DAVID Y. IGE
GOVERNOR

KEITH T. HAYASHI
INTERIM SUPERINTENDENT

STATE OF HAWAI`I
DEPARTMENT OF EDUCATION
P.O. BOX 2360
HONOLULU, HAWAI`I 96804

OFFICE OF FACILITIES AND OPERATIONS

December 29, 2021

TO: Ms. Mary Alice Evans
Director, Office of Planning and Sustainable Development
Environmental Review Program

FROM: Edward S. Ige
Facilities Director, Facilities Development Branch

SUBJECT: **Draft Environmental Assessment and Anticipated Finding of No Significant Impact**
James Campbell High School
Athletic Complex Facilities and Master Plan
Ewa Beach, Oahu, Hawaii
Job No.: Q81200-18
TMK: (1) 9-1-001:002

The Hawaii State Department of Education (Department) hereby transmits the Draft Environmental Assessment and Anticipated Finding of No Significant Impact determination. Please publish this determination in the next edition of the Environmental Notice.

A completed Office of Environmental Quality Control publication form is attached, a Portable Document Format copy, and an electronic copy of the publication form is in Microsoft Word. Simultaneous with this letter, we have submitted the summary of the action in the text file by electronic mail to your office.

Should you have any questions, please contact Karynn Yoneshige, Project Coordinator of the Facilities Development Branch, Project Management Section, at (808) 784-5127 or via email at karynn.yoneshige@k12.hi.us, or you could also contact our authorized agent of this project, Taeyong Kim, of the Environmental Communications, Inc. at (808) 528-4661.

ESI:ky

c: Taeyong Kim, Environmental Communications, Inc.
Kanako Furchi, Design Partners, Inc
Facilities Development Branch

From: webmaster@hawaii.gov
To: DBEDT OPSD Environmental Review Program
Subject: New online submission for The Environmental Notice
Date: Wednesday, December 29, 2021 11:57:00 AM

Action Name

James Campbell High School Athletic Complex Facilities and Master Plan

Type of Document/Determination

Draft environmental assessment and anticipated finding of no significant impact (DEA-AFNSI)

HRS §343-5(a) Trigger(s)

- (1) Propose the use of state or county lands or the use of state or county funds

Judicial district

ʻEwa, Oʻahu

Tax Map Key(s) (TMK(s))

(1) 9-1-001: 002

Action type

Agency

Other required permits and approvals

City and County of Honolulu Building Permits

Proposing/determining agency

Department of Education

Agency contact name

Karynn Yoneshige

Agency contact email (for info about the action)

karynn.yoneshige@k12.hi.us

Email address or URL for receiving comments

karynn.yoneshige@k12.hi.us

Agency contact phone

(808) 784-5127

Agency address

P.O. Box 2360
Honolulu, Hawaii 96804
United States
Map It

Was this submittal prepared by a consultant?

Yes

Consultant

Environmental Communications, Inc.

Consultant contact name

Taeyong Kim

Consultant contact email

tkim@environcom.com

Consultant contact phone

(808) 528-4661

Consultant address

P.O. Box 236097
Honolulu, HI 96823
United States
Map It

Action summary

The proposed project is a programmatic document for future improvements on the James Campbell High School campus as well as an environmental assessment that specifically address improvements for the athletic facilities for the campus. Presently funded is new athletic complex that will consist of new bleachers, girls and boys locker rooms, fitness and trainer rooms, broadcast booth, weight training rooms, a new ticket booth, concession stand and public toilets and other support services.

Other future master plan components include renovated fields, new parking areas, relocation of portable buildings to facility a new internal circulation road, new covered play courts to replace Ilima Intermediate's outdoor courts, a new parking garage, a new multipurpose building, additional play courts, replacement of visitor's bleachers and other modernization improvements.

The proposed project cost is $18,000,000.

Reasons supporting determination

Based on an evaluation of project significance criteria, the proposed James Campbell High School Athletic Facilities Improvements project is not expected to have a significant effect on the environment beyond those associated with a master planned campus community that is limited to already improved areas. As such, a Finding of No Significant Impact (FONSI) is anticipated for the project by Department of Education.

Attached documents (signed agency letter & EA/EIS)

- Campbell-HS-DEA-V.1C-pdf.pdf

Authorized individual

Taeyong Kim

Authorization

- The above named authorized individual hereby certifies that he/she has the authority to make this submission.

DRAFT ENVIRONMENTAL ASSESSMENT

JAMES CAMPBELL HIGH SCHOOL
ATHLETIC COMPLEX FACILITIES & MASTER PLAN

TMK 9-1-001: 002

91-980 NORTH ROAD

EWA BEACH, O'AHU, HAWAI'I

THIS DOCUMENT IS PREPARED PURSUANT TO CHAPTER 343, HAWAI□I REVISED STATUTES

APPROVING AGENCY:
STATE OF HAWAII
DEPARTMENT OF EDUCATION

DECEMBER 2021

DRAFT ENVIRONMENTAL ASSESSMENT
JAMES CAMPBELL HIGH SCHOOL
ATHLETIC COMPLEX FACILITIES & MASTER PLAN
TMK 9-1-001: 002
91-980 NORTH ROAD
EWA BEACH, O'AHU, HAWAI'I

THIS DOCUMENT IS PREPARED PURSUANT TO CHAPTER 343, HAWAI'I REVISED STATUTES

APPROVING AGENCY:
STATE OF HAWAII
DEPARTMENT OF EDUCATION

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APPENDICES

A Archaeological Assessment Report for the Ewa Elementary School Building E Project, Honouliuli Ahupua‘a, ‘Ewa District, O‘ahu TMK: [1] 9-1-017:002 (por.), Cultural Surveys Hawaii, Inc.

B 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 Hawaii, Inc.

ACRONYMS AND ABBREVIATIONS

343	Environmental Lawa Hawaii Revised Statutes (343 HRS)
AAQS	Ambient Air Quality Standards
AGL	Above Ground Level
ANSI	American National Standards Institute
BLNR	Board of Land and Natural Resources
BMPs	Best Management Practices
BWS	Board of Water Supply
CDUP	Conservation District Use Permit
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CFR	Code of Federal Regulations
CIC	Clean Islands Council
City	City and County of Honolulu
CO	Carbon Monoxide
CO_2	Carbon Dioxide
COC	Contaminant of Concern
COPC	Contaminant of Potential Concern
CT	Census Tract
CWA	Clean Water Act of 1977
CZMA	Coastal Zone Management Act
DA	Department of the Army
dB	Decibel
dBA	Decibels A-Weighted Scale
DBEDT	Dept. of Business, Economic Development and Tourism
DHS	U.S. Department of Homeland Security
DLM	Department of Land Management (City and County of Honolulu)
DLNR	Department of Land and Natural Resources
DNL	Day-night sound level
DOA	Department of Agriculture (State of Hawaii)
DOD	U.S. Department of Defense
DOE	Department of Education (State of Hawaii)
DOH	Department of Health (State of Hawaii)
DOT-A	Department of Transportation, Airports Division (State of Hawaii)
DOT-H	Department of Transportation, Harbors Division (State of Hawaii)
DPP	Department of Planning and Permitting (City and County of Honolulu)
DU	Decision Units
EA	Environmental Assessment
EFH	Essential Fish Habitats
EHE	Environmental Health Evaluation
EHMP	Environmental Hazard Management Plan
EIS	Environmental Impact Statement
EISPN	Environmental Impact Statement Preparation Notice
EMS	Emergency Medical Services (City and County of Honolulu)
EO	Executive Order(s)

EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act of 1973
ESA	Environmental Site Assessment
F	Fahrenheit
FAA	Federal Aviation Administration
FAQ	Frequently Asked Questions
FAR	Federal Aviation Regulations
FEMA	Federal Emergency Management Agency
FHA	Federal Housing Administration
FIRM	Flood Insurance Rate Map(s)
FONSI	Finding of No Significant Impact
FR	Federal Register
FWCA	Fish and Wildlife Coordination Act
GHG	Greenhouse gas
GHGRP	Greenhouse Gas Reporting Program
GWP	Global warming potential
H_2S	Hydrogen Sulfide
HAR	Hawai‘i Administrative Rules
HART	Honolulu Authority for Rapid Transit
HCDA	Hawaii Community Development Authority (State of Hawaii)
HCM	Highway Capacity Manual
HECO	Hawaiian Electric Company
HEER	Hazard Evaluation and Emergency Response Office (State of Hawaii)
HEPA	Hawaii Environmental Policy Act
HFD	Honolulu Fire Department (City and County of Honolulu)
HHFDC	Hawaii Housing Finance and Development Corporation (State of Hawaii)
HIA	Honolulu International Airport
HISC	Hawaii Invasive Species Council
HPD	Honolulu Police Department (City and County of Honolulu)
HRS	Hawaii Revised Statutes
HTCO	Hawaiian Telcom
HUD	U.S. Department of Housing and Urban Development
IBC	International Building Code
IPCC	Intergovernmental Panel on Climate Change
JBPHH	Joint Base Pearl Harbor-Hickam
kV	Kilovolt
LED	Light emitting diode
Leq	Equivalent sound level
LIHTC	State Low Income Housing Tax Credits
LOS	Level of Service
LUC	Land Use Commission (State of Hawaii)
LUO	Land Use Ordinance
MHHW	Mean higher high water
MLLW	Mean lower low water
MS4	Municipal Separate Storm Sewer System
MSL	Mean sea level

MUS	Management Unit Species
NAAQS	National Ambient Air Quality Standards
NAS	National Airspace System
NEC	Network Enterprise Center
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service (National Oceanic and Atmospheric Administration)
NO_2	Nitrogen Dioxide
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O_3	Ozone
OCCL	Office of Conservation and Coastal Lands (State of Hawaii)
OEQC	Office of Environmental Quality Control
OHA	Office of Hawaiian Affairs (State of Hawaii)
OMPO	Oahu Metropolitan Planning Organization
ORMP	Ocean Resources Management Plan (State of Hawaii)
OU1C	Operating Unit 1C
Pb	Lead
PCB	Polychlorinated biphenyl
PET	Polyethylene terephthalate
PUC	Public Utilities Commission
PVC	Polyvinyl chloride
RFP	Request for Proposals
RHRF	Rental Housing Revolving Fund
ROI	Region of influence
ROW	Right of way
SB	Senate Bill
SHPD	State Historic Preservation Division
SLUC	State Land Use Commission
SMA	Special Management Area
SOEST	School of Ocean and Earth Science and Technology (University of Hawaii)
SO_2	Sulfur dioxide
SPS	Sewage Pump Station
State	State of Hawaii
SVOC	Semi-volatile organic compounds
SWMP	Storm Water Management Plan
TMDL	Total Maximum Daily Load(s)
TMK	Tax Map Key
UH	University of Hawaii
US	United States
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard

USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	Underground storage tanks
VA	U.S. Department of Veterans Affairs
VOC	Volatile organic compound
VPH	Vehicles per hour
WQC	Water Quality Certification

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SECTION ONE
PROJECT SUMMARY

PROPOSING/ ACCEPTING AGENCY:	Department of Education Office of Facilities and Operations 3633 Waialae Avenue, Room B-201 Honolulu, Hawai‘i 96816
AGENT:	Environmental Communications, Inc. P.O. Box 236097 Honolulu, Hawai‘i 96823
PROJECT NAME:	James Campbell High School Master Plan and Athletic Facilities
PROJECT LOCATION:	91-750 Fort Weaver Road Ewa Beach, Oahu, Hawai‘i The project site is located on a large block containing James Campbell High School, Ilima Intermediate School, and Pohakea Elementary School
TAX MAP KEY:	9-1-001: 002
OWNERSHIP:	City and County of Honolulu
LOT AREA:	5.071 Acres
ZONING:	The project area is designated as R-5 Residential under the City and County of Honolulu Zoning Maps.
SPECIAL DISTRICT:	The project is not located in a Special District
STATE LAND USE:	Urban
EXISTING LAND USE:	The proposed project is presently in use as the James Campbell High School, a public facility. The proposed action will improve and continue the current use as an educational facility.
NATURE OF DEVELOPMENT:	The proposed action consists of the implementation of a portion of a new master plan for the James Campbell High School.

	This document encompasses the proposed master plan for the campus and specifically addresses the athletic complex improvements which have been funded. This Environmental Assessment (EA) is intended to serve as a programmatic for the Master Plan components which will be developed as funding is available and to provide specific details for the athletic complex improvements which have received funding.
TOTAL PROJECT COST:	Approximately $18,000,000
PROJECT SCHEDULE:	The athletic complex portion project is anticipated to commence in the Spring of 2025 and is anticipated to be completed in Summer of 2026.
PERMITS REQUIRED:	City and County of Honolulu Building Permits
NEED FOR ASSESSMENT:	Chapter 343, Hawaii Revised Statutes Use of State funds and County Lands
ACTION DETERMINATION:	Anticipated Finding of No Significant Impact

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SECTION TWO
PROPOSED PROJECT AND STATEMENT OF OBJECTIVES

2.1 PROJECT LOCATION

The proposed project entails a new campus master plan for the exiting James Campbell High School which is located on a single large block that also includes Ilima Intermediate School, Pohakea Elementary School and Kaimiloa Elementary School. The block also includes the Ewa Beach Library and the private Our Lady of Perpetual Help school. Other uses on this block include the Hale Pono Boys and Girls Club, a few commercial uses and townhouse and single family residential dwellings. This large block is bounded by Fort Weaver Road to the south, North Road to the west, Kehue Street to the north, and Kuhina Street to the West. The James Campbell High School is located on a portion of Tax Map Key: 9-1-001: 002 which includes the project site and Ilima Intermediate School and Pohakea Elementary School. The site is owned by the City and County of Honolulu.

The project area can be considered the center point of the Ewa Beach community. A mix of older single-family and low-density town homes surround the project area, while newer planned developments including Ocean Point and Ewa by Gentry lie to the west. These new developments have significantly increased the population of the district. Beyond the project block, notable uses include the Ewa Beach Community Park located directly across the project site on North Road, commercial uses and the US Postal Service located to the southwest, and the Ewa Beach Elementary School. It should be noted that three public elementary schools and one private elementary school are located less than a quarter mile from the project site and are indicative of the high demand for schools within this district.

In general, the Ewa Beach district has been transitioned from an agricultural and bedroom community to an area of mixed residential and commercial uses. This is enabled by the State and County models of urban development which promote mixed use growth in west Oahu. The proposed improvements will incrementally provide for the changing needs for high school education and supporting facilities as this dynamic community evolves.

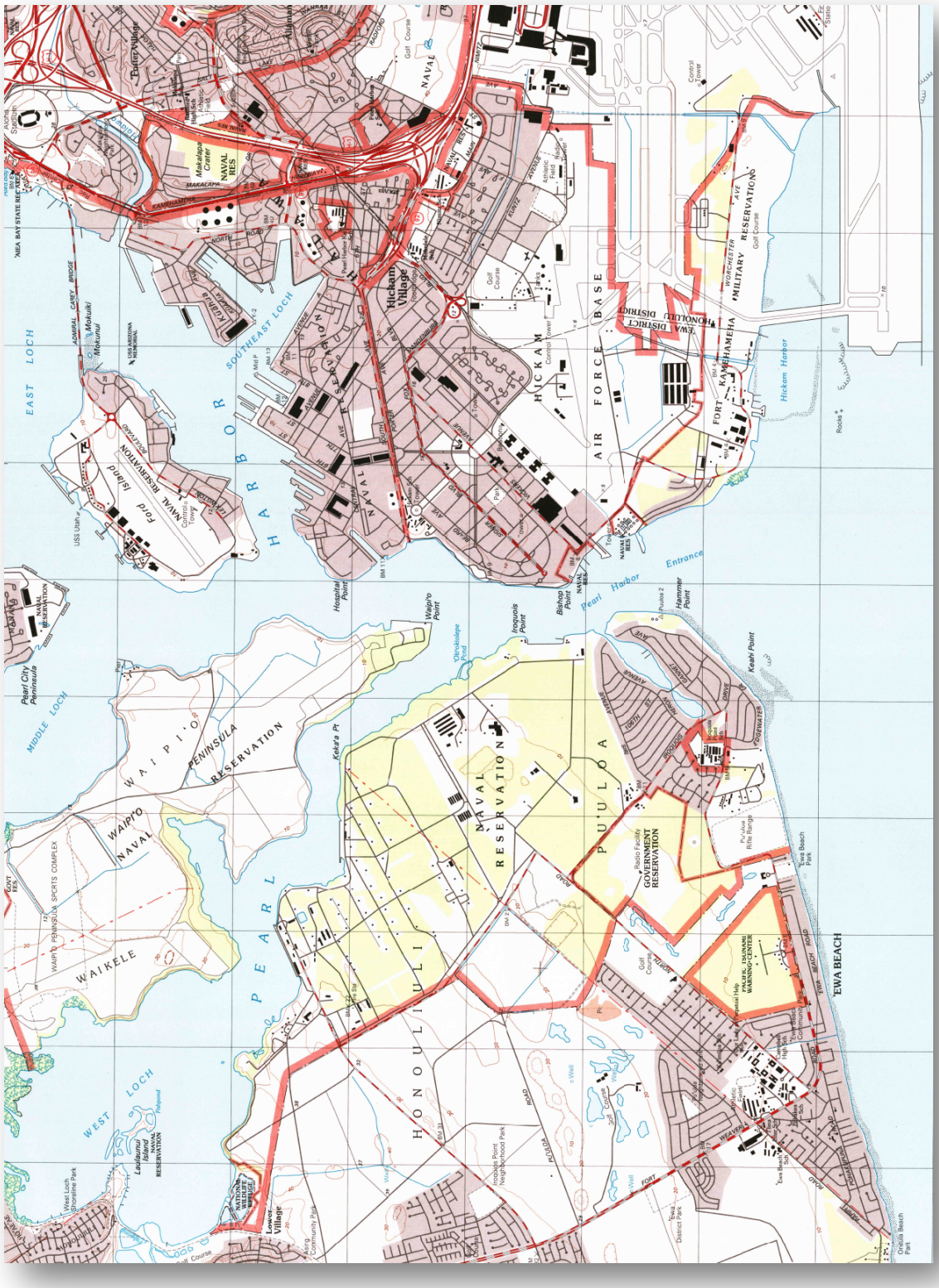


Figure 1: Project Location Map Source: US Geological Service

Figure 2: Aerial View Source: Google Earth

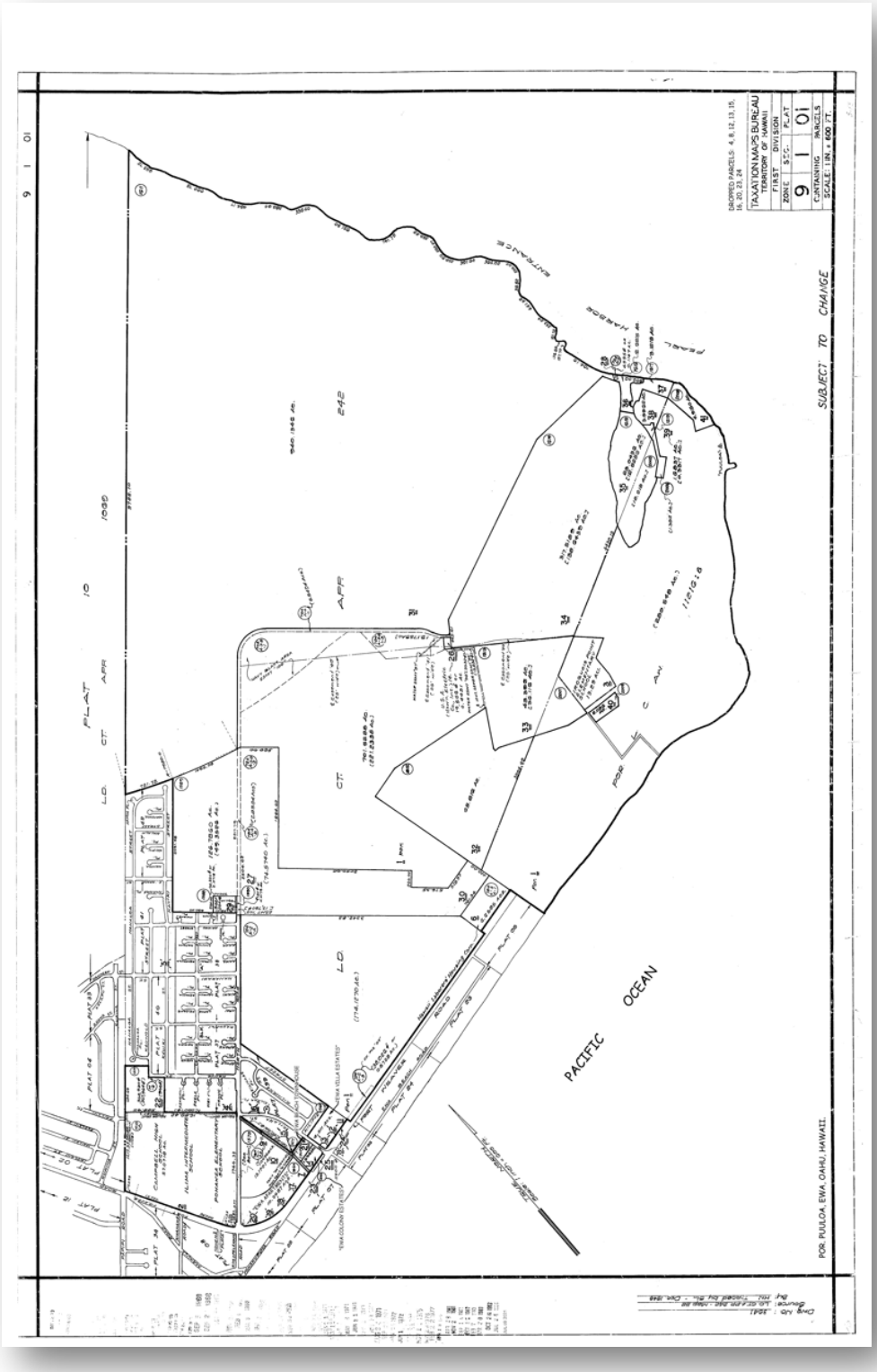


Figure 3: Tax Map Plat Source: City and County of Honolulu

2.2 PROJECT DESCRIPTION

2.2.1 PROJECT NEED AND PURPOSE OF THIS DOCUMENT

The project subject of this document is two-fold. This Environmental Assessment serves as a programmatic document for future improvements on the James Campbell High School campus which are described in gross area descriptions, and this document provides specific details regarding athletic complex improvements which have been programmatically funded and are in the design phase. Collectively, impacts associated with this master plan are regulated to a single site and are anticipated to be addressed by this document within a ten year period. Should the programming for specific components of the master plan substantially change, environmental site conditions change, or should the improvements occur beyond a 10-year period, the proposing agency shall evaluate the need for supplemental planning and environmental documentation.

The proposed master plan and athletic complex improvements are subject to Chapter 343, Hawaii Revised Statutes and Title 11, Chapter 200, Hawaii Administrative Rules. The proposed action is triggered by the use of State funds and County lands.

2.2.2 EXISTING CAMPUS PLAN

The existing facilities of the James Campbell High School campus are depicted in the following plan graphic. Areas not included in the master plan scope are depicted as hatched areas. A programmatic table of the individual use spaces within the plan are listed in the adjacent table. This plan graphic is immediately followed with the proposed master plan to facilitate easy comparisons.

2.2.3 PROPOSED MASTER PLAN COMPONENTS

The proposed master plan provides a graphic showing all master plan improvements and the project phasing in the accompanying table. This schedule provides general phase related improvements which are addressed as follows.

<u>Current Ongoing Improvements</u>

- As new classroom complex consisting of six classroom buildings totaling 39,900 square feet was recently completed. This complex of buildings is located immediately north of the main campus parking lot.
- A new plaza entry and unmarked parking area will be located adjacent to, and northwest of the administration building.
- These improvements are not subject of this document and were addressed under separate planning processes.

<u>Phase One Improvements</u>

- The baseball/ softball field will be renovated for improved turf conditions.

- A new small parking area will be added adjacent to the baseball/ softball field via an entrance off Kuhina Street.
- The multi-purpose field will be demolished and replaced with new turf and track surfaces.
- A new track and field throwing pit will be constructed at the north end of the field.

Phase Two Improvements

- Two portable buildings identified as 3 and 4, located southeast of the athletic field will be relocated to allow for improved movement of the internal circulation road that will be constructed.
- The new internal circulation road will provide restricted access for buses and authorized vehicles to the athletic complex. This service/ bus road will enter from Fort Weaver Road and will exit onto North Road northeast of the Ewa Beach Library.
- The existing outdoor courts serving Ilima Intermediate School will be demolished and replaced by new covered courts.
- The existing field building located west of the track and field will be demolished and will be replaced by homefield bleachers accommodating approximately 3,000 people and a press box with a locker room building located beneath the bleachers. This 9,230 square foot building will include athletic lockers, laundry room, Trainer's room, fitness room, first aid room & storage. Upgrades will be made to the existing fencing.
- A new ticket both, concession stand and toilet building will be added at the south end of the track and field area.
- A new storage and bathroom building will be added at the southeastern side of the track and field area.

Phase Three Improvements

- A new three story parking garage will be constructed between Ilima Intermediate School and the James Campbell High School. This parking building will be located in the location of the existing Building N.
- A new multipurpose building will be constructed south of the new interior access road immediately south of the track and field complex. This building will house athletic programs offices, physical education classrooms and general classroom spaces.
- Additional play courts and landscaping will be located adjacent to the existing play courts located at the east end of the campus.
- Visitors bleachers located on the east side of the track and field will be replace in this phase. The new bleachers will accommodate approximately 650 people.

Future Phases

- Demolition of Building A
- Construction of a new 2 story administration building and parking lot on the Building A site.
- Demolition of portable buildings 5 through 12, and 17 through 19.
- Construction of a new 3 story classroom building where the portable building was located.
- Demolition of Building N.
- Construction of a new 2 story STEM Academy Building.
- Expansion of the existing parking lot.
- Additional site work and landscaping.

The project has received funding for the new bleacher and athletic locker rooms building. The program for this building is provided in the following table.

CAMPBELL HIGH SCHOOL ATHLETIC COMPLEX	NEW WORK	UNIT AREA	ED SPEC AREA	TOTAL AREA
ATHLETIC LOCKER ROOMS				
GIRLS LOCKER ROOM				
COACH'S OFFICE	1	160	160	160
LOCKER SHOWER TOILET	1	110	110	110
LOCKER ROOM AND MEETING AREA	1	1,100	1,100	1,100
TOILET AREA	1	200	200	200
DRYING ROOM	1	300	300	300
SHOWER ROOM	5	100	500	500
EQUIPMENT STORAGE AREA	1	300	300	300
SHOWER BOOTH ROOM	3	40	120	120
SHOWER BOOTH ROOM (ADA)	1	80	80	80
TRANSGENDER ROOM	1	150	150	150
TOWEL AND SUPPLY STORAGE	1	200	200	200
JANITOR CLOSET	1	80	80	80
TOTAL				3,300
BOYS LOCKER ROOM				
COACH'S OFFICE	1	160	160	160
LOCKER SHOWER TOILET	1	110	110	110
LOCKER ROOM AND MEETING AREA	1	1,100	1,100	1,100
TOILET AREA	1	200	200	200
DRYING ROOM	1	300	300	300
SHOWER ROOM	5	100	500	500
EQUIPMENT STORAGE AREA	1	300	300	300
SHOWER BOOTH ROOM	3	40	120	120

SHOWER BOOTH ROOM (ADA)	1	80	80	80
TRANSGENDER ROOM	1	150	150	150
TOWEL AND SUPPLY STORAGE	1	200	200	200
JANITOR CLOSET	1	80	80	80
TOTAL				3,300
COMMON AREAS				
LAUNDRY ROOM	1	160	160	160
ELECT, MECH, TELECOM RMS	3	100	300	300
FITNESS ROOM	1	1,800	1,800	1,800
TRAINER'S ROOM	1	1,300	1,300	1,300
HEAVY EQUIPMENT ROOM	1	500	500	500
BROADCAST BOOTH	1	690	690	690
MEN'S PUBLIC TOILET	1	600	600	600
WOMEN'S PUBLIC TOILET	1	660	660	660
TOTAL				6,010
WEIGHT TRAINING ROOM				
MULTI-USE MACHINE AREA	1	800	800	800
SQUAT RACK AREA	3	100	300	300
POWER BENCH AREA	1	200	200	200
FREE STANDING RACK AREA	1	235	235	235
REHAB MACHINE AREA	1	625	625	625
TOTAL				2,160
TOTAL BUILDING AREA			TOTAL	14,770

ACCESSORY SPACES

OUTDOOR FACILITIES	**NEW WORK**	**UNIT AREA**	**ED SPEC AREA**	**TOTAL AREA**
TICKET BOOTH	1	100	100	100
CONCESSION	1	300	300	300
MEN'S PUBLIC TOILET	1	600	600	600
WOMEN'S PUBLIC TOILET	1	660	660	660
JANITOR'S CLOSET	1	80	80	200
STORAGE	1	800	800	800
TOTAL OUTDOOR FACILITIES			TOTAL	2,660

BLDG LETTER	BUILDING NAME	NO. STORIES	GROSS AREA (SF)
A	Administration Building	1	7,791
D	General Classroom Building	3	39,588
E	PE Locker/Showers	1	16,535
F	General Classroom Building	1	4,275
G	Specialty Classroom Building	2	23,005
H	Gymnasium	1	23,511
I	Cafeteria	1	23,657
J	Art / Specialty Classroom Building	1	22,399
K	Music / Band	1	11,962
L	Community / School Library	1	44,495
N	Industrial Arts Classroom Building	2	42,201
O	Science Classroom Building	3	48,683
P1	Portables 1-4 & 14	1	4,065
P2	Portables 5-12 & 17-19	1	9,360
P3	Portables 15-16	1	1,910
P4	Portables 25-28	1	4,000
Q	Varsity Locker Rooms	1	4,663
R	Industrial Education	1	16,850
SH	Saber Hall (Main Admin Office)	2	19,528
K			3,750
L		1	4,060
M			3,920
P2	Portable Classrooms	1	3,325

Figure 4: Existing Site Plan Source: Design Partners, Inc.

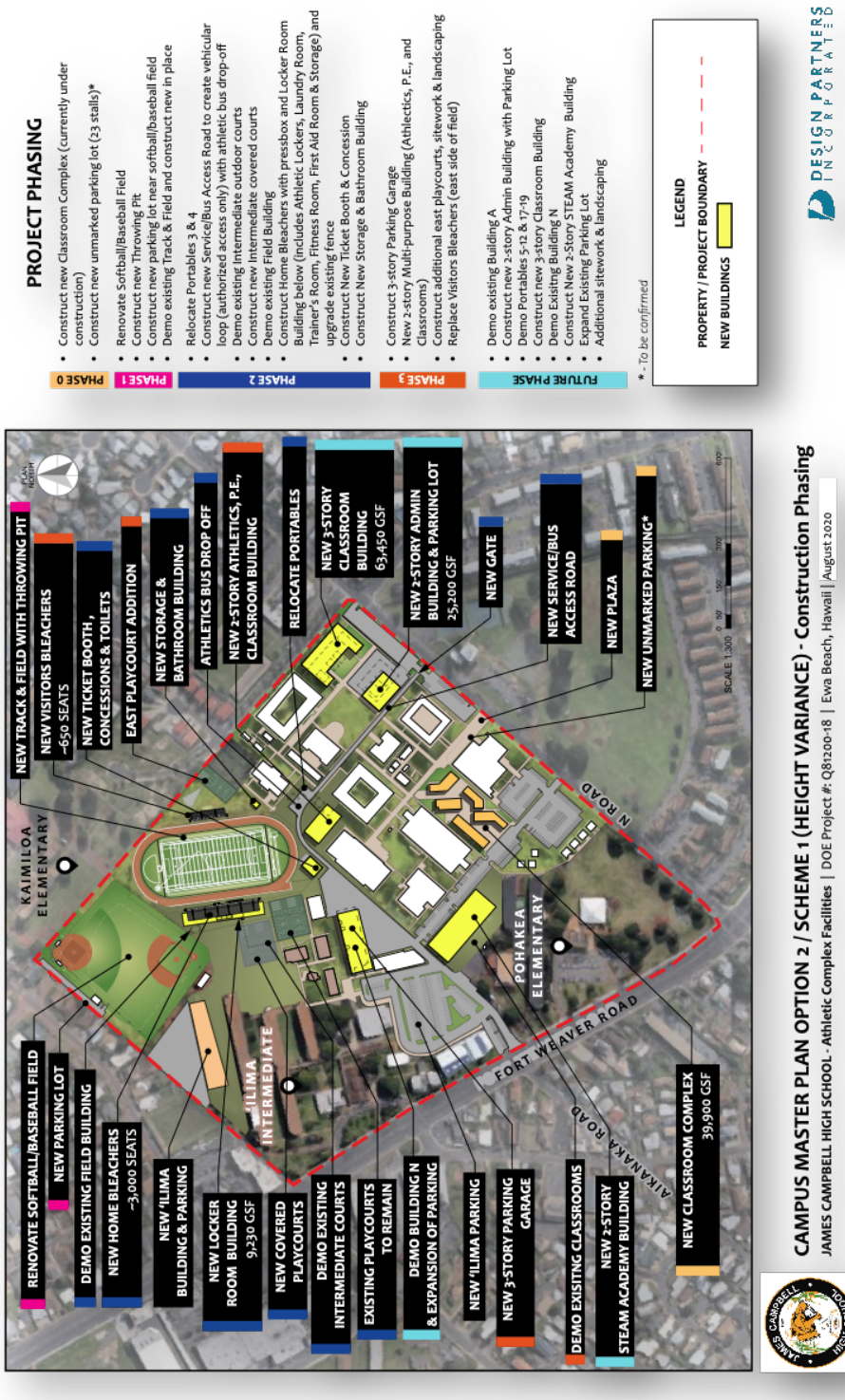


Figure 5: Site Master Plan Source: Design Partners, Inc.

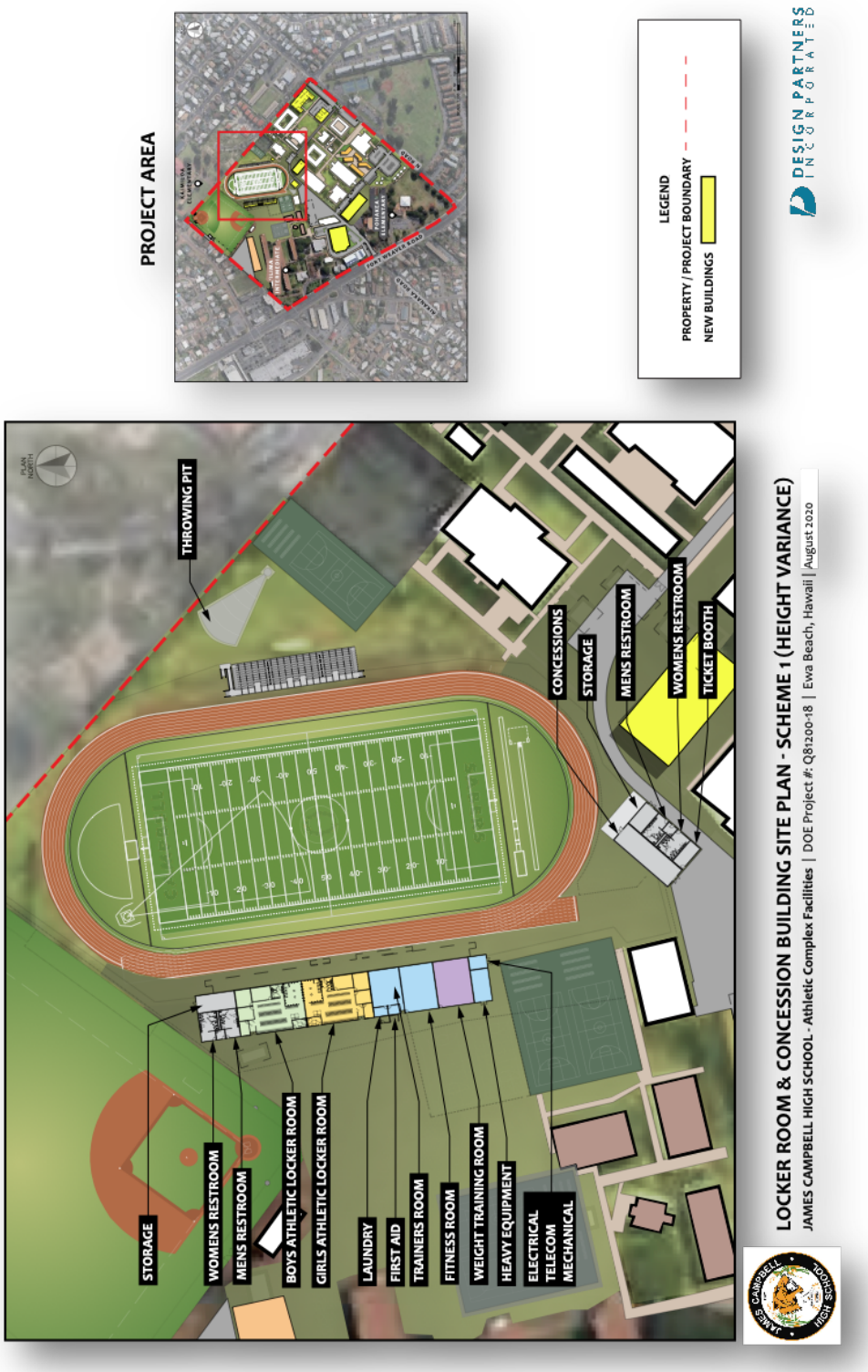


Figure 6: Athletic Facility Site Plan Source: Design Partners, Inc.

Figure 7: Locker Room and Bleacher Floor Plan Source: Design Partners, Inc.

2.3 PROJECT OBJECTIVE

The objective of the proposed project master plan is to create a path that strategically meets the needs of the largest public high school in Hawaii. The demand for educational services and facilities in this fast growing community is significant and compels the State of Hawaii Department of Education accommodate these needs within the limited area of this multi-school complex. Piecemeal, incremental improvements are not suitable for the significant needs of this school therefore a prioritized and phased approach is required. The subject master plan addresses both current and projected needs and also creates a sequence of improvements that allow for the maximization of this size limited campus.

Improvements to accommodate the growing student population have already begun with the addition of the new class room complex. It has been determined by the Department of Education that suitable athletic facilities are a priority item as well as to meet the requirements of Title IX directives regarding gender equitable facilities.

2.4 FUNDING AND SCHEDULE

The project master plan has been funded and current funding will allow for the construction of the athletic field complex improvements. The project total development cost is approximately $18,000,000.

Upon completion of the Environmental Assessment process, the project will be required to obtain standard construction related permits from the State of Hawaii and the City and County of Honolulu. The anticipated construction start date is during the Spring of 2025. The project is anticipated to be completed in the Summer of 2026.

SECTION THREE
DESCRIPTION OF ENVIRONMENT, ANTICIPATED IMPACTS AND MITIGATION MEASURES

3.1 ENVIRONMENTAL SETTING

The project site represents an entire city block that is located within a highly urbanized area located within the Ewa District. Originally a Hawaiian settlement area, the area was known as a plantation and subsequently became associated with the former Ewa Sugar Mill. Since the closure of the mill, Ewa Beach became a bedroom community that consists primarily of low-density residential uses and some supporting commercial areas. More recently, the Ewa district has become an area of rapid growth through planned developments and new sub-communities such as Ocean Point and Ewa by Gentry.

The project site and educational uses predate the newer communities that arose in the Ewa district. Located in what is essentially the core of the Ewa Beach community, new uses developed around the complex of schools leaving the schools no additional areas for expansion. Limited land area requires that capital improvements be planned and developed to accommodate the grown district population.

