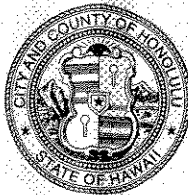


DEPARTMENT OF PLANNING AND PERMITTING  
**CITY AND COUNTY OF HONOLULU**

650 SOUTH KING STREET, 7<sup>TH</sup> FLOOR • HONOLULU, HAWAII 96813  
TELEPHONE: (808) 523-4432 • FAX: (808) 527-6743  
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MUFI HANNEMANN  
MAYOR



HENRY ENG, FAICP  
DIRECTOR

DAVID K. TANOUE  
DEPUTY DIRECTOR

2006/ED-1(TC)

December 20, 2006

OFFICE OF ENVIRONMENTAL  
QUALITY CONTROL

06 DEC 28 P 1:06

RECEIVED

Ms. Genevieve Salmonson, Director  
Office of Environmental Quality Control  
State of Hawaii  
State Office Tower, Room 702  
235 South Beretania Street, Suite 702  
Honolulu, Hawaii 96813

Dear Ms. Salmonson:

Subject: Chapter 343, HRS, Final Environmental Assessment (FEA)  
Finding of No Significant Impact (FONSI)  
DPP Project Reference No. 2006/ED-1  
Project: Waikiki Palms – Multi-Family Development  
Landowner/  
Applicant: Kaioo, LLC  
Agent: Kusao & Kurahashi, Inc.  
Location: 1726-1916 Kaioo Drive - Waikiki  
Request: Waikiki Special District Permit (Major)  
Proposal: 116-Unit Multi-Family Development – Two (2) Six-Story  
Buildings  
Tax Map Key: 2-6-12: 37-44 and 55-58

The Department of Planning and Permitting has reviewed the comments received during the 30-day public comment period, which began on March 8, 2006. The agency has determined that this project will not have significant environmental effects and has issued a FONSI. Please publish this notice in the next available OEQC Environmental Notice.

We have enclosed a completed OEQC Publication Form and four (4) copies of the FEA. If you have any questions, please contact Anthony Ching of our Urban Design Branch at 527-5833.

Very truly yours,

  
Henry Eng, FAICP, Director  
Department of Planning and Permitting

HE:cs  
Encls.  
doc463436rev1

2007-01-23-0A-FA-WAIKIKI PALMS MULTI-FAMILY RESIDENCE

JAN 23 2007

**FILE COPY**

**FINAL  
ENVIRONMENTAL ASSESSMENT**

**WAIKIKI PALMS  
MULTI-FAMILY DEVELOPMENT**

**WAIKIKI, OAHU, HAWAII**

**TAX MAP KEY 2-6-12: 37-44 AND 55-58**

**KAIOO, LLC  
PAUHI TOWER, SUITE 1250  
1001 BISHOP STREET  
HONOLULU, HAWAII 96813  
APPLICANT**

DEC. OF ENVIRONMENT &  
QUALITY CONTROL

06 DEC 28 P1:07

**RECEIVED**

Kusao & Kurahashi, Inc.  
Planning and Zoning Consultants  
2752 Woodlawn Drive, Suite 5-202  
Honolulu, Hawaii 96822

AGENT

JUNE 2006

**FINAL  
ENVIRONMENTAL ASSESSMENT**

**WAIKIKI PALMS  
MULTI-FAMILY DEVELOPMENT**

**WAIKIKI, OAHU, HAWAII**

**TAX MAP KEY 2-6-12: 37-44 AND 55-58**

**KAIOO, LLC  
PAUAHI TOWER, SUITE 1250  
1001 BISHOP STREET  
HONOLULU, HAWAII 96813  
APPLICANT**

**Kusao & Kurahashi, Inc.  
Planning and Zoning Consultants  
2752 Woodlawn Drive, Suite 5-202  
Honolulu, Hawaii 96822**

**AGENT**

**JUNE 2006**

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## **FINAL ENVIRONMENTAL ASSESSMENT**

### **WAIKIKI PALMS MULTI-FAMILY DEVELOPMENT OAHU, HAWAII Tax Map Key 2-6-12: 37-44 AND 55-58**

#### **I. INTRODUCTION**

The applicant, Kaioo LLC, proposes to develop a new multi-family dwelling (condominium or apartment) project in Waikiki. The proposed six-story development, will measure approximately 65 feet in height to the top of the main roof with additional height for roof top machinery. The buildings will include two levels of parking providing approximately 186 parking stalls at the lower levels with four floors of multi-family dwelling units above.

As indicated on the Site Plan, included in Appendix I, the project consists of two buildings; one with 84 units and the other with 32 units. The typical floor plan provides one-and two-bedrooms units ranging in size from about 690 to 1,121 square feet. The structures will have a total floor area of about 134,918 square feet. Anticipated open space will total about 36,132 square feet, which is slightly more than the required 50%. Park dedication requirements will be met on-site with the provision of private recreational space and recreational amenities, including a swimming pool.

The proposed development would replace a variety of low-rise (walk-up) multi-family dwellings which had previously occupied the site. The project site is currently undeveloped with a mixture of concrete, asphalt, dirt, and grass, landscaped with various vegetation.

This Final Environmental Assessment Report for the development of the multi-family complex is prepared pursuant to and in accordance with the

Final Environmental Assessment - Waikiki Palms

requirements of Chapter 343, Hawaii Revised Statutes (“HRS”) and Chapter 200 of Title 11, Hawaii Administrative Rules - Environmental Impact Statement Rules. The action that triggers an environmental assessment is the proposed development’s location in the Waikiki Special District

This Final Environmental Assessment will focus on the development of the new Waikiki Palms multi-family development at Kaioo Drive and the impact the development will have on Waikiki and the surrounding area.

**II. GENERAL INFORMATION**

- A. APPLICANT : Kaioo, LLC  
Pauahi Tower, Suite 1280  
1001 Bishop Street  
Honolulu, Hawaii 96813
- B. RECORDED FEE OWNER : Kaioo, LLC  
Pauahi Tower, Suite 1280  
1001 Bishop Street  
Honolulu, Hawaii 96813
- C. APPROVING AGENCY : Department of Planning & Permitting  
City and County of Honolulu  
650 South King Street, 7<sup>th</sup> Floor  
Honolulu, Hawaii 96813
- D. TAX MAP KEY : 2-6-012: 37-44 and 55-58

7  
9

Final Environmental Assessment - Waikiki Palms

- E. AGENT : Kusao & Kurahashi, Inc.  
Planning and Zoning Consultants  
2752 Woodlawn Drive, Suite 5-202  
Honolulu, Hawaii 96822  
Phone - (808) 988-2231
- F. LOCATION : 1726, 1744, 1770, 1788, 1792, 1804,  
1806, 1820, 1880, 1886, 1898 and  
1916 Kaioo Drive in Honolulu,  
Hawaii (Exhibit 1)
- G. LOT AREA : 72,135 square feet or 1.66 acres
- H. ZONING : Apartment Precinct
- I. STATE LAND USE : Urban
- J. DEVELOPMENT PLAN
- Land Use Map : Medium and Higher-Density  
Residential/Mixed Use (Exhibit 2)
- Public Infrastructure Map : No improvements affecting the  
project site (Exhibit 3)
- K. SPECIAL DISTRICT : Waikiki Special District (Exhibit 4)
- L. EXISTING USE : Formerly multi-family dwellings,  
currently vacant

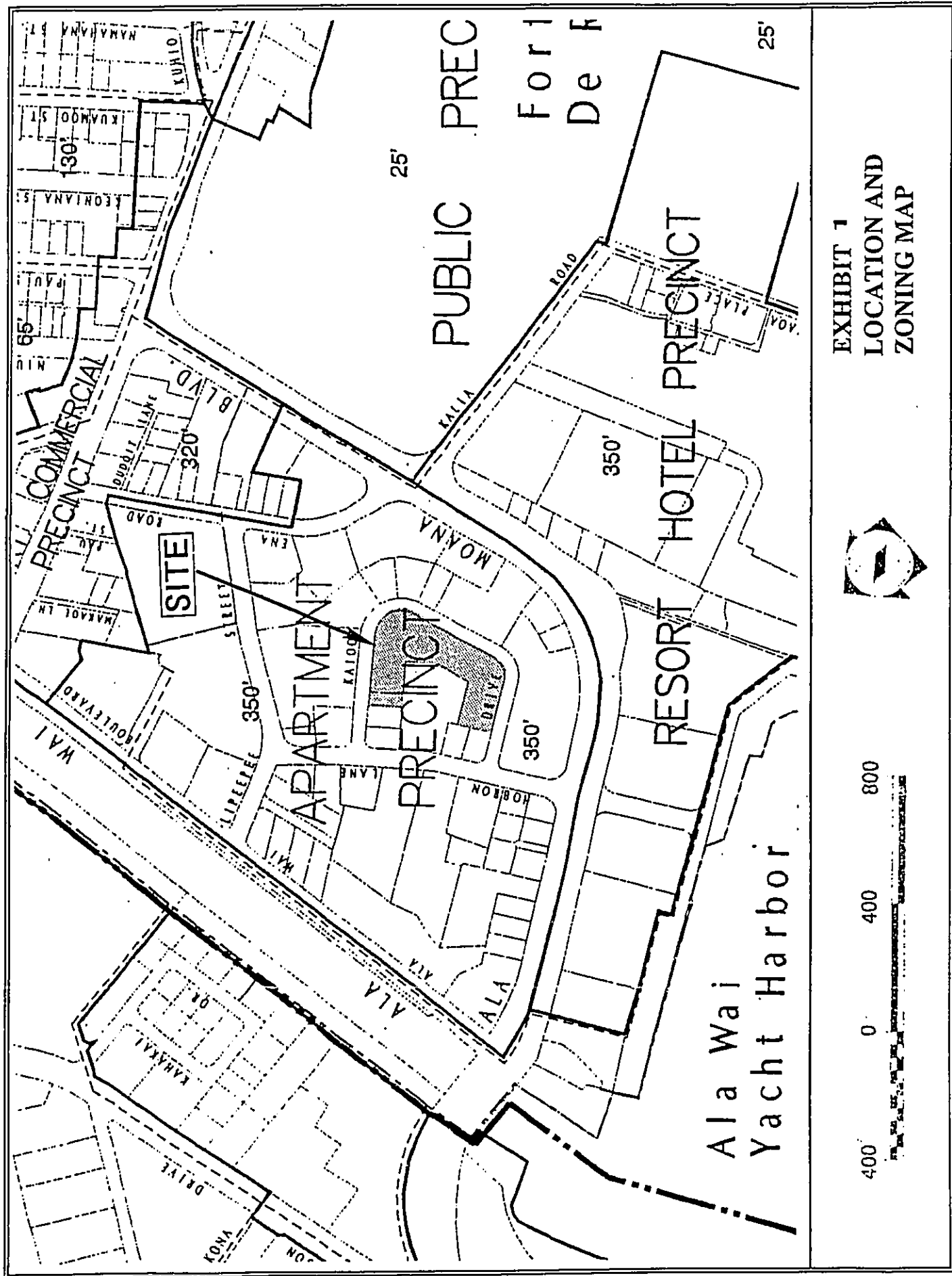
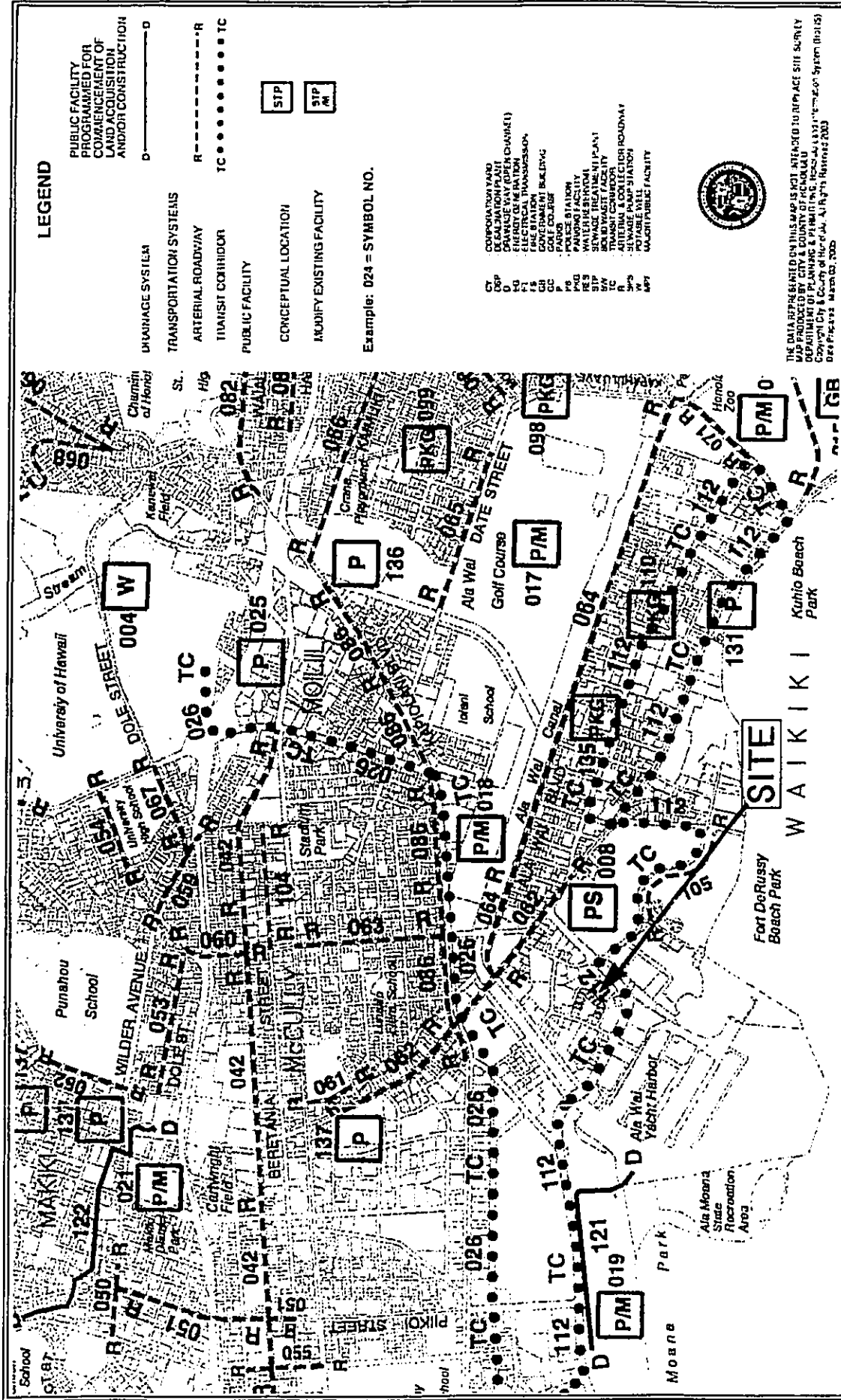


EXHIBIT 1  
LOCATION AND  
ZONING MAP

U.S. GEOLOGICAL SURVEY WATER RESOURCES DIVISION







**LEGEND**

PUBLIC FACILITY PROGRAMMED FOR COMMENCEMENT OF LAND ACQUISITION AND/OR CONSTRUCTION

URAINAGE SYSTEM D

TRANSPORTATION SYSTEMS R

ARTERIAL ROADWAY R

TRANSIT CORRIDOR TC

PUBLIC FACILITY P

CONCEPTUAL LOCATION SIP

MODIFY EXISTING FACILITY SIP

Example: 024 = SYMBOL NO.

CT CONSTRUCTION YARD  
 D DRAINAGE WAY (OPEN CHANNEL)  
 U UNDERGROUND UTILITY  
 F FIRE STATION  
 EB ELECTRICAL TRANSMISSION  
 CB CONVENTION BUILDING  
 P PARK  
 PS POLICE STATION  
 PKG PARKING FACILITY  
 SEWAGE TREATMENT PLANT  
 SW WASTE FACILITY  
 SA SANITATION FACILITY  
 R ARTERIAL ROADWAY  
 S SEWERAGE PLANT  
 W WASTE WATER TREATMENT PLANT  
 M MOUNTAIN PUBLIC FACILITY



THIS MAP IS NOT INTENDED TO REPLACE SITE SURVEY  
 MAPS OR TO BE USED FOR CONSTRUCTION OF PUBLIC  
 DEPARTMENT OF PLANNING AND DEVELOPMENT  
 Copyright City & County of Honolulu, 1997  
 Date Printed: March 03, 2000

**EXHIBIT 3  
PRIMARY URBAN CENTER  
PUBLIC INFRASTRUCTURE MAP**



0 1000 2000  
SCALE IN FEET



- M. LIST OF AGENCIES  
CONSULTED FOR  
PREPARATION  
OF THE DRAFT EA
- : Department of Planning and  
Permitting:  
Urban Design Branch  
Zoning Adjustments Branch  
Subdivision Branch  
Building Division  
Wastewater Branch  
Honolulu Fire Department  
Board of Water Supply  
Waikiki Neighborhood Board  
FEMA (Federal Emergency  
Management Agency)  
Kelly Barnes, an adjacent land owner

### III. DESCRIPTION OF PROPOSED ACTION

#### A. GENERAL DESCRIPTION

##### 1. History

Low-rise residential structures formerly occupied the site. These structures were demolished in 2003 to allow for redevelopment of the property.

According to the "Archaeological Literature Review and Field Inspection for the Proposed Waikiki Palms Multi-Family Development in Waikiki, Kona District, Island of O'ahu" the site is located in an area that was comprised of a complex of numerous large

and small fishponds, wetland and dryland agricultural fields and habitation sites. Historic maps and photographs indicate that the central portion of the project area comprised a dryland environment with surrounding fishponds. Maps and photographs produced around the late 1920's indicate that the area around the project site contained residential structures. A 1949 Sanborn Fire Insurance map shows apartment buildings on the project site. Subsequently, additional apartment buildings and further urbanization occurred on and around the project site.

2. Existing Conditions

The project area is presently vacant. The ground surface in the makai sections of the property is dirt and remnant asphalt paving. Vegetation including grass and various trees such as mango, tababuia, mock orange, coconut, pritchardia, banyan and rubber trees are found on the makai and central portion of the project area. Gravel and concrete covers portions of the mauka areas. A minimal amount of construction material is located in this area. A chain link fence surrounds much of the project site. A hollow tile wall provides a separation between the project site and the Windsor property. Similarly, a solid wall on 331/333 Hobron Lane provides a separation between the project site and the 331/333 Hobron Lane property.

