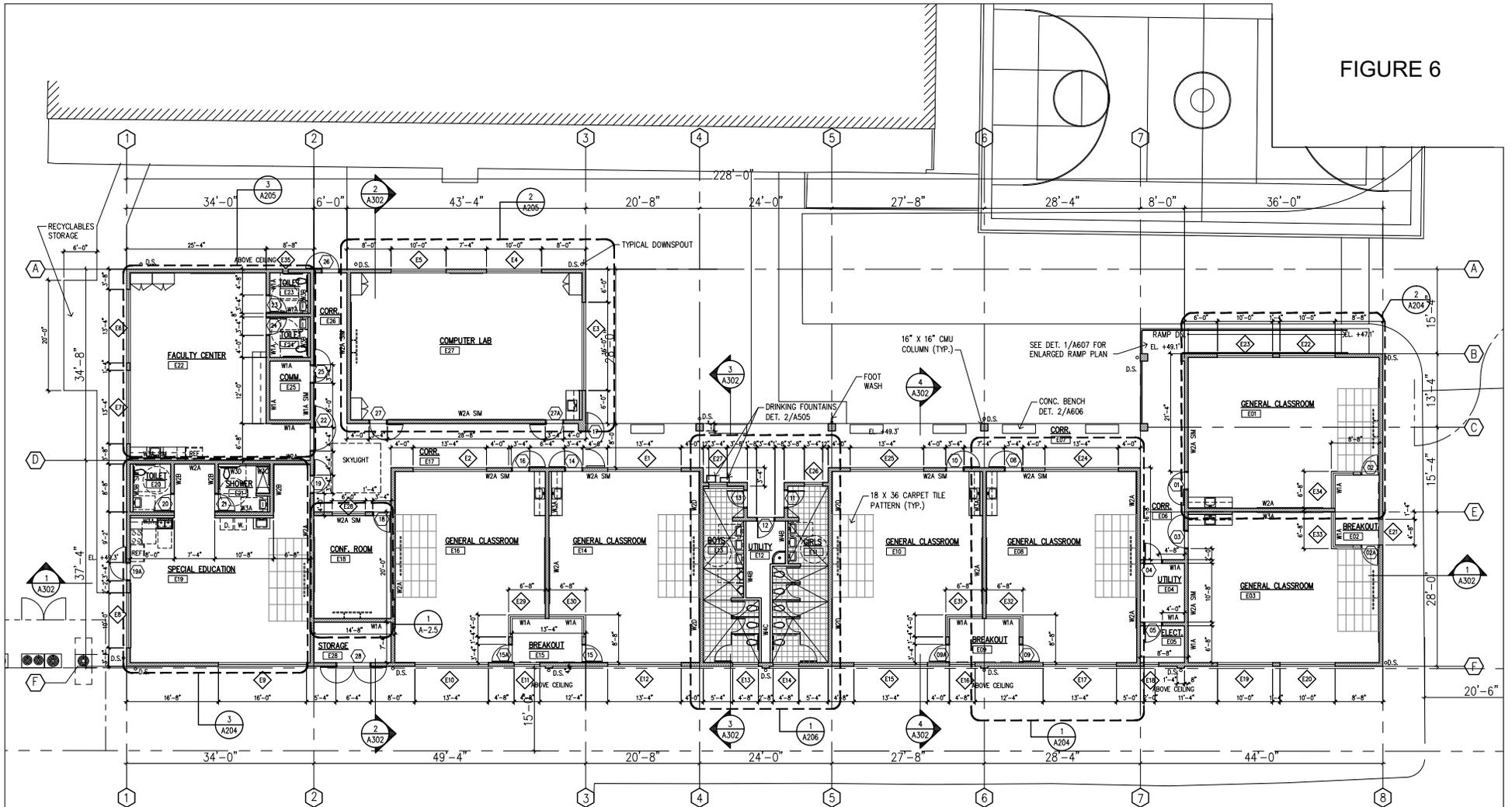
Walkways will be constructed to connect the new building to existing walkways at Building C. New walkways will be designed in compliance with Americans with Disabilities Act (ADA) Standards. A concrete pad adjacent to walkway near the Faculty Center is planned for the storage of materials for recycling. A two-foot wide concrete maintenance strip will border portions of the new building not already bordered by walkways or ramps.

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<sup>5</sup> *Honolulu Star-Advertiser*, April 27, 2013.

<sup>6</sup> *Honolulu Star-Advertiser*, April 27, 2013.

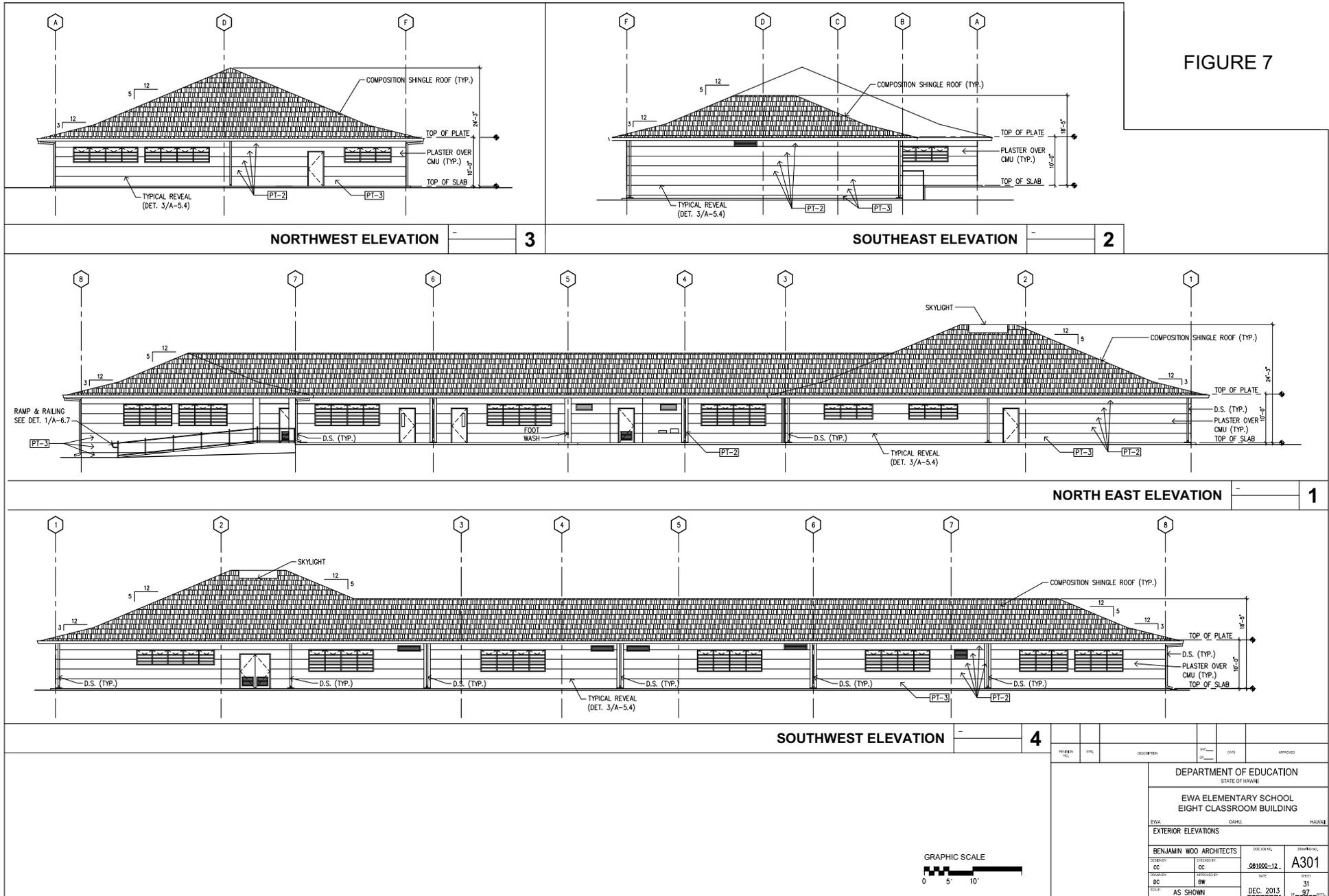
FIGURE 6



**FLOOR PLAN** 1

REVISION No.	DATE	DESCRIPTION	BY	DATE	APPROVED
DEPARTMENT OF EDUCATION STATE OF HAWAII <b>EWA ELEMENTARY SCHOOL                  EIGHT CLASSROOM BUILDING</b> EWA, OAHU, HAWAII					
BENJAMIN WOO ARCHITECTS 1555 KALANANAKU AVENUE, SUITE 200 HONOLULU, HI 96815		PROJECT NO. <b>081000-12</b>	DRAWING NO. <b>A201</b>		
DESIGNED BY CC	CHECKED BY CC	DATE 08/10/12			
DRAWN BY DC	APPROVED BY BW	DATE 12/22/13			
SCALE AS SHOWN		DATE DEC. 2013			

FIGURE 7



Selected trees and groundcover will be removed and new trees, shrubs, and groundcover will be planted to surround most sides of the building. An automatic irrigation system will be included in the project.

Temporary air-conditioning will be installed in Existing Building C for the duration of the project.

A new playground area is planned for the open area between the existing basketball court and Building I. The new playground area will be graded and include one play structure. The area might also include walls and irrigation if necessary.

The project will be designed to achieve a LEED<sup>8</sup> Silver rating equivalent under LEED 2009 for Schools; however, the project will not seek certification from the U.S. Green Building Council. Design considerations to promote sustainability may include maximizing natural lighting, reducing water usage, minimizing site disturbance, using materials with low volatile organic compounds (VOC), and minimizing energy consumption.

### **1.3.2 Circulation and Parking**

No changes are proposed to the existing vehicular circulation pattern and parking stalls for faculty and staff. A fire access road to the new building is being added and the trash enclosure will be relocated.

### **1.3.3 Infrastructure**

Domestic water service is planned to be hooked up to the existing water main on Pipeline Street. This connection from the new building will be the school water system's only connection to the Pipeline Street main.

Sewer service is planned to be connected to the existing sewer line on Pipeline Street. This connection from the new building will be the school sewer system's only connection to Pipeline Street.

Storm runoff from the site will be collected by inlets connected to an underground pipe detention system. The underground storage system will be connected to the existing drainage system on Pipeline Street. The intent is to temporarily store the runoff onsite and slowly discharge the runoff over time.

Electrical, communications, video, data, and fire alarm service will be connected to the existing on-campus system.

---

<sup>8</sup> Leadership in Energy and Environmental Design

### 1.3.4 Demolition

Existing pavement, curbing, grassing, utilities, and play equipment within the construction site will be demolished and removed as necessary. Four trees will be removed along with a jungle-gym play structure and two smaller play structures.

### 1.3.5 Staging/Storage Area

A construction/staging area has been identified for use at the contractor's option (see Project Area delineated on Figure 4). The contractor may elect to secure additional off-site staging area.

### 1.3.6 Project Cost and Schedule

The order of magnitude cost for construction of the proposed project is \$6 million. The cost does not include design, permits, fees, and other incidentals.

Construction of the new building is expected to begin in Summer 2014 and be completed approximately 12 months later.

## 1.4 ALTERNATIVES TO THE PROPOSED ACTION

In addition to construction of a new building, three other action alternatives were considered to address the project objectives.

- Move service area boundaries. DOE explored the alternative of having students attend another elementary school in the area. This option was not carried forward because other elementary schools in the vicinity are either at or near capacity.
- Construct more portable classrooms. 'Ewa Elementary School already has portable classroom buildings on the campus. Rather than continue to construct temporary facilities to accommodate the projected increase in enrollment, DOE decided to seek a permanent solution for this high-growth community.
- Construct the new building elsewhere on the campus. Another site on the campus was considered to accommodate the new classrooms. The alternative site is smaller and would have required a two-story structure. The school's need is for more Kindergarten and First Grade (K-1) classrooms. K-1 classrooms need to be on the ground floor and a two-story structure would not fit that requirement. The site that was selected is next to Building C, the existing Kindergarten building.

Therefore, this EA evaluates two alternatives: the proposed action, as described above, and no action, which assumes no new classroom building on the campus. Under the no action alternative, the school would continue to operate with inadequate and overcrowded classrooms - a situation that would continue to worsen given the projected increase in population. No action may require the construction of additional portables.

## 2 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

### 2.1 LAND USE

#### 2.1.1 Existing Conditions

##### 2.1.1.1 Region

The project is located on the 'Ewa Plain, in the southwest region of O'ahu, within the Honouliuli ahupua'a. The 'Ewa Plain was not densely inhabited in the pre-contact era. In the later 19th century, the Plain was used for sugar cane cultivation and the ground was disturbed, excavated, and filled with transported soils. The project vicinity was previously occupied by a sugar mill and ethnic workers camps. Existing development in the surrounding area consists of single-family homes, a few multi-family residential developments, community centers, a church, and a public golf course.

##### 2.1.1.2 Project Site and Existing Facilities

'Ewa Elementary School is the site of the proposed action. Although the school has roots dating from 1882, it has been in its current location since the 1920s. The school is one of seven elementary schools in the Campbell Complex of the Campbell-Kapolei Complex Area.

The proposed action will be situated on land owned by the State of Hawaii (7.984 acres); a portion of the school is on land owned by the City and County of Honolulu (1.392 acres). The parcels are bordered by Renton Road, Pipeline Street, 'Ewa Villages Golf Course, and the Villages of Moa'e Kū project.

Facilities at the school include permanent and portable buildings. Several of the permanent classroom buildings and portables have been added over the years. Facilities also consist of parking areas, a basketball court, and two play structures.

The State Land Use District of the project site is Urban. The project site is, by the City's Land Use Ordinances, zoned R-5 Residential (see Figure 8).

The school site falls within the 'Ewa Villages Historic District designated as SIHP 50-80-12-9786 and was placed on the Hawaii State Register of Historic Places on February 24, 1996.

#### 2.1.2 Impacts and Mitigation Measures

Neither the proposed action nor the no action alternation would result in any land use changes. No mitigation is required.



## 2.2 PHYSIOGRAPHY

### 2.2.1 Existing Conditions

#### 2.2.1.1 Topography

The existing school is situated slightly over one mile from the West Loch of Pearl Harbor and approximately 2.5 miles from the island's shoreline to the south. The topography of the site is relatively flat, with slopes ranging from approximately 1 to 1.5%. Elevations in the vicinity of the proposed new building range from approximately the 46 feet to 49 feet above mean sea level (msl).

#### 2.2.1.2 Soils

According to the U.S. Department of Agriculture, National Resources Conservation Services Web Soil Survey (<http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>), the native soil on the project site is HxA, Honouliuli clay, 0 to 2 percent slopes. The erosion hazard for HxA is described as slight and runoff potential is considered high. The typical profile consists of clay from 0 to 15 inches and 15 to 68 inches. Other undocumented soil types may have been imported to the site under the various construction projects that have occurred on the property.

#### 2.2.1.3 Groundwater and Surface Water

Based on the *Aquifer Identification and Classification for Oahu: Groundwater Protection Strategy for Hawaii*, the project area is located in the Waipahu Aquifer System of the Pearl Harbor Aquifer Sector. The aquifer type is either basal, unconfined sedimentary or basal, confined, flank. With either type, the water is considered ecologically important, irreplaceable, and moderately to highly vulnerable to contamination.

There are no streams in the project vicinity.

Runoff from the project site currently flows into the City's drainage system southwest of the project site.

#### 2.2.1.4 Climate

Temperatures in the project area range from an average annual maximum of 84.3° (F) to an average annual minimum of 65.7° (F). The maximum daily extreme temperature recorded at the NOAA Cooperative Station 'Ewa Plantation 741 is 93° (F), while the minimum daily recorded temperature is 49° (F).<sup>9</sup>

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<sup>9</sup> Western Regional Climate Center, <http://www.wrcc.dri.edu/summary/Climsmhi.html>, Cooperative Climatological Data Summaries, NOAA Cooperative Stations, website accessed November 20, 2012.

The 'Ewa Plain is one of the drier areas of Oahu. The average annual rainfall is approximately 21.5 inches, with observed annual maximum of 41.9 inches and minimum of 10.3 inches.<sup>10</sup>

## 2.2.2 Impacts and Mitigation Measures

The project is not expected to impact soils or groundwater. There will be slight alteration to topography. No mitigation is required. Impacts to drainage are discussed in the Infrastructure section.

Under the no action alternative, there would be no impacts relating to physiography.

## 2.3 FLORA

### 2.3.1 Existing Conditions

The project site consists predominantly of a grass lawn with scattered ornamental shrubs and trees. SWCA Environmental Consultants conducted a botanical survey of the site in August of 2012 (see Appendix B). No state or federally listed threatened, endangered, or candidate plant species (USFWS 2012) or rare native Hawaiian plant species were observed. The site is not within or in the vicinity of critical habitat for listed plants as designated by the U.S. Fish and Wildlife Service under the Endangered Species Act (ESA).

Forty-six plant species were recorded during the survey that included the project site and alternative site within the school grounds (see list in Appendix B). Only the 'uhaloa and kou are native plants and both are common across the state. Most of the project site is disturbed, including open grassy areas with scattered ornamental shrubs and trees, several non-native grasses, and herbaceous plants.

### 2.3.2 Impacts and Mitigation Measures

The proposed project would have no adverse impact on listed plant species or habitat. No mitigation is required. If landscaping is included as part of the project, it is recommended that native Hawaiian plants be used to the extent practicable. Plants appropriate for landscaping include: naupaka, pōhinahina, 'ilima, 'a'ali'i, 'Ewa hinahina, ma'o, naio, and alahe'e.

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<sup>10</sup> Western Regional Climate Center, <http://www.wrcc.dri.edu/summary/Climsmhi.html>, Cooperative Climatological Data Summaries, NOAA Cooperative Stations, website accessed November 20, 2012

## 2.4 FAUNA

### 2.4.1 Existing Conditions

SWCA Environmental Consultants conducted a fauna survey of the project site in August of 2012 (see Appendix B). No state or federally listed threatened, endangered, or candidate bird, mammal, or insect species were observed at the site or in the vicinity. The project site is not within or in the vicinity of critical habitat for any ESA-listed animal species.

Fourteen bird species were observed in the project vicinity, of which 13 were non-native introduced and the migratory Golden Plover. A list of species is provided in Appendix B. The species observed are typical of those found within an urban setting.

The mongoose was the only mammal observed in the vicinity; however, mice and rats are likely to be present. Non-native geckos were heard and one brown anole (introduced) was spotted. The Chinese swallowtail and the large orange sulphur butterfly, both introduced species, were observed.

### 2.4.2 Impacts and Mitigation Measures

The proposed project would have no significant adverse impacts on fauna populations in the region. The project area is already disturbed. Although not observed during the survey, there is potential for the endangered Hawaiian hoary bat (*Lasiurus cinereus*) to occasionally use the airspace or occasionally roost in trees in the area. The proposed improvements would be limited to a relatively small area that has already been developed. No mitigation is required.

## 2.5 AIR QUALITY

### 2.5.1 Existing Conditions

The U.S. Environmental Protection Agency (EPA) sets national ambient air quality standards (NAAQS) and the State Department of Health (DOH) sets ambient air quality standards for the state. The nearest monitoring station to the proposed action is the Kapolei Station located approximately 3.8 miles to the southwest. According to the *State of Hawaii Annual Summary 2011 Air Quality Data*, the State of Hawaii was in attainment of all NAAQS in 2011, excluding exceedances due to the effects of volcanoes and fireworks from New Year's celebrations.

### 2.5.2 Impacts and Mitigation Measures

Construction activities may result in short-term air quality impacts, including the generation of dust and emissions from construction vehicles and equipment. To avoid or minimize these temporary impacts, the contractor will be required to comply with the DOH Hawai'i Administrative Rules (HAR), Title 11, Chapter 60.1, "Air Pollution Control."

Compliance with State regulations will require adequate measures to control fugitive dust. Such measures could include:

- Planning different phases of construction, focusing on minimizing the amount of dust generating materials and activities, centralizing on-site vehicular traffic routes, and locating potential dusty equipment to areas of least impact;
- Watering of exposed dirt areas;
- Starting from the initial grading phase, landscaping and rapid covering of bare areas, including slopes;
- Controlling of dust from unpaved access roads;
- Controlling dust from debris being hauled away from the project site; and
- Installing a dust barrier/fence.

The need for a dust control permit is dependent on the type of equipment the contractor elects to use.

A temporary air conditioning system is planned for adjacent Building C to allow doors and windows to be shut during school hours. This measure will minimize the air quality impacts resulting from construction activities.

During operations, the proposed project, that is, use of the new building for classroom activities, would have no long-term impact on air quality. No mitigation is required.

## **2.6 ACOUSTICAL ENVIRONMENT**

### **2.6.1 Existing Conditions**

Noise in the vicinity is generated by school activities, residential activities, and traffic.

### **2.6.2 Impacts and Mitigation Measures**

Construction activities will generate noise that will have short-term impacts on nearby classrooms. To mitigate short-term construction-related noise impacts, compliance with the provisions of HAR 11-46, "Community Noise Control," will be exercised. A noise permit will be required if the noise levels from construction activity are expected to exceed specified standards. It will be the contractor's responsibility to minimize noise by properly maintaining mufflers and other noise-attenuating equipment. If construction work is required during evenings, night, and weekend hours, a variance will be sought from the DOH. The contractor could also be required to coordinate noisier work periods with the school to minimize impacts.

A temporary air conditioning system is planned for adjacent Building C to allow doors and windows to be shut during school hours. This measure would minimize the noise impacts resulting from construction activities.

Operation of mechanical equipment, such as those for the air conditioning system, may be a source of long-term noise. Noise generated from the equipment is anticipated to be no louder than noise generated from typical building air conditioning installations.

## **2.7 NATURAL HAZARDS**

### **2.7.1 Existing Conditions**

#### **2.7.1.1 Flood**

The Flood Hazard Assessment Report showing information from Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panel 15003C0310G indicates that the project site is within Zone D, areas in which flood hazards are undetermined but possible. See Figure 9.

#### **2.7.1.2 Earthquakes**

Most earthquake activity in the state occur on and around the island of Hawai'i. On O'ahu, the most recent earthquakes occurred in 2010 and 2011. In 2010, the U.S. Geological Survey (USGS) reported a 3.6-magnitude earthquake in the Ka'iwi Channel east of O'ahu. The epicenter of the 2011 earthquake (4.0-magnitude) was located offshore south of the island.<sup>11</sup>

#### **2.7.1.3 Hurricane**

Since record keeping began in the 1950s, eight hurricanes affected the Hawaiian Islands and 12 others posed threats by their passage. Hurricane 'Iniki on Kaua'i was the most recent Category 4 hurricane to strike Hawai'i.

### **2.7.2 Tsunami**

The proposed project is not located within a Tsunami Evacuation Zone.

### **2.7.3 Wildfires**

Due to the relatively low rainfall, undeveloped areas in 'Ewa are subject to brush fires from time to time. The project is situated within an existing school site surrounded by residential development and the 'Ewa Villages Golf Course.

### **2.7.4 Impacts and Mitigation Measures**

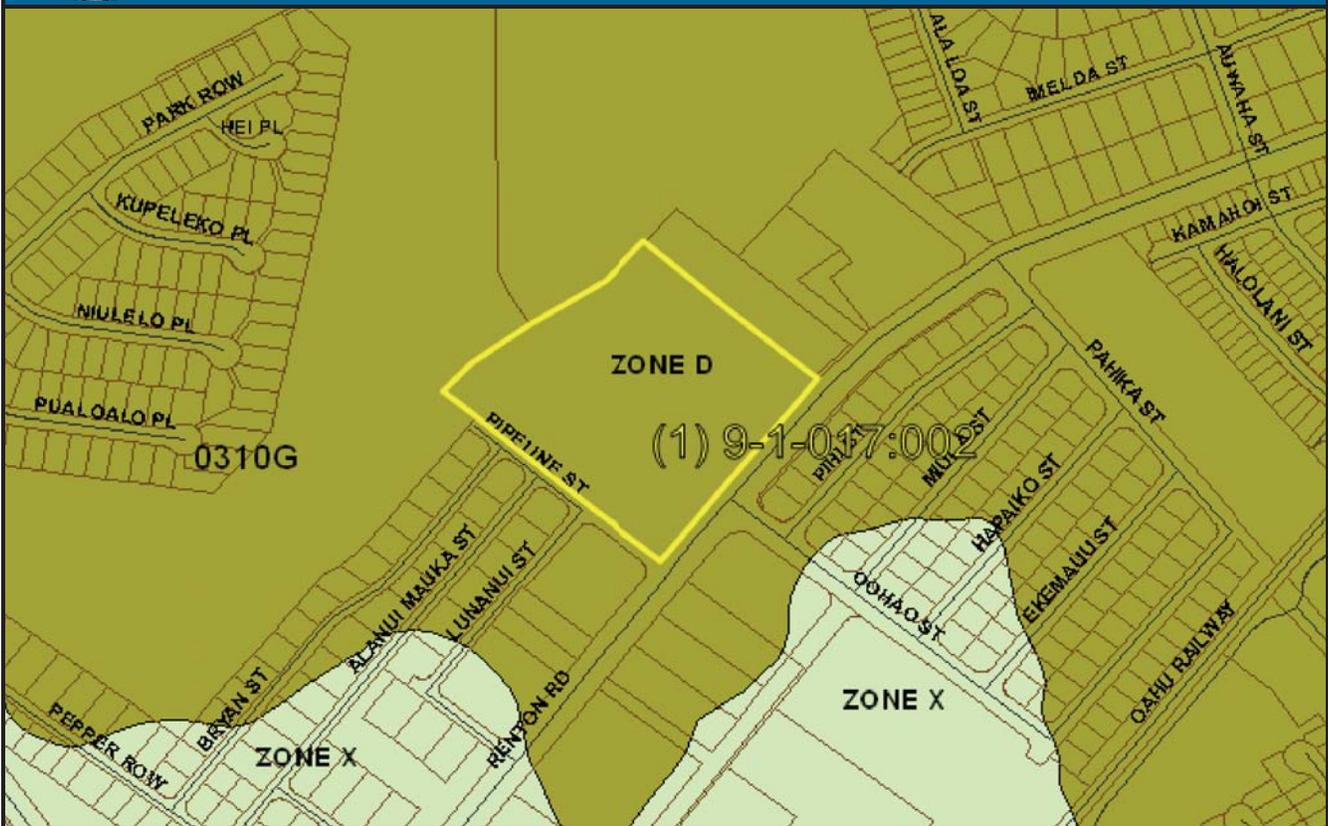
No flood or wildfire impacts are expected. The proposed facilities will be designed according to applicable structural and architectural standards to address seismic and hurricane risks. No additional mitigation is required. With no action, there would be no natural hazard impacts.

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<sup>11</sup> *Honolulu Star-Advertiser*, February 25, 2011.



# State of Hawaii FLOOD HAZARD ASSESSMENT REPORT



## NATIONAL FLOOD INSURANCE PROGRAM

### FLOOD ZONE DEFINITIONS

**SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD** – The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zone A, AE, AH, AO, V, and VE. The Base Flood Elevation (BFE) is the water-surface elevation of the 1% annual chance flood. Mandatory flood insurance purchase applies in these zones:

- Zone A:** No BFE determined.
- Zone AE:** BFE determined.
- Zone AH:** Flood depths of 1 to 3 feet (usually areas of ponding); BFE determined.
- Zone AO:** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined.
- Zone V:** Coastal flood zone with velocity hazard (wave action); no BFE determined.
- Zone VE:** Coastal flood zone with velocity hazard (wave action); BFE determined.
- Zone AEF:** Floodway areas in Zone AE. The floodway is the channel of stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without increasing the BFE.

**NON-SPECIAL FLOOD HAZARD AREA** – An area in a low-to-moderate risk flood zone. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

- Zone XS (X shaded):** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
- Zone X:** Areas determined to be outside the 0.2% annual chance floodplain.

### OTHER FLOOD AREAS

- Zone D:** Unstudied areas where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

### PROPERTY INFORMATION

**COUNTY:** HONOLULU  
**TMK NO:** (1) 9-1-017-002  
**PARCEL ADDRESS:** 91-1280 RENTON RD  
 EWA BEACH, HI 96706  
**FIRM INDEX DATE:** JANUARY 19, 2011  
**LETTER OF MAP CHANGE(S):** NONE  
**FEMA FIRM PANEL(S):** 15003C0310G  
**PANEL EFFECTIVE DATE:** JANUARY 19, 2011

**PARCEL DATA FROM:** APRIL 2013  
**IMAGERY DATA FROM:** MAY 2006

### IMPORTANT PHONE NUMBERS

**County NFIP Coordinator**  
 City and County of Honolulu  
 Mario Siu-Li, CFM (808) 768-8098  
**State NFIP Coordinator**  
 Carol Tyau-Beam, P.E., CFM (808) 587-0267

*Disclaimer: The Department of Land and Natural Resources (DLNR) assumes no responsibility arising from the use of the information contained in this report. Viewers/Users are responsible for verifying the accuracy of the information and agree to indemnify the DLNR from any liability, which may arise from its use.*

*If this map has been identified as "PRELIMINARY" or "UNOFFICIAL", please note that it is being provided for informational purposes and is not to be used for official/legal decisions, regulatory compliance, or flood insurance rating. Contact your county NFIP coordinator for flood zone determinations to be used for compliance with local floodplain management regulations.*

## 2.8 SCENIC RESOURCES

### 2.8.1 Existing Conditions

On the northwest side of the project area, views into and from the site are obstructed by trees and other vegetation. At the northeast to southeast side of the project area, views into and from the project area are of the existing portion of the school. To the south and southwest are residential homes.

### 2.8.2 Impacts and Mitigation Measures

The proposed action will result in minor visual alterations. Views of the campus from the nearest public street will not be significantly affected since the new building will be consistent in appearance with existing facilities. “Distance vistas of the shoreline from the H-1 Freeway above the Ewa Plain” and “mauka and makai views” as listed in the “Ewa Development Plan will be maintained. No mitigation is required.

## 2.9 ARCHAEOLOGICAL RESOURCES

### 2.9.1 Existing Resources

Cultural Surveys Hawai‘i, Inc. (CSH) conducted an archaeological literature review and field inspection of the project area (see Appendix C). The study included research of archival sources, historic maps, Land Commission Awards, and previous archaeological reports to determine the history of land use in the area and if archaeological sites have been recorded on or near the project area. Limited field inspection was conducted to identify any surface archaeological features and assess potential impacts to such sites, as well as identify any sensitive areas that may require further investigation or mitigation before the project is implemented.

It should be noted that the report does not fulfill the requirements of an archaeological inventory survey (per Hawai‘i Administrative Rules (HAR) Chapter 13-276). Rather, it serves as a document to facilitate the proposed project’s planning, and it supports historic preservation review compliance by identifying any archaeological concerns within the study area. This document presents data on the general nature, density, and distribution of archaeological resources as can be gleaned from available sources.

Research of previous archaeological studies indicates that pre-contact cultural deposits and burials are uncommon in the vicinity. The project area, however, is within ‘Ewa Village, which was a post-contact village associated with the large-scale cultivation of sugar cane in the Hawaiian Islands. ‘Ewa Elementary School falls within the ‘Ewa Villages Historic District, designated as SIHP 50-80-12-9786, and was placed on the Hawaii State Register of Historic Places on February 24, 1996. There may be early 20th century construction and habitation refuse associated with the village/community.

No historic properties were observed during CSH's field inspection.

## 2.9.2 Impacts and Mitigation Measures

In consideration of the land use history and previous finds reported in the vicinity, CSH would typically recommend no further archaeological work for the project. However, CSH noted that the State Historic Preservation Division (SHPD) has been more stringent lately in requirements for archaeological work – particularly within designated Register of Historic Properties sites. Early consultation with the SHPD regarding any possible archaeological requirements (such as the possible need for an archaeological monitoring program) is recommended. The literature review and field inspection document has been submitted to SHPD for review.

## 2.10 CULTURAL IMPACT ASSESSMENT

### 2.10.1 Existing Conditions

CSH conducted a cultural impact assessment (CIA) for the project (see Appendix D). Document research and cultural consultation efforts provided information pertinent to the assessment of the proposed project's impacts on cultural practices and resources.

Background research on the surrounding Honouliuli area provided information about the Honouliuli Ahupua'a, the moku of 'Ewa known as Ke 'Apana o 'Ewa, 'Ewa Plain geology, Hawaiian legends and historical accounts of the area being widely inhabited by pre-Contact Hawaiian populations including ali'i, Pu'uokapolei which once contained a heiau, the Pu'uloa area containing fishponds, and a network of Leeward O'ahu trails.

Throughout the course of the CIA preparation, an effort was made to contact and consult with Hawaiian organizations, agencies and community members to identify individuals who might have knowledge and/or expertise of the project area and its vicinity. CSH attempted to contact forty-six community members, of whom nine responded. Six kūpuna and/or kama'āina participated in interviews. The community consultation provided information on:

- Past use of the area for marine and freshwater resources
- Sources of plants previously used for food, medicine, ornamental and other uses
- Ancient trails
- The probability of the "cultural layer" still being in place but now filled in
- Of the several community participants sharing knowledge of locations of burials, one participant noted that there is a likelihood of burials that can be found on the entire route of the Kualaka'i Trail including a portion of the project area and that all burials in this area are within the karst and sinkholes of the 'Ewa Plain.

## **2.10.2 Impacts and Mitigation Measures**

Based on the information gathered, CSH recommended that should historic, cultural, or burial sites or artifacts be identified during construction ground disturbance activity, personnel involved with the construction work should cease all work in the immediate area of the find and the appropriate agencies notified pursuant to applicable laws. In the event of discoveries of burials during construction, recognized cultural authorities and lineal descendants should be notified and consulted on matters of burial treatment. Additionally, it is recommended that cultural and lineal descendants be granted access rights to iwi kupuna to conduct customary and traditional burial practices on-site.

## **2.11 SOCIO-ECONOMIC CONSIDERATIONS**

### **2.11.1 Existing Conditions**

As stated previously, population data from the City and County of Honolulu, Department of Planning and Permitting (DPP) shows the population of the 'Ewa Development Plan (DP) area increased at an average rate of approximately 4% per year from 2000 to 2010. The population of O'ahu increased at a slower average rate of approximately 0.9% during the same period.

### **2.11.2 Impacts and Mitigation Measures**

The proposed action is not expected to impact area population. The new building is proposed in response to the population increase in 'Ewa and resulting enrollment increase. It will contribute to a better learning environment for students and better working environment for faculty and staff.

The estimated construction cost of the proposed action is \$6 million. The cost does not include design and permit fees and other incidentals.

During the construction stage of the project, work would be created in the construction trades, material and supply vendors, and related fields. Secondary and induced effects would occur as monies from these industries are spent and re-spent, generating further impacts in the economy.

## **2.12 TRANSPORTATION**

### **2.12.1 Existing Conditions**

#### **2.12.1.1 Roads and Traffic**

The proposed action is located adjacent to Pipeline Street, which abuts the southwest boundary of the school property (See Figure 2). The street may be accessed from Bryan Street, Ala Nui Mauka Street, and Lunanui Street, as well as from Renton Road. Renton Road is one of the main thoroughfares in 'Ewa. According to City's Honolulu Land Information

System (HoLIS), Bryan Street, Ala Nui Mauka Street, Lunanui Street, and the portion of Pipeline Street mauka of Lunanui Street are City owned and maintained roads while Renton Road and Pipeline Street makai of Lunanui Street are maintained by the City but have multiple owners.

Access to the school is through an in-only driveway on Renton Road and two driveways on Pipeline Street. Of the two driveways on Pipeline Street, the south access is signed for entry and the north access is signed for exit.

#### **2.12.1.2 Public Transportation and Paratransit**

TheBus Route 44 provides service on Renton Road. An eastbound stop is located on the opposite side of Renton Road from the school, and a westbound stop is located near Pahika Street. Bus service is provided at approximately one-hour intervals between 5:30 AM and 10:30 PM. Route 44 runs from Leolua Street, near the Waipahu Town Center (north of Farrington Highway), to Popoi Place near the 'Ewa Beach Park.

Paratransit service in the form of TheHandi-Van is generally provided islandwide from approximately 4:00 AM through 1:00 AM. Twenty-four hour service is available in areas along TheBus Route 40 on Farrington Highway, approximately two miles from the project site.

#### **2.12.2 Impacts and Mitigation Measures**

Traffic impacts resulting from the proposed action is expected to be negligible. The projected increase in traffic generation is less than 3% above the average AM peak hour volume on Renton Road identified in the 2009 baseline count. Furthermore, the increased demand on the public transit system is negligible, estimated to be 2 riders per day. See Traffic Impact Assessment (Appendix E).

Short-term traffic impacts would include an increase in construction-related vehicles (some of which are slower moving) travelling to and from the site and partial road closures due to utility installation on Pipeline Street. The increase in vehicles and partial closures may result in localized traffic delays for private vehicles, public transit, and paratransit.

Short-term impacts might be mitigated by scheduling certain construction tasks during non-peak traffic hours, establishing a public information program, and/or providing a separate access to minimize conflicts between construction traffic and other vehicles.

The roadway system in the vicinity of the new building is looped, providing alternate routes to the Pipeline Street area. Pipeline Street is connected to Renton Road, Lunanui Street, Bryan Street, and Ala Nui Mauka Street, which allows access to Pipeline Street from multiple points. A traffic control plan would be prepared and implemented to mitigate the temporary construction-related traffic impacts. The proposed action is not anticipated to impact 24-hour paratransit service. The contractor will be required to notify the City and

County of Honolulu Department of Transportation Services and Oahu Transit Services (bus and paratransit operations) at least two weeks prior to the start of construction.

## 2.13 INFRASTRUCTURE

### 2.13.1 Existing Conditions

**Water.** The proposed building's water service is planned to come from the existing 8-inch water main on Pipeline Street.

**Sewer.** The proposed building's sewer service is planned to be connected to the existing 8-inch sewer line on Pipeline Street.

**Drainage.** Storm water runoff originating on-campus discharges to the existing City drainage system southwest of the project site.

**Electrical Power and Communications.** Electrical power to the school is provided by Hawaiian Electric Company (HECO). Hawaiian Telcom is the service provider for telephone service to the school. Oceanic Time Warner Cable provides cable TV service to the school.

### 2.13.2 Impacts and Mitigation Measures

**Water.** The Board of Water Supply (BWS) has indicated that the existing water system is adequate to accommodate the proposed classroom building. However, BWS reserves the right to change this position pending final approval of the building permit.

**Sewer.** According to the City Department of Planning and Permitting Wastewater Branch, the existing City sewers have adequate capacity to support the proposed project.

**Drainage.** The installation of additional impervious surfaces could result in an increase in the rate of runoff from the project area. The on-site storm drainage system will be designed to limit the rate of runoff to not more than the existing conditions. On-site runoff will be collected and temporarily stored underground in a detention system. This detention system will discharge to the municipal storm drain system at a controlled flow rate, equal to or less than the existing condition. Design of the drainage improvements will follow the Department of Planning and Permitting *Rules Relating to Storm Drainage Standards*. The design will also follow standards for storm water quality.

**Electrical Power.** Hawaiian Electric Company (HECO) service within the property will be upgraded to accommodate the classroom building. Upgrades will consist of additional HECO metering equipment and a possible upgrade of HECO's transformer. The transformer upgrade would be confined to within the existing vault. HECO work outside the property is not anticipated.

Telephone and CATV. Although connections will be made, modifications to the School's telephone and CATV service are not anticipated. The School has adequate telephone and CATV capacity to accommodate the project.

Utilities will be designed according to applicable standards. Construction plans will be reviewed, as required, by the appropriate agencies.

## 2.14 SOLID WASTE

### 2.14.1 Existing Conditions

A private contractor is used for collecting and disposing of solid waste. The school has three trash bins and refuse is picked up daily. Most municipal solid waste on O'ahu is disposed of at the City and County of Honolulu H-POWER Waste to Energy Plant and at the Waimanalo Gulch Sanitary Landfill.

The school has a recycling program which processes plastics and aluminum cans three times a year. The school does not have an organized program for recycling paper/cardboard and green waste.

### 2.14.2 Impacts and Mitigation Measures

Short-term impacts to the solid waste system would be limited to waste materials generated during demolition and construction. All construction materials will be properly transported, stored, and used. Demolition debris such as the concrete slab, as well as soil, rocks, vegetation, and construction debris will be properly disposed at DOH-approved City and County disposal or recycling facilities, and in accordance with applicable City, State, and Federal requirements. No construction waste materials will be buried or disposed on-site.

Generation of solid waste from the proposed building during normal operation is anticipated to be approximately 19.5 tons/school year.<sup>12</sup> Recycling of plastics, aluminum cans, paper, and green waste may potentially reduce the amount of solid waste by another 48%<sup>13, 14</sup>.

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<sup>12</sup> Amount calculated from generation rates found in State of California, Department of Resources, Recycling, and Recovery, Estimated Solid Waste Generation Rates for Institutions, accessed December 6, 2012, <http://www.calrecycle.ca.gov/WasteChar/WasteGenRates/Institution.htm>.

<sup>13</sup> Table 2-10 Waste Composition in Honolulu 2005-2006, Beck, R.W., *Integrated Solid Waste Management Plan Update* prepared for the City and County of Honolulu, October 2008.

<sup>14</sup> City and County of Honolulu, Department of Environmental Services, Oahu recycling rate, accessed December 5, 2012, <http://www.opala.org>.

## 2.15 PUBLIC FACILITIES AND SERVICES

### 2.15.1 Existing Conditions

**Police.** ‘Ewa Elementary School is located within the Honolulu Police Department’s District 8 (Kapolei).

**Fire and Emergency.** The engine company nearest to the school is Engine 43, housed at the of the East Kapolei Fire Station, approximately 3 miles away. Other fire stations in the vicinity include the Makakilo, ‘Ewa Beach, and Waipahu Stations.

**Medical.** The nearest hospital is the Pali Momi Medical Center located at 98-1079 Moanalua Road in ‘Aiea, near the Pearlridge Shopping Center, approximately 11 miles away. There are plans to open the former Hawaii Medical Center – West which closed in December 2011 as Queen’s Medical Center – West Oahu. The Queen’s facility is located approximately 2.5 miles away and is anticipated to open in 2014.

### 2.15.2 Impacts and Mitigation Measures

The proposed action—addition of one classroom building at an existing school—is not expected to adversely impact police, fire, emergency, or medical services in the region.

## 2.16 CUMULATIVE IMPACTS

Cumulative impacts are those which result from incremental effects of the proposed action when added to other past, present, and reasonably foreseeable actions in the same region of influence, including actions by other agencies or entities. Cumulative impacts can result from individually minor but collectively substantial actions taking place over a period of time.

The proposed action is planned in a region that has experienced and will continue to experience population growth and further development. However, addition of a single classroom building on the existing school campus is not expected to result in any significant cumulative impacts.

# 3 RELATIONSHIP TO PUBLIC AND LAND USE POLICIES

## 3.1 STATE POLICIES

### 3.1.1 Hawaii State Plan

The Hawai'i State Planning Act (Planning Act) has served as a guide for the long-range development of the state since its adoption into law in 1978 as Hawai'i Revised Statutes (HRS) Chapter 226. The Planning Act identifies goals, objectives, and policies for the state to: (1) provide a basis for determining priorities and allocating limited resources, such as public funds, services, human resources, land, energy, water, and other resources; (2) improve coordination of federal, state, and county plans, policies, programs, projects, and regulatory activities; and (3) establish a system for plan formulation and program coordination to provide for an integration of all major state and county activities.

The proposed action is consistent with several of the objectives and policies stated in HRS §226-21 - Objectives and Policies for the Socio-Cultural Advancement – Education, which include:

- (b) To achieve the educational objective, it shall be the policy of this State to:
  - (1) Support educational programs and activities that enhance personal development, physical fitness, recreation, and cultural pursuits of all groups.
  - (2) Ensure that the provision of adequate and accessible educational services and facilities that are designed to meet individual and community needs.
  - (3) Provide appropriate educational opportunities for groups with special needs.
  - (7) Promote programs and activities that facilitate the acquisition of basic skills, such as reading, writing, computing, listening, speaking, and reasoning.
  - (8) Emphasize quality educational programs in Hawaii's institutions to promote academic excellence.

### 3.1.2 State Environmental Policy

The proposed action is consistent with the State Environmental Policy, as stated in HRS Chapter 344, to “enhance the quality of life” by “creating opportunities for the residents of Hawai'i to improve their quality of life through diverse economic activities which are stable and in balance with the physical and social environments.” The proposed action will provide the needed school facilities which promote educational opportunities which are anticipated to improve quality of life.

### **3.1.3 State Land Use Classification**

State Land Use Districts are established by the State Land Use Commission in accordance with HRS Chapter 205. There are four classifications of land under this districting system: Agricultural, Conservation, Rural, and Urban. The purpose of the districts is to regulate the use of lands within the state to accommodate population growth and development as needed, and to protect important agricultural and natural resources areas. 'Ewa Elementary School is located within the Urban district. Activities or uses within the Urban district are regulated by the City and County of Honolulu. Existing use of the land would continue under the proposed action.

### **3.1.4 Coastal Zone Management/Special Management Area**

Hawaii's Coastal Zone Management (CZM) Program was enacted in 1977 (HRS Chapter 205A) through the passage of the Federal CZM Act of 1972. The objective of the CZM program is to protect and manage Hawai'i's coastal resources through land and water use regulations. Special Management Areas (SMA) have been established throughout the state under the CZM Program, and land use rules and regulations for those specially designated areas are administered by the individual county planning authorities. The project area is located outside of the SMA and does not require an SMA Use Permit.

## **3.2 COUNTY POLICIES**

### **3.2.1 General Plan**

The General Plan (1992, amended 2002) for the City and County of Honolulu is a written commitment by the City and County to guide Oahu to a future considered desirable and attainable. The project is consistent with the following policies and guidelines in Chapter IX, Health and Education:

Objective B: To provide a wide range of educational opportunities for the people of O'ahu.

Policy 4: Encourage the construction of school facilities that are designed for flexibility and high levels of use.

Policy 5: Facilitate the appropriate location of learning institutions from the preschool through the university levels.

The General Plan is in the process of being updated. Objectives of the General Plan are similar in a Public Review Draft of the Proposed 2013 Edition of the O'ahu General Plan dated November 2012.

### **3.2.2 'Ewa Development Plan**

The City and County of Honolulu's 'Ewa Development Plan (DP) program provides a framework for implementing General Plan objectives and policies for the growth and development of O'ahu at a regional level.

In July 2013, Ordinance 13-26 took effect which adopted a revised 'Ewa DP. The proposed action is consistent with DOE projections presented in the 'Ewa DP which state that ten new elementary schools, three new middle schools, and two new high schools will be needed by 2030.

The updated 'Ewa DP also lists 'Ewa Elementary as having a capacity of 798 students. As noted previously, the school's official enrollment count was 1,109 in 2012-2013 school year.<sup>15</sup>

### **3.2.3 Land Use Ordinance**

The project is in an area zoned R-5 Residential. The project is consistent with the Land Use Ordinance (LUO) being a nondwelling use which supports and complements residential neighborhood activities. Although schools are permitted in R-5 areas, the DPP was contacted to determine whether a Conditional Use Permit (CUP) would be required for the new classroom building. According to the DPP, a CUP would not be required since the new building would be an expansion of an existing public facility.

### **3.2.4 'Ewa Impact Fees**

According to the Revised Ordinances of Honolulu (ROH), Chapter 33A, "impact fees shall be charged and assessed for all new land development activities that require a building permit in the Ewa region" with a few exceptions. The ROH also states that the fees are to be borne by those who "directly contribute to expanding the population and increasing economic activity in the Ewa region through new land development activities." Construction of the new building will require a building permit and the project type does not appear on the exemption list, yet the project is not a population contributor, rather is a response to the expanding population. This type of impact fee would normally be assessed and paid prior to the issuance of a building permit.

## **3.3 SUMMARY OF REQUIRED PERMITS AND APPROVALS**

The following is a summary of permits and approvals that may be required for construction of the proposed action.

---

<sup>15</sup> The State of Hawai'i Department of Education, Reports, Enrollment, Official Enrollment Count, 2012-2013 School Year., accessed January 17, 2013, <http://doe.k12.hi.us/reports/enrollment/index>.

Table 1. Summary of Required Permits and Approvals for the Project

Permits/Approvals	Approving Agency
<b>State of Hawai'i</b>	
Construction Plans Approval	Department of Education
	Department of Health
National Pollutant Discharge Elimination System (NPDES) Permit	Department of Health
Community Noise Permit and/or Noise Variance	Department of Health
Archaeological Review	Department of Land and Natural Resources
<b>City and County of Honolulu</b>	
Construction Plans Approval	Department of Planning and Permitting
	Department of Transportation Services
	Board of Water Supply
	Department of Environmental Services
Building Permit	Department of Planning and Permitting
Street Usage Permit	Department of Planning and Permitting
Grading, Grubbing, and Stockpiling Permit	Department of Planning and Permitting
Trenching Permit	Department of Planning and Permitting
Storm Drain Connection Permit	Department of Planning and Permitting

## 4 PRELIMINARY DETERMINATION

This Draft Environmental Assessment demonstrates that the proposed action will have no significant adverse impact on the environment and that an Environmental Impact Statement is not warranted. A Finding of No Significant Impact (FONSI) is anticipated for this project.

# 5 FINDINGS AND REASONS SUPPORTING THE PRELIMINARY DETERMINATION

The following findings and reasons indicate that the proposed action will have no significant adverse impacts on the environment based on the 13 significance criteria as provided in HAR 11-200-12.

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

Construction of the proposed eight-classroom building would not result in significant loss or destruction of any natural or cultural resources. The building will be constructed within an existing school campus, on land which has been previously disturbed. Other related improvements, such as utility connections, will also be done in previously disturbed areas. The project is not anticipated to affect any threatened or endangered species or their habitat.

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

No curtailment of beneficial uses of the environment is anticipated. There are few, if any, alternative beneficial uses of the existing school site other than educational activities. The proposed action will enhance those activities.

- 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 Section 6.3 of this document, 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 project is expected to improve the economic and social well-being of the community and surrounding region. Students will be educated in a facility better suited to learning. Construction activities associated with the proposed improvements will mobilize existing labor and generate income and secondary effects in the local economy.

- 5) Substantially affects public health.

Existing State DOH regulations are intended to protect air and water quality and control noise. The proposed improvements would not result in the uncontrolled and unsupervised use of hazardous materials or construction methods that could detrimentally affect the area's public health and safety. The construction contractor

will be required comply with applicable permit requirements to avoid or minimize impacts on air and water quality, in accordance with HAR Title 11, Chapter 60.1, Air Pollution Control, and the project-specific NPDES permit. Construction noise will be minimized through compliance with HAR Chapter 11-46, Community Noise Control.

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

Population growth has resulted in a substantial increase in school enrollment. This growth has occurred, and will continue independent of the proposed project. The project itself would not generate population changes but is a response to population growth in the area. It is intended to provide additional and improved classroom facilities. There would be no substantial secondary impacts on public services and facilities.

- 7) Involves a substantial degradation of environmental quality.

The proposed action would not involve degradation of environmental quality during either construction or operations. The new building will be located within an existing school campus, on previously disturbed areas. Temporary construction-related impacts will be avoided or minimized through compliance with applicable DOH permit requirements.

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

The proposed project, a single classroom building and related infrastructure, will be limited to 'Ewa Elementary School and Pipeline Street and is not expected to have a cumulative or considerable effect on the environment or a commitment for larger actions.

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

No rare, threatened, or endangered species or their habitat have been identified on or near the project site.

- 10) Detrimentally affects air or water quality or ambient noise levels.

The anticipated impacts associated with project construction will be temporary. These impacts will be avoided or minimized by the implementation of best management practices and mitigation measures in accordance with applicable permit requirements. Long-term detrimental impacts to air, water quality, or ambient noise levels are not expected.

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

The project area is located more than two miles from the shoreline and, therefore, not in the vicinity of an estuary or coastal waters. It is not located in a flood plain or tsunami zone, and it is not in an area subject to erosion or geologic hazards. The

school is outside the Special Management Area. The proposed action is not expected to impact freshwater resources.

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

The proposed action will not affect identified scenic vistas or view planes.

- 13) Requires substantial energy consumption.

Installation of air conditioning and electrical systems in the new building will increase electrical utility demand at the school. However, the building will be designed to comply with the International Energy Code and the Honolulu County Revised Ordinance Chapter 32. In addition, various energy efficient design strategies will be utilized to further minimize energy consumption and to achieve an equivalent of LEED silver rating. Some energy resources will be consumed during project construction.

## 6 EARLY CONSULTATION

Early consultation letters for the project were transmitted to the following agencies and organizations for review and comment. This correspondence, including agency responses, is included in Appendix A.

AGENCIES AND INTERESTED PARTIES	Responses Included in Appendix
City and County Agencies	
Board of Water Supply	X
Department of Design and Construction	X
Department of Environmental Services	
Department of Planning and Permitting	X
Department of Transportation Services	X
Fire Department	X
Police Department	X
Utility Companies	
Hawaiian Electric Company	
Hawaiian Telcom	X
Oceanic Time Warner Cable	
Hawai'i Gas	X
Other Organizations	
'Ewa Neighborhood Board, No. 23	

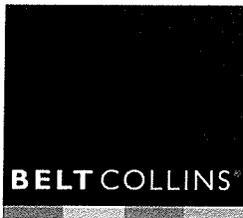
## 7 REFERENCES

- City and County of Honolulu, Department of General Planning. 1992, Amended October 3, 2003. *General Plan, Objectives and Policies*.
- City and County of Honolulu, Department of Planning and Permitting. November 2012. *Public Review Draft, O'ahu General Plan, Proposed 2013 Edition, 2035 O'ahu General Plan Update, Your Island, Your Future*.
- City and County of Honolulu, Department of Planning and Permitting. July 2013. *'Ewa Development Plan*.
- City and County of Honolulu, Department of Planning and Permitting, Honolulu Land Information System (HoLIS). <http://gis.hicentral.com/PubWebsite/metadata.aspx>. Accessed December 19, 2013.
- City and County of Honolulu, Department of Transportation Services, <http://www1.honolulu.gov/dts/riders.htm>. Accessed December 10, 2013.
- City and County of Honolulu, Oahu Transit Services, Inc., <http://thebus.org/Route/Routes.asp>. Accessed December 10, 2013.
- City and County of Honolulu, Planning Department. August 1997 (Revised May 2000). *'Ewa Development Plan*.
- Hammatt, Hallett H. and Shideler, David. June 2013. *Draft Archaeological Literature Review and Field Inspection for The 'Ewa Elementary School, Eight (8) Classroom Building Project, Honouliuli Ahupua'a, 'Ewa District, O'ahu Island, TMK: [1] 9-1-017: 002*. Cultural Surveys Hawai'i Inc.
- Hammatt, Hallett H. and Kandagawa, Emily. December 2013. *Cultural Impact Assessment for the 'Ewa Elementary School, Eight (8) Classroom Building Project, Honouliuli Ahupua'a, 'Ewa District, O'ahu Island, TMK: [1] 9-1-017: 002*. Cultural Surveys Hawai'i Inc.
- Mink, John F. and Lau, L. Stephen. November 1987 (Rev. 1990). *Technical Report No. 179, Aquifer Identification and Classification for Oah'u: Groundwater Protection Strategy for Hawai'i*.
- Ng, Julian. December 2013. *Traffic Impact Assessment, 'Ewa Elementary School Eight Classroom Building, 'Ewa, Oahu, Hawaii*. Julian Ng Incorporated.
- State of Hawai'i, Department of Land and Natural Resources, Hawaii – National Flood Insurance Program Flood Hazard Assesesment Tool. <http://gis.hawaiiinfip.org/fhat/>. Accessed December 10, 2013.
- State of Hawai'i, Office of Planning, Hawaii Statewide GIS Program. <http://planning.hawaii.gov/gis/download-gis-data/>. Accessed December 19, 2013.

SWCA Environmental Consultants. September 10, 2012. Letter Report of Flora and Fauna Survey in Support of the 'Ewa Elementary School Environmental Assessment, 'Ewa, O'ahu.

APPENDIX A  
EARLY CONSULTATION





September 26, 2012  
2012.70.0700 / 12E-311

Mr. Ernest Y.W. Lau, P.E.  
Manager & Chief Engineer  
Board of Water Supply  
City & County of Honolulu  
630 South Beretania Street  
Honolulu, HI 96843

Dear Mr. Lau:

**Water Availability and Environmental Assessment  
Proposed 'Ewa Elementary School Eight-Classroom Building  
Department of Education Job No. Q81000-12  
Tax Map Key: 9-1-017:002  
'Ewa, O'ahu, Hawai'i**

We would like to inquire into water availability for a proposed new classroom building at the 'Ewa Elementary School. The school has experienced considerable growth over the last few years and anticipates an increase in enrollment over the near term. The water service connection for the new building will most likely be made to the existing on-campus system; however, if required, the new service connection will be made within the adjacent rights of way. Waterlines within the school are connected to the existing 12" main on Renton Road.

Additional information on the project is as follows:

- a. TMK: 9-1-017: 002. The parcel is 7.984 acres and the project site is approximately 0.6 acres. The area is zoned R-5.
- b. Type of Development: One-story elementary school building. While the proposed building is anticipated to have a maximum occupancy of 346 persons, the projected day to day occupancy is expected to range between 150 and 200.
- c. Location of Access: There are two accesses to 'Ewa Elementary School, one on Renton Road and the other on Pipeline Street. No new accesses are planned for the new building.
- d. Elevations: The elevations across the project area range from approximately 45' to 50' above mean sea level (msl).
- e. Area Flood Insurance Rate Map Designation: Zone D, Areas in which flood hazards are undetermined, but possible.
- f. Layout: A preliminary map of the school site with proposed additional building is enclosed. See Figures 1 and 2.
- g. Owner/Developer: State of Hawaii, Department of Education

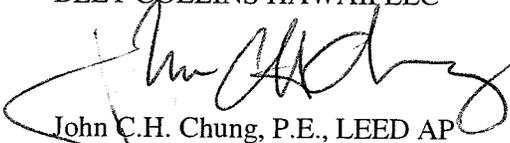
Mr. Ernest Y.W. Lau, P.E.  
September 26, 2012 / 12E-311  
Page 2

Additionally, as part of this proposed project, an Environmental Assessment (EA) is being prepared in compliance with Chapter 343, Hawaii Revised Statutes (HRS). At this time, we are also requesting preliminary input on the project. We would appreciate it if written comments can be submitted to the address below by November 2, 2012. Comments received during this period will be considered in the preparation of the Draft EA. When the draft is completed, a copy will be sent to you for further review and input.

Should any additional information or documentation be required to review or reply to either request, please contact our office. We thank you for your interest and participation.

Very truly yours,

BELT COLLINS HAWAII LLC



John C.H. Chung, P.E., LEED AP  
Vice President / Chief Engineer

JCC;jdk  
Enclosures

cc: Clifford Chu - Benjamin Woo Architects

# BOARD OF WATER SUPPLY

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



RECEIVED

2012 OCT 15 PM 12:46

October 10, 2012

BELT COLLINS HAWAII

PETER B. CARLISLE, MAYOR

DUANE R. MIYASHIRO, Chairman  
MAHEALANI CYPHER, Vice Chair  
THERESIA C. McMURDO  
ADAM C. WONG  
KAULANA H. R. PARK

WESTLEY K.C. CHUN, Ex-Officio  
GLENN M. OKIMOTO, Ex-Officio

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

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

Mr. John C.H. Chung, P.E., LEED AP  
Vice President/Chief Engineer  
Belt Collins Hawaii LLC  
2153 North King Street, Suite 200  
Honolulu, Hawaii 96819-4554

Dear Mr. Chung:

Subject: Your Letter Dated September 26, 2012, Requesting Comments on the Availability of Water and Environmental Assessment for the Proposed Ewa Elementary School Eight-Classroom Building - Tax Map Key: 9-1-017: 002

Thank you for your letter on the proposed classroom building.

The existing water system is adequate to accommodate the proposed eight-classroom building. However, please be advised that this information is based upon current data and, therefore, the Board of Water Supply (BWS) reserves the right to change any position or information stated herein up until the final approval of the building permit application. The final decision on the availability of water will be confirmed when the building permit application is submitted for approval.

When water is made available, the applicant will be required to pay our Water System Facilities Charges for resource development, transmission and daily storage.

The on-site fire protection requirements should be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department.

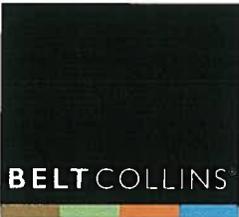
The proposed project is subject to BWS Cross-Connection Control and Backflow Prevention requirements prior to the issuance of the Building Permit Applications.

If you have any questions, please contact Robert Chun at 748-5443.

