

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU

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

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KIRK CALDWELL
MAYOR



GEORGE I. ATTA, FAICP
DIRECTOR

ARTHUR D. CHALLACOMBE
DEPUTY DIRECTOR

2015/ED-14 (MS)

November 25, 2015

Mr. Scott Glenn, Interim Director
State of Hawaii
Department of Health,
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

Dear Mr. Glenn:

SUBJECT: Chapter 25, Revised Ordinances of Honolulu (ROH)
Draft Environmental Assessment (DEA)
Project: Development of Three New Two-Family Dwelling Units
Applicant: 4607 Kahala LLC
Agent: Group 70 International, Inc. (Jeff Overton)
Location: 4607 Kahala Avenue - Kahala
Tax Map Key: 3-5-5: 16

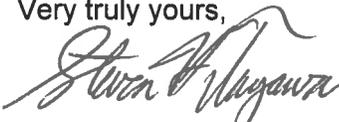
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OFFICE OF ENVIRONMENTAL
QUALITY CONTROL

With this letter, the Department of Planning and Permitting hereby transmits the DEA and anticipated finding of no significant impact (DEA-AFONSI) for the 4607 Kahala LLC project located on Tax Map Key Parcel 3-5-5: 16, in the Honolulu District on the island of Oahu, for publication of the project summary of the Draft Environmental Assessment (DEA) in the next edition of "*The Environmental Notice*" on **December 8, 2015**.

We respectfully request publication. Enclosed are two hard copies and one electronic copy of the DEA and the Publication Form. The Publication Form, including project summary was also sent via electronic mail to your office.

Should you have any questions, please call Malynne Simeon at 768-8023 or via email at msimeon@honolulu.gov.

Very truly yours,


for George I. Atta, FAICP
Director

Enclosures: DEA, two hard copies and one CD
One copy of OEQC Publication Form

NON-CHAPTER 343 DOCUMENT
PUBLICATION FORM
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

October 2015

FILE COPY

DEC 08 2015

Project Name: 4607 Kahala Avenue
Applicable Law: Chapter 25, Revised Ordinances of Honolulu
Type of Document: Draft Environmental Assessment
Island: Oahu
District: Honolulu
TMK: (1) 3-5-005: 016
Permits Required: Certified Shoreline Survey, Special Management Area Use Permit Major, Building Permits, Sidewalk/Driveway Work, Grading Grubbing Trenching and Stockpiling Permits, Sewer Connection Permits, Plan Approval, Street Usage

Applicant: 4607 Kahala LLC
822 Bishop Street
Honolulu, Hawaii 96813
Contact: Craig McGinnis
(808) 525-8430

Approving Agency: City and County of Honolulu
Department of Planning and Permitting
650 South King Street, 7th Floor
Honolulu, Hawaii 96813
Contact: Malynne Simeon
(808) 768-8023

Consultant: Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813
Contact: Jeff Overton
(808) 523-5866

Status: DEA-AFONSI

Project Summary: 4607 Kahala LLC is planning to redevelop a residential site located at 4607 Kahala Avenue. The site is approximately 1.3 acres located on the makai side of Kahala Avenue near Hunakai Street. Under the existing R-7.5 zoning and allowed density, the Applicant plans to construct six new homes in three two-family dwellings. The homes will be set back 25 feet from Kahala Avenue, and be consistent with the character of the neighborhood with native and tropical landscaping throughout the property. The site is located within the City's Special Management Area (SMA) and therefore requires the approval of a SMA Use Permit from the City Council. This Draft Environmental Assessment (DEA) is prepared in compliance with Chapter 25, Revised Ordinances of Honolulu.

OFFICE OF ENVIRONMENTAL
QUALITY CONTROL

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4607 KĀHALA AVENUE

TMK (1) 3-5-005:016
Kāhala, O'ahu, Hawai'i

Draft Environmental Assessment

Applicant:

4607 Kahala LLC

Approving Agency:

City and County of Honolulu
Department of Planning and Permitting

Prepared by:



Group 70 International, Inc.
Honolulu, HI

NOVEMBER 2015

4607 KĀHALA AVENUE

TMK (1) 3-5-005:016
Kāhala, O'ahu, Hawai'i

Draft Environmental Assessment

Applicant:

4607 Kahala LLC
822 Bishop Street
Honolulu, HI 96813

Approving Agency:

City and County of Honolulu
Department of Planning and Permitting
650 S. King Street
Honolulu, HI 96813

Prepared by:



Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, HI, 96822

NOVEMBER 2015

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4607 KĀHALA AVENUE

Draft Environmental Assessment

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- A Comment Letters and Responses
- B Archaeological Assessment
- C Cultural Impact Assessment
- D Preliminary Engineering Report

LIST OF ABBREVIATIONS/ACRONYMS

| | |
|-------|---|
| AIS | Archaeological Inventory Survey |
| BFE | Base Flood Elevation |
| BMP | Best Management Practices |
| BS | Beaches Sand |
| BWS | Honolulu Board of Water Supply |
| CI | Cast Iron |
| CIA | Cultural Impact Assessment |
| CZM | Coastal Zone Management |
| DFIRM | Digital Flood Insurance Rate Maps |
| DLNR | State Department of Land and Natural Resources |
| DPP | City and County of Honolulu Department of Planning and Permitting |
| EA | Environmental Assessment |
| FONSI | Finding of No Significant Impact |
| GPD | Gallons Per Day |
| GPM | Gallons Per Minute |
| HAR | Hawai'i Administrative Rules |
| HECO | Hawaiian Electric Company |
| HFD | Honolulu Fire Department |
| HPD | Honolulu Police Department |
| HRS | Hawai'i Revised Statutes |
| IBC | International Building Code |
| JaC | Jaucus Sand, 0 to 15 percent slopes |
| KCA | Kāhala Community Association |
| LID | Low Impact Development |
| LUO | Land Use Ordinance |
| MBTA | Migratory Bird Treaty Act |
| MSL | Mean Sea Level |
| NPDES | National Pollutant Discharge Elimination System |
| ppm | Parts Per Million |
| PUCDP | Primary Urban Center Development Plan |
| ROH | Revised Ordinances of Honolulu |
| SMA | Special Management Area |
| TRB | City and County of Honolulu DPP, Traffic Review Branch |
| TMK | Tax Map Key |
| UIC | Underground Injection Control |
| VOC | Volatile Organic Compound |
| vph | Vehicles Per Hour |

Section 1.0

INTRODUCTION

1.0 INTRODUCTION

This Draft Environmental Assessment (EA) was prepared in accordance with Hawaii Revised Statutes (HRS) Chapter 343, Revised Ordinances of Honolulu (ROH) ROH Chapter 25 in support of a Special Management Area (SMA) Use Permit application.

1.1 INFORMATION SUMMARY

| | |
|--------------------------------------|--|
| Type of Document: | Environmental Assessment (EA) |
| Name of Proposed Action: | 4607 Kāhala Avenue |
| Applicant: | 4607 Kahala LLC 822 Bishop Street Honolulu, HI 96813 |
| Applicant's Agent: | Group 70 International, Inc. 925 Bethel Street, 5 th Floor Honolulu, HI 96813 Contact: Jeff Overton Phone: 808-523-5866 |
| Approving Agency: | City and County of Honolulu Department of Planning and Permitting (DPP) 650 S. King Street Honolulu, HI 96813 |
| EA Trigger: | ROH Chapter 25, Special Management Area (SMA) |
| Site Location: | 4607 Kāhala Avenue, Honolulu District, Kona, O'ahu, Hawai'i (<i>Figure 1-1</i>) |
| Tax Map Key: | (1) 3-5-005: 016 (<i>Figure 1-2</i>) |
| Landowner: | 4607 Kahala LLC |
| Land Area: | Approximately 1.336 acres |
| State Land Use District: | Urban District (<i>Figure 1-3</i>) |
| City & County of Honolulu Zoning: | R-7.5 Residential (<i>Figure 1-4</i>) |

4607 KĀHALA AVENUE

Draft Environmental Assessment

City & County of Honolulu

Primary Urban Center

Development Plan: Low-Density Residential (*Figure 1-5*)

Special Design District: None

Special Management Area: Within SMA (*Figure 1-6*)

Flood Zone: Zone AO/VE/X (*Figure 3-3*)

Anticipated Determination: Finding of No Significant Impact (FONSI)

1.2 SITE LOCATION AND CHARACTERISTICS

The subject property is located in Honolulu in the traditional moku of Kona, east of Lē'ahi (Diamond Head) in the Kāhala area, and near the intersection of Hunakai Street and Kāhala Avenue. The site is designated as TMK 3-5-005:016 located at 4607 Kāhala Avenue. The parcel is owned by the 4607 Kahala LLC. The site is bordered by the Pacific Ocean to the south, and low-density residential properties on all other sides (*Figure 1-2*). A narrow parcel containing the City beach access route extends beyond the western property boundary. The existing site is vacant, with areas of remnant concrete slab from the prior residential use, and scattered areas of nonnative plants, shrubs, and weedy vegetation.

1.3 OVERVIEW OF THE PLANNED RESIDENTIAL USE

The owner is seeking to develop the subject property with six residences in three buildings. Each building will include two units (stacked flats) served by garage portes, guest parking areas, and a pool. Landscaping elements will include central gardens and lawns. The total floor area of improvements will be approximately 29,240 square feet (sf). Clearing, grading, and leveling is required to prepare the site for construction. Access will be provided by the two existing driveways.

1.4 PURPOSE OF THE ENVIRONMENTAL ASSESSMENT

This Environmental Assessment (EA) was prepared in accordance with Chapter 25, Revised Ordinances of Honolulu in support of a Special Management Area (SMA) Use Permit application. The SMA is required for development of residential structures greater than 7,500 square feet (sf) floor area. The Draft EA will be published in the Office of Environmental Quality Control *Environmental Notice*, which will commence a 30-day public review period. The City and County of Honolulu Department of Planning and Permitting (DPP) is the Approving Agency for the EA.

The Draft EA is presented in eight sections and includes the following: a summary description of the planned residential use; a list of necessary approvals; a description of the environmental setting; an evaluation of potential impacts and proposed mitigation measures on identified natural, cultural, and socioeconomic resources, and civil infrastructure; a discussion of alternatives; a discussion of the relationship of the proposed action to State and County land

use designations and regulations; the anticipated determination and justification; an updated list of agencies and organizations that participated in the pre-consultation phase of the Draft EA; and a list of references cited or used in preparing the EA.

After the 30-day review period of the Draft EA has concluded, public comments received will be considered and addressed to the extent feasible within the scope and evaluation of the proposed action. A Final EA will be prepared, highlighting document revisions based upon information received during the public comment period.

It is anticipated that DPP will issue a Finding of No Significant Impact (FONSI) upon acceptance of the Final EA.

1.5 PERMITS AND APPROVALS REQUIRED

Other approvals are required from the County and State to implement the proposed action, some of which include:

- Certified Shoreline Survey (Department of Land and Natural Resources)
- Special Management Area (SMA) Use Permit Major (DPP, Honolulu City Council)
- Building Permits (Buildings, Electrical, Plumbing), and Sidewalk/Driveway Work (DPP)
- Grading, Grubbing, Trenching and Stockpiling Permits (DPP)
- Sewer Connection Permits (DPP)
- Plan Approval (Board of Water Supply)
- Plan Approval (Hawaiian Electric Company)
- Trenching Permit (DPP)
- Street Usage (Department of Transportation Services)

1.6 AGENCIES, ORGANIZATIONS AND INDIVIDUALS CONTACTED DURING THE PRE-CONSULTATION PROCESS

A Pre-Consultation request was issued on August 10, 2015 to initiate the environmental review process.

A list of agencies and other parties contacted during the EA pre-consultation period is provided in *Section 8.0* of this document. Additionally, *Section 8.0* provides a list of the individuals and agencies that received copies of the Draft EA.

4607 KĀHALA AVENUE
Draft Environmental Assessment



FIGURE 1-1: PROJECT LOCATION

4607 KĀHALA AVENUE
Draft Environmental Assessment



FIGURE 1-2: TAX MAP KEY (3-5-005: 016)

4607 KĀHALA AVENUE
Draft Environmental Assessment



FIGURE 1-3: STATE LAND USE DESIGNATION MAP

4607 KĀHALA AVENUE
Draft Environmental Assessment

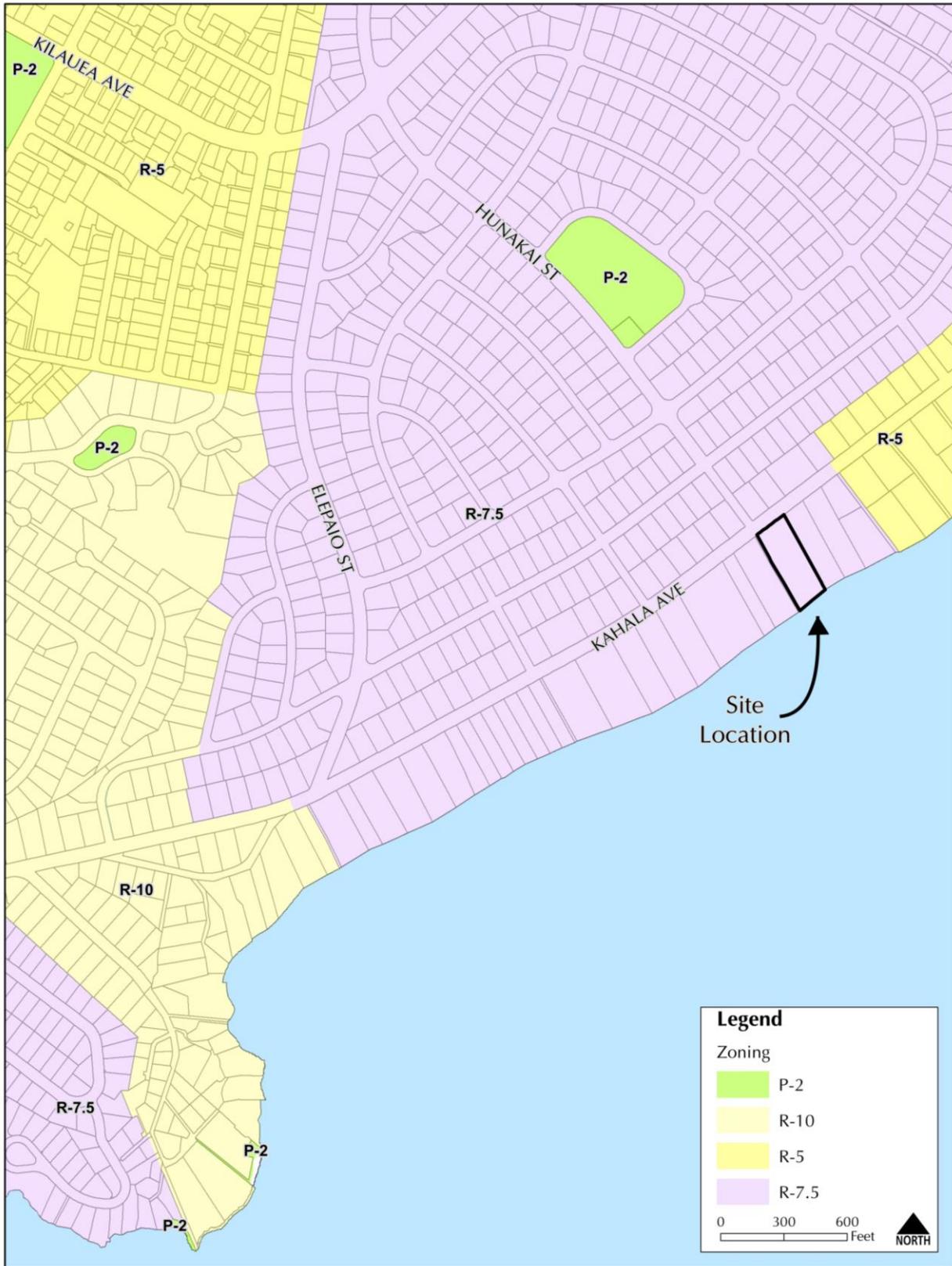


FIGURE 1-4: CITY AND COUNTY OF HONOLULU ZONING MAP

4607 KĀHALA AVENUE
Draft Environmental Assessment

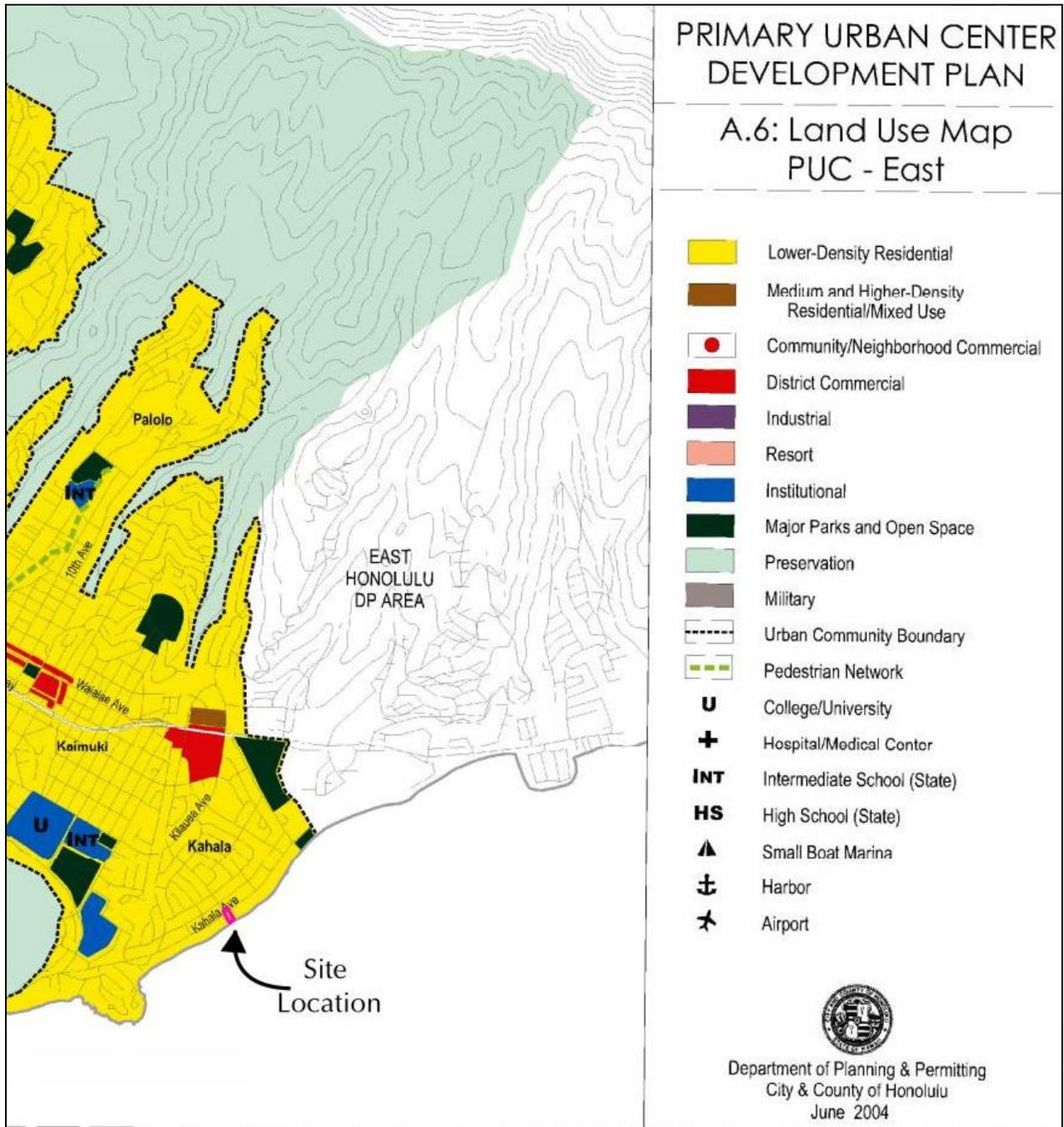


FIGURE 1-5: CITY AND COUNTY OF HONOLULU PRIMARY URBAN CENTER DEVELOPMENT PLAN MAP

4607 KĀHALA AVENUE
Draft Environmental Assessment

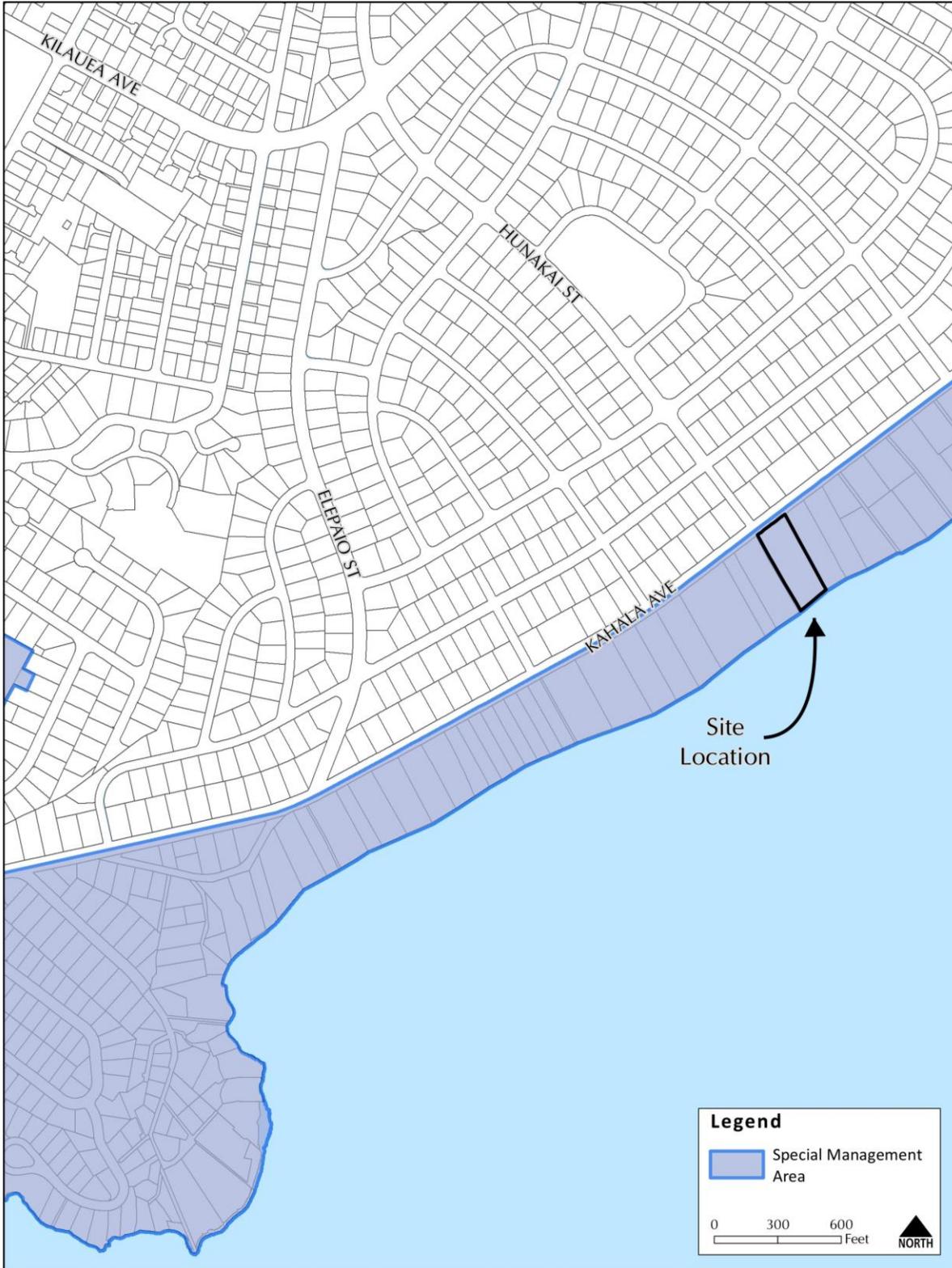


FIGURE 1-6: CITY AND COUNTY OF HONOLULU SPECIAL MANAGEMENT AREA MAP

Section 2.0

DESCRIPTION OF THE PROPOSED ACTION

2.0 DESCRIPTION OF THE PROPOSED ACTION

2.1 EXISTING CONDITIONS AND SITE PREPARATION

The project site is located on TMK (1) 3-5-005: 016 and is bounded directly by the Pacific Ocean to the south, Kāhala Avenue to the north, and low-density residential properties to the east and west. The 1.336-acre parcel is owned in fee by 4607 Kahala LLC, and is currently vacant with various plants, trees and vegetation (*Figure 2-1*). The previous use of this property included two residential structures, a pool, and a deck area. The pre-existing structures have since been demolished with several concrete slabs remaining.

2.2 DESCRIPTION OF PROPOSED ACTION

The owner will improve the site with six residences designed as stacked flats in three buildings. Each building will be served by garage portes, guest parking areas, and a pool. Landscaping elements will include central gardens and lawns. A rock or concrete masonry unit (CMU) wall will be constructed along the property edge facing Kāhala Avenue. Open works fencing will be installed along the makai and beach access boundaries of the site. The total floor area of improvements will be approximately 29,240 square feet. Each of these components is described below. Refer to the Site Plan in *Figure 2-2*, and Preliminary Site Utilization Summary and Development Program in *Tables 2-1 and 2-2*. The Site Plan and Development Program are subject to further refinements during final design.

Residential Structures

The residential land use of the site is governed by development requirements, such as density, lot coverage, setbacks (required yards), and height per the Land Use Ordinance (LUO), Chapter 21, Revised Ordinances of Honolulu (ROH), and the rules of the Special Management Area.

The property is zoned R-7.5 Residential with a total land area of 1.336 acres (58,207 square feet), which allows for development of up to 7.55 dwelling units. The proposed development program is for 6 dwelling units, or less than the total allowed density of 7 units. The site development will include six homes designed as stacked flats, as attached single family homes under provisions of the LUO. The site will have two residential buildings located on the makai portion of the site, and one on the mauka portion of the site.

The residential structures will be two stories with approximate heights not to exceed 25 feet. The buildings will be attached two-story residences (*Figures 2-2 and 2-3*). The second level of each stacked flat is accessed through a stairway located near the garage porte. The residential buildings are designed to maintain an appropriate sense of scale with the large property and the surrounding area. Buildings will not exceed the 25-foot height limit for structures in the R-7.5 Residential District (*Figure 2-4*).

Landscaping and Fencing

The physical development of the Kāhala coastline is dependent upon integrating the natural shoreline and built environment together. Key elements in this integration are the appropriate design, context, and materials used in developing the overall landscaping and exterior features of the area. There will be new landscaping established along the perimeter of the property and also integrated throughout the site. A rock or CMU wall will be constructed along the property edge facing Kāhala Avenue. Open works fencing will also be installed on the makai and beach access boundaries of the site. Plant species will be chosen that are representative of the natural and cultural landscape. Exterior landscape features will be appropriate for the climate, and favor salt and wind-tolerant, native Hawaiian and introduced species including coconut palm, thornless hala, dwarf clumping bamboo, na‘u gardenia, native hibiscus, and loulu palm will be planted. Refer to *Figure 2-2* and *Figures 2-7A and 2-7B*. The property will also have lawn area along the makai portion of the site. Each of the stacked flat residences will have its own pool.

2.3 PRELIMINARY DEVELOPMENT

The property is planned for three residential buildings within a landscaped setting. A summary of land uses is presented in Table 2-1.

Table 2-1 Preliminary Development Program

| LAND USE AREA | Site Areas (SF) |
|---|------------------------|
| Total Property Area | 58,207 |
| Total Developed Residential Area | 29,240 |
| Landscape/Gardens, Driveway, and Setbacks (Includes shoreline setback and beach area) | 33,596 |

The preliminary space program for the residential units is summarized below. Program elements are subject to further refinement in the design phases.

Table 2-2 Preliminary Residential Space Program

| Building | Gross Floor Area (SF) |
|--|------------------------------|
| MAUKA RESIDENCE – BUILDING 1 (TWO HOMES) | 10,280 |
| MAKAI RESIDENCE – BUILDING 2 (TWO HOMES) | 9,480 |
| MAKAI RESIDENCE – BUILDING 3 (TWO HOMES) | 9,480 |
| OVERALL TOTAL (GROSS FLOOR AREA) | 29,240 |

2.4 LUO REQUIREMENTS

The project will adhere to the development standards for R-7.5 Residential zoning as defined by the LUO. The applicable LUO development standards are shown below in *Table 2-2*:

Table 2-2: Compliance with LUO Development Standards for R-7.5 District

| LUO STANDARD | R-7.5 ZONE | PROJECT PLANS (all in Compliance) |
|---|---|---|
| Minimum Lot Area | 7,500 square feet | 58,207 square feet |
| Front Yard | 10 feet | 10 feet. |
| Side Yard | 5 feet | 5 feet |
| Maximum Bldg. Area | 50% of zoning lot | 50% of zoning lot |
| Maximum Height | 25 feet | 25 feet |
| Multiple Homes on Lot (LUO Section 21-8.20A) | Max. of 8 dwellings on single zoning lot. Lot area must be equal or greater than minimum lot size for underlying zoning district, times the number of dwelling units. | Six homes proposed. (Seven homes allowed) 58,207 sf ÷ 7,500 sf = 7.76 = 7 homes |

Source: LUO Table 21-3.2 Residential Districts Development Standards, Section 21-8.20A

Per ROH Chapter 23, uses permitted in the shoreline setback are minor structures, such as open works fences and limited paver walkways (20 square feet).

2.5 PROPERTY PROVISIONS

The Kāhala Community Association (KCA) upholds the Declaration of Protective Provisions and Supplemental Declaration of Protective Provision originally connected to the Kāhala landholdings of Kamehameha Schools. The project will comply with the applicable covenants and restrictions for the subject property.

2.6 SUSTAINABLE DESIGN

The building design and construction will incorporate sustainable design standards and practices. Design strategies will include incorporating natural lighting to illuminate interior spaces, energy-efficient mechanical and electrical systems to maximize energy savings, efficient plumbing systems to save water, Volatile Organic Compound (VOC)-free building materials and finishes to provide healthy interior environments. Buildings will incorporate architectural design features such as energy-efficient windows to decrease cooling loads on the building and increase interior thermal comfort levels.

2.7 PROJECT UTILITIES AND INFRASTRUCTURE

A Preliminary Engineering Report for the project was completed by Group 70 International, Inc. Civil Engineering (October 2015) and is provided as *Appendix E*. Existing conditions, potential impacts, and mitigation measures for site developments and civil infrastructures are discussed in *Section 3.0* of this document.

Water, sewer, and electrical services are available to the property. The following section describes the physical characteristics of the site utilities, and plans for improvements.

2.7.1 Water

Domestic Water

Existing potable water service is provided by the Board of Water Supply (BWS). A 6-inch diameter BWS cast iron (CI) water line extends in Kāhala Avenue, on the mauka side of the roadway.

The property is served by a 2-inch water meter located on the northeast corner of the parcel with a maximum flow rate of 160 GPM and a continuous flow rate of 80 GPM. The average daily demand for the project site zoned single family or duplex is 500 gallons/day/unit or 2,500 gallons/day/acre. The project is anticipated to require up to 3,000 GPD which can be accommodated by the existing BWS water main on Kāhala Avenue.

Fire Protection

Existing fire hydrants located on Kāhala Avenue fronting the subject parcels are anticipated to satisfy the fire protection requirements. The site plan will comply with current National Fire Protection Association (NFPA) 1 standards for access and egress. Fire sprinklers will be installed in the single-family residential buildings. Onsite fire hydrants are not required since the location of the existing fire hydrant on Kāhala Avenue at the Hunakai intersection meets the maximum allowable distance of 450 feet from the fire hydrant to the farthest point of the building.

A 20 foot wide fire lane approximately 100 feet long will be provided along the west driveway and within the site. The fire code allows a maximum distance of 150 feet from the fire lane to an exit door for buildings with fire sprinklers. All building exterior exit doors will be within 150 feet of the fire land. The fire lane will not require a turnaround since it will be less than 150 feet long.

A new master meter will be installed on Kāhala Avenue to serve the six dwellings. Based on BWS, the existing water systems and off-site fire protection are adequate, and can accommodate the single family units planned at the property.

2.7.2 Wastewater

There are no existing cesspools or septic tanks located within the property. An existing 6-inch sewer lateral connects to the 24-inch sewer main in Kahala Avenue. The on-site sewer distribution system will consist of a gravity-flow 6-inch sewer lateral collecting flows from the residences. Sewer system components will comply with design standards of the City and County of Honolulu Department of Wastewater Management.

2.7.3 Storm Drainage

The project site receives annual rainfall of approximately 28 inches. The City right-of-way fronting the property contains a catch basin on Kāhala Avenue which is connected to the City's

18-inch stormwater conduit which is part of the Kāhala Road public drainage system. The pipe is reinforced concrete at a length of 60 feet.

The closest public stormwater manhole is located near the northeastern corner of the parcel. The manhole is adjacent to TMK 3-5-004:001, and is located at the junction where the Kāhala Road drainage system is directed to a deep ocean outfall through a 48-inch reinforced concrete pipe.

Two private drainage inlets are located on either side of the old driveway on the parcel, approximately 50 feet inside the property line. These inlets are potentially tied into the City storm sewer along Kāhala Avenue.

Due to the sandy soil conditions, most rainfall percolates into the ground without ponding or runoff. Portions of the makai section of the property drains toward the ocean. Lower elevations in the center of the property collect runoff which percolates into the ground.

The parcel will be regarded at 1% slope to divide the property into two general drainage areas mauka and makai. Roughly one third of the property will drain toward Kāhala Avenue, with the remaining two thirds of the property draining toward the landscaped shoreline of the property.

The project will utilize infiltrative BMPs and sustainable design strategies. The drainage system is described in more detail in *Section 3.8.3*.

2.7.4 Solid Waste Disposal

Solid waste from the project site will be collected curbside by the City and County of Honolulu Waste Management.

2.7.5 Electrical and Communications

An existing utility pole is located at the corner of the parcel, in the direction of Lē'ahi. An additional utility pole is located across the subject property, on the mauka side of Kāhala Avenue.

HECO provides electrical service to residential properties in the Kāhala area. Verizon and Hawaiian Telcom provide telephone and internet service, and Oceanic Cable provides cable television and internet communication. These service providers will be consulted by the project design team to coordinate service to the property.

2.8 ACCESS, ROADWAYS, AND PARKING

Vehicular access to the site will be from two existing driveways off of Kāhala Avenue. Each driveway leads directly to parking areas and respective garage portes for the residential structures. Off-street parking spaces will be provided per LUO requirements to serve the project.

2.9 CONSTRUCTION CHARACTERISTICS

The project requires very limited vegetation clearing, grubbing, site mass grading and excavation (cut and fill). General construction trades will be engaged to construct the residential units. The construction of site utilities will require excavation. Extensive landscaping will be established throughout the property.

2.10 SUMMARY OF PROJECTED COSTS

Total development costs are estimated between \$40 to \$45 million.

2.11 SCHEDULE

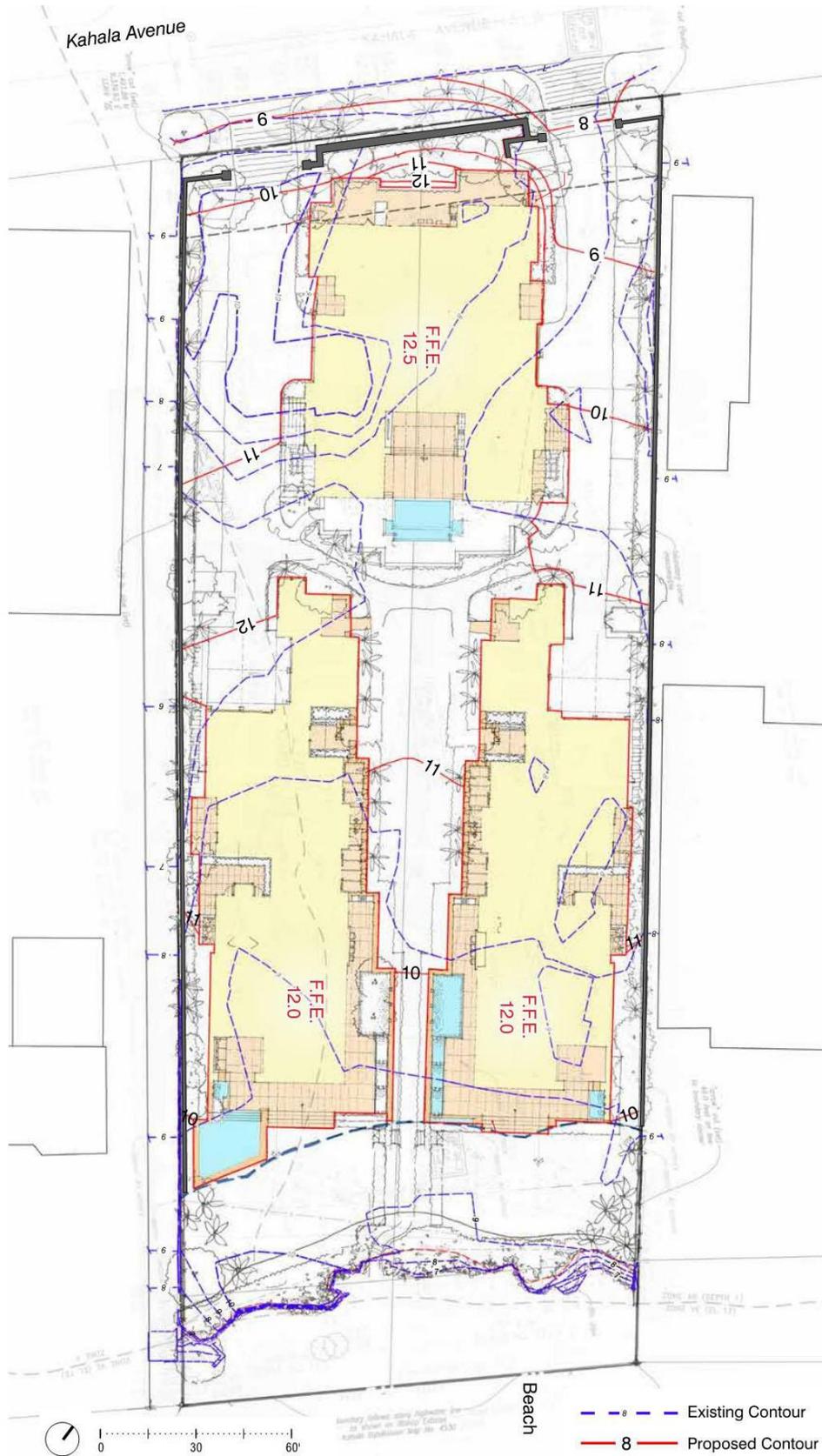
Planning and permitting for the project is anticipated to be completed in 2017. Site development will follow with anticipated completion in 2019.

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FIGURE 2-1: EXISTING CONDITION

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Source: Hart Howerton 2015

FIGURE 2-2: GRADING CONCEPT PLAN

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FIGURE 2-3: SITE PLAN – FIRST FLOOR

Source: Hart Howerton 2015

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FIGURE 2-4: SITE PLAN – SECOND FLOOR

Source: Hart Howerton 2015

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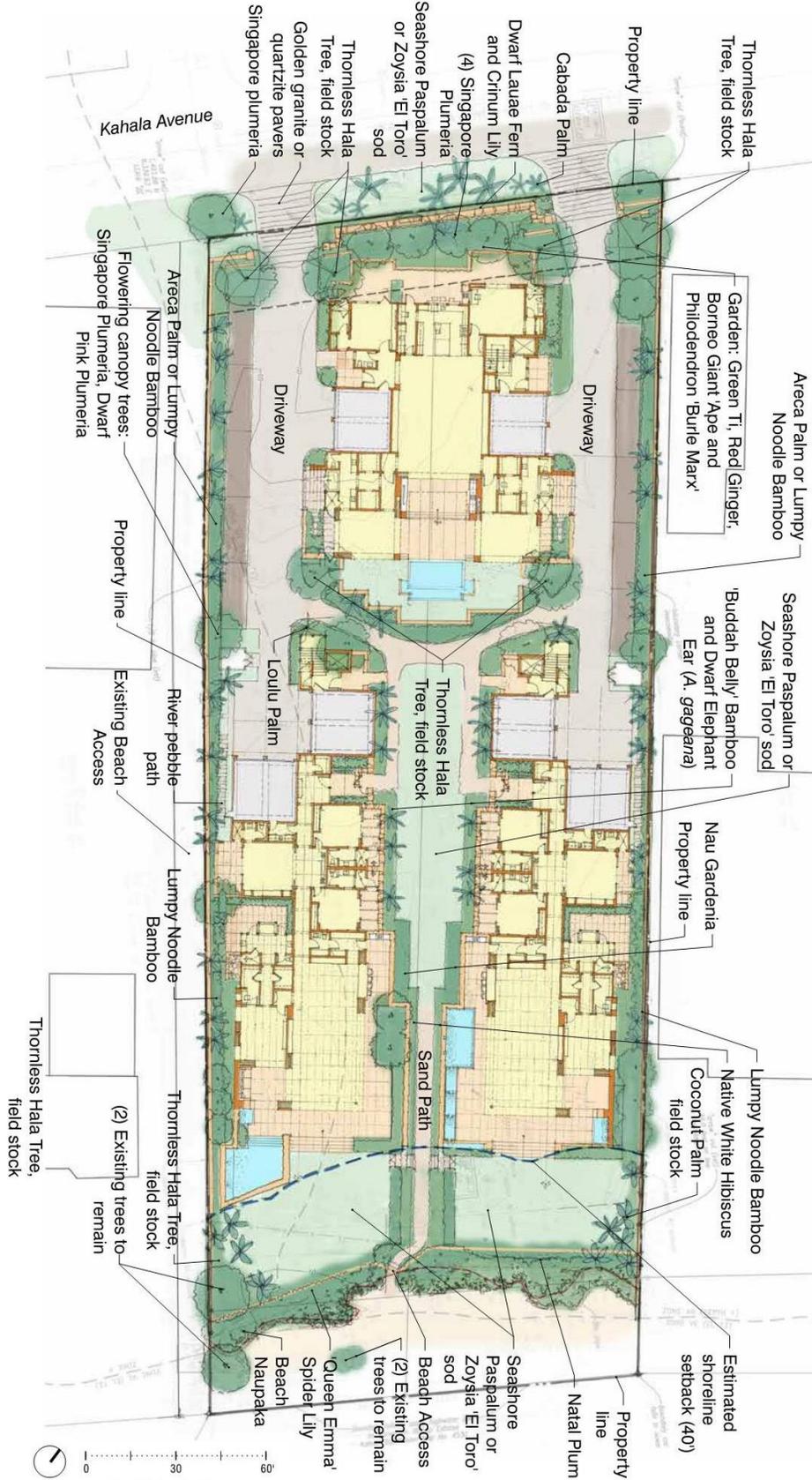


FIGURE 2-5: ROOF PLAN

Source: Hart Howerton 2015

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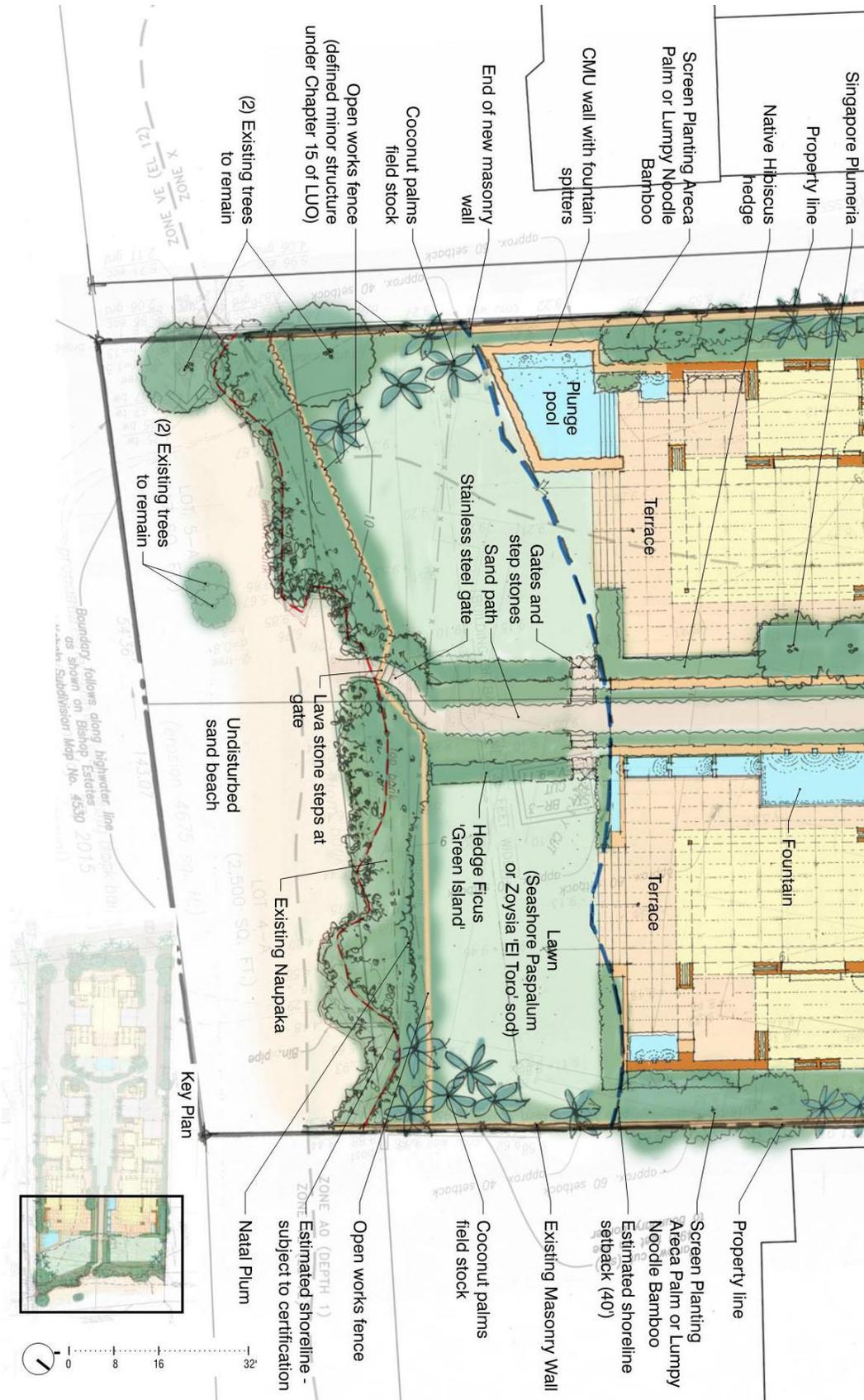


Source: Hart Howerton 2015

FIGURE 2-6: LANDSCAPE PLAN

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Source: Hart Howerton 2015

FIGURE 2-7: LANDSCAPE PLAN DETAIL

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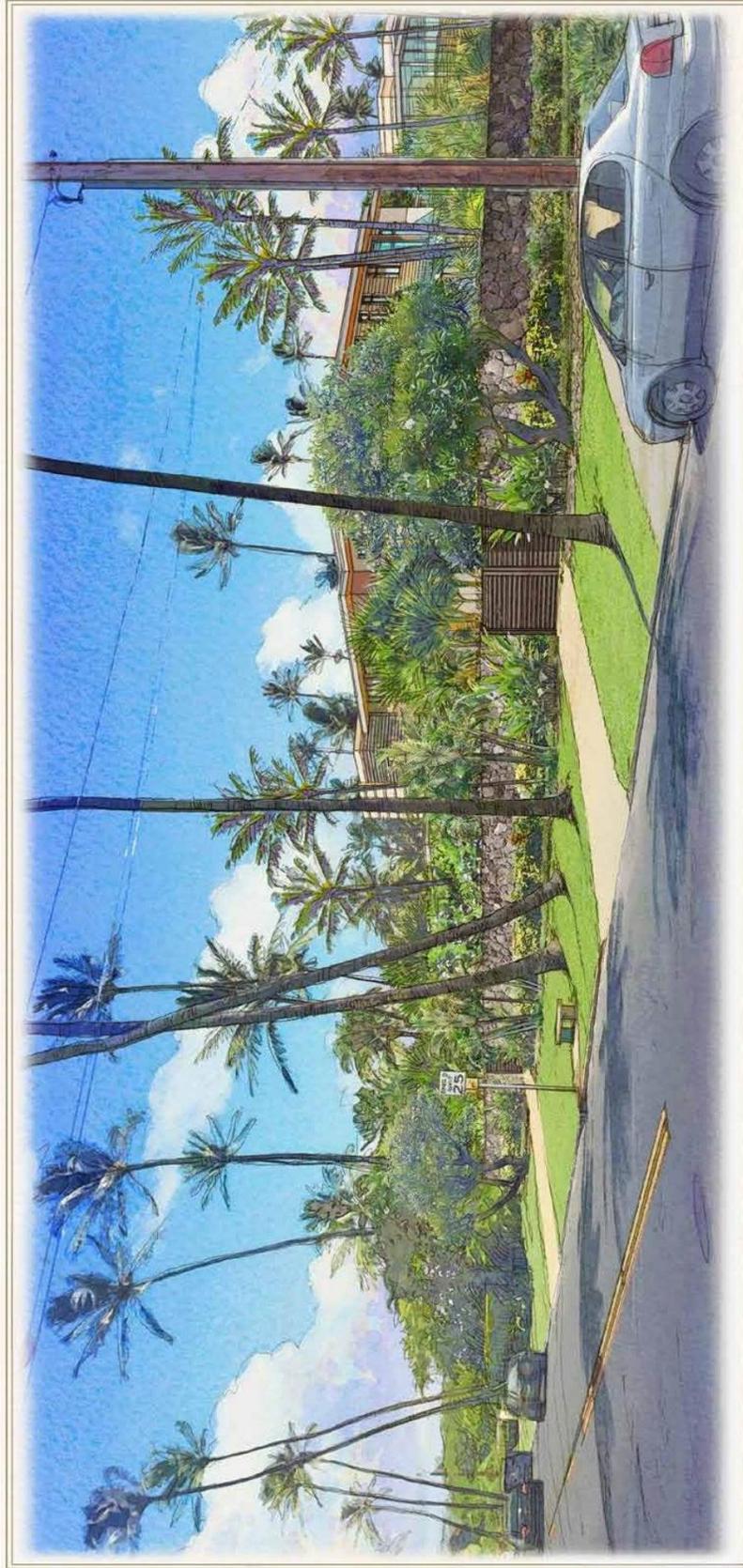
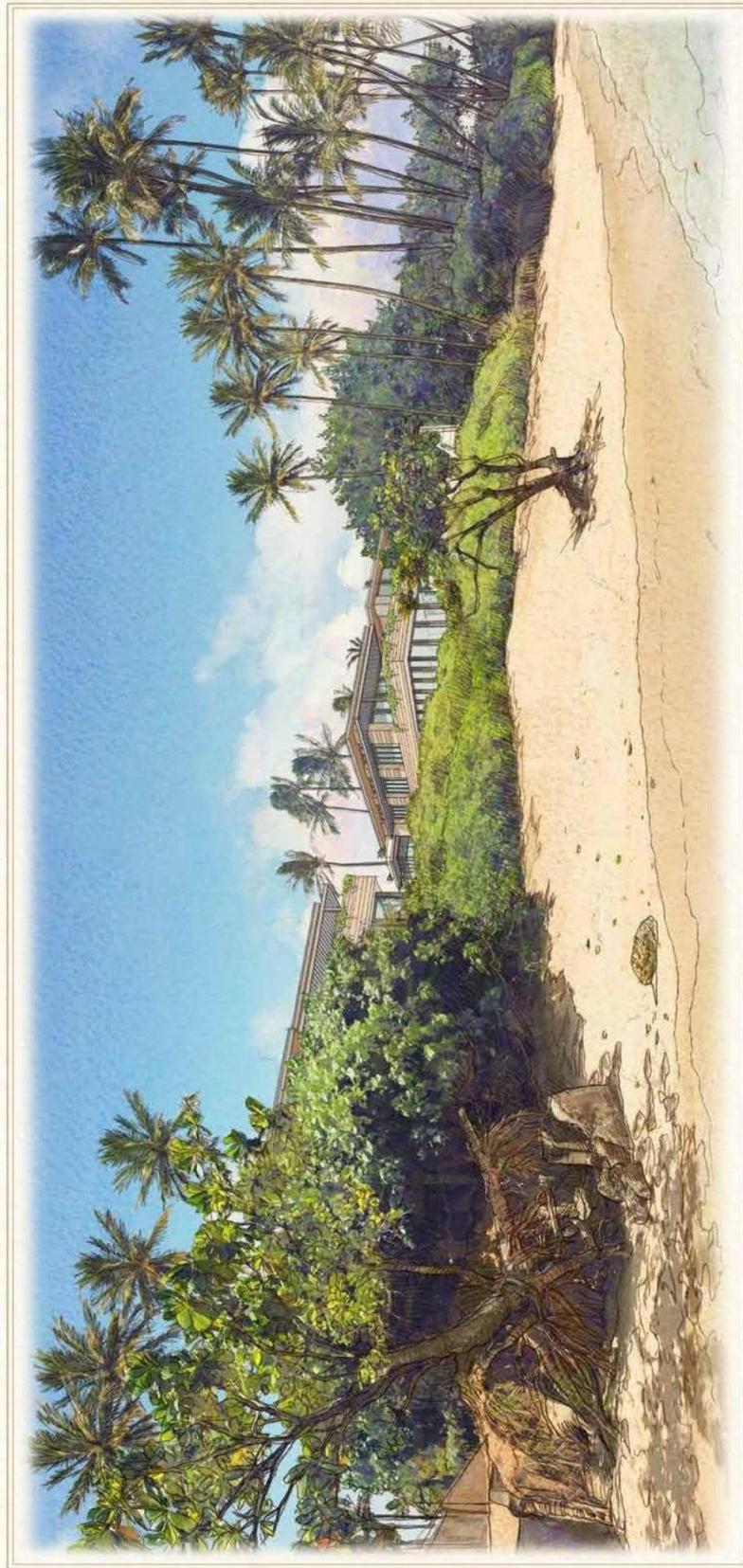


FIGURE 2-8: STREET PERSPECTIVE

Source: Hart Howerton 2015



Source: Hart Howerton 2015

FIGURE 2-9: BEACH PERSPECTIVE

Section 3.0

DESCRIPTION OF THE ENVIRONMENTAL SETTING, POTENTIAL IMPACTS AND MITIGATION MEASURES

3.0 DESCRIPTION OF THE ENVIRONMENTAL SETTING, POTENTIAL IMPACTS, AND MITIGATION MEASURES

This section describes the existing environmental setting and identifies possible impacts associated with the development and operation of the new residences. Strategies to mitigate potential impacts are also identified.

3.1 TOPOGRAPHY

Existing Conditions

The terrain within the property is uneven with gentle slopes and depressions. Current grades of the property are artificially low, where soils have been removed during demolition activities and prior work done on the site. The property is also depressed in comparison with adjacent parcels which are 3 feet higher in the central area. Elevations within the project site range between 6 to 10.8 feet above mean sea level (MSL). Refer to *Figure 3-1*.

Potential Impacts and Mitigation Measures

Mass grading and excavation will be required to level the site topography for construction and to facilitate site drainage and landscaping. Grading will fill irregular low spots within the property as well as establish a new datum for determining the base flood elevation and building envelopes. Best Management Practices will be implemented pursuant to the Grading Permit and National Pollutant Discharge Elimination System (NPDES) to address topographic modifications during grading.

3.2 SOILS & GEOLOGICAL CONDITIONS

Existing Conditions

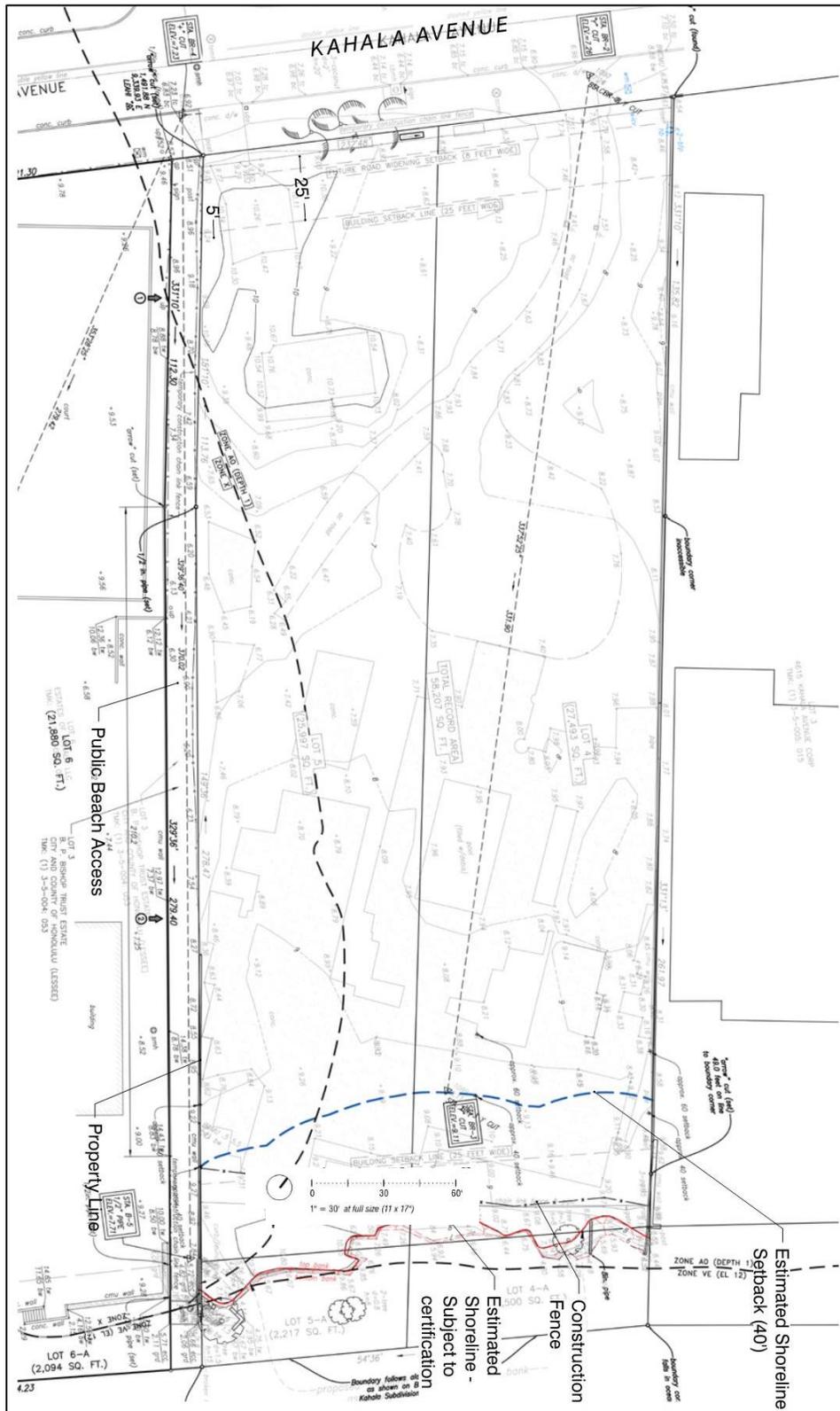
The Kāhala beach area lies between Lē'ahi (Diamond Head) and Koko Head. Soil types within the project site are identified in the U.S. Department of Agriculture, Natural Resources Conservation Service, Web Soil Survey. As depicted in *Figure 3-2*, the site consists of Beaches (BS) and Jaucus Sand (JaC), 0 to 15 percent slopes. BS areas consist of light colored sands of seashells and coral. JaC soil permeability is rapid but runoff is very slow. The water erosion hazard is slight but wind erosion is a severe hazard in places where the soil is not anchored by vegetation.