The project site is notable as a complex or cluster of schools including the Pohakea Elementary School, Ilima Intermediate School and the subject James Campbell High School. Adjacent to or within easy walking distance are Kaimiloa Elementary School, Ewa Beach Elementary School, and the private Our Lady of Perpetual Help School. Collectively, this is the single largest complex of schools in the State of Hawaii.

3.2 SURROUNDING USES

Adjacent uses are predominately low-density housing in single-family or low-density apartments to the north, east and south, and the planned development communities of Ocean Point to the west and Ewa by Gentry further north. Commercial uses are located primarily along Fort Weaver Road. The Ewa Beach Community Park is located across North Road from the project site.

3.3 MASTER PLAN

The actions subject of this environmental assessment are two-fold. The first component consists of an overall campus master plan that includes current, short-term and long-term improvements that address the most pressing needs on this campus. The second component which is addressed in greater detail are the athletic facilities improvements which have been funded and are identified as near-term improvements. This priority action is addressed within the context of the campus master plan because the sequencing

of improvement actions are difficult to treat discretely and are best served when viewed holistically.

3.4 ENVIRONMENTAL CONSIDERATIONS

3.4.1 GEOLOGICAL CHARACTERISTICS

Topography

The project site consists of flat urban land that this is in use as an existing high school campus. Previously, the site was extensively disturbed when the site was used for cane cultivation. The majority of the block is paved, is in occupied by structures, or is in maintained landscape and athletic field use. The surrounding blocks consist of both single-family dwellings and low-rise residential and commercial buildings. The site is located within a highly urbanized environment and the site is essential devoid of any undeveloped areas except in the vicinity of the Pacific Tsunami Warning Center.

Climate

The geography of the Ewa District is typically warm and dry in climate. Prevailing trade winds arrive from the northeast. According to the National Weather Service Honolulu Office, over a period of 30 years, normal monthly high temperatures range from 80 degrees in January to a high of 89 degrees in August for an average of 84 degrees. Normal month low temperatures range from a low of 63 degrees in February and a high of 72 degrees in August for a monthly average of 67 degrees. Precipitation typically ranges from 0.40 inches in August to a high of 3.3 inches in December. The annual average rainfall in Ewa is 19 inches per year.

USDA Soil Survey Report and Detailed Land Classification – Island of O‘ahu

The project site is located on soils classified Coral Outcrop (CR), according to Panel 55 of the Soil Survey of Islands of Kauai, O‘ahu, Maui, Molokai, and Lanai, State of Hawai‘i by the U.S. Department of Agriculture Soil Conservation Service. This land type consists of coral or cemented calcareous sand.
The project site is classified as “U” Urban on Map No. 248 of the Detailed Land Classification – Island of O‘ahu by the University of Hawai‘i Land Study Bureau.

Figure 8: Soils Map Source: USDA Soil Conservation Service

3.4.2 WATER RESOURCES

Hydrologic Hazards and Resources

According to Panel 150003 C 0328 G of the Federal Emergency Management Agency Flood Insurance Rate Map, the project site is located in Zone D, an unstudied area where flood hazards are undetermined, but flood is possible.

The project site lies at an elevation of approximately 13.5 feet above mean sea level.

Using the Hawai'i Sea Level Rose Vulnerability and Adaption Report, dated December 2017, and its companion tool, the Hawai'i Sea Level Rise Viewer, one is able to identify areas vulnerable to variations in sea level rise based upon three hazards – passive flooding, annual high wave flooding and coastal erosion. The Report projects sea level rise for four time periods as shown in the table below. Changes in global climate conditions can also influence the projections.

The Sea Level Rise Viewer depicts areas susceptible to sea level rise caused by the aforementioned three hazards and notes these areas as "Sea Level Rise Exposure Area." Campbell High School is not located in a Sea Level Rise Exposure Area

Global Sea Level Rise Projection		
Year	**Feet**	**Meters**
2030	0.5	0.16601
2050	1.1	0.3224
2075	2	0.5991
2100	3.2	0.9767

Source: Hawai'i Sea Level Rise Vulnerability and Adaptation Report, December 2017

Tsunami Inundation

According to the National Ocean and Atmospheric Administration (NOAA), the project site is located in the extreme evacuation area of the Tsunami Hazard Map.

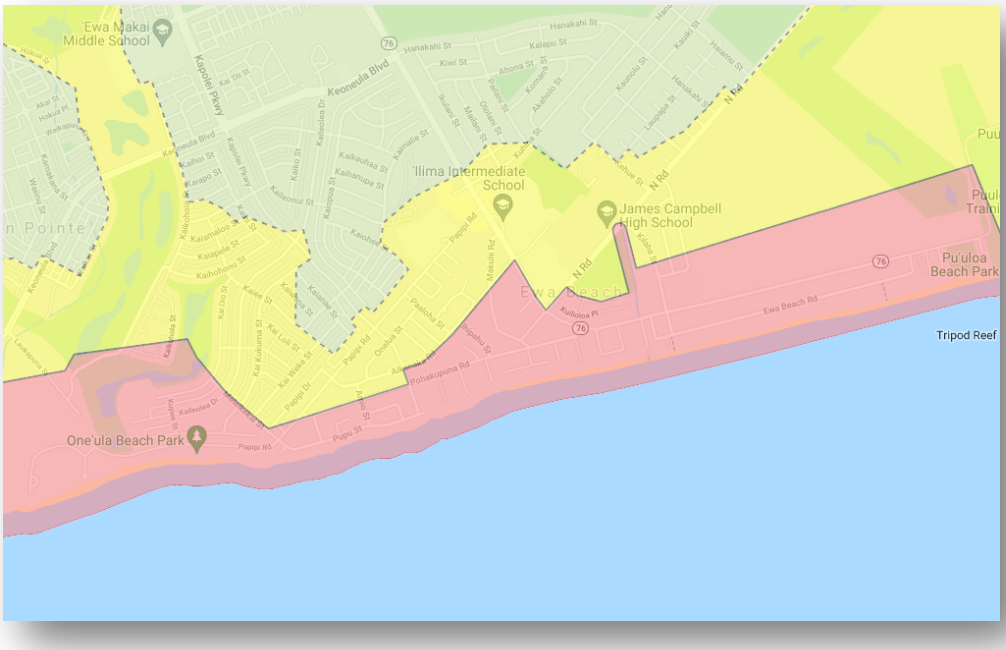
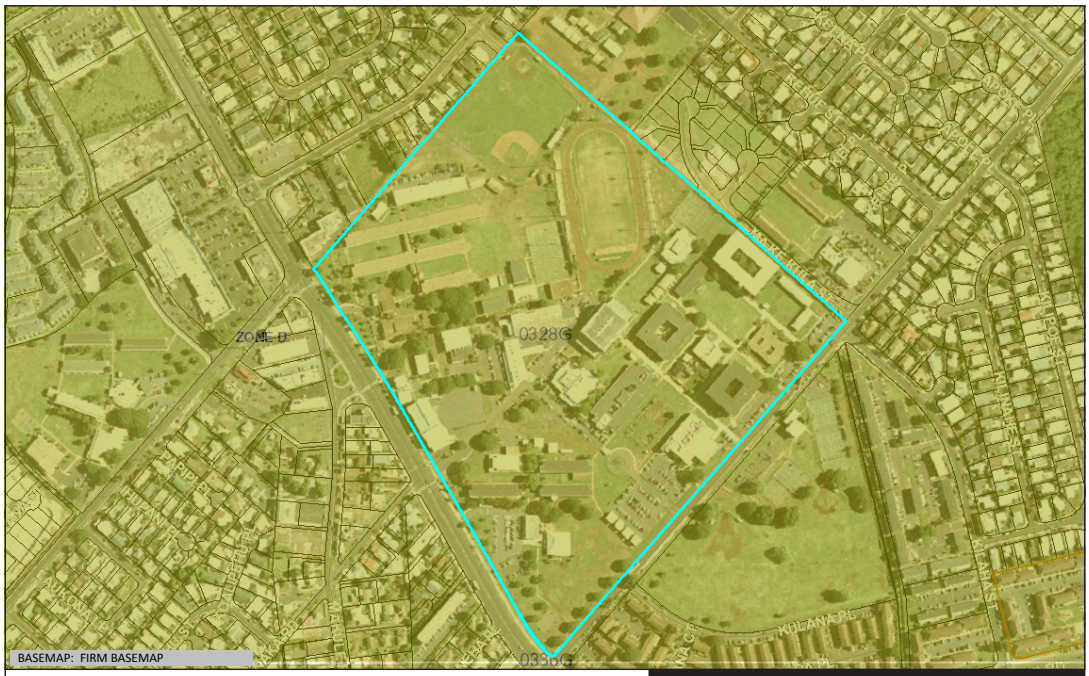


Figure 8: Tsunami Hazard Map Source: NOAA

Special Management Area

The project site is not located within the boundaries of the Special Management Area (SMA) Map.



Flood Hazard Assessment Report

www.hawaiinfip.org

James Campbell H.S.

Property Information

COUNTY:	HONOLULU
TMK NO:	(1) 9-1-001:002
WATERSHED:	KALOI
PARCEL ADDRESS:	91-980 NORTH ROAD EWA BEACH, HI 96706

Notes:

Flood Hazard Information

FIRM INDEX DATE:	NOVEMBER 05, 2014
LETTER OF MAP CHANGE(S):	NONE
FEMA FIRM PANEL:	15003C0328G
PANEL EFFECTIVE DATE:	JANUARY 19, 2011

THIS PROPERTY IS WITHIN A TSUNAMI EVACUTION ZONE: NO
FOR MORE INFO, VISIT: http://www.scd.hawaii.gov/

THIS PROPERTY IS WITHIN A DAM EVACUATION ZONE: NO
FOR MORE INFO, VISIT: http://dlnreng.hawaii.gov/dam/

0 400 800 ft

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

If this map has been identified as 'PRELIMINARY', please note that it is being provided for informational purposes and is not to be used for flood insurance rating. Contact your county floodplain manager for flood zone determinations to be used for compliance with local floodplain management regulations.

FLOOD HAZARD ASSESSMENT TOOL LAYER LEGEND
(*Note: legend does not correspond with NFHL)*

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD - The 1% annual chance flood (100-year), also know as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. SFHAs 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 apply, but coverage is available in participating communities.

Figure 9 – Flood Insurance Rate Map

Source: Department of Land and Natural Resources

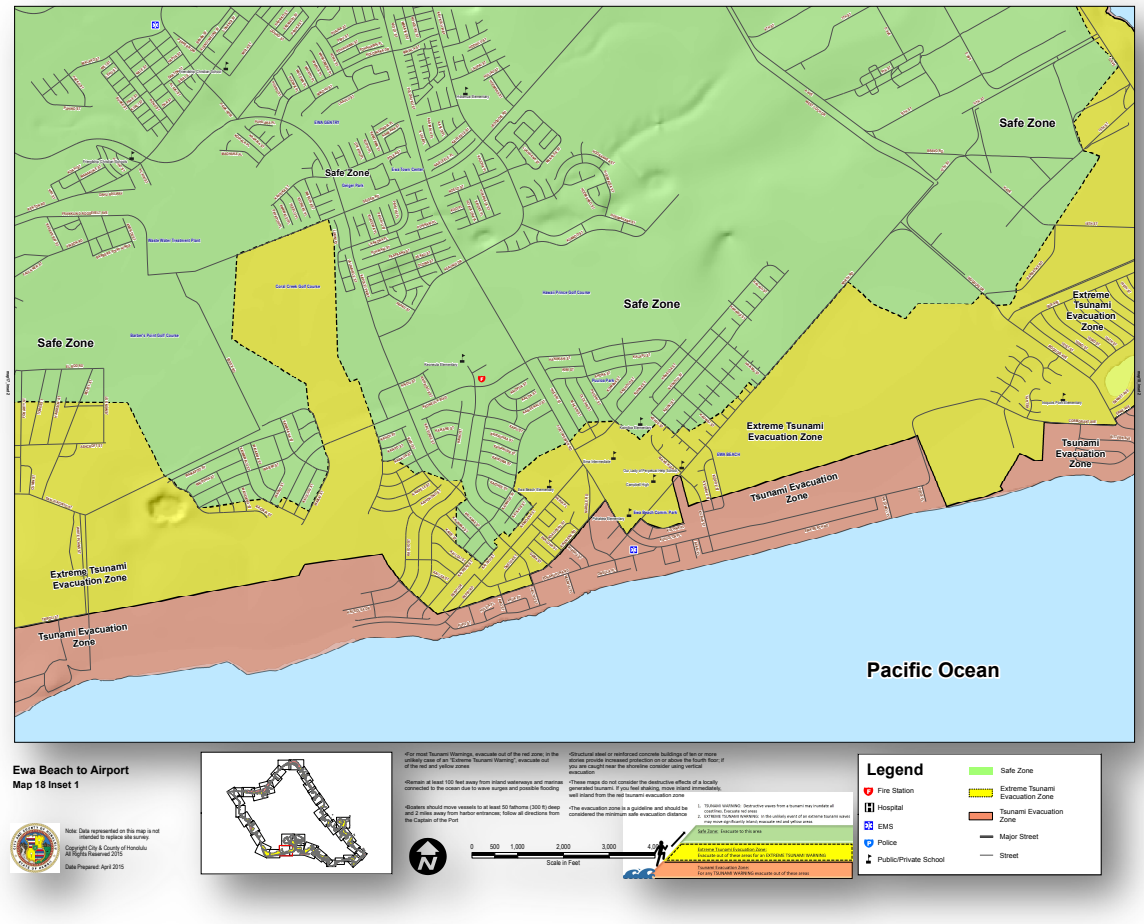


Figure 10 – Tsunami Hazard Map Source: City and County of Honolulu

3.4.3 HISTORICAL AND ARCHAEOLOGICAL ASSESSMENT

The proposed project site is located on an area that has been heavily altered during the construction of the existing field area. The proposed improvements will occur entirely on areas that were previously altered and not impacts to any area of historic significance or archaeological importance are anticipated. The area was formerly in sugarcane cultivation and but was urbanized over the years and no longer retains any character of its former uses.

In October 2014, Cultural Surveys Hawai‘i, Inc. (CSH) conducted an archaeological assessment investigation of the adjacent Ewa Elementary School. The study was designed to identify, document, and perform significance assessment of any historic properties in the project area, as well as to comply with the State’s historic preservation review under Hawai‘i Revised Statutes (HRS) §6E-8, Hawai‘i Administrative Rules (HAR) §13-13-275, and the project’s

environmental review under HRS §343. An archaeological inventory survey plan was accepted by the State Historic Preservation Division (SHPD) in a letter, dated June 14, 2014, to set the format for the above assessment.

The study titled *Archaeological Assessment Report for the Ewa Elementary School Building E Project, Honouliuli Ahupua'a, 'Ewa District, O'ahu, TMK: (1) 9-1-017:002 (por.)* was prepared by Cultural Surveys Hawaii, Inc.. The study, which did not find any archaeological artifacts, is included in its entirety as Appendix A.

In the unlikely event that any artifacts or remains are uncovered during the construction process, all work will cease and the appropriate agencies will be contacted for further instruction.

3.4.4 CULTURAL IMPACT ASSESSMENT

A study titled *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* was prepared by Cultural Surveys Hawai'i in December 2013. The study, which assesses the project area, is included in its entirety as Appendix B.

As stated in the Environmental Assessment prepared for the adjacent elementary school site, no significant findings resulted from the assessment however it was 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.

3.4.5 TRAFFIC CONDITIONS

The proposed athletic complex improvements that have been funded and scheduled for construction will not have any adverse impact on traffic conditions as the improvements will not generate any additional traffic over the current use of the field and supporting facilities. The project may possibly improve traffic flow immediately around the project site by the creation of a new internal service/ bus access road which will allow service vehicles and buses to enter into the site near the athletic facilities. This may improve traffic conditions during sporting

events by allowing buses to store and que within the site rather than outside of the campus.

3.4.6 NOISE ENVIRONMENT

Development of the project areas will involve excavation, grading, and other typical construction activities during construction. The use of impact equipment is not anticipated, as the foundation will be pre-drilled to avoid any need for pile driving. The actual noise levels produced during construction will be a function of the methods employed during each stage of the construction process. Earthmoving equipment, e.g., bulldozers and diesel-powered trucks, will probably be the loudest equipment used during construction. In cases where construction noise is expected to exceed the HDOH "maximum permissible" property line noise levels, a permit must be obtained to allow the operation of construction equipment.

In cases where construction noise exceeds, or is expected to exceed the State's "maximum permissible" property line noise levels, a permit must be obtained from HDOH to allow the operation of vehicles, cranes, construction equipment, power tools, etc., which emit noise levels in excess of the "maximum permissible" levels.

In order for HDOH to issue a construction noise permit, the contractor must submit a noise permit application to HDOH, which describes the construction activities for the project. Prior to issuing the noise permit, HDOH may require action by the contractor to incorporate noise mitigation into the construction plan. HDOH may also require the contractor to conduct noise monitoring or community meetings inviting the neighboring residents and business owners to discuss construction noise. The contractor should use reasonable and standard practices to mitigate noise, such as using mufflers on diesel and gasoline engines, using properly tuned and balanced machines, etc. However, HDOH may require additional noise mitigation, such as temporary noise barriers, or time of day usage limits for certain kinds of construction activities.

Use of the proposed improvements are not anticipated to have any negative affect on the noise environment above those presently experienced over the previous and current uses as an athletic facility.

3.4.7 AIR QUALITY AND HAZARDOUS MATERIALS

The proposed project will have short-term and long-term effect on ambient air quality. During demolition and excavation, dust will be generated however fugitive dust is generally controlled by frequent watering and perimeter screening. Best management practices will be used to ensure that dust control during demolition of the existing paving and during construction of the new building are kept to a minimum. These impacts are typical of any new construction project.

3.4.8 BIOLOGICAL CHARACTERISTICS

Flora

The project area is presently covered with an aluminum bleacher structure, concrete sidewalks and grass. The project site is essentially devoid of any plant material except for a single monkeypod tree that is located adjacent to the improvement area.

Fauna

The site does not serve as a wildlife habitat although avifauna, feral cats, and rodents may be found on-site although none were observed during site inspections.

3.4.9 INFRASTRUCTURE AND UTILITIES

The proposed improvements are readily serviced by existing utilities presently serving the campus. All existing utilities are located underground and any improvements to utility lines will remain underground. No significant impacts on infrastructure and utilities are expected from the proposed improvements.

Water

The project will continue to be serviced by the existing water system. The proposed athletic will result in an increase in water with the addition of locker rooms and additional restrooms. The new domestic water and fire protection water meters to serve the project are expected to be upgraded as part of the development. Water conservation efforts are likely to be implemented where practicable. This may include water efficient fixtures and the use of xeriscape or low water requirement landscaping.

Stormwater

The site is presently naturally drained with runoff entering a stormwater box drain in the project area. The proposed project will be required to control drainage according to prevailing drainage regulations. All storm water runoff from the proposed improvements will be reviewed for conformance with City and County of Honolulu Ordinance 96-34 regarding peak runoff.

Best Management Practices (BMPs) will be put in to place prior to the start of any construction to ensure that runoff in the storm drain system are treated for minimal impact into State receiving waters. Additionally, Low Impact Design feature will be considered for the project.

Wastewater

Approval from City and County of Honolulu Department of Planning and Permitting for municipal sewer system connection to accommodate the proposed project will be required. Sewer mains are located along each street frontage and an appropriate sewage connection system will be designed in consideration of the most effective connection points.

Solid Waste

It is expected that private refuse collection service will be used to service the project location. The project operator may implement recycling programs upon project completion.

Telephone and Electrical Services

Telephone and electrical services are available to the site. Coordination with the local electric and telephone service providers will be expected during the design and construction phases.

3.4.10 PUBLIC FACILITIES

The East Kapolei Fire Station No. 43 provides fire protection service to the project area. The station is located at 91-1211 Kinoiki Street. Response time to the site is less than 5 minutes.

Police service is provided by the Honolulu Police Department (HPD) District 8, which is administratively based in Kapolei. This station is located at 1100 Kamokila Boulevard, Police services are provided by patrolling officers and response time to the site is less than 5 minutes.

The nearest hospital providing full medical services is the Queens Medical Center – West Oahu which is located approximately 2.5 mile from the project site. The address of this facility, which also serves as the base for Emergency Medical Response is 91-2139 Fort Weaver Road, Ewa Beach.

Public and private Schools located near or adjacent to the project site include Pohakea Elementary School, Kaimiloa Elementary Schools, Ewa Beach Elementary School, Ilima Intermediate School, and the private Our Lady of Perpetual Help School. The proposed improvements will not have any impact on these schools but will be an important improvement for athletic activities at the James Campbell High School.

SECTION FOUR
RELATIONSHIP TO PLANS, CODES AND ORDINANCES

4.1 STATE OF HAWAII PLANS

State Land Use Boundary

The State Land Use Commission Boundary Maps identify the project site as being within the Urban area. This is consistent with the surrounding uses that include commercial uses and medium to low-density residential developments.

Coastal Zone Management Act

Hawai‘i Revised Statutes (HRS) § 205A-1 states that the entire State is located within the coastal zone management area. The proposed athletic complex project is generally consistent with all objectives of the CZM. The project does not directly affect coastal recreational, historic, costal ecosystems. The project will minimally decrease open space but will significantly increase the benefit the school and users of the facility. Overall, the project should be considered an important improvement both from a policy perspective as well as in terms of function and efficiency.

Hawaii State Plan

The project is also consistent with the Hawai‘i State Plan, HRS Chapter 226. While the project does affect the physical environment, the project will not affect the natural beauty and historic resource of Hawai‘i (12(b)(5) and 12(b)(7)) as the site is and has been within a highly urban environment designated for urban development. The project does provide significant educational and socio-cultural advancement by providing a fully integrated multi-function complex that is supportive of Department of Education policies.

HRS 226-21 elaborates on the State’s plan for socio-cultural advancement as it relates to education. In this regard the Plan specifically states the following:

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

(2) Ensure 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.

(4) Promote educational programs which enhance understanding of Hawaii's cultural heritage.

(5) Provide higher educational opportunities that enable Hawaii's people to adapt to changing employment demands.

(6) Assist individuals, especially those experiencing critical employment problems or barriers, or undergoing employment transitions, by providing appropriate employment training programs and other related educational opportunities.

(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.

(9) Support research programs and activities that enhance the education programs of the State.

The proposed improvements are consistent and further promote each object or has no conflict with any objective within the State Plan.

4.2 CITY AND COUNTY OF HONOLULU PLANS

City and County of Honolulu General Plan

The City and County of Honolulu General Plan provides the overall vision for the island of O‘ahu and broadly outlines the objectives and policies shaping future growth. While the proposed action is consistent with 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.

City and County of Honolulu Ewa Development Plan

The City’s Ewa Development Plan 2013 development plan guides development in the Ewa District of O‘ahu. While the project is generally consistent with all aspects of the Ewa DP, particularly relevant to the proposed project is Section 4.7 School Facilities. The Plan states that the Ewa district has an enormous shortfall in meeting educational facilities for this district. In this regard, the proposed improvements fully align with objectives and policies by provided sorely needed athletic facilities which are part of the basic programs of the Department of Education.

SECTION FIVE
IMPACTS, ALTERNATIVES AND MITIGATION MEASURES

5.1 PROBABLE IMPACT ON THE ENVIRONMENT

The proposed project represents no change in use but provides significant improvements to the athletic facilities for the James Campbell High School. The project is consistent with surrounding land uses and the intent of the prevailing Department of Education plans for the Campbell Area Complex. Impacts associated with the proposed project have generally been determined to be negligible. Upon completion, the new facility will greatly benefit the students, faculty and the public by providing improved seating and passive participation in sporting events, will provide significantly improved locker rooms for both male and female athletes, and new training areas.

When viewed in the cumulative with the other components proposed for the campus, impacts to the environment will be more significant. In addition to significantly improving the campus for the campus for both academic and sporting activities, the campus plant will be significantly improved over the no-action alternative.

Positive environmental impacts are expected as a result of the proposed short and long-term improvements. Students will directly benefit by the proposed improvements and public participants will also benefit from the proposed bleachers and appurtenant concessions, restrooms and overall grounds improvements.

5.2 ADVERSE IMPACTS WHICH CANNOT BE AVOIDED

Adverse impacts that cannot be avoided are generally related to short-term construction impacts. These impacts can be minimized by sound construction practices, Best Management Practices (BMPs) adherence to applicable construction regulations as prescribed by the Department of Health, and coordination with applicable County agencies. Primary construction related impacts are discussed in greater detail in the air quality and nose impact sections of this document.

5.3 ALTERNATIVES TO THE PROPOSED ACTION

No other use alternatives beyond the non-action alternative were considered for this project. Non-action was considered and rejected due to the need for appropriate gender equitable facilities and due to the extremely high student enrollment at James Campbell High School. The project is consistent with the State of Hawaii and City and County of Honolulu policies and objectives.

Within the scope of proposed improvements, alternative density configurations were considered however the proposed improvements are considered the most minimally invasive and will allow for continued use of the campus with minimal disruption. Alternative locations were not considered.

5.4 MITIGATION MEASURES

Long-term impacts resulting from the proposed improvements are expected to be minimal or non-existent based upon the subject environmental assessment. Long-term traffic, air and noise impacts are not expected to change significantly after improvements are completed. Short-term construction related noise and air quality impact mitigation measures include general good housekeeping practices and scheduled maintenance to avoid a prolonged construction period. The contractor will be directed to use best management practices (BMP) wherever applicable. Construction materials and equipment will be transported to the project site during non-peak traffic hours. In the event that existing roadways or sidewalks are damaged during construction activities, the roadways and sidewalks will be restored to original or better condition.

5.5 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Implementation of the proposed project will result in the irreversible and irretrievable commitment of resources in the use of non-recyclable energy expenditure and labor. Materials used for new construction may have salvage value; however, it is unlikely that such efforts will be cost-effective. The expenditure of these resources is offset by gains in construction-related wages, increased tax base and tertiary spending.

6.0 NECESSARY PERMITS AND APPROVALS

Permits and approvals that may be required are contingent upon the actual design of the proposed project. All permits and approvals are generally ministerial in nature. Permits listed below represent a general list that represents permits and approvals that will be required for the project.

State Agencies

Permit or Approval	Approving Agency
National Pollutant Discharge Elimination System (NPDES) Permit	Dept. of Health
Community Noise Permit / Variance	Dept. of Health

County Agencies

Permit or Approval	Approving Agency
Building Permits	Dept. of Planning and Permitting
Certificate of Occupancy	Dept. of Planning and Permitting
Construction Dewatering Permit	Dept. of Planning and Permitting
Grading and Stockpiling Permits	Dept. of Planning and Permitting
Sewer Connection Permit	Dept. of Environmental Services
Trenching Permit	Dept. of Planning and Permitting

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7.0. FINDNGS AND REASONS SUPPORTING ANTICIPATED DETERMINATION OF FINDING OF NO SIGNIFICANT IMPACT

As stated in Section 11-200-13, EIS Rules, Significance Criteria: in determining whether an action may have a significant effort on the environment, every phase of a proposed action shall be considered. The expected consequences of an action, both primary and secondary, and the cumulative as well as the short-term and long-term effects must be assessed in determining if an action shall have significant effect on the environment. Each of the significance criteria is listed below and is followed by the means of compliance or conflict (if extant).

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

The proposed action will occur on an existing developed site and will not impact any topographical resources other than the removal or relocation of some existing trees. Subsurface archaeological artifacts are an unlikely possibility; therefore, in the event that any archaeological remains are uncovered during the course of construction, all work will stop and the State Historic Preservation Office will be contacted for appropriate action.

- Curtails the range of beneficial uses of the environment.

The proposed improvements will not result in a change from its existing uses but represents a significant upgrade in athletic facilities to the school. The proposed project will not curtail beneficial uses of the environment. The proposed project will provide needed facilities and is considered a highest and best use in the public interest.

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

The proposed action is consistent with the goals and guidelines expressed in Chapter 344, Hawai‘i Revised Statutes and NEPA. The proposed action is triggered by the use of State lands and funds. The subject Environmental Assessment has been developed in compliance with the Chapter 343.

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

The proposed action will make a positive contribution to the welfare and economy of the State and City by providing desirable and needed athletic and educational facilities to the State of Hawai‘i. The proposed use will provide gender equitable accommodations for all student athletes. The facility will also contribute positively to the community through the use of goods and services in the area, through construction related employment, and through secondary and tertiary spending and taxes. The proposed action will not have any impact on any native cultural practices as the site has been in urban use for over 60 years.

A historic and cultural resource plan for the Mauka Area Plan is assessed in the programmatic *Kaka‘ako Community Development District Final Supplemental Environmental Impact Statement* prepared for the Hawai‘i Community Development Authority in May 2009. Section 2.8.1 Historic and Cultural Resources lists eight (8) sites that are considered important and selected for protection for their historic and cultural value. None of the properties is within or near the Block C project site. The document also states that other sites of historic and cultural significance with the Mauka Area may be identified and added to HCDA’s preservation list. None in the project vicinity have been subsequently no historic or cultural practices will be impacted by the proposed action.

- Substantially affects public health.

The proposed improvements are not expected to have any direct impact on public health but will provide significantly improved health related facilities to students and visitors of the school. No recreational resources for the public will be impacted by the project, nor will the project increase any undesirable environmental impacts.

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

The proposed action will not increase the population within the community. The project as proposed will significantly improve public educational and athletic facilities for this rapidly growing area.

- Involves a substantial degradation of environmental quality.

The proposed action will not degrade environmental quality. Impacts associated with the project, such as traffic impact and noise quality have been assessed to be minimal. The project is located in a highly urban environment that is expected to be heavily developed in the future. In that respect, the project is consistent with the overall land use of the district.

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

The proposed athletic facilities improvements represent a portion of the physical master plan for the campus and are an important component of campus improvements necessary for this high growth school. The site is appropriately zoned for the proposed activities and does not serve as a component of a larger development, but rather, fulfills the intent of the James Campbell High School Master Plan.

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

The proposed action will not affect any rare, threatened or endangered species of flora or fauna, nor is it known to be near or adjacent to any known wildlife sanctuaries.

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

The proposed action will not impact air or water quality. The change in noise level is expected to be negligible and will not significantly affect surrounding properties beyond its existing levels.

Minimal impacts on air quality and noise are anticipated during construction, but will be limited by normal construction practices and Department of Health construction mitigation standards.

- 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 will not have any impact on an environmentally sensitive area.

- Substantially affects scenic vistas and view planes identified in County or State plans or studies.

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

- Requires substantial energy consumption.

The project will require a small increase in electrical energy consumption over the existing use due to the size of the improvement over the existing facilities This increase is expected to be partially offset through energy conservation measures such as energy efficient light fixtures. General conservation goals include: meeting State energy conservation goals, using energy saving design practices and technologies, and recycling and using recycled-content products.

Based on the above stated criteria, the proposed James Campbell High School Athletic Facilities Improvements project is not expected to have a significant effect on the environment beyond those associated with a master planned community. As such, a Finding of No Significant Impact (FONSI) is anticipated for the project by Department of Education.

8.0 PARTIES CONSULTED DURING THE PREPARATION OF THE DRAFT ENVIRONMENTAL ASSESSMENT

State Agencies

Department of Education

Department of Land and Natural Resources
Historic Preservation Division

City and County Agencies

Department of Planning and Permitting

Honolulu Fire Department

Honolulu Police Department

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9.0 LIST OF PARTIES TO BE CONSULTED DURING THE DRAFT ENVIRONMENTAL ASSESSMENT REVIEW PROCESS

Agencies with ministerial or specific interests regarding the proposed project were contacted for their comments regarding the proposed project. Parties contacted are listed and the date of their comments are listed below.

Comment Date

Federal Agencies

US Environmental Protection Agency
Region IX Administrator

State Agencies

Department of Accounting and General Services
Department of Business Economic Development & Tourism
Energy, Resources & Technology Division
Department of Defense
Department of Education
Department of Health
Department of Health Clean Water Branch
Department of Land and Natural Resources
Department of Land and Natural Resources
State Historic Preservation Officer
Department of Transportation
Disability and Communication Access Board
Hawai‘i Community Development Authority
Office of Environmental Quality Control
Office of Hawaiian Affairs
Office of Planning
University of Hawai‘i at Manoa Environmental Center

County Agencies

Board of Water Supply
Department of Community and Social Services
Department of Design and Construction
Department of Environmental Services
Department of Facilities Maintenance
Department of Planning and Permitting
Department of Parks and Recreation
Department of Transportation Services
Fire Department
Police Department

Officials and Organizations

Neighborhood Board

Draft

Archaeological Assessment Report for the Ewa Elementary School Building E Project, Honouliuli Ahupua‘a, ‘Ewa District, O‘ahu TMK: [1] 9-1-017:002 (por.)

Prepared for
Belt Collins Hawaii, Ltd.

Prepared by
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November 2014

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Management Summary

Reference	Archaeological Assessment Report for the Ewa Elementary School Building E Project, Honouliuli Ahupua‘a, ‘Ewa District, O‘ahu TMK: [1] 9-1-017:002 (por.) (Stark et al. 2014)
Date	November 2014
Project Number(s)	Cultural Surveys Hawai‘i, Inc. (CSH) Job Code: HONOULIULI 106
Investigation Permit Number	CSH completed this Archaeological Assessment (AA), initially termed an Archaeological Inventory Survey (AIS) fieldwork under archaeological permit number 14-04, issued by the Hawai‘i State Historic Preservation Division (SHPD) per Hawai‘i Administrative Rules (HAR) §13-13-282.
Agencies	SHPD, Department of Education (DOE)
Land Jurisdiction	DOE
Project Proponent	DOE
Project Funding	DOE
Project Location	The Ewa Elementary School Building E Project area is located in the eastern corner of the Elementary School campus adjacent to the northwest end of Pipeline Street in the northeast side of Renton Village in the ‘Ewa Villages Historic District (SIHP # 50-80-12-9786), Honouliuli Ahupua‘a, ‘Ewa District, O‘ahu,TMK: [1] 9-1-017:002 (por.)
Project Description	The proposed project is for the construction of a new one-story, eight-classroom building located at Ewa Elementary School at 91-1280 Renton Road between Fernandez Village and Renton Village. The project will also include installation of underground utilities that will connect to existing utilities within the school site as well as to utilities extending into the Pipeline Street right-of-way to Bryan Street and Ala Nui Mauka Street. Ground disturbance will involve excavation of up to 6 ft below the existing surface of the new building footprint plus associated utilities and surrounding landscaping.
Project Acreage	While the property totals 347,883 sq ft (7.984 acres or 3.23 hectares), ground disturbance will only impact the 3,202 sq ft (.07 acres or 0.028 hectares) under the footprint of the new building plus associated utilities and landscaping.
Area of Potential Effect (APE) and Survey Area Acreage	While the area intensively inspected by CSH included the area impacted by the proposed new building footprint, the project’s area of potential effect (APE) is defined as the entire 7.984-acre school property. The project area is adjacent to the designated SIHP # 50-80-12-9786. The project area’s surrounding built environment is urban to suburban, with churches, small businesses, and single-family and low-rise condominium residential structures built within subdivisions.

Historic Preservation Regulatory Context	This is a state/municipal “governmental” project needing review under Hawai‘i Revised Statutes (HRS) §6E-8 and HAR §13-13-275. An SHPD §6E-8 Historic Preservation Review dated 13 June 2014 (LOG NO.: 2014.01495, 2014.00102, DOC NO.: 1404LS20, included in present Appendix A) specifically calls for the preparation of an AIS study for the review and acceptance of the SHPD. This archaeological investigation fulfills the requirements of HAR §13-13-276 and was conducted to identify, document, and assess significance of any historic properties. This document is intended to support the proposed project’s historic preservation review under HRS §6E-8 and HAR §13-13-275, as well as the project’s environmental review under HRS §343. It is also intended to support any project-related historic preservation consultation with stakeholders, such as state and county agencies and interested Native Hawaiian Organizations (NHOs) and community groups. Because no historic properties were identified within the project area during the initial AIS, this investigation is termed an archaeological assessment, per HAR §13-13-284-5(b)(5)(A); “Results of the survey shall be reported either through an archaeological assessment, if no sites were found, or an archaeological survey report which meets the minimum standards set forth in chapter 13-276.” No human skeletal remains were discovered during this archaeological investigation that complied with Hawai‘i State burial law (HRS §6E-43 and HAR §13-13-300).
Fieldwork Effort	The fieldwork component of this archaeological assessment survey was conducted between 22 October 2014 and 24 October 2014. CSH archaeological field personnel consisted of Scott Belluomini, B.A., Layne Krause, B.A, David W. Shideler, M.A., Richard Stark, Ph.D., and Trevor Yucha, B.A. All fieldwork was conducted under the overall direction of the principal investigator, Hallett H. Hammatt Ph.D. Fieldwork consisted of an initial 100% coverage pedestrian inspection on 29 September 2012, followed by the aforementioned October 2014 subsurface testing program. The pedestrian survey confirmed there were no surface historic properties within the Ewa Elementary School Building E project area. As there were no new surface historic properties identified during the pedestrian survey, the archaeological investigation focused on a program of subsurface testing to locate any buried cultural deposits and to facilitate a thorough examination of stratigraphy within the project area. No new historic properties were identified in subsurface testing: 1) no discrete cultural layers were observed, 2) all of the artifacts collected represent isolates and possibly were secondarily deposited, and 3) no archaeological features were observed.

Historic Properties Identified	None
Effect Recommendation	CSH's project specific effect recommendation is "no historic properties affected." No evidence of traditional Hawaiian culture was observed. A few historic artifacts (bent spoon, broken plate, bullet, and nails) were observed approximately 30 cm below the surface, but were not concentrated and are not intrinsically associated with any new historic property. No discrete cultural layers or pit features were observed.
Mitigation Recommendations	Ewa Elementary School is adjacent to the 'Ewa Villages Historic District designated as SIHP # 50-80-12-9786 and placed on the Hawai‘i State Register of Historic Places on 24 February 1996. No other historic properties were noted and no further archaeological mitigation is recommended.

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Section 1 Introduction

1.1 Project Background

At the request of Belt Collins Hawaii, Ltd., Cultural Surveys Hawai‘i, Inc. (CSH) has prepared this archaeological assessment report (AA) for the Ewa Elementary School Building E project, Honouliuli Ahupua‘a, ‘Ewa District, O‘ahu TMK: [1] 9-1-017:002 (por.). The project area (Figure 1) is owned by the State of Hawai‘i, Department of Education (DOE). The project area is located in the eastern corner of the Elementary School campus adjacent to the northwest end of Pipeline Street in the northeast side of Renton Village and immediately adjacent to the north by northeast of ‘Ewa Sugar Plantation Villages Historic District (SIHP # 50-80-12-9786) in southwest O‘ahu (Hawai‘i Register of Historic Places 1996). The project area is depicted on a portion of the 1999 U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle (Figure 1) tax map plat (Figure 2), and a 2013 aerial photograph (Figure 3).

The proposed project involves adding a classroom building that will include 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, and 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 school site that extend into the Pipeline Street right-of-way to Bryan Street and Ala Nui Mauka. Street (Figure 4).

During the week of 20 October 2014 CSH completed the archaeological excavation and documentation of 12 backhoe trenches within the project area (Figure 5). CSH previously prepared an *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 por., 9-1-017:037 por., and 9-1-101:999 por.* (Shideler and Hammatt 2014) that was formally reviewed and accepted by the State Historic Preservation Division (SHPD) in a §6E-8 Historic Preservation Review dated 10 March 2014 (LOG NO.: 2014.00908, DOC NO.: 1403SL08).