Very truly yours,

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





BELT COLLINS

September 25, 2012  
2012.70.0700 / 12E-301

Ms. Lori Kahikina, P.E., Director  
Department of Design and Construction  
City & County of Honolulu  
650 South King Street, 11th Floor  
Honolulu, HI 96813

Dear Ms. Kahikina:

**Environmental Assessment**  
**Proposed 'Ewa Elementary School Eight-Classroom Building**  
**Department of Education Job No. Q81000-12**  
**Tax Map Key: 9-1-017:002**  
**'Ewa, O'ahu, Hawai'i**

On behalf of the State of Hawai'i Department of Education (DOE), we would like to inform you of the proposed eight-classroom building addition at the existing 'Ewa Elementary School campus (see enclosed Figures 1 and 2). The purpose and need for the additional classrooms is to accommodate the anticipated increase in enrollment over the near term. The 192-unit low income rental project, Villages of Moa'e Kū, located next to the school, is expected to move forward in the near future.

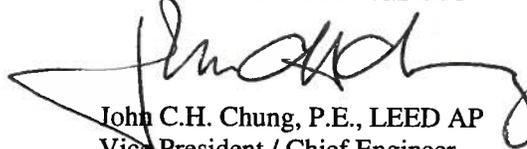
The new single story classroom building is planned to include six general classrooms, one special education classroom, one computer lab, one faculty center, a conference room, restrooms and accessory utility rooms. Utility service connections will be made to existing on-campus services or new service connections within the adjacent rights of way if required. While the proposed building is anticipated to have a maximum occupancy of 346 persons, the projected day to day occupancy is expected to range between 150 and 200 persons. No additions to the faculty are anticipated.

As part of this proposed project, an Environmental Assessment (EA) will be prepared in compliance with Chapter 343, Hawaii Revised Statutes (HRS). If you wish to provide preliminary input on the project at this time or be a consulted party while the EA is being prepared, please review the above introductory information and attached maps and submit your written comments to the address below by November 2, 2012. Comments received during this period will be considered in the preparation of the Draft EA. When the draft is completed, a copy will be sent to you for further review and input.

Should any additional information or documentation be required to review or reply to this request, please contact our office. We thank you for your interest and participation.

Very truly yours,

BELT COLLINS HAWAII LLC



John C.H. Chung, P.E., LEED AP  
Vice President / Chief Engineer

JCC:jdk

Enclosures

cc: Clifford Chu - Benjamin Woo Architects

RECEIVED

DEPARTMENT OF DESIGN AND CONSTRUCTION  
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11<sup>TH</sup> FLOOR  
HONOLULU, HAWAII 96813

Phone: (808) 768-8480 • Fax: (808) 768-4567  
Web site: [www.honolulu.gov](http://www.honolulu.gov)

2012 NOV -8 PM 12: 17

BELT COLLINS HAWAII  
PETER B. CARLISLE  
MAYOR



LORI M.K. KAHIKINA, P.E.  
DIRECTOR

CHRIS TAKASHIGE, P.E.  
DEPUTY DIRECTOR

November 5, 2012

Mr. John C.H. Chung, P.E., LEED AP  
Belt Collins Hawaii LLC  
2153 North King Street, Suite 200  
Honolulu, Hawaii 96819-4554

Dear Mr. Chung:

Environmental Assessment  
Proposed Ewa Elementary School Eight- Classroom Building  
Department of Education Job No. Q81000-12  
Tax Map Key: 9-1-017:002 Ewa, Oahu, Hawaii

Thank you for the opportunity to review and comment. The Department of Design and Construction has no comments on this project.

Should you have any questions, please contact me at 768-8480.

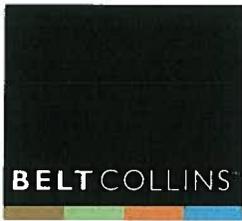
Sincerely,

Lori M. K. Kahikina P.E.  
Director

LMKK:pg:(485254)

- \_\_\_ Mapes, A.
- \_\_\_ Terry, M.
- \_\_\_ Agena, L.
- \_\_\_ Palesh, C.
- \_\_\_ Abe, R.
- \_\_\_ Ancheta, C.
- \_\_\_ Billingsley, W.
- \_\_\_ Chan, J.
- \_\_\_ Chang, L.
- ✓ Chung, J.
- \_\_\_ Conner, B.
- \_\_\_ Gilho, K.
- \_\_\_ Masunaga, R.
- \_\_\_ Kato, A.
- \_\_\_ Klem, S.
- \_\_\_ Konda, S.
- \_\_\_ Len, C.
- \_\_\_ Masunaga, R.
- \_\_\_ Masunaga, E.
- \_\_\_ Quinn, T.
- \_\_\_ Raso, B.
- \_\_\_ Rivera, A.
- \_\_\_ Tanahiro, E.
- \_\_\_ Young, J.

Job No. \_\_\_\_\_



September 25, 2012  
2012.70.0700 / 12E-303

Mr. Tim Steinberger, P.E., Director  
Department of Environmental Services  
City & County of Honolulu  
1000 'Ulu'ohi'a Street, Suite 308  
Kapolei, HI 96707

Dear Mr. Steinberger:

**Environmental Assessment  
Proposed 'Ewa Elementary School Eight-Classroom Building  
Department of Education Job No. Q81000-12  
Tax Map Key: 9-1-017:002  
'Ewa, O'ahu, Hawai'i**

On behalf of the State of Hawai'i Department of Education (DOE), we would like to inform you of the proposed eight-classroom building addition at the existing 'Ewa Elementary School campus (see enclosed Figures 1 and 2). The purpose and need for the additional classrooms is to accommodate the anticipated increase in enrollment over the near term. The 192-unit low income rental project, Villages of Moa'e Kū, located next to the school, is expected to move forward in the near future.

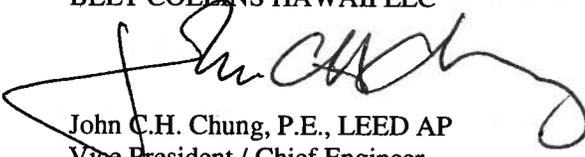
The new single story classroom building is planned to include six general classrooms, one special education classroom, one computer lab, one faculty center, a conference room, restrooms and accessory utility rooms. Utility service connections will be made to existing on-campus services or new service connections within the adjacent rights of way if required. While the proposed building is anticipated to have a maximum occupancy of 346 persons, the projected day to day occupancy is expected to range between 150 and 200 persons. No additions to the faculty are anticipated.

As part of this proposed project, an Environmental Assessment (EA) will be prepared in compliance with Chapter 343, Hawaii Revised Statutes (HRS). If you wish to provide preliminary input on the project at this time or be a consulted party while the EA is being prepared, please review the above introductory information and attached maps and submit your written comments to the address below by November 2, 2012. Comments received during this period will be considered in the preparation of the Draft EA. When the draft is completed, a copy will be sent to you for further review and input.

Should any additional information or documentation be required to review or reply to this request, please contact our office. We thank you for your interest and participation.

Very truly yours,

BELT COLLINS HAWAII LLC



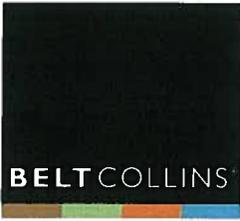
John C.H. Chung, P.E., LEED AP  
Vice President / Chief Engineer

JCC:jdk

Enclosures

cc: Clifford Chu - Benjamin Woo Architects





September 27, 2012  
2012.70.0700 / 12E-313

Mr. David Tanoue, Director  
Department of Planning & Permitting  
City and County of Honolulu  
650 South King Street, 7th Floor  
Honolulu, HI 96813

Dear Mr. Tanoue:

**Environmental Assessment  
Proposed 'Ewa Elementary School Eight-Classroom Building  
Department of Education Job No. Q81000-12  
Tax Map Key: 9-1-017:002  
'Ewa, O'ahu, Hawai'i**

On behalf of the State of Hawai'i Department of Education (DOE), we would like to inform you of the proposed eight-classroom building addition at the existing 'Ewa Elementary School campus (see enclosed Figures 1 and 2). The purpose and need for the additional classrooms is to accommodate the anticipated increase in enrollment over the near term. The 192-unit low income rental project, Villages of Moa'e Kū, located next to the school, is expected to move forward in the near future.

The new single story classroom building is planned to include six general classrooms, one special education classroom, one computer lab, one faculty center, a conference room, restrooms and accessory utility rooms. Utility service connections will be made to existing on-campus services or new service connections within the adjacent rights of way if required. While the proposed building is anticipated to have a maximum occupancy of 346 persons, the projected day to day occupancy is expected to range between 150 and 200 persons. No additions to the faculty are anticipated.

As part of this proposed project, an Environmental Assessment (EA) will be prepared in compliance with Chapter 343, Hawaii Revised Statutes (HRS). If you wish to provide preliminary input on the project at this time or be a consulted party while the EA is being prepared, please review the above introductory information and attached maps and submit your written comments to the address below by November 2, 2012. Comments received during this period will be considered in the preparation of the Draft EA. When the draft is completed, a copy will be sent to you for further review and input.

Should any additional information or documentation be required to review or reply to this request, please contact our office. We thank you for your interest and participation.

Very truly yours,

BELT COLLINS HAWAII LLC

A handwritten signature in black ink, appearing to read "John Chung", written over a large, stylized signature graphic that resembles a triangle or a large letter 'J'.

John C.H. Chung, P.E., LEED AP  
Vice President / Chief Engineer

JCC:jdk

Enclosures

cc: Clifford Chu - Benjamin Woo Architects

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2012 NOV -8 PM 12: 17

BELT COLLINS HAWAII

PETER B. CARLISLE  
MAYOR

DEPARTMENT OF PLANNING AND PERMITTING  
**CITY AND COUNTY OF HONOLULU**

650 SOUTH KING STREET, 7<sup>TH</sup> FLOOR • HONOLULU, HAWAII 96813  
PHONE: (808) 768-8000 • FAX: (808) 768-6041  
DEPT. WEB SITE: [www.honolulu.gov](http://www.honolulu.gov) • CITY WEB SITE: [www.honolulu.gov](http://www.honolulu.gov)



JIRO A. SUMADA  
ACTING DIRECTOR

2012/ELOG-1990(hs)

November 7, 2012

John C. H. Chung, P.E., LEED AP  
Vice President / Chief Engineer  
Belt Collins Hawai'i LLC  
2153 North King Street, Suite 200  
Honolulu, Hawai'i 96819-4554

Dear Mr. Chung:

Subject: Draft Environmental Assessment  
Proposed 'Ewa Elementary School Eight Classroom Building Addition  
Department of Education Job No. Q81000-12  
Tax Map Key: 9-1-017: 002  
'Ewa, O'ahu, Hawai'i

This is in response to your letter of September 27, 2012, requesting comments on the 'Ewa Elementary School Eight-Classroom Building Addition, Department of Education Job No. Q81000-12, Tax Map Key: 9-1-017:002, 'Ewa, O'ahu, Hawai'i.

The Draft Environmental Assessment should:

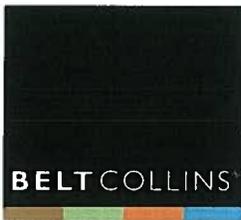
- Describe how the proposal addresses the policies and guidelines of the O'ahu General Plan and the 'Ewa Development Plan.
- Note that there is a water service meter easement of 300 square feet on the property in favor of the City and County of Honolulu.
- Note that the site is on the Hawaii Register of Historic Sites and describe the implications of such designation.
- Note that under Ordinance 02-52, development is subject to Ewa Highway Impact Fees.
- Include a list of anticipated permits that will be required.

Should you have any questions, please contact Harold Senter of my staff at 768-8055.

Very truly yours,

  
Jiro A. Sumada, Acting Director  
Department of Planning and Permitting

JS:bkg  
988476



September 26, 2012  
2012.70.0700 / 12E-312

Ms. Tessa Ching  
Department of Planning & Permitting  
Wastewater Branch  
City & County of Honolulu  
650 South King Street, 7th Floor  
Honolulu, HI 96813

Dear Ms. Ching:

**Sewer Connection and Environmental Assessment  
Proposed 'Ewa Elementary School Eight-Classroom Building  
Department of Education Job No. Q81000-12  
Tax Map Key: 9-1-017:002  
'Ewa, O'ahu, Hawai'i**

We would like to inquire into sewer availability for a proposed new classroom building at the 'Ewa Elementary School (see enclosed Figures 1 and 2). The school has experienced considerable growth over the last few years and anticipates an increase in enrollment over the near term. The sewer service connection for the new building will most likely be made to the existing on-campus system; however, if required, the new service connection will be made within the adjacent rights of way. Sewerlines within the school are connected to the existing 12" main on Renton Road. More project information is on the Site Development Division Master Application Form for Sewer Connection enclosed for submittal.

Additionally, as part of this proposed project, an Environmental Assessment (EA) is being prepared in compliance with Chapter 343, Hawaii Revised Statutes (HRS). At this time, we are also requesting preliminary input on the project. We would appreciate it if written comments can be submitted to the address below by November 2, 2012. Comments received during this period will be considered in the preparation of the Draft EA. When the draft is completed, a copy will be sent to you for further review and input.

Should any additional information or documentation be required to review or reply to these requests, please contact our office. We thank you for your interest and participation.

Very truly yours,

BELT COLLINS HAWAII LLC

A handwritten signature in black ink, appearing to read "John Chung".

John C.H. Chung, P.E., LEED AP  
Vice President / Chief Engineer

JCC:jdk  
Enclosures  
cc: Clifford Chu - Benjamin Woo Architects

CITY AND COUNTY OF HONOLULU  
DEPARTMENT OF PLANNING & PERMITTING  
650 South King Street, Honolulu, Hawaii 96813

## SITE DEVELOPMENT DIVISION MASTER APPLICATION FORM

Additional data, drawings/plans, and fee requirements are listed on a separate sheet titled "Instructions for Filing" and are available at your request. All specified materials described in the "Instructions for Filing" and required fees must accompany this form. You are encouraged to consult with Site Development Division (SDD) staff in completing the application to avoid processing delays. For other applications, procedures, instructions, and a fillable version of this form, please visit [www.honolulu.gov](http://www.honolulu.gov)

I. APPROVAL	PERMIT	VARIANCE	AGREEMENT/LICENSE
-------------	--------	----------	-------------------

Check one or more as appropriate:

- |  |  |   |  |
|--|--|---|--|
| <input type="checkbox"/> Subdivision         | <input type="checkbox"/> Grading                     | <input type="checkbox"/> Flood Hazard District Variance                   | <input type="checkbox"/> Driveway Crossing Existing Retaining Wall Agreement |
| <input type="checkbox"/> Easement(s)         | <input type="checkbox"/> Grubbing                    | <input type="checkbox"/> Slope Easement Variance                          | <input type="checkbox"/> Sewer Easement Agreement                            |
| <input type="checkbox"/> Lot Consolidation   | <input type="checkbox"/> Stockpiling                 | <input type="checkbox"/> Non-Standard Driveway Variance                   | <input type="checkbox"/> Drainage Connection License                         |
| <input type="checkbox"/> Park Dedication     | <input type="checkbox"/> Trenching                   | <input type="checkbox"/> Non-Standard Sidewalk Finish Variance            |  |
| <input type="checkbox"/> Site Development    | <input type="checkbox"/> Dewatering                  | <input type="checkbox"/> Surface Encroachment Variance                    |  |
| <input type="checkbox"/> Flood Determination | <input checked="" type="checkbox"/> Sewer Connection | <input type="checkbox"/> Surface Encroachment Variance for Planting Strip |  |

**NOTE: Sections II & III must be filled in completely for all applications. Please type or print legibly.**

II. LOT AND LAND USE INFORMATION
----------------------------------

TAX MAP KEY(S) 9-1-017: 002 Lot Area: 7.98 sq.ft./ac.

Zoning District: R-5 Development Plan Designation: Low and Medium Residential State Land Use District: Urban

Street Address/Location of Property: 91-1280 Renton Road  
Ewa Beach, HI 96706

Present Use of Property/Building: Elementary School

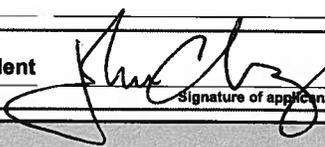
Project Name (if any): Ewa Elementary School Eight Classroom Building

Request/Proposal (describe the nature of the request, proposed activity or project):

**The request is for sewer connection for the proposed new classroom building.**

III. APPLICANT INFORMATION
----------------------------

	<b>Recorded Fee Owner/Applicant</b>	<b>Engineer/Architect/Surveyor</b>	<b>Contractor/Authorized Agent/Contact</b>
Name (& title)	<u>State of Hawaii - DOE</u>	<u>John Chung, Vice President</u>	<u>to be determined</u>
Mailing Address	<u>1390 Miller Street</u> <u>Honolulu, HI 96813</u>	<u>2153 N. King Street, Suite 200</u> <u>Honolulu, HI 96819</u>	
Phone Number(s)	<u>831-6731, 831-6732</u>	<u>521-5361</u>	

APPLICANT	<u>John Chung</u> <small>Print NAME of applicant</small>	<u>Belt Collins Hawaii LLC, Vice President</u> <small>Print COMPANY NAME and TITLE of applicant</small>	 <small>Signature of applicant</small>
-----------	---	--	--

IV. FOR GRADING/GRUBBING/STOCKPILING INFORMATION ONLY
---

Estimated Dates: Start: \_\_\_\_\_ Completion: \_\_\_\_\_ Borrow Material: \_\_\_\_\_

Area of work (sf): \_\_\_\_\_ Borrow Site: \_\_\_\_\_

Dimensions of work: Length: \_\_\_\_\_ Width: \_\_\_\_\_ Height\*: \_\_\_\_\_ Disposal Material: \_\_\_\_\_

Estimated Quantity (cy): Cut: \_\_\_\_\_ Fill: \_\_\_\_\_ Disposal Site: \_\_\_\_\_

\*Stockpile Only

AUTHORIZATION CLEARANCE
-------------------------

This statement of authorization is used in reference to the information provided for in sections I, II and III above.

I/We, \_\_\_\_\_, hereby authorize \_\_\_\_\_ to act in my/our behalf in obtaining/closing the Grading/Grubbing/Stockpiling permit for the project.

Print NAME and TITLE of person giving authority      Print NAME of person receiving authority

\_\_\_\_\_  
Signature of Owner/Developer giving authority

FOR DIVISION USE ONLY:
------------------------

Date of Application: \_\_\_\_\_ Received By: \_\_\_\_\_ Application No.: \_\_\_\_\_

**SEE REVERSE FOR APPLICATIONS FOR TRENCHING AND SEWER CONNECTION**

# SITE DEVELOPMENT DIVISION MASTER APPLICATION FORM

(REVERSE SIDE)

**V. FOR TRENCHING INFORMATION ONLY**

Work to be performed for: \_\_\_\_\_ Work to be done:  Service Connection  Repair  
 Estimated Dates: Start: \_\_\_\_\_ Completion: \_\_\_\_\_ Other: \_\_\_\_\_  
 Estimated Value of work: \$ \_\_\_\_\_ Dimensions: \_\_\_\_\_ ft/in \_\_\_\_\_ ft/in \_\_\_\_\_ ft/in

AGENCY CLEARANCES	SIGNATURE	DATE	ADDRESS	PHONE NO.
DPP, Wastewater Branch			650 So. King St., FMB, 1st Flr.	768-8210
DTS, Traffic Signal			650 So. King St., FMB, 2nd Flr.	768-8388
DDC, Street Lightning			650 So. King St., FMB, 9th Flr.	768-8431
BWS, Customer Care			630 So. Beretania St., 1st Flr.	748-5460
Hawaiian Electric, Construction Installation			820 Ward Avenue, 4th Flr.	543-5654
Hawaiian Telcom, Excavation			1177 Bishop St., Security Entrance Adams Lane	546-7746
Gasco., Inc., Maps & Records			515 Kamakee St., 1st Flr.	594-5575
Oceanic Cablevision, Engineering & Constr.			200 Akamainui St.	625-8443
<input type="checkbox"/> CHECK IF REQUIRED DFM, Division of Road Maintenance			99-999 Iwaena Street, #214	768-3600

DPP: Dept. of Planning and Permitting DTS: Dept. of Transportation Services DDC: Dept. of Design and Construction BWS: Board of Water Supply DFM: Dept. of Facility Maintenance

**NOTE:** The utilities listed above may not represent all underground utilities located within City rights-of-ways, nor do these utility clearances relieve the permittee from complying with all other applicable codes, rules, regulations, and/or permit procedures including, but not limited to, additional clearances and requirements for other utilities (i.e. irrigation, data transmission, etc.) located within City rights-of-ways. Pursuant to ROH 1990, Section 14-17.6, the permittee shall indemnify and save harmless the city for any injuries or damages to any person or property received or sustained by any person as a consequence of any act or acts of the permittee on work done under the trenching permit.

**FOR DIVISION USE ONLY:**

Date of Application: \_\_\_\_\_ Received By: \_\_\_\_\_ Application No.: \_\_\_\_\_

**VI. FOR SEWER CONNECTION INFORMATION ONLY** *To receive a response via e-mail, provide email address below and check box here:*

Residential: No. of Proposed Units \_\_\_\_\_ (Provide breakdown below)  
 \_\_\_\_\_ Studios \_\_\_\_\_ 1 Bedroom \_\_\_\_\_ 2 Bedrooms \_\_\_\_\_ 3 Bedrooms \_\_\_\_\_ 4 Bedrooms \_\_\_\_\_ Other

Non-Residential: (See attached sewer table for required category and quantity and provide any additional information in the remarks)

CATEGORY(IES)	QUANTITY(IES)	NEW WATER METER SIZE(S)
<b>Elementary School</b>	<b>346</b>	
_____	_____	_____
_____	_____	_____

Date of Connection: Early 2014 (approximate) Connection Work Desired:  Use Existing Lateral  Other  
 Dimensions: \_\_\_\_\_ ft. \_\_\_\_\_ in. \_\_\_\_\_ depth

Existing Structures/Dwellings on Property: (Provide breakdown below)

TYPE (i.e. Single Family)	QUANTITY(IES)	REMAIN	DEMOLISH
<b>Classroom, Library and</b>	<b>8</b>	<b>8</b>	<b>0</b>
<b>Administrative Buildings</b>	_____	_____	_____
_____	_____	_____	_____

Remarks: (Provide any additional information on the lines provided). *If response box is checked above, provide email address here:* **jchung@beltcollins.com**  
**There are five portable buildings not included in the above count.**

**FOR DIVISION USE ONLY:**

Date of Application: \_\_\_\_\_ Received By: \_\_\_\_\_ Application No.: \_\_\_\_\_

# SEWER TABLE

This table is used for required category and quantity for non-residential connections. (See sect. V1 "Sewer Connection Information Only" of the Site Development Master Application form).

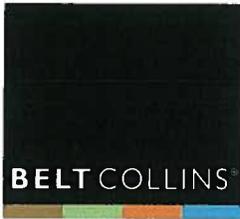
TAX MAP KEY(S) 9-1-017: 002

CATEGORY	UNITS	QUANTITY	CATEGORY	UNITS	QUANTITY
Animal Clinic	Employees	_____	Meat Processing	gpd*	_____
Aquarium	Employees	_____	Medical Clinic	Employees	_____
Auto Repair	Employees	_____	Military	gpd*	_____
Bakery	Employees	_____	Milk Processing	gpd*	_____
Banks	Employees	_____	Mortuaries	Employees	_____
Bowling Alley	Employees	_____	Motel	Rooms	_____
Car Dealership	Employees	_____	Museum	Employees	_____
Car Wash	Employees	_____	Newspaper Agencies	Employees	_____
Caterers	Employees	_____	Noodle Factory	Employees	_____
Church	Employees	_____	Nursery	Employees	_____
Commercial (Misc.)	Sq. Ft. of Floor Space	_____	Nursing, Convalescent Home	Employees and Beds	_____
Commercial Kennel	Employees	_____	Office Building	Employees	_____
Convent	Sisters	_____	Park w/ comfort station only	Employees	_____
Day Care, Pre-School	Children	_____	Parking Structure	Employees	_____
Delicatessen	Employees	_____	Personal Services	Employees	_____
Dental Clinic	Employees	_____	Photo Finishers	Employees	_____
Dentist's Office	Employees	_____	Photo Processing	Employees	_____
District Park	Employees	_____	Pineapple Processing	gpd*	_____
Doctor's Office	Employees	_____	Police Station	Employees	_____
Dormitory	Rooms	_____	Potato Chip Manufacturing	gpd*	_____
Drinking Establishment	Employees	_____	Poultry Processing	gpd*	_____
Dry Cleaning	gpd *	_____	Prison	Prisoners	_____
Elementary School	Students	346	Private Clubs	Employees	_____
Eye Glass Manufacturing	Employees	_____	Residential Care Home	Employees and Beds	_____
Fast Foods	Employees	_____	Resort Condo	Rooms	_____
Fire Station	Employees	_____	Restaurant	Seats per day	_____
Florist	Employees	_____	Retail	Sq. Ft. of Retail Floor Space	_____
General Industry (Misc.)	Sq. Ft. of Floor Space	_____	Rooming House	Rooms	_____
Golf Course w/Clubhouse	Employees	_____	Schools (other)	Students	_____
Government Offices	Employees	_____	Service Station	Employees	_____
Grocery Store	Employees	_____	Shopping Center	Sq. Ft. of Retail Floor Space	_____
Half-way House	Employees and Beds	_____	Soy Bean Factory	gpd*	_____
Health Spa	Employees	_____	Sports Arena	gpd*	_____
High Schools	Students	_____	Stadium	gpd*	_____
Hospital	Beds	_____	Sugar Processing	gpd*	_____
Hostel	Rooms	_____	Supermarket	Employees	_____
Hotel	Rooms	_____	Theater	Seats per day	_____
Hotel Development	Acres	_____	Tofu Factory	gpd*	_____
Intermediate Schools	Students	_____	Warehouse	Employees	_____
Jewelry Manufacturing	Employees	_____	YMCA (Lodging)	Rooms	_____
Laundromats	Machines	_____	Zoo	Employees	_____
Library	Employees	_____			

\*gpd = gallons per day

FOR DIVISION USE ONLY:

Date of Application: \_\_\_\_\_ Received By: \_\_\_\_\_ Application No.: \_\_\_\_\_



September 25, 2012  
2012.70.0700 / 12E-305

Mr. Wayne Yoshioka, Director  
Department of Transportation Services  
City & County of Honolulu  
801 South Beretania Street  
Honolulu, HI 96813

Dear Mr. Yoshioka:

**Environmental Assessment**  
**Proposed 'Ewa Elementary School Eight-Classroom Building**  
**Department of Education Job No. Q81000-12**  
**Tax Map Key: 9-1-017:002**  
**'Ewa, O'ahu, Hawai'i**

On behalf of the State of Hawai'i Department of Education (DOE), we would like to inform you of the proposed eight-classroom building addition at the existing 'Ewa Elementary School campus (see enclosed Figures 1 and 2). The purpose and need for the additional classrooms is to accommodate the anticipated increase in enrollment over the near term. The 192-unit low income rental project, Villages of Moa'e Kū, located next to the school, is expected to move forward in the near future.

The new single story classroom building is planned to include six general classrooms, one special education classroom, one computer lab, one faculty center, a conference room, restrooms and accessory utility rooms. Utility service connections will be made to existing on-campus services or new service connections within the adjacent rights of way if required. While the proposed building is anticipated to have a maximum occupancy of 346 persons, the projected day to day occupancy is expected to range between 150 and 200 persons. No additions to the faculty are anticipated.

As part of this proposed project, an Environmental Assessment (EA) will be prepared in compliance with Chapter 343, Hawaii Revised Statutes (HRS). If you wish to provide preliminary input on the project at this time or be a consulted party while the EA is being prepared, please review the above introductory information and attached maps and submit your written comments to the address below by November 2, 2012. Comments received during this period will be considered in the preparation of the Draft EA. When the draft is completed, a copy will be sent to you for further review and input.

Should any additional information or documentation be required to review or reply to this request, please contact our office. We thank you for your interest and participation.

Very truly yours,

BELT COLLINS HAWAII LLC

A handwritten signature in black ink, appearing to read "John Chung", written over a large, stylized signature graphic.

John C.H. Chung, P.E., LEED AP  
Vice President / Chief Engineer

JCC:jdk

Enclosures

cc: Clifford Chu - Benjamin Woo Architects

DEPARTMENT OF TRANSPORTATION SERVICES  
**CITY AND COUNTY OF HONOLULU**

650 SOUTH KING STREET, 3RD FLOOR  
HONOLULU, HAWAII 96813  
Phone: (808) 768-8305 • Fax: (808) 768-4730 • Internet: www.honolulu.gov

RECEIVED

2012 OCT 18 PM 12:33

PETER B. CARLISLE  
MAYOR



BELT COLLINS HAWAII  
WAYNE Y. YOSHIOKA  
DIRECTOR

KAI NANI KRAUT, P.E.  
DEPUTY DIRECTOR

TP9/12-485379R

October 16, 2012

Mr. John C.H. Chung, P.E., LEED AP  
Vice President/Chief Engineer  
Belt Collins Hawaii LLC  
2153 North King Street, Suite 200  
Honolulu, Hawaii 96819-4554

Dear Mr. Chung:

Subject: Pre-Consultation for Draft Environmental Assessment (DEA) Ewa  
Elementary School Eight-Classroom Building; DOE Job No. Q81000-  
12; Tax Map Key (TMK): 9-1-017:002; Ewa, Oahu, Hawaii

This responds to your letter of September 25, 2012, requesting our comments  
concerning this proposed project.

Our Traffic Engineering Division (TED) has the following comments:

- The DEA should prepare and discuss in a traffic management plan methods to minimize short-term traffic impacts during construction. In addition, a street usage permit may be required should construction of the project require the temporary usage of any public street in the area.
- The DEA should include a traffic impact assessment report (TIAR) to evaluate existing traffic conditions of the surrounding City roadways and viable mitigative measures, if necessary. The TIAR should include a discussion of pedestrian traffic in the area and ways to manage children walking to school.

Mr. John C.H. Chung, P.E., LEED AP  
Page 2  
October 16, 2012

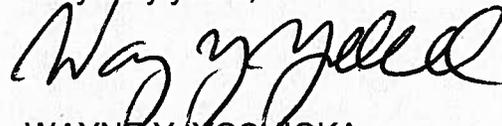
Our Public Transit Division (PTD) has the following comment:

- Your DEA should include a description of Public Transit in the project area, and the possible impact of your project on Public Transit bus and paratransit operations during construction. Basic information is available on our websites: [www.thebus.org](http://www.thebus.org) and [www.honolulu.gov/dts](http://www.honolulu.gov/dts). For more details, you may contact our staff at 768-8370.

We reserve further comment pending submission of the DEA.

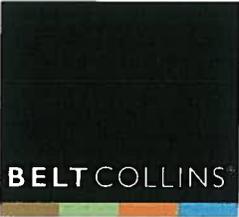
Thank you for the opportunity to review this matter. Should you have any further questions, please contact Michael Murphy of my staff at 768-8359.

Very truly yours,



WAYNE Y. YOSHIOKA  
Director





BELT COLLINS

September 25, 2012  
2012.70.0700 / 12E-302

Mr. Kenneth G. Silva, Chief  
Honolulu Fire Department  
City and County of Honolulu  
636 South Street  
Honolulu, HI 96813-5007

Dear Chief Silva:

**Environmental Assessment**  
**Proposed 'Ewa Elementary School Eight-Classroom Building**  
**Department of Education Job No. Q81000-12**  
**Tax Map Key: 9-1-017:002**  
**'Ewa, O'ahu, Hawai'i**

On behalf of the State of Hawai'i Department of Education (DOE), we would like to inform you of the proposed eight-classroom building addition at the existing 'Ewa Elementary School campus (see enclosed Figures 1 and 2). The purpose and need for the additional classrooms is to accommodate the anticipated increase in enrollment over the near term. The 192-unit low income rental project, Villages of Moa'e Kū, located next to the school, is expected to move forward in the near future.

The new single story classroom building is planned to include six general classrooms, one special education classroom, one computer lab, one faculty center, a conference room, restrooms and accessory utility rooms. Utility service connections will be made to existing on-campus services or new service connections within the adjacent rights of way if required. While the proposed building is anticipated to have a maximum occupancy of 346 persons, the projected day to day occupancy is expected to range between 150 and 200 persons. No additions to the faculty are anticipated.

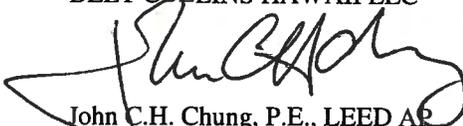
The two nearest fire hydrants are across Pipeline Street at the intersections of Alanui Mauka Street and Bryan Street. Both are located approximately 70' from the closest edge of the proposed building. Other fire hydrants within the school site are located over 300' away from the proposed building.

As part of this proposed project, an Environmental Assessment (EA) will be prepared in compliance with Chapter 343, Hawaii Revised Statutes (HRS). If you wish to provide preliminary input on the project at this time or be a consulted party while the EA is being prepared, please review the above introductory information and attached maps and submit your written comments to the address below by November 2, 2012. Comments received during this period will be considered in the preparation of the Draft EA. When the draft is completed, a copy will be sent to you for further review and input.

Should any additional information or documentation be required to review or reply to this request, please contact our office. We thank you for your interest and participation.

Very truly yours,

BELT COLLINS HAWAII LLC



John C.H. Chung, P.E., LEED AP  
Vice President / Chief Engineer

JCC/jdk

Enclosures

cc: Clifford Chu - Benjamin Woo Architects

Belt Collins Hawaii LLC | 2153 North King Street, Suite 200 | Honolulu, HI 96819-4554 USA  
Tel: 808.521.5361 | Fax: 808.538.7819 | www.beltcollins.com | honolulu@beltcollins.com

Belt Collins Hawaii is an Equal Opportunity Employer

HONOLULU FIRE DEPARTMENT  
**CITY AND COUNTY OF HONOLULU**

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

PETER B. CARLISLE  
MAYOR



RECEIVED

2012 OCT 18 PM 12:33

BELT COLLINS HAWAII  
KENNETH G. SILVA  
FIRE CHIEF

EMMIT A. KANE  
DEPUTY FIRE CHIEF

October 11, 2012

Mr. John Chung, P.E., LEED AP  
Vice President/Chief Engineer  
Belt Collins Hawaii LLC  
2153 North King Street, Suite 200  
Honolulu, Hawaii 96819-4554

Dear Mr. Chung:

Subject: Environmental Assessment  
Proposed Ewa Elementary School Eight-Classroom Building  
Ewa, Oahu, Hawaii  
Tax Map Key: 9-1-017: 002

In response to your letter of September 25, 2012, regarding the above-mentioned subject, the Honolulu Fire Department (HFD) requires that the following be complied with:

1. Fire department access roads shall be provided such that any portion of the facility or any portion of an exterior wall of the first story of the building is located not more than 150 feet (46 m) from fire department access roads as measured by an approved route around the exterior of the building or facility. (National Fire Protection Association [NFPA] 1; Uniform Fire Code [UFC]<sup>TM</sup>, 2006 Edition, Section 18.2.3.2.2.)

A fire department access road shall extend to within 50 ft (15 m) of at least one exterior door that can be opened from the outside and that provides access to the interior of the building. (NFPA 1; UFC<sup>TM</sup>, 2006 Edition, Section 18.2.3.2.1.)

2. A water supply approved by the county, capable of supplying the required fire flow for fire protection, shall be provided to all premises upon which facilities or buildings, or portions thereof, are hereafter

Mr. John Chung, P.E., LEED AP  
Page 2  
October 11, 2012

constructed, or moved into or within the county. When any portion of the facility or building is in excess of 150 feet (45 720 mm) from a water supply on a fire apparatus access road, as measured by an approved route around the exterior of the facility or building, on-site fire hydrants and mains capable of supplying the required fire flow shall be provided when required by the AHJ [Authority Having Jurisdiction]. (NFPA 1; UFC<sup>TM</sup>, 2006 Edition, Section 18.3.1, as amended.)

3. Submit civil drawings to the HFD for review and approval.

Should you have questions, please contact Battalion Chief Socrates Bratakos of our Fire Prevention Bureau at 723-7151 or [sbratakos@honolulu.gov](mailto:sbratakos@honolulu.gov).

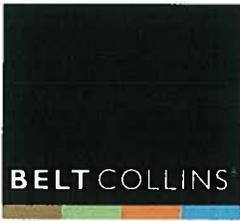
Sincerely,



KENNETH G. SILVA  
Fire Chief

KGS/SY:bh





September 25, 2012  
2012.70.0700 / 12E-304

Mr. Louis Kealoha, Chief  
Honolulu Police Department  
City & County of Honolulu  
801 South Beretania Street  
Honolulu, HI 96813

Dear Chief Kealoha:

**Environmental Assessment**  
**Proposed 'Ewa Elementary School Eight-Classroom Building**  
**Department of Education Job No. Q81000-12**  
**Tax Map Key: 9-1-017:002**  
**'Ewa, O'ahu, Hawai'i**

On behalf of the State of Hawai'i Department of Education (DOE), we would like to inform you of the proposed eight-classroom building addition at the existing 'Ewa Elementary School campus (see enclosed Figures 1 and 2). The purpose and need for the additional classrooms is to accommodate the anticipated increase in enrollment over the near term. The 192-unit low income rental project, Villages of Moa'e Kū, located next to the school, is expected to move forward in the near future.

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Should any additional information or documentation be required to review or reply to this request, please contact our office. We thank you for your interest and participation.

Very truly yours,

BELT COLLINS HAWAII LLC

A handwritten signature in black ink, appearing to read "John C.H. Chung".

John C.H. Chung, P.E., LEED AP  
Vice President / Chief Engineer

JCC:jdk

Enclosures

cc: Clifford Chu - Benjamin Woo Architects

POLICE DEPARTMENT  
CITY AND COUNTY OF HONOLULU

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

RECEIVED

2012 OCT 17 PM 12: 19

LOUIS M. KEALOHA  
BELT COLLINS HAWAII

DAVE M. KAJIHIRO  
MARIE A. MCCAULEY  
DEPUTY CHIEFS



PETER B. CARLISLE  
MAYOR

OUR REFERENCE EO-WS

October 15, 2012

Mr. John C. H. Chung, P.E., LEED AP  
Vice President/Chief Engineer  
Belt Collins Hawaii LLC  
2153 North King Street, Suite 200  
Honolulu, Hawaii 96819-4554

Dear Mr. Chung:

This is in response your letter dated September 25, 2012, requesting comments on the Environmental Assessment for the Proposed 'Ewa Elementary School Eight-Classroom Building project.

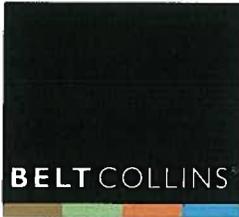
This project should have no significant impact on the facilities or operations of the Honolulu Police Department.

If there are any questions, please call Major Kerry Inouye of District 8 (Kapolei) at 723-8403.

Sincerely,

LOUIS M. KEALOHA  
Chief of Police

By   
BART HUBER  
Assistant Chief  
Support Services Bureau



BELT COLLINS

September 25, 2012  
2012.70.0700 / 12E-307

Mr. Kirk S. Tomita  
Sr. Environmental Scientist  
Hawaiian Electric Company  
P.O. Box 2750  
Honolulu, HI 96840

Dear Mr. Tomita:

**Environmental Assessment**  
**Proposed 'Ewa Elementary School Eight-Classroom Building**  
**Department of Education Job No. Q81000-12**  
**Tax Map Key: 9-1-017:002**  
**'Ewa, O'ahu, Hawai'i**

On behalf of the State of Hawai'i Department of Education (DOE), we would like to inform you of the proposed eight-classroom building addition at the existing 'Ewa Elementary School campus (see enclosed Figures 1 and 2). The purpose and need for the additional classrooms is to accommodate the anticipated increase in enrollment over the near term. The 192-unit low income rental project, Villages of Moa'e Kū, located next to the school, is expected to move forward in the near future.

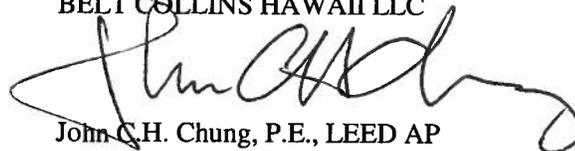
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As part of this proposed project, an Environmental Assessment (EA) will be prepared in compliance with Chapter 343, Hawaii Revised Statutes (HRS). If you wish to provide preliminary input on the project at this time or be a consulted party while the EA is being prepared, please review the above introductory information and attached maps and submit your written comments to the address below by November 2, 2012. Comments received during this period will be considered in the preparation of the Draft EA. When the draft is completed, a copy will be sent to you for further review and input.

Should any additional information or documentation be required to review or reply to this request, please contact our office. We thank you for your interest and participation.

Very truly yours,

BELT COLLINS HAWAII LLC



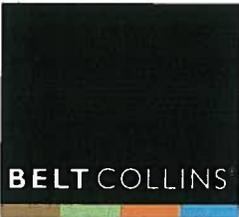
John C.H. Chung, P.E., LEED AP  
Vice President / Chief Engineer

JCC:jdk

Enclosures

cc: Clifford Chu - Benjamin Woo Architects





BELT COLLINS

September 25, 2012  
2012.70.0700 / 12E-308

Ms. Lynette Yoshida  
Section Manager – OSP Engineering  
Hawaiian Telcom  
1177 Bishop Street  
Honolulu, HI 96813

Dear Ms. Yoshida:

**Environmental Assessment**  
**Proposed ‘Ewa Elementary School Eight-Classroom Building**  
**Department of Education Job No. Q81000-12**  
**Tax Map Key: 9-1-017:002**  
**‘Ewa, O‘ahu, Hawai‘i**

On behalf of the State of Hawai‘i Department of Education (DOE), we would like to inform you of the proposed eight-classroom building addition at the existing ‘Ewa Elementary School campus (see enclosed Figures 1 and 2). The purpose and need for the additional classrooms is to accommodate the anticipated increase in enrollment over the near term. The 192-unit low income rental project, Villages of Moa‘e Kū, located next to the school, is expected to move forward in the near future.

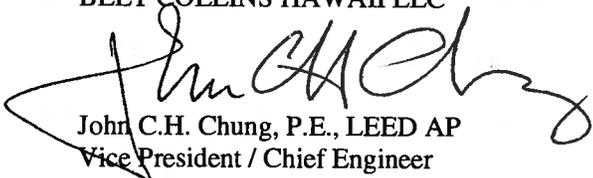
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Very truly yours,

BELT COLLINS HAWAII LLC



John C.H. Chung, P.E., LEED AP  
Vice President / Chief Engineer

JCC:jdk

Enclosures

cc: Clifford Chu - Benjamin Woo Architects



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BELT COLLINS HAWAII

Hawaiian Telcom 

October 22, 2012

Belt Collins Hawaii, Ltd.  
2153 North King Street, Suite 200  
Honolulu, Hawaii 96819-4554  
Attention: Mr. John C. H. Chung, P.E., LEED AP

Dear Mr. Chung:

**Subject: Environmental Assessment  
Proposed Ewa Elementary School Eight-Classroom Building  
Department of Education Job No. Q81000-12  
Tax Map Key: 9-1-017:002  
Ewa, Oahu, Hawaii**

Thank you for the opportunity to review and comment in preparation of the Environmental Assessment regarding the subject project.

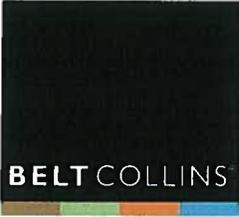
Hawaiian Telcom does not have any comments to offer at this.

If you have any questions or require assistance in the future on this project, please call me at 546-7761.

Sincerely,

Les Loo  
Network Engineer – OSP Engineering  
Network Engineering & Planning

cc: File



BELT COLLINS

September 25, 2012  
2012.70.0700 / 12E-309

Mr. David Tammarine, P.E.  
Oceanic Time Warner Cable  
Mililani Tech Park  
200 Akamainui Street  
Mililani, HI 96789

Dear Mr. Tammarine:

**Environmental Assessment  
Proposed 'Ewa Elementary School Eight-Classroom Building  
Department of Education Job No. Q81000-12  
Tax Map Key: 9-1-017:002  
'Ewa, O'ahu, Hawai'i**

On behalf of the State of Hawai'i Department of Education (DOE), we would like to inform you of the proposed eight-classroom building addition at the existing 'Ewa Elementary School campus (see enclosed Figures 1 and 2). The purpose and need for the additional classrooms is to accommodate the anticipated increase in enrollment over the near term. The 192-unit low income rental project, Villages of Moa'e Kū, located next to the school, is expected to move forward in the near future.

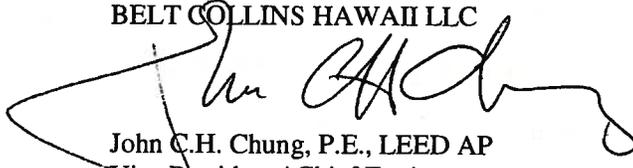
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Very truly yours,

BELT COLLINS HAWAII LLC



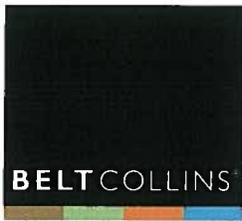
John C.H. Chung, P.E., LEED AP  
Vice President / Chief Engineer

JCC:jdk

Enclosures

cc: Clifford Chu - Benjamin Woo Architects





September 25, 2012  
2012.70.0700 / 12E-310

Mr. Charles Calvet, P.E.  
Manager, Engineering  
Hawai'i Gas – O'ahu Office  
P.O. Box 3000  
Honolulu, HI 96802-3000

Dear Mr. Calvet:

**Environmental Assessment  
Proposed 'Ewa Elementary School Eight-Classroom Building  
Department of Education Job No. Q81000-12  
Tax Map Key: 9-1-017:002  
'Ewa, O'ahu, Hawai'i**

On behalf of the State of Hawai'i Department of Education (DOE), we would like to inform you of the proposed eight-classroom building addition at the existing 'Ewa Elementary School campus (see enclosed Figures 1 and 2). The purpose and need for the additional classrooms is to accommodate the anticipated increase in enrollment over the near term. The 192-unit low income rental project, Villages of Moa'e Kū, located next to the school, is expected to move forward in the near future.

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Very truly yours,

BELT COLLINS HAWAII LLC

A handwritten signature in black ink, appearing to read "John C.H. Chung".

John C.H. Chung, P.E., LEED AP  
Vice President / Chief Engineer

JCC:jdk

Enclosures

cc: Clifford Chu - Benjamin Woo Architects



RECEIVED

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BELT COLLINS HAWAII

October 15, 2012

Mr. John C. H. Chung, P.E., LEED AP  
Vice-President / Chief Engineer  
Belt Collins Hawaii LLC  
2153 North King Street, Suite 200  
Honolulu, Hawaii 96819

Dear Mr. Chung:

Subject: Environmental Assessment  
Proposed 'Ewa Elementary School Eight-Classroom Building  
TMK: 9-1-017:002  
'Ewa, O'ahu, Hawai'i

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In response to your letter dated September 25, 2012, it has been determined that the area is currently clear of utility gas facilities.

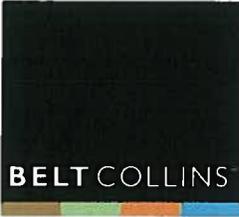
Thank you for the opportunity to review the maps. Should there be any questions, or if additional information is desired, please feel free to call Jared Pasalo at 594-5008.

Sincerely,

HAWAII GAS

Keith K. Yamamoto  
Manager, Engineering

KKY:krs  
12-173



BELT COLLINS

September 25, 2012  
2012.70.0700 / 12E-306

Ms. Celeste LaCuesta, Chairperson  
'Ewa No. 23 Neighborhood Board  
c/o Neighborhood Commission Office  
City Hall, Room 406  
Honolulu, HI 96813

Dear Ms. LaCuesta:

**Environmental Assessment**  
**Proposed 'Ewa Elementary School Eight-Classroom Building**  
**Department of Education Job No. Q81000-12**  
**Tax Map Key: 9-1-017:002**  
**'Ewa, O'ahu, Hawai'i**

On behalf of the State of Hawai'i Department of Education (DOE), we would like to inform you of the proposed eight-classroom building addition at the existing 'Ewa Elementary School campus (see enclosed Figures 1 and 2). The purpose and need for the additional classrooms is to accommodate the anticipated increase in enrollment over the near term. The 192-unit low income rental project, Villages of Moa'e Kū, located next to the school, is expected to move forward in the near future.

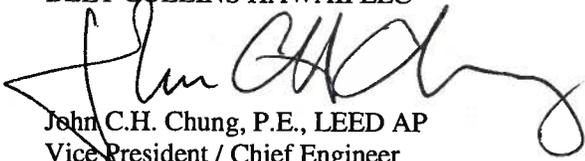
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Should any additional information or documentation be required to review or reply to this request, please contact our office. We thank you for your interest and participation.

Very truly yours,

BELT COLLINS HAWAII LLC



John C.H. Chung, P.E., LEED AP  
Vice President / Chief Engineer

JCC:jdk

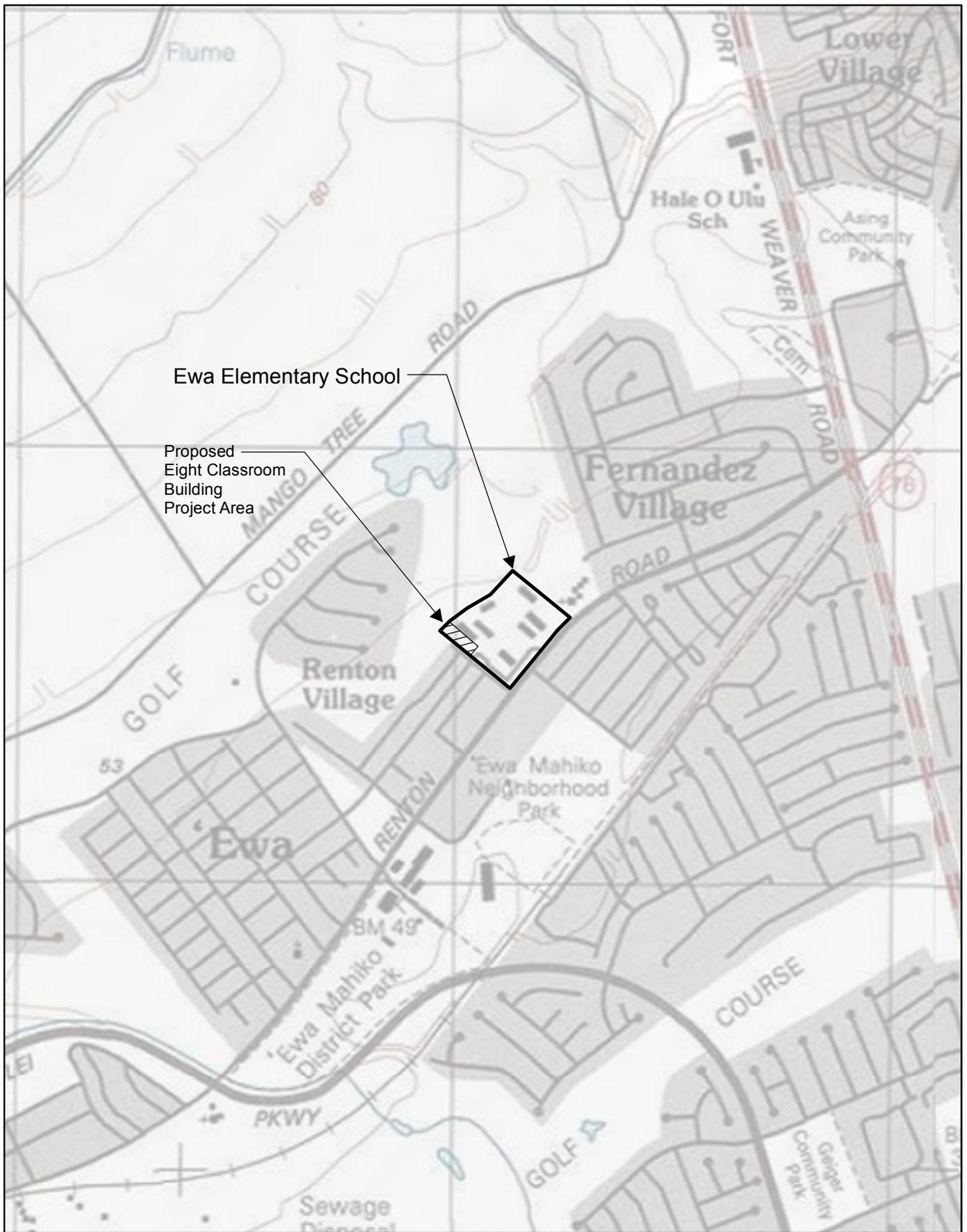
Enclosures

cc: Clifford Chu - Benjamin Woo Architects

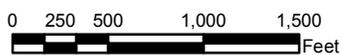


FIGURES ENCLOSED WITH  
EARLY CONSULTATION REQUEST LETTERS

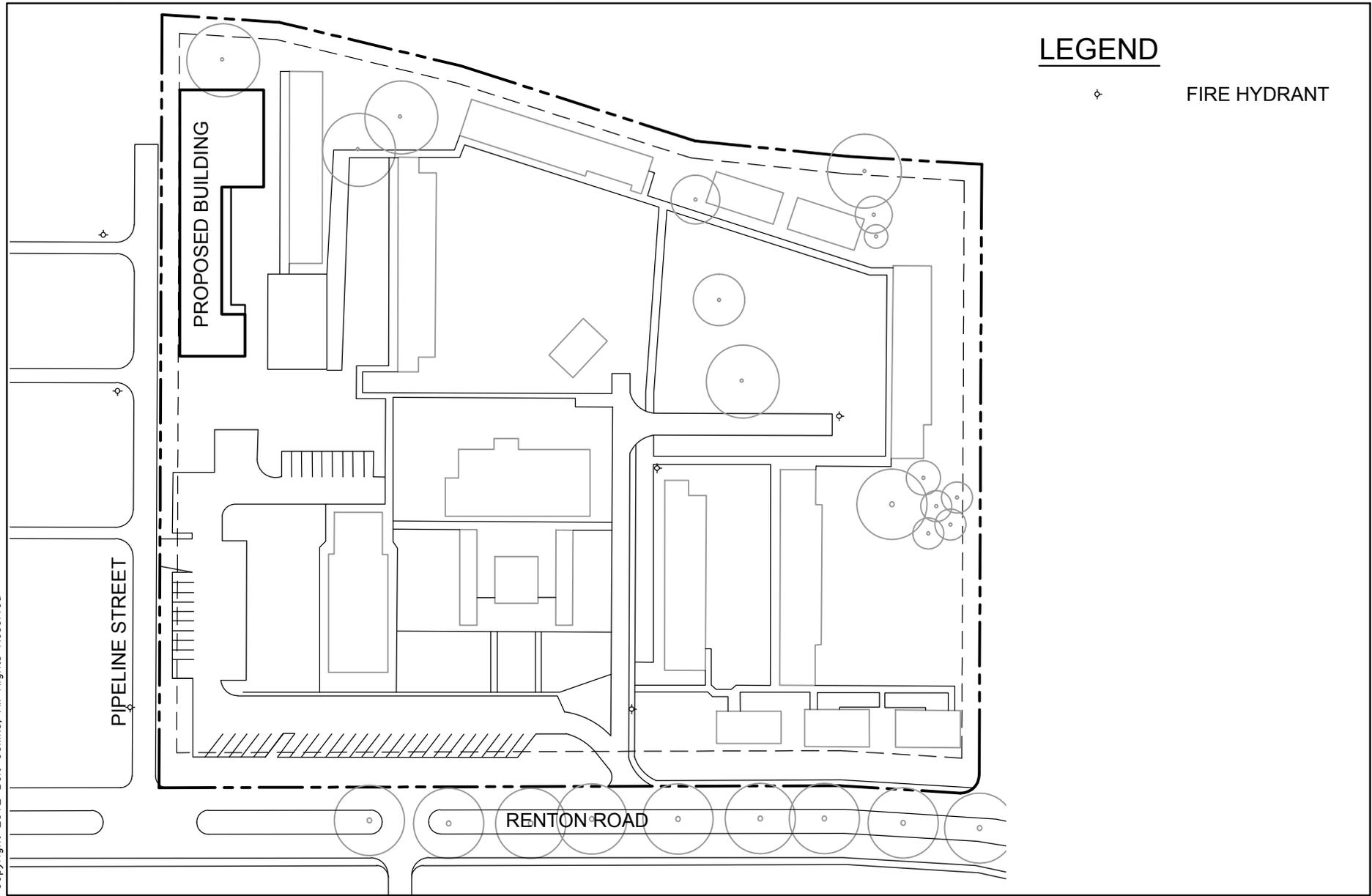




Prepared by: Belt Collins Hawaii LLC



**Figure 1**  
**Location Map**  
 Ewa Elementary School Proposed Eight Classroom Building  
 September 2012



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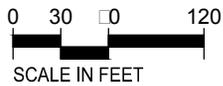


Figure 2  
PRELIMINARY SITE PLAN  
EWA ELEMENTARY SCHOOL  
SEPTEMBER 2012

# APPENDIX B

## FLORA AND FAUNA SURVEY



September 10, 2012

John Chung  
Belt Collins Hawai'i Ltd.  
Vice President/Chief Engineer  
2153 North King Street, Suite 200  
Honolulu, HI 96819

**Re: Flora and Fauna Survey in Support of the Ewa Elementary School Environmental Assessment, 'Ewa, O'ahu**

Dear Mr Chung:

In support of the Environmental Assessment (EA) for the Ewa Elementary School in 'Ewa, O'ahu, SWCA Environmental Consultants was tasked by Belt Collins Hawai'i Ltd. to conduct a flora and fauna survey of the Project Site (Attachment A) in Ewa Elementary School. This letter report summarizes the findings of the flora and fauna survey conducted by SWCA biologists Shahin Ansari and Ling Ong on August 22, 2012. The objectives of the flora and fauna survey were:

1. Identify and document the presence and distribution of plant species and vegetation communities within the proposed building location(s) through pedestrian survey;
2. Identify and document the presence and relative abundance of bird, mammal, amphibian, reptile, and invertebrate macrofauna which occur within the proposed building location(s) through pedestrian survey;
3. Identify any state or federally listed candidate, threatened, or endangered species, species of concern and/or rare (either locally or state-wide) species found within the proposed building location(s); and
4. Provide recommendations to prevent take of any state or federally listed candidate, threatened, or endangered species, species of concern and/or rare (either locally or state-wide) species if found within the proposed building location(s).

**Project Description:**

The Ewa Elementary School is located on the 'Ewa Plain of O'ahu, an area that is experiencing rapid development. To meet the anticipated increase in enrollment at this school, the State of Hawai'i Department of Education seeks to expand their on-campus facilities. The EA is being prepared to evaluate the potential impacts of adding new buildings on-campus in order to accommodate growth and a potential increase in enrollment.

The Project Site (area enclosed in blue in Attachment A) currently encompasses buildings, grassy fields, portable buildings/classrooms, parking area, and a basketball court.

### **Methods:**

A pedestrian survey of the Project Site was conducted on August 22, 2012. The biologists documented all plant and animal species (birds, mammals, insects, amphibians, and reptiles) observed within the Project Site. The survey was conducted in the morning and sunny, clear skies prevailed during the survey period. Taxa recorded during the survey are indicative of the season (“rainy” vs. “dry”) and the environmental conditions at the time of the survey.

### **Results and Discussion:**

#### Flora:

No state or federally listed threatened, endangered, or candidate endangered plant species (USFWS 2012), or rare native Hawaiian plant species, were observed at the Project Site during the survey. The Project Site does not contain critical habitat for threatened or endangered plants as designated by the U.S. Fish and Wildlife Service.

Forty-six (46) plant species were recorded at the site during the survey. Of these, only two are native to the Hawaiian Islands – kou (*Cordia subcordata*) and ‘uhaloa (*Waltheria indica*). Both these indigenous species are common across the State. Kou is known to be sparingly naturalized in low elevation, dry coastal areas on all main Hawaiian Islands. ‘Uhaloa is known to occur in dry, often disturbed sites between sea level and 1,220 m (0 – 4,000 ft) elevation on all of the main Hawaiian Islands, and also on Midway Atoll (Wagner et al. 1999). A list of all plant species observed by SWCA biologists within the Project Site is included as an attachment (Attachment B) to this letter report.