Potential Impacts and Mitigation Measures

The residential use will not change the overall soil composition at the site. Grading and leveling will redistribute soil in sections of the property. Earth moving activities during the construction period (e.g., clearing, grading, excavation) have potential to generate fugitive dust and erosion soil loss, addressed in *Section 3.6* and *Section 3.8.3*. Best Management Practices (BMPs) will be implemented to mitigate potential adverse effects to soil erosion and dust generation as described in these sections.

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Source: Austin Tsutsumi & Assoc. 2015

FIGURE 3-1: TOPOGRAPHY MAP

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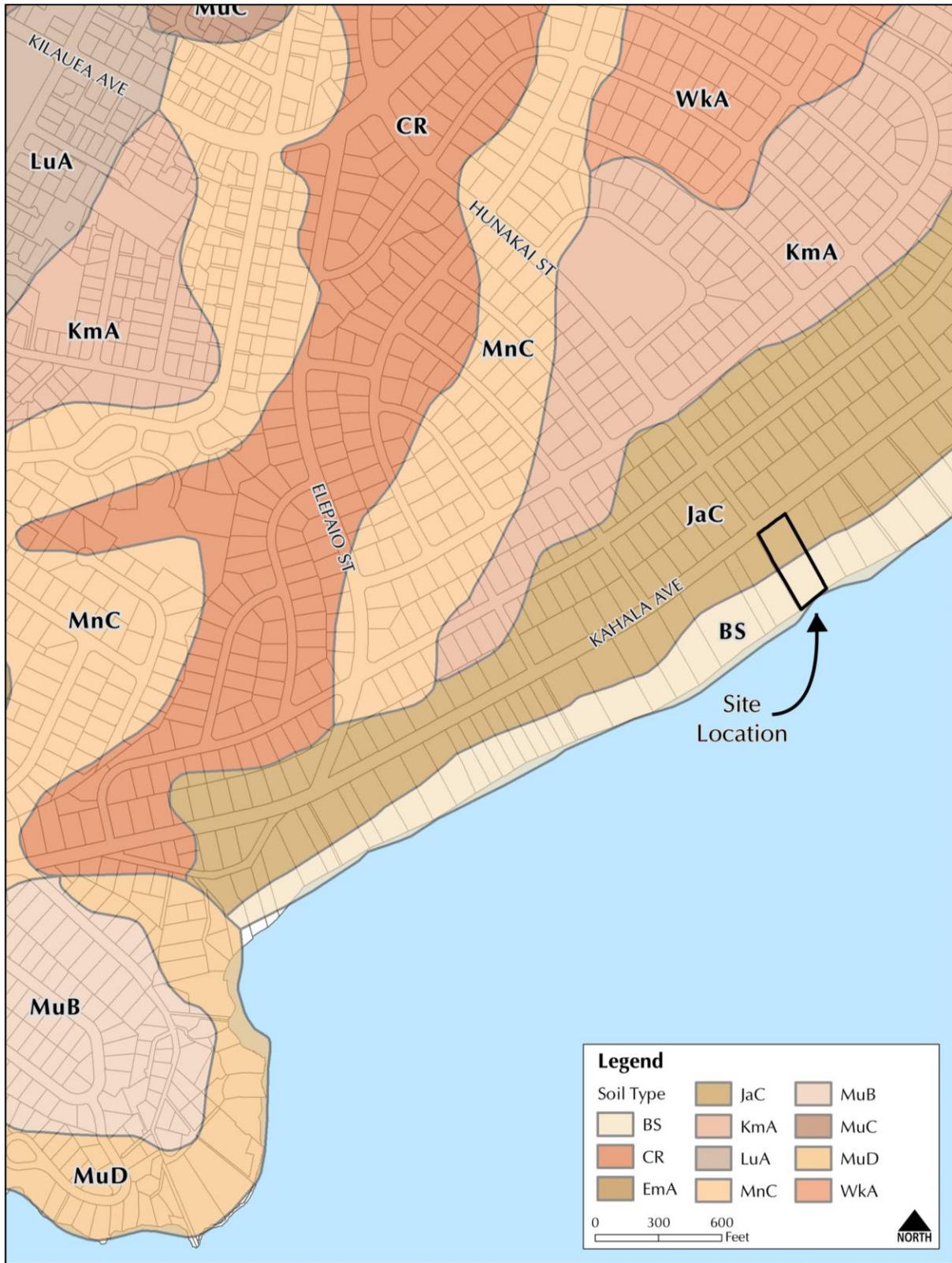


FIGURE 3-2: USDA NRCS SOILS MAP

3.3 CLIMATE

Existing Conditions

Climate on O‘ahu can be characterized as having low day-to-day and month-to-month variability. Differences in the climates of various areas are generally attributable to the island’s geologic formation and topography creating miniature ecosystems ranging from tropical rain forests to drier plains, along with corresponding differences in temperature, humidity, wind, and rainfall over short distances. Annual and daily variation in temperature depends to a large degree on elevation above sea level, distance inland, and exposure to trade winds.

Winds are predominantly “trade winds” from the east-northeast, except for occasional periods when “Kona” storms may generate strong winds from the south, or when the trade winds are weak and land breeze to sea breeze circulations develop. Wind speeds typically vary between about 5 and 20 miles per hour providing relatively good ventilation. Lower velocities (less than 10 mph) occur frequently and the typical northeasterly trade winds tend to break down in the Fall giving way to lighter, variable wind conditions through the Winter and into early Spring.

The project area’s temperatures generally have small seasonal variations between the warmest months (August and September) and the coolest months (January and February). Daily maximum temperatures usually run from the low-80’s in winter to the low-90’s in summer, while daily minimum temperatures run from the mid-60’s to the low-70’s, respectively. Average monthly temperatures in nearby Waikīkī range between 72 and 81 degrees Fahrenheit.

In general, rainfall is highly variable depending upon elevation and location with respect to trade winds. The Lē‘ahi area is one of the drier regions of O‘ahu, with an average annual rainfall of about 25 inches. Most of the rainfall occurs during winter storms, usually taking place from October through April.

Potential Impacts and Mitigation Measures

The proposed action will have no effect on climate conditions, and therefore no mitigation measures are required.

3.4 NATURAL HAZARDS

Existing Conditions

Based on the Federal Emergency Management Agency’s *Digital Flood Insurance Rate Map, DFIRM* data, effective 2011, the project area is located in Zone X, AO and VE and is also located within the designated tsunami zone (*Figures 3-3 and 3-4*). The Flood Zone X designation indicates the area is outside of the 0.2% annual chance floodplain. This portion of the subject parcel is not located in a Flood Hazard District as defined by LUO Section 21-9.10. A majority of the parcel is located in Zone AO which is defined as areas subject to inundation by 1-percent-annual-chance shallow flooding. The average floodplain depth is one foot. Mandatory flood insurance purchase requirements and floodplain management standards apply to this zone. A small portion of the parcel along with the adjacent coastal area is located in Flood Zone VE,

indicating an area subject to inundation by the 1-percent-annual-chance flood event with additional hazards due to storm-induced velocity wave action.

No hurricanes have significantly impacted the project area in recent history. The potential for hurricanes and tropical storms to cause future damage cannot be dismissed. In the past 60 years, four hurricanes have caused major damage in Hawai'i, including 'Iniki (1992), 'Iwa (1982), Dot (1959), and Nina (1957). In most recent history, Tropical Storm Iselle made landfall on Hawai'i Island in 2014, causing considerable damage to utility poles, roadways, and homes on the windward side of the island.

Earthquakes, landslides, and volcanic eruptions, which move the ocean floor, can all generate a series of large waves called tsunamis. Hawai'i is susceptible to tsunamis from earthquakes in the Pacific Rim of Fire which encompasses most of the Pacific Ocean. However, the most frequent impacts occur from local earthquakes like the 1976 Halapē quake, or quakes occurring off Japan, the Aleutian Chain, or South America.

The majority of earthquakes in Hawai'i are directly related to volcanic activity on the Island of Hawai'i. Per the 2006 International Building Code (IBC) seismic design maps, Honolulu could experience seismic activity around 0.15 of the earth's gravitational acceleration (g-force).

Potential Impacts and Mitigation Measures

The site is located within Flood Zones X, AO and VE; therefore, the project will comply with necessary design requirements and flood plain management standards. Construction work will be performed in accordance with the State and County-approved design standards. New drainage infrastructure will be designed and constructed to meet applicable standards. Pursuant to consultation with the DPP Site Development Division, the BFE's (Base Flood Elevations) will be processed with DPP based on the project's as-built (mass grading) elevations (*Figure 3-1*). Residential buildings will be constructed with first floor elevations above the base flood elevation (1 foot). No significant adverse effects are anticipated.

In the event of a tsunami, occupants will need to evacuate the property to avoid risk of tsunami inundation.

All construction will conform to relevant building codes to mitigate the risk of wind and seismic damage.

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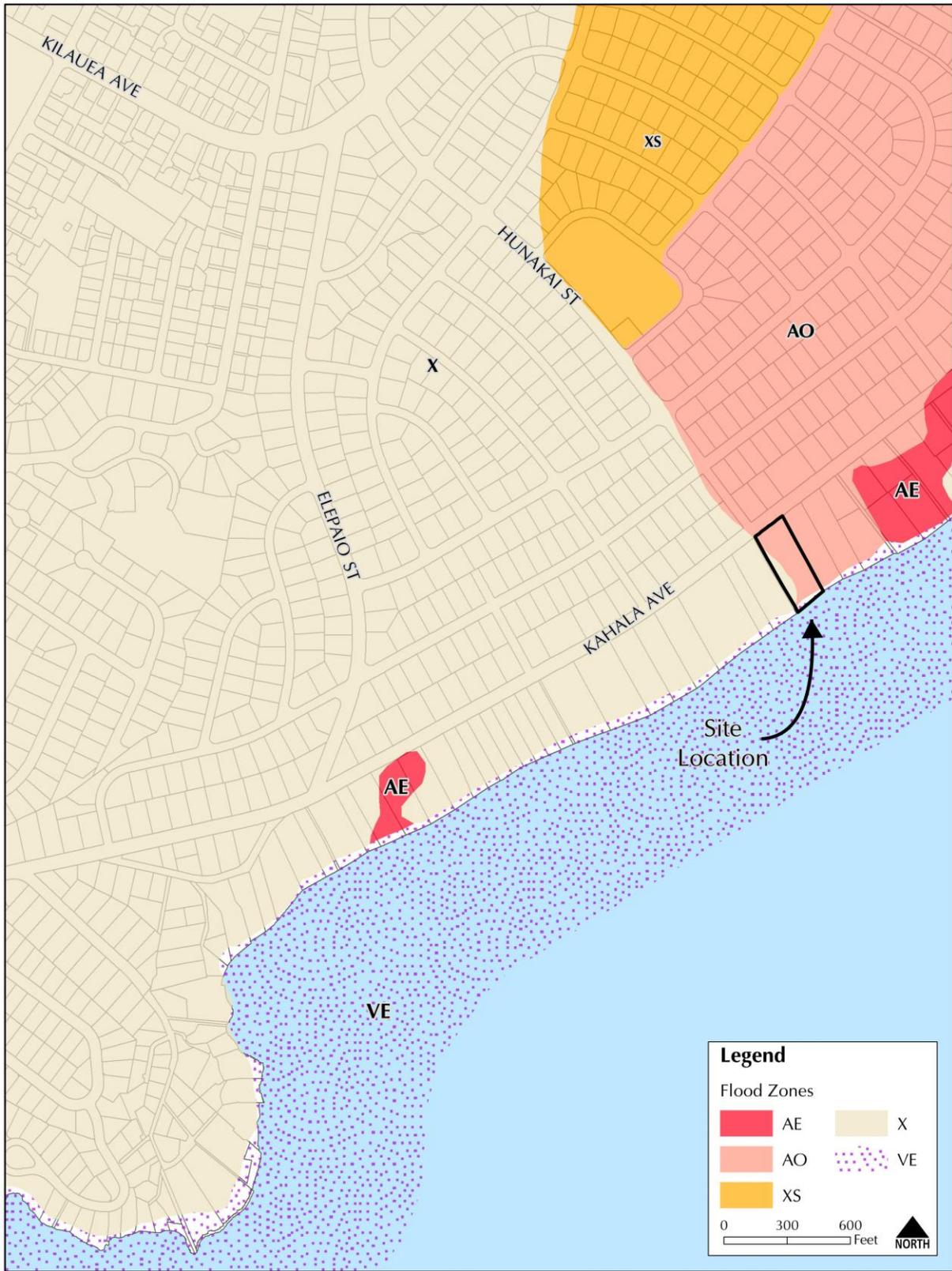


FIGURE 3-3: FEMA FLOOD INSURANCE RATE MAP

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FIGURE 3-4: TSUNAMI ZONE

3.5 FLORA AND FAUNA

Existing Conditions

The ground surface of the property has been completely disturbed with residential development and accessory structures for over a century. The parcel supports few remnants of prior landscape vegetation, such as common lawn grass, coconut and other palms, naupaka (*Scaevola taccada*), and false kamani (*Terminalia catappa*) at the shoreline area. A collection of exotic shrubs and weeds have sprouted since the lot has been vacant which grow in exotic topsoil previously imported to cover calcareous sands on the parcel.

Few fauna or avian species were observed during a site visit. Common established alien rodent and avian species occur on the site. Common rodent species are expected to be found on the site. These mammals include the roof rat (*Rattus rattus*), Norway rat, (*Rattus norvegicus*), small Indian Mongoose (*Herpestes auropunctatus*), house mouse (*Mus musculus*) and house cat (*Felis cattus*).

Several introduced birds could be seen on the subject property, including: Japanese white-eyes (*Zosterops japonica*), Java sparrow (*Padda oryzivora*), Spotted dove (*Streptopelia chinensis*), Zebra dove, (*Geopelia striata*), house finch (*Carpodacus mexicanus*), and Red-vented bulbul (*Pycnonotus cafer*).

The indigenous Wedge-tailed Shearwater (*Puffinus pacificus*) is known to have a small established colony in the Black Point area of Kāhala. The Wedge-tailed Shearwater is not a listed species under the Endangered Species Act, but they are protected under the Migratory Bird Treaty Act (MBTA). There is no evidence or accounts of the shearwater nesting at or near this property. No nesting seabirds were found on or near the site.

Potential Impacts and Mitigation Measures

Vegetation removal and site clearing and grading will affect the existing exotic shrub and ground cover species. There will be no vegetation clearing in the shoreline area.

The site will be landscaped to include non-invasive indigenous, Polynesian-introduced, and introduced plant species. Drought-tolerant species will be used, wherever possible, to minimize irrigation requirements and water needs (*Figure 2-10A and 2-10B*).

The development and operation of the residential development is not expected to result in adverse effects to plant or animal species. There will be no adverse effects on the area's wildlife or habitat.

Although no nesting sites or seabirds were identified during survey of the subject property, shoreline vegetation at the property poses the remote potential to support shearwater nesting.

3.6 ARCHAEOLOGICAL RESOURCES

Existing Conditions

An Archaeological Inventory Survey (AIS) was completed of the subject property by Scientific Consulting Services (SCS) (September 2015) resulting in an Archaeological Assessment report (*Appendix B*). This study addressed the potential for archaeological resources and historic properties, and to provide recommendations as related to the State of Hawai'i's historic review process.

Previous Archaeological Research in the Vicinity of the Project

SCS examined past research within the vicinity of the subject parcels to assess site types that may potentially be encountered. Archaeological sites recorded in the Kāhala area consist mainly of human burials have been identified in the coastal area during construction activities. cultural remains relating to both prehistoric and historic time periods.

Results of Archaeological Assessment

A preliminary field inspection and additional survey work was conducted by SCS Archaeologist between the months of May-July 2015. A surface pedestrian survey was conducted across 100 percent of the property. No significant historic or cultural properties were identified during the pedestrian survey.

Subsurface testing was conducted during the Archaeological Assessment in order to identify potential human alteration, archaeological features, and associated artifacts in subsurface contexts. Twenty subsurface test trenches were mechanically excavated during the survey (*Figure 3-4*). A single ceramic insulator was identified during the subsurface testing, whose origin could not be determined. All cultural materials identified during subsurface testing were classified as modern rubbish and construction debris.

The pedestrian survey and subsurface testing revealed three modern structures associated with modern habitation. No cultural or historic sites or features were identified in the property. Several of the test trenches encountered buried A-Horizon soils, but no cultural material was discovered. An old ceramic insulator was identified whose provenance could not be determined. The cultural material identified during the subsurface testing was confined to modern rubbish (wire, plastic bags, glass sherd and ceramic sherd) and modern construction debris (PVC pipe sections, red brick, concrete bricks, and fragments of red brick). One sub-adult faunal bone (possible avian) was identified in a layer of fill. Refer to *Appendix B* for the testing results.



FIGURE 3-5: LOCATIONS OF TEST TRENCHES

Potential Impacts and Mitigation Measures

Based on the historic use of the project area as well as the results of previous archaeological studies in the vicinity of the property, it was determined that no cultural or historic sites are present at the property.

Although no cultural or historic sites were identified during the current survey and subsurface testing, there is potential for inadvertent discoveries of historic or cultural sites during construction. Given the findings of previous archaeological work documented in the area (e.g., human burials and cultural deposits), archaeological monitoring is recommended for future ground disturbance activities associated with construction.

With the lack of historic and cultural properties identified on the site, and the implementation of archaeological monitoring during construction, there are no significant effects anticipated.

3.7 CULTURAL PRACTICES AND RESOURCES

Existing Conditions

A Cultural Impact Assessment (CIA) was completed by SCS in October 2015 and is included as *Appendix C*. The CIA considers the project's effect on traditional cultural practices. The project requires compliance with the State of Hawaii environmental review process under Chapter 343, HRS, which requires consideration of a proposed project's effect on traditional cultural

practices. Through document research and consultation with cultural experts, the CIA assessed the project for its potential effects on cultural practices.

Hawaiian organizations, agencies, and community members have been contacted in order to identify potentially knowledgeable individuals with cultural expertise and/or knowledge of the project area and the vicinity. Cultural community consultations were sought for this study, including government agency or Hawaiian cultural community organization representatives, or individuals such as long-time area residents and cultural practitioners. The organizations consulted included the Office of Hawaiian Affairs (OHA), the O'ahu Island Burial Council (OIBC), and Kumu Hula Victoria Holt-Takamine.

The results of the cultural consultation process identified general concerns about the possibility of inadvertent discoveries of Hawaiian artifacts or iwi (human remains) during the construction phase of the proposed action. This is a common concern with any proposed development on the island as the potential for unknown discoveries always exist. The history of the project site does suggest that there is potential for such discoveries. One of the informants mentioned that a hālau has used Kahala beaches for hi'uwai (water purification) practices and off-shore night fishing has been observed in the general area. Another shared the story of her family's limu gathering practices, which sometimes extended into the Kāhala area.

Potential Impacts and Mitigation Measures

Background research and community consultation indicates that the project will have minimal to no impacts to Hawaiian cultural beliefs, practices, resources (historic and/or cultural properties) sites, and traditions. Therefore, existing cultural practices that occur in the area will not be affected. Public access to the shoreline area will not be affected. Project personnel will be alerted to the potential for inadvertent cultural finds. Archaeological monitoring is planned during construction. If iwi or cultural resources are found during the ground disturbance for this project, cultural and lineal descendants of the area and appropriate agencies (e.g. SHPD, OHA, OIBC) will be notified and consulted in regard to preparation of appropriate mitigation plans, including a burial treatment plan.

The findings of the community consultation effort as well as an assessment of potential cultural impacts and recommended mitigation measures are presented in the Cultural Impact Assessment (*Appendix C*).

3.8 UTILITIES AND INFRASTRUCTURE

Group 70 International, Inc. (Group 70) prepared a preliminary engineering report for the project in October 2015 (*Appendix D*). The study addressed water supply, wastewater, storm drainage, and roadways.

3.8.1 Water System

Existing Conditions

Domestic Water

The existing potable water service to the Kāhala Avenue area is provided by the Honolulu Board of Water Supply (BWS). A 6-inch diameter BWS cast iron (CI) water main extends in Kāhala Avenue, on the mauka side of the roadway.

BWS distribution maps, record drawings, and consultation indicate onsite domestic water to the property is provided by a 2-inch water meter (No. 10070382, Premise ID# 8531505961) located on the northeastern corner of the parcel. The water meter has a maximum flow rate of 160 GPM and a continuous flow rate of 80 GPM.

Fire Protection

A 6-inch diameter water main is located in Kāhala Avenue fronting the site, which serves multiple fire hydrants along Kāhala Avenue near the site. One fire hydrant, M0149 is located across from the project site, located at the Hunakai Street and Kāhala Avenue intersection.

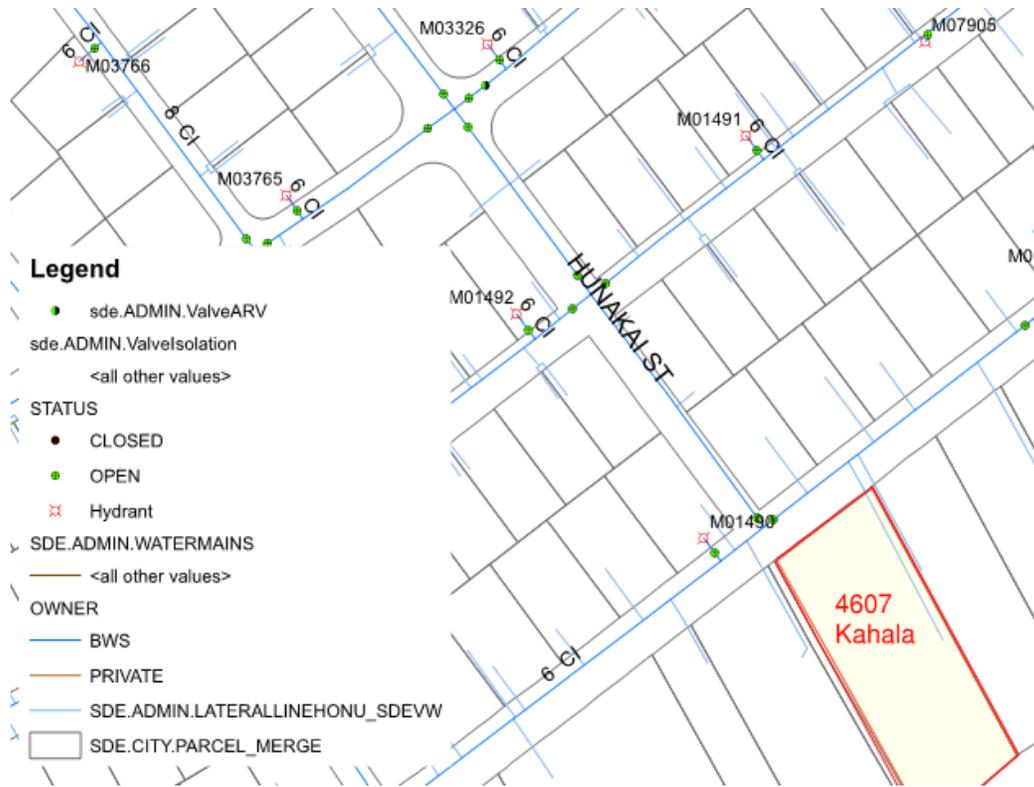


FIGURE 3-6: EXISTING BWS WATER DISTRIBUTION MAP

Potential Impacts and Mitigation Measures

Domestic Water

The property is currently served by an existing BWS 2-inch water meter which connects to the existing BWS water main in Kāhala Avenue. The average daily demand for the project site zoned single family or duplex is 500 gallons/day/unit or 2,500 gallons/day/acre. Water demand for the project is estimated at 3,000 GPD. BWS has verified there is adequate capacity to serve the project. Development of the property will conform to the City and County of Honolulu BWS Water System Standards (2002). When water is made available, the applicant will pay the BWS Water System Facilities Charges for resource development, transmission and daily storage. Existing water meters and laterals will remain in place depending on the proposed site improvements.

A new master water meter will be installed on Kāhala Avenue to serve the six residences.

Fire Protection

Existing fire hydrants located on Kāhala Avenue fronting the subject parcels are adequate and can accommodate the six residential units on the property. The project will comply with current NFPA 1 standards, and all residences will include fire sprinkler systems. Onsite fire hydrants are not required, as the location of the existing fire hydrant at the Kāhala Avenue and Hunakai intersection meets the maximum allowable distance of 450 feet from the fire hydrant to the farthest point of the building. A 20 foot wide fire lane will be provided for the buildings along the western driveway and within the site. The fire code allows a maximum distance of 150 feet from the fire lane to an exit door for buildings with sprinkler systems. All building exterior exit doors will be within 150 feet of the fire access. The fire lane will not require a turnaround as it will be less than 150 feet in length.

With the proposed mitigation measures, no significant impacts to water systems are anticipated with this residential redevelopment.

3.8.2 Wastewater

Existing Conditions

Based on State Department of Health Wastewater Branch records and consultation, there are no existing cesspools or septic tanks within the project property. An existing 6-inch private sewer lateral serves the property, and connects to a 24-inch sewer main in Kāhala Avenue. The sewer main and the water lateral are both made of vitrified clay pipe material.

In addition, a sewer manhole on Kāhala Avenue is located at the northwest portion of the parcel.

Future wastewater improvements for the property must comply with Department of Health Administrative Rules, Title 11, Chapter 23.

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FIGURE 3-7: EXISTING SEWER INFRASTRUCTURE

Potential Impacts and Mitigation Measures

Projected sewer demand for the project is estimated at 6,000 gallons per day (GPD). The on-site sewer distribution system will consist of a gravity-flow 6-inch sewer lateral collecting flows from the residences. Sewer system components will conform to the *Design Standards of the Department of Wastewater Management Volume 1, July 1993* and the *Design Standards of the Division of Wastewater management, Volume 2, July 1984*.

A Sewer Connection Application has been submitted and approved for the property by the DPP Wastewater Branch in October 2014, which is valid for two years after the approval date. The sewer connection license will be used during the Building Permit process as proof of obtaining approval to connect to the City sewer system. There are no plans for underground injection disposal of wastewater.

The City sewer system has adequate capacity to serve the planned residential use. No significant wastewater impacts are anticipated.

3.8.3 Storm Drainage

Existing Conditions

The project site receives annual rainfall of approximately 28 inches. The City right-of-way fronting the property contains a catch basin on Kāhala Avenue which is connected to an 18-inch stormwater conduit. The pipe is reinforced concrete pipe with a length of 60 feet.

The closest public stormwater manhole is located near the northeastern corner of the property, adjacent to parcel 3-5-004:001. The manhole is located where the junction of the Kāhala Road drainage system is directed to a deep ocean outfall through a 48-inch reinforced concrete pipe.

Two private drainage inlets are located on either side of the old driveway on the northwestern side of the property, approximately 50 feet inside the property line. These inlets are potentially tied into the City storm sewer along Kāhala Avenue.

Due to the sandy soil conditions, most rainfall percolates into the ground without ponding or runoff. Portions of the makai section of the property drains toward the ocean. Lower elevations in the center of the property collect runoff which percolates into the ground.

Probable Impacts and Mitigation Measures

The project site will be regraded at 1% slope to divide the property into two general drainage areas mauka and makai. Roughly one third of the property will drain toward Kāhala Avenue, with the remaining two thirds of the property draining toward the landscaped shoreline.

Landscaping will be established across the makai end of the property to provide natural filtration of runoff. The Civil Engineering Branch of the City and County of Honolulu Department of Planning and Permitting will review and approve the site grading, drainage, and erosion control plans before construction commences.

During the construction period, erosion will be minimized through compliance with the City and County's grading ordinance and the applicable provisions of the DOH's Water Quality Standards (Title 11, Chapter 54, HAR) and Water Pollution Control requirements (Title 11, Chapter 55, HAR). Additionally, standard Best Management Practices (BMPs) will be employed to minimize impacts, as detailed in subsequent construction plans.

Following site grading and construction of residential structures and pavements, runoff quantities will increase due to the increase in impervious surface area. Pervious pavements and landscaped areas will be used to increase on-site infiltration, and to reduce stormwater runoff.

Due to the high permeability of the sandy soils on the property, very little runoff is anticipated during normal rainfall events. Based on the proposed topography, runoff from the mauka portion of the site will sheet flow through landscaping towards Kahala Avenue and the makai portion of the site will sheet flow through landscaping toward the shoreline. Shallow retention basins or similar infiltration BMP's will collect roof downspout discharges. These measures will naturally filter site runoff and will buffer storm runoff flows from the property. All site drainage designs will comply with current Department of Planning and Permitting standards.

Infiltrative BMPs and sustainable design strategies will be used to retain the stormwater generated by the 10-year 1-hour design storm event, including the expected slight increase in runoff quantities over existing conditions. Although the residential use is not required to implement stormwater quality BMPs in accordance with the City and County's *Rules Relating to Storm Drainage Standards*, it is the goal to reduce the pollution associated with stormwater runoff from development. Infiltrative BMPs that may be used on-site for retention and stormwater quality facilities are described in detail below:

- **Infiltration Basin** - Infiltration basin is a shallow impoundment with no outlet, where storm drain runoff is stored and infiltrates through the basin invert and into the soil matrix. Treatment and removal of suspended pollutants/sediment occurs as water infiltrates instead of being conveyed to the public storm drain system. These basins are used when existing soil percolation rates are high. The location of the basins are integrated in the landscape and maintenance requirements will be minimal.
- **Infiltration Trench** - Infiltration trenches consist of subsurface gravel storage areas through which stormwater is retained and infiltrated. Proprietary chamber systems utilize storage within underground pipes in lieu of fully filled gravel trenches. Treatment and removal of suspended pollutants/sediment occurs as water infiltrates instead of being conveyed to the public storm drain system.
- **Pervious Pavements (Paver System)** - Pervious pavers collect stormwater runoff through the compacted sand joints in the paver system. Runoff infiltrates through the joints and into a gravel layer under the pavement, where runoff can be stored and infiltrated instead of being conveyed to the public storm drain system. Pollutants and sediment are removed from runoff as it infiltrates through the sand and gravel layers.
- **Enhanced Swale (Bio retention Swale/Dry Swale)** - An enhanced swale is a shallow, linear channel with planting beds covered with turf or other surface material, other than mulch or plants. Biofiltration swales rely on surface flow of runoff along the planted swale during which pollutants are removed, in lieu of infiltration through media (mulch/sandy soil), and tend to contain simple vegetation.

Implementation of these measures will mitigate increases in runoff, and help to reduce runoff quantities entering Kāhala Avenue. The BMPs will also improve water quality as pollutants and sediments are retained and treated on-site instead of being discharged off site. The BMPs will have overflow systems to bypass runoff volumes and flows from larger storm events. With the inclusion of BMPs and LID techniques, no significant stormwater impacts are anticipated.

3.8.4 Roadways and Traffic

Existing Conditions

Kāhala Avenue is the main access road running parallel to the coastline in the east-west direction serving the majority of beach front houses from Lē'ahi to the Wai'ālae Country Club in Kāhala. Two existing driveways provide access to the property off Kāhala Avenue. The two-lane roadway is under the jurisdiction of, and maintained by, the City and County of Honolulu.

The existing 60-foot right-of-way consists of 15-foot wide grassed shoulders and concrete and/or rock curbs. The posted speed limit is 25 miles per hour (mph) in both directions. The roadway is primarily used for residential traffic, but also serves as access to the Waialae Country Club and the Kāhala Hotel located at the east end of Kāhala Avenue.

Traffic associated with the Kāhala area is generally light, except for periods such as the Sony Open golf tournament. Traffic flow along Kāhala Avenue is nearly always uninterrupted. The

intersection of Hunakai Street and Kāhala Avenue is stop sign controlled on the Hunakai Street leg.

Discussions with the DPP Traffic Review Branch (TRB) confirmed that there are no future plans to widen Kāhala Avenue beyond the existing right-of-way. Although there are no future plans for frontage improvements, such as sidewalks and additional landscaping, TRB said that City reserves future rights to potentially utilize the existing 15-foot shoulder.

Probable Impacts and Mitigation Measures

The two existing access driveways to the property off Kāhala Avenue will be maintained. The driveways will provide access to the parking areas and garage portes for each residence. The existing beach access adjacent to the property will not be affected.

Low Impact Development (LID) design strategies are planned. Permeable pavements, such as pavers or grasscrete products may be used for the driveway surfaces. This type of pavement increases stormwater infiltration and percolation while providing a more aesthetic enhancement as compared to typical concrete or asphalt pavements. This action will reduce runoff from the site and promote infiltration which mimics the existing drainage patterns, reduces runoff and pollutants/sediment entering the Kāhala Street frontage and oceanfront area.

An 8-foot wide future road widening setback reserve exists along the street frontage of the parcel. Traffic Review Branch (TRB) confirmed that there are no future plans to widen Kāhala Avenue. The residential project will not affect the road widening setback, and adverse effects on roadway systems are not anticipated.

The traffic associated with the residential uses at the subject property is anticipated to be typical of the residences in the area. Vehicle use associated with the homes is anticipated to result in up to 8 to 10 vehicle trips during the peak hour. The traffic associated with the project will be negligible and not affect the operations along Kāhala Avenue.

3.9 AIR QUALITY

Existing Conditions

As required by the Clean Air Act of 1970 (as amended in 1977 and 1990), National Ambient Air Quality Standards were established by the U.S. Environmental Protection Agency (USEPA) for six criteria pollutants: carbon monoxide (CO), nitrogen dioxide, sulfur dioxide (SO₂), lead, ozone (O₃), particulate matter smaller than 10 microns (PM₁₀), and particulate matter smaller than 2.5 microns (PM_{2.5}). Ambient air is defined as the “general outdoor atmosphere, external to buildings, to which the general public has access.” These standards then define the maximum levels of these pollutants allowed with an adequate margin of safety in order to ensure and protect the public’s health and welfare.

The State Department of Health (DOH), Clean Air Branch (CAB) established the State Ambient Air Quality Standards. The DOH-CAB regularly samples ambient air quality at monitoring stations throughout the State and annually publishes this information. On O’ahu, there are six

monitoring stations. The closest station to the project site is located in downtown Honolulu on the roof of the DOH building (Kīnaʻu Hale) at 1250 Punchbowl Street, which measures SO₂, O₃, PM₁₀, PM_{2.5}.

Consistent trade winds regularly blow from a northeasterly direction, creating conditions for excellent air quality over the islands as the prevalent wind directions moves generated air pollutants on land to the southwest out to the open ocean. Present air quality in the project area is mostly affected by motor vehicles, with carbon monoxide being the most abundant of the pollutants emitted. Carbon monoxide is a colorless, odorless, tasteless gas under atmospheric conditions and is produced by the incomplete combustion of carbon fuel.

The State and Federal standards for carbon monoxide are set at 9 parts per million (ppm) and 35 ppm in one hour, respectively. The closest monitoring station on Punchbowl Street shows that the concentrations of carbon monoxide are below the State (9 ppm) and Federal (35 ppm) standards with an annual mean of 0.4 ppm (DOH 2015).

Potential Impacts and Mitigation Measures

There will be two types of short-term air quality effects that will result from construction of the residences. These effects include: fugitive dust generation and on-site/off-site emissions from moving construction equipment and commuting construction workers. The project activities are anticipated to be in compliance with State Ambient Air Quality Standards. Strict compliance with State and County pollution control requirements, such as dust-watering programs and covering dirt-hauling trucks, will mitigate fugitive dust from construction activities. On-site and off-site emissions from construction equipment and workers can be controlled, through the use of properly maintained equipment and standard construction site management practices.

3.10 NOISE

Existing Conditions

The primary source of existing noise levels at the project site occurs from the traffic along Kāhala Avenue. The Kāhala area is generally a quiet residential area. The ambient noise levels at the subject parcel are typical of noise levels found in urbanized residential areas.

Potential Impacts and Mitigation Measures

In the long-term, the residential use proposed for the site will not result in an increase in ambient noise levels in the area. Significant amounts of noise may, however, be generated during the short-term construction period and may impact existing residents in the neighborhood. Construction activities will be monitored by the State to comply with the provisions of the regulations for community noise control. The contractor will obtain a noise permit if the noise levels from construction activities are expected to exceed the allowable levels. Mobilization of heavy vehicles to and from the property will also comply with the State's administrative rules for vehicular noise control.

3.11 ELECTRICAL AND COMMUNICATIONS

Existing Conditions

The property is currently served by overhead power lines along Kāhala Avenue and overhead telecommunication lines by various providers. Electrical service for residential properties in the Kāhala area is provided by Hawaiian Electric Company (HECO). Verizon and Hawaiian Telcom provide telephone and internet service, and Oceanic Cable provides cable television and internet communications. These service providers will be consulted by the project design team to coordinate service to the project.

An existing utility pole is located on the corner of the property along Kāhala Avenue, in the direction of Lē‘ahi. An additional utility pole is situated across the property, on the mauka side of Kāhala Avenue.

Potential Impacts and Mitigation Measures

The residential use will add demand for electrical and communication services. Service capacity to the Kāhala Avenue area for electrical and communications are anticipated to be adequate, to be verified with HECO and Telcom companies. Electrical and communications service will be designed with the providers and an electrical engineer.

Off-site improvements required to provide the additional services will be the responsibility of each service provider, respectively. Required connections to the services systems will be coordinated with the respective service providers. No significant impact is anticipated.

3.12 PUBLIC FACILITIES AND SERVICES

This section discusses the potential effects to public facilities and services at the project site and surrounding area.

3.12.1 Educational Facilities

Existing Conditions

Kapi‘olani Community College, part of the University of Hawai‘i System, is located west of the subject parcel. A number of other public and private elementary, middle, and high schools are also located throughout the neighboring communities. The closest schools to the project include:

- Kāhala Elementary School is located at 4559 Kīlauea Avenue and is approximately 1.1 miles away from the project site.
- Kaimukī Middle School is located at 631 18th Avenue, and is approximately 1.1 miles away from the site.
- Variety School of Hawai‘i is located at 710 Palekaua Street and is approximately 1.2 miles away from the project site.

Potential Impacts and Mitigation Measures

The six homes could potentially generate 12 school aged children. The residential action will have limited effects to existing educational facilities.

3.12.2 Police

Existing Conditions

The project site is located in District 7 of the Honolulu Police Department (HPD) which encompasses approximately 40 square miles in east Honolulu, from Punahou Street to Makapu'u Point. With the exclusion of Waikīkī, the area includes Mānoa, McCully, Mō'ili'ili, Kaimukī, Pālolo, Lē'ahi (Diamond Head), Wai'alaie, Kāhala, 'Āina Haina, Kuli'ou'ou, Hawai'i Kai, Kalama Valley, and Sandy Beach.

East Honolulu has one HPD Substation and a Burglary Theft Detail office located within the District. A walk-in/store front Substation is located in the Hawai'i Kai Towne Center at 6600 Kalaniana'ole Highway. The Substation is around the 'ewa corner of the Hawai'i Kai Satellite City Hall office. The District's Burglary Theft Detail is located in the Lē'ahi area at 4087 Diamond Head Road. The Main Office for District 7 is served from the main police station at 801 Beretania Street.

Potential Impacts and Mitigation Measures

This project is anticipated to have minimal effect on the Police Department's operations and their ability to provide adequate protection services to the surrounding community. No adverse impacts or mitigation are anticipated.

3.12.3 Fire

Existing Conditions

Primary fire protection to the area is provided by the Honolulu Fire Department (HFD). The closest HFD fire stations are located in both Kaimukī and Waikīkī.

- Station 5 in Kaimukī is located at 971 Koko Head Avenue, and is approximately 1.6 miles away from the project site.
- Station 7 in Waikīkī is located at 381 Kapahulu Avenue and is approximately 2.6 miles away from the site.

Potential Impacts and Mitigation Measures

This project is expected to have minimal impact on the Fire Department's operations or ability to provide fire protection services to the area and surrounding community. The planned structures will be designed to meet fire and building code requirements. Appropriate design plans will also be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department for their review.

3.12.4 Medical Emergencies

Existing Conditions

Numerous major hospitals and clinics are located in relative proximity to the residential site. The nearest emergency hospital is Kapi'olani Medical Center, located approximately 4.5 miles from the project site taking an average response time of 8 to 10 minutes.

Potential Impacts and Mitigation Measures

The project will not affect the handling of medical emergencies. The area hospitals will continue to function at their present locations and will be accessible to the medical emergencies in the area. No mitigation is proposed.

3.13 SOLID WASTE MANAGEMENT

Existing Conditions

Solid waste is collected on a weekly basis by the City and County of Honolulu Waste Management Division.

Potential Impacts and Mitigation Measures

No mitigation is proposed but the City's residential recycling program should reduce overall levels of generation.

3.14 VISUAL RESOURCES

Existing Conditions

The site is located in Kāhala, along the shoreline approximately mid-way between Diamond Head Crater and the Kāhala Hotel. Residential uses are located adjacent to the site on three sides, with the property fronting the ocean. *Figure 1-2* provides an aerial perspective of the general area.

Significant public view locations have been as designated by the City and County of Honolulu Primary Urban Center Development Plan. The project site is not located within a Special District and does not lie within significant mauka-makai or East-West views.

The site is presently vacant and shielded from view by chain link fencing with privacy screens along the Kāhala Avenue frontage. The accompanying photos provide visual perspectives of the existing conditions of the project site, and immediate vicinity. *Figure 3-8* is an aerial photo of the project site with a key to photos depicting existing views and land uses. *Figure 3-9* provides a selection of site photos. The site is surrounded by large lots or residential uses.

Potential Impacts and Mitigation Measures

The project will involve construction of three residential buildings comprising six homes designed as stacked flats as allowed per the LUO. *Figures 2-5 and 2-6* present two elevation views of the completed project once constructed. View locations are from Kāhala Avenue and from the shoreline area. The conceptual elevations show the residential buildings and landscape which are compatible with the surrounding residential uses.

The project will conform to design controls established by the LUO, including the 25 foot height limit. Construction will observe a 40-foot setback from the shoreline, in accordance with Revised Ordinances of Honolulu Chapter 23 Shoreline Setbacks. Landscaping will be used to improve the visual character of the property from public view locations, primarily the pedestrian and roadway perspectives along the beach and Kāhala Avenue. Prominent public vantage points will be maintained and the residential character of Kāhala will be preserved. No significant visual resources effects are anticipated.

3.15 POTENTIAL CUMULATIVE AND SECONDARY IMPACTS

Cumulative effects are impacts which result from the incremental effects of an activity when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertake such other actions. The proposed action is consistent with applicable development plans and policies. The applicant will seek a Special Management Area permit and will adhere to the applicable terms and conditions of approval tied to this permit.

Construction activities will generate direct employment in construction-related industries and increase government revenues. Over the long-term, no cumulative impacts are anticipated from residential activities.

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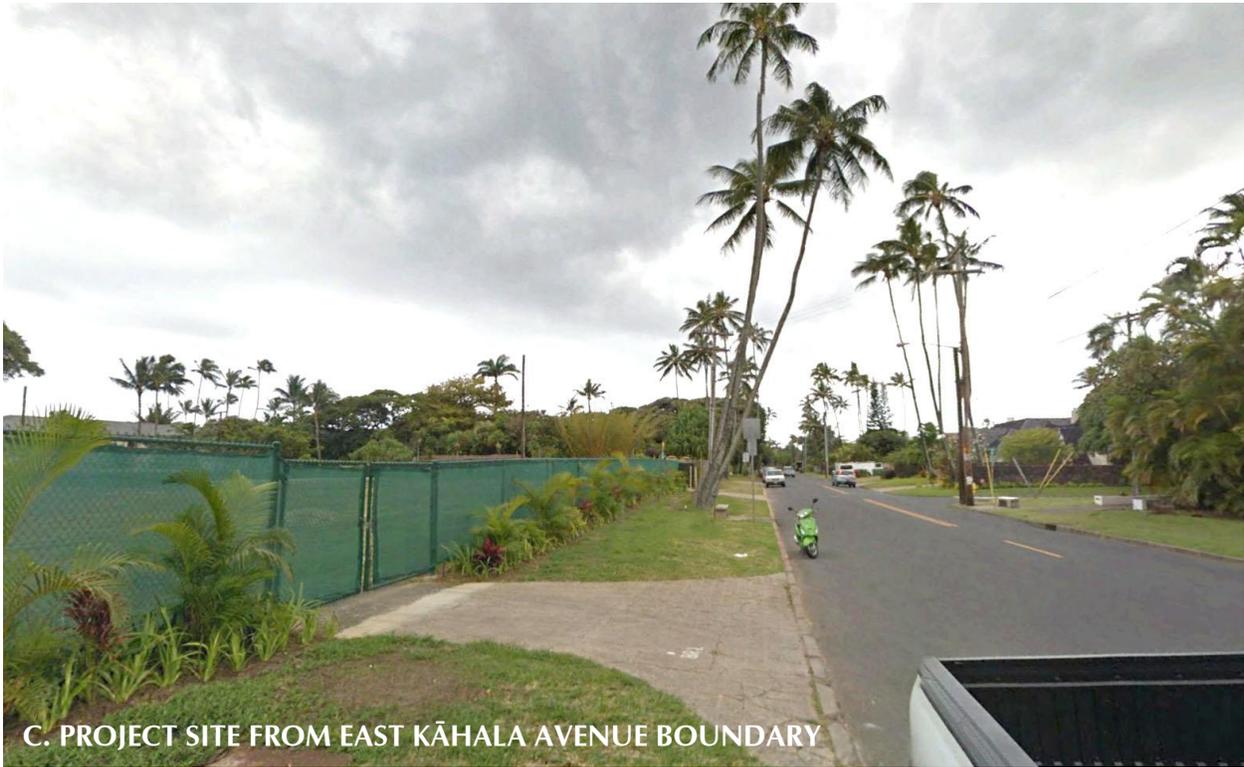
FIGURE 3-8: VIEW ANALYSIS PHOTO KEY

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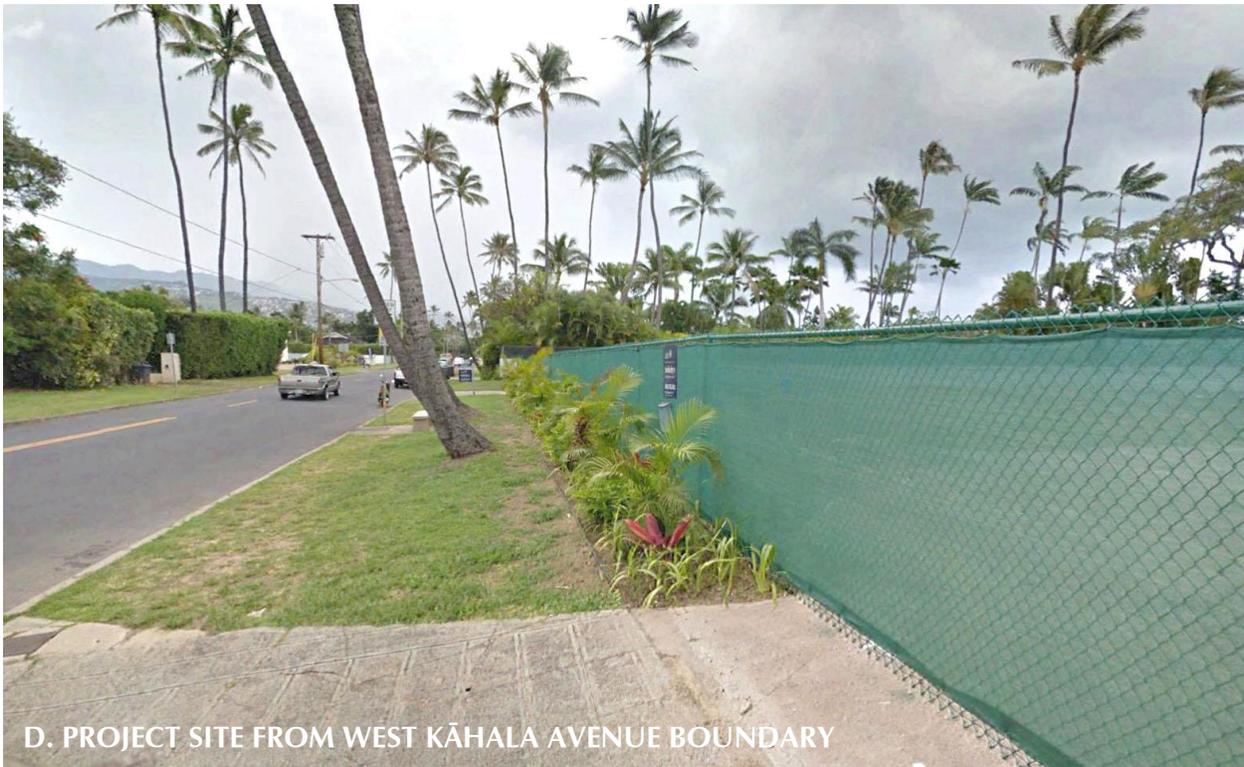


FIGURE 3-9: SITE PHOTOS

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C. PROJECT SITE FROM EAST KĀHALA AVENUE BOUNDARY



D. PROJECT SITE FROM WEST KĀHALA AVENUE BOUNDARY

FIGURE 3-9: SITE PHOTOS (CONTINUED)

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FIGURE 3-9: SITE PHOTOS (CONTINUED)



G. BEACH ACCESS LOOKING MAUKA



H. PROJECT SITE FROM KAHALA BEACH

FIGURE 3-9: SITE PHOTOS (CONTINUED)

Section 4.0

ALTERNATIVES TO THE PROPOSED PROJECT

4.0 ALTERNATIVES TO THE PROPOSED ACTION

This Environmental Assessment evaluates reasonable alternatives to the proposed action described in *Section 2.0*. The following provides a discussion of alternatives to the proposed project.

4.1 ALTERNATIVE A – NO-ACTION ALTERNATIVE

The “no-action” is the baseline against which all other alternatives are measured. “No-action” refers to the future site and program conditions that would likely result should the proposed project not proceed. The No-Action Alternative would keep the site unused without residential structures, with no change to the property.

The existing environmental conditions at the site would remain unchanged and the anticipated improvements to the subject parcel would be foregone. There would be no short term construction related impacts, such as soil disturbance and construction noise. The long term environmental conditions would be commensurate with an undeveloped vacant property.

Under the existing R-7.5 Residential zoning district and LUO provisions (see 21-8.20A Multiple Homes on Lot), a maximum of seven single family dwellings could be allowed on this property. There would be no development-related impacts under the No-Action Alternative. This alternative would result in total non-utilization of the site for its permitted use, under the existing R-7.5 zoning.

Under the No-Action Alternative, the vacant property would not achieve the redevelopment objectives for residential use as outlined in *Section 2.0*. The prior owner of this property was extremely inattentive in their care and upkeep. The intent behind the owner’s acquisition of this land was for future redevelopment of a quality residential use. Leaving the property vacant would continue to expose the land to trespassing and vandalism. The No-Action Alternative would not be a practical approach for the future of this land.

4.2 ALTERNATIVE B – MODEST SINGLE-FAMILY RESIDENCE (MINIMUM USE)

The redevelopment of the property with a modest single-family residence was considered as an alternative action as the minimum use option. A new residence with a total floor area under 7,500 square feet could be built, with accessory structures as permitted by the LUO, without need of an SMA permit.

The previous owner of this property developed large dwellings and associated structures. With a total land area of 1.336 acres, much of the property would remain open and underutilized from a land use redevelopment perspective.

This level of redevelopment would not require the evaluation of environmental factors and public/agency review through an EA and SMA Permit review process. Compared to the proposed action, this alternative would potentially have less impact associated with site construction, infrastructure, views of the property from public locations, and associated traffic.

The single residential use would not achieve the level of use allowed under existing land use controls. Given the high land value and property taxes associated with this property, buyers of

larger Kāhala properties desire to build very large residences and multiple homes as allowed under the LUO. The alternative for a small single-family residence would also create less economic benefits to City real property taxes and State general excise taxes. For these reasons, the Small Single-Family Residence Alternative is not viewed as a practical approach.

4.3 ALTERNATIVE C – SEVEN DETACHED SINGLE FAMILY RESIDENCES (MAXIMUM USE)

The redevelopment of the property with a large residential compound was considered as an alternative action as the maximum use option. Seven detached single family homes could be built under this alternative, along with accessory structures as permitted under the LUO. A total floor area in excess of 7,500 square feet would require the preparation of an EA and approval of an SMA Use Permit (Major).

The property has a total land area of 1.336 acres (58,207 square feet). The existing R-7.5 Residential zoning district and LUO provisions (see 21-8.20A Multiple Homes on Lot) allows for residential compound with seven homes. The maximum allowable development building area is 50% of the zoning lot which equates to approximately 29,098 square feet, or seven homes each with approximately 8,300 square feet floor area along with supporting accessory structures (garage, guest quarters, etc.).

This alternative represents the maximum use much of the property from a land use redevelopment perspective. As single-family detached homes, the redevelopment would essentially be a subdivision approach with very dense land use and limited open space and landscape within the property. Compared to the proposed action, this alternative would generate the most impact associated with site construction, infrastructure, views of the property from public locations, and associated traffic.

The single residential use would achieve the level of use allowed under existing land use controls. Given the high land value and property taxes associated with this property, buyers of larger Kāhala properties desire to build very large residences and multiple homes, as allowed under the LUO. The alternative for seven detached single-family residences would also create the most economic benefits to City real property taxes and State general excise taxes. Regardless of the benefits, the potential greater impacts associated with the maximum use seven detached single family home option is not viewed as a practical approach.

4.4 ALTERNATIVE D – ALTERNATIVE SITE

The 1.336 acre project site is surrounded by residential zoned lands to the east, west, and north, and by the Pacific Ocean to the south. While another residential property could have been selected for the development of the project, the project site would represent an ideal fit for the project's objectives and overall needs.

No other comparably sized large residential zoned parcel is owned or available in Kāhala. The 1.336-acre site is ideal to support the physical requirements of the six residential homes on this property. Other residential properties surrounding the site are currently occupied and are not for sale or available for development. In addition, most other oceanfront sites are smaller parcels which do not allow for the construction of six homes (as allowed under the existing R-7.5 Residential District zoning, per LUO Section 21-8.20A Multiple Homes on Lot). The parcel allows for a maximum of seven single family dwellings allowed on the lot. The project site was

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also chosen because it has access to the existing utilities and to ensure compliance with environmental regulations.

The Alternative Site option was evaluated and has been found to be less desirable for the project. The proposed site is an exact fit for the objectives and needs of the residential project. Additionally, the project site has been secured and purchased by 4607 Kahala LLC for the development of the project.

Section 5.0

APPLICABLE LAND USE PLANS AND POLICIES

5.0 PLANS AND POLICIES

This chapter presents an evaluation of the proposed action's consistency with applicable land use policies set forth in the Hawai'i State Plan, State Land Use Law, State Coastal Zone Management Program, 2050 Sustainable Communities Plan, City and County of Honolulu General Plan, Primary Urban Center Development Plan, Land Use Ordinance and Special Management Area.

5.1 HAWAI'I STATE PLAN

The Hawai'i State Plan establishes a statewide planning system that provides goals, objectives, and policies that detail priority directions and concerns of the State of Hawai'i. These policies are discussed in relation to the subject project.

It is the goal of the State, under the Hawai'i State Planning Act (Chapter 226, HRS), to achieve the following:

- A strong, viable economy, characterized by stability, diversity, and growth, that enables the fulfillment of the needs and expectations of Hawai'i present and future generations.
- A desired physical environment, characterized by beauty, cleanliness, quiet, stable natural systems, and uniqueness, that enhances the mental and physical well-being of the people.
- Physical, social, and economic well-being, for individuals and families in Hawai'i, that nourishes a sense of community responsibility, of caring, and of participation in community life (Chapter 226-4, HRS).

Specific objectives and policies of the State Plan that pertain to the project are as follows:

Section 226-11 Objectives and Policies for the Physical Environment - Land-based, Shoreline, and Marine Resources.

- (A) Planning for the State's physical environment with regard to land-based, shoreline and marine resources shall be directed towards achievement of the following objectives:
 - (1) Prudent use of Hawai'i's land-based, shoreline, and marine resources.
 - (2) Effective protection of Hawai'i's unique and fragile environmental resources.
- (B) To achieve the land-based, shoreline, and marine resources objectives, it shall be the policy of this State to:
 - (1) Exercise an overall conservation ethic in the use of Hawai'i's natural resources.
 - (2) Ensure compatibility between land-based and water-based activities and natural resources and ecological systems.
 - (3) Take into account the physical attributes of areas when planning and designing activities and facilities.
 - (6) Encourage the protection of rare or endangered plant and animal species and habitats native to Hawai'i.
 - (8) Pursue compatible relationships among activities, facilities and natural resources.