3. Proposed Development

The proposal consists of two six-story, multi-family buildings with a total of 134,918 square feet of floor area and 116 units. Building A, the smaller of the two buildings will face mauka (north) with the larger Building B wrapping around the remainder of the property. The proposed 6-story development, will measure approximately 65 feet in height to the top of the main roof with the elevator mechanical room exceeding this height. The two buildings will include two levels of parking at the ground and second levels with four floors of dwelling units above.

Vehicular access to each of the buildings is provided by two driveways off of Kaiwo Drive. On each of the buildings one of the driveways goes directly to the second parking level with the second driveway providing access to the ground floor. ADA parking for Building A is provided in two stalls at the ground floor elevation. In Building B four ADA parking stalls are also provided at the ground floor. Each building will have two elevators and two stairwells. Pedestrian entrance to Building B is at the makai-Diamond Head corner of the building. The pedestrian entrance to Building A is located on the mauka side of the building at about the midway point.

The recreational amenities proposed at the mauka-Diamond Head corner of the property, provide a separation between the two buildings.

At this location there will be a swimming pool, pool deck, barbeque cooking unit and sink, workout room and meeting room.

Open space as required by the Land Use Ordinance will be provided around the buildings and at the recreational area as indicated in the open space illustration contained in Appendix I.

The ground floor garbage dumpster for Building A is located on the ewa side of the elevators. In Building B, the garbage dumpster is located across the parking lot travel aisle from the elevators, also on the ground floor.

The dumpster used on the project site will have lids which control odors and pests. Locating the dumpsters within the lower parking level of the parking garage will create a buffer from the surrounding properties. Although trash at a multi-family project is typically collected two to three times a week, a garbage pickup schedule has not been established for the project. The City collects garbage in this neighborhood twice a week. Generally, sound levels associated with refuse trucks range from 90 to 100 dBA at 50 feet from the source. Placing the covered garbage dumpster within a partially enclosed garage provides mitigation from visual impacts, odor impact and pests.

A loading space is planned in a central location between the two buildings to be easily accessible for residents of both structures. The loading space location has been modified to relocate the stall and maneuvering area so that these are no longer located in the front yard.

4. Location

The project site is located in the Primary Urban Center of Honolulu at the ewa end of Waikiki as indicated on Exhibit 1. Addresses for the twelve properties that comprise the project site are 1726, 1744, 1770, 1788, 1792, 1804, 1806, 1820, 1880, 1886, 1898, 1916 Kaioo Drive. Hobron Lane which intersects with Kaioo Drive is located ewa of the project site. One block in the makai direction is Ala Moana Boulevard.

5. Surrounding Area

The property is bordered by Kaioo Drive and multi-family dwellings (Chateau Waikiki and Kaioo Terrace) on the north. On the east, across Kaioo Drive are more multi-family buildings and the 17-story Holiday Inn Hotel. South of Kaioo Drive is another multi-family building, Discovery Bay, which is 42 stories high. On the ewa side of the property is an open parking lot and other multifamily buildings, including the 44-story Windsor.

The "Barnes/Sambuco" property which is occupied by one and two story multi-family dwellings is located adjacent to the project at the ewa/mauka corner of the block on Hobron Lane and Kaioo Drive. 331/333 Hobron is occupied by a four-story 18-unit apartment building and is located adjacent to the makai/ewa corner of the project site.

6. Land Use Regulation

a. State Land Use

The project site is within the State's Urban District. The proposed multi-family dwelling complex is consistent with the State's Urban designation.

b. General Plan

The City General Plan directs most of the protected growth in residential population and jobs to the Primary Urban Center (PUC) and Ewa to achieve the City's overall strategy to "Keep the country country" and to maintain a compact urban core. The project will support this strategy by providing additional residential units within the PUC.

c. Development Plan

The Primary Urban Center Development Plan Land Use Map designates the site as Medium and Higher-Density Residential/Mixed Use. The proposed apartment development is consistent with this designation.

The project is consistent with the Primary Urban Center Development Plan for the Medium and Higher-Density Residential/Mixed Use designation. It is in close proximity to a variety of retail establishments at the following locations:

- Discovery Bay - There are several levels of retail establishments across Kaioo Drive in the Discovery Bay



complex including several eating establishments.

- Corner of Hobron and Ala Moana - ABC Store. This store sells sundry items and groceries, including bread and milk.
- Ena Road Establishments - The Wailana Coffee Shop and a variety of other retail establishments are located at the Canterbury Place.
- The Ala Wai Boat Harbor and Fort DeRussy Beach Park are within walking distance of the project. These locations will provide recreational opportunities for the future residents of the project.

The proposed development will not affect public views of Diamond Head or the Koolau Mountain Range. The project site is surrounded by taller multi-story buildings that already block views toward these landforms. This condition is illustrated in the axonometric plans provided in Appendix II.

d. Public Infrastructure Map

The Public Infrastructure Map shows that there are no planned infrastructure improvements affecting the project site.

e. Zoning

The project site is currently zoned Apartment Precinct with a 350-foot height limit. The proposed multi-family development is consistent with this zoning precinct and well below the height limit.

**B. TECHNICAL CHARACTERISTICS**

**1. Use Characteristics**

The proposed 65-foot Waikiki Palms multi-family complex will include parking at the lower levels and private recreational area and recreational amenities for the residents on site. At the ground floor there will be landscaping and pedestrian paths. A barbeque cooking unit and sink located at one end of the swimming pool deck will allow residents to prepare food in the out-door recreational area. In addition, to these recreational amenities a workout room and other facilities will be provided adjacent to the pool deck. A mail room for mail delivery is planned near the elevators of each of the buildings.

**2. Physical Characteristics**

The residential structures which had previously occupied the site have been removed. The small amount of remaining debris and most of the existing vegetation will be cleared from the site prior to construction of the proposed multi-family development. The temporary mobile construction office which previously occupied the north side of the property has now been removed.

The proposed multi-family buildings will be sited to fit the unusual shape of the property. These new structures will have six floors and rise to about 65 feet to the top of the pitched hip-roof. The floor area for the project will be approximately 134,918 square feet. Parking will be located on the first two levels with multi-family dwellings on the

upper four floors. The dwelling units will be arranged in a double loaded configuration with a corridor down the middle.

The conceptual landscape plan proposes a landscape buffer surrounding the project site. Landscaping will consist of medium size trees, palms, screening hedges, flowering shrubs, ground cover and grass.

Conceptual site, elevation and landscape plans for the Waikiki Palms are included in Appendix I.

3. Construction Characteristics

The construction of the project is expected to be completed over a 12-month period. Construction will begin as soon as the applicant is able to receive approval of the development by the City, including a Waikiki Special District Permit and building permit approvals.

#### IV. IMPACTS

The proposed development of 116 apartment units will replace 82 previously demolished on the project site. The net result will be an increase of 34 units. As this will be a relatively small increase, the impacts of the proposed development relative to what has existed in the recent past are expected to be minimal.

When all known projects in close proximity to the project site are considered representing recent past, present and future developments, we find that

there was a conversion of 596 hotel units to 181 condominium units at the Windsor; there will be 212 units replacing 230 units formerly on the property at the Ala Wai Gateway (Watermark); and 116 units replacing 82 units in the proposed Waikiki Palms development. The net cumulative impact is a reduction of units from 908 units to 509 units, resulting in a reduction of 399 units. The net result is about a 40% reduction in the total number of units in these three projects. A reduction of 399 units in this neighborhood represents a significant reduction in traffic impacts, noise impacts, and air quality impacts in the area and should represent a positive impact on the environment. There will be a loss of 596 hotel units and a net increase of 197 multi-family dwelling units within the surrounding neighborhood.

A. DEMOGRAPHIC IMPACTS

1. Residential Population

Based on Department of Planning and Permitting resident population data for dwellings in Waikiki, the average household size is approximately 1.72 individuals, which would translate to 200 residents living in the 116 unit multi-family development. The resident count occupying the 82 units which previously occupied the site was about 141, resulting in a net population increase of a total of 59 residents.

The cumulative impact of the three projects recently developed and/or planned for the area results in a residential population increase of about 339 persons (1.72 persons per unit). Although there is a net

reduction in total hotel and multi-family units, the multi-family units actually increase by about 197 units.

The General Plan Population Guidelines establish a population range for the Primary Urban Center Development Plan Area for the Year 2010 of between 450,800 and 497,800 persons. In 2000 the actual population for the Primary Urban Center was 419,339. The additional population supported by this development will help the Primary Urban Center in reaching the population range planned in the Year 2010.

2. Visitor Population

The proposed development is not expected to impact the visitor population. The proposed dwelling units will not be used as hotel rooms or transient vacation units. Transient vacation units are not a permitted use in the Apartment Precinct.

The cumulative impact of the three projects recently developed and/or planned in the area will result in a decrease of about 1,192 visitors in the visitor population based on an average of 2 visitors per hotel room and a reduction of 596 hotel rooms at the Windsor (formerly the Ohana Waikiki Hobron Hotel).

3. Character or Culture of the Neighborhood

The proposed multi-family development will be compatible with the character of the existing neighborhood and the surrounding uses. The multi-family use is the use that existed on the site for many years and is generally the same as the surrounding properties. The structures

which had previously occupied the site were constructed in the 1940's and 1950's. Accordingly, the proposed new building and landscaping are expected to revitalize the area.

The Cultural Impact Assessment, prepared for the project by Cultural Surveys Hawaii, Inc., concluded that "As a result of this assessment, no ongoing traditional cultural practices or concerns were identified for the study area." Finally the assessment states the following: "Based on the above findings future development of the specific project area will have minimal or no impact upon native Hawaiian cultural resources, beliefs and practices." (Appendix III)

The cumulative impact of the project will result in an increase of 339 residents and 1,192 less visitors which will result in a shift from a mix of visitors and residents in this neighborhood to a mix of more residents and less visitors, which is appropriate for this Apartment Precinct zoning lot.

4. Displacement

Residents who formerly occupied the dwellings on the property vacated the project site in 2003 when the buildings were demolished. The proposed development on the vacant property will not result in displacement of any residents.

The project site is mostly vacant, covered in asphalt or sparse landscaping.

The net cumulative impact is that 1,192 visitors were displaced about three years ago with the closing of the Ohana Waikiki Hobron Hotel.

**B. ECONOMIC IMPACTS**

**1. Economic Growth**

The proposal will provide short term jobs in the construction industry. There will also be a small number of long-term-jobs created for property management and secondary employment for typical condominium or apartment services, including landscaping, security, management and building maintenance.

Former property managers may have lost their income as a result of demolition of the rentals formerly on the property. This is a temporary condition as new property management work will be required with the proposed development. In addition, landscaping work and maintenance and repair work on the new units will provide additional employment for the project.

The proposed development will not have an adverse effect on property values or rental income of surrounding properties. Rental rates have been increasing as a result of market forces. The nominal increase in the number of units (34 additional units) over the 1.66 acre property is not a significant increase in density. It should be noted that the density at the Windsor was recently reduced from 596 hotel units to 181 condominium units. Property values are based on appraisals and the

sale of comparable properties in the area. It is possible that the sales of the proposed units could be used as "comparable properties", adjusted for age and condition for the purpose of determining property values for the adjacent and surrounding properties, resulting in an increase in property values for the older buildings on the surrounding properties.

The economic impact on the two properties that abut the project's side yards should not be adversely impacted by the proposed development. Given the allowable height limit of 350 feet, the proposed 65-foot height of the structure to the top of the roof is modest in relation to the allowable height limit. In addition, at the height setback of 13 feet from the abutting properties, the height of the building will be about 55 feet with a sloping pitched roof rising to 65 feet. In order to minimize impacts from the parking garage and view into the parking garage, the applicant plans a solid wall face with a design feature presently planned as "chevrons" to soften the visual impact of the structure and landscaping to visually screen the proposed structure. For further noise mitigation from the garage and property a 6-foot high solid wall is planned along the "Barnes/Sambuco" property line. A similar solid wall has been provided on the abutting Windsor property (the Waikiki Palms will provide an 18-foot setback along the rear property line) and the other abutting property at 331/333 Hobron Lane (located at the corner of Hobron Lane and Kaiou Drive) and no walls or fences are planned on the Waikiki Palms property at this time fronting these two



lots. The proposed Waikiki Palms development will meet the required height setbacks from the front, side and rear property lines providing adequate setback related to the planned height of the new structures. This should minimize adverse impacts to neighboring properties and impacts to their property values.

The cumulative impact of the project has resulted in the loss of 596 hotel rooms, but even with this reduction tourist spending has continued to rise, benefitting from upgrades to existing hotels and conversion to condo-hotels that have allowed upgrades and an increase in hotel revenues.

2. Government Revenues/Taxes

Tax revenues will be generated by the short-term construction work and some revenue will result from the projected long-term employment.

In addition, property tax revenues to the City will increase as a result of the increased valuation of the property relative to its former and current state.

If the apartments are sold as condominium units, the State will enjoy additional income in the form of conveyance fees.

The cumulative impact has resulted in a reduction of 596 hotel rooms. This reduction was the result of another project that converted their 596 hotel units to condominium units. The State and Counties have lost hotel room tax revenues and other revenues such as general

excise taxes that benefit the State. The City's loss in hotel room tax should be more than off-set by the increase in property taxes with the increase in building value related to the value of the condominiums on the property.

3. Housing Impacts

As mentioned earlier, the proposed 116-unit apartment development replaces the 82 units formerly on the project site. The proposed apartment development would add to the housing market in Waikiki and provide opportunities for people to live, work and play in Waikiki.

The cumulative impact of an increase in 197 residential units will result in additional dwelling units to meet the high demand for fee simple condominium units in Waikiki.

C. PUBLIC SERVICES

1. Access and Transportation

a. Vehicular and Pedestrian Traffic

The project site is located on Kaiwo Drive which intersects Hobron Lane at two points creating a U-shaped street. Kaiwo Drive has one travel lane which is about 26 feet wide from curb to curb with parking on both sides of the street. Direct access to the site is off of Kaiwo Drive via Hobron Lane. Traffic on Kaiwo Drive is one-way, traveling in a counterclockwise direction. A

stop sign provides a controlled exit for traffic exiting Kaioo Drive onto Hobron Lane.

Ala Moana Boulevard is predominantly a four-lane, two-way State of Hawaii roadway which intersects Hobron Lane approximately 250 feet southeast of the project site and provides access to the surrounding Waikiki and Ala Moana communities.

Julian Ng, traffic engineer, has prepared a traffic assessment report to analyze the traffic impacts of the Waikiki Palms project. This report, "Traffic Assessment for Kaioo Apartments Waikiki, Honolulu, Hawaii" is attached as Appendix IV. The Traffic Assessment calculates the anticipated vehicular and pedestrian traffic generation and distribution of the project related traffic. An analysis of cumulative impacts, including the increased peak hour traffic demand for the planned Ala Wai Gateway (now Watermark) project (which is generally used to account for the growth of future traffic volumes) is provided. The report found that the project related impacts are generally minimal.

The conclusions of the assessment are as follows:

The proposed project is estimated to have a peak hour traffic impact of less than 50 vehicles per hour, which would be a minimal impact in an area with high traffic volumes. The project's location in an urban center, with various services and

bus service available, will help to minimize traffic impacts. Pedestrian access to the site will be on existing sidewalks within public property, and the expected volumes would average less than one pedestrian per minute in the peak hour.

The project, along with other projects in the area, would increase the number of left turns from eastbound Ala Moana Boulevard to Hobron Lane. Additional storage in the existing turn lane should be provided to mitigate blockage of through traffic on Ala Moana Boulevard during peak hours. Ala Moana Boulevard is a State roadway. A copy of the traffic report including the recommendation for an extended left turn lane onto Hobron has been sent to the State Department of Transportation for their review and comment.

Although the traffic report states that pedestrians could choose to use either the makai or mauka connection to Hobron Lane when exiting the site, the location of the building entrances suggests that the pedestrians from Building B would generally tend to use the makai exit. The reason for this is due to the configuration of Kaioo Drive that even when traveling toward a mauka destination, the shortest route between the mauka corner of Hobron Lane and Kaioo Drive and the entrance to Building B is via the makai Hobron Lane and Kaioo Drive intersection. Due to the location of the entrance on Building A, residents of that

structure would tend to use the mauka exit onto Hobron Lane when traveling in either a mauka or makai direction. Because there are 84 units in Building B and only 32 units in Building A, the makai Kaioo Drive/Hobron Lane corners can be expected to have a larger percentage of the pedestrian traffic.

Based on the Traffic Assessment's trip generation, the net incremental increase in traffic resulting from the project would be less than 15 vehicles per hour during the peak hour. (This figure is based on the net increase of 34 units given the proposed 116 units and the previously existing 82 multi-family dwelling units.)

The driveway to the Ala Wai Gateway project site appears to form the fourth leg of the existing T-intersection of Kaioo Drive and Hobron Lane. For a signal to be warranted at this intersection, left turn volumes from either the Ala Wai Gateway project or from Kaioo Drive (not both, and not a combined total) must exceed 75 vehicles per hour for each of eight hours of a typical day, or exceed 80 vehicles per hour for each of the four hours of a typical day when total traffic on Hobron Lane exceeds 1,100 vehicles per hour (2:00 PM to 6:00 PM, based on a 24+ hour count summarized in the appendix of the Ala Wai Gateway traffic study). Based on the information provided in the Ala Wai Gateway traffic report, volumes from that side would be nowhere near meeting the warrant. On the Kaioo Drive side, traffic counts

are not available to determine if the left turn volumes exceed the minimums; however, it would be reasonable to estimate that the volume of traffic making the left turn from Kaioo Drive to Hobron Lane is less than the volume making left turns from Hobron Lane to Lipeepee Street (3-way stop intersection just to the north). The appendix in the Ala Wai Gateway traffic report shows peak hour traffic counts at this intersection; the highest volume of left turns from Hobron Lane to Lipeepee Street is 63 vehicles per hour.

