

Campbell High School Eight-Classroom Building Draft Environmental Assessment

DOE Job. No. Q00016-06



State of Hawaii
Department
of Education

October 2010



CAMPBELL

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LIST OF ACRONYMS

ADA	Americans with Disabilities Act
ADAAG	Americans with Disabilities Act Accessibility Guidelines
APE	Area of Potential Effect
BMP	Best Management Practices
BWS	Board of Water Supply
CZM	Coastal Zone Management
DCAB	Disability and Communication Access Board
DEM	Department of Emergency Management
DLNR	Department of Land & Natural Resources
DOE	Department of Education
DOH	Department of Health
DP	Development Plan
DPP	Department of Planning and Permitting
EA	Environmental Assessment
EIS	Environmental Impact Statement
EMS	Emergency Medical Services
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact

GPD	gallons per day
HAR	Hawai‘i Administrative Rules
HECO	Hawaiian Electric Company
HPD	Honolulu Police Department
HRS	Hawai‘i Revised Statutes
LUO	Land Use Ordinance
mgd	million gallons per day
MSL	mean sea level
NAAQS	National Ambient Air Quality Standards
NPDES	National Pollutant Discharge Elimination System
OEQC	Office of Environmental Quality Control
OHA	Office of Hawaiian Affairs
OTS	O‘ahu Transit Services
ROH	revised ordinances of Honolulu
SHPD	State Historic Preservation Division
SMA	Special Management Area
TMK	tax map key

INTRODUCTION

Project Summary

Item	Description
Project Name	Campbell High School Eight-Classroom Building, DOE Job. No. 00016-06
Proposing Agency	State of Hawai'i, Department of Education (DOE)
Approving Agency	State of Hawai'i, DOE
Anticipated Determination	Finding of No Significant Impact (FONSI)
Location	91-980 North Road 'Ewa Beach, HI 96706-2798 'Ewa District, O'ahu
Tax Map Key	TMK: 9-1-001:002
Existing Uses	High School
Landowner	State of Hawai'i
Need for Project	The new classroom building is needed to relieve overcrowding at Campbell High School, and to support continued growth in enrollment. Over the past six years, the number of students increased by 42% to 2,639 in the 2009-2010 school year. This is more than 600 students over capacity. Enrollment is projected to continue to grow another 12.8% over the next six years.
Project Description	<p>Construct a new 21,548 square foot, two-story classroom building. During the design phase, the project was increased from an eight-classroom to a 10-classroom facility to better meet the needs of the school. The building will include a language lab, two science classrooms and seven general purpose classrooms, plus teacher planning/collaboration areas and conference rooms. The new building is located at the north end of Campbell High School's existing main grass quadrangle near the middle of the campus, and surrounded by existing one, two and three-story buildings. The site is currently used for school assemblies. An outdoor stage is incorporated into the classroom building's design.</p> <p>The project also includes construction of a new 70-stall parking lot on the west side of the campus next to Buildings I and J. Several existing parking lots will be restriped to create 32 additional parking stalls.</p>
Flood Insurance Rate Map	Zone D, areas with flood hazard undetermined
State Land Use	Urban
Zoning	R-5 residential
Special Management Area (SMA)	Not within SMA

1 PROJECT DESCRIPTION

1.1 INTRODUCTION

The State of Hawai‘i Department of Education is proposing to construct a new eight-classroom building at James Campbell High School, located in ‘Ewa Beach, O‘ahu, Hawai‘i. The school is located at 91-980 North Road in ‘Ewa Beach, O‘ahu, Hawai‘i, and identified as TMK: 9-1-001:002 (Figures 1 and 2).

This Environmental Assessment (EA) has been prepared in accordance with Chapter 343, Hawai‘i Revised Statutes (HRS), Act 241, Session Laws of Hawai‘i (SLH) 1992, and Chapter 200 of Title 11, Department of Health (DOH) Administrative rules, “Environmental Impact Statement Rules.”

1.2 NEED FOR PROJECT

The new classroom building is urgently needed to relieve overcrowding at Campbell High School. Existing classrooms are operating far beyond design capacity due to rapid increases in student enrollment over the last 10 years. The growing enrollment has been the result of rapid urbanization in the ‘Ewa area.

State of Hawai‘i Department of Education (DOE) statistics show that from the 2003-2004 school year to the 2009-2010 school year, student enrollment at Campbell High School increased by 785 students, a 42% increase in six years. During the 2009-2010 school year, school enrollment was 2,638 students, 617 students over capacity. At the beginning of the 2010-2011 year, school officials estimated enrollment at 2,700 students. According to DOE projections, over the next six years, enrollment will grow by another 12.8%. (Department of Education, 2010).

Other Leeward Complex high schools have also experienced growth in enrollment. Over the past six years, Kapolei High School has experienced a 12% increase and is expected to increase another 4.5% over the next six years. Waipahu High School experienced a 5.1% increase over the last six years, and enrollment is expected to grow another 2% in the next six years.

The tremendous growth has resulted in overcrowded classrooms and other supporting facilities, staff shortages, and an overall reduction in the quality of the educational experience for students. Without the new classrooms, the overcrowded conditions will worsen as student enrollment continues to grow.

As a long-term solution, the DOE is planning construction of a new high school to serve the East Kapolei and ‘Ewa areas. A new high school will alleviate overcrowding at existing schools serving this growing region. Until the new high school can be planned, designed and constructed, the proposed project will provide relief and desperately needed classroom space.

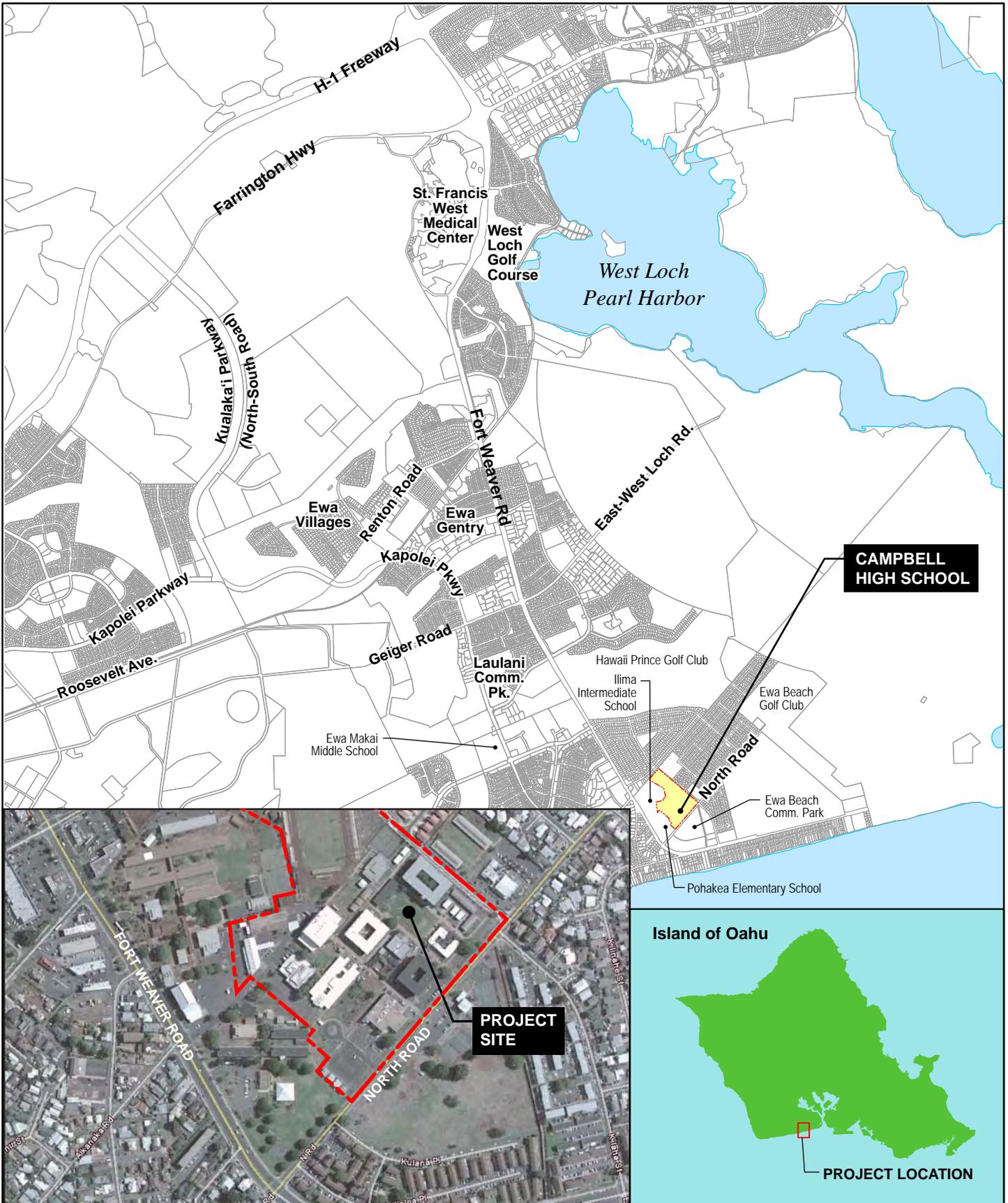
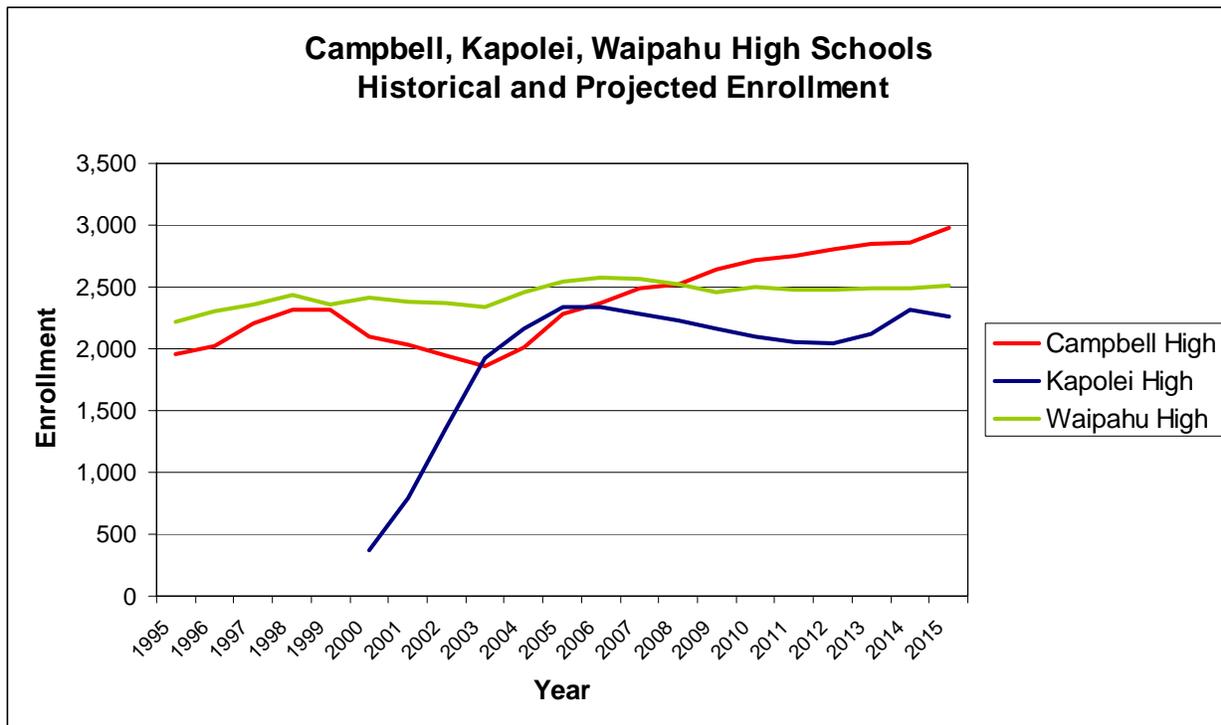


Figure 1
PROJECT LOCATION

Campbell High School Eight Classroom Building,
Ewa Beach, Oahu, Hawaii



Source: Department of Education, 2010

1.3 POSSIBLE ENVIRONMENTAL PERMITS AND APPROVALS

The following is a summary of environmental approvals and consultations that may be required for the proposed action. Chapter 4 includes a more detailed discussion of the project’s consistency with federal, State and local land use plans, policies and controls.

Table 1-1: Possible Environmental Permits and Approvals

Approval/Consultation	Agency
State of Hawai‘i	
Chapter 343 Hawai‘i Revised Statutes <i>(Environmental Assessment)</i>	Office of Environmental Quality Control
HRS Chapter 6E review <i>(Historic)</i>	Department of Land and Natural Resources, State Historic Preservation Division
Community noise permit and noise variance	Department of Health
Construction plan approval	Department of Health
Construction plans approval	Disability Communication Access Board

Approval/Consultation	Agency
City and County of Honolulu	
Waiver of building height requirements for R-5 zoned Residential District (LUO Section 21-3.70-1(c)(1))	Department of Planning & Permitting
Construction, grading, and trenching permits	Department of Planning & Permitting
Construction plan approval	Department of Planning & Permitting Department of Design and Construction Department of Environmental Services

2 PROPOSED ACTION AND ALTERNATIVES CONSIDERED

2.1 PROPOSED ACTION

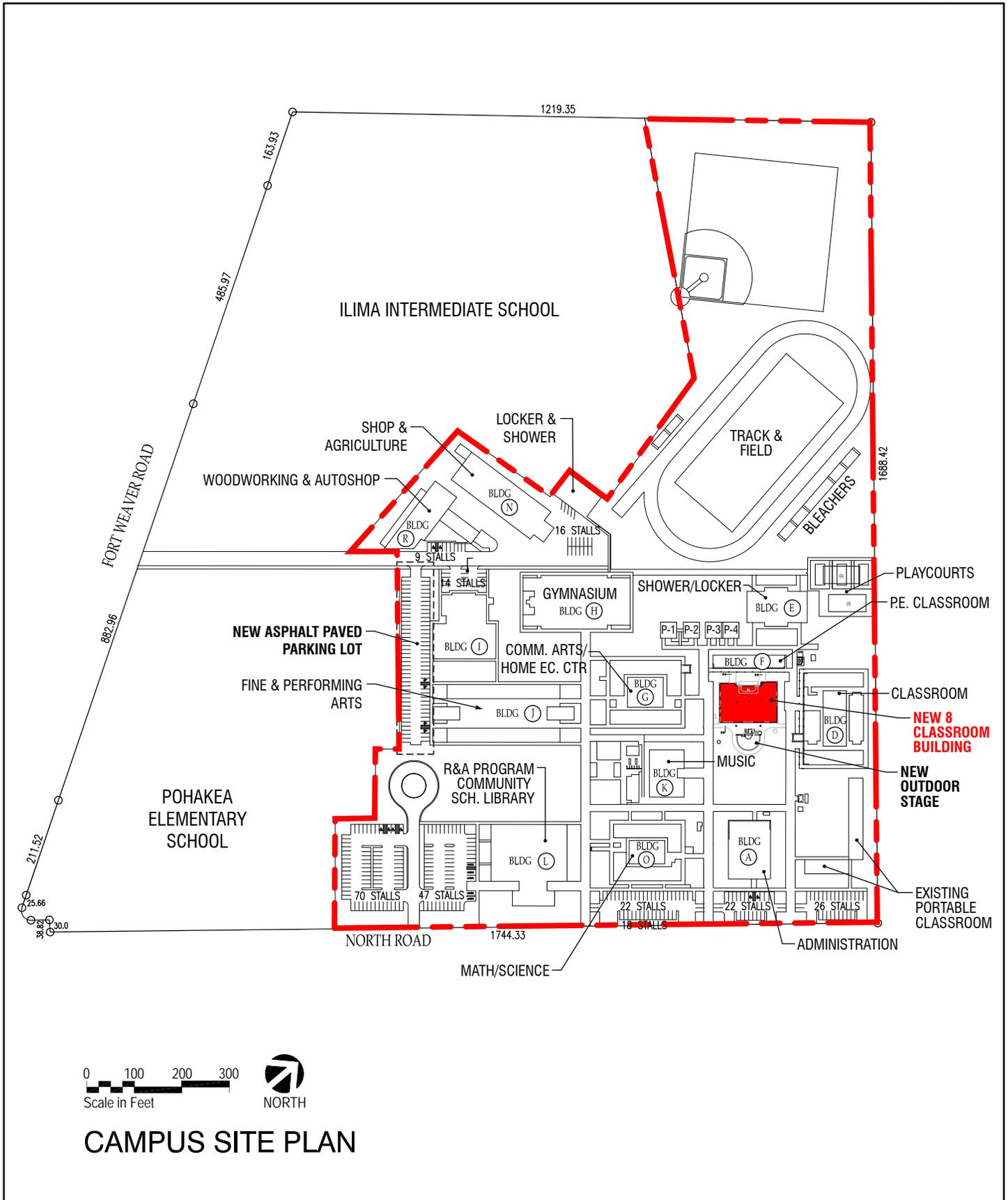
2.1.1 Project Location and Description

James Campbell High School is located at 91-980 North Road in 'Ewa Beach, O'ahu, Hawai'i. The school serves seven rural and two military communities, and is part of the State of Hawai'i Department of Education's Leeward District. The student population is ethnically diverse and includes Filipinos, Caucasians, part-Hawaiians, Japanese, Hispanics, Indo-Chinese, Samoans, and African-Americans. At the start of the 2010-2011 school year, enrollment was approximately 2,700 students in Grades 9 through 12. This is 33% above the school's official design capacity of 2,022 students.

The 38-acre campus includes 11 major buildings and an athletic complex. The new classroom building is proposed at the north end of Campbell High School's existing main grass quadrangle near the middle of the campus, and surrounded by existing one, two and three-story buildings (Figure 3).



The new classroom building will be constructed on the grassy area fronting P.E. Building F. The existing platform stage will be removed and a new outdoor stage will be built.



CAMPUS SITE PLAN

Figure 3
SITE PLAN

Campbell High School Eight Classroom Building,
Ewa Beach, Oahu, Hawaii



The grassy quad, looking south at Admin Bldg. A, Math/Science Bldg. O, and Music Bldg. K in the distance.



The project site, looking directly south toward Admin. Bldg. A. The existing platform stage in the foreground will be removed.

The proposed classroom building will be two stories in height and 21,548 square feet in size. Although initially conceived as an eight-classroom building, during the design process, the project was revised to include ten classrooms to better meet the needs of the school. The building includes a language lab, two science classrooms and seven general purpose classrooms in an open plan configuration to support a collaborative teaching concept. Classroom spaces can be separated from corridors and each other by full-height operable partitions. Support facilities include faculty planning/curriculum rooms, conference/instructional rooms, student restrooms and utility spaces. First and second floor plans are shown in Figures 4 and 5.

Because the existing grassy quadrangle is used for school assemblies, a new outdoor stage has been incorporated in the project. The outdoor stage will face the southern half of the existing grassy quad which will remain undeveloped.

The project's thermal insulation, electrical and mechanical systems are designed to comply with the Hawaii State energy code requirements. The project will comply with Americans with Disabilities Act (ADA) Guidelines. Final plans will be submitted to the Disability and Communication Access Board (DCAB) for ADA review.

The highest point of the building roof will be 45 feet in height, which will require a waiver of building height requirement for the R-5 residential district from the City and County of Honolulu Department of Planning and Permitting.

The project also includes construction of a new 70-stall parking lot on the west side of the campus next to Buildings I and J. Several existing parking lots throughout the campus will be restriped to create 32 additional parking stalls.

2.1.3 Project Schedule and Cost

The construction of the new classroom building will take approximately 12 months to complete. The work is targeted to commence during the summer 2011, in an effort to complete the initial excavation activities when school is not in session.

During construction, the southern half of the grassy quad nearest the Administration Building will be utilized as a staging area, and the entire quad will be fenced off. After completion of the new building, the southern half of the grassy quad will be open again for school use.