Discussion:

The project is a balanced residential redevelopment of an existing lot that is compatible to existing uses and relationships between the built environment and nearby shoreline. Best management practices will ensure that marine and nearshore habitats will be protected during project construction and operations.

Section 226-12 Objective and Policies for the Physical Environment - Scenic, Natural Beauty, and Historic Resources.

- (A) Planning for the State's physical environment shall be directed towards achievement of the objective of enhancement of Hawai'i's scenic assets, natural beauty, and multi-cultural/historical resources.
- (B) To achieve the scenic, natural beauty, and historic resources objective, it shall be the policy of this State to:
 - (1) Promote the preservation and restoration of significant natural and historic resources.
 - (3) Promote the preservation of views and vistas to enhance the visual and aesthetic enjoyment of mountains, ocean, scenic landscapes, and other natural features.
 - (5) Encourage the design of developments and activities that complement the natural beauty of the islands.

Discussion:

The project is designed to complement the natural beauty of the surrounding area. Existing views and vistas will not be adversely affected as a result of the project. The scale and size of the action are appropriate for the site to meet the design controls established in the LUO. The facility will not exceed 25 feet in height and will not interfere with existing prominent public vantage points which the public enjoys significant public views of Diamond Head and the ocean. Therefore, the proposed action will not affect scenic resources. Perimeter landscaping on the site will serve as a visual buffer to surrounding residential areas.

Historic resources have been documented in an Archaeological Assessment (SCS, September 2015) and Cultural Impact Assessment (SCS, October 2015) conducted for the project. The study found no evidence of archaeological remains. The site area has undergone extensive disturbance from previous development and does not possess culturally significant resources. Archaeological monitoring is planned during construction.

Section 226-13 Objective and Policies for the Physical Environment – Land, Air, and Water Quality.

- (A) Planning for the State's physical environment with regard to land, air, and water quality shall be directed towards achievement of the following objectives:
 - (1) Maintenance and pursuit of improved quality in Hawai'i's land, air, and water resources.
- (B) To achieve the land, air, and water quality objectives, it shall be the policy of this State to:
 - (2) Promote the proper management of Hawai'i's land and water resources.
 - (3) Promote effective measures to achieve desired quality in Hawai'i's surface, ground and coastal waters.

- (4) Encourage actions to maintain or improve aural and air quality levels to enhance the health and well-being of Hawai'i's people.
- (5) Reduce the threat to life and property from erosion, flooding, tsunamis, hurricanes, earthquakes, volcanic eruptions, and other natural or man-induced hazards and disasters.
- (6) Encourage design and construction practices that enhance the physical qualities of Hawai'i's communities.

Discussion:

The project is designed to fit appropriately within the surrounding environment. The acoustic environment and surrounding air quality may experience small effects during construction. Best management practices and regulatory controls will ensure air quality levels are within acceptable regulatory limits. The site is located within the tsunami evacuation zone and within the FEMA Flood Zones X, AO and VE. Design controls will plan the development to meet regulatory requirements.

Section 226-15 Objectives and Policies for Facility Systems - Solid and Liquid Wastes.

- (A) Planning for the State's facility systems with regard to solid and liquid wastes shall be directed towards the achievement of the following objectives:
 - (1) Maintenance of basic public health and sanitation standards relating to treatment and disposal of solid and liquid wastes.
 - (2) Provision of adequate sewerage facilities for physical and economic activities that alleviate problems in housing, employment, mobility, and other areas.
- (B) To achieve solid and liquid waste objectives, it shall be the policy of this State to:
 - (2) Promote re-use and recycling to reduce solid and liquid wastes and employ a conservation ethic.

Discussion:

Solid waste and wastewater disposal systems will be designed to minimize effects on existing solid and liquid waste facilities. The residential development will participate with the City and County of Honolulu's residential recycling program to minimize solid waste.

Section 226-16 Objective and Policies for Facility Systems - Water.

- (B) To achieve the facility systems water objective, it shall be the policy of this State to:
 - (1) Coordinate development of land use activities with existing and potential water supply.

Discussion:

The BWS has determined that its existing water system is adequate to accommodate and supply project demand.

Section 226-108 Sustainability Guidelines.

- (B) Encouraging planning that respects and promotes living within the natural resources and limits of the State;

Discussion:

During the planning phase of the project all of these aspects are considered and evaluated as part of the project design and environmental review process. The project will fit with the existing character of the surrounding Kāhala residences and will not adversely affect existing natural resources.

5.2 HAWAI'I STATE LAND USE DISTRICT BOUNDARIES

The State of Hawai'i Land Use Law regulates the classification and uses of lands in the State to accommodate growth and development, and to retain the natural resources in the area. All lands in the state are classified by the State Land Use Commission as either Urban, Rural, Agricultural, or Conservation, with consideration given to the General Plan of each County.

Discussion:

The location of the proposed action includes lands that are designated Urban District. The Hawai'i State Plan, Chapter 205-2 (b) Hawai'i Revised Statutes, states that:

“Urban districts shall include activities or uses as provided by ordinances or regulations of the county within which the urban district is situated.”

The proposed action is consistent with this Statute, as the proposed land uses are consistent with City and County of Honolulu General Plan, Primary Urban Center Development Plan, and Land Use Ordinance.

5.3 HAWAI'I COASTAL ZONE MANAGEMENT PROGRAM

The Coastal Zone Management Act of 1972 (16 USC Section 1451), as amended through Public Law 104-150, created the coastal management program and the National Estuarine Research Reserve system. The coastal states are authorized to develop and implement a state coastal zone management program. Hawai'i Coastal Zone Management (CZM) Program received federal approval in the late 1970's. The objectives of the State's Hawai'i Coastal Zone Management (CZM) Program, Section 205A-2, HRS, are to protect valuable and vulnerable coastal resources such as coastal ecosystems, special scenic and cultural values and recreational opportunities. The objectives of the program are also to reduce coastal hazards and to improve the review process for activities proposed within the coastal zone. Each county is responsible for designating a Special Management Area (SMA) that extends inland from the shoreline. Development within this SMA is subject to County approval to ensure the proposal is consistent with the policies and objectives of the Hawai'i CZM Program.

The site is within the SMA as delineated by the City and County of Honolulu.

Described below are the seven objectives of the Hawai'i CZM Program and an assessment of the action's effects relative to the State's CZM objectives and policies. The specific City and County SMA policies are also discussed in *Section 5.7*.

RECREATIONAL RESOURCES

Objective: Provide Coastal Recreational Opportunities Accessible to the Public

- (A) *Improve coordination and funding of coastal recreation planning and management.*
- (B) *Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:*
- *Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;*
 - *Requiring replacement of coastal resources having significant recreational value, including but not limited to surfing sites and sandy beaches, when such resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the State for recreation when replacement is not feasible or desirable;*
 - *Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;*
 - *Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;*
 - *Encouraging expanded public recreational use of county, state, and federally owned or controlled shoreline lands and waters having recreational value;*
 - *Adopting water quality standards and regulating point and non-point sources of pollution to protect and where feasible, restore the recreational value of coastal waters;*
 - *Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, artificial reefs for surfing and fishing; and*
 - *Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use Commissions, board of land and natural resources, county planning commissions; and crediting such dedication against the requirements of section 46-6.*

Discussion:

The proposed action would have no effect on coordination and funding of coastal recreation planning and management.

The residential project does not include development within the 40 foot setback area with the exception of allowed minor structures (open works fence and limited pavers). The proposed action will comply with State CZM guidelines and will not affect public coastal recreational opportunities.

The project will be constructed and maintained in accordance with State and Federal water quality regulations. Storm water and sewer management systems will be maintained and new infrastructure will be constructed to meet applicable standards. The City sewer systems have adequate capacity to address the anticipated load from the project. There are no septic tanks, leach fields, or injection wells proposed. There will be no discharge points into coastal waters.

HISTORIC RESOURCES

Objective: Protect, Preserve and, Where Desirable, Restore Those Natural and Man-Made Historic and Pre-Historic Resources in the Coastal Zone Management Area that are Significant in Hawaiian and American History and Culture

- (A) *Identify and analyze significant archaeological resources.*
- (B) *Maximize information retention through preservation of remains and artifacts or salvage operations; and*
- (C) *Support state goals for protection, restoration, interpretation and display of historic resources.*

Discussion:

An Archaeological Assessment Report (SCS, September 2015) was completed to assess the potential for locating archaeological resources at this site. Besides a single ceramic insulator whose origin could not be determined, all material identified during subsurface testing originated from modern rubbish and construction debris. The study did not identify evidence of archaeological remains at the site. The site area has undergone extensive disturbances from previous development. Consistent with the archeological investigation, the cultural assessment (SCS, October 2015) determined the site does not possess culturally significant resources. The report recommends archaeological monitoring during construction.

SCENIC AND OPEN SPACE RESOURCES

Objective: Protect, Preserve and, Where Desirable, Restore or Improve the Quality of Coastal Scenic and Open Space Resources

- (A) *Identify valued scenic resources in the coastal zone management area;*
- (B) *Insure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;*
- (C) *Preserve, maintain and where desirable, improve and restore shoreline open space and scenic resources; and*
- (D) *Encourage those developments which are not coastal dependent to locate in inland areas.*

Discussion:

As described in *Section 3.14*, the residential redevelopment will not affect vistas or scenic resources. The proposed action is consistent with the County General Plan, Primary Urban Center Development Plan, and Zoning regulations. The residential uses will blend into the surrounding urban residential neighborhood. The scale and size of the action are appropriate to the site meet the design controls established in the LUO. The residences will not exceed 25 feet in height and will not interfere with existing prominent public vantage points from which the public enjoys significant public views of Diamond Head and the ocean. Therefore, the proposed action will not adversely affect scenic resources. Perimeter landscaping on the site will serve as a visual buffer to surrounding residential areas.

COASTAL ECOSYSTEMS

Objective: Protect Valuable Coastal Ecosystems from Disruption and Minimize Adverse Impacts on all Coastal Ecosystems

- (A) *Improve the technical basis for natural resource management;*
- (B) *Preserve valuable coastal ecosystems of significant biological or economic importance;*
- (C) *Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs; and*
- (D) *Promote water quantity and quality planning and management practices which reflect the tolerance of fresh water and marine ecosystems and prohibit land and water uses which violate state water quality standards.*

Discussion:

The action will not affect coastal ecosystems or natural resource management. During construction and operation, stormwater will be retained onsite. Infiltrative BMPs will be used to reduce pollution associated with stormwater runoff generated by the 10-year 1-hour design storm event. Operations of the residences will comply with State and Federal water quality standards.

ECONOMIC USES

Objective: Provide Public or Private Facilities and Improvements Important to the State's Economy in Suitable Locations

- (A) *Concentrate in appropriate areas the location of coastal dependent development necessary to the state's economy;*
- (B) *Ensure that coastal dependent development such as harbors and ports, visitor industry facilities, and energy generating facilities are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area; and*
- (C) *Direct the location and expansion of coastal dependent development to areas presently designated and used for such developments and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:*
 - *Utilization of presently designated locations is not feasible;*
 - *Adverse environmental effects are minimized; and*
 - *Important to the State's economy.*

Discussion:

The project is consistent with State and County plans and land regulations and will not result in adverse social, visual, and environmental impacts in the CZM area.

COASTAL HAZARDS

Objective: Reduce Hazard to Life and Property From Tsunami, Storm Waves, Stream Flooding, Erosion and Subsidence.

- (A) *Develop and communicate adequate information on storm wave, tsunami, flood, erosion, and subsidence hazard;*
- (B) *Control development in areas subject to storm wave, tsunami, flood, erosion, and subsidence hazard;*
- (C) *Ensure that developments comply with requirements of the Federal Flood Insurance Program; and*
- (D) *Prevent coastal flooding from inland projects.*

Discussion:

The site is within FIRM Zones X, AO and VE, and is also located within the tsunami evacuation zone (*Figures 3-3 and 3-4*). Therefore, the project is subject to development standards within the Flood Hazard District. Construction work will be performed in accordance with the State and County-approved design standards. To prevent ponding or localized flooding resulting from storm run-off, existing drainage infrastructure will be maintained. New site infrastructure will be designed and constructed to meet applicable standards. No significant adverse effects are anticipated.

MANAGING DEVELOPMENT

Objective: Improve the Development Review Process, Communication, and Public Participation in the Management of Coastal Resources and Hazards

- (A) *Effectively utilize and implement existing law to the maximum extent possible in managing present and future coastal zone development;*
- (B) *Facilitate timely processing of application for development permits and resolve overlapping or conflicting permit requirements; and*
- (C) *Communicate the potential short and long-term impacts of proposed significant coastal developments early in their lifecycle and in terms understandable to the general public to facilitate public participation in the planning and review process.*

Discussion:

This EA discloses the potential short-term and long-term impacts of the action on the environment. Procedurally, this EA conforms to HRS Chapter 343. The Office of Environmental Quality Control (OEQC) publishes notice of the EA availability for public review. The public is allowed 30-days to submit comments on the EA. During pre-consultation agencies and organizations were consulted and will continue to be informed throughout the planning process.

PUBLIC PARTICIPATION

Objective: Stimulate Public Awareness, Education, and Participation in Coastal Management

- (A) *Promote public involvement in coastal zone management processes;*
- (B) *Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal issues, developments, and government activities; and*

- (C) *Organize workshops, policy dialogues, and site specific mediations to respond to coastal issues and conflicts.*

Discussion:

Public participation is part of the HRS Chapter 343 environmental review process. The Office of Environmental Quality Control (OEQC) publishes notice of the EA availability for public review. The public is allowed 30-days to submit comments on the EA. Information regarding the coastal issues and processes is publically provided in the EA, along with proposed mitigation measures addressing any coastal concerns. Consulted parties in the environmental process are encouraged to provide comments regarding the project during the Draft EA public review period. Comments submitted through the public review process, and the responses they generate, are all included within the Final EA that is publicly available through the OEQC.

BEACH PROTECTION

Objective: Protect Beaches for Public Use and Recreation

- (A) *Locate new structures inland from the shoreline setback to conserve open space, minimize interference with natural shoreline processes, and minimize loss of improvements due to erosion;*
(B) *Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities; and*
(C) *Minimize the construction of public erosion-protection structures seaward of the shoreline.*

Discussion:

The project site is located near the shoreline. However, no structures will be located near the shoreline area and will be setback according to applicable City development standards. No construction of public erosion-protection structures seaward of the shoreline will occur. The project will not affect public use and recreation of beaches near the site.

MARINE RESOURCES

Objective: Promote the Protection, Use, and Development of Marine and Coastal Resources to Assure Their Sustainability

- (A) *Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;*
(B) *Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency;*
(C) *Assert and articulate the interests of the State as a partner with federal agencies in the sound management of ocean resources within the United State exclusive economic zone;*
(D) *Promote research, study, and understanding of ocean processes, marine life, and other ocean resources in order to acquire and inventory information necessary to understand how ocean development activities relate to and impact upon ocean and coastal resources; and*
(E) *Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.*

Discussion:

The project will not adversely affect marine and coastal resources. The project will be setback according to City development standards and will not affect the shoreline area. The project does not promote research and understanding particular to ocean development activities and effects upon ocean and coastal resources.

5.4 2050 SUSTAINABLE COMMUNITIES PLAN

The Hawai'i 2050 Sustainability Plan as a long-term strategy has as its main goals and objectives respect for culture, character, beauty, and history of the state's island communities; balance among economic, community, and environmental priorities; and an effort to meet the needs of the present without compromising the ability of future generations to meet their own needs.

The 2050 Plan delineates five goals toward a sustainable Hawai'i accompanied by strategic actions for implementation and indicators to measure success or failure. The goals and strategic actions that are pertinent to the project are as follows.

Goal Three: Our natural resource are responsibly used, replenished and preserved for future generations.

Strategic Actions:

- Increase recycling, reuse and waste reduction strategies.
- Provide greater protection for air, and land-, fresh water- and ocean-based habitats.

Discussion:

The project will participate in the City and County of Honolulu's residential materials recycling program to minimize solid waste. The project will encourage a design that promotes protection of air and land, fresh water and ocean based habitats. Although the acoustic environment and surrounding air quality may be experience small impacts during construction, best management practices and regulatory controls will ensure air quality levels are within acceptable regulatory limits on-site and within the immediate area.

5.5 CITY AND COUNTY OF HONOLULU GENERAL PLAN (PROPOSED 2013 EDITION)

The General Plan of the City and County of Honolulu is a statement of long-range socio-economic, environmental, and design objectives and policies to be achieved for the general prosperity and welfare for the people of the city. It is intended to serve as a guide for all levels of government, private enterprise, neighborhood and citizen groups, organizations, and individual citizens (City and County of Honolulu Revised Charter 2000, Sec. 6-1508). The General Plan consists of eleven subject areas and provides the framework for the City's expression of public policy concerning the needs of the people and the functions of government. The subject areas address all aspects of health, safety, and welfare for O'ahu's communities, and include: population trends and growth, economic activity, the natural environment, housing, transportation and utilities, energy, physical development and urban design, public safety, health and education, culture and recreation, and government operations and fiscal management.

The project is consistent with the applicable objectives and policies of the City and County of Honolulu General Plan described below.

Natural Environment

Objective A: To protect and preserve the natural environment.

- *Policy 1: Protect O'ahu's natural environment, especially the shoreline, valleys, and ridges, from incompatible development.*
- *Policy 7: Protect the natural environment from damaging levels of air, water, and noise pollution.*
- *Policy 8: Protect plants, birds, and other animals that are unique to the State of Hawai'i and O'ahu, and protect their habitats.*

Objective B: To preserve and enhance natural landmarks and scenic views.

- *Policy 2: Protect O'ahu's scenic views, especially those seen from highly developed and heavily traveled areas.*

Discussion:

The applicant supports the protection and preservation of the natural environment including plants, trees, open spaces and shoreline resources. Short-term air quality and noise quality related to construction activities will be mitigated. Existing views and vistas will not be adversely affected as a result of the project. The scale and size of the action are appropriate to the site meet the design controls established in the LUO. The residences will not exceed 25 feet in height and will not interfere with existing prominent public vantage points from which the public enjoys significant public views of Diamond Head and the ocean. Perimeter landscaping on the site will serve as a visual buffer to surrounding residential areas.

Public Safety

Objective B: To protect residents and visitors and their property against natural disasters and other emergencies, traffic and fire hazards, and unsafe conditions.

- *Policy 2: Require all developments in areas subject to floods and tsunamis to be located and constructed in a manner that will not create any health or safety hazard.*
- *Policy 9: Design safe and secure public buildings.*

Discussion:

The site is located within the tsunami evacuation zone and within the FEMA Flood Zones X, AO and VE. Design controls will ensure the planned development meets regulatory requirements. The project will follow all building codes and standards to ensure health and safety hazards do not occur.

Culture and Recreation

Objective B: To protect O'ahu's cultural, historic, architectural, and archaeological resources.

- *Policy 3: Cooperate with the State and Federal governments in developing and implementing a comprehensive preservation program for social, cultural, historic, architectural, and archaeological resources.*

Discussion:

The applicant respects the multi-ethnic cultures found throughout Hawai'i and supports the protection of Hawai'i's cultural, archeological and historic resources. Historic resources have

been documented in Archaeological Assessment (SCS, September 2015) and Cultural Impact Assessment (SCS, October 2015) conducted for the project. The study did not identify evidence of archaeological remains at the site. The site area has undergone extensive disturbances from previous development does not possess culturally significant resources. Archaeological monitoring is planned during construction. Refer to *Section 3.6 and 3.7* of the EA.

5.6 CITY AND COUNTY OF HONOLULU LAND USE ORDINANCE GUIDELINES

The purpose of the LUO is to regulate land use in a manner that will encourage orderly development in accordance with adopted land use policies, including the County General Plan and development plans. The LUO is also intended to provide reasonable development and design standards. These standards are applicable to the location, height, bulk and size of structures, yard areas, off-street parking facilities, and open spaces, and the use of structures and land for agriculture, industry, business, residences or other purposes (Revised Ordinance for the City and County of Honolulu, Chapter 21).

Discussion:

The subject property is designated as “R-7.5: Residential” zone by the City and County of Honolulu (*Figure 1-4*). The action is not located within a Special District and is not subject to these additional design control standards. The design meets the R-7.5 standards as defined in the LUO. See Section 2.4 for discussion of compliance with LUO standards. Up to seven homes are allowed to be built on this property. Six homes will be built.

5.7 SPECIAL MANAGEMENT AREA

The entire project site lies within the boundary of the City and County of Honolulu’s Special Management Area (SMA) (*Figure 1-6*). Proposed improvements within the SMA are subject to SMA permit requirements pursuant to Section 205A, HRS, and Chapter 25 Revised Ordinances of Honolulu. An SMA Permit application will be submitted to the City and County of Honolulu Department of Planning and Permitting.

The objectives, policies and SMA guidelines, as set forth in Chapter 205A, Hawai’i Revised Statutes, are intended to ensure that adequate shoreline access is provided, public recreation and wildlife preserves are reserved, and that minimum adverse effects to water, visual and natural resources are assured.

Special controls on development within this area are necessary to avoid permanent loss of valuable resources and foreclosure of management options. Sections 25-3.1 and 3.2 of the Revised Ordinances of Honolulu (ROH) are used by the City and County of Honolulu Department of Planning and Permitting and the Honolulu City Council for the review of developments proposed in the Special Management Area (SMA). The objectives and policies for Section 25-3.1 are contained in HRS Section 205A 2 and are addressed in this chapter in Section 5.2 Hawai’i Coastal Zone Management Program. ROH Section 25-3.2 Review Guidelines are derived from Section 205A-26 HRS. The consistency of the proposed project with these guidelines is discussed below.

(1) All Development in the Special Management Area shall be subject to reasonable terms and conditions set by the council in order to ensure that:

- Adequate access, by dedication or other means, to publicly owned or used beaches, recreation areas, and natural reserves is provided to the extent consistent with sound conservation principles;
- Adequate and properly located public recreation areas and wildlife preserves are reserved;
- Provisions are made for solid and liquid waste treatment, disposition, and management which will minimize adverse effects upon special management area resources; and
- Alterations to existing land forms and vegetation, except crops, and construction of structures shall cause minimum adverse effect to water resources and scenic and recreational amenities and minimum danger of floods, landslides, erosion, siltation or failure in the event of earthquake.

Discussion:

The closest public access to the beach area fronting the site is located immediately to the west of the subject parcel, across from Hunakai Street. The proposed action will not adversely affect access to existing public shoreline or recreation areas.

No wildlife preserves or public areas are affected by the action.

Provisions will be made to ensure solid and liquid waste treatment, disposition, and management will have minimum adverse effects upon Special Management Area resources. Wastewater will connect to the City and County of Honolulu operated sewer system. A sewer connection application for the property was approved by the City and County of Honolulu, Department of Planning and Permitting, Wastewater Branch in 2014. The design of the sewer system will be in accordance with the Design Standards of the City and County of Honolulu's Department of Wastewater Management. Solid waste will be handled and disposed of by the City and County of Honolulu Waste Management.

Alterations to the land and vegetation will not adversely affect coastal areas or recreational resources. The project will require removal of scrub/weed vegetation (non-native species) and grading and grubbing for the construction of new facilities. Views from Kāhala Avenue will be improved with new landscaping. The action is a redevelopment of an existing residential lot and will not increase the potential hazard risk associated with flooding, landslides, erosion, siltation or earthquake. The design and construction will meet or exceed County building standards.

(2) No development shall be approved unless the council has first found that:

- The development will not have any substantial, adverse environmental or ecological effect except such adverse effect is minimized to the extent practicable and clearly outweighed by public health and safety, or compelling public interests. Such adverse effect shall include, but not be limited to, the potential cumulative impact of individual developments, each one of which taken in itself might not have a substantial adverse effect, and the elimination of planning options;
- The development is consistent with the objectives and policies set forth in Section 25-3.2 and area guidelines contained in Section 205A-26, Hawai'i Revised Statutes; and
- The development is consistent with the County General Plan, Development Plans, Zoning and subdivision codes and other applicable ordinances.

Discussion:

No substantial adverse environmental or ecological direct, indirect or cumulative impacts are anticipated from the action. Potential environmental impacts of the proposed project and the mitigation strategies to minimize adverse effects are described in Section 3.0 of this EA. The action is consistent with applicable plans and policies of the State of Hawai'i and the City and County of Honolulu.

(3) The Council Shall Seek to Minimize, Where Reasonable:

- *Dredging, filling or otherwise altering any bay, estuary, salt marsh, river mouth, slough or lagoon;*
- *Any development which would reduce the size of any beach or other area usable for public recreation;*
- *Any development which would reduce or impose restrictions upon public access to tidal and submerged lands, beaches, portions of rivers and streams within the special management area and the mean high tide line where there is no beach;*
- *Any development which would substantially interfere with or detract from the line of sight toward the sea from the State highway nearest the coast; and*
- *Any development which would adversely affect water quality, existing areas of open water free of visible structure, existing and potential fisheries and fishing grounds, wildlife habitats, or potential or existing agricultural uses of land.*

Discussion:

There will be no adverse impact with the exception of allowed minor structures to public accesses, public beaches or recreation areas (open works fence and limited pavers). The project will not be developed within the 40 foot shoreline setback area. The action will have no adverse effects on areas of open water, potential fisheries, fisheries, wildlife habitat, or agricultural land. Best management practices and other mitigative strategies will be utilized to minimize effects on water quality. The action will adhere to LUO height and size restrictions and would be similar in the overall size and scale to existing residential developments in the vicinity of the action. There is no line of sight to the ocean from the nearest State highway.

5.8 CITY AND COUNTY OF HONOLULU - PRIMARY URBAN CENTER DEVELOPMENT PLANS

The Primary Urban Center Development Plan (PUCDP) by the City and County of Honolulu Department of Planning and Permitting establishes policy to shape the growth and development of the PUC over the next 20 years. The planning goal of the PUCDP is to enhance the livability of the PUC while accommodating a moderate amount of growth. The PUCDP establishes the region's role in O'ahu's development pattern by establishing policies in the following areas:

- Natural, historic, cultural and scenic resources
- Parks and recreation areas
- Lower- and higher-density residential neighborhoods
- Commercial and visitor industry facilities
- Military installations, transportation centers and industrial areas

- Design of streets and buildings
- Neighborhood planning
- Transportation networks and systems

Discussion:

The PUCDP serves to guide development on a neighborhood and regional scale, and the policies are not applicable to a small-scale residential development. The site is designated Lower Density Residential on the PUCDP Land Use Map (*Figure 1-5*). The residential action is consistent with the PUCDP Land Use Map.

5.9 KĀHALA COMMUNITY ASSOCIATION

The Kāhala Community Association (KCA) provides oversight with regard to the Declaration of Protective Provisions and Supplemental Declaration of Protective Provision originally connected to the Kāhala landholdings of Kamehameha Schools. A discussion of the proposed action in relation to the protective provisions is provided below.

Protective Provision: Use

Provision states that each residential lot should be occupied and used only for residential purposes. Structures also should not be used as a tenement, rooming, or apartment houses or be connected with any business or trade.

Discussion:

The proposed action will include construction of six homes designed as stacked flats. Each home will have a single owner and the property will be used for residential purposes only. There will be no commercial business conducted on the property and the property will not be utilized by commercial employees. The proposed action is in compliance with the KCA Protective Provision regarding use.

Protective Provision: Subdivision and Consolidation

Provisions prohibit the existing residential lots from being further subdivided, or consolidated and re-subdivided to create additional residential lots.

Discussion:

The proposed action will not create additional residential lots.

Protective Provision: Setback Lines

Provisions enforce compliance with any existing setbacks.

Discussion:

The proposed action will comply with all existing setback lines.

Protective Provision: Repair and Maintenance

Provisions require that buildings and residential lots be properly repaired and maintained.

Discussion:

The property owners will provide for the regular building and grounds maintenance to preserve the attractive residential character of the area.

Protective Provision: Landscaping

Provisions require well-maintained landscaping along street frontages.

Discussion:

Monaghan Landscape Architects designed a landscape plan for the property which includes turf grass lawn, and tropical flowering shrubs and trees along the Kāhala Avenue frontage. The landscape will be regularly maintained to preserve the attractiveness of the property and views from Kāhala Avenue.

Discussion:

As discussed above, the proposed action conforms with the protective provisions tied to the land. All design plans will undergo design review with KCA to ensure the action meets Kāhala community standards.

5.10 LAND USE ORDINANCE SECTION 21-9.10 FLOOD HAZARD DISTRICTS

The Honolulu Land Use Ordinance Section 21-9.10 is enacted pursuant to the U.S. national Flood Insurance Act of 1968, as amended, and the U.S. Flood Disaster Protection Act of 1973, as amended. Areas that are subject to periodic inundation by flooding and/or tsunami may result in loss of life and property. The purposes of establishing flood hazard districts are to protect life and property and reduce public costs for flood control, rescue, and relief efforts.

The parcels are located in Zones X, AO and VE as shown on the 2011 FEMA Digital Flood Insurance Rate Map (DFIRM) (refer to *Figure 3-3*). The Flood Zone X designation indicates the area is outside of the 0.2% annual chance floodplain. This portion of the subject parcel is not located in a Flood Hazard District as defined by LUO Section 21-9.10. However, a majority of the parcel is located in Zone AO which is defined as areas subject to inundation by 1-percent-annual-chance shallow flooding where average depths are between one and three feet. Mandatory flood insurance purchase requirements and floodplain management standards apply for this zone. A small portion of the parcel along with the adjacent coastal area is located in Flood Zone VE, indicating an area along the coast subject to inundation by the 1-percent-annual-chance flood event with additional hazards due to storm-induced velocity wave action.

Discussion:

Majority of the subject parcel is located in a Flood Hazard District as defined by the LUO Sec. 21-9.10. Therefore, project is subject to development standards within the Flood Hazard District. Construction work will be performed in accordance with the State and County-approved design standards. To prevent ponding or localized flooding resulting from storm run-off, existing drainage infrastructure will be maintained. New site infrastructure will be designed and constructed to meet applicable standards. No significant adverse impacts are anticipated.

Section 6.0

FINDINGS SUPPORTING ANTICIPATED
DETERMINATION

6.0 FINDINGS SUPPORTING ANTICIPATED DETERMINATION

6.1 ANTICIPATED DETERMINATION

After reviewing the significance criteria outlined in Chapter 343, Hawai'i Revised Statutes (HRS), and Section 11-200-12, State Administrative Rules, Contents of Environmental Assessment, it is anticipated that the DPP will find that the planned development of residences at the subject property will not result in significant adverse effects on the natural or human environment. A Finding of No Significant Impact (FONSI) is anticipated.

6.2 REASONS SUPPORTING THE ANTICIPATED DETERMINATION

The potential effects of the residential improvements have been fully examined and discussed in this Environmental Assessment. As stated earlier, there are no significant environmental impacts expected to result from the residential action. This determination is based on the assessments as presented below for criterion (1) to (13).

(1) *Involve an irrevocable loss or destruction of any natural or cultural resources.*

The archaeological and cultural landscapes have been documented in studies conducted specifically for the project area. As detailed in *Section 3.6 and 3.7* of this report, the project does not involve any known loss or destruction of existing natural or cultural resources. The only specific area of concern is the unknown potential for the inadvertent discovery of subsurface historical or cultural resources, including the unknown possibility of iwi kūpuna (ancestral remains).

Given the potential for an inadvertent find, archaeological monitoring is planned during demolition and construction. If any cultural, historic, or archaeological resources are unearthed or ancestral remains are inadvertently discovered, the State Department of Land and Natural Resources (DLNR), State Historic Preservation Division (SHPD), the O'ahu Island Burial Council representative and participating interests from lineal descendents and individuals will be notified. The treatment of these resources will be conducted in strict compliance with the applicable historic preservation and burial laws.

No threatened or endangered species will be affected by the residential project.

(2) *Curtail the range of beneficial uses of the environment.*

The residential activities will not curtail the range of beneficial uses of the environment. Existing uses conform to existing land use designations. The project would actually increase beneficial uses of the parcels, replacing vacant, untended land with a revitalized residential use and landscaping.

There will be no impact on public access to the shoreline and no significant change in lateral access along the shore. With the exception of minor permitted structures, no structures will be

built within the 40 foot setback area (open works fence, limited pavers). There will be no impact to fishing on the reef flat seaward of the project site.

- (3) *Conflict 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 residential project does not conflict 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. State waters will not be affected.

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

The project would have no adverse social or economic impact to the state. Short-term economic benefits anticipated during construction will include direct, indirect, and induced employment opportunities and multiplier effects, but not at a level that would generate significant economic expansion.

- (5) *Substantially affects public health.*

The project is consistent with existing land uses and is not expected to affect public health, except in beneficial ways mentioned in item four above. However, there will be temporary short-term effects to air quality emanating from possible dust emissions and temporary degradation of the acoustic environment in the immediate vicinity resulting from construction equipment. Construction-related effects of noise, dust, and emissions will be mitigated by compliance with the State Department of Health Administrative Rules.

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

The approval will not have substantial secondary impacts, such as population changes or affects on public facilities.

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

The project will have no significant adverse environmental effects nor will it degrade environmental quality. It will not degrade water quality, nor impact marine flora and fauna. The project will not involve development within the 40 foot setback area.

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

The project would not involve cumulative impacts and is not a precursor for other future actions.

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

The project area does not contain identified rare, threatened or endangered species or habitat. No impact is anticipated.

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

General temporary effects associated with construction have been identified in this EA. Mitigation measures which are outlined in this EA will be applied during the on-going construction activity. No debris, petroleum products, or other construction-related substances or materials will be allowed to flow, fall, leach or otherwise enter the coastal waters. Best Management Practices will be adhered to during construction to minimize environmental pollution and damage. There will be some additional noise above ambient during construction resulting from equipment operation (trucks, back hoe, concrete operations). No detrimental long-term effects to air, water, or acoustic quality are anticipated with the residential action.

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

The project site is located within Flood Zones X, AO and VE and is also located within the designated tsunami zone (*Figures 3-3 and 3-4*). Therefore, the project will comply with necessary design requirements. Construction work will be performed in accordance with the State and County-approved design standards. To prevent ponding or localized flooding resulting from storm run-off, existing drainage infrastructure will be maintained. New site infrastructure will be designed and constructed to meet applicable standards. No significant adverse effects are anticipated. Refer to *Section 3.4* for additional details relating to natural hazards.

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

The site is visible from Kāhala Avenue, the public shoreline, and the public beach access. The new residences will not exceed 25 feet in height will have a no effect on public views of Diamond Head or other scenic view planes. Landscaping will enhance views from Kāhala Avenue.

(13) *Require substantial energy consumption.*

The action will slightly increase power consumption from the island's electrical grid. However, this increase will be minimal since older and less efficient systems that were used with the previous residential development will be removed and replaced by improved systems focused on efficiency of energy consumption.

6.3 SUMMARY

Based on the above findings, the residential action does not have significant socio-economic or environmental impacts. The Environmental Assessment recommends mitigation measures to alleviate effects when such effects are identified. The action is consistent with the Hawai'i State Plan, Hawai'i State Land Use District Boundaries; the Hawai'i Coastal Zone Management Plan, the City's General Plan and Development Plan; the City's Zoning Ordinance, and Special Management Area regulations.

Section 7.0

LIST OF REFERENCES

7.0 LIST OF REFERENCES

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- US Geological Survey. 2006. Seismic Design Maps for International Building Code.
Posted at: [http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/IBC2006-Figure1613_5\(10\).pdf](http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/IBC2006-Figure1613_5(10).pdf)

7.1 GEOGRAPHICAL INFORMATION SYSTEMS DATA

All maps produced using GIS are based on source data available from the Federal Government, State of Hawai'i and County of Hawai'i resources.

Aerial Imagery

Google Earth Aerial Imagery, 2015.

DFIRM/Flood Hazard Zones

FEMA 2015 (O'ahu)

Street Centerline (Roads)

City and County of Honolulu, September 2015

Soils

U.S. Department of Agriculture, Natural Resources Conservation Service, 2014

Special Management Area

City and County of Honolulu, 2011

State Land Use District

State Land Use Commission, March 2014

Tax Map Key

City and County of Honolulu, September 2015

Tsunami Evacuation Zone

City and County of Honolulu, 2015

Zoning

City and County of Honolulu, September 2015

Section 8.0

LIST OF AGENCIES, ORGANIZATIONS AND
INDIVIDUALS RECEIVING COPIES OF THE EA

4607 KĀHALA RESIDENCES

Draft Environmental Assessment

8.0 AGENCIES AND PARTIES CONSULTED

Table 8-1 lists the agencies, organizations, and individuals who were contacted during the planning process. Copies of the written comment letters and responses are included in this section.

Table 8-1: Agencies and Parties Consulted

| DISTRIBUTION | EA Pre-Consultation | EA Pre-Consultation Comments Received | Receiving Draft EA |
|---|----------------------------|--|---------------------------|
| A. Federal Agencies | | | |
| Army Corps of Engineers | | | X |
| U.S. Fish and Wildlife Service | | | X |
| B. State Agencies | | | |
| Department of Health (DOH), Clean Air Branch | | | X |
| DOH, Clean Water Branch | | | X |
| DOH, Solid and Hazardous Waste Branch | | | X |
| Department of Land and Natural Resources (DLNR), Land Division | | | X |
| DLNR, State Historic Preservation Division | | | X |
| Department of Planning and Permitting (DPP), Planning Division | | | X |
| DPP, Site Development Division | | | X |
| Land Use Commission | | | X |
| Office of Hawaiian Affairs | | | X |
| Office of Planning | | | X |
| University of Hawai'i Environmental Center | | | X |
| C. City and County of Honolulu | | | |
| Board of Water Supply | | | X |
| Department of Design and Construction | | | X |
| Department of Parks and Recreation | | | X |
| Department of Planning and Permitting (DPP), Land Use Approval Branch | X | X | X |

4607 KĀHALA RESIDENCES

Draft Environmental Assessment

| DISTRIBUTION | EA Pre-Consultation | EA Pre-Consultation Comments Received | Receiving Draft EA |
|--|---------------------|---------------------------------------|--------------------|
| Honolulu Police Department | | | X |
| Honolulu Fire Department | | | X |
| Wai'alaie-Kāhala Neighborhood Bd. No. 3 (Chair Richard Turbin) | X | X | X |
| Wai'alaie-Kāhala Neighborhood Bd. No. 3 (John Pyles, Subdist. 3 Rep.) | X | X | X |
| D. Elected Officials | | | |
| State House Rep. Bertrand Kobayashi (District 19) | X | | X |
| State Senator Sam Slom (District 9) | X | | X |
| Mayor Kirk Caldwell | X | | |
| Council Chair Ernie Martin | X | | |
| Councilmember Trevor Ozawa Council District 4 | X | X | X |
| Councilmember Ikaika Anderson, Chair, Zoning and Planning Cmte. | X | | X |
| E. Libraries | | | |
| Hawai'i State Library | | | X |
| Kaimukī Public Library | | | X |
| F. Community Interest Groups and Organizations | | | |
| Kāhala Community Association | X | | X |

Summary of EA Pre-consultation Comments

Individual comments were provided to the project team as a result of briefings and (verbal) response to the pre-consultation letter. In general the comments were supportive of the continued efforts to rehabilitate the properties owned previously by Genshiro Kawamoto. The pre-consultation included development plans for multiple homes on the property and site density considerations. Recommendations included extensive landscaping and non-intrusive architectural design.

On November 19, 2015, a presentation was made to the Wai'alaie-Kāhala Neighborhood Board No. 3. Several issues were discussed at the meeting, including the scope of development plans, permitting requirements, and construction timetable.

APPENDICES

Appendix A

PRECONSULTATION LETTER



August 10, 2015

Dear Participant:

PRINCIPALS

Francis S. Oda, Arch.D.,
FAIA, AICP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASID, LEED AP

Hitoshi Hida
AIA

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuen
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
AICP, LEED AP

Christine Mendes Ruotola
AICP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeil
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

OF COUNSEL

Ralph E. Portmore
FAICP

Subject: Pre-Consultation for Hawai'i Revised Statutes Chapter 343 and Revised Ordinances of Honolulu Chapter 25 Environmental Assessment
4607 Kahala Residences (Kahala, O'ahu, Hawai'i)
TMK (1) 3-5-005:016

Group 70 International, Inc. is currently undertaking the preparation of an Environmental Assessment (EA) pursuant to Hawai'i Revised Statutes Chapter 343 and Chapter 25, Revised Ordinances of Hawai'i, for the redevelopment of property located in Kahala, O'ahu, Hawai'i. The EA is planned for publication later this year.

A pre-consultation process is being conducted to engage agencies and interested parties in the environmental review process. Enclosed, for your review and comment, is an information summary and overview of the proposed action.

You are welcome to provide comments regarding the scope of this EA via telephone, email, fax, or U.S. Mail. These comments must be received by September 4, 2015 to be addressed in the Draft EA. Written comments received will be addressed directly.

Group 70 International, Inc.
925 Bethel Street, Fifth Floor
Honolulu, HI 96813-4307
Attn: Jeff Overton, AICP, LEED-AP
Email: 4607kahala@group70int.com
Tel: (808) 523-5866
Fax: (808) 523-5874

Thank you for participating in pre-consultation for this environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

A handwritten signature in black ink, appearing to read "Jeff H. Overton", is written over the printed name.

Jeffrey H. Overton, AICP, LEED-AP
Principal Planner

Attachments

4607 Kahala Residences (Kahala, O'ahu, Hawai'i)
TMK (1) 3-5-005:016

4607 Kahala LLC (an affiliate of A&B Properties, Inc.) is planning to redevelop three parcels formerly owned by Genshiro Kawamoto, located at 4607 Kahala Avenue. The site is about 1.3 acres located on the makai side of Kahala Avenue near Hunakai Street. Under the existing R-7.5 zoning and allowed density, the current plans anticipate that six new homes would be built. The site is located within the City's Special Management Area (SMA), therefore, a SMA Use Permit (Major) will be required. This will entail preparation of an Environmental Assessment (EA) and public hearings, providing opportunities for community input. The EA is planned for publication later this year.



Appendix B

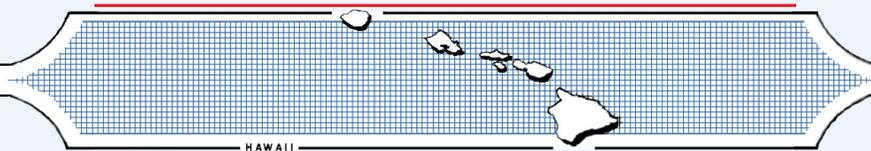
ARCHAEOLOGICAL ASSESSMENT

**AN ARCHAEOLOGICAL ASSESSMENT OF A WATERFRONT RESIDENTIAL
PARCEL COMPRISING LOTS 4, 4-A, 5, AND 5-A, IN
WAIKĪKĪ AHUPUA`A, KONA (HONOLULU) DISTRICT,
ISLAND OF O`AHU, HAWAI`I
[TMK (1) 3-5-005:016]**

Prepared by:
Elizabeth Pestana, B.A.
and
Robert L. Spear, Ph.D.
September 2015
DRAFT

Prepared for:
Group 70 International
925 Bethel St, 5th Floor
Honolulu, HI, 96813

SCIENTIFIC CONSULTANT SERVICES Inc.



1347 Kapiolani Blvd., Suite 408 Honolulu, Hawai`i 96814

ABSTRACT

At the request of Group 70 International, Scientific Consultant Services, Inc. conducted an archaeological inventory survey (AIS) of a property located at 4607 Kahala Avenue in Waikīkī Ahupua`a, Kona District, O`ahu Island, Hawai`i (TMK (1) 3-5-005:016). The parcel comprises approximately 1.33 acres (58,207 square feet) of land that includes four lots (Lots 4, 4-A, 5, and 5-A), owned by Estates of Kahala LLC, proposed for development construction of three residential structures, and landscaping.

Based on the historic use of the project area as well as the results of previous archaeological studies in the vicinity, it was determined that there was the potential for historic resources, that could include pre-Contact or Historic habitation features related to coastal occupation; and a high probability that burials might be found during excavations in the project area. Inventory level archaeological survey was conducted following DLNR/SHPD, §13-2876 Rules Governing Standards for Archaeological Inventory Surveys and Reports (HAR 2002).

Archaeological survey in the project parcel involved surface survey of the entire property and, in consultation with SHPD, limited systematic subsurface testing. Survey work resulted in no significant findings, therefore the current study documents an Archaeological Assessment (AA) for the project area. Surface survey in the project area observed scattered debris that consisted of pre-existing infrastructure remnants, and sparse scattered trash that included possibly modern-historic era materials (i.e., modern bottle glass, plastic, etc.), as well as faunal bone on the subgrade ground surface. Subsurface testing exposed multiple fill-soils layers, and the underlying natural deposits which consisted of previously disturbed beach sand and an intact, culturally sterile, beach dune stratum. A former A-Horizon was observed in several of the test trenches; and other features included fill-soil pits indicative of modern utilities and infrastructure associated with the previously existing dwelling. A single feature identified in association with the A-Horizon consisting of an anomalous sandy soil pit yielded no cultural material.

While no archaeological sites were identified in the current study, Archaeological Monitoring is recommended for future ground disturbance in the project area, due to significant findings of previous archaeological work documented in the project area vicinity (e.g., human burials and cultural deposits).

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INTRODUCTION

At the request of Group 70 International, Scientific Consultant Services, Inc. conducted an archaeological inventory survey (AIS) of a waterfront parcel at 4607 Kahala Avenue in Waikīkī Ahupua`a, Kona District, O`ahu Island, Hawai`i (TMK (1) 3-5-005:016) (Figures 1 and 2). The parcel comprises approximately 1.33 acres that includes four lots, owned by Estates of Kahala LLC which proposes to develop the parcel to include three new structures including a residential dwelling, and shoreline landscaping. The total floor area of these improvements is within approximately 58,207 square feet.

The goals of the AIS were to conduct thorough archival and background research of the project area and vicinity, surface reconnaissance of the property including mapping and recording of any identified archaeological sites, and limited systematic subsurface testing. The entire surface of the property was visually inspected, in accordance with HAR §13-275-4 (Appendix A), and test excavations were conducted to evaluate the subsurface stratigraphy and to test for subsurface features / sites below the modern landscaping fill that covers the property. Inventory Survey-level investigations were completed in the project area and resulted in no significant findings; this report therefore constitutes an Archaeological Assessment (AA) in accordance with HAR §13-275-5(b) (5).

PROJECT AREA DESCRIPTION

The project parcel is located within a residential neighborhood and is bounded by Kahala Avenue on the north, private residences on the west and east sides, and by the Pacific Ocean coastline to the south (Figure 3). The property consists of an approximately 1.33-Acres ocean-front residential parcel comprising four Lots (4, 4-A, 5, and 5-A), as is shown on a topographic survey map in Figure 4 (see also Figure 3). At the time of the survey observed surface conditions in the project area were remnant infrastructure, from the demolished previously existing residential dwelling and ancillary structures, and an existing asphalt paved driveway (Figures 5 and 6). Built portions of the parcel comprised of three prominent cement foundation pads in the northwest quadrant of Lot 5, and an expansive configured cement foundation covering the majority of the south half of the parcel; modern wire fences and/or basalt-and-concrete or concrete block walls on all four sides of the project area demarcate the property boundaries (see Figure 3).

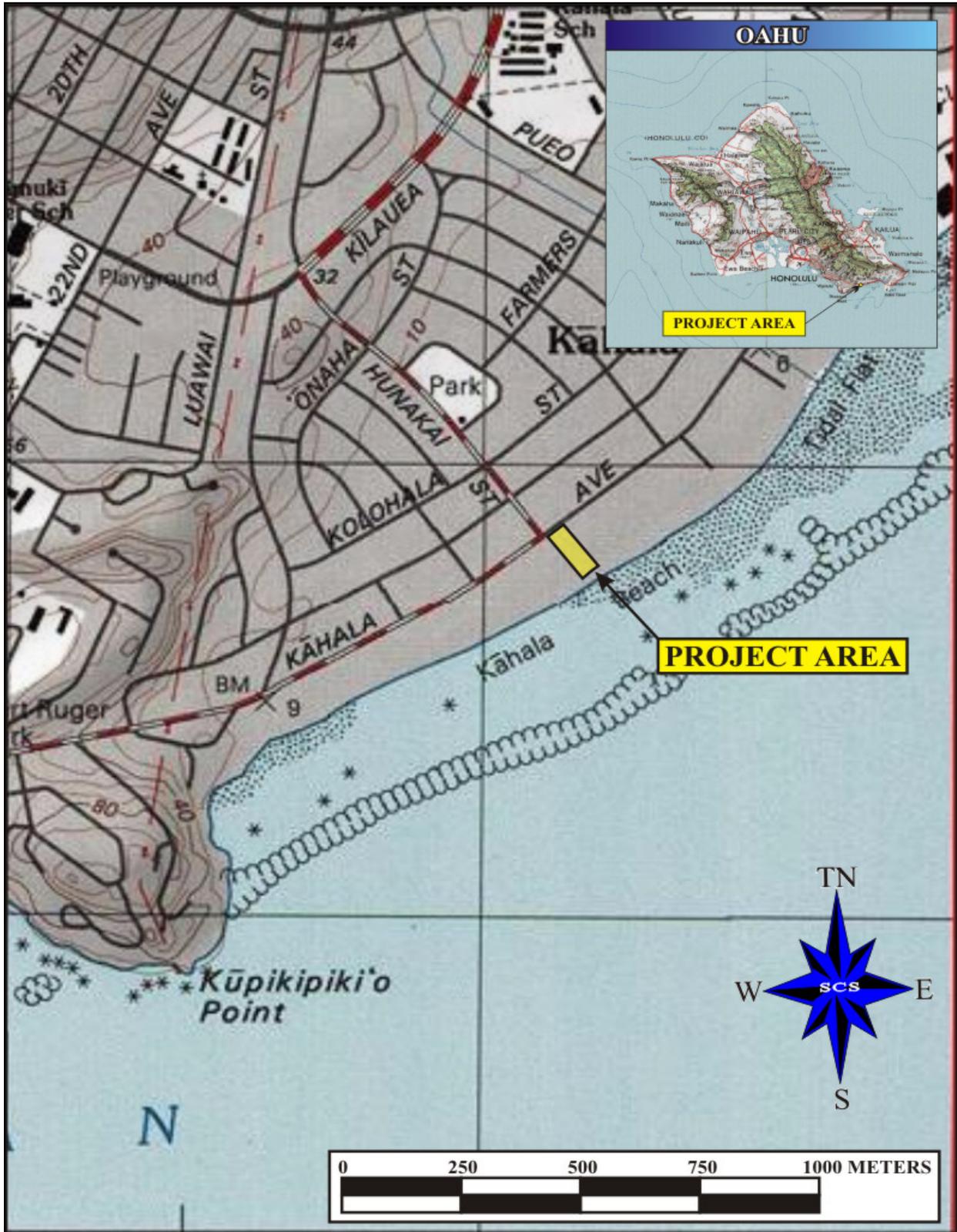


Figure 1: Portion of USGS Map Honolulu Quadrangle Showing the Project Area Location (TOPO! 1998).

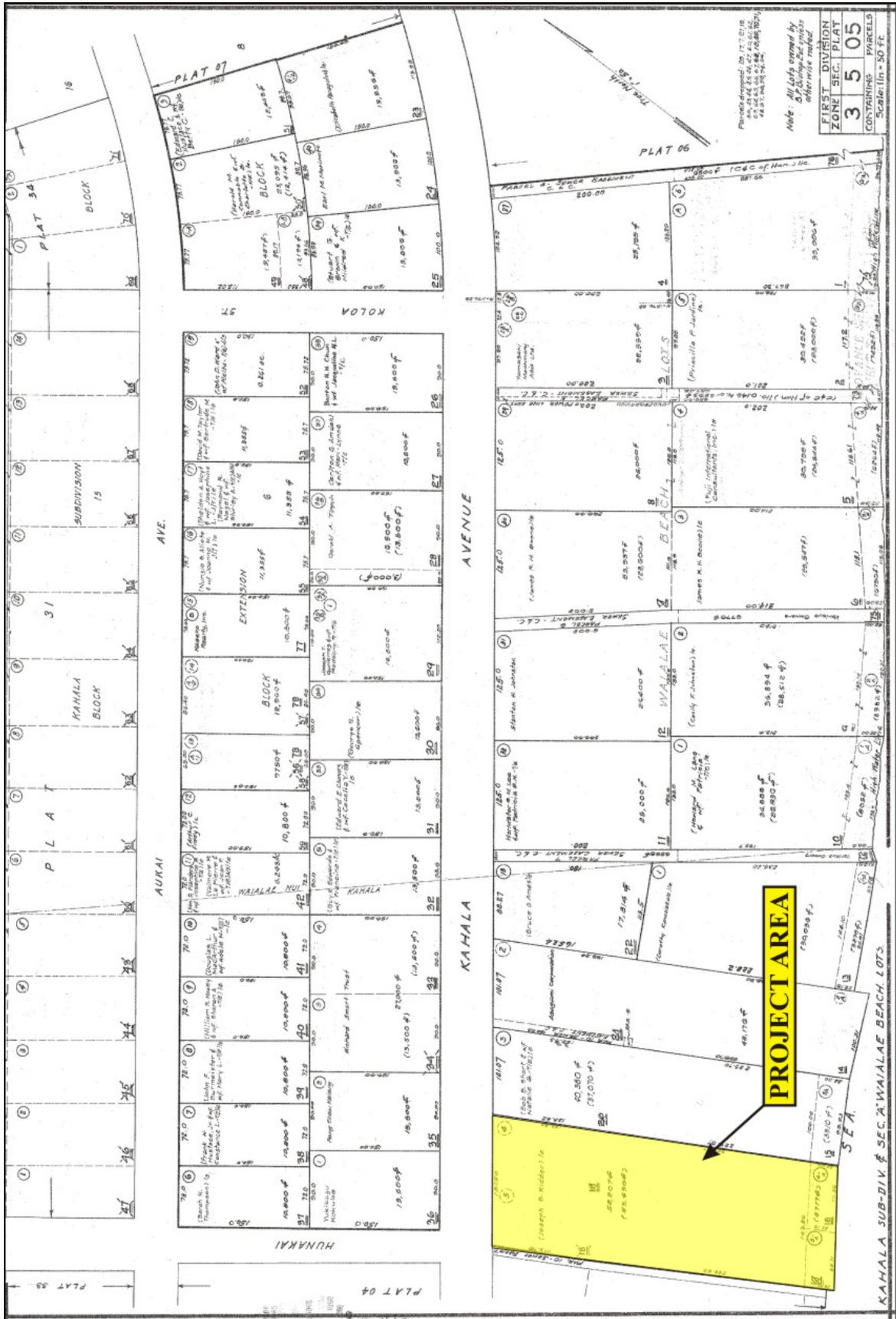


Figure 2: Tax Map Key [TMK (1) 3-5-005] Showing the Project Area Location as Parcel 016.



Figure 3: Satellite Aerial Image Depicting the Project Area (Google Earth, Imagery Date 1/15/2013).



Figure 5: Photographic Overview of the Project Area, Depicting Asphalt Driveway (Foreground) Main Dwelling Foundation Remnants (Background).



Figure 6: Photographic Overview of the Former Ancillary Dwelling Foundation/Infrastructure Remnants. View to North/Northwest.

GEOGRAPHIC SETTING

CLIMATE, SOILS, VEGETATION

The project area is located also the southeast coastline of O`ahu between approximately 3 (roughly 6 to 9 feet) above mean sea level (amsl). Kapakahi Stream is located no more than 2 km to the northeast of the project are, in Kāhala, Wai`alae Iki Ahupua`a, Honolulu (Kona) District, Island of O`ahu [TMK: (1) 3-5-005:016)] (see Figures 1 and 2).

The project area lies in the semi-arid southeast region of O`ahu. Rainfall indicators, according to Giambelluca *et al.* (1986:62), show that the project area does not receive more than 6 inches during the winter months of December and January.

According to Foote *et al.* (1972:28, 48; Sheet Map 63), the project area is comprised of Beach sand (BS) and Jaucas Sand (JaC), shown in Figure 7, which typically exhibit 0 to 15 percent slope. Beach sand, created from coral and seashells, is frequently utilized for recreational areas and resort development. Jaucas Sands, which exhibit rapid permeability and a slow to very slow runoff, is usually utilized as ranchland, in urban development, and sugarcane and truck crops.

Approximately fifty percent of the project area supports vegetation that includes remnants of modern landscape plants. The majority of vegetation in the project area consists of common lawn grass. Vegetation is present around the edges of existing concrete foundations in the project parcel surface, and in the periphery, along the property boundaries false *kamani* (*Terminalia catappa*) dominates. Coconut and other palm trees, and weeds have sprouted since the lots have been vacant. Most of these plants grow in fill topsoil that was imported to cover calcareous sands that occur naturally on the parcel.

CULTURAL AND HISTORIC BACKGROUND

TRADITIONAL SETTING

Recent re-evaluation of radiocarbon dates suggests O`ahu Island was first settled between A.D. 850 and 1100 by Polynesians sailing most likely from central East Polynesia (Kirch 2011:24). Archaeological settlement pattern data indicates that the initial colonization and occupation of



Figure 7: Soil Survey Map from Foote *et al.* (1972:28, 48; Sheet Map 63) Indicating, Soil Type within the Project Area.

the Hawaiian Islands first occurred on the windward shoreline areas of the main islands, with populations eventually settling into drier leeward areas at later periods (Kirch 1985). Coastal settlement was still dominant, but populations began exploiting and living in the upland (*kula*) zones. Greater population expansion to inland areas began about the A.D. Twelfth Century, but continued through the Sixteenth Century.

As the Hawaiian culture developed, land became the property of the king, or *ali`i`ai moku* (the *ali`i* who eats the island/district), which he held in trust for the gods. His title of *ali`i`ai moku* ensured rights and responsibilities to the land, but did not confer absolute ownership. The king kept the parcels he wanted, his higher chiefs received large parcels from him and, in turn they, distributed smaller parcels to lesser chiefs. The *maka`āinana* (commoners) worked the individual plots of land (Kirch and Sahlins 1992 vol.1:25).