1.2 Historic Preservation Regulatory Context and Document Purpose

This is a state/municipal “governmental” project needing review under Hawai‘i Revised Statutes (HRS) §6E-8 and Hawai‘i Administrative Rules (HAR) §13-13-275. This archaeological assessment investigation fulfills the requirements of HAR §13-13-276 and was conducted to identify, document, and make significance assessments of any historic properties. This document is intended to support the proposed project’s historic preservation review under Hawai‘i Revised Statutes (HRS) §6E-8 and Hawai‘i Administrative Rules (HAR) §13-13-275, as well as the project’s environmental review under HRS §343. It is also intended to support any project-related historic preservation consultation with stakeholders, such as state and county agencies and interested Native Hawaiian Organizations (NHOs) and community groups. No human skeletal remains were discovered during this AIS investigation that complied with Hawai‘i State burial law (HRS §6E-43 and HAR §13-13-300). An archaeological inventory survey plan for this project was accepted by the SHPD in a letter dated 13 June 2014 (LOG NO.: 2014.01495, DOC NO.:

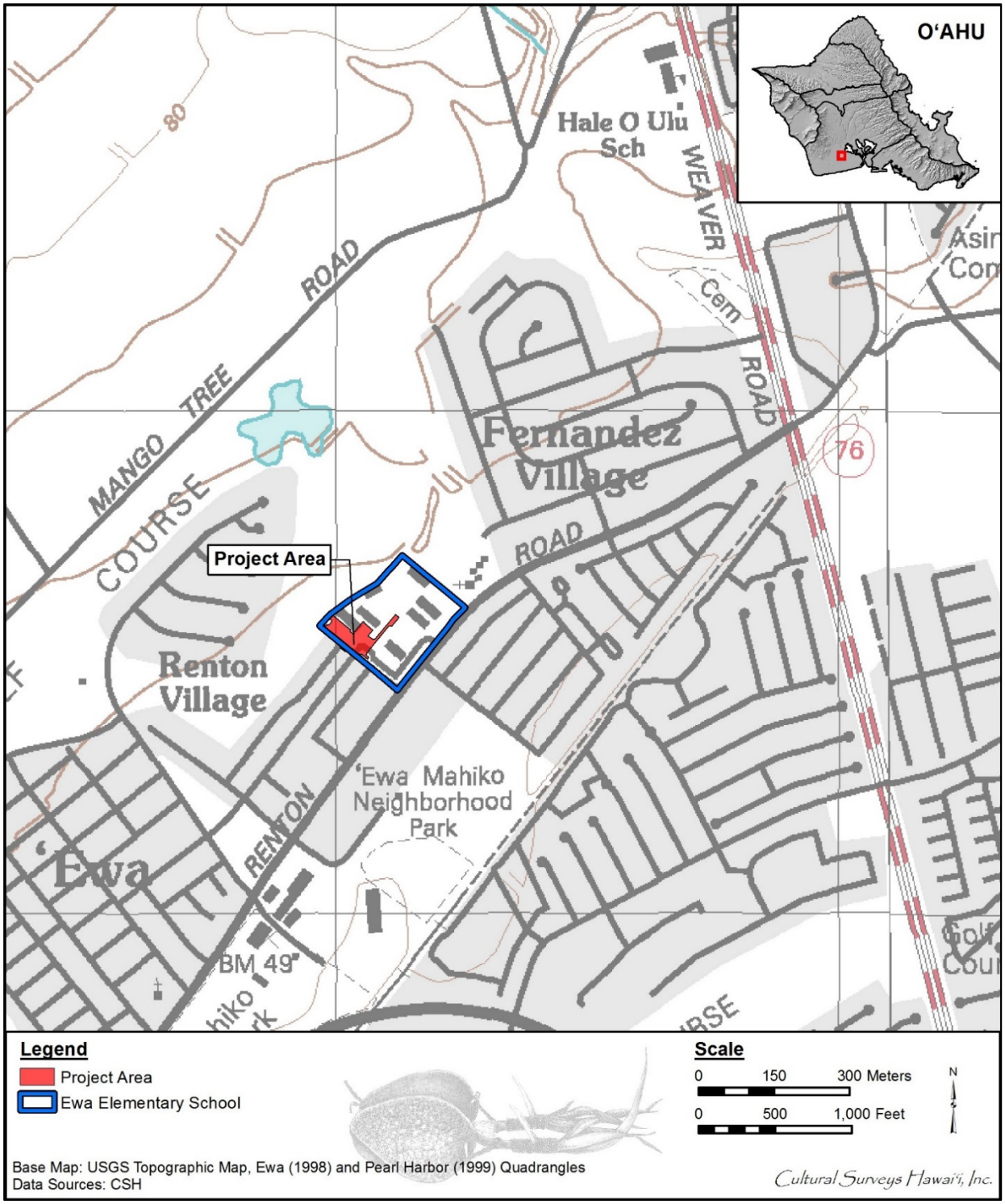

Figure 1. Portion of the 1998 Ewa and 1999 Pearl Harbor USGS 7.5-minute topographic quadrangles showing the location of the project area

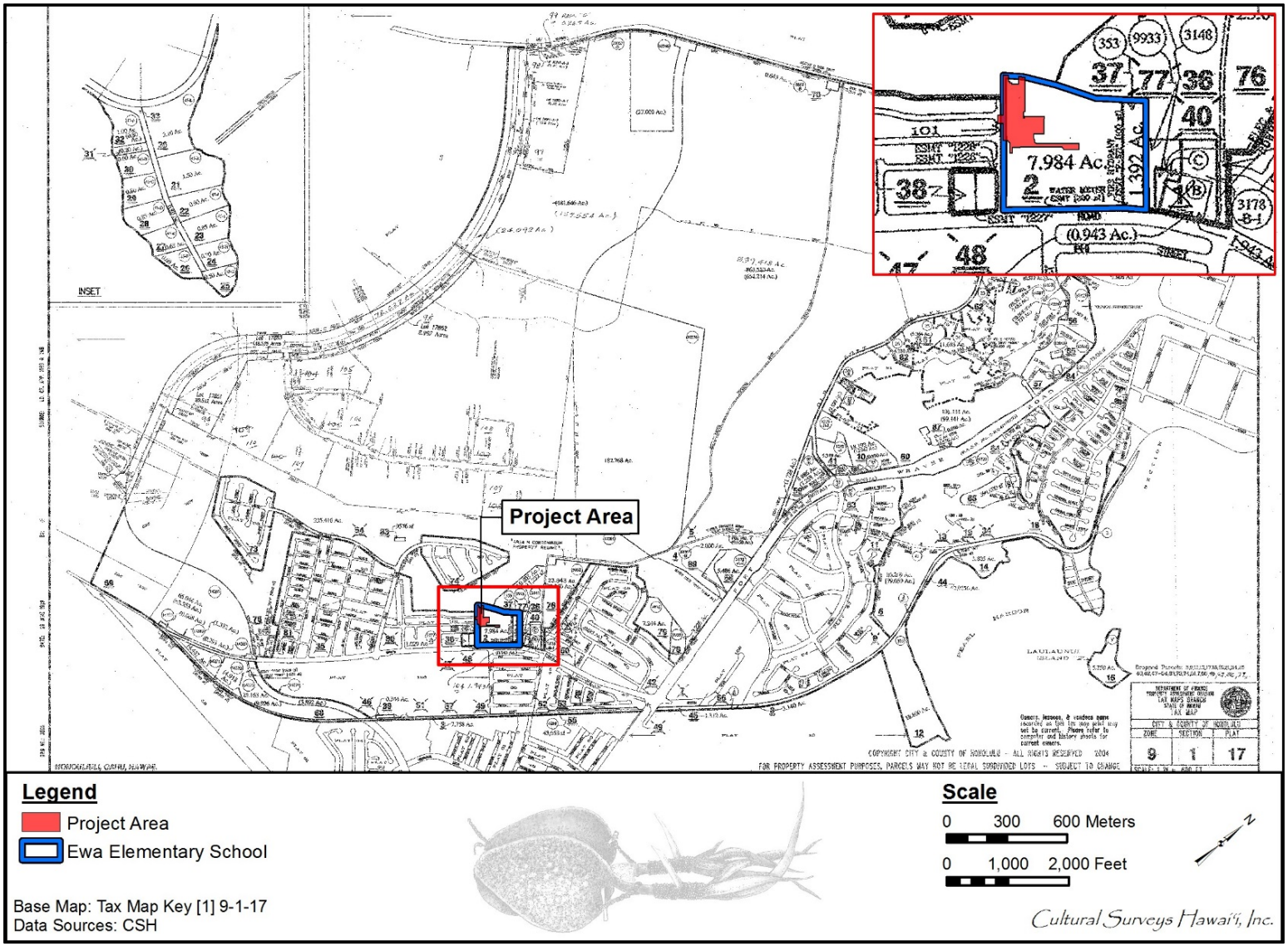

Figure 2. Tax Map Key (TMK) [1] 9-1-017 showing the project area (Hawai‘i TMK 2014)

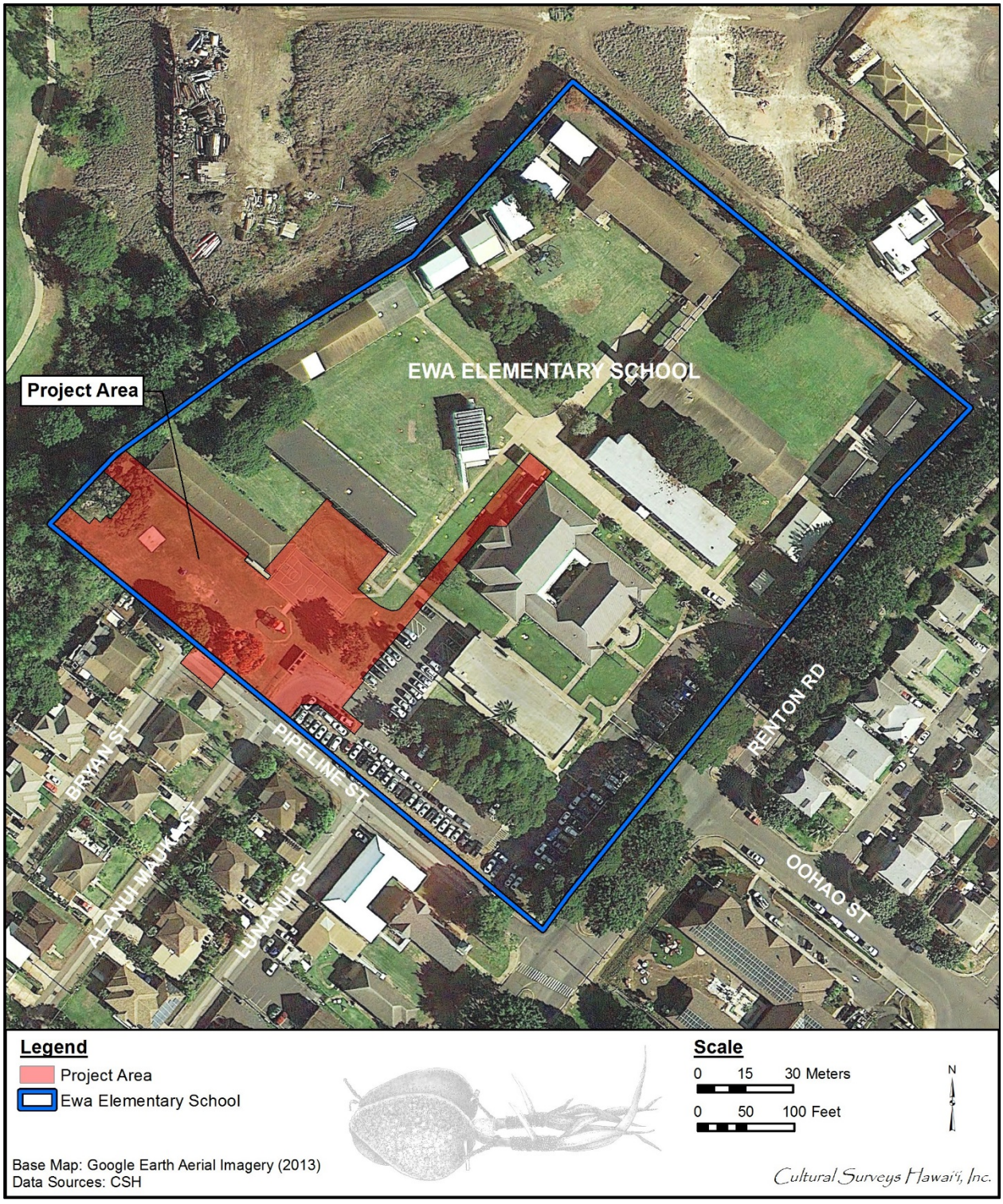

Figure 3. Aerial photograph of the project area (Google Earth 2013)

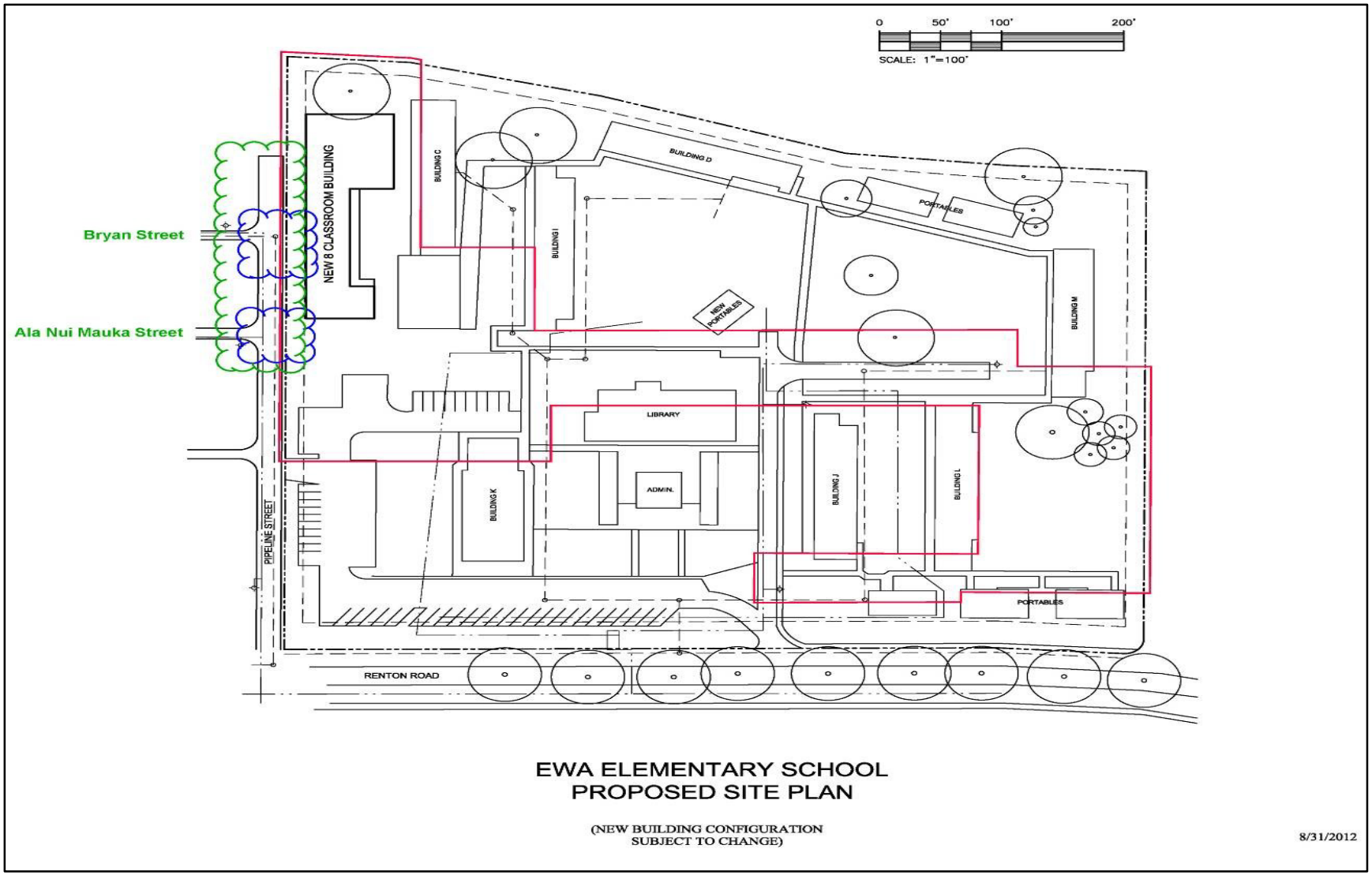

Figure 4. Project plan, courtesy of the client

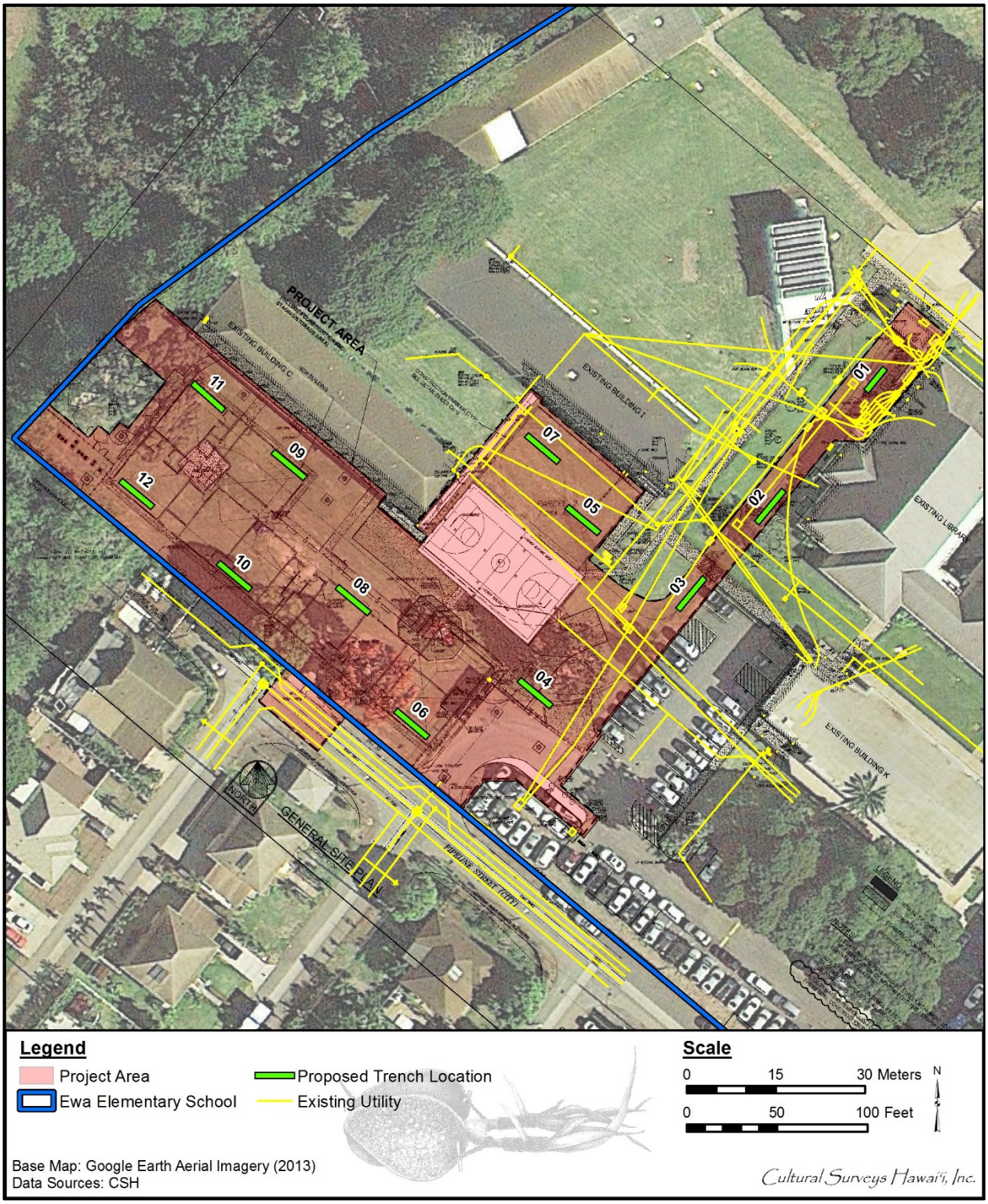

Figure 5. Backhoe trench locations

1404LS20). In March 2014 CSH completed an archaeological literature review and field inspection (LRFI) (Shideler and Hammatt 2014). Because no historic properties were identified within the project area during the AIS, this investigation is termed an archaeological assessment (AA), per HAR §13-13-284-5(b)(5)(A); "Results of the survey shall be reported either through an archaeological assessment, if no sites were found, or an archaeological survey report which meets the minimum standards set forth in chapter 13-276."

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 m (40-50 ft) above mean sea level. Natural modern vegetation in these areas consists of *kiawe* (*Prosopis pallida*), *koa haole* (*Leucaena leucocephala*), *klu* (*Acacia farnesiana*), finger grass (*Chloris* sp.), and bristly foxtail (*Setaria verticillata*).

Soil types within the vicinity of the project area include Ewa silty clay loam (EmA, moderately shallow, 0 to 2% slopes), Honouliuli Clay (HxA, 2 to 6% slopes), Mamala stony silty clay loam (MnC, 0 to 12% slopes), and water (W) (Figure 6). The Ewa Series consists of well-drained soils in basins on alluvial fans (Foote et al. 1972:29). These soils are used for sugar cane, truck crops, and pasture. Natural vegetation consists of finger grass, *kiawe*, *koa haole*, *klu*, finger grass, 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 ft. These soils are also used for sugar cane, truck crops, orchards, and pasture. Natural vegetation consists of *kiawe*, *koa haole*, bristly foxtail, and finger grass.

Located in leeward O‘ahu, the project area is one of the driest areas of O‘ahu, averaging approximately 460 mm (18 inches) of annual rainfall (Giambelluca et al. 1986). Wet season rainfall occurs in the project area between November and April. 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.

1.3.2 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 adjacent to the historic ‘Ewa Village 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.

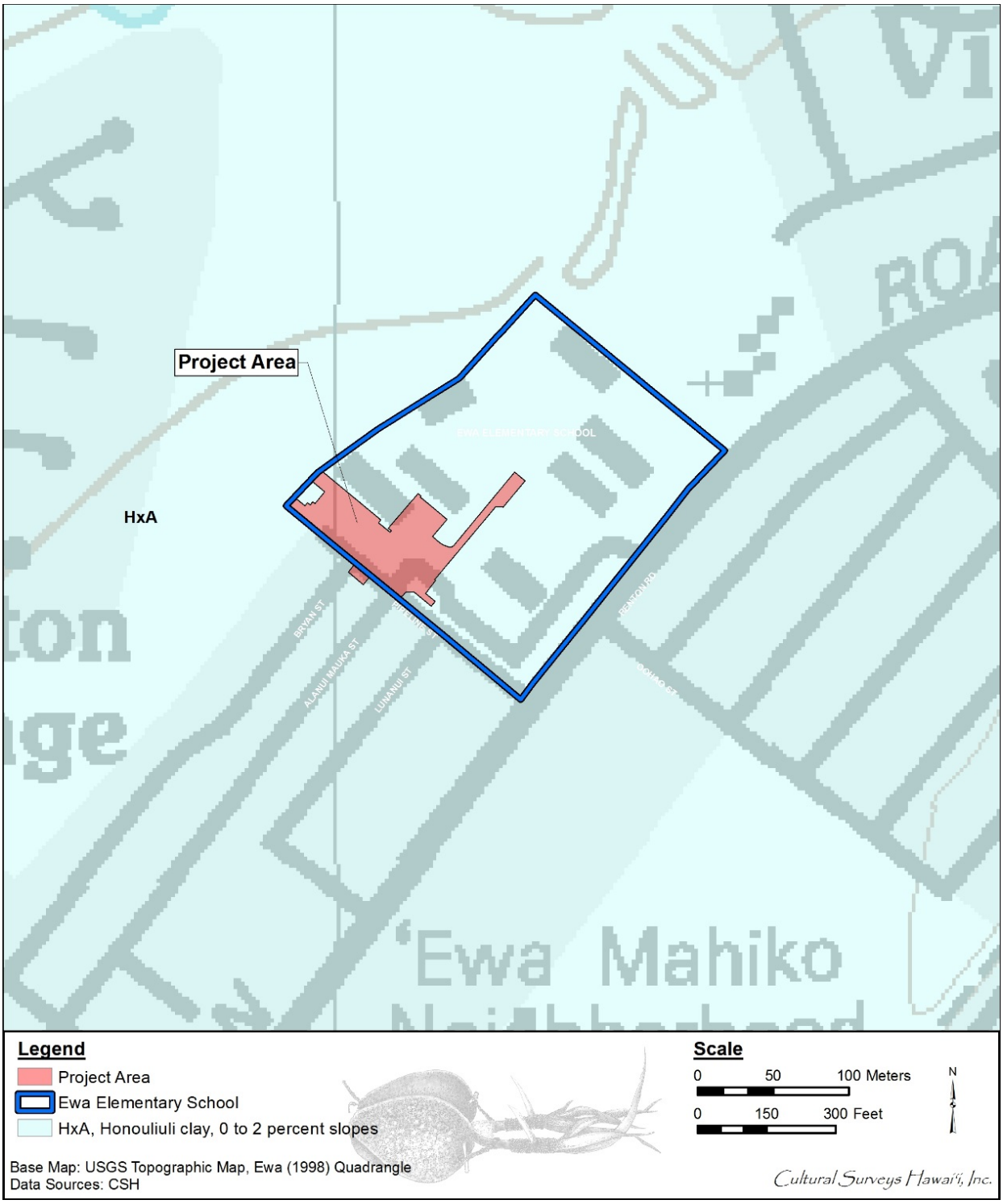

Figure 6. Overlay of Soil Survey of the State of Hawaii, indicating soil types within and surrounding the project area (Foote et al. 1972 and U.S. Department of Agriculture Soils Survey Geographic Database [SSURGO] 2001)

Section 2 Methods

2.1 Field Methods

CSH completed the fieldwork component of this archaeological assessment under archaeological permit number 14-04, issued by the SHPD pursuant to HAR §13-13-282. Fieldwork was conducted between 22 October 2014 and 24 October 2014 by CSH archaeologists Trevor Yucha, B.S., Scott Belluomini, B.A., Layne Krause, B.A., and Richard Stark, Ph.D. under the general supervision of David Shideler, M.A. and Principal Investigator, Hallett Hammatt Ph.D. This work required approximately 6 person-days to complete. In general, fieldwork included subsurface testing of 12 backhoe trenches. Trench excavations were observed for any cultural material, mapped, and photo documented.

2.1.1 Pedestrian Survey

Initially, a 100%-coverage pedestrian inspection of the open and non-built areas within the project area was undertaken for the purpose of historic property identification and documentation of any surface cultural properties. The project area was surveyed on foot and photographs were taken. The pedestrian survey identified no new cultural properties within the project area. Subsurface testing followed to determine if and what subsurface cultural materials would be impacted by the proposed project.

2.1.2 Subsurface Testing

The subsurface testing program was backhoe assisted and involved 12 test excavations (see Figure 5). In general, linear trenches measuring approximately 6 m (20 ft) long and 0.6 m (2 ft) wide were excavated within the project area. A stratigraphic profile of each test excavation was drawn and photographed. Plan view drawings were made of utilities encountered within the trenches; as no archaeological features were encountered, no other plan view drawings were made.

Photographs were taken systematically throughout the project area of work in progress, recording procedures, personnel, work conditions, the area’s natural and built environment and the progress of each trench excavation from ground breaking through to completion. Overview photographs, plan views and multiple profile view photographs were taken of each trench, showing the stratigraphic sequence and presence/absence of utilities. A photographic scale and orientation were included in the documentation for each photograph.

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

Diagnostic artifacts were collected from several test excavations and analyzed as described below in Section 2.2.1, Artifact Analysis. Neither faunal remains nor floral remains were encountered during excavations. No archaeological features were observed and no sediment samples were taken.

2.2 Laboratory Methods

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

2.2.1 Artifact Analysis

In general, artifact analysis focused on establishing, to the greatest extent possible, material type, function, cultural affiliation, and age of manufacture. As applicable, artifacts were washed, sorted, measured, weighed, described, photographed, and catalogued. Diagnostic (dateable or identifiable) attributes of artifacts were researched.

No traditional Hawaiian artifacts nor any faunal material were identified. Historic artifacts were identified using standard reference materials (e.g., Elliott and Gould 1988; Fike 1987; Kovel and Kovel 1986; Lehner 1988; Millar 1988; Munsey 1970; and Toulouse 1971), as well as resources available on the internet. Analyzed materials are tabulated in Table 16 and presented in Section 5, Archaeological Analysis.

2.2.2 Disposition of Materials

Materials collected during the project will remain temporarily curated at the CSH office in Waimānalo, O‘ahu. CSH will make arrangements with the landowner regarding the disposition of this material. Should the landowner request different archiving of material, an archive location will be determined in consultation with the SHPD. All data generated during the course of the archaeological assessment are stored at the CSH offices.

2.2.3 Research Methods

Background research included a review of previous archaeological studies on file at the SHPD; review of documents at Hamilton Library of the University of Hawai‘i, the Hawai‘i State Archives, the Mission Houses Museum Library, the Hawai‘i Public Library, and the Bishop Museum Archives; study of historic photographs at the Hawai‘i State Archives and the Bishop Museum Archives; and study of historic maps at the Survey Office of the Department of Land and Natural Resources. Historic maps and photographs from the CSH library were also consulted. In addition, Māhele records were examined from the Waihona ‘Aina database (Waihona ‘Aina 2000). This research provided the environmental, cultural, historic, and archaeological background for the project area. The sources studied were used to formulate a predictive model regarding the expected types and locations of historic properties in the project area.

Section 3 Background Research

3.1 Traditional and Historical Background

3.1.1 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 4 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. 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.

3.1.2 Mythological and Traditional Accounts

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.

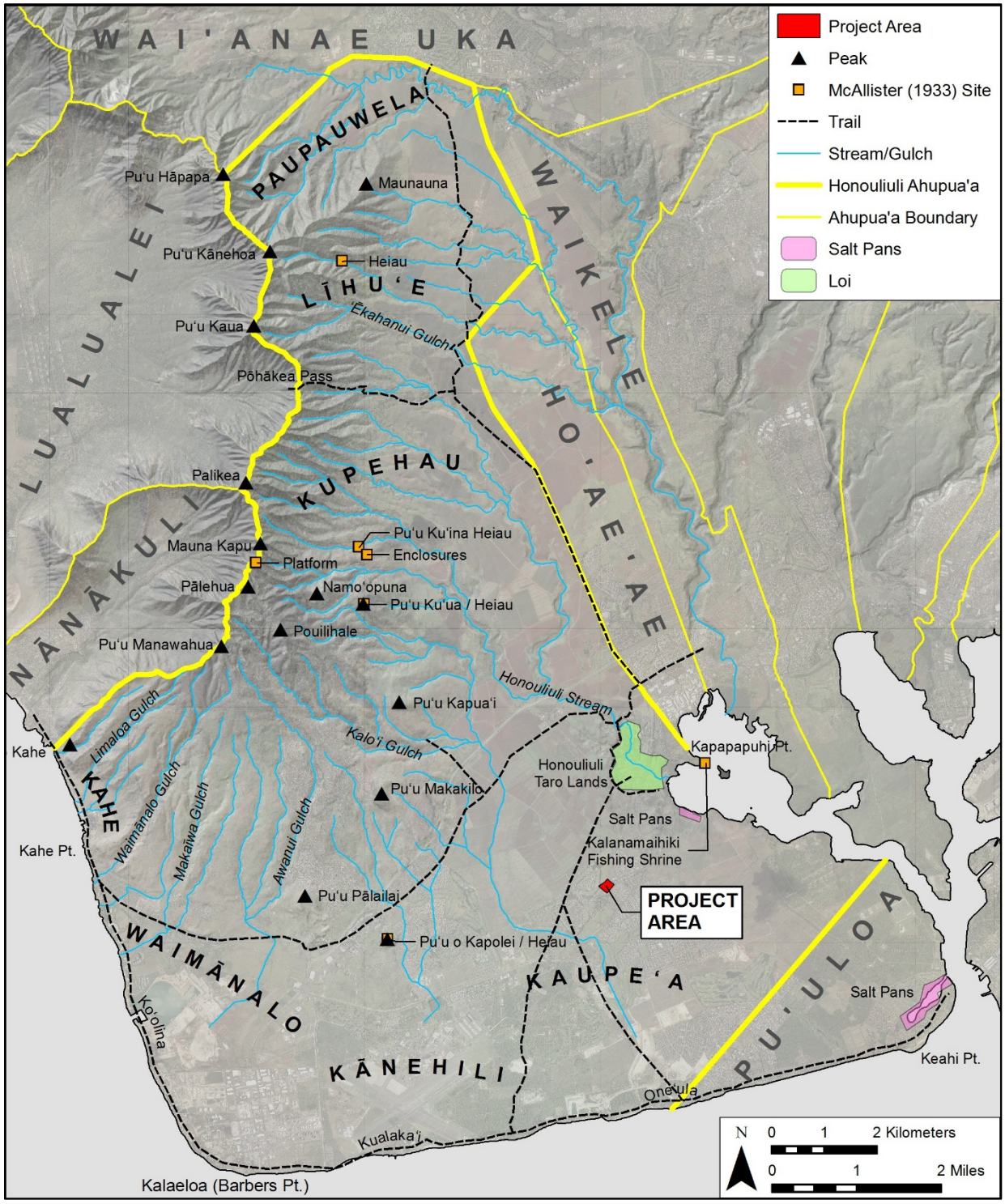

Figure 7. Place names of Honouliuli Ahupua‘a, with location of the Ewa Elementary School project area and significant settlements shown (Sources: Alexander 1873, Monsarrat 1878, U.S. War Department 1933-1936, McAllister 1933, Sterling and Summers 1978, and U.S. Geological Survey 1998)

> 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. Sterling by Simeon Nawaa, 22 March 1954 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 that were exploited by the Hawaiians and that 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]

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) 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* (inland) 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,	*E newa ai o hea make i ka lā,*
The god that dwells on Kapolei hill.	*Akua noho la i Pu‘uokapolei.*
The sun is wailing on account of the women of Kamao,	*E hanehane mai ana ka lā i nā wahine o Kamao*,
A hiding god, blossoming ohai of the banks,	*Akua pe‘e, pua ‘ohai o ke kaha*,
Contented among the stones-	*I walea wale i ke a-*

Among the breadfruit planted by Kahai.	*I ka ulu kanu a Kahai*.
Thou hast spoken of by the oo-	*Haina ‘oe e ka oo-*
By the bird of Kanehili.	*E ka manu o Kānehili.*
(Fornander 1919:4(2):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 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 1919:4(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) 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]

3.1.3 Early Historic Period

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 1798:1:167]
>
> . . . 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 1798:2:217]
>
> 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 1798:3:361-363]

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 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 frostbitten 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 the following:

> 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]

Missionary William Ellis recorded a contrasting picture of ‘Ewa in 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]

3.1.4 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 their numbers. Thus, four years following the 1832 census, the ‘Ewa population had dropped to 3,423 (Schmitt 1973:9, 36).

Between 1848 and 1853, there were 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-nineteenth century due to population decline and consolidation of the remaining people in towns.

3.1.5 The Māhele and the Kuleana Act

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 among the king of Hawai‘i, the *ali‘i*, and the common people, which introduced the concept of private property into Hawaiian society. Kamehameha III divided the land into the following 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 *konohiki* (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(s) 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 (Table 1; see Figure 7, Figure 25 and Appendix B). No awards were located near the project area on the ‘Ewa Plain. 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, Ilikahi, Palahemo
749	Mahina	Kaulaula	762	Kalama	Kaaumakua
751	Kalauli	Kamoku, Polapola, Kalihikahi	763	Keliiaa, Solomona	Hiwa, Poohilo, Mauakapuoa, 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
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, Kapapapuhi
847	Hinaa	Poohilo	1580	Kanahuna	Kamilomilo

LCA	Awardee	*‘Ili*	LCA	Awardee	*‘Ili*
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, Kapapapuhi
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, Kapapuhi
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	Poohili, Kepoe, Loloulu, Puaaluu
947	Kaopala	Loloulu, Kaulaula	5950	Pihana	Kamoku
960	Poopuu	Loloulu	10933	Uia	Niukee
1565	Kaalauahi	Niukee, Kapapahi	11218	Kekau‘ōnohi	*ahupua‘a* award

3.1.6 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 (*Agave sisalana*) plantations, and a major sugar plantation (Ewa Plantation Company), the area of Pu‘uloa remained outside 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).

3.1.7 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 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 Company 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* in Pagliaro 1987:3). Following this discovery, plantation developers and ranchers drilled numerous wells in search of the valuable resource.

3.1.8 Mid- to Late 1800s

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*, 15 August 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 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). 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 the following:

> 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)

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

In 1886, Campbell and B.F. Dillingham put together the “Colonization Project,” 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 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 name Oahu Railway and Land Company (OR&L).

During the last decade of the nineteenth century, the railroad reached from Honolulu to Pearl City in 1890, to Wai‘anae in 1895, to Waialua Plantation in 1898, and to Kahuku in 1899 (Kuykendall 1967:3:100). 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 ft 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 ft 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 army, naval, and air bases.

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

The Navy base at Pearl Harbor had its own rail lines that connected to the OR&L rail lines.

In August 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 following:

> 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. [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 1 December 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).

3.1.10 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 1967:3:69). 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*, December 1902:19-22 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).

3.1.11 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. The mill and plantation camps were 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

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

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

European, who usually lived in segregated camps or housing areas. George F. Renton, the plantation manager from 1899 to 1920, described the plantation houses:

> 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 U.S. 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.

3.1.12 Twentieth Century Development

A series of twentieth Century maps shows the urban and sub-urban development of the project area from the late 1800s to the 1970s (Figure 11 through Figure 20). An 1894 map shows no development in Honouliuli Ahupua‘a (see Figure 12). This 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. On this map, numerous Ewa Sugar plantation tracks surround the early plantation workers camps, shown as clusters of houses (see Figure 14). 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 and the project area is labeled as Ewa School (see Figure 15). A 1933-1935 map shows Ewa School as dominated by one large school building (see Figure 16; see also Figure 21 and Figure 22). A map of Ewa Plantation (27 July 1939) shows the location of the project area surrounded by sugar cane fields and plantation infrastructure (see Figure 17). It is understood that the Ewa Plantation fields were still expanding to the south and east at that time (as indicated by the field numbering system) as a thin layer of soil was established on the native raised reef limestone to support cultivation. A 1943 map shows increasing road development virtually all over Honouliuli Ahupua‘a (see Figure 18). A 1953 map shows extraordinary development of the coastal ‘Ewa Beach community to the south and Fort Weaver Road (see Figure 19). A 1978 aerial photograph shows the areas to the northeast and southwest of the project area as dense residential areas. The areas northwest and east of the project area appear absent of urban development (see Figure 20).