The majority of the Project Site is comprised of open, manicured grassy areas (Figure 1) with few scattered ornamental shrubs and trees and low-growing non-native grasses and herbaceous plants that are common in disturbed coastal areas throughout the Hawaiian Islands. Bermuda grass (*Cynodon dactylon*), Hilo grass (*Paspalum conjugatum*), buffel grass (*Cenchrus ciliaris*), and radiate finger grass (*Chloris radiata*) are among the grasses scattered throughout the area. Non-native herbaceous species common at the Project Site include straggler daisy (*Calyptocarpus vialis*), creeping indigo (*Indigofera hendecaphylla*), creeping sida (*Sida ciliaris*), weed sorrel (*Oxalis corniculata*), boerhavia (*Boerhavia coccinea*), and ipomoea (*Ipomoea obscura*). Ornamental shrubs observed include milkweed (*Calotropis gigantea*) and *Heliconia* spp., while rainbow shower tree (*Cassia x nealiae*) and monkey pod (*Samanea saman*) were common tree species on the Project Site. One large Chinese banyan (*Ficus microcarpa*) tree was observed close to the fence line near in the northwestern corner of the Project Site (Figure 2).



Figure 1. Open, manicured grassy areas comprised the majority of the vegetation within the Project Site.



Figure 2. Large Chinese banyan tree in the northwestern corner of the Project Site.

Fauna:

No native state or federally listed threatened, endangered, or candidate bird, mammal, or insect species were observed at the Project Site or in the vicinity. The Project Site does not contain critical habitat and is not near critical habitat for any listed species.

Fourteen species of birds were observed during the site visit (Table 1), of which, 13 are non-native introduced species and one is a migratory species. The species observed are typical of those found within an urban setting. The Pacific golden plover (*Pluvialis fulva*), or kōlea, is a

migratory species and is a common winter visitor to the Hawaiian Islands between August and May and frequents lawns and fields in urban settings (Hawaii Audubon Society 2005).

**Table 1. Bird Species Observed at the Project Site.**

M=Migrant, NN = non-native permanent resident; A= abundant; C = common; U = uncommon

Common Name	Scientific Name	Status	Relative Abundance on Site
Pacific golden plover	<i>Pluvialis fulva</i>	M	U
Cattle egret	<i>Bubulcus ibis</i>	NN	U
Spotted dove	<i>Streptopelia chinensis</i>	NN	A
Zebra dove	<i>Geopelia striata</i>	NN	A
Red-vented bulbul	<i>Pycnonotus cafer</i>	NN	A
Common myna	<i>Acridotheres tristis</i>	NN	A
Japanese white-eye	<i>Zosterops japonicus</i>	NN	C
Northern cardinal	<i>Cardinalis cardinalis</i>	NN	U
Red-crested cardinal	<i>Paroaria coronata</i>	NN	U
House finch	<i>Carpodacus mexicanus</i>	NN	C
Chestnut munia	<i>Lonchura malacca</i>	NN	U
Nutmeg mannakin	<i>Lonchura punctulata</i>	NN	U
Java sparrow	<i>Padda oryzivora</i>	NN	C
Common waxbill	<i>Estrilda astrild</i>	NN	X
<b>Total species</b>			<b>14</b>

The endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*) is the only native terrestrial mammal species which is still extant within the Hawaiian Islands (UFWS 1998). The Hawaiian hoary bat has been recorded on O‘ahu, as well as on Moloka‘i, Maui, Kaua‘i, and the Island of Hawai‘i. No historical or current population estimates or information exist for this endemic subspecies. Hawaiian hoary bats have been documented in both native and disturbed habitats (NRCS 2009, Ong et al. 2012). However, bat activity rates at sampled locations on O‘ahu have been relatively low compared to Kaua‘i and the Island of Hawai‘i (Ong et al. 2012). Therefore, it is possible that Hawaiian hoary bats could very occasionally forage within the airspace of the Project Site. Large trees present within the Project Site, such as the Chinese banyan (Figure 2), monkey pod and shower trees could potentially be used as roost trees when bats are present.

No night surveys were conducted to survey for the endangered Hawaiian hoary. No Hawaiian hoary bats were seen during the day-time survey conducted at the Project Site.

The only mammal observed during the survey was the mongoose (*Herpestes javanicus*); however, rats (*Rattus* spp.) and mice (*Mus musculus*) are likely to be present at the site. Two introduced butterfly species were observed, the Chinese swallowtail (*Papilio xuthus*) and the

large orange sulphur butterfly (*Phoebis agarithe*). Non-native geckos (Gekkonidae) were heard, and one introduced brown anole (*Anolis sagrei*) was observed.

### **Conclusions and Recommendations:**

Modifications at the Project Site are not expected to have a significant adverse impact on any state or federally listed candidate, threatened, or endangered species, species of concern, and/or rare plants or animals. The entire site is disturbed and the landscape highly manicured by the grounds keeping crew of the school. The flora and fauna within the Project Site are predominantly non-native. The two native plant species at the Project Site (kou and 'uhaloa) commonly occur on O'ahu and the other main Hawaiian Islands. No native animals were found using the Project Site; however, there is a small possibility that the endangered Hawaiian hoary bat could occasionally use the airspace at the Project Site or occasionally roost in the trees within the Project Site.

If additional landscaping is desired in the future at the Project Site, SWCA recommends that native Hawaiian plants be employed for landscaping to the maximum extent practicable. Potential coastal native plants that may be appropriate for landscaping include: naupaka (*Scaevola taccada*), pōhinahina (*Vitex rotundifolia*), 'ilima (*Sida fallax*), 'a'ali'i (*Dodonaea viscosa*), 'Ewa hinahina (*Achyranthes splendens* var. *rotunda*), ma'o (*Gossypium tomentosum*), naio (*Myoporum sandwicense*), and alahe'e (*Psydrax odoratum*). If native plants do not meet landscaping objectives, plants with a low risk of becoming invasive may be substituted. Additional information on selecting appropriate plants for landscaping can be obtained from the following sites:

- <http://www.botany.Hawaii.edu/faculty/daehler/wra/default2.htm>
- [http://www.hear.org/alternativestoinvasives/pdfs/mcaac\\_hpwra\\_a2i\\_list.pdf](http://www.hear.org/alternativestoinvasives/pdfs/mcaac_hpwra_a2i_list.pdf)
- <http://www.nativeplants.Hawaii.edu/>

### **References:**

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- Hawaii Audubon Society (HAS). 2005. *Hawaii's Birds*, 6<sup>th</sup> Edition. Waipahu, Hawai'i: Island Heritage.
- McKeown, S. 1996. A field guide to reptiles and amphibians in the Hawaiian Islands. Los Osos, California: Diamond Head Publishing.
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Mitchell, C., C. Ogura, D.W. Meadows, A. Kane, L. Strommer, S. Fretz, D. Leonard, and A. McClung. 2005. Hawai'i's Comprehensive Wildlife Conservation Strategy. Hawai'i Department of Land and Natural Resources, Honolulu. Available at: <http://www.state.hi.us/dlnr/dofaw/cwcs/files/NAAT%20final%20CWCS/Full%20document%20Hawaii%20CWCS.pdf>. Accessed on June 11, 2012

Natural Resource Conservation Science. 2009. Bats of the U.S. Pacific Islands. Biology Technical Note no. 20.

Ong L., Miyamoto A., Craig M., Roy R. and Cowan D. 2012. Detecting the elusive: documenting Hawaiian hoary bat activity on Oahu. 20<sup>th</sup> Hawaii Conservation Conference, What Difference does 20 Years Make? Reflections on Change, Innovation, and the Work that Remains. July 31-Aug 2, 2012. Honolulu, Hawaii.

Palmer, D.D. 2003. *Hawaii's Ferns and Fern Allies*. Honolulu: University of Hawai'i Press.

Ralph, C.J., and C. van Riper, III. 1985. Historical and current factors affecting Hawaiian native birds. In *Bird Conservation*, edited by S.A. Temple, pp. 7-42. Madison, Wisconsin: University of Wisconsin Press.

USFWS. 1998. Recovery Plan for the Hawaiian Hoary Bat (*Lasiurus cinereus semotus*). U.S. Fish and Wildlife Service, Portland, Oregon.

USFWS. 2012. Endangered Species Program website. Available at <http://www.fws.gov/endangered/>. Accessed June 11, 2012.

Wagner, W.L., and D.R. Herbst. 1999. Supplement to the *Manual of the Flowering Plants of Hawai'i*. In *Manual of the Flowering Plants of Hawai'i* by W.L. Wagner, D.R. Herbst, and S.H. Sohmer, pp. 1855-1918. Honolulu: University of Hawai'i Press and Bishop Museum Press.

Wagner, W.L., D.R. Herbst, N. Khan, and T. Flynn. 2012. Hawaiian Vascular Plant Updates: A Supplement to the *Manual of the Flowering Plants of Hawai'i* and *Hawai'i's Ferns and Fern Allies*. Version 1.3.

Wagner, W.L., D.R. Herbst, and S.H. Sohmer. 1999. *Manual of the Flowering Plants of Hawai'i*. 2 vols. Rev. ed. Honolulu: University of Hawai'i Press and Bishop Museum Press.

This letter report summarizes SWCA's findings of the one-day flora and fauna survey at the Ewa Elementary School in 'Ewa, O'ahu on August 22, 2012 in support of the EA being conducted by Belt Collins Hawai'i Ltd. Should you have any questions regarding this letter report, please feel free to contact us at any time.

Sincerely,

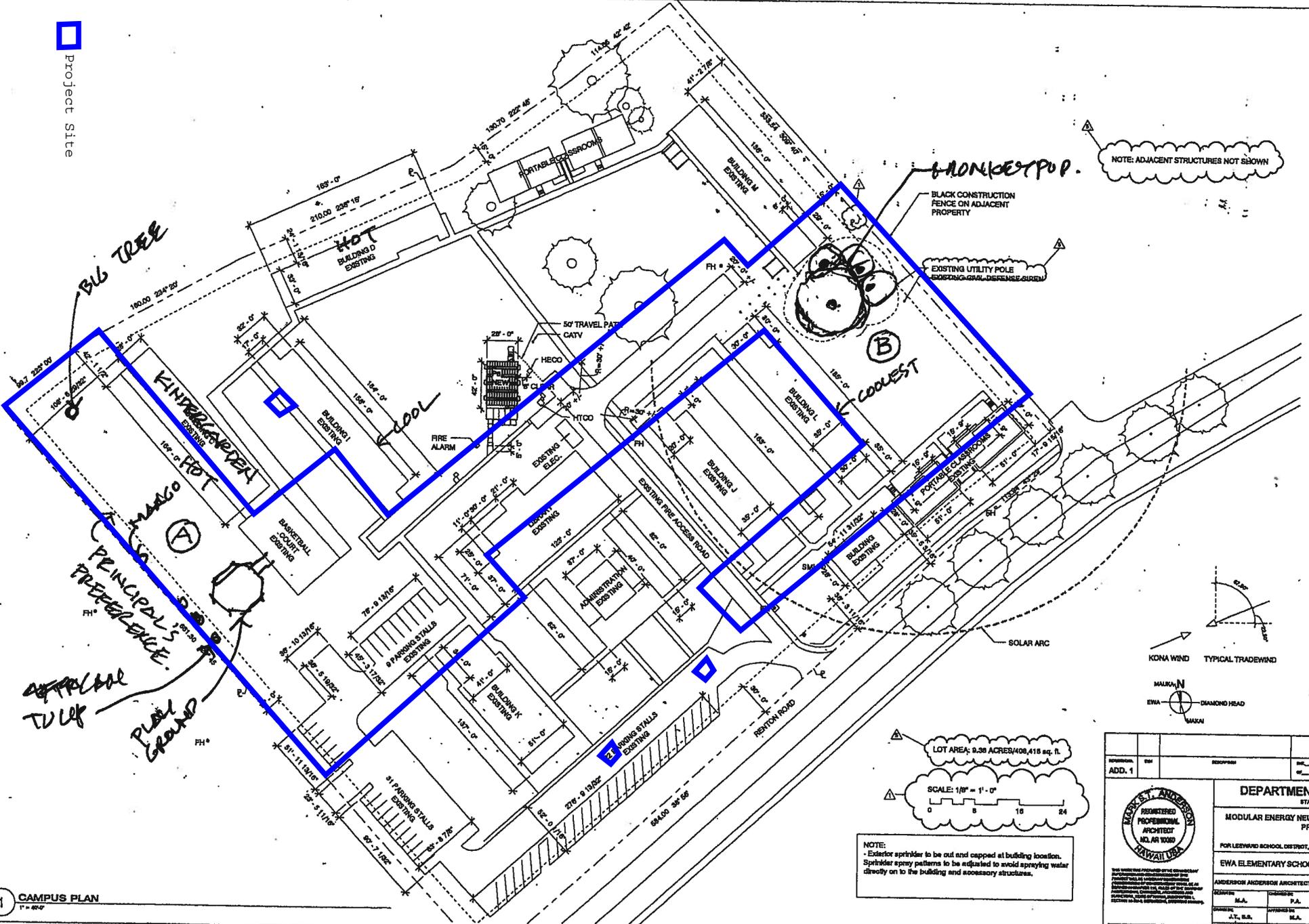
A handwritten signature in black ink, appearing to read 'Ling Ong', with a long horizontal stroke extending to the right.

Ling Ong, Ph.D.  
Wildlife Scientist/Project Manager

Attachments: A. Project Site Map  
B. List of Plant Species Observed at the Project Site

# Attachment A

Project Site



PROJECT:  
MODULAR ENERGY NEUTRAL PORTABLE CLASSROOM PROTOTYPE

PROJECT ADDRESS:  
EWA ELEMENTARY SCHOOL  
81-1250 REPTON ROAD  
EWA BEACH, HAWAII 96761

PREPARED FOR:  
STATE OF HAWAII  
DEPARTMENT OF EDUCATION

AAA JOB No:  
0834149

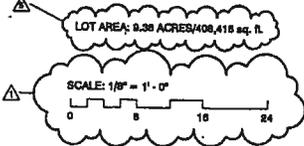
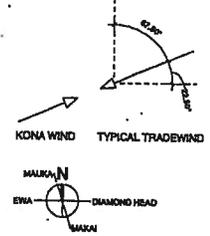


PRELIMINARY  
NOT FOR CONSTRUCTION

ANDERSON ANDERSON ARCHITECTS  
30 TENAYA STREET  
SAN FRANCISCO, CALIFORNIA  
94104-8800

SUZUKI ANDERSON ARCHITECTS  
P.O. BOX 791168  
HOLOLOA, HAWAII 96729-1168  
808 835-7355

Revisions		
ID	Date	By
1	03/18/11	DOE
6	06/08/20	Zm
11		Corr



NOTE:  
- Exterior sprinkler to be out and capped at building location.  
- Sprinkler spray patterns to be adjusted to avoid spraying water directly on to the building and accessory structures.

NO. 1	REV.	DESCRIPTION	DATE	BY
ADD. 1				

**DEPARTMENT OF EDUCATION**  
STATE OF HAWAII

**MODULAR ENERGY NEUTRAL PORTABLE CLASSROOM PROTOTYPE**

FOR LEIYARD SCHOOL DISTRICT, OAHU,  
HAWAII

**EWA ELEMENTARY SCHOOL CAMPUS PLAN**

ANDERSON ANDERSON ARCHITECTURE  
REGISTERED PROFESSIONAL ARCHITECT  
NO. AR 5028  
HAWAII, USA

DESIGNED BY: M.A. / DRAWN BY: P.A. / DATE: 08/23-08

APPROVED BY: J.T., R.S. / DATE: 04/28/11

SCALE: AS NOTED

CAMPUS PLAN  
1" = 80'-0"

**ATTACHMENT B**

**CHECKLIST OF PLANTS OBSERVED AT EWA ELEMENTARY SCHOOL ON AUGUST 22, 2012.**

The following checklist is an inventory of all the plant species observed by SWCA biologists on August 22, 2012 during the survey of the Project Site at Ewa Elementary School located in ‘Ewa, O‘ahu. The plant names are arranged alphabetically by family and then by species into three groups: ferns and lycophytes, monocots, and dicots. The taxonomy and nomenclature of ferns and lycophytes is in accordance with Palmer (2003) and Evenhuis and Eldredge (2011). The taxonomy and nomenclature of the flowering plants (monocots and dicots) are in accordance with Wagner et al. (1999); recent name changes are those recorded in Wagner et al. (2012).

**Status:**

E = endemic = native only to the Hawaiian Islands.

I = indigenous= native to the Hawaiian Islands and elsewhere.

P = Polynesian = introduced by Polynesians.

X =introduced/ alien = all those plants brought to the Hawaiian Islands by humans, intentionally or accidentally, after Western contact (Cook’s arrival in the islands in 1778).

<b>Scientific name</b>	<b>Common/Hawaiian name(s)</b>	<b>Status</b>
<b>FERNS AND LYCOPHYTES</b>		
<b>Polypodiaceae</b>		
<i>Phymatosorus grossus</i> (Langsd. & Fisch.) Brownlie	laua‘e	X
<b>MONOCOTS</b>		
<b>Agavaceae</b>		
<i>Cordyline fruticosa</i> (L.) A. Chev.	ti leaf, ki	P
<b>Areaceae</b>		
<i>Archontophoenix alexandrae</i> (F. Muell.) H. Wendl. & Drude	Alexander palm	X
<i>Dypsis lutescens</i> (H. Wendland) Beentje & J. Dransfield	areca palm	X
<b>Cyperaceae</b>		
<i>Cyperus rotundus</i> L.	purple nut sedge	X
<b>Heliconiaceae</b>		

Scientific name	Common/Hawaiian name(s)	Status
<i>Heliconia</i> spp.	heliconia	X
<b>Poaceae</b>		
<i>Urochloa mutica</i> (Forssk.) T.Q. Nguyen	California grass	X
<i>Cenchrus ciliaris</i> L.	buffel grass	X
<i>Chloris radiata</i> (L.) Sw.	radiate finger grass	X
<i>Cynodon dactylon</i> (L.) Pers.	Bermuda grass	X
<i>Dactyloctenium aegyptium</i> (L.) Willd.	beach wiregrass	X
<i>Eragrostis amabilis</i> (L.) Wight & Am. Ex Nees	lovegrass	X
<i>Paspalum conjugatum</i> P. J. Bergius	Hilo grass	X
<i>Sporobolus elongatus</i> R. Br.	rat tail grass	X
<b>Zingiberaceae</b>		
<i>Zingiber zerumbet</i> (L.) J.E. Smith	shampoo ginger, wild ginger	X
<b>DICOTS</b>		
<b>Amaranthaceae</b>		
<i>Amaranthus spinosus</i> L.	spiny amaranth	X
<i>Alternanthera pungens</i> Kunth.	khaki weed	X
<b>Anacardiaceae</b>		
<i>Mangifera indica</i> L.	mango	X
<b>Asclepiadaceae</b>		
<i>Calotropis gigantea</i> (L.) W.T. Aiton	milkweed	X
<b>Asteraceae</b>		
<i>Calyptocarpus vialis</i> Less.	straggler daisy	X
<i>Conyza canadensis</i> (L.) Cronquist var <i>pusilla</i> (Nutt.) Cronquist	horseweed	X
<i>Sphagneticola trilobata</i> (L.) Pruski	wedelia	X
<i>Youngia japonica</i> (L.) DC.	Oriental hawksbeard	X
<b>Bignoniaceae</b>		
<i>Spathodea campanulata</i> P. Beauv.	African tulip tree	X

Scientific name	Common/Hawaiian name(s)	Status
<b>Boraginaceae</b>		
<i>Cordia subcordata</i> Lam.	kou	I
<b>Caricaceae</b>		
<i>Carica papaya</i> L.	papaya	X
<b>Convolvulaceae</b>		
<i>Ipomoea obscura</i> (L.) Ker Gawl.	ipomoea	X
<i>Coccinia grandis</i> (L.) Voigt	ivy gourd	X
<b>Euphorbiaceae</b>		
<i>Euphorbia hirta</i> L.	garden spurge	X
<i>Euphorbia prostrata</i> Aiton	prostrate spurge	X
<i>Phyllanthus debilis</i> Klein ex Willd.	phyllanthus, niruri	X
<b>Fabaceae</b>		
<i>Arachis pintoi</i> Krapov. & W.C. Greg	golden glory	X
<i>Cassia x nealiae</i> H.S. Irwin & Barneby	rainbow shower tree	X
<i>Indigofera hendecaphylla</i> Jacq.	creeping indigo	X
<i>Leucaena leucocephala</i> (Lam) de Wit	haole koa	X
<i>Pithecellobium dulce</i> (Roxb.) Benth.	Manila tamarind, 'opiuma	X
<i>Samanea saman</i> (Jacq.) Merr.	monkey pod tree	X
<b>Malvaceae</b>		
<i>Abutilon grandifolium</i> (Willd.) Sweet	hairy abutilon	X
<i>Hibiscus rosa-sinensis</i> L.	Chinese hibiscus, red hibiscus	X
<i>Sida ciliaris</i> L.	creeping sida	X
<b>Moraceae</b>		
<i>Ficus microcarpa</i> L. f.	Chinese banyan	X
<b>Nyctaginaceae</b>		
<i>Boerhavia coccinea</i> Mill.	boerhavia	X
<i>Bougainvillea</i> spp.	bougainvillea	X

Scientific name	Common/Hawaiian name(s)	Status
<b>Oxalidaceae</b>		
<i>Oxalis corniculata</i> L.	wood sorrel	P?
<b>Sterculiaceae</b>		
<i>Waltheria indica</i> L.	‘uhaloa	I
<b>Verbenaceae</b>		
<i>Lantana camara</i> L.	lantana	X



# APPENDIX C

DRAFT  
ARCHAEOLOGICAL LITERATURE REVIEW  
AND  
FIELD INSPECTION



---

**Draft**  
**Archaeological Literature Review and Field Inspection for**  
**The 'Ewa Elementary School**  
**Eight (8) Classroom Building Project,**  
**Honouliuli Ahupua'a, 'Ewa District, O'ahu Island**  
**TMK: [1] 9-1-017:002**

**Prepared for**  
**Belt Collins Hawaii LLC**

**Prepared by**  
**David Shideler, M.A.**  
**and**  
**Hallett H. Hammatt, Ph.D.**

**Cultural Surveys Hawai'i, Inc.**  
**Kailua, Hawai'i**  
**(Job Code: HONOULIULI 75)**

**June 2013**

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**O'ahu Office**  
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**Kailua, Hawai'i 96734**  
**Ph.: (808) 262-9972**  
**Fax: (808) 262-4950**

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**1993 Main St.**  
**Wailuku, Hawai'i 96793**  
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**Fax: (808) 244-1994**

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## Management Summary

<b>Reference</b>	Archaeological Literature Review and Field Inspection for the 'Ewa Elementary School Eight (8) Classroom Building Project, Honouliuli Ahupua'a, 'Ewa District, O'ahu Island [TMK: (1) 9-1-017:002]
<b>Date</b>	June 2013
<b>Project Number (s)</b>	Cultural Surveys Hawai'i Inc. (CSH) Job Code: HONOULIULI 75
<b>Investigation Permit Number</b>	The fieldwork component of this Archaeological Literature Review and Field Inspection (LRFI) study was carried out under archaeological permit number 12-04, issued by the Hawai'i State Historic Preservation Division/Department of Land and Natural Resources (SHPD/DLNR), per Hawai'i Administrative Rules (HAR) Chapter 13-282.
<b>Project Location</b>	The project area is located at 'Ewa Elementary School at 91-1280 Renton Road between Fernandez Village and Renton Village in 'Ewa O'ahu. The proposed building will be located in the western corner of the school near Pipeline Street. The project area is depicted on the U.S. Geological Survey 7.5-Minute Series Topographic Map, 'Ewa Quadrangle (1998) (Figure 1).
<b>Project Description</b>	The proposed project consists of adding an eight classroom building. The building is planned to contain the following: six general classrooms, one special education classroom, one computer resource services room, one faculty center, one conference room, two general utility rooms, student gang restrooms, and mechanical/ electrical/ communication rooms. The project will also include installation of underground utilities that will connect to existing utilities within the school site as well as to utilities adjacent to the southwest portion of the school site, extending into the Pipeline Street right of way to Bryan Street and Ala Nui Mauka Street.
<b>Land Jurisdiction</b>	Hawai'i State Government: Department of Education (DOE)
<b>Agencies</b>	State Historic Preservation Division (SHPD), Department of Land and Natural Resources (DLNR)
<b>Project Acreage</b>	Approximately 9,120 square feet (0.20 acres or 0.085 ha)
<b>Area of Potential Effect (APE) and Survey Acreage</b>	The proposed project's area of potential effect (APE) is defined as the entire 9,120-square feet (0.20-acres or 0.085 ha) project area.

<b>Historic Preservation Regulatory Context</b>	This investigation does not fulfill the requirements of an archaeological inventory survey per HAR Chapter 13-276. Rather, it serves as a document to facilitate the proposed project's planning, and it supports historic preservation review compliance by identifying any archaeological concerns within the study area. This document develops data on the likely general nature, density and distribution of archaeological resources as can be gleaned from available sources.
<b>Fieldwork Effort</b>	A field inspection was carried out on September 29, 2012 by CSH archaeologist David W. Shideler, M.A. under the general supervision of Dr. Hallett H. Hammatt. The archaeologist walked all open, accessible areas of the property and took photographs.
<b>Summary and Mitigation Recommendation</b>	'Ewa Elementary School falls within the Ewa Villages Historic District designated as SIHP 50-80-12-9786 and was placed on the Hawaii State Register of Historic Places on February 24, 1996. No other historic properties were noted during the field inspection. Based on background research, the probability that pre-Contact and or eighteenth and nineteenth century burials and cultural deposits associated with the use of the land for habitation is low. In consideration of the land use history and previous finds reported from the vicinity, CSH would typically recommend no further archaeological work for the project. However, the SHPD has been much more stringent lately in requirements for archaeological work – particularly within designated Register of Historic Properties sites. Early consultation with the SHPD regarding any possible archaeological requirements (such as the possible need for an archaeological monitoring program) is recommended.

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## Section 1 Introduction

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### 1.1 Project Background

At the request of Belt Collins Hawaii, LLC (2153 North King St., Suite 200, Honolulu, HI 96819-4554), Cultural Surveys Hawai'i Inc. (CSH) completed an Archaeological Literature Review and Field Inspection for the 'Ewa Elementary School Eight Classroom Building Project, Honouliuli Ahupua'a, 'Ewa District, Island of O'ahu, Tax Map Key (TMK) [1] 9-1-017:002 por. The project area is located at 'Ewa Elementary School at 91-1280 Renton Road between Fernandez Village and Renton Village in 'Ewa O'ahu. The project area location is depicted in a U.S. Geological Survey topographic map (Figure 1), Hawai'i Tax Maps (Figure 2 and Figure 3), and an aerial photograph (Figure 4).

The proposed project consists of adding an eight classroom building. The building is planned to contain: six general classrooms, one special education classroom, one computer resource services room, one faculty center, one conference room, two general utility rooms, student gang restrooms, and mechanical/electrical/communication rooms. The project will also include installation of underground utilities that will connect to existing utilities within the school site as well as to utilities adjacent to the southwest portion of the school site, extending into the Pipeline Street right of way to Bryan Street and Ala Nui Mauka Street (Figure 5).

The project area is understood as owned by the State of Hawai'i, Department of Education (DOE). The proposed project's area of potential effect (APE) is defined as the entire 9,120-square feet (0.20-acres) project area. This study was prepared to guide decision-making in advance of future redevelopment in the project area and to support possible consultation with the State Historic Preservation Division/Department of Land and Natural Resources (SHPD/DLNR) and/or other concerned groups.

This investigation does not fulfill the requirements of an archaeological inventory survey (per Hawai'i Administrative Rules (HAR) Chapter 13-276). Rather, it serves as a document to facilitate the proposed project's planning, and it supports historic preservation review compliance by identifying any archaeological concerns within the study area. This document develops data on the general nature, density, and distribution of archaeological resources as can be gleaned from available sources.

### 1.2 Scope of Work

The scope of work for report includes:

1. Historical research to include study of archival sources, historic maps, Land Commission Awards and previous archaeological reports to construct a history of land use and to determine if archaeological sites have been recorded on or near this property.
2. Limited field inspection of the project area to identify any surface archaeological features and to investigate and assess the potential for impact to such sites. This assessment will identify any sensitive areas that may require further investigation or mitigation before the project proceeds.

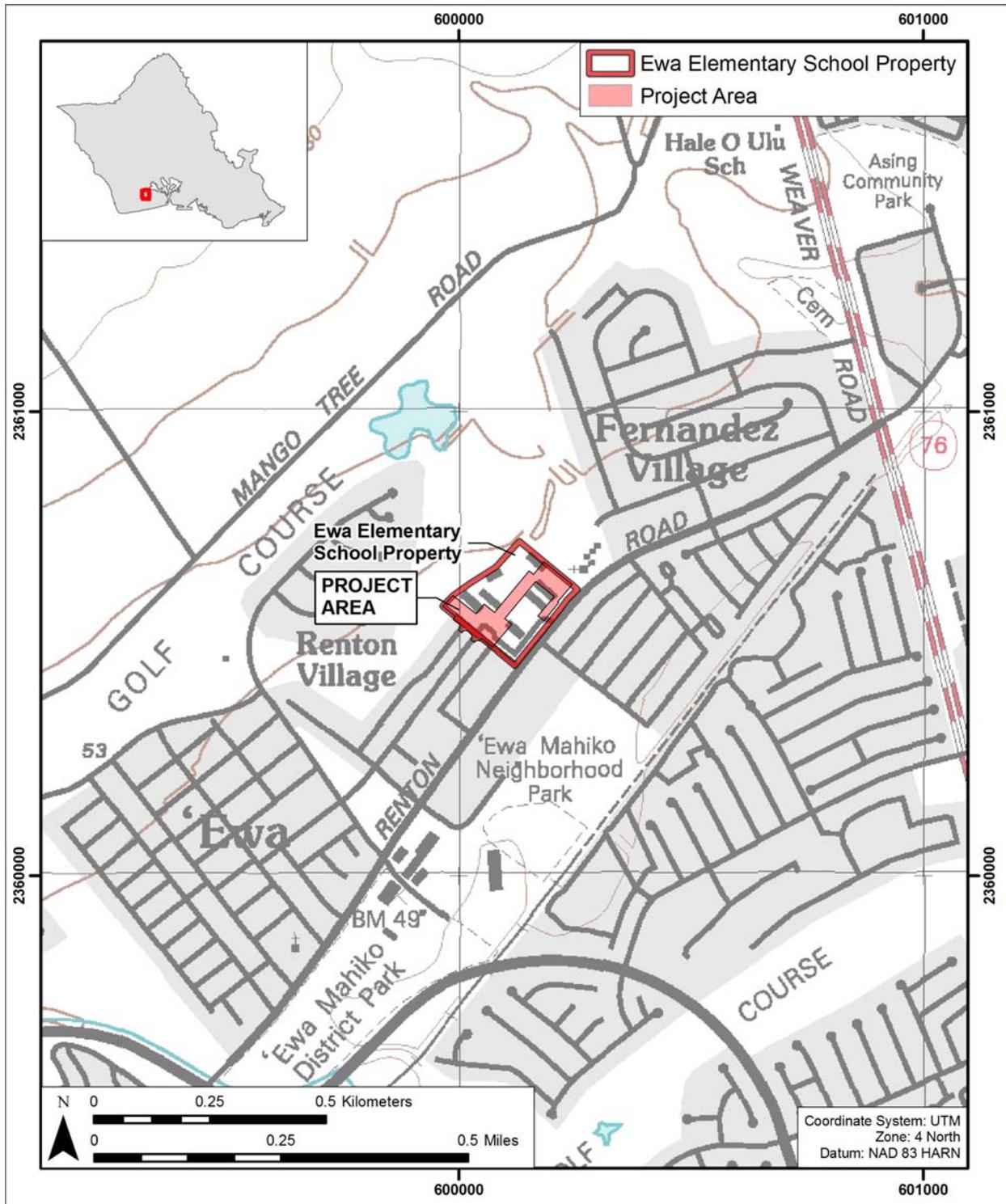


Figure 1. U.S. Geological Survey 7.5-Minute Series Topographic Map of O'ahu, 'Ewa Quadrangle (1998) with Project Area depicted

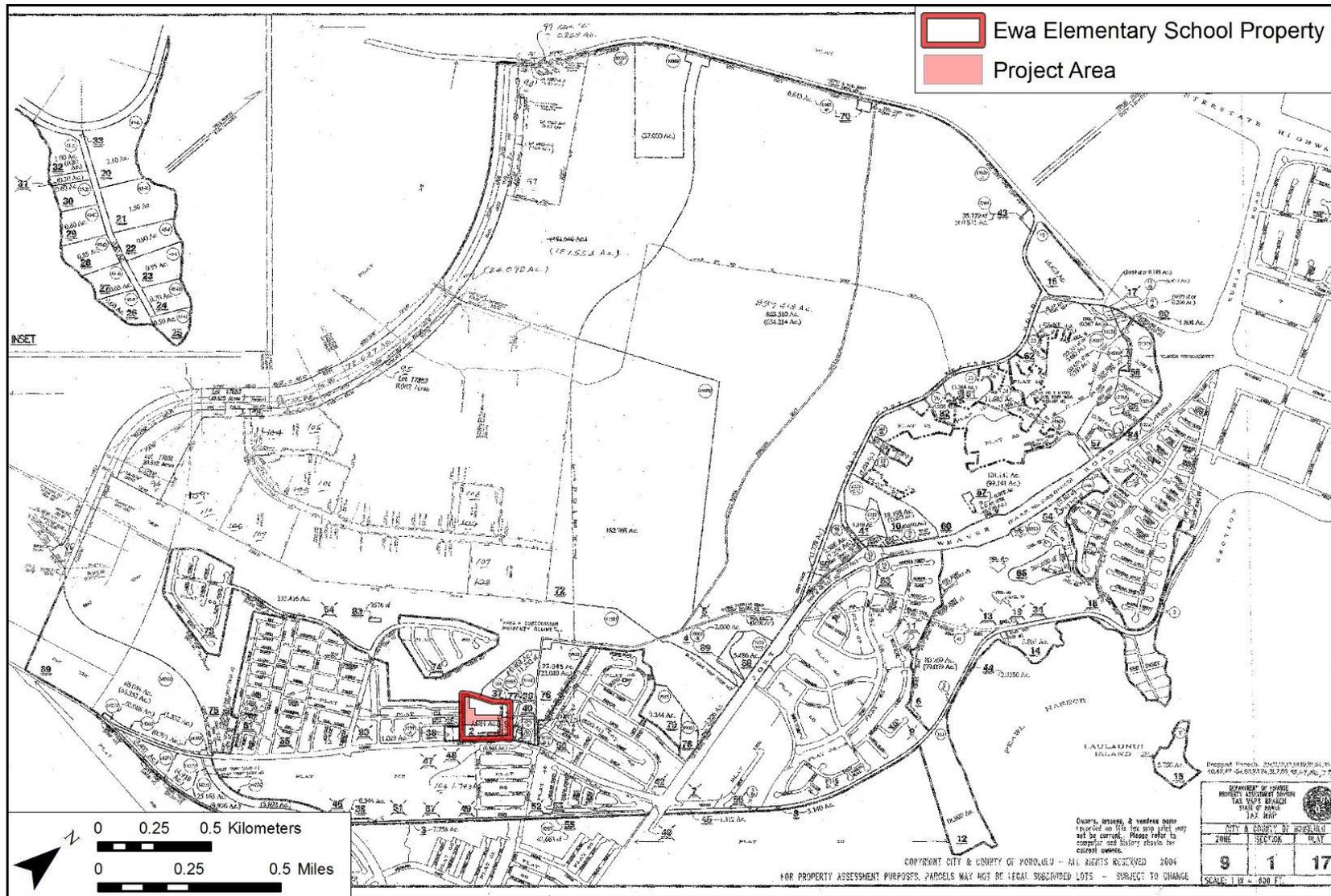


Figure 2. Tax Map Key (TMK) [1] 9-1-017:002 of the project area (Hawai'i TMK Service 2011)

Literature Review and Field Inspection for the 'Ewa Elementary School Eight Classroom Building Project, 'Ewa, O'ahu

TMK: [1] 9-1-017:002

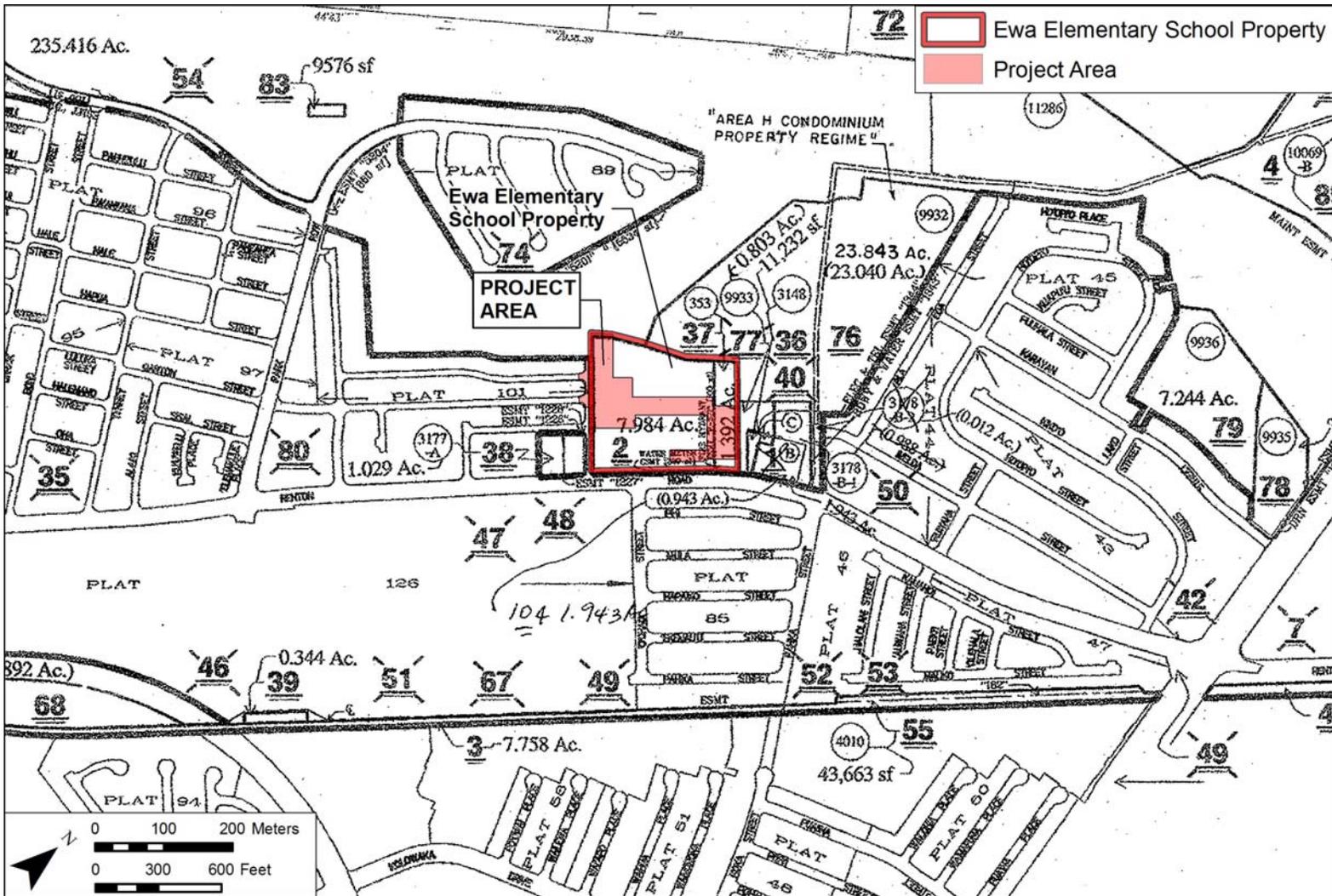


Figure 3. Close up of TMK [1] 9-1-017:002 with project area (Hawai'i TMK Service 2011)



Figure 4. Aerial photograph (Google Earth 2007), showing the location of the project area

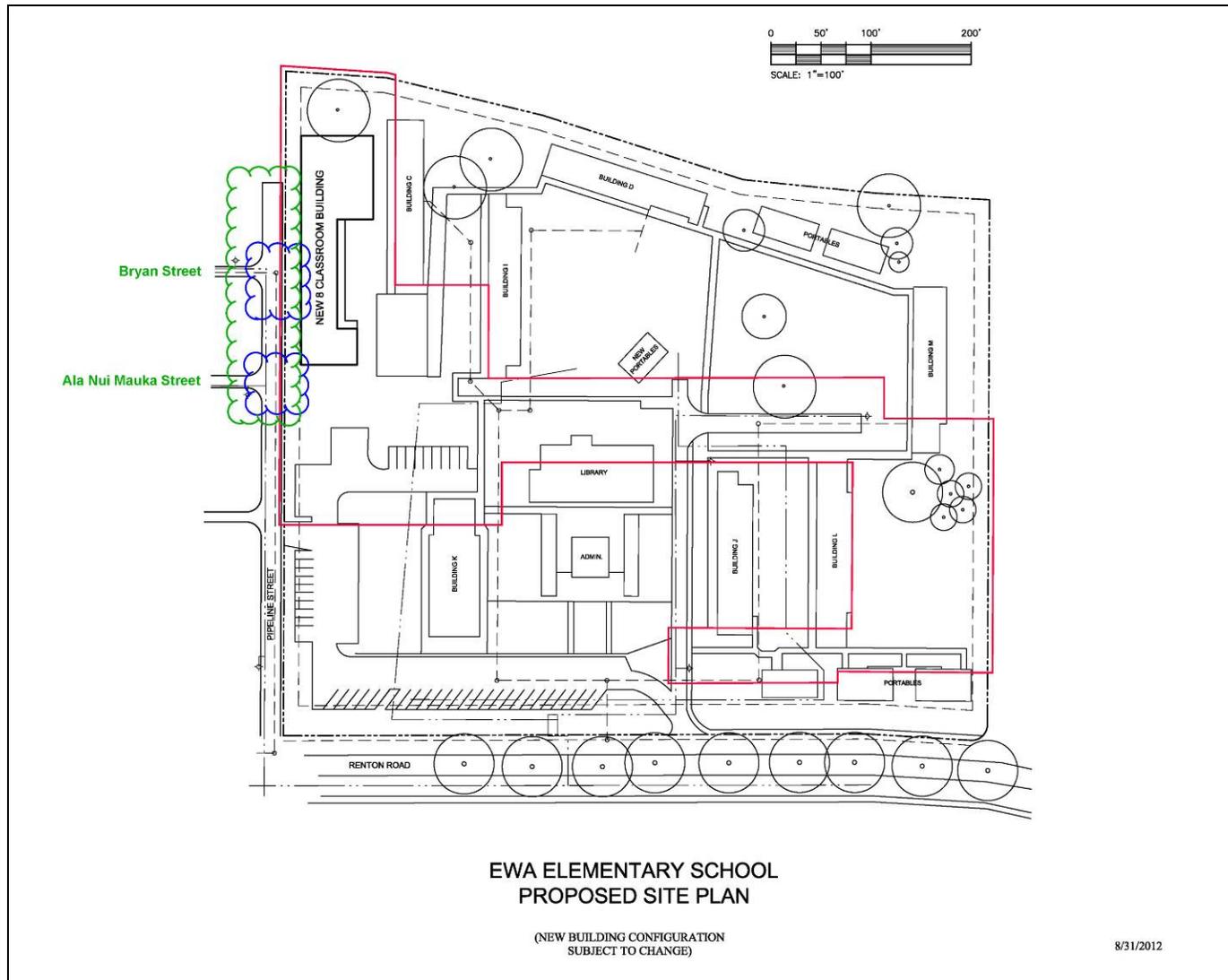


Figure 5. Project plans (provided by client)

3. Preparation of a report to include the results of the historical research and the limited fieldwork with an assessment of archaeological potential based on that research, with recommendations for further archaeological work, if appropriate. It will also provide mitigation recommendations if there are archaeologically sensitive areas that need to be taken into consideration.

This scope of work includes full coordination with the SHPD/DLNR relating to archaeological matters. This coordination takes place after consent of the owner or representatives.

## 1.3 Environmental Setting

### 1.3.1 Natural Environment

The project area is located on the 'Ewa Plain, in the southwest region of O'ahu. The 'Ewa Plain is a Pleistocene (>38,000 years old) reef platform overlain by alluvium from the southern end of the Wai'anae Mountain Range. This alluvium supported commercial sugar cane cultivation in the vicinity of the project area for over a century. According to U.S. Department of Agriculture (USDA) soil survey data (Foote et al. 1972), sediments within the project area consist of Honouliuli Clay (HxA). Soils of the Honouliuli Series are described as "well-drained soils on coastal plains on the island of Oahu in the Ewa area...developed in alluvium derived from basic igneous material," with Honouliuli Clay occurring "in the lowlands along the coastal plains" (Foote et al. 1972). Lands within the project area are level to gently sloping, with elevations ranging from 12-15 meters (40-50 feet) above mean sea level (Figure 6). Natural modern vegetation in these areas consists of *kiawe* (*Prosopis pallida*), *koa haole* (*Leucaena leucocephala*), *klu* (*Acacia farnesiana*), fingergrass (*Chloris* sp.), and bristly foxtail (*Setaria verticillata*).

Other soil types within the vicinity of the project area include Ewa silty clay loam (EmA, moderately shallow, 0 to 2 percent slopes), Honouliuli Clay (HxB, 2 to 6 percent slopes), Mamala stony silty clay loam (MnC, 0 to 12 percent slopes), and water (W).

The Ewa Series consists of well-drained soils in basins on alluvial fans (Foote et al. 1972:29). These soils are used for sugarcane, truck crops, and pasture. Natural vegetation consists of fingergrass, *kiawe*, *koa haole*, *klu*, fingergrass, and bristly foxtail.

The Mamala Series consists of shallow, well-drained soils along the coastal plains on the islands of O'ahu and Kaua'i (Foote et al. 1972:93). These soils formed in alluvium deposited over coral limestone and consolidated calcareous sand. They are nearly level to moderately sloping. Elevations range from sea level to 100 feet on O'ahu and annual rainfall occurs between November to April yielding 18 to 25-inches of rain. These soils are also used for sugarcane, truck crops, orchards, and pasture. Natural vegetation consists of *kiawe*, *koa haole*, bristly foxtail, and swollen fingergrass.

Located in leeward O'ahu, the project area is one of the driest areas of O'ahu, averaging approximately 460 mm (18 in.) of annual rainfall (Giambelluca et al. 1986). In pre-Contact times the vicinity of the project area would have consisted of a lowland dry shrub and grassland environment, but the area has been extensively disturbed and transformed by human activity,

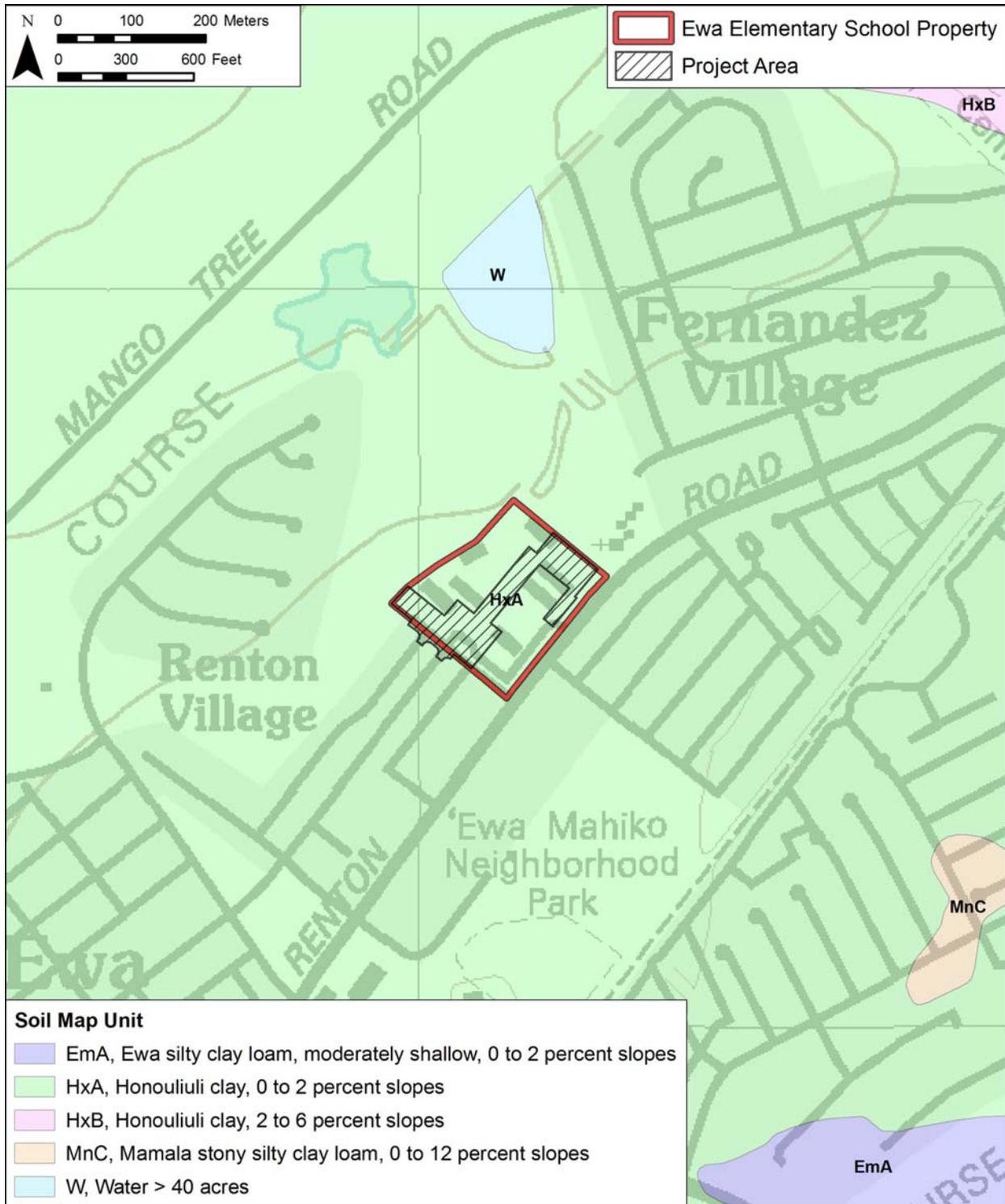


Figure 6. Overlay of Soil Survey of the State of Hawai'i (Foote et al. 1972) showing sediment types within the project area (base map U. S. Geological Survey 7.5-Minute Series Topographic map of O'ahu, 'Ewa Quadrangle 1998)

including sugar cane cultivation and modern development. Vegetation within the project area presently consists of an actively maintained grass lawn.

### **1.3.2 Built Environment**

The project area has been altered by historic and modern land uses, including sugar cane cultivation and plantation village development. Development in the surrounding area generally consists of single-family and low-rise condominium residential structures. The project area is located within the historic 'Ewa Villages plantation village area, specifically between Renton Village and Fernandez Village. The 'Ewa Mahiko Neighborhood Park is south of the project area. The modern 'Ewa Gentry residential subdivision is located to the southeast of the project area. Additional development in the vicinity includes the Coral Creek Golf Course, located within Kalo'i Gulch.

## **1.4 Methods**

### **1.4.1 Research Methods**

Historical documents, maps, and existing archaeological information pertaining to the *ahupua'a* (land division usually extending from the uplands to the sea) of Honouliuli were researched at the CSH library and other archives including the University of Hawai'i at Mānoa's (UHM) Hamilton Library, the State Historic Preservation Division (SHPD) library, the Hawai'i State Archives, the State Land Survey Division's Registered Maps (RM), and the archives of the Bishop Museum. Previous archaeological reports for the area were reviewed, as were historic maps and photographs and primary and secondary historical sources. Information on Land Commission Awards was accessed through Waihona 'Āina Māhele and Boundary Commission Database (2012; [www.waihona.com](http://www.waihona.com)).

### **1.4.2 Field Check**

The fieldwork component of the Literature Review-Field Inspection was carried out under archaeological permit number 12-04, issued by SHPD/DLNR, per HAR Chapter 13-282. The field inspection was conducted on by David W. Shideler, M.A. on September 29, 2012 under the general supervision of principal investigator Hallett H. Hammatt, Ph.D. All accessible portions of the property were surveyed on foot and photographs were taken.

## Section 2 Background Research

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### 2.1 Traditional and Historical Background

#### 2.1.1 Overview

Honouliuli Ahupua‘a, as a traditional land unit (Figure 7), had tremendous and varied resources available for use by early Hawaiians. Within Honouliuli Ahupua‘a, not only is there a long coastline fronting the normally calm waters of leeward O‘ahu, but there are also four miles of waterfront along the west side of the West Loch of Pearl Harbor. The “karstic desert” and marginal characterization of the limestone plain, which is the most readily visible terrain, does not do justice to the ahupua‘a as a whole. The following available resources contribute to the richness of this land unit:

1. Twelve miles of coastline with continuous shallow fringing reef, offering rich marine resources.
2. Four miles of frontage on the waters of West Loch (west side of Pearl Harbor, or Pu‘uloa) that provided extensive fisheries (mullet, *awa* [*Chanos chanos*], shellfish) as well as frontage suitable for development of fishponds (e.g., Laulaunui).
3. The lower portion of Honouliuli Valley in the ‘Ewa plain offered rich, level, alluvial soils with plentiful water for irrigation from the stream, as well as abundant springs. This irrigable land would have stretched well up the valley.
4. A broad limestone plain, because of innumerable limestone sinkholes, offered a nesting home for a large population of avifauna (Tuggle and Tomonari-Tuggle 1997:8). This resource may have been one of the early attractions to human settlement.
5. An extensive upland forest zone extended as much as 12 miles inland from the edge of the coastal plain. As Handy and Handy (1972:469) described the forest as much more distant from the lowlands here than can be seen on the windward coast, but the forest was much more extensive. Much of the upper reaches of the *ahupua‘a* contained biologically-diverse forest with *kukui* (*Aleurites moluccana*), *‘ōhi‘a* (*Metrosideros polymorpha*), *‘iliahi* (sandalwood), *hau* (*Hibiscus tilaceus*), *ti* (*kī*, *Cordyline fruticosa*), banana, etc.

The political and cultural center of the *ahupua‘a* is understood to have been the relatively dense settlement and rich lands for irrigated *kalo* (taro; *Colocasia esculenta*) cultivation at the *‘ili* (subdivision of an *ahupua‘a*) of Honouliuli located where Honouliuli Stream empties into the north portion of West Loch (east of the present study area). The name of the *ahupua‘a*, translated as “dark bay” (Pukui et al. 1974:51), may refer to the nature of the waters of West Loch at the mouth of Honouliuli Stream.

#### 2.1.2 Pre-Contact to 1800

The present study is located in the southwestern portion of Honouliuli *ahupua‘a* in the ‘Ewa district of O‘ahu. One translation of ‘Ewa means “strayed,” a reference to a legend of the gods, Kāne and Kanaloa.

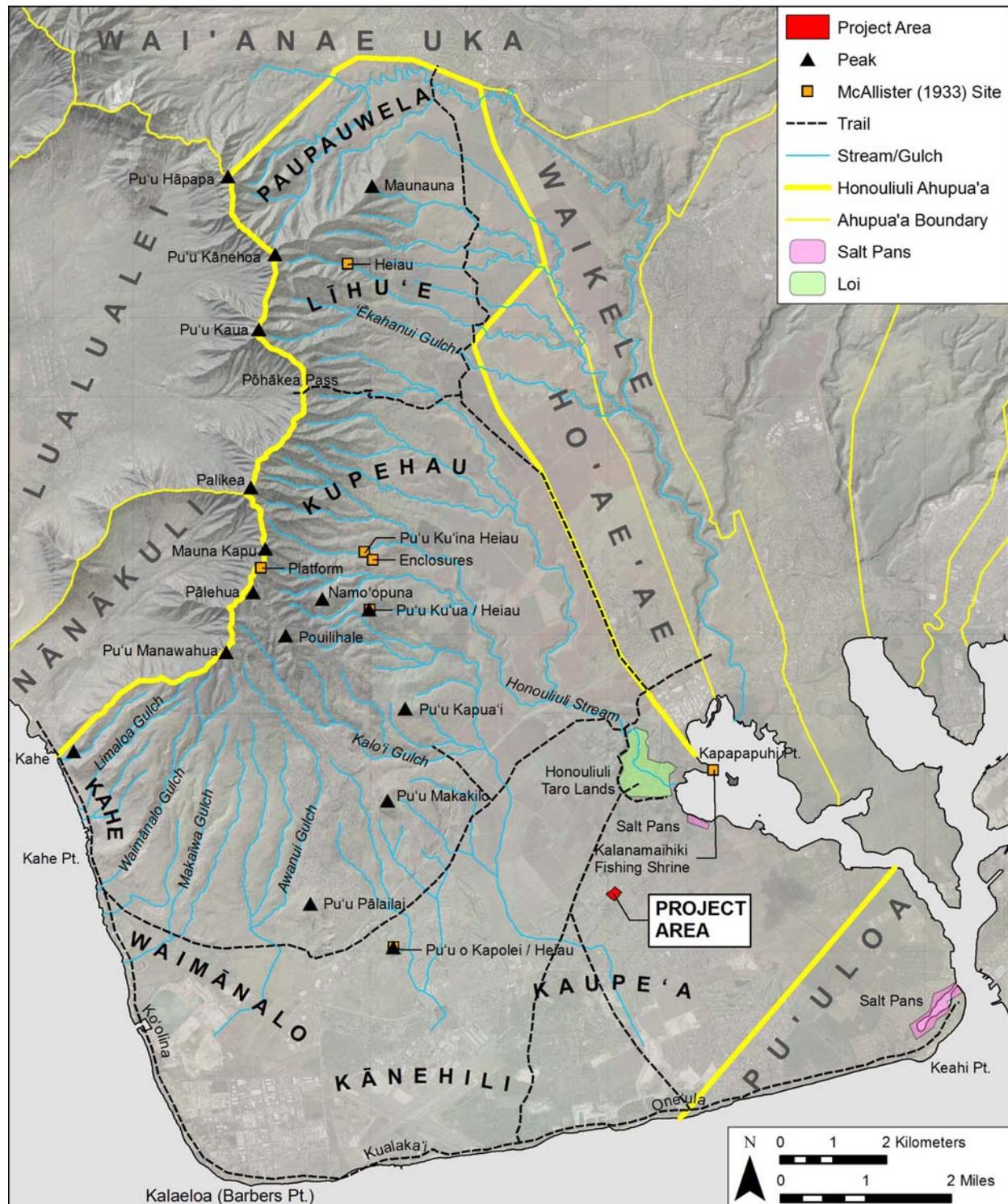


Figure 7. Place names of Honouliuli Ahupua‘a, with location of the ‘Ewa Elementary School project area and significant settlements shown (Sources: Malden 1825, Alexander 1873, Monsarrat 1878, U.S. War Department 1933-1936, McAllister 1933, Sterling and Summers 1978, and U.S. Geological Survey 1998)

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

Honouliuli means “dark water,” “dark bay,” or “blue harbor” and was named for the waters of Pearl Harbor (Jarrett 1930:22), which marks the eastern boundary of the *ahupua'a*. Another explanation for the name comes from the “Legend of Lepeamoa,” the chicken-girl of Pālama. In this legend, Honouliuli is the name of the husband of the chiefess Kapālama and grandfather of Lepeamoa. The land district Honouliuli was named for the grandfather of Lepeamoa (Westervelt 1915:164-184). Pu'uloa, in turn, signifies “long hill” and was both the name of an *'ili* of Honouliuli and one of the names of Pearl Harbor itself (Pukui 1983:182).

The 'Ewa district incorporated a wide array of resources and was an area associated with the *ali'i* (Hawaiian royalty) in ancient times. As described in a nineteenth century publication, 'Ewa was “a favorite residence of Oahu kings in olden times” (Sterling and Summers 1978:1). Handy and Handy describe the characteristics of the 'Ewa environment which were exploited by the Hawaiians and which may have drawn the *ali'i* to the district:

The salient feature of 'Ewa...is its spacious coastal plain, surrounding the deep bays (“lochs”) of Pearl Harbor...

These bays offered the most favorable locality in all the Hawaiian Islands for the building of fishponds and fish traps into which deep-sea fish came on the inflow of tidal waters.

The lowlands, bisected by ample streams, were ideal terrain for the cultivation of irrigated taro. The hinterland consisted of deep valleys running far back into the Ko'olau range...The lower parts of the valley sides were excellent for the culture of yams and bananas. Farther inland grew the *'awa* [kava; *Piper methysticum*] for which the area was famous...[The] *wao* [upland forest] was more extensive [than on the windward side of O'ahu], giving greater opportunity to forage for wild foods in famine time...