In general, several terms, such as *moku*, *ahupua`a*, *`ili* or *`ili`āina* were devised to describe various land sections. A district (*moku*) contained smaller land divisions (*ahupua`a*), which customarily continued inland from the ocean and upland into the mountains. Extended household groups living within the *ahupua`a* were, therefore, able to harvest from both the land and the sea. As the Polynesian economy was based on agricultural production and marine exploitation, as well as animal husbandry and utilizing forest resources, this situation ideally allowed each *ahupua`a* to be self-sufficient by supplying needed resources from different environmental zones (Lyons 1875:111). The *`ili`āina*, or *`ili*, were smaller land divisions next in importance to the *ahupua`a* and were administered by the chief who controlled the *ahupua`a* in which the *`ili* were located (*ibid*:33; Lucas 1995:40). The *mo`o`āina* were narrow strips of land within an *`ili*. The land holding of a tenant, or *hoa`āina*, residing in an *ahupua`a* was called a *kuleana* (Lucas 1995:61). Oral history notes that the division of O`ahu's lands into districts (*moku*) and sub-districts was solidified by the *ali`i nui*, Mā`ili-kūkahi during the early part of the 16th century (Kamakau 1992:53-56). O`ahu contained six districts including Wai`anae, `Ewa, Waialua, Ko`olauloa, Ko`olaupoko, and Kona at the time of contact. The project area is located in the *`ili* of Wai`alae Nui, in the *ahupua`a* of Waikīkī, in the *moku* of Kona.

Large scale or intensive agricultural endeavors were implemented in association with habitation. Coastal lands were used for settlement and taro was cultivated in near-coastal reaches and in the uplands. On the southeast coast of O`ahu, taro cultivation was confined to valleys with streams or springs that would water the terraces. The staple crop in Wai`alae and Wailupe valleys was sweet potatoes, which were planted in the valleys,

on hillsides, and in the coastal strip (Handy 1940:155-6). Coconut, *hala*, *hau*, *kou*, and breadfruit trees were also cultivated in Waialae (Nagaoka 1985:11)

HISTORIC SETTING

Early western visitors to O‘ahu described the southeast coast as well-cultivated and well-populated. In 1789 Captain Nathaniel Portlock anchored in Maunalua Bay to take on fresh water, which was brought to the ship in calabashes. Portlock described the coastal setting:

...the bay all around has a beautiful appearance, the low land and vallies being in a high state of cultivation, and crowded with plantations of taro, sweet potatoes, sugar cane, &c., interspersed with a great number of cocoa-nut trees, which renders the prospect truly delightful (Portlock 1789:73-4)

In 1828 Levi Chamberlain toured southeastern O`ahu, including Wai`alae:

...a grove of palm trees and a number of branching kou trees, among which stand the grass huts of the natives, having a cool appearance, overshadowed by the waving tops of the cocoanuts, among which the trade winds sweep unobstructed (Chamberlain 1828in Hawaiian Historical Society 1956: 28-29)

In 1865 Henry Willis Baxley described the region:

Further along the shore, the few hamlets of Waialae are seen nestled in a grove. And a short distance beyond, the grass huts of Wailupe cluster near the high hill of Mauna Loa, from the southern foot of which a ridge extends still further southwardly to the bold and lofty cape named Coco Head, the eastern boundary of the beautiful bay of Waialae, of which Diamond Head, already described, forms the western (Baxley 1865:124)

THE MĀHELE (1848-1851)

In the 1840s, a drastic change in the traditional land tenure resulted in a division of island lands and a system of private ownership based on Western law. Once Article IV of the Board of Commissioners to Quiet Land Titles was passed in December 1845, the legal process of private land ownership was begun. The land division, called the *Māhele*, began in 1848. The lands of the kingdom of Hawai`i were divided among the king (crown lands), the *ali`i* and *konohiki*, and the government. The ‘*ili* of Wai‘alae Iki was awarded to Abner Pākī, the father of Bernice Pauahi Bishop, and the ‘*ili* of Wai‘alae Nui was awarded to Victoria Kamamalu, granddaughter of Kamehameha.

The project area is located within the land of Kanewai, which was awarded to Kalaiheana as Land Commission Award (LCA) 228:2 during the Māhele. A 1927 land survey map (registered map 2760) indicates LCA 228 and land ownership boundaries of Wai‘alae Iki and coastal portion of Wai‘alae Nui, shown in Figure 8. Kalaiheana was a kahu to Liholiho and participated in the 1824 invasion of Kaua‘i [Kamakau 1992:220, 268]. According to John ‘I‘i’s testimony, Kalaiheana received the lands after Kamehameha’s conquest of O‘ahu, as recorded in LCA documentation (Appendix B).

Kalaiheana’s land, called Kanewai, is at Waikiki. It has some leles in Manoa— Keapuapu, Holoawalu [Kaloalu in N. T.], Pakui, and the lele of Pahoa at Waikiki; and the sea of Kahala. That was the land of Keeaumoku at Waikiki, adjoining the north side of Kalaepohaku. This land became his upon the victory of Kamehameha I at the Battle of Nuuanu, also Waialua, as was the custom of granting lands to the chiefs at the time. When the peieleu [fleet of large canoes] came, the land passed from Keeaumoku to Papa and Kalaiheana, and all the leles were also conveyed. From thence came this acquisition and there was no deterrent until the year 1841. For the first time, an edge of Kahala was taken for Wai`alae. And in the year 1846 another portion was taken for Kalaepohaku, in the month of May, or perhaps June. (Native Register vol.2, pg1, cited at Waihona Aina)

When Kalaiheana died in 1855, the land of Kanewai was bequeathed to John ‘I‘i as the Guardian of Victoria [Kamamalu]. Victoria Kamamalu was awarded the ‘*ili* of Wai‘alae Nui as LCA 7713, as the heir to her mother, Kinau, who had inherited the lands of Ka‘ahumanu. Bernice Pauahi Bishop subsequently inherited Kamamalu’s land.

WAI‘ALAE RANCH

In the 1850s Captain John Ross leased 300 acres from the Kamehameha family for a ranch, where he raised cattle. In 1887 Daniel Isenberg purchased the lease to Wai‘alae Ranch from the Bishop Estate and planted vast fields of alfalfa in Wai‘alae for the development of a dairy ranch, the Wai`alae Ranch Company, which by 1924 was the largest dairy in Honolulu. Isenberg sold the property in the 1920s (Hitch and Kuramoto 1981:36). In July 1927, the Isenberg ranch home, near the mouth of Wai‘alae Stream, became the club house for the Wai‘alae Golf Course (Honolulu Star Bulletin, August 25, 1934).

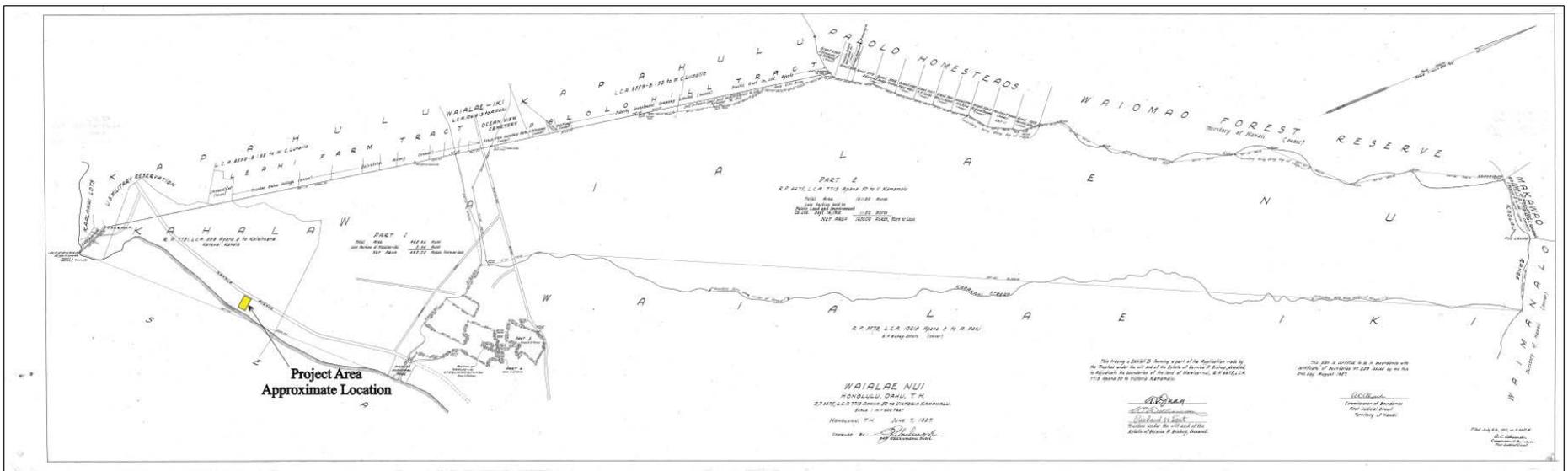


Figure 8: 1927 Land Survey Map of Wai'alaie Iki and Wai'alaie Nui, by Commissioner of Boundaries- A.C. Alexander, Indicating LCA and RP Lands (DAGS Land Survey Maps, Registered Map 2760)

NIU PLANTATION

In the 1881 edition of Thomas Thrum's *Hawaiian Almanac and Annual*, a single sugar plantation was listed in the district of Wai'ala'e, the Niu Plantation. This plantation is not listed in subsequent annuals, suggesting that the plantation was short-lived. An attempt to grow pineapple in the 1920s was also short-lived.

WAI'ALAE GOLF COURSE

In 1925 the Territorial Hotel Company acquired 250 acres from the Bishop Estate for the construction of Wai'ala'e Golf Course. The course was built to cater to wealthy tourists but local residents could also use the course by paying an annual fee (Hitch and Kuramoto 1981:42). After the stock market crash of 1929 some of the local members were persuaded to manage the course as a private club. In the 1960s the golf course was redesigned to make room for the construction of the Kahala Hilton Hotel, the Kahala apartments, and the Kai Nani subdivision along the coastal side of the property.

RESIDENTIAL DEVELOPMENT

In the 1920s, Wai'ala'e gradually developed into a suburb of Honolulu, spreading eastward along Wai'ala'e Road (now Kalaniana'ole Highway) and *mauka* into Wai'ala'e Iki and Ainakoa. Beginning in the 1920s, a series of improvements were made to Wai'ala'e Road, as part of the development of Kalaniana'ole Highway. Farming continued in the area into the 1930s; in 1938 more than 50 pig farms were operating in the vicinity of Farmers Road and Kahala Avenues. At the same time the beachfront along Kahala Avenue was being developed with homes (Honolulu Advertiser, December 20, 1938). In the 1940s and 1950s the Bishop Estate subdivided and leased individual residential sites across Kahala. By 1956 Wailupe Fishpond, to the east of the project area, had been filled in to provide more land for subdivision development (Clark 1977:36-7).

PREVIOUS ARCHAEOLOGICAL RESEARCH

An examination of past research within the vicinity of the project area has been utilized to assess site types that may potentially be encountered during the course of the project. The numerous archaeological sites recorded in the area consist mainly of human burials identified during construction activities, as well as cultural remains relating to both prehistoric and historic time periods (Figure 9).

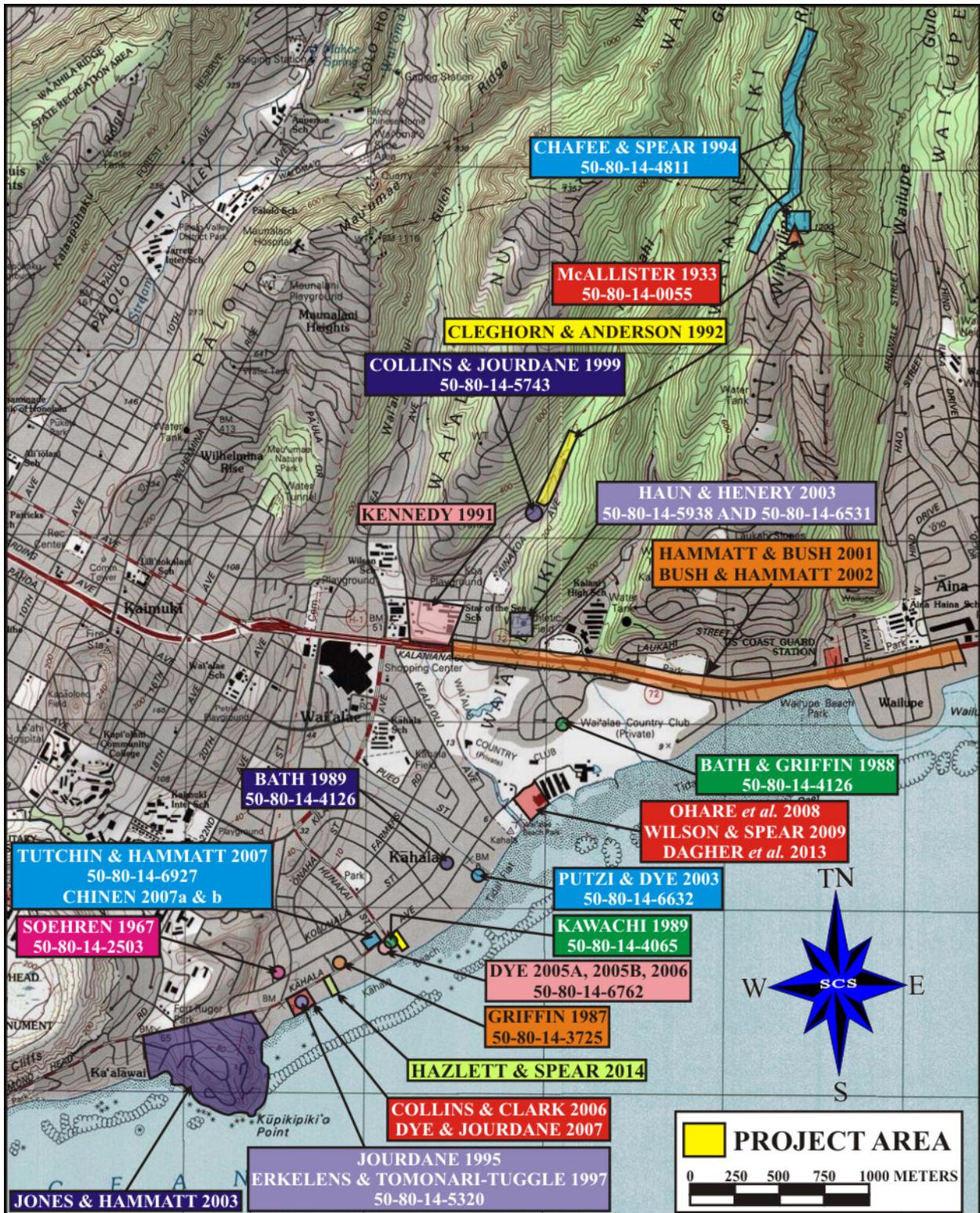


Figure 9: Portion of 1998 USGS Map (Honolulu Quadrangle) Showing Location of Previous Archaeological Studies In the Vicinity of the Project Area.

In McAllister's report on his 1930s survey of the archaeological features of O`ahu, only one site is mentioned for Wai`alae. An informant told him that there was once a *heiau* called Kaunua Kahekili in Wai`alae Iki; McAllister noted that the *heiau* had been almost completely destroyed.

Site 55, Kaunua Kahekili Heiau, Wai`alae Iki. Punahoa of Keahia says that Kaunua Kahekili was a very large heiau. It was located on the top of the ridge which divides Wailupe and Wai`alae, on the highest and most pronounced knoll. The site was formerly planted in pineapples, but now the heiau is overgrown with high grass and weeds and the pineapples are on the sloping ground which surrounds it. Many large rocks embedded in the earth are all that remain of the structure. (McAllister 1933:71)

Lloyd Soehren (1967) of the Bishop Museum excavated a test unit in a cave, called the Wai`alae shelter cave (State Site 50-80-14-2503), in 1967 on Kuana Street. Marine shell food remains, traditional Hawaiian artifacts, and historic artifacts were recovered, including a fish hook, an octopus lure, a coral file, copper tubing and bottle glass dating from the 1880s to 1920s (cf. Kennedy 1991).

Joseph Kennedy in 1991 conducted a surface survey of a 7.5-acre parcel occupied by facilities for the Star of the Sea Church-School complex located mauka and adjacent to Kalaniana'ole Highway. Two lava tubes and six caves were found, but they did not contain any cultural material. No other surface features were found.

Paul Cleghorn and Lisa Anderson (1992) conducted a surface survey of a 6.4-acre parcel in Kapakahi Gulch, mauka of the end of Luinakoa Street. No surface features were found.

David Chaffee and Robert Spear (1994) conducted an assessment of the surface features along a 1,100-meter-long corridor of the Wiliwilinui Trail Alignment on Wai`alae Iki Ridge. The only feature found was a World War II concrete and metal bunker, which was given the SIHP (State Inventory of Historic Places) site designation number 50-80-14-4811.

In 2001 and 2002, (Bush and Hammatt 2002) monitored the installation of a gas main (Hammatt and Bush 2001) and a water main from 'Ainakoa Avenue to West Hind Drive. The majority of the project corridor was within a zone of coral outcrop that has since been covered by eroded soil and fill layers. The main trenching line was found to be composed primarily of fill materials associated with different phases in the development of the highway. No cultural

material (except modern trash) was encountered during installation of the gas main, but pockets of sand were noted. One horseshoe and one poi pounder fragment were collected during installation of the water main. Basalt boulders found in one area were thought to possibly be part of the wall of former Wailupe Fishpond.

Jones and Hammatt (2003) monitored improvements to the water system at Black Point. Monitors were on-site during all excavations in areas thought to have Jaucas sand. The actual area that contained Jaucas sands was much smaller than predicted, but the excavations for the water system were generally shallow (less than 50 centimeters deep), and it was determined that strata of undisturbed sand were probably still undisturbed at a deeper level. No subsurface features were found.

In 2008 Cultural Surveys Hawaii (CSH) conducted an Archaeological Literature Review and Field-Check for the proposed Wai`alae Country Club Master Plan Project (O`Hare et al. 2008). CSH also produced a Cultural Impact Evaluation for the Country Club Master Plan as well (Spearing et al. 2008).

Archaeological Monitoring was conducted in the Wai`alae Country Club project area parcels for an electrical switchgear installation/ air conditioning replacement project (Wilson and Spear 2009). All excavations associated with this project were monitored, noting the subsurface strata consisted of a single uniform stratigraphy, the vast majority of which was previously disturbed through landscaping and building construction. No cultural deposits or significant historic properties were identified.

SCS (Hazlett and Spear 2014) conducted archaeological survey of two adjoining parcels less than 500 meters southwest of the current project area. Surface survey and subsurface testing that included ten mechanically excavated test trenches did not yield any archaeological sites. However, the Archaeological Assessment documented the presence of a buried former A-Horizon.

BURIALS

Many mid-nineteenth century visitors to the islands visited a large area of exposed bones in sand on the eastern side of Diamond Head or Black Point, in Waikīkī Ahupua`a. These tourists, including the writer Mark Twain, speculated that either these graves were the remains of warriors killed in one of Kamehameha's battles or the interment site for Hawaiians who died in one of the many epidemics that swept the islands in the years after contact with Westerners and

Asians. From the early traveler's accounts, this large dune cemetery was probably in the *`ili* of Wai`alae Nui in the Kahala beach area. Several visitors to the cemetery noted that they rode or drove around Black Point, but had not yet reached the coconut groves of the *`ili* of Wai`alae Iki, within the current project area. Although it does not seem that the dense concentration of bones found in Kahala extends to the project area, it is likely that some burials were interred in the Wai`alae Iki shore, wherever the sand was deep enough for a shallow pit (Spearing et al. 2008).

During construction at a property at 4505 Kahala Avenue, human bones were found by the construction crew and the SHPD was notified. Annie Griffin (1987) visited the site and disinterred the skeleton, which consisted of a primary burial of a young-to-middle aged female placed in a semi-flexed position. A subsequent examination of the remains by Lee and Pietruszewsky (1988) of the University of Hawai'i determined that there was a second burial intrusive with the first, which consisted only of the lower limb bones of a young male adult. Both burials were assigned to State Site 50-80-14-3725.

During the excavation of a swimming pool on a property at 1013 Waiholo Street, the SHPD was informed of the discovery of human bones by the medical examiner's office (Bath and Griffin 1988). The burial was in a flexed position. A subsequent examination of the remains by Douglas and Pietruszewsky (1988) of the University of Hawai'i determined the bones were of a female, approximately 35 years old. The burial was designated State Site 50-80-14-3760.

Contractors at a construction site at 4745 Aukai Avenue reported the discovery of human bones to the SHPD in 1989 (Bath 1989). A previously disturbed partial burial was found and disinterred. A subsequent examination of the remains by Bradley and Pietruszewsky (1989a) of the University of Hawai'i determined the bones were of a single adult male, 40 to 45 years old. The burial was designated State Site 50-80-14-4126.

Human bones were identified during the excavation of a house foundation at 4585 Kahala Avenue and reported to the SHPD in 1989 (Kawachi 1989). The burial was disturbed by the construction, but the contractor's description indicated that the burial may have been in a flexed position. The skull and upper third of the body was missing. A subsequent examination of the remains by Bradley and Pietruszewsky (1989b) of the University of Hawai'i determined the bones were of a female, approximately 25 to 35 years old. The burial was designated State Site 50-80-14-4065.

In 1995, human bones found during the excavation of an elevator shaft for a house at 4433 Kahala Avenue were reported to the SHPD (Jourdane 1995). The bones (Burial 1) were determined to be likely from an ash and charcoal cultural layer 60 to 95 centimeters below the ground surface. The burial was disinterred and later reinterred. The burial and the cultural layer were designated State Site 50-80-14-5320.

In 1997, additional burial recovery work was carried out at 4433 Kahala Avenue (Erkelens and Tomonari-Tuggle 1997). Back dirt piles were screened and the loose soil was removed from the elevator shaft. When the walls of the shaft were cleaned, the profile of a fire pit and the profile of a burial pit were noted. A second burial was found in the burial pit and additional elements of this burial were found in the back dirt piles. A backhoe excavated a 4 by 2.5-m block around Burial 2 and a third burial was uncovered. Burial 1 was identified as the skeleton of a 30-35 year old male. A shell button and two porcelain beads in the back dirt probably belong to this individual. Burial 2 was identified as the skeleton of a 20-25 year old female. Burial 3 was identified as a 3-year old child, probably the child of the female (Burial 2). A square-cut nail was found with this burial. Due to the presence of historic artifacts, the burials were determined to be of Polynesian or Asian ethnicity, buried in the nineteenth century. All three burials were disinterred and reinterred elsewhere on the property. All three burials at the site are considered part of State Site 50-80-14-5320.

In April of 1999, a local resident brought several bones that he collected from a cave to a forestry worker. The SHPD was notified and Sara Collins and Muffett Jourdane (1999) inspected the cave, which was located mauka of the end of Luinakoa Street (Aina Koa Subdivision) on Wai`alae Nui Ridge. They reported that bones were scattered over the cave floor and probably represented the bones of just one individual. No other cultural remains were found in the cave. The cave and burial were designated SIHP #50-80-14-5743.

During the excavation of a utility line at 4773 Kahala Avenue in 2003, human bones were inadvertently exposed. T. S. Dye & Colleagues were contracted to conduct further investigation of the find (Putzi and Dye 2003). The remains of five individuals, a cultural layer, and several traditional Hawaiian artifacts were recovered from the excavation and from the back dirt piles. The burials were probably of Hawaiian ancestry based on the presence of the traditional artifacts. The burials and the cultural layer were designated SIHP #50-80-14-6632.

In 2003, archaeologists from Haun and Associates (Haun and Henry 2003) conducted a surface survey of the 8-acre Wai`alae 180 Reservoir Replacement project site near the Kalani

High School Athletic Field, mauka of Kalaniana'ole Highway. Two caves with human remains were found. The caves were designated State Site 50-80-14-14-5938 and 50-80-14-6351. The floor of each cave was bare lava. Several bones were found at State Site 50-80-14-5938, including five crania; only one skeletal element, an infant cranium, was found at Site 6351. No historic material was found at the cave, so the archaeologists determined that the remains were probably Hawaiians buried in the pre-contact or early post-contact periods.

Human skeletal remains were found at 4577 Kahala Avenue in 2006 during excavation of a sewer line. T. S. Dye & Colleagues (Dye 2005a, b; Dye 2006) were contracted to recover all bones from the trench and the back dirt piles. One in situ burial and one disturbed burial were found within a cultural layer. The remains were disinterred and reinterred on the same parcel. The burials and the cultural layer were designated State Site 50-80-14-6762.

In 2006, Pacific Consulting Services (Collins and Clark 2006) conducted extensive Phase I subsurface testing at three parcels, 4415, 4423, and 4433 Kahala Avenue. Fifty-one test units were excavated, covering the majority of the project area. Human remains had been previously found at 4433 Kahala Avenue in the 1990s (Jourdane 1995; Erkelens and Tomonari-Tuggle 1997). Collins and Clark (2006) reported on two sand cultural layers, the upper layer believed to be associated with historic period habitation and the lower sand layer associated with traditional Hawaiian habitation. No pre- or post-Contact Hawaiian artifacts were found in these layers, but small quantities of charcoal, thermally-altered rock, fish bone, and marine gastropods were identified.

The second phase of this project was carried out in 2007 (Dye and Jourdane 2007). During this phase, the 1997 re-interment site was relocated and marked on the surface. Twenty shovel tests were excavated in areas not covered by the Phase I project. Controlled block excavations were placed adjacent to shovel test pits which contained one or both of the two sand layers identified by Collins and Clark (2006). The work indicated that the possible two cultural layers were actually "a single old land surface, or paleosol, upon which a variety of historic-period artifacts had been deposited" (Dye and Jourdane 2007:32).

In March of 2007, the SHPD (Chinen 2007a) was notified that human skeletal remains had been found during construction a new house and swimming pool at 4565 Kahala Avenue. The bones were dispersed around the property's backyard. The SHPD determined that a qualified archaeological consultant would need to screen back dirt piles and conduct block excavations at the site to try to determine the original location of the burial and to test if other burials were

present. CSH (Tulchin and Hammatt 2007) excavated 25 test units but the original location of the burial could not be determined. They did recover additional skeletal remains from the back dirt piles. Following the test excavations, a CSH archaeologist monitored the remainder of construction related excavations in the project area. On April 25, May 15 and July 11, 2007 additional human skeletal remains were observed (Chinen 2007b). These were determined to be from the same burial as that found in March. The SHPD assumed jurisdiction over the inadvertent discoveries and determined to relocate the remains. The burial was designated site SIHP #50-80-14-6927.

Scientific Consultant Services, Inc. conducted Archaeological Monitoring for the Wai`alae Country Club Clubhouse upgrade between February 1 to May 31, 2011 (Dagher *et al.* 2013). Two archaeological sites were recorded; State Site 50-80-14-7206 was a human burial, with a partially intact burial pit, and State Site 50-80-14-7207 was comprised of an in situ human burial (Feature 1) and a pit feature of indeterminate function (Feature 2). The burials were found to be in association with a former A-horizon identified as a cultural layer.

Scientific Consultant Services, Inc. conducted Archaeological Monitoring for the Wai`alae Country Club Annex Building Project between April 22 to December 30, 2013 (Pestana and Spear, in prep.). Five human burials (Burial 1 to Burial-5) and twelve subsurface features (including one animal burial, four burial pits, and seven pit features of indeterminate function) were recorded.

POTENTIAL SITE TYPES TO BE ENCOUNTERED

Based on the historic use of the project area as well as the results of previous archaeological studies in the vicinity of the project area, it is likely that potential site types in the project area might include pre-Contact or historic habitation features related to the sites location on the shoreline. Given the proximity of the ocean and the number of burials found along Kahala Avenue (13 reported burials, at 4433, 4505, 4565, 4577, 4585, and 4773 Kahala Avenue, as well as the thirty individuals recovered from the Wai`alae Golf Course), there is a high probability that burials might be found during excavations in the project area.

METHODS

Preliminary field inspection was conducted on May 27, 2015 by SCS archaeologist, Guerin Tome, B.A., and Principle Investigator (PI), Robert L. Spear. Additional survey work / recordation were carried out on July 7 - 9, 2015 by SCS archaeologist Elizabeth Pestana, B.A. under the overall direction of Robert L. Spear, Ph.D. Surface survey was conducted across 100 percent of the property, in accordance with HAR §13-275-4.

Survey data in the project area, encompassing all field work tasks, involved recording of all surface and subsurface observations via field notes, photographs, and standard field forms (e.g., Project Summary form, Excavation Summary form, Subsurface Feature form). The overall project area, and subsurface stratigraphy were mapped were mapped by way of Global Positioning System (GPS) handheld unit.

Surface survey involved inspection of surface conditions, and existing landscape features visible on the project parcel ground. The size and nature of the previously developed residential parcel allowed for one hundred percent of the parcel to be visually inspected for archaeological properties by a walk-through on single occasion. Based on existing physical conditions of the project area a subsurface testing strategy was devised in consultation with SHPD.

The determined subsurface testing plan involved systematic limited trench excavations. Test excavations were carried out via mechanical excavator, by which twenty stratigraphic trenches (ST) were placed across the parcel in accessible locations throughout the overall study area. The sample included portions of all Lots within the project parcel; nine stratigraphic trenches in Lot 4/4A, and eleven stratigraphic trenches in Lot 5/5A, collectively (Figure 10). A subsurface testing/sampling plan, in regard to total number and placement of test trenches, was based on project parcel acreage and accessible ground, with an objective of obtaining adequate data representative of the parcel as a whole, in evaluation of the presence/absence of cultural deposits. Trenches ranged in length between 4.0 meters to 4.85 meters, for an average length of 4.45 meters, and 89.03 linear meters. In majority, stratigraphic test excavations terminated at the water table depending on tidal activity, and elevation of the test location in the project parcel; base of excavation was otherwise as deep as approximately 220 to 250 centimeters below the surface (cmbs). All trenching activity was monitored, and excavated soils/sediments were visually screened, trench sidewalls were inspected for archaeological traces/features, and

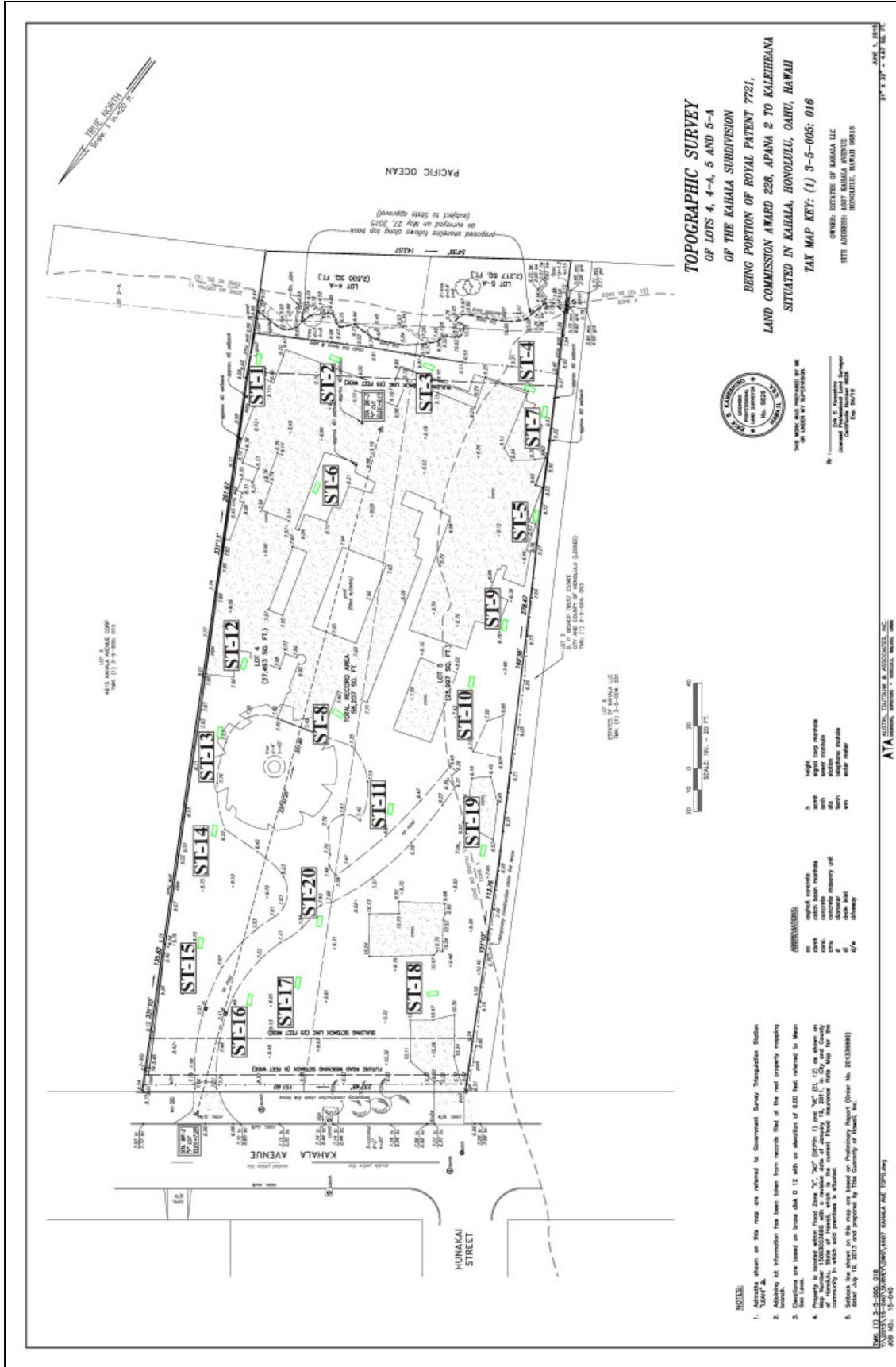


Figure 10: Topographic Survey Plan Map Illustrating Approximate GPS Locations and Positions of Stratigraphic Test Trenches (ST-1 through 20).

stratigraphic characteristics were recorded. All trenches were recorded to include one profile illustration of at least one sidewall; stratigraphic soil descriptions were recorded using the standard USDA terms (*e.g.*, sediment size, consistency, color, inclusions), referencing United States Department of Agriculture Soil Survey Manual (Soil Survey Division 1993), and Munsell Soil Color Book (2009 Year Revised). Sediments and deposits of possible archeological significance were sampled and labeled with proveniences. All aspects of the work were photographed with a digital camera. Each trench was backfilled following data recordation.

LABORATORY

Laboratory work was conducted as outlined in the AMP, in accordance with HAR §13279-5 (*ibid*). Laboratory work, conducted at SCS facilities in Honolulu, consisted of digitally drafting all relevant plan view maps and stratigraphic profile illustrations compiled during field work, and archiving digital images. Materials sampled and collected from the project area for laboratory analysis were tabulated to include provenience information weights, lengths, widths, and counts. Collected materials and cultural artifacts were assessed by ‘type’ and ‘function’. Select artifacts significant to the finding were photographed for presentation in this report. Qualitative analysis of fauna was done minimally for taxonomy on invertebrate remains contained in sediment samples, to the extent possible, and tabulated by provenience. Likewise, charcoal samples associated with significant archaeological deposits may be subject to wood taxa identification and, if amenable, submitted for radiocarbon analysis. Since wood charcoal was not identified or obtained from a significant/primary context, this data is not available.

CURATION

All materials accumulated during field-work will be stored at the SCS office in Honolulu for laboratory analysis, while the AA document is drafted. Following SHPD acceptance of the ‘Final Draft’ AA, all sampled materials/artifacts collected from the project area are stored at SCS Honolulu until an appropriate curation facility is selected, in consultation with the landowner and SHPD. All documentation generated during field-work, including maps, photographs, field notes, etc., will remain on file at SCS Honolulu.

RESULTS OF FIELD SURVEY

The project parcel is a previously built residential property, once comprising multiple structures related to a household dwelling which formerly occupied the parcel. The parcel has been subject to a moderate degree of ground disturbance related to the construction of former residence(s) built between 1930 and 1960, according to Department of Planning and Permitting (DPP) Tax Map Key info documentation dated 4/3/2015 (<http://dppweb.honolulu.gov>).

No significant historic/cultural properties were identified by surface survey and subsurface testing in the project area. Modern features that consisted of fill-soil pits representing old utility trenches/landscaping activity associated with the previously existing dwelling were observed within the surface and mechanically affected strata immediately below the surface. A former A-Horizon was also observed in a few of the test trenches, and included an associated anomalous pit feature, neither of which contained culturally significant materials. This study therefore documents an Archaeological Assessment for the project area.

SURFACE SURVEY

The project parcel was subject to a preliminary reconnaissance on May 27, 2015. The entire project area surface was inspected. In addition to modern wire fences and/or basalt and concrete or concrete block walls on all four sides of the project area, at least four concrete foundations/pads, an asphalt paved driveway, and old culvert, all likely remnants associated with the previously existing dwelling, were noted within each lot across the project area (Figures 11 through 15; see Figure 4).

The primary foundation related to the main former dwelling covered roughly half of the project parcel in the south portion, was bi-level and included stone finish veneer, and featured a swimming pool filled with rubble (see Figures 11 and 12). Ancillary to the main dwelling foundation remnant were four smaller foundation/concrete pads and associated abandoned infrastructure which also included a probable culvert, constructed of cement blocks with metal grating cover, approximately two feet deep (see Figures 14 and 15).

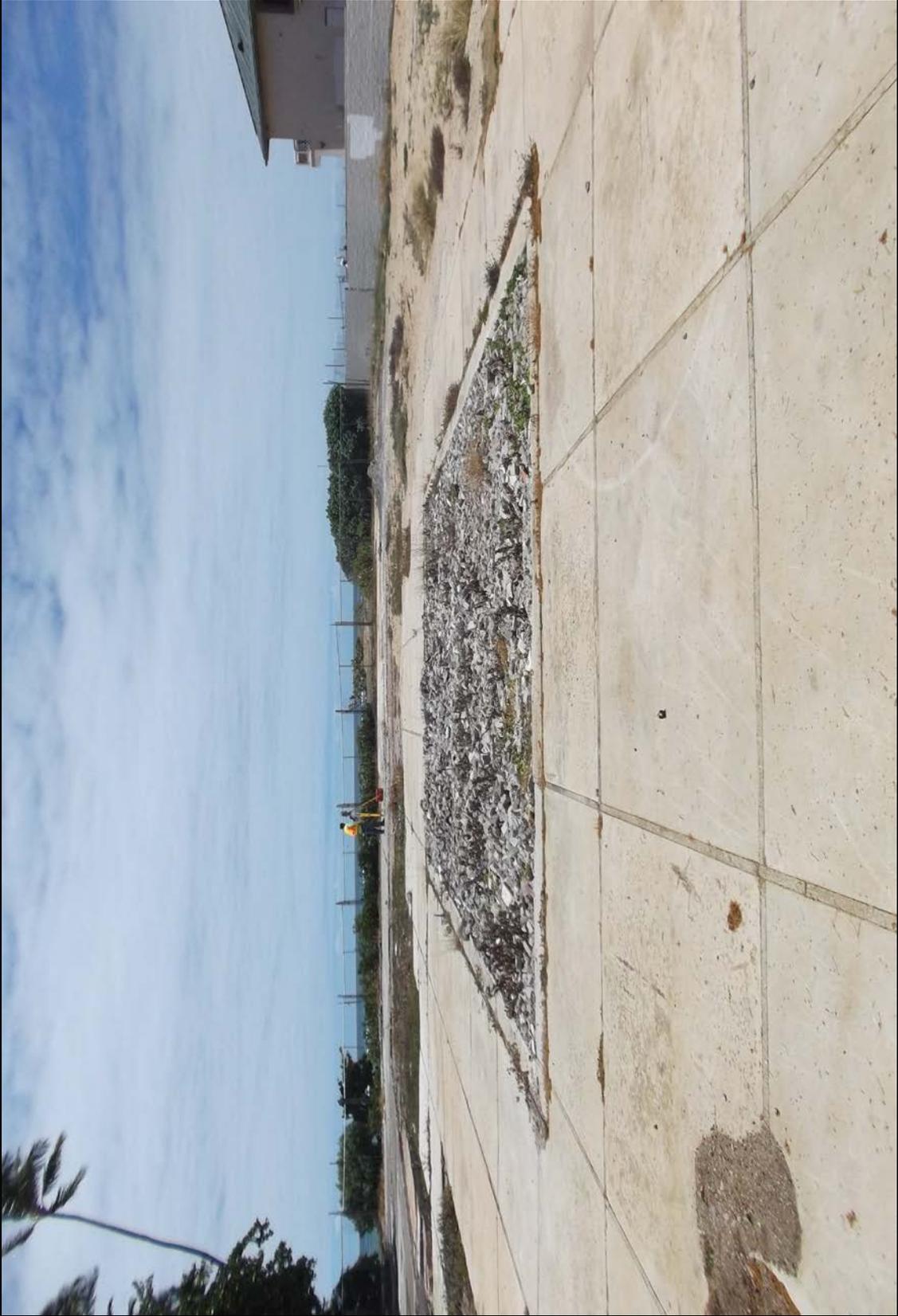


Figure 11: Photographic Overview Depicting the Former Primary Dwelling Foundation and Rubble Filled Swimming pool Remnants. View to South/Southeast.



Figure 12: Photographic Overview Depicting the Former Primary Dwelling Bi-Level Foundation Remnant. View to South.



Figure 13: Photographic Overview Depicting the Former Primary Dwelling Bi-Level Foundation Remnant Showing Stone Veneer Detail.



Figure 14: Photographic Overview Depicting an Old Culvert, Among the Ancillary Infrastructure Remnants of the Previously Existing Dwelling.



Figure 15: Photographic Overview Depicting Additional Foundation/Concrete Pads, of Ancillary Infrastructure Remnants of the Previously Existing Dwelling.

SUBSURFACE TESTING

Subsurface testing included twenty total stratigraphic trench (ST-1 through ST-20) excavations in the project area, shown on a GPS generated satellite image in Figure 16. Trenching persisted as deeply as safely possible into the sterile stratum. All trenches terminated in sterile sand, most often reaching the water table. The GPS locations for ST-1 through ST-20 are presented in Table 1.

Table 1: GPS Coordinates of Stratigraphic Test Trenches (ST-1 through ST-20).

| Waypoint | Lat. | Long. | Northing | Easting |
|----------|----------|------------|------------|------------|
| ST-1 | 21.26327 | -157.78353 | 2351770.73 | 626210.506 |
| ST-2 | 21.26322 | -157.78359 | 2351765.04 | 626204.116 |
| ST-3 | 21.26315 | -157.78373 | 2351757.84 | 626189.644 |
| ST-4 | 21.26308 | -157.78382 | 2351749.35 | 626179.955 |
| ST-5 | 21.2633 | -157.78397 | 2351773.7 | 626164.41 |
| ST-6 | 21.26311 | -157.78386 | 2351774.55 | 626200.4 |
| ST-7 | 21.26311 | -157.78386 | 2351753.31 | 626175.774 |
| ST-8 | 21.26354 | -157.7839 | 2351799.99 | 626171.679 |
| ST-9 | 21.26342 | -157.78404 | 2351787.15 | 626157.561 |
| ST-10 | 21.26348 | -157.7841 | 2351793.85 | 626150.869 |
| ST-11 | 21.26358 | -157.78396 | 2351804.81 | 626165.208 |
| ST-12 | 21.26357 | -157.7838 | 2351803.95 | 626182.337 |
| ST-13 | 21.26374 | -157.7838 | 2351822.1 | 626181.574 |
| ST-14 | 21.2638 | -157.78388 | 2351829.45 | 626173.631 |
| ST-15 | 21.26391 | -157.78392 | 2351841.37 | 626169.077 |
| ST-16 | 21.26393 | -157.78405 | 2351843.71 | 626155.985 |
| ST-17 | 21.26381 | -157.78418 | 2351829.98 | 626142.081 |
| ST-18 | 21.26378 | -157.78423 | 2351826.96 | 626137.643 |
| ST-19 | 21.26363 | -157.78417 | 2351809.63 | 626144.106 |
| ST-20 | 21.26379 | -157.78404 | 2351827.44 | 626156.629 |

The soil stratigraphy observed of the project area in general is composed of fairly shallow fill-soils underlain by the natural beach sediments. As mentioned above, modern features consisting of fill-soil pits and lenses, observed in a number of the STs, were indicative of old utility trenches, and landscaping activities associated with the previously existing residential dwelling. In addition, a buried (probable) former A-Horizon was exposed in several trench side-walls, along with one anomalous soil pit. None of the soil features observed yielded significant cultural materials.



Figure 16: Satellite Aerial Image (source: Google Earth) Indicating GPS Locations of Stratigraphic Test Trenches ST-1 through ST-20.

Test trenches exposed one distinctive fill-soil stratum and an interface layer composed of fill mixed with the natural sediment, depending on location in the parcel, overlying the natural beach sand deposit. Natural strata composed two layers including mechanically affected sand, and the underlying *in situ* dune sand deposit. The stratigraphy exposed across the project area proved fairly uniform throughout, therefore a sample of that which is representative of the project parcel within Lots 4, 4A, 5, and 5A, including concise soil descriptions, stratigraphic profiles and photographs of each is presented the text below (note that fill soil layers are labeled with the prefix “f-“ in all soil descriptions). General Information pertaining to, dimension and stratigraphic observations for each stratigraphic test trench is summarized in Table 2; Table 3 includes the general descript soil layer sequence documented for the overall project area.

REPRESENTATIVE PROJECT AREA STRATIGRAPHY

TEST TRENCH 2 (ST-2)

Test Trench-1 ST-2, 4.6 m long by 1.0/1.2 m wide and 2.20 cm deep, was placed just south of and parallel to the southeast edge of the main dwelling concrete foundation remnant in the southeast corner of the project area within portions of Lots 4 and 4A, oriented north/south (see Figure 16). ST-2 contained one fill-soil layer and three culturally sterile sand strata, described below (Figures 17 and 18). Excavation of ST-2 was terminated at 220 cmbs, the depth at which the water-table was encountered.

Layer f-I

Layer I (0-34/48 cmbs) consisted of semi-compact brown (10YR 5/3, dry) sandy clay-loam with grass and few coconut tree roots. As the lower boundary was solid, Layer I was interpreted as local fill. Layer I was culturally sterile.

Layer II

Layer II (34/48-68 cmbs) consisted of loose to loosely compact, white (10YR 8/1, dry) loamy sand with few to no grass and tree roots. Layer II was interpreted as a natural stratum. As the layer's lower boundary was diffuse, Layer II was interpreted as a natural stratum. Layer II was culturally sterile.

Layer III

Layer III (68-72 cmbs) consisted of loose to loosely compact, Light Gray (10YR 7/1, dry) sand. Layer III was diffuse, with indistinct boundaries and appeared to occur just below the interface of Layers II and IV. This sediment layer was discontinuous throughout the ST-2 test trench. Layer III is interpreted as a natural, probably, buried former A-Horizon stratum. Layer III was culturally sterile.

Table 2: Summary of Test Trench Stratigraphic Information.

| ST # | Lot # | Test Trench (LxW) | Depth (max.; (cmbs) | Stratigraphic Observations | Remarks |
|-------|-------|-------------------|---------------------|---|---|
| ST-1 | 4/4A | 4.6x1.0/1.2 | 220 | Four strata (Layers f-I-V) included one fill layer (Layer fI) underlain by a natural previously disturbed beach sand layer (LayerII), sand and mixed silty loam/peat gravel fill; commingled clay and silty sand; III (44-65 cmbs) disturbed natural beach sand; former A-horizon represented by a discontinuous approx. 3-5 cm thick band of diffuse dark grayish sand w/in in situ beach dune deposit | Pre-existing infrastructure (pipes, irrigation) observed in Layers f-I and II. Soda bottle base observed in Layer I fill stratum. Water table not encountered. No cultural features or materials were identified. |
| *ST-2 | 4/4A | 4.6x1.0 | 220 **(205) | Four strata (Layers f-I-IV) included one fill-soil layer (Layer f-I) underlain by three natural sediment layers (Layers II-IV), former A-horizon represented by a discontinuous approx. 3-5 cm thick band of diffuse dark grayish sand; <i>in situ</i> beach dune deposit | North wall abutted the main dwelling concrete foundation. Pre-existing infrastructure (6' asbestos [?] pipe) observed within Layers f-I and II. No significant cultural features or materials were identified. Water table not encountered. |
| ST-3 | 5/5A | 4.3x0.80/1.3 | 220 | Four strata (Layers f-I-IV) included one fill-soil layer (Layer f-I) underlain by, a buried former A-Horizon) (Layer III observed as discontinuous; one natural clay stratum (sediment/former A-horizon, represented by Layer IV stratum). | Infrastructure observed in Layers f-I and II. Water table not encountered. No cultural features or materials were identified. |

| ST # | Lot # | Test Trench (LxW) | Depth (max.; (cmbs) | Stratigraphic Observations | Remarks |
|-------|-------|-------------------|---------------------|---|---|
| *ST-4 | 5A | 4.6x0.80 | 218 | Four strata (Layers f-I-IV); sandy clay-loam fill (Layer f-I) underlain by mechanically affected beach sand (Layer II), sediment layer w/ abundant coconut roots (Layer III), and <i>in situ</i> dune stratum (Layer IV) | Discrete A-Horizon was not discernible in ST-4 Layer III; water table not encountered. No cultural features or materials were identified. |
| ST-5 | 5 | 4.5x0.90/1.3 | 230 | Four strata (Layers f-I-IV), one fill-soil layer (Layer f-I) underlain with sandy strata including previously disturbed beach sand layer (Layer II), and <i>in situ</i> dune sand to base of excavation. | Metal/pipe fragments observed in upper strata associated backfill; water table encountered at approx. at 135/138 cmbs. |
| ST-6 | 4 | 4.4x1.2 | 256 | Four strata (Layers f-I-IV); one clay fill-soil layer (Layer f-I) and two fill-soil lens inclusions underlain by previously disturbed beach sand layer (Layer II), former A-horizon (represented by Layer III) was observed within <i>in situ</i> dune sand stratum (Layer IV); Natural coralline sand lens also observed within Layer IV lower extent. | Metal/pipe fragments observed in upper associated fill stratum and two fill-soil lenses; water table encountered at approx. at 120 cmbs. |
| ST-7 | 5 | 4.5x1.2/1.7 | 215 | Four fill strata (Layers f-I-IV) (Layer III stratum; former A-horizon) observed in trench floor and base of excavated side walls. | Water table was encountered in base of excavation. No cultural features or materials were identified. |

| ST # | Lot # | Test Trench (LxW) | Depth (max.; (cmbs) | Stratigraphic Observations | Remarks |
|-------|-------|-------------------|---------------------|--|--|
| *ST-8 | 4 | 4.0x 1.1 | 238 | Four strata (Layers f-I-IV) including silty clay loam fill soil layer (Layer f-I) underlain by a previously disturbed beach sand layer (to base of excavation; top of probable natural clay deposit | Shallow modern irrigation trench feature observed in Layer f-I intruded Layer II. Coconut tree root-ball intruded Layers III and IV from Layer II; Layer III (possible A-Horizon) was indistinct due to surrounding disturbance. Water table was encountered in base of excavation. No significant cultural features or materials were identified. |
| ST-9 | 5 | 4.0x1.0 | 220 | Three strata (Layers f-I-III) included narrow fill stratum underlain by multiple stratified fill lenses, previously disturbed beach sand (Layer I); dune sand stratum, and former A-horizon not observed. | Water table observed rising from base of excavation approx. No cultural features or materials were identified. |
| ST-10 | 5 | 4.7x0.85/1.3 | 225 | Four strata (Layers f-I-IV); included one clay fill-soil layer (Layer f-1) including multiple mottled fill-soil lenses (sediment/former A-horizon, represented by Layer IV stratum). | Water table encountered at 163 cmbs; observed marshy sediment matrices contained flecks of carbonized organic material. No significant cultural features or materials identified. |
| ST-11 | 5 | 4.8x0.90/1.2 | 224 | Four strata (Layers f-I-IV) included one fill layer (Layer f-D); former A-Horizon) (Layer III observed as discontinuous; one natural clay stratum (sediment/former A-horizon, represented by Layer IV stratum). | Water table was observed rising from base of excavation. No cultural features or materials were identified. |
| ST-12 | 4 | 3.48x1.0/1.3 | 225 | Six strata (Layers f-I-fIII; IV-VI) included one fill-soil layer (f-I) underlain with sandy strata including previously disturbed beach sand layer (Layer II), and <i>in situ</i> dune sand to base of excavation. | Water table encountered at base of excavation. No cultural features or materials were identified. |

| ST # | Lot # | Test Trench (LxW) | Depth (max.; (cmbs) | Stratigraphic Observations | Remarks |
|--------|-------|-------------------|---------------------|--|---|
| ST-13 | 4 | 4.85x1.0 | 230 | Four strata (Layers f-I-IV) included one fill layer (Layer f-I); former A-Horizon) (Layer III observed as discontinuous; one natural clay stratum (sediment/former A-horizon, represented by Layer IV stratum). | Water table observed rising from base of excavation. No cultural features or materials were identified. |
| ST-14 | 4 | 4.7x0.90 | 235 | Four strata (Layers f-I-III) included one clay fill-soil layer (fI), underlain by sandy strata consisting of previously disturbed beach sand layer (Layer II), and <i>in situ</i> dune sand to base of excavation. | Water table was not encountered. No cultural features or materials were identified. |
| ST-15 | 4 | 4.4x0.70/1.28 | 250 | Four strata (Layers f-I-IV) included one clay fill-soil layer (f-I) underlain by sandy strata consisting of a previously disturbed beach sand layer (Layer II), and <i>in situ</i> dune sand to base of excavation. | Water table encountered. No cultural features or materials were identified. |
| *ST-16 | 4 | 4.4x0.80 | 225 | Four strata (Layers f-I-IV), and SSFE 1/1a anomalous sandy-soil pit ; strata included one clay fill-soil layer (f-I) underlain by sandy strata consisting of dark loamy sand lens, previously disturbed beach sand layer (Layer II), truncated A-Horizon (Layer III) and <i>in situ</i> dune sand to base of excavation. | SSFE. 1 appeared to originate in Layer f-1 and intruded Layers II and III. SSFE feature fill consisted of sandy clayey soil matrix originated from former A-Horizon layer. No significant cultural materials identified. Water table encountered. |
| ST-17 | 4 | 4.6x0.75 | 230 | Four strata (Layers f-I-IV), one clay fill-soil layer (f-I) underlain with sandy strata including previously disturbed beach sand layer (Layer II), and <i>in situ</i> dune sand to base | Water table encountered at 228 cmbs. No significant cultural features or materials were identified. |

| ST # | Lot # | Test Trench (LxW) | Depth (max.; (cmbs) | Stratigraphic Observations | Remarks |
|-------|-------|-------------------|---------------------|--|---|
| | | | | of excavation. | |
| ST-18 | 5 | 4.8x0.75 | 280 | Four strata (Layers f-I-IV), one fill-soil layer (f-I) underlain with sandy strata including previously disturbed beach sand layer (Layer II), and <i>in situ</i> dune sand to base of excavation. | Water table encountered at 275 cmbs. No significant cultural features or materials were identified. |
| ST-19 | 5 | 4.8x1.0/1.3 | 204 | Four strata (Layers f-I-IV), one fill-soil layer (f-I) underlain with sandy strata including previously disturbed beach sand layer (Layer II), and <i>in situ</i> dune sand to base of excavation. | Water table encountered at 206 cmbs. No significant cultural features or materials were identified. |
| ST-20 | 4 | 4.0x0.8/1.3 | 220 | Three Strata (Layers f-I-III); one fill-soil layer (f-I) underlain by previously disturbed sand layer (Layer II), and dune sand stratum (III/IV); A-Horizon (Layer III) not observed. | Water table encountered at 206 cmbs; No significant cultural features or materials were identified. |

*Representative Stratigraphic Profile

Table 3: Representative Project Area Stratigraphy, Typical Soils Sequence.

| Stratum/ Layers | Soil/Sediment Description | Interpretation |
|--------------------|---|---|
| f-1 | Brown to dark brown (10YR 3/4-6 and 5/3, dry) semi-compact, sandy, silty clay-loam with grass micro roots, and some gravel content; abrupt lower boundary | Modern Fill |
| f-2 | Light to dark gray (10YR 7/1 to 4/1, dry) mixed gravels and silty clay; abrupt lower boundary | Modern Fill |
| f-3 | White to light gray (10YR 7/2 and 2.5 Y 7/1 to 8/1, dry) compact coralline sand and crushed coral and gravels | |
| II | White (10YR 8/1, dry) loose, fine sand with some coconut tree roots; indistinct, wavy lower boundary | Previously disturbed natural sediment layer |
| III | Light Gray (10YR 7/1, dry) diffuse, loosely compact, semi humic fine sand; discrete, discontinuous sediment layer | Former A-Horizon |
| IV | Very pale brown (10YR 8/2, dry-moist) loosely compact, fine beach sand stratum | <i>In situ</i> dune sand deposit |

ST-2 NORTH WALL PROFILE

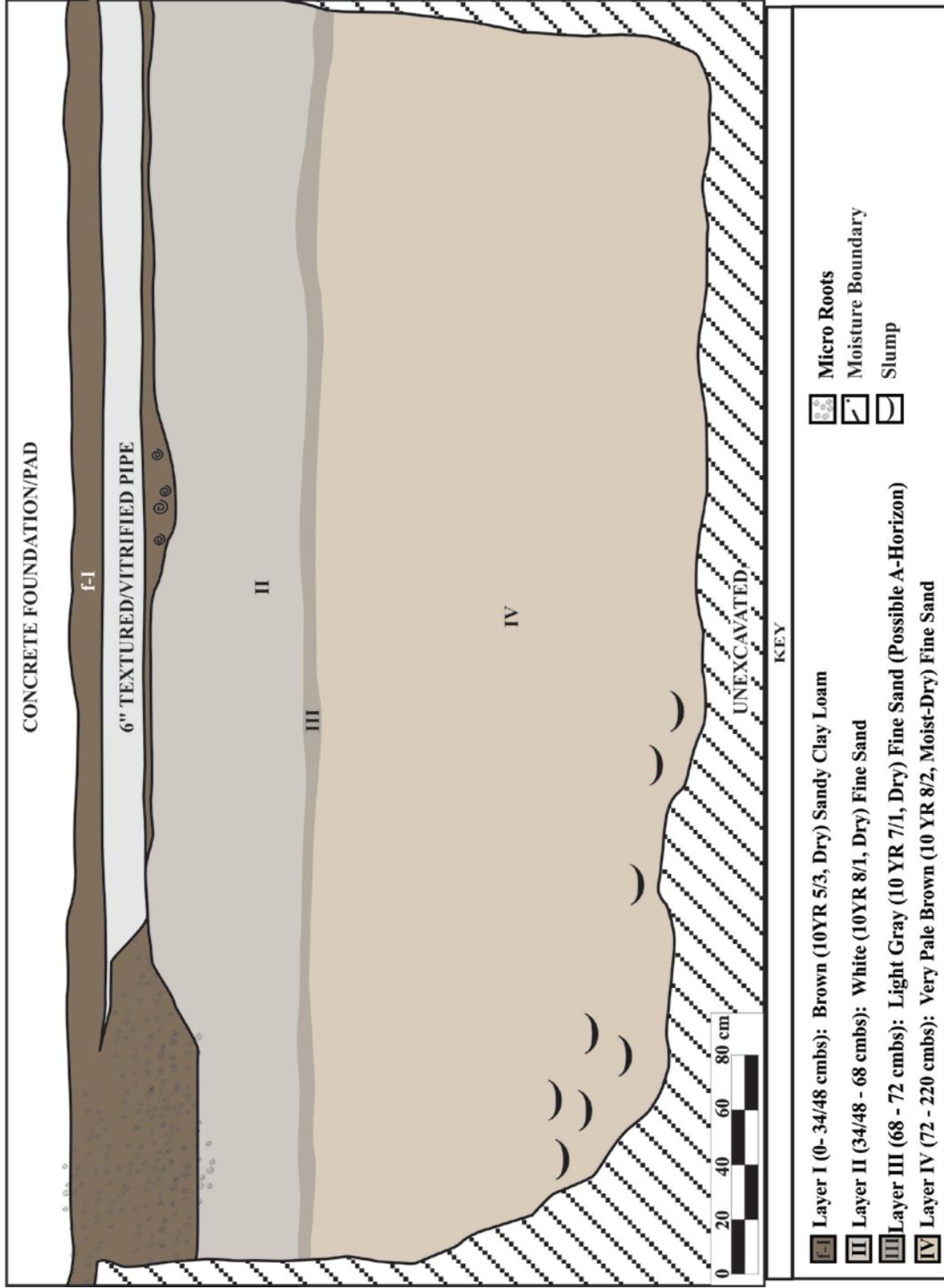


Figure 17: Stratigraphic Profile Illustration of ST-2 North Sidewall, Representative Stratigraphy as Observed within Portions of Lots 4/4A in the Project Parcel.