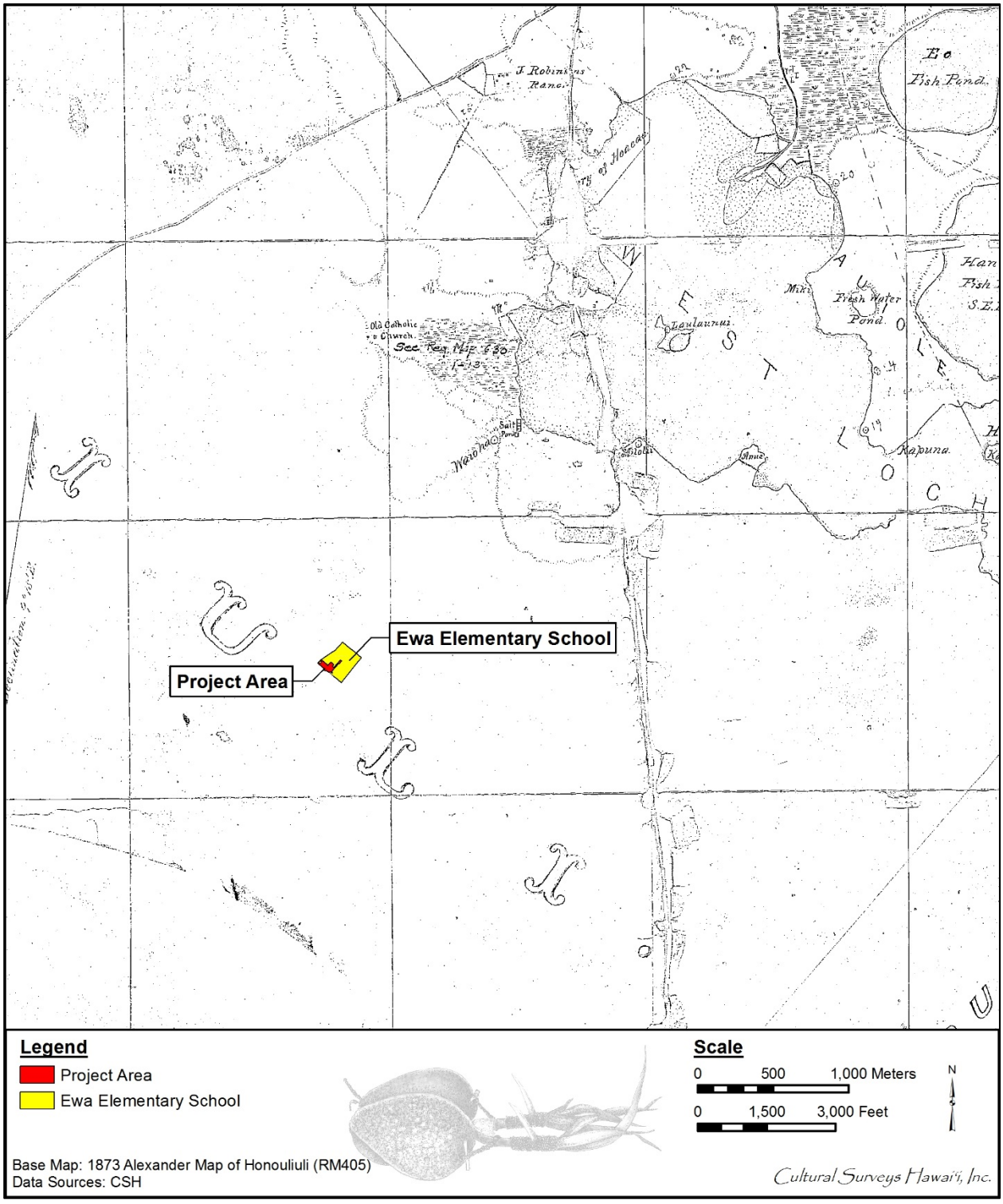

Figure 11. 1873 Alexander map showing the project area

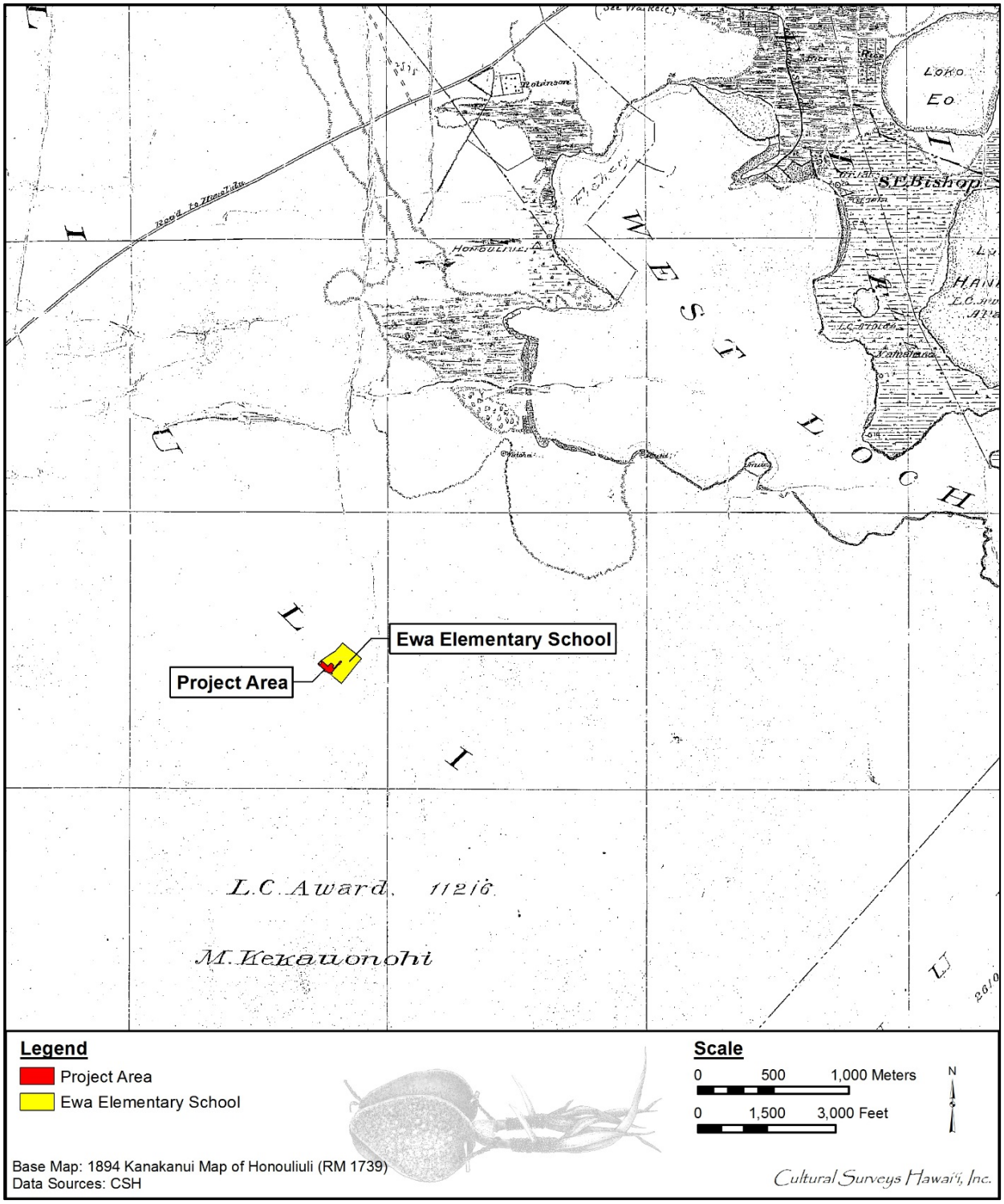

Figure 12. An 1894 map of Honouliuli Ahupua‘a (Kanakanui 1894) showing the project area and the area now known as Pearl Harbor (West Loch); note the entire Honouliuli Ahupua‘a awarded to M. Kekaunu‘ōhi under LCA 11216

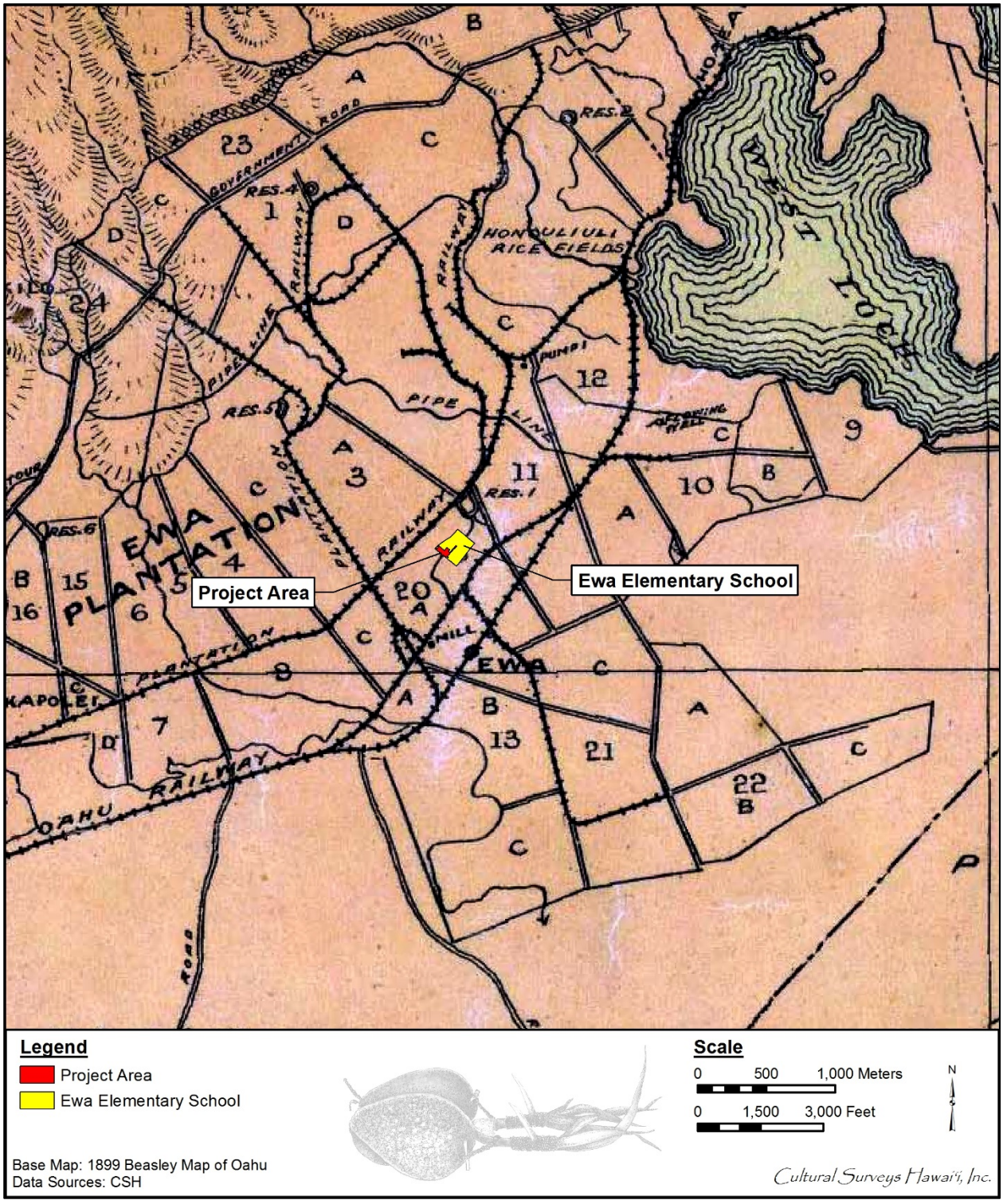

Figure 13. Portion of Beasley’s 1899 Map of O‘ahu

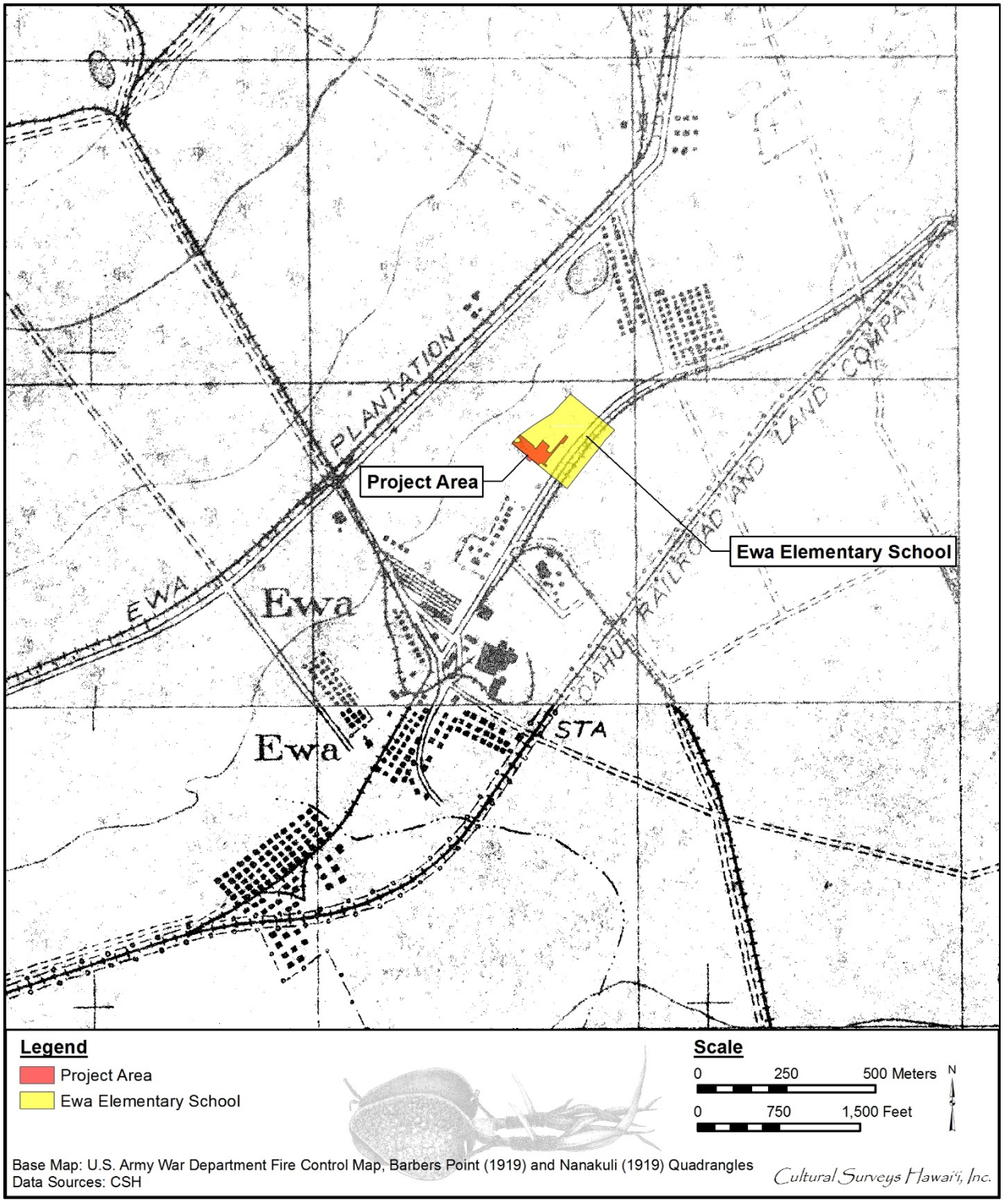

Figure 14. Portion of a 1919 U.S. War Department Fire Control map of O‘ahu, Barbers Point and Nanakuli Quadrangles, with the location of the project area; note southeastern portion of project area was once in the path of a railroad

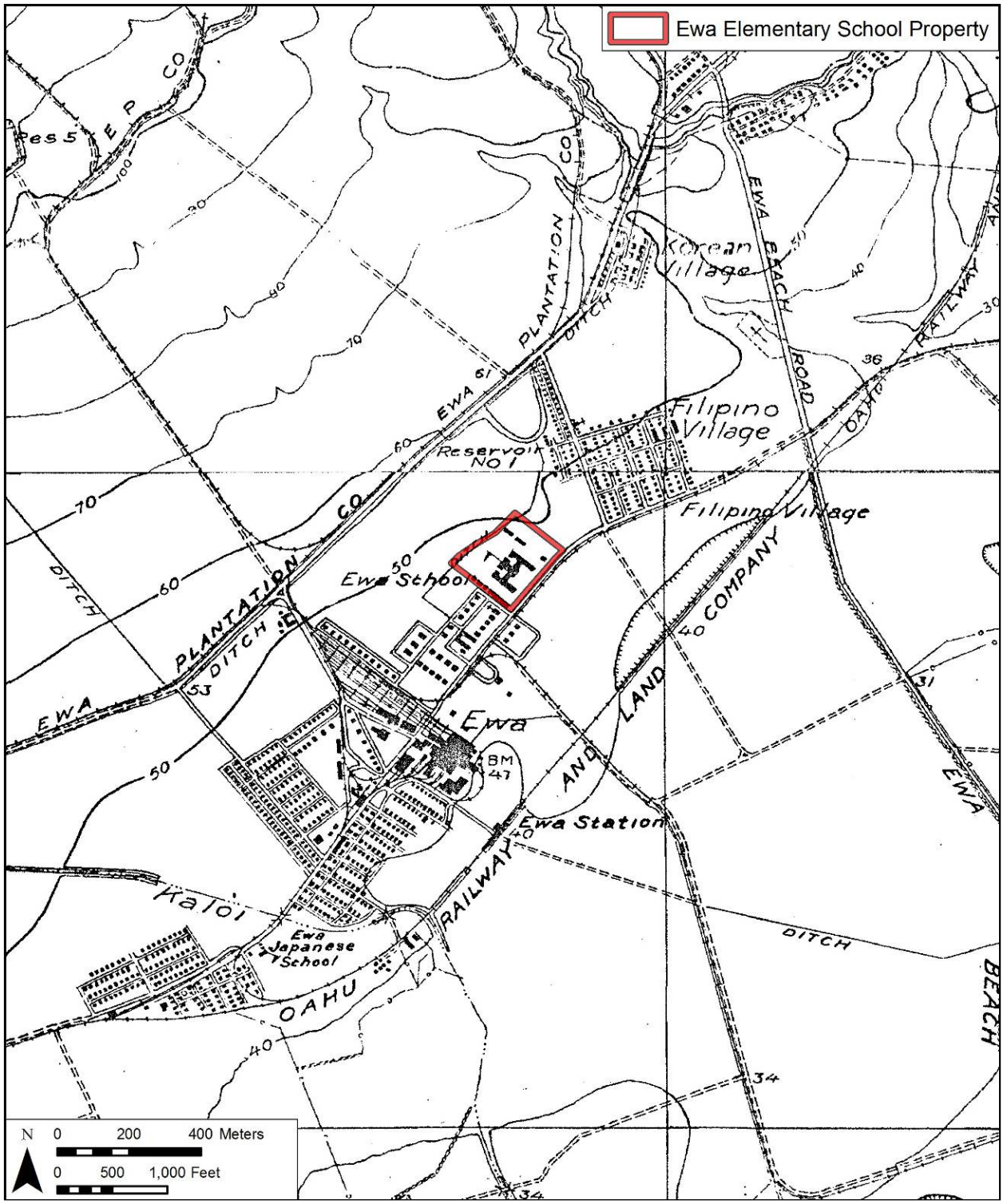

Figure 15. A 1927-1930 U.S. Geological Survey 7.5-Minute Series topographic map of O‘ahu, Ewa Quadrangle, showing the project area now called Ewa School; railroad tracks still visible within the vicinity of the project area; development south of the project area is evident

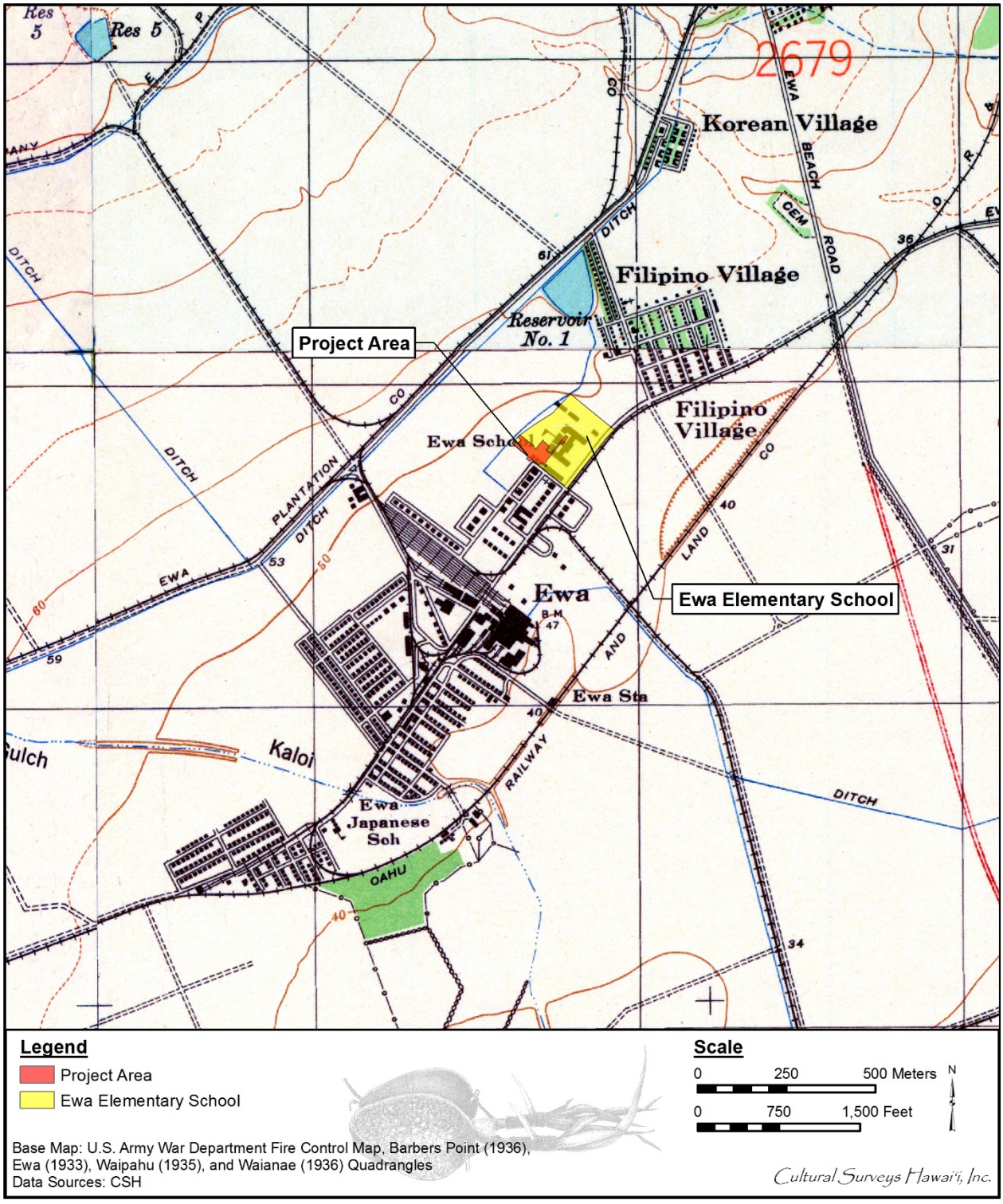

Figure 16. A 1933-1935 U.S. War Department Fire Control map of O‘ahu, depicting the project area

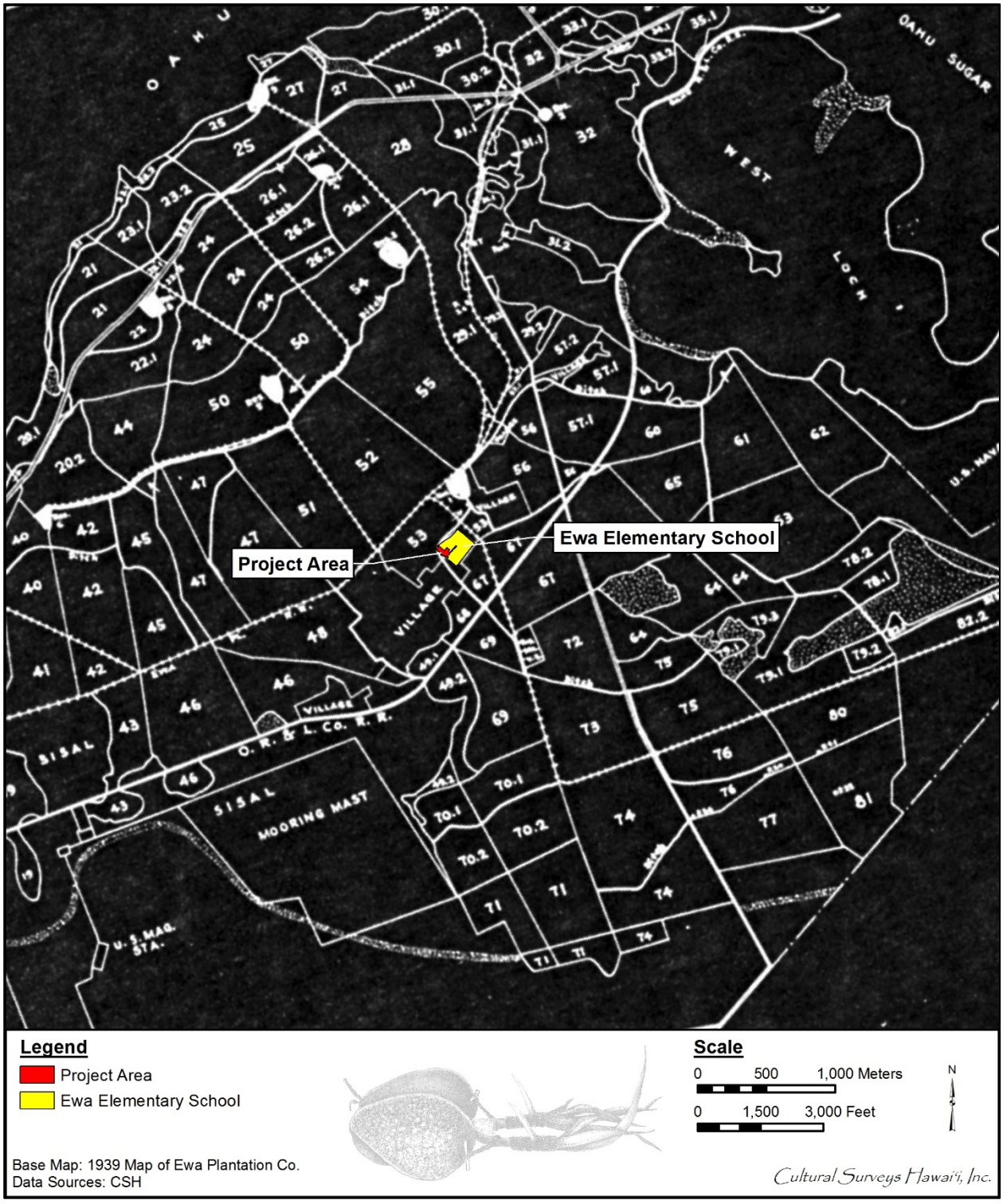

Figure 17. Map of Ewa Plantation (27 July 1939) showing the location of the project area within the plantation infrastructure

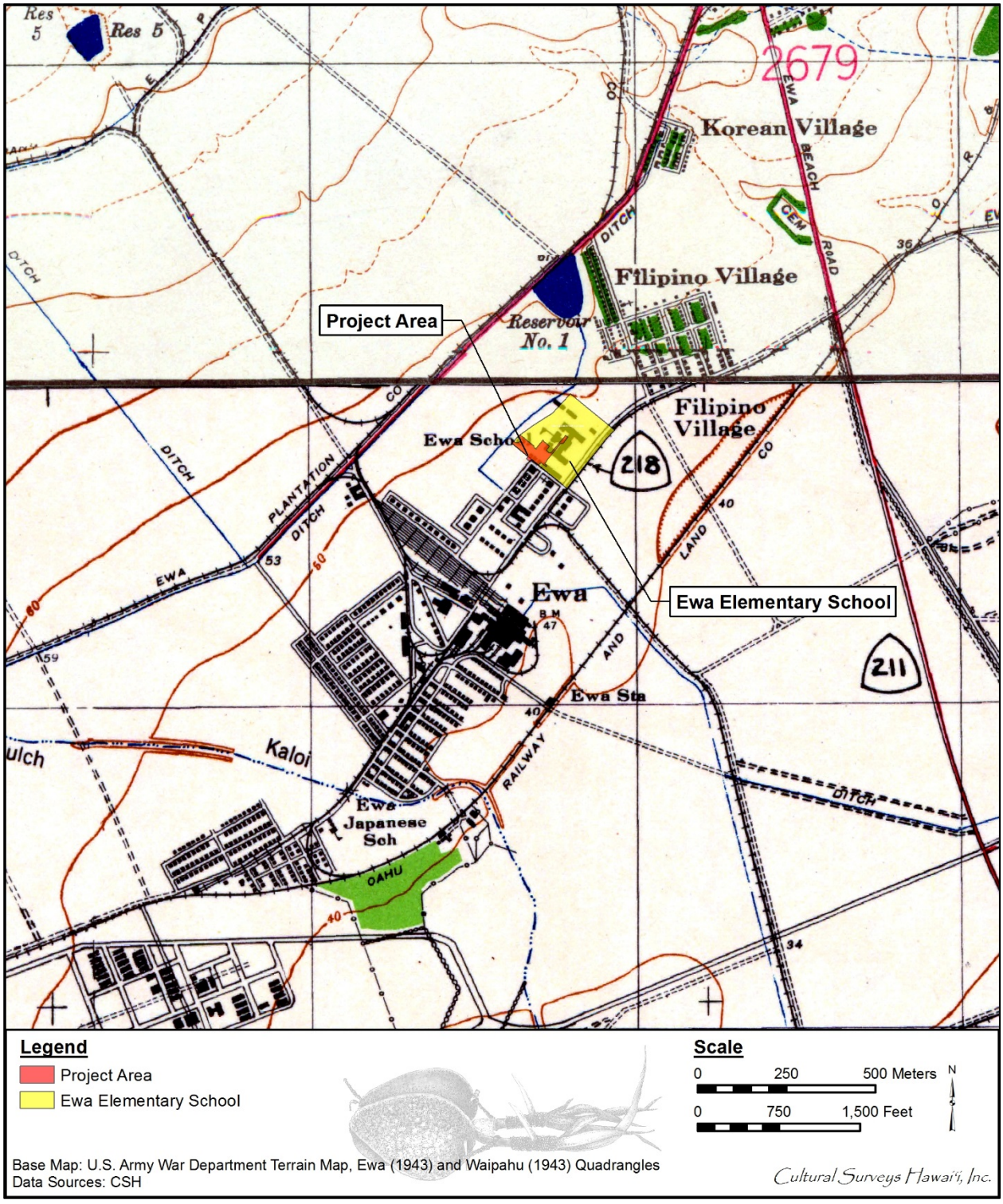

Figure 18. A 1943 U.S. War Department Terrain map of O‘ahu, Ewa and Waipahu Quadrangles, with location of project area indicated

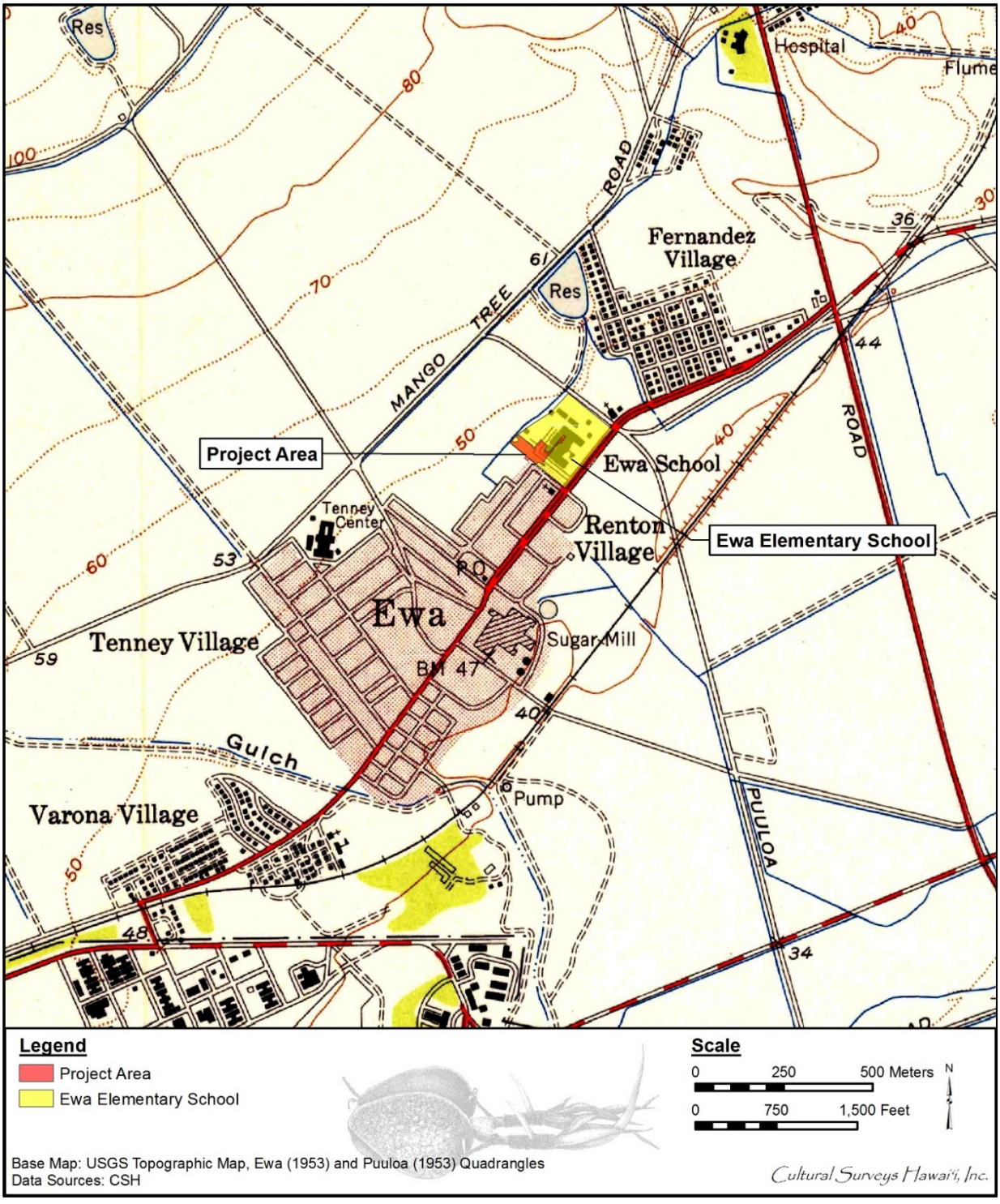

Figure 19. A portion of the 1953 Ewa and Puuloa USGS 7.5-Minute series topographic quadrangles, with location of project area indicated; note fewer railroad tracks and more development south of the project area

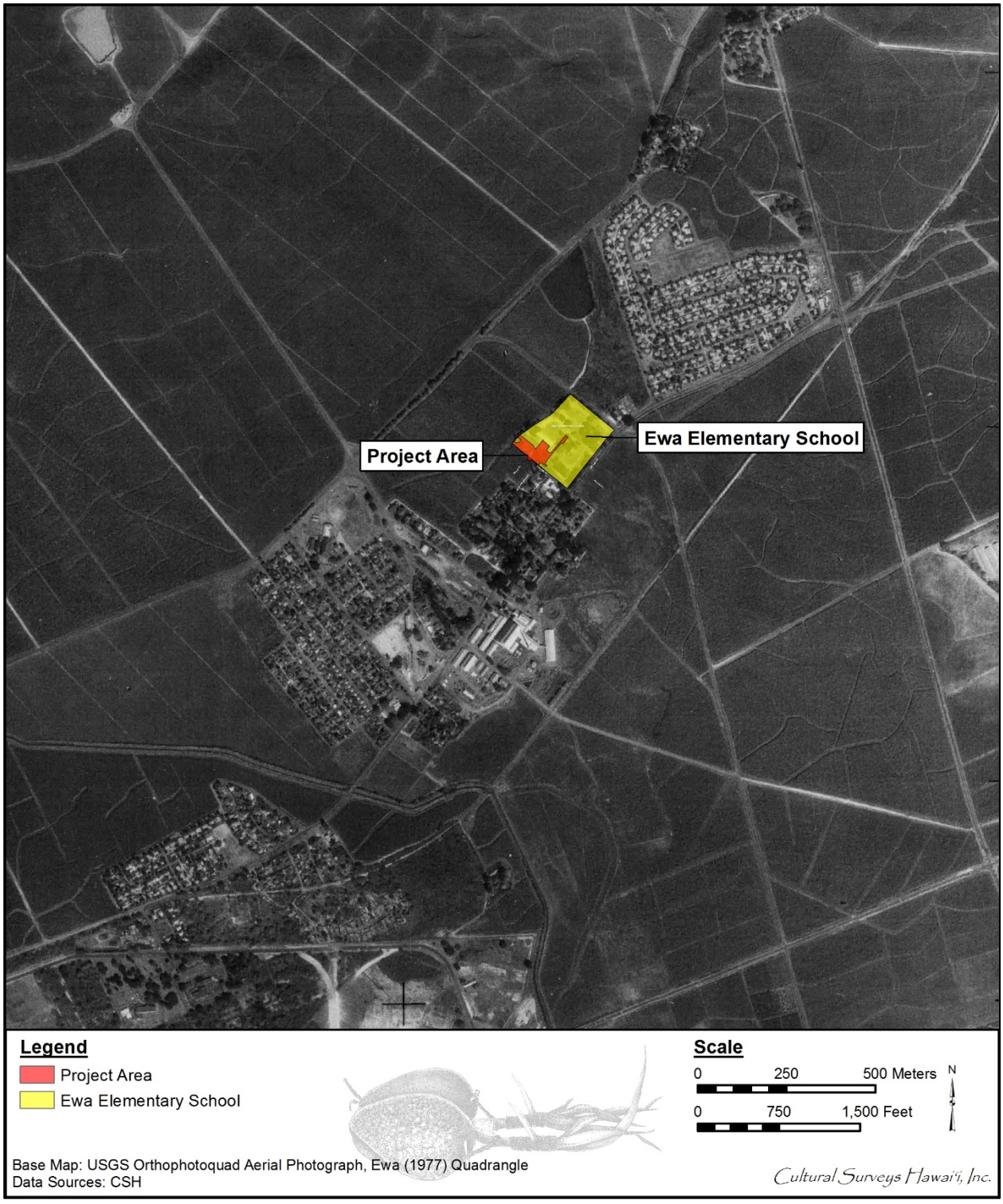

Figure 20. A 1978 USGS aerial photograph showing the location of the project area

3.1.1 History of Ewa Elementary School

Ewa Elementary School's official website (Ewa Elementary 2012) distinguishes it as one of the oldest schools in the Leeward School District of O‘ahu, dating back to 1882. Until the early 1990s the majority of Ewa Elementary School students were the children of Oahu 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, includes many photographs of the old Ewa Elementary School (Figure 21 and Figure 22) and depicts the pride that the ‘Ewa Community took in their school. Figure 23 illustrates student activities during one of the many field days at Ewa School.