The following roadway and traffic operations improvements were proposed along Ala Moana Boulevard as part of the Hilton Hawaiian Village Waikikian project (listed geographically, from Ala Wai Canal toward Kalakaua Avenue, or west to east):

- Increase the length of the eastbound left turn pocket on Ala Moana Boulevard for left turns to Hobron Lane (mauka).
- Adjust the timing of the existing traffic signal at the intersection of Ala Moana Boulevard and Hobron Lane.
- Add a fourth eastbound lane on Ala Moana Boulevard, from Hobron Lane to Kalia Road.
- Remove the old roadway segment located makai of the eastbound lanes of Ala Moana Boulevard in the vicinity of the Ilikai east driveway. Provide a new bus parking area in

- front of the existing ramps to the Ilikai parking garage and a new driveway to Ala Moana Boulevard.
- Connect Dewey Lane directly to the eastbound lanes of Ala Moana Boulevard and create a new median opening on Ala Moana Boulevard where Dewey Lane intersects Ala Moana Boulevard. Provide new sidewalks through the area and landscape the unpaved areas.
  - Provide a new traffic signal system to control movements at the intersection of Dewey Lane and Ala Moana Boulevard; provide crosswalks across Dewey Lane and across Ala Moana Boulevard.
  - Construct a new westbound left turn pocket on Ala Moana Boulevard for left turns to Dewey Lane.
  - Widen the right turn from eastbound Ala Moana Boulevard to Kalia Road from one to two lanes; add a right turn signal and pedestrian signals for the pedestrian crossing across these lanes.
  - Adjust the timing of the existing traffic signal at the intersection of Ala Moana Boulevard and Kalia Road/Ena Road and coordinate the timing of the signals along Ala Moana Boulevard from Atkinson Drive to Kalia Road.
  - Increase the length of the westbound left turn pocket on Ala Moana Boulevard for left turns to Kalia Road.

Given the significant reduction in trips from the cumulative impact of the loss of 596 hotel units and an increase of 197 condominium units. The cumulative impact is an overall reduction in trips for the am peak hour of 300 vehicles; a reduction in trips for the pm peak hour of 295 vehicles; and a decrease in daily traffic of 4,000 vehicles per day.

b. On-Street Parking

On street parking is allowed on Kaiwo Drive parallel to and along the left curb, except at the ten existing driveways, the first curve, where there is a posted no parking sign and near a fire hydrant located at the second bend. Parallel parking is also allowed along portions of the right curb. Parking here is unmarked. Parallel parking is also allowed on both sides of Hobron Lane between Ala Moana Boulevard and Lipeepee Street.

There is currently parking for about 26 cars along the property frontage without markings, and 23 cars if the stalls were marked (using the City's standard practice of marking 22-foot stalls with 18-foot stalls at the ends). The future number of parking stalls is estimated to be relatively unchanged with a total of about 26 unmarked stalls and 23 marked stalls. Generally, the location of on street parking will change with an increase in parking in the middle of the block (where there are broad existing driveways fronting parcels 90, 91 and 92) and a decrease in other



areas. Under existing conditions, unauthorized parking is available for about eight cars along these lengthy driveway aprons. Parking along these driveway aprons should not be allowed.

The number of parking spaces available during construction will depend on the areas that the city will allow the contractor to utilize. We anticipate that this will be determined by the Department of Transportation Services upon application for a street use permit.

It is acknowledged that parking fronting the site and particularly at the driveways may be restricted as part of this development. The anticipated "no-parking" areas were accounted for in the above estimates for future on-street parking.

c. Driveways

Driveways will be designed to not exceed 5% slope for the first 25-feet from the property line. The driveways will be constructed as standard City dropped driveways and adequate sight distance to pedestrians and other vehicles will be provided and maintained. Driveway locations will be located as far from curves in the roadway as practical.

2. Water System

Water is supplied to the area by an 8-inch water main along Kaiwo Drive. Domestic water service for the proposed development will be

provided through a new lateral connection to the existing Board of Water Supply System (BWS) water main and a new compound meter. The size of the new compound water meter, which is based on the projected gallons per minute usage rate, required for the proposed development will be determined during the design phase of the project. After the meter, a reduced pressure backflow preventer assembly is required to protect the BWS system from cross contamination. The on-site water system will extend from the backflow preventer to the various buildings.

The fire protection water service lateral will consist of a detector check meter and waterline extending to the buildings. During the design phase of the project a mechanical engineer will be retained to verify the need for a fire pump for the proposed building. The Fire Department will also be consulted at this time to determine the need for on-site fire hydrants and to review fire truck access requirements.

The cumulative impact of the loss of 596 hotel units and an increase of 197 condominium units will result in an overall reduction in water demand in the area of about 149,500 gallons per day.

3. Wastewater

There are existing 6-inch and 8-inch gravity sewer lines located along Kaiwo Drive. The individual lots that comprise the project site are each connected to this system by sewer laterals. Flows from this system are directed partially via easements on private properties to a

sewer main along Ala Moana Boulevard. The main along Ala Moana Boulevard leads to a pump station in Waikiki where the flows are then directed to Sand Island Treatment Plant for treatment and disposal.

Based on standards found in the Water System Standards 2002 and Design Standards, Department of Wastewater Management, July 1993, the average daily flow generated by the project is anticipated to be 3,584 gallons each day. Design standards require that the system be designed to accommodate a maximum flow during wet weather conditions. That design peak flow will be 36,163 gallons per day. The waste-water system will be connected to the existing gravity systems along Kaiio Drive. No off-site improvements will be required. A Sewer Connection Application for the project was approved on September 30, 2005. A copy is attached in Appendix V.

The cumulative impact of the loss of 596 hotel units and an increase of 197 condominium units will result in an overall reduction in sewer demand in the area of about 64,000 gallons per day.

4. Drainage

The adjacent streets and drainage system are owned by the City and County of Honolulu. Connection to the underground drainage system will require approval by the City and County of Honolulu. If the existing drainage system is at capacity, the increase in storm water generated from the development must be detained on site. The

development will also comply with City and County storm water quality regulations.

The project site is relatively flat with elevations ranging from approximately one to two meters above mean sea level. The majority of the project site is vacant. All other areas of the site are unimproved with miscellaneous vegetation, including grass, trees and shrubs, as well as small areas of asphalt and concrete.

In general, the storm water generated within the project site sheet flows to the existing municipal storm drainage system in the adjacent streets.

Since the project site was previously developed with existing apartment buildings and limited landscaped areas a significant increase in storm water generated by the project site is not expected. A comprehensive storm drainage study will be prepared during the design phase of the project to confirm storm runoff volumes. In the event that the detailed storm drainage study determines that there is an increase in storm runoff to the municipal system, further analysis will be conducted to determine that the municipal system is adequate to accommodate the increased flows. If the off-site municipal system is not able to accommodate the increase in storm runoff, all increases in storm runoff will be detained on-site through the use of detention basins or other means.

Prior to connection to the City's system, the on-site storm water will be filtered, if required, in accordance with the City and County of Honolulu Department of Planning and Permitting, Rules Relating to Storm Drainage Standards, Storm Water Quality Section, dated January 2000.

The cumulative impact of the loss of 596 hotel units and an increase of 197 condominium units will not result in a significant change in drainage for the area since drainage is more closely related to lot coverage and permeable (landscaped) surfaces. Development of lots in the Apartment Precinct will generally result in a 50% lot coverage and should not be affected by the cumulative impact of unit counts.

5. Solid Waste Disposal

The solid waste generated by the proposed development will be collected by a private firm and will not impact municipal refuse services.

The cumulative impact of the loss of 596 hotel units and an increase of 197 condominium units will result in an overall reduction in solid waste demand in the area of about 3,712 pound per day.

6. Schools

Based on State Department of Education data and estimates the proposed apartment development is anticipated to increase student population at district schools as indicated below:

- a) Jefferson Elementary (Kindergarten to 5<sup>th</sup>) - 13 students
- b) Washington Middle (6<sup>th</sup> to 8<sup>th</sup>) - 5 students

c) Kaimuki High (9<sup>th</sup> to 12<sup>th</sup>) - 8 students

The following table provides the capacity, the actual 2005-2006 student enrollment, the projected enrollment for 2007-2008 and 2010-2011 for the three affected schools:

Public School Capacity and Enrollment

School	Capacity	2005-2006 Enrollment	2007-2008 Projection	2010-2011 Projection
Jefferson Elementary	603	474	409	466
Washington Middle	1,008	1,066	964	876
Kaimuki High	1,478	1,297	1,267	1,263

Each of the three public schools which would serve the project have adequate capacity to accommodate the anticipated increases in the student population in light of the projected future enrollments. In its letter of March 22, 2006, the State Department of Education indicated that they would not request a contribution for development of additional school facilities.

The cumulative impact of the loss of 596 hotel units and an increase of 197 condominium units will result in an student generation of 22 additional elementary school students; 8 middle school students and 14 high school students. The table above indicates that these increases in enrollment can easily be handled by the schools servicing this community.

7. Parks

The development of the Waikiki Palms will not have a significant impact on the existing parks or recreation facilities in the area. The nearest park sites are Ala Wai Community Park, Duke Kahanamoku Beach Park, and Ala Moana Regional Park, all of which are within a half mile of the project site.

Park dedication requires 110 square feet of recreational area for each dwelling unit. Accordingly, the proposal will include a minimum 12,760 square feet of recreational open space. The proposed recreational area is 12,990 square feet, slightly larger than the area required.

The cumulative impact of the loss of 596 hotel units and an increase of 197 condominium units will not result in a significant impact on recreational space since this represents a significant reduction in persons on the island utilizing our parks. In addition, the 197 condominium units would result in about a half acre of recreational space being provided by the developers.

8. Police

The Police Department's Alapai Headquarters is located approximately 2.1 miles away at the intersection of Alapai Street and Beretania Street. The Waikiki Substation is located approximately 1 mile away on Kalakaua Avenue. Kalakaua is a one-way road traveling east. The shortest route from the Police Station on Kalakaua and the

project site appears to be along Kuhio Avenue. The travel distance of this route is about 1.6 miles.

The cumulative impact of the loss of 596 hotel units and an increase of 197 condominium units will result in an overall reduction in persons in the area and will result in a reduction in demand for police services.

9. Fire

The Pawa Fire Station (Station 2) is located approximately 0.7 mile away on Makaloa Street. The Kapahulu Fire Station (Station 7) is located approximately 1.8 miles away on Kapahulu Avenue.

The cumulative impact of the loss of 596 hotel units and an increase of 197 condominium units will result in an overall reduction in persons in the area and will result in a reduction in demand for fire services.

10. Utilities

a. Electric

The Hawaiian Electric Company has existing power lines serving this area and the applicant will coordinate development of the Waikiki Palms to ensure that the electrical service will be adequate to support the proposed development.

The cumulative impact of the loss of 596 hotel units and an increase of 197 condominium units will result in an overall



reduction in persons in the area and will result in a reduction in demand for electrical services.

b. Telephone

Hawaiian Telcom, formerly Verizon and GTE Hawaiian Telephone Company, has existing utility service lines in the area. It is expected that these existing lines will be used to service the proposed multi-family development. The applicant will coordinate with Hawaiian Telcom to determine if new lines will be required. No off-site work is expected.

The cumulative impact of the loss of 596 hotel units and an increase of 197 condominium units will result in an overall reduction in persons in the area and will result in a reduction in demand for telephone services.

D. ENVIRONMENTAL IMPACTS

1. Historical and Archaeological Resources

Cultural Surveys Hawaii, Inc. has prepared an archaeological literature review and field inspection report and cultural impact assessment for the project. Please refer to Appendix VI - Archaeological Literature Review and Field Inspection.

The archaeological report recommended that an archaeological survey including subsurface testing be conducted. This archaeological inventory survey has been completed and a report describing the findings and recommendations is included as Appendix VII. The

recommendation is that no additional data recovery work needs to be carried out but that the State Historic Preservation Division be consulted for a possible archaeological monitoring program during any future development of the project site.

The Cultural Impact Assessment, prepared for the project by Cultural Surveys Hawaii, Inc., concluded that "As a result of this assessment, no ongoing traditional cultural practices or concerns were identified for the study area." Finally the assessment states the following: "Based on the above findings future development of the specific project area will have minimal or no impact upon native Hawaiian cultural resources, beliefs and practices."

2. Natural Resources

a. Water Resources

There are no potable water resources within the project site. The project site is located approximately 400 feet from the Ala Wai Yacht Harbor and Duke Kahanamoku Lagoon and will not have an impact on these coastal resources.

b. Flood Plain Management

According to the Flood Insurance Rate Map for the City and County of Honolulu, panel 365 of 395, Map Number 15003C0365 E, dated November 20, 2000, the project site is in Zone AO, an area determined to have an average flood depth of 2 feet. Zone AO identifies area with flood depths of one to

three feet (usually ponding) where the base flood has been determined.

The project will comply with flood hazard requirements for building in the AO flood zone. The applicant will provide a Flood Fringe District Certification to establish the Regulatory Flood Elevation.

c. Wetlands Protection

Maps included in the attached archaeological report indicate that there were ponds on a portion of the property in the 1920's, however, those were filled long ago as the area was urbanized. Today there are no wetlands on or in the vicinity of the project site.

d. Coastal Zone Management

The development site is not within the City's Special Management Area. The Special Management Area encompasses properties that are makai of Ala Moana Boulevard.

e. Unique Natural Features

The project site is relatively flat with elevations ranging from approximately one to two meters above mean sea level. There are no unique features such as sand dunes or sloped areas where erosion would be a concern.

f. Flora

Vegetation on the site consists of introduced species. Because the site has been urbanized for many years, native endangered or threatened species are not found in this environment.

g. Fauna

Native land and water birds are not expected to be found at this site or at the surrounding properties because the area lacks any suitable habitat that could support these types of animals. Other recent avifaunal and feral mammal surveys done for projects within Waikiki and in relatively close proximity to the project (International Market Place and Ala Wai Gateway) have not found threatened or endangered species.

h. Agricultural Lands

The project site is in an urban area where its use will not impact agricultural lands or lands with the potential for agricultural use.

i. Open Space and Visual Impacts

The proposed structure will have a finished height of about 65 feet to the top of the main roof. The proposed buildings are well below the 350-foot maximum height limit of this Apartment Precinct. The proposed development will not affect any important view planes in the area of Waikiki. As previously

indicated, the property is generally surrounded by taller multi-story structures. These surrounding structures more or less obscure public views along Kaiwo Drive in most directions.

The potential visual impact on surrounding areas is illustrated in the Axonometric Plans provided in Appendix II.

Development within the Apartment Precinct requires an area equal to 50% of the zoning lot be kept in open space. With the current design the applicant proposes to provide about 36,132 square feet of open space. This is slightly more than the 50% (36,068 square feet) that would be required.

Given the allowable height limit of 350 feet, the proposed 65-foot height of the structure to the top of the roof is modest in relation to the allowable height limit. In addition, at the side yards, at the height setback of 13 feet from the abutting properties, the height of the building will be about 55 feet with a sloping pitched roof rising to 65 feet. In order to minimize impacts from the parking garage and view into the parking garage, the applicant plans a solid wall face with a design feature presently planned as "chevrons" to soften the visual impact of the structure and landscaping to visually screen the proposed structure. The proposed Waikiki Palms development will meet the required height setbacks from the front, side and rear property

lines providing adequate setback related to the planned height of the new structures.

j. Topography

The project site is relatively flat with elevations ranging from approximately one to two meters above mean sea level. There are no unique features or natural land forms on the property.

k. Soils

The U.S. Department of Agriculture Soil Conservation Service Soil Survey Report for the Island of Oahu classifies the soils for this area as Fill land, mixed (F1) under the Fill Land Series. This series consists of areas filled with materials from excavation from adjacent sloping terrain, dredging, bagasse and slurry from sugar mills and garbage. This type of soil can be found on the islands of Kauai, Maui and Oahu.

Fill land, mixed (F1) occurs in areas adjacent to the ocean near Pearl Harbor and in Honolulu. It consist of material dredged from the ocean, hauled from surrounding areas and garbage and is used for urban development including: airports, industrial facilities and housing.

Except for soil amendments needed to support the proposed landscaping, the existing soil conditions will generally remain unchanged.

I. Noise

A noise assessment for the project was prepared and is attached as Appendix VIII. The executive summary states as follows:

“The project area currently experiences noise levels typical of an urban environment. Noise measurements taken on the existing project property show a Day-Night Level, Ldn  $\leq 63$  dBA. These noise levels are slightly below the EPA noise design goal of Ldn  $\leq 65$  dBA. However, noise levels are above the EPA future noise design goal of Ldn, 55 dBA.”

The report goes on to say that “During the project construction, the dominant noise sources will probably be pile drivers and earth moving equipment, such as bulldozers and diesel powered truck. Noise from construction activities will occur on the project site. Noise from construction activities should be short term and must comply with State of Hawaii Community Noise Control Rules and a construction noise permit issued by the Department of Health.”

“The results of the vehicular traffic noise analysis show negligible increases in traffic noise levels due to the project. In addition, all existing and future predicted noise levels are expected to be below the FHWA/HDOT maximum noise limit of

67 dBA. Therefore, the project is not expected to produce a significant traffic noise impact.”

“Noise from the planned parking garage will be audible at the nearest residence. The design of the garage should incorporate noise control measures.”

It should be noted that modern pile driving equipment which has come into use in the islands within the last five years is significantly quieter than equipment used in the 80's and 90's. Because the lot is relatively level, the use of earth moving equipment will be minimal.

At this time the applicant anticipates using the following construction equipment:

- pile driver
- fork lift
- hydraulic crane
- concrete mixer trucks
- air compressor
- power hand tools

Construction is anticipated to occur Monday through Friday from about 7:00 am to 3:30 pm. Construction activities on Saturday, if any, will consist mainly of clean-up with a possible concrete pour for foundations to avoid peak hour traffic congestion.



The developer is considering use of a Junttan Hydraulic Impact Hammer, a relatively new piece of equipment with low impact noise and no exhaust.

It should also be noted that the layout of the parking garage is designed so that motorists need only navigate one turn when entering or exiting the parking garage. Vehicles will tend to be moving more slowly as they approach the turn as they exit the parking garage in anticipation of the stop before entering Kaiou Drive. This would tend to minimize and possibly eliminate the sound of squealing tires rounding corners. The applicant proposes to utilize floor treatment in the garage to mitigate noise impacts for vehicles turning corners in the garage.

Sound levels from refuse trucks range from 90 to 100 dBA at 50 feet from the source. Sounds from refuse collection are not expected to change from the existing refuse collection on Kaiou Drive.

It should be noted that noise from refuse trucks, motorcycles, car alarms, mechanical equipment, pedestrians and other sources already exist in this highly urbanized environment. The project is not anticipated to increase these noises in a significant manner.

The cumulative impact of the loss of 596 hotel units and an increase of 197 condominium units will result in an overall

reduction in traffic and vehicle trips which generate the primary long term noise impacts of projects.

m. Air Quality

Because the proposed increase in the number of dwelling units, from 82 to 116, is so marginal, long term impacts to air quality are not expected to exceed those impacts that existed with the 82 units.

Generally, long term air quality impacts are related to increases in traffic. As noted earlier, the increase in peak hour traffic for the new project is expected to be less than 15 vehicles per hour. This will result in a negligible impact on air quality.