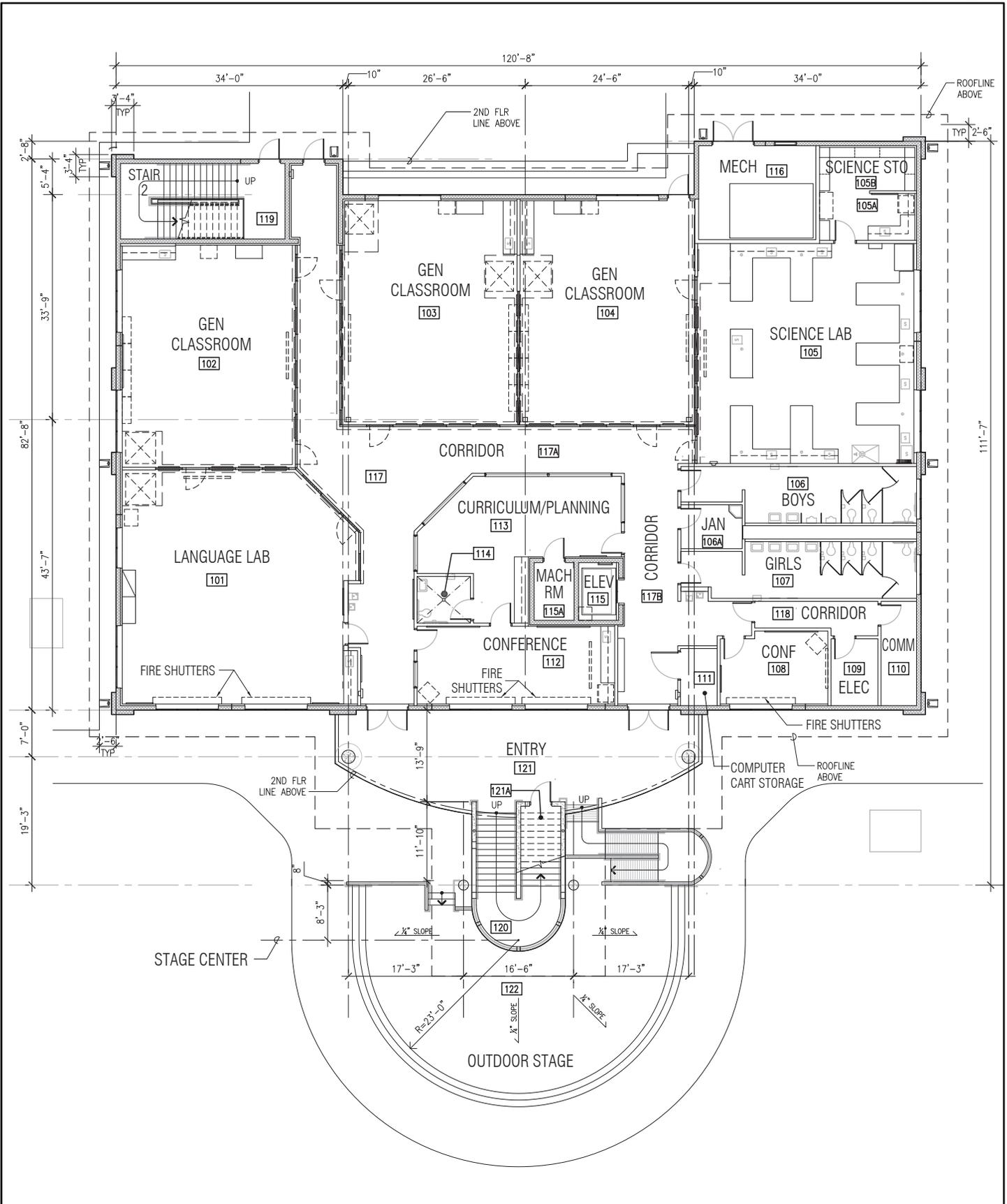


Figure 4
1st FLOOR PLAN

Campbell High School Eight Classroom Building,
Ewa Beach, Oahu, Hawaii

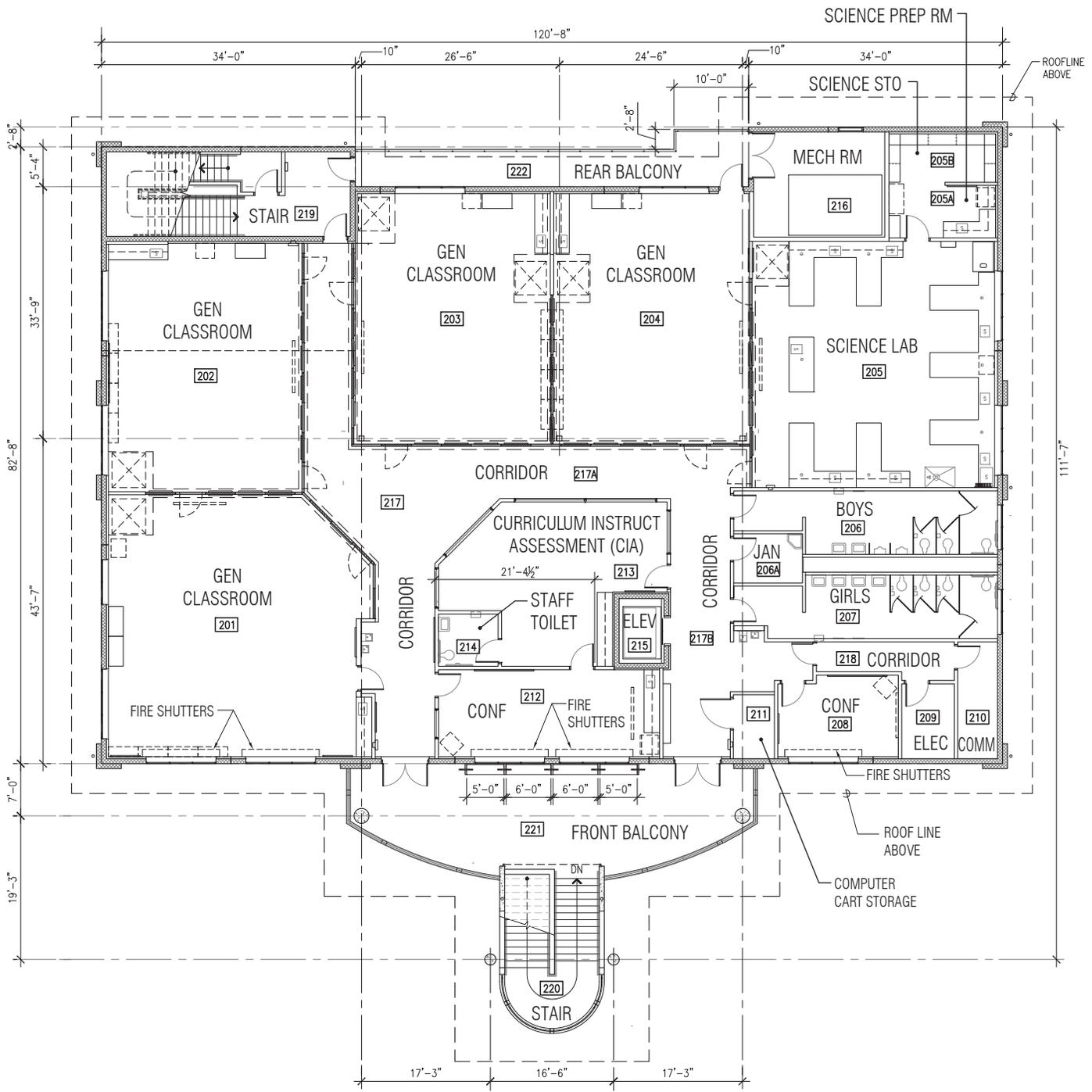
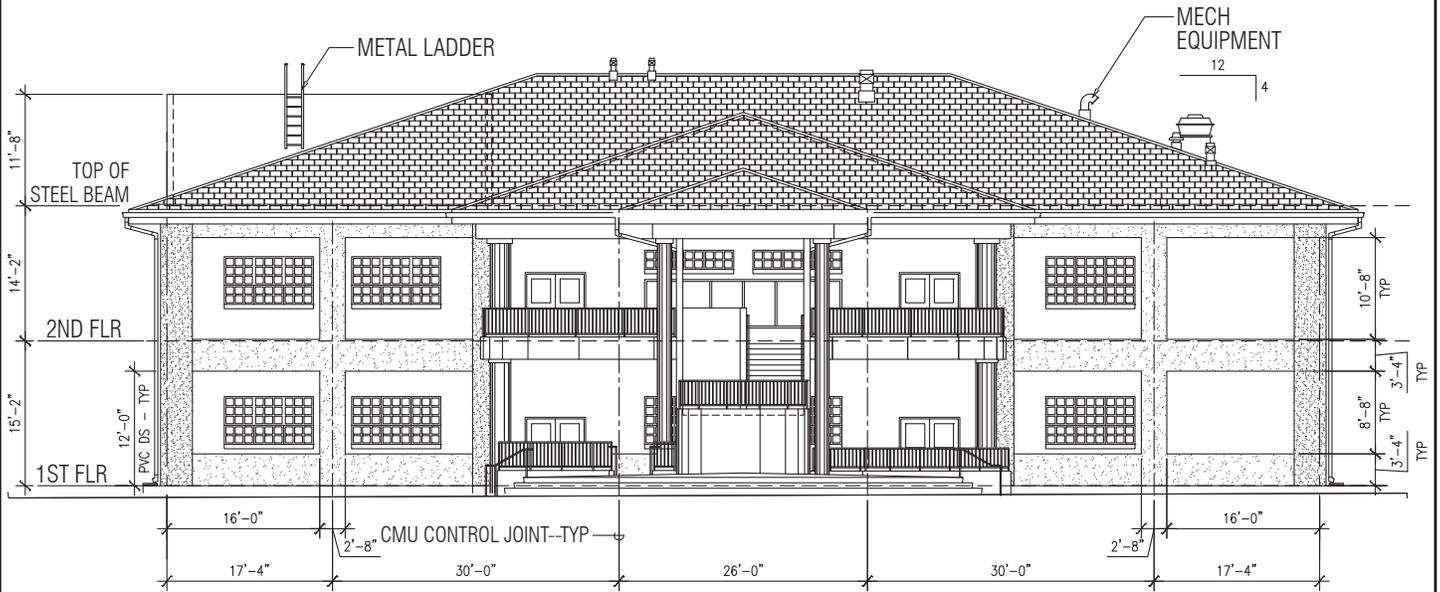
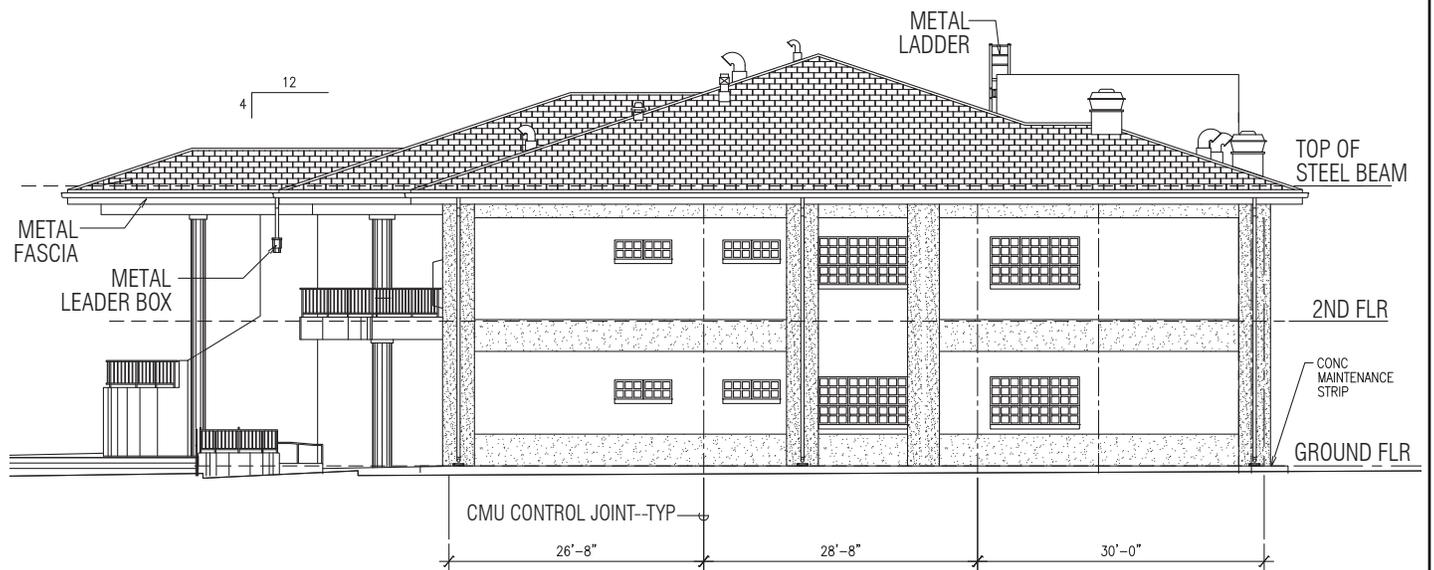


Figure 5
2nd FLOOR PLAN

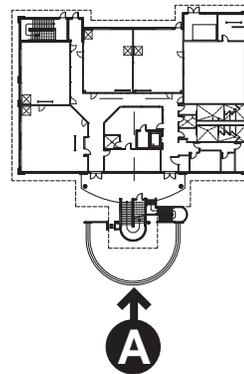
Campbell High School Eight Classroom Building,
Ewa Beach, Oahu, Hawaii



A SOUTHEAST ELEVATION



B NORTHEAST ELEVATION



B

A



NORTH



EXTERIOR ELEVATION KEY

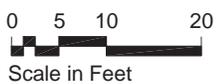
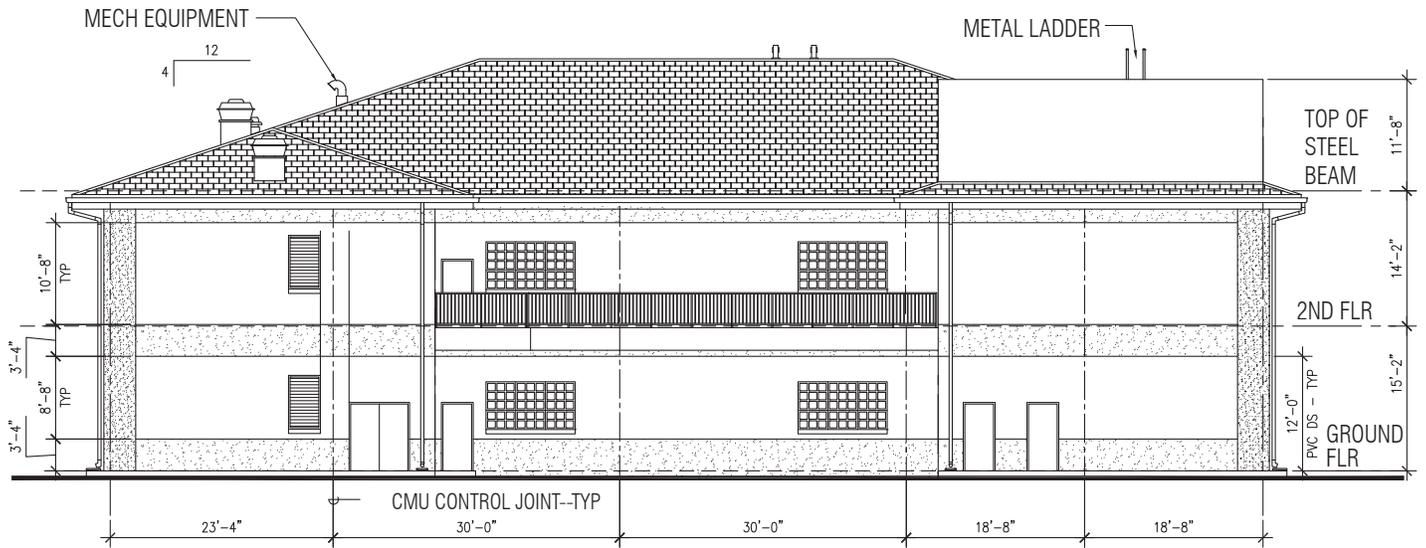
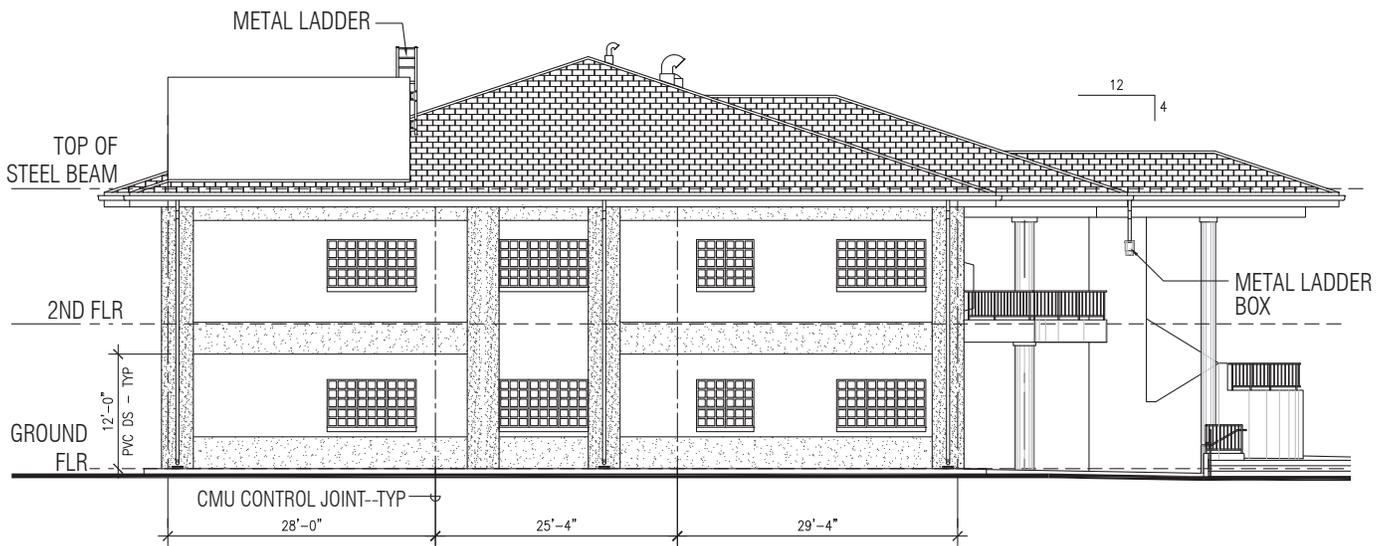


Figure 6
SOUTHEAST & NORTHEAST ELEVATIONS

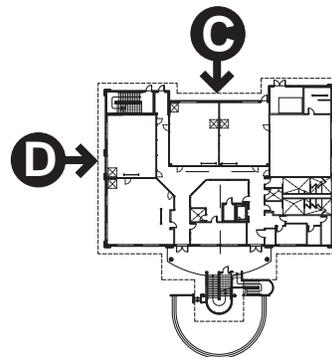
Campbell High School Eight Classroom Building,
Ewa Beach, Oahu, Hawaii



C NORTHWEST ELEVATION



D SOUTHWEST ELEVATION



NORTH



EXTERIOR ELEVATION KEY



Figure 7
NORTHWEST & SOUTHWEST ELEVATIONS

Campbell High School Eight Classroom Building,
Ewa Beach, Oahu, Hawaii



Construction vehicles will access the project site through an entry gate on North Road.

2.2 ALTERNATIVES CONSIDERED

The DOE considered a number of alternatives during the planning and design for this project. The alternatives are summarized below.

2.2.1 No-Action Alternative

The No Action alternative assumes the status quo. Under this alternative, a new classroom building would not be constructed. The school would continue to operate with inadequate and overcrowded classrooms, which would continue to worsen as student population expands over the next few years. (what about no child left behind, etc.)

2.2.2 Redistricting Students to Other High Schools

One option that was considered to address the tremendous growth in enrollment at Campbell High School was redistricting, where some students would be diverted to other nearby high schools. However, after evaluating enrollment capacity, trends and projections for surrounding Kapolei High School and Waipahu High School, this option was eliminated.

Over the past six years, Kapolei High School has experienced a 12% increase in enrollment, and is currently 318 students over capacity. School enrollments are projected to increase another 4.5% over the next six years. Waipahu High School likewise experienced a 5.1% increase over the last six years, and is currently 323 students over capacity. Enrollment is expected to grow another 2% in the next six years.

In summary, surrounding high schools are also operating over capacity and are projecting further growth. These schools are already utilizing portable classrooms to accommodate their students, and space for more portables is limited. Redistricting Campbell High School students to surrounding high schools is not a viable option to address the overcrowding problem.

2.2.3 Use of Modular or Temporary Buildings

Another alternative would be to utilize modular or temporary classrooms to alleviate the overcrowded conditions at the school. Modular structures have the advantage of being less expensive initially and quicker to install than a traditional classroom building. However, this alternative was not considered an acceptable long-term solution. School enrollment has boomed over the last six years and is projected to continue to increase due to population growth in the area. Although a modular facility could provide immediate classroom space, it would not provide enough classroom space, or the quality and durability of a permanent classroom building. Moreover, because modular structures would be limited to a single-story layout, there is insufficient land area on campus to provide the equivalent of ten classrooms.

2.2.4 Alternative Locations and Designs

Four alternative locations for the new classroom building were explored early in the project design process. The preferred site at the northern end of the grass quadrangle, north of the administration building, was ultimately selected because of its size, availability, its central location, and good functional relationships to other buildings. The three other sites considered and the reasons they were dismissed are:

- Southeast corner of the cafeteria (site was determined to be too small for the project).
- North side of library (site would have displaced the existing school garden).
- Northeast corner of administration building (conflicted with portable classroom buildings and would require relocation of electrical transformer)

Although the project began as an eight-classroom building, the project was increased during the design phase to a ten-classroom building to better meet the needs of the school. During the design process, alternative design schemes and floor plan layouts were developed and evaluated. All the alternatives were two-story schemes, in order to minimize the building footprint and maximize open space within the campus. The schemes differed in their layout and room location. Based on the needs of the school and through consultations with school personnel, the proposed design was determined to be the most desirable. The design provides multi-functional classroom spaces that will provide the greatest flexibility for users.

2.3 EVALUATION OF ALTERNATIVES

The proposed action was the result of an alternatives analysis, which also considered alternate locations and building layouts. The project site was selected because it is of sufficient size, is available for development, and would involve no loss of parking. The location provides good functional relationships with other classrooms. The construction could proceed without displacing or relocating other uses. A two-story layout would minimize the building footprint, and the classroom layout was selected for its flexibility.

3 AFFECTED ENVIRONMENT, IMPACTS AND MITIGATION

3.1 INTRODUCTION

This chapter describes the existing environment, potential project impacts and proposed mitigation. This chapter is organized by resource area, and is generally divided into: 1) physical environment, 2) biological environment, 3) socio-economic environment, 4) utilities and infrastructure, 5) traffic, and 6) public services and facilities.

The discussion of environmental impacts includes both direct and indirect impacts. Direct impacts are those caused by the action and occur at the same place and time. Indirect effects may occur later in time or farther in distance, but are still reasonably foreseeable. The analysis in this chapter also identifies possible cumulative environmental impacts. Cumulative impacts are defined as the results from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

3.2 PHYSICAL ENVIRONMENT

3.2.1 Geography and Setting

James Campbell High School is located on the 'Ewa Plain on the southwestern coast of O'ahu. The 'Ewa Plain is a Pleistocene (>38,000 years old) limestone reef platform overlying flows of the Wai'anae volcanic series. The lower portion of the 'Ewa Plain where the project area is located is a lowland limestone exposure with thin alluvial deposits. The 'Ewa Plain is also notable for countless sinkholes caused by chemical weathering (dissolution) of the limestone shelf. (Cultural Surveys Hawai'i, 2010).

The project area is in an urbanized, residential area of 'Ewa. The surrounding areas include residential neighborhoods, several schools, 'Ewa Beach Community Park, and 'Ewa Beach Shopping Center. The 38-acre, Campbell High School campus is contiguous to the Ilima Intermediate School and Pohakea Elementary School campuses.

3.2.2 Topography and Soils

Existing Conditions

General

The project site, where the new classroom building will be constructed, is a flat, rectangular grassy area of the campus known as the quadrangle. The site is surrounded on three sides by classroom buildings and on the fourth side by the administration building. The new eight-classroom building will be constructed on the northwestern end of the quadrangle, adjacent to P.E. classroom Building F. The southwestern half of the quadrangle will remain open and

undeveloped. The site elevation ranges from 13.58 feet MSL on the north end to 13.03 feet MSL on the southern end.

U.S. Department of Agriculture Soil Survey

The U.S. Department of Agriculture soil survey classifies the soils under the entire school campus as coral (limestone) outcrop (CR) (see Figure 8). Coral outcrop is described as consisting of *“coral or cemented calcareous sand on the island of O‘ahu...Coral outcrop makes up about 80 to 90 percent of the acreage. The remaining 10 to 20 percent consists of a thin layer of friable, red soil material in cracks, crevices, and depressions within the coral outcrop.”*

Geotechnical Investigation

A subsurface investigation was conducted for the project by Fewell Geotechnical Engineering (July 2007). Three test borings and three percolation holes were drilled and samples of subsurface soils were obtained and evaluated. The test borings revealed that the site for the new classroom building is generally underlain by about 0.5 to 2 feet of fill over up to 4.5 feet of alluvial (water-deposited) soils, over a coral formation at depths ranging from about two to 5 feet below the existing ground surface. The coral formation was found directly below the fill in the percolation holes in front of the proposed building location.

The coral formation consists of weathered coral rock immediately below the alluvium and fill, which grades to coral detritus at depths of 15.5 to 16.6 feet below ground surface. The coral detritus consists of uncemented coral fragments. In one of the three soil borings, a 3.5 feet tall void was found below the coral rock at a depth of 10 feet, followed by very loose coral debris to a depth of 17 feet, where coral detritus was found. The coral detritus extended to the bottom of all three borings at depths of 20 to 25 feet below the existing ground surface.

Groundwater was found in all of the test borings at a depth of 11 feet below the existing ground surface. The geotechnical study estimated that these depths correspond to between elevation 1 and elevation 2.

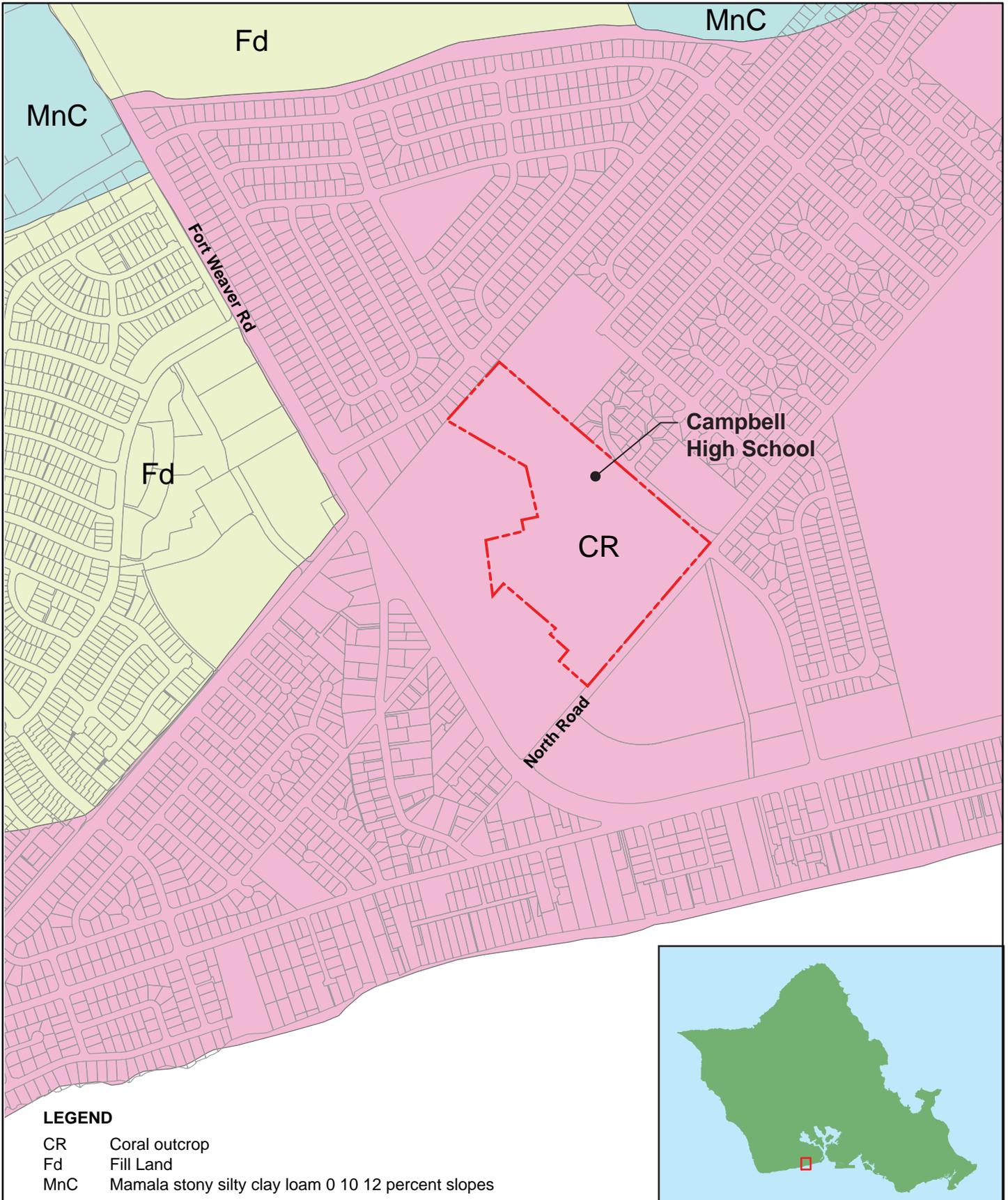


Figure 8
SOILS MAP

Campbell High School Eight Classroom Building,
Ewa Beach, Oahu, Hawaii

Impacts and Mitigation

The geotechnical study concluded that the site for the new building is “*generally underlain by compacted fill over relatively competent alluvial soils and intact coral rock, which should provide adequate support for the structure*” (Fewell Geotechnical Engineering, 2007). The geotechnical study included recommendations during grading, site preparation, and construction of foundations to mitigate potential soil and geotechnical concerns. For example, the study noted that voids and/or solution cavities are anticipated within the coral rock formation beneath the surface soils. Since these can affect heavily loaded footings, foundation locations should be probed prior to foundation construction to determine if voids or cavities are present immediately beneath the foundation bearing levels. The use of heavy excavating equipment such as rock trenchers and hoe rams should be anticipated during excavations, which must penetrate the coral rock located two to five feet below the surface soils. The study also noted that although groundwater is not expected to affect most of the construction, dewatering should be anticipated for deep utility trenches or other deep site excavations.

The recommendations in the geotechnical study for site preparation, site grading, installation of utilities, construction of foundations, design of concrete slabs, and drainage will be followed.

The following regulations will also be followed during construction:

- Chapter 14, Articles 13-16 as related to Grading, Soil Erosion and Sediment Control, of the Revised Ordinance of Honolulu, 1990, as amended.
- Department of Planning and Permitting, Rules relating to Soil Erosion Standards and Guidelines, (1999);
- USDA Soil Conservation Services Erosion and Sediment Control Guide for Hawai‘i, (1968).

Initial site preparation and construction of foundations will be scheduled during the summer months, to minimize noise and dust impacts on students and school personnel. Throughout the construction period, best construction management practices will be utilized, including regular watering to reduce fugitive dust impacts. There will be no long-term, adverse impacts to soils.