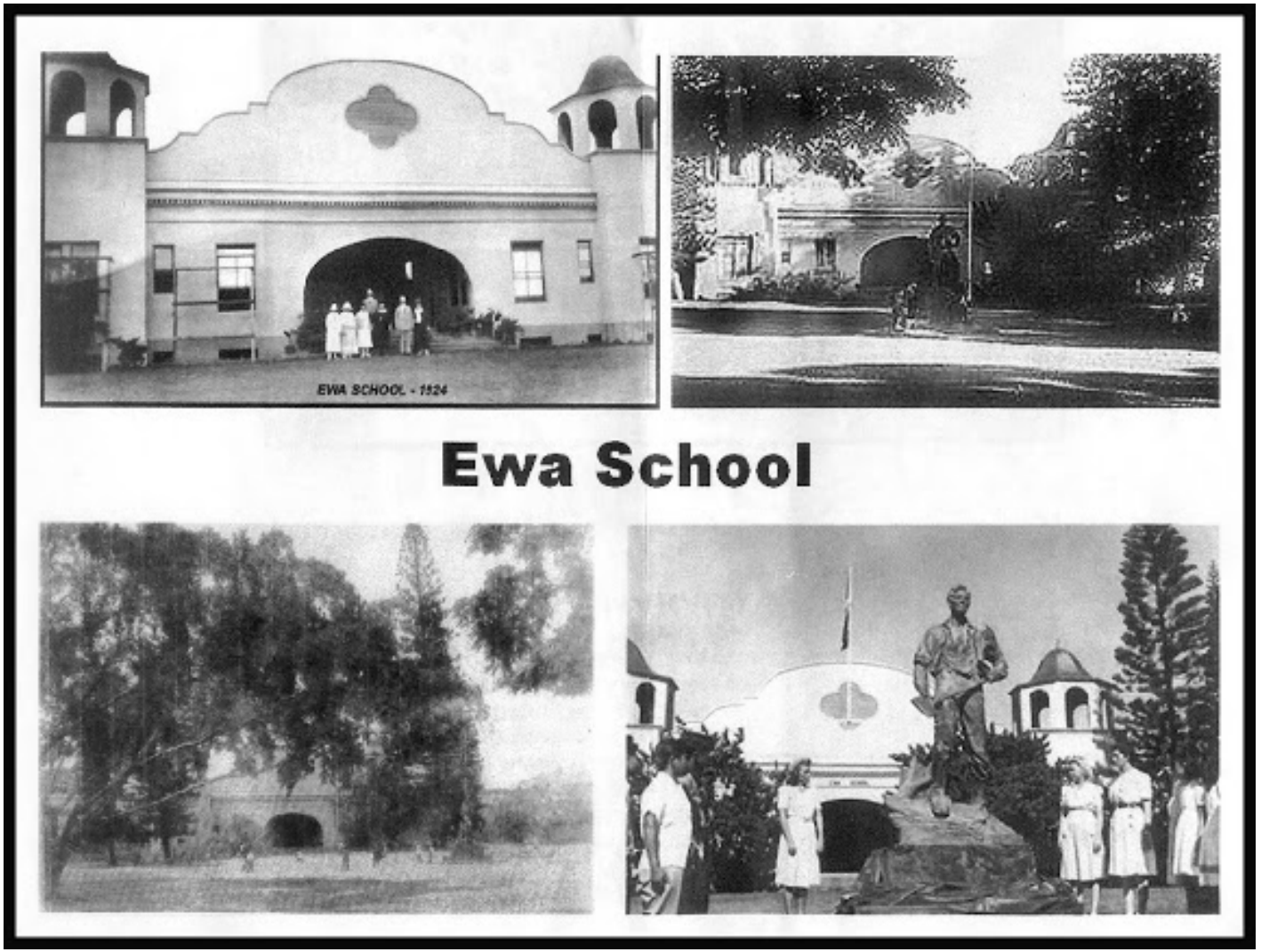

Figure 21. From the Isamu Murakami website: “The old Ewa School is fondly remembered. At upper left is one of the first photos of Ewa School taken in 1924. At lower right is the Lincoln Dedication Ceremony on Feb. 14, 1944 (You can see the canvas that covered the statue that was removed at the base of the statue).” (Murakami 2012)

Figure 22. “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.” (Murakami 2012)

Figure 23. Photograph of teacher and students at a 1925 Ewa School nail driving contest

3.2 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. McAllister recorded 14 sites in Honouliuli, which he numbered as Sites 133–146 (Table 2; McAllister 1933:107-108).

Table 2. Sites in Honouliuli Ahupua‘a Recorded by McAllister during his Island-Wide Survey

Site No.	Location	Description	Source
133	At the foot of Pu‘u Kānehoa	"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 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	"Enclosures in leveled-off areas; the largest measuring 85 by 100 feet with low in closings 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 (Sesuvium portulacastrum)”	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 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 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. This work has generally focused on 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 24 and historic properties near/within the current project area are shown on Figure 25. Projects near Ewa Elementary School are summarized in Table 3 and described in more detail in the following sections.

3.2.1 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 miles) 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 #s -3318 and -3320) at Kapapapuhi Point; a significant pre-Contact deposit with trash pits, fire pits and at least one human burial (SIHP # -3321); a buried fishpond (SIHP # -3322); an historic fishpond (SIHP # -3323) built in the 1890s during the construction of the OR&L railroad; and a buried pond field system (SIHP # -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 within the West Loch Bluffs project site (Hammatt and Shideler 1990). The majority of the project area was impacted by a century of sugar cane 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.

3.2.2 ‘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 sugar cane workers once existed near the intersection of the OR&L bed and a cane road near Fort Weaver Road, but the archaeologists did not find any surface remains of this camp.

A subsequent subsurface exploration was undertaken, in which 18 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 m 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).

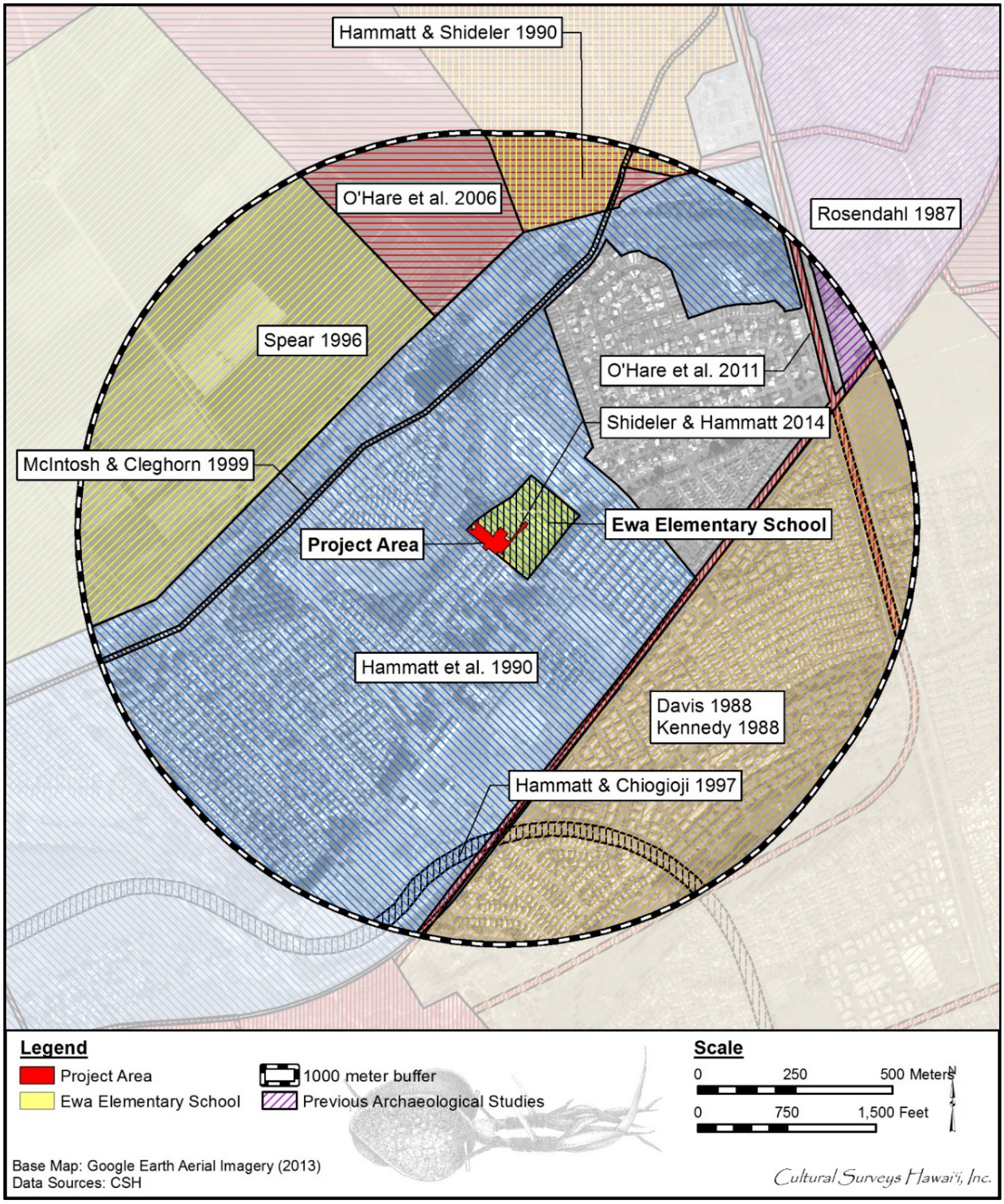

Figure 24. Previous archaeological studies within the project area and immediate vicinity

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

Reference	Nature of Study	Location	Results (SIHP # 50-80-12)
McAllister 1933	Archaeological survey	Island-wide	Sites 133-146; see Table 2 for complete listing of sites and descriptions
Rosendahl 1987	Reconnaissance survey with subsurface testing	West Loch Estates	Modern cemetery (SIHP # 50-80-13-3319) with a pre-Contact deposit, two historic sites with pre-Contact deposits (SIHP #s -3318, -3320); a pre-Contact deposit with a burial (SIHP # -3321), a buried fishpond (SIHP # 3322), an 1890s fishpond (SIHP # -3323), and a buried pond field system (SIHP # -3324)
Davis 1988	Subsurface excavation	‘Ewa Gentry	No historic properties identified
Kennedy 1988	Reconnaissance survey	‘Ewa Gentry	No pre-Contact surface features found; OR&L railroad bed (SIHP # - 9714) formed *mauka* boundary
Hammatt and Shideler 1990	Inventory survey	West Loch Bluffs	Project area includes sites of three former plantation villages (Pipeline, Stable, and Drivers Village)
Hammatt et al. 1990	Reconnaissance survey	‘Ewa Villages	No pre-Contact surface features noted
Spear 1996	Reconnaissance and assessment	West of Tenney and Varona villages	No historic properties identified
Hammatt and Chiogioji 1997	Reconnaissance survey	Kapolei Parkway	No pre-Contact surface features noted but historic plantation flume remnants and a ditch noted
McIntosh and Cleghorn 1999	Archaeological archival research	Honouliuli Wastewater Treatment Plant	Extremely little likelihood of encountering surface archaeological sites; possible subsurface resources present
O’Hare et al. 2006	Inventory survey	East Kapolei	Five sites previously identified; one consists of Ewa Sugar Plantation infrastructure features (SHIP # -4344)
O’Hare et al. 2011	Literature review and field inspection	Honouliuli to Hālawa Ahupua‘a	Recommendations included monitoring and survey work
Shideler and Hammatt 2014	Literature review and field inspection	Ewa Elementary School	No historic properties identified

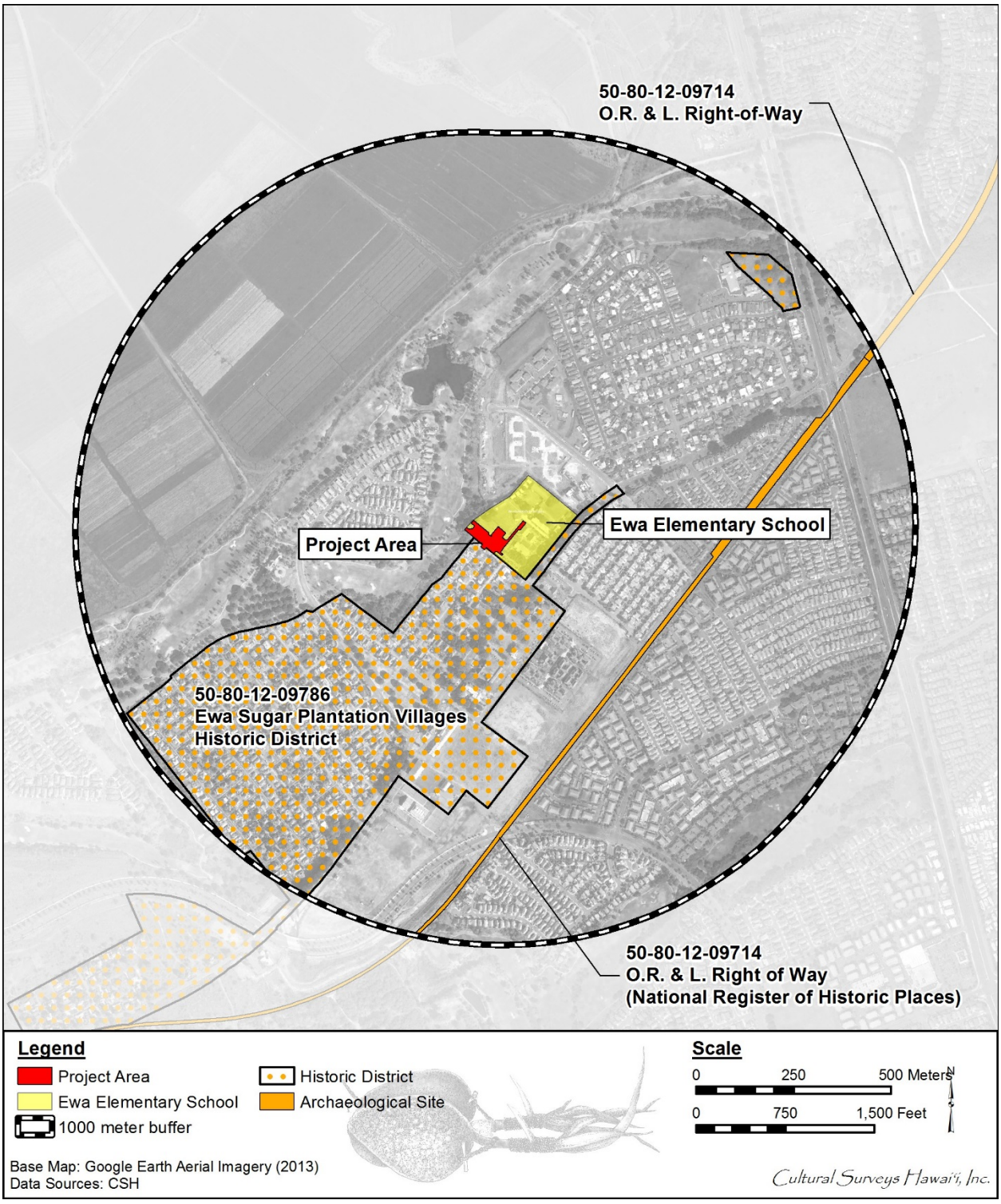

Figure 25. Historic properties near the project area

3.2.3 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 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 World War II, and a former reservoir site). The survey also included fields then under sugar cane cultivation.

The surface survey found no evidence of any pre-Contact 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 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 # -9786) was listed on the Hawai‘i Register of Historic Places in 1996.

3.2.4 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 previously identified sites of archaeological and historic concern, Ewa Villages and the OR&L 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 the project area but were not classified as sites during the survey. No further archaeological investigation was recommended.

3.2.5 Honouliuli Wastewater Treatment Plant

In 1999, Pacific Legacy, Inc. conducted archaeological archival research for the Honouliuli Wastewater Treatment Plant Water Reclamation project. Archival research and a review of previous archaeological studies in the area indicated an extremely small likelihood that any surface archaeological sites would be present within the project area. The only exception to this is the OR&L Right-of-Way, which is listed on the National Register of Historic Places. Research pointed to the possibility of encountering subsurface resources in the form of sinkholes containing cultural materials and possibly human burials.

3.2.6 East Kapolei Project

CSH conducted an archaeological inventory survey for the East Kapolei project in 2006 (O'Hare et al. 2006). The 2,625-acre project area included five previously identified archaeological sites. Of these, the first consists of SIHP # -4344, Ewa Sugar Plantation scattered infrastructure features (SIHP # -4344 Features A–C recorded in 1990 [Hammatt et al. 1990] and Features D–F recorded during survey work in 2005-2006 [O'Hare et al. 2006]).

The other four previously identified sites consist of a railroad berm (SIHP # -4345), a northern pumping station (SIHP # -4346), a central pumping station (SIHP #-4347), and a southern pumping station (SIHP # -4348).

Historic properties assessed as ineligible under Hawai‘i Register of Historic Places criteria A–E consist of four areas of historic habitation: Honouliuli taro lands, Kapalani Catholic Church, Pipeline Village, and Drivers/Stable Village. These historic properties were also identified during the 1990 survey. No site designations were assigned to these historic properties and no surface remains associated with them were identified during the survey (Hammatt et al. 1990). In addition, although no subsurface remains were found during backhoe testing, archaeological monitoring was recommended as part of any future development of the area.

3.2.7 ‘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 in the project area, which had been heavily disturbed by modern agricultural and residential use.

3.2.8 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 Hālawa (O'Hare et al. 2011).

No archaeological historic properties were observed during the surface field inspection. Areas with high potential for subsurface historical and cultural resources are at the margins of the Lochs of Pearl Harbor and perennial streams. These immediate vicinities were ideal locations for early Polynesian settlement and dense Hawaiian settlement. Some of the inland locations away from waterways appear to have a low level of archaeological concern.

3.3 Background Summary and Predictive Model

Honouliuli Ahupua‘a as a traditional land unit (see Figure 7) had tremendous and varied resources available for use by early Hawaiians. That said, prior to extensive historic and modern land alteration, this particular area of Honouliuli does not appear to have been densely populated nor used for cultivation. Research in previous archaeological studies indicates pre-Contact cultural deposits and burials are uncommon in the vicinity of the project area and if encountered would be expected to yield the remnants of traditional Hawaiian temporary sites used for procurement of resources.

The project area is immediately adjacent to ‘Ewa Sugar Plantation Village, which was a post-Contact village associated with the large-scale cultivation of sugar cane in the Hawaiian Islands.

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 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. The test trenches in the project area fall within what has been used as an open grassy play area since the school’s conception. Adjacent to the zone tested with backhoe trenches currently includes classrooms, the cafeteria, and other open play zones. School administration indicate that previously some faculty members lived in on-campus housing near this area and a greenhouse existed with a school garden in the general vicinity of the archaeological testing. Ewa Elementary School falls immediately adjacent to the ‘Ewa Sugar Plantation Villages Historic District, designated as SIHP -9786 (see Figure 25), and was added to the Hawai‘i State Register of Historic Places on 24 February 1996. There may be early twentieth century construction and habitation refuse associated with village/community of this designated State Register historic district.

Section 4 Results of Fieldwork

The fieldwork component of this archaeological investigation was conducted between 22 October 2014 and 24 October 2014. CSH archaeological field personnel consisted of Scott Belluomini, B.A., Layne Krause, B.A, David W. Shideler, M.A., Richard Stark, Ph.D., and Trevor Yucha, B.A. All fieldwork was conducted under the direction of the principal investigator, Hallett H. Hammatt, Ph.D.

Fieldwork consisted of an initial 100% coverage pedestrian inspection followed by a subsurface testing program. The pedestrian survey confirmed there were no surface historic properties within the Ewa Elementary School Building E project area. As there were no surface historic properties identified, the archaeological investigation focused on a program of subsurface testing to locate any buried cultural deposits and to facilitate a thorough examination of stratigraphy within the project area. Despite the dearth of material recovered, this work lies immediately adjacent to ‘Ewa Villages Historic District (SIHP #50-80-12-9786) and thus provides contextual information that enhances our understanding of the historic district.

4.1 Subsurface Testing Results

A total of 12 backhoe-assisted test excavations were completed and given the designations T-1 through T-12 (see Figure 5). The test excavations were distributed throughout the project area to provide comprehensive testing coverage. The dimensions of each test excavation typically measure approximately 6.0 m (20 ft) long by 0.80 m (2.6 ft) wide, varying slightly up to 1.4 m wide. The depth of excavation typically extends to 2.0 m (6.6 ft), varying up to 2.45 m (8 ft). That said, one half of each trench was excavated to 1 m below surface with the other half of the excavation and extending deeper, typically to 2 m below surface.

In 11 out of the 12 trenches excavated, CSH archaeologists observed a redundant stratigraphic sequence of loamy clay, sometimes appearing disturbed. Thus, the bulk of the sediments encountered represent decomposing terrigenous alluvium of the Waianae Mountains. In the one exception, T-4, the terrigenous alluvium overlays what appears to be a mixed zone of coralline loamy sand and then a naturally deposited marine sandy loam (see Section 4.1.4 Test Excavation 4 below for detailed description). In two test excavations, T-1 and T-2, active utility lines prohibited the complete excavation of each trench. In these cases, the test excavations were shifted if a reasonable location was found near the original test location. All unexcavated areas beneath utility lines or utility jackets are accurately represented on stratigraphic profile maps. Other than the isolated finds referenced in Section 5, Artifact Analysis, no significant cultural materials nor any archaeological features were observed during the subsurface excavation within the project area.

4.1.1 Test Excavation 1 (T-1)

T-1 was located in the east portion of the project area near the main electrical utility building on the Ewa Elementary School campus. T-1 measured 4.0 m long by 0.8 m wide and was oriented in a northeast-southwest direction. The excavation terminated at 0.5 m due to the existence of a gas line which extends through the center of the test excavation. No water table was observed. Two other utility lines associated with the sprinkler system and drainage systems were also encountered. The existence of utilities on either side of the test excavation prevented relocation of the test excavation within close proximity. The T-1 stratigraphic profile consists of a locally procured clay fill (Stratum I) associated with the buried utilities (Figure 26 through Figure 29, and Table 4).

Figure 26. Overview of T-1 at base of excavation showing two PVC pipes and gas line marker; view to northeast

Figure 27. Plan view of T-1

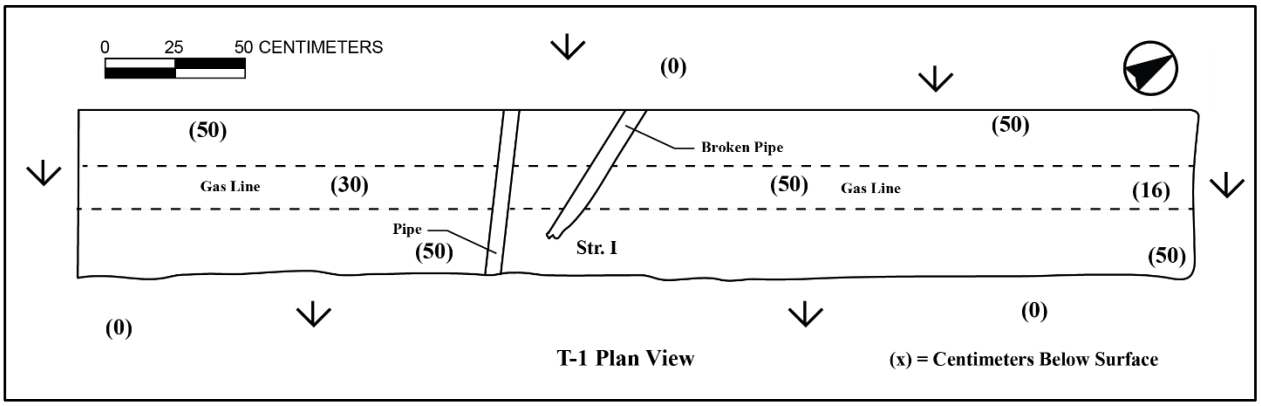

Figure 28. Plan view of T-1 at base of excavation

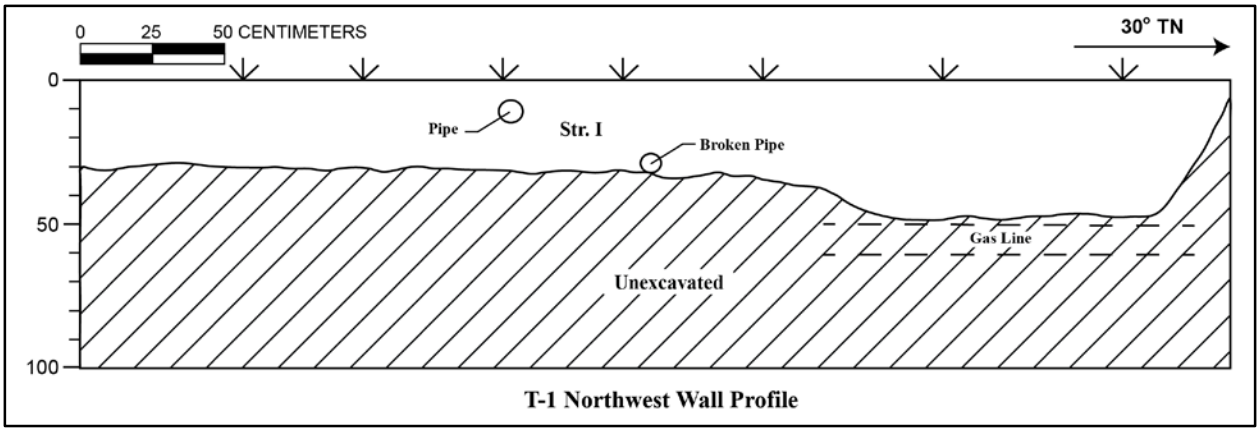

Figure 29. Profile view of T-1 northwest sidewall

Table 4. Stratigraphic Description of Test Excavation 1

Stratum	Depth (cmbs)	Description of Sediment
I	0–50 (BOE)	Fill; 10YR 3/2, very dark grayish brown; clay; moderate, fine blocky structure; moist, firm consistence; no cementation; plastic; terrigenous origin; lower boundary not visible; locally procured fill; contains multiple utility lines

4.1.2 Test Excavation 2 (T-2)

T-2 was located near the current Ewa Elementary School library in the east portion of the project area. The test excavation measured 5.8 m by 1.4 m wide and was oriented in a northeast-southwest direction. Several utilities were encountered in the original trench location. Observing a large PVC pipe in the southeast trench corner and a PVC pipe associated with the sprinkler system extending diagonally through the center of the trench, the test excavation was relocated north of the sprinkler pipe. Two electricity conduits were encountered extending diagonally bisecting the relocated test excavation. Due to the abundance of utilities in the area, the trench was not able to be relocated in close proximity to the original trench, and the portion of the trench that did not contain utilities was excavated to 2.15 m. No water table was observed. The stratigraphic profile of T-2 consists of a disturbed clay loam alluvium (Stratum I) (Figure 30 through Figure 33 and Table 5).

Figure 30. Oblique view of T-2 northwest sidewall in the portion excavated to 2.15 m; view to north

Figure 31. Plan view of T-2 showing location of utilities and relocated test excavation; view to southwest

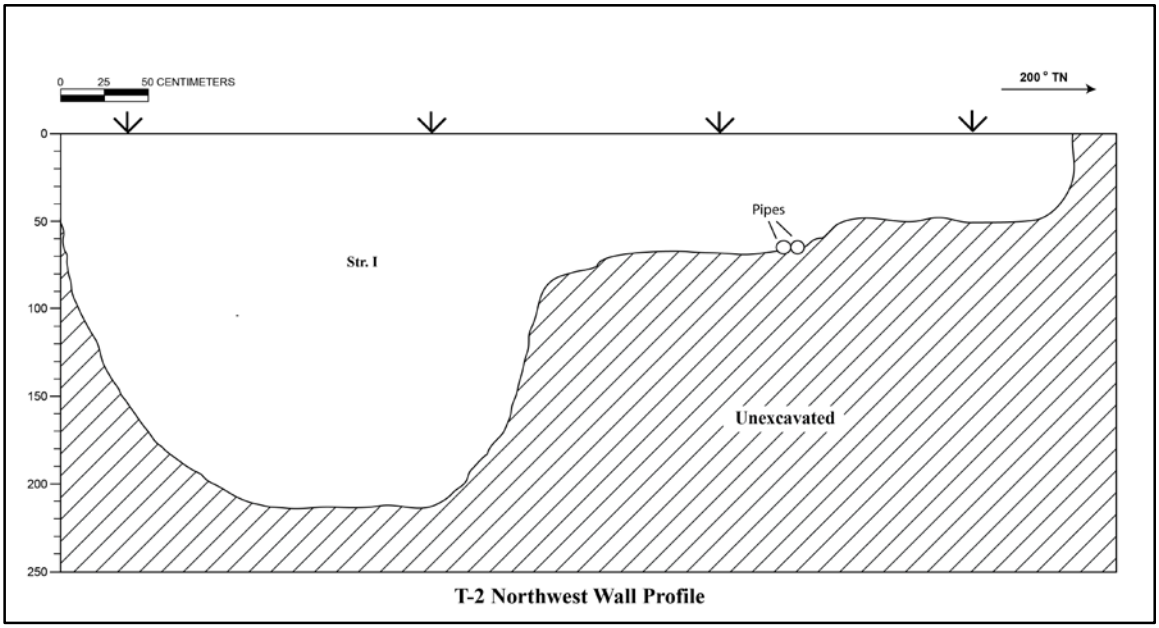

Figure 32. T-2 profile of northwest sidewall

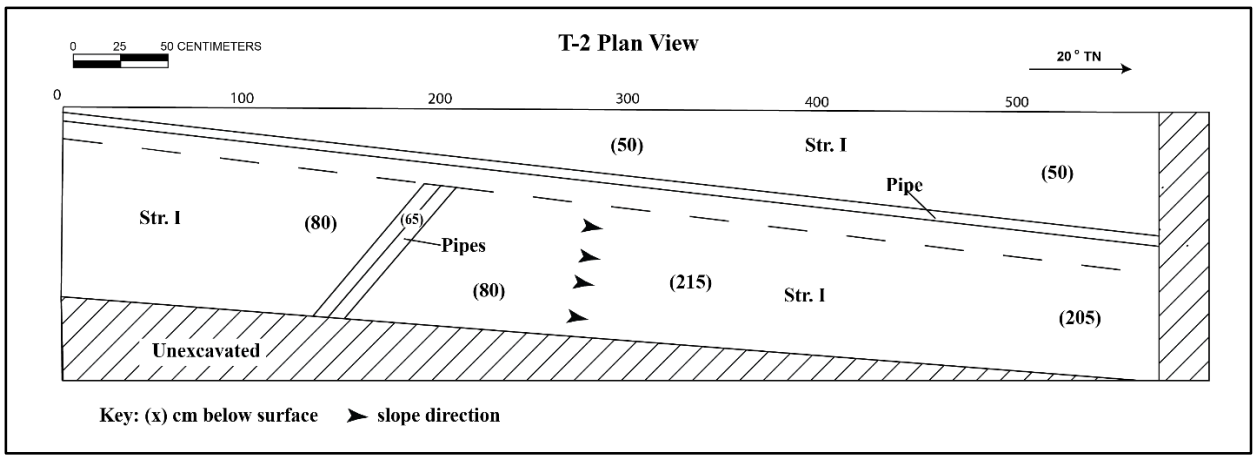

Figure 33. T-2 plan view showing utilities and relocated test excavation location

Table 5. Stratigraphic Description of Test Excavation 2

Stratum	Depth (cmbs)	Description of Sediment
I	0–215 (BOE)	Disturbed alluvium; 10YR 3/2, very dark grayish brown; clay; moderate, fine blocky structure; moist, firm consistence; no cementation; plastic; terrigenous origin; lower boundary not visible; naturally deposited disturbed alluvium

4.1.3 Test Excavation 3 (T-3)

T-3 was located in the southeast portion of the project area near the cafeteria parking lot. T-3 measured 6.0 m long by 0.8 m wide and was oriented in a northeast-southwest direction. The test excavation was excavated to 1.0 m below surface in the southwestn half of the excavation and to 2.0 m below surface in the northeastern half. No water table was observed. The stratigraphic profile of T-3 consists of imported clay loam landscaping fill (Stratum I), overlying a naturally deposited clay alluvium (Stratum II) (Figure 34, Figure 35, and Table 6). A green and white marble fragment was identified but not collected from the first 30 cm of Stratum I. A photograph and further discussion of the marble is found in Section 5, Artifact Analysis.

Figure 34. Oblique overview of T-3 southeast sidewall; view to east

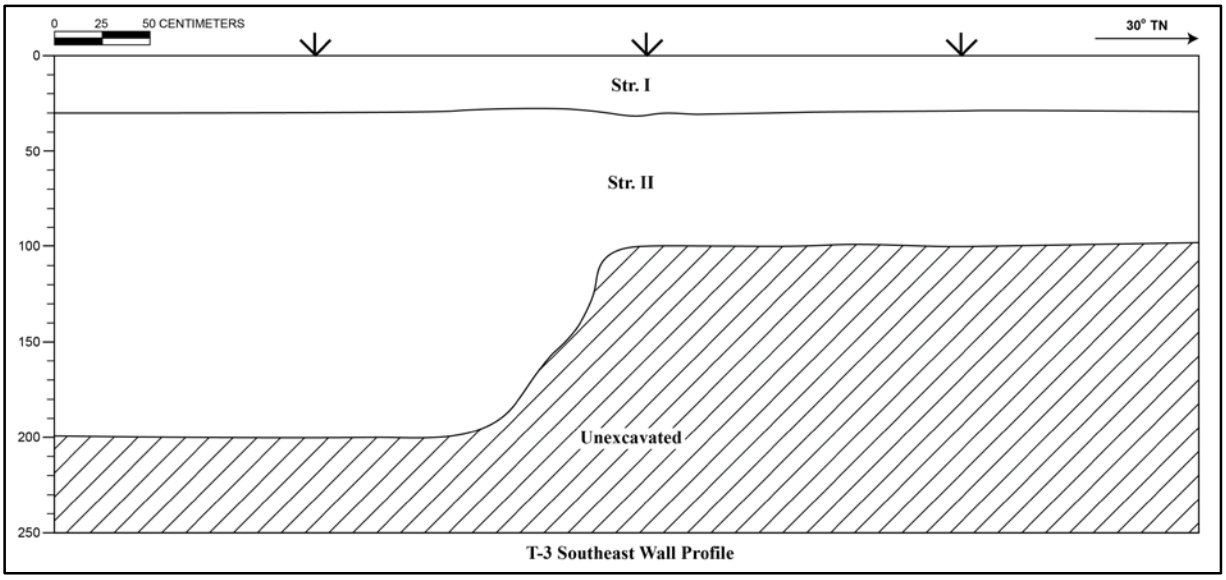

Figure 35. Profile of T-3 southeast sidewall

Table 6. Stratigraphic Description of Test Excavation 3

Stratum	Depth (cmbs)	Description of Sediment
I	0–32	Fill; 2.5YR 4/6, red; clay loam; strong, fine, granular structure; moist, firm consistence; no cementation; plastic; terrigenous origin; clear, smooth lower boundary; imported landscaping fill
II	32–200 (BOE)	Naturally deposited alluvium; 10YR 3/2, very dark grayish brown; clay; strong, medium, blocky structure; moist, extremely firm consistence; no cementation; plastic; terrigenous origin; lower boundary not visible

4.1.4 Test Excavation 4 (T-4)

Test Excavation 4 (T-4) was located in the south portion of the project area near the cafeteria parking lot. T-4 measured 6.0 m long by 0.80 m wide and was oriented in a northwest-southeast direction. The test excavation was excavated to 1.0 m below surface in the southeastern half of the excavation and to 2.45 m below surface in the northwestern half. No water table was observed. The stratigraphic profile of T-4 consists of imported clay loam landscaping fill (Stratum I) and gravelly clay loam fill (Stratum II), overlying a naturally deposited clay alluvium (Stratum III) that overlies a naturally deposited coralline loamy sand (Stratum IV) and naturally deposited marine sandy loam (Stratum V) (Figure 36, Figure 37, Figure 38, and Table 7).

Figure 36. Photograph of T-4 northeast sidewall; view to east

Figure 37. Close up of T-4 northeast sidewall; view to northeast

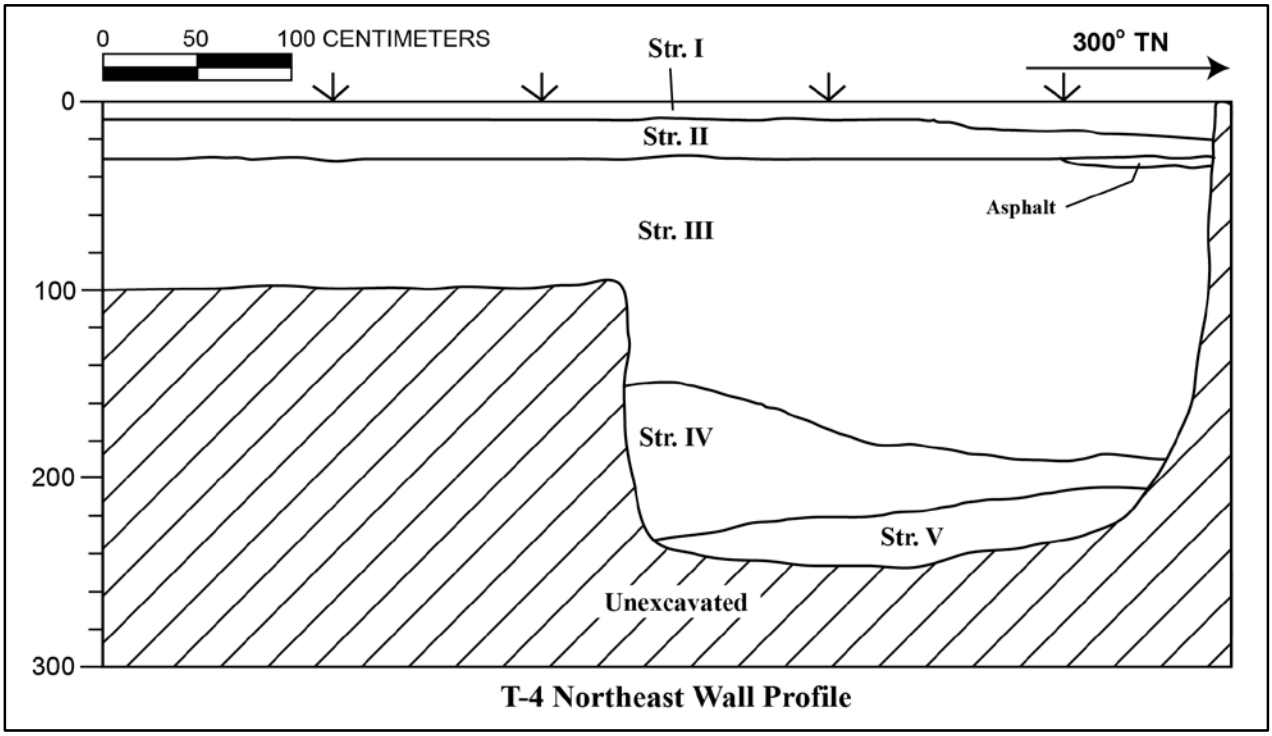

Figure 38. Profile of T-4 northeast sidewall

Table 7. Stratigraphic Description of Test Excavation 4

Stratum	Depth (cmbs)	Description of Sediment
I	0–20	Fill; 2.5YR 3/2, dusky red; clay loam; moderate, medium, granular structure; moist, firm consistence; no cementation; plastic; terrigenous origin; clear smooth, boundary; imported landscaping fill
II	10–30	Fill; 10YR 3/2, very dark grayish brown; gravelly clay loam; moderate, fine, medium structure; moist, firm consistence; no cementation; plastic; mixed origin, clear, smooth lower boundary; imported fill with thin sand mottling
III	30–190	A horizon; 10YR 3/2, very dark grayish brown; clay; moderate, fine blocky structure; moist, firm consistence; no cementation; plastic; terrigenous origin; clear, smooth lower boundary; naturally deposited alluvium
IV	150–225	Natural; 10YR 6/4, light yellowish brown; loamy sand; moderate, fine, granular structure; moist, firm consistence; no cementation; non-plastic; marine origin; clear, smooth lower boundary; naturally deposited coralline loamy sand
V	205–245 (BOE)	Natural; 10YR 7/3, very pale brown; sandy loam; moderate, fine, granular structure; moist, friable consistence; no cementation; non-plastic; marine origin; lower boundary not visible; naturally deposited marine sandy loam

4.1.5 Test Excavation 5 (T-5)

T-5 was located in the north portion of the project area. T-5 measured 6.0 m long by 0.80 m wide and was oriented in a northwest-southeast direction. The test excavation was excavated to 1.0 m below surface in the southeastern half of the excavation and to 2.0 m below surface in the northwestern half. No water table was observed. The stratigraphic profile of T-5 consists of imported clay loam landscaping fill (Stratum I), overlying a naturally deposited clay alluvium (Stratum II) (Figure 39, Figure 40, and Table 8).