Impacts from vehicle exhausts are not expected to impact the nearest residents. The nearest residents would be located on the level above the second level of parking. According to the traffic report, traffic volumes entering and exiting the project, even during peak periods will not be significant. Parking is dispersed over two levels across the project site. Cars are not expected to be "idling" within the parking garage. For these reasons exhaust fumes from vehicles are not anticipated to have any impact.

The cumulative impact of the loss of 596 hotel units and an increase of 197 condominium units will result in an overall reduction traffic and trip generation which are the principal

measure of long term air quality impacts in residential and hotel projects.

n. Hazards

The applicant conducted an environmental site assessment for the property to determine if there were any environmentally hazardous substances or petroleum products on the property. The assessment revealed no evidence of recognized environmental conditions on the property.

o. Exceptional Trees

There are no exceptional trees on the property. Most of the existing vegetation which consists of introduced or indigenous species will be removed during the redevelopment of the property. New landscaping will be installed as part of the project. In conjunction with the application for the Waikiki Special District Permit for project approval, the applicant will discuss and show all existing trees (with 6-inch caliper or more) to be removed, retained, or relocated.

## V. ALTERNATIVES CONSIDERED

As mentioned throughout this report the proposed development of Kaiwo Drive will not have a significant impact on the surrounding area in terms of public services or the environment.

Positive socio-economic impacts are projected with the development of the multi-family complex, and increases in short term employment. The project is expected to revitalize the area.

A. NO ACTION

The property is currently vacant and sparsely vegetated with remnant landscaping that was installed as part of the previously existing multi-family developments. While the property has been temporarily maintained in this condition and it provides some buffering for the existing buildings along Kaiwo Drive, it is not an economically feasible alternative for the long term.

B. PROPOSED MULTI-FAMILY DEVELOPMENT WITH 116 UNITS

The proposed 116-unit multi-family development was considered the best alternative for development of the site. The reasons are as follows:

- The development will revitalize the property and enhance the neighborhood.
- It will provide needed housing in the Waikiki area. There is a strong demand for fee simple condominium units in Waikiki.
- It will provide a favorable economic benefit for the applicant, the City, and to some degree the State.
- It will tend to reduce the degree of non-conformities with regard to reverse vehicular maneuvering onto Kaiwo Drive, encroachments into the front yard setbacks and other building standards.

In the process of developing the current proposal the applicant considered several variations. Some of the initial designs called for port cocheres fronting each of the buildings and loading in the front yard. These designs reduced the amount of open space and were not a preferable alternative.

C. MULTI-FAMILY DEVELOPMENT WITH 82 UNITS

A third alternative would be to develop a multi-family condominium project with about the same number of units as previously existed on the site. This alternative would allow the developer to offer larger units given the allowable floor area. The general building envelope could generally remain the same because the proposed structure is consistent with zoning development standards and Special District requirements. Development of an 82 unit alternative would have incrementally less impacts related to sewer, water, traffic and other impacts related to the number of units in relation to the proposed 116-unit project. Construction impacts between the proposal and this alternative are expected to be very similar. At this level of development with only 82 units the larger units would necessarily be higher priced and there is a concern that these higher priced units would be difficult to market. With the proposed 116 smaller units the price would be more affordable than the larger units. The additional 34 units provides housing opportunities to an additional 34 families.

## **VI. MITIGATION MEASURES**

Although the impacts from the proposed development are not expected to be significant, the following mitigation measures are planned to minimize potential project impacts on the surrounding area:

### **A. TRAFFIC**

As previously indicated, the traffic study recommends that the left turn storage lane from eastbound Ala Moana Boulevard to Hobron Lane be extended the equivalent of one car length, or about 25 feet. The applicant will work with the State Department of Transportation to address this matter.

### **B. ARCHAEOLOGICAL**

Cultural Surveys Hawaii, Inc. has conducted an archaeological inventory survey with subsurface testing. This archaeological inventory survey has been completed and a report describing the findings and recommendations is included as Appendix VII. The recommendation of that report is that no additional data recovery work needs to be carried out but that the State Historic Preservation Division (SHPD) be consulted for a possible archaeological monitoring program during any future development of the project site. No burials were found during the inventory survey. The applicant will consult with SHPD regarding a possible archeological monitoring program.

The applicant will instruct the contractor to immediately stop work and contact the State Historic Preservation Division (SHPD) for review and approval of proposed mitigation measures should any previously unidentified historic sites (including but not limited to artifacts, shell, bone, or charcoal deposits, human burials, rock or coral alignments, pavings or walls) be encountered during construction. Work in the immediate area shall be stopped until SHPD is able to assess impacts and make further recommendations for appropriate mitigation measures.

C. NOISE

The noise assessment, conducted by D.L. Adams Associates Ltd., made several recommendations for noise mitigation. The analysis for traffic noise showed that significant noise impacts would not be generated by the project related traffic. Therefore there are no recommendations to reduce the traffic noise.

The noise study recommended that the building be designed to minimize noise from stationary mechanical equipment. The applicant will consider this type of noise attenuation in designing the building.

The noise assessment recommended that the building design should consider treating the floor of the garage to reduce tire squealing and treating the ceiling to reduce the build-up of noise within the garage. As previously indicated, the parking garage layout with few turns and reduced speeds will tend to reduce the noise from squealing tires. It is the

applicant's intent to mitigate parking garage noise by providing floor treatment in the garage.

The applicant will comply with State Department of Health regulations related to construction noise.

**D. AIR QUALITY**

The applicant proposes the following dust control measures when appropriate:

- frequent watering the site during construction
- paving and landscaping exposed areas as soon as possible; and
- installation of dust screens when needed.

**VII. GOVERNMENT PERMITS AND APPROVALS REQUIRED**

The following governmental permits or approvals are required for implementation of the project:

- Finding of No Significant Impact for the Final Environmental
- Waikiki Special District Permit, Major
- Park Dedication Permit
- A Conditional Use Permit, Minor, to jointly develop the separate lots
- Building Permits

The applicant is working with the Department of Planning and Permitting to design a project that will comply with all of the development standards for the



underlying zoning including open space standards. Variances from these standards are not anticipated.

### VIII. PHOTOGRAPHS

Photographs of the project site and adjoining land uses are provided in Appendix IX to provide a visual record of existing conditions.

### IX. LAND USE ORDINANCE

#### A. DEVELOPMENT STANDARDS FOR THE APARTMENT PRECINCT

Compliance with the development standards of the Land Use Ordinance (LUO), including the Apartment Precinct Development Standards and parking and loading requirements, is described below.

#### LUO Development Standards for the Apartment Precinct

Development Standard	LUO Requirement	Proposed
Minimum lot area (square feet)	10,000	72,135
Minimum lot width and depth (feet)	50	100 Depth 267 Width
Yards Front Side and rear (feet)	15 10	18 13 (side) and 18 (rear)

Final Environmental Assessment - Waikiki Palms

Development Standard	LUO Requirement	Proposed
Maximum density (FAR)	1.50 (134,963 sf)	1.49 (134,918 sf)
Minimum open space (percentage of zoning lot)	36,068 sf (50% of the lot area)	36,132 sf (50.5%)
Maximum height (feet)	350	65
Transitional height setback	1 foot for every 10 feet above 40 feet	project complies

FAR means "Floor Area Ratio" and is the ratio of the floor area of the buildings to the total area of the zoning lot (including half of the abutting street right-of-way).

The project will comply with all of the development standards for the Apartment Precinct including open space.

**B. PARKING AND LOADING**

There is a parking requirement of one stall per dwelling unit resulting in a parking requirement of 116 parking stalls. The applicant will provide 186 parking stalls.

There is an LUO requirement of one loading stall for every 20 to 150 units resulting in a requirement of one loading stall for the project. One loading stall is being provided between the recreational area and Building B as indicated on the Site Plan. The location of this stall has been modified from its location in the Draft EA to relocate the maneuvering area

and stall from the front yard to a more interior location to address comments offered during the Draft EA process.

## **X. WAIKIKI SPECIAL DISTRICT**

The proposed development will satisfy the objectives and standards of the Waikiki Special District as follows:

### **A. OBJECTIVES**

#### **Promote a Hawaiian Sense of Place**

The proposed Waikiki Palms will evoke a tropical appearance with lush greenery, flowering shrubs, and a variety of palms and canopy form trees surrounding the site. A conceptual landscape plan is attached as part of the project plans in Appendix I. A rendering from a vantage point near the northeast corner (also in Appendix I) provides an illustration of the proposed project. The Waikiki Palms, with its landscaping, open space and low-rise structure will minimize visual impact on surrounding buildings. The tropical landscaping will frame the project entrances. Outdoor walkways and the recreational area will enhance the outdoor experience for residents of the project.

In conjunction with the application for the Waikiki Special District Permit for the project the applicant will discuss and show all existing trees (with 6-inch caliper or more) to be removed, retained, or relocated. The species, caliper, spread, and height will be identified at that time.

The applicant's architectural consultant has been working with the Director and staff at the Department of Planning and Permitting to create the appropriate articulation and rich visual definition by contrasting the soft-scape of the lush greenery and the hard-scape of the buildings stylized exterior. The building articulation will create contrasting light and shadows on the building surface to further contribute to the Hawaiian sense of place at the Waikiki Palms.

The applicant is proposing a hip roof a design element encouraged in the City's "Waikiki Special District Design Guidelines", and is also considering railing designs to further promote a Hawaiian sense of place.

B. DISTRICT GUIDELINES

1. Building Design

a. Orientation and Form

The proposed six -story building is not expected to impact significant public views. Because the project site is surrounded by considerably taller buildings, public views are very limited. This condition is evident in the simulated view analysis, Appendix II, and the area photographs, Appendix IX. Although not a requirement, the proposed, relatively low-rise, Waikiki Palms project is sensitive to mitigating view impacts from the surrounding private properties. The objective in the design of this six-story development was to create a low-impact, low-rise development without negatively affecting any ountain or ocean

view corridors that surrounding structures may currently have. The site's dimensions and configuration in addition to the required setbacks from the boundaries lines pose additional constraints which limit development options on the site. Generally, the building is configured to fit the unusual shape of the property. Landscaping will be used to screen proposed structures to the mitigate the impact on surrounding properties.

At ground level, landscaping will be provided to screen the two levels of parking and create a visual buffer from the public roadway. The building's mass will be broken up by projecting and recessing building elements with features such as bay windows, false columns, wall/window delineation, and recessed building mass. The roof follows the buildings' emphasized stepped design and stays true to a stylized roof which is often correlated to the typical modern Hawaiian-style building.

The 6-story Waikiki Palms buildings will provide an appropriate height transition from the 44-story Windsor, 39-story Chateau Waikiki and 42-story Discovery Bay to some of the lower buildings in the area.

b. Open Space

Open space is provided primarily in the northeastern corner of the site and also surrounding each of the buildings. Configuring the on-site open space in this manner creates usable

open-space. The corner recreation area serves as both a meaningful space for tenants to congregate and also as a buffer zone between the two buildings and the surrounding lots. In addition it creates visual relief from the public street and sidewalks.

Projects within the Apartment Precinct are required to provide open space area equal to at least 50 percent of the zoning lot area. The applicant proposes to comply with this requirement. This is illustrated in the Open Space Plans included in Appendix I.

The project will comply with all LUO requirements for setbacks and transitional height setbacks.

The applicant proposes an open space recreational area in the northeastern corner of the site and also surrounding each of the buildings. Configuring the open-space in this manner creates usable open-space for the residents and is consistent with the illustration for "preferred location for open space" illustrated on page 5 of the Waikiki Special Design District Guidelines. This corner of the project consists primarily of a recreational area that will create an area for social interaction and visual relief.

c. **Parking Facilities**

The impact of the parking structure located below the living levels of the Waikiki Palms is mitigated through a variety

of means. There are trees and plantings along the entire length of each of the Kaioo Drive facing elevations with the intention of screening the parking garage from view. This reduces the visual impact of the parked cars and drive aisles from pedestrians and motorists. Site size/dimensions restrict thinner variations or orientations of the parking structure within the site. The setback from the parking structure to the property line at Kaioo Drive ranges from 17' to 19' which allows for a tropical landscaped buffer zone.

The architects had considered constructing a portion of the two levels of parking below grade to reduce the amount of parking facing the public space but were informed that the flood hazard regulations prohibited that design. The shape of the lot limits the applicants ability to reconfigure the parking in a different manner.

d. Articulation, Scale, Material and Color

The building façade will be varied with a high degree of articulation. The applicant will utilize bay windows, recessed windows, projecting eyebrows and recessed building masses to providing articulation and contrast.

The scale of the building is relatively modest relative to most of the surrounding buildings and the allowable 350-foot height limit.

The applicant will be using articulated masonry finishes blended with manufactured siding, bringing out earth colored tones to soften the buildings' exterior appearance. Use of these exterior treatments will allow the building to blend with the surrounding environment and proposed landscaping.

These elements of articulation, scale, material and color are in keeping with the recommendations of the "Waikiki Special District Design Guidelines".

2. Ground Level Features

a. Entries, Lobbies and Arcades

The applicant plans a secured lobby area for the benefit and safety of the tenants. Visitors of tenants will be welcomed by right-of-way connecting entry walkways.

To minimize the visual impacts of a blank wall facing Kaiio Drive, the parking levels are planned with openings around each level to better integrate them into the rest of the building. In addition, as mentioned earlier, the parking lot will be screened by lush landscaping along Kaiio Drive. These elements are in keeping with the recommendations of the "Waikiki Special District Design Guidelines".

b. Visual Links

A visual link on the site is being provided at the recreation area which provides a spatial relief for this corner of the site. The



applicant intends to provide a six-foot high wrought iron fence or fence of similar transparency along Kaioo Drive with breaks for driveways and walkways to the building. As such the setback will be two feet from the property line providing a two-foot public access area along the Kaioo Drive frontage of the property. In addition, the public will have a visual link through the entire landscape area within the front yard of the project.

3. Features in Required Yards

a. Porte Cocheres

Early designs showed a porte cochere fronting each of the buildings. These were removed as a result of discussions with staff at the Department of Planning and Permitting because these areas would reduce the amount of open space. As a result there are no port cocheres currently planned for the project.

b. Walls and Fences

The applicant plans to utilize a wrought iron fence or fence of similar transparency where appropriate on the Kaioo Drive side on the Kaioo Drive side of the development. This will be placed 24 inches from the front property line as specified in the Waikiki Special District Design Guidelines. The plantings along the perimeter fence line are proposed to partially screen the building from pedestrian view and also act as a pedestrian-scale element.

The applicant is considering using a rock or stone wall to support the proposed identification sign at the north east corner of the property.

c. Shading Devices

Shading devices such as roof overhangs, eaves and eyebrows are planned, and are expected to encroach no more than the recommended amount permitted by the LUO and "Waikiki Special District Design Guidelines".

d. Roof Design and Equipment Screening

The roof design is a hipped-roof as recommended in the Waikiki Special District Design Guidelines. Additional height, beyond the 65 feet for the main roof line, maybe needed to accommodate roof top machinery but will be screened and/or designed to blend with the building as shown in the elevation drawings.

4. Landscaping

a. Plant material

The applicant proposes a large landscaped recreational area at the northeastern corner of the site with a mix of hard-scape and pool area. As mentioned earlier, the building will be screened with landscaping utilizing a mix of vertical and mid-height canopy form trees and shrubs. Proposed trees and hedges will partially screen the front yard area from public view.

Final Environmental Assessment - Waikiki Palms

The applicant is currently considering the following plant species to create a lush tropical setting:

Palm Trees

Coconut Palms

Loulu Palms

Joannis Palms

Foxtail Palms

Areca Palms

Macarthur Palms

Vertical and canopy form trees

Octopus Trees

Harpullia

Bottlebrush

False Olive

Podocarpus

Rainbow Shower

Narra

Hong Kong Orchid Trees

Mahogany

Pak-Lan

Screening Hedges

Croton

Hibiscus

Flowering Shrubs and Ground cover and Zoysia El Toro

This proposed landscape material is in keeping with the recommendations of the "Waikiki Special District Design Guidelines". Irrigation will be provided to maintain the landscaping. The applicant will consider the use of native plants in the landscape.

In conjunction with application for the Waikiki Special District Permit for tree removal and implementation of the project, the applicant will discuss and show all existing trees (with 6-inch caliper or more) to be removed, retained, or relocated. The species, caliper, spread, and height will be identified.

b. Water Features and Artwork

The landscaped recreational pool area will serve as the main water feature for the site. Landscaped walkways will also contribute to the tropical ambiance of the project.

c. Sidewalks and Paving

Private walkways will be developed with patterned and/or textured paving materials to provide a sense of scale and rhythm appropriate to the surrounding buildings and landscaping. We are proposing just five curb cuts over the extensive street frontage (one curb cut will be secured for trash enclosure access only) which will not significantly impact vehicular traffic or pedestrians on these roadways. This represents a significant reduction from the existing 10 curb cuts on the property.

d. Signage

An indirectly illuminated ground sign at the northeast corner is proposed to identify the Waikiki Palms Multi-family. The ground sign will not exceed the permitted 12 square feet as permitted by the LUO.

e. Lighting

Lighting will be used for safety and to enhance the nighttime ambiance of the outdoor recreational and open space areas on the property. Outdoor lighting will be subdued or shielded so that it will not spill onto surrounding properties or public rights-of-way.

Light fixtures to be used in the project will be provided in accordance with the LUO and Waikiki Special District Design Guidelines which call for lighting to contribute to public safety. In addition outdoor lighting will be subdued or shielded so as not to produce glare and light spillage onto surrounding properties, or public rights-of-ways. Lighting from the proposed parking levels will not impact the abutting properties because there will be a solid wall along the two levels of parking that face abutting properties.

C. URBAN DESIGN CONTROLS

1. Waikiki Gateways

The Waikiki Palms is not in close proximity to any Waikiki Gateway and will not affect the intended entry-type settings.

2. Fort DeRussy

The Waikiki Palms is located relatively close to Fort DeRussy but is not visible from that site because of the intervening large buildings.

3. Major Streets

The Waikiki Palms fronts on Kaiwo Drive and will provide landscaped open space along this frontage as a benefit to pedestrians along this roadway. The project is not located on a major street as identified in the Waikiki Special District Design Guidelines.

4. Waikiki Promenade

The Waikiki Palms is not in close proximity to the Waikiki Promenade area and will not significantly affect any mauka-makai sight-lines due to its low-rise nature or rights-of-way for pedestrian access.

5. Coastal Height Setback

The Waikiki Palms is not situated along the shoreline and is not subject to the coastal height setback.

6. Mini Parks

The Waikiki Palms will provide a private mini-park at the northeastern corner of the proposed development site. This corner park location will help in the visual "softness" of the corner and will be a valuable visual benefit for both the pedestrian and passing vehicles. The project will not impact the existing mini parks that are identified in the Waikiki Special Design Guidelines.