Ecologically ['Ewa] was like other parts of Oahu, except that the great bays of Pearl Harbor provided a greater variety and abundance of shellfish and were famous as the summer home of mullet. In the interior was the same avifauna [as elsewhere on Oahu], including the birds whose feathers were prized for feather capes, helmets, and *lei* [garland, wreath] making. In fact this, with its spacious *wao* inland, was the region where these birds were most numerous. There were more extensive areas also where *wauke* [paper mulberry; *Broussonetia papyrifera*] and *mamaki* [*Pipturus spp.*], which supplied bast for the making of

*kapa* [bark cloth], grew in abundance. In fact, 'Ewa was famous for its *mamaki*. There was, too, much *olonā* [*Touchardia latifolia*] grown in the interior, and wild bananas and yams flourished. (Handy and Handy 1972:469)

### 2.1.3 *Mo'olelo* (Stories) of the 'Ewa Plains

The current project area is on the 'Ewa coastal plains, east of the prominent hill Pu'uokapolei. There are several places on the 'Ewa coastal plain (e.g. Kānehili and Kaupe'a), that are associated with *ao kuewa*, the realm of the homeless souls. Samuel Kamakau explains the Hawaiian beliefs in the afterlife:

There were three realms (*ao*) for the spirits of the dead. . . There were, first, the realm of the homeless souls, the *ao kuewa*; second, the realm of the ancestral spirits, the *ao 'aumakua*; and third, the realm of Milu, *ke ao o Milu* . . .

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

On the plain of Kaupe'a beside Pu'uloa [Pearl Harbor], wandering souls could go to catch moths (*pulelehua*) and spiders (*nanana*). However, wandering souls could not go far in the places mentioned earlier before they would be found catching spiders by 'aumakua souls, and be helped to escape. (Kamakau 1991:47-49)

Pu'uokapolei is a prominent hill at the *mauka* edge of the coastal 'Ewa Plains and was the primary landmark for travelers on the trail that ran from Pearl Harbor west to Wai'anae (Sterling and Summers 1978:34). In another section of his account of the dead, Kamakau calls the plain of wandering souls the "plain at Pu'uokapolei."

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

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

Go carefully lest you fall dead in the sun,  
The god that dwells on Kapolei hill.

*E newa ai o hea make i ka lā,  
Akua noho la i Pu'uokapolei.*

<p>The sun is wailing on account of the women of Kamao, A hiding god, blossoming ohai of the banks, Contented among the stones- Among the breadfruit planted by Kahai. Thou hast spoken of by the oo- By the bird of Kanehili. (Fornander 1919: Vol. VI, Part II:297)</p>	<p><i>E hanehane mai ana ka lā i nā wahine o Kamao, Akua pe'e, pua 'ohai o ke kaha, I walea wale i ke a- I ka ulu kanu a Kahai. Haina 'oe e ka oo- E ka manu o Kānehili.</i></p>
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Fornander provides some notes on this lament. The god dwelling at Kapolei is the god Kahahana, stating that this is where his soul has gone. Kamao is one of the names of the door to the underworld. This lament draws an association with wandering souls and the place where the first breadfruit tree was planted by Kahai at Pu'uloa (Fornander 1919: Vol. VI, Part 2:304).

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

The wiliwili grove of Kaupe'a      *Ka wiliwili of Kaupe'a.*  
In 'Ewa, O'ahu. Said to be where homeless ghosts wander among the trees.

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

In a chant by Hi'iaka, the sister of the Hawaiian volcano goddess, Pele, several place names in 'Ewa are mentioned as Hi'iaka travels from Pu'uokapolei towards the 'Ewa coast. In the chant, Hi'iaka is moving downhill from Kaupe'a, probably the plains adjacent to Pu'uokapolei, toward the coast, to the plains of Kānehili. The chant also refers to Pe'e-kaua, which may be a variation of Kau-pe'e or Kaupe'a. Hi'iaka sang this bitter chant addressed to Lohi'au and Wahine-'ōma'o, and it uses the association of the Plains of Kaupe'a as a place for the wandering of lost souls. The name Kānehili also refers to wandering, as the word hili means "to go astray" (Emerson 1915:162).

*Ku'u aikana i ke awa lau o Pu'uloa,  
Mai ke kula o Pe'e-kaua, ke noho oe,  
E noho kaua e kui, e lei i ka pua o ke kauno'a,  
I ka pua o ke akuli-kuli, o ka wili-wili;  
O ka iho'na o Kau-pe'e i K-hili,  
Ua hili au; akahi no ka hili o ka la pomaika'i;  
E Lohiau ipo, e Wahine-oma'o,  
Hoe 'a mai ka wa'a i a'e aku au.*

We meet at Ewa's leaf-shaped lagoon, friends;  
Let us sit, if you will on this lea  
And bedeck us with wreaths of Kauno'a,  
Of akuli-kuli and wili-wili,  
My soul went astray in this solitude;  
It lost the track for once, in spite of luck,

As I came down the road to Kau-pe‘a.  
 No nightmare dream was that which tricked my soul.  
 This way, dear friends; turn the canoe this way;  
 Paddle hither and let me embark.  
 (Emerson 1915:167-168)

#### 2.1.4 Observations of Early Explorers and Visitors

Captain James Cook landed in the Hawaiian Islands in 1778, and ten years later the first published description of Pearl Harbor appeared. Captain Nathaniel Portlock, observing the coast of Honolulu for Great Britain, recorded the investigation of a “fine, deep bay running well to the northward” around the west point of “King George’s Bay” in his journal (Portlock 1789:74). Portlock’s description matches the entire crescent-shaped shoreline from Barber’s Point to Diamond Head.

Captain George Vancouver made three voyages to the Hawaiian Islands between 1792 and 1794. In 1793, the British captain recorded the name of the harbor opening as “O-poo-ro-ah” and sent several boats across the sand bar to venture into the harbor proper (Vancouver 1798:884). The area known as “Pu‘u-loa” was comprised of the western bank at the entrance to Pearl River. George Vancouver anchored off the entrance to West Loch in 1793, and the Hawaiians told him of the area at “a little distance from the sea, [where] the soil is rich and all the necessaries of life are abundantly produced” (Vancouver 1798, in Sterling and Summers 1978:36). Mr. Whitbey, one of Vancouver’s crew, observed, “from the number of houses within the harbor it should seem to be very populous; but the very few inhabitants who made their appearance were an indication of the contrary” (Vancouver 1798, in Sterling and Summers 1978:36).

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

The point is low flat land, with a reef round it . . . Not far from the S.W. point is a small grove of shabby cocoa-nut trees, and along these shores are a few struggling fishermen’s huts. (Vancouver 1798, Vol. I: 167)

. . . from the commencement of the high land to the westward of Opooroah [Pu‘uloa], was composed of one very barren rocky waste, nearly destitute of verdure, cultivation or inhabitants, with little variation all the way to the west point of the island . . . (Vancouver 1798, Vol. II: 217)

. . . This tract of land was of some extent but did not seem to be populous, nor to possess any great degree of fertility; although we were told that at a little distance from the sea, the soil is rich, and all necessaries of life are abundantly produced . . . (Vancouver 1798, Vol. III: 361-363)

During the first decades of the nineteenth century, several western visitors described the ‘Ewa landscape near Pearl Harbor. Archibald Campbell, an English sailor, spent some time in Hawai‘i between 1809-1810. He had survived a shipwreck off the Island of Sannack on the northwest coast of America. As a result, both his feet became frost-bitten and were amputated. He spent over a year recuperating in the Hawaiian Islands. His narrative is considered noteworthy because it describes life before the missionaries arrived. Of the Pearl River area, Campbell wrote:

Wymumme, or Pearl River, lies about seven miles farther to the westward. This inlet extends ten or twelve miles up the country. The entrance is not more than a quarter of a mile wide, and is only navigable for small craft; the depth of water on the bar, at the highest tides, not exceeding seven feet; farther up it is nearly two miles across. There is an isle in it, belonging to Manina, the king's interpreter, in which he keeps a numerous flock of sheep and goats. (Campbell 1967:114) The flat land along shore is highly cultivated; taro root, yams, and sweet potatoes, are the most common crops; but taro forms the chief object of their husbandry, being the principal article of food amongst every class of inhabitants. (Campbell 1967:115)

A contrasting picture of 'Ewa is recorded in the missionary William Ellis' description from 1823-24 of the 'Ewa lands away from the coast:

The plain of Eva is nearly twenty miles in length, from the Pearl River to Waiarua, and in some parts nine or ten miles across. The soil is fertile, and watered by a number of rivulets, which wind their way along the deep water-courses that intersect its surface, and empty themselves into the sea. Though capable of a high state of improvement, a very small portion of it is enclosed or under any kind of culture, and in travelling across it, scarce a habitation is to be seen. (Ellis 1963:7)

### 2.1.5 Population

At the time of Western Contact (1778), the most populous *ahupua'a* on the island was Honouliuli, with the majority of the population centered on Pearl Harbor. In 1832, a missionary census of Honouliuli recorded the population as 1,026, which represented 25% of the total 'Ewa District population of 4,015 (Schmitt 1973:19).

Beginning with the time of Western contact, Hawaiians were introduced to many virulent western diseases, which began to decimate the native populations. Thus, four years following the 1832 census, the 'Ewa population had dropped to 3,423 (Schmitt 1973:9, 36).

Between 1848 and 1853, there was a series of epidemics of measles, influenza, and whooping cough that often wiped out whole villages. In 1853, the population of 'Ewa and Wai'anae combined was 2,451 people. In 1872, it was 1,671 (Schmitt 1968:71). The inland area of 'Ewa was probably abandoned by the mid-19<sup>th</sup> due to population decline and consolidation of the remaining people in town.

### 2.1.6 The Māhele

In 1845, the Board of Commissioners to Quiet Land Titles, also called the Land Commission, was established "for the investigation and final ascertainment or rejection of all claims of private individuals, whether natives or foreigners, to any landed property" (Chinen 1958:8). This led to the Māhele, the division of lands between the king of Hawai'i, the *ali'i*, and the common people, which introduced the concept of private property into the Hawaiian society. Kamehameha III divided the land into four categories: certain lands to be reserved for the king and the royal house were known as Crown Lands; lands set aside to generate revenue for the government were known as Government Lands; lands claimed by *ali'i* and their *konoiki* (supervisors) were called

Konohiki Lands; and habitation and agricultural plots claimed by the common people were called *kuleana* (Chinen 1958:8-15).

In 1848, the crown and the *ali‘i* received their land titles, known as Land Commission Awards (LCA). Members of the royal family were awarded entire *ahupua‘a*, while high-ranking *ali‘i* were awarded entire *‘ili* and lesser *konohiki* were awarded half of an *‘ili* (Kame‘eleihiwa 1992:269, 279). Title to an *ahupua‘a* or *‘ili* typically included ownership of the area’s fishpond and offshore fishing rights (Devaney et al. 1982:143). The lands awarded as Crown Lands and Konohiki Lands, as well as lands designated as Government Lands, were “subject to the rights of native tenants.” The Kuleana Act of 1850 “authorized the Land Commission to award fee simple titles to all native tenants who occupied and improved any portion of Crown, Government, or Konohiki Lands” (Chinen 1958:29).

During the Great Māhele, the Land Commission awarded the 43,250 acres of Honouliuli to M. Kekau‘ōnohi (Royal Patent #6971 in 1877; Parcel #1069 in the Land Court office), a granddaughter of Kamehameha and the heir of Kalanimoku, who had been given the land by Kamehameha after the conquest of O‘ahu (Indices of Awards 1929; Kame‘eleihiwa 1992). A total of 72 *kuleana* awards were made in the *ahupua‘a*, almost all in or adjacent to the Honouliuli Taro lands at Honouliuli Gulch (see Table 1 and Figure 7), and which contained fishponds and irrigated taro fields. No awards were located near the project area on the ‘Ewa Plains. See Table 1 for LCAs awarded in Honouliuli Ahupua‘a.

Table 1. Land Commission Awards Awarded in Honouliuli Ahupua‘a

LCA	Awardee	‘Ili	LCA	Awardee	‘Ili
748	Kalauhala	Panahaha, Kaaumakua	761	Kinolua	Niukee, Kailikahi, Iilikahi, Palahemo
749	Mahina	Kaulaula	762	Kalama	Kaaumakua
751	Kalauli	Kamoku, Polapola, Kalihikahi	763	Keliiaa, Solomona	Hiwa, Poohilo, Mauakapua, Uani / Maui, Polapola
752	Haae	Kailikahi, Kailihai	765	Kamalae	Niukee, Kailikahi, Palahemo
753	Manuwa	Kamoku	766	Paele	Niukee, Kaluamooiki, Kailikahi
754	Kaunahi	Niukee	767	Hapauea	Niukee, Kapapahi
755	Keinohana-nui	Niukee, Kailikahi, Kaakau	768	Pio	Kahaumakua, Niukee, Waioha
756	Kauouo	Kaaumakua	827	Kauakahilau	Poohilo
758	Nihua	Niukee	828	Kawahaea	Poohilo
760	Kuhemu	Kamaipipipi, Niukee, Naopala, Kailikahi	831	Kaekuna	Poohilo

LCA	Awardee	'Ili	LCA	Awardee	'Ili
832	Opiopio	Poohilo	1570	Kekua	Poohilo
834	Oni	Poohilo, Kailikahi	1570- B	Paekane	Kaaumakua
839	Kaaiawaawa	Kamilomilo, Kailikahi, Haole, Poohilo	1570- C	Naholowaa	Kaaumakua
845	Kekukahiko	Kapapahi, Niukee	1573	Kawahamana	Niukee, Kapapahu
847	Hinaa	Poohilo	1580	Kanahuna	Kamilomilo
848	Kapule	Poohilo	1580- B	Kapioho	Polapola, Kahiwapalaai
869	Pue	Maui	1598	Kekua	Loloulu, Kapapahi
872	Kahakuliilii	Loloulu, Paakai, Papaioua	1605- B	Nakai	Mahuna, Niukee
874	Laamaikahiki	Polapola, Hiwa	1666	Mauwele	Poohilo
876	Nohunohu	Niukee, Nukee	1666- B	Kuahilo	Poohilo
881	Kikala	Polapola	1670	Moano	Loloulu, Kaaumakua
886	Kahalewai	Kamoku, Manuwa	1672	Makue	Kamoku, Kapapahu
892	Aoao, Samuela	Kapapahi, Niukee	1699	Leleiaupa	Maui, Poaiwaikele
898	Kaneaola	Polapola	1701	Alaluka	Pohilo
901	Kuahine	Nukee / Niukee,	1703	Aimaikai	Kamilomilo
902	Haakue	Waimanalo	1713	Healani	Niukee, Kapapahu
905	Kaimuena	Kaaumakua	1719	Hilea	Kaaumakua
906	Kanoho	Kamoku	1720	Hilinae	Polapola
907	Luana	Kamaipipipi, Niukee	5204	Kalama 2	Polapola
910	Nunu	Kaaumakua	5653	Kua	Maui, Polapola, Kahui
911	Kauhailepa	Poohilo	5654	Kuhiena	Maui, Poohilo
914	Kamaala	Niukee, Kapapahi	5653- B	Kanehikili	Poohilo
916	Kama	Loloulu, Makau	5670- B	Kaohai	Kaihuopalaai, Polapola
917	Kaulu	Kamilomilo, Kaaumakua	5670- C	Kumupopo	Poohilo, Kepoe, Loloulu, Puaaluu
947	Kaopala	Loloulu, Kaulaula	5950	Pihana	Kamoku
960	Poopuu	Loloulu	10933	Uia	Niukee
1565	Kaalauahi	Niukee, Kapapahi	11218	Kekau'ono	<i>ahupua 'a</i> award

### 2.1.7 Salt Works in Pu'uloa

In 1849, Kekau'ōnohi sold the lands of Pu'uloa to Isaac Montgomery. In partnership with Kamehameha III, Isaac Montgomery established a very profitable salt works enterprise near Keahi Point at the entrance to Pearl Harbor. Kamakau (1961:409) reported, "The king and Isaac of Pu'uloa are getting rich by running the salt water into patches and trading salt with other islands."

While the remainder of Honouliuli Ahupua'a was subsequently sold to James Campbell in 1877 and utilized for numerous enterprises, including a cattle ranch (Honouliuli Ranch), rice farms, a limestone quarry, commercial *kiawe* cutting, sisal plantations and a major sugar plantation (Ewa Plantation Company), the area of Pu'uloa remained outside of agricultural development. Much of Pu'uloa's 2,300 acres were used for ranching (McAllister 1933:109), salt works and coastal fishponds, and by 1920, private home development (Frierson 1972:18).

### 2.1.8 Early Ranching on the 'Ewa Plain

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

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

...acreage, 43,250, all in pasture, but possessing fertile soils suitable for agriculture; affords grazing for such valuable stock. The length of this estate is no less than 18 miles. It extends to within less than a mile of the sea coast, to the westward of the Pearl River inlet... There are valuable fisheries attached to this estate... (Bowser 1880:489)

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

In 1881, a medical student, touring the island to provide smallpox vaccinations to the population, viewed Campbell's property, called the Honouliuli Ranch:

I took a ride over the Honouliuli Ranch which is quite romantic. The soil is a deep, reddish loam, up to the highest peaks, and the country is well-grassed. Springs of water abound. The *ilima* [*S. fallax*], which grows in endless quantities on the plains of this ranch, is considered excellent for feeding cattle; beside it grows the indigo plant, whose young shoots are also good fodder, of which the cattle are fond. Beneath these grows the manieizie grass, and Spanish clover and native grasses grow in the open; so there is abundant pasturage of various kinds here. As I rode, to the left were towering mountains and gaping gorges; ahead,

undulating plains, and to the right, creeks and indentations from the sea. A wide valley of fertile land extends between the Nuuanu Range and the Waianae Mountains and thence to the coast of Waialua. There are many wild goats in this valley, which are left more or less undisturbed because they kill the growth of mimosa bushes, which would otherwise overrun the country and destroy the pasturage for cattle. (Briggs 1926:62-63)

Most of Campbell's lands in Honouliuli were used exclusively for cattle ranching. At that time, one planter remarked "the country was so dry and full of bottomless cracks and fissures that water would all be lost and irrigation impracticable" (Ewa Plantation Co. 1923:6-7). In 1879, Campbell brought in a well-driller from California to search the 'Ewa plains for water. The well, drilled to a depth of 240 feet near Campbell's home in 'Ewa, resulted in "a sheet of pure water flowing like a dome of glass from all sides of the well casing" (The Legacy of James Campbell, cited in Pagliaro 1987:3). Following this discovery, plantation developers and ranchers drilled numerous wells in search of the valuable resource.

### 2.1.9 Other Enterprises in Campbell Lands

As noted above, part of Mr. Campbell's lands were also used to grow rice. By 1885, 200 acres in Honouliuli were used for rice and 50 acres were used to grow bananas (article in *Pacific Commercial Advertiser*, August 15, 1885, summarized in Silva 1987:A-12). These rice fields were planted in former taro fields or in undeveloped swamps. The rice fields in 1882 were described by Frank Damon, during a tour of the area.

Towards evening we reached Honouliuli, where the whole valley is leased to rice planters... This was one of the largest rice plantations we visited. Sometimes two or three men only, have a few fields which they cultivate for themselves, and we often too came upon houses where there were eight or ten men working their own land. But the larger plantations are owned by merchants in Honolulu, who have a manager acting for them. (Damon 1882:37)

In 1890, Dillingham leased all land below 200 feet to William Castle, who used most of it for sugar cane, but also leased some for rice cultivation, pasture, wood lots, bee-keeping, garden crops, and quarries. Some land above 650 feet was also leased for the cultivation of canaigre, an herbal source of tannin used in leather production (Frierson 1972:15-16).

An additional agricultural trial was conducted in the Honouliuli area for the cultivation of sisal, a plant used to make fibers for rope and other material. Some sisal was planted before 1898 and production continued until the 1920s (Frierson 1972:16). This was grown mainly on the coastal plain of Honouliuli in Kānehili, just *mauka* of Kualaka'i Beach (now Nimitz Beach). An article in the *Paradise of the Pacific* in 1902 described this venture in glowing terms:

The venture was made and a tract of land containing a large percentage of disintegrated coral, in the neighborhood of Ewa Plantation, where nothing else would grow, was chosen for the planting... The Hawaiian Fiber Co., which Mr. Turner organized, and of which he is now manager, has 755 acres under fence, two and a half miles of which is stone wall with good gates at convenient places... In a large field containing 130 acres, mauka of the Oahu Railway & Land Co. track, the first harvest is to be gathered in a few months... Out of this

section of 130 acres the company has figured on securing 50 tons of clean fiber, for which it is offered eight cents per pound in Honolulu or nine cents per pound in San Francisco. (*Paradise of the Pacific* March 1902:17)

Into the early twentieth century, some Hawaiian families continued to live in Honouliuli and preserve the traditional lifestyle, including at the fishing village of Kualaka'i. One resident, Mrs. Eli Williamson, recalled:

In the Honouliuli area the train stopped among the *kiawe* trees and *malina* (Sisal) thickets. We disembarked with the assorted food bundles and water containers. Some of the Kualaka'i 'ohana (family) met us to help carry the 'ukana (bundles) along a sandstone pathway through the *kiawe* and *malina*. The distance to the frame house near the shore seemed long. When we departed our 'ukana contained fresh lobsters, *limu* (seaweed), fish and *i'a malo'o* (dried fish)... (Williamson, in Kelly 1985:160)

### 2.1.10 History of the Oahu Railway and Land Company (OR&L)

In 1886, Campbell and B. F. Dillingham put together the "Colonization Project," which was an attempt to sell Honouliuli land to homesteaders (Thrum 1886:64). This homestead idea failed. Two factors that contributed to the failure were the lack of water and the distance from 'Ewa to Honolulu. The water problem was solved by the drilling of artesian wells, and Dillingham decided that the area could be used instead for large-scale sugar-cane cultivation (Pagliaro 1987:4). The transportation problem was to be solved by the construction of a railroad, which B. Franklin Dillingham soon began to finance under the company name of the Oahu Railway and Land Company (OR&L).

During the last decade of the nineteenth century, the railroad would reach from Honolulu to Pearl City in 1890, to Wai'anae in 1895, to Wai'alua Plantation in 1898, and to Kahuku in 1899 (Kuykendall 1967:III, 100). This railroad line eventually ran across the center of the 'Ewa Plain. To attract business to his new railroad system, Dillingham subleased all land below 200 feet elevation to William Castle, who in turn sublet the area to the newly-formed Ewa Plantation Company for sugar cane cultivation (Frierson 1972:15). Both the Ewa Plantation and the Oahu Sugar Company operated their own trains and tracks to move sugar cane to their mills (Figure 8). Dillingham's Honouliuli lands above 200 feet that were suitable for sugar cane cultivation were sublet to the Oahu Sugar Company. Throughout this time, and continuing into modern times, cattle ranching continued in the area, and Honouliuli Ranch, established by Dillingham, was the "fattening" area for other ranches (Frierson 1972:15).

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



Figure 8. Ewa Plantation train circa 1950s (State of Hawai'i Department of Transportation, Airports Division, Hawai'i Aviation)

army, naval, and air bases. The Navy base at Pearl Harbor had its own rail lines that connected to the OR&L rail lines.

In August of 1945, the war ended, and so did the OR&L's heyday as a military transport line.

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

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

The sudden termination of the war with Japan changed not only the character of our transportation, but cut the freight tonnage to a third and the passenger business to a little above the pre-war level. With the increased cost of labor and material and the shrinkage in freight tonnage and passenger travel, it was definite that the road could not be operated as a common carrier. With no prospect of increased tonnage, and the impossibility of increasing rates against truck competition, your management has applied to the Interstate Commerce for authority to abandon its mainline. (Walter Dillingham, cited in Chiddix and Simpson 2004:257)

After the war, most of the 150+ miles of OR&L track were pried up, locomotives were sold to businesses on the U.S. mainland, and railway cars were scrapped. In 1947, the U.S. Navy took over a section of the OR&L track for their own use, to transport bombs, ammunition, and torpedoes from the ammunition magazines at Lualualei, West Loch in Pearl Harbor, and Waikele on OR&L's Wahiawā Branch to Pearl Harbor Naval Base (Treiber 2005:25-26). The track to Waipahu was abandoned in the 1950s, but the line from the magazines in Lualualei to the wharves in West Loch at Pearl Harbor remained open until 1968.

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

### **2.1.11 Ewa Plantation Company and Sugar Cane Cultivation**

The Ewa Plantation Company was incorporated in 1890 for sugar cane cultivation (Figure 9). Ewa Plantation's first crop, 2,849 tons of sugar, was harvested in 1892. Ewa Plantation was the first all-artesian water plantation, and it gave an impressive demonstration of the role artesian wells were to play in the later history of the Hawaiian sugar industry (Kuykendall 1967:III, 69). As a means to generate soil deposition on the coral plain and increase arable land in the lowlands, the Ewa Plantation Company installed ditches running from the lower slopes of the mountain range to the lowlands. When the rainy season began, they plowed ground perpendicular to the slope so that soil would be carried down the drainage ditches into the lower coral plain. After a few years, about 373 acres of coral wasteland were reclaimed in this manner (Immisch 1964). By the 1920s, Ewa Plantation was generating large profits and was the "richest sugar plantation in the world" (Paradise of the Pacific, Dec. 1902:19-22, cited in Kelly 1985:171).

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

### **2.1.12 'Ewa Villages Plantation Housing**

In 1890, construction began on housing for over 500 Ewa Plantation workers (Hammatt et al. 1990:13). Eight main plantation camps, collectively known as 'Ewa Villages, were constructed in the vicinity of Ewa Plantation sugar mill (Figure 10). These villages included (from northeast to southwest) Lower Village, Middle Village (also called Korean Village), Fernandez Village, Renton Village, Tenney Village, Mill Village, Varona Village, and "C" Village. A 1919 War



Figure 9. Fertilizing cane at Ewa Plantation circa 1925 (University of Hawai'i at Mānoa Digital Collection)

Department map (see Figure 12) shows the extent of plantation development in the vicinity of the sugar mill by the early 1900s. The mill and plantation camps are located at junctions of major plantation transportation corridors, including the Ewa Plantation railway, the OR&L Railway, and plantation roads.

In 1928, probably the year with the greatest number of workers, the census bureau counted 4,967 people living on and associated with the Ewa Plantation (Hammatt et al. 1990: 13). These workers were Japanese, Chinese, Okinawan, Korean, Portuguese, Spanish, Hawaiian, Filipino, and European, who usually lived in segregated camps or housing areas. The plantation houses were described by George F. Renton, the plantation manager from 1899 to 1920:

Each of these dwellings is enclosed by a fence and supplied with water. It is pleasant to note the eagerness with which these homes have been taken up, and how much the premises have been improved. This is especially noticeable among the Japanese... At present writing there are 451 dwellings on this estate. These are actual houses exclusive of restaurants, bath houses, cook houses, work shops, schools or churches. (Pagliaro 1987:17)

With the onset of World War II in the 1940s, the US military drew from the plantation workforce to support the war effort. To cope with the loss of plantation laborers, Ewa Plantation came to rely on mechanical harvesting. This led to the overall decline in the large, multi-racial plantation workforce that had characterized the early history of the plantation (Hammatt et al. 1990:13). The Ewa Plantation Mill closed in the mid-1970s, following the sale of Ewa Plantation to Oahu Sugar Company. Sugar cane cultivation continued in 'Ewa until the mid-1990s.



Figure 10. Filipino laborers village circa 1925; workers of Ewa Plantation (University of Hawai'i at Mānoa Digital Collection)

### 2.1.13 Twentieth Century Development

A series of twentieth Century maps shows the development of the project area. An 1894 map shows no development in Honouliuli Ahupua‘a (Figure 11); the map also notes that the *ahupua‘a* was awarded to Kekau‘ōnohi as part of LCA 11216. A 1919 map shows the future Fort Weaver Road and Renton Road as dirt roads; a railroad track is adjacent to Renton Road on the south side of the project area. Numerous Ewa Sugar plantation tracks surround the early plantation workers camps, shown as clusters of houses (Figure 12). A 1927-1930 map shows development north and south of the project area (mostly plantation villages), the improvement of the future Fort Weaver Road (called out as the “Ewa Beach Road”), and the development of flumes, ditches, fields and roads of the Ewa Plantation Company. The project area is labeled as Ewa School (Figure 13). A 1933 - 1935 map shows Ewa School as dominated by one large school building (Figure 14; see also Figure 19 and Figure 20). A Map of Ewa Plantation (July 27, 1939) shows the location of the project area surrounded by sugar cane fields and plantation infrastructure (Figure 15). It is understood that the Ewa Plantation fields were still expanding to the south and east in that timeframe (as indicated by the field numbering system) as a thin layer of soil could be established on the native raised reef limestone to support cultivation. A 1943 map shows increasing road development virtually all over Honouliuli Ahupua‘a (Figure 16). A 1953 map shows an extraordinary development of the coastal Ewa Beach community to the south and Fort Weaver Road (Figure 17). A 1978 aerial photograph shows that the areas to the northeast and southwest of the project area are high volume residential areas. The areas northwest and east of the project area appear to be clear of urban development (Figure 18).

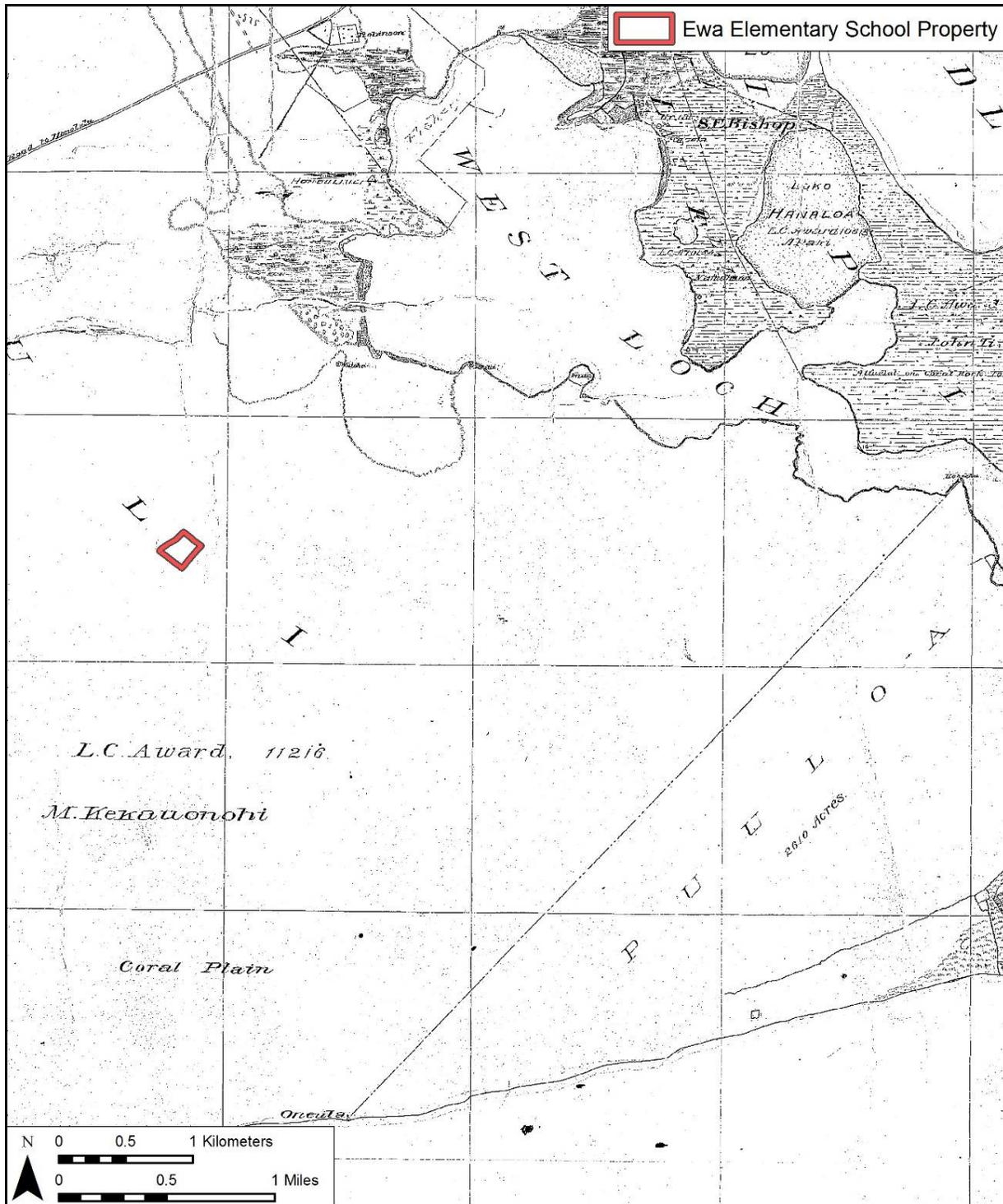


Figure 11. An 1894 map of Honouliuli Ahupua‘a (Kanakanui 1894) showing the project area and the area now known as Pearl Harbor (West Loch); note that the entire Honouliuli Ahupua‘a is awarded to M. Kekaunu‘ōhi under LCA 11216 (Registered Map No. 1739, Hawai‘i Land Survey Division)

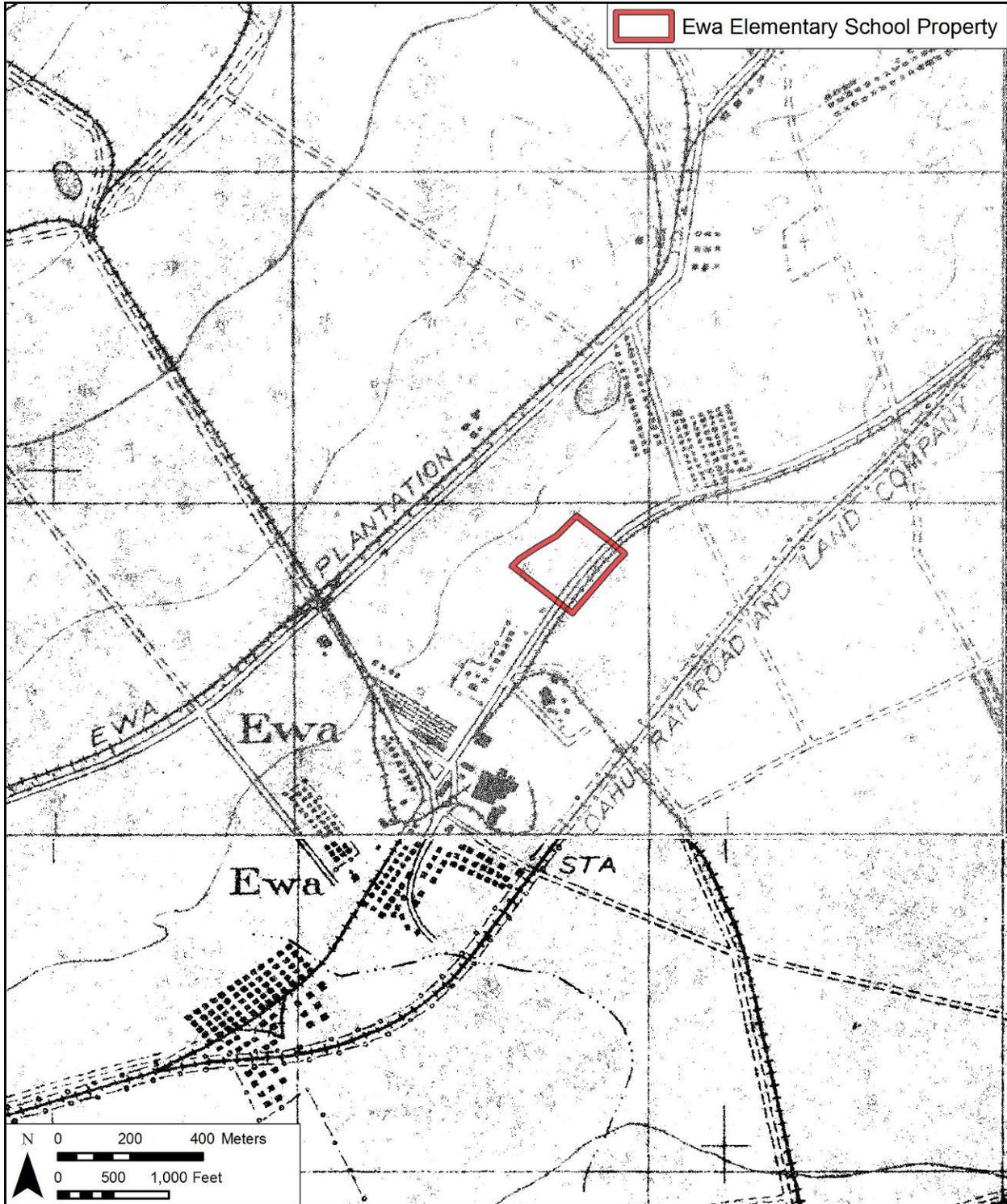


Figure 12. Portion of a 1919 U. S. War Department 7.5 Minute series topographic map of O'ahu, 'Ewa Quadrangle, with the location of the project area; note the southeastern portion of the project area was once in the path of a railroad

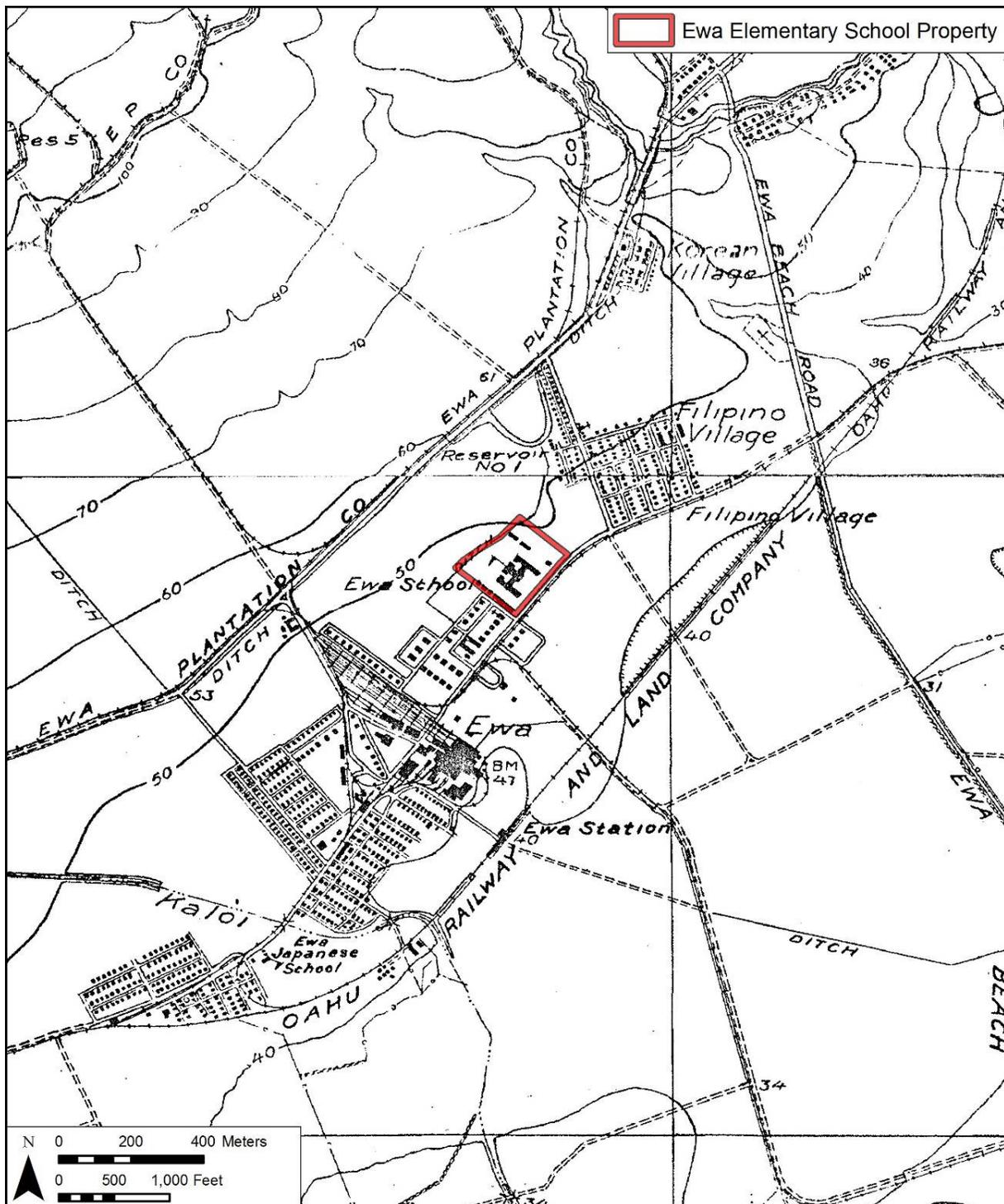


Figure 13. A 1927-1930 U.S. Geological Survey 7.5 Minute Series topographic map of O'ahu, 'Ewa Quadrangle, showing the project area now called Ewa School; railroad tracks are still visible within the vicinity of the project area; development south of the project area is evident

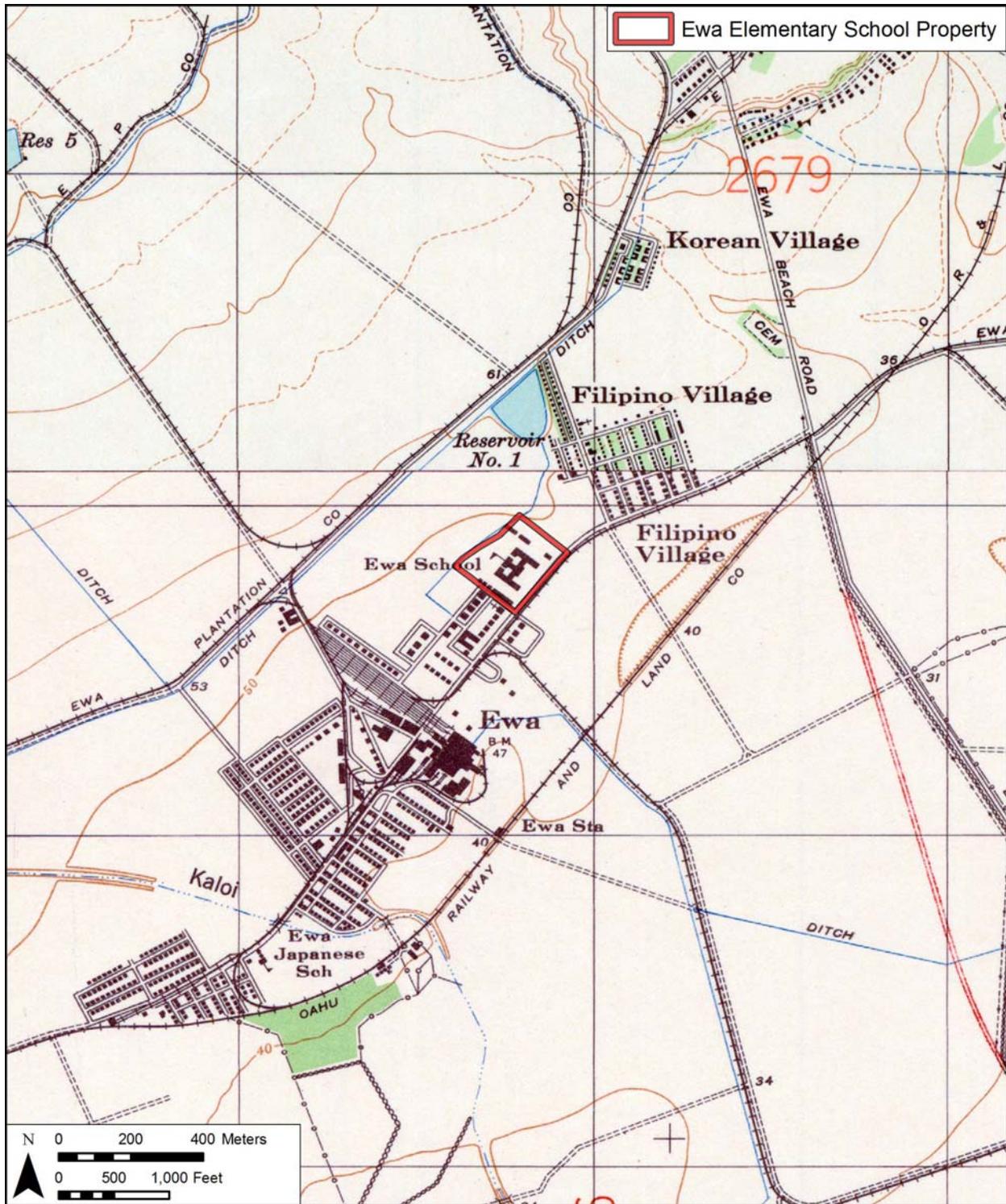


Figure 14. A 1933-1935 U. S. War Department 7.5 Minute series topographic map of O‘ahu, ‘Ewa Quadrangle, depicting the project area

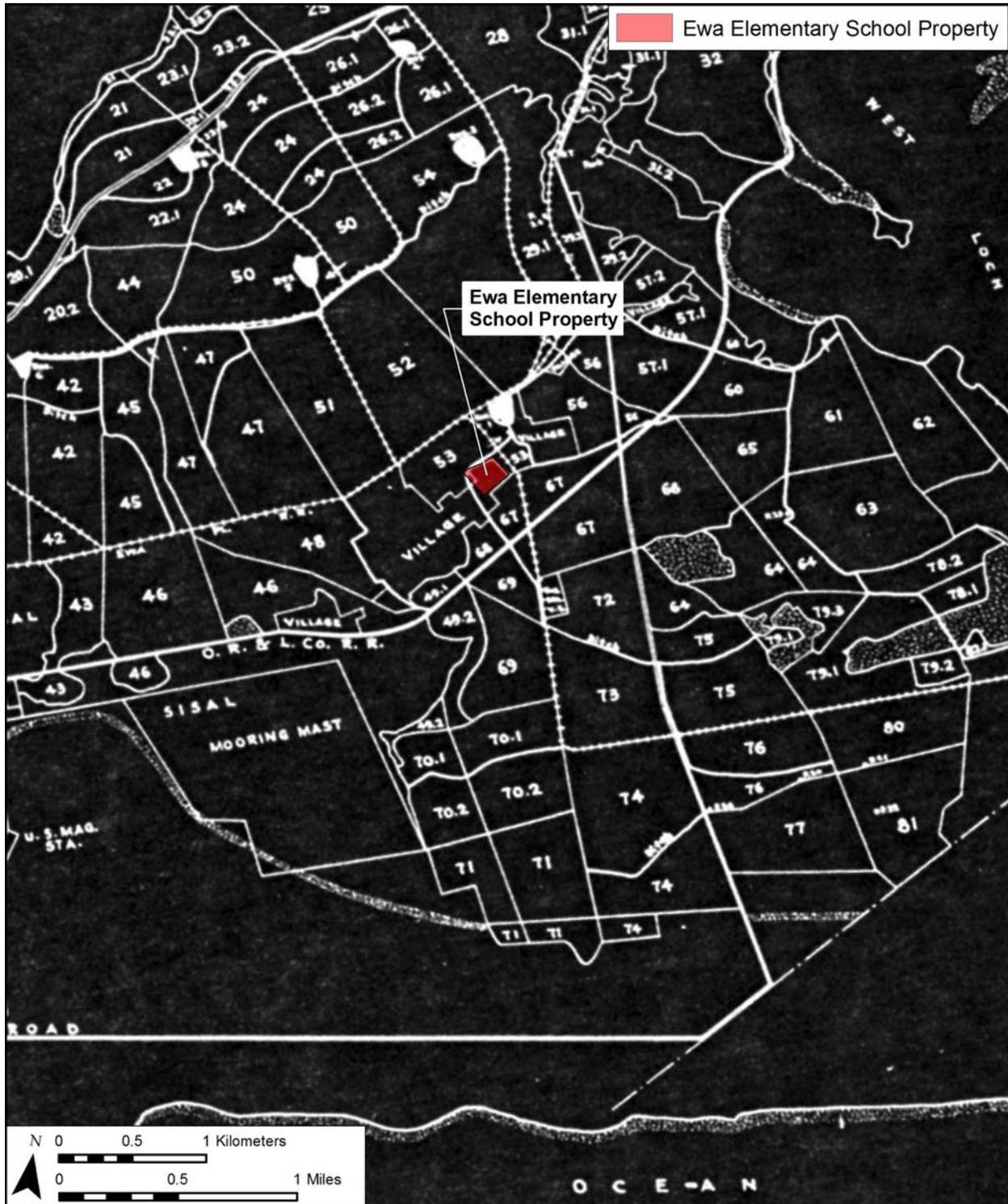


Figure 15. Map of Ewa Plantation (July 27, 1939) showing the location of the project area within the plantation infrastructure

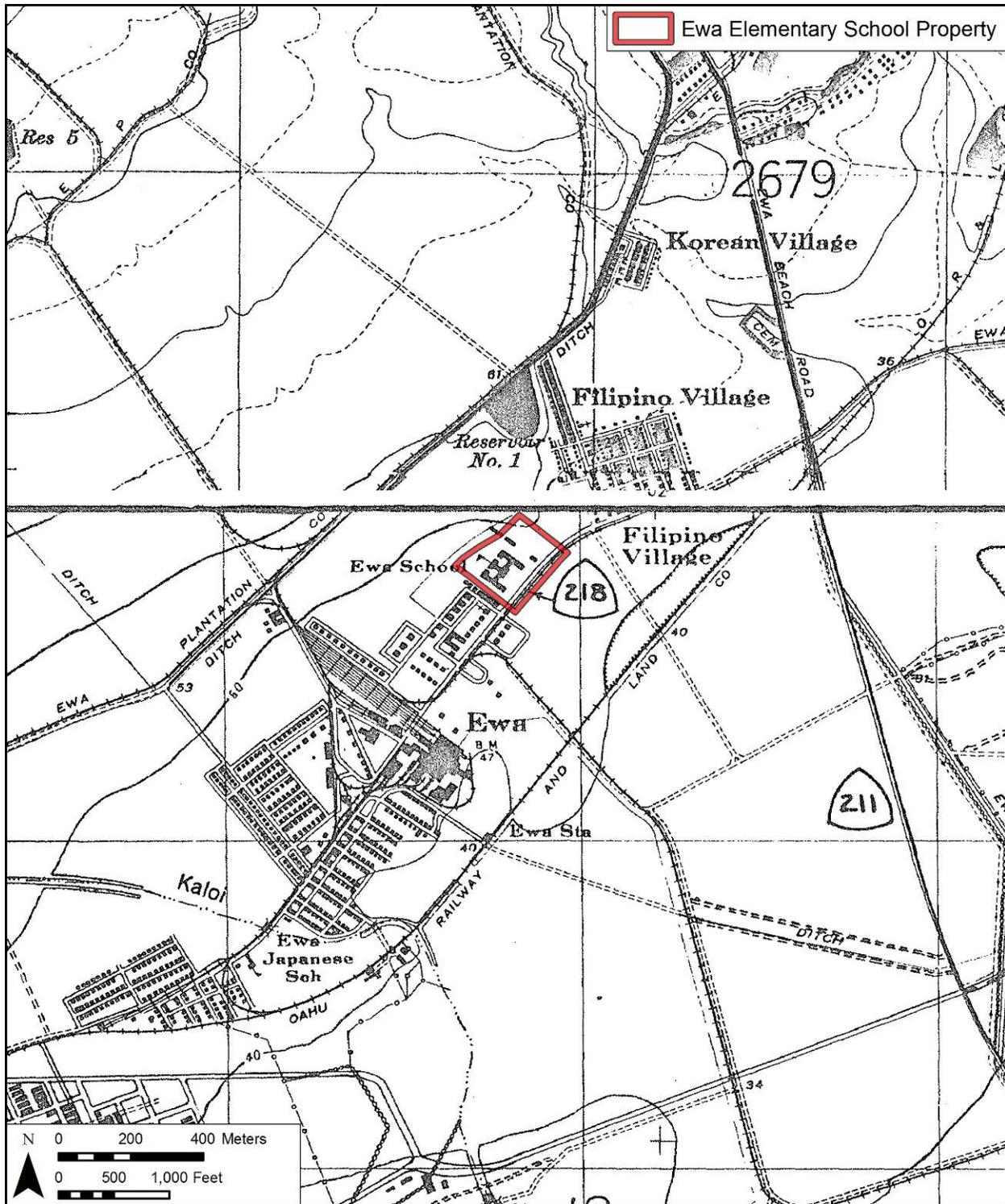


Figure 16. A 1943 U. S. War Department 7.5 Minute series topographic map of O'ahu, 'Ewa Quadrangle, with location of project area indicated

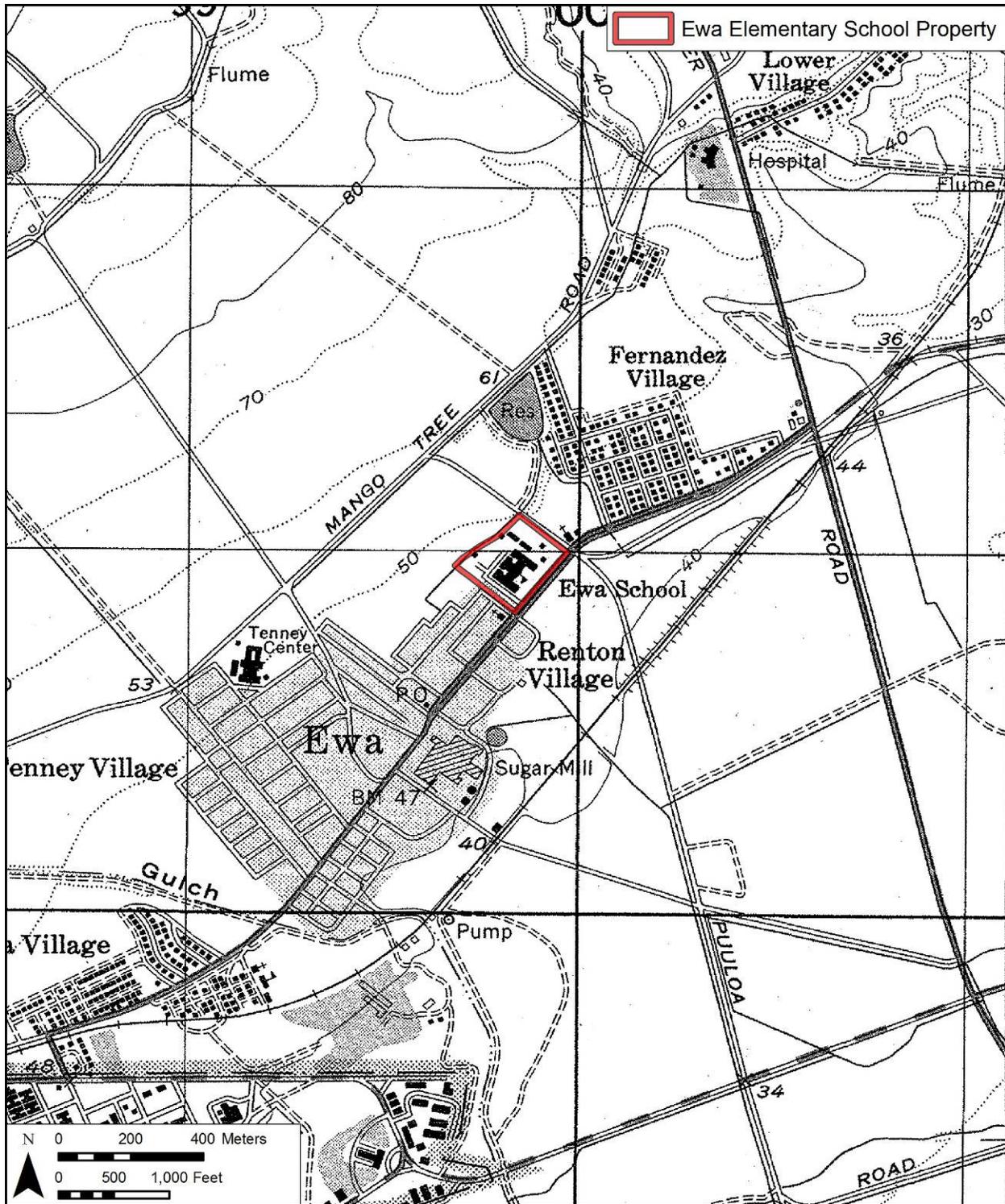


Figure 17. A portion of the 1953 U. S. Army Map Service 7.5 Minute series topographic map of O’ahu, ‘Ewa Quadrangle, with location of project area indicated; note there are less railroad tracks and more development south of the project area



Figure 18. A 1978 aerial photograph showing the location of the project area (source: U.S. Geological Survey Orthophoto)

### 2.1.14 History of Ewa Elementary School

‘Ewa Elementary School’s official website (2012) distinguishes it as one of the oldest schools in the Leeward District of O‘ahu, dating back to 1882. Until the early 1990s the majority of ‘Ewa Elementary School students were the children of O‘ahu Sugar Company workers. Once the sugar plantations closed, however, the new housing developments constructed resulted in a more diversified local community (‘Ewa Elementary School 2012).

The website of the ‘Ewa Elementary School provides a brief history and overview of their school:

#### **A Bit of Ewa School History**

Ewa School is one of the oldest schools in the Leeward District, with our roots dating back to 1882. While our school was located in other areas in Ewa, we have been in this location since the early 1920s. Katherine MacIntosh Burke was an administrator of Ewa Elementary School in the 1930s. She was a great admirer of Abraham Lincoln and willed \$8,000 of her savings for the construction of a Lincoln statue. In the early 1940s, Dr. Avard Fairbanks, a professor of sculpting in Arbor, Michigan, created and donated the statue that presently stands on our school campus. The statue fronts our main office building, however, in the earlier years, the original main building housed classrooms, main office, auditorium and cafeteria. A row of teacher cottages have been replaced by the parking lot on the Kapolei side of the cafeteria. Our garden, where students cultivated a variety of fruits and vegetables, has been replaced by L-Building and the playground on the Honolulu side of L-Building. Our library was housed in a large building where P1 and P2 presently stand. I-Building was built in the 60s, L-Building in the 80s and M-Building in the 90s. Up until then, children of sugar plantation workers comprised the greater majority of our enrollment. With the closing of Oahu Sugar Company in the mid 90s, new housing developments have replaced former sugar cane land. We have become a very diverse community, bringing to our school a variety of values, beliefs and practices. While older facilities have been replaced, the hard work, effort and commitment from our faculty and staff have not changed over the years and we are dedicated to provide your child the best education possible. (‘Ewa Elementary School 2012)

An internet photographic gallery by a long-time ‘Ewa resident, Isamu Murakami, has many photographs of the old ‘Ewa Elementary School (Figure 18 and Figure 19) and depicts the pride that the ‘Ewa Community took in their school.