Figure 39. T-5 oblique profile view; view to northeast

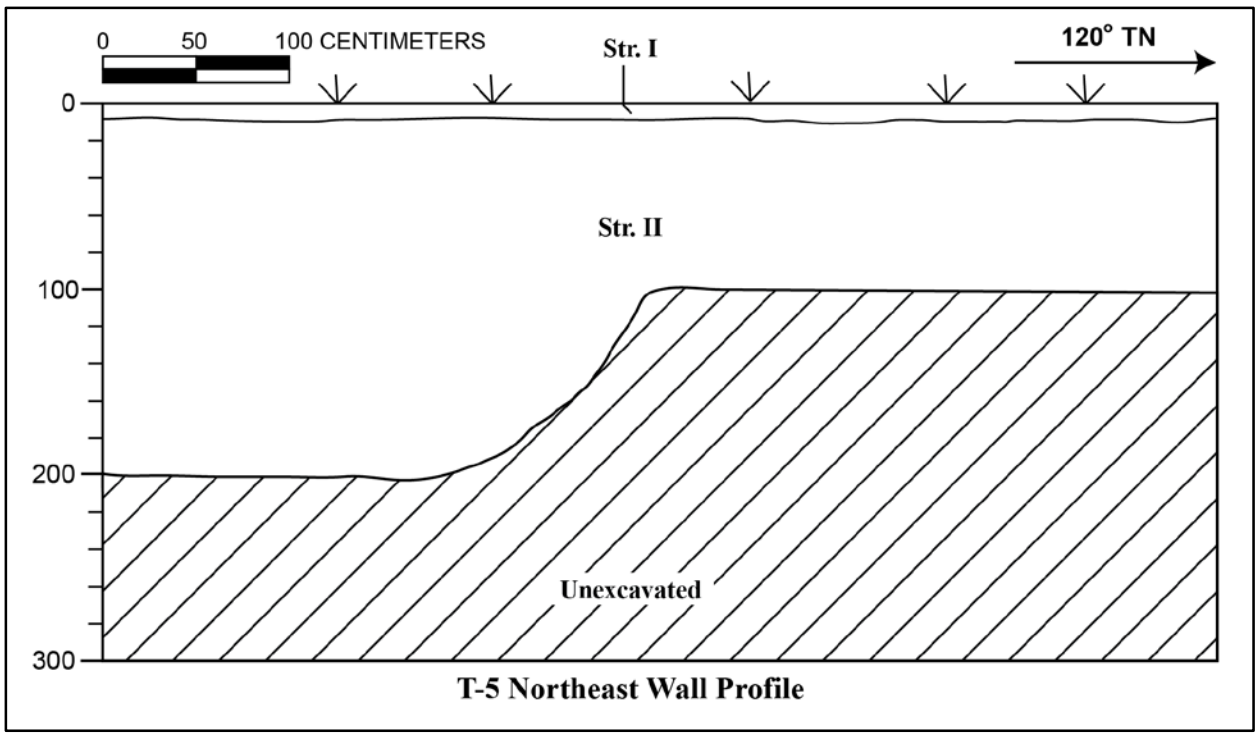

Figure 40. Profile of T-5 northeast sidewall

Table 8. Stratigraphic Description of Test Excavation 5

Stratum	Depth (cmbs)	Description of Sediment
I	0–10	Fill; 2.5YR 4/6, red; clay loam; strong, fine, granular structure; moist, firm consistence; no cementation; plastic; terrigenous origin; diffuse, smooth lower boundary; imported landscaping fill
II	10–200 (BOE)	Naturally deposited alluvium; 10YR 3/3, dark brown; clay; strong, medium, blocky structure; moist, extremely firm consistence; no cementation; plastic; terrigenous origin; lower boundary not visible

4.1.6 Test Excavation 6 (T-6)

T-6 was located in the south portion of the project area near Pipeline Street. T-6 measured 6.0 m long by 0.80 m wide and was oriented in a northwest-southeast direction. The test excavation was excavated to 1.0 m below surface in the southeastern half of the excavation and to 2.0 m below surface in the northwestern half. No water table was observed. The stratigraphic profile of T-6 consists of imported sandy loam landscaping fill (Stratum I), an imported sand fill (Stratum II), and an imported clay loam fill (Stratum III) overlying a naturally deposited clay alluvium (Stratum IV) (Figure 41, Figure 43, and Table 9).

Figure 41. Profile of T-6 northeast sidewall; oblique view to east

Figure 42. Close-up of T-6 northeast sidewall stratigraphic sequence, oblique view to the east

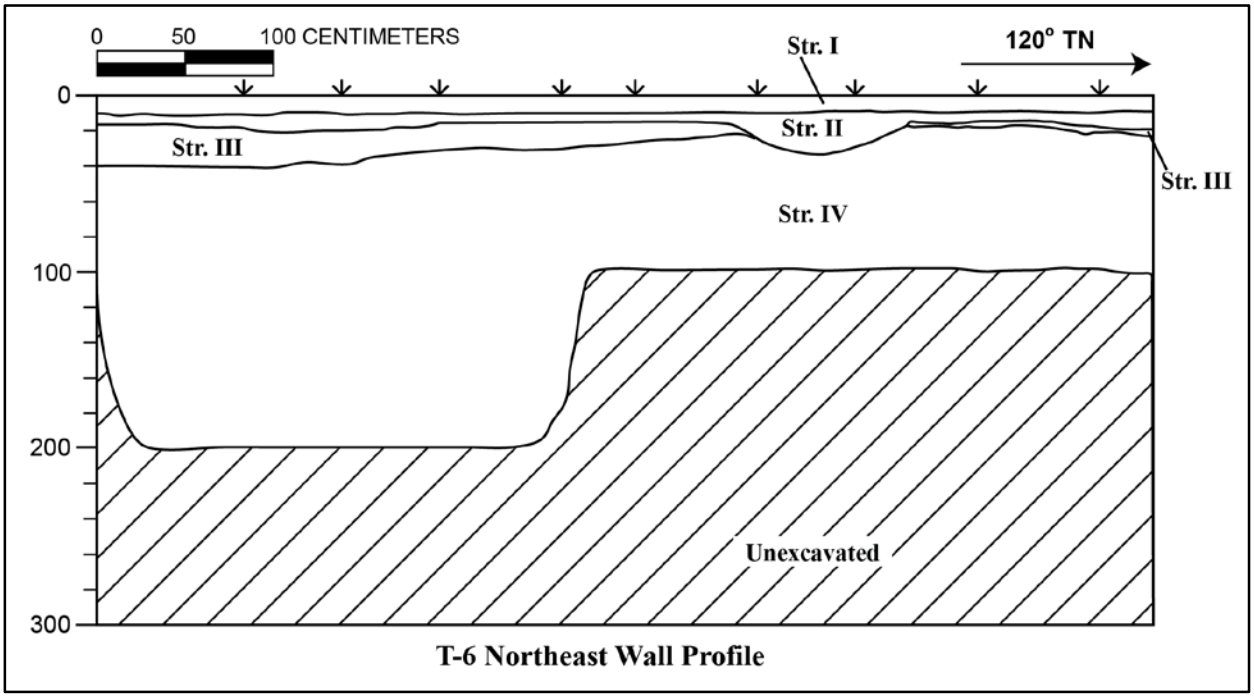

Figure 43. Profile of T-6 northeast sidewall

Table 9. Stratigraphic Description of Test Excavation 6

Stratum	Depth (cmbs)	Description of Sediment
I	0–10	Fill; 7.5YR 3/2, dark brown; sandy loam; weak, fine, granular structure; moist, friable consistence; no cementation; non-plastic; terrigenous origin; clear, smooth lower boundary; imported sandy loam landscaping fill
II	10–20	Fill; 10YR 6/8, brownish yellow; sand; weak, fine, granular structure; moist, loose consistence; no cementation; non-plastic; marine origin; clear, smooth lower boundary; imported fill associated with grading of the playground area
III	16–40	Fill; 2.5YR 3/2, dusky red; clay loam; strong, fine, granular structure; moist, firm consistence; no cementation; plastic; terrigenous origin; clear, smooth lower boundary; imported fill associated with grading of area
IV	16–200 (BOE)	Naturally deposited alluvium; 10YR 3/2, very dark grayish brown; clay; strong, fine, blocky structure; moist, extremely firm consistence; no cementation; plastic; terrigenous origin; lower boundary not visible

4.1.7 Test Excavation 7 (T-7)

T-7 was located in the north portion of the project area. T-7 measured 6.0 m long by 0.80 m wide and was oriented in a northwest-southeast direction. The test excavation was excavated to 1.0 m below surface in the southeastern half of the excavation and to 2.0 m below surface in the northwestern half. No water table was observed. The stratigraphic profile of T-7 consists of imported clay loam landscaping fill (Stratum I), overlying a naturally deposited clay alluvium (Stratum II) (Figure 44 through Figure 46 and Table 10).

Figure 44. T-7 profile oblique; view to southeast

Figure 45. T-7 profile oblique; view to northwest

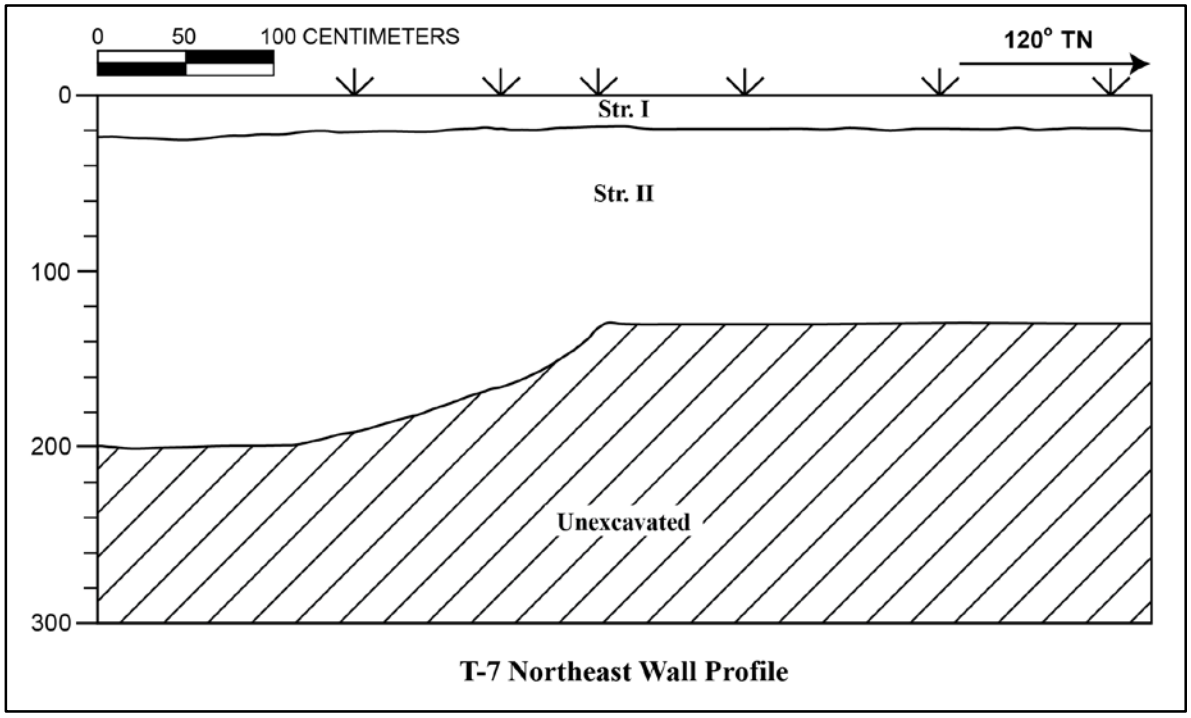

Figure 46. Profile of T-7 northeast sidewall

Table 10. Stratigraphic Description of Test Excavation 7

Stratum	Depth (cmbs)	Description of Sediment
I	0–25	Fill; 2.5YR 4/6, red; clay loam; strong, fine, granular structure; moist, firm consistence; no cementation; plastic; terrigenous origin; diffuse, smooth lower boundary; imported landscaping fill
II	20–200 (BOE)	Naturally deposited alluvium; 10YR 3/3, dark brown; clay; strong, medium, blocky structure; moist, extremely firm consistence; no cementation; plastic; terrigenous origin; lower boundary not visible

4.1.8 Test Excavation 8 (T-8)

T-8 was located in the center of the project area. T-8 measured 6.0 m long by 0.80 m wide and was oriented in a northwest-southeast direction. The test excavation was excavated to 1.0 m below surface in the southeastern half of the excavation and to 2.0 m below surface in the northwestern half. No water table was observed. An irrigation pipe was encountered 5 cm below the surface, but did not obstruct further excavation. A deposit of construction debris (concrete, metal, nails, etc.) was observed along the surface in the southeast portion of the project area (Figure 47). The stratigraphic profile of T-8 consists of imported cobbly loamy sand construction debris fill (Stratum I), overlying a naturally deposited clay alluvium (Stratum II) (Figure 48, Figure 49, and Table 11). No traditional Hawaiian was observed. Two nails were observed and collected within Stratum I between 0 and 10 cm below surface. More detailed information on the nails can be found in Section 5, Artifact Analysis.

Figure 47. Photograph of construction debris observed in T-8 Stratum I

Figure 48. Photograph of T-8 southwest sidewall; view to south

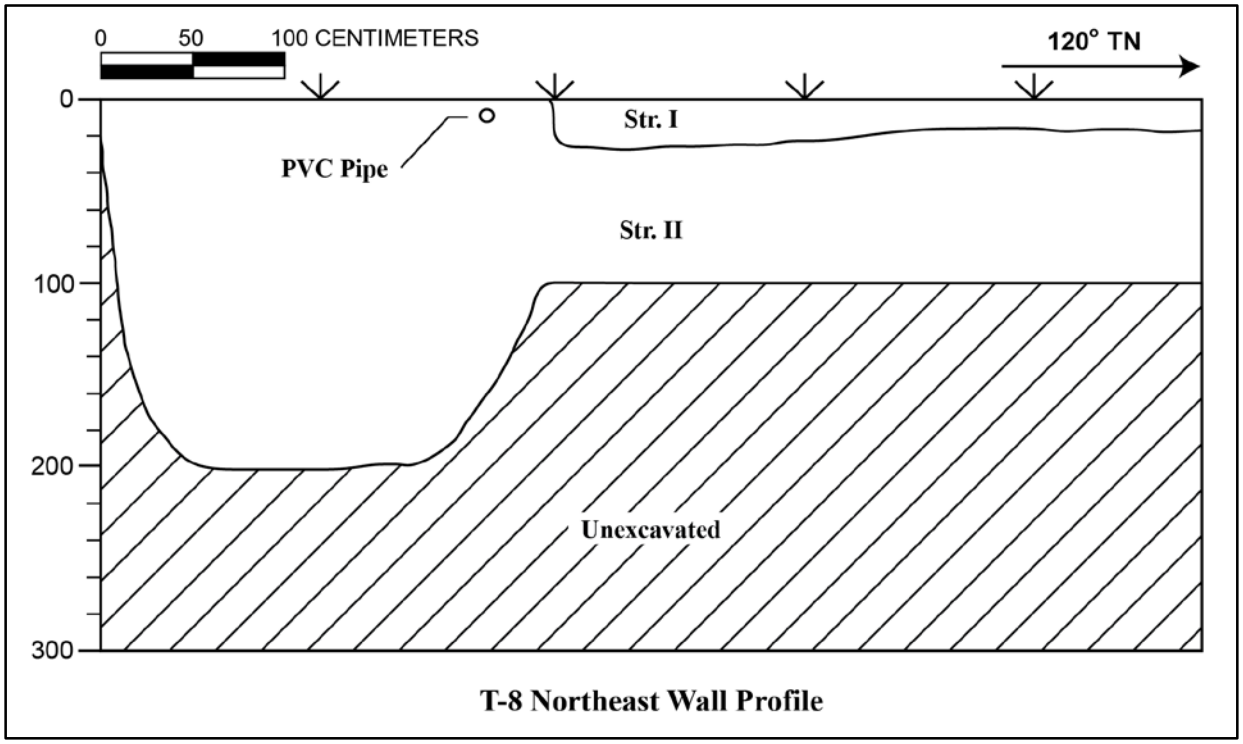

Figure 49. Profile of T-8 northeast sidewall

Table 11. Stratigraphic Description of Test Excavation 8

Stratum	Depth (cmbs)	Description of Sediment
I	0–30	Fill; 2.5 YR 4/6, red; cobbly loamy sand; moderate, fine, granular structure; moist, friable consistence; no cementation; non-plastic; mixed origin; clear, smooth lower boundary; imported construction debris fill
II	0–200 (BOE)	Naturally deposited alluvium; 10YR 3/2, very dark grayish brown; clay; strong, medium, blocky structure; moist, extremely firm consistence; no cementation; plastic; terrigenous origin; lower boundary not visible

4.1.9 Test Excavation 9 (T-9)

T-9 was located in the northwest portion of the project area. T-9 measured 6.0 m long by 0.80 m wide and was oriented in a northwest-southeast direction. The test excavation was excavated to 1.0 m below surface in the southeastern half of the excavation and to 2.1 m below surface in the northwestern half. No water table was observed. The stratigraphic profile of T-9 consists of imported clay loam landscaping fill (Stratum I), locally procured clay alluvium fill (Stratum II), imported sandy loam fill (Stratum III), overlying a naturally deposited disturbed clay alluvium (Stratum IV) (Figure 50, Figure 51, and Table 12). A bullet was observed and collected within Stratum II between 10 and 30 cm below surface. More detailed information on the bullet can be found in Section 5, Artifact Analysis.

Figure 50. T-9 profile oblique view; view to west

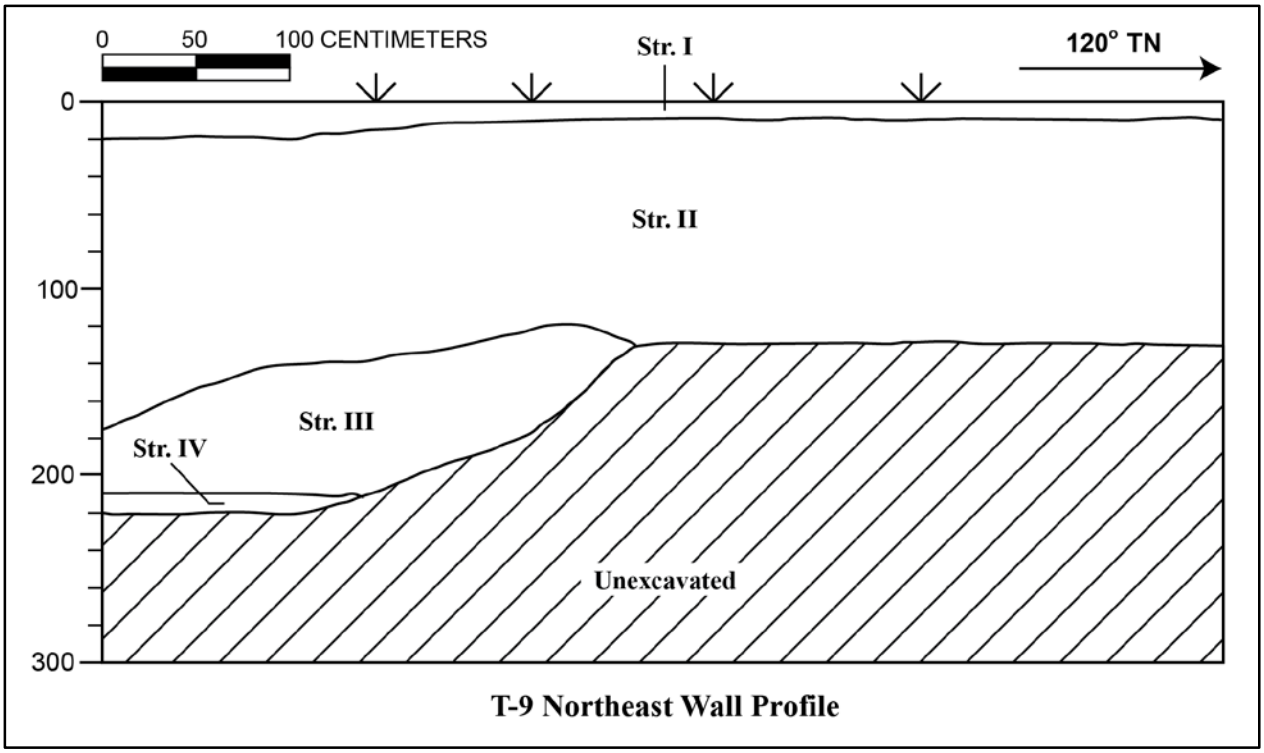

Figure 51. Profile of T-9 northeast sidewall

Table 12. Stratigraphic Description of Test Excavation 9

Stratum	Depth (cmbs)	Description of Sediment
I	0–20	Fill; 2.5YR 4/6, red; clay loam; strong, fine, granular structure; moist, firm consistence; no cementation; plastic; terrigenous origin; diffuse, smooth lower boundary; imported landscaping fill
II	10–155	Fill; 10YR 3/2, very dark grayish brown; clay; strong, fine, granular structure; moist, firm consistence; no cementation; plastic; terrigenous origin; clear, smooth lower boundary; redeposited alluvium
III	120–210	Fill; 10YR 4/2, dark grayish brown; very cobbly sandy loam; moderate, medium, granular structure; moist, firm consistence; no cementation; slightly plastic; mixed origin; clear, smooth lower boundary; pocket of imported sandy loam fill
IV	210–220 (BOE)	Naturally deposited / disturbed alluvium; 10YR 3/2, very dark grayish brown; clay; strong, fine, granular structure; moist, firm consistence; no cementation; plastic; terrigenous origin; clear, smooth lower boundary

4.1.10 Test Excavation 10 (T-10)

T-10 was located in the northwest portion of the project area. T-10 measured 6.0 m long by 0.80 m wide and was oriented in a northwest-southeast direction. The test excavation was excavated to 1.0 m below surface in the southeastern half of the excavation and to 2.0 m below surface in the northwestern half. No water table was observed. The stratigraphic profile of T-10 consists of a naturally deposited disturbed clay alluvium (Stratum I) (Figure 52, Figure 53, and Table 13). A nail was observed and collected within Stratum I between 0 and 70 cm below surface. More detailed information on the nail can be found in Section 5, Artifact Analysis.

Figure 52. Oblique profile view of T-10 northeast sidewall

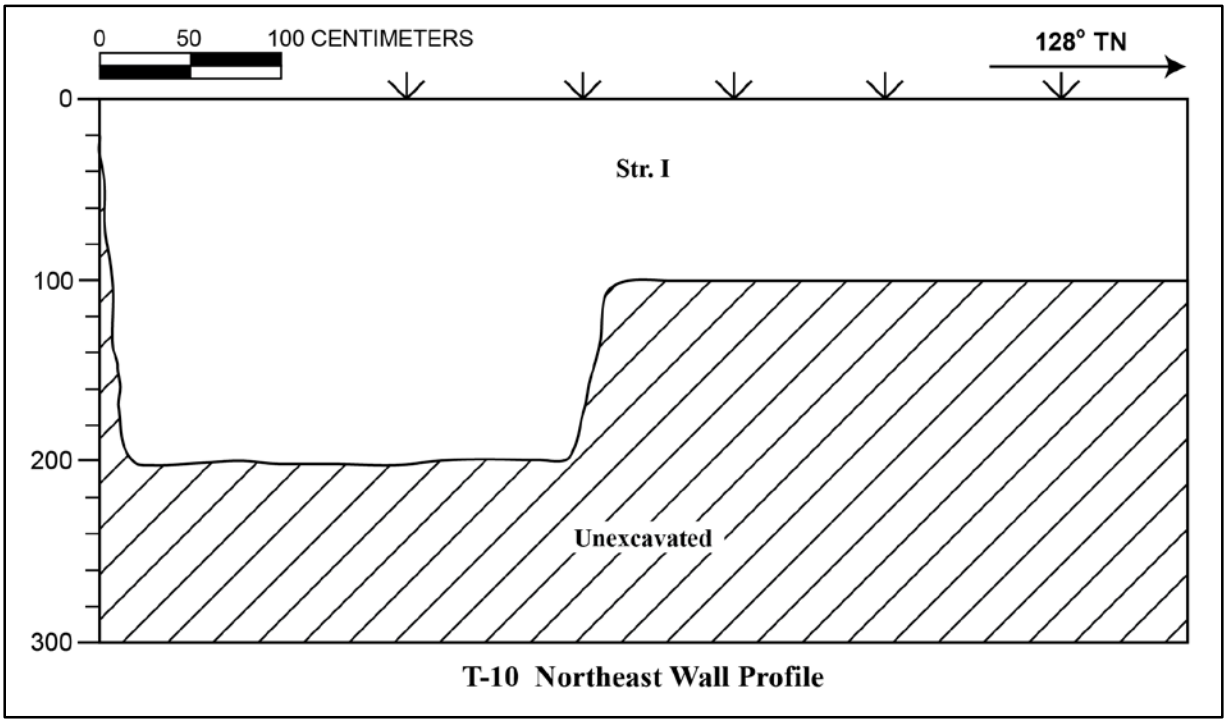

Figure 53. Profile of T-10 northeast sidewall

Table 13. Stratigraphic Description of Test Excavation 10

Stratum	Depth (cmbs)	Description of Sediment
I	0–200 (BOE)	Naturally deposited alluvium; 10YR 3/2, very dark grayish brown; clay; moderate, medium blocky structure; moist, extremely firm consistence; no cementation; plastic; terrigenous origin; lower boundary not visible

4.1.11 Test Excavation 11 (T-11)

T-11 was located in the northwest portion of the project area near Pipeline Street. T-11 measured 6.0 m long by 0.80 m wide and was oriented in a northwest-southeast direction. The test excavation was excavated to 1.0 m below surface in the southeastern half of the excavation and to 1.6 m below surface in the northwestern half. No water table was observed. The stratigraphic profile of T-11 consists of a naturally deposited disturbed clay alluvium (Stratum I) (Figure 54 through Figure 56 and Table 14) Historic artifacts recovered from T-11 Stratum I (0-30cm) include two re-fit fragments of a clay plate, a nickel plated spoon, and a rim fragment of a blue glass jar. Photographs and discussion of these artifacts follow in Section 5, Artifact Analysis.

Figure 54. T-11 excavation overview; view to east

Figure 55. T-11 plan view; view to southeast

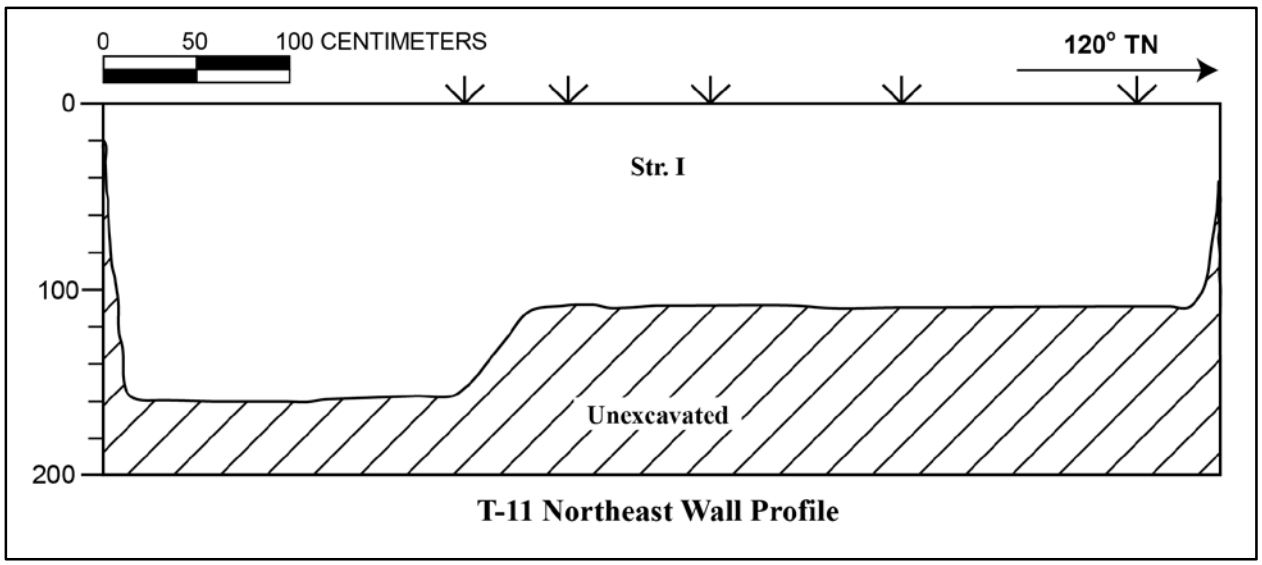

Figure 56. Profile of T-11 northeast sidewall

Table 14. Stratigraphic Description of Test Excavation 11

Stratum	Depth (cmbs)	Description of Sediment
I	0–160 (BOE)	Naturally deposited alluvium; 10YR 3/2, very dark grayish brown; clay, strong, medium, blocky structure; moist, extremely firm consistence; no cementation; plastic; terrigenous origin; lower boundary not visible

4.1.12 Test Excavation 12 (T-12)

T-12 was located in the northwest portion of the project area. T-12 measured 6.0 m long by 0.80 m wide and was oriented in a northwest-southeast direction. The test excavation was excavated to 1.0 m below surface in the southeastern half of the excavation and to 2.0 m below surface in the northwestern half. No water table was observed. The stratigraphic profile of T-12 consists of an imported loamy sand landscaping fill (Stratum I), overlying a naturally deposited disturbed clay alluvium (Stratum II) (Figure 57, Figure 58, and Table 15). Some historic artifacts were observed and collected, but were not observed in any form of a concentration or stratigraphic layer. A bent spoon, plate fragments, and a glass fragment were observed and collected within Stratum I between 0 and 30 cm below surface. More detailed information on these historic artifacts can be found in Section 5, Artifact Analysis.

Figure 57. Close-up oblique view of T-12 northeast sidewall

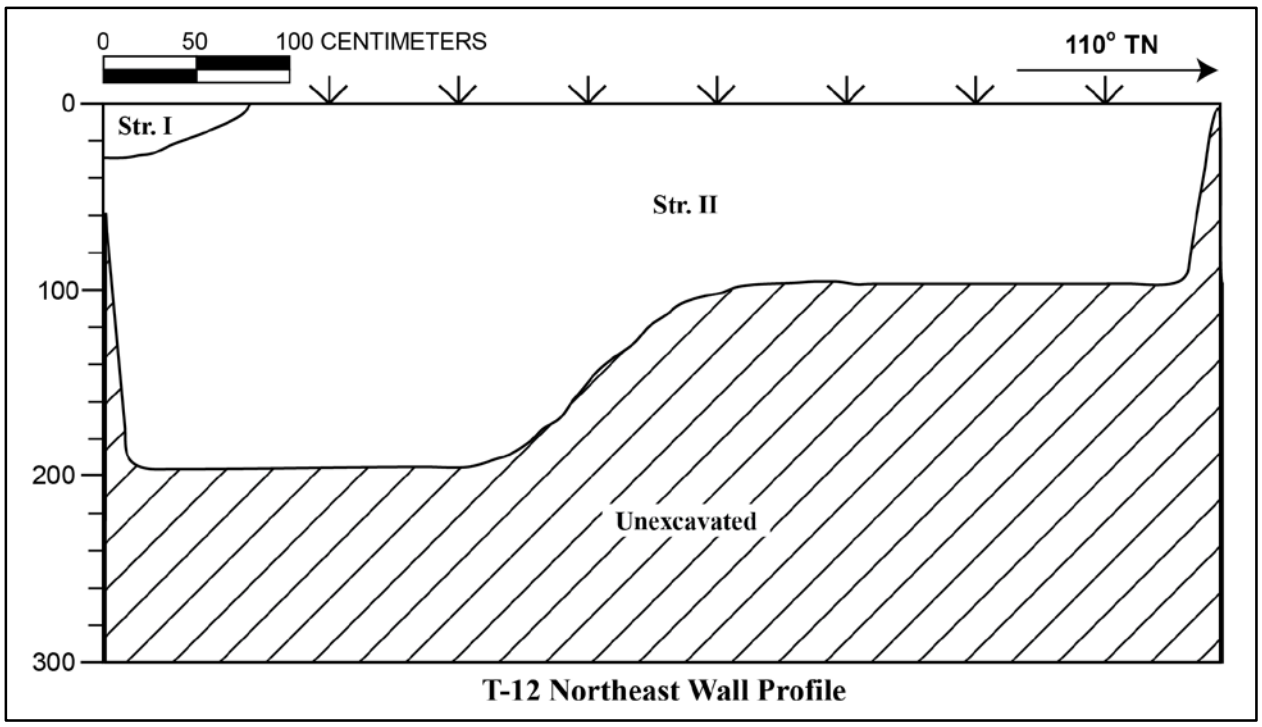

Figure 58. Profile of T-12 northeast sidewall

Table 15. Stratigraphic Description of Test Excavation 12

Stratum	Depth (cmbs)	Description of Sediment
I	0–30	Fill; 10YR 4/3, brown; loamy sand; weak, fine, granular structure; moist, loose consistence; no cementation; non-plastic; mixed origin; clear, smooth lower boundary; imported landscaping fill
II	30–200 (BOE)	Naturally deposited alluvium; 10YR 4/2, dark grayish brown; clay, strong, medium, blocky structure; moist, extremely firm consistence; no cementation; plastic; terrigenous origin; lower boundary not visible

Section 5 Artifact Analysis

All of the artifacts encountered within the project area are historic and none of them are deemed traditional. Nine historic artifacts are described as noteworthy. The artifacts include a glass marble, three steel nails, a bullet, broken plate fragments which refit, a blue glass jar fragment, and a nickel plated spoon. These artifacts are summarized in Table 16 and can be seen in Figure 60 through Figure 69.

Table 16. Summary of Artifacts Collected within the Project Area

Acc. #	Provenience	H/L (cm)	Di. (cm)	Material	Type	Age	Description/Identification
1	T-3, Stratum I 0–30 cmbs	3.5	3.5	Glass	Marble	Unknown historic	Green and white glass marble fragment, machine made
2	T-8 Stratum I 0–30 cmbs	7.5	0.3	Steel	Nail	Unknown historic	Steel wire nail, rusted
3	T-8 Stratum I 0–30 cmbs	10	0.5	Steel	Nail	Unknown historic	Steel wire nail, rusted
4	T-9 Stratum II 10–30 cmbs	3.5	0.77	Steel	Bullet	WWII	Bullet (brass / lead) and possibly adhering cartridge cap tentatively identified as Japanese Arisaka rifle or 7.7mm machine gun
5	T-10 Stratum I 0–70 cmbs	6.5	0.5	Brass	Nail	Unknown historic	Steel wire nail, rusted
6	T-11 Stratum 0–30 cmbs	11	5	Plastic	Plate	Unknown historic	Plastic plate fragment
7	T-11 Stratum 0–30 cmbs	14	10.5	Plastic	Plate	Unknown historic	Plastic plate fragment
8	T-11 Stratum I 0–30 cmbs	3.8	3	Glass	Jar	Unknown historic	Blue glass jar rim fragment, machine mold
9	T-11 Stratum I 0–30 cmbs	14.5	3	Nickel plated	Spoon	Unknown historic	Nickel-plated “Simpson” spoon

The glass marble (Acc. # 1) (Figure 59) encountered within the first 30 cm of T-3 is congruent with what one would expect from the playground area surrounding T-3. The most commonly encountered artifact type in this project is the historic round wire nail, totaling three (Acc. #s 2, 3, and 5; Figure 60 and Figure 61). Two of the wire nails were recovered from Stratum I of T-8, the same location for other uncollected historic construction debris that included rebar and cut limestone (see Figure 47). These nails probably relate to construction debris secondarily deposited, however the nail recovered in T-10 (Acc. # 5; Figure 61), recovered from a depth of up to 70 cm, may be related to Ewa School nail-driving contests anecdotally described by school personnel as taking place in the general vicinity of T-10. In Figure 23, students and a teacher are seen posing during a 1925 nail-driving contest before a large pile of nails in a grassy open area.

Two fragments of an early molded plastic plate (Acc. #s 6 and 7), possibly “Melmac” in style (Figure 62 and Figure 62) were recovered in Stratum I of T-11 (0-30 cm). The two plate fragments refit and exhibit two charred stains overlapping fractures. The basal center of the larger plate fragment includes a portion of a raised inscription left during the creation of the artifact from a mold. The inscription, contained within a 2.5 cm by 2.5 cm circle, has a five-point star contained within a 0.7 cm by 0.7 cm circle that overlies four lines of patent and maker information. This information is incomplete as the plate was fractured in this area, and yet it reads “REG U.S. P . . ., KYS-1 . . . , MADE IN U.S . . . , 238.” (Figure 63). Also recovered from Stratum I of T-11 (0-30 cm) is a bent nickel-plated spoon with an inscription, located mid-ventral, that reads “Simpson Nickel.” (Figure 64 and Figure 65) and a 3.8 by 3 cm rim fragment of a blue glass jar (Figure 66 and Figure 67).

In T-9 a bullet measuring 7.6 mm by 35 mm was recovered from a depth of 10–30 cm (Figure 68). The full cartridge head is absent on the artifact; however, the base of the artifact does have what appears to be a portion of the cartridge head basal cap adhering to the bullet base. The implication of a missing cartridge head is that the bullet had been fired, however, only minor blunting is noted on the bullet tip and no major impact marks nor striations are observed. This bullet is quite similar to that used in a 7.7 mm Japanese Arisaka cartridge (Figure 69), developed in 1897 and identified as “the primary cartridge used by Japan throughout World War II” (Hildebrand 2005). The 0.1 mm difference in diameter size may be accounted for by post-firing shrinkage and weathering.