7. Significant Public Views

The Waikiki Palms will not adversely affect views to Diamond Head, the Ocean, the Ala Wai Canal, or any of the major rights-of-way in Waikiki. The buildings low profile also help avoid blocking any views from the surrounding area.

8. Public Pedestrian Access

The Waikiki Palms location does not provide opportunities for public pedestrian access as encouraged by the "Waikiki Special District Design Guidelines" because except for its Kaioo Drive frontage it does not abut a public right-of-way.

9. Historic Structures, Significant Sites and Landmarks

The newly renovated Windsor, located adjacent to the project, is a notable landmark as it has views of all surrounding Waikiki and Honolulu. To minimize any negative visual impacts from the proposed Waikiki Palms, which is planned to surround the Windsor development, the applicant has designed this project to have a lower profile and minimize obstructing any sight-lines which may currently exist for the Windsor.

## XI. SIGNIFICANCE CRITERIA

The following review of the significance criteria indicates that the development will not have a significant impact on the environment.

- **No irrevocable commitment to loss or destruction of any natural or cultural resource would result.**

The project is located in an urbanized area and there are no significant natural resources on the site.

Following the recommendations of the archaeological assessment will minimize impact on natural or cultural resources that may be present on the project site.

The recommendations of the archaeological inventory survey is that no additional data recovery work needs to be carried out. The State Historic Preservation Division be consulted for a possible archaeological monitoring program during any future development of the project site. The applicant will consult with the SHPD regarding a possible archaeological monitoring plan.

- **The action would not curtail the range of beneficial uses of the environment.**

The proposed development will not curtail, but will instead enhance the range of beneficial uses of the environment. The present vacant project site partially covered with asphalt and concrete and miscellaneous landscaping, offers little beneficial use to anyone. The Waikiki Palms multi-family complex and amenities and landscaping will provide residents with an enjoyable place to live and recreate.

- **The proposed action does not conflict with the state's long-term environmental policies or goals and guidelines.**

The State's environmental policies and guidelines are set forth in Chapter 344, Hawaii Revised Statutes, "State Environmental



Policy". The broad policies set forth include conservation of natural resources and enhancement of the quality of life. As discussed earlier, the project does not affect significant natural resources, and will enhance the neighborhood and provide an enjoyable place for people to live.

- **The economic or social welfare of the community or state would not be substantially affected.**

The development will give a temporary boost to the State's economy by providing short-term construction employment and related tax impacts, and long-term jobs in maintenance and property management.

The social welfare of the community would be positively affected by the development of this multi-family complex. The Waikiki Palms multi-family complex will offer attractive living conditions to those wishing to live in Waikiki. The development will offer an attractive living environment and in addition will offer lush landscaping and open spaces for the benefit of residents and neighbors alike.

- **The proposed action does not substantially affect public health.**

The proposed action will not affect public health. The applicant will comply with State Department of Health regulations relative to air quality and noise. The environmental site assessment did not identify any hazardous materials on the property. The

proposed land use is compatible with the surrounding condominium and commercial developments.

- **No substantial secondary impacts, such as population changes or effects on public facilities, are anticipated.**

As mentioned earlier under "Residential Population" the General Plan Population Guidelines establish a population range for the Primary Urban Center Development Plan Area for the Year 2010 of between 450,800 and 497,800 persons. In 2000 the actual population for the Primary Urban Center was 419,339. The additional population supported by this development will help the Primary Urban Center in reaching the population range planned in the Year 2010.

The proposal represents a small increase in the number of dwelling units that previously occupied the site. No secondary impacts on public facilities are anticipated, since the municipal water, wastewater, and transportation systems are adequate to support the proposed development. Drainage is expected to improve with greater landscape areas than currently exist.

- **No substantial degradation of environmental quality is anticipated.**

The development will not result in a substantial degradation of the environment. Only minimal impact is projected during the construction phase. Dust control measures appropriate to the situation will be employed by the contractor, including where appropriate, the use of

water wagons, erection of dust barriers and other methods for minimizing dust. Only minimal impact is projected during the construction phase of the proposed development. The applicant will comply with State Department of Health regulations relative to air and noise pollution.

- **The proposed action does not involve a commitment to larger actions, nor would cumulative impacts result in considerable effect on the environment.**

The proposed development does not involve a commitment to larger actions nor will it result in cumulative impacts to the environment. The proposed development of the Waikiki Palms multi-family complex will not generate future developments that could result in a cumulative impact.

- **No rare, threatened or endangered species or their habitats would be affected.**

As previously mentioned, threatened or endangered species are not expected to be found on the site or in the vicinity of the project site due to the urbanized condition of the area.

- **Air quality, water quality or ambient noise levels would not be detrimentally affected.**

Short term impacts on air quality are expected to be primarily related to dust generated by the construction activity. Dust will be generated as the existing vegetation is removed in preparation for construction. Dust control measures appropriate to the situation will be employed by the contractor, including where appropriate, watering,

installation of dust barriers and revegetating and paving as soon as possible.

Short term noise impacts at construction sites are an expected result of construction activity. The State Department of Health administers rules and regulations relating to the hours during which construction is permitted and the noise levels permitted during those hours. The contractor will be required to apply for a permit from the State Department of Health should noise from construction activities exceed established limits. The contractor will abide by the conditions of the permit.

Long term noise impact from the proposed development are generally considered to be negligible as the project is located in an urbanized area with existing surrounding noises including mechanical equipment, vehicular traffic and construction noise. Long term noise generated at the project can be minimized with building design methods. At this time mechanical equipment such as chillers and compressors which typically generate noise are not proposed for the project.

Water quality would not be detrimentally affected by the proposed development. The project is not near any natural water resources. The Honolulu Board of Water Supply (BWS) currently provides potable water for the project site. No off-site water improvements are needed to service the proposed development.

- **The project would not affect environmentally sensitive areas, such as flood plains, tsunami zones, erosion-prone areas, geologically hazardous lands, estuaries, fresh waters or coastal waters.**

The project site is in Zone AO, an area determined to have an average flood depths 2 feet. The proposed development will be designed to meet Land Use Ordinance standards for development in this flood zone.

The development will not affect tsunami zones, erosion-prone areas, geologically hazardous land, estuaries, fresh water nor coastal waters.

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

The proposed development will not impact important coastal views described in the 1987 Department of Land Utilization Coastal View Study. In this portion of Waikiki, Ala Wai Yacht Harbor makai of the project site provides important stationary coastal views. The proposed development will not affect significant public views identified in Section 21-9.80-3 of the Land Use Ordinance.

- **Requires substantial energy consumption.**

The Hawaiian Electric Company has existing power lines serving this area and the applicant will coordinate development to ensure that the power lines will be adequate to support the proposed multi-family or timeshare development. The applicant will consider the use of energy saving appliances and fixtures in the design of the project.

## **XII. LIST OF AGENCIES CONSULTED**

The applicant has prepared point by point responses to each of the comments received during the agency and public review period for the Draft Environmental Assessment. Copies of the agency and public comment letters and the applicant's response are included in Appendix X, Agency and Public Comments on the Draft EA.

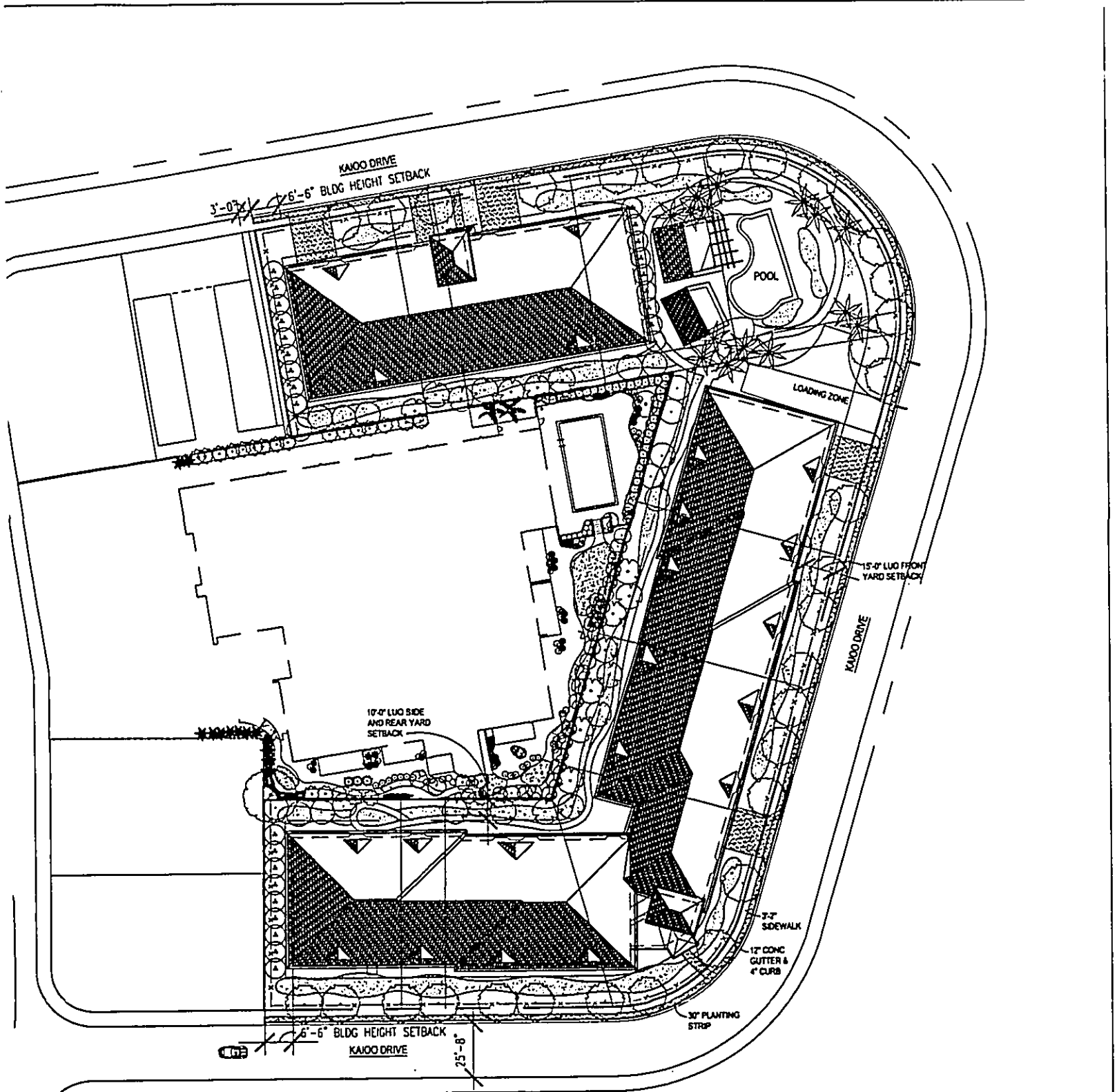
## **XIII. RECOMMENDATION**

Based on this Final Environmental Assessment, the project is not expected to have significant environmental impacts. Accordingly, a Finding of No Significant Impact (FONSI) for the proposed development of the Waikiki Plans multi-family complex is requested.

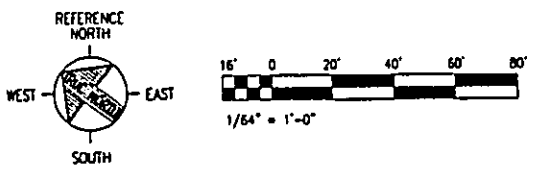
**APPENDIX I**  
**PLANS AND RENDERING**