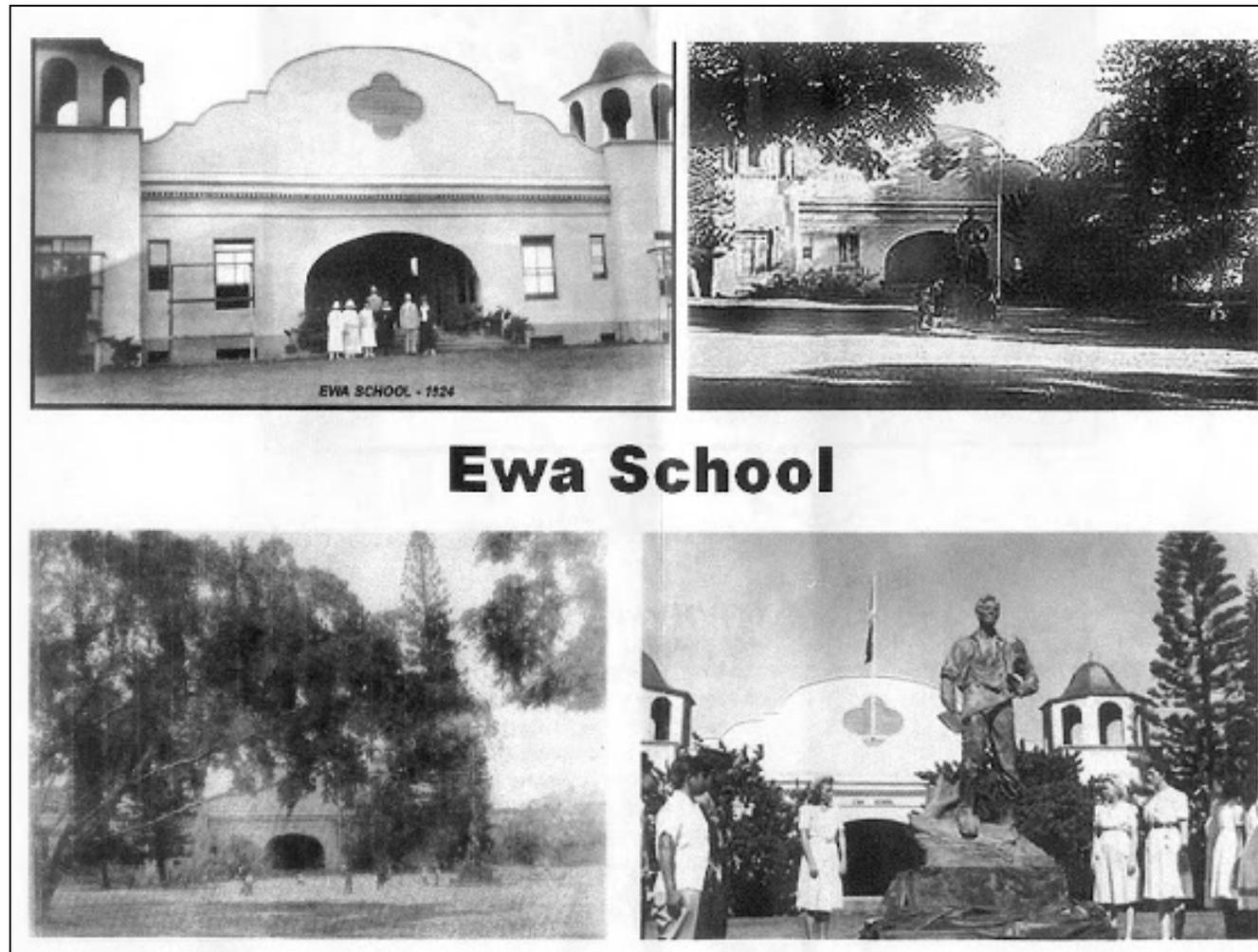


Figure 19. “The old Ewa School is fondly remembered. At upper left is one of the first photos of Ewa School taken in 1924. At lower right is the Lincoln Dedication Ceremony on Feb. 14, 1944 (You can see the canvas that covered the statue that was removed at the base of the statue).” (Isamu Murakami Internet site, January 2012)



Figure 20. EWA, OUR HOME TOWN U.S.A. This is a beautiful panoramic view of our Ewa Elementary School in late 1930 before the Lincoln Statue was installed. Look how beautiful Ewa school is, it was the most beautiful school in Hawaii, built like the early missions in California. We will never see a school like this, ever again! It made me cry when I found out that OUR school was destroyed. (Isamu Murakami Internet site, January 2012)

## 2.2 Previous Archaeological Research

The earliest attempt to record archaeological remains in Honouliuli Ahupua'a was made by Thrum (1906:46). He reported the existence of a *heiau* (Pre-Christian place of worship) located on Pu'uokapolei, west of the present project area. In a second monograph, Thrum (1938:136) called this heiau Palole'i (Kapolei). Emory (1933) mapped and photographed these structures, but they were dismantled and destroyed sometime before McAllister's survey of the islands in the 1930s. According to legend, Pu'uokapolei was the residence of Kamapua'a, the pig-god, and his grandmother, Kamaunuahihio (McAllister 1933:108).

In his surface survey of the 1930s, archaeologist J. Gilbert McAllister recorded the specific locations of important sites, and the general locations of less important sites (at Honouliuli). McAllister recorded 14 specific sites at Honouliuli, numbered Sites 133-146 (Table 2; McAllister 1933:107-108).

Table 2. Sites in Honouliuli Ahupua'a Identified During McAllister's Island Wide Survey

Site No.	Location	Description	Source
133	At the foot of Pu'u Kānehōa	A small inclosure said to be a heiau on a slight elevation in a gulch; 25 x 30 feet; the inside walls are 2 – 3 feet high; outside walls range from 2 – 5 feet depending on the slope of the land; heavy growth of lantana; grass and guava bushes in the interior of the inclosure	McAllister 1933: 107
134	In a gulch at the foot of Mauna Kapu	Pu'u Kuina Heiau, Aikukuai, Honouliuli; a suggestion of a terrace is all that remains	McAllister 1933: 107
135	Land of Kukuilua	Inclosures in leveled-off areas; the largest measuring 85 by 100 feet with low inclosings and facings; probably kuleana sites	McAllister 1933: 107
136	Mauna Kapu	Small platform on the ridge dividing 'Ewa and Wai'anae; 4 to 6 feet square of coral and basalt stones; thought to have been built by Hawaiians who considered it sacred; believed to be an altar	McAllister 1933: 107
137	Palikea, Honouliuli	Pu'u Ku'ua Heiau; on a ridge overlooking Nānākuli and Honouliuli at the approximate height of 1,800 feet; most of the stones were used for a cattle pen makai (towards the ocean) of the site	McAllister 1933: 108
138	Pu'u Kapolei	Pu'u Kapolei Heiau; stones from the heiau supplied the rock crusher located on the side of the elevation (approximately 100 feet away makai); formerly a large rock shelter on the makai said were Kamapua'a is said to have lived with his grandmother	McAllister 1933: 108

Site No.	Location	Description	Source
139	Kapapapuhi, Honouliuli	Kalanamihiki ko'a (fishing shrine); near the end of the small tongue of land that juts out opposite of Laulaunui Island; two large, rough stones about 2.5 feet high with six to seven smooth stones approximately 1 foot high in a small pile adjoining; the entire site is covered in 'ākulikuli ( <i>Sesuvium portulacastrum</i> )	McAllister 1933: 108
140	Laulaunui	Fishpond adjoining Laulaunui Island; approximately 4 to 5 acres with a wall about 900 feet long, 7 feet wide, and 3.5 feet high; there are no mākāhā (sluice gate)	McAllister 1933: 108
141	Kaihuopala'ai, 'Ewa	Said to apply to the whole West Loch of Pearl Harbor; during October/November, large shoals of mullet are said to travel from Pearl Harbor to Makapu'u Point to Lāi'e/Malaekahana and back to Pearl Harbor; this traveling of fish continues until March or April	McAllister 1933: 108
142	Pu'uloa, opposite the tip of Waipi'o Peninsula	Kapamuku Fishpond (also known as Pamoku Fishpond); approximately 3 acres with a wall of 660 feet in length; walls are about 6 feet wide and 3.5 feet in height; there are no mākāhā; the salt water seeps through loosely piled stones	McAllister 1933: 108
143	Pu'uloa, across from the end of Waipi'o Peninsula	Okiokilepe Fishpond; a small pond of 6 acres with a wall approximating 1,000 feet long; the walls are made of coral and measure 6.5 feet wide and 4 feet high; there are no mākāhā, the salt water seeps through loosely piled stones	McAllister 1933: 109
144	Unknown	Former location of fish traps and a ko'a	McAllister 1933: 109
145	Pu'uloa	Site where the first breadfruit in Hawai'i is said to have been planted; credited to Kahai, a son of Mo'ikeha, who brought the species from Upolu, in the Samoan group, on his return from Kahiki	McAllister 1933: 109
146	Unknown	'Ewa coral plains includes old stone walls, particularly near the Pu'uloa Salt Works; holes and pits in the coral were used by Hawaiians; the soil on the floor of larger pits were used for cultivation; some pits offered shelter and protection to the population as well	McAllister 1933: 109

Archaeological research in the general vicinity of the project area began in the late 1970s. Work has generally focused large project areas, including: West Loch Estates and Bluffs, the 'Ewa Gentry Project, 'Ewa Villages, Kapolei Parkway, the East Kapolei Project, 'Ewa Industrial Park, and the Honouliuli/Waipahu/Pearl City Wastewater Facilities Project. Archaeological studies in the immediate vicinity of the current project area are depicted in Figure 21, and historic properties near the current project area are shown on Figure 22. Projects near 'Ewa

Elementary School are summarized in Table 3 and described in more detail in the following sections.

### **2.2.1 West Loch Estates and West Loch Bluff**

An archaeological reconnaissance survey (Rosendahl 1987) was conducted in association with the development of the 232-acre “West Loch Estates” Residential Increments I and II Project (including golf course and parks). The study area is approximately 0.8 km (0.5 mi.) northeast of the current project area, in the section of the Honouliuli Taro Lands adjacent to Pearl Harbor. This study covered portions of the old town of Honouliuli, the focus of population in the early historic period (and possibly earlier). Identified State Inventory of Historic Properties (SIHP) included: a modern cemetery (SIHP # 50-80-13-3319) with a remnant pre-Contact deposit, two historic sites of minimal integrity with some possible pre-Contact deposits (SIHP # 50-80-13-3318 and -3320) at Kapapahu Point, a significant pre-Contact deposit with trash pits, fire pits and at least one human burial (SIHP # 50-80-13-3321), a buried fishpond (SIHP # 50-80-13-3322), an historic fishpond (SIHP # 50-80-13-3323) built in the 1890s during the construction of the OR&L railroad, and a buried pond field system (SIHP # 50-80-13-3324) (Rosendahl 1987:7, 9). It was noted that some artifacts “indicate the possibility of pre-1900 occupation” (Rosendahl. 1987:8).

In 1990, CSH conducted an archaeological inventory survey of an approximately 546-acre parcel (Hammatt and Shideler 1990). The majority of the project area was impacted by a century of sugarcane cultivation and plantation infrastructure. The survey found no evidence of prehistoric activity within the project area. However, the project area includes three former plantation villages (Pipeline, Stable, and Drivers Villages), the former site of the Honouliuli (Kapalani) Roman Catholic Church and the former site of kuleana parcels.

### **2.2.2 ‘Ewa Gentry Project**

In the initial reconnaissance (Kennedy 1988) of the 1,016 acre ‘Ewa Gentry survey area, no surface evidence of potentially significant pre-Contact remains was found. The OR&L railroad bed/right of way (SIHP # 50-80-12-9714) did form a portion of the mauka boundary. According to historic maps, a Filipino Camp for sugarcane workers once existed near the intersection of the OR&L bed and a cane road near Ft. Weaver Road, but the archaeologists did not find any surface remains of this camp.

A subsequent subsurface exploration was undertaken, in which eighteen backhoe trenches were excavated. However, “no evidence of past in situ cultural activity was found anywhere in the Ewa Gentry project area” (Davis 1988). The archaeologists found that soil was only about 1 meter deep over a coral substrate, and that their project area was “apparently situated on an ancient upper rim of Hono‘uli‘uli Valley” (Davis 1988:4).

### **2.2.3 ‘Ewa Villages**

In 1990, CSH (Hammatt et al. 1990) conducted an archaeological reconnaissance survey of the 616-acre ‘Ewa Villages study area, including the current project area. The archaeological survey included three extant plantation villages (Renton Village, Tenney Village, and Varona Village), the sites of three former plantation villages (C Village, Mill Village, and Middle

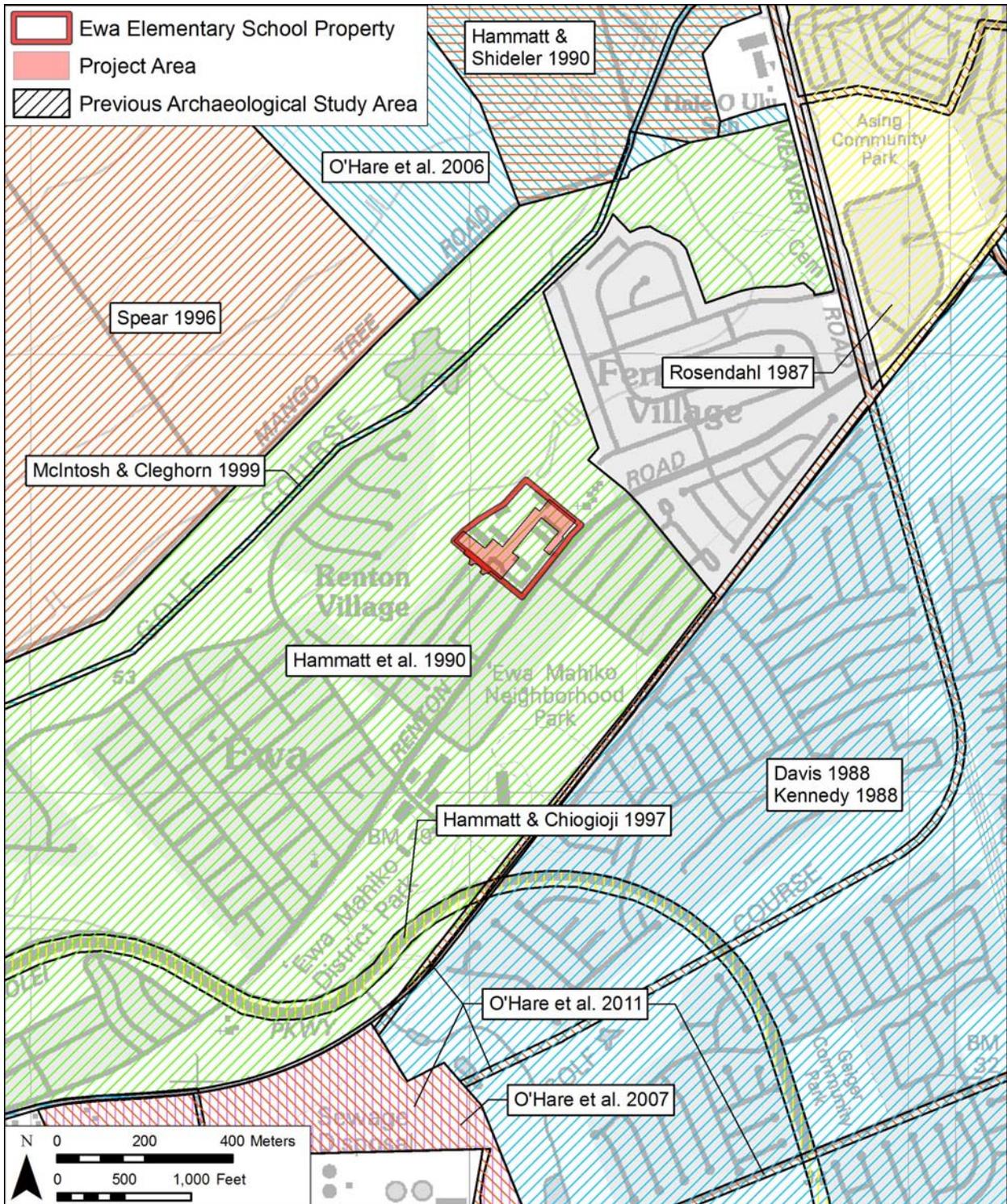


Figure 21. Previous archaeological studies within the project area and immediate vicinity (base map U.S. Geological Survey 7.5-Minute Series Topographic Map, 'Ewa Quadrangle)

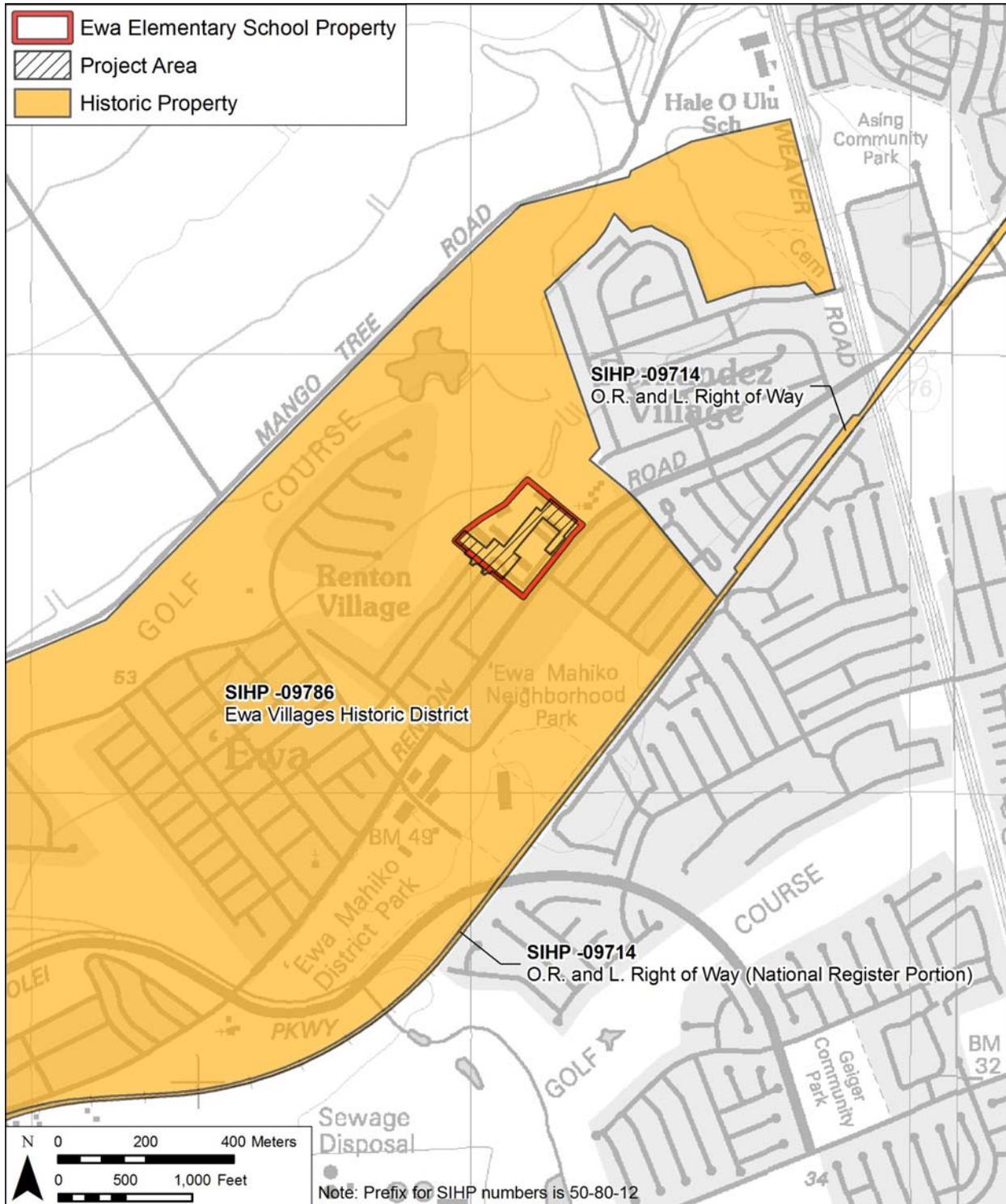


Figure 22. Historic properties within the project area and the immediate vicinity shaded in yellow (base map U. S. Geological Survey 7.5-Minute Series Topographic Map, 'Ewa Quadrangle)

Table 3. Summary of Previous Archaeological Studies in the Vicinity of the Project Area

Reference	Nature of Study	Location	Findings
McAllister 1933	Archaeological Survey	Island-wide	Sites 133-146; see Table 2 above for complete listing of sites and description
Rosendahl 1987	Reconnaissance Survey with subsurface testing	West Loch Estates	A modern cemetery (SIHP # -3319) with a pre-Contact deposit, two historic sites with pre-Contact deposits (-3318, -3320), a pre-Contact deposit with a burial (-3321), a buried fishpond (3322), an 1890s fishpond (-3323), and a buried pond field system (-3324)
Davis 1988	Subsurface Excavation	‘Ewa Gentry Project	No pre-Contact subsurface features were noted.
Kennedy 1988	Reconnaissance Survey	‘Ewa Gentry Project	No pre-Contact surface features found. The OR&L railroad bed (-9714) formed the <i>mauka</i> boundary.
Hammatt and Shideler 1990	Inventory Survey	West Loch Bluffs	The project area includes the sites of three former plantation villages (Pipeline, Stable, and Drivers Village).
Hammatt et al. 1990	Reconnaissance Survey	‘Ewa Villages	No pre-Contact surface features were noted.
Spear 1996	Reconnaissance and Assessment	West of Tenney & Varona Villages	No pre-Contact surface features were noted.
Hammatt and Chiogioji 1997	Reconnaissance Survey	Kapolei Parkway	No pre-Contact surface features were noted.
O’Hare et al. 2006	Inventory Survey	East Kapolei Project	Five sites had been previously identified; one of these sites was used to denote Ewa Sugar Plantation infrastructure features (-4344
O’Hare et al. 2007	Inventory Survey	‘Ewa Industrial Park	No historic properties identified.
O’Hare et al. 2011	Literature Review and Field Inspection	Honouliuli to Hālawā Ahupua‘a	Recommendations include monitoring, and survey work

Village), and several other sites associated with the ‘Ewa Plantation infrastructure, (the Plantation Cemetery, the ‘Ewa Japanese School, ‘Ewa Depot, the site of a previous Buddhist temple burned down in WWII, and a former reservoir site). The survey also included fields then under sugar cane cultivation. The surface survey of the land found no evidence of any prehistoric features within the project area and concluded that no further archaeological research in

association with concerns for Hawaiian prehistory was necessary. However, because of the historic preservation concern 'Ewa Villages has merited, further documentation of some of the ruined historic sites was recommended. In the immediate vicinity of the current project area, Hammatt et al. (1990) indicated the former locations of Mill Village and Long Store. The only remains observed were concrete foundations.

In 1996, Scientific Consultant Services (Spear 1996) conducted an archaeological survey in an area west of the Tenney and Varona plantation villages and north of the Honouliuli Treatment Plant. No archaeological sites were identified.

The southern boundary of the 'Ewa Villages study area is the alignment of the O'ahu Railroad and Land Company (OR&L) right-of-way (SIHP # 50-80-12-9714). This railroad bed, from the intersection with Fort Weaver Road to the intersection of Farrington Highway and Lualualei Road in Nānākuli was listed on the National Register of Historic Places in 1975. The entire 'Ewa Villages area (SIHP # 50-80-12-9786) was listed on the Hawai'i Register of Historic Places in 1996.

#### **2.2.4 Kapolei Parkway**

In 1997, CSH conducted an archaeological reconnaissance survey for a proposed north/south oriented roadway (later known as Kapolei Parkway). The corridor crosses two historic villages: 'Ewa Villages and the Oahu Railway and Land Company Right-of-Way (Hammatt and Chiogioji 1997). During the survey no prehistoric or early historic Hawaiian archaeological sites or surface finds were encountered. Remnants of flumes and a ditch were observed within portions of historic value but were not classified as sites during the survey. No further archaeological investigation was recommended.

#### **2.2.5 East Kapolei Project**

CSH conducted an archaeological inventory survey for the East Kapolei Project in 2006 (O'Hare et al. 2006). The 2,625-acres yielded five archaeological sites that had been previously identified in a 1990 survey conducted by CSH (Hammatt et al. 1990). One of the sites, SIHP # 50-80-12-4344, was used to denote Ewa Sugar Plantation scattered infrastructure features. Three features (A-C) were recorded for this site during the 1990 survey. During the 2005-2006 survey, four additional sugar plantation features were recorded and were considered additional features (D-F) to Site -4344. No further work or preservation was recommended for Site -4344.

The remaining four previously identified sites include a railroad berm (SIHP # 50-80-12-4345), a northern pumping station (-4346), a central pumping station (-4347), and a southern pumping station (-4348).

Historic properties that were ineligible for historic preservation include four areas of historic habitation: Honouliuli Taro Lands, Kapalani Catholic Church, Pipeline Village, and Drivers/Stable Village. These four sites were also identified during the 1990 survey. No site designations were given nor were any surface remains found during the survey.

Although no subsurface remains were found during backhoe testing, a program for an on-site/on-call archaeological monitor was recommended during any future development of the area.

### **2.2.6 'Ewa Industrial Park**

In 2007, CSH (O'Hare et al. 2007) conducted an archaeological inventory survey of an approximately 48-acre parcel proposed for development as an industrial park. No surface historic properties were identified. The study area was observed to have been heavily disturbed by modern agricultural and residential use.

### **2.2.7 Honouliuli/Waipahu/Pearl City Wastewater Facilities**

In 2011, CSH conducted an archaeological literature review and field inspection for the proposed Honouliuli/Waipahu/Pearl City Wastewater Facilities in the ahupua'a of Honouliuli, Hō'ae'ae, Waikele, Waiawa, Mānana, Waimalu, and Hālawā.

No archaeological resources were observed during field inspections on the surface. It was noted that many of the locations proposed for project related impacts to shallow sediments are close to the margins of the Lochs of Pearl Harbor and perennial streams. These immediate vicinities are ideal locations for early Polynesian settlement and dense Hawaiian settlement. In addition, some of the inland locations that are away from waterways appear to have a low level of archaeological concern. Many of the recommendations during excavations include on-call monitoring, on-site monitoring, a combination of on-call and on-site monitoring, and in some cases, an archaeological inventory survey was warranted due to presence of kuleana parcels in the vicinity, the proximity of fresh waterways, and a high likelihood of previously documented cultural resources in the area.

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## Section 3 Field Inspection

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The fieldwork component for this project was carried out under archaeological permit number 12-04, issued by SHPD/DLNR, per HAR Chapter 13-282. The field inspection was conducted on September 29, 2012 by David W. Shideler, M.A. under the general supervision of principal investigator Hallett H. Hammatt, Ph.D. All accessible portions of the property were surveyed on foot and photographs were taken of the exteriors of buildings and parking lots, as shown in CSH field inspection photographs (Figure 23 to Figure 28). No historic properties, other than possibly the buildings themselves, were noted.



Figure 23. A local geographic riddle of long-standing is that “You have not seen O‘ahu until you have seen the Abraham Lincoln statue” – that has graced Ewa Elementary since 1944 (CSH photograph)

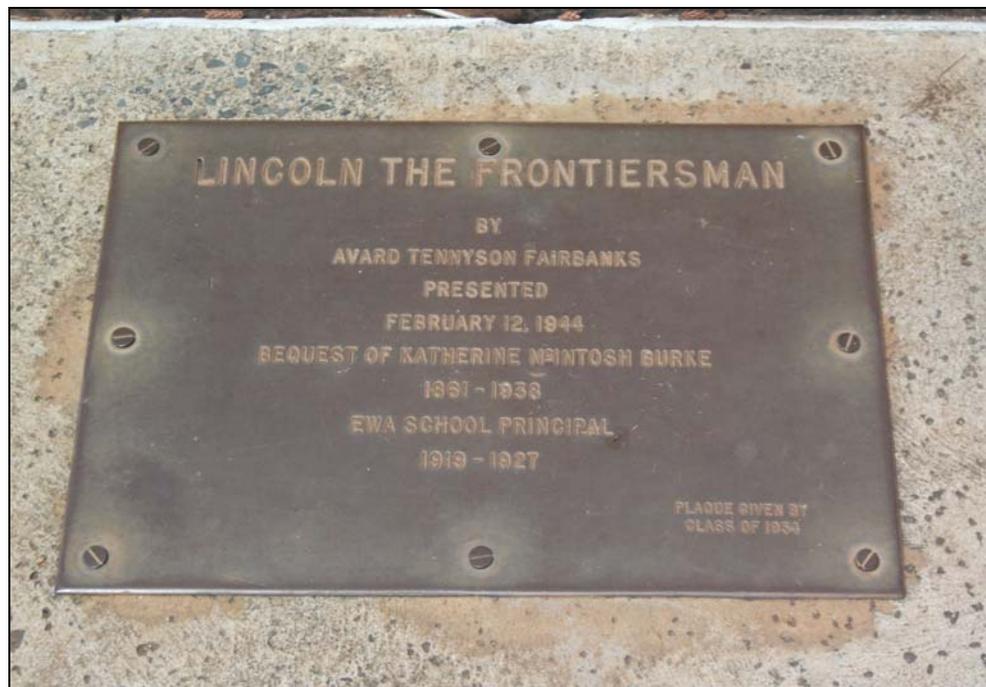


Figure 24. Plaque fronting Lincoln the Frontiersman at Ewa Elementary School (CSH photograph)



Figure 25. General view of southwest portion of project area along southwest edge of the Ewa School campus, view to northwest (CSH photograph)



Figure 26. General view of southwest portion of project area along southwest edge of the Ewa School campus, view to southeast (CSH photograph)



Figure 27. General view of northeast portion of project area, view to southeast (CSH photograph)



Figure 28. General view of northeast portion of project area, view to northeast (CSH photograph)

## Section 4 Summary and Recommendations

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At the request of Belt Collins Hawai'i, LLC, Cultural Surveys Hawai'i Inc. (CSH) completed an Archaeological Literature Review and Field Inspection for the 'Ewa Elementary School Eight Classroom Building Project, Honouliuli Ahupua'a, 'Ewa District, Island of O'ahu, Tax Map Key (TMK) [1] 9-1-017:002 por. The proposed project consists of adding an eight classroom building. The building is planned to contain: six general classrooms, one special education classroom, one computer resource services room, one faculty center, one conference room, two general utility rooms, student gang restrooms, and mechanical/ electrical/ communication rooms. The project will also include installation of underground utilities that will connect to existing utilities within the school site as well as to utilities adjacent to the southwest portion of the school site, extending across Pipeline Street to Bryan Street and Ala Nui Mauka Street.

The project area was part of the arid 'Ewa coastal plain in the pre-contact era. It was not densely inhabited or used for cultivation. In the late nineteenth century, the 'Ewa Plain was used for sugar cane cultivation, and the ground was disturbed, excavated, and filled with transported soils. The vicinity of the project area was developed for the sugar mill and ethnic workers camp, which soon became a true village, with schools, churches, and other community structures. The 'Ewa School was founded in 1892, and the 'Ewa Elementary School has been in its current location since the early 1920s.

Research in previous archaeological studies indicates that pre-contact cultural deposits and burials are uncommon in the vicinity of the project area. However, the project area is within 'Ewa Village, which was a post-contact village associated with the large-scale cultivation of sugar cane in the Hawaiian Islands. Ewa Elementary School falls within the Ewa Villages Historic District designated as SIHP 50-80-12-9786 and was placed on the Hawaii State Register of Historic Places on February 24, 1996. There may be early twentieth century construction and habitation refuse associated with village/community of this designated State Register historic district.

In a 1990 report on the Ewa Villages (Hammatt et al. 1990:36), an area that included the 'Ewa Elementary School location, CSH recommended that

. . . because of the historic preservation concern the project area has merited, we recommend that the issue of subsurface archaeology be explicitly raised with the SHPD office prior to the development of any land by the City and County upon which pre-WWII plantation structures are known to have existed. This would include the vicinity of Renton Village, Tenney Village, Varona Village, C Village, Mill Village, Middle Village, 'Ewa Mill, 'Ewa Elementary School, 'Ewa Station and the 'Ewa Japanese School site. It is anticipated that in many areas no subsurface archaeological reconnaissance would be deemed necessary and that short-term archaeological monitoring during construction would suffice in other areas but this recommendation should be made by the State Historic Sites Section or their designated suthorites.

In consideration of the land use history and previous finds reported from the vicinity, CSH would typically recommend no further archaeological work for the project. However, the SHPD

has been much more stringent lately in requirements for archaeological work – particularly within designated Register of Historic Properties sites. Early consultation with the SHPD regarding any possible archaeological requirements (such as the possible need for an archaeological monitoring program) is recommended.

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# APPENDIX D

## CULTURAL IMPACT ASSESSMENT



**Cultural Impact Assessment  
For the 'Ewa Elementary School  
Eight (8) Classroom Building Project,  
Honouliuli Ahupua'a, 'Ewa District, O'ahu Island  
TMK: [1] 9-1-017:002**

**Prepared for  
Belt Collins Hawaii LLC**

**Prepared by  
Emily Kandagawa, B.A.  
and  
Hallett H. Hammatt, Ph.D.**

**Cultural Surveys Hawai'i, Inc.  
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## Prefatory Remarks on Language and Style

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### **A Note about Hawaiian and other non-English Words:**

Cultural Surveys Hawai'i (CSH) recognizes that the Hawaiian language is an official language of the State of Hawai'i, it is important to daily life, and using it is essential to conveying a sense of place and identity. In this report, CSH uses italics to identify and highlight all foreign (i.e., non-English and non-Hawaiian) words. Italics are only used for Hawaiian words when citing from a previous document that italicized them. CSH parenthetically translates or defines in the text the non-English words at first mention, and the commonly-used non-English words and their translations are also listed in the Glossary (Appendix A) for reference.

### **A Note about Plant and Animal Names:**

When community participants mention specific plants and animals by Hawaiian, other non-English or common names, CSH provides their possible scientific names (Genus and species) in the Common and Scientific Names of Plants and Animals Mentioned by Community Participants (Appendix B). CSH derives these possible names from authoritative sources, but since the community participants only name the organisms and do not taxonomically identify them, CSH cannot positively ascertain their scientific identifications. CSH does not attempt in this report to verify the possible scientific names of plants and animals in previously published documents; however, citations of previously published works that include both common and scientific names of plants and animals appear as in the original texts.

## Management Summary

Reference	Cultural Impact Assessment (CIA) for the ‘Ewa Elementary School Eight (8) Classroom Building Project, Honouliuli Ahupua‘a, ‘Ewa District, O‘ahu Island, Tax Map Key (TMK) [1] 9-1-017:002
Date	December 2013
Project Number	CSH Job Code: HONOULIULI 76
Project Location	The Project area is located at ‘Ewa Elementary School, just north of the intersection of Pipeline Street and Renton Road in the ahupua‘a (land division usually extending from the uplands to the sea) of Honouliuli, ‘Ewa District, on the island of O‘ahu.
Land Jurisdiction	Government: Department of Accounting and General Services (DAGS)
Agencies	Department of Accounting and General Services (DAGS)
Project Description	<p>The Department of Education (DOE), State of Hawai‘i, is proposing to build an eight classroom building at the existing ‘Ewa Elementary School to address the current shortage of classrooms and alleviate additional anticipated overcrowding in the future.</p> <p>The proposed building will be located in the western corner of the school site, near Pipeline Street, and is planned to be a one-story structure. The Project will also include installation of underground utilities that will connect to existing utilities within the school site. The building is planned to contain the following: six general classrooms; one special education contained classroom; one computer resource services room; one faculty center; one conference room; two general utility rooms; student gang restrooms; and mechanical/electrical/communications rooms.</p>
Project Acreage	Approximately 9,120 square feet (ft <sup>2</sup> )
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. Belt Collins Hawai‘i LLC on behalf of DAGS requested CSH to conduct this CIA. Through document research and ongoing cultural consultation efforts, this report provides information pertinent to the assessment of the proposed Projects’ impacts to cultural practices and resources (per the <i>Office of Environmental Quality Control’s [OEQC] Guidelines for Assessing Cultural Impacts</i> ) which may include Traditional Cultural Properties (TCPs) of ongoing cultural significance that may be eligible for inclusion on the State Register of Historic Places, in accordance with Hawai‘i State Historic Preservation Statute (Chapter 6E) guidelines for significance criteria according to Hawai‘i Administrative Rules (HAR) §13–275 under Criterion E. The document is intended to support the Project’s environmental review and may also serve to support the Project’s historic preservation review under HRS Chapter 6E and HAR Chapter 13–275.

Consultation Effort	CSH attempted to contact Hawaiian organizations, agencies and community members in order to identify individuals with cultural expertise and/or knowledge of the Project area and the vicinity. Outreach included efforts to contact 46 individuals and agencies. The organizations consulted included the State Historic Preservation Division (SHPD), the Office of Hawaiian Affairs (OHA), the O'ahu Island Burial Council (OIBC), and Hui Mālama I Nā Kūpuna o Hawai'i Nei.
Results of Background Research	<p>Background research on the Project area and surrounding area of Honouliuli indicated the following results:</p> <ol style="list-style-type: none"> <li>1. The moku of 'Ewa was known as Ke 'Apana o 'Ewa. One of the most significant features "is its spacious coastal plain, surrounding the deep bays ("lochs") of Pearl Harbor, which are actually the drowned seaward valleys of 'Ewa's main streams, Waikele and Waipi'o." (Handy &amp; Handy 1972: 469) 'Ewa is also one of the best areas to grow gourds and was famous for its māmaki (used to make kapa clothing) and wiliwili. The area was also known for a rare kalo called Kāi o 'Ewa which was grown in marshy locations.</li> <li>2. The 'Ewa Plain consists of a flat, karstic raise limestone reef forming a level nearly featureless "desert" marked in pre-Contact times by a thin or non-existent soil mantle. The micro-topography is notable in containing countless sinkholes caused by chemical weathering of the limestone shelf. The shelf is overlain by alluvium deposited through a series of gulches draining the Wai'anae Mountains. The largest of these is Honouliuli Gulch which drains into West Loch.</li> <li>3. John Papa 'Ī'i describes a network of Leeward O'ahu trails (Figure 6), which in later historic times encircled and crossed the Wai'anae Range, allowing passage from West Loch to the Honouliuli lowlands, past Pu'u Kapolei and Waimānalo Gulch to the Wai'anae coast and onward circumscribing the shoreline of O'ahu ('Ī'i 1959:96-98).</li> <li>4. Pu'uloa (commonly known today as Pearl Harbor) is ideal for the construction of fishponds including Laulaunui, and its productivity is well recorded. The story of (Ka) Ihuopala'ai is also associated with the tradition of the 'anae-holo or traveling mullet. "The home of the anae-holo is at Honouliuli, Pearl Harbor, at a place called Ihuopalaai. They make periodical journeys around to the opposite side of the island, starting from Puuloa and going to windward, passing successively Kumumanu, Kalihi, Kou, Kalia, Waikiki, Kaalawai, and so on, around to the Koolau side, ending at Laie, and then returning by the same course to their starting point." (Thrum 1907:271-272)</li> </ol>

	<ol style="list-style-type: none"> <li>5. Honouliuli Ahupua‘a is the largest ahupua‘a unit in ‘Ewa and on the island of O‘ahu and includes all the land from the western boundary of Pu‘uloa (commonly known today as Pearl Harbor) extending to the ‘Ewa/Wai‘anae District boundary that extends to the summit of the Wai‘anae Mountain Range; with the exception of the west side of the ahupua‘a of Pu‘uloa (‘Ewa Beach/Iroquois Point). Honouliuli includes 12-miles (mi) of open coastline from One‘ula to Pili o Kahe and four mi of waterfront along the West Loch of Pearl Harbor. The ahupua‘a extends mauka from West Loch to Schofield Barracks in Wahiawā.</li> <li>6. Various Hawaiian legends and early historical accounts indicate that the ahupua‘a of Honouliuli was once widely inhabited by pre-Contact Hawaiian populations, including the Hawaiian ali‘i. “Koolina in Waimānalo near the boundary of ‘Ewa and Wai‘anae. This was a vacationing place for chief Kakuhihewa and the priest Napuaikamao was the caretaker of the place.” (Sterling and Summers 1978:41) This substantial population was supported by the plentiful marine and estuarine resources available at the coast, along which several sites interpreted as permanent habitations were located. Other attractive subsistence-related features of the ahupua‘a included irrigated lowlands suitable for wetland taro cultivation and the lower forest area of the mountain slopes, for the procurement of forest goods (Hammatt et al. 1990).</li> <li>7. Pu‘uokapolei is a prominent hill located on the ‘Ewa coastal plain and was the primary landmark for travelers on the trail that ran from Pearl Harbor to Wai‘anae. A heiau was once on the summit of the hill, however, during McAllister’s survey of O‘ahu it had been destroyed (McAllister 1933:108). The hill was also used as a point of solar reference or as a place for celestial observations that mark the winter and summer solstice. A ceremony at a heiau on Pu‘uokapolei provides a vantage point to capture the sun setting directly behind Pu‘ula‘ila‘i, a peak farther west in the Wai‘anae range. A coinciding ceremony at Kūpalaha Heiau in Waikīkī captures the same essence as the sun sets behind Pu‘uokapolei.</li> </ol>
<p>Results of Community Consultation</p>	<p>Of the 46 community members contacted, nine people responded. Six kūpuna (elder) and/or kama‘āina (Native born) participated in formal interviews for more in-depth contributions to the CIA. This community consultation indicates the following:</p> <ol style="list-style-type: none"> <li>1. The waters of Pu‘uloa provided an abundant marine resource according to Mr. Shad Kāne whose father often fished and hunted for crabs, collected shellfish, and gathered limu in the specific area of Pōhaku O Kāne which is located on the</li> </ol>

	<p>peninsula. Mr. Kāne's father also fished at the river mouths that flowed into the ocean such as Waimea Bay. Mr. Kāne has photographs that depict these fishing areas, however, most of these rivers he frequented no longer flow today. He also explains that although the fishponds and salt ponds that once dotted the area now known as Pearl Harbor, Mr. Kāne insists that the cultural history of the area still exists today, it is just filled in.</p> <ol style="list-style-type: none"> <li>2. The Project vicinity and environs are sources of plants that are valuable resources for food, medicine, ornamental and other uses. Mr. Tony Bise recalls plants that would grow in the sugar fields that were used for the practice of la'au lapa'au. He remembers heating up leaves and putting them on sores; and wild grasses that were boiled to make tea out of. Mr. Bise does not recall the names for these plants. Mr. Kāne recalls his mother speaking of lo'i kalo but cannot specifically point out where on the peninsula it was located. Mr. Kāne adds that the area's agricultural base include watercress and rice.</li> <li>3. The ancient trails in 'Ewa are an important part of the landscape as Mr. Kāne explains that the location of the 'Ewa Plantation Villages and modern day alignment of Renton Road and 'Ewa Sugar Mill was done in consideration of two trails from Kualaka'i to One'ula. These foot trails were once used by ancient Hawaiians to connect the mauka to makai relationships of Honouliuli.</li> <li>4. The cultural layers in recent years in 'Ewa has been severely disturbed by farming activities, construction and military expansion. Mr Kāne stresses the importance of the area and that "There are a lot of interesting things regarding all of Pu'uloa. Much of this area in 'Ewa Moku has been altered a lot. Compared to other places it is has been altered significantly by, and grew out of, a partnership between business interests, land owners and federal agencies... The ancient Hawaiian resources, due to the very nature of the alteration in the region, have not been removed. It has all been filled in. In other words, the cultural landscape within all of 'Ewa is still there. It is just buried. In other words, the cultural landscape within all of 'Ewa is still there. It is just buried. The stuff that was on the high ground, where they planted sugar cane and pineapple is gone. Within the valleys, the low-lying areas, the wetlands adjacent to Pearl Harbor, from 'Ewa Beach to 'Aiea, much of that cultural landscape—the cultural layer—is still in place. The Navy and the DOD [Department of Defense] are beginning to understand the importance of preservation and our history. They are realizing it is not just a history of the DOD within Pearl Harbor;</li> </ol>
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	<p>it is a history of all the many cultures that live here. No better place than ‘Ewa because there is a lot here. These guys, Tin Hu Young, the Colburns, and Don Francisco de Paula Marin, were a big part of this history. They were from other places, making it a very colorful place that tries to integrate many histories into one.”</p> <p>5. Community participants shared their knowledge of various locations of burials:</p> <ul style="list-style-type: none"> <li>a) Mr. Kāne notes that a portion of the Kualaka‘i Trail is part of Kalaeloa Heritage Park (KHP). A two acre (ac) portion within the KHP, adjacent to the Kualaka‘i Trail has been cleared and is used as an interpretive trail. There are seven identified Hawaiian burials within this two acre portion. Mr. Kāne states that there is a likelihood of burials that can be found on the entire route of the trail including the portion of the Project area. All burials in this area are within the karst and sinkholes of the ‘Ewa Plain.</li> <li>b) Mr. Bise asserts there are no burials near the ‘Ewa Mahiko District Park. He recalls working in the agricultural fields and seeing three graves amongst the sisal.</li> <li>c) Ms. Lorna Pico and Mr. Stanley Tamashiro note that the surrounding areas of the schools were occupied by sugar cane fields, so there are no burials that they know of. However, they note that there may have been burials long before the plantation era beneath the Project area.</li> </ul>
<p>Recommendations</p>	<p>Based on the information gathered from archival documents, from the companion archaeological inventory survey (Shideler and Hammatt 2012), and from community consultation detailed in the CIA report, CSH recommends the following measures for the proposed Project to mitigate potentially adverse effects on cultural, historic and natural resources, practices, and beliefs:</p> <ul style="list-style-type: none"> <li>1. CSH recommends that, should historic, cultural or burial sites or artifacts be identified during ground disturbance, the personnel involved with construction activities of the Project should immediately cease all work and the appropriate agencies notified pursuant to applicable law. In the event of discoveries of burials during Project construction activities, recognized cultural and lineal descendants should be notified and consulted on matters of burial treatment. Additionally, CSH recommends that cultural and lineal descendants be granted access rights to iwi kupuna to conduct traditional and customary burial practices on-site.</li> </ul>

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## Section 1 Introduction

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### 1.1 Project Background

At the request of Belt Collins Hawai‘i LLC on behalf of the Department of Accounting and General Services (DAGS), Cultural Surveys Hawai‘i, Inc. (CSH) is conducting this Cultural Impact Assessment (CIA) for the proposed ‘Ewa Elementary School Eight (8) Classroom Building Project, Honouliuli Ahupua‘a, ‘Ewa District, O‘ahu Island (Tax Map Key [TMK]: [1] 9-1-017:002). The ‘Ewa Elementary School Project property is located at the intersection of Pipeline Street and Renton Road. The Project area and survey area are shown on a U.S. Geological Survey topographic map (Figure 1), an aerial photograph (Figure 2), and a TMK map (Figure 3 and Figure 4).

The Department of Education (DOE), State of Hawai‘i, is proposing to build an eight classroom building at the existing ‘Ewa Elementary School to address the current shortage of classrooms and alleviate additional anticipated overcrowding in the future. The proposed building will be located in the western corner of the school site, near Pipeline Street, and is planned to be a one-story structure. The Project will also include installation of underground utilities that will connect to existing utilities within the school site. The building is planned to contain the following: six general classrooms; one special education contained classroom; one computer resource services room; one faculty center; one conference room; two general utility rooms; student gang restrooms; and mechanical/electrical/communications rooms.

### 1.2 Document Purpose

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

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

The document is intended to support the Project’s environmental review and may also serve to support the Project’s historic preservation review under HRS Chapter 6E and HAR Chapter 13-275.

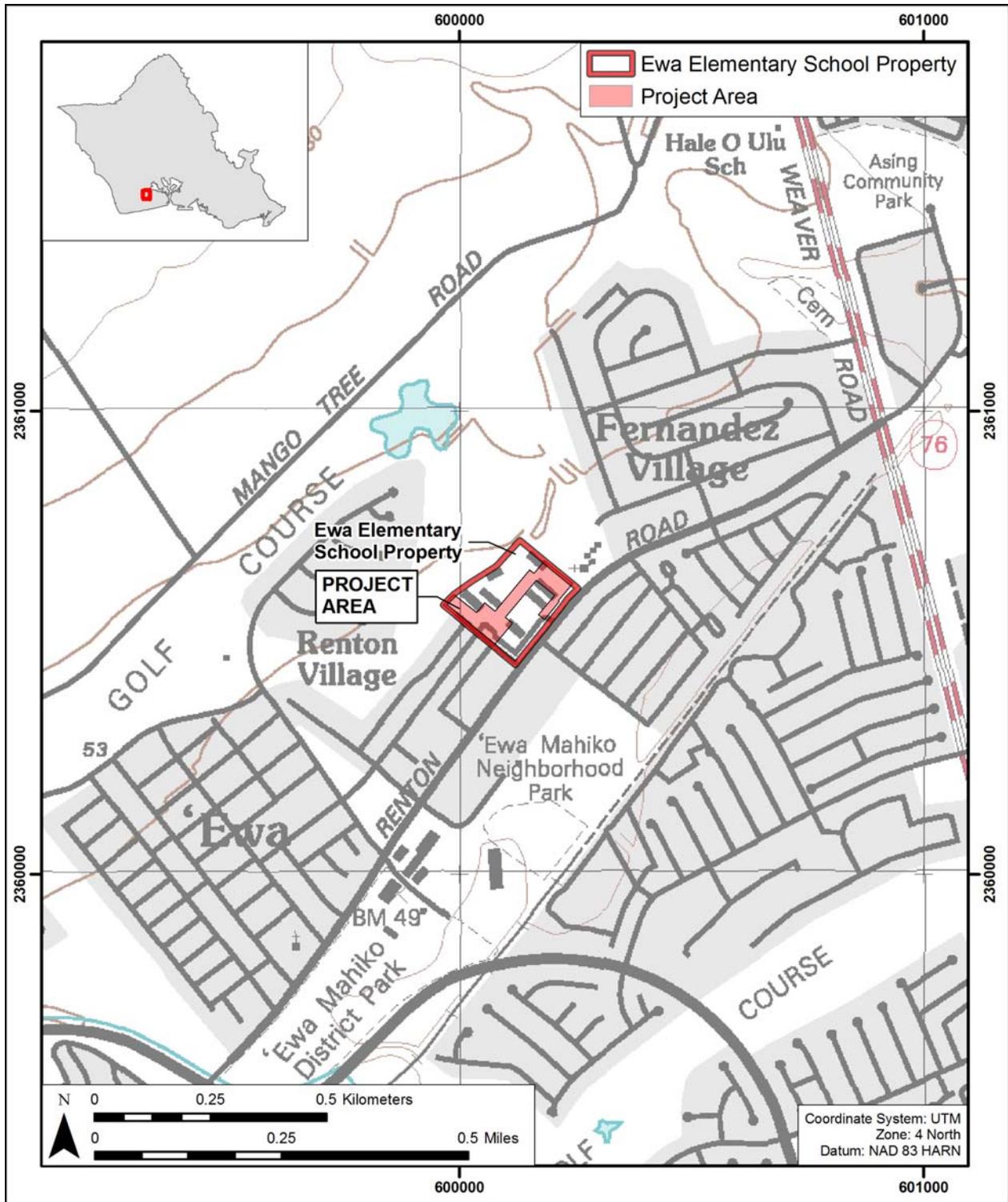


Figure 1. Portion of U.S. Geological Survey 7.5-Minute Series Topographic Map, 'Ewa Quadrangle (1998), showing the location of the Project area



Figure 2. 2007 Google Earth Aerial photograph, showing the location of the Project area

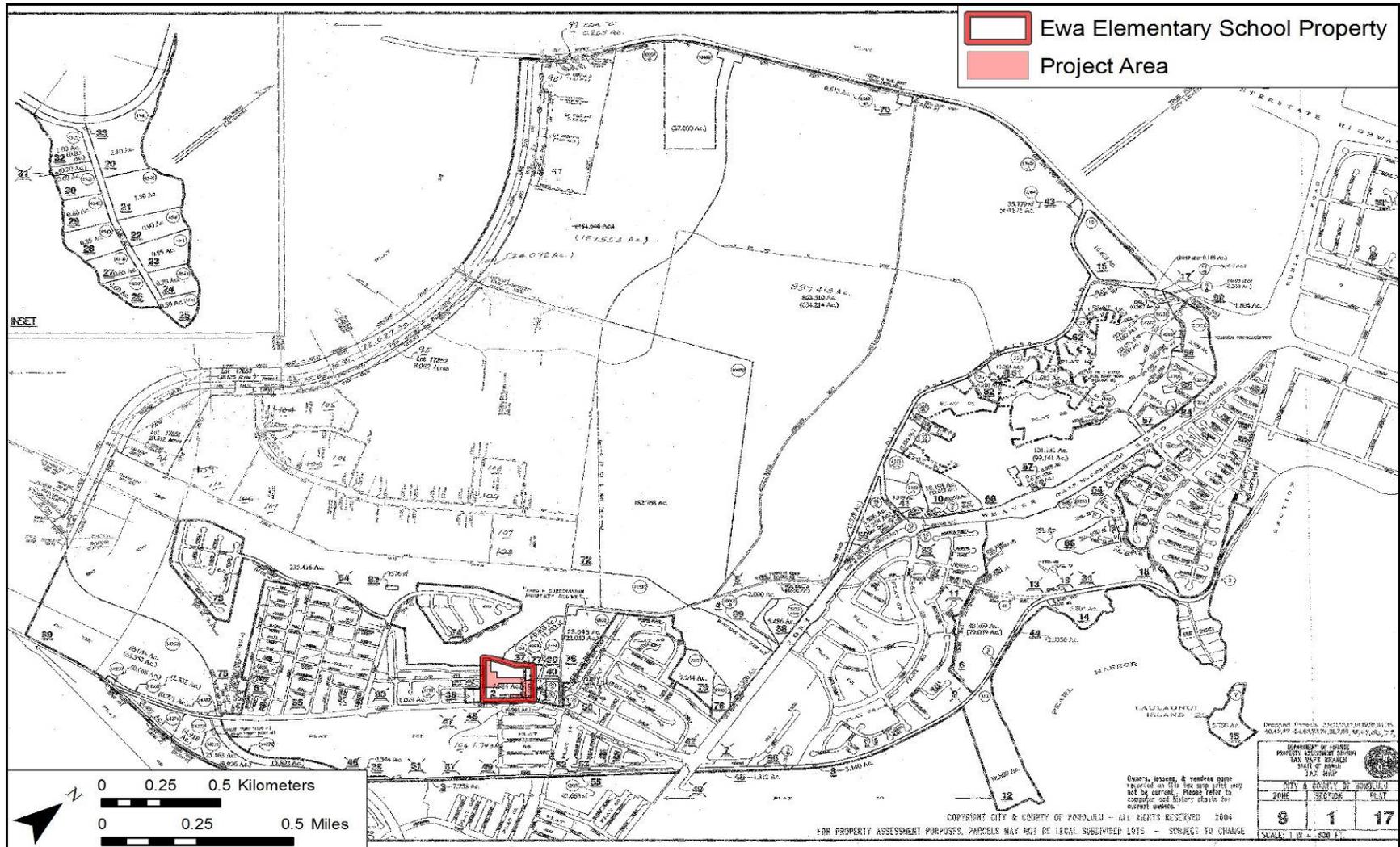


Figure 3. TMK [1] 9-1-017:002 of the Project area (Hawai'i Tax Map Key Service 2012)

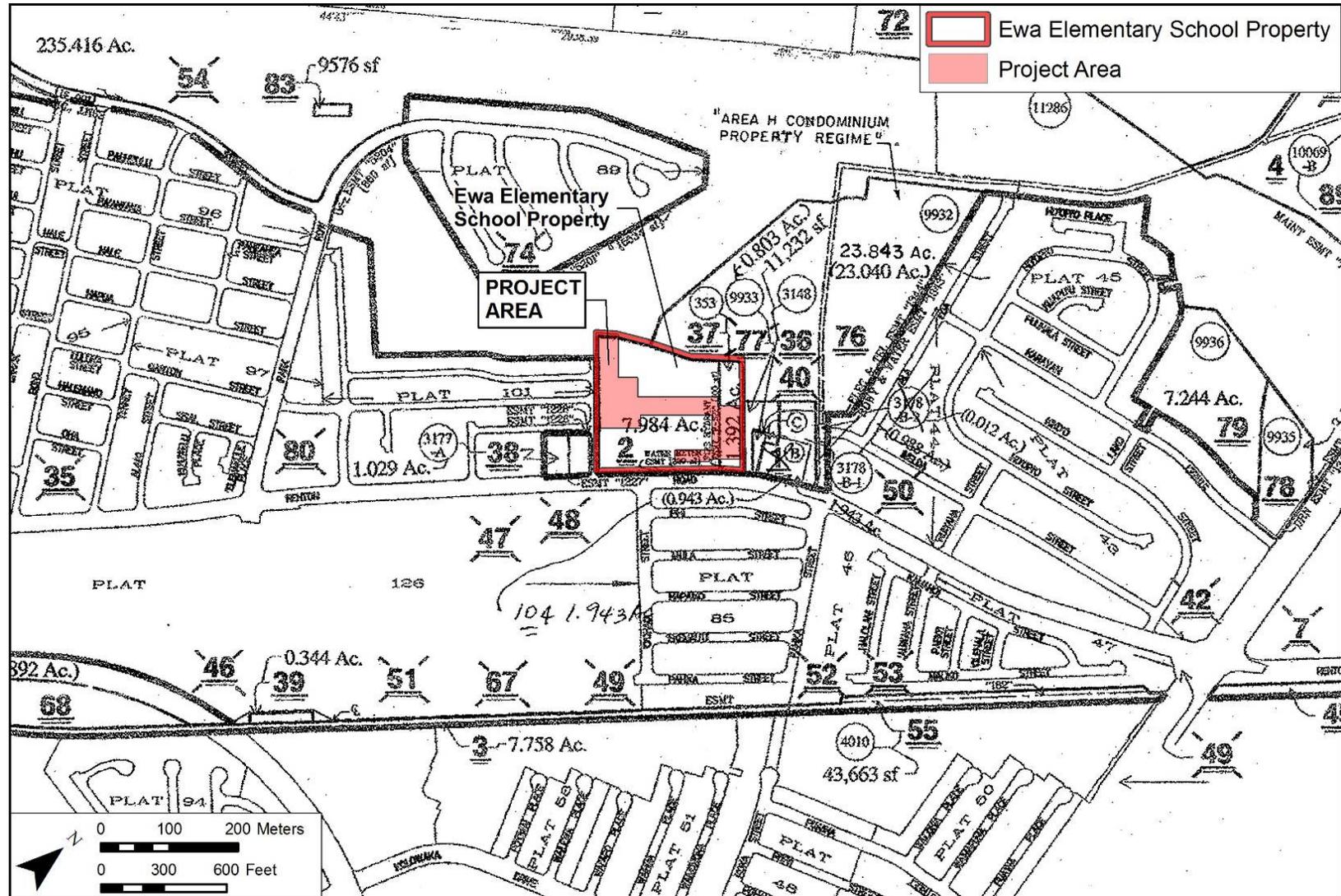


Figure 4. Close up of TMK [1] 9-1-017:002 with Project area

## 1.3 Scope of Work

The scope of work for this CIA includes:

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

Review of previous archaeological work at and near the subject parcel that may be relevant to reconstructions of traditional land use activities; and to the identification and description of cultural resources, practices and beliefs associated with the parcel.

Consultation and interviews with knowledgeable parties regarding cultural and natural resources and practices at or near the parcel; present and past uses of the parcel; and/or other practices, uses, or traditions associated with the parcel and environs.

Preparation of a report that summarizes the results of these research activities and provides recommendations based on findings.

## 1.4 Environmental Setting

### 1.4.1 Natural Setting

The Project area is located on the 'Ewa Plain, in the southwest region of O'ahu. The 'Ewa Plain is a Pleistocene (>38,000 years old) reef platform overlain by alluvium from the southern end of the Wai'anae Mountain Range. This alluvium supported commercial sugar cane cultivation in the vicinity of the Project area for over a century. According to US Department of Agriculture (USDA) soil survey data (Foote et al. 1972), sediments within the Project area consist of Honouliuli Clay (HxA). Soils of the Honouliuli Series are described as "well-drained soils on coastal plains on the island of Oahu in the 'Ewa area...developed in alluvium derived from basic igneous material," with Honouliuli Clay occurring "in the lowlands along the coastal plains" (Foote et al. 1972). Lands within the Project area are level to gently sloping, with elevations ranging from 12-15 meters (m) (40-50 feet [ft]) above mean sea level (AMSL) (Figure 5).

Other soil types within the vicinity of the Project area include Ewa silty clay loam (EmA, moderately shallow, 0 to 2 percent slopes), Honouliuli Clay (HxB, 2 to 6 percent slopes), Mamala stony silty clay loam (MnC, 0 to 12 percent slopes), and water (W).

The Ewa Series consists of well-drained soils in basins on alluvial fans (Foote et al. 1972:29). These soils are used for sugarcane, truck crops, and pasture. Natural vegetation consists of fingergrass, kiawe (Algaroba), koa haole, klum and 'uhaloa.

The Mamala Series consists of shallow, well-drained soils along the coastal plains on the islands of O'ahu and Kaua'i (Foote et al. 1972:93). These soils formed in alluvium deposited over coral limestone and consolidated calcareous sand. They are nearly level to moderately sloping. Elevations range from sea level to 100 ft on O'ahu and annual rainfall occurs between November to April yielding 18 to 25-inches (in) of rain. These soils are also used for sugarcane,

truck crops, orchards, and pasture. Natural vegetation consists of kiawe, koa haole, bristly foxtail, and swollen fingergrass.

Located in leeward O'ahu, the Project area is one of the driest areas on O'ahu, averaging approximately 460 millimeters (mm) (18 in) of annual rainfall (Giambelluca et al. 1986). In pre-Contact times the vicinity of the Project area would have consisted of a lowland dry shrub and grassland environment, but the area has been extensively disturbed and transformed by human activity, including sugar cane cultivation and modern development. Vegetation within the Project area presently consists of an actively maintained grass lawn.