Noting the unusual nature of a fired, potentially Japanese bullet found 10–30 cm below the surface on the Ewa School playground, an investigation was conducted into the details of the 7 December 1941 attack on O‘ahu, with specific emphasis on the Japanese ballistics used for strafing. ‘Ewa Field was one of the first targets of the attack, taking machine gun fire at approximately 7:50 a.m. Interestingly, the Japanese early model Zero/Zeke fighters (A6M2, A6M3) used in the 7 December 1941 attack on Hawai‘i were normally equipped with two 20mm cannons

> and two 7.7 mm machine guns with 500 rounds each . . . With evidence that pilots made five to eight passes, the conclusion is that they had to make very selective use of 20 mm firing time and do much strafing with the 7.7 mm guns. The Val dive-bombers over Hawaii (D3A1) had two forward firing 7.7 mm machine guns and one rear cockpit 7.7 mm flexible gun . . . Repeated eyewitness mention of ‘wild flying and spraying of bullets’ reflects cases of pilots holding down the trigger

Figure 59. Acc. # 1, glass marble from Trench 3, Stratum I (0–30cm); scale blocks represent 0.5cm

Figure 60. Acc. #s 2 and 3 (top to bottom), wire nails from Trench 8, Stratum I (0–30cm)

Figure 61. Acc. # 5, wire nail from T-10, Stratum I (0–70cm)

Figure 62. Acc. #s 6 and 7 (top to bottom), plastic plate fragments from T-11, Stratum I

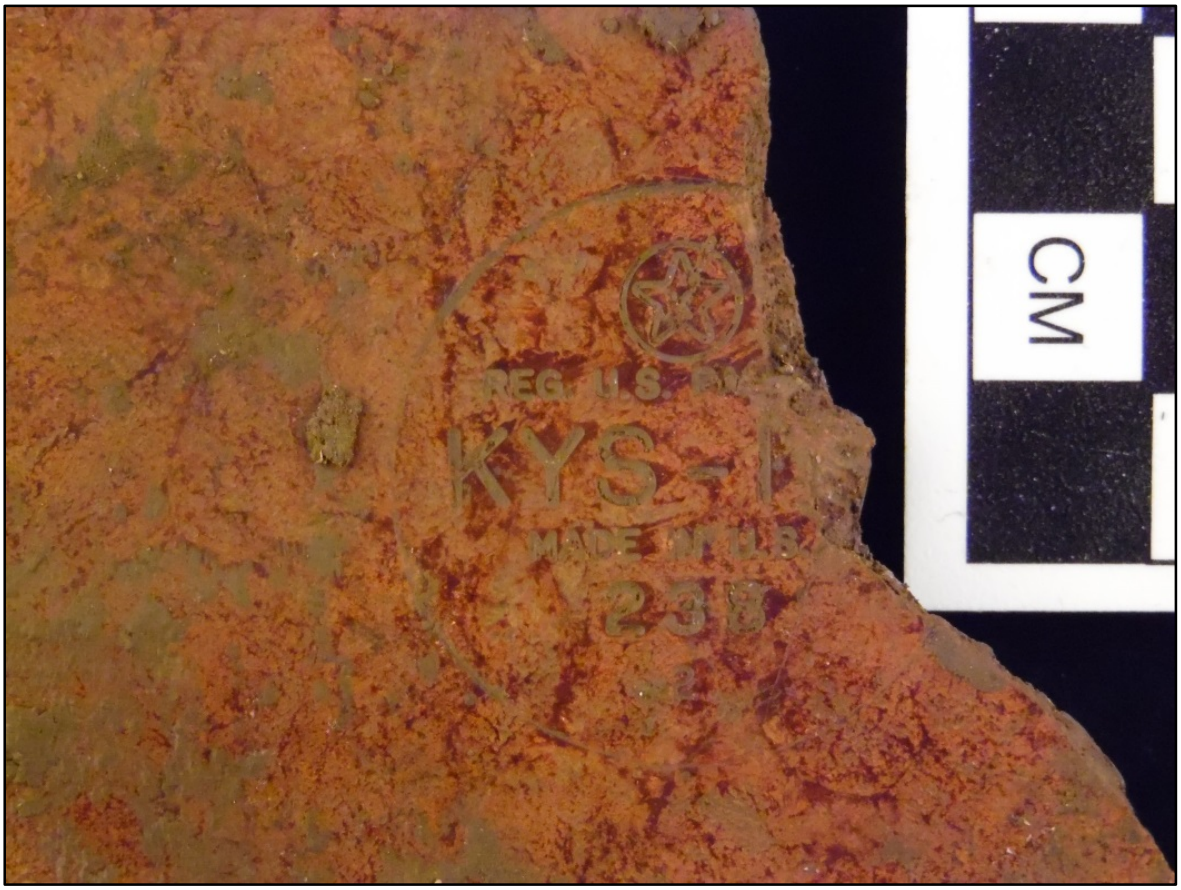

Figure 63. Acc. # 7, close-up basal inscription from plate recovered from T-11, Stratum I

Figure 64. Acc. # 9, spoon from T-11, Stratum I (0–30cm)

Figure 65. Acc. # 9, spoon basal inscription reads “Simpson Nickel”

Figure 66. Acc. # 8, blue glass jar rim fragment from T-11, Stratum I (0–30cm)

Figure 67. Acc. # 8, blue glass jar rim fragment from T-11, Stratum I (0–30cm)

Figure 68. Acc. # 4, bullet (7.6mm by 35mm) from T-9, Stratum II (10–30cm)

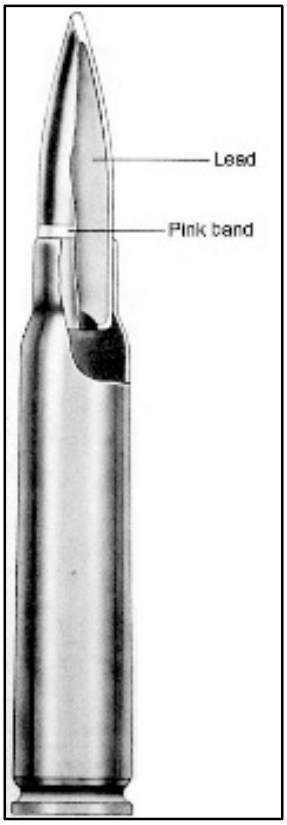

Figure 69. For comparison, a 7.7 mm rimless Japanese-made bullet-TM9-1985-5 (Johnson 1944:384)

> while flying across bases, through yards, and in hard maneuvers, which will certainly send bullets far and wide. Such shooting may account for the post-mission admission of one Japanese dive-bomber pilot that it took him three passes at Ewa before he could hit any of the parked planes with his gunfire. [Colgan 2010:30]

“The Waianae Mountains are visible to the north of Ewa Field. This range along the central-west side of O‘ahu presented both a means of concealment and an obstacle. The Japanese first wave squadrons approached undetected over the saddle in central O‘ahu between these mountains and the Koolau Mountains to the east” (Mason 2011:10) (Figure 70).

Noting directions of aircraft approach, eyewitness accounts from that day, and the size and form correlation with World War II era Japanese ballistics, the possibility exists that the recovered ordinance is World War II era and quite possibly the result of strafing from the 1941 attack on Pearl Harbor; however, the observed shape of the bullet does not exactly conform to the basally tapered “boat-tailed” machine gun bullet thought to have been used in the attack (Hildebrand 2005). One possible explanation for the missing basal taper “boat-tail” form in this artifact is that it is perhaps present but obscured by a remnant basal-cap component, now fully oxidized and adhered to the bullet. If this is indeed the case, the form and dimensions of this artifact would be within 0.1 mm of exactly conforming to the machine gun ballistics used in the 7 December 1941 Japanese attack on O‘ahu. At this point, exact identification of the T-9 bullet remains unknown.

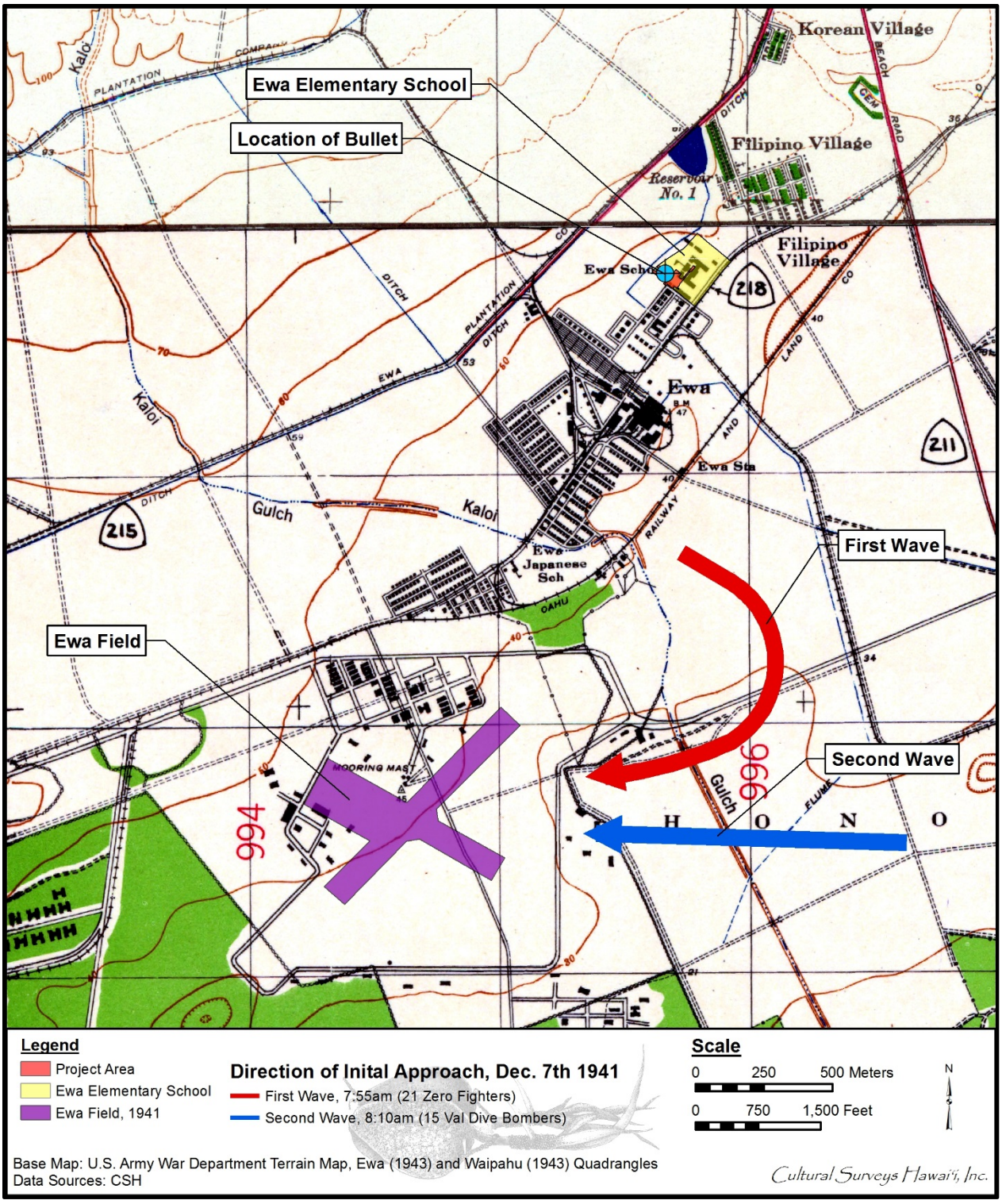

Figure 70. Location of the found bullet in reference to the initial approaches of the 21-Zero Japanese fighters at 7:55 a.m. and the 15-Val Dive Bombers at 8:10 a.m. on 7 December 1941

Section 6 Summary and Interpretation

CSH initially prepared an archaeological literature review and field inspection for the Ewa Elementary School Eight (8) Classroom Building Eproject, Honouliuli Ahupua‘a, ‘Ewa District, O‘ahu Island TMK: (1) 9-1-017:002 por., 9-1-017:037 por., and 9-1-101:999 por. (Shideler and Hammatt 2014) that was formally reviewed and accepted by the SHPD in a §6E-8 Historic Preservation Review dated 10 March 2014 (LOG NO.: 2014.00908, DOC NO.: 1403SL08). The pedestrian survey observed no surface historic properties within the Ewa Elementary School Building E project area and thus the subsequent archaeological investigation focused on a program of subsurface trench testing to locate any buried cultural deposits and to facilitate a thorough examination of stratigraphy within the project area.

CSH completed the trench testing fieldwork component of this project during the week of 20 October 2014, specifically including the archaeological excavation and documentation of 12 backhoe trenches within the project area (see Figure 5). This work was carried out by CSH archaeologists Trevor Yucha, B.A., Scott Belluomini, B.A., Layne Krause, B.A., and Richard Stark, Ph.D. under the general supervision of David Shideler, M.A. and Principal Investigator, Hallett Hammatt Ph.D. In addition to a previous 100% coverage pedestrian survey of open spaces, fieldwork included subsurface testing of 12 backhoe trenches. The trench excavations were observed for any cultural material, mapped, and photo documented. In general, stratigraphic sequence within the trenches included shallow sandy loam fills overlaying deep (+2 m), and a dense, sometimes disturbed natural clay-loam alluvium.

No significant cultural findings were made in the initial pedestrian survey. In the subsequent 12 backhoe trenches a mere nine artifacts were collected. Artifacts recovered, although infrequent, typically correlate with expectations for the material culture surrounding human behaviors on a school playground. Potential behavioral interpretations for the artifacts observed relate to play (marble and nails), school construction and ongoing renovation (nails, rebar and cut-stone), field or garden/greenhouse collections intended for the science classroom (blue glass jar fragment), and school feasting (a spoon and plate fragments with burn marks). The most anomalous artifact in the Ewa School assemblage observed for this project is the bullet recovered from T-9. That the dimensions and form of this artifact are nearly identical to the Japanese ballistics used in the 7 December 1941 attack on O‘ahu, the bullet is deemed here as the most significant of the recovered artifacts, although its identification as Japanese World War II era origin remains uncertain.

Portions of the ‘Ewa Sugar Plantation Villages Historic District (SIHP # 50-80-12-9786) are immediately to the south and west of the current project area (Hawai‘i Register of Historic Places 1996); however, the archaeological findings for this project are so limited in scope that CSH foresees no probable destructive impacts on the historic property. The results of the current archaeological fieldwork do provide further documentation for this previously identified site and do indicate Ewa School and probably other portions of the ‘Ewa Villages Historic District were subjected to Japanese machine gun strafing on the morning of 7 December 1941. Although the project area falls immediately adjacent to previously designated SIHP # 50-80-12-9786, archaeological findings indicate the proposed project will affect no new historic property.

Section 7 Project Effect and Mitigation Recommendations

7.1 Project Effect

As no new historic properties were identified within the current project area, the proposed Ewa School improvement and expansion project will not, in our estimation, adversely impact any historic properties. This “no historic properties affected” designation does take into consideration the fact that the project area borders, to the north and east, ‘Ewa Sugar Plantation Villages Historic District (SIHP # 50-80-12-9786) (Hawai‘i Register of Historic Places 1996).

7.2 Mitigation Recommendations

No new historic properties were identified within the current project area, due to the following facts: 1) no discrete cultural layers were observed, 2) all of the artifacts collected represent isolates and possibly were secondarily deposited, and 3) no archaeological features were observed. That said, this work is significant in that it does enhance our understanding of the immediately adjacent ‘Ewa Sugar Plantation Villages Historic District (See Figure 25) (SIHP # 50-80-12-9786) (Hawai‘i Register of Historic Places 1996).

Because no historic properties were identified within the project area during the AIS, this investigation is termed an archaeological assessment, per HAR §13-13-284-5(b)(5)(A); “Results of the survey shall be reported either through an archaeological assessment, if no sites were found, or an archaeological survey report which meets the minimum standards set forth in chapter 13-276.”

With very few and isolated historic artifacts and no new historic properties found within the current project area, the mitigation recommendations must relate to the overall context of the project area only as adjacent to the ‘Ewa Sugar Plantation Villages Historic District (SIHP # 50-80-12-9786). With no discrete cultural layers, no human nor any faunal remains, no archaeological features, nor in situ artifact suites, CSH is inclined to recommend no further archaeological work for this Ewa School project.

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Appendix A SHPD Correspondence

NEIL ABERCROMBIE
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LAND
STATE PARKS

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

March 10, 2014

Mr. David W. Shideler
Cultural Surveys Hawai‘i, Inc.
P.O. Box 1114
Kailua, HI 96734

LOG NO: 2014.00908
DOC NO: 1403SL08
Archaeology, Architecture

Dear Mr. Shideler:

SUBJECT: **Chapter 6E-8 Historic Preservation Review–**
Archaeological Literature Review and Field Inspection for the ‘Ewa Elementary School Eight (8) Classroom Building Project, Ewa Elementary School, 91-1280 Renton Road Honouliuli Ahupua‘a, ‘Ewa District, O‘ahu Island
TMK: (1) 9-1-017:002 por., 037 por., 9-1-101:999 por.

Thank you for the opportunity to review this revised draft report titled *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 por., 9-1-017:037 por., and 9-1-101:999 por.* (Shideler and Hammatt, February 2014). We received this submittal on February 28, 2014.

This literature review and field inspection was undertaken on behalf of Belt Collins Hawaii in support of their preparation of an environmental assessment (EA) for the project. The project involves adding a building and installation of underground utilities within the school site as well as connecting to utilities extending into the Pipeline Street right of way to Bryan Street and Ala Nui Mauka Street. The project area consists of about 3.6 acres.

Our records indicate the project area is located within the Ewa Villages Historic District (SIHP 50-80-12-9786) which was added to the Hawaii State Register of Historic Places on February 24, 1996. No newly- or previously-identified archaeological historic properties were identified during the field inspection. However, the report notes low potential exists for subsurface archaeological deposits. In addition, the school has been located on this property since the early 1920s and potential exists that some of the buildings and/or other architectural features (e.g., Abraham Lincoln statute) may be eligible for listing on the Hawaii Register of Historic Places.

The report provides an adequate discussion of the natural environs, cultural and historic background, previous archaeological studies, and the field inspection findings. It also states that early consultation with SHPD is recommended concerning the potential impact of future development on possible subsurface historic properties, as well architectural historic properties. We concur with these recommendations.

The revisions adequately address the issues raised in our earlier correspondence (December 30, 2013; Log No. 2013.1583, Doc. No. 1312SL30). Although this document does not fulfill the requirements of an archaeological inventory survey as specified in Hawaii Administrative Rules (HAR) §13-276, it serves to facilitate project planning and supports the historic preservation review process. The report is accepted as final, pursuant to HAR 13-284-5(b)(2). Please send one hardcopy of the document, clearly marked FINAL, along with a copy of this review letter and a text-searchable PDF version on CD to the Kapolei SHPD office, attention SHPD Library. Please contact Michael J. Gushard at (808) 692-8026 for any questions regarding architectural resources. Please contact me at (808) 692-8019 if you have any questions or concerns regarding this letter.

Aloha,

Susan A. Lebo

Susan A. Lebo, PhD
Oahu Lead Archaeologist

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KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

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

June 13, 2014

Department of Planning and Permitting
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

LOG NO: 2014.01495,
2014.00102
DOC NO: 1404LS20
Archaeology, Architecture

Dear Mr. or Ms.:

SUBJECT: **Chapter 6E-8 Historic Preservation Review – LOG NO. REVISED**
Building Permit Application, A2014-01-0221
91-1280 Renton Rd., 'Ewa – New one-story, 8-room classroom building (Building E)
Honouliuli Ahupua'a, 'Ewa District, Island of O'ahu
TMK: (1) 9-1-017:002

Thank you for the opportunity to review this permit application for the proposed construction of a new one-story, eight classroom building located at 'Ewa Elementary School at 91-1280 Renton Road between Fernandez Village and Renton Village. We received this submittal on April 3, 2014. This property totals 347,783 square feet (7.984 acres). The proposed building will be located in the western corner of the school grounds near Pipeline Street. Ground disturbance will involve demolition, removal, and disposal of an existing trash enclosure, chain link fence, fence posts, concrete slab, play equipment, and deeply rooted trees, excavation of up to 6 feet below the existing grade for the concrete footings for the new building, and excavation of new underground utilities that will connect to existing utilities within the school site as well as to utilities adjacent to the school site. The new building will be approximately 3,202 square feet. The footprint for the new building will encompass the entire footprint of the existing areas removed, as well as landscaped areas within a 72' x 228' area.

Our records indicate that 'Ewa Elementary School falls within the Ewa Villages Historic District designated as SIHP 50-80-12-9786 which was placed on the Hawaii State Register of Historic Places on February 24, 1996. It is also adjacent to the OR&L railroad right-of-way which is designated as SIHP 50-80-12-9714 (Kennedy 1988). This portion was placed on the National Register of Historic Places on December 1, 1975. In addition, 'Ewa Elementary School was originally constructed in the plantation style in 1921, but was rebuilt in 1954. International Style additions were constructed in 1964 throughout the elementary school's campus. The school is eligible for the State and National Registers of Historic Places under Criterion A as a longstanding community focal point.

Our records also indicate that an *Archaeological Literature Review and Field Inspection for the 'Ewa Elementary School Eight (8) Classroom Building Project* report (Shideler 2014) recommends early consultation with SHPD regarding historic property review recommendations (e.g., subsurface testing, archaeological monitoring). SHPD concurred with this recommendation (March 10, 2014; Log No. 2014.00908, Doc. No. 1403SL08).

Due to the potential for historic properties to be affected by the proposed ground-disturbing work, we request an **archaeological inventory survey involving subsurface testing be conducted** to determine if archaeological historic properties are present within the proposed project area and, if so, to determine an appropriate course of mitigation for this property. We also request that an **Architectural Reconnaissance Level Inventory be completed**

City and County of Honolulu
Department of Planning & Permitting
June 13, 2014
Page 2

of the school buildings and structures to determine the potential effects of this project on the school. We look forward to the opportunity to review and accept these reports prior to commencement of the project.

Please contact Michael Gushard at (808) 692-8028 or at Michael.J.Gushard@hawaii.gov for any questions regarding architectural resources. Please contact me at (808) 692-8019 or at Susan.A.Lebo@hawaii.gov if you have any questions regarding archaeological resources or this letter.

Aloha,

Susan A. Lebo

Susan A. Lebo, PhD
Oahu Lead Archaeologist

cc: Cliff Chu cliff@benwooarchitects.com
John C.H. Chung jchung@bchdesign.com

Appendix B ‘Ewa Sugar Plantation Historic District Boundary (SIHP # 50-80-12-9786)

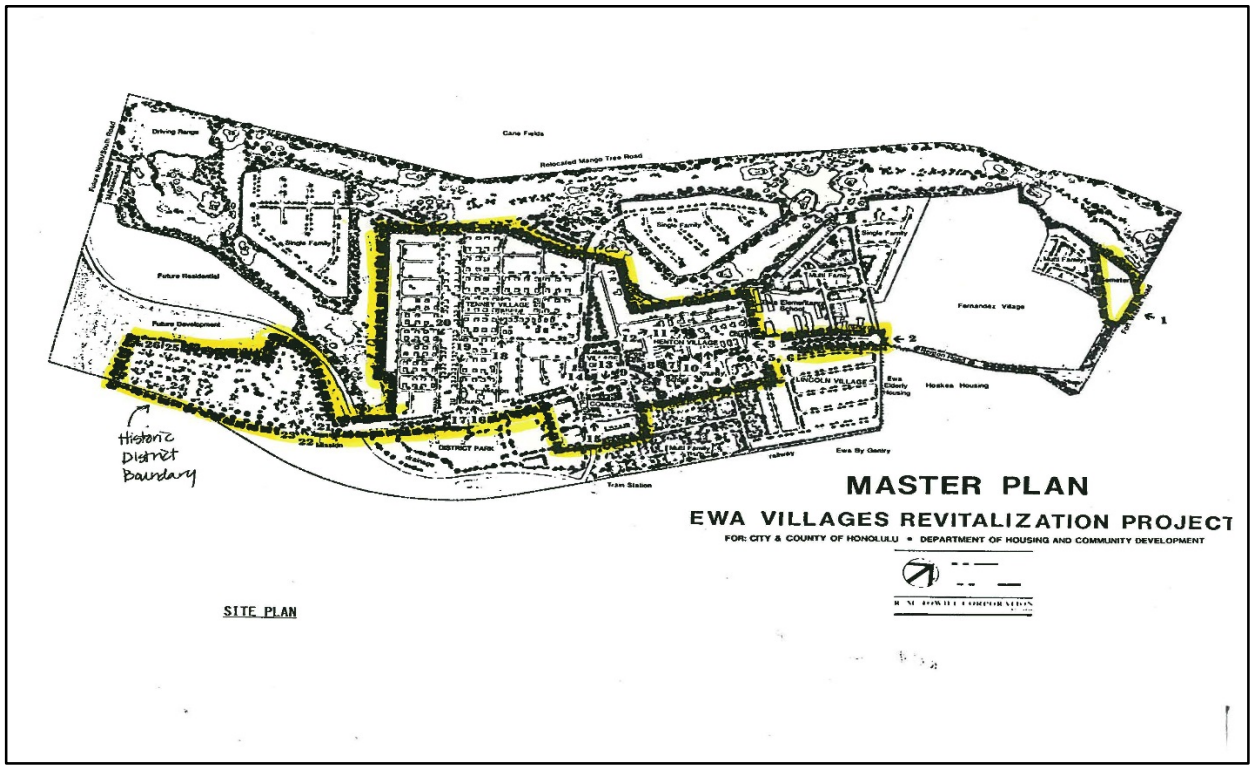

Figure 71. Map from Moy 1995:25, showing the boundary of the ‘Ewa Sugar Plantation Historic District (SIHP # 50-80-12-9786).

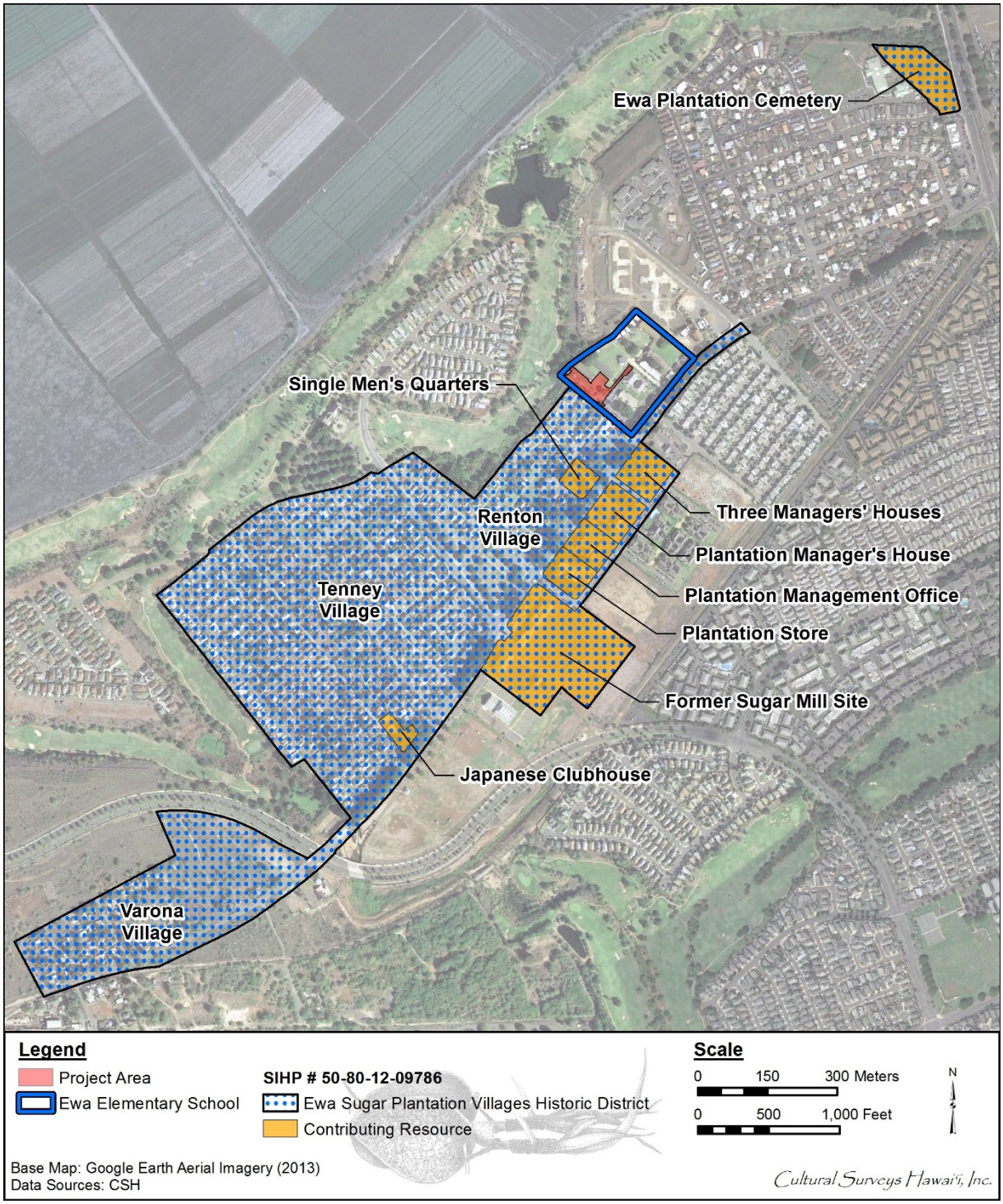

Figure 72. Map showing the project area in relation to SIHP # 50-80-12-09786

Cultural Impact Assessment
For the ʻEwa Elementary School
Eight (8) Classroom Building Project,
Honouliuli Ahupuaʻa, ʻEwa District, Oʻahu 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 Hawaiʻi, Inc.

Kailua, Hawaiʻi

(Job Code: HONOULIULI 76)

December 2013

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Prefatory Remarks on Language and Style

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	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.
Project Acreage	Approximately 9,120 square feet (ft^2)
Document Purpose	The Project requires compliance with the State of Hawai‘i environmental review process (Hawai‘i Revised Statutes [HRS] Chapter 343), which requires consideration of a proposed project’s effect on cultural practices and resources. 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 *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 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	Background research on the Project area and surrounding area of Honouliuli indicated the following results: 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 (used to make kapa clothing) and wiliwili. The area was also known for a rare kalo called Kāī o ‘Ewa which was grown in marshy locations. 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. 3. John Papa ‘Ī‘ī 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‘ī 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 (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. 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 Waikīkī captures the same essence as the sun sets behind Pu‘uokapolei.
Results of Community Consultation	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: 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 (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. 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.
Recommendations	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: 1. CSH recommends that, should historic, cultural or burial sites or artifacts be identified during ground disturbance, the personnel involved with construction activites 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 descendents be granted access rights to iwi kupuna to conduct traditional and customary burial practices on-site.

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Section 1 Introduction

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.

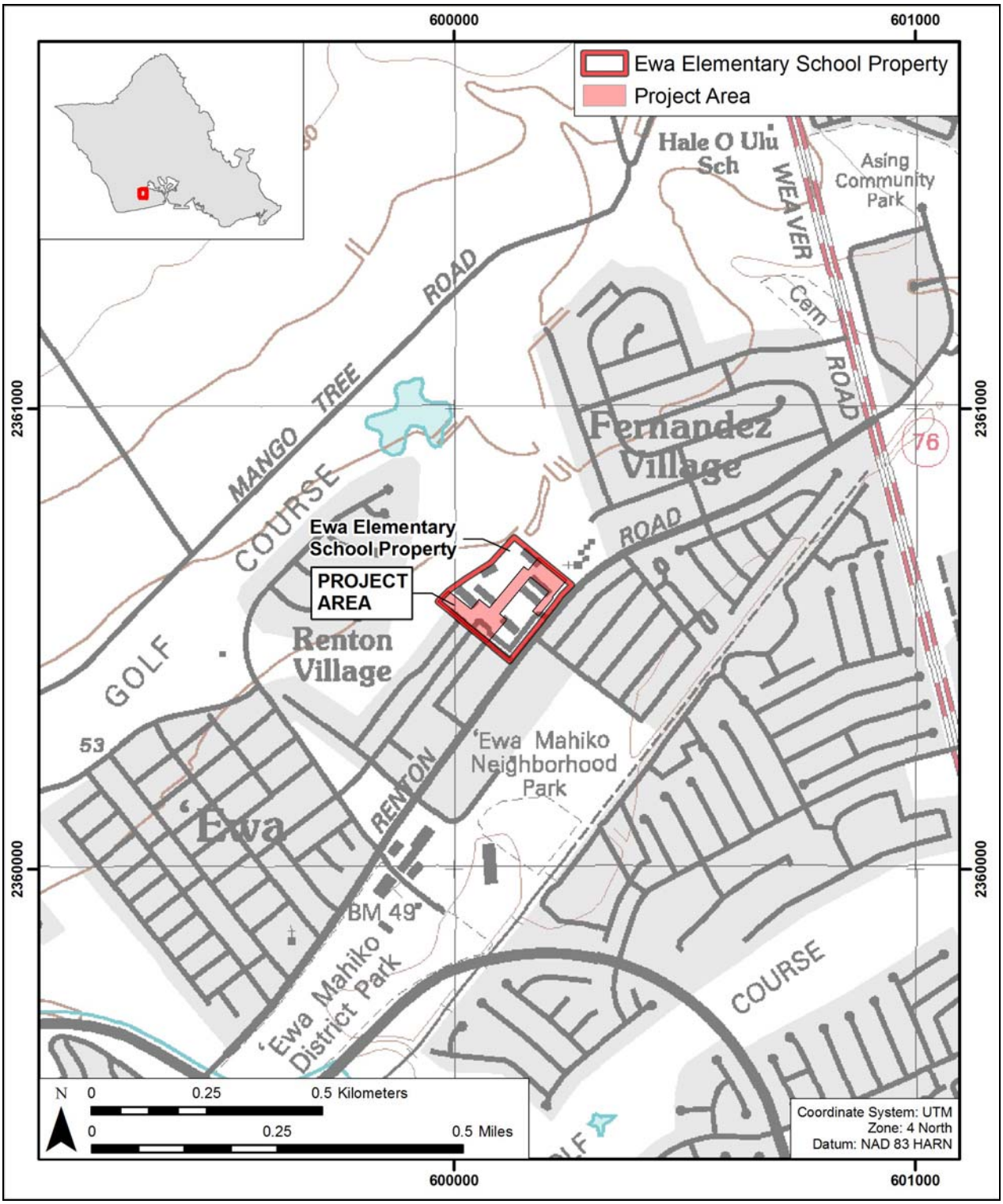

Figure 1. Portion of U.S. Geological Survey 7.5-Minute Series Topographic Map, ‘Ewa Quadrangle (1998), showing the location of the Project area

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

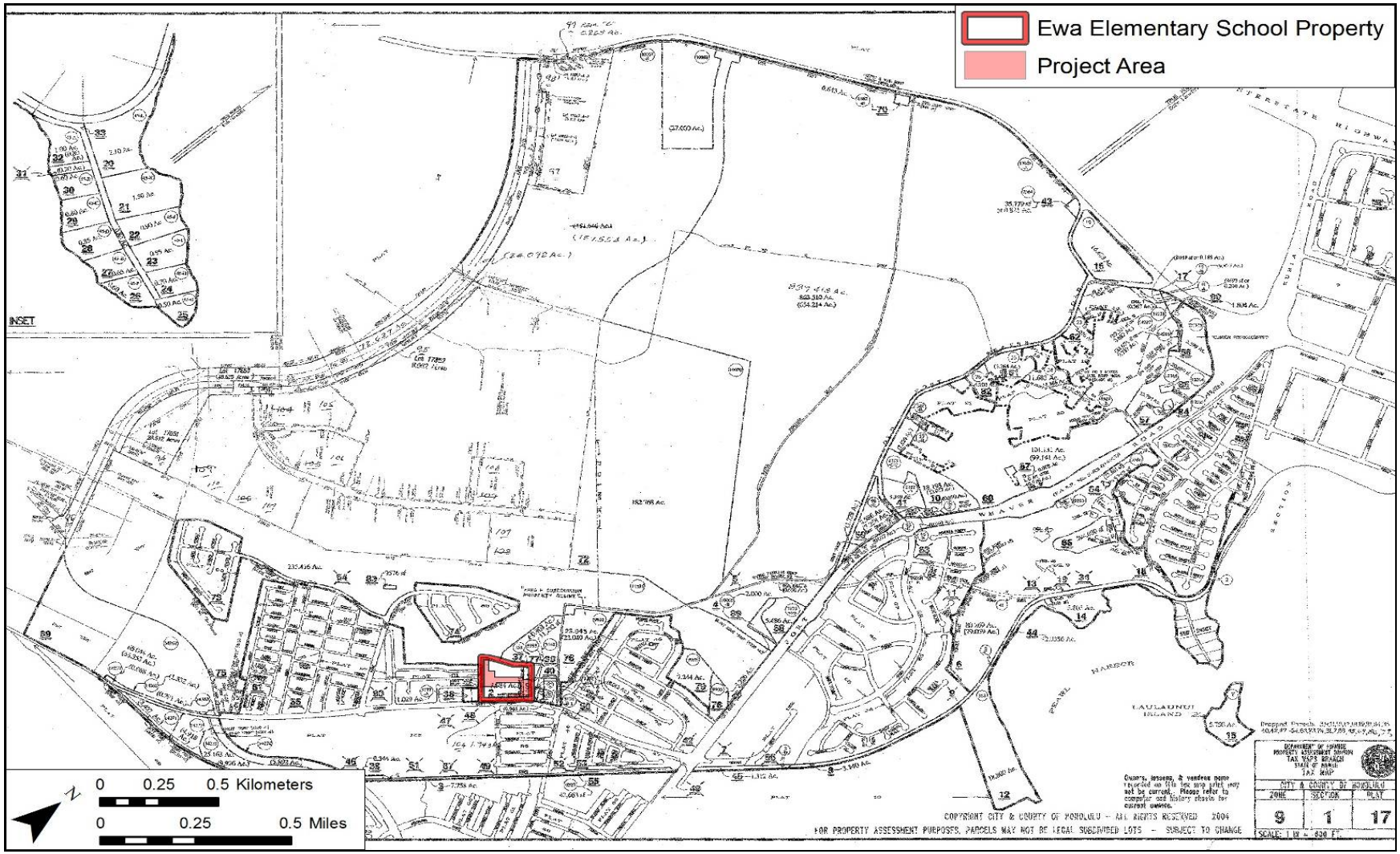

Figure 3. TMK [1] 9-1-017:002 of the Project area (Hawai‘i Tax Map Key Service 2012)

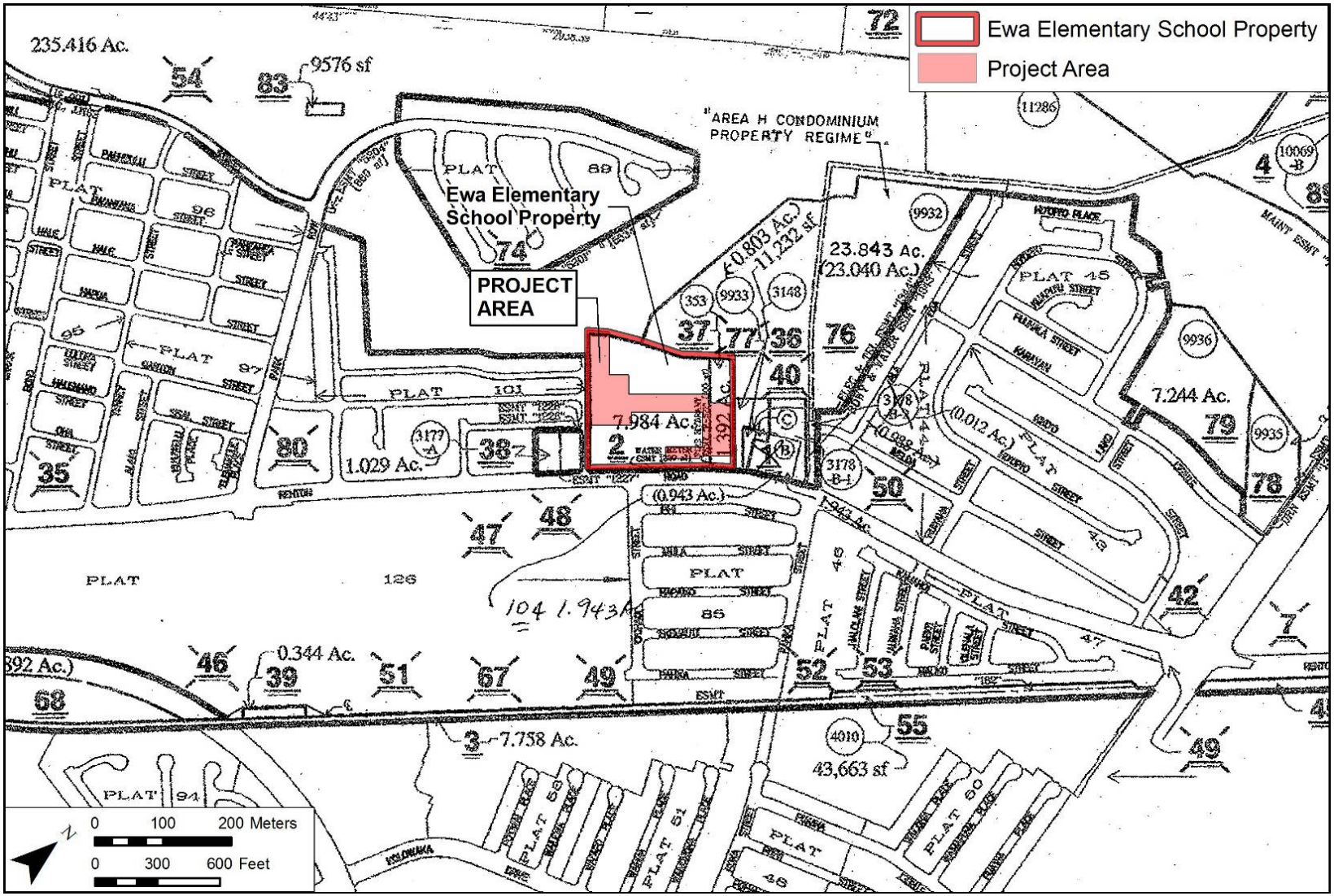

Figure 4. Close up of TMK [1] 9-1-017:002 with Project area

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 perecent 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

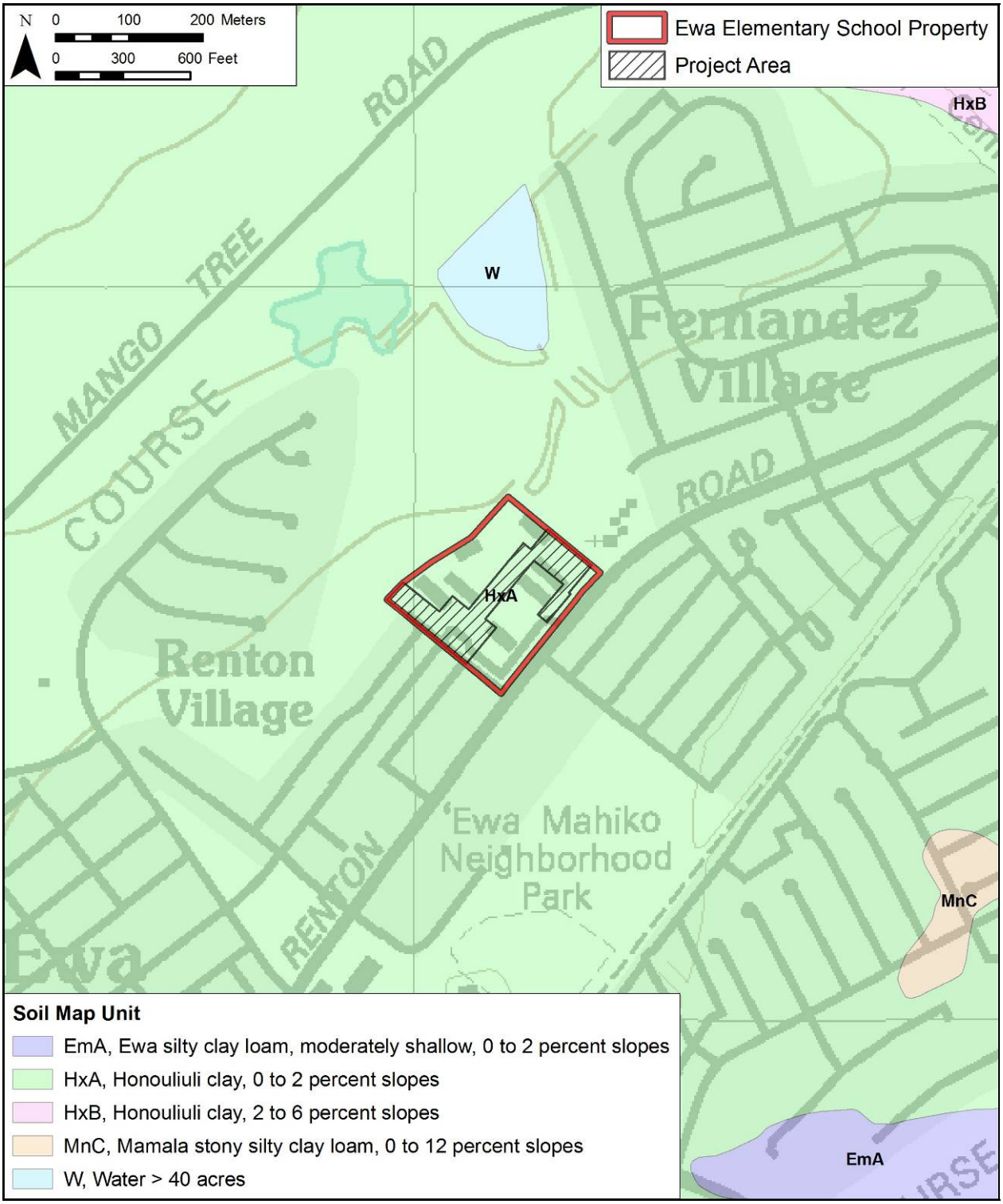

Figure 5. Overlay of Soil Survey of the State of Hawai‘i (Foote et al. 1972) showing sediment types within the Project area (base map U.S. Goelologcial Survey 7.5-Minute Series Topographic Map (1998), ‘Ewa Quadrangle)

Section 2 Methods

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) 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.