3.2.3 Climate and Air Quality

Existing Conditions

Climate

Temperatures in the ‘Ewa area recorded in 2003 at the ‘Ewa Plantation (Station No. 741) averaged about 77 degrees Fahrenheit and varied between 86 and 69 degrees (NOAA 2003)

The ‘Ewa plain is one of the driest areas of O‘ahu, with annual average of about 21 inches per year. Monthly average rainfall is low with generally less than one inch of rain during the summer (June to August) and less than 4 inches during the winter months (November to January).

Winds are predominantly trade winds from the east-northeast, except for occasional Kona storms with winds from the south. Trade wind speeds average between 5 and 15 miles per hour.

Air Quality

National Ambient Air Quality Standards (NAAQS) have been established for seven major air pollutants: carbon monoxide (CO), nitrogen oxides (NO_x), ozone (O₃), particulate matter smaller than 10 microns (PM₁₀), particulate matter smaller than 2.5 microns (PM_{2.5}), sulfur oxides (SO_x), and lead. Air pollutant levels are monitored by the State Department of Health (DOH) at a network of sampling stations statewide. The nearest monitoring station is located in the Kapolei Business Park, approximately seven miles from Campbell High School. Based on the DOH's most recent air quality data for the island of O'ahu, all federal and state air quality standards were met.

Impacts and Mitigation

Site preparation and construction activities will generate fugitive dust and exhaust emission from construction equipment, which has the potential to impact surrounding classrooms and offices. The project area is about 50 feet from the P.E. classroom Building F, and about 100 feet from classroom Buildings D and G, and 200 feet from the administrative office Bldg. A. In order to mitigate impacts to the school, construction will be initiated during the summer when school is not in session.

The contractor is required to schedule activities that create excessive noise and dust such as concrete coring, drilling, hammering, trenching, and demolition for the weekends, holidays, or non-school hours.

The construction contractor will be required to keep dust to a minimum, and will employ fugitive dust emission control measures in compliance with provisions of the State DOH Rules and Regulations (Chapter 43, Section 10) and Hawai'i Administrative Rules (HAR) Chapter 11-60.1, "Air Pollution Control," Section 11-60.1-33 on Fugitive Dust.

During construction, dust screens will be utilized and the contractor will spray water as necessary to control dust. In addition, the following measures will be implemented to minimize dust and air quality impacts:

- Provide an adequate water source at the site prior to start-up of construction activities;
- Pave or revegetate work areas cleared of vegetation as soon as possible to reduce dust;
- Provide adequate dust control measures during weekends, after hours, and prior to daily start-up of construction activities;
- Control dust from debris being hauled away from the project site;
- Move construction equipment to and from the work sites during non-peak traffic periods, to the extent possible, in order to minimize disruption to area traffic.

Air quality impacts during construction will be mitigated through the methods identified, not be significant and will be temporary in duration.

Long-Term Impacts

The project will not have a long-term adverse affect on air quality. The new classroom building will not increase school enrollment or the number of motor vehicles coming to the school. Any increase in emissions associated with increased electrical demand generated by the classroom will be negligible.

3.2.4 Natural Hazards

Existing Conditions

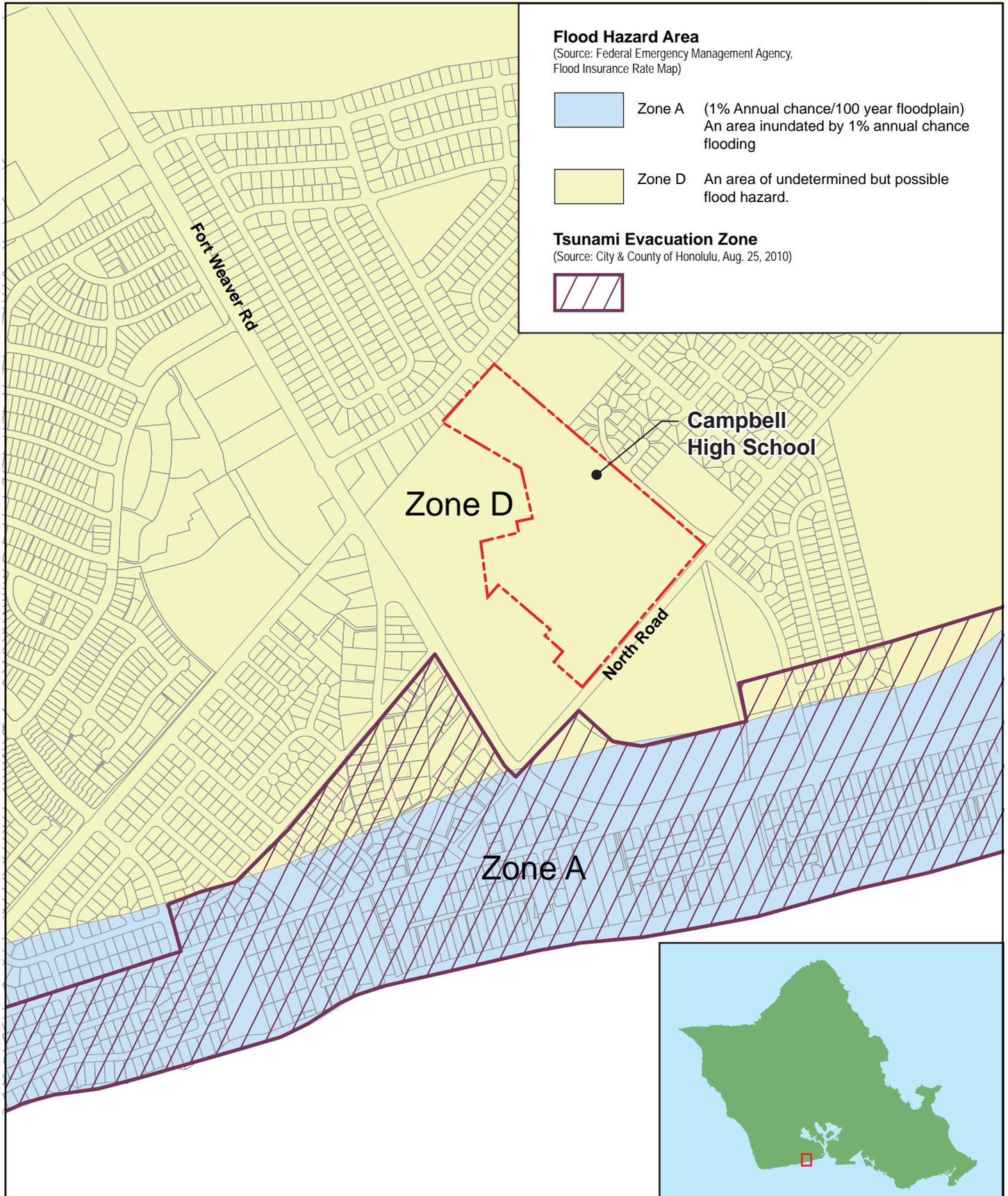
Flood and tsunami evacuation areas are shown in Figure 9. According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), the school campus is within Zone D, areas of undetermined but possible flood hazard. The coastal areas of 'Ewa Beach are within Flood Zone A, the 100-year floodplain with a 1% annual chance of flooding. However, the school is outside this flood hazard area.

The project site is not vulnerable to tsunami or great seismic hazard. Based on the updated O'ahu tsunami evacuation maps recently completed by the City Department of Emergency Management (DEM), the school is outside the tsunami evacuation area. Campbell High School is identified as a public shelter/refuge for tsunami.

The Island of O'ahu is in the Uniform Building Code (UBC, 1997) Earthquake Zone 2A. The UBC contain six seismic zones, ranging from 0 (no chance of severe ground shaking) to 4 (10% chance of severe shaking in a 50-year interval). The school building will be designed and constructed to meet these building standards.

Impacts and Mitigation

Given the areas relatively low annual rainfall and distance from area streams, flooding is not expected to be a problem. The school is outside of the tsunami evacuation zone. The new classroom building will be designed using standards of the International Building Code, 2006 Edition and wind speed of 105 mph, Exposure C.



0 200 400 600 800
 Scale in Feet



Figure 9
FLOOD AND TSUNAMI HAZARD
 Campbell High School Eight Classroom Building,
 Ewa Beach, Oahu, Hawaii

3.2.5 Noise

Existing Conditions

Noise in the vicinity of the project site is generated by school activities and traffic on North Road and Fort Weaver Road. Both roads are subject to high volumes of vehicular traffic. The ‘Ewa area is also subject to ambient noise generated by take-offs and landings at the Honolulu International Airport, located about six miles to the east.

Noise is regulated by the DOH under HAR Chapter 11-42, “Vehicular Noise Control for O‘ahu,” and Chapter 46, “Community Noise Control.” The current allowable noise limits for residential, apartment, and community business properties on O‘ahu are as follows:

Zoning	Daytime 7:00 AM to 10:00 PM	Nighttime 10:00 PM to 7:00 AM
Residential	55 dBA	45 dBA
Apartment	60 dBA	50 dBA
Community Business	60 dBA	50 dBA

Impacts and Mitigation

Short-Term Construction Impacts

Construction activities will generate temporary noise that will have short-term impacts on adjacent classrooms. Because the project site is surrounded by classrooms and offices on all sides, noise has less chance to dissipate, and is likely to reverberate, causing disruption and annoyance. Initial grading, excavation and construction of building foundations will generate the highest levels of noise, and will be scheduled during the summer to minimize the noise impact on students and staff. Because construction is expected to extend over 12 months, there will be construction work ongoing for most of the following school year. To reduce the noise impact of construction activities, no loud noise making activity such as jack-hammering or heavy excavation will be allowed during school hours. The contractor will be required to coordinate with the school and eliminate noisy work during student testing periods. Power equipment, internal combustion engines, compressors and vehicles will include mufflers and other sound suppressing devices. Noise barriers will be placed to fence in the noise as much as possible. Existing air conditioning in the surrounding classroom buildings will reduce noise levels, as windows and doors can be closed.

Noise impacts off the school campus will be minimal. All construction activities will comply with the DOH Administrative Rules Chapter 11-46 on Community Noise Control. In cases where construction noise exceeds, or is expected to exceed the DOH’s “maximum permissible” noise levels at the school property line, a permit will be obtained from the DOH to operate vehicles,

construction equipment, power tools, etc. that emit noise levels in excess of “maximum permissible” levels.

The State Department of Health (DOH) currently regulates construction noise under a permit system. Under current procedures, noisy construction activities are restricted to hours between 7:00 AM and 6:00 PM, Monday through Friday, excluding certain holidays, and 9:00 AM and 6:00 PM on Saturdays. Construction is not permitted on Sundays.

Operational Noise

Once constructed, the classroom building will not generate or increase ambient noise levels. There will not be noisy mechanical equipment associated with the building. The classrooms will not be adversely impacted by exterior noise, since the building is located in the middle of the campus away from major roadways, and surrounded by other classrooms. Noise from sources outside the classrooms will also be reduced by the use of air conditioning and the ability to close classroom doors and windows.

3.3 BIOLOGICAL ENVIRONMENT

3.3.1 Botanical Resources

The Campbell High School campus is a highly altered urban environment. Most of the vegetation within the school campus consists of landscaping or introduced, non-native species. The project site is currently an open grassy lawn. There are no native flora or threatened or endangered species present in the project area. The project will not have an adverse effect on botanical resources.

3.3.2 Terrestrial Fauna and Avifauna

The project improvements will take place within a developed area of the school campus. Fauna at the project site would most likely include introduced species that have adapted readily to the human environment. Among the species commonly found in similar urbanized areas are mammals that typically inhabit urban areas including feral cats (*Felis catus*) rats (*Rattus* sp), house mouse (*Mus musculus*) and Indian mongoose (*Herpestes a. auropunctatus*).

Avifauna found on the project site would include alien species common to urban environments, such as the Common Mynah (*Acridotheres tristis*), Red crested Cardinal (*Paroaria coronata*), Northern Cardinal (*Cardinalis cardinalis*), House Finch (*Carpodacus mexicanus*), Java Sparrow (*Padda oryzivora*), Rock Pigeon (*Columba livia*), Spotted Dove (*Streptopelia chenensis*), Zebra Dove (*Geopelia striata*), Red-vented Bulbuls (*Pycnonotus cafer*), and Japanese White-eye (*Zosterops japonicus*).

The project will not have an adverse effect on terrestrial fauna or avifauna.

3.4 SOCIO-ECONOMIC ENVIRONMENT

3.4.1 Demographic Characteristics

Existing Conditions

Campbell High School is bordered by Ilima Intermediate School and Pohakea Elementary School, and residential neighborhoods. Based on U.S. Census data, resident population in the 'Ewa Beach CDP (census-designed place) was 14,650 persons in 2000, a 2.3% increase over the 1990 population of 14,315. However, between 2000 and 2010, 'Ewa experienced a residential construction boom, resulting in significant increases in resident population. Although the 2010 census data is not yet available, the State of Hawai'i Department of Business, Economic Development and Tourism (DBEDT) has estimated that the total population in the 'Ewa "Neighborhood Area" increased by 36.7% between 2000 and 2010 (State of Hawai'i Data Book 2009). By comparison, the population of the entire island of O'ahu increased by 4.1% during this same period. The DBEDT estimates show 'Ewa as one of the O'ahu neighborhoods with the largest percentage increase in population, exceeded only by Makakilo/Kapolei (37.7% increase) and Mililani Mauka-Launani Valley (73.8% increase).

U.S. Census data from year 2000 showed the 'Ewa area with a median age of 31.2 years, compared to the O'ahu median of 35.7 years. Average household size was 3.69 persons, compared to the O'ahu average of 2.95. Racial composition in 2000 was 11.1% white; 49.1% Asian; 10.6% Native Hawaiian/Pacific Islander; and 27.3% categorizing themselves as mixed race (i.e., two or more races).

Impacts and Mitigation

The proposed project will not affect area population or demographics. The new classroom building is proposed in response to the tremendous population increases in the 'Ewa area over the past ten years. The population increase has in turn affected school enrollment, and resulted in overcrowded classrooms. The population growth is expected to continue in the coming years. The construction of the new classroom building will alleviate overcrowded conditions and provide needed classrooms to support current and future Campbell High School students.

There will be short-term construction noise and dust that will affect the school community, but these inconveniences will be temporary, and more than offset by the benefits of the new facilities.

The construction project will provide positive economic benefits in terms of construction jobs, construction spending, and multiplier effects on the local economy. In the long-term, the new classroom building will have a positive social and economic effect on the school and the community.

3.4.2 Archaeological, Historic, and Cultural Resources

An Archaeological Literature Review and Field Inspection for the project was prepared by Cultural Surveys Hawai‘i (August 2010) (see Appendix). Although the new classroom building will be constructed on the Campbell High School campus, the Area of Potential Effect (APE) for the study was the combined area of Campbell High School, Ilima Intermediate School, Pohakea Elementary School, which are within a single TMK parcel.

Existing Conditions

A field check of the property was conducted by Cultural Surveys Hawai‘i in August 2010. The results of the field check were minimal, and only identified two small, filled-in sink holes. The first likely sinkhole was located just south of Portable Classroom JP-11 on Campbell High School campus. The sinkhole was filled with loose soil and a coral block. The second sink hole was located in the northern corner of Pohakea Elementary School. It too was filled with loose soil. No historic properties were located within the immediate bounds of the proposed project area on Campbell High School.

All three of the school campuses included in the survey have been extensively graded and developed, with virtually no original limestone bedrock still visible. The grounds consist of manicured grass yards, and scattered ornamental trees and bushes, such as monkeypod, plumeria, shower trees, and small palms.

Extrapolating from previous archeological surveys in the area, the study notes that one would have expected to encounter numerous sinkholes, and likely mounds (*ahu*), coral stacked wall remnants, and coral enclosures ranging in date from prehistoric to historic. The absence of archaeological sites, except for the two still-visible sink holes, strongly suggests that the previous construction of the schools eradicated virtually all trace of any original archaeological sites.

Impacts and Mitigation

Given the highly disturbed nature of the site, the study concluded that construction of the eight-classroom building will have no impact on archaeological or cultural resources. Given the results of the field inspection and archaeological literature review, no further archaeological work was recommended.

The Literature Review and Field Inspection report was sent to the State Historic Preservation Division (SHPD) for review in accordance under HRS Chapter 6E-8 and HAR Chapter 13-275. The results of that review are pending.

Cultural Impact

Wahi Pana and Mo‘olelo

Wahi pana (legendary places) and *mo‘olelo* (stories, legends) reveal that the project area exists within a cultural context, a complex network of sacred sites, connecting the ‘Ewa Plain with

Pu‘uokapolei, Pu‘uloa, Hoakalei, and the Honouliuli ‘Īli. The stories of Hi‘iaka and Kamapua‘a at Pu‘uloa, the naming of Hoakalei and of Honouliuli, and the *heiau* at Pu‘uokapolei and Papapūhi (Honouliuli ‘Īli) demonstrate relationships that link modern inhabitants with the past. The Campbell High School campus however appears to lie at some distance from these named and storied *wahi pana*.

Hawaiian Habitation and Agriculture

The project site is not in an area that would have been used for agriculture or habitation. The Campbell High School campus is in a relatively dry area and located about one-fourth mile from the ocean. The area has both low rainfall and shallow soils, and would have been marginal at best for agriculture. More likely, any permanent or temporary traditional Hawaiian habitation in the vicinity would have been closer to the coast. The project area was where people would have been expected to pass through to get to nearby ocean resources.

The archaeological study for the project conducted by Cultural Surveys Hawai‘i (2010) identified no sites within the immediate project area or the larger study area. The survey noted extensive previous disturbance, as evidenced by surface grading, infrastructure installation and the presence of school structures. The lack of archaeological sites and the extensive disturbance led the archaeologists to conclude that any evidence of pre- and post-contact archaeological sites had been erased. No further archaeological work was recommended.

Plant and Water Resources

Other cultural impact studies in the ‘Ewa area have noted patterns of gathering of *‘ilima*, red *ilima*, mulberries, mango, *uhaloa*, *walu*, ginger root and *pōpolo*, and salt. None of these resources is believed to be present in the project area. People gathered *limu* and reef fish near ‘Ewa Beach and Barber’s Point but Campbell High School is situated well back from the coast.

Potential for Burials

Because there is little evidence that the immediate area was inhabited (due to dry weather, poor soils, etc.), there is little likelihood of burials. As a precaution, it is recommended that building plans be annotated to require that in the event of any discoveries of human skeletal remains or other significant finds, that all work in the immediate vicinity stop and the State Historic Preservation Division be promptly notified.

Summary

In summary, the project area does not have significant cultural value, probably was not inhabited, and was not used for traditional gathering. The project will not affect traditional native Hawaiian or modern day cultural practices. The project will not impact archaeological sites or cultural resources. The EA process will provide further opportunity for any individuals with specific knowledge or concerns about cultural resource issues to come forward with additional information.

3.5 UTILITIES AND INFRASTRUCTURE

3.5.1 Existing Conditions

Water service to the area is provided by the City and County of Honolulu's Board of Water Supply (BWS). Sewer service to the school is provided through the City and County of Honolulu. Electrical service is provided by Hawaiian Electric Company (HECO) and telephone service is by Hawaiian Telcom. Water and sewer lines connect to the City's system at North Road.

There are numerous water, electrical, and sewer lines within the area. Existing sewer and water lines which are underneath the footprint of the new building will be relocated as part of the project. Two abandoned cesspools under the building footprint will also be demolished and removed. New utility connections will be made to existing water, sewer and electrical lines.

3.5.2 Impacts and Mitigation

Water

Based on the Honolulu Board of Water Supply standards for a school building, water demand is estimated at 4,000 gallons per day (GPD)/Acre or 60 GPD/student (Domestic Consumption Guidelines, Water System Standards, Honolulu Board of Water Supply, 2002). Water demand for the eight-classroom building is estimated as follows:

$$\begin{aligned} \text{Water Demand} &= 4,000 \text{ GPD/acre} \\ \text{Building square footage(SF)} &= 9,800 \text{ SF or } 0.23 \text{ Acres} \\ \text{Daily Water Demand} &= 0.23 \text{ Ac} \times 4,000 \text{ GPD/Ac} = \underline{\underline{920 \text{ GPD}}} \end{aligned}$$

In an early consultation letter dated August 24, 2010, the BWS has indicated that the existing water system is presently adequate to accommodate the proposed classroom building. The final decision on availability of water will be confirmed when the building permit application is submitted for approval.

Wastewater

The project's estimated average daily demand for wastewater is 7,500 gallons per day (GPD) with a maximum daily demand of 37,500 GPD and peak hour demand of 40,150 GPD. The project's sewer system will be designed in accordance with the City and County of Honolulu's Design Standards of the Department of Wastewater management.

Electrical/Telephone

The new classroom building will have electrical power, lighting, life safety and communication systems. Estimated electrical demand for the building is estimated at 150-200 kW. The existing power system will be extended to support the new building as follows:

- Power: Electrical power will be extended to the New Classroom Building from existing Electrical Distribution Switchboard “B” in Electrical Building “B.” There is capacity and space for a new breaker to serve the new building.
- Telephone/Administrative Data/Public Address/CATV Systems: Extended from existing Data Pullbox “C1” to new Classroom building
- Program Bell System: Extended from existing Handhole “B1” to new Classroom building
- Fire Alarm & Public Address Systems: Existing distribution existing ducts are to be intercepted and Handholes relocated and new conductors installed as required by installation of new building
- Building “F”: Existing Panel “F” to be replaced as required for Building “F” temporary A/C power

General

Construction drawings will be submitted to the BWS, HECO, Hawaiian Telcom and Oceanic Time Warner for review and comment and to insure that there will be no adverse impact to utility infrastructure or service. The construction contractor will coordinate with these agencies during the construction period and service will not be interrupted.

3.5.3 Drainage

Existing Conditions

The project site is fairly level, and because it encompasses a large grassy area, stormwater typically percolates into the ground. Given the dry conditions in the ‘Ewa area, issues affecting the existing drainage condition will be minimal. An existing drain inlet is located near the eastern corner of the project site.

Impacts and Mitigation

The project will transform a portion of an existing grassy lawn into a hardened surface with a new two-story building. Runoff will increase due to the proposed impervious surfaces. Building roof runoff will be captured through downspouts and released onto concrete splash blocks. Sidewalk culverts will be constructed to allow runoff to be flow around the building, before exiting the site through the existing drain inlet.

The project area is less than one acre in size, and is not expected to require a National Pollutant Discharge Elimination System (NPDES) permit for storm water discharge associated with construction.

3.5.4 Solid and Hazardous Wastes

The City and County of Honolulu's Department of Environmental Service is responsible for refuse pick up, hauling and disposal from the surrounding residential areas. The school, as well as commercial establishments and multi-family residential developments contract with private haulers. Refuse is disposed at the City's H-POWER refuse to energy plant located at Campbell Industrial Park and the Waimanalo Gulch Landfill in Leeward O'ahu.

The project will not have short or long-term impacts due to hazardous materials, waste or petroleum products. All construction materials will be properly used, transported, stored and disposed. Demolition debris such as the concrete ramp and stage, as well as soil, rocks, and vegetation removed will be properly disposed at DOH-approved City and County disposal or recycling facilities, and in accordance with applicable City, State, and Federal requirements. No construction waste materials will be buried or disposed on site.

3.6 TRAFFIC AND TRANSPORTATION

3.6.1 Existing Conditions

Campbell High School is located on North Road, about 1,500 feet east of the signalized intersection with Fort Weaver Road. Fort Weaver Road in this area has four lanes and is the primary mauka-makai thoroughfare providing access between 'Ewa Beach's residential communities, Farrington Highway and the H-1 Freeway. North Road is a local, two lane road which passes the school, 'Ewa Beach Community Park, and residential neighborhoods before terminating at the 'Ewa Beach Golf Club. The administration building and main school parking lots front North Road.

Vehicular access to the school's gymnasium and track field at the back of the campus is available via Aikanaka Road directly off Fort Weaver Road. Aikanaka Road also provides access to the 'Ilima Intermediate School and Pohakea Elementary School campuses, which front Fort Weaver Road.

O'ahu Transit Services (OTS) ("The Bus") provides public bus service to the Campbell High School area. The OTS 'Ewa Beach Transit Center is located on Fort Weaver Road and Makule Road, across from 'Ilima Intermediate School. The Transit Center is the major bus hub for the 'Ewa area. Bus lines serving the Transit Center include Lines 41, 44, 42, 91, 201, and E Country Express. Many of these lines travel down North Road directly in front of Campbell High School. Routes 91, 201 and E provide express freeway service from 'Ewa Beach to downtown Honolulu, Ala Moana and Waikiki. Route 42 provides local service through 'Ewa Beach, Waipahu, Pearl City, the airport, downtown Honolulu and Waikiki via surface streets. The other lines provide access between Ewa Beach and points west, including Kapolei, Makakilo and Campbell Industrial Park.

3.6.2 Impacts and Mitigation

The new classroom building will not impact traffic on North Road or Fort Weaver Road, as it will not increase student enrollment, the number of vehicles coming to and from the campus, or alter commuting patterns. The students who will utilize the new classrooms are already attending Campbell High School. Any roadway, intersection, or pedestrian improvements needed in the vicinity of the school will be needed independent of whether or not the proposed classroom is built.

The project includes a new 70-stall, paved parking lot off Aikanaka Road entrance, adjacent to Buildings I and J. The project will also restripe existing parking lots within the campus. With the new parking lot, the school will have a total of 310 off-street parking stalls, including 12 wheelchair accessible stalls required by the Americans with Disabilities Act Accessibility Guidelines (ADAAG). The total is 11 stalls more than the minimum required. The parking stalls may be used by either visitors, staff or students.

The increased parking on campus will reduce overflow, on-street parking in the surrounding neighborhoods. This will improve local traffic flow and increase the availability of street parking in the neighborhoods immediately surrounding the school.