Figure 18: Photograph Depicting ST-2 North Wall Profile, Representative Stratigraphy within Lot 4/4A (Adjacent to the Former Main Dwelling Concrete Foundation Pad) of the Project Parcel.

Layer IV

Layer IV (72-220 cmbs) consisted of loose, very pale brown (10YR 8/2, dry) fine dune sand. The Layer IV Stratum upper boundary was indistinct. Layer IV is interpreted as a natural sediment deposit; no cultural material was observed in Layer IV.

TEST TRENCH 4 (ST-4)

Test Trench-4 (ST-4), 4.6 m long by 0.8 m wide and 2.18 m deep, and placed adjacent to the southwest edge of the main dwelling foundation remnant in Lot 5A of the project parcel, oriented East/West (see Figure 16). ST-4 contained four stratigraphic layers which are described below (Figures 19 and 20).

Layer f-I

Layer f-I (0-8/12 cmbs) consisted of semi-compact dark brown (10YR 3/3, dry) silty sand with grass roots. As the lower boundary was abrupt, Layer I was interpreted as local fill. Multiple red bricks and concrete bricks were observed in this layer but none showed diagnostic features so no bricks were collected.

Layer II

Layer II (8/12-32 cmbs) consisted of loose, white (10YR 8/1, dry) silty, fine beach sand with grass roots. Layer II was interpreted as the natural beach sand deposit, subject to previous disturbance. Layer II was observed in the plane of a concrete foundation slab. No archaeological features were observed.

Layer III

Layer III (32-80 cmbs) consisted of loose to loosely compact light gray (10YR 7/1, dry) humic sand and contained some coconut tree roots. This layer's lower boundary was diffuse, Layer III stratum was interpreted as a possible former A-Horizon with a diminishing organic content. Layer III was culturally sterile.

Layer IV

Layer IV (80-210 cmbs) consisted of loose, very pale brown (10YR 8/2, dry), fine beach sand. Layer IV was interpreted as a natural dune stratum. Layer IV was culturally sterile.

TEST TRENCH 8 (ST-8)

Test Trench-8 (ST-8), 4.0 m long by 1.1 m wide and 238 cm deep, was placed on the northwest side of the main dwelling foundation remnant, oriented Southwest-Northeast, in Lot 4 of the project parcel (see Figure 16). ST-8 contained four stratigraphic layers which are described below (Figures 21 and 22).

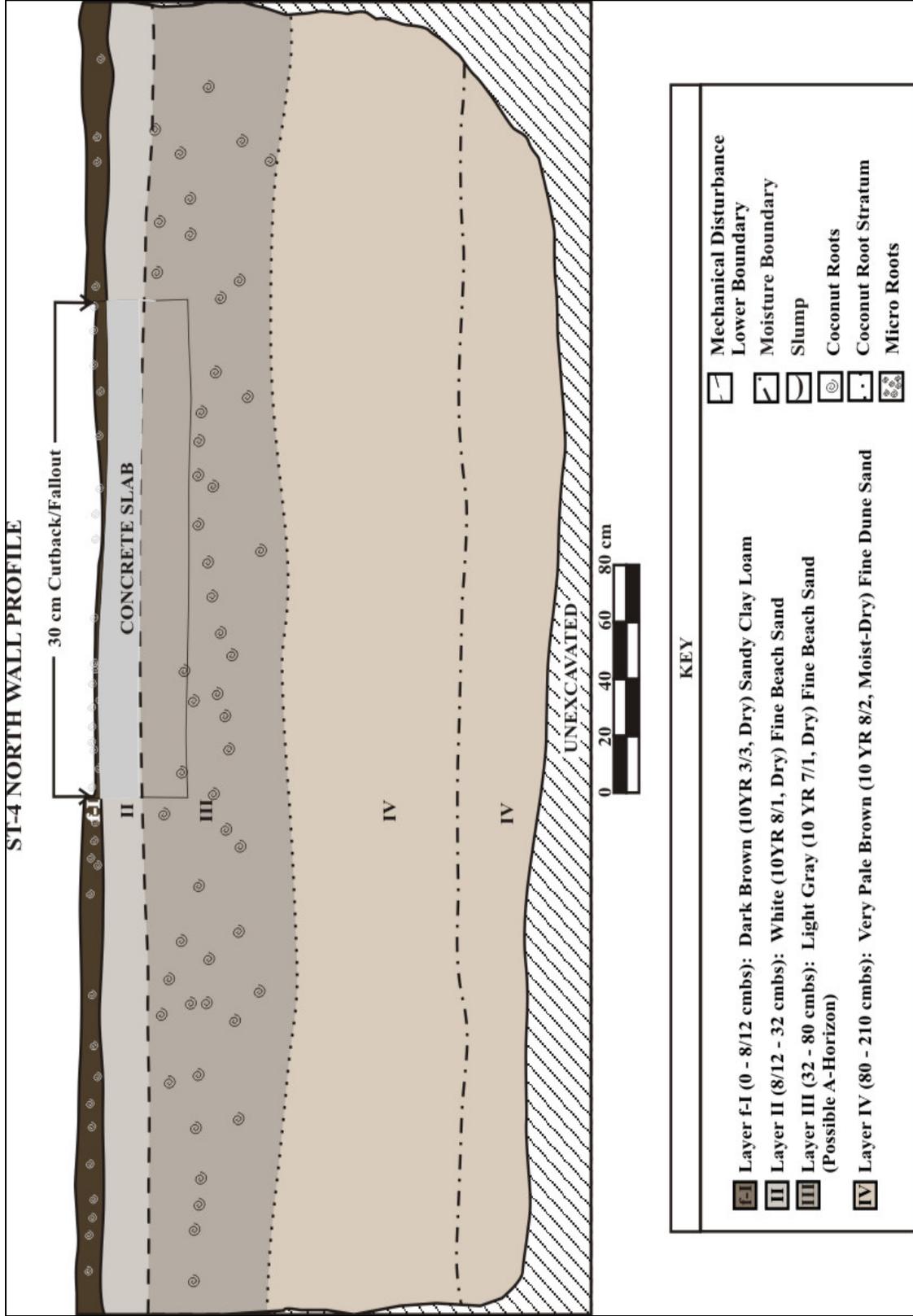


Figure 19: Stratigraphic Profile Illustration of ST-4 North Sidewall, Representative Stratigraphy as Observed within Portions of Lots 5/5A in the Project Parcel.



Figure 20: Photograph depicting ST-4 East/Northeast Sidewall, Representative Stratigraphy within Lot 5/5A in the Project Parcel.

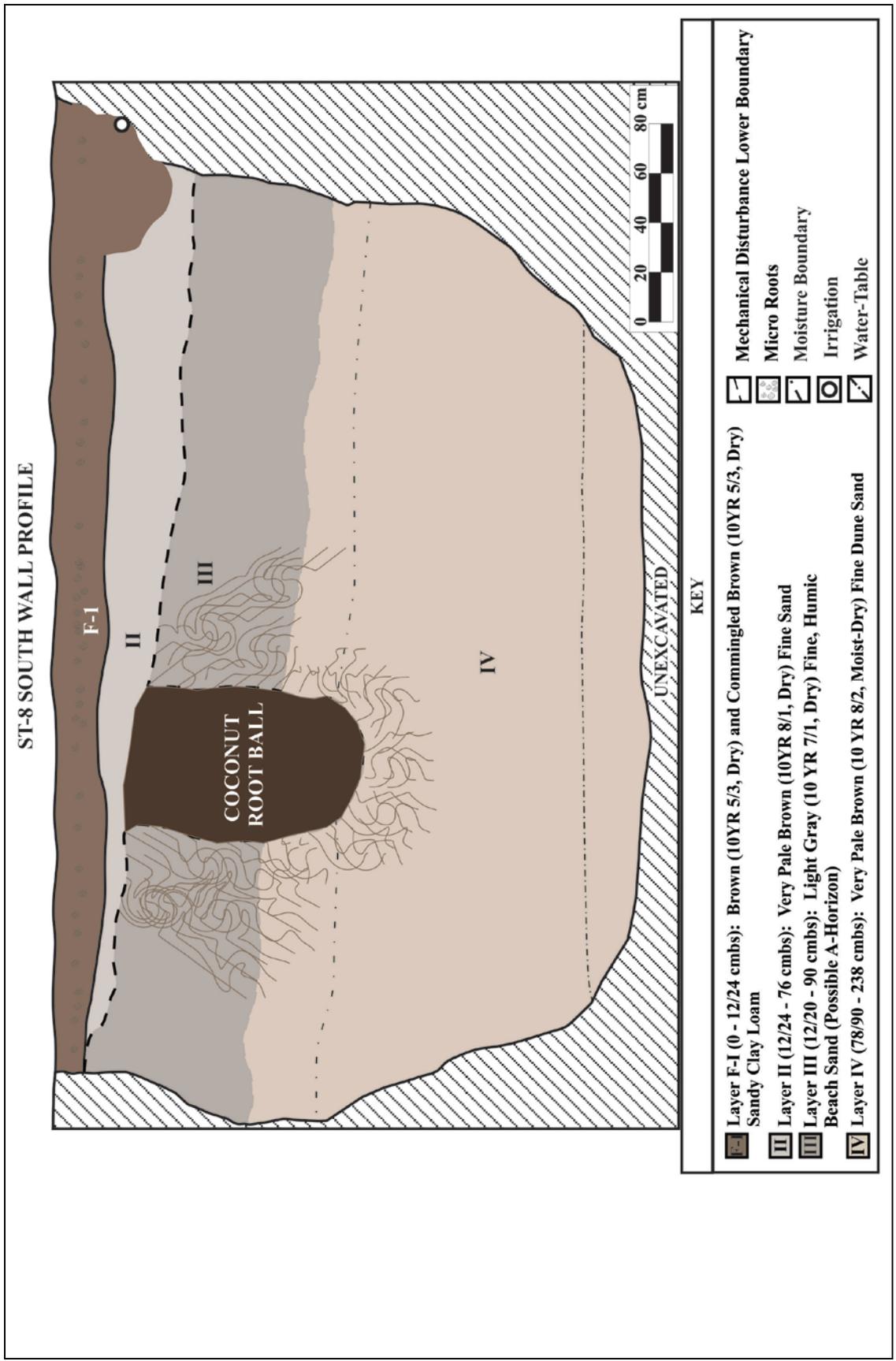


Figure 21: Stratigraphic Illustration of ST-8 South/Southwest Sidewall, Representative Stratigraphy as Observed within Lot 5 in the Project Parcel.



Figure 22: Photograph Depicting Representative Stratigraphy as observed in ST-8, within Lot 4 of the Project Parcel.

Layer f-I

Layer I (0-12/24 cmbs) consisted of semi-compact brown (10YR 5/3, dry) sandy clayey silt commingled with Brown (10YR 3/3, dry) sandy clay-loam, and contained grass roots. Cultural material observed in this layer included sections of white 1" PVC irrigation pipe, and fragmented ferrous metal. As the lower boundary was abrupt, Layer I was interpreted as imported fill.

Layer II

Layer II (12/24-76 cmbs) consisted of loose, very pale brown (10YR 8/1, dry) fine beach sand. Layer II was interpreted as a natural stratum. Layer II was culturally sterile. Excavation of ST-4 was terminated at 120 cmbs because the sidewall collapsed.

Layer III

Layer II (76-90 cmbs) consisted of loose light gray (10YR 7/1, dry), fine sand with and contained an elongated coconut root ball. As the layer's lower boundary was diffuse, Layer II was interpreted as a former A-Horizon. Layer II was culturally sterile.

Layer IV

Layer II (78/90-238 cmbs) consisted of loose, very pale brown (10YR 8/3, dry) sand. Layer III was interpreted as a natural stratum. Layer III was culturally sterile. Excavation of ST-10 was terminated at 190 cmbs because the sidewall collapsed.

TEST TRENCH 16 (ST-16)

Test Trench-16 (ST-16), 9.1 m long by 0.8 m wide and 225 cm deep, was placed in the north central portion of the project area, oriented north/south in Lot 4 of the project parcel (see Figure 16). ST-16 contained four stratigraphic layers, and an anomalous sand and soil pit feature which are described below (Figures 23 through 25).

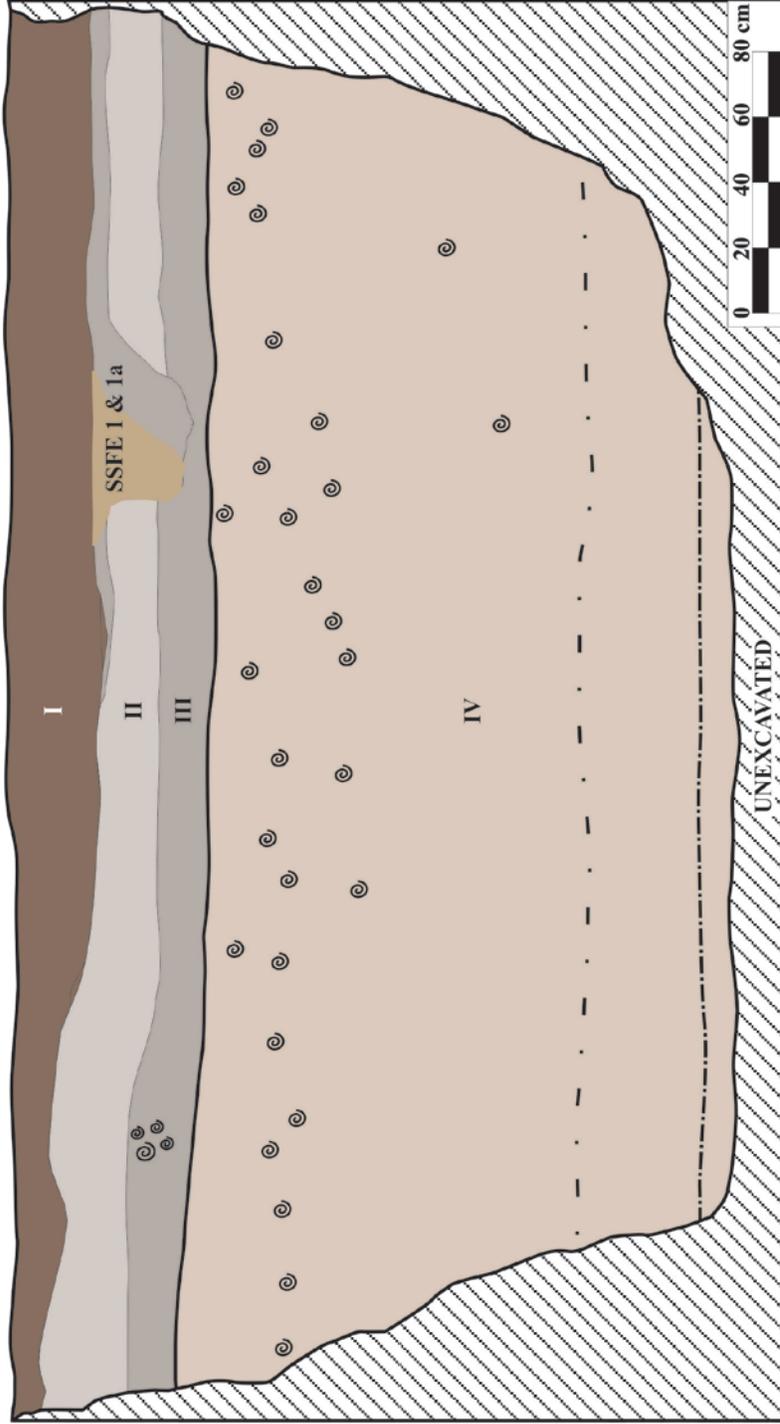
Layer I

Layer I (0-10/26 cmbs) consisted of semi-compact, brown (10YR 5/3, dry) sandy clay-loam with some grass rootlets. As the lower boundary was abrupt, Layer I was interpreted as imported fill. No cultural materials were observed.

Layer II

Layer II (10/26-60 cmbs) consisted of loosely compact, very pale brown (10YR 8/2, dry), fine beach sand. As the layer's lower boundary was diffuse, Layer II was interpreted as a natural stratum. Layer II was culturally sterile.

ST-16 WEST WALL PROFILE



KEY

| | | | |
|--|---|--|---------------------------------------|
| | Layer I (0 - 10/26 cmb): Brown (10YR 5/3, Dry) Sandy Clay Loam | | Mechanical Disturbance Lower Boundary |
| | Layer II (10/26 - 38/42 cmb): Very Pale Brown (10YR 8/1, Dry) Fine Sand | | Micro Roots |
| | Layer III (38/42 - 55/60 cmb): Light Gray (10 YR 7/1, Dry) Fine Sand (Probable A-Horizon) | | Moisture Boundary |
| | Layer IV (55/60 - 225 cmb): Very Pale Brown (10 YR 8/2, Moist-Dry) Fine Sand | | Slump |
| | SSFE 1a: Light Gray (10YR 7/1, Dry) Sand Lens | | |

Figure 23: Stratigraphic Illustration of ST-16 Profile, South Wall Representative Project Area Stratigraphy as Observed in Located within Lots 5.



Figure 24: Photograph Depicting Representative Stratigraphy as observed in ST-16 West Sidewall, within Lot 4 of the Project Parcel.



Figure 25: Photograph Depicting SSFE, 1 and 1a, Sandy Soil Pit and narrow Sand Lens, and Discrete Buried Former A-Horizon in ST-16 West Sidewall.

Layer III

Layer III (60-80 cmbs) consisted of loosely compact, light gray (10YR 7/1, dry) humic sand with tree rootlts. The Layer III stratum appeared as discrete, clear and abrupt upper and lower boundaries. No cultural material was observed in Layer III. Based on the layer's loamy content and diffuse lower boundary, Layer III was interpreted as a natural former A-Horizon.

Layer IV

Layer IV (80-225 cmbs) consisted of loose, light gray (10YR 8/3, dry) sand. Layer IV was interpreted as a natural stratum. Layer IV was culturally sterile. Excavation of ST-16 was terminated at 225 cmbs at water-table.

Layer II

Layer II (20-160 cmbs) consisted of loose, very pale brown (10YR 8/3, dry) sand. Layer II was interpreted as a natural stratum. Layer II was culturally sterile. Excavation of ST-7 was terminated at 160 cmbs because the sidewall collapsed.

Subsurface Feature (SSFE) 1&1a

An indiscrete sand lens (SSFE 1a) and associated soil pit (SSFE 1) was observed in the north half of ST-16 west side-wall at a depth between roughly 25-50 cmbs (see Figures 23 and 25). SSFE 1a was observed as a quite narrow, tapered sand lens that consisted of humic sand matrix, light gray (10YR 7/1, dry) in color and diffuse with pale brown beach sand mottles. The lens may have represented a more substantive deposit as it appeared to have been horizontally truncated by the overlying clay-fill layer. In association, SSFE 1 was observed as an elongated pit intruding the Layer II beach sand stratum and Layer III buried former A-Horizon. SSFE 1 consisted of grayish brown (10YR 7/4, dry) loamy, clayey sand matrices that originated from SSFE 1a. Soil samples collected from both feature components did not yield any cultural materials or artifacts.

BURIED A-HORIZON

A buried former A-Horizon was identified in test trenches ST-1 through 3, ST-6, and ST-15 through ST-18 (see Figures 17 through 25; and Appendix C). No cultural material was identified in this layer in any of the eleven trenches. Where identified, the A-Horizon layer appeared discretely in the intact dune sand stratum, and moreover, was strongest in the north/northeast portions of the project area. The former A-Horizon was typically identified as Layer III within the *in situ* sand stratum underlying the mechanically affected sand layer. This

layer was not continuous; and no buried former A-Horizon layer was discernable in test trenches ST-4, ST-5, ST-7 through ST-14, and ST-19 and ST-20. Beach sand sediment deposits included juxtaposed strata of a previously disturbed beach sand layer and *in situ* dune deposit. The boundary of disturbance in the natural strata was marked in some areas by what appeared to be a former A-horizon observed as a discontinuous darker diffuse band of sand.

ARTIFACTUAL MATERIALS

Artifacts and/or cultural materials identified in the project area and suspected as potentially historic in origin were collected (Appendix D). The majority of materials/artifacts collected were identified in surface contexts and included porcelain fragments, and bottle glass. Bottle glass was also identified and collected from excavated backfill associated mixed fills and the previously disturbed natural deposit in ST-3 and ST-10. Material analysis of bottle glass collected from backfill material excavated at Test Trench ST-9, determined the glass dated to the early 20th century historic era, indicated by a manufacturer stamp on the bottle base fragment. The glass fragments comprised the remnants an intact bottle impacted by the mechanical excavation. The bottle fragments were in isolated context identified in backfill material associated with fill-soil lenses, at roughly 30-40 cmbs. No additional historic materials were identified

CONCLUSIONS AND RECOMMENDATIONS

The current archaeological survey study was conducted at beachfront properties in TMK (1) 3-5-005:016 comprising a project area of 1.34-Acre total. Based on the historic use of the project area as well as the results of previous archaeological studies in the vicinity of the project area, it was determined that potential site types in the project area might include pre-Contact or Historic habitation features related to the sites location on the shoreline, and that there was a high probability that burials might be found during excavations in the project area.

While the pedestrian survey and subsurface testing revealed three modern structures associated with modern habitation, no cultural or historic sites or features were identified in the project area. A discontinuous buried former A-Horizon was present in four of the ten test trenches, but no cultural material was discovered in this layer in any of the four test trenches. With the exception of a single ceramic insulator whose provenance could not be determined, all of the cultural material identified during the subsurface testing was confined to modern rubbish

(wire, plastic bags, glass sherd and ceramic sherd) and modern construction debris (PVC pipe sections, red brick, concrete bricks, and fragments of red brick). One sub-adult faunal bone was identified in a layer of fill.

Although no cultural or historic sites were identified during the current survey and subsurface testing, Archaeological Monitoring is recommended for future ground disturbance in the project area, given the findings of previous archaeological work documented in the area (*e.g.*, human burials and cultural deposits).

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APPENDIX A: HAR §13-276

DEPARTMENT OF LAND AND NATURAL RESOURCES

Adoption of Chapter 13-276
Hawaii Administrative Rules

October 31, 2002

SUMMARY

Chapter 13-276, Hawaii Administrative Rules,
entitled "Rules Governing Standards for Archaeological
Inventory Surveys and Reports", is adopted.

HAWAII ADMINISTRATIVE RULES

TITLE 13

DEPARTMENT OF LAND AND NATURAL RESOURCES

SUBTITLE 13

STATE HISTORIC PRESERVATION DIVISION RULES

CHAPTER 276

RULES GOVERNING STANDARDS FOR ARCHAEOLOGICAL INVENTORY
SURVEYS AND REPORTS

| | |
|-----------|---|
| §13-276-1 | Policy and purpose |
| §13-276-2 | Definitions |
| §13-276-3 | Archaeological inventory survey, generally |
| §13-276-4 | Archaeological field survey |
| §13-276-5 | Archaeological inventory survey report |
| §13-276-6 | Final disposition of collections |
| §13-276-7 | Significance assessments |
| §13-276-8 | Recommendations |
| §13-276-9 | Penalty |

§13-276-1 Policy and purpose. This chapter establishes standards for archaeological inventory surveys and reports required by chapters 13-275 and 13-284 for the historic preservation review process. [Eff] (Auth: HRS §6E-3) (Imp: HRS §§6E-1, 6E-3, 6E-7, 6E-8, 6E-42)

§13-276-2 Definitions. As used in this chapter unless the context requires otherwise:

"Ahupua`a" means a traditional Hawaiian land division usually extending from the mountain to the sea.

"Archaeological inventory survey" means the process of identifying and documenting the archaeological historic properties and burial sites in a delineated area, gathering sufficient information to evaluate significance of the historic properties and burial sites, and compiling the information into a

written report for review and acceptance by the department.

"Burial site" means any specific unmarked location where prehistoric or historic human skeletal remains and their associated burial goods if any, are interred, and its immediate surrounding archaeological context, including any associated surface or subsurface features, deemed a unique class of historic property, and not otherwise included in section 6E-41, HRS.

"Consultation process" means notifying interested organizations and individuals that a project could affect historic properties of interest to them; seeking their views on the identification, significance evaluations, and mitigation treatment of these properties; and considering their views in a good faith and appropriate manner during the review process.

"Department" or "DLNR" means the state department of land and natural resources.

"Historic preservation review process" means the process specified in chapters 13-275 and 13-284, used to comply with sections 6E-7, 6E-8 and 6E-42, HRS.

"Historic property" means any building, structure, object, district, area, or site, including heiau and underwater site, which is over fifty years old.

"Person" means any individual, firm, association, agency, organization, partnership, estate, trust, corporation, company, or governmental unit that is proposing a project.

"Project" means any activity directly undertaken by the state or its political subdivisions or supported in whole or in part through appropriations, contracts, grants, subsidies, loans, or other forms of funding assistance from the state or its political subdivisions or involving any lease, permit, license, certificate, land use change, or other entitlement for use issued by the state or its political subdivisions.

"Project area" means the area the proposed project may potentially affect, either directly or indirectly. It includes not only the area where the project will take place, but also the proposed project's area of potential effect.

"State historic preservation division" or "SHPD" means the state historic preservation division within the state department of land and natural resources.

[Eff] (Auth: HRS §§6E-2, 6E-3, 6E-7, 6E-8, 6E-42) (Imp: HRS §§6E-1, 6E-3, 6E-7, 6E-8, 6E-42)

§13-276-3 Archaeological inventory survey, generally. An archaeological inventory survey shall:

- (1) Determine if archaeological historic properties are present in the project area and, if so, identify all such historic properties.
- (2) Gather sufficient information to evaluate each historic property's significance in accordance with the significance criteria listed in subsection 13-275-6(b).
[Eff: _____] (Auth: HRS §6E-3)
(Imp: HRS §§6E-1, 6E-3, 6E-7, 6E-8, 6E-42)

§13-276-4 Archaeological field survey. (a) Portions of the project area that have no adequate inventory survey reports prepared for them shall undergo archaeological inventory survey to determine whether archaeological historic properties are present and, if so, to present their description, interpretation, and location. The entire surface of the project area shall be visually inspected, and any proposed deviations from this level of inspection shall be approved by SHPD prior to implementation.

(b) The presence or absence of subsurface sites shall be evaluated for areas which have no visible historic properties. This evaluation shall include findings of test excavations, if deemed necessary by the department, or a conclusion, with supportive documentation, that historic properties are not anticipated to be present.

(c) Test excavations shall be undertaken on historic properties, or features of properties, that have several possible alternative functions based on surface examination to provide additional information that might help to resolve the question of property or feature function. Recordation of such excavations and any necessary laboratory analysis of recovered materials shall be undertaken as part of the archaeological inventory survey. If human skeletal remains are found, they shall not be disturbed, excavations shall be backfilled, and SHPD notified as soon as possible. Archaeological historic properties, or features of properties, that are highly probable to be burials based on surface examination shall not undergo test excavation without authorization from the department.

§13-276-4

(d) If 100% of the proposed project's surface area is not inventoried, sampling strategies need prior approval from the department. [Eff] (Auth: HRS §6E-3) (Imp: HRS §§6E-1, 6E-3, 6E-7, 6E-8, 6E-42)

§13-276-5 Archaeological inventory survey report.

(a) An archaeological inventory survey report shall be prepared to record and synthesize the data gathered from background research, field survey and consultation process with knowledgeable individuals. The report shall include:

- (1) Identification of the survey area:
 - (A) On a 1:24000 scale United States Geological Survey quadrangle map, or on a portion or an enlargement of a portion of this map; and
 - (B) In the text, stating the island, district and ahupua`a of the area and the tax map key (TMK) and acreage of the parcel.
- (2) Identification of the owner or owners of the parcel; and
- (3) A description of the environment, to include:
 - (A) Topography (including general elevations, distance inland, and general terrain patterns);
 - (B) Vegetation;
 - (C) Geology and soils;
 - (D) Climate, including rainfall; and
 - (E) Hydrology.

(b) The report shall contain a section on background research which shall be used to predict the kinds and distributions of historic properties that might still be present and to provide a context for understanding and evaluating the significance of any historic properties that are found. The background section of the report shall include:

- (1) Historic background information, which shall:
 - (A) Present findings on land use and site patterns for the project area and either ahupua`a or other appropriate areas as determined in consultation with the SHPD for:
 - (i) Prehistoric and early historic times, as revealed by any

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- eighteenth or nineteenth century literature on Hawaii;
 - (ii) 1848-1851 times, as indicated by land commission awards; and
 - (iii) Post-1850 times as revealed in later literature or through oral history.
 - (B) Provide a summary of documents and materials reviewed during the research; and
 - (C) Indicate:
 - (i) Whether any land commission awards were granted within the project area and within either the ahupua`a in which the project area is located or other appropriate areas as determined in consultation with SHPD; and
 - (ii) If awards were granted within the ahupua`a or other appropriate areas as determined in consultation with SHPD, specify the number of these awards, their LCA number, the use of each plot or apana awarded, and locate the awards on a map whenever possible.
- (2) Archaeological background information, which shall review any relevant prior archaeological studies in the project area and in either the ahupua`a in which the project is located or other relevant areas as determined in consultation with SHPD. At a minimum, the SHPD library shall be consulted for prior studies. If no studies exist, the archaeological inventory survey report shall so state this fact. If studies exist, the findings shall be summarized. This summary shall include:
 - (A) The areal extent of the prior survey coverage indicated on a map;
 - (B) A synthesis and analysis of information on the project area and its related lands' chronology, function and land use patterns, reconciling, as needed, the historical and archaeological information; and

- (C) Predictions as to types of sites expected to be encountered during field survey.
- (3) If an inventory plan was submitted to, and approved by, the SHPD, the information in this section may be omitted from the inventory report.
- (c) The report shall contain a section on methods used in the archaeological field survey which shall include:
 - (1) The names and qualifications of the principal investigator;
 - (2) The number of field personnel, the dates when the survey was performed and the duration of time for the survey;
 - (3) The extent of survey coverage. If the coverage was less than one hundred percent, the rationale for the sample (the sampling design) must be presented in a careful discussion. Sampling designs which included analysis of possible subsurface sites under sand dunes, urban fill, and other areas must also be presented here;
 - (4) A discussion of any factors which limited the survey effort;
 - (5) The techniques used to identify archaeological properties (transects, sweeps, test excavations, augering, etc.);
 - (6) The extent of historic property recording (mapping, measuring, photographing, test excavations) and the techniques used, with the rationale for these techniques given;
 - (7) The method used to plot site location; and
 - (8) The method used to determine a site and its boundaries.
- (d) The report shall contain a section on its archaeological field survey and laboratory findings. Each archaeological property found shall be individually described as follows:
 - (1) A state inventory number and any previous numbers;
 - (2) A reference to a previous study, if the property has been previously recorded;
 - (3) The property's formal type (e.g., C-shaped enclosure, platform, enclosure, wall, paving, etc.). If it has several major features, then each of these should be noted (e.g., 3

- C-shaped enclosures, 1 platform, 4 stone cairns); and
- (4) A description of each property, to include:
 - (A) Size, horizontal extent;
 - (B) Shape, materials, methods of construction, and area of the major feature or features with representative architectural heights and widths, etc., (in metrics);
 - (C) The presence or absence of surface remains (artifacts, midden, debris, etc.), and if present, the general nature of these remains and their density and distribution;
 - (D) The presence or absence of any subsurface deposits, and if present, an assessment of the general depth and nature of the deposits. If test excavations, augering, etc., occurred, these results must be presented here and shall include stratigraphic information with:
 - (i) Standard U.S.D.A. soil descriptions (with Munsell colors); and
 - (ii) Stratigraphic profile drawings, to scale, that include observed surface and subsurface features. When appropriate, representative line-drawn profiles, to scale, of test excavations not through surface architecture may be used where no subsurface features are visible in the excavation side walls;
 - (E) Representative photographs, illustrations, or both;
 - (F) Drafted plan map to scale, which shall include major features, and location and shape of internal features such as firepits, cupboards, midden deposits, a bar scale, north arrow, and indicate in the text the method used (e.g., tape and compass or type of instrument mapping);
 - (G) The integrity of the site;
 - (H) An assessment of site function or functions, with reasonable and adequate supportive arguments. The character of

- habitation sites shall be clearly interpreted;
- (I) An assessment of site age, with absolute dating results when available; and
 - (J) An evaluation of site significance.
- (e) The report shall document, describe, and graphically display any previous land disturbances (e.g., bulldozing, grubbing by machine, or sugarcane cultivation) identified during the survey.
- (f) The report shall contain a summary of the findings, to include, but not be restricted to:
- (1) Total number of archaeological sites found;
 - (2) A map or maps locating all the archaeological properties found and, if practical, their boundaries, with at least one site location map being a portion of the relevant United States Geological Survey standard 1:24,000 topographic map;
 - (3) A table presenting the sites with their state number, formal type, and possible function listed;
 - (4) If multiple archaeological sites within a major functional type (such as religious, burial, permanent habitation, and temporary habitation site types) are found, summaries of each type shall occur;
 - (5) A re-evaluation of ideas on the history of land use in the ahupua`a and the parcel; and
 - (6) In cases where more than five sites are present within a major functional type, the summary of the functional type shall include:
 - (A) A table which itemizes for each site and its relevant constituent structures the key variables used to determine the function (e.g., form, area); and
 - (B) A map showing the distribution of the sites within that functional type.
- (g) The report shall contain information on the consultation process with individuals knowledgeable about the project area's history, if discussions with the SHPD, background research or public input indicate a need to consult with knowledgeable individuals.
- (1) Information shall include:
 - (A) Personnel conducting the consultation process, with names and qualifications;
 - (B) Methods of identifying and contacting knowledgeable persons;

- (C) Names of knowledgeable persons consulted, or, if the person wishes to remain anonymous, a characterization of the person; and
 - (D) A summary as to whether additional archaeological historic properties were identified during the consultation process, and whether additional information on archaeological site function was obtained during the consultation process;
- (2) Should additional information on site function be obtained, that information shall be presented in the site description portion of the report;
 - (3) Consult SHPD guidelines on ethnographic surveys and reports for assistance in preparing findings from the consultation process; and
 - (4) If an inventory plan was submitted to, and approved by, the SHPD, the information in this section may be omitted from the inventory report. [Eff]
(Auth: HRS §6E-3) (Imp: HRS §§6E-1, 6E-3, 6E-7, 6E-8, 6E-42)

§13-276-6 Final disposition of collections.

(a) All collections, excluding human remains and grave goods, from public lands shall be placed in an acceptable archive to be designated by the SHPD. Arrangements shall be made with private landowners on the disposition of collections from their lands. If private landowners request archiving of material, then the archive shall be determined in consultation with the SHPD.

(b) In the event human skeletal remains are recovered during survey, final treatment of any such remains and associated grave goods shall follow the procedures of section 6E-43, HRS. [Eff]
(Auth: HRS §§6E-3, 6E-43) (Imp: HRS §§6E-1, 6E-3, 6E-6, 6E-7, 6E-8, 6E-42, 6E-43)

§13-276-7 Significance assessments.

Significance evaluations shall be included in the survey report. They shall be included at the end of each site description and in a separate section of the report,

§13-276-7

which shall be labeled "Significance Assessments" and shall include a summary table listing all sites and their significance. [Eff] (Auth: HRS §6E-3) (Imp: HRS §§6E-1, 6E-3, 6E-7, 6E-8, 6E-42)

§13-276-8 Recommendations. Recommendations such as mitigation commitments shall be included in the survey report. They shall be included in the summary table listing all the sites and their significance. [Eff] (Auth: HRS §6E-3) (Imp: HRS §§6E-1, 6E-3, 6E-7, 6E-8, 6E-42)

§13-276-9 Penalty. Non-compliance with the provisions and procedures established by this chapter shall result in a directive to the person not to proceed with project ground alteration, a denial or revocation of SHPD written concurrence or agreement, and shall also be penalized as provided in section 6E-11, HRS, and applicable laws. [Eff] (Auth: HRS §6E-3) (Imp: HRS §§6E-1, 6E-3, 6E-7, 6E-8, 6E-11)

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DEPARTMENT OF LAND AND NATURAL RESOURCES

Chapter 13-276, Hawaii Administrative Rules, on the Summary Page dated October 31, 2002, was adopted November 15, 2002, following public hearings held on the islands of Kauai on August 20, 2002, Hawaii on August 21 and 22, 2002, Maui on August 26, 2002, Molokai on August 27, 2002, Oahu on August 28, 2002, and Lanai on August 29, 2002, after public notice was given in the Honolulu Star Bulletin, Hawaii Tribune Herald, West Hawaii Today, Maui News, and the Garden Isle on July 21, 2002.

The adoption of chapter 13-276 shall take effect ten days after filing with the Office of the Lieutenant Governor.

Peter T. Young,
Chairperson
Board of Land and Natural
Resources

Approved:

Linda Lingle, Governor
State of Hawaii

Dated: _____

APPROVED AS TO FORM:

Deputy Attorney General

Filed

276-11

APPENDIX B: LCA DOCUMENTATION



Document Delivery

Mahele Database Documents

Number: 00228

Claim Number: **00228**
 Claimant: **Kalaiheana**
 Other claimant:
 Other name:
 Island: **Oahu**
 District: **Kona**
 Ahupuaa: **Waikiki, Manoa, Kahla**
 Ili: **Pahoa, Helumoa, Kanewai**

| | | | |
|-----------------|----------|--------------------------|------------------------------|
| Apana: | 5 | Awarded: | 1 |
| Loi: | 1 | FR: | 150v1 |
| Plus: | + | NR: | 1v2 |
| Mala Taro: | 0 | FT: | 163,164v1 |
| Kula: | 0 | NT: | 268,271v2 |
| House lot: | 1 | RP: | 7720, 7721, 7722,7723 |
| Kihapai/Pakanu: | 0 | Number of Royal Patents: | 4 |
| Salt lands: | 0 | Koele/Poalima: | No |
| Wauke: | 0 | Loko: | No |
| Olonā: | 0 | Lokoia: | No |
| Noni: | 0 | Fishing Rights: | No |
| Hala: | 0 | Sea/Shore/Dunes: | No |
| Sweet Potatoes: | 0 | Auwai/Ditch: | No |
| Irish Potatoes: | 0 | Other Edifice: | No |
| Bananas: | 0 | Spring/Well: | No |
| Breadfruit: | 0 | Pigpen: | No |
| Coconut: | 1 | Road/Path: | Yes |

| | | | |
|---------------------|----|-----------------------|-----|
| Coffee: | 0 | Burial/Graveyard: | No |
| Oranges: | 0 | Wall/Fence: | Yes |
| Bitter Melon/Gourd: | 0 | Stream/Muliwai/River: | No |
| Sugar Cane: | 0 | Pali: | No |
| Tobacco: | 0 | Disease: | No |
| Koa/Kou Trees: | 0 | Claimant Died: | No |
| Other Plants: | 0 | Other Trees: | 0 |
| Other Mammals: | No | Miscellaneous: | |

**No. 228, [Kalaiheana], Ii, claimant
F.R. 150v1**

1 document in Native Register, page 1, volume 2

N.R. 1-3v2

No. 228, [Kalaiheana], John Ii for Kalaiheana

Greetings to the Commissioners whom the Moi has appointed to quiet land titles: I, the undersigned hereby state that Kalaiheana's land, called Kanewai, is at Waikiki. It has some leles in Manoa - Keapuapu, Holoawalu /Kaloalu in N.T./, Pakui, and the lele of Pahoa at Waikiki; and the sea of Kahala. That was the land of Keeaumoku at Waikiki, adjoining the north side of Kalaepohaku. This land became his upon the victory of Kamehameha I at the Battle of Nuuanu, also Waialua, as was the custom of granting land to chiefs at that time. When the peleleu /fleet of large canoes/ came, the land passed from Keeaumoku to Papa and Kalaiheana, and all the leles were also conveyed. From thence came this acquisition and there was no deterrent until the year 1841. For the first time, an edge of Kahala as taken for Waialae. And in the year 1846 another portion was taken for Kalaepohaku, in the month of May, or perhaps June. The witnesses are Keheana and Eleele. This is ended.

Also, there is the coconut grove of Heleumoa at Waikiki. It is said that perhaps two years after /the Battle of/ Nuuanu, it went to some of us, to Kalaiheana, from Kamehameha I. No one objected until the year 1846, in the month of May or June, when it as taken for the first time. The witnesses are Kapuakaona and Ku.

Since Kalaiheana has chosen me has his representative, therefore I am making this request to you, the Land Commissioners.

I am, your servant,
John Ii

To: W. R., J. R., Y. K., K, Royal School, August 14, 1846

F.T. 162-163v1

Claim No. 228, John Ii, attorney, Kalaiheana, claimant, August 30 [1847]

Ku testified on oath, He knows the land in this case. It is at Waititi, its name is Helumoa. It is cocoa nut land. Witness knows the boundaries.

Kalaukau is the name of the land, east
Keamoku that on the North
On the West is the old road leading from Honolulu
On the South is a stream called Apukokohau.

Claimant holds the land from Kamehameha I who gave it to Kaileo, he gave it to Papa, he willed it when he died to Keawikalohi, and he gave it to the claimant.

No person has claimed the land from the first-named person down until 1846. It came into claimant's hands in the time of Rihoriho. Kuluwilehua is the counter claimant.

John Ii, testified on oath, that he knows the place, and that the persons already named were those who were living under Kamehameha, who had particular care of his household property and were known by the chiefs as such. Kamehameha himself lived on this land; & when he died, he left them in possession.

The chiefs went with Kamehameha to Hawaii & were there when he died, but their families remained. When Rihoriho came to the government he allowed them to remain.

After Kamehameha's death, the chiefs returned. Rihoriho fixed his residence on the same spot. So it has been through the reign of Kamehameha II & Kaahumanu, and has been left all along in possession of this class of people. Those living on the land are under claimant; six in number with own houses.

Kuluwailehua, stated that he founds his claim on his mother, a regular claim from Kamehameha, Rihoriho, Kaahumanu &c, through his mother's ancestors to himself. In 1842 he was living under Kekuanaoa, then the land became Kekuanaoa's and witness lived on it. It became Kekuanaoa's from Kekauluohi who had it from the King. In 1842 and 1843 this land was returned to witness and he lived under the King on it.

Witness relies on 7 Sec. 3 Chapter of laws of 1839, page 27. There are two divisions of this land; one of cocoa nut trees & the other of kalo. The former piece has been taken off and constitutes the claim of Kalaiheana, and ought to be returned, according to the law cited. It was one land formerly, but Kamehameha 1 divided it, and gave it to Kalaiheana's ancestors.

Note. In another clause of those laws cited, the one referred to is restricted in its operation to the space of 6 months from the time of enactment.

The Board voted unanimously a freehold less than allodial to Kalaiheana for the part claimed and occupied by him and rejected the counter claim of Kuluwailehua.

Resumed page 164

F.T. 164-165v1

Claim No. 228, John Ii for Kalaiheana from page 162. September 1847

Claim No. 2 under 228. Eleele testified on oath that he knows the place which is at Waikiki. Kanawai is its name. It borders on the sea, which enters part of it.

On South & East is land of Kalaipohaku
On Northeast & North is land of Waihi
From Northwest & West round is Piliamo
On West Keokapu has land.

This land belonged to Keaumoku, father of Kaahumanu. The land was taken in possession by him under Kamehameha I when the last battle was fought in Nuuanu. Another land at Waialua was also given him at the same time. When Kaumoku obtained it was in 1804. Claimant is his descendant. At that time it extended farther in the sea than now. The family has been in constant possession ever since & have never lived away from it since 1804. Witness is not related to the family.

Kaeana, testified on oath, that he knows the land & confirmed the general deposition of the former witness. He stated that Keapuapu, Pakui, Koloahu, Kaiokahala, Komolipo, Papaa were all living on the land or outside of it, and are members of the family, and live under claimant.

A freehold title less than allodial was voted by the Board to Kalaiheana.

N.T. 268v2

No. 228, John Ii [for Kalaiheana], Honolulu, August 30, 1847

Ku, sworn by the Word of God and stated. I have seen the property of Kalaiheana named Helumoa, it is a coconut grove and the boundaries are Keonuku on the right, Kaluaohau on the east, the river Apuakohau on the south and the old road to Honolulu here is on the west side. Kailio had received his interest from Kamehameha I; from Kailio to Papa; Papa to Keawekalohe and from Keawekalohe to Kalaiheana. Kalaiheana has lived there from the long ago to the year 1846 when Kuluwailehua had objected to him.

John Ii, sworn by the Word of God and stated, I have seen this land and these names which are written in this claim document are the attendants of Kamehameha I. Their work was taking care of the house and preparing the food. These people were in constant contact with the chiefs and were close to each and every chief. When Kamehameha I died, they continued to live on the property and when the chief returned from Hawaii Kalaiheana went to live there. These people have lived there since Kamehameha II to Kaahumanu's reign, and to the year 1846 when Kuluwailehua had raised objections.

See page 271

Kuluwailehua's statement of objection to Kalaiheana. The interest to this land is for my parents who had lived (there) from Kamehameha I to Kaahumanu's reign. When my parents died in the year 1842, the land was taken by M. Kekuanaoa and I lived under him. Kekuanaoa had received his interest from Kekauluohi and Kekauluohi had received her interest from the king. In the year 1843 the land had become mine thro'

the king and when I had looked (read) the Kuluwailehua's statement concerning borders, I realized that a border of my land had become Kalaiheana's property so I took that coconut grove because that is a border for Pahoa.

N.T. 271v2

No. 228, John Ii, [for Kalaiheana], From page 267

Eleele, sworn by the Word of God and stated, I have seen this land Kanewai by name in Waikiki, also the taro and the sea of Kahala. The boundaries are Waihi from the north to the east, Kalaepohaku on the east and the south sides and Palimoo and Kiokapu on the west side. That land is for Keeumoku I. He is the father of Kaahumanu and Keeumoku had received that land at the time of the battle of Nuuanu. Waihi at Waialua is another land. During the expansion, this land was given to Kalaiheana in the year 1804 and he has lived there since that time to this, no one has objected.

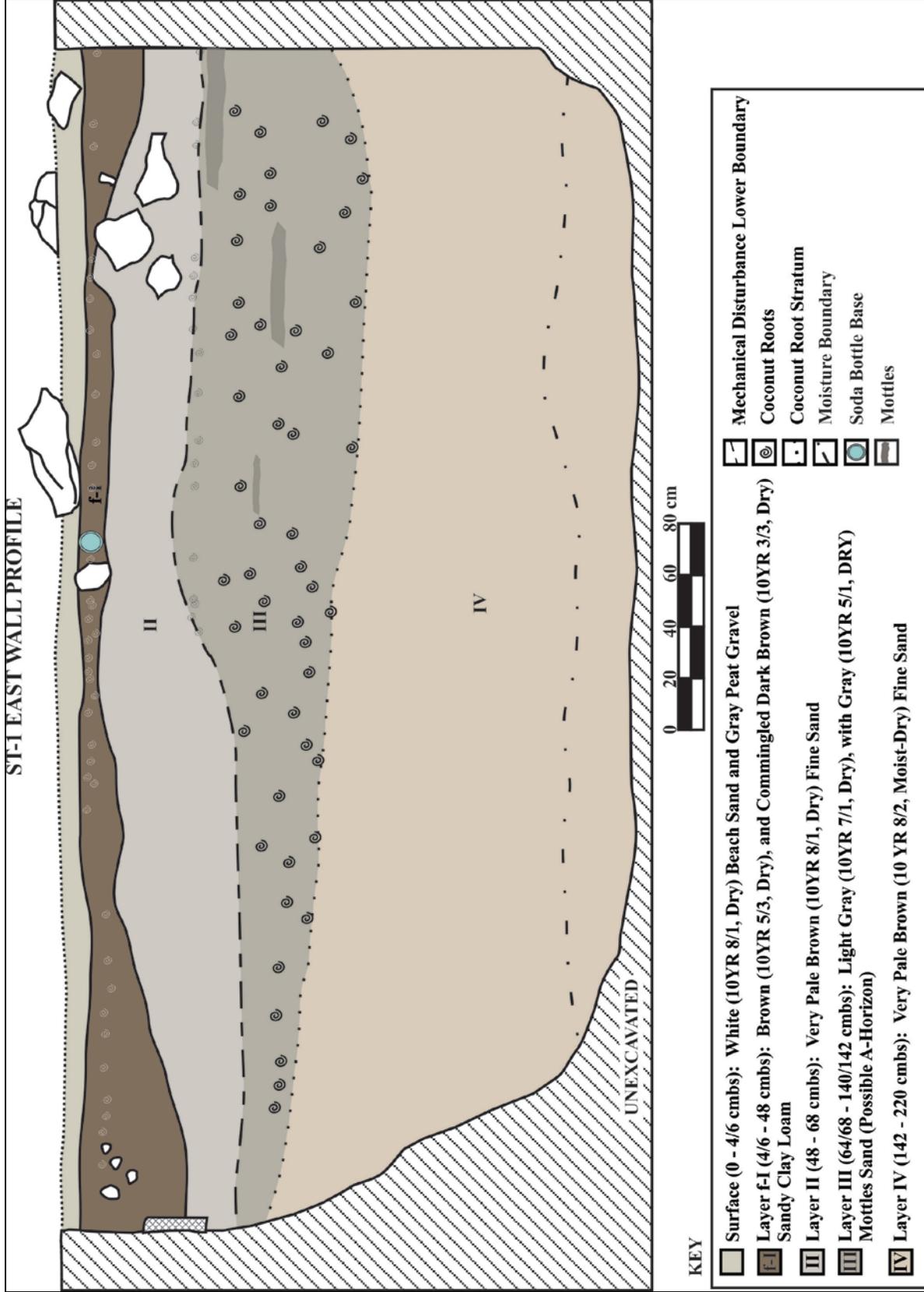
Kaheana, sworn by the Word of God and stated, I have seen this land, as has been mentioned by Eleele; however, there are other lands which I have seen (1) Keapuapu, (2) Kaloalu, (3) Kamoolepo of "Pakui." Kahala is the sea of these lands and the sea [name]. These are leles' for Kanewai and living there is through Keeumoku.

Pahoa, Kahala and Panewai are outside of the boundaries of Pahoa lele. The land Pahoa is on the east, Nanaikola and Kamoku are on the west side. During the expansion these lands were taken by Kalaiheana but Pahoa was acquired by Keopulani through Kamehameha and in the year 1835, that land was returned again to Kalaiheana.

[Award 228; R.P. 7722; Pahoa Waikiki; 1 ap.; 1.11 Acs; no R.P.; Kanewai Manoa Kona; 1 ap.; 66.59 Acs; R.P. 7723; Helumoa Waikiki Kona; 3 ap.; 4.93 Acs; R.P. 7720; Kanewai Manoa Kona, 27 Acs 115 Anana 19 Kapuai; R.P. 7721; Kanewai Kahala Kona; 1 ap.; 173 Acs 54 lq[?] fathoms]

APPENDIX C: PROJECT AREA STRATIGRAPHIC PROFILES

ST-1 EAST WALL PROFILE



Stratigraphic Profile Drawing Illustrating ST-1 East Wall, Located within Lot 4.



Photographic Overview of ST-1, East Wall; within Lot 4.

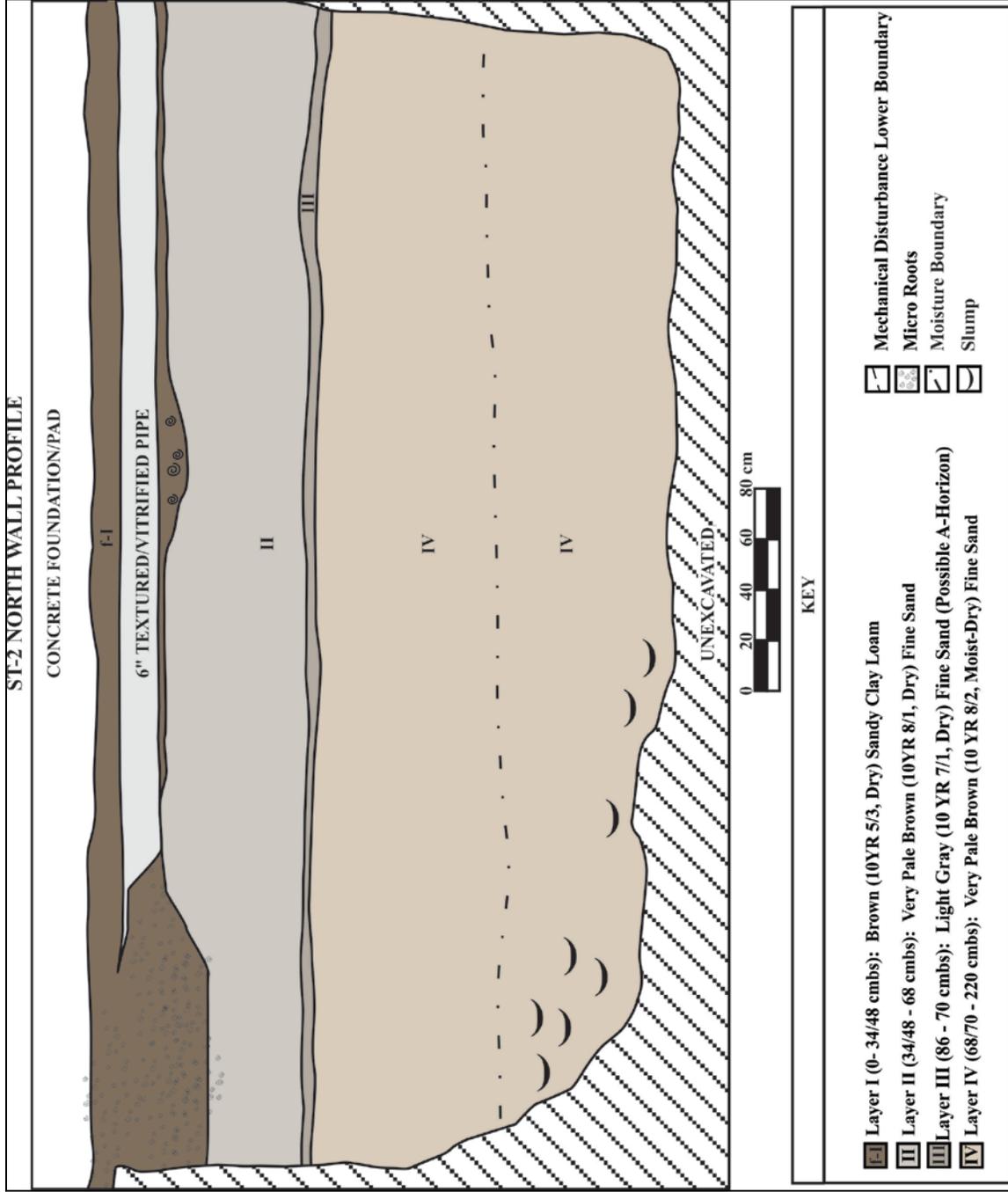
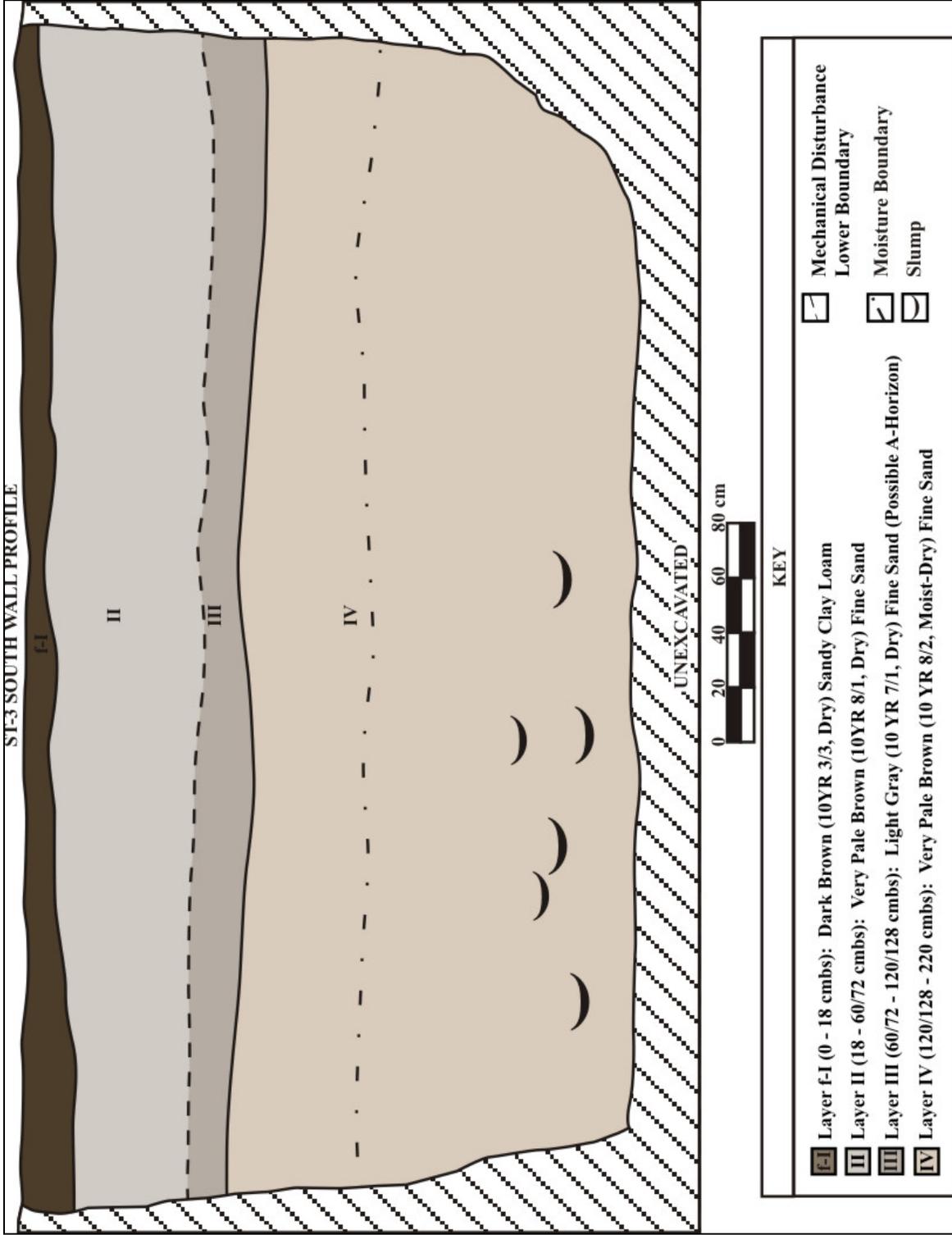


Figure 26: Stratigraphic Profile Illustration Representative of Project Area Stratigraphy as Observed in ST-2 North Wall, Located within Portions of Lots 4/4A.