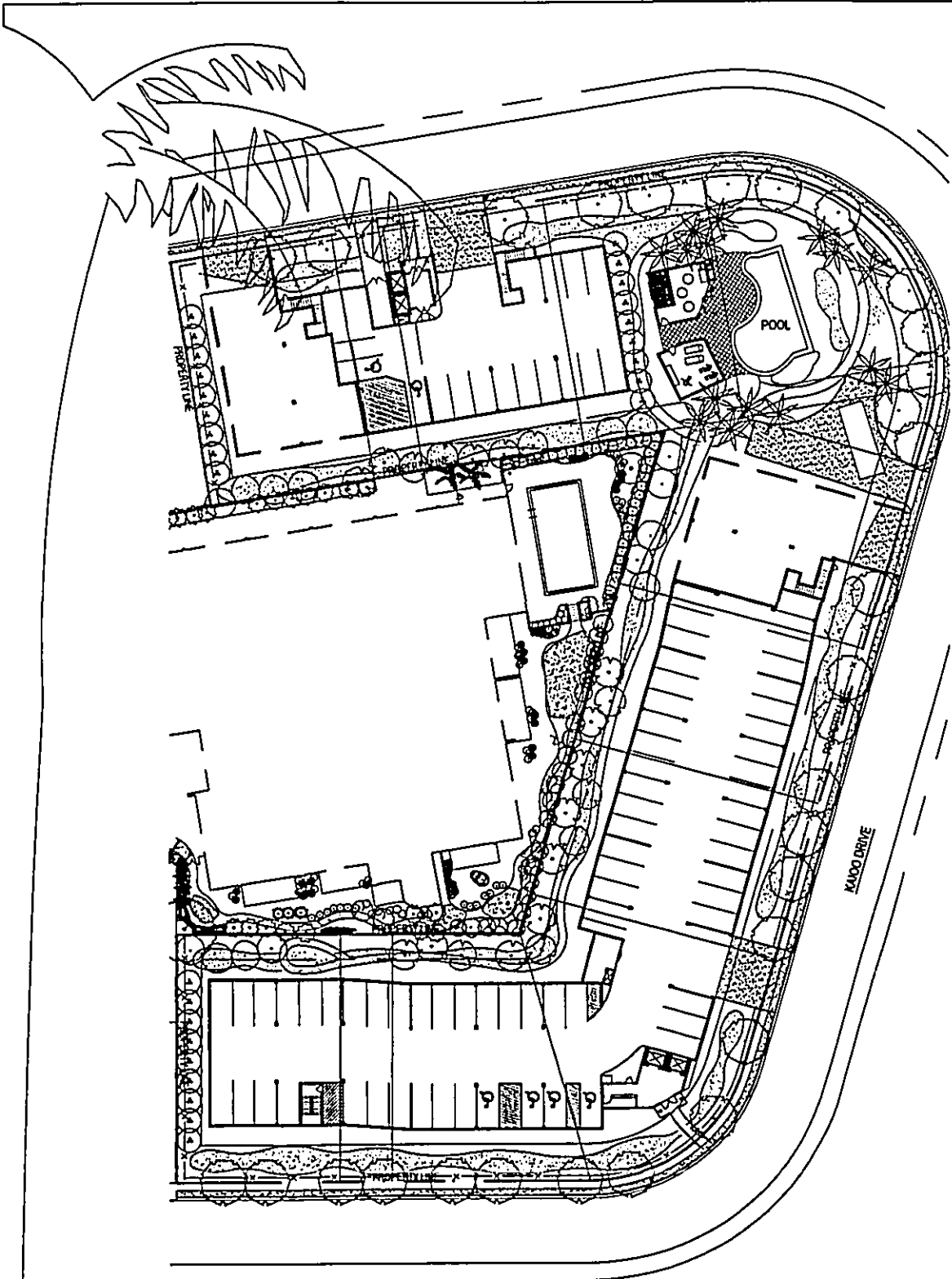




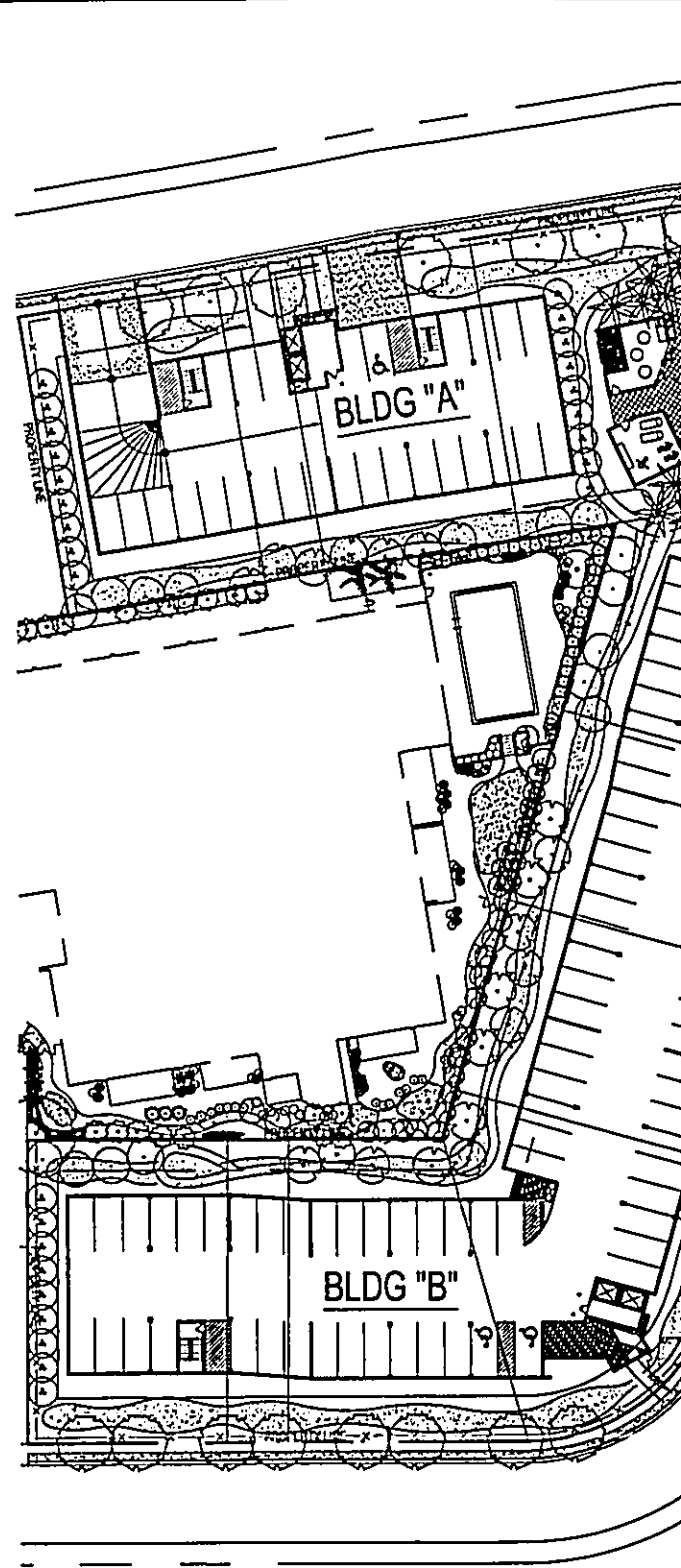


**ROOF PLAN**





PARKING LEVEL 1



PARKING LEVEL 2

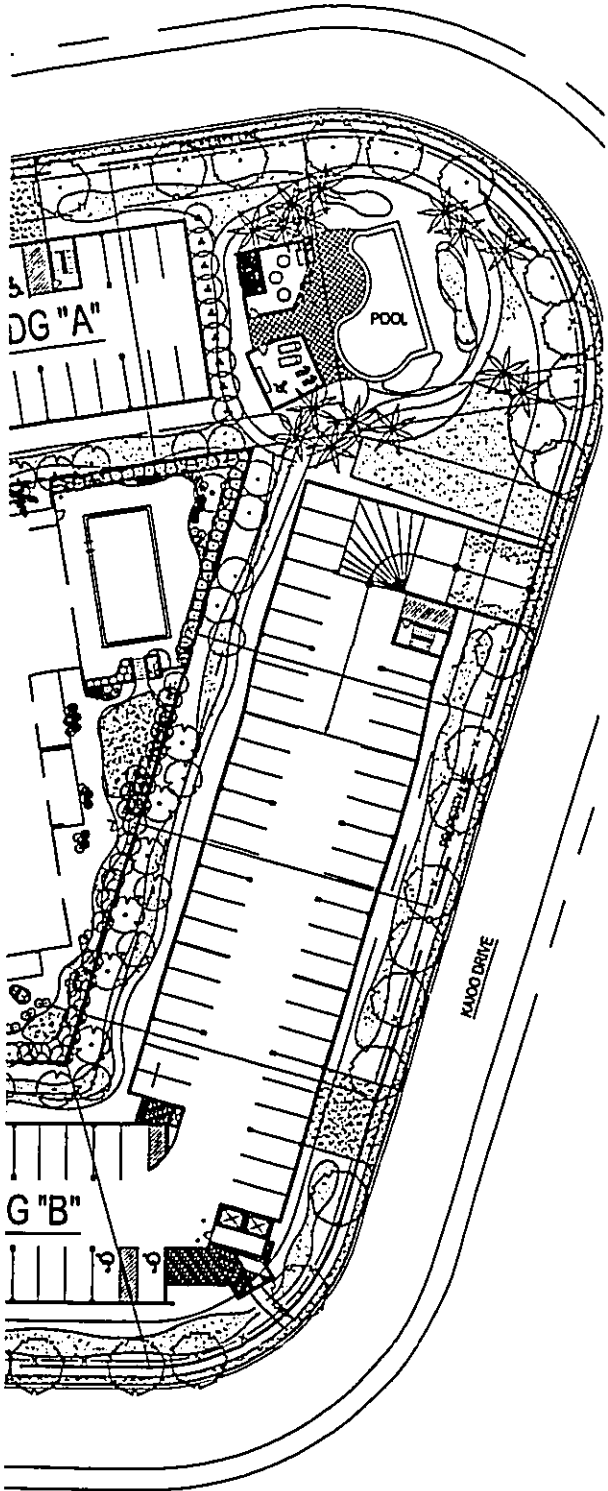


# WAIKIKI PALMS

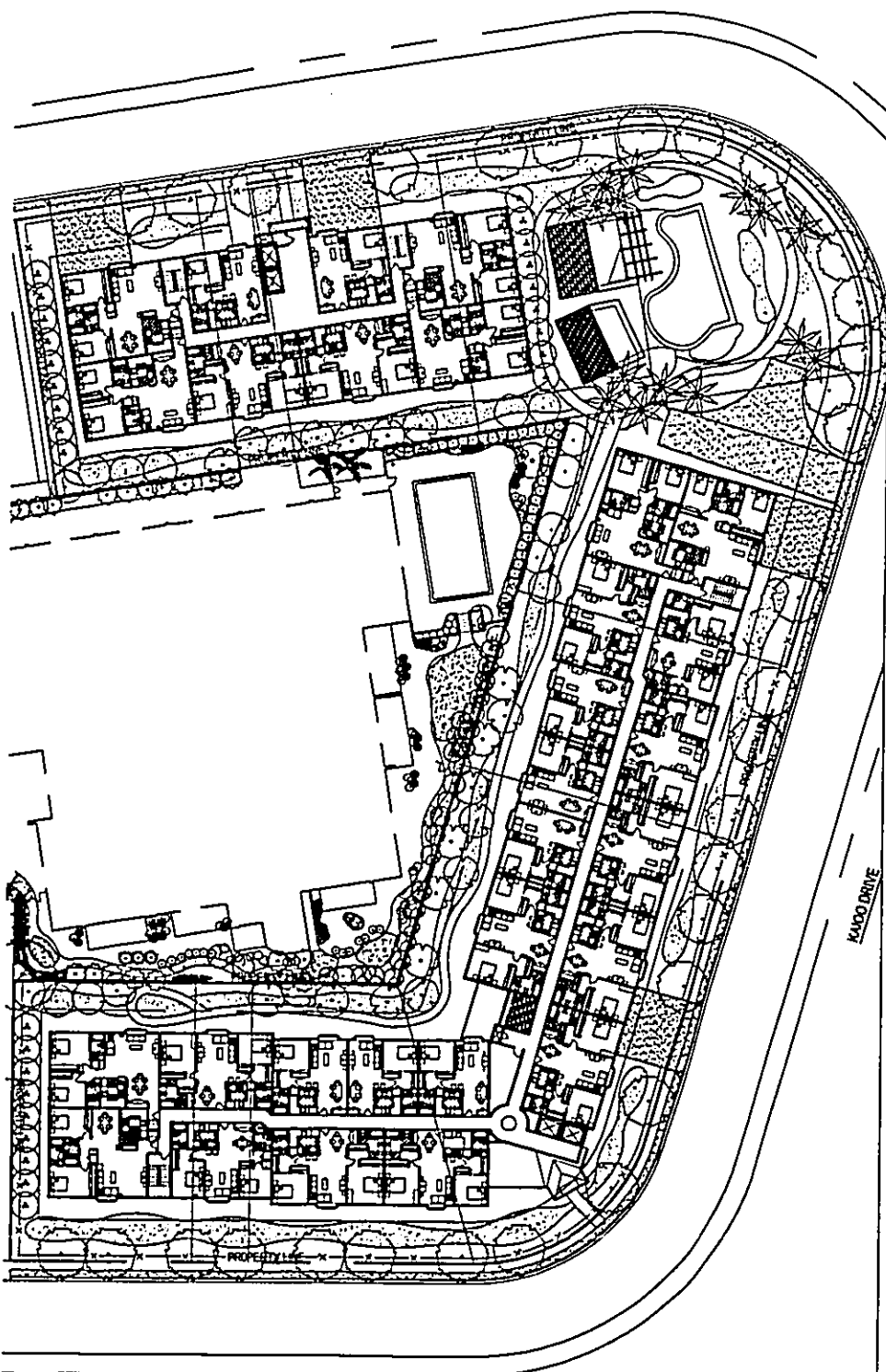
MULTI-FAMILY DEVELOPMENT

KAIOO DRIVE, WAIKIKI, HAWAII

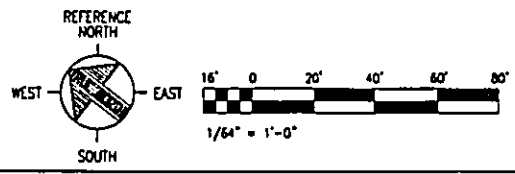
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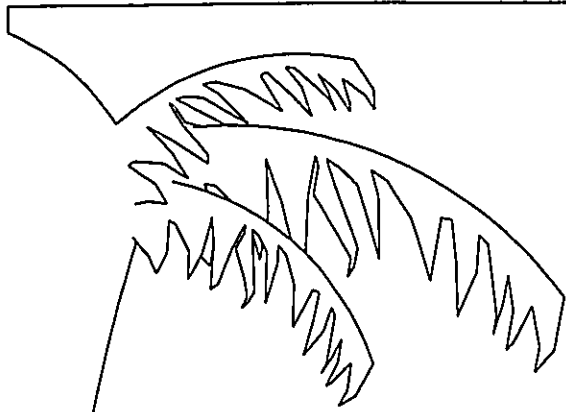


PARKING LEVEL 2



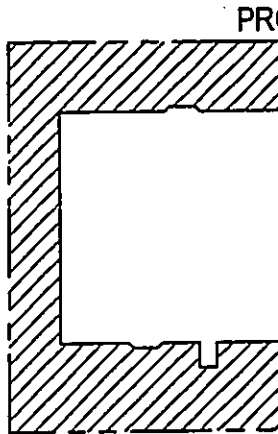
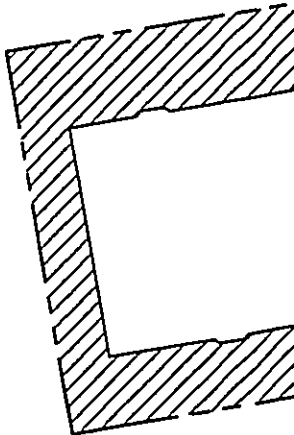
TYPICAL FLOOR LAYOUT





**OPEN SPACE AREA CHART**

	EXISTING AREA/ AREA REQUIRED	COMMENTS
LOT AREA	72,135 SF	
OPEN SPACE REQ'D	36,068 SF	OPEN SPACE REQ'D = 1/2 THE LOT AREA
AREA OF BLDGS AND DRIVEWAYS	36,003 SF	INCLUDES ALL BUILDINGS AND LOADING STALL MANUEVERING SPACE
OPEN SPACE PROVIDED	36,132 SF (64 SF MORE THAN REQ'D)	