During construction, vehicles and equipment will be moved to and from the campus through an access gate and driveway on North Road that is normally locked. Construction vehicles will drive past the administration building to the staging area behind the building. Equipment will be staged on the southern half of the grassy quadrangle. Construction equipment will be mobilized to and from the school only during non-peak traffic hours. The project improvements will be initiated during the summer to minimize impact on school traffic. There will be no loss of parking during construction. There will be no equipment or material staging off-campus.

There will be no impact to public bus service or traffic along North Road or Fort Weaver Road either during construction or once the classroom building is completed.

3.7 PUBLIC SERVICES AND FACILITIES

3.7.1 Police, Fire and Emergency Services

Existing Conditions

Police, fire and emergency services are provided through the City and County of Honolulu.

Police

The 'Ewa District is served by the Honolulu Police Department's District 8 Headquarters (Kapolei Station), which services the communities of 'Ewa, 'Ewa Beach, West Loch, Barbers Point, Kapolei, Makakilo, Campbell Industrial Park, Honokai Hale, Ko Olina, Nānākuli, Mā'ili, Wai'anae, Mākaha, Mākua and Ka'ena. The project site is within the District's Sector 3 service area.

Fire

The project area is served by the Honolulu Fire Department's 'Ewa Beach Fire Station, located on Pohakupuna Road, across 'Ewa Beach Community Park. The City is currently planning to build a new Ocean Pointe Fire Station to replace the existing 'Ewa Beach station. The new 12,000-square-foot Ocean Pointe station will include support facilities for a five-firefighter engine company, with the capability to expand to a second fire company in the future. A multi-level training tower will also be included. The new \$4.6 million station will be built on a site donated by development company Haseko.

Parks and Recreation

The nearest public park is the 'Ewa Beach Community Park located across the street from the school. The park houses the 'Ewa Beach Community/Recreation Center. Facilities include restrooms, tennis courts, two baseball diamonds, basketball courts, volleyball courts, a playground and the 'Ewa Beach Skate Park.

Medical Services

Medical service is available at the Hawai'i Medical Center West, formerly the St. Francis Medical Center West on Fort Weaver Road, approximately six miles north (mauka) of the project site. This short-term, acute care hospital has 102 beds, 90 of which are adult and/or pediatric care and 12 are intensive care. The next nearest medical facility is the Kapiolani Medical Center at Pali Momi on Moanalua Road, in the Pearlridge area.

Impacts and Mitigation

The project will not have an impact on the need for fire, police, or emergency medical services or operations. There will be no impacts on the 'Ewa Beach Community Park or other recreational services or facilities. The project will not increase student population at the school or increase demand for public services. The new classroom building will meet all applicable building and fire codes, and all design standards for its infrastructure improvements.

An early consultation letter from the Honolulu Police Department dated September 1, 2010 indicated that the project should have no significant impact on the facilities or operations of the Honolulu Police Department. The Department of Parks and Recreation, in an early consultation letter dated September 20, 2010, stated that the project will have no impact on any of its programs or facilities. The Honolulu Fire Department stated that the project comply with requirements for fire access and fire flow protection, and requested to review civil drawings. Comment letters are included in Chapter 7 of this Draft EA.

3.7.2 Schools

Existing Conditions

James Campbell High School is part of the State of Hawai‘i Department of Education’s (DOE) Leeward District, and serves seven rural and two military communities in the ‘Ewa area of ‘Oahu. The school campus encompasses 38 acres, and includes 11 major buildings and an athletic complex.

The “Campbell Complex” consists of Campbell High School and its feeder schools, which include ‘Ewa Elementary, ‘Ewa Beach Elementary, Holomua Elementary, Iroquois Point Elementary, Kaimiloa Elementary, Pohakea Elementary, and Ilima Intermediate Schools.

Campbell High School, along with other schools in the Leeward District’s ‘Ewa and Kapolei areas, has experienced tremendous growth over the past six to ten years, with continued growth expected in years to come. During school year 2009-2010, the school had a total enrollment of 2,639 students in grades 9 through 12, a 42% increase in six years. At the beginning of the 2010-2011 school year, school officials estimated enrollment at 2,700 students, compared to the school’s design capacity of 2,022 students.

Impacts and Mitigation

The construction of the new classroom building will help alleviate the overcrowding at Campbell High School caused by the rapid growth in population and school enrollment over the past decade. The project will enhance the learning environment by providing modern, high quality classrooms, alleviating overcrowding, and will have a positive effect on the learning environment, and on student and staff morale.

The DOE’s long-term plan is to construct a new high school to serve the East Kapolei and ‘Ewa communities. A new high school is a high priority for the DOE, and is being planned independent of the new classroom building at Campbell High School. However, it will be many years before a new high school is completed. Until then, the proposed classroom building will provide needed relief for the Campbell High School community.

During construction, there will be noise and dust impacts to surrounding classrooms and administrative offices, which surround the project site on all sides. The DOE plans to initiate construction during the summer months, so that the noisiest construction activities will occur when school is not in session. Construction will be halted during periods of standardized testing. However, inconvenience and noise disturbance to surrounding classrooms during the construction period is unavoidable.

4 CONSISTENCY WITH EXISTING PLANS, POLICIES AND CONTROLS

4.1 STATE OF HAWAII

4.1.1 Hawai'i State Plan

The 1996 Hawai'i State Plan (Chapter 226, HRS) is the umbrella document in the statewide planning system. It serves as a written guide for the future long-range development of the state by describing a desired future for the residents of Hawai'i and providing a set of goals, objectives, and policies that are intended to shape the general direction of public and private development.

The project is in conformance with State Plan objectives and policies for **socio-cultural advancement—education**:

“(b) To achieve the educational objective, it shall be the policy of this State to: (1) Support educational programs and activities that enhance personal development, physical fitness, recreation, and cultural pursuits of all groups...(2) Ensure that the provision of adequate and accessible educational services and facilities that are designed to meet individual and community needs...” (Section 226-21, HRS).

4.1.2 State Land Use Classification

The State Land Use Commission, pursuant to Chapter 205 and 205A, HRS and Chapter 15-15, Hawai'i Administrative rules, is empowered to classify all lands in the State into one of four land use districts: urban, rural, agricultural and conservation. All of the Campbell High School campus and surrounding areas are located within the State Urban district. Activities or uses within the Urban district are regulated by the City and County of Honolulu.

4.1.3 Coastal Zone Management/Special Management Area (SMA)

Coastal Zone Management (“CZM”) objectives and policies (Section 205A-2, HRS) and the Special Management Area (“SMA”) guidelines (Section 25-3.2 ROH) have been developed to preserve, protect, and where possible, to restore the natural resources of the coastal zone of Hawai'i. All lands in the State of Hawai'i and the area extending seaward from the shoreline are classified as valuable coastal resources within the State's CZM area.

The project is located outside the City and County of Honolulu's SMA (see Figure 11), and a SMA use permit is not required. The project will have no impact on marine or coastal resources.

4.2 CITY AND COUNTY OF HONOLULU

4.2.1 County General Plan

General Plan Objectives and Policies

The project is in conformance with the following policies and guidelines of the City and County of Honolulu's *1992 General Plan Objectives and Policies, Chapter IX, Health and Education*.

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

Policy 3: encourage the after-hours use of school buildings, grounds, and facilities.

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.

4.2.2 'Ewa Development Plan

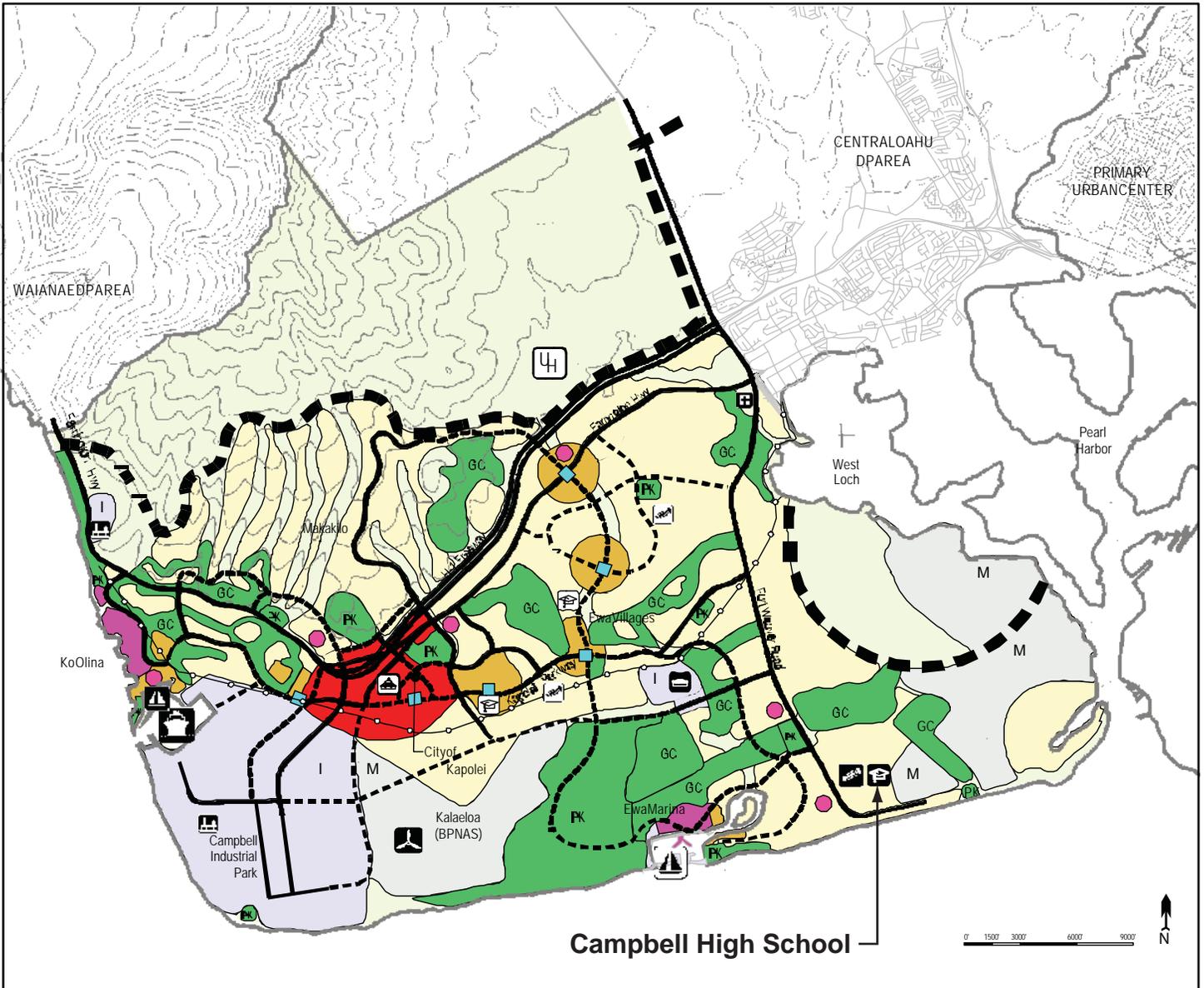
The City and County of Honolulu's Development Plan (DP) program provides a relatively detailed framework for implementing General Plan objectives and policies for the growth and development of O'ahu at a regional level.

The project site is located within the 'Ewa DP area. The 2000 'Ewa Development Plan is in the process of being updated, and is expected to be completed in the near future. The current 'Ewa DP Land Use Map is shown in Figure 10. The proposed classroom building at Campbell High School is consistent with the school's current land use map designation as a high school. The project is also consistent with the 'Ewa DP's general policies for school facilities:

- The State Department of Education should review and recommend on the adequacy of school facilities, either at existing schools or at new school sites to be made available when the development is completed.
- Developers should pay their fair share of all costs needed to insure provision of adequate school facilities for the children living in their developments.

In Section 4.7, School Facilities, the 'Ewa DP projected a need for nine new elementary schools, two new intermediate schools, and at least one new high school in 'Ewa by 2020. In recent years, many of those facilities have been completed, including Kapolei High School which opened in 2000, and a new 'Ewa Makai Middle School which is currently under construction.

Just as these new school facilities are intended to accommodate the tremendous population growth in the 'Ewa area, the construction of the new eight-classroom building will alleviate current overcrowding and improve learning conditions for students at Campbell High School.



Campbell High School

EWA DEVELOPMENT PLAN

Urban Land Use Map

- Low and Medium Density Residential
- High Density Residential
- Community Commercial Center
- City of Kapolei (High Density Residential and Commercial)
- Resort/Recreation Area
- Industrial
- Military
- Public Institution
- Agricultural Land Preservation
- Parks and Golf Courses
- Transit Node (High Density Residential and Commercial)
- Urban Growth Boundary

EXISTING FUTURE

- Existing Electric Power Plant
- Existing Wastewater T.P.
- Existing Intermediate School
- Existing High School
- Existing U.H. West Oahu
- Existing Hospital
- Existing Small Boat Marina
- Future Civic Center
- Future Wastewater T.P.
- Future Intermediate School
- Future High School
- Future U.H. West Oahu
- Future Hospital
- Future Small Boat Marina

- Commercial Harbor
- Airfield
- Highways, Arterial & Major Streets
- Historic Railway

Planning Department

 City & County of Honolulu

 August 1997

Figure 10
EWA DEVELOPMENT PLAN LAND USE

Campbell High School Eight Classroom Building,
Ewa Beach, Oahu, Hawaii

4.2.3 County Zoning

The City and County of Honolulu's Land Use Ordinance (Section 21, ROH) is its zoning ordinance, which regulates land use in a manner that will encourage orderly development in accordance with adopted land use policies.

The entire school campus is located in the R-5 Residential zoning district, as shown in Figure 11. The intent of the City and County's residential districts is to provide areas for urban residential development. Schools are a permitted use within the R-5 zoning district. The R-5 residential zoning requires a minimum lot size of 5,000 square feet with building heights of 25 feet. The roof of the new two-story classroom building will be 45 feet at its highest point. A waiver for the height requirements of the Land use Ordinance Section 21-3.70-1(c)(1) is being submitted to the Department of Planning and Permitting.

5 ANTICIPATED DETERMINATION, FINDINGS AND REASONS SUPPORTING THE CHAPTER 343 HRS DETERMINATION

5.1 ANTICIPATED CHAPTER 343 HRS DETERMINATION

Based on the information and analysis in this Environmental Assessment, the State of Hawai‘i Department of Education anticipates that the project will not result in a significant impact on the environment. As such, it anticipates issuing a Finding of No Significant Impact (FONSI), pursuant to the State of Hawai‘i HRS Chapter 343, and an Environmental Impact Statement (EIS) is not required.

5.2 CHAPTER 343 HAWAI‘I REVISED STATUTES (HRS) SIGNIFICANCE CRITERIA

In determining whether an action may have significant impact on the environment, the applicant or agency must consider all phases of the project, its expected consequences both primary and secondary, its cumulative impact with other projects, and its short and long-term effects. The State of Hawai‘i Department of Health Rules Section 11-200-12 (Hawai‘i Administrative Rules, revised 1996) establish 13 “Significance Criteria” to be used as a basis for identifying whether significant environmental impact will occur.

An agency will determine an action may have a significant impact on the environment if it meets any of the following criteria:

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

The construction of a new eight-classroom building will not result in an irrevocable commitment to loss or destruction of any natural or cultural resources. The building will be constructed within an existing school campus, on land which has been previously disturbed. The project will not affect any threatened or endangered significant biological resources. No historic properties were identified or are anticipated to be encountered.

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

The proposed project does not curtail the range of beneficial uses of the environment. The project improvements will occur within the boundaries of a developed school campus. The project will replace an outdoor stage currently used for school assemblies. The project is consistent with existing land use plans for the area. There are few, if any, alternative beneficial uses.

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

The proposed project is consistent with the environmental policies in Chapter 344, HRS, which establishes a state policy to encourage productive and enjoyable harmony between people and

their environment, promotes efforts to prevent or eliminate damage to the environment and stimulate community health and welfare, and enriches the understanding of the ecological systems and natural resources important to the people of Hawai‘i.

The primary purpose of the project is to provide adequate classrooms to support the existing student population at Campbell High School. By improving the area’s public school facilities, the project is consistent with guideline (8)(B) Community life and housing in §344-4, Guidelines. That specific guideline is to “Develop communities which provide a sense of identity and social satisfaction in harmony with the environment and provide internal opportunities for shopping, employment, education and recreation.”

4. Substantially affects the economic or social welfare of the community or state;

The project will provide needed classroom facilities at Campbell High School, and will therefore have a positive impact on the economic and social welfare of the community. Short-term negative impacts are associated with construction noise and dust, and possibly some minor traffic disruption. These impacts will be temporary.

5. Substantially affects public health;

The proposed project will be completed in accordance with federal, State and City and County of Honolulu rules and regulations governing public safety and health. Primary public health concerns involve construction-period air quality, noise and traffic. The contractor will be obligated to meet the environmental standards and procedures of various government agencies in the course of obtaining necessary permits. Potential public health impacts will be minimized or brought to negligible levels by the mitigation measure described in this document.

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

Population growth has resulted in a substantial increase in school enrollment. This growth has occurred, and will continue independent of the proposed project. The project itself is not generating the population changes. Rather, the project is responding to these population changes by providing additional and improved classroom facilities to alleviate current overcrowded conditions. The project will have no secondary impact on other public facilities.

7. Involves a substantial degradation of environmental quality;

The project will take place within an existing school campus, on previously disturbed areas. Construction period impacts related to noise and air quality will be temporary and short-term. In order to minimize impacts to students, work will be conducted during the summer months to the extent possible. Short-term impacts will be mitigated through equipment noise attenuation, and use of best management practices during construction.

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

The proposed project is limited to Campbell High School, and does not have a considerable effect on the environment or a commitment for larger actions.

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

No rare, threatened or endangered species or its habitat will be impacted by the project. The project area is an urbanized and developed site, and there are no significant biological resources located where improvements are proposed.

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

The project will result in short-term construction period increases in fugitive dust and noise that will inconvenience students and faculty when school is in session. These impacts will be temporary. There will be no long term impacts to air or water quality or noise.

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

The project area is not within an environmentally sensitive or high risk area, and is away from the Special Management Area and coastal resources.

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

The project will not impact scenic vistas or viewplanes identified in county or state plans or studies. The highest point of the building's roof will be 45 feet in height, and as such, somewhat taller than the surrounding one and two-story buildings, but consistent in character and scale. The new building will be visually compatible with the surrounding school. A zoning height variance will be obtained from the City and County of Honolulu. The building will not obstruct views of the ocean or the mountains.

13. Requires substantial energy consumption.

Installation of air conditioning and electrical systems in the new building will increase utility demand at the school, but this will not be substantial. The building is designed to comply with Hawai'i State energy code requirements. Some energy resources will be consumed during project construction.

6 REFERENCES

City and County of Honolulu, Department of General Planning. *General Plan Objectives and Policies*. 1992.

City and County of Honolulu, Department of Planning and Permitting. 'Ewa Development Plan. Revised May 2000.

_____. Land Use Ordinance. May 1999.

Cultural Surveys Hawai'i, Inc. *Archaeological Literature Review and Field Inspection for the Campbell High School Project, Pu'u'loa, Honouliuli Ahupua'a, 'Ewa District, O'ahu, TMK: [1] 9-1-001:002*. August 2010.

Fewell Geotechnical Engineering, Ltd. *Subsurface Investigation Report, New 8-Classroom Building, Campbell High School, Ewa Beach, Oahu, Hawaii*. July 24, 2007.

State of Hawai'i, Department of Business, Economic Development and Tourism. *State Data Book 2009*. <http://hawaii.gov/dbedt/info/economic/databook/>

State of Hawai'i, Office of the Governor, Office of State Planning. *The Hawai'i State Plan*, Chapter 226, Hawai'i Revised Statutes, 1991.

State of Hawai'i, Department of Education. *'Ewa Makai Middle School Final Environmental Assessment*. December 2008.

U.S. Department of Agriculture, Soil Conservation Service, In Cooperation with the University of Hawai'i Agriculture Experiment Station. August 1972. *Soil Survey of Kaua'i, O'ahu, Maui, Moloka'i and Lana'i, State of Hawai'i*.

U.S. Census Bureau, 2000 Census Data. <http://factfinder.census.gov>. Census 2000 Summary File 1 (SF1) 100 Percent Data, and Summary File 3 (SF)-Sample Data.

7 PERSONS AND AGENCIES INVOLVED IN THE PREPARATION OF THE ENVIRONMENTAL ASSESSMENT

7.1 AGENCIES AND ORGANIZATIONS CONSULTED

The following agencies and organizations were contacted during the early consultation for the Draft EA. The comments received during the early consultation are summarized in Section 7.2 and copies of the letters are included at the end of this chapter.

Federal

U.S. Army Engineer Division

- Civil Works Technical Branch
- Regulatory Branch

State

Department of Business, Economic Development & Tourism, Office of Planning

Department of Hawaiian Home Lands

Department of Land and Natural Resources

- Land Division
- State Historic Preservation Division

Department of Education

- Planning Section
- Campbell High School

Department of Health

- Environmental Planning Office

Department of Transportation

Office of Environmental Quality Control

Office of Hawaiian Affairs

City and County of Honolulu

Department of Design and Construction

Department of Environmental Services

Department of Facility Maintenance

Fire Department

Department of Planning & Permitting

Department of Parks and Recreation

Police Department

Department of Transportation Services

Board of Water Supply

Other Organizations

Neighborhood Board #23, Ewa
 Hawaiian Electric Company
 Hawaiian TelCom
 Oceanic Time Warner Cable

Elected Officials

City Councilmember Todd Apo, Honolulu City Council District 1
 Senator Willie Espero, 20th Senatorial District
 Representative Kimberly Pine, 43rd Representative District

7.2 COMMENTS RECEIVED DURING PRE-ASSESSMENT CONSULTATION

Letters soliciting comments were sent to the agencies and organizations listed above in August 2010, and a total of eleven (11) written responses were received. A summary of the comments is included in the table below, and copies of the letters are included at the end of this chapter.

Table 7-1: Summary of Comments Received During Pre-Assessment Consultation

Agency or Individual	Format/Date/Reference	Comments	Action/Response
Federal			
Department of the Army, U.S. Army Engineer District	Letter dated August 24, 2010	Based on info provided, appears that review area is entirely upland and absent of waters of the U.S. DA permit will not be required.	Information noted in Draft EA
State of Hawai'i			
Department of Health	Letter dated August 26, 2010	No comments at this time. Recommend reviewing standard comments on website. Recommend applying healthy built environment principles.	No action required.
Department of Land & Natural Resources, <i>Land Division</i>	Letter dated September 21, 2010 with consolidated comments from various divisions.	Other than comments from Land Division-Oahu District, Engineering Division, DLNR has no other comments to offer	No action required.
<i>Engineering Division</i>		Project is located in Flood Zone D, area where flood hazard is undetermined. Applicant should include project water demands and infrastructure required to meet water demands.	Information noted in Draft EA. Water and infrastructure demand discussed in DEA.

Agency or Individual	Format/Date/Reference	Comments	Action/Response
<i>Commission on Water Resource Management`</i>	Letter dated September 16, 2010	Recommend coordination with DLNR Engineering Division to incorporate project into State Water Projects Plan. Recommend water efficient fixtures and practices. Recommend use of BMP for stormwater management. EA should identify project water demand and methodology, and source of water.	Comment forwarded to project engineers. EA includes water demand information.
Office of Hawaiian Affairs	Letter dated September 1, 2010	No specific comments at this time. Look forward to reviewing DEA and providing additional comments. OHA applauds DOE efforts to improve learning environment at Campbell High School.	No action required.
City & County of Honolulu			
Dept. of Design and Construction	Letter dated September 15, 2010	No comments.	No action required.
Department of Facility Maintenance	Letter dated September 16, 2010	No comments as proposed classroom building will be within property under jurisdiction of the Dept. of Education and will have negligible impact on our facilities and operations.	No action required.
Honolulu Fire Department	Letter dated September 10, 2010	Must comply with requirements for fire access roads, and water supply capable of supplying fire flow. Submit civil drawings to HFD for review and approval.	Information included in Draft EA and forwarded to civil engineer.
Police Department	Letter dated September 1, 2010	Project should have no significant impact on facilities or operations of HPD.	No action required.
Parks and Recreation	Letter dated September 20, 2010	No comment, project will not impact any program or facility of the department. You may remove us as consulted party.	No action required.
Dept. of Transportation Services	Letter dated September 7, 2010	Construction traffic may have an impact on bus service along Fort Weaver Road and North Road, DEA should describe public transit serving general area. Project must comply with ADA	DEA includes information on public transit service. Project will comply with ADA provisions.

Agency or Individual	Format/Date/Reference	Comments	Action/Response
		provisions. DEA should include Traffic Impact Assessment Report (TIAR) which would include short-term impacts during construction and mitigation measures.	TIAR not needed because there will be no increase in vehicles and no impact to off-campus traffic during construction or after completion.
Board of Water Supply	Letter dated August 24, 2010	Existing water system is presently adequate to accommodate proposed classroom building. Final decision on availability of water to be confirmed. Coordinate fire protection with HFD.	Comment included in EA.
Other			
Hawaiian Telcom	Letter dated August 27, 2010	No comments to offer at this time.	No action required.



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

REPLY TO
ATTENTION OF:

August 24, 2010

Regulatory Branch

File Number POH-2010-0217

Kimura International, Inc.
Attention: Glenn T. Kimura
1600 Kapiolani Boulevard, Suite 1610
Honolulu, Hawaii 96814

RECEIVED AUG 26 2010

Dear Mr. Kimura:

We have received your request dated August 18, 2010 for the Department of the Army to review and comment on the proposed construction of an Eight Classroom Building at James Campbell High School at TMK (1) 9-1-001:002, Ewa Beach, Island of Oahu, Hawaii. We have assigned the project the reference number **POH-2010-0217**. Please cite the reference number in any future correspondence concerning this project. We completed our review of the submitted document pursuant to Section 10 of the Rivers and Harbors Act of 1899 (Section 10) and Section 404 of the Clean Water Act (Section 404).