Photographic Overview Depicting ST-2 North Wall Profile, Stratigraphy within Lot 4/4A.

ST-3 SOUTH WALL PROFILE

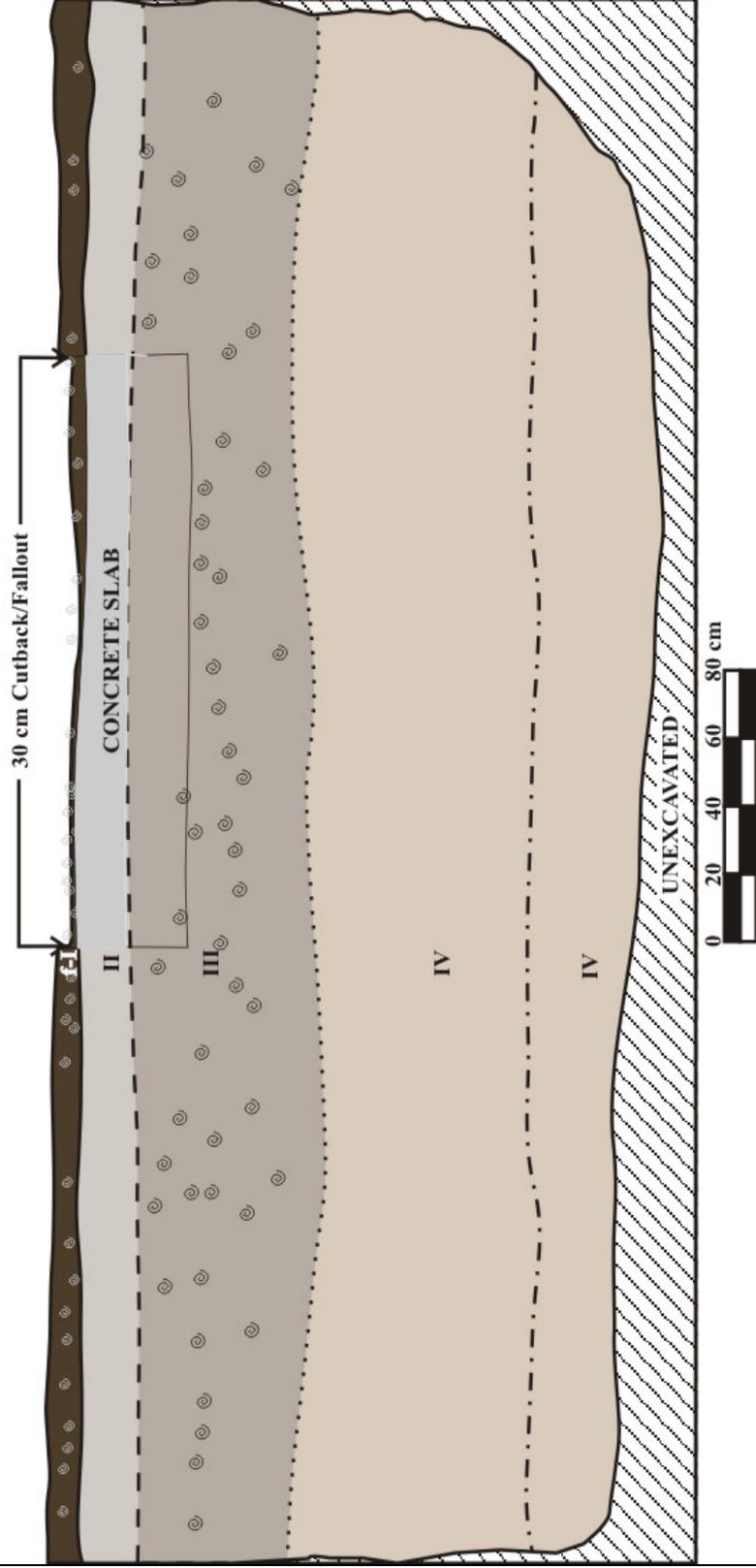


Stratigraphic Profile Drawing Illustrating ST-3 South Wall, Located within Lot 5/5a.



Photograph Overview Depicting ST-3 South Wall Profile, Stratigraphy within Lot 5/5A.

ST-4 NORTH WALL PROFILE

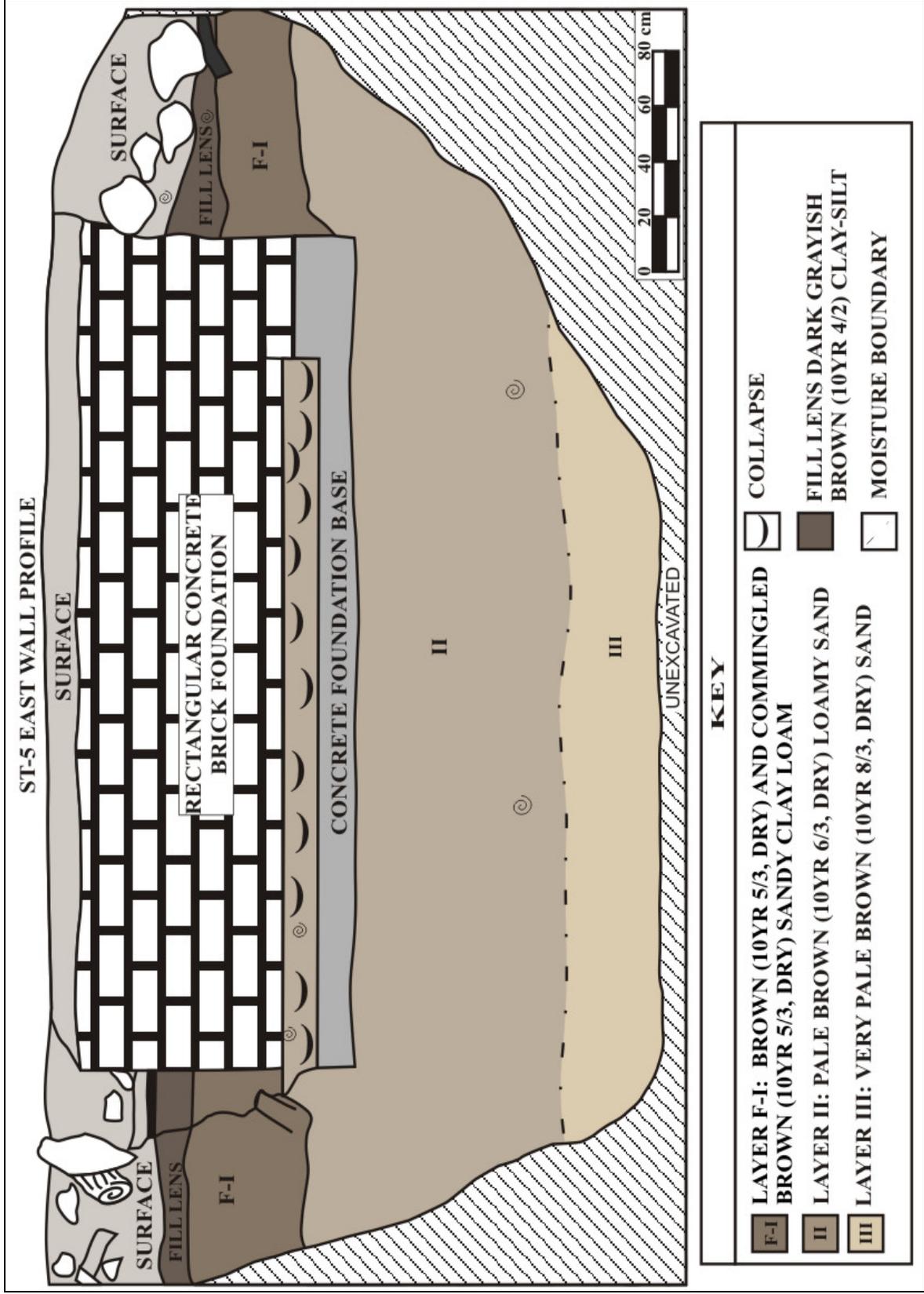


| KEY | |
|-----|--|
| | Layer f-I (0 - 8/12 cmbs): Dark Brown (10YR 3/3, Dry) Sandy Clay Loam |
| | Layer II (8/12 - 32 cmbs): Very Pale Brown (10YR 8/1, Dry) Fine Sand |
| | Layer III (32 - 80 cmbs): Light Gray (10 YR 7/1, Dry) Fine Sand (Possible A-Horizon) |
| | Layer IV (80 - 210 cmbs): Very Pale Brown (10 YR 8/2, Moist-Dry) Fine Sand |
| | Mechanical Disturbance |
| | Lower Boundary |
| | Moisture Boundary |
| | Slump |
| | Coconut Roots |
| | Coconut Root Stratum |
| | Micro Roots |

Representative Stratigraphic Profile Drawing Illustrating ST-4 North Wall; within Portions of Lots 5A.



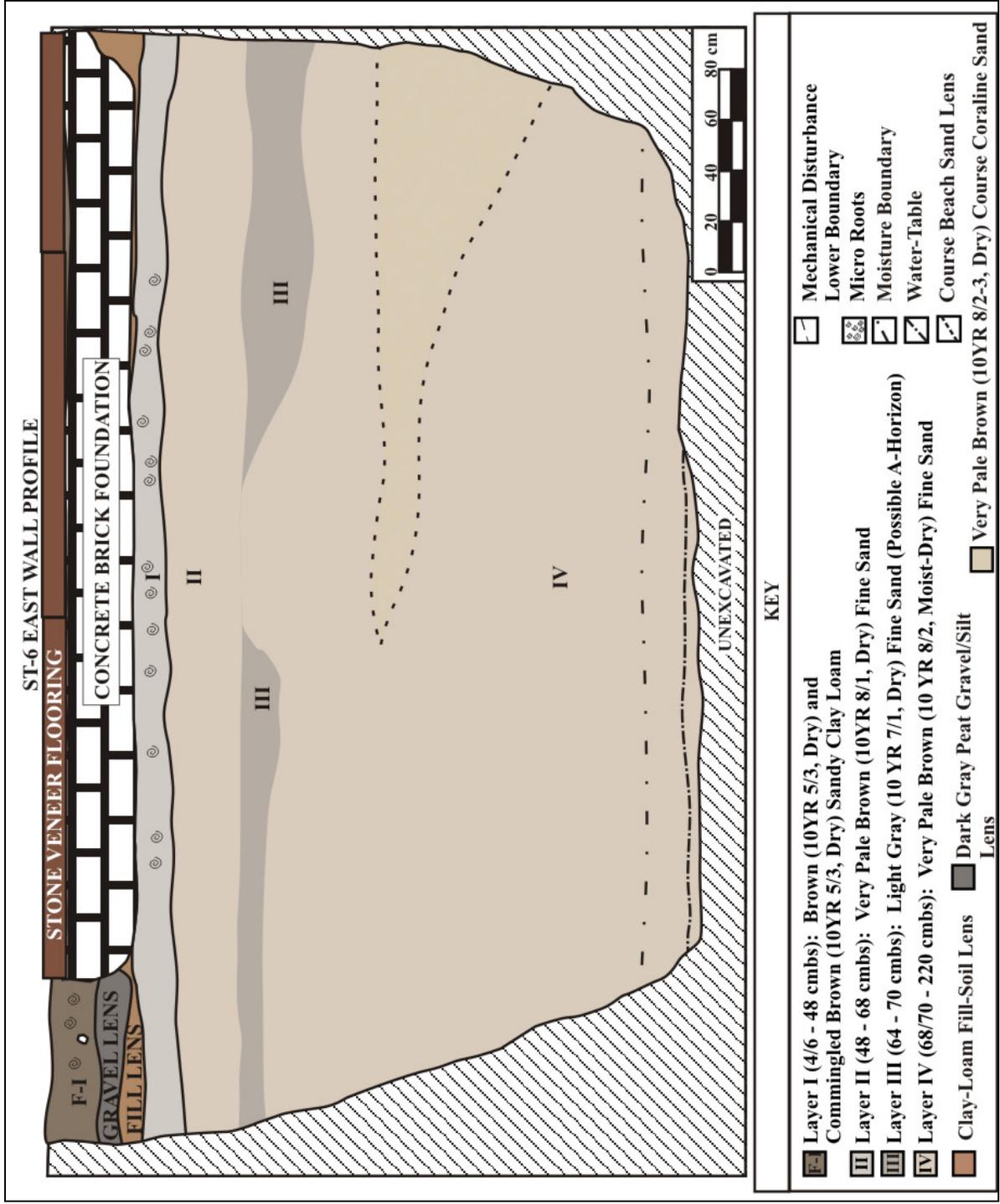
Photograph Overview Depicting ST-4 North Wall Profile, Stratigraphy within Lot 5A.



Stratigraphic Profile Drawing Illustrating ST-5 South Wall, Located within Lot 5.



Photograph Overview Depicting ST-5 East Wall Profile, Stratigraphy within Lot 5.

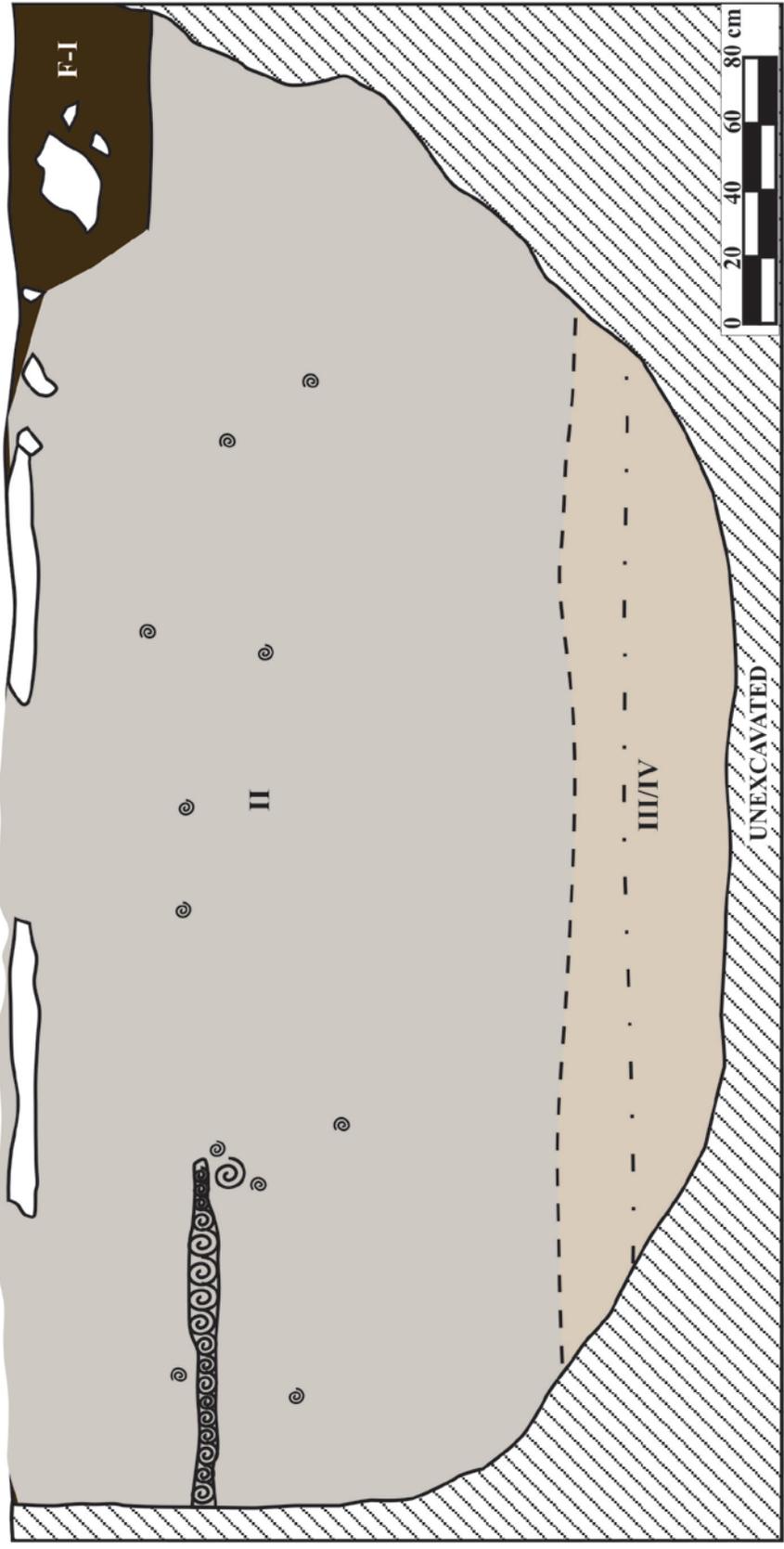


Stratigraphic Profile Drawing Illustrating ST-6 East Wall, Located within Lot 4.



Photograph Overview Depicting ST-6 East Wall Profile, Stratigraphy within Lot 4.

ST-7 EAST WALL PROFILE



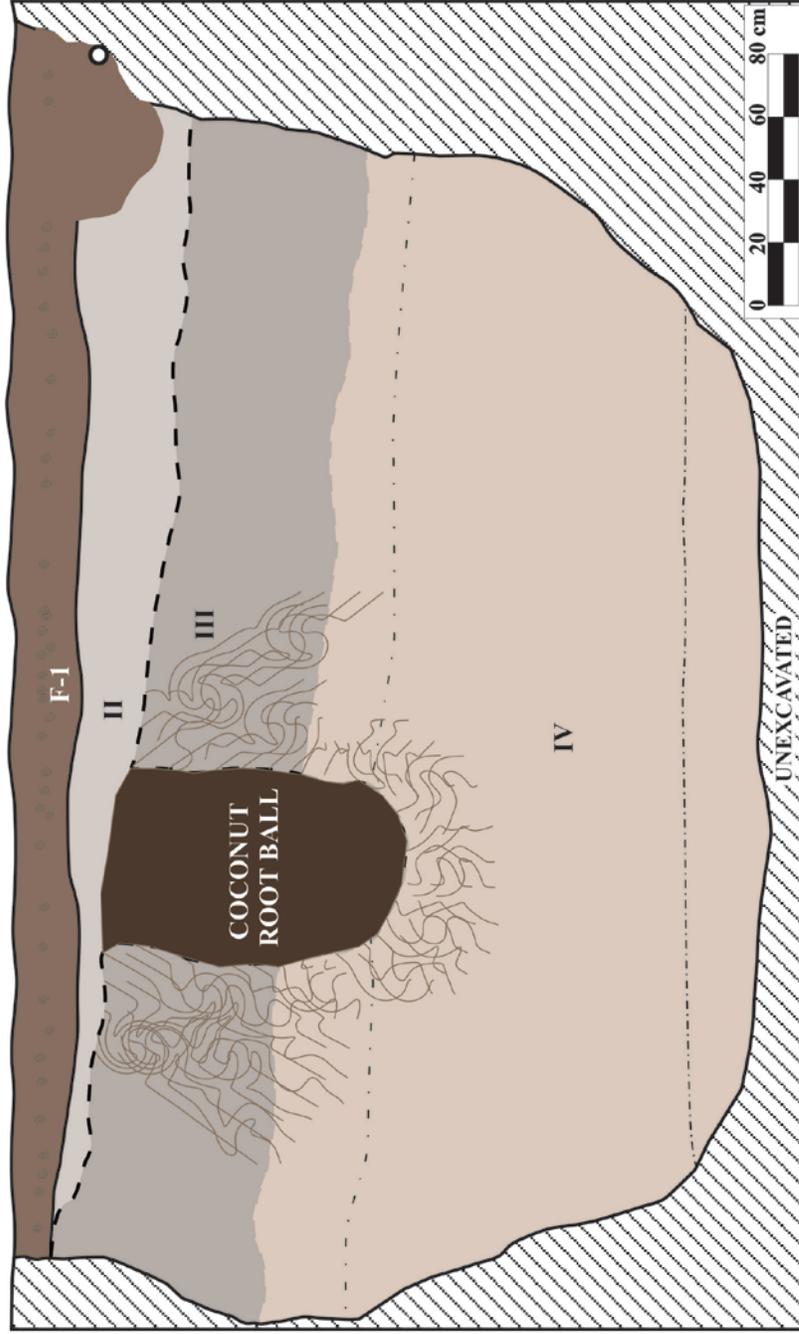
| KEY | |
|-----|--|
| | Layer F-I (0 - 42 cmbs): Dark Brown (10YR 3/3, Dry) Sandy Clay Loam |
| | Layer II (42 - 70/80 cmbs): White (10YR 8/1, Dry) Fine Sand |
| | Layer IV (80 - 215 cmbs): Very Pale Brown (10 YR 8/2, Moist-Dry) Fine Sand |
| | UNEXCAVATED |
| | Mechanical Disturbance |
| | Lower Boundary |
| | Moisture Boundary |
| | Fragmented Concrete Slab |
| | Coconut Roots |

Stratigraphic Profile Drawing Illustrating ST-7 East Wall, Located within Lot 5.



Photograph Overview Depicting ST-7 East Wall Profile, Stratigraphy within Lot 5.

ST-8 SOUTH WALL PROFILE



KEY

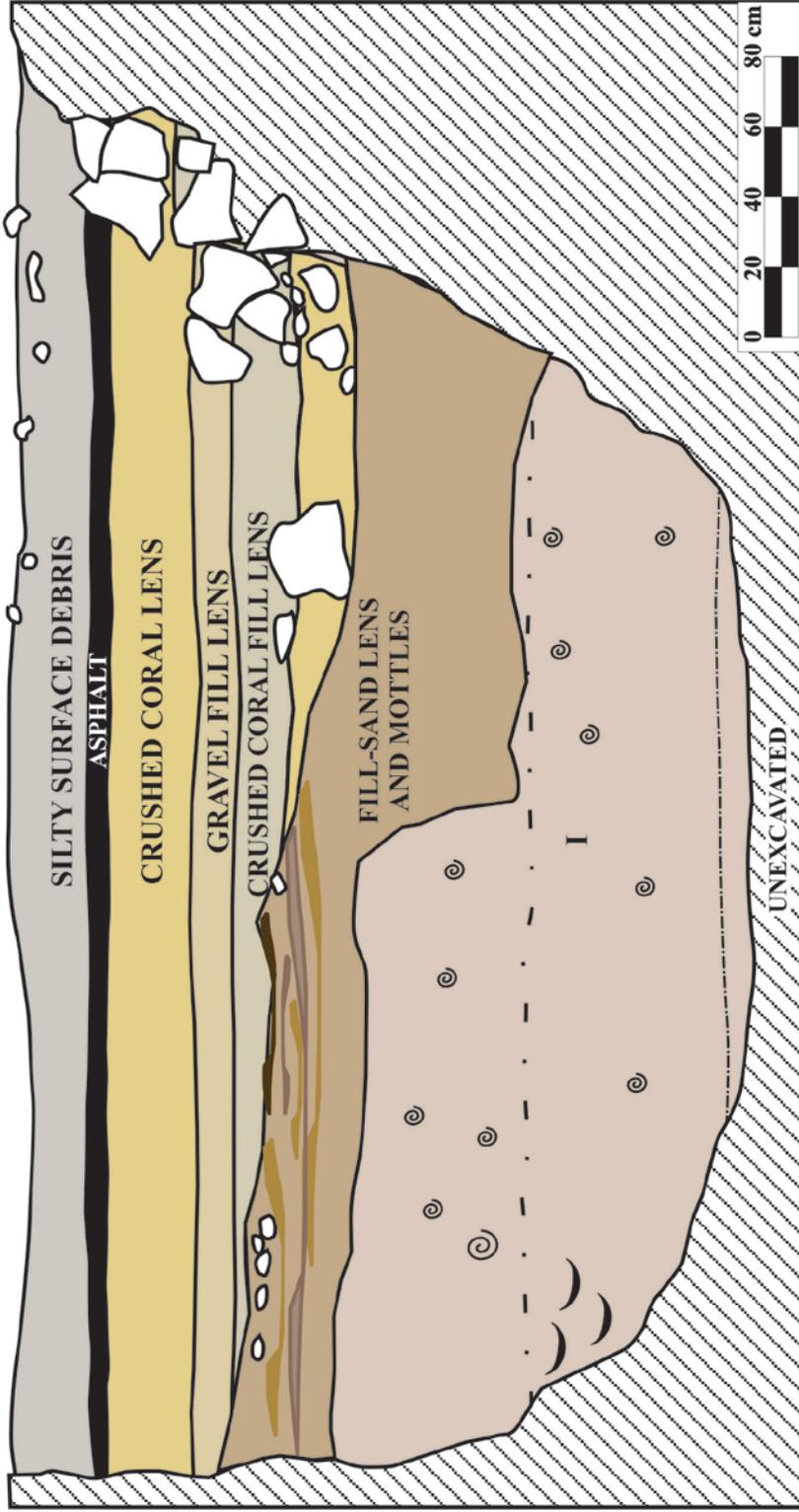
- Layer I (0 - 12/24 cmts): Brown (10YR 5/3, Dry) and Commingled Brown (10YR 5/3, Dry) Sandy Clay Loam
- Layer II (12/24 - 76 cmts): Very Pale Brown (10YR 8/1, Dry) Fine Sand
- Layer III (12/20 - 90 cmts): Light Gray (10 YR 7/1, Dry) Fine, Humic Beach Sand (Possible A-Horizon)
- Layer IV (78/90 - 238 cmts): Very Pale Brown (10 YR 8/2, Moist-Dry) Fine Dune Sand
- Mechanical Disturbance Lower Boundary
- Micro Roots
- Moisture Boundary
- Irrigation
- Water-Table

Representative Stratigraphic Profile Drawing Illustrating ST-8 South Wall, Located within Lot 4.



Photograph Overview Depicting ST-8 South Wall Profile, Stratigraphy within Lot 4.

ST-9 EAST WALL PROFILE



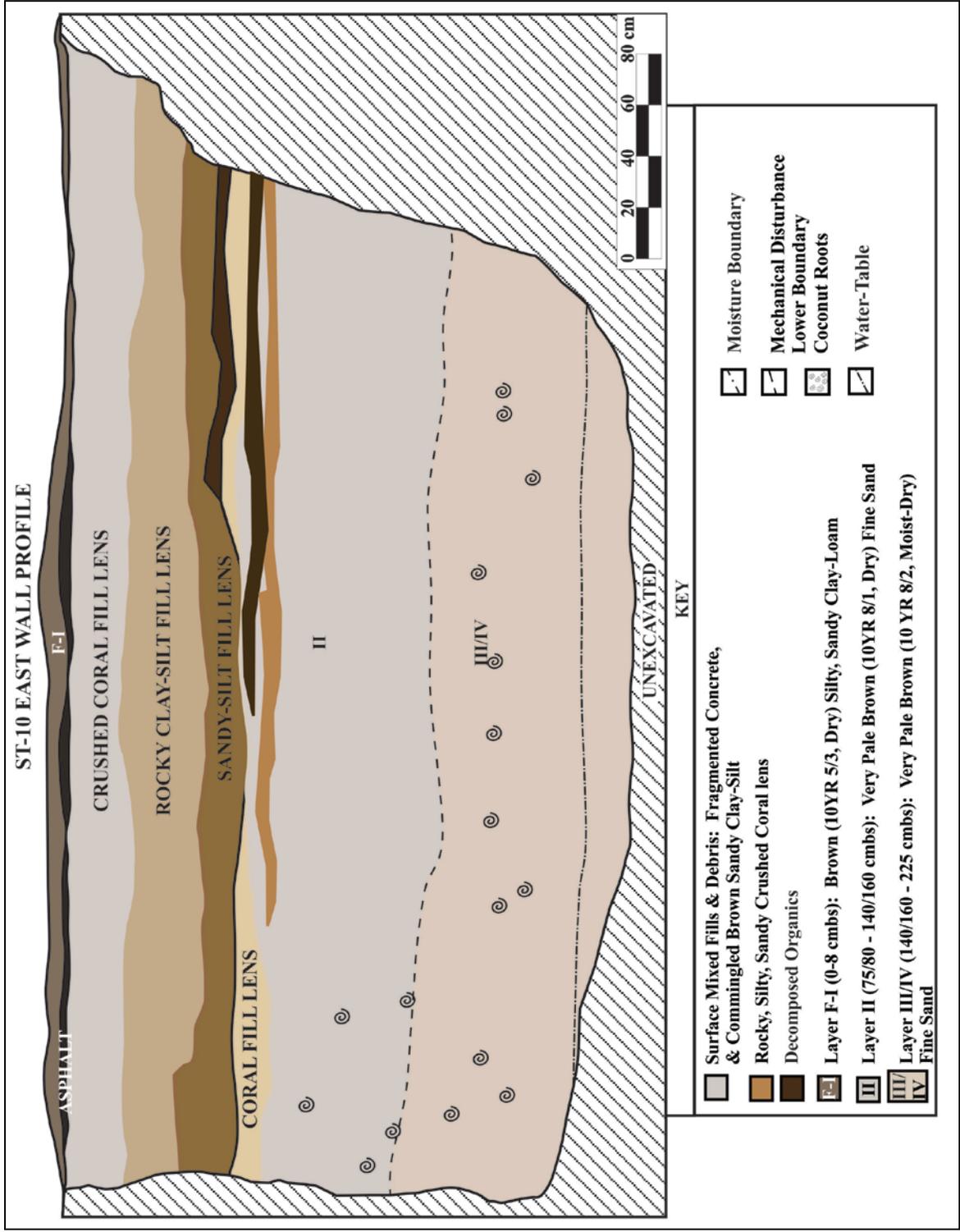
KEY

| | | | |
|--|--|--|-------------------|
| | Surface: Mixed Fills & Debris: Fragmented Concrete, Crushed Commingled Brown Clay-Silt | | Moisture Boundary |
| | Rocky, Silty, Sandy Crushed Coral lens | | Micro Roots |
| | Stratified Silty-Sand & Silty Clay-Loam Fill Lens w/Sandy Mottles | | Water-Table |
| | Layer I (104/110 - 220 cmb): Very Pale Brown (10 YR 8/2, Moist-Dry) Fine Sand | | Slump |

Stratigraphic Profile Drawing Illustrating ST-9 East Wall, Located within Lot 5.



Photograph Overview Depicting ST-9 East Wall Profile, Stratigraphy within Lot 5.

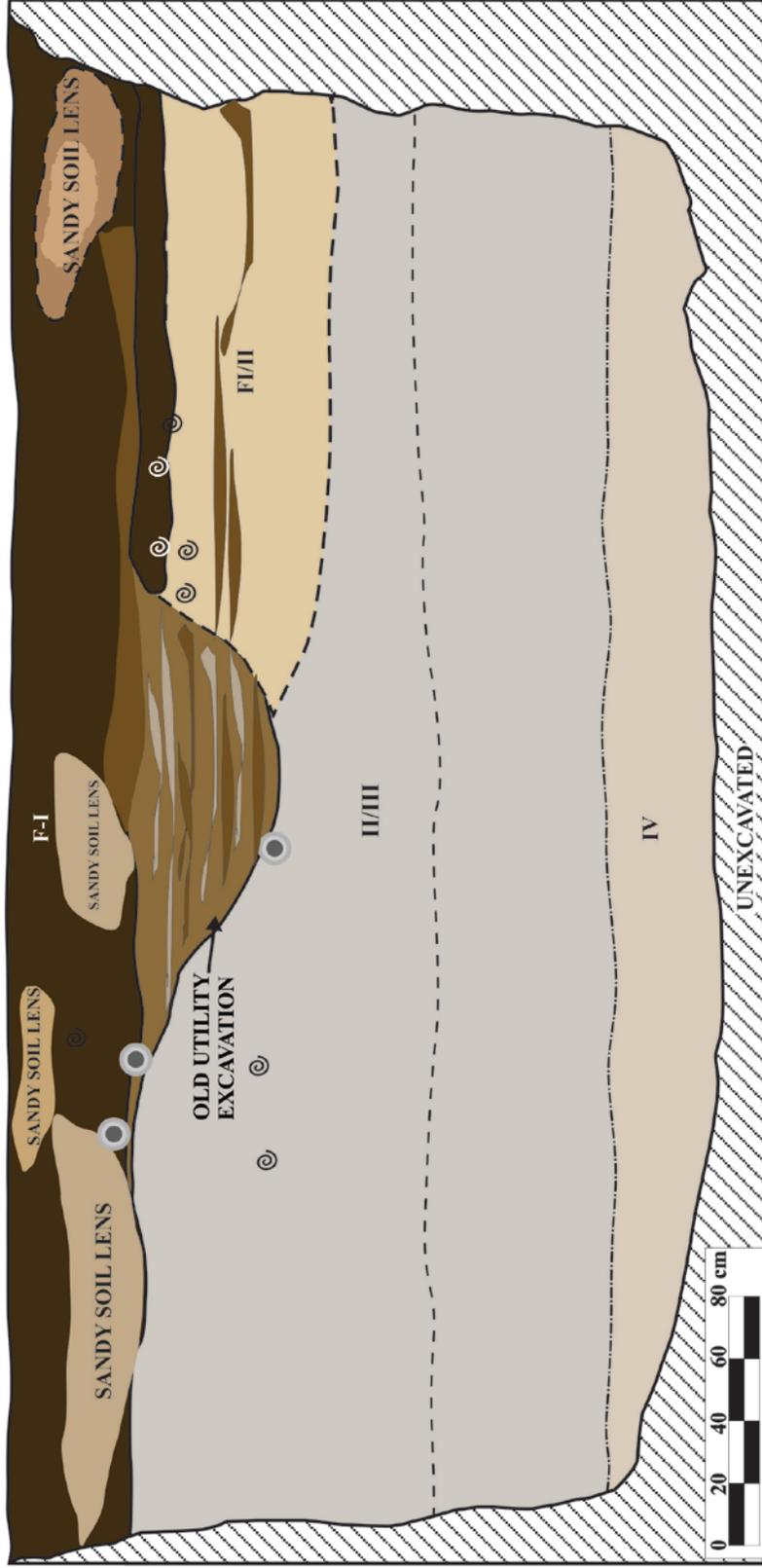


Stratigraphic Profile Drawing Illustrating ST-10 East Wall, Located within Lot 5.



Photograph Overview Depicting ST-10 East Wall Profile, Stratigraphy within Lot 5.

ST-11 EAST WALL PROFILE



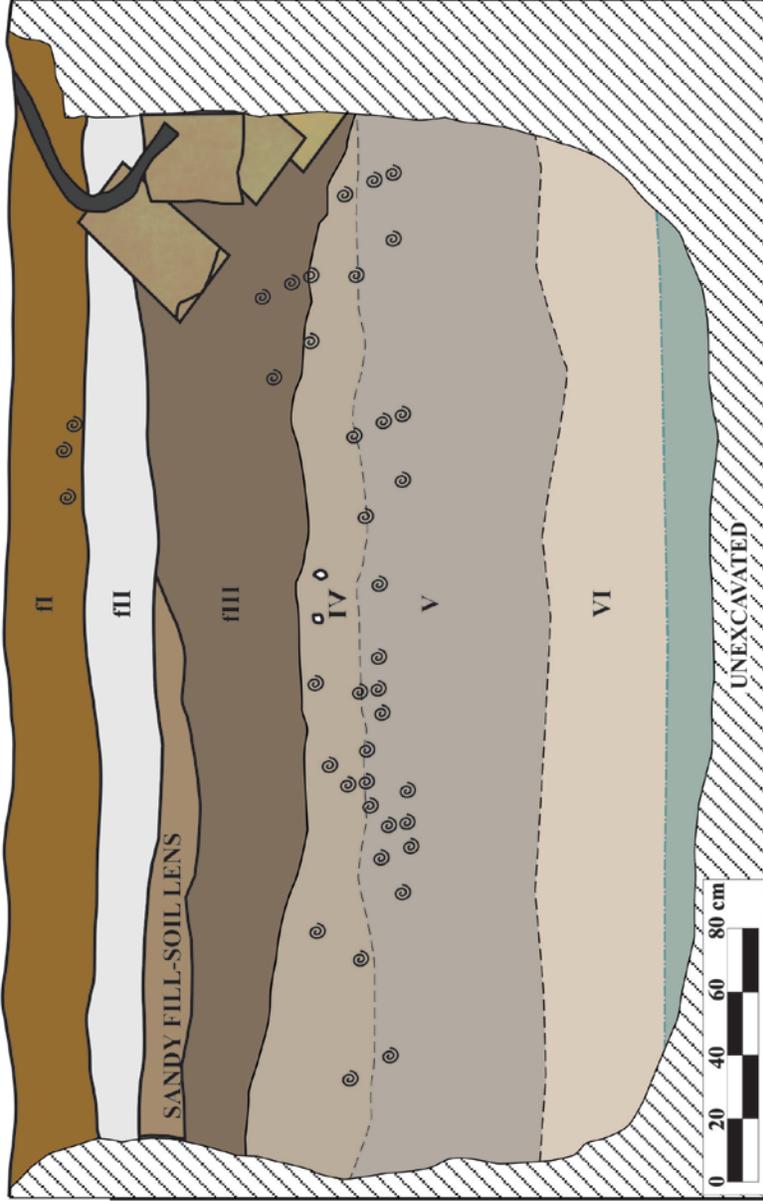
| KEY | |
|-----|--|
| | Layer F-I (0-42 cmbs): Brown (10YR 3/3, Dry) Silty, Sandy Clay Sandy Clay Loam |
| | Layer F-I/II (42/80 - 102 cmbs): Commingled Fill-Soils and Beach Sand; Plane of Modern Disturbance |
| | Layer II/III (102 - 224 cmbs): Very Pale Brown (10YR 8/1, Dry) Fine Sand |
| | Layer IV (102 - 224 cmbs): Very Pale Brown (10YR 8/2, Moist-Dry) Fine Sand |
| | Decomposed Organics |
| | UNEXCAVATED |
| | Moisture Boundary |
| | Mechanical Disturbance Lower Boundary |
| | Coconut Roots |
| | Water-Table |
| | Galvanized 1"-1/2" Pipe |

Stratigraphic Profile Drawing Illustrating ST-11 East Wall, Located within Lot 5.



Photograph Overview Depicting ST-11 East Wall Profile, Stratigraphy within Lot 5.

ST-12 EAST WALL PROFILE



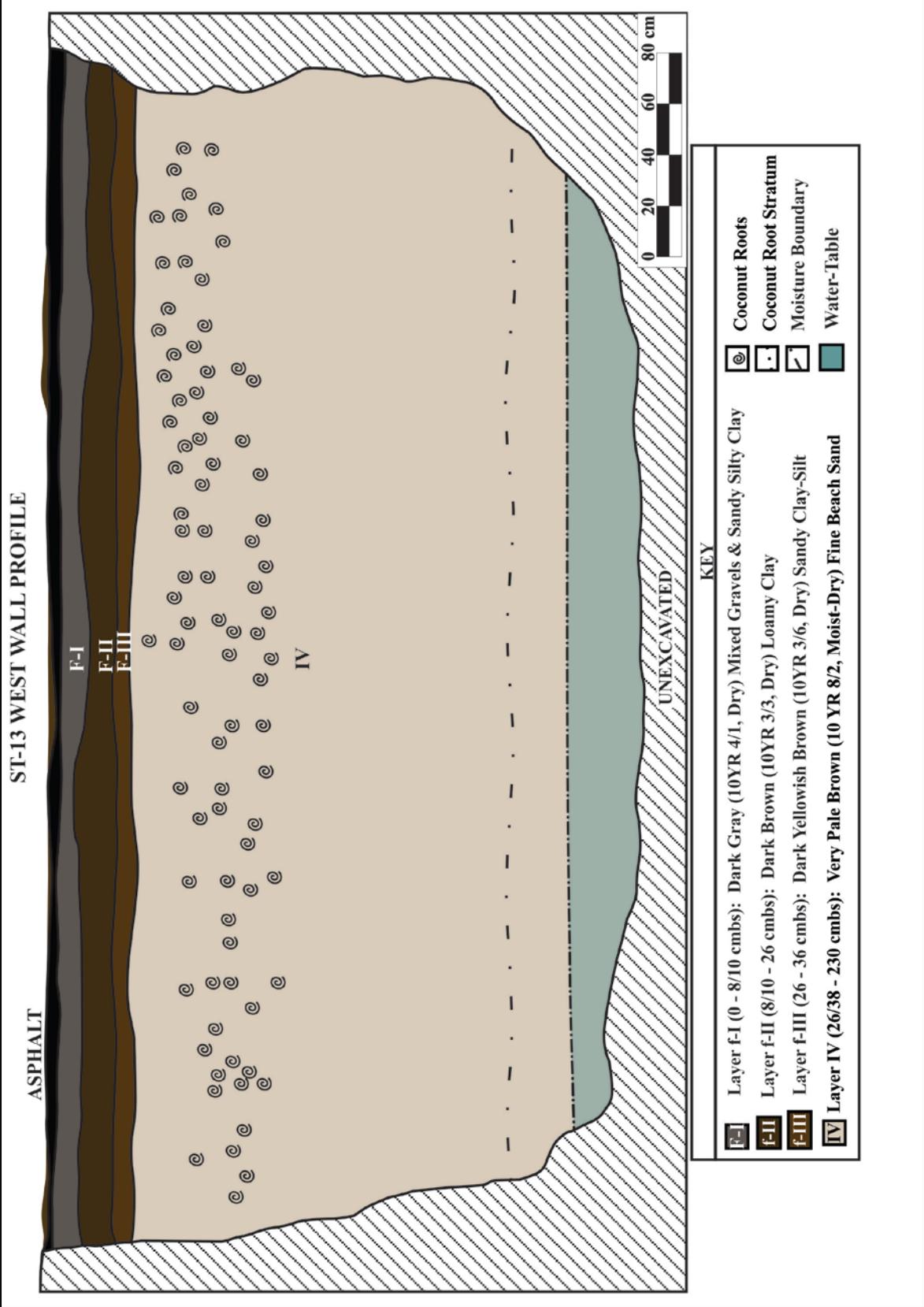
KEY

- f-I** Layer II (4/6 - 48 cmbs): Brown (10YR 5/3, Dry) and Commingled Brown (10YR 3/3, Dry) Sandy Clay Loam
 - f-II** Layer III (23/30 - 40/52 cmbs): White (2.5Y 8/1, Dry) Silty Sand
 - f-III** Layer IIII (40/52 - 95 cmbs): Brown (10YR 5/3, Dry) Loamy Clay-Silt
 - IV** Layer IV (76/95 - 106 cmbs): Light Gray (10YR 7/2, Dry) Commingled Fill Soil and Fine Beach Sand.
 - V** Layer V (106 - 168 cmbs): Light Gray (10YR 7/1, Dry) Fine Sand
 - VI** Layer VI (68/70 - 222 cmbs): Very Pale Brown (10YR 8/2, Moist-Dry) Fine Sand
 - Soil-Fill Lenses:** Commingled Beach Sand and Clay Fill-Soil
- Concrete Block
 - Galvanized Pipe
 - Previous Disturbance Lower Boundary
 - Coconut Roots
 - Water-Table
 - Slump

Stratigraphic Profile Drawing Illustrating ST-12 East Wall, Located within Lot 4.



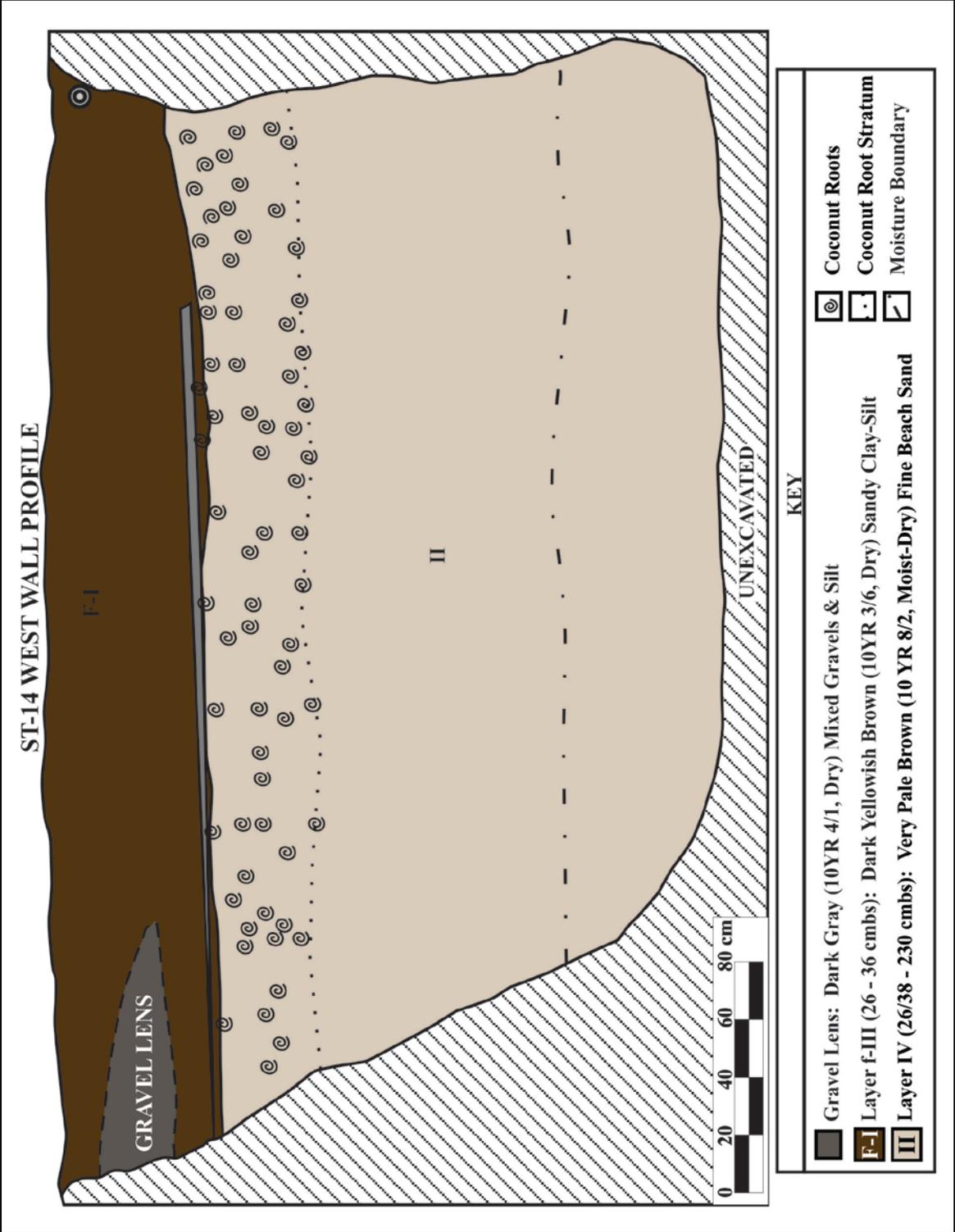
Photograph Overview Depicting ST-12 East Wall Profile, Stratigraphy within Lot 4.



Stratigraphic Profile Drawing Illustrating ST-13 West Wall, Located within Lot 4.



Photograph Overview Depicting ST-13 West Wall Profile, Stratigraphy within Lot 4.

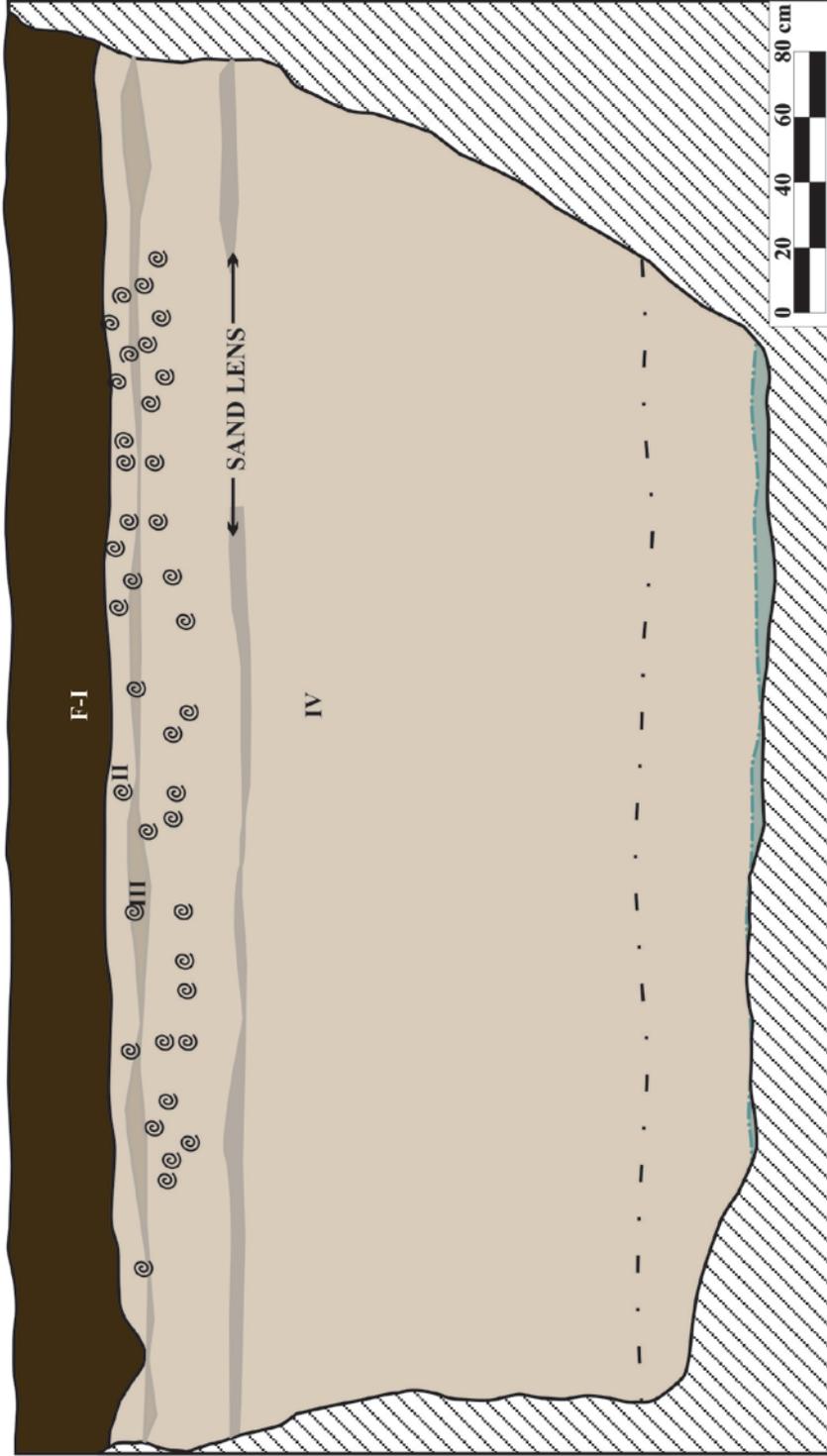


Stratigraphic Profile Drawing Illustrating ST-14 West Wall, Located within Lot 4.



Photograph Overview Depicting ST-14 West Wall Profile, Stratigraphy within Lot 4.

ST-15 EAST WALL PROFILE



KEY

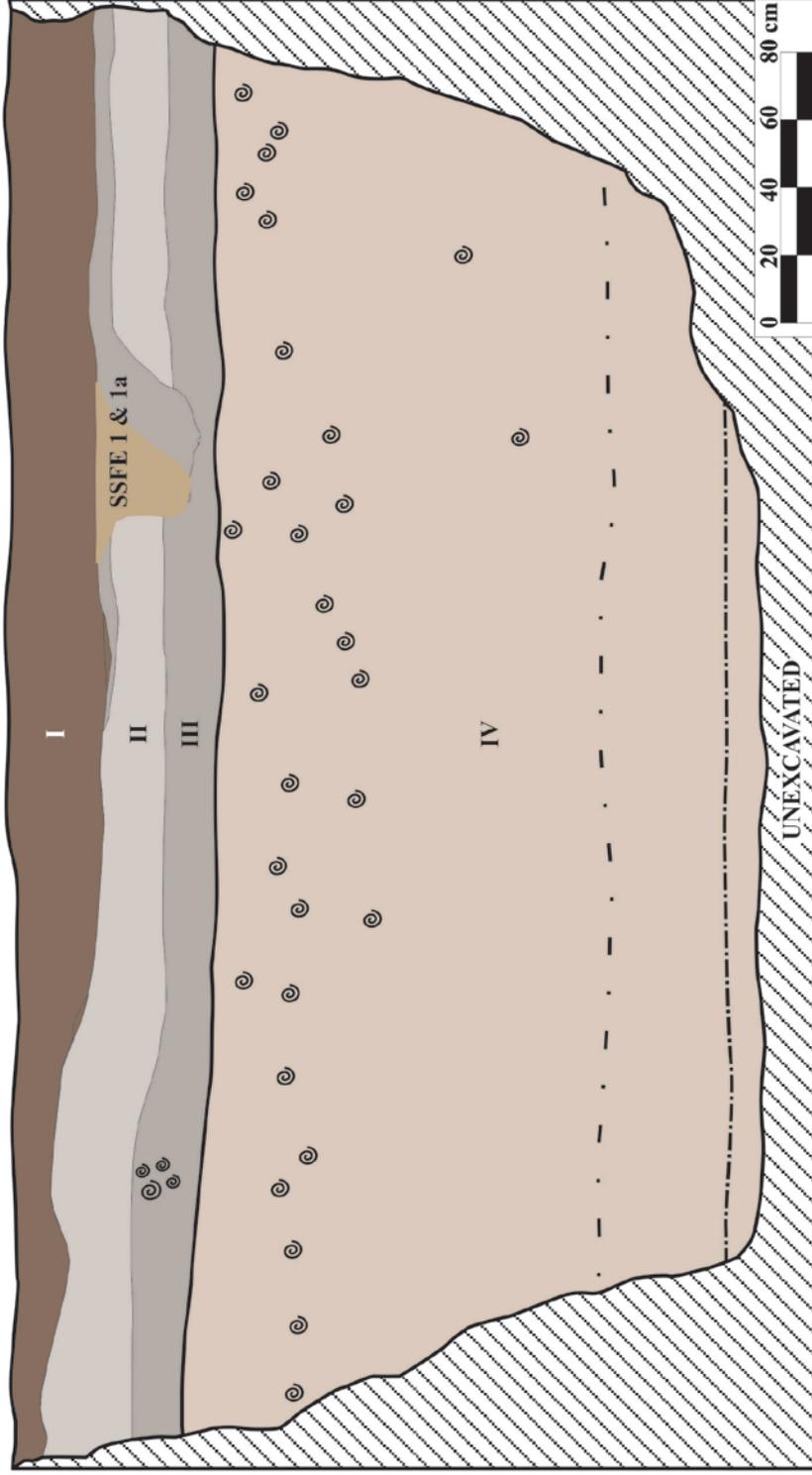
| | | | |
|------------|---|--|-----------------------|
| F-I | Layer f-II (0 - 28/40 cmbs): Dark Brown (10YR 3/3, Dry) Loamy Clay | | Coconut Roots |
| II | Layer II (28/40 - 50 cmbs): Very Pale Brown (10YR 8/2, Dry) Fine Beach Sand | | Coconut Root Stratium |
| III | Layer III (50 - 55/58 cmbs): Light Gray (10 YR 7/2, Dry) Fine Sand (Possible A-Horizon) | | Moisture Boundary |
| | Sand Lens (40/44 - 60 cmbs): Light Gray (10YR 7/1, Dry) Fine Beach Sand | | Water-Table |
| IV | Layer IV (26/38 - 250 cmbs): Very Pale Brown (10 YR 8/2, Moist-Dry) Fine Beach Sand | | |

Stratigraphic Profile Drawing Illustrating ST-15 East Wall, Located within Lot 4.