### **1.4.2 Built Environment**

The Project area has been altered by historic and modern land uses, including sugar cane cultivation and plantation village development. Development in the surrounding area generally consists of single-family and low-rise condominium residential structures. The Project area is located within the historic 'Ewa Villages plantation village area, specifically between Renton Village and Fernandez Village. The 'Ewa Mahiko Neighborhood Park is south of the Project area. The modern 'Ewa Gentry residential subdivision is located to the southeast of the Project

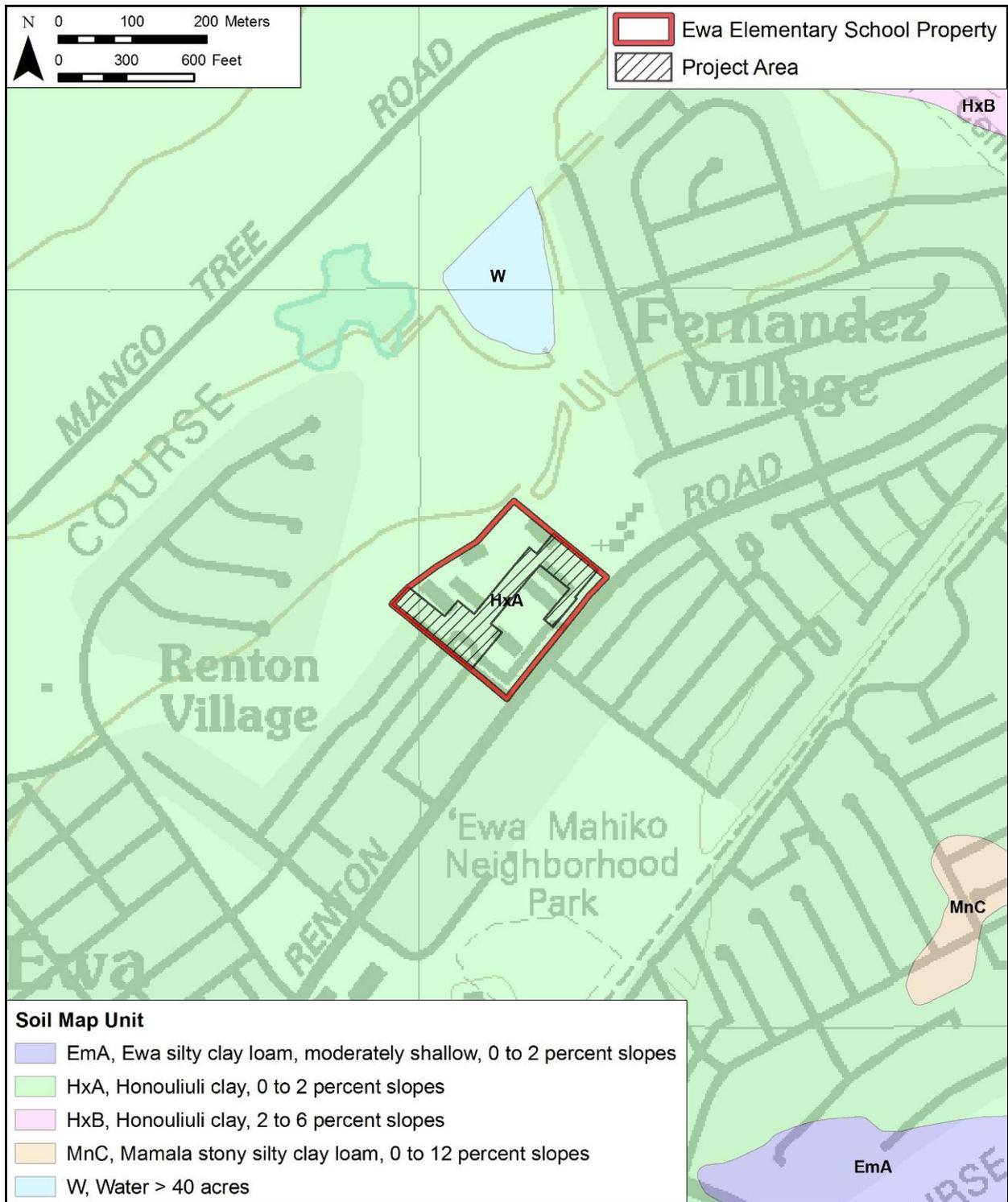


Figure 5. Overlay of Soil Survey of the State of Hawai'i (Foote et al. 1972) showing sediment types within the Project area (base map U.S. Geological Survey 7.5-Minute Series Topographic Map (1998), 'Ewa Quadrangle )

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## Section 2 Methods

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### 2.1 Archival Research

Historical documents, maps, and existing archaeological information pertaining to Honouliuli were researched at the CSH library and other archives including the University of Hawai'i at Mānoa's Hamilton Library, the State Historic Preservation Division (SHPD) library, the Hawai'i State Archives, the State Land Survey Division, and the archives of the Bernice Pauahi Bishop Museum (BPBM). Previous archaeological reports for the area were reviewed, as were historic maps and photographs and primary and secondary historical sources. Information on Land Commission Awards (LCAs) was accessed through Waihona 'Aina Corporation's Māhele Data Base ([www.waihona.com](http://www.waihona.com)) as well as a selection of CSH library references. Research for the Cultural and Historical Background section centered on the following cultural and historic resources, practices and beliefs: religious and ceremonial knowledge and practices; traditional subsistence land use and settlement patterns; gathering practices and agricultural pursuits; wahi pana (storied places) and associated mo'olelo (stories, oral traditions), mele (songs), oli (chants), and 'ōlelo no'eau (proverbs); and historic land transformation, development, and population changes (see Scope of Work in Section 1.3).

### 2.2 Community Consultation

#### 2.2.1 Sampling and Recruitment

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

We begin with purposive sampling informed by referrals from known specialists and relevant agencies. For example, we contacted the SHPD, Office of Hawaiian Affairs (OHA), O'ahu Island Burial Council (OIBC), and community and cultural organizations in Honouliuli for their brief response/review of the Project and to identify potentially individuals with cultural expertise and/or knowledge of the Project area and vicinity, and other appropriate community representatives and members. Based on their in-depth knowledge and experiences, these key respondents then referred CSH to additional potential participants who were added to the pool of invited participants. This is snowball sampling, a chain referral method that entails asking a few key individuals (including agency and organization representatives) to provide their comments and referrals to other locally recognized experts or stakeholders who would be likely candidates for the study (Bernard 2006:192). CSH also employs expert or judgment sampling which involves assembling a group of people with recognized experience and expertise in a specific area (Bernard 2006:189–191). CSH maintains a database that draws on over two decades of

established relationships with community consultants: cultural practitioners and specialists, community representatives, and cultural and lineal descendants. The names of new potential contacts are also provided by colleagues at CSH and from the researchers' familiarity with people who live in or around the study area. Researchers often attend public forums (e.g., Neighborhood Board, Burial Council and Civic Club meetings) in (or near) the study area to scope for participants. Please refer to Table 1, Section 5 , for a complete list of individuals and organizations contacted for this CIA.

CSH focuses on obtaining in-depth information with a high level of validity from a targeted group of relevant stakeholders and local experts. Our qualitative methods do not aim to survey an entire population or subgroup. A depth of understanding about complex issues cannot be gained through comprehensive surveying. Our qualitative methodologies do not include quantitative (statistical) analyses, yet they are recognized as rigorous and thorough. Bernard (2006:25) describes the qualitative methods as "a kind of measurement, an integral part of the complex whole that comprises scientific research." Depending on the size and complexity of the project, CSH CIA reports include in-depth contributions from about one-third of all participating respondents. Typically this means three to 12 interviews.

### **2.2.2 Informed Consent Protocol**

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

### **2.2.3 Interview Techniques**

To assist in discussion of natural and cultural resources and cultural practices specific to the study area, CSH initiates semi-structured interviews (as described by Bernard 2006) asking questions from the following broad categories: cultivation, gathering practices and mauka (inland) and makai (seaward) resources, burials, trails, historic properties, and wahi pana. The interview protocol is tailored to the specific natural and cultural features of the landscape in the study area identified through archival research and community consultation. These interviews and oral histories supplement and provide depth to consultations from government agencies and

community organizations that may provide brief responses, reviews and/or referrals gathered via phone, email, and occasionally face-to-face commentary.

### *2.2.3.1 In-depth Interviews and Oral Histories*

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

## **2.3 Compensation and Contributions to Community**

Many individuals and communities have generously worked with CSH over the years to identify and document the rich natural and cultural resources of these islands for cultural impact, ethno-historical and, more recently, TCP studies. CSH makes every effort to provide some form of compensation to individuals and communities who contribute to cultural studies. This is done in a variety of ways: individual interview participants are compensated for their time in the form of a small honorarium and/or other makana (gift); community organization representatives (who may not be allowed to receive a gift) are asked if they would like a donation to a Hawaiian charter school or nonprofit of their choice to be made anonymously or in the name of the individual or organization participating in the study; contributors are provided their transcripts, interview summaries, photographs and—when possible—a copy of the CIA report; CSH is working to identify a public repository for all cultural studies that will allow easy access to current and past reports; CSH staff do volunteer work for community initiatives that serve to preserve and protect historic and cultural resources (for example in Lāna'i and Kaho'olawe). Generally our goal is to provide educational opportunities to students through internships, share our knowledge of historic preservation and cultural resources and the State and Federal laws that guide the historic preservation process, and through involvement in an ongoing working group of public and private stakeholders collaborating to improve and strengthen the Chapter 343 environmental review process.

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## Section 3 Traditional Background

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This section draws from archaeology, ethnography, and an archive of historic documents to present a portrait of Hawaiian culture and history as it relates to the specific Project area. Focusing in on geographic and temporal scales, this section first traces the exploration of the Pacific Ocean and the subsequent discovery and settlement of the Hawaiian archipelago, the opening and closing of a voyaging corridor between Hawai'i and Tahiti, and later cultural changes and distinctive Hawaiian innovations that are reflected in the archaeological record, including expansion into marginal environments, exponential population growth, intensification of production, increased social stratification, and territorial division of land. This broad overview leads to an approximate chronological history of the ahupua'a (land division usually extending from the uplands to the sea) of the Project area, including the earliest known settlement and subsistence patterns, a compilation of wahi pana and associated mo'olelo, successions of chiefly rule, the introduction of private property, plantation eras, the Pacific theatre of World War II, and contemporary land use.

### 3.1 Discovery and Settlement of the Hawaiian Islands

Ten thousand years ago, humans had migrated to occupy nearly all the habitable land on the planet. Aside from crossing a series of short water gaps to reach Australia and New Guinea, they had reached it all by walking. The remaining unexplored region was the vast Pacific Ocean. Approximately 4,500 years ago, coastal dwellers of southeast China began a wave of migration through the closely-spaced, inter-visible islands of Southeast Asia. Advances in sailing strategies, canoe technology, and navigation techniques enabled their descendents to sail past the familiar insular waters a millennium later. These precocious seafarers systematically explored the remote, uninhabited regions of the Pacific Ocean to the east, as well as the Indian Ocean to the west. This led to the eventual discovery and colonization of virtually every habitable island in the Pacific Ocean, as well as coastal trading along the Indian sub-continent and settlement as far west as Madagascar (Howe 2007; Irwin 2007).

The ancient wayfinders most likely employed an expansionary strategy of first staging a series of exploratory probes to find likely islands, followed by returns to the homeland, and then launching colonizing expeditions (Irwin 1992). To do so, they sailed their double-hulled voyaging canoes eastward against the direction of the dominant trade winds by waiting for westerly wind shifts. After mentally mapping the positions of newly discovered islands in terms of celestial referents, they returned to their homelands to share the sailing directions for future voyages of colonization (Finney 1996). As most of the Pacific Islands are volcanic in origin, the exploratory seafarers, also horticulturalists, by necessity transported a landscape of plants. They brought with them taro, yams, breadfruit, bananas, and coconuts, as well as domesticated pigs, dogs, and chickens, and, possibly with intention, rats (Irwin 2007; Kirch 2000).

Later voyagers discovered and settled the distant archipelagoes of western Polynesia (e.g., Samoa, Tonga, and Fiji), the northwestern archipelagoes of Micronesia (e.g., Marshall Islands and Caroline Islands), and eastern Polynesia (e.g. Tahiti and Marquesas), and from there settled the widely-separated archipelagoes of Hawai'i and Aotearoa as well as the solitary island of Rapa Nui (Irwin 2007; Kirch 2000). Finney (2007:145) suggests that a waxing and waning

rhythm of voyaging characterized the large, high-island archipelagoes of eastern Polynesia: “a flurry of back and forth sailings as the islands are being discovered, settled and supplied; then some continued long-range travel for personal, religious or other reasons; and then by a contraction of voyaging as populations grew and rival chiefdoms fought over land and power.”

Archeological excavations, linguistic reconstructions, and genetic studies suggest that the initial settlement of Hawai'i came from eastern Polynesia as early as A.D. 300–600 (Kirch 2000:291) or as late as A.D. 700–800 (Athens et al. 2002). Mo'olelo link Hawai'i to Kahiki – the ancestral homeland of Hawaiians, thought to be any land beyond the horizon – through accounts of the discovery of certain Hawaiian islands and subsequent inter-archipelago return trips (Beckwith 1970). The first settlers of Hawai'i from within the region of Kahiki were probably from the Marquesas Islands (Kirch 2000:291). The archaeological record suggests that early Hawaiians formed settlements of hamlets along the coasts, interred the dead, ate domesticated pigs, dogs, and chickens, and began to clear tracts of forest between A.D. 600–1100 (Kirch 2000:293).

Archaeological excavation data from one site in particular – the Bellows Beach sand dune occupation site in Waimānalo – indicate that Hawaiian settlers and their descendents, like their east Polynesian ancestors, lived in pole-and-thatch dwellings, interred the dead beneath these structures, cooked in small hearths, and manufactured stone tools as well as bone and shell fishhooks, and supported themselves by cultivating inland crops, raising domesticated animals, hunting seabirds on offshore islets, fishing, and gathering shellfish. As they adapted to local conditions, they invented distinctive Hawaiian artifacts, including two-piece fishhooks and the lei niho palaoa (whale tooth garland), which, in addition to other ornaments interred with individuals, suggests a degree of social stratification (Kirch 1985:71–74).

### 3.2 Expansion and Intensification

The archaeological record suggests that Hawaiians experienced exponential population growth, intensification of production, and increased social stratification around A.D. 1100–1650. Hawaiians converted valley floors and hillsides to lo'i (irrigated terraces) with 'auwai (stone-lined canals and ditches) that diverted stream water to irrigate kalo (taro) and other crops in flooded pond fields, developed dryland field systems for the cultivation of 'uala (sweet potato) and other crops, and constructed stone-walled loko i'a (fishponds) on shallow reef flats to grow and harvest fish (Kirch 2000:293–295). By A.D. 1600, the population, which had burgeoned to at least several hundred thousand people, expanded from the fertile windward regions into the most arid and marginal regions of the archipelago—the leeward valleys and coasts (Kirch 2007). This agricultural and aquacultural intensification supported emerging classes of ali'i (chiefs) and maka'āinana (commoners), whose labor created enduring heiau (place of worship) and other monuments that survive in the archaeological record (Kirch 2000:295–296).

The original settlers and their descendents had likely organized themselves into kin-based social groups. The necessity of defining territorial boundaries increased as the population rapidly grew, the amount of available land diminished, voyaging spheres contracted, and the society became more differentiated, hierarchical, and competitive (Kirch 1985:306). The original lineage territories and associated chiefdoms were most likely moku'āina, or moku (districts), that were sequentially divided (Ladefoged and Graves 2006). Between A.D. 1400–1500, Hawaiians

developed a system of land tenure that centered on the ahupua'a, a territorial unit that typically extended from the peaks of the mountains down to the sea, encompassing the entire ecology of an island and incorporating its main resource zones, including interior uplands and mountains, coastal lowlands, and fringing reefs (Kirch 2000:296). The maka'ainana remained on the land they cultivated, but ali'i now governed this ahupua'a pattern of territorial units. These ahupua'a territories changed through time; the regions in a moku with greater predictability of resources were most likely settled first and defined according to topographic features, and later divided into separate communities if increases in production could support larger populations (Ladefoged and Graves 2006).

### 3.3 Honouliuli Ahupua'a

The Project area is situated on the 'Ewa Plain, in the lowlands of Honouliuli Ahupua'a in the moku of 'Ewa. The ahupua'a of Honouliuli is the largest traditional land unit on the island of O'ahu. Honouliuli includes all the land from the western boundary of Pearl Harbor (Pu'uloa) westward around the southwest corner of O'ahu to the 'Ewa/Wai'anae District Boundary, with the exception of the west side of the harbor entrance which is in the ahupua'a of Pu'uloa ('Ewa Beach/Iroquois Point). Honouliuli Ahupua'a includes approximately 19 kilometers (km) (12 mi) of open coastline from One'ula westward to the boundary known as Pili o Kahe. The ahupua'a extends mauka from West Loch nearly to Schofield Barracks in Wahiawā. The western boundary of the ahupua'a follows the summit of the Wai'anae Mountain Range, running north as far as Pu'u Hapapa.

Not only does Honouliuli Ahupua'a include a long coastline fronting the normally calm waters of leeward O'ahu, but there is also four miles (mi) of waterfront along the west side of West Loch. The land immediately mauka of the Pacific coast consists of a flat karstic raised limestone reef forming a level nearly featureless "desert" plain marked in pre-Contact times (previous to illuviation caused by sugar cultivation) by a thin or non-existent soil mantle. The micro-topography is notable in containing countless sinkholes caused by chemical weathering (dissolution) of the limestone shelf. Proceeding mauka from this limestone plain, this shelf is overlain by alluvium deposited through a series of gulches draining the Wai'anae Mountains. The largest of these is Honouliuli Gulch towards the east side of the plain which drains into West Loch. To the west are fairly steep gradient gulches forming a more linear than dendritic drainage pattern. These gulches are steep-sided in the uplands and generally of a high gradient until they emerge onto the flat 'Ewa Plain. The alluvium they have carried has spread out in delta fashion over the mauka portions of the plain, which comprises a dramatic depositional environment at the stream gradient change. These gulches are generally dry, but during seasonal Kona storms carry immense quantities of runoff onto the plain and into the ocean (Tuggle and Tomonari-Tuggle 1997:12). As typical drainages in arid slopes they are either raging uncontrollably, or are dry and as such do not form stable water sources for traditional agriculture in their upper reaches. The Honouliuli gulches, in contrast to those draining into Pearl Harbor to the east, generally do not have valleys suitable for extensive irrigated agriculture. However, this lack is more than compensated by the rich watered lowlands of the base of Honouliuli Gulch (i.e. the 'ili of Honouliuli).

Various Hawaiian legends and early historical accounts indicate that the ahupua'a of Honouliuli was once widely inhabited by pre-Contact Hawaiian populations, including the

Hawaiian ali'i. This substantial population was supported by the plentiful marine and estuarine resources available at the coast, along which several sites interpreted as permanent habitations were located. Other attractive subsistence-related features of the ahupua'a included irrigated lowlands suitable for wetland taro cultivation and the lower forest area of the mountain slopes, for the procurement of forest goods (Hammatt et al. 1990). Exploitation of the forest resources along the slopes of the Wai'anae Range - as suggested by Handy and Handy - probably acted as a viable subsistence alternative, particularly during times of famine:

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

These upper valley slopes may have also been a significant resource for opportunistic quarrying of basalt for the manufacturing of stone tools. This is evidenced in part by the existence of a probable quarrying site that is part of the State Inventory of Historic Properties (SIHP). SIHP #50-80-12-4322 is located on the lower ledge of the east ridge line of Makaīwa Gulch at 122 m (400 ft) elevation (Hammatt et al. 1991).

The Hawaiian ali'i were also attracted to the region. One historical account of particular interest refers to an ali'i residing in Ko'olina:

Koolina is in Waimānalo near the boundary of 'Ewa and Wai'anae. This was a vacationing place for chief Kakuhihewa and the priest Napuaikamao was the caretaker of the place. Remember Reader; this Koolina is not situated in the Waimānalo on the Koolau side of the island but the Waimānalo in 'Ewa. It is a lovely and delightful place and the chief; Kakuhihewa loved this home of his (Sterling and Summers 1978:41).

John Papa 'Ī'i describes a network of Leeward O'ahu trails (Figure 6), which in later historic times encircled and crossed the Wai'anae Range, allowing passage from West Loch to the Honouliuli lowlands, past Pu'u Kapolei and Waimānalo Gulch to the Wai'anae coast and onward circumscribing the shoreline of O'ahu ('Ī'i 1959:96-98).

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

Subsequent to Western contact in the area, the landscape of the 'Ewa plains and Wai'anae slopes was adversely affected by the removal of the sandalwood and other trees, and the introduction of domesticated animals and new vegetation. Goats, sheep, and cattle were brought to the Hawaiian Islands by Vancouver in the early 1790s and were allowed to graze freely about the land for some time after. L.A. Henke reports the existence of a longhorn cattle ranch in Wai'anae by at least 1840 (Frierson 1972:10). During this time, perhaps as early as 1790, exotic plant species were introduced to the area. These typically included vegetation best suited to a terrain disturbed by the logging of sandalwood forest and eroded by animal grazing. The kiawe

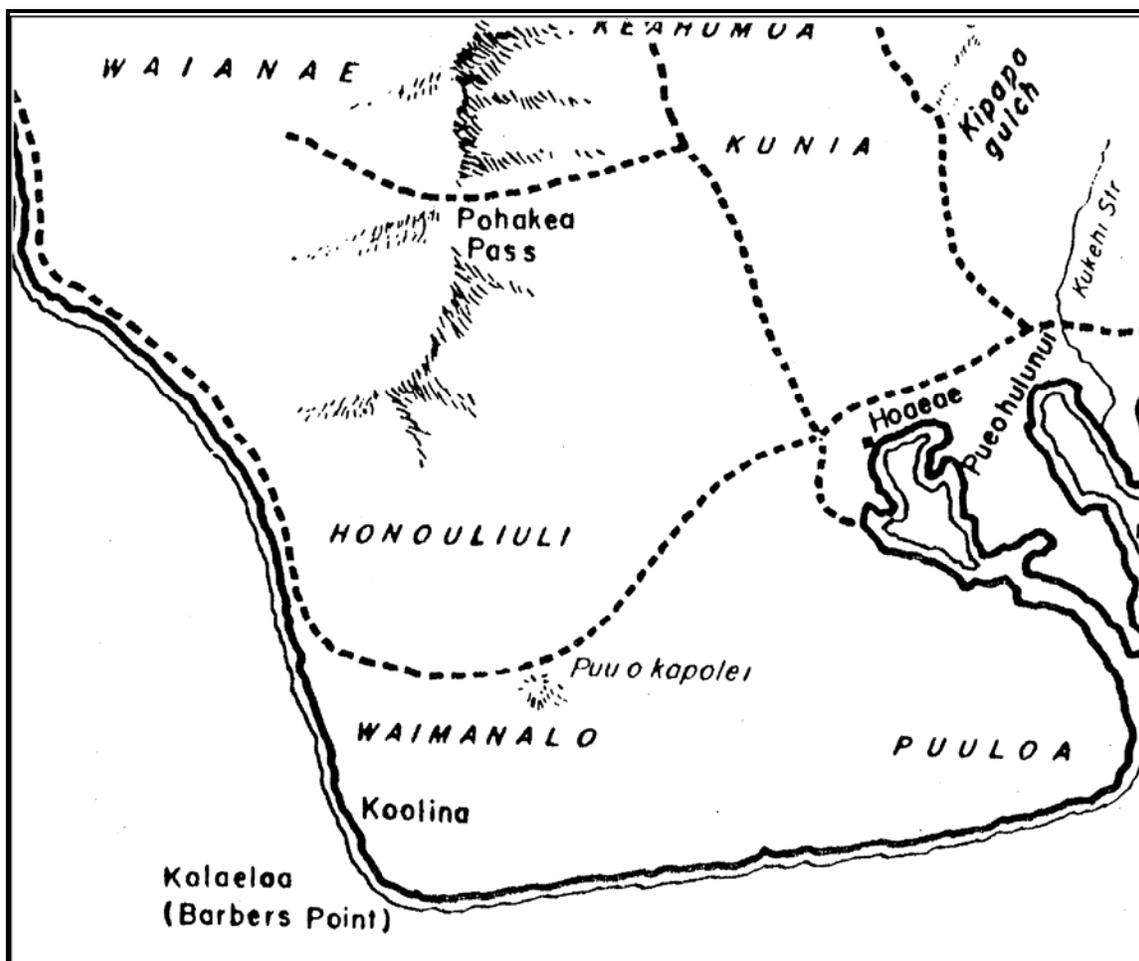


Figure 6. Map by Paul Rockwood showing trails of Leeward O'ahu ca. 1810, as described by John Papa 'I'i (1959:96)

tree was introduced during this period, either in 1828 or 1837 (Frierson 1972:11). The following dates of other introduced vegetation are given by R. Smith and outlined by Frierson (1972:10-11):

“early,” circa 1790:

Prickly pear cactus, *Opuntia tuna*

Haole koa, *Leucaena leucocephala*

Guava, *Psidium guajava*

1835-1840:

Burmuda [sic] grass, *Cynodon dactylon*

Wire grass, *Eleusine indica*

1858:

Lantana, *Lantana camara*

### 3.4 Wahi Pana and Mo'olelo

Honouliuli is associated with a number of legendary accounts. Many of these concern the actions of akua (gods) such as Kāne; Kanaloa; Māui; Kamapua'a, the pig god; and Maunauna, the shark deity. There are several references to chiefly lineages and to the ruling chiefs Hilo-a-Lakapu and Kūali'i. Ko'olina is reported to have been a vacationing place for Kākūhihewa.

The traditions of Honouliuli Ahupua'a have been compiled and summarized numerous times by Sterling and Summers (1978), Hammatt and Folk (1981), Kelly (1991), Tuggle and Tomonari-Tuggle (1997), and others. Some of the themes of these traditions include connections with Kahiki and the special character and relationship of the places known as Pu'uokapolei and Kualaka'i. There are several versions of the chief Kaha'i leaving from Kalaeloa for a trip to Kahiki. On his return to the Hawaiian Islands he brought back the first breadfruit (Kamakau 1991a:110) and planted it at Pu'uloa, near Pearl Harbor in 'Ewa (Beckwith 1970:97). Several stories associate places in Honouliuli to the gods Kāne and Kanaloa; with the Hawaiian pig god Kamapua'a and the Hina family; and with the sisters of Pele, the Hawaiian volcano goddess; all of who have strong connections with Kahiki (Kamakau 1991a:111; Pukui et al. 1974:89). The locations of traditional places names for Honouliuli are illustrated in Figure 7.

#### 3.4.1 Kāne and Kanaloa and the Boundaries of 'Ewa

Honouliuli is the largest ahupua'a in the moku of 'Ewa. One translation of the name for this district is given as "unequal" (Dictionary of Hawaiian Localities, *Saturday Press*, Aug. 11, 1883, as cited in Sterling and Summers 1978:1). Others translate the word as "strayed" and associate it with the legends of the gods, Kāne and Kanaloa.

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

Honouliuli has been translated as "dark water," "dark bay," or "blue harbor" and was named for the waters of Pearl Harbor (Jarrett 1930:22), which marks the eastern boundary of the ahupua'a. Pu'uloa (the original name for Pearl Harbor) is usually translated as "long hill" but could refer to a "heaped mound". Another explanation for the names comes from the "Legend of Lepeamoā", the chicken-girl of Pālāma. In this legend, Honouliuli is the name of the husband of the chiefess Kapālāma and grandfather of Lepeamoā (Thrum 1923:164-184). "Her grandfather gave his name, Honouliuli to a land district west of Honolulu . . ." (Thrum 1923:170). Westervelt (1963:209) gives an almost identical account.

Eventually the stone was found at Pili o Kahe. This is a spot where two small hills of the Wai'anae Range come down parallel on the boundary between Honouliuli and Nānākuli ('Ewa and Wai'anae). The ancient Hawaiians said the hill on the

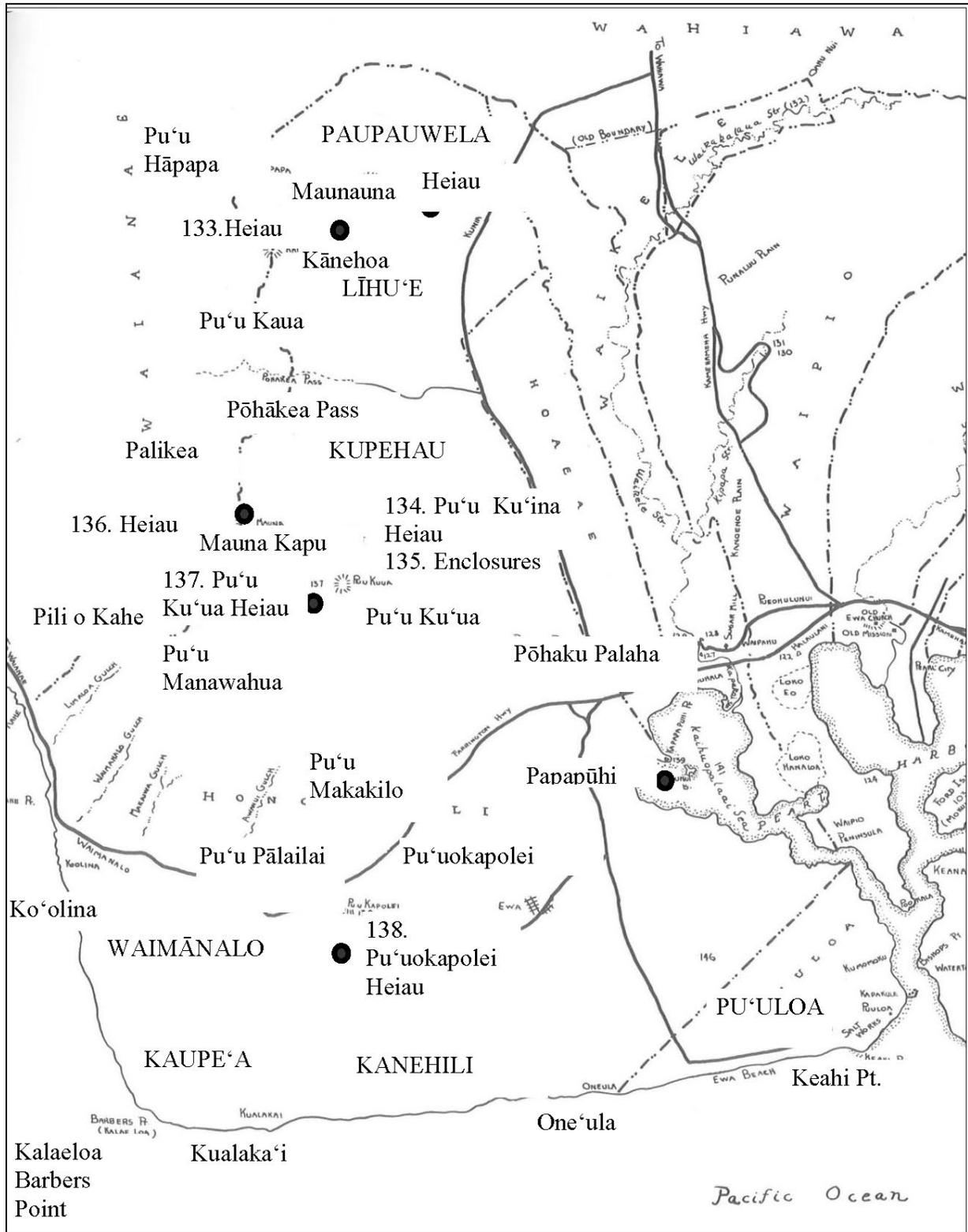


Figure 7. Place names of Honouliuli (adapted from Sterling and Summers 1978)

‘Ewa side was the male and the hill on the Wai‘anae side was female. The stone was found on the Waianae side hill and the place is known as Pili o Kahe. (Pili=cling to, Kahe=flow). The name refers, therefore, to the female or Waianae side hill. And that is where the boundary between the two districts runs (Told to E.S. by Simeon Nawaa, March 22, 1954, as cited in Sterling and Summers 1978:1).

### 3.4.2 The Pele Family at Honouliuli

Kapolei (literally “beloved Kapo”), specifically the 166-ft high cone of that name, is understood to have been named in reference to one of the volcano goddess Pele’s sisters, Kapo (Pukui et al. 1974:89). Pōhākea Pass is understood as one of the resting places of another of Pele’s sisters, Hi‘iaka, as she was returning from Kaua‘i with Pele’s lover Lohiau (Fornander 1919, Vol. V, note 6:188). A considerable number of mele and pule (prayers) are ascribed to Hi‘iaka as she stood at the summit of Pōhākea (*Aluna au a Pōhākea, Kū au, nānā ia Puna*, in Emerson 1915:162–168). From this vantage point Hi‘iaka could see, through her powers of vision, that her beloved lehua groves and friend Hopoe at Puna, Hawai‘i Island had been blasted by her jealous sister Pele. She could also see that in her canoe, off the coast of Wai‘anae, Lohiau was seducing her traveling companion Wahine‘ōma‘o. A spring located at Kualaka‘i near Barbers Point was named Hoaka-lei (“lei [garland] reflection”) because Hi‘iaka “picked lehua flowers here to make a lei and saw her reflection in the water” (Pukui et al. 1974:119).

### 3.4.3 Kamapua‘a

Kamapua‘a, the pig god, is associated with Honouliuli:

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

Emma Nakuina goes on to note: “A very short time ago [prior to 1904] the foundations of Kamaunuaniho’s house could still be seen at Puuokapolei” (Nakuina 1904:50).

### 3.4.4 Pu‘uokapolei, the Plains of Kaupe‘a and Kānehili, and the Reckoning of the Seasons

Pu‘uokapolei is a prominent hill located on the ‘Ewa coastal plain and was the primary landmark for travelers on the trail that ran from Pearl Harbor west to Wai‘anae (Sterling and Summers 1978:34). Pu‘u means “hill”, and Kapolei means “beloved Kapo,” a reference to the sister of the Hawaiian volcano goddess, Pele.

There are several places on the ‘Ewa coastal plain that are associated with *ao kuenta*, the realm of the homeless souls. Samuel Kamakau explains the Hawaiian beliefs in the afterlife:

There were three realms (*ao*) for the spirits of the dead. . . There were, first, the realm of the homeless souls, the *ao kuenta*; second, the realm of the ancestral spirits, the *ao ‘aumakua*; and third, the realm of Milu, *ke ao o Milu*....

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

On the plain of Kaupe'a beside Pu'uloa [Pearl Harbor], wandering souls could go to catch moths (*pulelehua*) and spiders (*nanana*). However, wandering souls could not go far in the places mentioned earlier before they would be found catching spiders by 'aumakua souls, and be helped to escape. . . . (Kamakau 1991a:47-49).

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

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

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

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

(Fornander 1919, Vol. VI, Part II:297)

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

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

The wiliwili grove of Kaupe'a

*Ka wiliwili of Kaupe'a.*

In 'Ewa, O'ahu. Said to be where homeless ghosts wander among the trees.

Beckwith (1970:154) has stressed that "the worst fate that could befall a soul was to be abandoned by its 'aumakua and left to stray, a wandering spirit (kuewa) in some barren and desolate place." These wandering spirits were often malicious, so the places that they wandered were avoided.

In a chant by Hi'iaka, the sister of the Hawaiian volcano goddess, Pele, several place names in 'Ewa are mentioned as Hi'iaka travels from Pu'uokapolei towards the 'Ewa coast. In the chant, Hi'iaka is moving downhill from Kaupe'a, probably the plains adjacent to Pu'u o Kapolei, toward the coast, to the plains of Kānehili. The chant also refers to Pe'e-kaua, which may be a variation of Kau-pe'e or Kaupe'a. Hi'iaka sang this bitter chant addressed to Lohi'au and Wahine'ōma'o, and it uses the association of the Plains of Kaupe'a as a place for the wandering of lost souls. The name Kānehili also refers to wandering, as the word hili means "to go astray" (Emerson 1915:162).

Ku'u aikana i ke awa lau o Pu'uloa,  
 Mai ke kula o Pe'e-kaua, ke noho oe,  
 E noho kaua e kui, e lei i ka pua o ke kauno'a,  
 I ka pua o ke akuli-kuli, o ka wili-wili;  
 O ka iho'na o Kau-pe'e i K-hili,  
 Ua hili au; akahi no ka hili o ka la pomaika'i;  
 E Lohiau ipo, e Wahine-oma'o,  
 Hoe 'a mai ka wa'a i a'e aku au.  
 We meet at Ewa's leaf-shaped lagoon, friends;  
 Let us sit, if you will on this lea  
 And bedeck us with wreaths of Kauno'a,  
 Of akuli-kuli and wili-wili,  
 My soul went astray in this solitude;  
 It lost the track for once, in spite of luck,  
 As I came down the road to Kau-pe'a.  
 No nightmare dream was that which tricked my soul.

This way, dear friends; turn the canoe this way;

Paddle hither and let me embark

(Emerson 1915:167-168).

Samuel Kamakau says that ancient Hawaiians also used Pu'u o Kapolei as an astronomical marker to designate the seasons:

. . . the O'ahu people who reckoned the time (*O'ahu po'e helu*) called the season Kau [summer] for the setting of the sun from Pu'uokapolei, a hill in Honouliuli, 'Ewa, to the opening of Mahinaona (*i ke kawaha o Mahinaona*). When the sun moved south from Pu'uokapolei—and during the season of the sun in the south—for the coming of coolness and for the sprouting of new buds on growing things—the season was called Ho'oilo [winter, rainy, season] (Kamakau 1976:14).

A heiau was once on Pu'uokapolei, but had been destroyed by the time of McAllister's (1933:108) survey of the island in the early 1930s. The hill was used as a point of solar reference or as a place for such observations (Fornander 1919, Vol. VI, Part II:297). Pu'uokapolei may have been regarded as the gate of the setting sun, just as the eastern gate of Kumukahi in Puna is regarded as the rising sun; both places are associated with the Hawaiian goddess Kapo (Emerson 1915:41). This somewhat contradicts some Hawaiian cosmologies, in which Kū was the god of the rising sun, and Hina, the mother of Kamapua'a was associated with the setting of the sun. Fornander (1919, Vol. VI, Part II:292) states that Pu'uokapolei may have been a jumping off point associated with the wandering souls who roamed the plains of Kaupe'a and Kāne-hili, makai of the hill.

A ceremony commemorating the changing of the seasons is still observed each year in the beginning of May at Waikīkī and Honouliuli. This ceremony was documented in a previous cultural impact assessment conducted by CSH (Genz et al. 2012). Sam 'Ohukani'ōhi'a Gon III, Na Wa'a Lalani Kahuna O Pu'u Kohola, and the late Kumu Hula John Keola Lake's hula hālau perform 'oli and hula, explaining that the kilo hōkū (astronomers) of O'ahu observed how, from the perspective of Waikīkī, the sun sets in a southerly direction over the ocean during the winter solstice and in a northerly direction behind the 'Ewa ridgeline during the summer solstice. During the springtime, the position of the setting sun marches steadily northward each day, and at the beginning of May, the sun sets behind Pu'uokapolei, perfectly centered within its depression, from the vantage point of Kūpalaha Heiau just west of the Waikīkī Aquarium. A coinciding ceremony at a heiau on Pu'uokapolei similarly views the setting of the sun behind Pu'ula'ila'i farther west, and a line of sight extending eastward from Pu'ula'ila'i, Pu'uokapolei, and the former site of Kūpalaha Heiau ends at the closely associated Papa'ena'ena Heiau. Mr. Gon suggests that Papa'ena'ena Heiau may have been part of the ceremonies of this astronomical event.

### 3.4.5 The Traveling Mullet of Honouliuli (Fish Stories)

The story of (Ka) Ihuopala'ai is also associated with the tradition of the 'anae-holo or traveling mullet (Thrum 1906:270-272):

The home of the anae-holo is at Honouliuli, Pearl Harbor, at a place called Ihuopalaai. They make periodical journeys around to the opposite side of the island, starting from Puuloa and going to windward, passing successively

Kumumanu, Kalihi, Kou, Kalia, Waikiki, Kaalawai, and so on, around to the Koolau side, ending at Laie, and then returning by the same course to their starting point. (Thrum 1907:271)

In Thrum's account, Ihuopala'ai is a male who possesses a Kū'ula, or fish god, which supplied the large mullet known as 'anae. His sister lived in Lā'ie and there came a time when there were no fish. She sent her husband to visit Ihuopala'ai who was kind enough to send the fish following his brother-in-law on his trip back to Lā'ie.

This story is associated with a poetical saying documented by Mary Kawena Pukui about Honouliuli:

Ka i'a hali a ka makani

The fish fetched by the wind (Pukui 1983:145)

Pukui explains, "The 'anaeholo, a fish that travels from Honouliuli, where it breeds, to Kaipāpa'u on the windward side of O'ahu. It then turns about and returns to its original home. It is driven closer to shore when the wind is strong" (1983:145).

### 3.4.6 Mo'ō at Maunauna

Moses Manu in recounting the legend of Keaomelemele makes a reference to a mo'ō (supernatural water spirit, lizard) named Maunauna who lived above Līhu'e (presumably at the landform of that name in extreme northern Honouliuli) and who was regarded as a bad lizard (*Nupepa Kuokoa* April 25, 1885).

### 3.4.7 The Story of Kaihuopala'ai Pond, Honouliuli

In the legend of Maikohā, a sister of Maikohā (a deified hairy man who became the god of tapa makers) named Kaihuopala'ai, journeys to O'ahu:

Ike aku la o Kaihuopala ai i ka maikai o Kapapaapuhi, he k e noho ana ma Honouliuli ma Ewa. Moe iho la laua, a noho iho la o Kaihuopala'ai i laila a hiki i keia la. Oia kela loko kai e hoopuni ia nei i ka anae, nona na ia he nui loa, a hiki i keia kakau ana.

Kaihuopala'ai saw a goodly man by the name of Kapapaapuhi who was living at Honouliuli, 'Ewa; she fell in love with him and they were united, so Kaihuopala'ai has remained in 'Ewa to this day. She was changed into that fishpond in which mullet are kept and fattened, and that fishpond is used for that purpose to this day [1919]. (Fornander 1919, Vol. V, Part II:270-271)

### 3.4.8 Honouliuli and the Head of Hilo-a-Lakapu (Legend of the Sacred Spear-point)

In the *Legend of the Sacred Spear-point*, there is a reference to the Hawai'i Island chief Hilo-a-Lakapu (Kalākaua 1990:209-225). Following his unsuccessful raid against O'ahu "he was slain at Waimano, and his head was placed upon a pole near Honouliuli for the birds to feed upon" (Kalākaua 1990:224).

### 3.4.9 Kūali'i

The celebrated chief, Kūali'i, is said to have led an army of 'ekolu mano (twelve thousand) against the chiefs of Ko'olauloa with an army of 'ekolu lau (twelve hundred) upon the plains of Keahumoa (Fornander 1917, Vol. IV, Part II:364-401). Perhaps because the odds were so skewed the battle was called off and the ali'i of Ko'olau ha'awi a'e (ceded) the districts of Ko'olauloa, Ko'olaupoko, Waialua, and Wai'anae to Kūali'i. When the ali'i of Kaua'i heard of this victory at Honouliuli they gave Kaua'i to Kūali'i as well and thus he became possessed of all the islands. The strife at Honouliuli was the occasion of the recitation of a song for Kūali'i by a certain Kapa'ahulani that makes passing reference in word play to the blue poi (cooked taro corms pounded and thinned with water), which appeases the hunger of Honouliuli (Uliuli ka poi e piha nei - o Honouliuli).

### 3.4.10 Kahalaopuna at Pōhākea Pass

One of the most popular legends of O'ahu is that of Kahalaopuna (or Kaha), a young woman of Mānoa who is slandered by others and then killed by her betrothed, Kauhi, a chief from Ko'olau, O'ahu. While the numerous accounts vary in details (e.g., Fornander 1919, Vol. V, Part I:188-193; E.M. Nakuina 1904:41-45; Skinner 1971:220-223; and others), they typically have Kahalaopuna slain and then revived repeatedly with the aid of a protective owl spirit. Kauhi forces her to hike west from Mānoa through the uplands until they get to Pōhākea Pass through the southern Wai'anae Range in north Honouliuli. At Pōhākea Pass, Kauhi beats her with a stick until she is dead. Her 'uhane (spirit) flies up into a lehua tree and chants for someone to go notify her parents of her fate. Upon hearing the news her parents fetch Kahalaopuna back to Mānoa and she is restored to life.

### 3.4.11 Paupauwela and Līhu'e

Paupauwela (also spelled Popouwela) is the name of the land area in the extreme mauka section of Honouliuli Ahupua'a. The land area of Līhu'e is just makai of this land, and extends into the ahupua'a of Waipi'o (adjacent to the eastern border of Honouliuli). Both place names are mentioned in a chant recorded by Abraham Fornander (1917, Vol. IV, Part II:384-386), which was composed as a mele for the O'ahu king, Kūali'i, as he was preparing to battle Kuiaia, the chief of Wai'anae:

Ihea, ihea la ke kahua,	Where? Where is the battle field
Paio ai o ke koa-a?	Where the warrior is to fight?
I kai i kahua i Kalena,	On the field of Kalena,
I Manini, i Hanini	<i>At Manini, at Hanini,</i>
I ninia i ka wai akua,	Where was poured the water of the god
I ko hana i Malamanui	By your work at Malamanui;
Ka luna o Kapapa, i Paupauwela,	On the heights of Kapapa, at Paupauwela,
I ka hilina'i i ke kalele,	Where they lean and rest;
Ka hala o Halahalanui maauea,	At the hala trees of indolent Halahalanui,

E kula ohia ke Pule-e,	At the ohia grove of Pule-e
Ke 'kua o Lono o Makalii	<i>The god of Lono, of Makalii</i>
Ka lala aalao Ukulonoku,	The fragrant branch of the Ukulonoku,
No Kona paha, no Lihue.	Mayhap from Kona, from Lihue,
No ka la i Maunauna,	For the day at Maunauna
No ka wai i Paupauwela.	For the water at Paupauwela.
Ula ka wai i Paupauwela,	Red is the water of Paupauwela,
Ke kilau o Malamani,	From the slain at Malamani,
Ka moo kilau i Kapapa.	The slain on the ridge at Kapapa.

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

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

(Fornander 1917: Vol. IV, Part II:390-391).

### 3.4.12 Hill of Maunauna

The hill Maunauna lies between the lands Paupauwela and Lihu'e. One translation of Maunauna is "mountain sent [on errands]." Two servant mo'o who lived here had no keepers to supply their needs" (Pukui et al. 1974:149). It was at Maunauna, according to one tradition, that the forces of the chiefs Kūali'i and Kuiaia of Wai'anae met to do battle, which was averted when a mele honoring the god Kū was chanted (Fornander 1917: Vol. IV, Part II:348). In the legend of Keaomelemele, a woman named Paliuli traveled in this area:

In a very short time she [Paliuli] walked over the plain of 'Ewa; 'Ewa that is known as the land of the silent fish [pearl oysters]... She went on to the plain of

Punalu'u and turned to gaze at Maunauna point and the plain of Lihue (Manu 1885, translation in Sterling and Summers 1978:21).

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

In this story, Lolale was a chief of O'ahu who asked his friend Kalamakua to find him a bride (Kalākaua 1990:228-246; Skinner 1971:217-219). Kalamakua traveled to Maui and chose Kelea, the chief's sister, and returned with her to O'ahu; during this time the two grew close. Kelea lived with Lolale for a while, but he was a silent type that was often away from home playing sports and walking in the woodlands. Longing for Kalamakua, Kelea decided to leave her husband, Lolale voiced no "spoken bitterness;" however, after she left, he sang this lament:

Farewell, my partner of the lowland plains,  
 On the waters of Pohakeo, above Kanehoa,  
 On the dark mountain spur of Mauna-una!  
 O, Lihue, she is gone!  
 Sniff the sweet scent of the grass,  
 The sweet scent of the wild vines  
 That are twisted by Waikoloa,  
 By the winds of Waiopua,  
 My flower!  
 As if a mote were in my eye.  
 The pupil of my eye is troubled.  
 Dimness covers my eyes. Woe is me!  
 (Kalākaua 1990:244-245)

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## Section 4 Historical Background

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### 4.1 Pre-Contact to Early Post-Contact Period

By ca. A.D. 1320, 'Ewa, along with Kona, and Ko'olaupoko were the dominant regions of O'ahu, ruled by the sons of a chief named Māweke (Cordy 2002:22). The 'Ewa region at this time included the traditional districts of 'Ewa, Wai'anae, and Waialua (Fornander 1880:48). Around A.D. 1400, the entire island was ruled by King La'akona. Chiefs within his line, the Māweke-Kumuhonua line, reigned until about A.D. 1520-1540, with their major royal center at Līhu'e, in 'Ewa. (Cordy 2002:24). Haka was the last chief of the Māweke-Kumuhonua line, who was slain by his men at the fortress of Waewae near Līhu'e (Kamakau 1991a:54-54; Fornander 1880:88). Power shifted between the chiefs of different districts from approximately A.D. 1500 until the early 1700s, when Kūali'i achieved control of all of O'ahu by defeating the Kona chiefs, then the 'Ewa chiefs, and then expanding his control on windward Kaua'i. Peleiholani, the heir of Kūali'i, gained control of O'ahu ca. A.D. 1740, and later conquered parts of Moloka'i. He was ruler of O'ahu until his death in ca. A.D. 1778 when Kahahana, of the 'Ewa line of chiefs was selected as the ruler of O'ahu (Cordy 2002:24-41).

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

Various Hawaiian legends and early historical accounts indicate that the ahupua'a of Honouliuli was once widely inhabited by pre-Contact populations, including the Hawaiian ali'i. While these accounts contrast with archaeological evidence, the habitation in Honouliuli would be attributable to the plentiful marine and estuarine resources available at the coast, where several sites interpreted as permanent habitations and fishing shrines have been located. Other attractive subsistence-related features of the ahupua'a include irrigated lowlands suitable for wetland taro cultivation, as well as the lower forest area of the mountain slopes for the procurement of forest resources. Handy and Handy report:

The lowlands, bisected by ample streams, were ideal terrain for the cultivation of irrigated taro. The hinterland consisted of deep valleys running far back into the Ko'olau range. Between the valleys were ridges, with steep sides, but a very gradual increase of altitude. The lower part of the valley sides were excellent for the cultivation of yams and bananas. Farther inland grew the 'awa for which the area was famous. (Handy and Handy 1972:429)

In addition, breadfruit, coconuts, wauke (paper mulberry, used to make kapa clothing), bananas, and olonā (used to make cordage) and other plants were grown in the interior. 'Ewa was known as one of the best areas to grow gourds and was famous for its māmaki (also used to make kapa clothing). It was also famous for a rare taro called the Kāi o 'Ewa, which was grown in mounds in marshy locations (Handy and Handy 1972:626). The cultivation of this prized and delicious taro led to the saying:

*Ua 'ai i ke k̄ai-koi o 'Ewa.* He has eaten the K̄ai-koi taro of 'Ewa.

K̄ai is O'ahu's best eating taro; one who has eaten it will always like it. Said of a youth of a maiden of 'Ewa, who, like the K̄ai taro, is not easily forgotten (Pukui 1983:305).

The lochs of Pearl Harbor were ideal for the construction of fishponds and fishtraps. Forest resources along the slopes of the Wai'anae Range probably acted as a viable subsistence alternative during times of famine or low rainfall (Handy 1940:211; Handy and Handy 1972:469-470). The upper valley slopes may have also been a resource for sporadic quarrying of basalt used in the manufacturing of stone tools.

John Papa 'Ī'ī described a network of Leeward O'ahu trails, which in historic times encircled and crossed the Wai'anae Range, allowing passage from Lualualei to Honouliuli by three different trails ('Ī'ī 1959:96-98). The following description of the trails is provided by 'Ī'ī:

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

The cross-ahupua'a (east-west) trail that skirted Pearl Harbor, passed north of Pu'uokapolei, and continued along the coast to Wai'anae, is depicted in an 1825 Map of the South Coast of O'ahu by Charles Malden of the British ship, the Blonde. The trail generally follows the route of the modern Farrington Highway, north of the current Project area (Figure 8). Malden's 1825 map also shows a mauka-makai (north-south) trail with two spurs, that extending from the cross-ahupua'a (east-west) trail to settlements at the coast. The Project area is located south of the eastern mauka-makai trails.

Tuggle and Tomonari-Tuggle (1997) compiled information on several historic maps to produce a composite map of important features on the 'Ewa Plain from 1825 to World War II (ca. 1940s). On this map, the two mauka-makai trails are shown to extend to coastal settlements, one ending at the village of One'ula, the other trail ending halfway between the villages of One'ula and Kualaka'i (Figure 9).

At contact, the most populous ahupua'a on the island was Honouliuli, with the majority of the population centered on Pearl Harbor. In 1832, a missionary census of 'Ewa recorded the population as 4,015; within four years the population was down to 3,423 (Schmitt 1973:09). In 1835, there were eight to ten deaths for every birth (Kelly 1991:157-158). Between 1848 and 1853, there was a series of epidemics of measles, influenza, and whooping cough that often wiped out whole villages. In 1853, the population of 'Ewa and Wai'anae combined was 2,451 people. In 1872, it was 1,671 (Schmitt 1977:12). The inland area of 'Ewa was probably abandoned by the mid-nineteenth century, due to population decline and consolidation of the remaining people in the town of Honouliuli (at Kapapāhū Point, adjacent to Pearl Harbor).

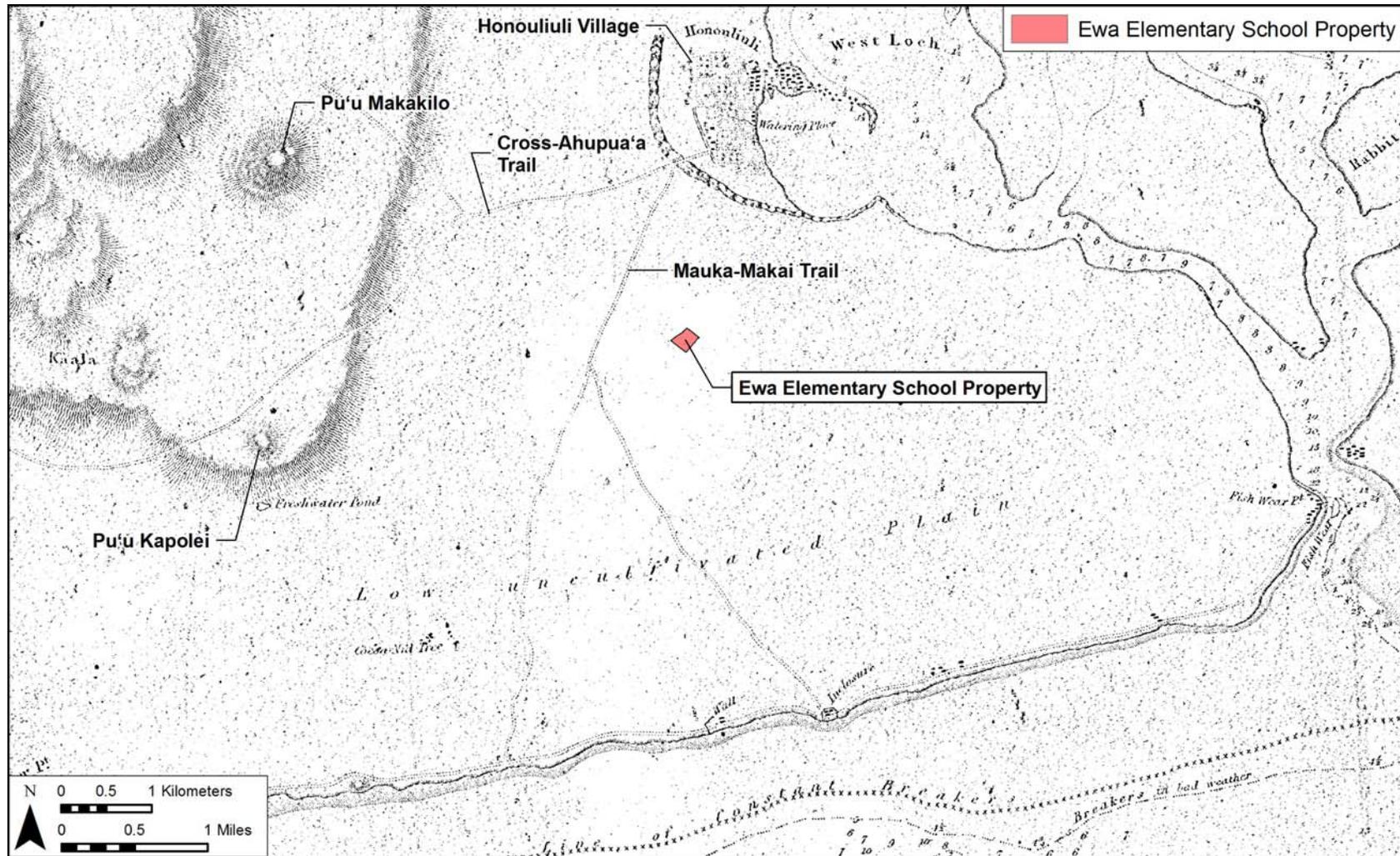


Figure 8. Portion of 1825 Map of the South Coast of Woahoo (O’ahu) and Honolulu by Lt. C.R. Malden from the British frigate the Blonde, showing the approximate location of the Project area and features discussed in the text (Hawai’i State Land Survey Division, Registered Map 640)

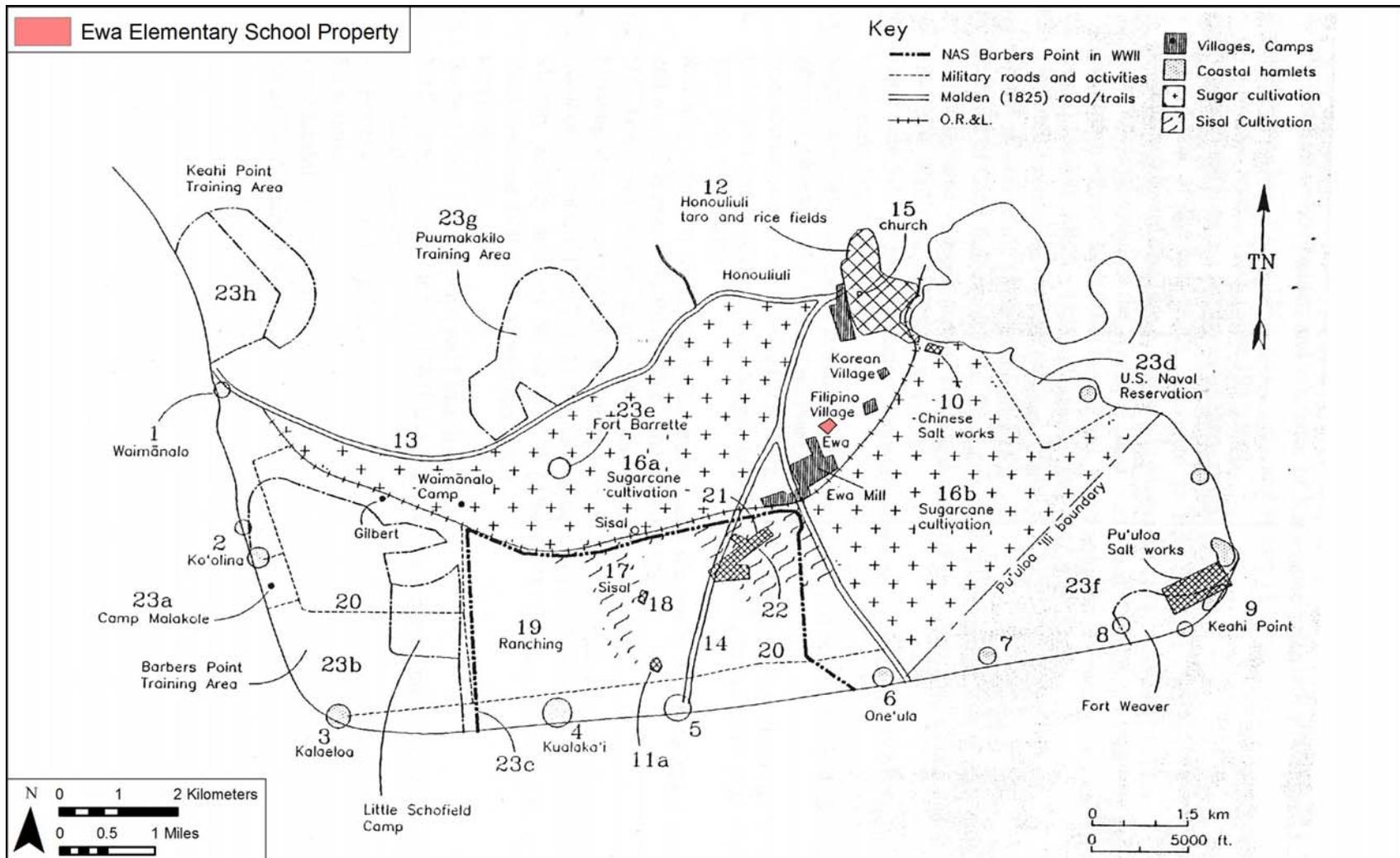


Figure 9. Map by Tuggle and Tomonari-Tuggle (1997:32), compiled from historic maps, showing features of the 'Ewa Plain from 1825 to World War II (see following page for key on places cited)

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

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

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

The earliest detailed maps of the area show no substantial habitation closer to the Project area than the western edge of West Loch, in the vicinity of Kapapahu Point (Hō'ae'ae Point on modern maps). The 1825 Malden map documents substantial settlement at the "Honouliuli Taro Lands" west of Kapapūhi Point, and it seems clear that in early historic times, this was the population center for Honouliuli Ahupua'a (Dicks et al. 1987). The amenities of that area, such as fishponds, taro lo'i, shellfish collecting, and salt drying would have focused population there in pre-Contact times. Perhaps because of the significance of this 'ili, Honouliuli was also applied to the entire ahupua'a.