Section 10 requires that a Department of the Army (DA) permit be obtained from the U.S. Army Corps of Engineers (Corps) prior to undertaking any construction, dredging and other activities occurring in, over, or under navigable waters of the U.S. The line of jurisdiction extends to the Mean High Water (MHW) Mark for tidal waters. Section 404 requires that a DA permit be obtained for the discharge (placement) of dredge and/or fill material into waters of the U.S., including wetlands. The line of jurisdiction extends to the Mean Higher High Water (MHHW) Mark for tidally influenced waters, the Ordinary High Water (OHW) Mark for non-tidal waters and the approved delineated boundary for wetlands.

Based on the information you submitted, it appears the review area consists entirely of uplands and is absent of waters of the U.S., including adjacent wetlands, subject to Corps jurisdiction. We anticipate any proposed development activities will not involve the placement or discharge of dredged and/or fill material into waters of the U.S.; therefore, it appears a **DA permit will not be required**. This determination does not relieve you of the responsibility to obtain any other permits, licenses, or approvals that may be required under County, State, or Federal law for your proposed work

Thank you for contacting us regarding this project and providing us with the opportunity to comment. Should you have any questions, please contact Ms. Jessie Pa'ahana at 808.438.0391 or via e-mail at Jessie.K.Paahana@usace.army.mil. Please be advised you can provide comments on your experience with the Honolulu District Regulatory Branch by accessing our web-based customer survey form at <http://per2.nwp.usace.army.mil/survey.html>.

Sincerely,

George P. Young, P.E.
Chief, Regulatory Branch

LINDA LINGLE
GOVERNOR OF HAWAII



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

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

In reply, please refer to:
File:

EPO- I-3315

August 26, 2010

RECEIVED AUG 31 2010

Mr. Glenn T. Kimura, President
Kimura International
1600 Kapiolani Blvd., Suite 1610
Honolulu, Hawaii 96814

Dear Mr. Kimura:

**SUBJECT: Environmental Assessment – Early Consultation for Campbell High School,
Eight Classroom Building, Ewa Beach, Oahu, Hawaii
DOE Job No. 00016-06
TMK: 9-1-001:002**

Thank you for allowing us to review and comment on the subject document. The document was routed to the various branches of the Environmental Health Administration. We have no comments at this time, but reserve the right to future comments. We strongly recommend that you review all of the Standard Comments on our website: www.hawaii.gov/health/environmental/env-planning/landuse/landuse.html. Any comments specifically applicable to this application should be adhered to.

The same website also features a Healthy Community Design Smart Growth Checklist (Checklist). The Hawaii State Department of Health, Built Environment Working Group, recommends that State and county planning departments, developers, planners, engineers and other interested parties apply the healthy built environment principles in the Checklist whenever they plan or review new developments or redevelopments projects. We also ask you to share this list with others to increase community awareness on healthy community design.

If there are any questions about these comments please contact the Environmental Planning Office at 586-4337.

Sincerely,

GENEVIEVE SALMONSON, Acting Manager
Environmental Planning Office

LINDA LINGLE
GOVERNOR OF HAWAII



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



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

RECEIVED SEP 13 2010

September 10, 2010

Kimura International
1600 Kapiolani Blvd Suite 1610
Honolulu, Hawaii 96814

Attention: Ms. Leslie Kurisaki

Ladies and Gentlemen:

Subject: Early Consultation for Environmental Assessment for Campbell High School, Eight Classroom Building

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

Other than the comments from Land Division-Oahu District, Engineering Division, the Department of Land and Natural Resources has no other comments to offer on the subject matter. Historic Preservation will be submitting comments through a separate letter. Should you have any questions, please feel free to call our office at 587-0433. Thank you.

Sincerely,

A handwritten signature in black ink, appearing to read "Morris M. Atta".

for Morris M. Atta
Acting Administrator

LINDA LINGLE
GOVERNOR OF HAWAII



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

10 AUG 31 PM 03:16 ENGINEERING



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

RECEIVED SEP 13 2010

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

August 31, 2010

RECEIVED
LAND DIVISION
2010 SEP 10 A 8:51
DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

MEMORANDUM

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

Charlene

FROM: Charlene Unoki, Assistant Administrator
SUBJECT: Early Consultation for Environmental Assessment for Campbell High School,
Eight Classroom Building
LOCATION: Island of Oahu
APPLICANT: Kimura International on behalf of the Department of Education

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by September 10, 2010.

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

Attachments

- We have no objections.
- We have no comments.
- Comments are attached.

Signed: *[Signature]*
Date: 9/10/10

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/Charlene Unoki

REF: Early Consultation For EA for Campbell High School, Eight Classroom Building, Ewa Beach
Oahu.016

COMMENTS

- () We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone ____.
- (X) **Please take note that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Zone D, an area where flood hazards are undetermined.**
- () Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is ____.
- () Please note that the project must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR), whenever development within a Special Flood Hazard Area is undertaken. If there are any questions, please contact the State NFIP Coordinator, Ms. Carol Tyau-Beam, of the Department of Land and Natural Resources, Engineering Division at (808) 587-0267.

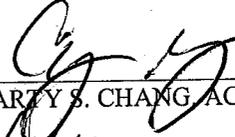
Please be advised that 44CFR indicates the minimum standards set forth by the NFIP. Your Community's local flood ordinance may prove to be more restrictive and thus take precedence over the minimum NFIP standards. If there are questions regarding the local flood ordinances, please contact the applicable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

- () Mr. Robert Sumimoto at (808) 523-4254 or Mr. Mario Siu Li at (808) 523-4247 of the City and County of Honolulu, Department of Planning and Permitting.
- () Mr. Frank DeMarco at (808) 961-8042 of the County of Hawaii, Department of Public Works.
- () Mr. Francis Cerizo at (808) 270-7771 of the County of Maui, Department of Planning.
- () Mr. Mario Antonio at (808) 241-6620 of the County of Kauai, Department of Public Works.
- (X) **The applicant should include project water demands and infrastructure required to meet water demands. Please note that the implementation of any State-sponsored projects requiring water service from the Honolulu Board of Water Supply system must first obtain water allocation credits from the Engineering Division before it can receive a building permit and/or water meter.**
- () The applicant should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update.

() Additional Comments: _____

() Other: _____

Should you have any questions, please call Mr. Dennis Imada of the Planning Branch at 587-0257.

Signed: 
CARY S. CHANG ACTING CHIEF ENGINEER

Date: 9/8/16



RECEIVED SEP 13 2010



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

August 31, 2010

MEMORANDUM

TO: *ML*

DLNR Agencies:

- Div. of Aquatic Resources
- Div. of Boating & Ocean Recreation
- Engineering Division
- Div. of Forestry & Wildlife
- Div. of State Parks
- ~~Commission on Water Resource Management~~
- Office of Conservation & Coastal Lands
- Land Division - Oahu District

Charlene

FROM: *to*

Charlene Unoki, Assistant Administrator

SUBJECT: Early Consultation for Environmental Assessment for Campbell High School, Eight Classroom Building

LOCATION: Island of Oahu

APPLICANT: Kimura International on behalf of the Department of Education

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by September 10, 2010.

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

Attachments

- We have no objections.
- We have no comments.
- Comments are attached.

Signed: *[Signature]*
Date: 9/1/2010 *BL*

LINDA LINGLE
GOVERNOR OF HAWAII



Laura H. Thielen
Chairperson
Board of Land and Natural Resources
Commission on Water Resource Management



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

RECEIVED SEP 22 2010

September 21, 2010

Kimura International
1600 Kapiolani Blvd Suite 1610
Honolulu, Hawaii 96814

Attention: Ms. Leslie Kurisaki

Ladies and Gentlemen:

Subject: Early Consultation for Environmental Assessment for Campbell High School, Eight Classroom Building

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

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

Sincerely,

A handwritten signature in black ink, appearing to read "Charlene Unoki".

Charlene Unoki
Assistant Administrator

LINDA LINGLE
GOVERNOR OF HAWAII



LAURA H. THIELEN
CHAIRPERSON

RECEIVED
LAND DIVISION

WILLIAM D. BALFOUR, JR.
SUMNER ERDMAN
NEAL S. FUJIWARA
CHIYOME L. FUKINO, M.D.
DONNA FAY K. KIYOSAKI, P.E.
LAWRENCE H. MIIKE, M.D., J.D.

2010 SEP 21 A 7:59

LENORE N. OHYE
ACTING DEPUTY DIRECTOR

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

DEPT OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

September 16, 2010

RECEIVED SEP 22 2010

REF: Campbell HS Classroom Early Consult EA.doc

TO: Morris Atta, Administrator
Land Division

FROM: Lenore N. Ohye, Acting Deputy Director
Commission on Water Resource Management *Lenore N. Ohye*

SUBJECT: Early Consultation for Environmental Assessment for Campbell High School, Eight Classroom Building

FILE NO.: NA
TMK NO.: 9-1-001:002

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

Our comments related to water resources are checked off below.

1. We recommend coordination with the county to incorporate this project into the county's Water Use and Development Plan. Please contact the respective Planning Department and/or Department of Water Supply for further information.
2. We recommend coordination with the Engineering Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.
3. We recommend coordination with the Hawaii Department of Agriculture (HDOA) to incorporate the reclassification of agricultural zoned land and the redistribution of agricultural resources into the State's Agricultural Water Use and Development Plan (AWUDP). Please contact the HDOA for more information.
4. We recommend that water efficient fixtures be installed and water efficient practices implemented throughout the development to reduce the increased demand on the area's freshwater resources. Reducing the water usage of a home or building may earn credit towards Leadership in Energy and Environmental Design (LEED) certification. More information on LEED certification is available at <http://www.usgbc.org/leed>. A listing of fixtures certified by the EPA as having high water efficiency can be found at <http://www.epa.gov/watersense/pp/index.htm>.

DRF-IA 06/19/2008

- 5. We recommend the use of best management practices (BMP) for stormwater management to minimize the impact of the project to the existing area's hydrology while maintaining on-site infiltration and preventing polluted runoff from storm events. Stormwater management BMPs may earn credit toward LEED certification. More information on stormwater BMPs can be found at <http://hawaii.gov/dbedt/czm/initiative/lid.php>.
- 6. We recommend the use of alternative water sources, wherever practicable.
- 7. There may be the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.

Permits required by CWRM:

Additional information and forms are available at http://hawaii.gov/dlnr/cwr/resources_permits.htm.

- 8. The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit is required prior to use of water.
- 9. A Well Construction Permit(s) is (are) required any well construction work begins.
- 10. A Pump Installation Permit(s) is (are) required before ground water is developed as a source of supply for the project.
- 11. There is (are) well(s) located on or adjacent to this project. If wells are not planned to be used and will be affected by any new construction, they must be properly abandoned and sealed. A permit for well abandonment must be obtained.
- 12. Ground water withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.
- 13. A Stream Channel Alteration Permit(s) is (are) required before any alteration(s) can be made to the bed and/or banks of a stream channel.
- 14. A Stream Diversion Works Permit(s) is (are) required before any stream diversion works is (are) constructed or altered.
- 15. A Petition to Amend the Interim Instream Flow Standard is required for any new or expanded diversion(s) of surface water.
- 16. The planned source of water for this project has not been identified in this report. Therefore, we cannot determine what permits or petitions are required from our office, or whether there are potential impacts to water resources.
- OTHER:
We recommend that the EA identify the project water demand and methodology for deriving this demand. We also recommend that the EA identify the source of this water.

If there are any questions, please contact Lenore Ohye at 587-0216.

PHONE (808) 594-1888

FAX (808) 594-1865



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

RECEIVED SEP 08 2010

HRD10/5208

September 1, 2010

Glenn T. Kimura, President
Kimura International
1600 Kapi'olani Boulevard, Suite 1610
Honolulu, Hawai'i 96814

**RE: Pre- Draft Environmental Assessment Consultation
Campbell High School
Ewa, Island of O'ahu
Tax Map Key: (1) 9-1-001:002**

Aloha e Glenn Kimura,

The Office of Hawaiian Affairs (OHA) is in receipt of your August 18, 2010 letter seeking comments ahead of a draft environmental assessment (DEA) being prepared for the State of Hawai'i-Department of Education (DOE).

It is our understanding the DOE is proposing to construct a new eight classroom building at James Campbell High School. This new building will be situated near the middle of campus in a grassy area surrounded by existing classrooms where school assemblies are held.

We have no specific comments at this time. Thank you for initiating consultation at this early stage. We look forward to the opportunity to review the completed DEA and provide additional comments at that time. OHA applauds the efforts of the DOE to improve the learning environment at Campbell High School.

'O wau iho nō me ka 'oia'i'o,

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

Clyde W. Nāmu'o
Chief Executive Officer

LINDA LINGLE
GOVERNOR



BRENNON T. MORIOKA
DIRECTOR

Deputy Directors
MICHAEL D. FORMBY
FRANCIS PAUL KEENO
JIRO A. SUMADA

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

IN REPLY REFER TO:

STP 8.0219

September 3, 2010

RECEIVED SEP 10 2010

Mr. Glenn T. Kimura
President
1600 Kapiolani Boulevard, Suite 1610
Honolulu, Hawaii 96814

Dear Mr. Kimura:

Subject: Campbell High School, Eight Classroom Building
Environmental Assessment – Early Consultation

Thank you for requesting the State Department of Transportation's (DOT) review of the subject project.

DOT understands that the subject proposes to construct a new eight-classroom building at James Campbell High School. The new 21,548 square foot, two story classroom building is intended to alleviate existing overcrowding conditions at the school. Access to the project site is from North Road and Fort Weaver Road.

Given the project is to provide instructional facilities for the current school enrollment, DOT does not anticipate any significant, adverse impacts to its transportation facilities.

DOT appreciates the opportunity to provide comments. If there are any other questions, please contact Mr. David Shimokawa of the DOT Statewide Transportation Planning Office at telephone number (808) 587-2356.

Very truly yours,

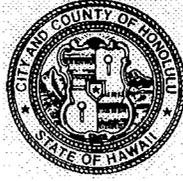
A handwritten signature in black ink, appearing to be "BM", written over a horizontal line.

BRENNON T. MORIOKA, Ph.D., P.E.
Director of Transportation

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813

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



KIRK CALDWELL
ACTING MAYOR

CRAIG I. NISHIMURA, P.E.
DIRECTOR

COLLINS D. LAM, P.E.
DEPUTY DIRECTOR

September 15, 2010

RECEIVED SEP 17 2010

Mr. Glenn T. Kimura, President
Kimura International, Inc.
1600 Kapiolani Boulevard, Suite 1610
Honolulu, Hawaii 96814

Dear Mr. Kimura

Subject: Campbell High School, Eight Classroom Building
Ewa Beach, Oahu, Hawaii
TMK: 9-1-001:002
DOE Job. No.00016-06
Environmental Assessment – Early Consultation

Thank you for inviting us to review the above Final Environmental Assessment. The Department of Design and Construction does not have any comments to offer at this time.

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

Very truly yours,

A handwritten signature in black ink, appearing to read "Craig I. Nishimura".

Craig I, Nishimura, P.E.

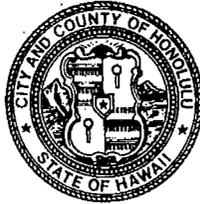
FOR Director

CN:pg(380528)

DEPARTMENT OF FACILITY MAINTENANCE
CITY AND COUNTY OF HONOLULU

1000 Uluohia Street, Suite 215, Kapolei, Hawaii 96707
Phone: (808) 768-3343 • Fax: (808) 768-3381
Website: www.honolulu.gov

KIRK W. CALDWELL
ACTING MAYOR



JEFFREY S. CUDIAMAT, P.E.
DIRECTOR AND CHIEF ENGINEER

GEORGE "KEOKI" MIYAMOTO
DEPUTY DIRECTOR

IN REPLY REFER TO:
DRM 10-696

September 16, 2010

RECEIVED SEP 15 2010

Mr. Glenn T. Kimura, President
Kimura International
1600 Kapiolani Boulevard, Suite 1610
Honolulu, Hawaii 96814

Dear Mr. Kimura:

Subject: Environmental Assessment (EA) – Early Consultation
Campbell High School, Eight Classroom Building
Ewa Beach, Oahu, Hawaii, TMK: 9-1-001:002
DOE Job No. 00016-06

Thank you for the opportunity to provide comments on the early consultation for the EA for the proposed eight classroom building at Campbell High School.

We have no comments to offer as the proposed classroom building will be within property under the jurisdiction of the State Department of Education and will have negligible impact on our facilities and operations.

Since the proposed classroom building will not affect our facilities or operations, we request the Department of Facility Maintenance (DFM) be removed from the environmental assessment process for this project.

Should you have any questions, please call Charles Pignataro of the Division of Road Maintenance, at 768-3697.

Sincerely,

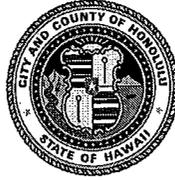
A handwritten signature in black ink, appearing to read "Jeffrey S. Cudiamat", is written over a circular stamp.

Jeffrey S. Cudiamat, P.E.
Director and Chief Engineer

HONOLULU FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU

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

KIRK W. CALDWELL
ACTING MAYOR



KENNETH G. SILVA
FIRE CHIEF

ROLLAND J. HARVEST
DEPUTY FIRE CHIEF

September 10, 2010

RECEIVED SEP 14 2010

Mr. Glenn Kimura, President
Kimura International
1600 Kapiolani Boulevard, Suite 1610
Honolulu, Hawaii 96814

Dear Mr. Kimura:

Subject: Environmental Assessment - Early Consultation
Campbell High School, Eight Classroom Building
Ewa Beach, Oahu, Hawaii
Tax Map Key: 9-1-001: 002
DOE Job No. 00016-06

In response to your letter of August 18, 2010, regarding the above-mentioned subject, the Honolulu Fire Department (HFD) reviewed the material provided and requires that the following be complied with:

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

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

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

Mr. Glenn Kimura, President

Page 2

September 10, 2010

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

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

Should you have any questions, please call Battalion Chief Socrates Bratakos of our Fire Prevention Bureau at 723-7151.

Sincerely,



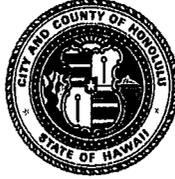
KENNETH G. SILVA
Fire Chief

KGS/SY:bh

DEPARTMENT OF PARKS AND RECREATION
CITY AND COUNTY OF HONOLULU

KAPOLEI HALE, 1000 ULUOHIA STREET, STE. 309 • KAPOLEI, HAWAII 96707
Phone: (808) 768-3003 • FAX: (808) 768-3053 • Internet: www.honolulu.gov

KIRK W. CALDWELL
ACTING MAYOR



LESTER K. C. CHANG
DIRECTOR

RICHARD HARU
DEPUTY DIRECTOR

RECEIVED SEP 22 2010

September 20, 2010

Mr. Glenn T. Kimura, President
Kimura International, Inc.
1600 Kapiolani Boulevard
Honolulu, Hawaii 96814

Dear Mr. Kimura:

Subject: Early-Consultation for Environmental Assessment
Campbell High School, Eight Classroom Building
TMK: 9-1-001:002
DOE Job No. 00016-06

Thank you for the opportunity to review and comment at the pre-consultation stage of the Draft Environmental Assessment for the Campbell High School, Eight Classroom Building project.

The Department of Parks and Recreation has no comment, as the proposed project will not impact any program or facility of the department. You may remove us as a consulted party to the balance of the EIS process.

Should you have any questions, please contact Mr. John Reid, Planner, at 768-3017.

Sincerely,


LESTER K. C. CHANG
Director

LKCC:jr
(380534)

POLICE DEPARTMENT
CITY AND COUNTY OF HONOLULU

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



LOUIS M. KEALOHA
CHIEF

DELBERT T. TATSUYAMA
RANDAL K. MACADANGDANG
DEPUTY CHIEFS

OUR REFERENCE **DMK-DK**

September 1, 2010

RECEIVED SEP 03 2010

Mr. Glenn T. Kimura, President
Kimura International, Inc.
1600 Kapiolani Boulevard, Suite 1610
Honolulu, Hawaii 96814

Dear Mr. Kimura:

This is in response to your letter of August 18, 2010, requesting comments on an Early Consultation, Draft Environmental Assessment, for the Campbell High School Eight-Classroom Building project in Ewa Beach.

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

If there are any questions, please call Captain Mitchell Kiyuna or Major Michael Moses of District 8 (Kapolei/Waianae) at 692-4253.

Sincerely,

LOUIS M. KEALOHA
Chief of Police

By 

DAVE M. KAJIHIRO
Assistant Chief of Police
Support Services Bureau

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 3RD FLOOR
HONOLULU, HAWAII 96813

Phone: (808) 768-8305 • Fax: (808) 768-4730 • Internet: www.honolulu.gov

KIRK W. CALDWELL
ACTING MAYOR



WAYNE Y. YOSHIOKA
DIRECTOR

SHARON ANN THOM
DEPUTY DIRECTOR

KENNETH TORU HAMAYASU P.E.
DEPUTY DIRECTOR

TP8/10-380475R

September 7, 2010

RECEIVED SEP 09 2010

Mr. Glenn T. Kimura, President
Kimura International, Inc
1600 Kapiolani Boulevard, Suite 1610
Honolulu, Hawaii 96814

Dear Mr. Kimura:

Subject: Environmental Assessment (EA) Pre-Assessment Consultation
Campbell High School, Eight Classroom Building
Tax Map Key: 9-1-001:002, Ewa Beach, Oahu, Hawaii

This responds to your letter dated August 18, 2010, requesting a pre-consultation for comments in preparing the Draft Environmental Assessment (DEA) for the subject project.

Although the project is entirely internal, the construction traffic may have an impact on our bus service along Fort Weaver Road and North Road. Therefore, the DEA should include a description of Public Transit serving the general area of your project, the potential impact of your project on Public Transit operations during construction, and the impact of your project on Public Transit as a result of the completed project. Basic information is available on our websites: www.thebus.org and www.honolulu.gov/dts. For more details, you may contact our staff at 768-8370.

The project must comply with the appropriate provisions of the Americans with Disabilities Act (ADA). On-site and internal traffic circulation should be designed to facilitate the City's The Handi-Van's 31' turning radius and 10'6" height clearance.

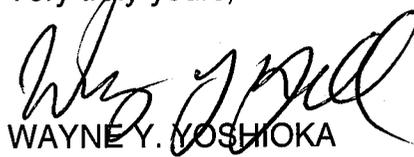
The DEA should include the preparation of a Traffic Impact Assessment Report (TIAR) which would include short term impacts during construction and mitigation measures. The department reserves comment on the project pending the preparation of the associated traffic study.

Mr. Glenn T. Kimura, President
Page 2
September 7, 2010

Prior to the start of the project, the affected Neighborhood Board, residents, and businesses should be informed about the scope and duration of the project.

Should you have any questions on the matter, you may contact Ms. Virginia Bisho of my staff at 768-5461.

Very truly yours,



WAYNE Y. YOSHIOKA
Director

BOARD OF WATER SUPPLY

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



August 24, 2010

KIRK W. CALDWELL, Acting Mayor

RANDALL Y. S. CHUNG, Chairman
WILLIAM K. MAHOE
THERESIA C. McMURDO
ADAM C. WONG

JEFFREY S. CUDIAMAT, Ex-Officio
BRENNON T. MORIOKA, Ex-Officio

WAYNE M. HASHIRO, P.E.
Manager and Chief Engineer

DEAN A. NAKANO
Deputy Manager

RECEIVED AUG 25 2010

Mr. Glenn T. Kimura, President
Kimura International, Incorporated
1600 Kapiolani Boulevard, Suite 1610
Honolulu, Hawaii 96814

Dear Mr. Kimura:

Subject: Your Letter Dated August 18, 2010 Requesting Comments on the Campbell High School, Eight Classroom Building, Environmental Assessment - Early Consultation, TMK: 9-1-1:2

Thank you for your letter on the proposed eight classroom building.

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

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

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

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

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

Very truly yours,


PAUL S. KIKUCHI
Chief Financial Officer
Customer Care Division

Hawaiian Telcom 

RECEIVED AUG 31 2010

August 27, 2010

Kimura International, Inc.
1600 Kapiolani Boulevard, Suite 1610
Honolulu, Hawaii 96814
Attention: Mr. Glenn T. Kimura

Dear Mr. Kimura:

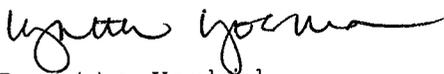
**Subject: Campbell High School, Eight Classroom Building
Environmental Assessment - Early Consultation**

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

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

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

Sincerely,



Lynette Yoshida
Senior Manager - OSP Engineering
Network Engineering & Planning

cc: File [Ewa Beach]

Appendix A

Subsurface Investigation Report
Fewell Geotechnical Engineering, Ltd.
July 24, 2007



**FEWELL
GEOTECHNICAL
ENGINEERING, LTD.**

Oahu Office
96-1416 Waihona Place
Pearl City, Hawaii 96782-1973
(808) 455-6569
FAX (808) 456-7062
E-mail: fge@fgeltd.com

Maui Office
360 Papa Place, Suite 103
Kahului, Hawaii 96732-2464
(808) 873-0110
FAX (808) 873-0906

**SUBSURFACE INVESTIGATION REPORT
NEW 8-CLASSROOM BUILDING
CAMPBELL HIGH SCHOOL
EWA BEACH, OAHU, HAWAII**

for

CDS INTERNATIONAL, INC.

by

FEWELL GEOTECHNICAL ENGINEERING, LTD.