Photograph Overview Depicting ST-15 East Wall Profile, Stratigraphy within Lot 4.

ST-16 WEST WALL PROFILE



KEY

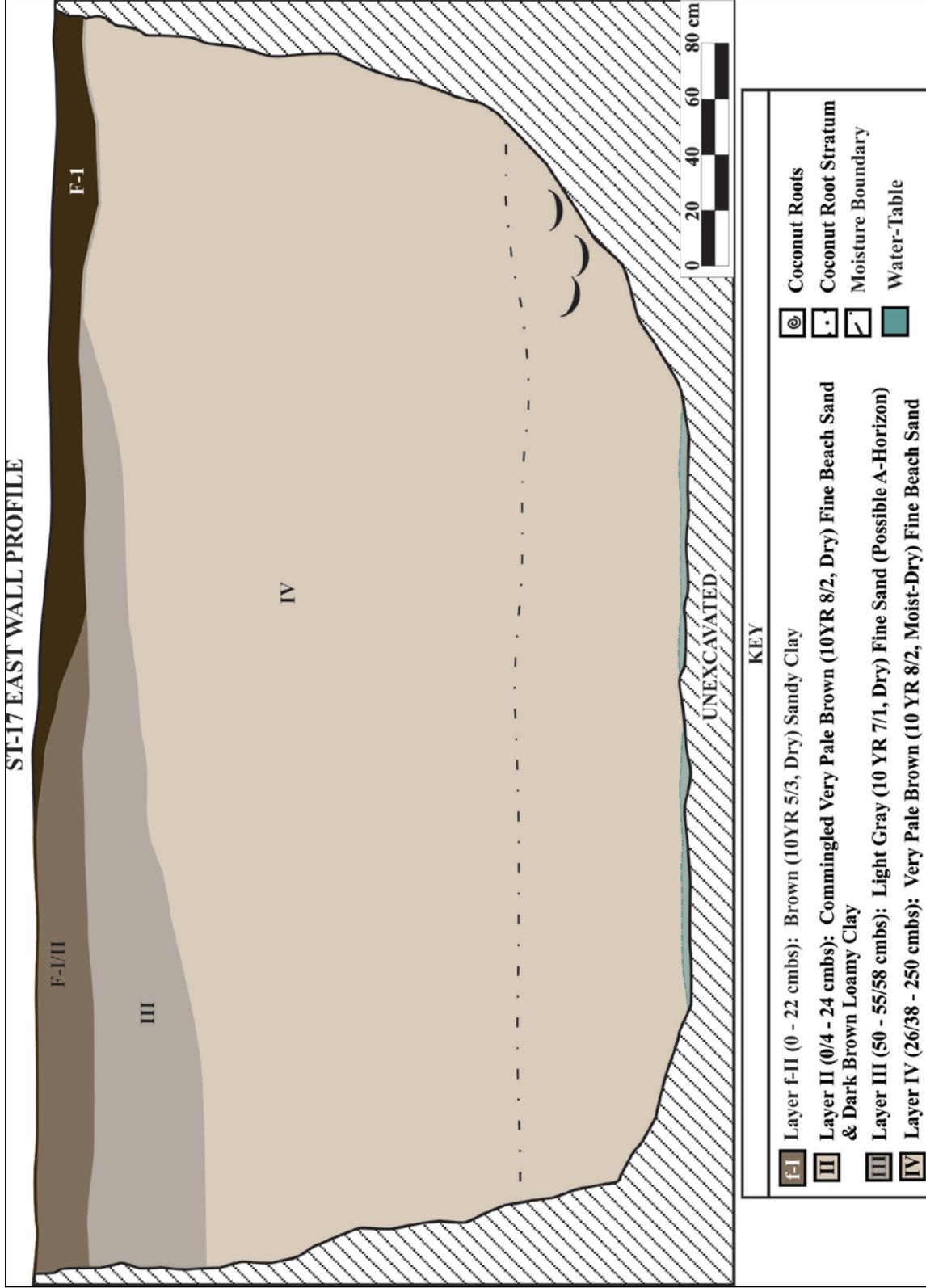
| | | | |
|--|--|--|---|
| | Layer I (0 - 10/26 cmts): Brown (10YR 5/3, Dry) Sandy Clay Loam | | Mechanical Disturbance Lower Boundary |
| | Layer II (10/26 - 38/42 cmts): Very Pale Brown (10YR 8/1, Dry) Fine Sand | | Micro Roots |
| | Layer III (38/42 - 55/60 cmts): Light Gray (10 YR 7/1, Dry) Fine Sand (Probable A-Horizon) | | Moisture Boundary |
| | Layer IV (55/60 - 225 cmts): Very Pale Brown (10 YR 8/2, Moist-Dry) Fine Sand | | Slump |
| | SSFE 1: Grayish Brown (10YR 7/4, Dry) Clayey/Sandy Soil Pit | | SSFE 1a: Light Gray (10YR 7/1, Dry) Sand Lens |

Representative Stratigraphic Profile Drawing Illustrating ST-16 West Wall, Located within Lot 4.



Photograph Overview Depicting ST-16 West Wall Profile, Stratigraphy within Lot 4.

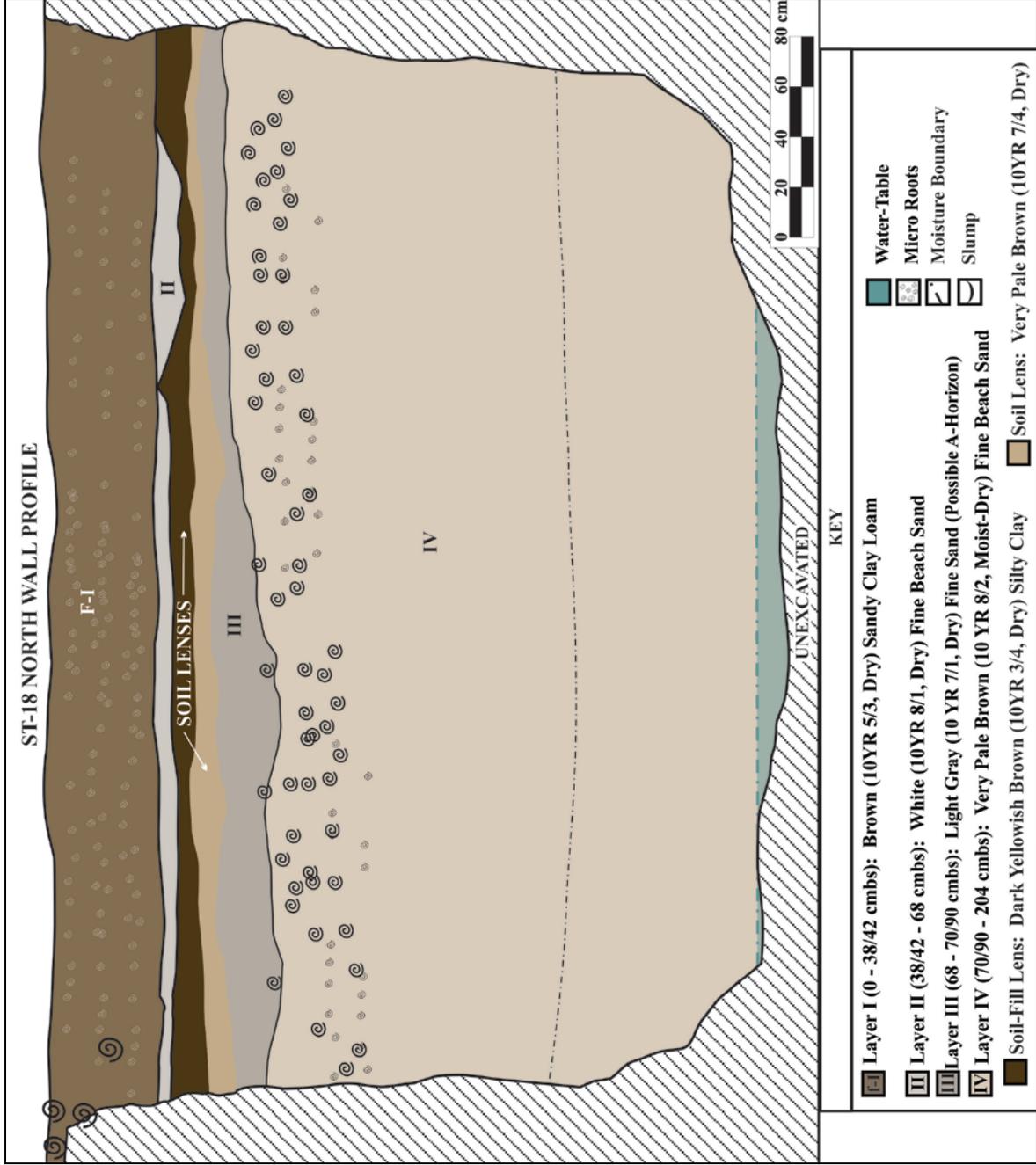
ST-17 EAST WALL PROFILE



Stratigraphic Profile Drawing Illustrating ST-17 East Wall, Located within Lot 4.



Photograph Overview Depicting ST-17 East Wall Profile, Stratigraphy within Lot 4.

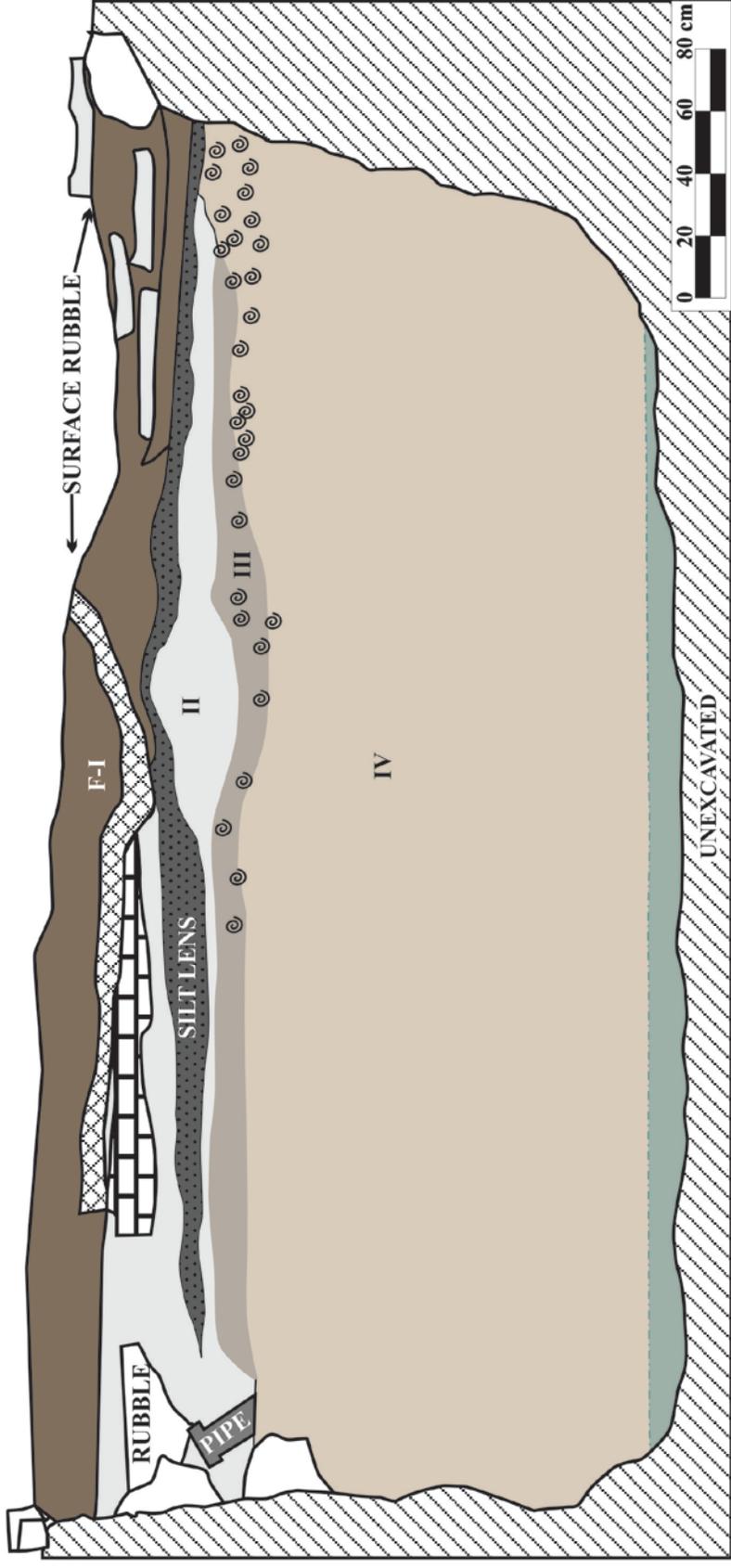


Stratigraphic Profile Drawing Illustrating ST-18 North Wall, Located within Lot 5.



Photograph Overview Depicting ST-18 North Wall Profile, Stratigraphy within Lot 5.

ST-19 WEST WALL PROFILE



KEY

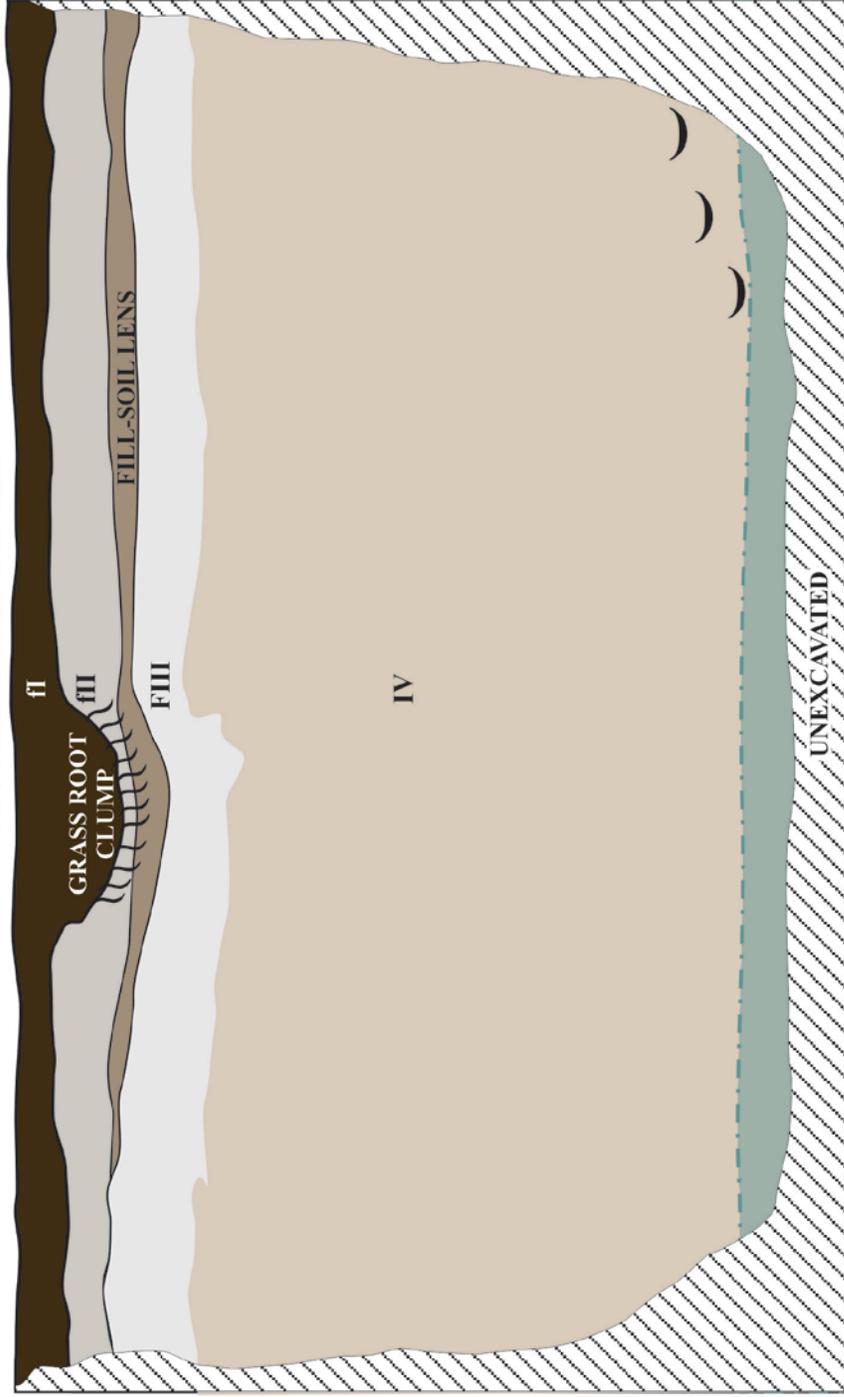
| | | | |
|--|---|--|--------------------|
| | Layer I (0- 60/85 cmbs): Brown (10YR 5/3, Dry) Sandy Clay Loam | | Water-Table |
| | Layer II (60/75 - 68 cmbs): Very Pale Brown (10YR 8/1, Dry) Fine Sand | | Coconut Tree Roots |
| | Layer III (55/65 - 70 cmbs): Light Gray (10 YR 7/1, Dry) Fine Sand (Possible A-Horizon) | | |
| | Layer IV (68/70 - 220 cmbs): Very Pale Brown (10 YR 8/2, Moist-Dry) Fine Sand | | |

Representative Stratigraphic Profile Drawing Illustrating ST-19 West Wall, Located within Lot 5.



Photograph Overview Depicting ST-19 West Wall Profile, Stratigraphy within Lot 5.

ST-20 EAST WALL PROFILE



KEY

- f-I Layer fI (0- 24/30 cmbs): Brown (10YR 3/3, Dry) Loamy, Silty Clay
- f-II Layer fII (24/30 - 38/50 cmbs): Light Gray (2.5Y 7/1, Dry) Silty Sand
- f-III Layer III (86 - 70 cmbs): Light Gray (10 YR 7/1, Dry) Fine Sand (Possible A-Horizon)
- IV Layer IV (68/70 - 220 cmbs): Very Pale Brown (10 YR 8/2, Moist-Dry) Fine Sand
- Fill-Soil Lens: Mixed Gravels and Clay-Silt
- Slump



Stratigraphic Profile Drawing Illustrating ST-20 East Wall, Located within Lot 4.



Photograph Overview Depicting ST-20 East Wall Profile, Stratigraphy within Lot 4.

APPENDIX D: CULTURAL MATERIALS INVENTORY

SCS PROJECT 1754 COLLECTED MATERIAL INVENTORY

| Lab Bag | Excavation Unit | Subsurface Feature | Layer/Level | Depth | Collected Item | Measurements | Count' | Remarks |
|--|-----------------|--------------------|-------------|-------------|--------------------------------|-----------------------|--------|---|
| 1 | ST-3 | - | Possibly II | ~ 30 cmb | Broken Glass Bottle | - | - | Broken, clear glass Gamer Packaging Company (Minneapolis, Minnesota; 1987-current) bottle. Manufacturer's stamp is an embossed blocky capital letter G on a raised squarish block. |
| 2 | ST-7 | - | Surface | - | Porcelain Rice Bowl Rim Sherds | Rim diameter: 4.0 cm | 1 | Exterior decorated under glaze with blue vegetation transfer print and black hand painted rim, interior decorated under glaze with unrecognizable patterns and hand painted black rim. |
| 3 | ST-9 | - | Backfill | ~ 30-40 cmb | Bottle Glass Base Sherd | Base diameter: 7.8 cm | 1 | See below. |
| <p>Clear, Honolulu Dairyman's Association glass bottle base sherd; body, heel, and base embossed. Body embossment: HONOLULU. Heel embossment: manufacturer's stamp. Base embossment: capital HD. The manufacturer's stamp is an outline of an isosceles triangle with a small triangle within the upper half of the triangle outline interior and a capital IPG in the lower half of the triangle outline. The bottle manufacturer is either Pacific Glass Co. (San Francisco, Ca.; 1902-1925) or Illinois Pacific Glass Corp. (San Francisco, Ca.; 1925-1930).</p> | | | | | | | | |
| 4 | ST-15 | - | III | 32 cmb | Sand Matrix | 2.8 g | - | 1/8" matrix; no cultural material. |
| 4 | ST-15 | - | III | 32 cmb | Sand Matrix | 197.0 g | - | < 1/8" matrix; no cultural material. |
| 5 | ST-16 | - | IV | 40-55 cmb | Marine Invertebrate | < 0.1 g | 1 | Gastropoda: <i>Hipponix</i> sp. |
| 5 | ST-16 | - | IV | 40-55 cmb | Sandy Soil Matrix | 40.4 g | - | > 1/8" matrix; no cultural material. |
| 5 | ST-16 | - | IV | 40-55 cmb | Sandy Soil Matrix | 74.9 g | - | < 1/8" matrix; no cultural material. |
| 6 | ST-16 | 1a | - | 35-40 cmb | Charcoal | < 0.1 g | - | < 1/8" |
| 6 | ST-16 | 1a | - | 35-40 cmb | Sandy Soil Matrix | 0.5 g | - | > 1/8" matrix; no cultural material. |
| 6 | ST-16 | 1a | - | 35-40 cmb | Sand Matrix | 175.2 g | - | < 1/8" matrix; no cultural material. |
| 7 | ST-16 | 1 | II | 33-41 cmb | Sand Matrix | 0.5 g | - | > 1/8" matrix; no cultural material. |

| SCS PROJECT 1754 COLLECTED MATERIAL INVENTORY | | | | | | | | | |
|---|-----------------|--------------------|-------------|------------|----------------------|--------------|--------------------|--------------------------------------|--|
| Lab Bag | Excavation Unit | Subsurface Feature | Layer/Level | Depth | Collected Item | Measurements | Count ¹ | Remarks | |
| 7 | ST-16 | 1 | II | 33-41 cmts | Sandy Soil Matrix | 58.1 g | - | < 1/8" matrix; no cultural material. | |
| 8 | ST-17 | - | III | 50-56 cmts | Sand Matrix | < 0.1 g | - | > 1/8" matrix; no cultural material. | |
| 8 | ST-17 | - | III | 50-56 cmts | Sandy Soil Matrix | 68.2 g | - | < 1/8" matrix; no cultural material. | |
| 9 | ST-18 | - | III | 75-80 cmts | Sand Matrix | < 0.1 g | - | > 1/8" matrix; no cultural material. | |
| 9 | ST-18 | - | III | 75-80 cmts | Soil and Sand Matrix | 40.7 g | - | < 1/8" matrix; no cultural material. | |

Note 1: If vertebrate, then count is Minimum Number of Individuals (MNI). If artifact, then count is number of artifacts.

Appendix C

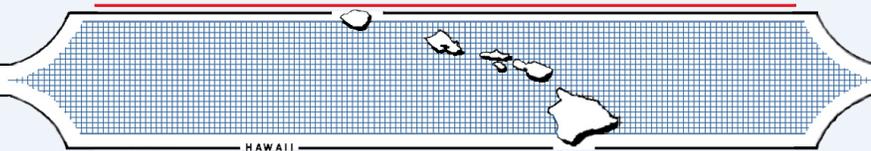
CULTURAL IMPACT ASSESSMENT

**A CULTURAL IMPACT ASSESSMENT FOR
THE 4607 KAHALA AVENUE RESIDENCES PROJECT
`ILI OF WAI`ALAE NUI, WAIKĪKĪ AHUPUA`A
KONA (HONOLULU) DISTRICT,
ISLAND OF O`AHU, HAWAII
[TMK (1) 3-5-005:016]**

Prepared by:
Cathleen A. Dagher, B.A.
and
Robert L. Spear, Ph.D.
October 2015
DRAFT

Prepared for:
Group 70 International
925 Bethel St, 5th Floor
Honolulu, HI, 96813

SCIENTIFIC CONSULTANT SERVICES Inc.



1347 Kapiolani Blvd., Suite 408 Honolulu, Hawai'i 96814

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INTRODUCTION

At the request of Group 70 International, Scientific Consultant Services, Inc. (SCS), has prepared a Cultural Impact Assessment (CIA) for the proposed 4607 Kahala Avenue Residences Project, located on an approximately 1.3 acre property in the `ili of Wai`alae Nui, Waikīkī Ahupua`a, Kona District, O`ahu Island, Hawai`i [TMK (1) 3-5-005:016] (Figures 1 through 3). The landowners (4607 Kahala LLC, an affiliate of A&B Properties, Inc.), are planning to re-develop three previously developed parcels, formerly owned by Genshiro Kawamoto, located on the *makai* (east) side of Kahala Avenue, fronting the ocean, near Hunakai Street.

The Constitution of the State of Hawai`i clearly states the duty of the State and its agencies is to preserve, protect, and prevent interference with the traditional and customary rights of Native Hawaiians. Article XII, Section 7 (2000) requires the State to “protect all rights, customarily and traditionally exercised for subsistence, cultural and religious purposes and possessed by *ahupua`a* tenants who are descendants of Native Hawaiians who inhabited the Hawaiian Islands prior to 1778.” In spite of the establishment of the foreign concept of private ownership and western-style government, Kamehameha III (Kauikeaouli) preserved the peoples traditional right to subsistence. As a result in 1850, the Hawaiian Government confirmed the traditional access rights to Native Hawaiian *ahupua`a* tenants to gather specific natural resources for customary uses from undeveloped private property and waterways under the Hawaiian Revised Statutes (HRS) 7-1. In 1992, the State of Hawai`i Supreme Court, reaffirmed HRS 7-1 and expanded it to include, “native Hawaiian rights...may extend beyond the *ahupua`a* in which a Native Hawaiian resides where such rights have been customarily and traditionally exercised in this manner” (Pele Defense Fund v. Paty, 73 Haw.578, 1992).

Act 50, enacted by the Legislature of the State of Hawai`i (2000) with House Bill (HB) 2895, relating to Environmental Impact Statements, proposes that:

...there is a need to clarify that the preparation of environmental assessments or environmental impact statements should identify and address effects on Hawaii’s culture, and traditional and customary rights... [H.B. NO. 2895].

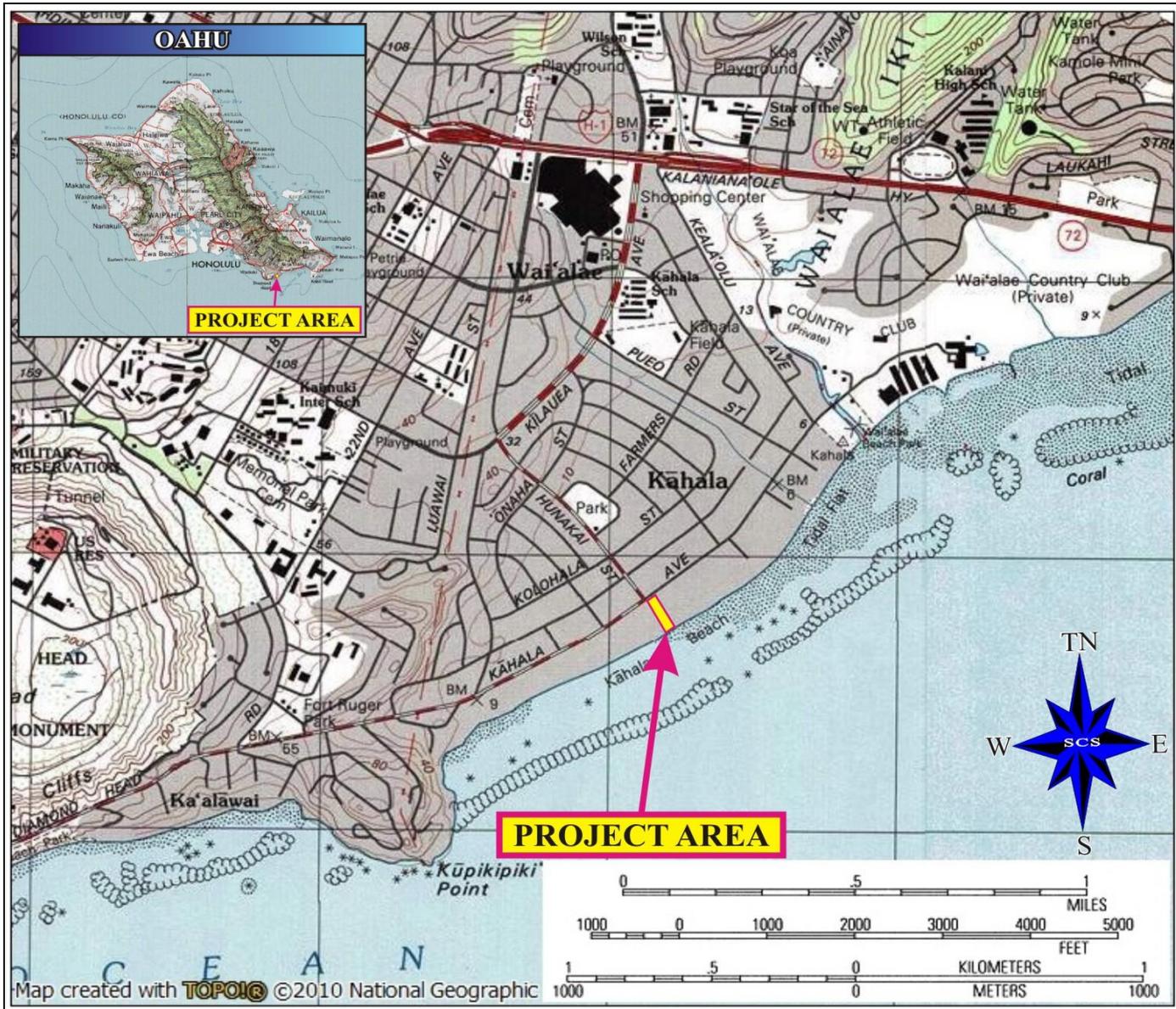


Figure 1: USGS Quadrangle (Honolulu 1998; 1:24,000) Map Showing Project Area Location.



Figure 2: Tax Map Key [TMK: (1) 3-5-005] Showing Project Area Location.



Figure 3: Google Earth Image (Imagery Date 1/15/2013) Showing Project Area Location.

Articles IX and XII of the state constitution, other state laws, and the courts of the State impose on government agencies a duty to promote and protect cultural beliefs and practices, and resources of Native Hawaiians as well as other ethnic groups. Act 50 also requires state agencies and other developers to assess the effects of proposed land use or shore line developments on the “cultural practices of the community and State” as part of the HRS Chapter 343 (2001) environmental review process.

It also re-defined the definition of “significant effect” to include “the sum of effects on the quality of the environment including actions impacting a natural resource, limit the range of beneficial uses of the environment, that are contrary to the State’s environmental policies . . . or adversely affect the economic welfare, social welfare or cultural practices of the community and State” (H.B. 2895, Act 50, 2000). Cultural resources can include a broad range of often overlapping categories, including places, behaviors, values, beliefs, objects, records, stories, etc. (H.B. 2895, Act 50, 2000).

Thus, Act 50 requires that an assessment of cultural practices and the possible impacts of a proposed action be included in Environmental Assessments and Environmental Impact Statements, and to be taken into consideration during the planning process. As defined by the Hawaii State Office of Environmental Quality Control (OEQC), the concept of geographical expansion is recognized by using, as an example, “the broad geographical area, e.g. district or *ahupua`a*” (OEQC 2012:12). It was decided that the process should identify ‘anthropological’ cultural practices, rather than ‘social’ cultural practices. For example, *limu* (edible seaweed) gathering would be considered an anthropological cultural practice, while a modern-day marathon would be considered a social cultural practice.

Therefore, the purpose of a Cultural Impact Assessment is to identify the possibility of on-going cultural activities and resources within a project area, or its vicinity, and then assessing the potential for impacts on these cultural resources. The CIA is not intended to be a document of in depth archival-historical land research, or a record of oral family histories, unless these records contain information about specific cultural resources that might be impacted by a proposed project.

According to the Guidelines for Assessing Cultural Impacts established by the Hawaii State Office of Environmental Quality Control (OEQC 2012:12):

The types of cultural practices and beliefs subject to assessment may include subsistence, commercial, residential, agricultural, access-related, recreational, and religions and spiritual customs. The types of cultural resources subject to assessment may include traditional cultural properties or other types of historic sites, both manmade and natural, which support such cultural beliefs.

The meaning of “traditional” was explained in *National Register Bulletin*:

Traditional” in this context refers to those beliefs, customs, and practices of a living community of people that have been passed down through the generations’, usually orally or through practice. The traditional cultural significance of a historic property then is significance derived from the role the property plays in a community’s historically rooted beliefs, customs, and practices. . . . [Parker and King 1998:1]

METHODOLOGY

This Cultural Impact Assessment was prepared as much as possible in accordance with the suggested methodology and content protocol in the Guidelines for Assessing Cultural Impacts (OEQC 2012:11-13). In outlining the “Cultural Impact Assessment Methodology”, the OEQC (2012:11) states that:

“...information may be obtained through scoping, community meetings, ethnographic interviews and oral histories...”

This report contains archival and documentary research, as well as communication with organizations having knowledge of the project area, its cultural resources, and its practices and beliefs. An example of the letters of inquiry is presented in Appendix A, copies of the posted legal notice and the Affidavit are presented in Appendix B, and an example follow-up to the initial letter of inquiry is in Appendix C. This Cultural Impact Assessment was prepared in accordance with the suggested methodology and content protocol provided in the Guidelines for Assessing Cultural Impacts (OEQC 2012:13), whenever possible. The assessment concerning cultural impacts may include, but not be limited to:

- A. A discussion of the methods applied and results of consultation with individuals and organizations identified by the preparer as being familiar with cultural practices and features associated with the project area, including any constraints or limitations which might have affected the quality of the information obtained.

- B. A description of methods adopted by the preparer to identify, locate, and select the persons interviewed, including a discussion of the level of effort undertaken.
- C. Ethnographic and oral history interview procedures, including the circumstances under which the interviews were conducted, and any constraints or limitations which might have affected the quality of the information obtained.
- D. Biographical information concerning the individuals and organizations consulted, their particular expertise, and their historical and genealogical relationship to the project area, as well as information concerning the persons submitting information or interviewed, their particular knowledge and cultural expertise, if any, and their historical and genealogical relationship to the project area.
- E. A discussion concerning historical and cultural source materials consulted, the institutions and repositories searched and the level of effort undertaken. This discussion should include, if appropriate, the particular perspective of the authors, any opposing views, and any other relevant constraints, limitations or biases.
- F. A discussion concerning the cultural resources, practices and beliefs identified, and, for resources and practices, their location within the broad geographical area in which the proposed action is located, as well as their direct or indirect significance or connection to the project site.
- G. A discussion concerning the nature of the cultural practices and beliefs, and the significance of the cultural resources within the project area affected directly or indirectly by the proposed project.
- H. An explanation of confidential information that has been withheld from public disclosure in the assessment.
- I. A discussion concerning any conflicting information in regard to identified cultural resources, practices and beliefs.
- J. An analysis of the potential effect of any proposed physical alteration on cultural resources, practices or beliefs; the potential of the proposed action to isolate cultural resources, practices or beliefs from their setting; and the potential of the proposed action to introduce elements which may alter the setting in which cultural practices take place.
- K. A bibliography of references, and attached records of interviews which were allowed to be disclosed.

If on-going cultural activities and/or resources are identified within the project area, assessments of the potential effects on the cultural resources in the project area and recommendations for mitigation of these effects can be proposed.

ARCHIVAL RESEARCH

Archival research focused on a historical documentary study involving both published and unpublished sources. These included legendary accounts of native and early foreign writers; early historical journals and narratives; historic maps, land records, such as Land Commission Awards, Royal Patent Grants, and Boundary Commission records; historic accounts, and previous archaeological reports.

INTERVIEW METHODOLOGY

Interviews are conducted in accordance with Federal and State laws, and guidelines, when knowledgeable individuals are able to identify cultural practices in, or in close proximity to, the project area. If they have knowledge of traditional stories, practices and beliefs associated with a project area or if they know of historical properties within the project area, they are sought out for additional consultation and interviews. Individuals who have particular knowledge of traditions passed down from preceding generations and a personal familiarity with the project area are invited to share their relevant information concerning particular cultural resources. Often people are recommended for their expertise, and indeed, organizations, such as Hawaiian Civic Clubs, the Island Branch of Office of Hawaiian Affairs (OHA), historical societies, Island Trail clubs, and Planning Commissions are depended upon for their recommendations of suitable informants. These groups are invited to contribute their input, and suggest further avenues of inquiry, as well as specific individuals to interview. It should be stressed again that this process does not include formal or in-depth ethnographic interviews or oral histories as described in the OEQC's *Guidelines for Assessing Cultural Impacts* (2012). The assessments are intended to identify potential impacts to on-going cultural practices, or resources, within a project area or in its close vicinity.

If knowledgeable individuals are identified, personal interviews are sometimes taped and then transcribed. These draft transcripts are returned to each of the participants for their review and comments. After corrections are made, each individual signs a release form, making the interview available for this study. When telephone interviews occur, a summary of the information is usually sent for correction and approval, or dictated by the informant and then incorporated into the document. If no cultural resource information is forthcoming and no knowledgeable informants are suggested for further inquiry, interviews are not conducted.

ENVIRONMENTAL SETTING

The island of O`ahu ranks third in size of the eight main islands in the Hawaiian Archipelago. The Wai`anae and Ko`olau Mountain ranges were formed by two volcanoes. Through the millennia the constant force of water carved fertile amphitheater-headed valleys and rugged passes eroded at lower elevations providing access from one side of the island to another (Macdonald and Abbott 1970). According to Stearns (1966:86-87), numerous volcanic eruptions created a number of today's well-known landmarks, including the Mōkapu Peninsula, on the windward side of O`ahu, Ka`au Crater, Kaimukī Dome, and Diamond Head Crater. Soon after the Diamond Head eruption, a thin black lava flow occurred on the southeast side of Diamond Head forming the area currently known as Black Point. At the same time, "... voluminous lava flows from a vent on the northeast side [of Diamond Head formed]..."

PROJECT AREA DESCRIPTION

The landowners (4607 Kahala LLC, an affiliate of A&B Properties, Inc.), are planning to re-develop three previously developed parcels, formerly owned by Genshiro Kawamoto, located on the *makai* (east) side of Kahala Avenue, fronting the ocean, near Hunakai Street. The subject property, 4607 Kahala Avenue, is located on an approximately 1.3 acre property in the `ili of Wai`alae Nui, Waikīkī Ahupua`a, Kona District, O`ahu Island, Hawai`i [TMK (1) 3-5-005:016] (see Figures 1 through 3). The subject property is bound on the northern side by Kahala Avenue, by the Pacific Ocean on the southern side, and by residential properties on the eastern and western sides.

CLIMATE

Project area elevations are approximately 3 meters above mean sea level (amsl) with an annual precipitation of 20 to 30 inches along this portion of the leeward coast (Giambelluca *et al.*, 2012). Temperatures in this area range from 50 to 80 degrees Fahrenheit) during the winter months and from 60 to 90 degrees during the summer.

SOILS AND VEGETATION

According to Foote *et al.* (1972: 48-49, Sheet Map 63), in places where topsoil was not applied, soils classified as Jaucas Sand (JaC), have developed. Jaucas sands consist of excessively drained sands that typically occur as narrow strips adjacent to the ocean. The nearest drainage is Kapakahi Stream, located more than 1.5 km to the northeast of the project area. The subject property includes remnants of modern landscaping vegetation,

such as grass lawns, coconut and other palms, mango trees, a variety of flowering trees and shrubs, and weeds that have sprouted since the lots have been vacant. Most of these plants grow in fill topsoil that was imported to cover calcareous sands that occur naturally on both parcels.

CULTURAL HISTORICAL CONTEXT

The island of O`ahu ranks third in size of the eight main islands in the Hawaiian Archipelago. The Wai`anae and Ko` Olau Mountain ranges were formed by two volcanoes. Through the millennia the constant force of water carved fertile amphitheater-headed valleys and rugged passes eroded at lower elevations providing access from one side of the island to another (Macdonald and Abbott 1970). According to Stearns (1966:86-87), numerous volcanic eruptions created a number of today's well-known landmarks, including the Mōkapu Peninsula, on the windward side of O`ahu, Ka`au Crater, Kaimukī Dome, and Diamond Head Crater. Soon after the Diamond Head eruption, a thin black lava flow occurred on the southeast side of Diamond Head forming the area currently known as Black Point. At the same time, "... voluminous lava flows from a vent on the northeast side [of Diamond Head formed] "... the Kaimuki lava dome, on which [the] Kaimuki section of Honolulu is now built."

PAST POLITICAL BOUNDARIES

Traditionally, the division of O`ahu's land into districts (*moku*) and sub-districts was said to be performed by a *Mā`ilikukahi* who was chosen by the chiefs to be the *mō`īho`oponopono o ke aupuni* (administrator of the government; Kamakau 1991:53-55). Cordy (2002) places *Mā`ilikukahi* at the beginning of the 16th century. *Mā`ilikukahi* created six districts and six district chiefs (*ali`i`ai`moku*). Land was considered the property of the king or *ali`i`ai`moku* (the *ali`i* who eats the island/district), which he held in trust for the gods. The title of *ali`i`ai`moku* ensured rights and responsibilities to the land, but did not confer absolute ownership. The king kept the parcels he wanted; his higher chiefs received large parcels from him and, in turn, distributed smaller parcels to lesser chiefs. The *maka`āinana* (commoners) worked the individual plots of land. It is said that *Mā`ilikukahi* gave land to *maka`āinana* (commoners) all over the island of O`ahu (*ibid*).

In general, several terms, such as *moku*, *ahupua`a*, *`ili* or *`ili`āina* were used to delineate various land sections. A district (*moku*) contained smaller land divisions (*ahupua`a*) that customarily continued inland from the ocean and upland into the mountains. Extended household groups living within the *ahupua`a* were therefore able to harvest from both the land

and the sea. Ideally, this situation allowed each *ahupua`a* to be self-sufficient by supplying needed resources from different environmental zones (Lyons 1875:111). The *`ili `āina* or *`ili* were smaller land divisions next in importance to the *ahupua`a* and were administered by the chief who controlled the *ahupua`a* in which it was located (Lyons 1875:33; Lucas 1995:40). The *mo`o`āina* were narrow strips of land within an *`ili*. The land holding of a tenant or *hoa `āina* residing in a *ahupua`a* was called a *kuleana* (Lucas 1995:61). The project area is located in the Waikīkī *Ahupua`a*. Waikīkī means literally “spouting water” and is said to be named for the swamps (Pukui *et al.* 1974:223).

TRADITIONAL SETTING

Recent re-evaluation of radiocarbon dates suggests O`ahu Island was first settled between A.D. 850 and 1100 by Polynesians sailing most likely from central East Polynesia (Kirch 2011:24). Archaeological settlement pattern data indicates that the initial colonization and occupation of the Hawaiian Islands first occurred on the windward shoreline areas of the main islands, with populations eventually settling into drier leeward areas at later periods (Kirch 1985). Coastal settlement was still dominant, but populations began exploiting and living in the upland (*kula*) zones. Greater population expansion to inland areas began about the A.D. Twelfth Century, but continued through the 16th Century.

As the Hawaiian culture developed, land became the property of the king, or *ali`i `ai moku* (the *ali`i* who eats the island/district), which was held in trust for the gods. The title of *ali`i `ai moku* ensured rights and responsibilities to the land, but did not confer absolute ownership. The king kept the parcels he wanted, his higher chiefs received large parcels from him and, in turn they, distributed smaller parcels to lesser chiefs. The *maka`āinana* (commoners) worked the individual plots of land (Kirch and Sahlins 1992 vol.1:25).

In general, several terms, such as *moku*, *ahupua`a*, *`ili* or *`ili`āina* were devised to describe various land sections. A district (*moku*) contained smaller land divisions (*ahupua`a*), which customarily continued inland from the ocean and upland into the mountains. Extended household groups living within the *ahupua`a* were, therefore, able to harvest from both the land and the sea. As the Polynesian economy was based on agricultural production and marine exploitation, as well as animal husbandry and utilizing forest resources, this situation ideally allowed each *ahupua`a* to be self-sufficient by supplying needed resources from different environmental zones (Lyons 1875:111). The *`ili `āina*, or *`ili*, were smaller land divisions next in importance to the *ahupua`a* and were administered by the chief who controlled the *ahupua`a* in

which the *ili* were located (*ibid*:33; Lucas 1995:40). The *mo`o`āina* were narrow strips of land within an *ili*. The land holding of a tenant, or *hoa`āina*, residing in an *ahupua`a* was called a *kuleana* (Lucas 1995:61). Oral history notes that the division of O`ahu's lands into districts (*moku*) and sub-districts was solidified by the *ali`i nui*, Mā`ili-kūkahi during the early part of the 16th century (Kamakau 1991:53-56). O`ahu contained six districts including Wai`anae, `Ewa, Waialua, Ko`olauloa, Ko`olaupoko, and Kona at the time of contact with westerners.

Large scale or intensive agricultural endeavors were implemented in association with habitation. Coastal lands were used for settlement and taro was cultivated in near-coastal reaches and in the uplands. On the southeast coast of O`ahu, taro cultivation was confined to valleys with streams or springs that would water the terraces. The staple crop in Wai`alae and Wailupe valleys was sweet potatoes, which were planted in the valleys, on hillsides, and in the coastal strip (Handy 1940:155-6).

HISTORIC SETTING

Early western visitors to O`ahu described the southeast coast as well-cultivated and well-populated. In 1789 Captain Nathaniel Portlock anchored in Maunalua Bay to take on fresh water, which was brought to the ship in calabashes. Portlock described the coastal setting:

...the bay all around has a beautiful appearance, the low land and vallies being in a high state of cultivation, and crowded with plantations of taro, sweet potatoes, sugar cane, &c., interspersed with a great number of cocoa-nut trees, which renders the prospect truly delightful. (Portlock 1789:73-4)

In 1828 Levi Chamberlain toured southeastern O`ahu, including Wai`alae:

...a grove of palm trees and a number of branching kou trees, among which stand the grass huts of the natives, having a cool appearance, overshadowed by the waving tops of the cocoanuts, among which the trade winds sweep unobstructed (Chamberlain 1956:28-9)

In 1865 Henry Willis Baxley described the region:

Further along the shore, the few hamlets of Waialae are seen nestled in a grove. And a short distance beyond, the grass huts of Wailupe cluster near the high hill of Mauna Loa, from the southern foot of which a ridge extends still further southwardly to the bold

and lofty cape named Coco Head, the eastern boundary of the beautiful bay of Waialae, of which Diamond Head, already described, forms the western boundary(Baxley 1865:124).

According to Pukui *et al.* (1989; 220), Handy and Handy (1972: 483), and Handy (1940 in Sterling and Summers 1978:275), Wai`alae Ahupua`a takes its name from a spring which is located above Kalaniana`ole Highway. This stone-lined spring is said to feed a stream which provided water to agricultural terraces in the area. A glimpse of the traditional lifestyle of Wai`alae Nui is provided by J.K. Mokumaia (in Sterling and Summers 1978:276) who states:

Many people lived along the shores and they worked at farming and fishing. Plants grew. There were taro patches, tobacco, sweet potatoes, bananas, and sugar cane. There were many konohikis in former days. Paki was Waialae-nui's konohiki of fishing....There were ever so many people on the shores when these chiefs came to spend a while with the common people.

There was the spring that Kamalu use to bathe in....

There were two springs, one is on the summit of Waialae-nui...These appear to be good sites, there is much water, but its beauty of the time of the konohiki is gone. Now the kapu is freed and the kapu places are trodden underfoot.

THE MĀHELE (1848-1851)

In the 1840s, a drastic change in the traditional land tenure resulted in a division of island lands and a system of private ownership based on Western law. While it is a complex issue, many scholars believe that in order to protect Hawaiian sovereignty from foreign powers, Kamehameha III (Kamehameha III) was forced to establish laws changing the traditional Hawaiian economy to that of a market economy (Kuykendall 1938, Vol. I:145; Daws 1977:111; Kelly 1983:45; Kame`eleihiwa 1992:169-70, 176; Kelly 1998:4). The Māhele of 1848 divided Hawaiian lands between the king, the chiefs, the government, and began the process of private ownership of lands. The subsequently awarded parcels were called Land Commission Awards (LCAs). Once lands were thus made available and private ownership was instituted, the *maka`āinana* (commoners), if they had been made aware of the procedures, were able to claim the plots on which they had been cultivating and living. These claims did not include any previously cultivated but presently fallow land, `okipu`u (forest clearing on O`ahu), stream fisheries, or many other resources necessary for traditional survival (Kelly 1983; Kame`eleihiwa 1992:295; Kirch and Sahlins 1992). If occupation could be established through the testimony of

two witnesses, the petitioners were awarded the claimed LCA and issued a Royal Patent after which they could take possession of the property (Chinen 1961:16).

Once Article IV of the Board of Commissioners to Quiet Land Titles was passed in December 1845, the legal process of private land ownership was begun. The land division, called the Māhele, began in 1848. As stated above, the lands of the kingdom of Hawai`i were divided among the king (crown lands), the *ali`i* and *konohiki*, and the government. The `ili of Wai`alae Iki was awarded to Abner Pākī, the father of Bernice Pauahi Bishop, and the *ili* of Wai`alae Nui was awarded to Victoria Kamamalu, granddaughter of Kamehameha.

The project area is located within the land of Kānewai, which was awarded to Kalaiheana as Land Commission Award (LCA) 228:2, during the Māhele. Kalaiheana was a *kahu* (guardian) to Liholiho and participated in the 1824 invasion of Kaua`i (Kamakau 1991:220, 268). According to the testimony of John Papa `Īī, in the Native Register, Kalaiheana received the lands after Kamehameha's conquest of O`ahu:

Kalaiheana's land, called Kanewai, is at Waikiki. It has some leles in Manoa— Keapuapu, Holoawalu [Kaloalu in N. T.], Pakui, and the lele of Paho at Waikiki; and the sea of Kahala. at was the land of Keeaumoku at Waikiki, adjoining the north side of Kalaepohaku. This land became his upon the victory of Kamehameha I at the Battle of Nuuanu, also Wai'alua, as was the custom of granting lands to the chiefs at the time. When the peleleu [fleet of large canoes] came, the land passed from Keeaumoku to Papa and Kalaiheana, and all the leles were also conveyed. From thence came this acquisition and there was no deterrent until the year 1841. For the first time, an edge of Kahala was taken for Wai`alae. And in the year 1846 another portion was taken for Kalaepohaku, in the month of May, or perhaps June. (Native Register vol.2, pg1, cited in Waihona `Aina 2014)

When Kalaiheana died in 1855, the `ili of Kānewai was bequeathed to John Papa `Īī as the guardian (*kahu*) of Victoria (Kamamalu). According to `Īī, Kalaiheana had claimed Kānewai before the Land Commission, "... but, not in his own right but as possession of the land under Kamamalu." Victoria Kamamalu was granted the *ahupua`a* of Wai`alae as LCA 7713, as the heir to her mother, Kinau, who had inherited the lands of Ka`ahumanu. Bernice Pauahi Bishop subsequently inherited Kamamalu's land.

WAIALAE RANCH

In the 1850s Captain John Ross leased 300 acres from the Kamehameha family for a ranch, where he raised cattle. In 1887, Daniel Isenberg purchased the lease to Waialae Ranch from the Bishop Estate. Isenberg subsequently planted extensive fields of alfalfa in Wai`alae for the development of a dairy ranch, the Waialae Ranch Company. By 1924, the Waialae Ranch Company was the largest dairy in Honolulu. Isenberg sold the property in the 1920s (Hitch and Kuramoto 1981:36). In July 1927, the Isenberg ranch home, near the mouth of Wai`alae Stream, became the club house for the Waialae Golf Course (Honolulu Star Bulletin, August 25, 1934).

NIU PLANTATION

In the 1881 edition of Thomas Thrum's (1881) *Hawaiian Almanac and Annual*, a single sugar plantation was listed in the district of Wai`alae, the Niu Plantation. This plantation is not listed in subsequent annuals, suggesting that the plantation was short-lived. An attempt to grow pineapple in the 1920s was also short-lived.

WAIALAE GOLF COURSE

In 1925 the Territorial Hotel Company acquired 250 acres from the Bishop Estate for the construction of Waialae Golf Course. The course was built to cater to wealthy tourists but local residents could also use the course by paying an annual fee (Hitch and Kuramoto 1981:42). After the stock market crash of 1929 some of the local members were persuaded to manage the course as a private club. In the 1960s the golf course was redesigned to make room for the construction of the Kahala Hilton Hotel, the Kahala apartments, and the Kai Nani subdivision along the coastal side of the property.

RESIDENTIAL DEVELOPMENT

In the 1920s, Wai`alae gradually developed into a suburb of Honolulu, spreading eastward along Wai`alae Road (now Kalaniana`ole Highway) and *mauka* into Wai`alae Iki and `Āinakoā. Beginning in the 1920s, a series of improvements were made to Wai`alae Road, as part of the development of Kalanianaole Highway. Farming continued in the area into the 1930s; in 1938 more than 50 pig farms were operating in the vicinity of Farmers Road and Kahala Avenues. At the same time the beachfront along Kahala Avenue was being developed with homes (Honolulu Advertiser, December 20, 1938). In the 1940s and 1950s the Bishop Estate subdivided and leased individual residential sites across Kahala. By 1956 Wailupe Fishpond, to the east of the project area, had been filled in to provide more land for subdivision development (Clark 1977:36-7).

PREVIOUS ARCHAEOLOGICAL RESEARCH

The numerous archaeological sites recorded in the area consist mainly of human burials identified during construction activities, as well as cultural remains relating to both prehistoric and historic time periods.

Few archaeological surveys have been conducted in Wai`alae Nui and Wai`alae Iki. Most of the archaeological work in the area was initiated by the inadvertent discovery of human remains during construction activities.

In the early 1930s, John G. McAllister conducted an archaeological survey of the island of O`ahu, under the auspices of the Bernice Pauahi Bishop Museum. During the survey, Punahoa, an informant, told McAllister (1933) Kaunua Kahekili Heiau (McAllister's Site 55). Although the *heiau* had been destroyed by the time of McAllister's survey, Punahoa described the *heiau* as a large structure which had been "...located on top of the ridge which divides Wailupe and Waialae, on the highest and most pronounced knoll. The site was formerly planted in pineapples, but now the heiau is overgrown with high grass and weeds and the pineapples are on the ground sloping around it. Many large rocks embedded in the earth are all that remains of the structure" (McAllister 1933: 71).

In 1967, the Bishop Museum excavated a test unit the Wai`alae shelter cave (State Site 50-80-14-2503), on Kuana Street. Marine shell food remains, traditional Hawaiian artifacts, and historic artifacts were recovered, including a fish hook, an octopus lure, a coral file, copper tubing and bottle glass dating from the 1880s to 1920s (Lloyd Soehren 1967 in Kennedy 1991).

Joseph Kennedy (1991) conducted a surface survey of a 7.5-acre parcel occupied by facilities for the Star of the Sea Church-School complex located mauka and adjacent to Kalaniana`ole Highway. Two lava tubes and six caves were found, but they did not contain any cultural material. No other surface features were found.

Paul Cleghorn Consulting conducted a surface survey of a 6.4-acre parcel in Kapakahi Gulch, mauka of the end of Luinakoa Street (Cleghorn and Anderson 1992). No surface features were found.

Scientific Consultant Services, Inc., conducted an assessment of the surface features along a 1,100-meter-long corridor of the Wiliwilinui Trail Alignment on Wai`alae Iki Ridge (Chaffee and Spear 1994). During the survey, a World War II concrete and metal bunker (State Site 50-80-14-4811) was identified.

In 2001 and 2002, Cultural Surveys Hawai`i, Inc. conducted archaeological monitoring during the installation of a gas main and a water main from `Ainakoa Avenue to West Hind Drive (Bush and Hammatt 2002). The majority of the project corridor was within a zone of coral outcrop that has since been covered by eroded soil and fill layers. The main trenching line was found to be composed primarily of fill materials associated with different phases in the development of the highway. No cultural material (except modern trash) was encountered during installation of the gas main, but pockets of sand were noted. One horseshoe and one *poi* pounder fragment were collected during installation of the water main. Basalt boulders found in one area were thought to possibly be part of the wall of former Wailupe Fishpond.

Subsequently, Cultural Survey's Hawai`i, Inc. conducted archaeological monitoring during improvements to the water system at Black Point (Jones and Hammatt (2003). Monitors were on-site during all excavations in areas thought to have Jaucas sand. The actual area that contained Jaucas sands was much smaller than predicted, but the excavations for the water system were generally shallow (less than 50 centimeters deep), and it was determined that strata of undisturbed sand were probably still undisturbed at a deeper level. No subsurface features were found.

Cultural Surveys Hawai`i Inc. conducted an archaeological literature review and field inspection for the proposed Wai`alae Country Club Master Plan Project conducted (O`Hare *et al.* 2008). In addition the same group also produced a Cultural Impact Evaluation for the Country Club Master Plan as well (Spearing et al. 2008).

Scientific Consultant Services, Inc. conducted archaeological monitoring of the Wai`alae Country Club during the installation of electrical switchgear installation and replacement of air conditioning facilities (Wilson and Spear 2009). The excavations associated with this undertaking revealed subsurface strata consisting of a single uniform stratigraphy, the vast majority of which was previously disturbed though landscaping and building construction. No cultural deposits or significant historic properties were identified.

In 2013, Scientific Consultant Services, Inc. conducted an archaeological inventory survey of the subject properties (Hazlett and Spear 2014, in prep.). During the survey, no historic properties were identified.

BURIALS

Many mid-nineteenth century visitors to the islands visited a large area of inadvertently exposed human skeletal remains in sand on the eastern side of Diamond Head or Black Point, in Waikīkī Ahupua`a. These tourists, including the writer Mark Twain, speculated that either these graves were the remains of warriors killed in one of Kamehameha's battles or the interment site for Hawaiians who died in one of the many epidemics that swept the islands in the years after contact with Westerners and Asians. From the early traveler's accounts, this large dune cemetery was probably in the `ili of Wai`alae Nui in the Kahala beach area. Several visitors to the cemetery noted that they rode or drove around Black Point, but had not yet reached the coconut groves of the `ili of Wai`alae Iki, within the current project area. Although it does not seem that the dense concentration of human skeletal remains encountered in Kahala extends to the project area, it is likely that some burials were interred in the Wai`alae Iki shore, wherever the sand was deep enough for a shallow pit (Spearing et al. 2008).