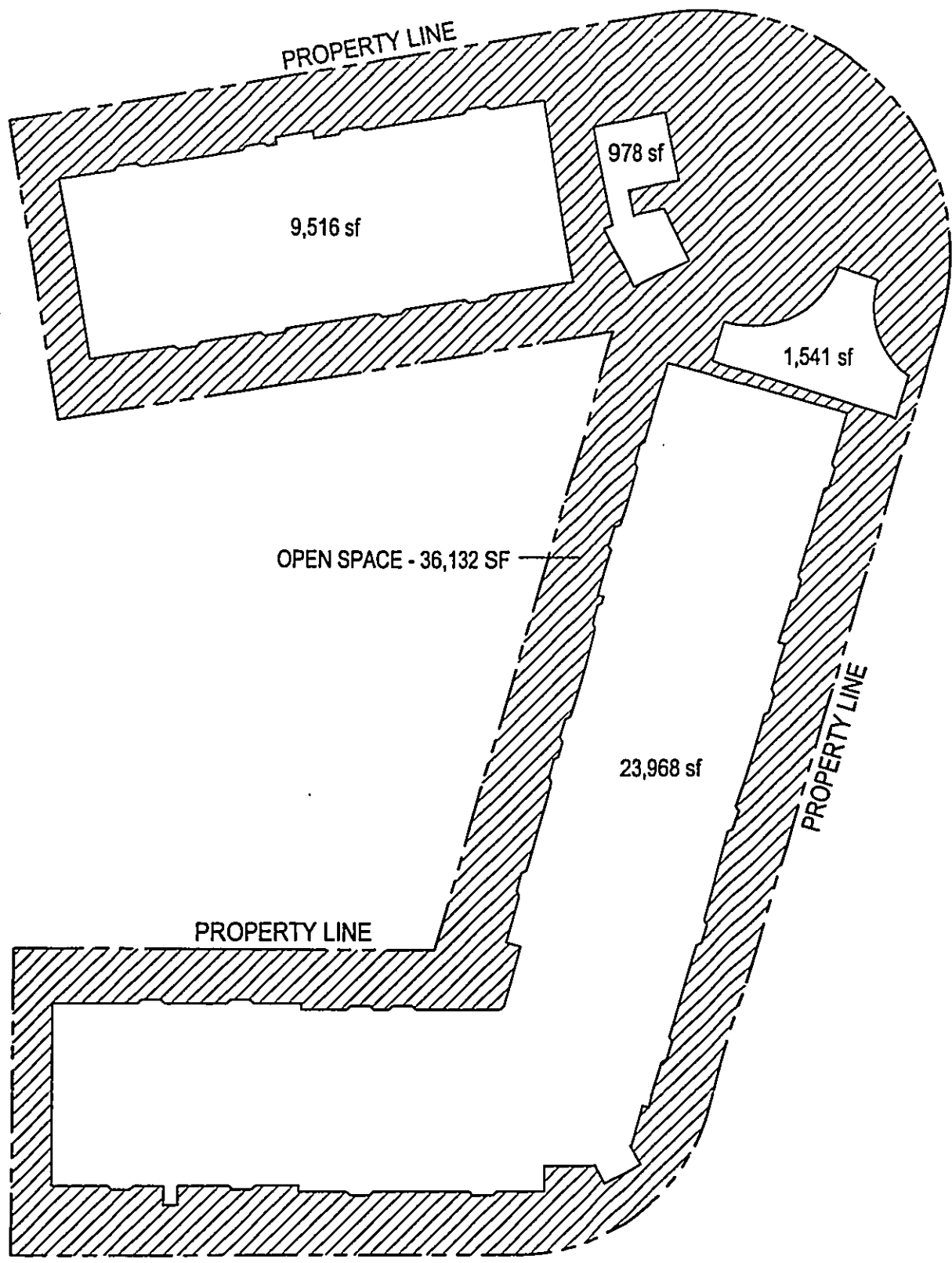
# WAIKIKI PALMS

MULTI-FAMILY DEVELOPMENT

KAIOO DRIVE, WAIKIKI, HAWAII

TMK: 2-6-12: 37, 38, 39, 40, 41, 42, 43, 44, 55, 56, 57 and 58

OPEN SPAC



**OPEN SPACE CALCULATION**





BUILDING "A" - NORTH ELEVATION



# WAIKIKI PALMS

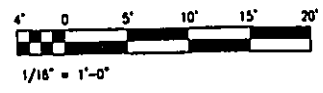
MULTI-FAMILY DEVELOPMENT

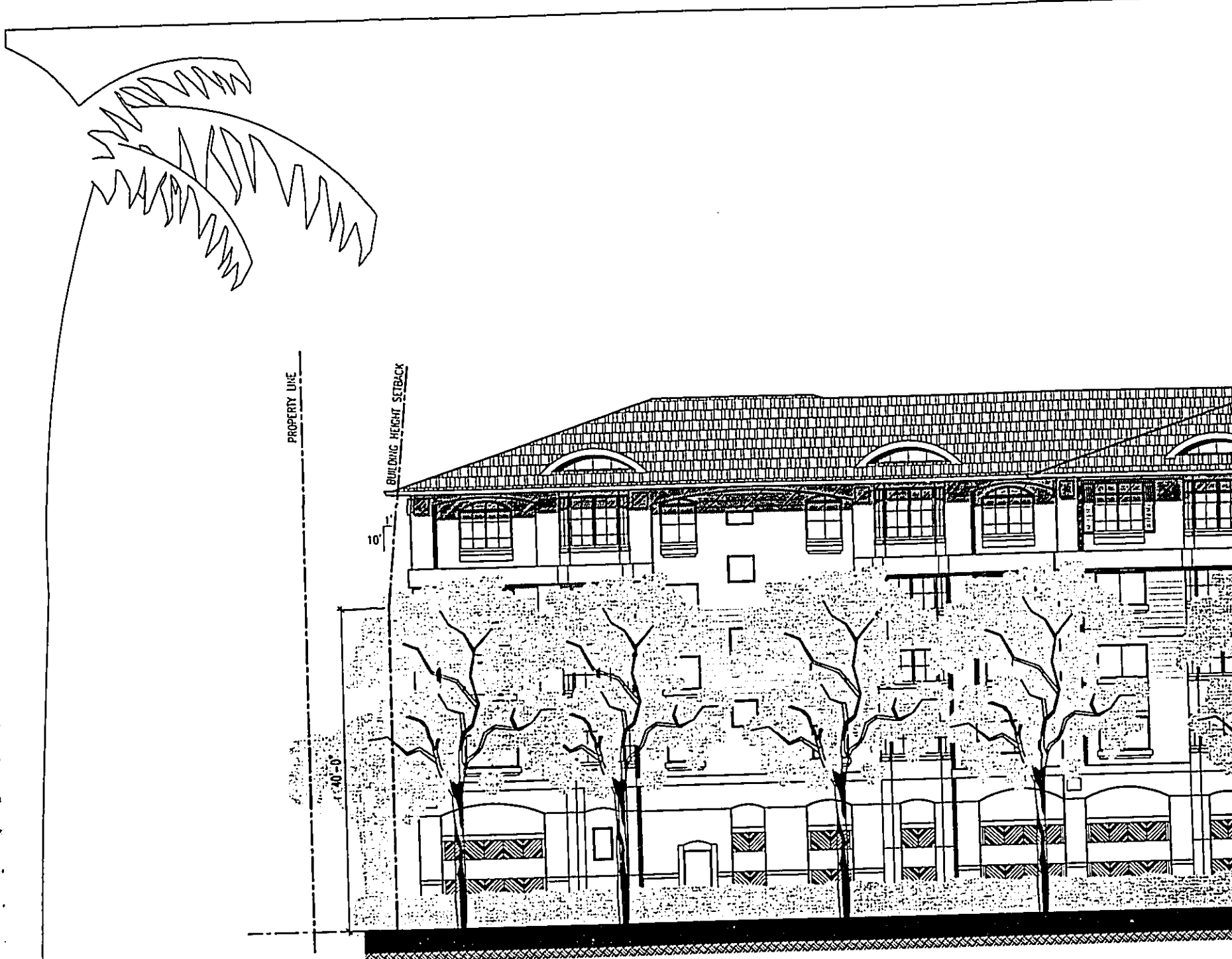
KAIKO DRIVE, WAIKIKI, HAWAII

TMK: 2-8-12: 37, 38, 39, 40, 41, 42, 43, 44, 55, 56, 57 and 58



" - NORTH ELEVATION





BUILDING "B" - SOUTH



# WAIKIKI PALMS

MULTI-FAMILY DEVELOPMENT

KAIKO DRIVE, WAIKIKI, HAWAII

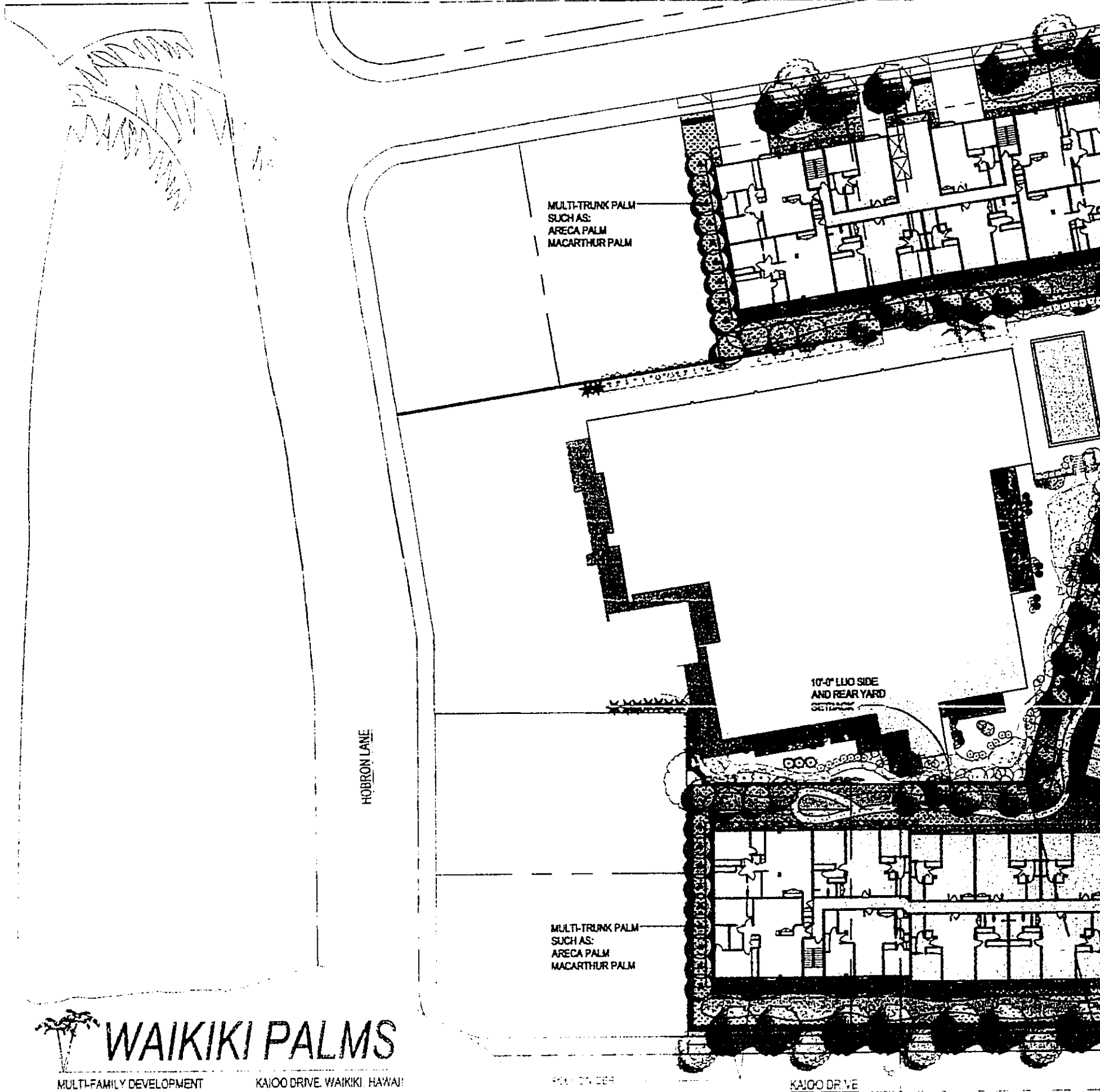
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"B" - SOUTH ELEVATION





# WAIKIKI PALMS

MULTI-FAMILY DEVELOPMENT

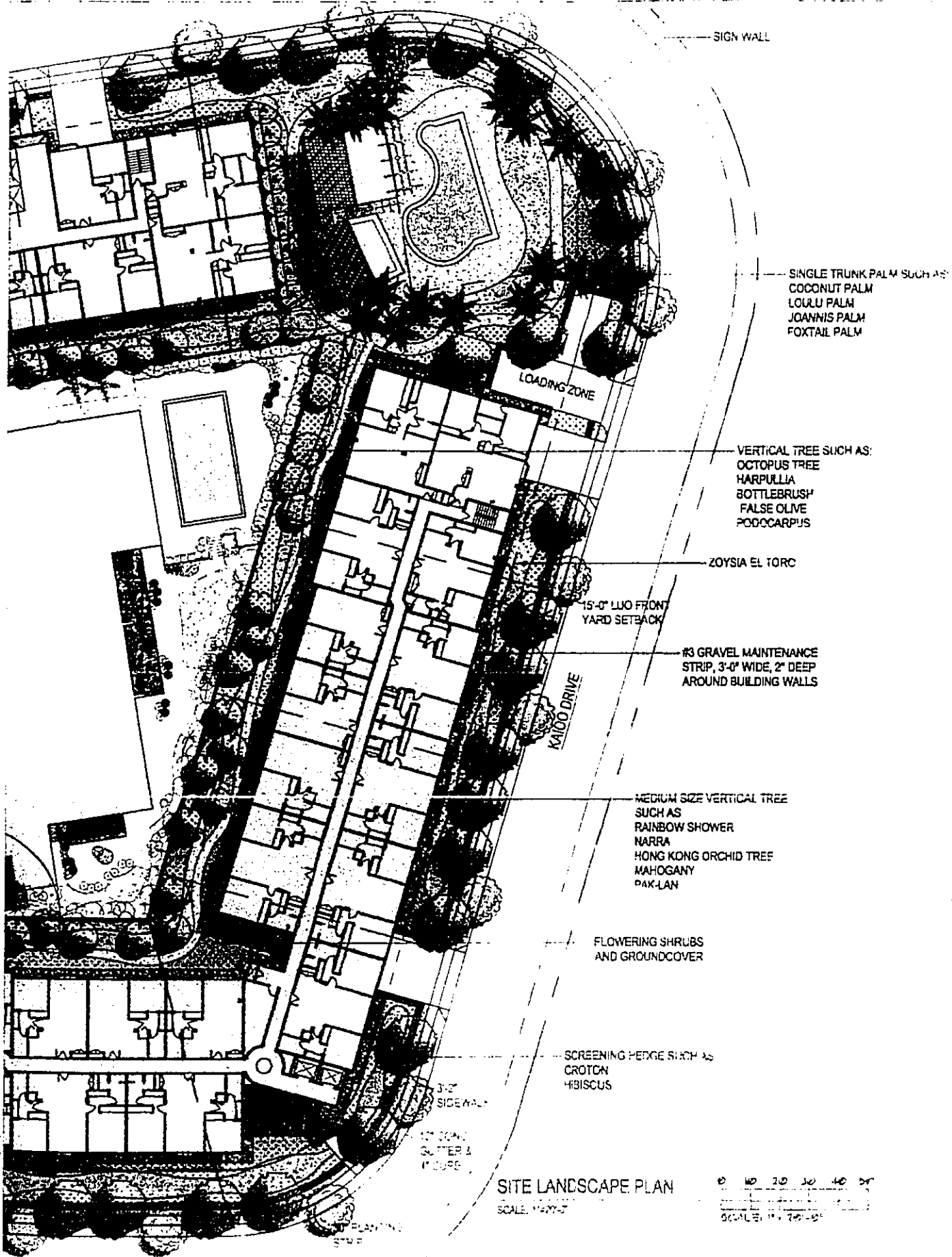
KAILOO DRIVE, WAIKIKI, HAWAII

T.M.K. 2-6-2 37, 38, 39, 40, 41, 42, 43, 44, 55, 56, 57, 62, 58

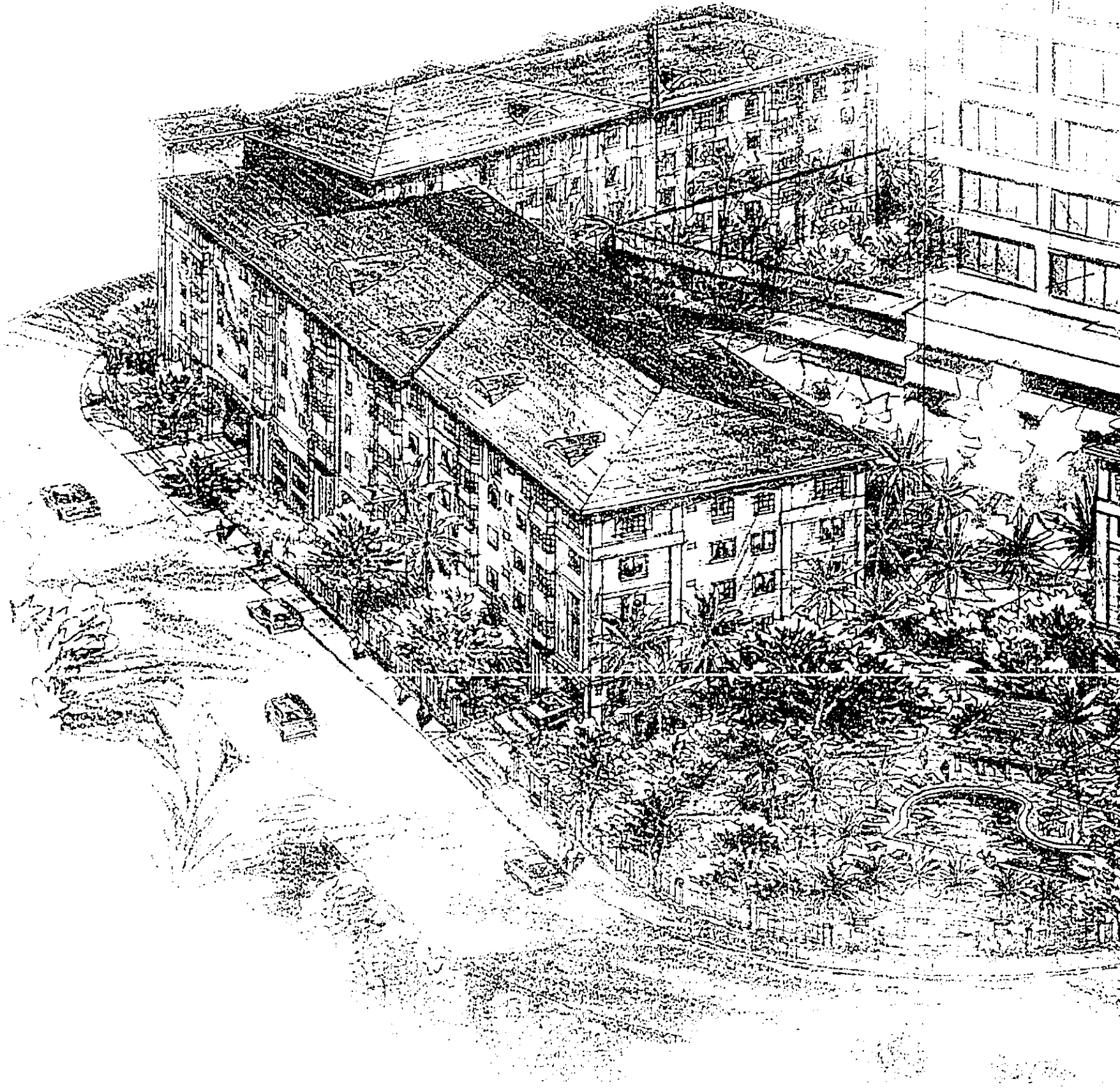
KAILOO DRIVE

KAILOO DRIVE

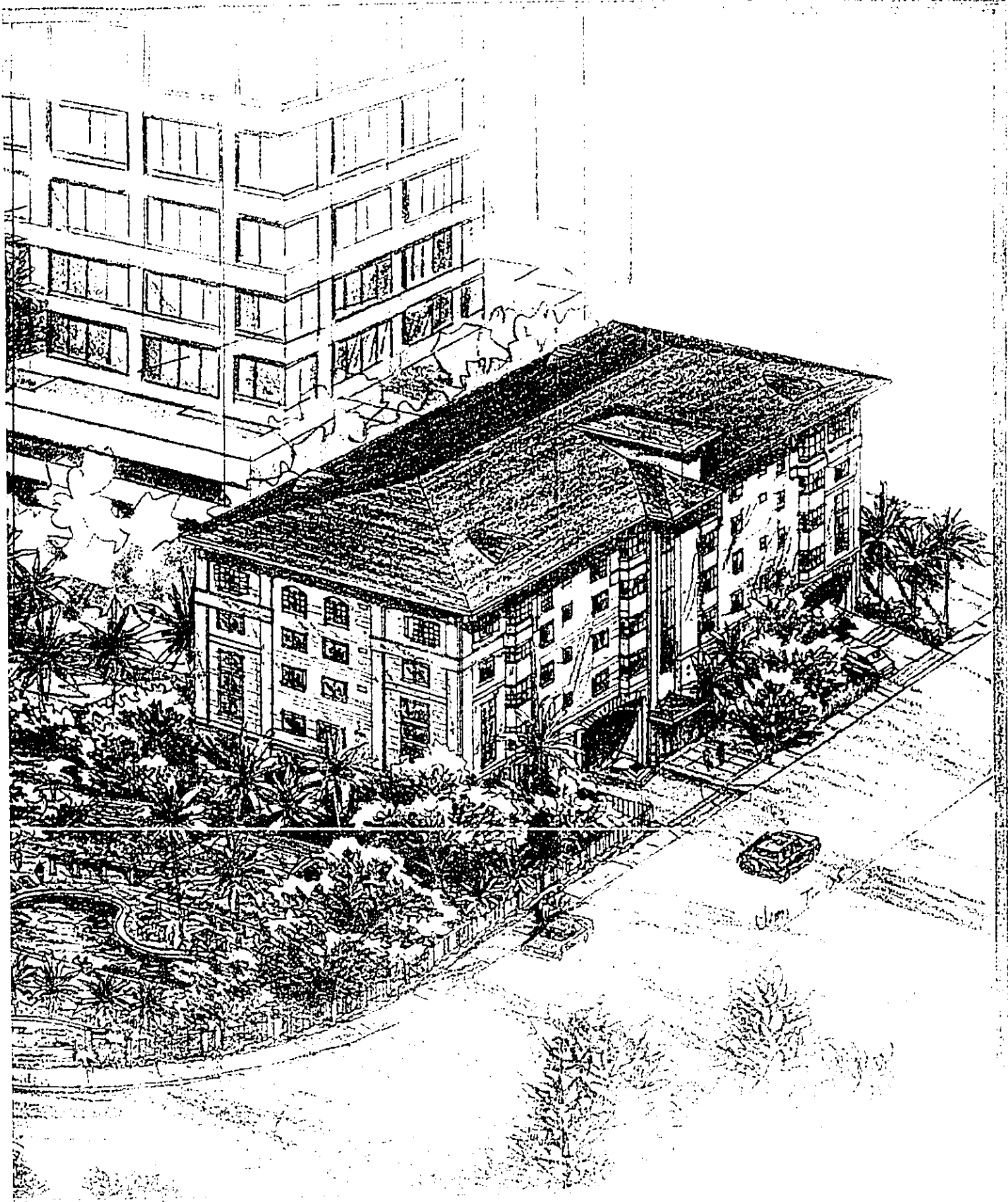
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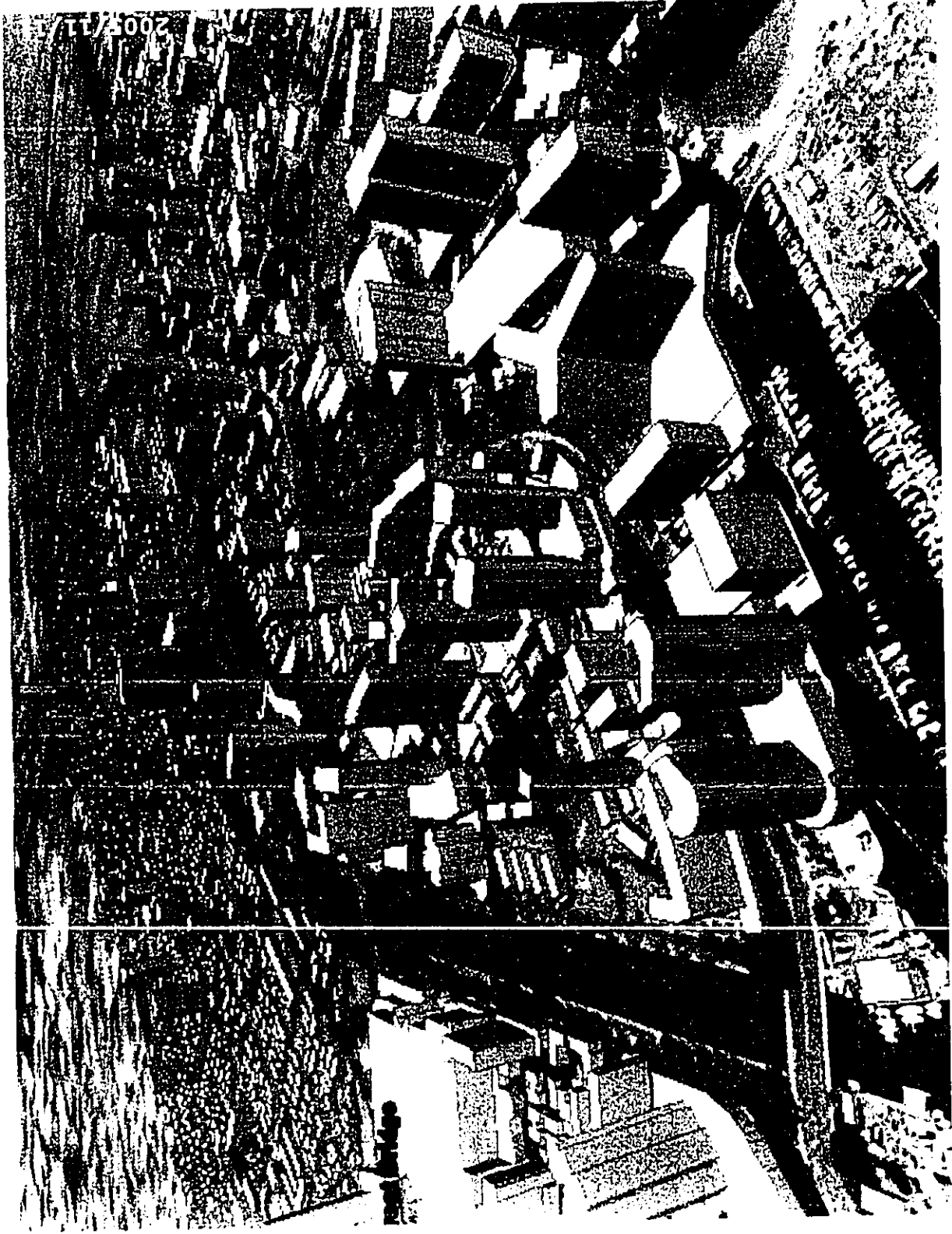