JULY 24, 2007



**FEWELL
GEOTECHNICAL
ENGINEERING, LTD.**

Oahu Office
96-1416 Waihona Place
Pearl City, Hawaii 96782-1973
(808) 455-6569
FAX (808) 456-7062
E-mail: fge@fgeltd.com

Maui Office
360 Papa Place, Suite 103
Kahului, Hawaii 96732-2464
(808) 873-0110
FAX (808) 873-0906

File 2764.01
July 24, 2007

CDS International, Inc.
1001 Bishop Street, Suite 400
Honolulu, Hawaii 96813

Attention: Mr. Richard Balcom

Subject: **Subsurface Investigation Report**
New 8-Classroom Building
Campbell High School
Ewa Beach, Oahu, Hawaii
DOE Job No. Q00016-06

We have completed a subsurface investigation for the site of the New 8-Classroom Building at Campbell High School, in Ewa Beach, Oahu, Hawaii. This report summarizes our findings and conclusions and presents geotechnical recommendations for the design and construction of the new building.

This work was completed in general accordance with our January 7, 2007 revised proposal and your April 23, 2007 verbal authorization. The initiation of the investigation and the completion of the report were delayed at the request of Campbell High School to allow the work to occur during the summer vacation for the school.

Project Considerations – The preliminary information provided by CDS International (CDS), indicates that a new 8-classroom building is proposed at Campbell High School. Campbell High School is on the western side of North Road in Ewa Beach, between Pohakea Elementary School and Our Lady of Perpetual Help School. The general area of the school is shown on the Project Location Map, Figure 1, in the attached Appendix.

The site of the proposed classroom building is within an open quadrangle in the northern corner of the school campus. The quadrangle is surrounded by the Administrative Building and Buildings D, F and G. The entire quadrangle is estimated at about 150 feet wide by about 300 feet long, covering about an acre. The new classroom building is proposed within the western half of the quadrangle, just east of the existing Physical Education Building, Building F.

The quadrangle is surrounded by concrete sidewalks, and it houses an elevated stage on its western end, in the area of the new building. The remainder of the area is covered with lawn. The ground surface within the quadrangle is relatively level at about Elev. 11 to Elev. 12 within the area of the new building, but is 1 to 2 feet below the surrounding sidewalks and floor levels of the adjacent buildings. Numerous water, electrical and sewer utilities transect the area. We understand that an abandoned cesspool occupies the northwestern corner of the proposed building area.

The May 1, 2007 preliminary design schemes provided by CDS indicate that the new building will be 2-stories in height and will provide about 9,700 square feet for each floor. It is generally rectangular in shape and about 120 feet long by 80 feet wide. An attached stage and amphitheater area will extend the central section of the building out an additional 50 feet on its eastern side. We understand through our discussions with CDS that the finish floor for the building is proposed at Elev. 14.

The building interior is planned with minimal fixed walls and it is anticipated that scattered columns will be necessary along the center of the building to support the second floor and roof. Information provided by the Project Structural Engineer indicates that wall loads are estimated at 3.3 to 6.9 kips per foot of wall, and column loads are estimated at 95 to 113 kips per column. Based on the existing grades, it is anticipated that 1 to 2 feet of fill will be necessary to establish the finish floor level at Elev. 14 during the site grading.

Drainage for the new construction will be controlled on-site through a leaching field. We understand through our discussions with the Project Civil Engineer, that the fields will be on the eastern side of the new building in the remaining open area of the quad. The infiltrators will likely be installed at about 5 feet below the existing ground surface.

Subsurface Investigation – A total of 3 test borings and 3 percolation holes were drilled on June 12 and 13, 2007 at the approximate locations shown on the attached Site and Boring Location Plan, Figure 2, in the Appendix. The borings were drilled to depths of 20 to 25 feet below the existing ground surface, while the percolation holes were drilled to depths of 1 to 5½ feet. Both the borings and percolation holes were drilled with a Simco SK2400 truck-mounted drilling rig advancing 4-inch diameter continuous flight augers and NX coring tools, where necessary.

Relatively undisturbed samples of the subsurface soils were obtained at selected depths with either a 3.0-inch O.D. split-spoon sampler or a 2.0-inch Standard Penetration Test (SPT) sampler, both driven by a 140-pound hammer falling 30 inches. The number of blows required to advance the samplers the final 12 inches into the soil mass was recorded and is shown on the Boring and Percolation Hole Logs, Figures 3 through 8, together with the materials encountered in each hole. A Boring Log Legend is included as Figure 9.

The “blow counts” shown on the logs are the actual blow counts obtained in the field. The blow counts for the 3.0-inch diameter sampler have not been normalized to their equivalent SPT blow counts.

Percolation Tests – Percolation Holes P-1, P-2 and P-3 were saturated overnight and tested on June 14, 2007. The percolation tests were completed in general accordance with the Site Evaluation guidelines of the State of Hawaii Department of Health under Chapter 11-62 of the Hawaii Administrative Rules.

Although only 2 percolation holes and tests were initially planned, the presence of 2 significantly different materials within the depth of testing necessitated an additional test. Percolation Holes P-1 and P-2 were drilled to depths of 5 and 5½ feet, respectively, and the tests were performed on the coral materials at the bottom of these holes. Percolation

Hole P-3 was drilled to a depth of 1 foot to test the percolation rate of near surface cohesive soils found above the coral.

In general the testing consisted of placing a 1-inch thick layer of free draining 3B-Fine aggregate at the bottom of the hole, filling the lower 6 inches of the hole with water, and recording the drop in the water level over 10-minute or 30-minute time intervals, depending on the type of soils being tested and the initial rates of percolation.

The results of the percolation tests are shown in Figures 10 through 12. The tests indicate that the surface layer of cohesive soils showed a percolation rate of 17.8 minutes per inch (mpi), while the coral beneath the surface soils exhibit percolation rates of 4.1 mpi and 36.9 mpi. The different rates found in the coral are likely related to the composition and fracturing of the coral at each location.

Laboratory Testing – Selected samples of the subsurface soils were tested in our laboratory to determine their general engineering characteristics, including in-situ moisture content, density, and swell under their in-situ moisture conditions. Atterberg Limits and gradation tests were performed on visually representative samples to aid in their classification. Due to the rocky nature of most of the samples, relatively limited laboratory tests could be performed.

The results of the laboratory tests are shown on the Boring and Percolation Hole Logs where appropriate. Selected results are graphically shown on Figures 13 through 19 in the Appendix. Table I at the end of the Appendix presents a summary of the laboratory tests on the undisturbed samples.

General Subsurface Conditions – The test borings revealed that the site for the new classroom building is generally underlain by about ½ to 2 feet of fill over up to 4½ feet of alluvial (water-deposited) soils, over a coral formation at depths ranging from about 2 to 5 feet below the existing ground surface. The coral formation was found directly below the fill in the percolation holes in front of the proposed building location.

The coral formation consists of weathered coral rock immediately below the alluvium and fill, but grades to coral detritus consisting of uncemented coral fragments at depths of 15½ to 16½ feet below the ground surface in Borings 1 and 2. In Boring 3, a 3½-foot tall void was found below the coral rock at a depth of 10 feet, followed by very loose coral debris to a depth of 17 feet, at which depth, a coral detritus similar to the materials found in Borings 1 and 2 was found. The coral detritus extends to the bottom of all of the borings at depths of 20 to 25 feet below the existing ground surface.

Fill - Fill was found in all of the test borings and percolation holes. The fill generally consists of highly plastic clayey silt, classified as MH under the Unified Soil Classification (USC) system. The fills encountered in the borings and percolation holes are damp and hard, and generally appear adequately compacted.

A swell test on the fill indicates that it is low to moderately expansive with a swell of 2.1 percent and a swell index of 0.60. The swell index is the ratio of the incremental swell for each increment of moisture content change.

Alluvium - Alluvial clayey sands and clayey gravels were found beneath the fill in borings drilled in the building area, but were not found in the percolation holes drilled in

front of the proposed building. The clayey sand and clayey gravel are classified as SC and GC under the USC system, and exhibit relative densities of medium dense to dense. Based on their relative densities, it is estimated that these alluvial soils should exhibit moderate shear strengths and low to moderate compressibility.

Coral Formation - The top of the coral formation beneath the alluvium was found at depths of 2 to 5 feet below the existing ground surface, or between about Elev. 8 and Elev. 10, based on the May 7, 2007 Topographic Plan provided by CDS. The coral formation generally consists of slightly weathered coral rock near the ground surface but grades to uncemented detritus at greater depths.

The thickness of the intact coral rock varies from as thick as 14 feet in Boring 1, to as thin as 7 feet in Boring 3, where the void was found at a depth of 10 feet. The intact coral rock is medium hard and broken to occasionally broken.

The coral detritus below the coral rock in Borings 1 and 2, and below the coral debris in Boring 3, generally consists of uncemented silty gravel-sized coral fragments, which are classified as GM under the USC system. The materials exhibit relative densities of medium dense to dense, which suggests that they should possess moderate shear strengths and low compressibility.

The coral debris found below the void in Boring 3 is similar to the coral detritus, but is generally well graded gravel-sized coral fragments with a very loose relative density. Their low blow counts suggest that they are relatively weak soils with moderate to high compressibility.

Groundwater - Groundwater was found in all of the test borings at a depth of 11 feet below the existing ground surface at the time of the investigation. Based on the estimated ground surface elevations at the boring locations, these depths correspond to between about Elev. 1 and Elev. 2.

Discussion – We believe that the site for the new 8-classroom building can be adequately developed to satisfactorily support the new construction provided the recommendations of this report are followed. The subsurface investigation has revealed that the site for the new building is generally underlain by compacted fill over relatively competent alluvial soils and intact coral rock, which should provide adequate support for the structure.

The most significant concerns regarding the development of the site for the new construction is the medium dense alluvial sands and gravel beneath the fill, and the low to moderate shrink-swell characteristics of the fills. However, we believe that these concerns can be minimized by proof-rolling the site during the site grading to densify the alluvium in-place, and by using a low-expansion fill in the site grading over the existing fills.

Our analysis indicates that concerns regarding the expansion of the soils can be minimized by the placement of at least 12 inches of low-expansion soils over the existing fills. Since the site will be raised 1 to 2 feet to establish the finish grades, the use of a low-expansion imported fill should mitigate the concerns with the moderately expansive soils on the site.

The void found beneath, or within, the coral rock in Boring 3 was not found in the remaining borings. We believe that it is likely an isolated solution cavity, which are not uncommon in coral formations. Similar voids should be anticipated within the coral formation. Foundation probes should be drilled during the construction to determine whether such voids or cavities exist immediately below the foundations.

Recommendations

General – The subsurface investigation has revealed that the site for the new 8-classroom building is generally underlain by compacted fill over a thin layer of low to moderately compressible alluvial soils and coral rock. The alluvial soils can consolidate and affect the heavily loaded foundations. Some special considerations should be included in the design and construction of the site grading to densify the existing alluvial soils in-place prior to filling the site.

Voids and/or solution cavities should be anticipated within the coral rock formation beneath the surface soils. Although they should not affect the floor slabs and light foundations, they can affect the heavily loaded footings. Foundation probes should be drilled at the foundation locations prior to the foundation construction to determine whether voids or cavities are present immediately beneath the foundation bearing levels.

The coral rock found beneath the existing surface soils at depths of 2 to 5 feet below the existing ground surface is slightly weathered and medium-hard. The use of heavy excavating equipment such as rock trenchers and hoe-rams should be anticipated for excavations, which must penetrate the coral rock.

Groundwater was found in all of the borings at a depth of 11 feet, which corresponds to between about Elev. 1 and Elev. 2. At this depth, the groundwater is not anticipated to affect most of the construction. However, dewatering should be anticipated for deep utility trenches or other deep site excavations, which approach Elev. 2.

Site Preparation – Prior to the start of the actual grading operations, the site should be cleared and grubbed in accordance with Section 10 of the Standard Specifications for Public Works Construction of the City and County of Honolulu (Standard Specifications). All above-ground vegetation and debris resulting from the removal of the existing structures should be cleared and removed from the site.

Any roots, root mats or similar below ground organic materials should be grubbed and removed from the site. The actual depth of grubbing can best be determined in the field but 2 to 4 inches will likely suffice. The organically contaminated grubbed materials are not suitable for use as engineered fill and should be wasted off-site. They may be stockpiled for use as topsoil in landscaping provided they meet the requirements of the Project Landscape Architect.

Following the clearing and grubbing operation, the building area, plus a 5-foot perimeter, should be proof-rolled with no less than 7 passes of a heavy vibratory compactor such as a Raygo Rascal 400A, or its equivalent, imparting at least 25,000-foot pounds of dynamic force into the underlying soils. The proof-rolling should not encroach within 10 feet of the existing building to minimize the potential of disturbance to those structures.

Any soft or loose spots, or uncompacted fills encountered should be over-excavated, and the resulting depression backfilled in accordance with the Grading Recommendations. The excavated materials may be re-used to backfill the over-excavated depression provided the backfill level does not exceed the original ground surface elevation, and the material is free of organics, rocks or soil clods greater than 2 inches in maximum dimension, and other deleterious materials.

The existing utilities crossing the site, which interfere with the new construction, should be removed and rerouted. The resulting trenches should be cleaned out and backfilled in accordance with the Utility Recommendations of this report.

The existing cesspool in the northwestern corner of the site should similarly be cleaned out and backfilled. It is anticipated that the depth of the cesspool will likely extend down into the underlying coral rock materials. The cesspool should be cleaned out of debris and backfilled with low-cost concrete up to the top of the coral formation. The remainder of the backfill should consist of soil backfill placed and compacted in accordance with the Grading Recommendations of this report.

Site Grading – Once the site has been properly prepared, site grading may commence to generate the planned finish grades. The level portion of the graded building pad should extend a lateral distance of at least 5 feet beyond the perimeter of the structure and its related attachments. Where this criteria cannot be met, deepening of the foundations along the perimeter will be necessary.

Due to the lack of excavation in the site grading it is anticipated that fills will have to be imported to the site. The imported fill should be a low-expansion soil free of organics, deleterious materials, rocks or soil clods larger than 2 inches in maximum dimension. It should exhibit a Liquid Limit of no more than 60, a Plasticity Index of less than 20, and no more than 1 percent swell when tested in accordance with ASTM D1883.

The existing ground to receive fill should be moisture-conditioned to no drier than its optimum moisture content and uniformly compacted to at least 90 percent relative compaction as determined by Laboratory Compaction Test ASTM D1557 for a depth of at least 6 inches prior to fill placement. Fill should be placed in relatively level lifts of no more than 8 inches in loose thickness, moisture-conditioned to within 3 percent of its optimum moisture content and uniformly compacted to at least 90 percent relative compaction as determined by the above-referenced test.

Fill slopes should be over-constructed during the mass grading and cut back to their design configuration during the fine grading to provide a tight compacted slope surface. Fill slopes should be limited to no steeper than 2 Horizontal to 1 Vertical (2H:1V) for heights of up to 5 feet. Cut slopes and fill slopes exceeding this height are not anticipated on this project and should be individually evaluated should they occur.

Utilities – The installation of the utilities should be in accordance with Section 11 of the Standard Specifications and the appropriate section of the Standard Specifications pertaining to each utility. The use of heavy trenching equipment and hoe-rams should be anticipated where the utility trenches extend down into the coral rock at depths as shallow as 2 feet below the ground surface.

Utilities may be founded on the compacted fill, the natural alluvial soils, or the coral rock. Where the utilities are founded on the coral rock, the coral should be excavated below the invert of the pipes and replaced with a granular pipe cushion material to minimize the potential for point loads on the pipes. The thickness of the over-excavation and the pipe cushion should be in accordance with the appropriate section of the Standard Specifications pertaining to each utility, but should not be less than 6 inches.

Backfills for the utilities may consist of the excavated on-site soils provided they do not extend to a level above 12 inches below the building subgrade, and the material is free of organics, deleterious materials and rocks or soil clods greater than 2 inches in maximum dimension. Crushing and processing of the excavated coral such that it meets the above requirements should be anticipated to use as backfill.

Utility backfills should be placed and compacted in accordance with Section 11 of the Standard Specifications using the appropriate mechanical compactors around and above the pipes. Jetting and ponding with water should not be allowed as a method of compaction. Backfill should be placed in relatively level lifts of no more than 8 inches in loose thickness, moisture-conditioned to within 3 percent of its optimum moisture content and uniformly compacted to at least 90 percent relative compaction as determined by ASTM D1557.

Adequate shoring and bracing should be provided for the utility trenches and other deep site excavation in accordance with the applicable HIOSH requirements. The design of the shoring and bracing systems should be the responsibility of the contractor.

The layout of the utilities should consider the building foundation locations and should not encroach within the supportive soils beneath the footings. This is generally delineated by an imaginary line extending down from the outside edge of the footings at a slope of 1½H:1V. Fewell Geotechnical Engineering, Ltd. (FGE) should be notified where the footings must pass beneath the foundations or within the supportive soils for the foundations such that these occurrences can be individually evaluated.

Foundations – We believe that the proposed structure can be supported on shallow individual spread footings, continuous footings, or a combination of these two types. Although other foundations systems are available, we believe that the recommended system will perform satisfactorily and will likely be the most economical.

Individual spread footings should be at least 24 inches in width, while continuous footing should maintain a minimum base width of at least 16 inches. The footings should be embedded at least 12 inches below the lowest adjacent compacted subgrade on level ground. Foundations on slopes or within 5 feet of the top of slopes should be embedded a sufficient depth such that there is at least 6 feet of horizontal distance between the lower outside edge of the footing and the compacted slope face.

The foundations may be founded on compacted fill or the densified alluvial soils where they may be designed for an allowable bearing capacity of 3,000 pounds per square foot (p.s.f.). Should a higher capacity be desired, the foundation may be extended down to bear on the coral formation beneath the fill and alluvial materials, where they may be designed for an allowable bearing capacity of 8,000 p.s.f. These values may be increased by 1/3 for short-term transient loads.

Individual spread footings may bear on either soil or coral but should bear on the same material throughout their contact surface. Where the foundation bears partially on soil and partially on coral, it should be extended deeper such that the foundation bears entirely on the coral.

The bottom of the foundation excavations should be cleaned out of the loose materials prior to the placement of the reinforcing steel and concrete. Foundation excavations bearing on soils should be compacted to at least 90 percent relative compaction as determined by ASTM D1557 prior to the placement of the reinforcing steel.

Foundation probes should be drilled for each individual spread footing and at 10-foot intervals along the continuous foundations to determine whether voids or cavities are present beneath the foundations. The continuous footing should be designed to span 10 feet as a simple beam. The probes should be extended down at least 1½ footing widths but not less than 5 feet below the bearing level of the continuous foundations. Probes for the individual spread footings should be extended at least 1 foundation width but not less than 8 feet below the bearing levels of the footing.

Additional probes should be anticipated where cavities or voids are found to better delineate their lateral extent. FGE should be notified should any cavities or voids be encountered such that they can be evaluated and additional recommendations provided. The procedures for each void will differ depending on the actual conditions in the field, but in general, will likely consist of breaking open the shallow voids such that they can be backfilled with concrete, and grouting the deeper voids with pumped concrete. Probe holes, which do not encounter voids, should also be grouted prior to the actual foundation construction.

The foundations should be designed in accordance with the recommendations of the Project Structural Engineer. Total and differential settlements exceeding ½ inch are not anticipated for the footings provided the wall and column loads do not exceed 7 kips per foot and 125 kips per column. FGE should be notified should the actual loads exceed these amounts so that the foundations can be re-evaluated and additional recommendations provided, if necessary.

Concrete Slabs-on-Grades – Concrete slabs-on-grades can be used for the ground floor slab of the building provided the Grading Recommendations have been followed. This will assure that the slabs subgrade consists of at least 12 inches of low-expansion imported fill, which has been compacted to at least 90 percent relative compaction.

The existing fills and natural alluvial soils are susceptible to the capillary rise of moisture. At least 4 inches of lightly compacted ASTM C-33 No. 67 aggregate (3B Fine) should be placed below the slab and over the soil subgrades to act as a capillary break. A vapor barrier, if desirable, should be installed in accordance with the recommendations of the Project Structural Engineer.

The design of the concrete slabs-on-grades should be in accordance with the recommendations of the Project Structural Engineer. Differential settlements between the foundations and slabs exceeding ¼ inch are not anticipated.

Miscellaneous – Assuming that the coral detritus of the coral formation extends to a depth of 100 feet below the site, the Site Classification for the site would be D under the

2003 International Building Code. Positive drainage provisions should be included in the design and construction of the project to direct surface water away from the slopes and preclude the ponding of water adjacent to or beneath the structures. The graded slopes should be grassed or mulched as soon as practical after the grading to minimize erosion.

Quality Control – The site preparation, including the proof-rolling and the site grading should be observed by FGE to determine whether the anticipated soil conditions are encountered. Field density tests should be taken on the fills and backfills to determine whether the specified levels of compaction are consistently obtained. Samples of the proposed fill materials should be submitted to FGE at least 7 working days prior to their intended jobsite delivery to allow adequate time for testing, evaluation, and approval.

The foundation excavations and foundation probes should be observed by FGE to verify that the anticipated bearing materials are encountered. The recommendations provided herein are contingent on adequate observation and testing of the geotechnical aspects of the construction by FGE.

Limitations - This report has been prepared for the exclusive use of **CDS International, Inc.** for the proposed **New 8-Classroom Building** at Campbell High School in Ewa Beach, Oahu, Hawaii. In the preparation of this report and the performance of the investigation, FGE has strived to perform our work in a manner consistent with that level of care and skill ordinarily exercised by members of the geotechnical profession practicing under similar conditions in Hawaii. No other warranty, either expressed or implied, is made.

The analysis, conclusions and recommendations submitted in this report are based in part upon the test borings and field observations, and upon the assumption that the subsurface conditions do not deviate from those observed. If any variations or undesirable conditions are encountered during construction, or if the proposed construction will differ from that planned at the present time, FGE should be notified so that supplemental recommendations can be provided. The conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed and the conclusions of this report modified or verified in writing.

Unanticipated soil conditions are commonly encountered and cannot be fully determined by soil samples, test borings, or test pits. Such unexpected conditions frequently require that additional expenditures be made to attain a properly constructed project. Some contingency funds are recommended to accommodate such potential extra costs.

The investigation for this report may not have disclosed the presence of underground structures, such as cesspools, drywells, storage tanks, etc. that may be present at the site in addition to the existing cesspool. Should these items be encountered during construction, FGE should be notified to provide recommendations for their disposition.

The scope of work for this investigation was limited to conventional geotechnical services and did not include archeological or environmental assessments or evaluations. Silence in the report regarding any archeological or environmental aspects of the site does not indicate the absence of potential archeological or environmental problems.

Groundwater was observed at the depths and times indicated on the Boring Logs. However, it must be noted that fluctuations of the groundwater may occur due to variations in rainfall, tides and other factors not present at the time of the investigation.

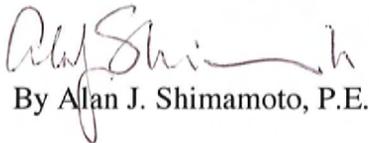
FGE should be provided the opportunity for general review of the final design drawings and specifications to verify that the earthwork and foundation recommendations have been properly interpreted and implemented in the design and specification. If FGE is not accorded the privilege of making this recommended review, it can assume no responsibility for misinterpretations of the recommendations.

FGE should also be retained to provide periodic soil engineering services during construction. This is to observe compliance of the design concepts, specifications, and recommendations and to allow design changes in the event the subsurface conditions differ from that anticipated prior to construction. The recommendations contained herein are contingent upon adequate construction monitoring of the geotechnical phases of the construction by FGE.

We appreciate the opportunity to be of service to you on this project. Should you have any questions pertaining to any aspect of this report, or if we can be of additional assistance to you, please do not hesitate to contact us.

Respectfully submitted,

FEWELL GEOTECHNICAL ENGINEERING, LTD.


By Alan J. Shimamoto, P.E.

/ajs:cer:tjc:fse:ras

Attachments



Appendix B

Archaeological Literature Review and Field Inspection
Cultural Surveys Hawai'i
August 2010

**Archaeological Literature Review and Field Inspection for
the Campbell High School Project, Pu‘uloa,
Honouliuli Ahupua‘a, ‘Ewa District, O‘ahu Island
TMK: [1] 9-1-001:002**

**Prepared for
Kimura International, Inc.**

**Prepared by
Ena Sroat, B.A.,
David W. Shideler, M.A.,
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Hallett H. Hammatt, Ph.D.**

**Cultural Surveys Hawai‘i, Inc.
Kailua, Hawai‘i
(Job Code: HONOULIULI 43)**

August 2010

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Management Summary

Reference	Archaeological Literature Review and Field Inspection for the Campbell High School Project, Pu'uloa, Honouliuli Ahupua'a, 'Ewa District, O'ahu Island (Sroat et al. 2010)
Date	August 2010
Project Number (s)	CSH (Cultural Surveys Hawai'i) Job Code: HONOULIULI 43
Investigation Permit Number	The field check was conducted under archaeological permit number 10-10 issued by the Hawai'i State Historic Preservation Division (SHPD), Department of Land and Natural Resources (DLNR), per Hawai'i Administrative Rules (HAR) Chapter 13-282.
Project Location	'Ewa, Honouliuli/Pu'uloa District, O'ahu, Hawai'i, TMK: [1] 9-1-001:002
Land Jurisdiction	State of Hawai'i Department of Education
Agencies	State Historic Preservation Division (SHPD), Department of Land and Natural Resources (DLNR)
Project Description	The proposed action consists of the construction of a new high school building comprised of 8 classrooms on the Campbell High School campus.
Project Acreage	Campbell High School campus
Area of Potential Effect (APE) and Survey Acreage	For the purposes of this archaeological literature review and field inspection study, the Area of Potential Effect (APE) is considered to be the combined area of Campbell High School, 'Ilima Intermediate School and Pohakea Elementary School.
Document Purpose	This investigation is not an archaeological inventory survey, per the requirements of HAR Chapter 13-276; however, through detailed historical, cultural, and archaeological background research, a summary of the likelihood of significant archaeological finds and likely historic preservation requirements is supplied. The document is intended to facilitate the project's planning and support the project's historic preservation compliance. Based on findings, cultural resource management recommendations are presented.
Fieldwork Effort	A field check of the property was conducted on August 4, 2010 by Ena Sroat, under the general supervision of Dr. Hallett H. Hammatt.
Results Summary	Results of the fieldcheck for the entire survey area were minimal, consisting of only two small, filled-in sinkholes. No historic properties were located within the immediate bounds of the proposed project area on Campbell High School. All three school campuses of the survey area showed extensive previous disturbance, as evidenced by surface grading, infrastructure installation and the complex of school structures. The paucity of archaeological sites, excepting the two still visible sinkholes, strongly suggests that the previous construction of the three schools eradicated virtually all trace of any archaeological sites as may have been present.
Recommendations	Based on the results of the literature review and field inspection, Cultural Surveys Hawai'i recommends no further archaeological work for the proposed project.