Among the first historic accounts of Honouliuli was one written by Captain Vancouver when he sailed by Kalaeloa (Barbers Point) in 1792 and recorded his impression of the small coastal village of Kualaka'i and the arid Honouliuli coast.

The point is low flat land, with a reef round it... Not far from the S.W. point is a small grove of shabby cocoa-nut trees, and along these shores are a few struggling fishermen's huts (Vancouver 1798, Vol. I:167).

...from the commencement of the high land to the westward of Opooroah [Pu'uloa], was composed of one very barren rocky waste, nearly destitute of verdure, cultivation or inhabitants, with little variation all the way to the west point of the island...(Vancouver 1798, Vol. II:217).

This tract of land was of some extent but did not seem to be populous, nor to possess any great degree of fertility; although we were told that at a little distance from the sea, the soil is rich, and all necessaries of life are abundantly produced....(Vancouver 1798, Vol. III:361-363).

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

In the month of November the king was pleased to grant me about sixty acres (ac) of land, situated upon the Wymummee [traditional Hawaiian name for Pearl River], or Pearl-water, an inlet of the sea about twelve mi to the west of Hanaroorā [Honolulu]... We passed by footpaths, winding through an extensive and fertile plain, the whole of which is in the highest state of cultivation. Every stream was carefully embanked, to supply water for the taro beds. Where there was not water, the land was under crops of yams and sweet potatoes (Campbell 1967:103-104).

Pearl and mother of-pearl shells are found here in considerable quantity. Since the king has learned of their value, he has kept the fishing to himself, and employs divers for the purpose (Campbell 1967:114-115).

## 4.2 Mid-Nineteenth Century and the Māhele

In the mid-nineteenth century, during the time of Kamehameha III, a series of legal and legislative changes were brought about in the name of 'land reform' (see Chinen 1958, 1971 for details). Following the enactment of the Organic Acts of 1845 and 1846, the concept of private land ownership was introduced and all land in the Hawaiian Kingdom was divided into three main types: government (or Crown) land; ali'i lands; and commoner lands, which maka'āinana could in principle obtain in fee simple, following passage of the Kuleana Act in 1850. This act, in principle, allowed maka'āinana to own land parcels at which they were currently and actively cultivating and/or residing. Of the hundreds of thousands of ac set aside as potential kuleana (land claims by maka'āinana) parcels only about 10,000 claimants ultimately obtained some 30,000 ac, while 252 chiefs, for example, divided up about a million acres, leaving most Hawaiians disenfranchised.

In 1848, the crown and the ali'i received their land titles. The common people began to receive their kuleana parcels in the beginning of 1850. During the Māhele of 1848, 99 individual land claims in the ahupua'a of Honouliuli were registered and awarded by King Kamehameha III. The 72 kuleana awards given to commoners were almost all made adjacent to Honouliuli Gulch, most within the "Honouliuli Taro Lands," which contained fishponds and irrigated taro fields (Tuggle and Tomonari-Tuggle 1997:34). No kuleana claims were made for land within the current study area or vicinity.

In 1855, the Land Commission awarded all of unclaimed lands in Honouliuli, (43,250 ac), to Miriam Ke'āhikuni Kekau'ōnohi (Royal Patent 6971, LCA 11216), granddaughter of Kamehameha I and the heir of Kalanimōkū. Kalanimōkū had been given the land by Kamehameha after the conquest of O'ahu (Kame'eleihiwa 1992; Waihona 'Āina Corp 2002). Kekau'ōnohi was one of Liholiho's (Kamehameha II's) wives. After his death, she lived with her half-brother, Luanu'u Kahalai'a, who was governor of Kaua'i (Kelly 1985:21). Subsequently, Kekau'ōnohi ran away with Queen Ka'ahumanu's stepson, Keli'iahonui, and then became the wife of Chief Levi Ha'alelea. Upon her death on June 2, 1851, all her property was passed on to her husband and his heirs. In 1863, the owners of the kuleana lands deeded their lands back to Ha'alelea to pay off debts owed to him (Frierson 1972:12). In 1864, Ha'alelea died, and his second wife, Anadelia Amoe, transferred ownership of the land to her sister's husband, John Coney.

## 4.3 Shifting Landscape

Much of the mauka lands in western Honouliuli, including ridges and deep gulches, were unsuitable for commercial sugar cultivation and remained pastureland for grazing livestock. By 1920, however, many of the lands of Honouliuli were used for commercial sugar cane cultivation (Frierson 1972:18). By 1919 a reservoir had been established just south of Pālehua Road. In the late 1920s, the main residential communities were at the northeast edge of the 'Ewa Plain. The largest community was still at Honouliuli Village. 'Ewa was primarily a plantation town, focused around the sugar mill, with a public school as well as a Japanese school. Additional settlement was in Waipahu, centered on the Waipahu sugar mill, operated by the O'ahu Sugar Company. Historic maps of the Makakilo area indicate a lack of any other significant development in the area into the 1940s.

A 1919 map (Figure 10) shows the O.R. & L. railroad alignment ran northeast/southwest 300 m inland (to the north). Significant communities of approximately nine homes are shown at the "Sisal" siding of the O.R. & L. The many fence lines indicate that ranching was the major land use (other than the short lived sisal plantation).

A 1933-1935 map (Figure 11) suggests that the sisal plantation had already gone out of business. 'Ewa is now being developed as the map clearly illustrates the different plantation villages along the rail line. The 'Ewa School has been built.

A 1953 map (Figure 12) displays the Project area as 'Ewa School. Segments of the rail line are still present but roads now dominate the 'Ewa Plain. More buildings are present on the 'Ewa Plain as they dot the southwestern portion of the map.

### 4.3.1 Early Ranching on the 'Ewa Plain

John Coney rented land to James Dowsett and John Meek in 1871, who used it for cattle grazing. As described above (Section 0), in 1877 this land in Honouliuli, except for the 'ili of Pu'uloa, was sold to James Campbell for \$95,000. Campbell then drove away 32,237 head of cattle belonging to Dowsett, Meek, and James Robinson, and constructed a fence around the outer boundary of his property (Bordner and Silva 1983:C-12). He let the land rest for one year and then began to restock the ranch, so that he had 5,500 head after a few years (Dillingham 1885, cited in Frierson 1972:14).

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

...acreage, 43,250, all in pasture, but possessing fertile soils suitable for agriculture; affords grazing for such valuable stock. The length of this estate is no less than 18 mi. It extends to within less than a mi of the sea coast, to the westward of the Pearl River inlet...There are valuable fisheries attached to this estate... (Bowser 1880:489).

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

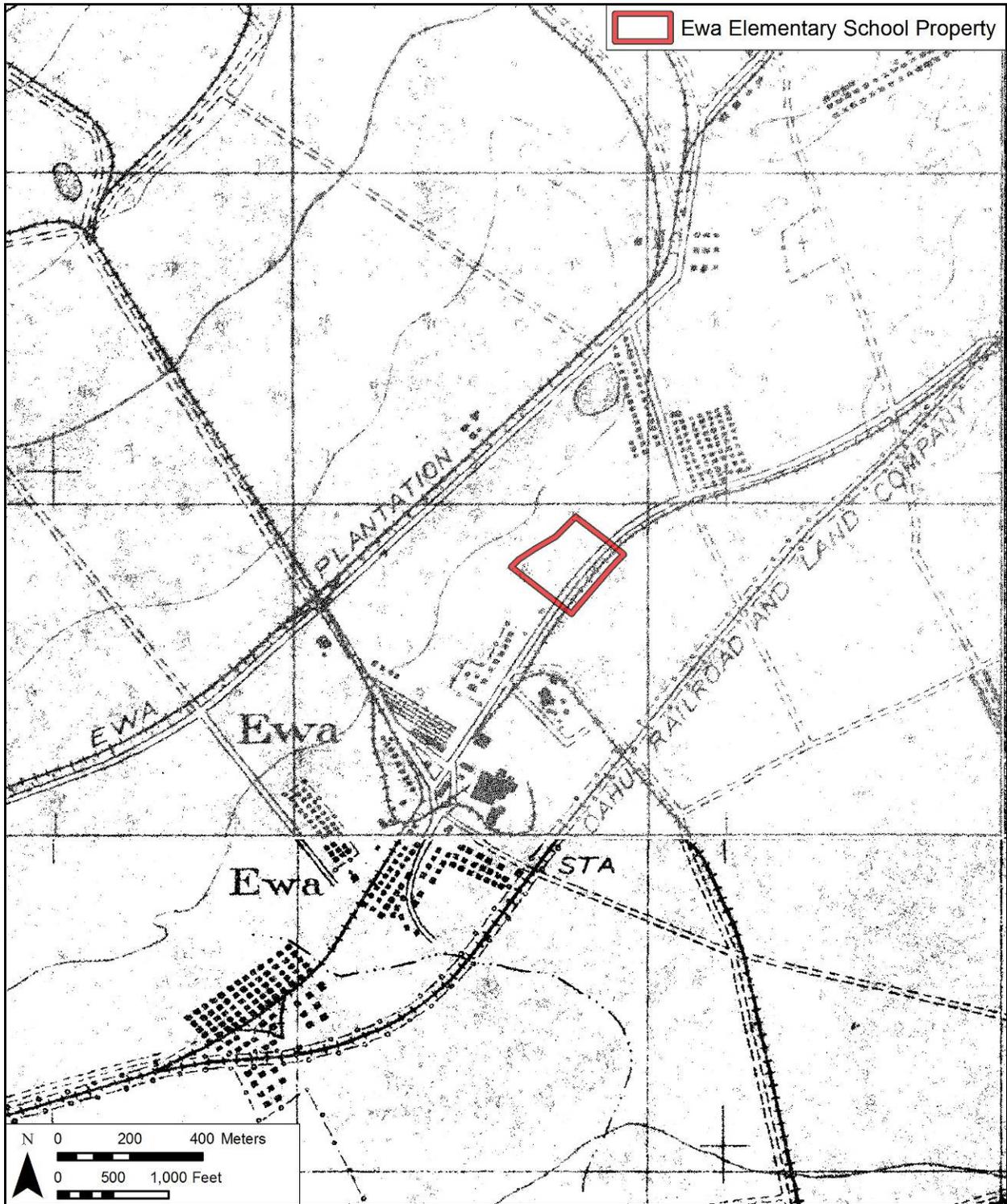


Figure 10. Portion of a 1919 U.S. War Department topographic map, 'Ewa Quadrangle, with the location of the Project area.

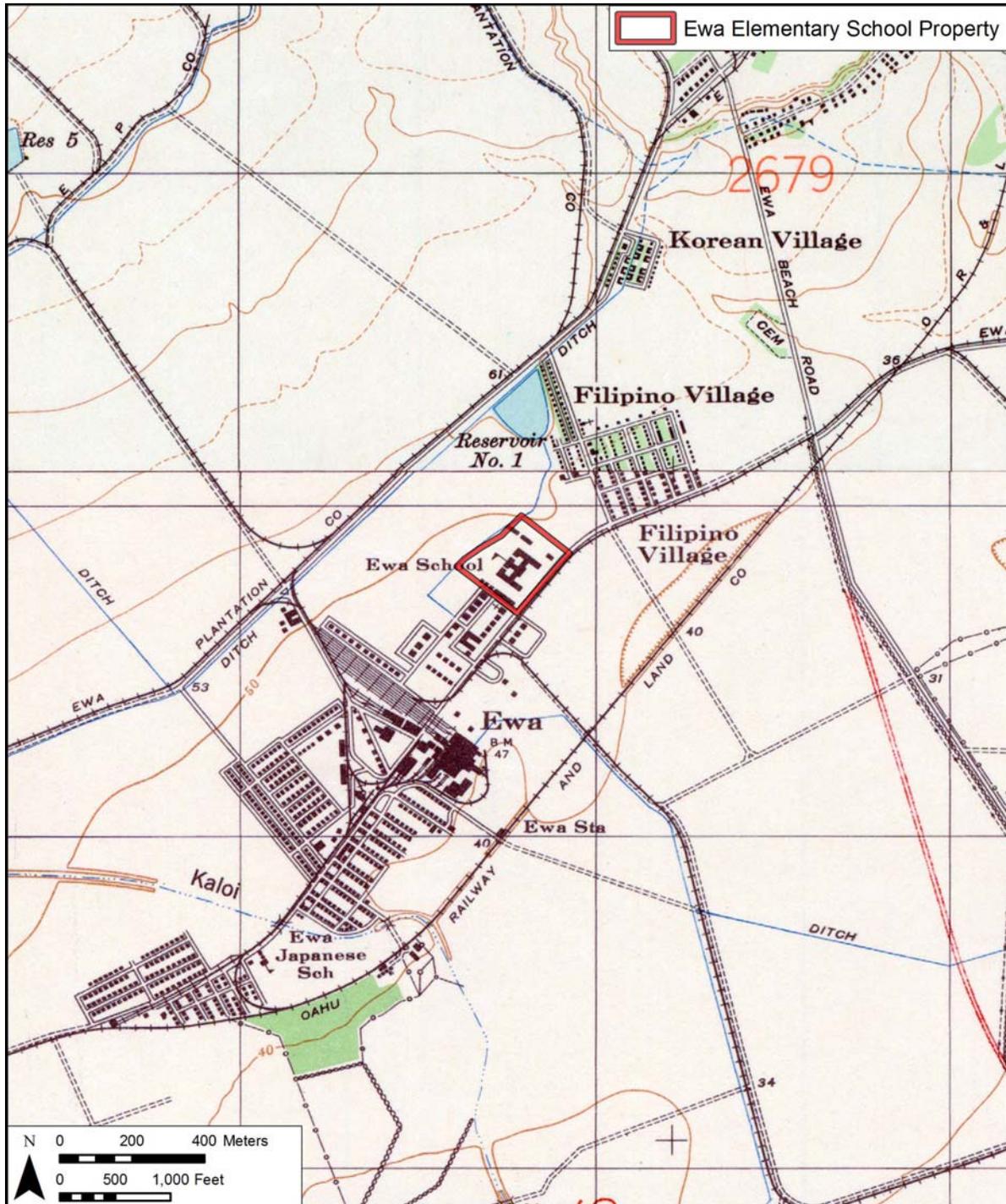


Figure 11. A 1933-1935 U.S. War Department topographic map, 'Ewa Quadrangle, showing the Project area now called 'Ewa Elementary School; railroad tracks are still visible within the vicinity of the Project area; development south of the Project area is evident

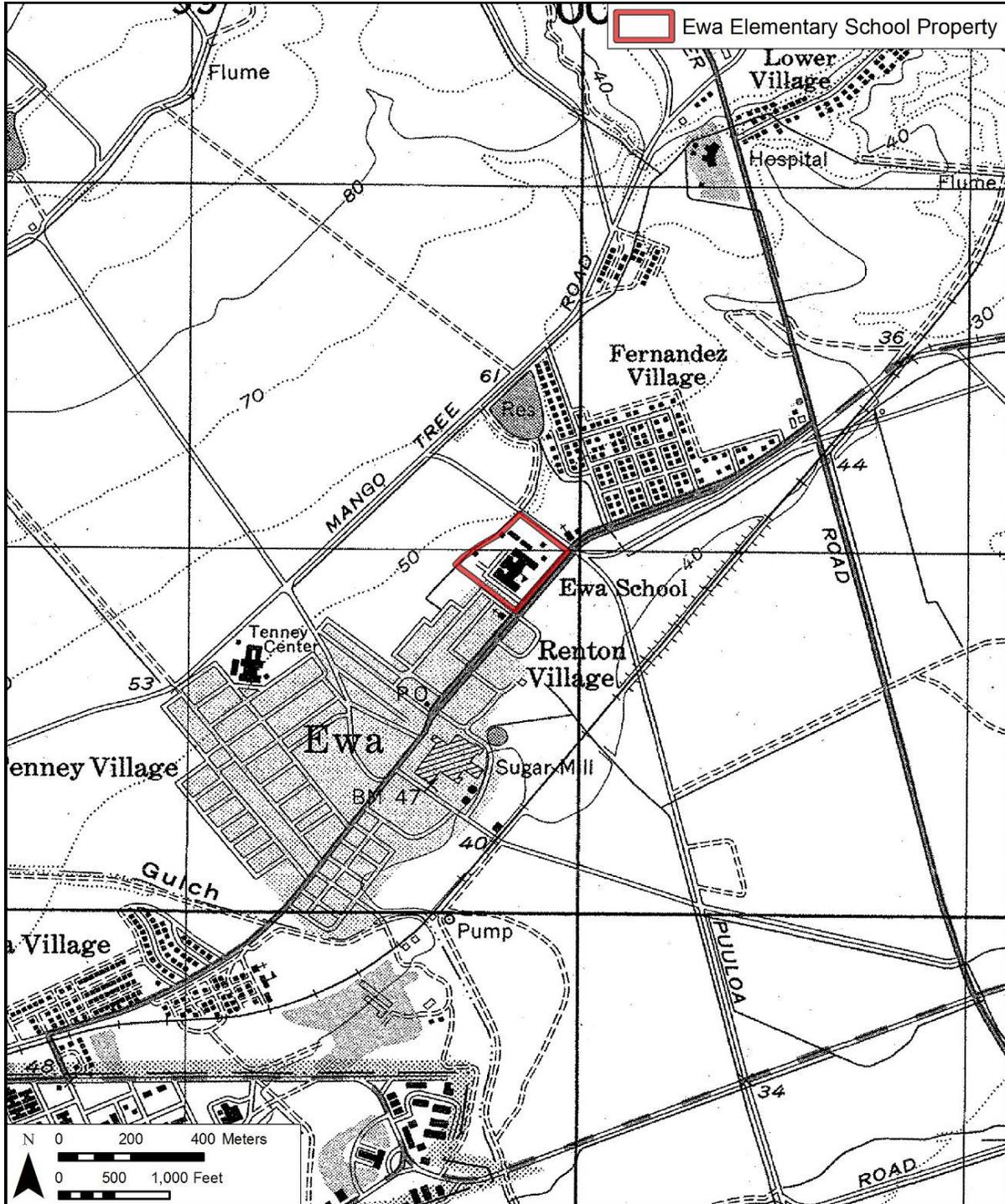


Figure 12. A portion of the 1953 U.S. Army Map Service topographic map, 'Ewa Quadrangle,' with location of Project area indicated; note there are less railroad tracks and more development south of the Project area.

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In 1881, a medical student, touring the island to provide smallpox vaccinations to the population, viewed Campbell's property, called the Honouliuli Ranch:

I took a ride over the Honouliuli Ranch which is quite romantic. The soil is a deep, reddish loam, up to the highest peaks, and the country is well-grassed. Springs of water abound. The ilima, which grows in endless quantities on the plains of this ranch, is considered excellent for feeding cattle; beside it grows the indigo plant, whose young shoots are also good fodder, of which the cattle are fond. Beneath these grows the manieizie grass, and Spanish clover and native grasses grow in the open; so there is abundant pasturage of various kinds here. As I rode, to the left were towering mountains and gaping gorges; ahead, undulating plains, and to the right, creeks and indentations from the sea. A wide valley of fertile land extends between the Nuuanu Range and the Waianae Mountains and thence to the coast of Waialua. There are many wild goats in this valley, which are left more or less undisturbed because they kill the growth of mimosa bushes, which would otherwise overrun the country and destroy the pasturage for cattle. (Briggs 1926:62-63)

Most of Campbell's lands in Honouliuli were used exclusively for cattle ranching. At that time, one planter remarked "the country was so dry and full of bottomless cracks and fissures that water would all be lost and irrigation impracticable" (Ewa Plantation Co. 1923:6-7). In 1879, Campbell brought in a well-driller from California to search the 'Ewa plains for water. The well, drilled to a depth of 240 ft near Campbell's home in 'Ewa, resulted in "a sheet of pure water flowing like a dome of glass from all sides of the well casing" (The Legacy of James Campbell, cited in Pagliaro 1987:3). Following this discovery, plantation developers and ranchers drilled numerous wells in search of the valuable resource.

#### **4.3.2 Other Enterprises in Campbell Lands**

As noted above, part of Mr. Campbell's lands were also used to grow rice. These rice fields were planted in former taro fields or in undeveloped swamps. The rice fields in 1882 were described by Frank Damon, during a tour of the area.

Towards evening we reached Honouliuli, where the whole valley is leased to rice planters... This was one of the largest rice plantations we visited. Sometimes two or three men only, have a few fields which they cultivate for themselves, and we often too came upon houses where there were eight or ten men working their own land. But the larger plantations are owned by merchants in Honolulu, who have a manager acting for them.... (Damon 1882:37).

In 1890, Dillingham leased all land below 200 ft to William Castle, who used most of it for sugar cane, but also leased some for rice cultivation, pasture, wood lots, bee-keeping, garden crops, and quarries. Some land above 650 ft was also leased for the cultivation of canaigre, an herbal source of tannin used in leather production (Frierson 1972:15-16).

An additional agricultural trial was conducted in the Honouliuli area for the cultivation of sisal, a plant used to make fibers for rope and other material. Some sisal was planted before 1898 and production continued until the 1920s (Frierson 1972:16). This was grown mainly on the coastal plain of Honouliuli in Kānehili, just mauka of Kualaka'i Beach (now Nimitz Beach).

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Into the early twentieth century, some Hawaiian families continued to live in Honouliuli and preserve the traditional lifestyle, including at the fishing village of Kualaka‘i. One resident, Mrs. Eli Williamson, recalled:

In the Honouliuli area the train stopped among the *kiawe* (algaraboa) trees and *malina* (sisal) thickets. We disembarked with the assorted food bundles and water containers. Some of the Kualaka‘i *‘ohana* (family) met us to help carry the *‘ukana* (bundles) along a sandstone pathway through the *kiawe* and *malina*. The distance to the frame house near the shore seemed long. When we departed our *‘ukana* contained fresh lobsters, *limu* (seaweed), fish and *i‘a malo‘o* (dried fish)... (Williamson, in Kelly 1985:160).

#### **4.3.3 History of the Oahu Railway and Land Company (O. R. & L.)**

In 1886, Campbell and B. F. Dillingham put together the “Colonization Project,” which was an attempt to sell Honouliuli land to homesteaders (Thrum 1886:64). This homestead project failed, largely due to the lack of water and the distance from ‘Ewa to Honolulu. The water problem was solved by the drilling of artesian wells, and Dillingham decided that the area could be used instead for large-scale cultivation (Pagliaro 1987:4). The transportation problem was to be solved by the construction of a railroad, which B. Franklin Dillingham soon began to finance under the company name of the Oahu Railway and Land Company (O. R. & L.).

In 1889, Campbell leased his property to Benjamin Dillingham, who subsequently formed the O‘ahu Railway & Land Co. (O.R. & L) in 1890. To attract business to his new railroad, Dillingham subleased all land below 200 ft elevation to William Castle who in turn sublet the area to the ‘Ewa Plantation Company for sugar cane cultivation (Frierson 1972:15). Dillingham’s Honouliuli lands above 200 ft elevation that was suitable for sugar cane cultivation were sublet to the O‘ahu Sugar Co. Throughout this time, and continuing into modern times, cattle ranching continued in the area, and Honouliuli Ranch - established by Dillingham - was the “fattening” area for other ranches (Frierson 1972:15).

During the last decade of the nineteenth century, the railroad would reach from Honolulu to Pearl City in 1890, to Wai‘anae in 1895, to Waialua Plantation in 1898, and to Kahuku in 1899 (Kuykendall 1967:III, 100). This railroad line eventually ran across the center of the ‘Ewa Plain at the lower boundary of the sugar fields.

Dillingham’s mauka lands in western Honouliuli that were unsuitable for commercial sugar production remained pasture for grazing livestock. From 1890 to 1892 the Ranch Department of the O.R. & L. Co. tapped plantation flumes and searched for alternative sources of water. Ida von Holt leaves this account of her husband Harry’s (Superintendent of the O.R. & L Ranch Dept.) search for water in the foothills of the Wai‘anae Range:

One of those places is on the old trail to Pālehua, and had evidently been a place of which the Hawaiians had known, for its name is Kalo‘i (the taro patch), and even in dry weather water would be standing in the holes made by the cattle, as they tried to get a drop or two (Von Holt 1985:136).

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The spring was located along the upper slopes of the southern face of Kalo‘i Gulch. A second account is given of the discovery of spring water in an area over the ridge on the north side of Kalo‘i Gulch:

Shouting to the men to come over with their picks and shovels, he [Harry von Holt] soon got them busy clearing away lots of small stones and earth. Almost at once they could see that there were evidences of a paved well, and at about three feet down they came upon a huge flat rock, as large around as two men could span with their arms. Digging the rock loose and lifting it to one side, what was their astonishment to find a clear bubbling spring (Von Holt 1985:138)!

Following the discovery, two old Hawaiians began to ask Von Holt about the spring:

Finally he [Harry von Holt] got them to explain that the spring, called “Waihuna” (Hidden Spring) had been one of the principal sources of water for all that country, which was quite heavily populated before the smallpox epidemic of 1840...A powerful Kahuna living at the spring had hidden it before he died of the smallpox, and had put a curse on the one who disturbed the stone, that he or she would surely die before a year was out (Von Holt 1985:138–140).

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

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

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

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

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

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

After the war, most of the 150+ mi of O. R. & L. track were pried up, locomotives were sold to businesses on the US mainland, and railway cars were scrapped. In 1947, the US Navy took over a section of the O. R. & L. track for their own use, to transport bombs, ammunition, and torpedoes from the ammunition magazines at Lualualei, West Loch in Pearl Harbor, and Waikele on O. R. & L.'s Wahiawā Branch to Pearl Harbor Naval Base (Treiber 2005:25-26). The track to Waipahu was abandoned in the 1950s, but the line from the magazines in Lualualei to the wharves in West Loch at Pearl Harbor remained open until 1968.

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

#### **4.3.4 Ewa Plantation Company: Sugar Cane Cultivation**

The Ewa Plantation Company was incorporated in 1890 for sugar cane cultivation (Figure 13). Ewa Plantation's first crop, 2,849 tons of sugar, was harvested in 1892. Ewa Plantation was the first all-artesian plantation, and it gave an impressive demonstration of the role artesian wells were to play in the later history of the Hawaiian sugar industry (Kuykendall 1967:III, 69). As a means to generate soil deposition on the coral plain and increase arable land in the lowlands, the Ewa Plantation Company installed ditches running from the lower slopes of the mountain range to the lowlands. When the rainy season began, they plowed ground perpendicular to the slope so that soil would be carried down the drainage ditches into the lower coral plain. After a few years, about 373 acres of coral wasteland were reclaimed in this manner (Immisch 1964). By the 1920s, Ewa Plantation was generating large profits and was the "richest sugar plantation in the world" (*Paradise of the Pacific*, Dec. 1902:19-22, cited in Kelly 1985:171).

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

#### **4.3.5 Plantation Workers Housing: 'Ewa Villages**

In 1890, construction began on housing for over 500 Ewa Plantation workers (Hammatt et al. 1990:13). Eight main plantation camps, collectively known as 'Ewa Villages, were constructed in the vicinity of Ewa Plantation sugar mill. These villages included (from northeast to



Figure 13. 1955 Photograph of Ewa Plantation Co. Sugar Mill (Honolulu Advertiser Archives)

southwest) Lower Village, Middle Village (also called Korean Village), Fernandez Village, Renton Village, Tenney Village, Mill Village, Varona Village, and “C” Village. A 1919 War Department map shows the extent of plantation development in the vicinity of the sugar mill by the early 1900s. The mill and plantation camps are located at junctions of major plantation transportation corridors, including the Ewa Plantation railway, the O. R. & L. railway, and plantation roads. A plantation camp, including a road and plantation dwellings are indicated within the current Project area.

In 1928, probably the year with the greatest number of workers, the census bureau counted 4,967 people living on and associated with the Ewa Plantation (Hammatt et al. 1990:13). These workers were Japanese, Chinese, Okinawan, Korean, Portuguese, Spanish, Hawaiian, Filipino, and European, who usually lived in segregated camps or housing areas. The plantation houses were described by George F. Renton, the plantation manager from 1899 to 1920:

Each of these dwellings is enclosed by a fence and supplied with water. It is pleasant to note the eagerness with which these homes have been taken up, and

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how much the premises have been improved. This is especially noticeable among the Japanese...At present writing there are 451 dwellings on this estate. These are actual houses exclusive of restaurants, bath houses, cook houses, work shops, schools or churches. (Pagliaro 1987:17)

With the onset of World War II in the 1940s, the US military drew from the plantation workforce to support the war effort. To cope with the loss of plantation laborers, Ewa Plantation came to rely on mechanical harvesting. This led to the overall decline in the large, multi-racial plantation workforce that had characterized the early history of the plantation (Hammat et al. 1990:13). The current Project area includes a portion of Mill Village, as well as structures associated with the sugar mill. The map also shows the Ewa Field south of Ewa Villages, as military-related development came to dominate the region following World War II (Figure 13).

The Ewa Plantation Mill closed in the mid-1970s, following the sale of Ewa Plantation to Oahu Sugar Company. Sugar cane cultivation continued in Ewa until the mid-1990s. In 2001, the City and County of Honolulu planned to incorporate portions of the Ewa Sugar Mill site into the nearby 'Ewa Mahiko District Park.

#### **4.3.6 'Ewa Elementary School**

'Ewa School's official website distinguishes it as one of the oldest schools in the Leeward District of O'ahu, serving the Ewa Plantation community dating back to 1882. Until the early 1990s, the majority of 'Ewa Elementary School students were the children of Ewa Plantation Company and Oahu Sugar Company workers. Once the sugar plantations closed, however, the new housing developments resulted in a more diversified local community ([http://ewael.k12.hi.us/Ewa\\_Elementary/Welcome.html](http://ewael.k12.hi.us/Ewa_Elementary/Welcome.html)).

In 1921, a mandated course on the sugar industry implemented at 'Ewa School "aroused keen interest" in proposing a similar course for other public schools throughout Hawai'i at the time. Some local educators described the course as one that gave students "intimate knowledge about the leading industry in Hawaii" and as "destined to play an important part in the curriculum of the island public schools." Hakalau School in Hilo was the first to follow the example of 'Ewa School's course in growing sugar, and the expansion of the course to other islands was especially endorsed by Governor W. R. Farrington and superintendent of public instruction Vauhan MacCaughey, in conjunction with plantation managers' support. Both teachers and plantation executives lectured in the classroom and in the fields with the intent to give children a foundation in the technological aspects of sugar plantations in order to later pursue careers in the industry (*The Louisiana Planter and Sugar Manufacturer*, Vol. 68, No. 2, page 25, January 14, 1922).

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## Section 5 Community Consultation

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Throughout the course of this assessment, an effort was made to contact and consult with Hawaiian cultural organizations, government agencies, and individuals who might have knowledge of and/or concerns about traditional cultural practices specifically related to the Project area. This effort was made by letter, email, telephone and in person contact. The initial outreach effort was started in September 2010. Community consultation was completed in December 2012. In the majority of cases, letters along with a map and an aerial photograph of the Project area were mailed with the following text:

At the request of Belt Collins Hawaii LLC on behalf of Department of Accounting and General Services (DAGS), Cultural Surveys Hawai'i Inc. (CSH) is conducting a Cultural Impact Assessment (CIA) for the proposed 'Ewa Elementary School Eight (8) Classroom Building Project, Honouliuli Ahupua'a, 'Ewa District, Island of O'ahu, Tax Map Key [1] 9-1-017:002 as depicted on a 1998 US Geological Surveys topographic map (Figure 1) and on an aerial image (Figure 2).

The Department of Education, State of Hawai'i, is proposing to build an eight classroom building at the existing Ewa Elementary School to address the current shortage of classrooms and alleviate additional anticipated overcrowding in the future.

The proposed building will be located in the western corner of the school site, near Pipeline Street, and is planned to be a one-story structure. The Project will also include installation of underground utilities that will connect to existing utilities within the school site, or within the City road right-of-way if necessary. The building is planned to contain the following: six general classrooms; one special education contained classroom; one computer lab; one faculty center; one conference room; student restrooms; and accessory utility rooms.

The purpose of the CIA is to assess potential impacts on cultural practices and resources as a result of the planned Project. We are seeking your kōkua (assistance) and guidance regarding the following aspects of our study:

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

Knowledge of cultural sites- 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 (elders) and kama'āina (Native born) who might be willing to share their cultural knowledge of the Project area and the surrounding ahupua'a (land division usually extending from the uplands to the sea).

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

In most cases, two to three attempts were made to contact individuals, organizations, and agencies apposite to the CIA for this Project. The results of the community consultation process are presented in Table 1. Referrals and short responses can be found in this section following the table. Extensive interviews specifically related to Honouliuli Ahupua'a and the Project area are presented in Section 6 below.

Table 1. Results of Community Consultation

<b>Name</b>	<b>Affiliation, Background</b>	<b>Comments</b>
Aiu, Pua	SHPD Administrator	E-mailed Hinano Rodrigues letter and figures 10/1/12.
Ayau, Edward Halealoha	Hui Mālama O Nā Kūpuna O Hawai'i Nei	E-mailed letter and figures 9/24/12. E-mailed second letter and figures 11/5/12.
Barbieto, Pio and Lida	Raised in Ewa Plantation (Banana/Varona Camp)	Mailed letter and figures 9/21/12. Mailed second letter and figures 11/2/12.
Bise, Tony	'Ewa Cultural Historian	Mailed letter and figures 9/21/12. Mailed second letter and figures 11/2/12.
Cabanilla, Rida T. R.	'Ewa Historical Society	Mailed letter and figures 9/21/12. Mailed second letter and figures 11/2/12.
Clark, Melvin Kauwila	Cultural Historian	Mailed letter and figures 9/21/12 EK. Mailed second letter and figures 11/2/12 EK.
Crabbe, Dr. Kamana'opono	OHA CEO and Administrator	Mailed letter and figures 9/21/12. E-mailed second letter and figures 10/1/12.
Falemei, Hinaleimoana K.K.W.	O'ahu Island Burial Council	E-mailed letter and figures 10/8/12. E-mailed second letter and figures 11/5/12. Received response 11/15/12 referring CSH to Shad Kāne, 'Ewa District council member.
Ka'eliwai, George	Hawaiian Civic Club of 'Ewa	Mailed letter and figures 9/21/12. Mailed second letter and figures 11/2/12.
Kamahele, Momi	Hawaiian Studies Department Leeward Community College Halau Pua Ali'i 'Ilima	E-mailed letter and figures 9/25/12. E-mailed second letter and figures 11/5/12.

Name	Affiliation, Background	Comments
Kāne, Shad	Makakilo/Kapolei Neighborhood Chairperson	<p>Mailed letter and figures 9/21/12.  E-mailed letter and figures 11/5/12.  Received e-mail response 11/5/12:  “I have not seen your ‘‘Ewa Elementary School Eight Classroom Building Project Cultural Impact Assessment’ Consultation letter. I am not aware of the details of the project however I am attaching a Malden's Map of 1825 that identifies several trails that pass close to this area. The decisions in the 1800s regarding the location of the 'Ewa Plantation Villages and the alignment of today's Renton Road and 'Ewa Sugar Mill was done in consideration of these 2 trails from Kualaka'i and Oneula. Portions of these trails were still in use at the start of sugar. Initially serving as a footrail for ancient Hawaiians connecting ocean resources with the lo'i kalo of Kaihuopalaai. They eventually became horse trails and carriage trails. It eventually brought rise to the steam locomotive tracks and gas vehicles to transport sugar to the docks of Honolulu. A portion of the Kualaka'i Trail is part of the Kalaeloa Heritage Park today. A 2 acre portion within the KHP adjacent to the Kualaka'i Trail has been cleaned up and serve as an interpretive trail toward the construction of the KHP. There are 7 identified Hawaiian burials within this 2 acre parcel. There is likelihood that burials can be found the entire route of the Kualaka'i Trail to include the portion of your project. The burials in this area are within the karst or sinkholes.”</p>
Keala, Jane	Ahahui Sivila Hawai'i O Kapolei HCC	<p>Mailed letter and figures 9/21/12.  Mailed second letter and figures 11/2/12.</p>
Keli'ipa'akaua, Chase and Justin K	Cultural Descendents	<p>Mailed letter and figures 9/21/12.  Mailed second letter and figures 11/5/12.</p>
Lacuesta, Celeste	'Ewa Neighborhood Board	<p>E-mail sent 9/25/12. Emailed second letter and figures 11/5/12.</p>

<b>Name</b>	<b>Affiliation, Background</b>	<b>Comments</b>
Lomaoang, Florence and Fernando	Former Neighborhood Board members; long time residents	Mailed letter and figures 9/21/12. Mailed second letter and figures 11/2/12.
Malama, Tesha	'Ewa Villages Community Association	Mailed letter and figures 9/21/12. Mailed second letter and figures 11/2/12.
Martin, Emogene	Friends of 'Ewa	Mailed letter and figures 10/2/12. Mailed second letter and figures 11/2/12.
Matanane, Eric	Oral Traditions Wahipana O Ewa, Nakoia	E-mailed letter and figures 10/1/12. E-mailed second letter and figures 11/5/12.
Nahulu-Mahelona, Moani	Hawaiian Studies Department, Kapolei High School	Mailed letter and figures 9/21/12. Mailed second letter and figures 11/2/12.
Nakamatsu, Charles	Raised in the 'Ewa Villages ("C" Village)	Mailed letter and figures 9/21/12. Mailed second letter and figures 11/2/12.
Norman, Carolyn D.K.	Cultural Descendant	Mailed letter and figures 9/21/12. Mailed second letter and figures 11/2/12.
Norman, Theodore R.K., Keli'inui K. and Kaleo K.	Cultural Descendants	Mailed letter and figures 9/21/12. Mailed second letter and figures 11/2/12.
Nunes, Keoni	Oral Traditions, kalaikakau (tattoo)	Mailed letter and figures 9/21/12. Mailed second letter and figures 11/2/12.
Tiffany, Nettie	Kahu for Lanikūhonua	E-mailed letter and figures 10/1/12. E-mailed second letter and figures 11/5/12.
Quintal, Leti	Raised in 'Ewa Villages; Co-Secretary at Immaculate Conception Church	E-mailed letter and figures 9/25/12. E-mailed second letter and figures 11/5/12.
Ramos, Rodolfo	Chair of 'Ewa Task Force	Mailed letter and figures 9/21/12. Mailed second letter and figures 11/2/12.
Rivera, Frances	Director, Boys and Girls Club of 'Ewa	Mailed letter and figures 9/21/12. Mailed second letter and figures 11/2/12.
Gomes-Silva, Lisa	Cultural Descendant	Mailed letter and figures 9/21/12. Mailed second letter and figures 11/2/12.
Serrao, Mary	Hoakalei Cultural Foundation	Mailed letter and figures 9/21/12. Executive Director Kepa Maly responded via e-mail on 10/9/12 with suggestions and interview possibilities with former oral history participant Barbara Shibuya.

Name	Affiliation, Background	Comments
Shibuya, Barbara	-	E-mailed letter and figures 10/10/12. CSH interviewed Barbara and her family 11/12/12. CSH was referred to Lorna Pico, Barbara's fiancé's aunty, who works at 'Ewa Elementary.
Stagner, Dr. Ishmael	Kama'āina; historian and genealogist	Mailed letter and figures 10/4/12. Mailed second letter and figures 11/2/12.
Tamashiro, Stanley and Lorna Pico	Principal and Administrative Assistant at 'Ewa Elementary	E-mailed letter and figures 12/2/12. CSH interviewed Stanley and Lorna together on 12/27/2012.
Weygan-Hildebrand, Carolyn	Pa'ahana Community Development Corporation	<p>Mailed letter and figures 9/21/12.</p> <p>Mailed second letter and figures 11/2/12.</p> <p>CSH received an e-mail response on 11/3/12:</p> <p>“Thank you for seeking assistance re: Ewa Elementary School Project and congratulations. Ewa, as you may know, is a special place as far as historic preservation goes. It is also serving the fast growing region in the island.</p> <p>I'm responding to your letter dated November 2, 2012. I personally do not have indepth knowledge of six elements that you have identified. However, there are networks in the community that may lead to the information you seek. Among them would be the Principal of Ewa Elementary School himself who grew up in the community. The school's alumni just had a reunion so the connections are still fresh, too. The Ewa Church nearby have members who have been the source of good information about people and places- the Bise family, Myrna Abang...</p> <p>Let me know if assistance is needed in coordinating or facilitating the gathering of folks that might have knowledge. Depending on the work involve, I will offer assistance as a resident (pro bono) or a free lance consultant (for fee).</p>

Name	Affiliation, Background	Comments
Young, Tin Hu and Helen Kealiiwahineulawe naokola He'eia Colburn	Pu'uloa residents; Kawaihahao Church archivist	Mailed letter and figures 9/21/12. Mailed second letter and figures 11/2/12.
Lawrance Woode Jr.	Pelekikena, Hawaiian Civic Club of 'Ewa-Pu'uloa	Mailed letter and figures 9/21/12. Mailed second letter and figures 11/2/12.
Ewa Villages Non-Profit Development Corporation	-	Mailed letter and figures 9/21/12. Mailed second letter and figures 11/2/12.

## 5.1 State Historic Preservation Division

CSH contacted Mr. Hinano Rodrigues, acting History and Culture Branch Chief of SHPD, on October 1, 2012 and received e-mail confirmation that our community contact letter and figures had been received. SHPD recommended CSH contact the 'Ewa Villages Community Association for contacts with regard to the current Project.

## 5.2 Office of Hawaiian Affairs

CSH contacted Dr. Kamana'opono Crabbe via administrative assistants Keola Lindsey and Kathryn N. Keala on September 21 and October 1, 2012. CSH has received no official response from OHA with regard to the current Project.

## 5.3 Kepa Maly

Kepa Maly, Executive Director of Hoakalei Cultural Foundation, responded to CSH regarding this Project via e-mail on October 29, 2012, as well as suggested specific 'Ewa families to contact for oral history:

I...have spent quite a bit of time researching the native language accounts and history of Honouliuli Ahupua'a. That said, I am of course still a student and learning and collecting historical records. I understand that the area of the school project has been connected with plantation operations since close to 1890. And while the surface has been completely modified, it is still possible that subsurface cultural layers could exist. So it would be wise to engage cultural and archaeological monitors during intrusive ground work to minimize possible disturbance of such resources.

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## Section 6 Interviews

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Kama'āina and kūpuna with knowledge of the proposed Project and study area participated in semi-structured interviews for this CIA. CSH attempted to contact 46 individuals for this CIA report; of those, nine responded and six participated in formal interviews. CSH initiated the interviews with questions from the following six broad categories: wahi pana and mo'olelo, agriculture and gathering practices, freshwater and marine resources, trails, cultural and historic properties, and burials. Participants' biographical backgrounds, comments, and concerns about the proposed development and Project area and environs are presented below.

### 6.1 Acknowledgements

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

### 6.2 Tony Bise

Tony Bise, age 89, volunteers as the General Manager of the 'Ewa Federal Credit Union, which is across the street from the 'Ewa Sugar Mill. Mr. Bise, who grew up in nearby Lower Village, is considered a historian of 'Ewa Villages. He has lived in Honouliuli Ahupua'a all his life and is currently living on Imelda Street in the 'Ewa Villages (Figure 14). While 'Ewa Plantation was operational, Tony Bise worked in the machine shop from the 1930s until the 1970s. The interview was conducted on June 4, 2009, at the 'Ewa Federal Credit Union in 'Ewa Village, O'ahu.

When asked about the inhabitants and the flora prior to the sugar mill, Mr. Bise recalled the history taught to him, "Over here was all kiawe trees and koa." Mr. Bise did not know of the people who lived in the area prior to the sugar plantation.

The only burials in the area, as far as Mr. Bise recalls, are at the cemeteries near Fort Weaver Road and in West Loch. Mr. Bise asserts that, "There's no burials over here" near 'Ewa Mahiko District Park. However, Mr. Bise also remembers that, "when we were kids, when we were working in the fields cutting weeds, there was a grave right in front there, near Kapolei....[pointing at the map of 'Ewa Mahiko Park]. It's not too far away from the area over here." He later added that there were actually three graves among the sisal.

Mr. Bise spoke of Harvest Home as one of the few ceremonies that occurred at the sugar mill. He also mentioned the Bon Dance festivals. Mr. Bise does not know of any artifacts or plants that were gathered in the area. Yet he knows that there are "plants that grow right in the sugar field.... the leaf, you heat it up. Then, whenever you got some kind of a sore, you put that on." He had forgotten the name of these medicinal plants. He described another "wild grass that they use for if you got cancer or something. They put that. Or they boil that and make tea out of it. They got that kind of thing growing around, but I don't know what they call it."



Figure 14. Tony Bise at home in 'Ewa Villages (CSH 2009)

### 6.3 Shad Kāne

CSH interviewed Shad Kāne on January 3, 2011 at his home in Kapolei. Selections from the interview reveal Mr. Kāne's generational ties to the peninsula of Pu'uloa, highlight the buried cultural landscape of 'Ewa, and explain the significance of the mauka-makai relationship in 'Ewa.

Mr. Kāne was born on the Pearl City peninsula in Mānana in 1945. Just prior to his first birthday and after the Navy took control of the peninsula at the start of the Pacific Theater of World War II, his parents, Hattie and Tazoni Crowningberg Kāne, moved to Wahiawā where he grew up. Mr. Kāne attended Kamehameha Schools. After enlisting in the Navy and attending the University of Hawai'i, Mr. Kāne worked for the Honolulu Police Department for 34 years. He retired in 2000 and since, has become involved in several initiatives to preserve Hawaiian historical and cultural sites. He is a member of the Royal Order of Kamehameha, the O'ahu Council of Hawaiian Civic Clubs, Nā Koa 'O Pālehua, and the Ahahui Sivila O Hawai'i O Kapolei Hawaiian Civic Club. He is also the 'Ewa representative on the OIBC and a Native Hawaiian representative on the Native American Advisory Group to the Advisory Council of Historic Preservation in Washington, D.C.

As a young adult, Mr. Kāne first became interested in his Hawaiian cultural heritage. Yet, his parents were part of a generation of Hawaiians that was struggling to survive. In this period of time, many Hawaiians did not share their knowledge of Hawaiian cultural traditions and language with their children. After Mr. Kāne graduated from high school, his mother shared

several mo'olelo with him of her life on the peninsula of Pu'uloa prior to World War II. Mr. Kāne's family lived on Laniwai Street, which was not far from where his mother worked as a hula dancer for Pan American. Pā'au'au lokahi, a fishpond, was also located nearby. Mr. Kāne recalls with fondness that he sang the Pā'au'au Waltz as a student at Kamehameha Schools.

Mr. Kāne's mother also spoke to him of lo'i kalo, although Mr. Kāne cannot say with certainty that these lo'i kalo were on the peninsula. Family photographs of lo'i kalo from this time period could be from the surrounding area. The region's agricultural base also included watercress farms and rice fields. In addition, Mr. Kāne's father fished, hunted for crabs, collected oysters and clams, and gathered limu in the waters of Pu'uloa in the specific area of Pōhaku O Kāne on the peninsula. Growing up, Mr. Kāne recollects how he and his father fished at the mouths of rivers that flowed into the ocean, such as Waimea Bay. While he has photographs of many of the fishing areas, most of these rivers no longer flow.

Mr. Kāne discusses the dramatic alterations to the land within the moku of 'Ewa. Most significantly, the land of Pu'uloa, which connects to all 13 ahupua'a in 'Ewa, has been filled in through a growing partnership between business interests and federal agencies. However, the cultural landscape—the ancient use of the land for such activities as fishing, gathering, collecting medicinal plants, and worshipping—remains intact underground:

There are a lot of interesting things regarding all of Pu'uloa. Much of this area in 'Ewa Moku has been altered a lot. Compared to other places it is has been altered significantly by, and grew out of, a partnership between business interests, land owners and federal agencies. We've seen this history in other places, like Manifest Destiny, moving and expanding land ownership. The federal agency provided security for the business interests, and ultimately to provide for the expansion of large numbers of people. In these Hawaiian Islands, it happened more in 'Ewa more than anywhere else. Twenty-five percent of all lands belong to federal agencies, such as the Department of Defense [DOD]. Much of that is on O'ahu, and much of that is in 'Ewa. Think of all the military bases. I'm not trying to be judgmental—I'm just trying to share what I've learned over the years. I don't blame the children of today for the decisions their parents made. It is a different time and we have to move on.

'Ewa is critical. It is at the very nature of that partnership, of agriculture and the support of federal agencies, and the erosion of our Hawaiian culture. The nature of agriculture is to bulldoze. An archaeologist's job is to find things [that] are identifiable and draw conclusions from something that can be seen. You can't do that if you can't see anything. It is a challenge.

The ancient Hawaiian resources, due to the very nature of the alteration in the region, have not been removed. It has all been filled in. In other words, the cultural landscape within all of 'Ewa is still there. It is just buried. The stuff that was on the high ground, where they planted sugar cane and pineapple is gone. Within the valleys, the low-lying areas, the wetlands adjacent to Pearl Harbor, from 'Ewa Beach to 'Aiea, much of that cultural landscape—the cultural layer—is still in place. The Navy and the DOD are beginning to understand the importance of preservation and our history. They are realizing it is not just a

history of the DOD within Pearl Harbor; it is a history of all the many cultures that live here. No better place than 'Ewa because there is a lot here. These guys, Tin Hu Young, the Colburns, and Don Francisco de Paula Marin, were a big part of this history. They were from other places, making it a very colorful place that tries to integrate many histories into one.

When you see Pearl Harbor, you see nothing Hawaiian. But in reality, that Hawaiian cultural history is still there. Much of what was on the surface is no longer there. But the cultural landscape is still beneath it. The Navy simply filled in everything. Much of Pearl Harbor was fishponds and salt ponds. All of those are still there, they are just filled up. I am constantly saying that this is part of a traditional cultural landscape, but the Navy disagrees with me. The Navy doesn't see anything. To show that the traditional cultural landscape still exists, I have to speak about the ancient Hawaiian land use, and not in terms of physical structures. We are talking about land that was used for specific purposes by Native Hawaiians. We can talk about it in terms of gathering resources, fishing. We can talk about in terms of a place to gather salt. We can speak of it in terms of a place of worship and pray. We can speak of it in terms of a place to gather medicinal plants. A traditional cultural landscape is that. It is land that was used for a specific cultural purpose. If you speak of it in that respect the Navy must understand that it is a traditional cultural landscape. This is a challenge in 'Ewa, more so than anywhere else. If you go anywhere else, you'll see something above the ground and exposed. You go to 'Ewa, it is not exposed. It's underground.

On November 5, 2012, Mr. Kāne also responded to a CSH inquiry by e-mail describing the significance of Malden's 1825 map of trails (Figure 15). He explained that Malden actually drafted the map in the 1790s prior to Kamehameha. Two trails were recorded closest to the Project area:

The decisions in the 1800s regarding the location of the 'Ewa Plantation Villages and the alignment of today's Renton Road and 'Ewa Sugar Mill was done in consideration of these two trails from Kualaka'i and Oneula. Portions of these trails were still in use at the start of sugar. Initially serving as a foottrail for ancient Hawaiians connecting ocean resources with the lo'i kalo of Kaihuopalaai. They eventually became horse trails and carriage trails. It eventually brought rise to the steam locomotive tracks and gas vehicles to transport sugar to the docks of Honolulu. A portion of the Kualaka'i Trail is part of the Kalaeloa Heritage Park [KHP] today. A two acre portion within the KHP adjacent to the Kualaka'i Trail has been cleaned up and serve as an interpretive trail toward the construction of the KHP. There are seven identified Hawaiian burials within this two acre parcel. There is a likelihood that burials can be found the entire route of the Kualaka'i Trail to include the portion of your project. The burials in this area are within the karst or sinkholes.

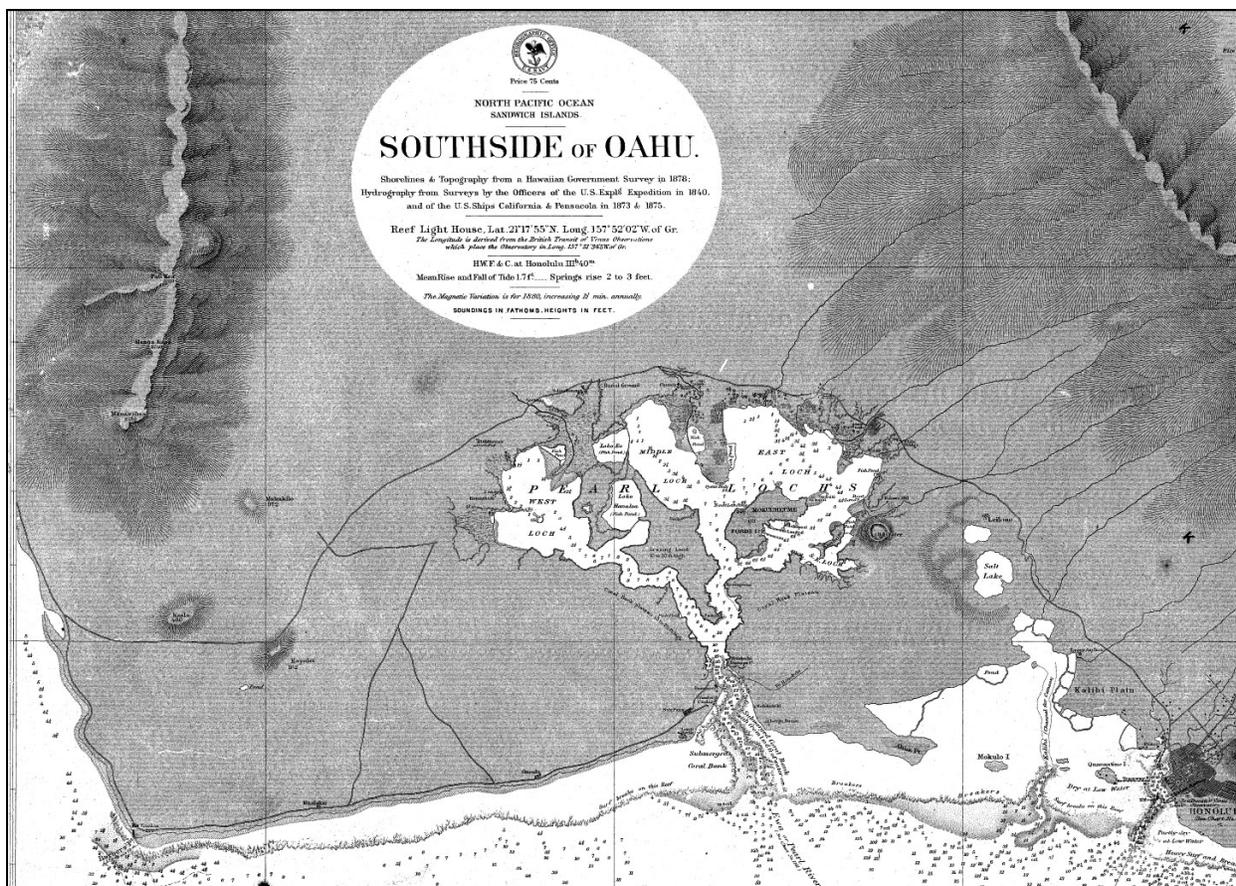


Figure 15. Malden's map depicting Honouliuli Ahupua'a (Malden 1825)

## 6.4 Shibuya 'Ohana

Barbara Shibuya graciously invited CSH to interview her, her two sisters Mona Shibuya and Janice Trinidad, and her cousin Wileen N. Biscaino on November 12, 2012. Barbara's oldest sister Janice hosted the group at her home. All four women were born and raised in 'Ewa Villages (Figure 16). Janice, Barbara, and Mona's father worked as a tractor operator in the cane fields after starting out tending his own plot of sugar cane. Their mother worked for the Navy Exchange Laundry, while Wileen's mother was a nurse at 'Ewa Plantation Hospital. Wileen grew up in the same house on Fernandez Road, and her three cousins moved a total of eleven times within 'Ewa, including to homes in Lower Village, Fernandez Road, Mendonca Farm, Arc Street, and Tenny Street. Many of the major streets were named after the luna, or managers, of 'Ewa Plantation.

The family spoke at length about the beauty of the sugar cane fields and their life growing up in 'Ewa at that time. Wileen's brothers would collect the sugar cane tassels that grow on the top of the plant to make spears to play with, even shooting them at neighborhood cats. Janice reminisced about the many things she and the other children had to do in those days. She and her friends especially enjoyed riding their bikes to go play on the flume:

And they used to tell us not to play in the flumes, because the water coming down is very strong and it can suck you in! That's why they used to have grills at the end because if you go under you can at least try [to get out]. When the flume is not open, it's so inviting; it's like a swimming pool. So we're splish-slashing, and you see the cane truck come: "Hey! You guys better get out of there! I know your parents!" – "Okay! We're going!"

They also used to catch crayfish and tilapia in the flumes and pick *ogo* (seaweed). The women's grandmother's house had chicken coups in the back yard as well, along with eggplant, ginger, *lychee*, and *kalamungay* (drumstick) trees, whose leaves are used for soup. "If you can't eat it, don't plant it," their grandmother used to say. Because the family cultivated so many different varieties of fruits and vegetables, they hardly went to the market for anything else. The Filipino tradition of *sabong*, or cockfighting, also carried on in the Shibuya family. When family and neighbors hosted cockfights, the girls would make money selling sandwiches and soda under the supervision of their father. Mona added that after each match, the rooster was never wasted; they prepared its lean meat for family meals.

Wileen recounted how she and her cousins grew up playing in the cane fields:

Our grandmother used to live right in the front of Renton Road. Across from her was cane field, and when we saw the black snow, that meant they were burning the cane. We'd run to grandma's house and wait until everything was done, and then go across the street – "Can we have sugar cane?" – and they'd cut and peel them for us.

Wileen and Janice pointed out that what used to be called Mango Road was lined with many common mango trees. They noted that 'Ewa was famous for mangoes because of the favorable climate. Homes in the area usually had one or two mango trees in the yard. Some varieties found in 'Ewa include pocket, haven, cigar, and kiwi.

"I was blessed to be raised the way I was," Barbara said. She noted the 'Ewa Shopping Center that once existed next to Lanakila Baptist School now stands on Renton Road. Other establishments that existed include a bowling alley, barber shop, Olympic-sized swimming pool, baseball field, several restaurants, and a gym on Tenney Street. The Tenney Street house in which Barbara now lives has a small house in the back yard that was once used for a Saimin stand during the plantation days. She went on to describe:

We had our own little village here. It was awesome...to be able to run freely and not be afraid. And we all knew our neighbors and we felt safe. I have good neighbors, but we don't know them like we did before when we would name each family down the street, our doors didn't need to be locked, and we took care of each other.

As girls, they also used to climb the fence after hours with their friends to go swimming at the community gym where they had an Olympic-sized swimming pool:

This guy – we used to call him Souza – used to be the lifeguard. He'd go, "You better get out of the pool, Shibuya! I know your parents!" And he used to live in 'Ewa, so we used to go knock, "Souza, we like go swim. Can you be our

lifeguard?” And he’d say, “Okay, give me an hour. I’m coming,” and he’d come to our house.

They frequented the “*Pake* [Chinese] Store” as well. The four women recalled a family on Fernandez Road that used to rent out their dirt-floor garage space to a Chinese man who sold canned goods, candies, and other items to the neighborhood. Near the train station in what was referred to as “Banana Camp” (commonly known as Verona Village). There was also a piggery where their families would drive in to choose a pig for slaughter to take home. The process of removing the animals’ hair was called *kiss kiss* in Filipino, and Wileen used to help her brother with killing the chickens for salting and cooking as well – especially for parties. The smell of burning kiawe wood was a telltale sign of an upcoming party in the neighborhood. The Shibuyas’ father was a skilled cook and would prepare 20 pounds of rice in a single wok. Wileen recalled, “I remember growing up, it used to be all lined up. You would see all these big buckets food, all these slabs, maybe get pig head, and get long tables and see people cutting up vegetables. And nobody was stealing the food! And then maybe in the back portion you see all the fires going.”

In regards to the O‘ahu Railway, Janice explained her understanding that those living farther west of the elementary school in “Hawaiian Camp” were the families that worked for the railroad. Wileen noted that the train tracks that used to move the sugar are still visible along the highway. Barbara’s cousin Wileen described how when she was about 5 years old, the children in ‘Ewa used to get train rides at Christmas time and take home goody-bags with apples and oranges with each child’s name written on it.