During construction at a property at 4505 Kahala Avenue, human skeletal remains were inadvertently identified by a construction crew and reported to the State Historic Preservation Division (SHPD). The SHPD archaeologists disinterred the skeletal remains, which was determined to consist of the primary interment of a young-to-middle aged female which had been interred in a semi-flexed position (Griffin 1987). A subsequent examination of the remains by the University of Hawai`i, Mānoa, determined that there was a second burial intrusive with the first, which consisted only of the lower limb skeletal elements of a young male adult (Lee and Pietrusewsky 1988). The burial site was subsequently designated State Site 50-80-14-3725

During the excavation of a swimming pool on a property at 1013 Waiholo Street, human skeletal remains were inadvertently discovered. The SHPD archaeologists disinterred the remains and determined the remains represented a single individual in a flexed position (Bath and Griffin 1988). A subsequent examination of the remains by the University of Hawai`i determined the skeletal remains represented an adult female, approximately 35 years old (Douglas and Pietrusewsky 1988). The burial site was subsequently designated State Site 50-80-14-3760.

In 1989, contractors at a construction site located at 4745 Aukai Avenue reported the inadvertent discovery of human skeletal remains to the SHPD. The State Historic Preservation Division archaeologist determined the partial remains represented a single individual which had been previously disturbed (Bath 1989). A subsequent examination of the remains by the University of Hawai`i, Mānoa, determined the skeletal remains represented a single adult male, 40 to 45 years old (Bradley and Pietrusewsky 1989a). The burial was subsequently designated State Site 50-80-14-4126.

In 1989, Human skeletal remains inadvertently identified during the construction excavations for a house foundation at 4585 Kahala Avenue were reported to the SHPD (Kawachi 1989). The burial was disturbed by the construction, but the contractor's description indicated that the burial may have been in a flexed position. The skull and upper third of the body was missing. A subsequent examination of the remains by the University of Hawai`i, Mānoa, determined the skeletal remains represented an adult female, approximately 25 to 35 years old (Bradley and Pietrusewsky 1989b). The burial was subsequently designated State Site 50-80-14-4065.

In 1995, human skeletal remains were inadvertently encountered during the excavation of an elevator shaft for a house at 4433 Kahala Avenue. The burial (later designated as Burial 1) was determined to be likely associated with an ash and charcoal cultural layer 60 to 95 centimeters below the ground surface (Jourdane 1995). The burial was disinterred and later re-interred. The burial and the cultural layer were designated State Site 50-80-14-5320.

In 1997, additional burial recovery work was carried out at 4433 Kahala Avenue (Erkelens and Tomonari-Tuggle 1997). Back dirt piles were screened and the loose soil was removed from the elevator shaft. When the walls of the shaft were cleaned, the profile of a fire pit and the profile of a burial pit were noted. A second burial was encountered in the burial pit and additional elements of this burial were located in the back dirt piles. A backhoe excavated a 4 by 2.5-m block around Burial 2 and a third burial was uncovered. Burial 1 was identified as the skeleton of a 30-35 year old male. A shell button and two porcelain beads in the back dirt probably belong to this individual. Burial 2 was identified as the skeleton of a 20-25 year old female. Burial 3 was identified as a 3-year old child, probably the child of the female (Burial 2). A square-cut nail was found with this burial. Due to the presence of historic artifacts, the burials were determined to be of Polynesian or Asian ethnicity, buried in the nineteenth century. All three burials were disinterred and reinterred elsewhere on the property. All three burials at the site are considered part of State Site 50-80-14-5320.

In April of 1999, a local resident collected human skeletal remains from a cave to a located *mauka* of the end of Luinakoa Street (Aina Koa Subdivision) on Wai`alae Nui Ridge. The State Historic Preservation Division archaeologists were notified and determined that the human skeletal elements were distributed across the cave floor and were likely to represent one individual (Collins and Jourdane 1999). No other cultural remains were found in the cave. The cave and burial were designated State Site 50-80-14-5743.

During the excavation of a utility line at 4773 Kahala Avenue in 2003, human skeletal remains were inadvertently encountered. T. S. Dye & Colleagues were contracted to conduct further investigation of the find (Putzi and Dye 2003). The remains of five individuals, a cultural layer, and several traditional Hawaiian artifacts were recovered from the excavation and from the back dirt piles. The burials were probably of Hawaiian ancestry based on the presence of the traditional artifacts. The burials and the cultural layer were designated State Site 50-80-14-6632.

In 2003, Haun and Associates Inc. conducted a surface survey of the 8-acre Waialae 180 Reservoir Replacement project site located near the Kalani High School Athletic Field, *mauka* of Kalaniana'ole Highway (Haun and Henry 2003). During the survey, two caves containing human skeletal remains were identified (State Site 50-80-14-14-5938 and 50-80-14-6351). The human skeletal elements identified and designated as State Site 50-80-14-5938, included five crania, suggesting 5 individuals were represented. A single human infant cranium was encountered at Site 6351. As no evidence of historic cultural materials was present, the burials were interpreted to be Native Hawaiian associated with the late pre- or early post-Contact Period.

Human skeletal remains were inadvertently identified at 4577 Kahala Avenue in 2006 during excavation of a sewer line. The remains were interpreted to represent a single *in situ* burial and a single previously disturbed burial encountered within a cultural layer (Dye 2005a, b; Dye 2006). The burials and the cultural layer were designated State Site 50-80-14-6762.

In 2006, Pacific Consulting Services conducted extensive Phase I subsurface testing at three parcels located at 4415, 4423, and 4433 Kahala Avenue (Collins and Clark 2006). Fifty-one test units were excavated, covering the majority of the project area. Human skeletal remains had been previously encountered at 4433 Kahala Avenue in the 1990s (Jourdane 1995; Erkelens and Tomonari-Tuggle 1997). Collins and Clark (2006) reported on two sand cultural layers, the upper layer believed to be associated with historic period habitation and the lower sand layer associated with traditional Hawaiian habitation.

The second phase of this project was carried out in 2007 (Dye and Jourdane 2007). During this phase, the 1997 re-interment site was relocated and marked on the surface. Twenty shovel tests were excavated in areas not covered by the Phase I project. Controlled block excavations were placed adjacent to shovel test pits which contained one or more of the two sand layers identified by Collins and Clark (2006). The work indicated that the possible two cultural layers were actually "a single old land surface, or paleosol, upon which a variety of historic-period artifacts had been deposited" (Dye and Jourdane 2007:32).

In March of 2007, the SHPD (Chinen 2007a) was notified that human skeletal remains had been inadvertently identified during construction a new house and swimming pool at 4565 Kahala Avenue. The skeletal remains were dispersed around the property's backyard. The SHPD determined that a qualified archaeological consultant would need to screen back dirt piles and conduct block excavations at the site to try to determine the original location of the burial and to test if other burials were present. CSH (Tulchin and Hammatt 2007) excavated 25 test units but the original location of the burial could not be determined. They did recover additional skeletal remains from the back dirt piles. Following the test excavations, a CSH archaeologist monitored the remainder of construction related excavations in the project area. On April 25, May 15 and July 11, 2007 additional human skeletal remains were observed (Chinen 2007b). These were determined to be from the same burial as that was identified in March. The SHPD assumed jurisdiction over the inadvertent discoveries and determined to relocate the remains. The burial was designated site State Site 50-80-14-6927.

Scientific Consultant Services, Inc. conducted Archaeological Monitoring for the Waialae Country Club Clubhouse upgrade between February 1 and May 31, 2011 (Dagher *et al.* 2013). Two archaeological sites were recorded; State Site 50-80-14-7206, a human burial, with a partially intact burial pit, and State Site 50-80-14-7207, comprised of a single *in situ* human burial (Feature 1) and a pit feature of indeterminate function (Feature 2). The burials were found to be in association with a former A-horizon identified as a cultural layer.

Scientific Consultant Services, Inc. conducted Archaeological Monitoring for the Waialae Country Club Annex Building Project between April 22 to December 30, 2013 (Pestana and Spear, n.d. a, in prep.). The archaeological monitoring led to the identification of two sites (State Sites 50-80-14-7206 and 50-80-14-7207). State Site 50-80-14-7206 (Burial 1), located on TMK: (1) 3-5-023:038, consisted of a partial set of human skeletal remains encountered in the excavation for the Waialae Country Club Clubhouse's footing expansion excavation. State Site 50-80-14-7207, located on TMK: (1) 3-5-023: 003 consisted of two subsurface features

represented by a human burial (Subsurface Feature 1, Burial 1) and a pit (Subsurface Feature 2) of indeterminate function.

In 2013, Scientific Consultant Services, Inc. (Hazlett and Spear 2014) conducted an archaeological inventory survey of two adjacent waterfront parcels at 4465/4469 Kahala Avenue in the `ili of Wai`alae Nui, Wai`alae Ahupua`a, Kona District, O`ahu Island, Hawai`i [TMK (1) 3-5-003:002 and 003]. No historic properties were identified.

In 2015, Scientific Consultant Services, Inc. (Pestana and Spear n.d, a, in prep) conducted an archaeological inventory survey-level investigation of the approximately 1.3 acre subject property in the `ili of Wai`alae Nui, Waikīkī Ahupua`a, Kona District, O`ahu Island, Hawai`i [TMK (1) 3-5-005:016]. No historic properties were identified.

CONSULTATION

Consultation was sought from Dr. Kamana`opono M. Crabbe, Chief Executive Officer, Office of Hawaiian Affairs; Vincent H. Rodrigues, State Historic Preservation Division, Culture and History Branch Chief; Manu Boyd, President, Hawaiian Civic Club, President; Victoria Holt-Takamine, Kumu Hula; Hinalaimoana K.K. Wong-Kalu, community member; William Ho`ohuli, community member; Leimana DaMate, Aha Moku Advisory Committee, Executive Director; S.C. Kaahiki Solis, Cultural Historian, State Historic Preservation Division; Mahealani Cypher, Ko`olaupoko Hawaiian Civic Club, President; Laura Thompson, Polynesian Voyaging Society and the Hawaiian Civic Club.

In addition, a Cultural Impact Assessment Notice was published on August 26, 27 and 30, 2015, in *The Honolulu Star-Advertiser*, and in the September 2015 issue of the OHA newspaper, *Ka Wai Ola* (Garett Kamemoto, personal communication) (see Appendix B). These notices requested information of cultural resources or activities in the area of the proposed project, stated the Tax Map Key (TMK) number, and where to respond with pertinent information. Based on the responses, an assessment of the potential effects on cultural resources in the project area and recommendations for mitigation of these effects can be proposed.

CULTURAL IMPACT ASSESSMENT INQUIRY RESPONSES

Analysis of the potential effect of the project on cultural resources, practices or beliefs, the potential to isolate cultural resources, maintain practices or beliefs in their original setting, and the potential of the project to introduce elements that may alter the setting in which cultural practices take place is a requirement of the OEQC (2012:13). As stated earlier, this includes the cultural resources of the different groups comprising the multi-ethnic community of Hawai'i.

Three responses to SCS's request seeking information pertaining to traditional cultural practices conducted in the vicinity of the proposed development site were received: Dr. Kamana`opono M. Crabbe, Chief Executive Officer, Office of Hawaiian Affairs, Victoria Holt-Takamine, *kumu hula*; and Hinalaimoana K.K. Wong-Kalu, Chair and Kona District Representative, O`ahu Island Burial Council. These responses are provided below.

Victoria Holt-Takamine

A response was received from Mrs. Victoria Holt-Takamine, via an e-mail from Kawika McKeague, on February 18, 2014 [in response to a CIA inquiry for a near-by property]. In the mail, Mrs. Holt-Takamine stated that, "In terms of cultural practices, the [*hula*] *hālau* [school] used to go to Kahala Beach to conduct *hi`uwai* (ocean purification) practices that were conducted usually in anticipation/preparation for a competition, performance, or a period during *hālau* training that warrant spiritual cleansing. *Hi`uwai* [were] usually conducted either [at] sunrise [or] sunset. Protocols would include a period of silence after *oli* [chants] and *pule* [prayers] were offered. Each *hālau* member, in silence, would enter the ocean water and focus on thoughts, feelings, emotions, they wanted transmitted out of their physical/spiritual form and released in the water. [The] [o]cean is healing/cleansing/purifying. The beaches fronting Kahala were utilized because of their remote location and less likely to have an uninvited audience watch the protocol being conducted". Mrs. Holt-Takamine also recalled that during her time dancing for Danny Kaleikini, fishermen that would do night fishing off the shore.

Dr. Kamana`opono M. Crabbe, Chief Executive Officer, Office of Hawaiian Affairs

PHONE (808) 594-1888



FAX (808) 594-1938

STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
560 N. NIMITZ HWY., SUITE 200
HONOLULU, HAWAII 96817

HRD15-7594

September 10, 2015

Cathleen Dagher
Senior Archaeologist
Scientific Consultation Services, Inc.
1347 Kapi`olani Boulevard, Suite 408
Honolulu, HI 96814

Re: Cultural Impact Assessment Consultation for 4607 Kāhala Avenue Redevelopment
Waikiki Ahupua`a, Kona Moku, O`ahu Mokupuni
Tax Map Key: (1) 3-5-005:016

Aloha e Cathleen Dagher:

The Office of Hawaiian Affairs (OHA) is in receipt of your August 19, 2015 letter, initiating consultation and seeking comments ahead of a cultural impact assessment for the proposed redevelopment of 4607 Kāhala Avenue.

The project plan includes a plan to redevelop three parcels on a 1.3-acre parcel located on the makai side of Kāhala Avenue. As mentioned in your letter, the property is under the existing R-7,5 zoning and allowed density and the current plan anticipates that six new homes will be built.

Previous archaeological records from the T.S. Dye & Colleagues, Archaeologists, Inc. report mentions that iwi kūpuna have been found along the area of the Kāhala Avenue neighborhood. Individual burials have been found near 4505 Kāhala Avenue, at the Kāhala Hilton Hotel, and at the location of the Kāhala Apartments, an unrecorded historic-era cemetery was exposed.¹ OHA notes that because burials were found in adjacent properties, the possibility of encountering Hawaiian burials and cultural deposits is high.

¹ Erkelens, C. and M. Tomonari-Tuggle (1997, April). Archaeological Investigations at 4433 Kāhala Avenue, Honolulu, Hawai'i. Takenaka (USA) Corporation. Honolulu: International Archaeological Research Institute, Inc.

Cathleen Dagher
September 10, 2015
Page 2

According to the report on burial recovery operations by T.S. Dye & Colleagues, Archaeologists, Inc.'s historical background of December 4, 2003,

[t]he project area is located in the Kāhala neighborhood of Honolulu. Traditionally it was known as Kanewai Kāhala (Erkelens and Tomonari-Tuggle 1997: 4-8). During the Great Mahele, the land of Kanewai Kāhala was awarded to Kalaiheana. Kalaiheana had been a war leader under Kamehameha and based his claim on having received the land from the king as panalā'au for services rendered during the Battle of Nu'uauu. Kalaiheana was a kahu to Liholiho and participated in the 1824 invasion of Kaua'i (Kamakau 1992:220, 268). He died in 1855, leaving the land to his kinsman, John 'I'i, as foster father to Victoria Kamamalu. Kamamalu's lands were inherited by her father, Kekūana'oa. Later, Bernice Pauahi inherited these and other lands of the Kamehameha dynasty, becoming their sole proprietor. With her death in 1885, these holdings were designated the Bishop Estate. The Bishop Estate leased lands throughout this area for agriculture, pig farming, horse breeding, and dairy and cattle ranching. Title was also held for fisheries offshore. Not until the 1940's and early 1950's was this area developed for residential purposes (Erkelens and Tomonari-Tuggle 1997)."

OHA will rely on the project's plan to continue consultation with, and seek the input of, cultural practitioners, community members, and family descendants in this area and the ahupua'a of Waikīkī who best know the area.

Finally, OHA does request assurances that should iwi kūpuna or Native Hawaiian cultural deposits be identified during ground altering activities, all work will immediately cease and the appropriate agencies, including OHA, will be contacted pursuant to applicable law.

Thank you for initiating consultation at this early stage. Should you have any questions, please contact Kathryn Keala at (808) 594-0272 or kathyk@oha.org.

'O wau iho nō me ka 'oia 'i'o,


Kamana'opono M. Crabbe, Ph.D.
Ka Puhana, Chief Executive Officer

KC:kk

**Please address replies and similar, future correspondence to our agency:*

Dr. Kamana'opono Crabbe
Attn: OHA Compliance Enforcement
560 N. Nimitz Hwy, Ste. 200
Honolulu, HI 96817

Hinaleimoana K.K. Wong-Kalu

My grandmother Mona Kananiokalani Kealoha (Mathias) was the daughter of my great grandparents Enoka Kealoha and Maria Kahokuokekai Gardner. They lived much of their life on the *makai* side of School Street, near the St. Theresa Catholic Church, on the *mauka* side of the road.

My grandmother Mona was the youngest girl of 16 children and I was raised much of my life by her and my other grandparents. She often told stories of how our Kealoha family line (primarily her and her siblings under Enoka and Maria, were known as the "Seaweed" Kealoha clan). This nickname was the definitive to ascertain whether or not we were related to others with the same Kealoha last name. (The former family last name was Kepohoni, which in fact is actually a derivative of Cape Horn with Hawaiian orthography and pronunciation. A distant ancestor went around on whaling ships and upon rounding Cape Horn, he apparently took the adage after that voyage, probably because that may have been all he would recount about when he came home).

The "Seaweed" Kealoha family was well known for gathering seaweed of different desired varieties and my great grandmother Maria often took my grandmother to different places to gather seaweed or *Limu* as we know it and prepared it for all sorts of family eating opportunities. Some of my grandmother's brothers went to school at Kamehameha Schools and thus whenever family would visit them (they being boarders on KS campus) they would bring lots of *Limu* to go with the *poi* that was shared with my grandmother's older brothers.

The Seaweed or *Limu* that was gathered by my great grandmother was often taken from different places all throughout the Moku of Kona (Kou, and now more commonly referred to as Honolulu), sometimes ending up as far as Kahala if there happened to be transportation available.

This is my story about the *limu* gathering of my family.

SUMMARY

The “level of effort undertaken” to identify potential effect by a project to cultural resources, places or beliefs (OEQC 2012) has not been officially defined and is left up to the investigator. A good faith effort can mean contacting agencies by letter, interviewing people who may be affected by the project or who know its history, research identifying sensitive areas and previous land use, holding meetings in which the public is invited to testify, notifying the community

through the media, and other appropriate strategies based on the type of project being proposed and its impact potential. Sending inquiring letters to organizations concerning development of a piece of property that has already been totally impacted by previous activity and is located in an already developed industrial area may be a “good faith effort”. However, when many factors need to be considered, such as in coastal or mountain development, a good faith effort might mean an entirely different level of research activity. In the case of the current undertaking, letters of inquiry were sent to individuals and organizations that may have knowledge or information pertaining to the collection of cultural resources and/or practices currently, or previously conducted in the vicinity of proposed project area and the *ʻili* of Waiʻālae Nui.

Historical and cultural source materials were extensively used and can be found listed in the References portion of the report. Such scholars as Samuel Kamakau, Martha Beckwith, Jon J. Chinen, Lilikalā Kameʻeleihiwa, R. S. Kuykendall, Marion Kelly, E. S. C. Handy and E.G. Handy, Elspeth P. Sterling, and Mary Kawena Pukuʻi and Samuel H. Elbert continue to contribute to our knowledge and understanding of Hawaiʻi, past and present. The works of these and other authors were consulted and incorporated in the report where appropriate. Land use document research was supplied by the Waihona ʻAina Database (2015).

CULTURAL ASSESSMENT AND RECOMMENDATIONS

Analysis of the potential effect of the project on cultural resources, practices or beliefs, its potential to isolate cultural resources, practices or beliefs from their setting, and the potential of the project to introduce elements which may alter the setting in which cultural practices take place is also a suggested guideline of the OEQC (2012). Based on historical research and the response from those organizations and individuals contacted, it is reasonable to conclude that Hawaiian rights related to gathering, access or other customary activities within the project area will not be affected and there will be no adverse effect upon cultural practices or beliefs.

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APPENDIX A: EXAMPLE LETTER OF INQUIRY

Aloha kāua:

At the request of Group 70, Scientific Consultant Services, Inc. (SCS) is in the process of preparing a Cultural Impact Assessment (CIA) pertaining to a proposed residential project located on 1.3 acres of land within the `ili of Waialae Iki, Waikīkī Ahupua`a, Honolulu (Kona) District, O`ahu Island [TMK: (1) 3-5-005:016] (Figures 1 and 2).

4607 Kahala LLC (an affiliate of A&B Properties, Inc.) is planning to re-develop three, previously developed, parcels formerly owned by Genshiro Kawamoto, located at 4607 Kahala Avenue, Honolulu, Hawai`i. The proposed project area is situated on the *makai* (east) side of Kahala Avenue, fronting the ocean, near Hunakai Street.

The purpose of this Cultural Impact Assessment (CIA) is to identify and understand the importance of any traditional Hawaiian and/or historic cultural resources or traditional cultural practices associated with the `ili of Waialae Iki and the surrounding Waikīkī Ahupua`a. In an effort to promote responsible decision-making, the CIA will gather information about the project area and its surroundings through research and interviews with individuals that are knowledgeable about the area in order to assess potential impacts to the cultural resources, cultural practices and beliefs identified as a result of the proposed project. We are seeking your *kōkua* and guidance regarding the following aspects of our study:

- General history as well as present and past land use of the project area
- Knowledge of cultural resources which may be impacted by future development of the project area (i.e. historic and archaeological sites, as well as burials)
- Knowledge of traditional gathering practices in the project area, both past and ongoing
- Cultural associations of the project area, such as legends, traditional uses and beliefs
- Referrals of *kūpuna* or elders and *kama`āina* who might be willing to share their cultural knowledge of the project area and the surrounding *ahupua`a*
- Due to the sensitive nature regarding *iwi kūpuna* or ancestral remains discovered, *mana`o* regarding *nā iwi kūpuna* will be greatly appreciated
- Any other cultural concerns the community has related to Hawaiian cultural practices within or in the vicinity of the project area.

The Cultural Impact Assessment is being conducted in compliance with the State of Hawai`i Revised Statutes (HRS) Chapter 343 Environmental Impact Statement Law and in accordance with the State of Hawai`i Department of Health's Office of Environmental Quality Control (OEQC) Guidelines for Assessing Cultural Impacts as adopted by the Environmental Council, State of Hawai`i on November 19, 1997, Scientific Consultant

According to the *Guidelines for Assessing Cultural Impacts* (Office of Environmental Quality Control, Nov. 1997):

The types of cultural practices and beliefs subject to assessment may include subsistence, commercial, residential, agricultural, access-related, recreational, and religious and spiritual customs... The types of cultural resources subject to

assessment may include traditional cultural properties or other types of historic sites, both man made and natural which support such cultural beliefs...

Enclosed are maps showing the proposed project area. Please contact me at the Scientific Consultant Services, Honolulu, office at (808) 597-1182 or via e-mail (cathy@scshawaii.com) with any information or recommendations concerning this Cultural Impact Assessment. The results of the cultural impact assessment are dependent on the response and contributions made by individuals, such as you.

Sincerely yours,

Cathleen Dagher
Senior Archaeologist
Enclosures (3)

APPENDIX B: NEWSPAPER NOTICE AND AFFIDAVIT

Scientific Consultant Services, Inc. (SCS) is seeking information on cultural resources and traditional, previously or on-going, cultural activities in the vicinity of a proposed residential project area located on approximately 1.3 acres of land within the *`ili* of Waiālae Iki, Waikīkī Ahupua`a, Honolulu (Kona) District, O`ahu Island [TMK: (1) 3-5-005:016]. Please respond within 30 days to Cathleen Dagher at (808) 597-1182.

AFFIDAVIT OF PUBLICATION

IN THE MATTER OF
CIA Notice for 4607 Kahala (SCS Proj 1755)

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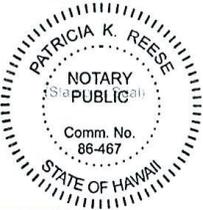
STATE OF HAWAII }
} SS.
City and County of Honolulu }

Doc. Date: AUG 31 2015 # Pages: 1

Notary Name: Patricia K. Reese First Judicial **Circuit**

Doc. Description: Affidavit of
Publication

Patricia K. Reese AUG 31 2015
Notary Signature Date



Lisa Kaukani being duly sworn, deposes and says that she is a clerk, duly authorized to execute this affidavit of Oahu Publications, Inc. publisher of The Honolulu Star-Advertiser, MidWeek, The Garden Island, West Hawaii Today, and Hawaii Tribune-Herald, that said newspapers are newspapers of general circulation in the State of Hawaii, and that the attached notice is true notice as was published in the aforementioned newspapers as follows:

- Honolulu Star-Advertiser 3 times on:
08/26, 08/27, 08/30/2015
- MidWeek 0 times on:
- The Garden Island 0 times on:
- Hawaii Tribune-Herald 0 times on:
- West Hawaii Today 0 times on:

Scientific Consultant Services, Inc. (SCS) is seeking information on cultural resources and traditional, previously or on-going, cultural activities in the vicinity of a proposed residential project area located on approximately 1.3 acres of land within the 'ili of Wai'alea Iki, Waikiki Ahupua'a, Honolulu (Kona) District, O'ahu Island (TMK: (1) 3-5-005:016). Please respond within 30 days to Cathleen Dagher at (808) 597-1182.
(SAT90497 8/26, 8/27, 8/30/15)

Other Publications: 0 times on:

And that affiant is not a party to or in any way interested in the above entitled matter.

Lisa Kaukani
Lisa Kaukani

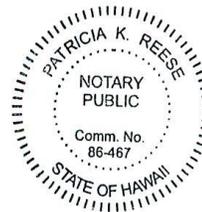
Subscribed to and sworn before me this 31st day of August A.D. 2015

Patricia K. Reese
Patricia K. Reese, Notary Public of the First Judicial Circuit, State of Hawaii

My commission expires: Oct 07, 2018

Ad # 0000790497

SP.NO.: _____ L.N.



APPENDIX C: EXAMPLE FOLLOW-UP LETTER OF INQUIRY

Aloha kāua:

This is the follow-up to our August 19, 2015 letter seeking information pertaining to traditional cultural practices. At the request of Group 70, Scientific Consultant Services, Inc. (SCS) is in the process of preparing a Cultural Impact Assessment (CIA) pertaining to a proposed residential project located on 1.3 acres of land within the `ili of Waialae Iki, Waikīkī Ahupua`a, Honolulu (Kona) District, O`ahu Island [TMK: (1) 3-5-005:016].

4607 Kahala LLC (an affiliate of A&B Properties, Inc.) is planning to redevelop three parcels formerly owned by Genshiro Kawamoto, located at 4607 Kahala Avenue. The site is about 1.3 acres located on the makai side of Kahala Avenue near Hunakai Street. Under the existing R-7.5 zoning and allowed density, the current plans anticipate that six new homes would be built.

The purpose of this Cultural Impact Assessment (CIA) is to identify and understand the importance of any traditional Hawaiian and/or historic cultural resources or traditional cultural practices associated with the `ili of Waialae Iki and the surrounding Waikīkī Ahupua`a. In an effort to promote responsible decision-making, the CIA will gather information about the project area and its surroundings through research and interviews with individuals that are knowledgeable about the area in order to assess potential impacts to the cultural resources, cultural practices and beliefs identified as a result of the proposed project. We are seeking your *kōkua* and guidance regarding the following aspects of our study:

- General history as well as present and past land use of the project area
- Knowledge of cultural resources which may be impacted by future development of the project area (i.e. historic and archaeological sites, as well as burials)
- Knowledge of traditional gathering practices in the project area, both past and ongoing
- Cultural associations of the project area, such as legends, traditional uses and beliefs
- Referrals of *kūpuna* or elders and *kama`āina* who might be willing to share their cultural knowledge of the project area and the surrounding *ahupua`a*
- Due to the sensitive nature regarding *iwi kūpuna* or ancestral remains discovered, *mana`o* regarding *nā iwi kūpuna* will be greatly appreciated
- Any other cultural concerns the community has related to Hawaiian cultural practices within or in the vicinity of the project area.

The Cultural Impact Assessment is being conducted in compliance with the State of Hawai`i Revised Statutes (HRS) Chapter 343 Environmental Impact Statement Law and in accordance with the State of Hawai`i Department of Health's Office of Environmental Quality Control (OEQC) Guidelines for Assessing Cultural Impacts as adopted by the Environmental Council, State of Hawai`i on November 19, 1997.

According to the *Guidelines for Assessing Cultural Impacts* (Office of Environmental Quality Control, Nov. 1997):

The types of cultural practices and beliefs subject to assessment may include subsistence, commercial, residential, agricultural, access-related, recreational, and religious and spiritual customs... The types of cultural resources subject to assessment may include traditional cultural properties or other types of historic sites, both man made and natural which support such cultural beliefs...

Please contact me at the Scientific Consultant Services, Honolulu, office at (808) 597-1182 or via e-mail (cathy@scshawaii.com) with any information or recommendations concerning this Cultural Impact Assessment. The results of the cultural impact assessment are dependent on the response and contributions made by individuals, such as you.

Sincerely yours,

A handwritten signature in cursive script that reads "Cathleen Dagher". The signature is written in black ink and is positioned below the "Sincerely yours," text.

Cathleen Dagher
Senior Archaeologist

Appendix D

PRELIMINARY ENGINEERING REPORT

PRELIMINARY ENGINEERING REPORT

FOR
4607 Kahala Avenue

Kahala, Honolulu, Oahu, Hawai'i
TMK: (1) 3-5-005: 016

October 15, 2015

Prepared for:

4607 Kahala LLC



THIS WORK WAS PREPARED
BY ME OR UNDER MY SUPERVISION

SIGNATURE
EXPIRATION DATE:

Prepared by:



925 Bethel Street, 5th Floor
Honolulu, HI 96813
Phone: (808) 523-5866
Fax: (808) 523-5874

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REFERENCES

1.0 INTRODUCTION

1.1 OVERVIEW

The project site is located on a parcel of previously developed land in Kahala, Honolulu, Oahu, Hawaii. It is identified as Tax Map Key (TMK) (1) 3-5-005:016 and is a consolidation of former lots 4, 4A, 5, 5A of the Kahala Subdivision. The subject tract area is approximately 58,207 square feet (1.34 acres). The parcel is currently zoned R-7.5 and is located within the Primary Urban Center and Special Management Area (SMA) of the City and County of Honolulu.

The property is located on the makai side of Kahala Avenue. Its northern boundary fronts Kahala Avenue, its southern boundary fronts the Pacific Ocean, and its western and eastern boundaries are adjacent to existing developed residential lots. (See Figure 1 – Location Map).

1.2 EXISTING CONDITIONS

The property is currently vacant but was previously developed with a single family dwelling plus an ancillary dwelling and swimming pool with associated driveways and walkways and lanais. The dwelling structures were demolished sometime between 2007-2009 and only a few trees and concrete slabs remain today. There are three approximately 20-foot high palm trees within the Kahala Avenue right-of-way.

The revised ALTA/ACSM Land Title Survey by Austin, Tsutsumi & Associates (November 8, 2013 and revised June 29, 2015) shows a future 8-foot road widening setback along the street frontage of the tract and a 25 foot wide building setback along Kahala Avenue. There is also a 40-foot shoreline setback. The shoreline was surveyed by Austin, Tsutsumi & Associates in June 2015 for official shoreline certification by the State Department of Land and Natural Resources (DLNR). Certification is expected by November 5, 2015.

There are existing CMU walls running along the parcel's easterly side and westerly sides. The wall along the easterly side is adjacent to TMK (1) 3-5-005:015, and the wall located along the Diamond Head side boundary is adjacent to Lot 3, TMK (1) 3-3-004-053 and along the eastern side of the public beach access pathway between Kahala Avenue and the Pacific Ocean.

There are public bus transit routes serving the site with two bus stops on Kahala Avenue. Bus Stop #4032 is located directly in front of the subject parcel and the other bus stop is located directly across Kahala Avenue in front of the property at TMK (1) 3-5-005:036. According to the latest Oahu Transit Services schedules, "TheBus" routes 14 and 22 travel in an east-west direction along Kahala Ave every day of the week.

Kahala Elementary School, Kalani High School and Kapiolani Community College are close by.



Figure 1
Location Map

1.3 TOPOGRAPHY AND SOIL CONDITIONS

The topographic survey prepared by Austin, Tsutsumi and Associates (June 29, 2015) indicates the parcel to be relatively level to gently sloping with elevations ranging from a high of 10.8 feet to a low of 6.0 feet, with site drainage mostly flowing makai. Elevations are based on City & County of Honolulu Street Monument brass disk “D12” which has an elevation of 6.00 feet referred to Mean Sea Level. Higher elevations are on the makai and mauka sides of the parcel with lower elevations generally near the center of the parcel. The depression in the center of the site could potentially cause drainage issues and must be considered as part of the site improvements. (See Figure 2 – Topographic Survey).

Soils on the property are classified as Jaucas Sand (JaC) on the mauka half of the parcel and Beaches (BS) on the makai half of the parcel. These soil types consist of mostly calcium carbonate with high to very high permeability. (See Table 1– Soil Properties and Figure 3– Soils Map).

| Soil Type | Jaucas Sand, 0 to 15% slope | Beaches, 1 to 5% slope |
|-----------------------------------|--|--|
| Drainage Class | Well drained | Excessively drained |
| Runoff Class | Low | Very Low |
| Permeability | High to very high (6.0 to 19.98 in/hr) | High to very high (6.0 to 19.98 in/hr) |
| Depth to Restrictive Layer | More than 80" | n/a |

**Table 1
Soil Properties**

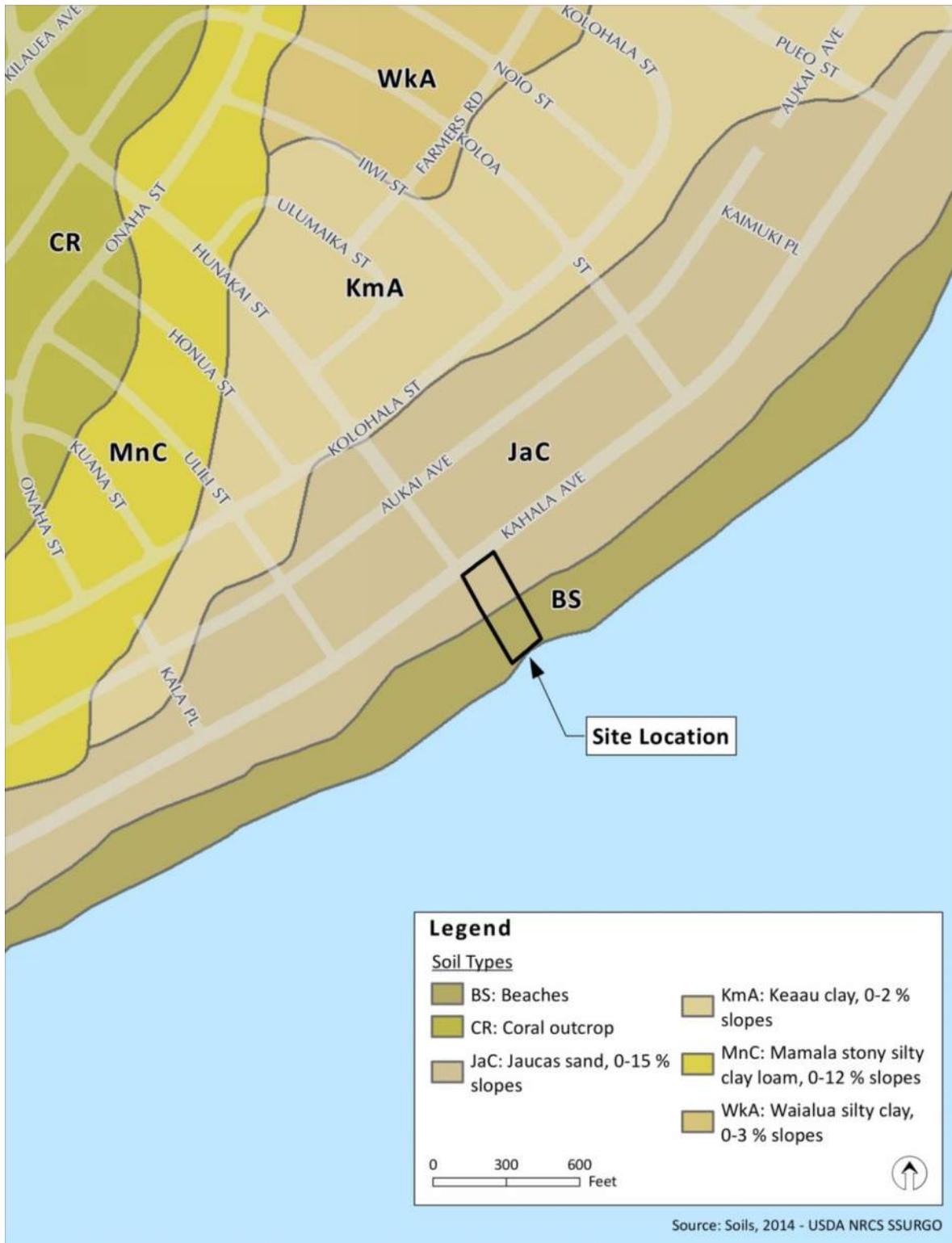


Figure 3
Soils Map

1.4 FLOOD ZONE

Based on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panel 15003C0369H (January 19, 2011), the majority of the parcel is located within Flood Zone AO – 1% annual chance of sheet flow flooding with a depth of 1 foot. A small portion of the project site along the western side is designated as Flood Zone X which is outside the 100-year floodplain. Another small portion of the parcel outside the proposed building footprint is located within Flood Zone VE (100 year coastal flood zone with additional hazards due to storm-induced velocity wave action) with a potential wave height of 12 feet. (See Figure 4 – Flood Zone Map).

Development of properties within flood hazard zones must conform to FEMA regulations and the City of Honolulu Land Use Ordinance (LUO). Although there are several alternatives for developments to comply with the flood hazard district regulations, the currently proposed design will elevate the first floor at least one foot above the highest adjacent grade elevation. An Elevation Certificate will be required.

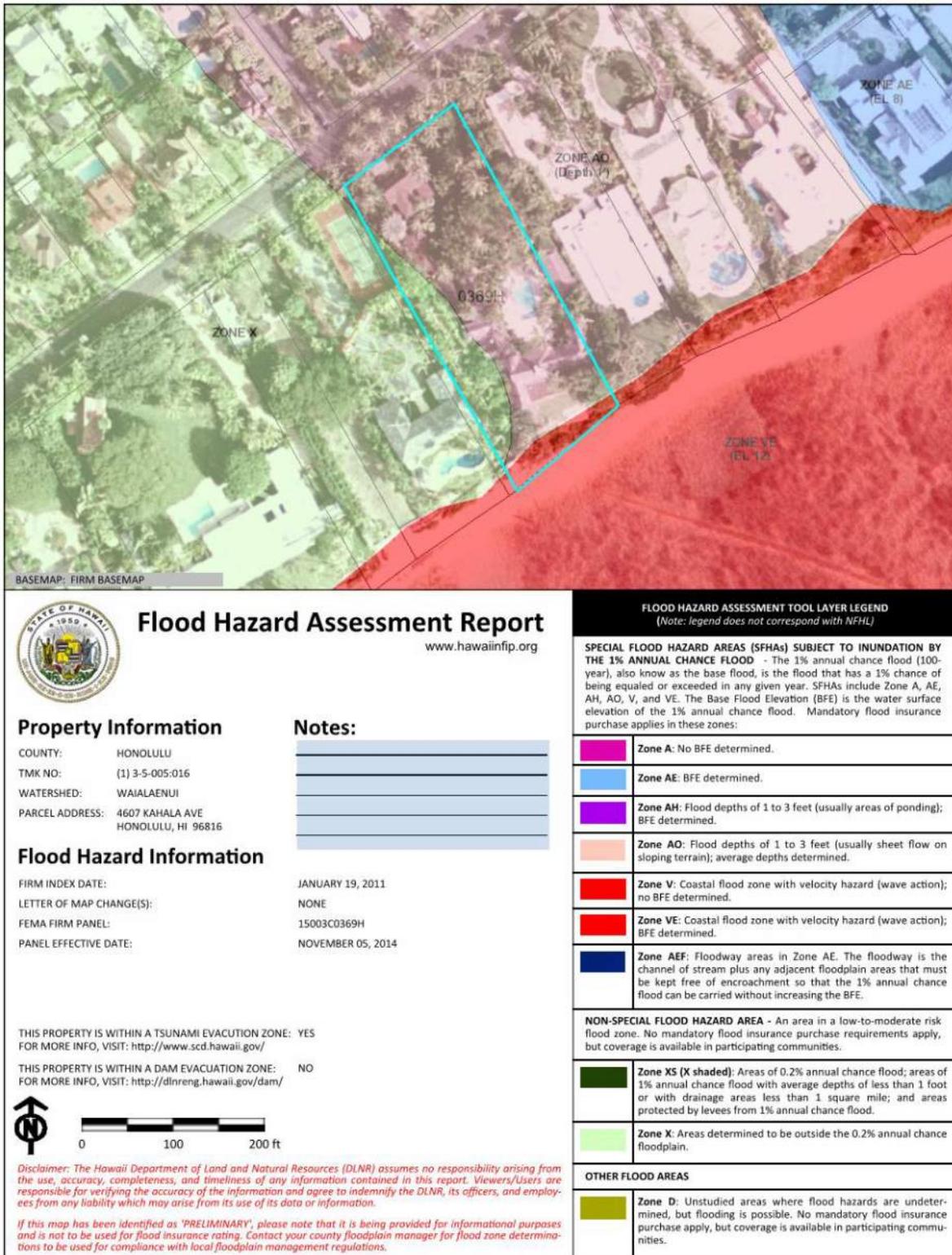


Figure 4
Flood Zone Map

1.5 TSUNAMI ZONES

The project site is located within a Tsunami Evacuation Zone. Evacuation recommendations are provided by City & County of Honolulu’s Department of Emergency Management who also provide the locations of nearby shelter facilities. (See Refer to Figure 5 – Tsunami Zone Map).



Figure 5
Tsunami Zone Map

2.0 EXISTING INFRASTRUCTURE

2.1 ROADWAYS

Kahala Avenue is the main access road running parallel to the coastline in the east-west direction in this area of Honolulu, and it serves the majority of the beach front house lots from Diamond Head to the Waialae Country Club in Kahala. It is a two-lane asphalt roadway that is under the jurisdiction of and maintained by the City and County of Honolulu.

The existing 60 foot wide right-of-way (ROW) includes 15 foot shoulders and concrete curbs and has a posted speed limit of 25 miles per hour (mph) in both directions. Kahala Avenue is primarily used for residential traffic, but also serves as access to the Waialae Country Club and the Kahala Hotel and Resort Oahu located at the far eastern end of Kahala Avenue.

2.2 STORMWATER DRAINAGE

There is a public stormwater system along Kahala Avenue and there is a drainage catch basin located directly in front of the property. This catch basin is connected to an 18-inch reinforced concrete storm water pipe that is part of the Kahala Road public drainage system.

The closest public stormwater manhole is located near the northwestern corner, adjacent to parcel (TMK) 3-5-004:001. This manhole is located at the junction where the Kahala Road drainage system is directed to a deep ocean outfall via a 48-inch pipe.

There are two private drainage inlets on either side of the old existing site driveway, located approximately 50 feet inside the property line. It is possible these two inlets are tied into the city storm sewer along the street.

The majority of the subject property has an existing drainage pattern of overland surface flow. Due to the sandy soil conditions most rainfall percolates into the ground without ponding or runoff. The mauka end of the lot closest to Kahala Avenue drains to the street and the makai section of the property drains overland toward the shoreline. Lower elevations in the center of the property create a depression which collects runoff that must percolate into the ground.



Figure 6
Existing Drainage Infrastructure
(Honolulu Land Information System – HOLIS)

2.3 SANITARY SEWER

Based on Department of Health Wastewater Branch records and consultations with state staff there are no cesspools or septic tanks within the project site.

There is an existing 6-inch private sewer lateral serving the site which connects to a 24-inch public sewer main on Kahala Avenue.

The sewer main (C-481376) and sewer lateral (141672) are both made of vitreous clay pipe (VCP).

There is a sewer manhole on Kahala Avenue located at the northwest end of the parcel.



Figure 7
Existing Sewer Infrastructure
(Honolulu Land Information System – HOLIS)

2.4 WATER (DOMESTIC AND FIRE PROTECTION)

The Board of Water Supply (BWS) operates the City's water system consisting of transmission mains, distribution lines, service laterals, water meters and fire hydrants in the vicinity of the project. Domestic water service is provided by a 6-inch cast iron (CI) water line on the mauka side of Kahala Avenue.



Figure 8
Existing Water Infrastructure
(Honolulu Land Information System – HOLIS)

BWS record drawings, distribution maps, and consultation with staff indicate onsite domestic water is supplied to the property by a 2-inch water meter (No. 10070382, Premise ID: 8531505961). The water meter is located at the northeast corner of the parcel.

The 6-inch water main on Kahala Avenue serves multiple fire hydrants along the street. Fire hydrant M-01490 is located across the street at the intersection of Hunakai Street and Kahala Avenue.

BWS has suspended fire flow tests on fire hydrants as a water conservation measure, so instead they provided the following calculated flow data for Fire Hydrant No. M-01490 located at the mauka-Diamond Head corner of the intersection of Kahala Avenue and Hunakai Street:

Static Pressure.....74 psi

Residual Pressure.....53 psi

Flow.....1000 gpm

2.5 ELECTRIC, TELEPHONE AND CABLE

Electrical, telephone and cable services are currently located on aboveground utility poles along Kahala Avenue and along the public beach access. There is a utility pole located just off the northwest corner of the parcel at the intersection of Kahala Avenue and Hunakai Street that connects to the main grid of utility poles along Kahala Avenue and Hunakai Street. Electrical and telephone service are provided from this pole via underground conduit.

Cable services are currently provided overhead from a line of poles extending along the public beach access path.

Hawaiian Electric Company (HECO) provides electrical service to residential properties in the Kahala area. Verizon Wireless and Hawaiian Telcom provide telephone and internet service. Oceanic Time-Warner cable provides cable television and internet communication services. These service providers will be consulted by the project team during design to coordinate service to the property.

3.0 PLANNED INFRASTRUCTURE

3.1 PROPOSED IMPROVEMENTS

The redevelopment will consist of three buildings with a total of six residential dwelling units as allowed by the City and County of Honolulu Land Use Ordinance (ROH Ch.25). Site development will include internal driveways and parking. A large garden/lawn area will be located between the three buildings. (See Figure 9 – Proposed Site Plan).

Per the Honolulu LUO, beachfront residences in this area have a height limit of 25 feet. The ALTA survey prepared by Austin, Tsutsumi and Associates (November 8, 2013) shows a front building setback of 25 feet from Kahala Avenue per deed dated May 2, 1988, and also shows an 8-foot future roadway widening setback. Based on discussions with staff at the City's Traffic Review Branch (TRB) and the TRB road widening setback maps there are no requirements for road widening on Kahala Avenue fronting the property.

Since the parcel is located within the City's Special Management Area (SMA) permits will be required since the residential structure will be greater than 7,500 SF. The SMA permit application requires an Environmental Assessment and public hearings to provide opportunities for agency and community input.

The project will not affect existing public beach access.

3.2 DRIVEWAYS

The two existing driveways to the property from Kahala Avenue will be retained, although the westernmost driveway will likely be relocated slightly to the east to remove the conflict with the existing public beach access path. Off-street parking for residents and guests will comply with LUO requirements.

3.3 DRAINAGE

The owners propose to regrade the site at 1% slope to divide the property into two general drainage areas mauka and makai. Roughly 1/3 of the property will drain toward Kahala Avenue with the remaining 2/3 of the property draining toward the landscaped shoreline area of the property.

Landscaping will be established across the makai end of the property to provide natural filtration of runoff. The Civil Engineering Branch (CEB) of the City and County of Honolulu Department of Permitting and Planning (DPP) will need to review and approve the site grading, drainage and erosion control plans before any new construction can begin.



Figure 9
Proposed Site Plan

3.2.1 DESIGN CRITERIA

All drainage design must meet the requirements of the City and County of Honolulu, Department of Planning and Permitting, *Rules Relating to Storm Drainage Standards* (Effective January 1, 2000 with subsequent amendments effective May 1, 2011 and June 1, 2013).

Recurrence Interval

For drainage areas of 100 acres or less, T_m (recurrence interval) = 10 year based on 1-hour storm.

Runoff Quantity

For drainage areas of 100 acres or less, the Rational Method along with accompanying reference plates, tables, and charts must be used to determine quantities of flow rate.

For drainage areas where downstream capacities are inadequate to accommodate the post-development condition runoff quantity calculated, runoff quantities are be limited to pre-development conditions and rates.

Storm Water Quality

For projects with a disturbed area of greater than one (1) acre, specific criteria for storm water quality improvements based upon the City and County's recently amended *Rules Relating to Storm Drainage Standards* must be met (Category A2). The combined area of this residential site is 58,207 square feet, or 1.336 acres, and therefore subject to the City and County's storm water quality requirements.

For projects with parking lots and driveways greater than 10,000 square feet in area, specific criteria for storm water quality improvements based upon the City and County's recently amended *Rules Relating to Storm Drainage Standards* must be met (Category B). The planned driveways and parking lots will be less than 10,000 square feet in area and therefore will not be subject to the City and County's storm water quality requirements

Sustainability and Low Impact Development (LID) design strategies, as shown in the City and County's *Rules Relating to Storm Drainage Standards* are anticipated for the site and will also reflect the owners' goal for promoting good stewardship in Hawaii's unique environment. This residential site will integrate storm water quantity and quality control Best Management Practices (BMP's).

For a retention-based water quality control treatment system, the required retention volume to be retained is based on the amount of runoff volume that would be produced from a design rainfall depth of 1 inch. The formula $WQFV=C \times 1'' \times A \times 3630$ is used to calculate the water quality volume.

For a flow-through based water quality control treatment system, the required flow rate for flow-through treatment is based on the amount of runoff that would be produced from a peak rainfall intensity of 0.4 inches per hour. The formula $WQFR=C \times 0.4'' \times A$ is used to calculate the water quality flow rate.

3.2.2 HYDROLOGIC METHODOLOGY

Since the total on-site drainage area is less than 100 acres, the hydrologic calculations for the existing conditions at the subject parcel will be based on the Rational Method, $Q=CIA$. Design values will be obtained from various design plates, tables and charts in the City and County of Honolulu's *Rules Relating to Storm Drainage Standards* (Effective January 1, 2000 with subsequent amendments effective May 1, 2011 and June 1, 2013).

$$Q=CIA$$

Q = Peak Runoff Flow Rate (cubic feet per second)

C = Coefficient of Runoff

I = Rainfall intensity in inches per hour (in/hr.)

A = Total drainage area (acres)

3.2.3 HYDROLOGY & HYDRAULICS

Due to the high permeability of the sandy soils on the property, very little runoff is anticipated during normal rainfall events. Based on the proposed topography, runoff from the mauka portion of the site will sheet flow through landscaping towards Kahala Avenue and the makai portion of the site will sheet flow through landscaping toward the shoreline. Shallow retention basins or similar infiltration BMP's will collect roof downspout discharges. These measures will naturally filter site runoff and will buffer storm runoff flows from the property. All site drainage designs will comply with current Department of Planning and Permitting (DPP) standards.

3.2.4 RETENTION SYSTEMS AND STORMWATER QUALITY

The purpose of the water quality criteria is to reduce the amount of pollutants associated with storm water runoff from development. Although residential use is not required to implement storm water quality BMPs in accordance with the City and County's *Rules Relating to Storm Drainage Standards*, it is the goal of the owners to reduce and mitigate potential pollution associated with storm water runoff.

Retention and stormwater quality facilities that may be integrated with the site drainage system:

Infiltration Basin

An infiltration basin is a shallow impoundment with no outlet, where storm drain runoff is stored and infiltrates through the basin invert and into the soil matrix. Treatment and removal of suspended pollutants or sediment occurs as water infiltrates instead of being conveyed to the public storm drain system. Typically, these basins are used when existing soil percolation rates are high.

Infiltration Trench

An infiltration trench is a rock-filled trench with no outlet, where storm water runoff is stored in the void spaces between the rocks and infiltrates through the bottom and into the soil matrix. Treatment and removal of suspended pollutants or sediment occurs as water infiltrates instead of being conveyed to the public storm drain system. Typically, these trenches also contain a pre-treatment system. They can be more difficult to maintain as they are larger structures and are beneath grade. However, they are utilized where on-site space is at a premium because they can be located underground beneath driveways and parking areas.

Pervious Pavements (Paver System)

Pervious pavement refers to any porous, load-bearing surface that allows for temporary rainwater storage in an underlying aggregate layer until it infiltrates into the soil matrix. Pollutants and sediment are removed from the runoff as it infiltrates through the sand and gravel layers. The joints should be cleaned periodically to remove surface pollutants and sediment and to maintain the capacity of the pervious paver system. Pervious paver costs may be slightly higher than typical pavement, but in general are not prohibitive.

Bioretention Basin (Rain Garden)

A bioretention basin is an engineered shallow depression that collects and filters stormwater runoff using conditioned planting soil beds and vegetation. The filtered runoff infiltrates through the basin invert into the soil matrix.

Enhanced Swale (Bioretention Swale/Dry Swale)

An enhanced swale is a shallow, linear channel with planting beds and covered with turf or other surface materials such as mulch or plants. Biofiltration swales rely on surface flow of runoff along the planted swale during which pollutants are removed in lieu of infiltration through media (mulch/sandy soil) and tend to contain simple vegetation.

Green Roof

Green roofs contain a relatively thin layer of soil and plantings on top of a roof and may be a pre-engineered system or built in structurally with the roof design. Green roofs reduce impervious areas, reducing storm water volume and flow. Additional storm water is removed through the plants and evapotranspiration. However, they tend to be more maintenance intensive and require higher up-front costs in the roof and plumbing design. This BMP is best suited for sites with large roof areas.

3.4 FLOOD HAZARD MANAGEMENT

Development within FEMA flood zones must comply with the City LUO which includes regulations for development within a designated flood hazard district. As required by the LUO for flood zone AO, the finished floor of the structure will have to be elevated above the base flood elevation which is 1 foot above existing grade on the property. A BFE (Base Flood Elevation) determination will be prepared and submitted to DPP for approval and a flood elevation certificate will be required by DPP during the building permit process.

3.5 SANITARY SEWER

The parcel has an existing 6 inch lateral that connects to the City's 24 inch sewer main located on Kahala Avenue. This sewer lateral will be utilized to connect the planned residences to the sewer main. DPP Wastewater Branch approved a Sewer Connection Application (SCA) for the project on October 23, 2014. The SCA is valid for two years after the approval date (to October 23, 2016).

Development of the residential use of this property area will conform to the *Design Standards of the Department of Wastewater Management Volume 1* (July 1993) and the *Design Standards of the Division of Wastewater Management Volume 2* (July 1984).

3.6 WATER (DOMESTIC AND FIRE PROTECTION)

The property is currently served by an existing 2-inch water meter (maximum flow rate of 160 gpm and continuous flow rate of 80 gpm). The average daily demand for a project site zoned single family or duplex is 500 gallons/day/unit or 2,500 gallons/day/acre with the water service request based on the higher total daily demand. With six units at 500 gallons per day (gpd) the project is anticipated to require up to 3,000 gpd. According to a Board of Water Supply (BWS) letter dated October 28, 2014, the existing water system and off-site fire protection are adequate to accommodate the six single family units planned for the property.

All redevelopment of the property will conform to the City and County of Honolulu Board of Water Supply's *Water System Standards, 2002*. A new master water meter will be sized based on the combined final fixture count of the six proposed single family dwellings.

The proposed site plan will comply with current NFPA 1 standards for access and egress, and it is planned for the single-family residential buildings to be sprinklered. Onsite fire hydrants will not be necessary as the location of the existing fire hydrant on Kahala Avenue at the Hunakai intersection meets the maximum allowable distance of 450' from the fire hydrant to the farthest point of the building.

A 20' wide "Fire Apparatus Access Road" (fire lane) approximately 100' long will be provided along the west driveway and within the site. The fire code allows a 150' maximum distance from the fire lane to an exit door for sprinklered buildings. All building exterior exit doors will be within 150' of the fire lane. The fire lane will not need a turnaround since it will be less than 150' in length.

3.7 ELECTRIC, TELEPHONE, AND CABLE

Hawaiian Electric Company (HECO) provides electrical service to residential properties in the Kahala area. Verizon Wireless and Hawaiian Telcom provide telephone and internet service. Oceanic Time-Warner cable provides cable television and internet communication services. These service providers will be consulted by the project team during design to coordinate service to the property.

4.0 CONCLUSION

The project site at 4607 Kahala Avenue was previously developed as a residential property. The redevelopment of the 1.34 acre site at TMK (1) 3-5-005:016 will consist of 6 new residential dwellings with supporting utility services and parking for residents and guests.

Some onsite improvements will be needed to improve the existing site conditions, however, the existing public and private civil infrastructure serving the property will not be adversely affected by the planned project. Roadways, water service, sewer service, drainage facilities and private utilities are available and adequate to serve the redevelopment.

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REFERENCES

City and County of Honolulu, Department of Planning and Permitting, *Honolulu Land Information System (HoLIS)*, <http://gis.hicentral.com/>

City and County of Honolulu, Department of Planning and Permitting, *Rules Relating to Storm Drainage Standards* (Effective January 1, 2000 with subsequent amendments effective May 1, 2011 and June 1, 2013).

City and County of Honolulu, Office of Council Services, Chapter 21 – Land Use Ordinance, *Revised Ordinances of Honolulu*, dated 1990.

State of Hawaii, Department of Land and Natural Resources, *Hawaii Flood Hazard Assessment Tool*, <http://gis.hawaiiinfip.org/fhat/>