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Section 1 Introduction

1.1 Project Background

At the request of Kimura International, Inc. (1600 Kapi‘olani Blvd., Suite 1610, Honolulu, HI 96814), Cultural Surveys Hawai‘i, Inc. (CSH) has prepared this archaeological literature review and field check for the proposed Campbell High School Project within Honouliuli Ahupua‘a, ‘Ewa District, O‘ahu Island, TMK: [1] 9-1-001:002. The project area is located on the northeastern corner of Fort Weaver Road and North Road (91-980 North Road). This area is shown on the U. S. Geological Survey 7.5-Minute Series Topographic Map, ‘Ewa Quadrangle (Figure 1), on a Hawai‘i Tax Map Key Plat 9-1-001 (Figure 2), and on a U.S. Geological Survey aerial photograph (Figure 3).

The proposed project involves the construction of a new, 8-classroom high school building within the northeast portion of the Campbell High School campus (Figure 4). Land disturbing activities would include the removal of existing infrastructure in the project area, including a raised platform, as well as general construction activity of grubbing, grading, excavations for subsurface utilities, and associated infrastructure improvements.

For the purposes of this Archaeological Literature Review and Field Inspection (LRFI), the study area is considered to encompass Campbell High School and the adjacent, associated schools, ‘Ilima Intermediate School and Pōhākea Elementary School.

The proposed project is subject to Hawai‘i State environmental and historic preservation review legislation [Hawai‘i Revised Statutes (HRS) Chapter 343 and HRS 6E-8/Hawai‘i Administrative Rules (HAR) Chapter 13-275, respectively]. While this investigation does not fulfill the requirements of an archaeological inventory survey investigation (per HAR Chapter 13-276), it serves as a document to facilitate the proposed project’s planning and supports historic preservation review compliance by assessing if there are any major archaeological concerns within the study area and to develop data on the general nature, density and distribution of archaeological resources.

1.2 Scope of Work

The scope of work for the literature review and field check includes:

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



Figure 1. Portion of the 1998 U.S. Geological Survey 7.5-minute series topographic map, 'Ewa quadrangle, showing the current project area



Figure 3. Aerial photograph showing the location of the survey and project areas (U.S. Geological Survey Orthoimagery 2005)

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

1.3 Environmental Setting

1.3.1 Natural Environment

The project area is located on the 'Ewa Plain within the *'ili* (traditional land section) of Pu'uloa in Honouliuli Ahupua'a (traditional Hawaiian land division) on the southwestern coast of O'ahu. The 'Ewa Plain is a Pleistocene (>38,000 years old) limestone reef platform overlying flows of the Wai'anae volcanic series (MacDonald et al. 1983:423). The lower portion of the 'Ewa Plain in which the project area is located is a lowland limestone exposure with thin alluvial deposits. The 'Ewa Plain is also notable for countless sinkholes caused by chemical weathering (dissolution) of the limestone shelf.

The 'Ewa plains are one of the driest areas of O'ahu, with the area between sea level and the 40 ft contour lying below the 25-inch (640 mm) rainfall line. Annual rainfall averages 18 to 25 inches, most of which falls during the winter storm season. Rainfall measured from 1902 to 1935 varied from extremes of 6 to 41 inches per year (Stearns and Vaksvik 1935: facing p. 201). Surface water consists of one permanent stream at Honouliuli Gulch, some seasonal streams, wetlands, sheet runoff, and ground water in sinkholes. Temperatures range from lows of about 50° F to highs of around 90° F (Price 1983:64).

The project area is generally quite level, standing at approximately 10 feet above sea level. In pre-contact Hawai'i, the project area would have been covered by lowland dry shrub and grassland; however, extensive disturbance and transformation by human activity has changed the landscape to that of manicured grounds and school structures.

Based on U.S. Department of Agriculture soil survey data, the project area is entirely coral (limestone) outcrop (CR) (Foote et al. 1972) (Figure 5). Coral outcrop (CR) is described as consisting of "coral or cemented calcareous sand on the island of Oahu...Coral outcrop makes up about 80 to 90 percent of the acreage. The remaining 10 to 20 percent consists of a thin layer of friable, red soil material in cracks, crevices, and depressions within the coral outcrop" (Foote et al. 1972).

The surface of the Pleistocene limestone outcrop, where not covered by alluvium or stockpiled material, has characteristic dissolution "pit caves" (Myroie and Carew 1995), which are nearly universally, but erroneously, referred to as "sink holes" (Halliday 2005). These pit caves, or sinkholes, vary widely in areal extent and depth, with some of the more modest features comparable in volume to five-gallon buckets, while some of the larger features, although usually irregularly shaped, are several meters wide and several meters deep. In traditional Hawaiian times, the areas of exposed coral outcrop were undoubtedly more extensive.

1.3.2 Built Environment

The project area is located in a modern, residentially developed area of Pu'uloa within Honouliuli Ahupua'a. The immediate environs include residential neighborhoods, several

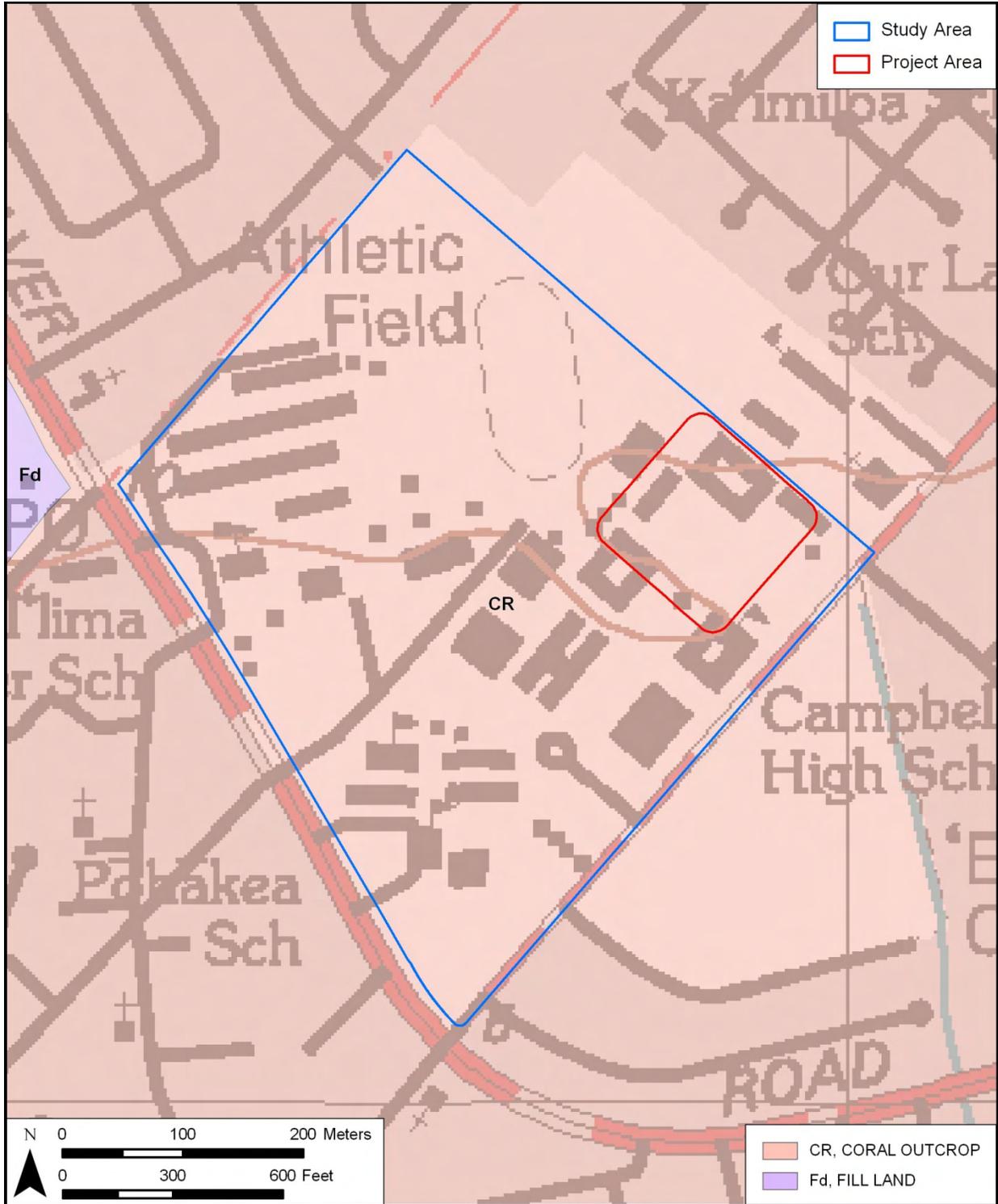


Figure 5. Soils map showing Coral Outcrop in the project area and wider survey area (Foote et al. 1972; U.S. Department of Agriculture 2001)

schools (Kaimiloa Elementary School, Our Lady of Perpetual Help School and 'Ewa Beach Elementary), the 'Ewa Beach Community Park, and 'Ewa Beach Shopping Center. The project area is comprised specifically of the central Campbell High School campus; however, for the purposes of this report, the study area has been extended to also include the entire Campbell High School campus as well as both the contiguous 'Ilima Intermediate School and Pōhākea Elementary School.

1.4 Methods

1.4.1 Research Methods

Historical documents, maps, and existing archaeological information pertaining to the *ahupua'a* of Honouliuli and the *'ili* of Pu'uloa were researched at the CSH library and other archives including the University of Hawai'i at Mānoa's (UHM) Hamilton Library, the State Historic Preservation Division (SHPD) library, the Hawai'i State Archives, the State Land Survey Division's Registered Maps (RM), the archives of the Bishop Museum, and the archives of Kamehameha Schools and Bishop Estate (BE) maps. Previous archaeological reports for the area were reviewed, as were historic maps and photographs and primary and secondary historical sources. Information on Land Commission Awards was accessed through Waihona 'Āina Corporation's (2002) Māhele data base as well as a selection of CSH library references. Information on Land Commission Awards was accessed through Waihona 'Āina Corporation's *Māhele* Data Base (Waihona 'Āina Corporation (www.waihona.com)).

1.4.2 Field Check

The fieldwork component of the archaeological literature review and field inspection was conducted on August 4, 2010 by Ena Sroat, B.A., under the general supervision of Hallatt H. Hammatt, Ph.D. (principal investigator). Fieldwork was conducted under state archaeological fieldwork permit No. 09-20 issued by SHPD, per HAR Chapter 13-13-282. The field effort required 1.5 person hours to complete.

Section 2 Background Research

2.1 Traditional and Historical Background

2.1.1 Pre-Contact to 1800

The present study is located in Pu'uloa, the southeast district of Honouliuli *ahupua'a* in the 'Ewa district of O'ahu. One translation of the name for this district is given as "unequal" (*Saturday Press*, Aug. 11, 1883). 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; cited in Sterling and Summers 1978:1)

Honouliuli means "dark water," "dark bay," or "blue harbor" and was named for the waters of Pearl Harbor (Jarrett 1930:22), which marks the eastern boundary of the *ahupua'a*. Another explanation for the name comes from the "Legend of Lepeamo," the chicken-girl of Pālama. In this legend, Honouliuli is the name of the husband of the chiefess Kapālama and grandfather of Lepeamo. The land district Honouliuli was named for the grandfather of Lepeamo (Westervelt 1923:164-184). 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:#1686).

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 19th century publication, 'Ewa was "a favorite residence of Oahu kings in olden times" (Sterling and Summers 1978:1). Handy and Handy describe the characteristics of the 'Ewa environment which were exploited by the Hawaiians and which may have drawn the *ali'i* to the district:

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

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

The lowlands, bisected by ample streams, were ideal terrain for the cultivation of irrigated taro. The hinterland consisted of deep valleys running far back into the Ko'olau range...The lower parts of the valley sides were excellent for the culture of yams and bananas. Farther inland grew the 'awa 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 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 and mamaki, which supplied bast for the making of kapa, grew in abundance. In fact, 'Ewa was famous for its mamaki. There was, too, much olonā grown in the interior, and wild bananas and yams flourished. (Handy and Handy 1972:469)

Perhaps the most famous resource of Pu'uloa [Pearl Harbor] were the pearl oysters of the family Pteriidae (mainly *Pinctada radiata*), called *pipi*, which were once abundant on the harbor reefs. In legend, these pearl oysters were carried to Pu'uloa from Kahiki, the Hawaiian ancestral homelands, by a *mo'o* (lizard or water spirit) named Kānekua'ana, who was the *kia'i* (food guardian) for 'Ewa. This oyster was sometimes called "the silent fish", or, *i'a hamau leo o 'Ewa*, 'Ewa's silent sea creature, since the collectors were supposed to stay quiet while harvesting the shells. (Handy and Handy 1972:470-1)

Pu'uloa is also named as the site where the first breadfruit was planted in the Hawaiian Islands by the chief Kaha'i:

Tradition credits the introduction of the breadfruit tree in these islands to Kahai, a son of Maikeha, who brought a species from Upolu, in the Samoan group, on his return voyage from Kahiki, and planted some at Puuloa, Oahu. (Thrum in McAllister 1933:109)

The traditional lore of Pu'uloa is also rich in legends as the home of protective shark 'aumakua (guardian spirits for for specific Hawaiian families or clans):

The Hawaiians knew Pearl Harbor as Pu'uloa, and they believed that there, dwelling in a large cavern on the Honouliuli side of the harbor, Ka'ahupāhau, the queen of all sharks on O'ahu, made her home. Her chief gura was a brother shark, who lived in a pit at the entrance to the lochs. (Clark 1977:69)

Pu'uloa is further named by the nineteenth-century Hawaiian writers, Samuel Kamakau and John Papa 'Ī'ī, as a place of great political events. Kamakau relates that the *kahuna* Ka'opulupulu, "the lead counselor of the island", was infamously betrayed and killed at Pu'uloa, setting the stage for great political turbulence and warfare in the latter part of the 18th century (Kamakau 1992:134). In addition, two chiefs in Pu'uloa were suspected of conspiracy against the ascendant ruler Kamehameha:

Kamehameha was watchful against conspirators and those who plotted at night against his rule. Did such plotters go undiscovered? After the battle of Nu'uanu certain treacherous chiefs, Ke-kua-manoha and Ka-uhi-wawae-ono, were suspected of plotting to kill him. They were living at Pu'uloa in 'Ewa. Kamehameha went there at night from Honolulu and overheard clearly the whole

plot. Then he stuck his dagger, called Kauwa, into the ground [as a sign that none were to leave the house until he sent for them]. In the morning they saw it and knew that Kamehameha had been there and discovered their conspiracy. They were taken to Honolulu and treated with tolerance. (Kamakau 1992:182)

Also during the time of Kamehameha:

Some of the chiefs under Kamehameha, such as Alapa'i-malo-iki and Ka-uhiwawae-ono, were murdering chiefs who did not keep the law against killing men, but went out with their men to catch people for shark bait...At Keala and Kalahiki in South Kona, at Hamakuapoko on Maui, and at Pu'uloa on Oahu, people were killed by them for shark bait. (Kamakau 1992:232)

2.1.2 Observations of Early Explorers and Visitors

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

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

Captain Vancouver sailed by Kalaeloa (Barbers Point) in 1792, and recorded his impression of the small coastal village of Kualaka'i (a short distance to the west of the current project area) and the arid Honouliuli coast.

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

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

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

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

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

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

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

2.1.3 Population

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 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, however, Hawaiian populations were introduced to many virulent western diseases which began to decimate the native populations. Thus, four years following the 1832 census, the 'Ewa population had dropped to 3,423 (Schmitt 1973:9, 36), "a decrease of 592 in 4 years" (Ewa Station Report 1836). Reverend Lowell Smith noted:

The people of Ewa are a dying people. I have not been able to obtain an exact count of all the deaths & births since the last general meeting. But my impression is that there have been as many as 8 or 10 deaths to one birth. I have heard of but 4 births on Waiawa during the year, & all of these children are dead. I have attended about 20 funerals on that one land, & 16 of these were adults. (Ewa Station Report 1836)

Between 1848 and 1853, there was a series of epidemics of measles, influenza, and whooping cough that often wiped out whole villages. In 1853, the population of 'Ewa and Wai'anae

combined was 2,451 people. In 1872, it was 1,671 (Schmitt 1968:71). The inland area of 'Ewa was probably abandoned by the mid-19th due to population decline and consolidation of the remaining people in town.

2.1.4 The Māhele and History of Pu'uloa Land Usage

In 1845, the Board of Commissioners to Quiet Land Titles, also called the Land Commission, was established “for the investigation and final ascertainment or rejection of all claims of private individuals, whether natives or foreigners, to any landed property” (Chinen 1958:8). This led to the Māhele, the division of lands between the king of Hawai'i, the *ali'i* (chiefs), and the common people, which introduced the concept of private property into the Hawaiian society. Kamehameha III divided the land into four categories: certain lands to be reserved for the king and the royal house were known as Crown Lands; lands set aside to generate revenue for the government were known as Government Lands; lands claimed by *ali'i* and their *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 (land section within an *ahupua'a*), and lesser *konohiki* were awarded half of an 'ili (Kame'eiehiwa 1992:269, 279). Title to an *ahupua'a* or 'ili typically included ownership of the area's fishpond and offshore fishing rights (Devaney et al. 1982:143). The lands awarded as Crown Lands and Konohiki Lands, as well as lands designated as Government Lands, were “subject to the rights of native tenants.” The Kuleana Act of 1850 “authorized the Land Commission to award fee simple titles to all native tenants who occupied and improved any portion of Crown, Government, or Konohiki Lands” (Chinen 1958:29).

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

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 (Figure 7 to Figure 8). 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.” The salt was sent to Russian settlements in the Pacific Northwest, where it was used to pack salmon (Hawaiian Gazette, January 29, 1897). Shortly after establishing the salt works, Isaac Montgomery sold the business to Charles W. Vincent, while remaining on as manager (King 1982:545). In his diaries the American diplomat, David Lawrence Gregg, recounts a visit to the Pu'uloa salt works in May of 1854:

We first landed at the salt works of Mr. [Charles W.] Vincent, and were taken over them by Mr. Isaac Montgomery, the superintendent. From 10 to fifteen thousand barrels of salt are annually manufactured, and it would be easy to make

three or four times that amount. Pits a few inches of uniform depth are dug in the clay, which appears to be impervious, into which the water is let by means of sluices, and suffered to stand until a thick crust of salt is formed by evaporation. This is then taken off and a new supply of water introduced. A “crop” of salt, as it is called, requires about three weeks. (King 1982:131)

While the remainder of Honouliuli Ahupua‘a was subsequently sold to James Campbell in 1877 and utilized for numerous enterprises, including a cattle ranch (Honouliuli Ranch), rice farms, a limestone quarry, commercial *kiawe* cutting, sisal plantations and a major sugar plantation (Ewa Plantation Company), the area of Pu‘uloa remained outside of agricultural development (Figure 7). Instead, 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).

In 1962, Campbell High School was established in Pu‘uloa. At that time, Campbell High School was located at what is now ‘Ilima Intermediate School and the athletic fields. Pōhākea Elementary School, also founded in 1962, was initially located on the grounds of Campbell High School but was later relocated in 1974 to its present location. During this time, the immediate area was in the process of residential development and still retained vacant, undeveloped lots (McCoy 1972:3).

Table 1. Land Commission Awards in Honouliuli

*LCA	Awardee	‘Ili		LCA	Awardee	‘Ili
748	Kalauhala	Panahaha, Kaaumakua		906	Kanoho	Kamoku
749	Mahina	Kaulaula		907	Luana	Kamaipipipi, Niukee
751	Kalauli	Kamoku, Polapola, Kalihikahi		910	Nunu	Kaaumakua
752	Haae	Kailikahi, Kailihai		911	Kauhailepa	Poohilo
753	Manuwa	Kamoku		914	Kamaala	Niukee, Kapapahi
754	Kaunahi	Niukee		916	Kama	Loloulu, Makau
755	Keinohana- nui	Niukee, Kailikahi, Kaakau		917	Kaulu	Kamilomilo, Kaaumakua
756	Kauouo	Kaaumakua		947	Kaopala	Loloulu, Kaulaula
758	Nihua	Niukee		960	Poopuu	Loloulu
760	Kuhemu	Kamaipipipi, Niukee, Naopala, Kailikahi		1565	Kaalauahi	Niukee, Kapapahi
761	Kinolua	Niukee, Kailikahi, Ilikahi, Palahemo		1570	Kekua	Poohilo
762	Kalama	Kaaumakua		1570- B	Paekane	Kaaumakua
763	Keliiiaa, Solomona	Hiwa, Poohilo, Mauakapuoā, Uani / Maui, Polapola		1570- C	Naholowaa	Kaaumakua

*LCA	Awardee	'Ili		LCA	Awardee	'Ili
765	Kamalaē	Niukee, Kailikahi, Palahemo		1573	Kawahamana	Niukee, Kapapahu
766	Paele	Niukee, Kaluamooiki, Kailikahi		1580	Kanahuna	Kamilomilo
767	Hapauea	Niukee, Kapapahi		1580-B	Kapioho	Polapola, Kahiwapalaai
768	Pio	Kahaumakua, Niukee, Waioha		1598	Kekua	Loloulu, Kapapahi
827	Kauakahilau	Poohilo		1605-B	Nakai	Mahuna, Niukee
828	Kawahaea	Poohilo		1666	Mauwele	Poohilo
831	Kaekuna	Poohilo		1666-B	Kuahilo	Poohilo
832	Opiopio	Poohilo		1670	Moano	Loloulu, Kaaumakua
834	Oni	Poohilo, Kailikahi		1672	Makue	Kamoku, Kapapahu
839	Kaaiawaawa	Kamilomilo, Kailikahi, Haole, Poohilo		1699	Leleiaupa	Maui, Poaiwaikele
845	Kekukahiko	Kapapahi, Niukee		1701	Alaluka	Pohilo
847	Hinaa	Poohilo		1703	Aimaikai	Kamilomilo
848	Kapule	Poohilo		1713	Healani	Niukee, Kapapahu
869	Pue	Maui		1719	Hilea	Kaaumakua
872	Kahakuliilii	Loloulu, Paakai, Papaioa		1720	Hilinae	Polapola
874	Laamaikahiki	Polapola, Hiwa		5204	Kalama 2	Polapola
876	Nohunohu	Niukee, Nukee		5653	Kua	Maui, Polapola, Kahui
881	Kikala	Polapola		5654	Kuhiena	Maui, Poohilo
886	Kahalewai	Kamoku, Manuwa		5653-B	Kanehikili	Poohilo
892	Aoao, Samuela	Kapapahi, Niukee		5670-B	Kaohai	Kaihuopalaai, Polapola
898	Kaneaola	Polapola		5670-C	Kumupopo	Poohili, Kepoe, Loloulu, Puaaluu
901	Kuahine	Nukee / Niukee,		5950	Pihana	Kamoku
902	Haakue	Waimanalo		10933	Uia	Niukee
905	Kaimuena	Kaaumakua		11218	Kekau'ōnohi	<i>ahupua'a</i> award