Wileen reminisced about the school lunches they enjoyed at ‘Ewa School, including pigs-in-a-blanket, pork chili, and Spanish rice: “Everything was cooked there. Not anymore. Now it’s more like fast food. They had awesome meatloaf; everything was homemade in the kitchen.” Whatever leftovers the school had would be sold to anyone who brought in their Tupperware or pots. Barbara’s family also recalled bringing their kitchen pots to the soup kitchen in Lower Camp (near the old ‘Ewa Plantation Hospital) when their parents working on the plantation would strike for better wages. Unaware at the time that their parents were struggling, the children would be excited to see the gathering of food and family at a neighbor’s house to distribute the rations. The four women attended ‘Ewa School [perhaps too late to have taken the course on sugar plantation operations described in the 1922 *Louisiana Planter and Sugar Manufacturer* (see Section 4.3.6)]. Even when Janice proposed the possibility of working in the ‘Ewa plantation office, her father told her he didn’t want her or her husband working there because he foresaw the closing of the plantation.

The family remembers growing up with the racial prejudices of World War II, which lingered even after the plantation folded in the late 1970s. Janice recalls:

We used to have some portables in ‘Ewa Elementary where they used to have Japanese classes. We wanted to attend those classes after school, but my dad refused because he was in 2 wars – WWII and the Korean War – and he said, “No, you live in the United States you speak English.” But today we are the losers, yeah? We could have had another language, right? But at that time, because of Pearl Harbor – and because our last name is Shibuya; that’s a Japanese

name – so you can imagine the prejudice that we had. And we were half Filipino, so that made it worse.

When the women were growing up, they were taught strictly to behave out of respect, because other families in the community were always watching. “We couldn’t do anything wrong because as soon as we got home our parents were waiting already. They knew,” Wileen said. Janice recounted how they were forbidden from walking eastward along Renton Road toward the school because it was “Haole Camp” where the plantation managers lived. “They [the managers] didn’t want us walking that street,” she said, and one day their father was turned in because she and Mona were seen walking there. “Even though we don’t know those people they ended up finding out who we were and who the child belongs to. So those days were segregated, meaning when you first enter, that was Filipino majority, Haole camp, Japanese, and then Filipinos and then Hawaiians.”

Even today, Mona notes, “There’s segregation; it’s unspoken, but it’s there. We like to act like it’s all good but it’s not.” Although they generally agree with other historical accounts celebrating ‘Ewa School as a melting pot within a multicultural community, Janice qualifies that with the recognition of the community separations outside of the elementary school. Today the demographic make-up of the ‘Ewa community is quite similar to that of the plantation era, but the former tensions and separations of racial camps are no longer present.

Barbara described a personal encounter with what her sisters and cousin understood when they were young to be a wandering spirit along the old Mango Road. When Barbara was in her early 20s and her son was about 4 years old, she would walk down Mango Road. For three days in a row, at the same moment the sun would set, she would reach a certain tree and immediately be overcome with fear. When she finally went to ask her grandmother what was wrong, her grandmother advised her, “You don’t go there anymore. There’s a man in the tree who likes you.” Other stories Barbara has heard growing up describe children being taken from their mothers, so she heeded her grandmother’s warning. The only burial site in the area that Barbara and her family are aware of is the graveyard by the Zippy’s Restaurant where their grandfather and uncles are buried. It was once cared for by an older man in the community, but has since become overgrown for lack of regular maintenance. The other graveyard is at old Tong Ranch, now known as Westloch Fairways.

Barbara noted that ‘Ewa School was famous for the Lincoln Day Program celebrating President Abraham Lincoln’s birthday. When they were young, the Royal Hawaiian Band and singers were commissioned to play, beautiful flower leis would be worn all around, and scores of balloons would be released into the sky. But in recent years, they said, the celebration is not as grand as it once was, possibly due to the changes in the community dynamics since the closing of the sugar plantation. Even for ‘Ewa Carnival, they said, everyone would be looking to the sky for a man to parachute out from a plane to mark the start of festivities. There was a strong sense of community in those early years of the carnival, and families from the other side of O‘ahu would travel to ‘Ewa just for that gathering by the former gym. When they attempted to bring back the carnival in the 1990s, however, Barbara and her family were disappointed in its management and organization, especially with regard to crowd control. Because there are houses built by the old gym, the carnival was set up in a blocked off portion of Renton Road with rides and vendors set up along the median and in the park, creating dust and parking problems.

By the time 'Ewa was registered as a historic district about a decade ago, there were relatively few historic buildings still left standing in 'Ewa Villages. Janice explained that her home near Renton Road was a newer home across the street from a park where a mural is painted (Figure 17). The mural is painted on a historic wall that was part of the original structure of the old truck station where the sugar cane was dropped off, rinsed, and then sent by conveyor belt underneath Renton Road to the sugar mill. Janice laments by the time 'Ewa was registered as a historic district there were hardly any historic buildings left that would attract visitors. "Right across from the Japanese club house used to be a two-story building where they used to have a saimin stand, Long's Store, little mom-and-pop shops – and it's no longer in existence." In the 1970s, most shops began to shut down. The newer homes near the elementary school replaced some of those shops.

Janice points out the remaining historic buildings to her knowledge are the post office, the old 'Ewa store and the adjacent building, the plantation manager's mansion, and the Japanese club house. The women agreed that they would like to see 'Ewa turn its remaining historic buildings into museum attractions to preserve the community's history and aesthetic nature, much like Lahaina, Maui. They are hopeful that the renovation of the former plantation manager's mansion, for which Councilman Tom Berg helped raise and release funds earlier this year, will result in a museum. To their understanding, a similar scenario played out for the old circular auditorium at 'Ewa School; rather than mounting community pressure to renovate the historic auditorium, it was replaced with a new building with little to no community protest. "When you think plantation people, they pretty much just go with the flow," Janice said. Barbara asserted, "That's why it is what it is now. That's why us younger generation needs to step up, or there ain't gonna be jack left." Even the wall at the park across from Janice's home holds meaning, because it was part of the structure of the sugar plantation that was once used to wash the sugar cane. The mural on the wall at the park illustrates the history of 'Ewa Plantation and was completed in the 1990s to mark its 100-year anniversary.

The large kinds of cooperative community or family gatherings the women experienced growing up doesn't occur so much today. Although they are not as involved with school events as they got older, the last few events the family did attend were different from their childhood. "That's why growing up I wish my daughters and granddaughters could see what we went through. I mean, it was good," Janice said. Barbara was glad, however, that her son Shanon thanked her in his early 20s for raising him in such a free and open lifestyle in 'Ewa. He was a very friendly boy and wandered the neighborhood making friends of all ages, even with golf course security guards who allowed him to fish for tilapia in the golf course ponds. As young as 7-years old, he would hop on his bicycle with his fishing pole and greet all the neighbors as he rode past. All Barbara had to do was call one of her neighbors to be sure somebody saw him and he was safe. Shanon even had a charge account with the neighborhood Manapua Man. "To this day my husband calls my nephew Jones, because he was 'Jonesin' all over the place, just doing his own thing!" Janice added.

Janice feels that driving down Renton Road is the only thing that makes one feel like they are in 'Ewa today, because the trees and the road itself from 'Ewa Store to the Immaculate Conception Catholic Church (one of the first churches built in West O'ahu) are still much the same: "As soon as I come into 'Ewa and I see our church, I think, 'I'm home.' And then when I'm driving under the tree, that's when I feel this is my 'Ewa." But with more speeding cars and

people from outside the 'Ewa community coming in to use Mahiko and other 'Ewa parks, the changes tend to be more disruptive than helpful to the community from Barbara's family's perspective. Barbara and Janice lament with the change in landscape today they couldn't let their children run as freely without worry as they did before.

The women expressed particular concern for how the expansion of 'Ewa Elementary may contribute to the parking and traffic problems they have been experiencing for the past several years along Renton Road. Barbara noted how cars have been parking along Renton Road because of an increasing lack of parking in the area, in addition to the dangerous increase of cars speeding throughout the neighborhood. One of Barbara's dogs was hit and killed recently, a young boy was hit earlier this year, and a man crossing the street in a wheelchair was almost hit as well – incidents unheard of in a neighborhood where children and pets are regularly seen playing outside. They also commented on their disappointment in the aesthetic changes of 'Ewa School as well. "Ewa School is not pretty like it was before. We had a nice big auditorium and two big pine trees in front. Now it just looks like a regular cement school," Barbara said. "If this is a historical preservation area, then maybe they should have kept something from the school. You know, like how McKinley [High School] has their buildings still."

For Barbara and her family, the practical issues of parking and speeding ultimately relate to the larger socio-cultural changes that have taken place in the community since they were children growing up in the plantation times. When Janice bought her home, she made it a point to stay in 'Ewa. "I wanted to raise my girls in 'Ewa – which I did – and now my granddaughters. But because of progress, it's changed. I mean, people don't treat each other the same." With more outsiders moved into the neighborhoods, they feel the sense of tight-knit community has been lost to an extent.



Figure 16. Family photo outside of Janice Trinidad's home in 'Ewa Villages. From the left: Barbara Shibuya, Wileen N. Biscaino, Mona Shibuya, and Janice Trinidad (CSH 2012)



Figure 17. Mural painted on the historic wall from the original 'Ewa Plantation truck station on Renton Road marking its 100 year anniversary (CSH 2012)

## 6.5 Lorna Pico and Stanley Tamashiro

CSH met with 'Ewa Elementary School Principal Stanley Tamashiro and Administrative Assistant Lorna Pico for a joint interview on December 27, 2012 in Stanley's office on the school campus. They were both born and raised in 'Ewa Villages and spoke about the strong community connections that emerged from the plantation era there.

### 6.5.1 Lorna Pico

Lorna Pico was born in the old Ewa Plantation Hospital in 1958. Her parents were immigrants from the Philippines. Lorna's father had come to work for the plantation, then returned to the Philippines some time after to marry Lorna's mother, a "picture bride." He worked in the 'Ewa Plantation lab and later worked in the boiler room refining sugar. Lorna's mother came to 'Ewa in 1957 and worked as a housewife. Lorna grew up in "Banana Camp" and now lives in Fernandez Village. Eventually, her own husband worked for the plantation and continued working with O'ahu Sugar when they bought 'Ewa Plantation. After having her children, Lorna began working at 'Ewa Elementary in 1983.

### 6.5.2 Stanley Tamashiro

Stanley Tamashiro was born a few years before Lorna in 'Ewa Plantation Hospital as well, "Third floor, Dr. Wall," he said laughing. His father was born in 1920 in Waipahu but worked for 'Ewa Plantation and moved the family first to Lower Village, which is now part of 'Ewa Fairways, across from 'Ewa Family Center. His dad worked for the plantation for nearly 50 years, starting as a crane operator, then an irrigation supervisor, and finally retiring as a cultivation manager overseeing the planting operations for O'ahu Sugar after the 'Ewa Plantation buy-out. Stanley's mother worked as a housewife and the family moved to Tenney Village until about 1970 when they moved to "Haole Camp" on Renton Road. When Stanley married he moved out of 'Ewa and has been living in Waipio Gentry for about 40 years. He became principal of 'Ewa Elementary in 2003 after serving as the 'Ewa Complex-Area Superintendent, and before that as principal of Kaimiloa Elementary School in 'Ewa Beach.

### 6.5.3 Joint Interview with Lorna Pico and Stanley Tamashiro

Lorna agrees that a marked change has taken place in 'Ewa from the days when "everyone knew everyone" in a close-knit community of mostly plantation workers. "Pretty much the same guys that you started kindergarten with when you left as a sixth grader [were] still there. Because most of us our parents worked for the plantation, we didn't really leave, as opposed to where we're at now," Stanley said, "[But] we still have families who have been here a long time, even if they're not plantation families."

Lorna and Stanley speak fondly of the 'Ewa community events they enjoyed as children. "I think the ['Ewa] Carnival was one of the more memorable experiences for all of us growing up here," Stanley tells CSH. It was held at the community gym near Tenney Village and included a swimming pool to fish for tilapia, rides, various games, and exhibits. The gym also housed its own swimming pool, bowling alley, kickball and basketball court; along with football, baseball and track fields. "It was really cheap membership; something like \$1 for the family," Lorna notes. The gym was officially the "'Ewa Recreation Association" but was largely managed by the plantation. Stan elaborated on the relationship:

I think that's one of the big things about our plantation as opposed to, say, Waipahu. I guess because other people moved into Waipahu, so it wasn't only plantation. I think the big difference – and my dad used to always say – between 'Ewa and Waipahu was we were owned by Castle & Cooke; missionary family. Although they're business people, still missionary; they look out for the people. Whereas Raw Sugar, owned by Amfac, [Inc.] German businessmen, if you're not making a buck for that, they're not going to fix it up. So, our roads were really good paved roads. Waipahu in the camp – was my wife's family – a lot of their roads weren't paved. We had a gym; they didn't have. They had a park; we had too. Although Tenney Gym was the big gym, we had in every camp their own club house, basketball court, playground area, and park. Even Lower Village, the smallest one, had a field to play volleyball and basketball. The plantation really took care of the workers.

The Christmas program was a big event for the community as well; everyone had their own gift with their names on it. On May Day, Stanley and his friends recall going to the gym after

school to play and they were provided lunch. A plantation truck used to pick them up from school and take them to nearby One'ula (commonly referred to as "Hau Bush") and CPC Beach Park so the kids could picnic and play games during the day. When the gym hosted their Summer Fun Program, children would walk to camp and the plantation truck would return them home. Campbell High School often used the gym for their basketball games and other major sports games, Lorna explains. It was a place that people rented for parties and Lorna was actually married in the gym. Although 'Ewa Plantation was a separate entity, they were heavily involved in the school. Stanley recalls, "When you think of the unveiling of the statue in 1944, the Plantation Manager was probably more important than the Governor and the Superintendent of Education. He probably decided almost everything that ever happened."

Lorna and Stanley were too young to have taken the course on sugar plantation operations described in the 1922 *Louisiana Planter and Sugar Manufacturer* (see Section 4.3.6), but Lorna mentions there were agriculturally centered classes back then because 'Ewa School used to go up through intermediate class levels. There was also a school garden on the northeast end of the campus (now the L Building near the school playground). Every class had their own couple of rows of corn, beans or other plants to tend. That garden program ended perhaps around the time Lorna left kindergarten. There was an attempt to bring it back through a grant for an intergenerational program from Hawai'i Pacific University, where people came to teach the elementary school children about gardening near the northeast fence. However, the program only lasted as long as there was grant money.

No gathering of plants or other traditional Hawaiian practices are observed today to their knowledge, but Lorna did point out that there are still people living today in Hawaiian Camp who have been there a long time, including the Huna and Ka'anehi families. Stanley notes how looking at the 'Ewa School graduation pictures, one can see the change from a mostly Asian and Haole demographic to one of mostly Filipino mix of immigrants by the 1940s. Lorna and Stanley never experienced much racial tension growing up, although Stanley admits the tension might have been more evident earlier when the different villages were more segregated. The plantation intentionally separated the racial camps, Stanley explained, because at one time they actually paid different racial groups different rates. So by separating them, there would be less chance that word could get out and complaints would arise. When the plantation finally closed and more outside families and new developments came in, there may have been more tension then too, Stan speculated. "Everybody was so close and protective of 'Ewa families. And when outside families came, a lot of them were from Waipahu – Waipahu was like a rival," Lorna states.

When Lorna's sister-in-law attended school in the 1950s there weren't many schools on the Leeward side. Students from 'Ewa Beach, Waipahu and Pearl City were sent to 'Ewa Elementary until about the 9th grade. So in this respect, Lorna states, the 'Ewa Plantation community knew and embraced many outsiders because even if they were not part of the plantation, they were a part of the school. Because of this dynamic Lorna is left unsure about how the dynamics exactly played out as change came to 'Ewa Villages. Stanley remembers the "Friends for 'Ewa" group being formed in part to facilitate bringing the different communities together around historical preservation at about the time of the fold-up of the plantation and shifting community dynamics. "I guess it's natural anytime there's change," he commented. "If you've been there for many years, you know how things are supposed to be. Then here comes some other people trying to tell you, 'Hey, this is not how things are supposed to be.'"

When the plantation shut down, 'Ewa Recreation Association folded as well. Lorna explains there was money still left in the Association's account and they initially attempted to revive community sports activities and events. Lorna's family was part of that effort that succeeded in funding basketball and volleyball for about two seasons, as well as the construction of a backstop for the baseball field in the old Mahiko Park that was behind what is now Friendship Bible Baptist Church. The local families wanted to continue to provide their children the same experiences and opportunities they enjoyed growing up, but funding eventually ran out. "Unfortunately, I think a lot of the success that we enjoyed was due to the plantation taking care of things," Stanley explains. He continues:

For instance, the end of summer 'Ewa Carnival was actually for the benefit of the 'Ewa Recreation Association, but who was there building the booths? Plantation plumbers, plantation electricians, plantation carpenters. My uncle was active at Pearl City Community Association, and he always used to ask my dad, "How come you guys make so much money?" Because [Pearl City] was a bigger community. But they couldn't make as much money because they had to pay for everything to put things up. Whereas us, if we needed food booths, the plantation came with the carpenter and the supplies of wood, etc. There may have been a minimal cost, but not paying the going rate. The plantation really took care of us in all aspects.

When Stanley came back in 2003, the school was fairly large with about 800 students – now up to 1,100 with about 100 staff members. Stanley wanted to ensure 'Ewa Elementary remained the kind of community where people look out for each other as a whole (Figure 18). No matter the specific roles of students, teachers or staff, "Everybody takes care of everybody, because that's what a community does," Stanley emphasizes. Stanley remembers coming home early from school and his father would always know because someone in the neighborhood would see Stanley's car. "Whoever told my dad was just looking out for my family. And that quality of a community is hard to find now because the common ground was the plantation." Although the great majority of families living in 'Ewa Villages today have no connection to the plantation, the school continues to remind people that 'Ewa is still a plantation town. Stanley notes this plantation origin as the reason that even the 'Ewa Elementary School shirt still depicts the sugar mill rather than the Lincoln statue that fronts the school.

Lorna also made an example of the school's 'Ewa 'Ohana Fair to illustrate how the supportive community attitude still endures. In the 1990s, the fair used to go on into the evenings and have several different booth attractions. Oahu Sugar Company was asked to make booths, and they actually provided supplies afterwards for the school to use in the future. So for Lorna, that signaled that the charitable, supportive attitude in 'Ewa continued even when there was no longer a plantation on their grounds.

The surrounding areas of the school were all occupied by sugar cane fields, so no burials are known to Lorna or Stanley beyond the cemetery near Zippy's Restaurant, although they speculate that there may have been burials long before the plantation era. Stanley did explain that there have been teachers and other staff who can sense or can see that there is a spirit living on campus. "I come regularly by myself so I'm not worried about it because I respect whoever's here, and I'm not here to make trouble," Stanley notes. Though no threatening encounters have

been reported, the stories that he has heard usually deal with electronic devices turning on when they weren't on before. Lorna also recalls the time when they built the new administration building before Stanley became principal. They had to perform the traditional blessing because the school was going to have the first Lincoln Day Program since the statue was moved away from the Renton Road sidewalk. "The teacher who wove the haku, her hands all of a sudden froze. She couldn't move; she couldn't do it. And so they called in a Hawaiian priest and he went on campus and he said it was because the statue was moved without the proper permission," Lorna explains. So the kahu (priest) completed the blessing, and then went on to inform them of a Menehune (legendary race of small people who worked at night building fishponds, roads, temples) path that goes through the back of the campus and through the library and office buildings, although that was not any cause for fear.

According to Stanley, the new classroom building on the west end of campus will be L-shaped and leave the parking lot intact. The east portion of the Project area was one possibility for placing the building. However, as Stanley explains, he did not want to build there because the area is not large enough for a one-story building. In such a case, a standardized two-story building would have been necessary, whereas a one-story building would allow for a more distinctive design. Placement of the eight-classroom building on the west end also puts it next to current building for kindergarten and first grade, the intended grade levels the new building would serve. Eventually, Stanley said, the central cross-campus sidewalk would be widened as well. Stanley and Lorna noted how the administration building, the newest building replacement, was actually designed by an architect from 'Ewa and incorporated a similar design to the original building, with two separate wings and walkways cutting through. So the intent for the upcoming classroom building is to modernize, while preserving a degree of the school's historical character.



Figure 18. 'Ewa Elementary School; note the steeple of the Immaculate Conception Catholic Church in the background (CSH 2012)

## Section 7 Cultural Landscape

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### 7.1 Overview

Discussions of specific aspects of traditional Hawaiian culture as they may relate to the Project area are presented below. This section examines cultural resources and practices identified within or in proximity to the subject Project area in the broader context of the encompassing Honouliuli Ahupua'a landscape. Excerpts from interview sessions from past and the present cultural studies are incorporated throughout this section where applicable.

### 7.2 Wahi Pana and Mo'olelo

Wahi pana and mo'olelo reveal that the Project area exists within a complex network of sacred sites, connecting the 'Ewa Plain. The stories of Hi'iaka and Kamapua'a at Pu'uloa; the naming of Hoakalei and of Honouliuli; and the heiau at Pu'u o Kapolei demonstrate relationships that connect the history of the past to the present day living. Mr. Shad Kāne specifically spoke of the relationship that people have to these traditional concepts and names. The cultural significance of the Project site is maintained through these relationships, as expressed in the stories of the area and the names. Mr. Kāne spoke at length about the altering of history by replacing names, referencing modern military accounts, especially places near Pu'uloa, thus negating the significance of Hawaiian concepts and values. The area commonly referred to as Pearl Harbor in modern times was once referred to as Pu'uloa ("long hill"). Honouliuli is the western-most ahupua'a in the 'Ewa District. Honouliuli means "dark water," "dark bay," or "blue harbor" and was named for the waters of Pearl Harbor (Jarrett 1930:22), which marks the eastern boundary of the ahupua'a.

It seems likely the boundaries of Honouliuli were often contested with the Wai'anae community. The 'Ewa community could determine that the dividing point between Wai'anae and 'Ewa was between two hills at Pili o Kahe:

The ancient Hawaiians said the hill on the 'Ewa side was the male and the hill on the Wai'anae side was female. The stone was found on the Waianae side hill and the place is known as Pili o Kahe [Pili=cling to, Kahe=flow]. The name refers, therefore, to the female or Waianae side hill. And that is where the boundary between the two districts runs (Sterling and Summers 1978:1).

Pu'uokapolei is a prominent hill located on the 'Ewa coastal plain and was the primary landmark for travelers on the trail that ran from Pearl Harbor west to Wai'anae (Sterling and Summers 1978:34). Pu'u means "hill", and Kapolei means "beloved Kapo," a reference to the sister of the Hawaiian volcano goddess, Pele. A heiau was once on Pu'uokapolei, but had been destroyed by the time of McAllister's (1933:108) survey of the island in the early 1930s. The hill was used as a point of solar reference or as a place for such observations (Fornander 1919, Vol. VI, Part II:292). Pu'uokapolei may have been regarded as the gate of the setting sun, just as the eastern gate of Kumukahi in Puna is regarded as the rising sun; both places are associated with the Hawaiian goddess Kapo (Emerson 1915:41).

Ceremonies commemorating the changing of the seasons are still observed each year in the beginning at May in Waikīkī and Honouliuli. Sam 'Ohukani'ōhia Gon III, Na Wa'a Lalani Kahuna O Pu'u Kohola, and the late Kumu Hula John Keola Lake's hula hālau perform 'oli and hula explaining how the astronomer's of O'ahu observed how the sun sets during the winter solstice (southernly direction over the ocean) and the summer solstice (northernly behind the 'Ewa ridge). During the spring, the position of the sun sets more northernly each day. At the beginning of May, the sun sets behind Pu'uokapolei, perfectly centered within its vantage point of Kūpalaha Heiau just west of the Waikīkī Aquarium. A coinciding ceremony at a heiau on Pu'uokapolei captures the same essence as the sun sets behind Pu'ula'ila'i, a peak farther west in the Wai'anae range.

Honouliuli is also known for its ancient trails, and there are accounts that a menehune path runs through part of the campus. Ms. Lorna Pico and Mr. Stanley Tamashiro note that teachers and staff can sense or see that there is a spirit living on the 'Ewa Elementary School campus. No threatening encounters have been reported other than stories that electronic devices turn on when they were off. Ms. Pico recalls the time when the new administration building was built prior to Mr. Tamashiro becoming principal. A traditional blessing was performed prior to the first Lincoln Day Program after the Lincoln statue was moved away from the Renton Road sidewalk. During the blessing, a teacher who had woven a haku (lei) became frozen. A kahu (Hawaiian priest) was brought in and explained that the statue was moved without permission and that a Menehune path runs in the back of the campus that goes through the library and office buildings.

### 7.3 Marine and Freshwater Gathering

Honouliuli Ahupua'a, as a traditional land unit, had tremendous and varied resources available for use by early Hawaiians. Honouliuli Ahupua'a covers a 12 mi long coastline fronting the calm waters of leeward O'ahu, as well as four mi of waterfront along the west side of the West Loch of Pearl Harbor (Pu'uloa). The long coastline with continuous shallow fringing reef offer rich marine resources and the four mi of frontage on the waters of West Loch offered extensive fisheries (mullet, awa, shellfish) as well as frontage suitable for development of fishponds (e.g., Laulaunui).

Mr. Kāne's father often fished, hunted for crabs, collected shellfish, and gathered limu in the waters of Pu'uloa in the specific area of Pōhaku O Kāne which is on the peninsula. Mr. Kāne's father also fished at the mouths of rivers that flowed into the ocean such as Waimea Bay. Mr. Kāne has photographs of these fishing areas, however, most of these rivers no longer flow. Mr. Kāne also notes that although when you see Pearl Harbor, "you see nothing Hawaiian." He insists that the cultural history is still in tact, it's just beneath the surface. The Navy has filled in the fishponds and salt ponds that once existed in the Pearl Harbor region. Mr. Kāne explains that the location of the 'Ewa Plantation Villages and the modern day alignment of Renton Road and 'Ewa Sugar Mill was done in consideration of two trails from Kualaka'i and One'ula. These foot trails were used by ancient Hawaiians to connect the mauka to makai relationships (lo'i kalo to ocean resources).

## 7.4 Plant Gathering and Cultivation

The lower portion of Honouliuli Valley in the 'Ewa plain offered rich level alluvial soils and water for irrigation from the stream, as well as abundant springs. 'Ewa was known as one of the best areas to grow gourds and was famous for its māmaki as well as a rare taro called Kāi o 'Ewa usually found in marshy location. Mr. Kāne's mother spoke to him of lo'i kalo but cannot say with certainty that these patches were on the peninsula. Mr. Kāne adds that the area's agricultural base include watercress and rice. This irrigable land stretched mauka towards the valley. A broad limestone plain which, because of innumerable limestone sinkholes, offered a nesting home for a large population of avifauna. This resource may have been one of the early attractions to human settlement. Mr. Tony Bise recalls plants that would grow in the sugar fields used for the practice of la'au lapa'au (Hawaiian healing medicine). "The leaf, you heat it up. Then, whenever you got some kind of a sore, you put that on," recalls Mr. Bise. He also describes a "wild grass that they use for if you got cancer or something. Or they boil that and make a tea out of it."

In addition, an extensive upland forest zone extended as much as 12 mi inland from the edge of the coastal plain. As Handy and Handy (1972:469) have pointed out, the forest was much more distant from the lowlands here than on the windward coast, but it was much more extensive. Much of the upper reaches of the ahupua'a contained a biologically-diverse forest with kukui, 'ōhia lehua, 'iliahi, hau, kī, banana, etc. The upper valley slopes may have also been a resource for sporadic quarrying of basalt tools.

The Shibuya 'Ohana's grandmother's home had chicken coups along with eggplant, ginger, *lychee*, and *kalamungay* trees. The family notes that 'Ewa was famous for its mangoes due to the favorable climate. Homes in the area usually had one or two mango trees in the yard. Varieties often found in 'Ewa include pocket, haven, cigar, and kiwi. They also recall catching crayfish and tilapia in the flumes and picking ogo.

## 7.5 Burials

The only burials in the area, as far as Mr. Bise recalls, are at the cemeteries near Fort Weaver Road and in West Loch. Mr. Bise asserts that, "There's no burials over here" near 'Ewa Mahiko District Park. However, Mr. Bise also remembers that, "when we were kids, when we were working in the fields cutting weeds, there was a grave right in front there, near Kapolei....[pointing at the map of 'Ewa Mahiko Park]. It's not too far away from the area over here." He later added that there were actually three graves among the sisal.

Mr. Kāne notes that a portion of the Kualaka'i Trail is part of Kalaeloa Heritage Park (KHP). A two acre portion within the KHP, adjacent to the Kualaka'i Trail has been cleared and is used as an interpretive trail. There are seven identified Hawaiian burials within this two acre portion. Mr. Kāne states that there is a likelihood of burials that can be found on the entire route of the trail including a portion of the Project area. All burials in this area are within the karst and sinkholes of the 'Ewa Plain.

Barbara Shibuya only knows of the graveyard that is near Zippy's restaurant where the Shibuya 'Ohana's grandfather and uncles are buried. The graveyard was once cared for by an older man in the community, but has since become overgrown for lack of regular maintenance. The other graveyard is at old Tong Ranch now known as Westloch Fairways.

Ms. Pico and Mr. Tamashiro note that the surrounding areas of the schools were occupied by sugar cane fields, so there are no burials that they know of. However, they note that there may have been burials long before the plantation era that are beneath the vicinity of the school that they are unaware of.

## Section 8 Summary and Recommendations

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At the request of Belt Collins Hawaii LCC and the Department of Accounting and General Services (DAGS) CSH is conducting a CIA for the proposed 'Ewa Elementary School Eight (8) Classroom Building Project. The CIA specifically focused on the Project area of 'Ewa Elementary School property, but the study encompassed the entire ahupua'a of Honouliuli.

### 8.1 Results of Background Research

Background research on the Project area and surrounding area of Honouliuli places the study area in the larger context of the ahupua'a pattern and indicates the following:

1. The moku of 'Ewa was known as Ke 'Apana o 'Ewa. One of the most significant features "is its spacious coastal plain, surrounding the deep bays ("lochs") of Pearl Harbor, which are actually the drowned seaward valleys of 'Ewa's main streams, Waikele and Waipi'o." (Handy & Handy 1972: 469) 'Ewa is also one of the best areas to grow gourds and was famous for its māmaki and wiliwili. The area was also known for a rare kalo called Kāi o 'Ewa which was grown in marshy locations.
2. The 'Ewa Plain consists of a flat, karstic raised limestone reef forming a level nearly featureless "desert" marked in pre-Contact times by a thin or non-existent soil mantle. The micro-topography is notable in containing countless sinkholes caused by chemical weathering of the limestone shelf. The shelf is overlain by alluvium deposited through a series of gulches draining the Wai'anae Mountains. The largest of these is Honouliuli Gulch which drains into West Loch.
3. John Papa 'Ī'i describes a network of Leeward O'ahu trails, which in later historic times encircled and crossed the Wai'anae Range, allowing passage from West Loch to the Honouliuli lowlands, past Pu'u Kapolei and Waimānalo Gulch to the Wai'anae coast and onward circumscribing the shoreline of O'ahu ('Ī'i 1959:96-98).
4. Pu'uloa (commonly known today as Pearl Harbor) is ideal for the construction of fishponds including Laulaunui, and its productivity is well recorded. The story of (Ka) Ihuopala'ai is also associated with the tradition of the 'anae-holo or traveling mullet. "The home of the anae-holo is at Honouliuli, Pearl Harbor, at a place called Ihuopalaai. They make periodical journeys around to the opposite side of the island, starting from Puuloa and going to windward, passing successively Kumumanu, Kalihi, Kou, Kalia, Waikiki, Kaalawai, and so on, around to the Koolau side, ending at Laie, and then returning by the same course to their starting point." (Thrum 1907:271-272)
5. Honouliuli Ahupua'a is the largest ahupua'a unit in 'Ewa and on the island of O'ahu and includes all the land from the western boundary of Pu'uloa (commonly known today as Pearl Harbor) extending to the 'Ewa/Wai'anae District boundary that extends to the summit of the Wai'anae Mountain Range; with the exception of the west side of the ahupua'a of Pu'uloa ('Ewa Beach/Iroquois Point). Honouliuli includes 12-miles of open coastline from One'ula to Pili o Kahe and four mi of waterfront along the West Loch of Pearl Harbor. The ahupua'a extends mauka from West Loch to Schofield Barracks in Wahiawā.

6. Various Hawaiian legends and early historical accounts indicate that the ahupua'a of Honouliuli was once widely inhabited by pre-Contact Hawaiian populations, including the Hawaiian ali'i. "Koolina in Waimānalo near the boundary of 'Ewa and Wai'anae. This was a vacationing place for chief Kakuhihewa and the priest Napuaikamao was the caretaker of the place." (Sterling and Summers 1978:41) This substantial population was supported by the plentiful marine and estuarine resources available at the coast, along which several sites interpreted as permanent habitations were located. Other attractive subsistence-related features of the ahupua'a included irrigated lowlands suitable for wetland taro cultivation and the lower forest area of the mountain slopes, for the procurement of forest goods (Hammatt et al. 1990).
7. Pu'uokapolei is a prominent hill located on the 'Ewa coastal plain and was the primary landmark for travelers on the trail that ran from Pearl Harbor to Wai'anae. A heiau was once on the summit of the hill, however, during McAllister's survey of O'ahu it had been destroyed (McAllister 1933:108). The hill was also used as a point of solar reference or as a place for celestial observations that mark the winter and summer solstice. A ceremony at a heiau on Pu'uokapolei provides a vantage point to capture the sun setting directly behind Pu'ula'ila'i, a peak farther west in the Wai'anae range. A coinciding ceremony at Kūpalaha Heiau in Waikī captures the same essence as the sun sets behind Pu'uokapolei.

## 8.2 Results of Community Consultation

CSH attempted to contact 46 community members (government agency or community organization representatives, or individuals such as residents and cultural practitioners) for this CIA report; of those, nine responded and six participated in formal interviews for more in-depth contributions to the CIA. Presented below are salient themes and concerns that emerged from participants' interviews regarding the proposed Project:

1. The waters of Pu'uloa provided an abundant marine resource according to Mr. Shad Kāne whose father often fished and hunted for crabs, collected shellfish, and gathered limu in the specific area of Pōhaku O Kāne which is located on the peninsula. Mr. Kāne's father also fished at the river mouths that flowed into the ocean such as Waimea Bay. Mr. Kāne has photographs that depict these fishing areas, however, most of these rivers he frequented no longer flow today. He also explains that although the fishponds and salt ponds that once dotted the area now known as Pearl Harbor, Mr. Kāne insists that the cultural history of the area still exists today, it is just filled in.
2. The Project vicinity and environs are sources of plants that are valuable resources for food, medicine, ornamental and other uses. Mr. Tony Bise recalls plants that would grow in the sugar fields that were used for the practice of la'au lapa'au. He remembers heating up leaves and putting them on sores; and wild grasses that were boiled to make tea out of. Mr. Bise does not recall the names for these plants. Mr. Kāne recalls his mother speaking of lo'i kalo but cannot specifically point out where on the peninsula it was located. Mr. Kāne adds that the area's agricultural base include watercress and rice.
3. The ancient trails in 'Ewa are an important part of the landscape as Mr. Kāne explains that the location of the 'Ewa Plantation Villages and modern day alignment of Renton Road and 'Ewa Sugar Mill was done in consideration of two trails from Kualaka'i to One'ula. These

foot trails were once used by ancient Hawaiians to connect the mauka to makai relationships of Honouliuli.

4. The cultural layers in recent years in 'Ewa has been severely disturbed by farming activities, construction and military expansion. Mr Kāne stresses the importance of the area and that "There are a lot of interesting things regarding all of Pu'uloa. Much of this area in 'Ewa Moku has been altered a lot. Compared to other places it is has been altered significantly by, and grew out of, a partnership between business interests, land owners and federal agencies...The ancient Hawaiian resources, due to the very nature of the alteration in the region, have not been removed. It has all been filled in. In other words, the cultural landscape within all of 'Ewa is still there. It is just buried. In other words, the cultural landscape within all of 'Ewa is still there. It is just buried. The stuff that was on the high ground, where they planted sugar cane and pineapple is gone. Within the valleys, the low-lying areas, the wetlands adjacent to Pearl Harbor, from 'Ewa Beach to 'Aiea, much of that cultural landscape—the cultural layer—is still in place. The Navy and the DOD [Department of Defense] are beginning to understand the importance of preservation and our history. They are realizing it is not just a history of the DOD within Pearl Harbor; it is a history of all the many cultures that live here. No better place than 'Ewa because there is a lot here. These guys, Tin Hu Young, the Colburns, and Don Francisco de Paula Marin, were a big part of this history. They were from other places, making it a very colorful place that tries to integrate many histories into one."
5. Community participants shared their knowledge of various locations of burials:
  - a) Mr. Kāne notes that a portion of the Kualaka'i Trail is part of Kalaeloa Heritage Park (KHP). A two acre portion within the KHP, adjacent to the Kualaka'i Trail has been cleared and is used as an interpretive trail. There are seven identified Hawaiian burials within this two acre portion. Mr. Kāne states that there is a likelihood of burials that can be found on the entire route of the trail including the portion of the Project area. All burials in this area are within the karst and sinkholes of the 'Ewa Plain.
  - b) Mr. Bise asserts there are no burials near the 'Ewa Mahiko District Park. He recalls working in the agricultural fields and seeing three graves amongst the sisal.
  - c) Ms. Lorna Pico and Mr. Stanley Tamashiro note that the surrounding areas of the schools were occupied by sugar cane fields, so there are no burials that they know of. However, they note that there may have been burials long before the plantation era beneath the Project area.

### 8.3 Cultural Impacts and Recommendations

Based on the information gathered for the cultural and historic background and community consultation detailed in this CIA report, CSH makes the following recommendations:

1. CSH recommends that, should historic, cultural or burial sites or artifacts be identified during ground disturbance, the personnel involved with construction activities of the Project should immediately cease all work and the appropriate agencies notified pursuant to applicable law. In the event of discoveries of burials

during Project construction activities, recognized cultural and lineal descendants should be notified and consulted on matters of burial treatment. Additionally, CSH recommends that cultural and lineal descendants be granted access rights to iwi kupuna to conduct traditional and customary burial practices on-site.

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## Appendix A Glossary of Hawaiian Words

To highlight the various and complex meanings of Hawaiian words, the complete translations from Pukui and Elbert (1986) are used unless otherwise noted. In some cases, alternate translations may resonate stronger with Hawaiians today; these are placed prior to the Pukui and Elbert (1986) translations and marked with “(common).”

Diacritical markings used in the Hawaiian words are the ‘okina and the kahakō. The ‘okina, or glottal stop, is only found between two vowels or at the beginning of a word that starts with a vowel. A break in speech is created between the sounds of the two vowels. The pronunciation of the ‘okina is similar to saying “oh-oh.” The ‘okina is written as a backwards apostrophe. The kahakō is only found above a vowel. It stresses or elongates a vowel sound from one beat to two beats. The kahakō is written as a line above a vowel.

Hawaiian Word	English Translation
Ahupua‘a	Land division usually extending from the uplands to the sea
Akua	Family or personal gods
Ali‘i	Chief, chiefess
‘Auwai	Ditch
Heiau	Pre-Christian place of worship, shrine; some heiau were elaborately constructed like a stone platforms or a simple earth terrace
Kalo	Taro
Kama‘āina	Native-born; literally translating to “land child”
Kuleana	Right, privilege, concern, responsibility
Kupuna (Kūpuna, plural)	Grandparent, elder
Lo‘i	Irrigated terrace, especially for taro but also for rice
Loko i‘a	Fish pond
Makai	Towards the ocean
Maka‘āinana	Commoner
Makana	Gift, present
Mauka	Toward the mountain
Mele	Song, anthem
Moku	District
Mo‘o	Water spirit, lizard (common)
Mo‘olelo	Story, tale, myth
‘Ōlelo no‘eau	Proverb, wise saying
Oli	Chant that was not danced to, especially with prolonged phrases chanted in one breath, often with a trill (i‘i) at the end of each phrase
Poi	Cooked taro corms pounded and thinned with water
Pu‘u	Peak
‘Uala	Sweet potato
Wahi pana	Legendary place

## Appendix B Common and Scientific Names for Plants and Animals Mentioned by Community Participants

Common Names		Scientific Name		Source
Hawaiian	Other	Genus	Species	
kalo	taro	<i>Colocasia esculenta</i>	<i>esculenta</i>	Wagner et al. 1999
	kalamungay	<i>Moringa</i>	<i>oleifera</i>	Starr Environmental 2013
koa		<i>Acacia</i>	<i>koa</i>	Wagner et al. 1999
	lychee	<i>Litchi</i>	<i>chinensis</i>	Starr Environmental 2013
	ogo	<i>Gracilaria</i>	<i>parvispora</i>	Guiry and Guiry 2010

# Appendix C Community Consultation Letter

**Cultural Surveys Hawai'i, Inc.**  
Archaeological and Cultural Impact Studies  
Hallett H. Hammatt, Ph.D., President



P.O. Box 1114 Kailua, Hawai'i 96734 Ph: (808) 262-9972 Fax: (808) 262-4950  
Job code: HONOULIULI 76 [ekandagawa@culturalsurveys.com](mailto:ekandagawa@culturalsurveys.com) [www.culturalsurveys.com](http://www.culturalsurveys.com)

September 21, 2012

Aloha mai,

At the request of Belt Collins Hawaii LLC on behalf of Department of Accounting and General Services (DAGS), Cultural Surveys Hawai'i Inc. (CSH) is conducting a Cultural Impact Assessment (CIA) for the proposed 'Ewa Elementary School Eight (8) Classroom Building Project, Honouliuli Ahupua'a, 'Ewa District, Island of O'ahu, Tax Map Key [1] 9-1-017:002 as depicted on a 1998 US Geological Surveys topographic map (Figure 1) and on an aerial image (Figure 2).

The Department of Education, State of Hawai'i, is proposing to build an eight classroom building at the existing Ewa Elementary School to address the current shortage of classrooms and alleviate additional anticipated overcrowding in the future.

The proposed building will be located in the western corner of the school site, near Pipeline Street, and is planned to be a one-story structure. The Project will also include installation of underground utilities that will connect to existing utilities within the school site, or within the City road right-of-way if necessary. The building is planned to contain the following: six general classrooms; one special education contained classroom; one computer lab; one faculty center; one conference room; student restrooms; and accessory utility rooms.

The purpose of the CIA is to assess potential impacts on cultural practices and resources as a result of the planned Project. We are seeking your kōkua (assistance) and guidance regarding the following aspects of our study:

- **General history and present and past land use of the Project area.**
- **Knowledge of cultural sites- 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 (elders) and kama'āina (Native born) who might be willing to share their cultural knowledge of the Project area and the surrounding ahupua'a (land division usually extending from the uplands to the sea).**
- **Any other cultural concerns the community might have related to Hawaiian cultural practices within or in the vicinity of the Project area.**

In advance, we appreciate your assistance in our research effort. Please contact me at [ekandagawa@culturalsurveys.com](mailto:ekandagawa@culturalsurveys.com) or by phone at (808) 262-9972 if you would like to participate in this study or have any information to share regarding this Project.

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HONOULIULI 76 CIA

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Mahalo nui loa,

Emily Kandagawa  
CSH Cultural Researcher

# Appendix D Authorization and Release Form

**Cultural Surveys Hawai'i, Inc.**  
Archaeological and Cultural Impact Studies  
Hallett H. Hammatt, Ph.D., President



P.O. Box 1114      Kailua, Hawai'i 96734      Ph: (808) 262-9972      Fax: (808) 262-4950  
Job code: HONOULIULI 76      [ekandagawa@culturalsurvevs.com](mailto:ekandagawa@culturalsurvevs.com)      [www.culturalsurvevs.com](http://www.culturalsurvevs.com)

### AUTHORIZATION AND RELEASE FORM

Cultural Surveys Hawai'i (CSH) appreciates the generosity of the kūpuna and kama'āina who are sharing their knowledge of cultural and historic properties, and experiences of past and present cultural practices in Honouliuli Ahupua'a, 'Ewa District, O'ahu Island, Tax Map Key [1] 9-1-017:002.

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

1. The interview will not be tape-recorded without your knowledge and explicit permission.
2. If recorded, you will have the opportunity to review the written transcript of our interview with you. At that time you may make any additions, deletions or corrections you wish.
3. If recorded, you will be given a copy of the interview notes for your records.
4. You will be given a copy of this release form for your records.
5. You will be given any photographs taken of you during the interview.

For your protection, we need your written confirmation that:

1. You consent to the use of the complete transcript and/or interview quotes for reports on cultural sites and practices, historic documentation, and/or academic purposes.
2. You agree that the interview shall be made available to the public.
3. If a photograph is taken during the interview, you consent to the photograph being included in any report/s or publication/s generated by this cultural study.

I, \_\_\_\_\_, agree to the procedures outlined above and, by my  
(Please print your name here)  
signature, give my consent and release for this interview to be used as specified.

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

\_\_\_\_\_

# APPENDIX E

## TRAFFIC IMPACT ASSESSMENT



**Traffic Impact Assessment**  
**'Ewa Elementary School Eight Classroom Building**

'Ewa, Oahu, Hawaii



THIS WORK WAS PREPARED BY  
ME OR UNDER MY SUPERVISION

  
Signature

Expiration Date: 4/30/2014

Prepared by:  
Julian Ng Incorporated  
P.O. Box 816  
Kaneohe, HI 96744

December 2013

**Traffic Impact Assessment  
'Ewa Elementary School Eight Classroom Building  
'Ewa, Oahu, Hawaii**

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**Traffic Impact Assessment of  
'Ewa Elementary School, Eight-Classroom Building  
91-1280 Renton Road  
'Ewa Beach, Oahu, Hawai'i  
TMK 9-1-017: 002**

**December 2013**

**Summary**

The State of Hawai'i Department of Education has proposed to construct a new eight-classroom building at the 'Ewa Elementary School, located at 'Ewa Villages, adjacent to Renton Road, approximately 0.6 mile west of Fort Weaver Road. The building will be located at the rear of the existing campus near Pipeline Street, and includes six general education classrooms, one special education classroom, one computer lab, a faculty center, student restrooms, and several utility closets. The classrooms will provide additional space for the growing student population at the school. Other site improvements will include new walkways, a fire access road, utility connections, the relocation of an existing trash enclosure, and improvements to the site drainage system.

This traffic assessment was prepared to identify the potential traffic impact of the new facilities. While the new facilities are being provided to serve the expected growth in enrollment, not providing the new facilities could also result in the school serving a similar enrollment, albeit in less than ideal classroom conditions. The traffic impact, therefore, could arguably be nil; however, this traffic assessment provides analyses that assume that additional traffic generated by the new classrooms would not occur without the construction of these improvements.

The potential traffic impact of the new building, approximately 13,000 square feet in floor area, and has been estimated to total 200 vehicle trips per day (100 vehicles per day entering the site, 100 vehicles per day leaving the site), with the highest hourly volume occurring at the beginning of the school day, when the traffic impact will be an additional 38 vehicles per hour entering the site and 30 vehicles per hour exiting the site. Traffic impacts will also occur at other times of the day, but hourly volumes would be less than in the hour before the school day begins. These volumes are less than criteria used to determine if traffic impacts could be significant (100 vehicles per hour / 500 vehicles per day); the traffic impact of the proposed classroom building is not considered to be significant.

The vehicular access patterns at the existing school are not being changed. Teachers and other staff generally arrive earlier than parents dropping off students, and park in 90° stalls in parking aisles along the front of (near Renton Road), or the west side (near Pipeline Street), of the campus. The later arrival of students being dropped off by parents or other caretakers occurs in the travel aisles of both large parking lots. These on-site traffic patterns will not change because of the project.

## Introduction

In early 2011, the State of Hawai‘i Department of Transportation (HDOT) published a draft “Best Practices” guideline for the preparation of traffic impact reports (TIRs). While this guideline has not been adopted, it has been used as a template in this traffic assessment to identify the traffic impacts of the proposed action.

Section 5.2.3 of that guideline discusses “triggers” and states that if the project “does not meet the trigger (minimum) for completing the analysis, it is in everyone’s best interest to scale the effort appropriately before resources are wasted.” Section 5.2.3 further states that actions “that generate relatively low number of trips, and are not expected to significantly increase or alter traffic generation or distribution may be documented with a Traffic Impact Assessment (TIA) memorandum. The memorandum would include a description of the project, the surrounding transportation system including any potential impacts, and also include some analyses regarding trips generated by the project. Figure 5 [of the proposed guideline] shows a sample checklist that covers the Traffic Impact Assessment requirements. Developments consisting of 100 or fewer trips during an hour and/or 500 or fewer daily trips, should prepare a Traffic Impact Assessment memorandum.” The “development” of this project is the addition of the eight-classroom building.

The Traffic Review Branch of the City and County of Honolulu Department of Planning and Permitting determines on a case-by-case basis the level of detail needed for the assessment of traffic impacts. The City and County of Honolulu Department of Transportation Services has requested that discussions of existing traffic conditions, methods to minimize short-term traffic impacts during construction, and pedestrian traffic be included. In addition, a description of public transit in the area and the possible impact to public transit should be discussed.

The information provided herein is intended to conform to the proposed requirements for a TIA from the “Best Practices” document to address most of the issues. A copy of the checklist from the HDOT’s proposed guideline is shown below:

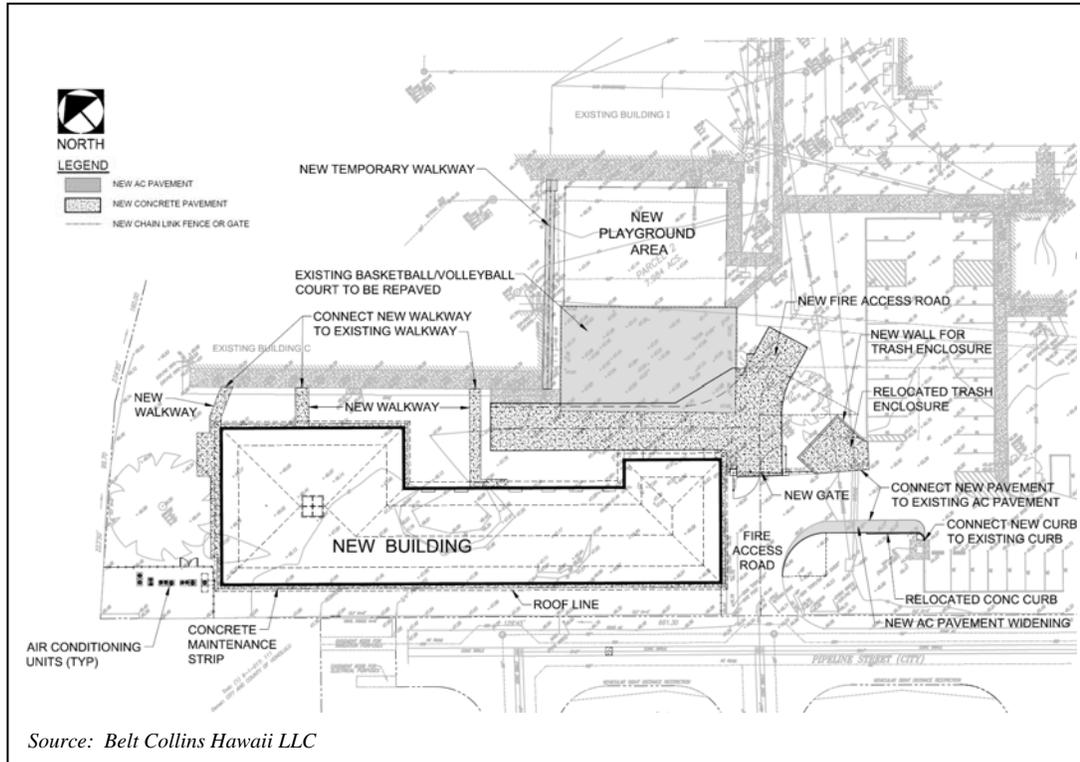
1. *Development Name*
2. *Development Description (quantity and type of land use, development schedule)*
3. *Development Location (Parcel number(s), address, vicinity map)*
4. *Existing transportation system (functional class, speed, volumes, transit/pedestrian/bike amenities, existing safety and/or operational issues)*
5. *Proposed transportation improvements (site plan, internal/external circulation number and location of access points, modifications to existing motorized/non-motorized system)*
6. *Proposed transportation impacts (trip generation table, trip distribution graphic, description of potential impacts – safety, sight distance, motorized/non-motorized impacts, impacts to critical intersections or facilities.)*

A section “7” is included in the traffic assessment that follows to discuss traffic management during and after construction of the project.

## Traffic Impact Assessment

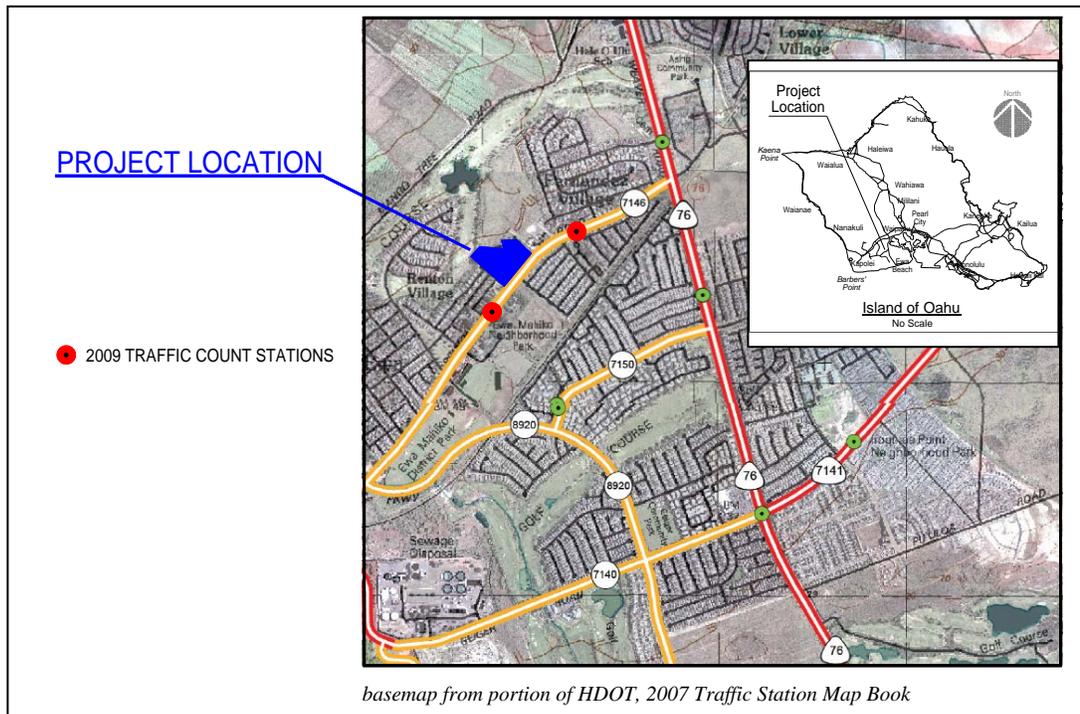
The proposed project is the construction of eight additional classrooms at an existing elementary school in 'Ewa.

1. **Development Name:** 'Ewa Elementary School, Eight Classroom Building
2. **Development Description:** The proposed project is the construction of a new classroom building that will have eight classrooms, walkways, and other improvements near the new building. A conceptual site plan is shown below.



The proposed project is intended to provide classroom space for increased enrollment that would occur with or without the project. The project traffic impact, therefore, could be considered negligible. This traffic assessment, however, assumes that the “project impact” would be to increase the traffic generated by the existing school by the amount that would be attributed to the added classroom space.

**3. Development Location:** 91-1280 Renton Road, TMK 9-1-017:002



**4. Existing Transportation System:** The proposed building is located near the northwest corner of the existing school campus, near Pipeline Street. Pipeline Street is a narrow two-way street that carries one lane of traffic in each direction. A stop sign controls southbound traffic at the street's approach to Renton Road. The posted speed limit on Pipeline Street is 15 miles per hour.

The school is located north of Renton Road, a divided urban collector street; east of Pahika Street (800 feet east of the project site), Renton Road is striped for two lanes of traffic in each direction. Fronting the school site, the roadway is narrower and carries a single lane of traffic in each direction; however, there is sufficient width for parallel parking along the right curb. Left turn lanes are carved out of the raised landscaped median at intersections. Renton Road has a posted speed limit of 25 miles per hour and there are speed humps in the roadway in advance of the crosswalks nearest the school.

Existing vehicular access to the site includes an in-only driveway near the center of the site frontage on Renton Road, located east of the T-intersection with Oohao Street. Two additional driveways connect to Pipeline Street along the west side of the school site; a one-way pattern is established as the south driveway near Renton Road is signed for entry only, and the north driveway is signed as an exit only driveway.

Concrete sidewalks exist along the site's street frontage along Renton Road. No sidewalks exist along Pipeline Street. The nearest existing bikeway is the bike route on Fort Weaver Road, approximately 0.6 miles to the east.

Machine traffic counts taken on Renton Road over a 48-hour period in February 2009 showed total two-way weekday volumes ranging from 9,763 to 12,204 vehicles per day; the volume in the westbound direction (adjacent to the project site) ranged between 4,213 and 5,052 vehicles per day. Traffic volumes on Renton Road are highest during the morning commute periods, with the peak hourly counts of approximately 1,190 vehicles per hour (total two-way volume) recorded between 7:00 AM and 8:00 AM, with westbound volume being about half the eastbound volume. Highest hourly volumes (two-way) during other hours of the day did not exceed 850 vehicles per hour.

City bus service is available on Renton Road, with a westbound bus stop located near Pahika Street (approximately 700 feet east of the center of the Renton Road frontage of the site) and an eastbound bus stop is located on the opposite side of Renton Road (500 feet walking distance, using the crosswalk at the Oohao Street intersection). Public bus service on Renton Road is provided by Route 44, which provides one bus in each direction at approximately 1-hour intervals between 5:30 AM and 10:30 PM seven days a week. Bus service can also be accessed at bus stops on Fort Weaver Road, approximately 0.6 mile east of the site, where Route 42 provides two buses per hour in each direction. Other routes in the island-wide system can be accessed with transfers at the Waipahu Transit Station or at other locations.

5. **Proposed Transportation Improvements:** The proposed project does not include any changes to vehicular, pedestrian, or bicycle access to the site. On-site improvements include walkways between the new and existing buildings, and a fire access lane.
6. **Transportation Impacts of Proposed Project:** Traffic estimates for the project are shown below.

#### Project Traffic Estimates

	Based on floor area of 13,000 SF*		Based on number of students*	
Average Weekday Traffic	200		210	
AM Peak Hour of Adjacent Street	68		72	
Entering site   Exiting site	38	30	40	32
PM Site Traffic Peak Hour	41		45	
Entering site   Exiting site	18	23	20	25
PM Peak Hour of Adjacent Street	16		24	
Entering site   Exiting site	7	9	12	12

\*Note: Traffic estimates are based on trip factors from Institute of Transportation Engineers, *Trip Generation Manual 9<sup>th</sup> Edition* (Land Use Code 520 – Elementary School). The number of students (160) is based on an average 20 students per classroom.

The proposed project's traffic generation of less than 75 vehicle trips per hour and about 200 vehicle trips per day fall within the guidelines (100 or fewer trips per hour and 500 or less trips per day) for a traffic assessment.

The project traffic impact would be distributed onto both the local streets north of Renton Road and onto Renton Road. For an estimated traffic distribution of 15% on the local streets, 40% on Renton Road west of the site, and 45% on Renton Road east of the site, the project traffic impact would be less than 3% of the average AM Peak Hour volumes from the traffic counts taken on Renton Road in 2009.

Public transit use by elementary school students is not expected due to the generally short distances between home and school (and the school bus service provided for those who live farther from school); however, employees may be using the bus system. For eight classrooms, the employment impact may be as much as twelve persons, and using an estimated 15% transit use, the transit impact would be two additional riders, which would not be significant.

- 7. Traffic Management During and After Construction:** Short-term impacts of construction activity will be included in the planning of the construction activities. If appropriate, temporary access routes will be provided if existing routes are within work areas.

Delivery of construction material and removal of debris will be limited to non-peak traffic hours. The construction area will be provided with a separate vehicular access to minimize conflicts between construction traffic and other vehicles. A program will be established to provide public information and a contact person identified should questions or complaints related to construction arise. Appropriate street usage or highway use permits will be obtained if temporary use of a public street area or delivery of oversized material occurs.

The school has an ongoing pedestrian safety program and students and staff will be reminded about proper use of sidewalks and crosswalks, and the dangers of walking on roadways without sidewalks.