Section 3 Traditional Background

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‘āinana 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‘ī 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‘ī 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

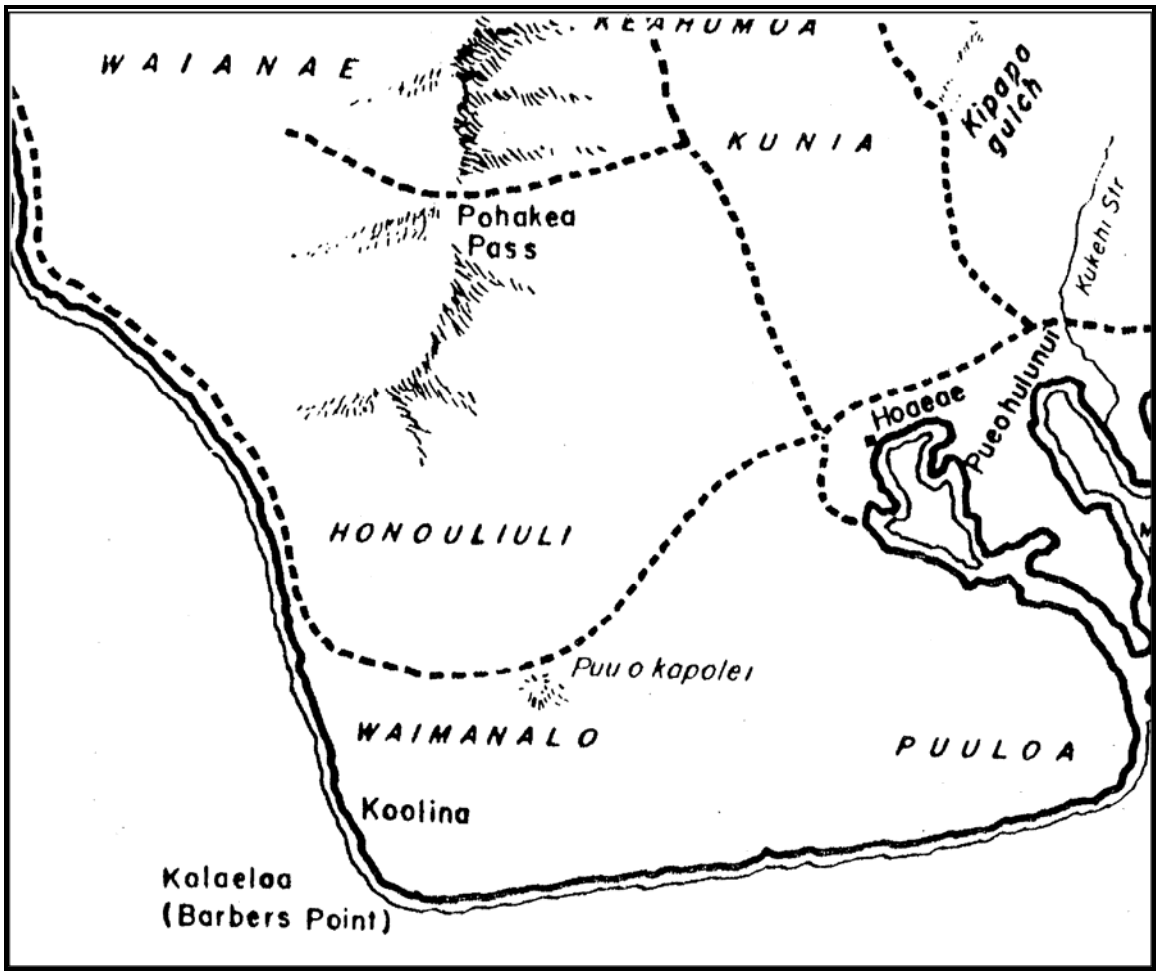

Figure 6. Map by Paul Rockwood showing trails of Leeward O‘ahu ca. 1810, as described by John Papa ‘Ī‘ī (1959:96)

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 Kākuhihewa.

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 Lepeamoa”, the chicken-girl of Pālama. In this legend, Honouliuli is the name of the husband of the chiefess Kapālama and grandfather of Lepeamoa (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

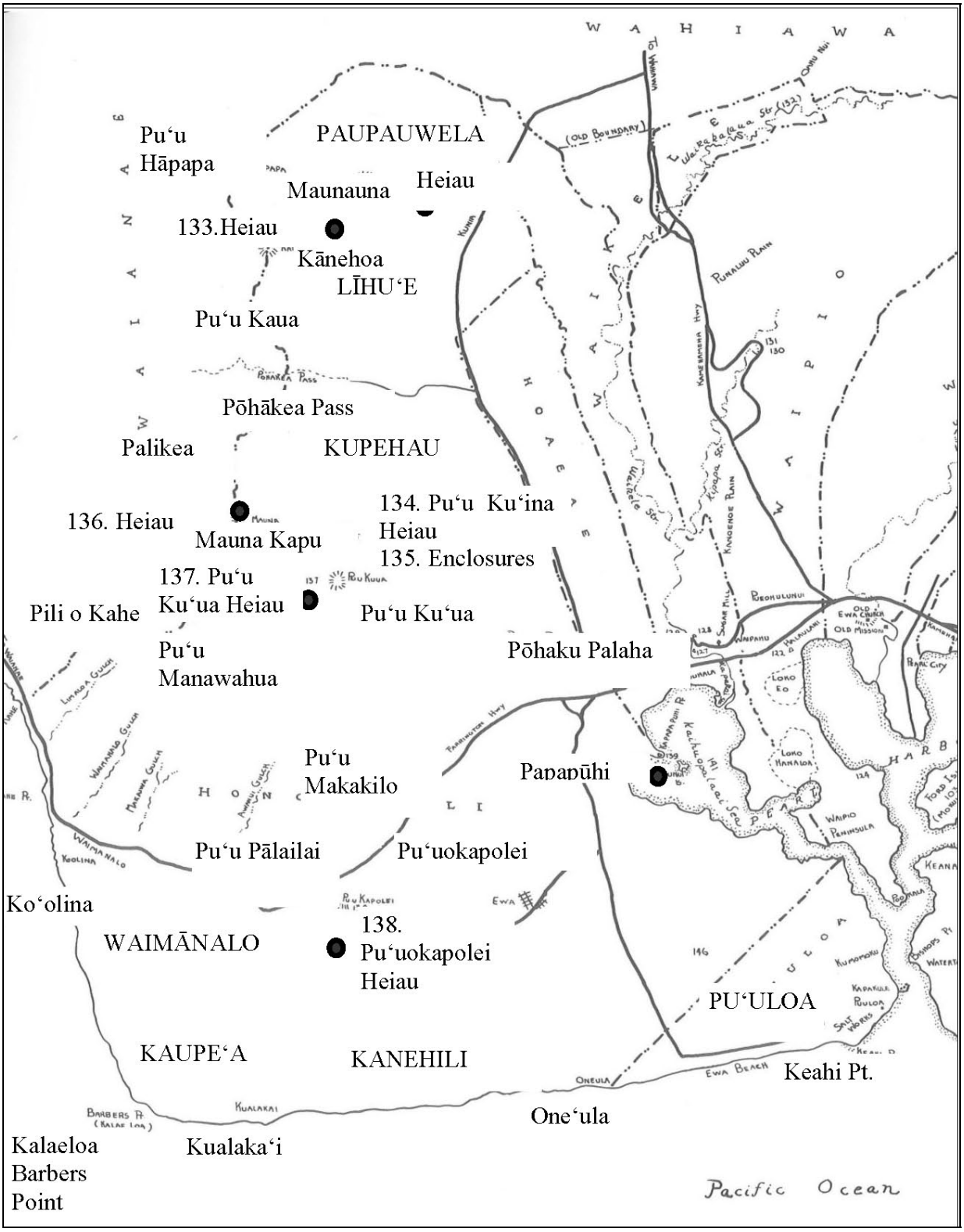

Figure 7. Place names of Honouliuli (adapted from Sterling and Summers 1978)

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

(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‘o at Maunauna

Moses Manu in recounting the legend of Keaomelemele makes a reference to a mo‘o (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	*At Manini, at Hanini,*
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 hilinai 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	*The god of Lono, of Makalii*
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 Līhu‘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)

Section 4 Historical Background

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 Kāī 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 kāī-koi o ‘Ewa*. He has eaten the Kāī-koi taro of ‘Ewa.
>
> Kāī 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 Kāī 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 Waiau, 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 Kapapapūhi Point, adjacent to Pearl Harbor).

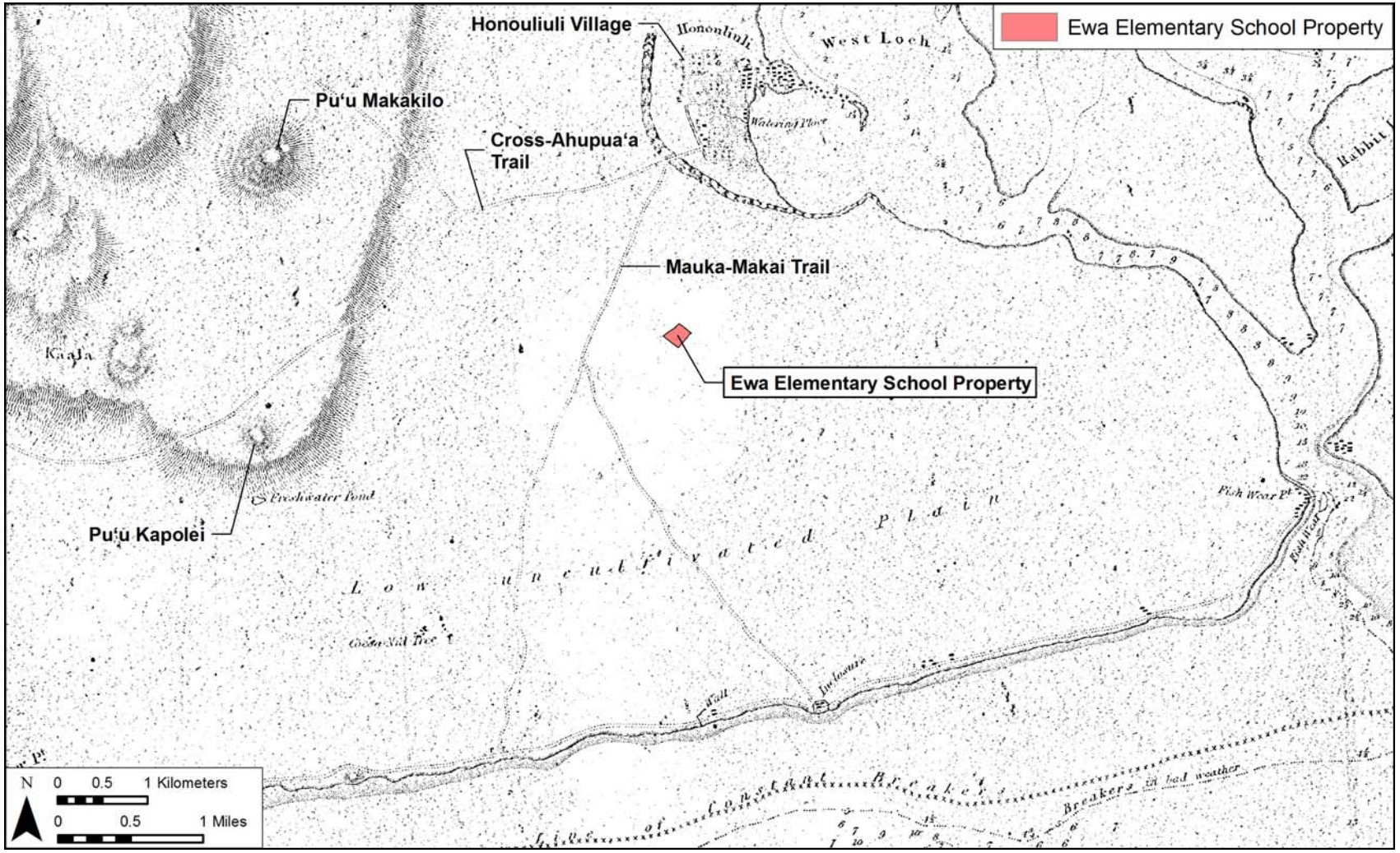

Figure 8. Portion of 1825 Map of the South Coast of Woahoo (O‘ahu) and Honolulu by Lt. C.R. Malden from the British frigate the Blonde, showing the approximate location of the Project area and features discussed in the text (Hawai‘i State Land Suvey Division, Registered Map 640)

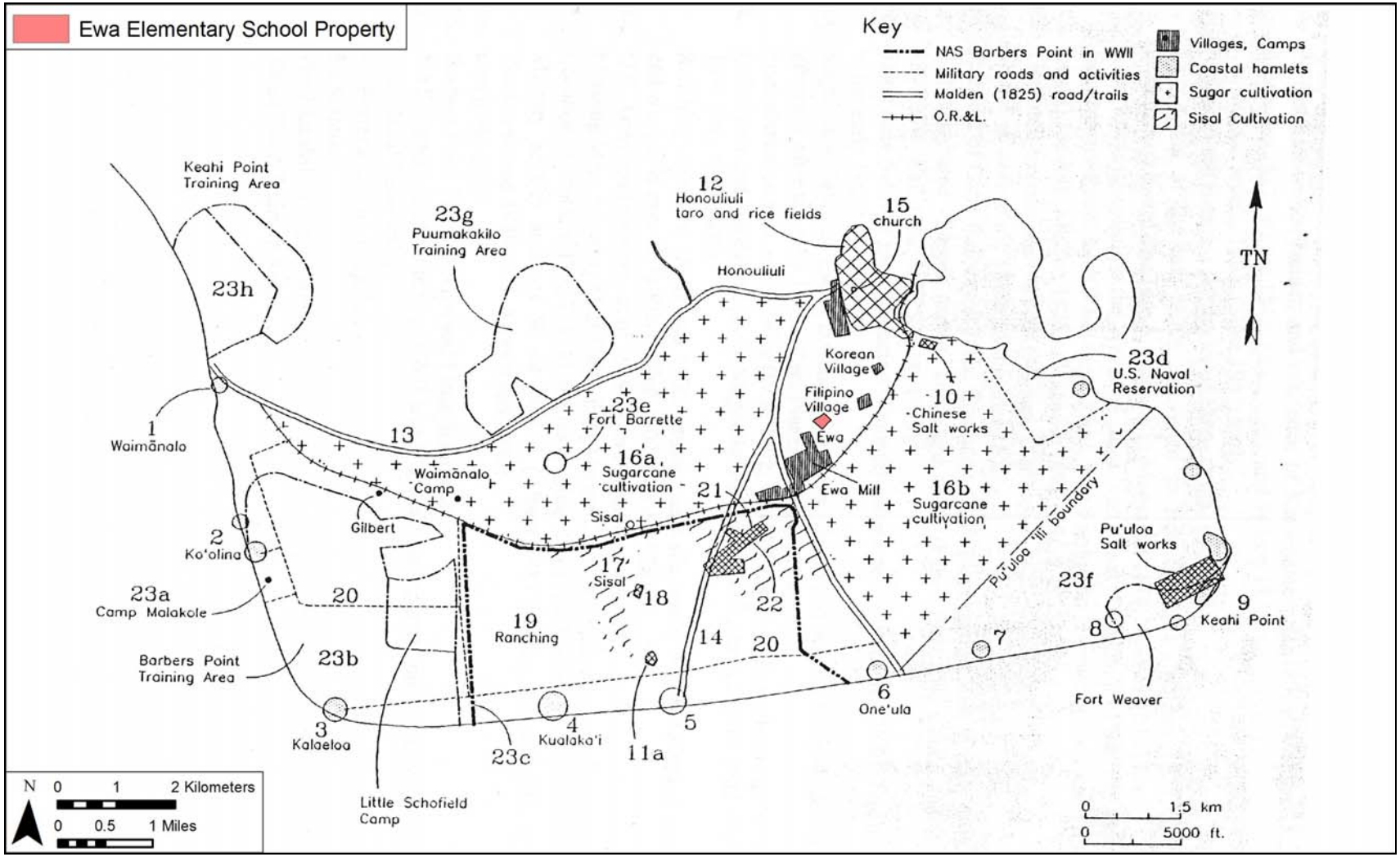

Figure 9. Map by Tuggle and Tomonari-Tuggle (1997:32), compiled from historic maps, showing features of the ‘Ewa Plain from 1825 to World War II (see following page for key on places cited)

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 Kapapapuhi Point (Hō‘ae‘ae Point on modern maps). The 1825 Malden map documents substantial settlement at the “Honouliuli Taro Lands” west of Kapapapūhi 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 Honoulili 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 Hanaroora [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‘ahikuni 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).

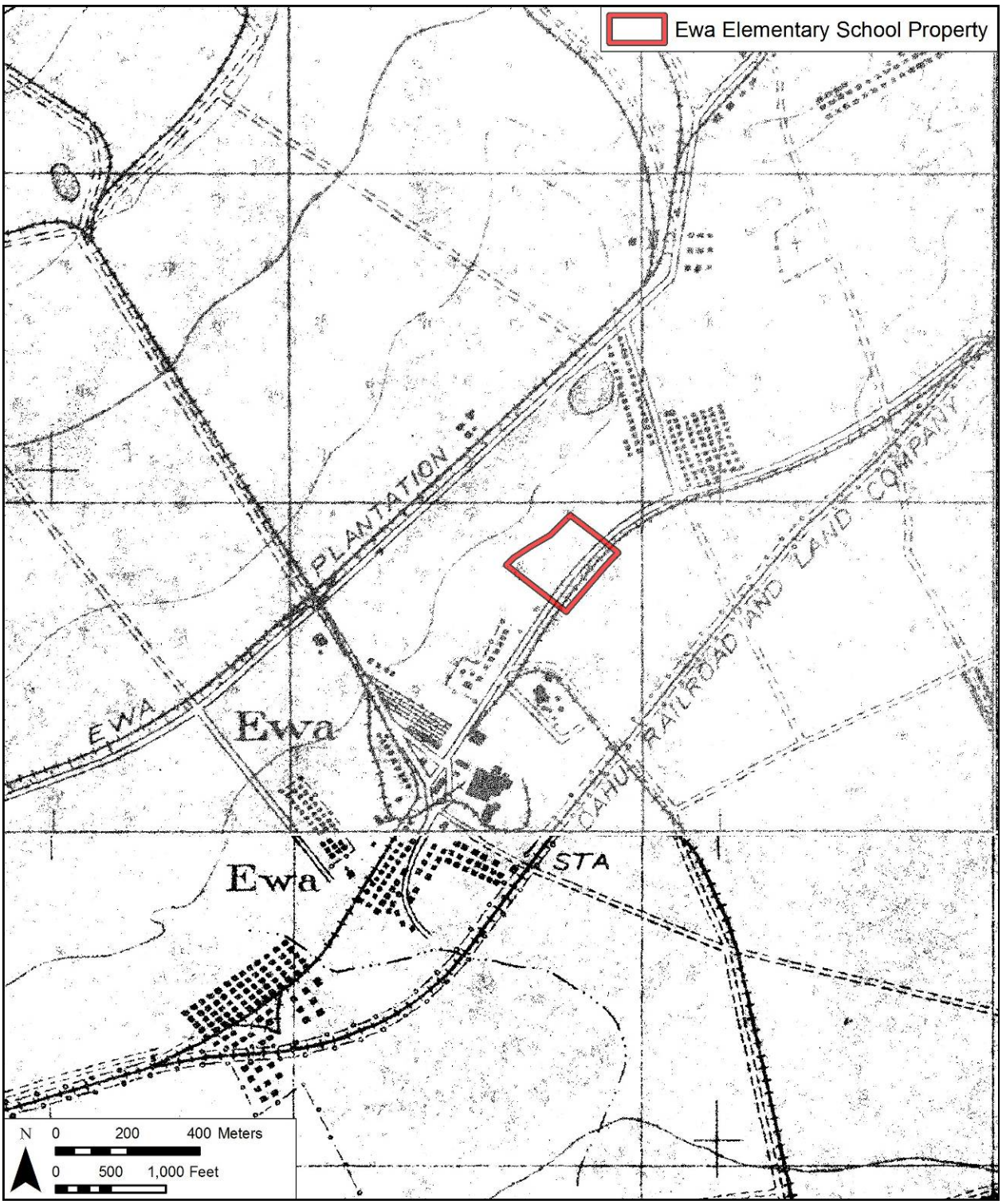

Figure 10. Portion of a 1919 U.S. War Department topographic map, ʻEwa Quadrangle, with the location of the Project area.

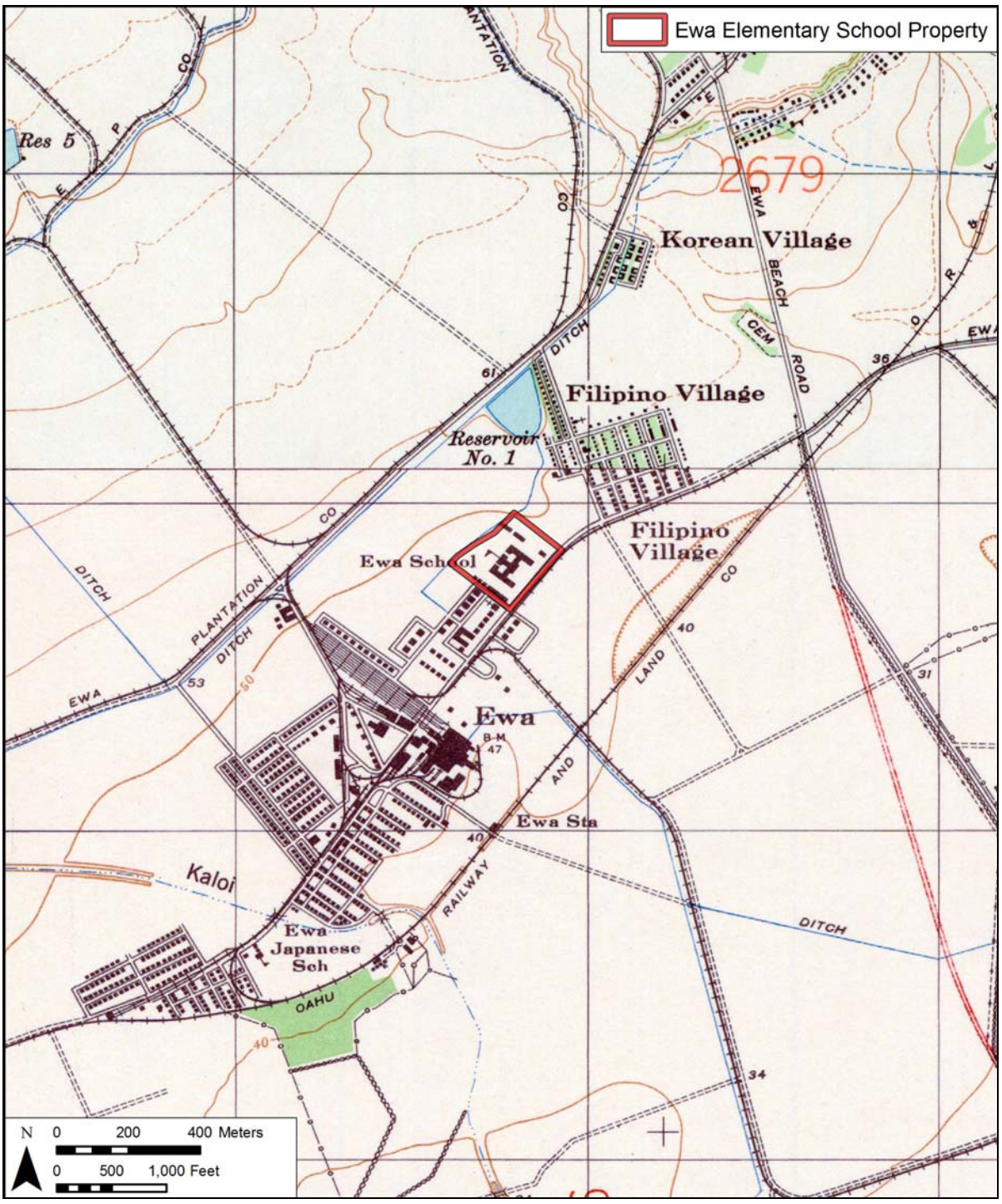

Figure 11. A 1933-1935 U.S. War Department topographic map, ‘Ewa Quadrangle, showing the Project area now called ‘Ewa Elementary School; railroad tracks are still visible within the vicinity of the Project area; development south of the Project area is evident

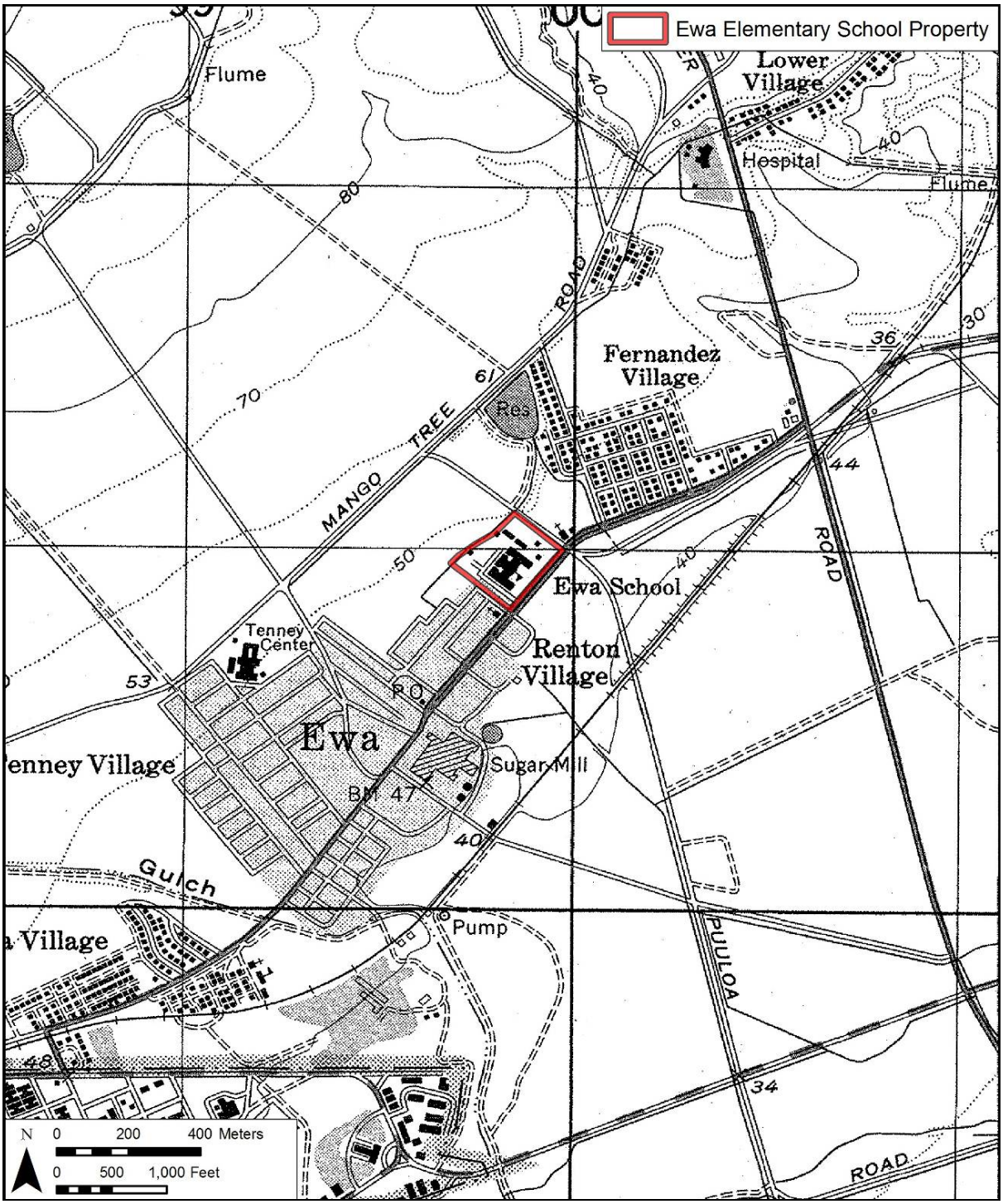

Figure 12. A portion of the 1953 U.S. Army Map Service topographic map, ‘Ewa Quadrangle, with location of Project area indicated; note there are less railroad tracks and more development south of the Project area.

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 ʻEwa plains for water. The well, drilled to a depth of 240 ft near Campbell's home in ʻEwa, 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 Kualakaʻi Beach (now Nimitz Beach).

Into the early twentieth century, some Hawaiian families continued to live in Honouliuli and preserve the traditional lifestyle, including at the fishing village of Kualakaʻi. 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 Kualakaʻi ʻ*ohana* (family) met us to help carry the ʻ*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 ʻ*ukana* contained fresh lobsters, *limu* (seaweed), fish and *iʻa maloʻo* (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 ʻEwa 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 Oʻahu 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 ʻEwa 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 Oʻahu 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 Waiʻanae 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 ʻEwa 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 Waiʻanae 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 Kaloʻi (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).

The spring was located along the upper slopes of the southern face of Kaloʻi Gulch. A second account is given of the discovery of spring water in an area over the ridge on the north side of Kaloʻi 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

> 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 Laulualei to the wharves in West Loch at Peal 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

> 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 ʻEwa Mahiko District Park.

4.3.6 ʻEwa Elementary School

ʻEwa School's official website distinguishes it as one of the oldest schools in the Leeward District of Oʻahu, serving the Ewa Plantation community dating back to 1882. Until the early 1990s, the majority of ʻEwa 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).

In 1921, a mandated course on the sugar industry implemented at ʻEwa School "aroused keen interest" in proposing a similar course for other public schools throughout Hawaiʻi 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 ʻEwa School's course in growing sugar, and the expansion of the course to other islands was especially endoursed 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).

Section 5 Community Consultation

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

Name	Affiliation, Background	Comments
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	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 likehood 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.”
Keala, Jane	Ahahui Sivila Hawai’i O Kapolei HCC	Mailed letter and figures 9/21/12. Mailed second letter and figures 11/2/12.
Keli‘ipa‘akaua, Chase and Justin K	Cultural Descendents	Mailed letter and figures 9/21/12. Mailed second letter and figures 11/5/12.
Lacuesta, Celeste	‘Ewa Neighborhood Board	E-mail sent 9/25/12. Emailed second letter and figures 11/5/12.

Name	Affiliation, Background	Comments
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, Nakoa	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	Mailed letter and figures 9/21/12. Mailed second letter and figures 11/2/12. CSH received an e-mail response on 11/3/12: “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 fasting growing region in the island. 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... 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).

Name	Affiliation, Background	Comments
Young, Tin Hu and Helen Kealiiwahineulawe naokola He‘eia Colburn	Pu‘uloa residents; Kawaiahao 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.

Section 6 Interviews

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 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 [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 likehood 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.

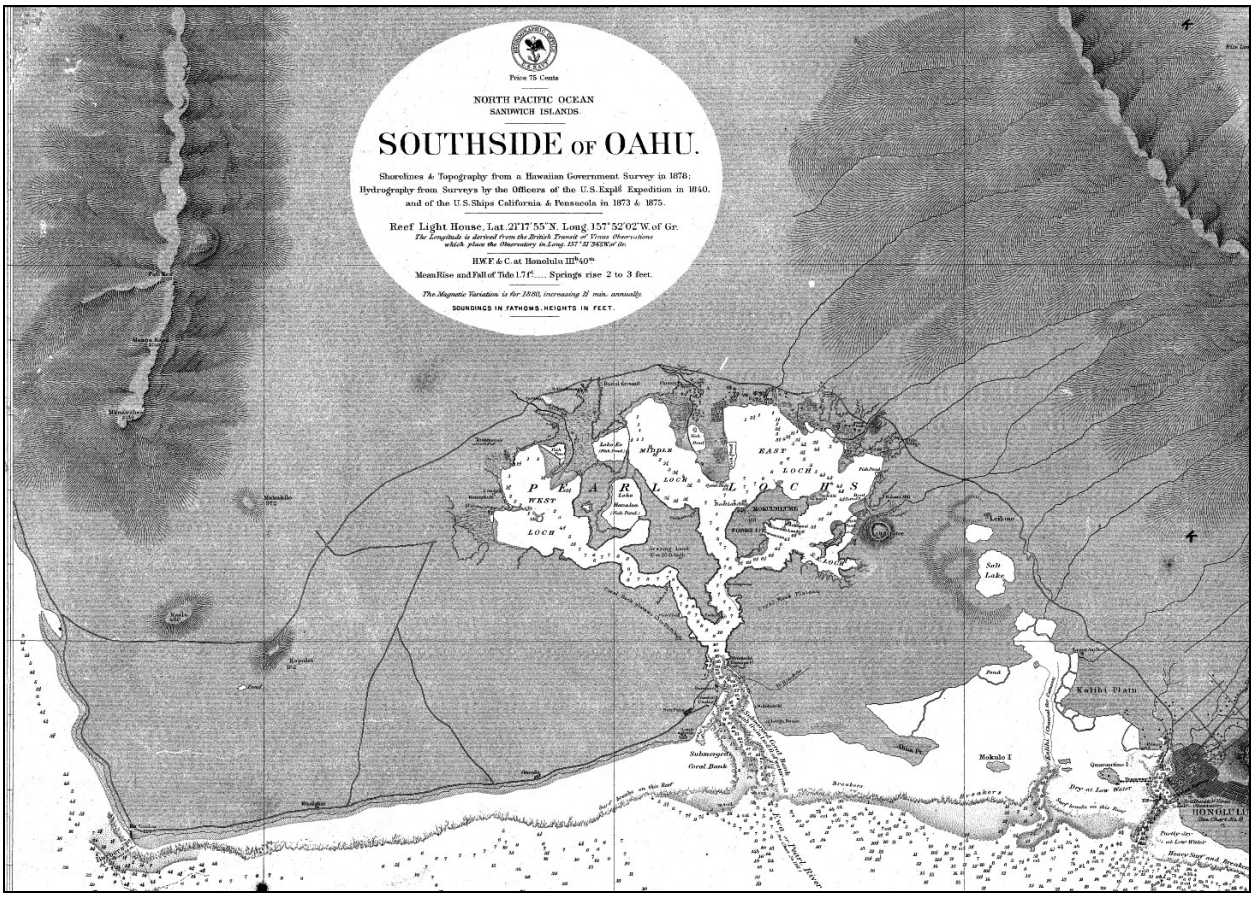

Figure 15. Malden’s map depicting Honouliuli Ahupua‘a (Malden 1825)

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 reminiced 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 leafs 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. Barabara'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 its 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 witht he 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 Platation truch 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 exibits. 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 Hawaian 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 brining 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, plantion electritians, 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

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 Kāī 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

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 Kāī o ‘Ewa which was grown in marshy locations.
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.
3. John Papa ‘Ī‘ī 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‘ī 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 Waikīkī 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 activites 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 descendents be granted access rights to iwi kupuna to conduct traditional and customary burial practices on-site.

Section 9 References Cited

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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	*Colocasia esculenta*	*esculenta*	Wagner et al. 1999
	kalamungay	*Moringa*	*oleifera*	Starr Environmental 2013
koa		*Acacia*	*koa*	Wagner et al. 1999
	lychee	*Litchi*	*chinensis*	Starr Environmental 2013
	ogo	*Gracilaria*	*parvispora*	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 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 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.

1

HONOULIULI 76 CIA

Mahalo nui loa,

Emily Kandagawa
CSH Cultural Researcher

2

Appendix D Authorization and Release Form

Cultural Surveys Hawai‘i, Inc.
Archaeological and Cultural Impact Studies
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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)