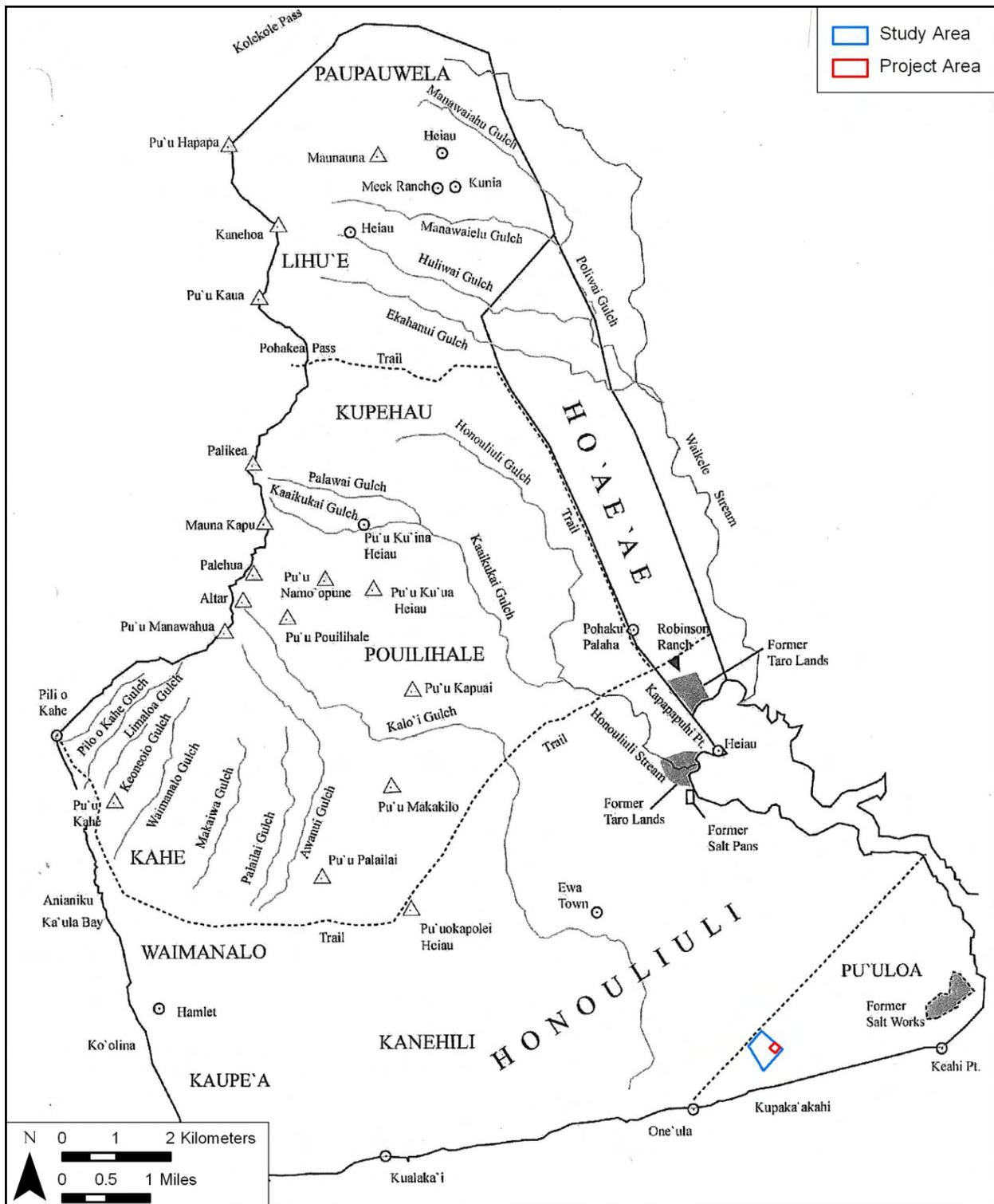


Figure 6. Honouliuli Ahupua'a showing the area of Pu'uloa and its relation to the former taro lands, salt works, water sources and cultural sites of Honouliuli (base map: 1927 U.S. Geological Survey, 'Ewa, Barbers Point, Wai'anae, and Waipahu Quadrangles)

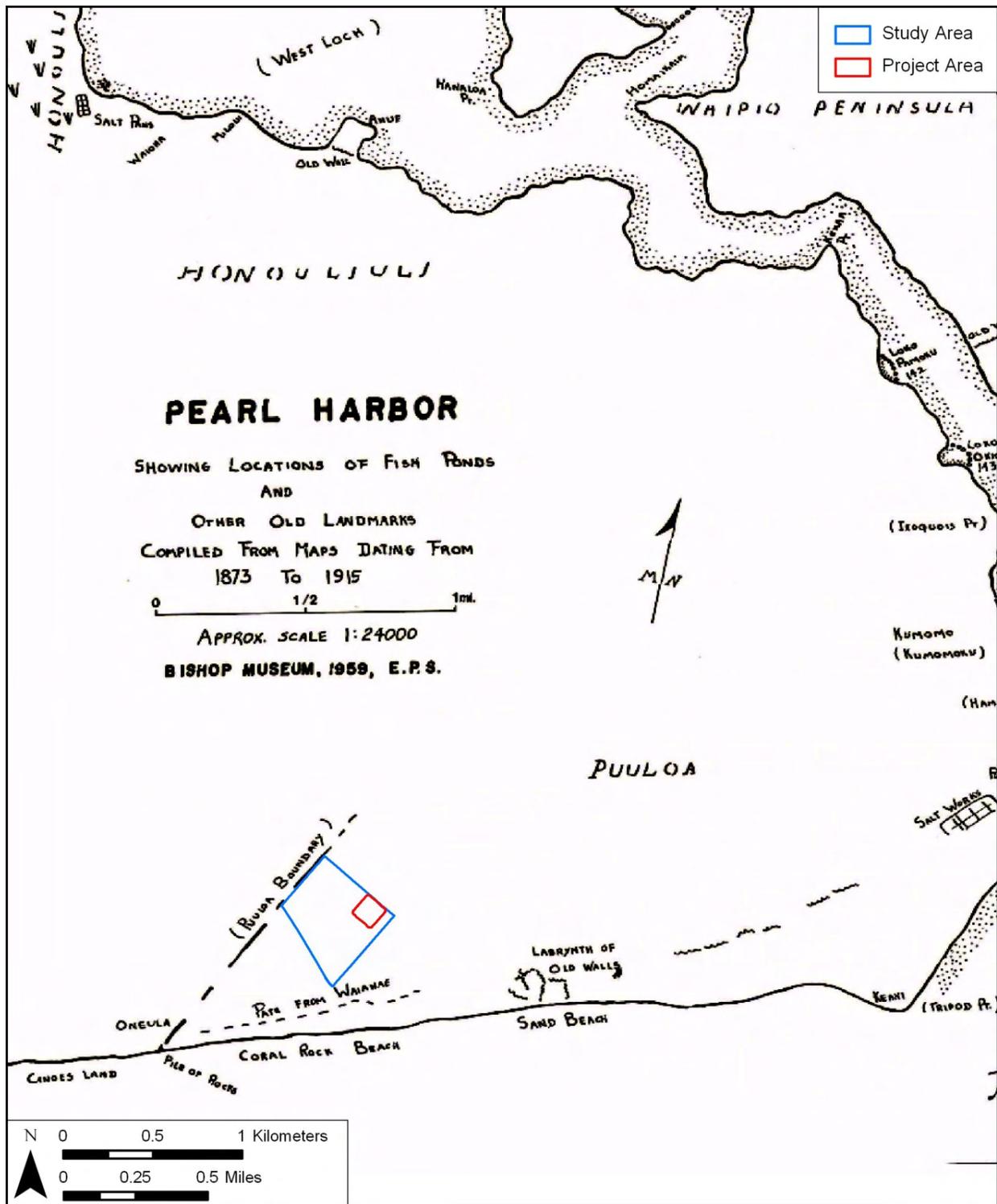


Figure 7. Location of project area within the 'ili of Pu'uoloa and locations of historic ranching walls ("labyrinth of old walls") and salt works (adapted from Sterling and Summers 1978)

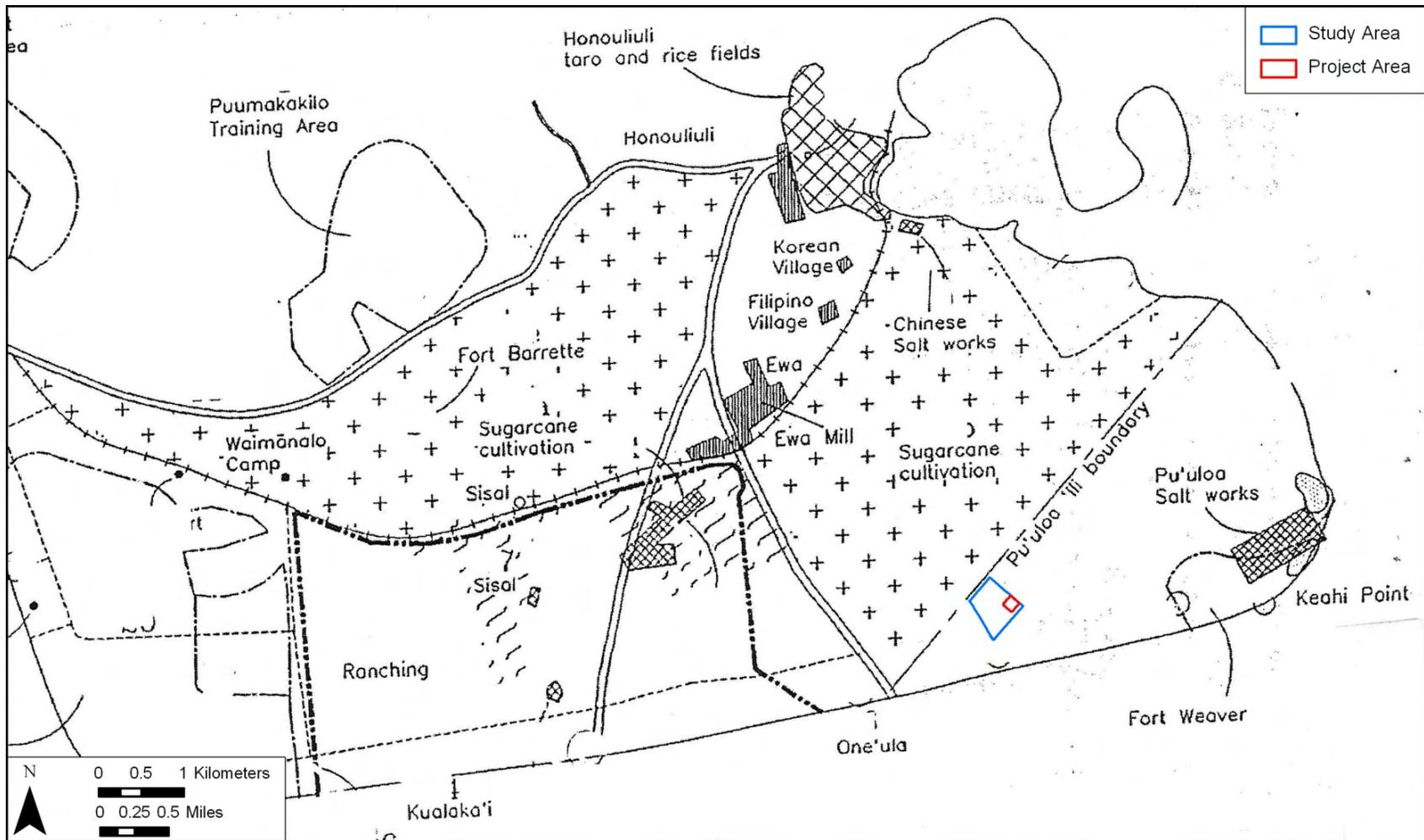


Figure 8. 'Ewa coral plains, location of historic agricultural, ranching, and salt work enterprises in the late nineteenth to the twentieth century (modified from Tuggle and Tomonari-Tuggle 1997)

Section 3 Previous Archaeological Research

3.1 Previous Archaeological Investigations in Pu'uloa and the Immediate Vicinity

The first mention of archaeology in the 'Ewa plains was a brief description by Thrum of a *heiau* that had once been at Pu'ukapolei (Thrum 1907:46). It was described as "a heiau on Kapolei hill, Ewa-size and class unknown. Its walls thrown down for fencing." The *heiau* had been completely destroyed by 1933 when J. Gilbert McAllister's (1933:108) made a survey of important O'ahu sites. McAllister described all archaeological features in the 'Ewa plains as Site 146 (McAllister 1933:109).

Ewa coral plains, throughout which are remains of many sites. The great extent of old stone walls, particularly near the Pu'uloa Salt Works belongs to the ranching period of about 75 years ago. It is probable that the holes and pits in the coral were formerly used by the Hawaiians. Frequently the soil on the floor of larger pits was used for cultivation, and even today one comes upon bananas and Hawaiian sugar cane still growing in them.

Within the project area of Campbell High School and its immediate environs, no archaeological surveys were conducted prior to school and residential development (McCoy 1972:3). However, during the three decades of the 1970s through the 1990s, ten archaeological surveys and subsurface testings were undertaken within the district of Pu'uloa or the adjacent lands of Honouliuli (Table 2 and Figure 9). Together, these studies provide a composite portrait of land usage within Pu'uloa and the lower 'Ewa Plains.

3.1.1 Pu'uloa Elementary School Site

In 1972, the first archaeological survey in Pu'uloa was conducted by Patrick McCoy of the Bishop Museum for the proposed Pu'uloa Elementary School, on the grounds of the current Kaimiloa Elementary School (McCoy 1972). The survey area was located directly to the northeast of the present-day baseball field of the athletic grounds, thus providing the closest glimpse of the archaeological footprint of the project area. In the survey, numerous coral-stacked walls and enclosures were recorded along with modified depressions (small sinkholes) and mounds (*ahu*). The majority of sites were interpreted as historic ranching remnants with the exception of the 4 *ahu* mounds which were deemed of possibly prehistoric origin.

3.1.2 Ewa Marina Community Project

Between 1979 and 1991, four archaeological surveys were conducted of the Ewa Marina Community Project, located between approximately 0.4 – 2.3 miles west of Campbell High School. Significant numbers of prehistoric habitation and agricultural sites were identified, particularly in the *makai* (seaward) region, as well as historic military and ranching remnants.

1. Jourdane 1979

The first limited survey was conducted in 1972 by Elaine Jourdane of the Bishop Museum. Jourdane identified numerous, though unquantified, sites, including coral walls and enclosures,

Table 2. Previous Archaeological Investigations in the Immediate Vicinity of the Study Area

Reference	Nature of Study	Location	Findings
McCoy 1972	Archaeological Inventory Survey	Kaimiloa Elementary School, Pu'uloa, Honouliuli	Identified probable historic, ranching-era walls and sinkhole modifications as well as mounds and <i>ahu</i> of possible pre-contact origin.
Jourdane 1979	Archaeological Reconnaissance Survey	Ewa Marina Community, One'ula, Honouliuli	A limited survey of the project area identified an unquantified number of sites, assessed as indeterminate in age.
Davis 1979	Archaeological Inventory Survey	Ewa Marina Community, One'ula, Honouliuli	Identified 107 cultural features, interpreted as part of a late prehistoric/early historic settlement
Athens 1987	Human Burial Removal	Iriquois Point, Pu'uloa, Honouliuli	One prehistoric burial.
Davis 1988	Archaeological Reconnaissance Survey	Pu'uloa Golf Course, Pu'uloa, Honouliuli	Identified 25 stone structures.
Hammatt & Shideler 1989	Archaeological and Paleontological Assessment	Ewa Marina Community, One'ula, Honouliuli	A limited survey identified probable ranching and military sites as well as possible pre-contact enclosures
Dunn & Haun 1991	Archaeological Survey and Test Excavations	Ewa Marina Community, One'ula, Honouliuli	Located 312+ features, including prehistoric habitation and agricultural sites
Davis & Burtchard 1991	Archaeological Survey	PPV Housing Area, West Loch Unit, Lualualei Naval Ammunition Depot, Pu'uloa, Honouliuli	No historic properties identified.
Kennedy 1991	Archaeological Survey and Subsurface Testing	Pu'uloa Golf Course, Pu'uloa, Honouliuli	Identified 72 prehistoric, historic and modern sites, including prehistoric habitation
Jensen & Head 1995	Archaeological Reconnaissance Survey	West Loch Branch, Lualualei Naval Ammunition Depot, Pu'uloa, Honouliuli	Identified 109 traditional sites and 172 military, ranching and agricultural sites
Hammatt & Borthwick 1997	Archaeological Inventory Survey	Ewa High Frequency Transmitter Station, Pu'uloa, Honouliuli	No historic properties identified.

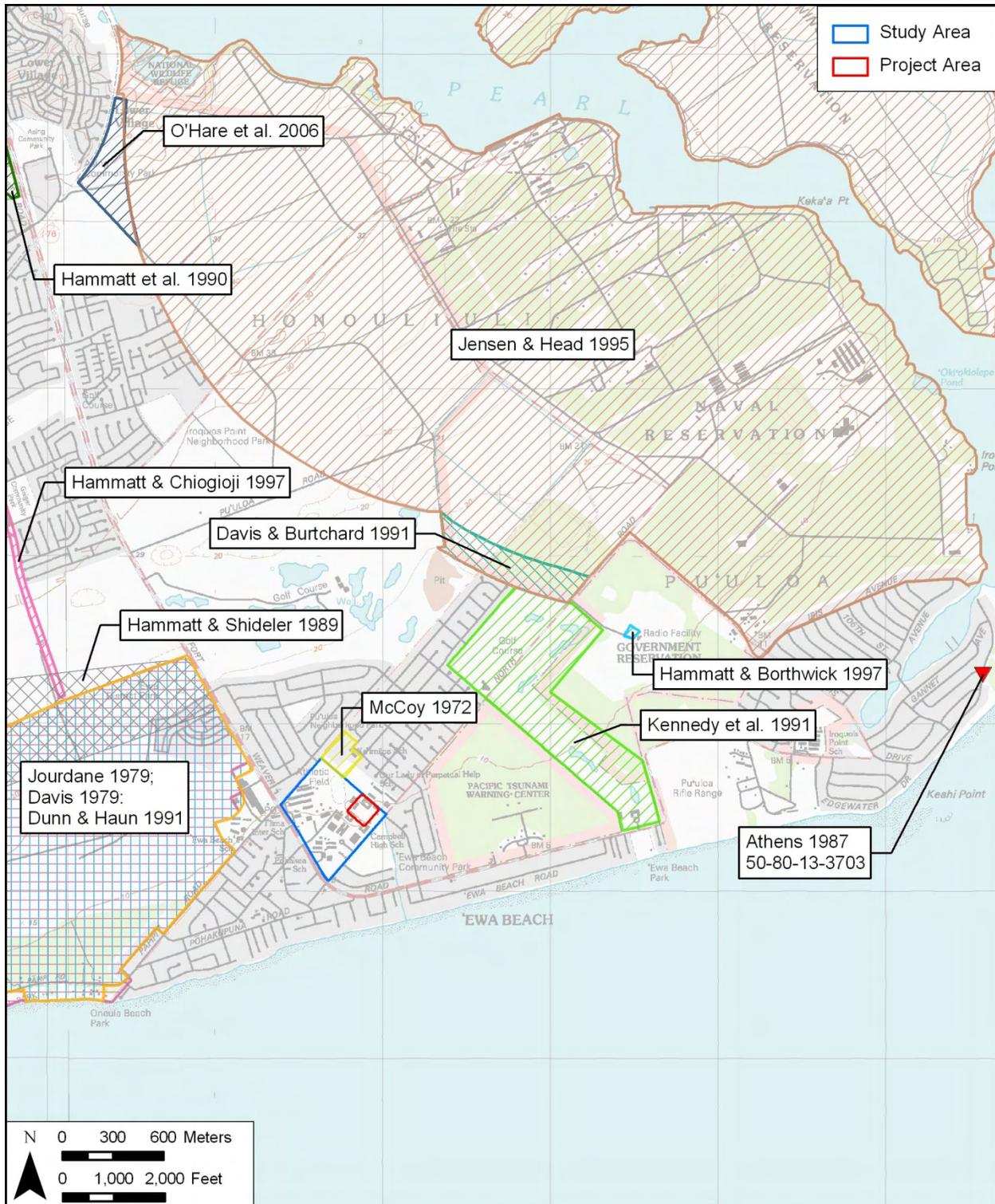


Figure 9. U.S. Geological Survey 7.5-minute series map, Ewa quadrangle (1998), showing area of archaeological study in the vicinity of the project area

paved areas, coral rock alignments, a platform and abundant sinkholes and depressions. The findings were assessed as indeterminate in age, of either prehistoric or historic origin.

2. Davis 1979

Further survey work by Bertell Davis of Hawai'i Marine Research, Inc. identified 107 cultural features that were "inferred to have once been part of an extensive late prehistoric/early historic settlement along the coast of the Ewa plain." (Davis 1979:1) The features were generally located in cluster complexes and were predominantly situated around a swamp in the far western, coastal zone of the project. However, habitation and agricultural sites also continued eastwards along the coastal zone and included a probable ceremonial platform. Analysis of a volcanic flake collected from a habitation enclosure yielded a date range of A.D. 1733-1805. No sites were identified in the formerly cultivated sugar lands in the *mauka* portion of the project.

3. Hammatt & Shideler 1989

A follow-up survey of the *mauka* portion of the project was conducted by Cultural Surveys Hawai'i, Inc. in 1989. The survey relocated at least two sites recorded by Davis in 1979 as well as an alignment and three filled-in sinkholes.

4. Dunn & Haun 1991

In 1991, the archaeological firm, Paul H. Rosendahl, Ph.D., Inc., conducted an extensive archaeological survey and test excavations for the Ewa Marina Community Project. Two concentrations of prehistoric habitation sites were identified, located in the far west end of the project area and in the east-central portion. In the intermediate zone between the two concentrations were located the majority of agricultural sites found within the survey area. In all, 53 sites consisting of more than 312 component features were documented. Test excavations totaled 61 units placed in 57 features in addition to 122 informal shovel tests, 24 backhoe trenches within the cane field lands, and 176 sinkhole tests. A total of 67 indigenous artifacts were collected from the test units and shovel tests. No cultural deposits were encountered in any of the cane field trenches. Sinkholes yielded bird bone and occasional midden and charcoal. Radiometric dating of charcoal suggests the earliest Hawaiian usage of the area began between A.D. 1000 and A.D. 1250 and intensified between A.D. 1500 and A.D. 1700. The study concludes that Hawaiian occupation of the area spread from west to east, occupying first the area surrounding the swamp (see Davis 1979), then expanding eastward towards One'ula.

3.1.3 Iroquois Point, Human Burial Removal

During excavations in 1987 for a sewer pipeline at Iroquois Point Naval Housing near the mouth of Pearl Harbor, a human burial was exposed. Investigation by Stephen Athens of the International Archaeological Research Institute, Inc. concluded that the burial pertained to a young Polynesian woman interred sometime prior to 1900. The burial was given the site number designation 50-80-13-3703.

3.1.4 Pu'uloa Golf Course

1. Davis 1988

An archaeological survey by Bertell Davis in 1988 documented 25 structures, including at least one house enclosure, 11 field shelters, 5 cairns, 2 wall-enclosed sinkholes, and remnants of a wall.

2. Kennedy et al. 1992

A subsequent survey accompanied by test excavations was conducted by Joseph Kennedy and Tim Denham of Archaeological Consultants of Hawai'i, Inc. A total of 72 sites were documented, including 15 walls, 17 mounds, 17 enclosures, 16 C- or L-shapes, 13 sinkholes, 2 platforms and one site composed of upright stones. Dating extracted from test excavations produced an age range between A.D. 1020-1708. The survey hypothesized that early settlers subsisted primarily on the avian nests within the area, then switched to a marine-based subsistence due to the decline in nesting birds, most likely due to the Polynesian rat as well as humans. It was further conjectured that, due to the decline in overall marine midden prior to Western contact, the Hawaiian population in the area had later greatly decreased, thus agreeing with Captain Vancouver's observations of an uninhabited coastline.

3.1.5 PPV Housing Area, West Loch Unit of the Lualualei Naval Ammunition Depot

An archaeological survey and single test unit were conducted in 1991 by Bertell Davis and Greg Burtchard of the International Archaeological Research Institute, Inc. No sites were documented.

3.1.6 West Loch Branch of Naval Magazine Lualualei

An archaeological survey of 4 parcels within the West Loch Branch of NAVMAG-Lualualei included 2 parcels in relative proximity to the current project area. Only 109 traditional Hawaiian sites were encountered, almost all (107) were located within one cluster complex within the lands designated as "undeveloped". The remaining documented sites consisted of military remnants as well as possible historic ranching and agricultural sites.

3.1.7 Ewa High Frequency Transmitter Station

An archaeological survey conducted in 1997 by Hal Hammatt and Douglas Borthwick of Cultural Surveys Hawai'i, Inc. yielded no archaeological sites.

Section 4 Results of Fieldcheck

Fieldwork was conducted on August 4, 2010 by CSH archaeologist, Ena Sroat B.A, working under the overall guidance of Hallett H. Hammatt Ph.D. The scope of work called for a limited field inspection to identify any surface archaeological features; to investigate and assess the potential for impact to such sites; and to identify any sensitive areas that may require further investigation or mitigation prior to proposed development projects. The field inspection included both the immediate project area and the wider survey area comprised of the entire Campbell High School campus, 'Ilima Intermediate School and Pohakea Elementary School (Figure 10 to Figure 13).

The fieldcheck indicated a low level of historic preservation concern. Only two possible archaeological sites were encountered, consisting of two small, filled-in sinkholes. The first likely sinkhole, measuring approximately 70 cm x 70 cm, was located just south of Portable Classroom P-11 on Campbell High School grounds. The sinkhole was filled in with loose soil and a coral block (Figure 10). The second sinkhole, measuring approximately 80 cm x 80 cm, was located in the northern corner of Pohakea Elementary School just behind (north of) the portable buildings. It, also, was filled in with loose soil (Figure 11). No sites were located on 'Ilima Intermediate School campus.

All three school campuses are extensively graded and developed, with virtually no original limestone bedrock still visible. The grounds consist of manicured grass yards and scattered ornamental trees and bushes, such as monkeypod trees, plumeria, shower trees and small palms.

Extrapolating from the archaeological surveys conducted within the general environs of Pu'uloa, most particularly from the survey directly adjacent to the present-day Campbell High School athletic fields (McCoy 1972), one would have expected to encounter not only numerous (often modified) sinkholes, but also likely mounds (*ahu*), coral-stacked wall remnants and coral enclosures, ranging in date from prehistoric to historic. The absence of any such sites, excepting the two still visible sinkholes, strongly suggests that the previous construction of the three schools eradicated virtually all trace of any original archaeological sites.



Figure 10. Photo of filled-in sinkhole south of Portable Classroom P-11, Campbell High School



Figure 11. Photo of filled-in sinkhole in the northern corner of Pohakea Elementary School



Figure 12. Photo of project area, facing west, current campus green of Campbell High School



Figure 13. Photo of project area, facing southeast, current campus green of Campbell High School

Section 5 Summary and Recommendations

A 100 percent pedestrian inspection of the survey area's surface documented only two possible archaeological sites, both consisting of small filled-in sinkholes. No sites were located within the immediate bounds of the proposed project area on Campbell High School. The pedestrian inspection noted that all three school campuses of the survey area showed extensive previous disturbance, as evidenced by surface grading, infrastructure installation and the complex of school structures.

The lack of archaeological sites and the extensive prior disturbance to the survey area and project area indicate that any evidence of pre- and post-contact archaeological sites has been previously erased. Thus, based on the results of this literature review and field inspection, Cultural Surveys Hawai'i recommends no further archaeological work for the proposed project.

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