**APPENDIX II**  
**AXONOMETRIC PLANS AND AERIAL PHOTOGRAPH**



Looking toward the ocean

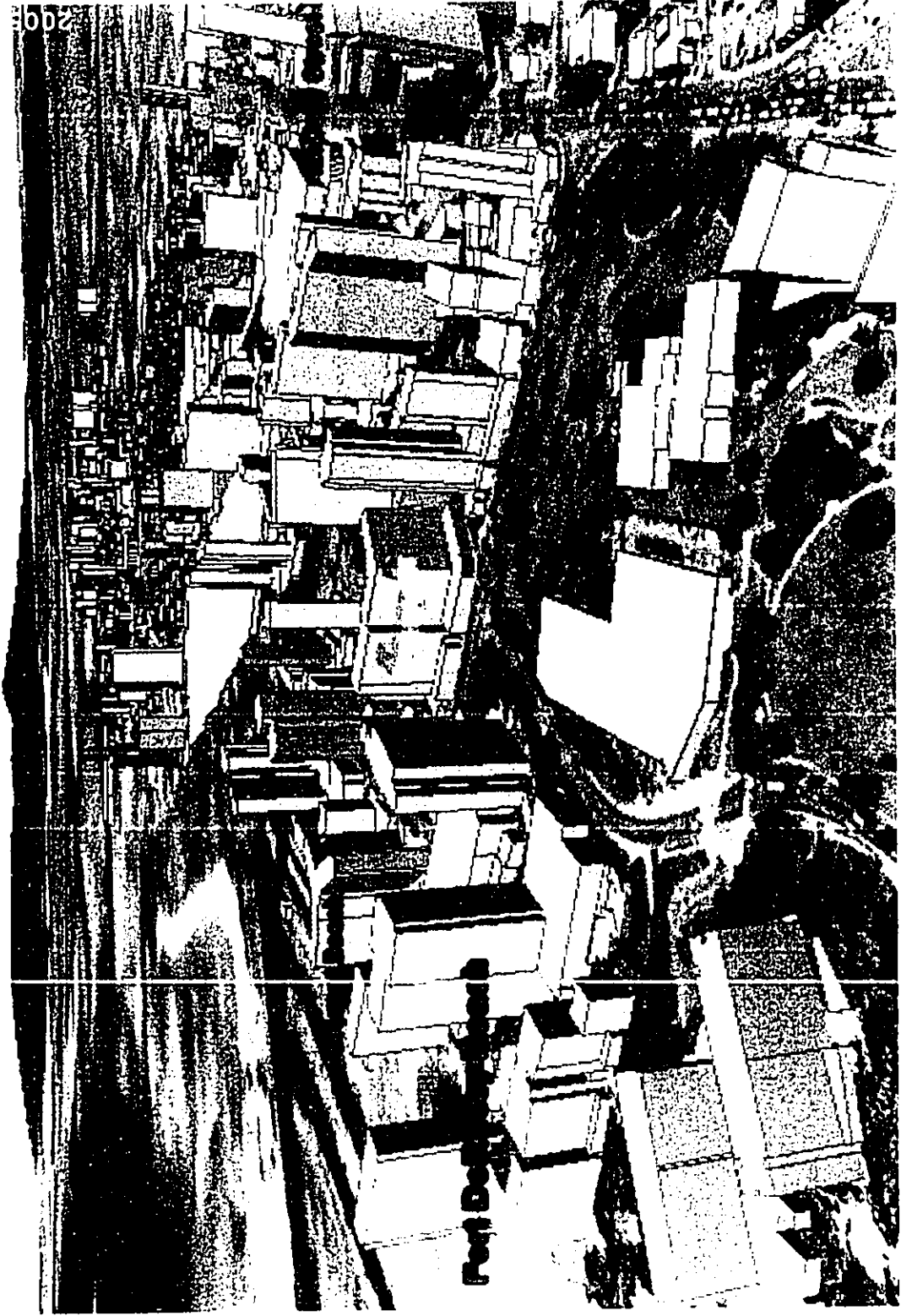
View from the mountains



View from the Ocean

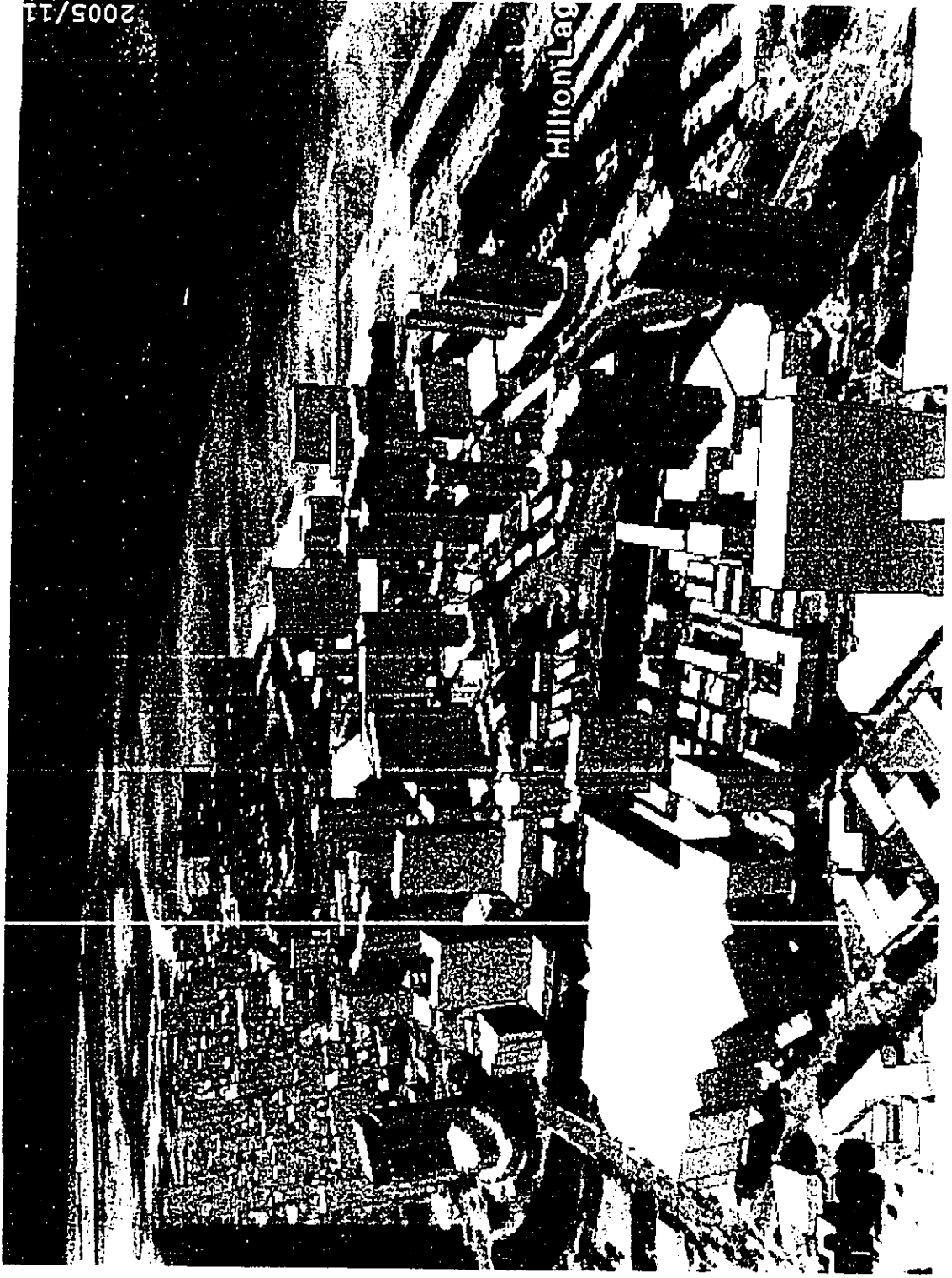
Looking toward the mountains





Looking toward Ewa

View from Diamond Head



View from Ewa

Looking toward Waikiki

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**APPENDIX III**  
**CULTURAL IMPACT ASSESSMENT**

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**Cultural Impact Assessment**  
**For the Proposed Kaio‘o Drive Multi-Family Development**  
**in Waikīkī, Kona District, Island of O‘ahu**  
**TMK: [1] 2-6-012: 37, 38, 39, 40, 41, 42, 43, 44, 55, 56, 57**  
**& 58**

Prepared for  
**Kusao & Kurahashi, Inc.**

Prepared by  
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**Rodney Chiogioji, B.A.**

and  
**Hallett H. Hammatt, Ph.D.**

**Cultural Surveys Hawai‘i, Inc.**  
**Kailua, Hawai‘i**  
**(Job Code: WAIK 83)**

**December 2005**

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## Management Summary

<b>Reference</b>	<b>Cultural Impact Assessment for the Proposed Kaiko`o Drive Multi-Family Development in Waikiki, Kona District Island of O`ahu TMK: [1] 2-6-012: 37, 38, 39, 40, 41, 42, 43, 44, 55, 56, 57 &amp; 58</b>
<b>Date</b>	<b>December 2005</b>
<b>Project Number (s)</b>	<b>Cultural Surveys Hawai'i, Inc. (CSH) Job Code: WAIK 83</b>
<b>Investigation Permit Number</b>	<b>The fieldwork for this investigation was carried out under archaeological permit number 0508 issued by the Hawai'i State Historic Preservation Division/Department of Land and Natural Resources (SHPD/DLNR).</b>
<b>Project Location</b>	<b>Kaio`o Drive, Waikiki, Kona District, O`ahu. TMK: (1) 2-6-012: 37, 38, 39, 40, 41, 42, 43, 44, 55, 56, 57, &amp; 58</b>
<b>Land Jurisdiction</b>	<b>Kaio`o LLC</b>
<b>Agencies</b>	<b>State of Hawai'i and Office of Environmental Quality Control</b>
<b>Project Description</b>	<b>The project proposes to develop a 6-story multi-family residential complex.</b>
<b>Project Acreage</b>	<b>72,135 square feet</b>
<b>Area of Potential Effect (APE) and Survey Acreage</b>	<b>For this assessment, the project's APE is defined as the entire U shaped parcels donated by TMK: (1) 2-6-012: 37, 38, 39, 40, 41, 42, 43, 44, 55, 56, 57, &amp; 58</b>
<b>Document Purpose</b>	<b>This project requires compliance with the State of Hawai'i environmental review process [Hawai'i Revised Statutes (HRS) Chapter 343], which requires consideration of a proposed project's effect on traditional cultural practices. At the request of Kusao &amp; Kurahashi Inc., CSH undertook this Cultural Impact Assessment. Through document research and cultural consultation efforts this document provides information pertinent to the assessment of the proposed project's impacts to cultural practices [per the OEQC's <i>Guidelines for Assessing Cultural Impacts</i>]. This document is intended to support the project's environmental review and may also serve to support the project's historic preservation review under HRS Chapter 6E-42 and Hawai'i Administrative Rules Chapter 13-284.</b>

<b>Cultural Consultation Effort</b>	As part of the cultural consultation effort of this investigation, Hawaiian organizations, government agencies, and community members were contacted to: (1) identify potentially knowledgeable individuals with cultural expertise and knowledge of the project area and the surrounding vicinity, and (2) identify cultural concerns and potential impacts within the project area. Results of the community contact process are presented in Section (5 ) below. Cultural Anthropologist Aulii Mitchell conducted the consultation effort under the general supervision of Hallett H. Hammatt, Ph.D.
<b>Identified Historic Properties</b>	No historic properties identified within the study area.
<b>Result of Cultural Consultation</b>	As a result of this CIA, no on-going traditional cultural practices or concerns were identified for the study area.
<b>Recommendations</b>	<p>Based on the above findings future development of the specific project area will have minimal or no impact upon native Hawaiian cultural resources, beliefs and practices.</p> <p>In order to address traditional cultural concerns, and given the cultural sensitivity of the entire Waikiki area, it should be noted, however, that subsurface properties associated with former traditional Hawaiian activities in the project area, such as artifacts and cultural layers, may be present despite the decades of sugar cultivation activities. As a precautionary measure, personnel involved in future development activities in the area should be informed of the possibility of inadvertent cultural finds, and should be made aware of the appropriate notification measures to follow.</p>

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## Section 1 Introduction

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### 1.1 Project Background

At the request of Kusao & Kurahashi, Inc., Cultural Surveys Hawai'i Inc. has completed this Cultural Impact Assessment report for the proposed Kaio'o Drive multi-family development on Kaio'o Drive in Waikiki, Kona District, O'ahu Island (TMK (1) 2-6-012: 37, 38, 39, 40, 41, 42, 43, 44, 55, 56, 57 & 58) (Figures 1, 2, 3, 4, 5, 6 & 7).

The proposed project is a 6-story condominium complex.

Based on historical, cultural, and archaeological background research, and a field inspection of the project area, this report presents documentation of past land use within the project area and in the surrounding portion of Waikiki Ahupua'a. The report is intended to facilitate the project's planning and support the project's historic preservation compliance.

### 1.2 Scope of Work

The scope for the cultural impact assessment includes:

1. Examination of historical documents, Land Commission Awards, historic maps, with the specific purpose of identifying traditional Hawaiian activities including gathering of plant, animal and other resources or agricultural pursuits as may be indicated in the historic record.
2. A review of the existing archaeological information pertaining to the sites on the property as they may allow us to reconstruct traditional land use activities and identify and describe the cultural resources, practices and beliefs associated with the parcel and identify present uses, if appropriate.
3. Conduct oral interviews with persons knowledgeable about the historic and traditional practices in the project area and region. We anticipate both formal and informal interviews.
4. Preparation of a report on items 1-3 summarizing the information gathered related to traditional practices and land use. The report will assess the impact of the proposed action on the cultural practices and features identified.

### 1.3 Environmental Setting

The project area is flat and averages 2 to 3 meters above mean sea level. The average rain fall in this coastal area of Waikiki is between 20-30 inches per year, with temperatures ranging from 60 to 85 degrees Fahrenheit (Armstrong 1973:56). Although the area has been graded and filled (Fill Land), the natural soil deposit is Jaucus sand (JaC) (Foote et al. 1973). The majority of the project area is now covered with grass. Portions of the lot are covered with construction material; the northwestern corner is paved with asphalt.

The project area is bounded by Kaio'o Drive on the north, east, and west sides and Hobron Lane on the west side. It is a horse-shoe shaped property with the open ends toward Hobron Lane; the center of the horseshoe is fenced in around the 'Ohana Hobron Hotel. The project area is currently an open lot surrounded by several condominiums and hotels fronting Kaio'o Drive and Hobron Lane.

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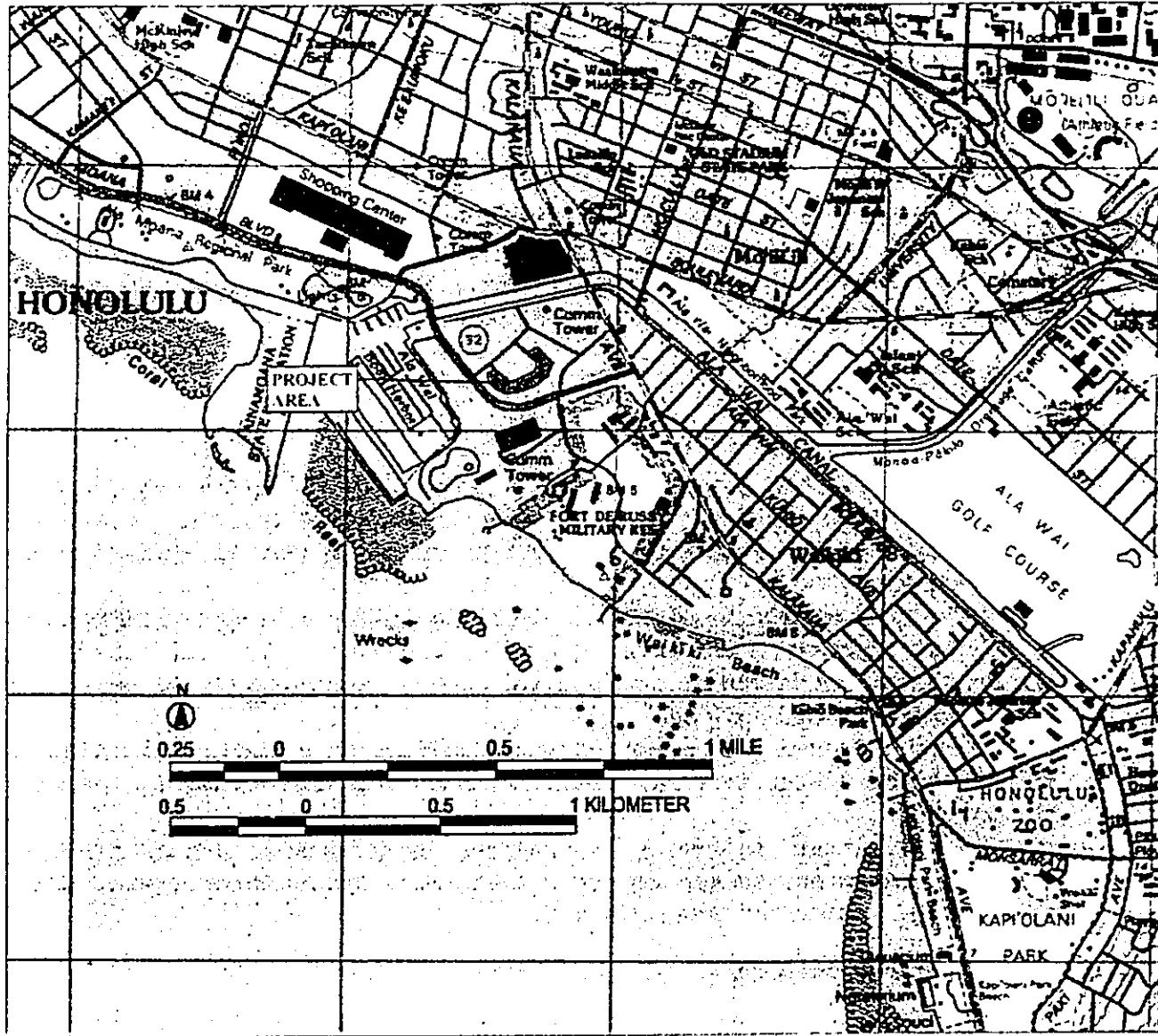


Figure 1 USGS 7.5 Minute Series topographic map, Honolulu Quadrangle, showing project area location

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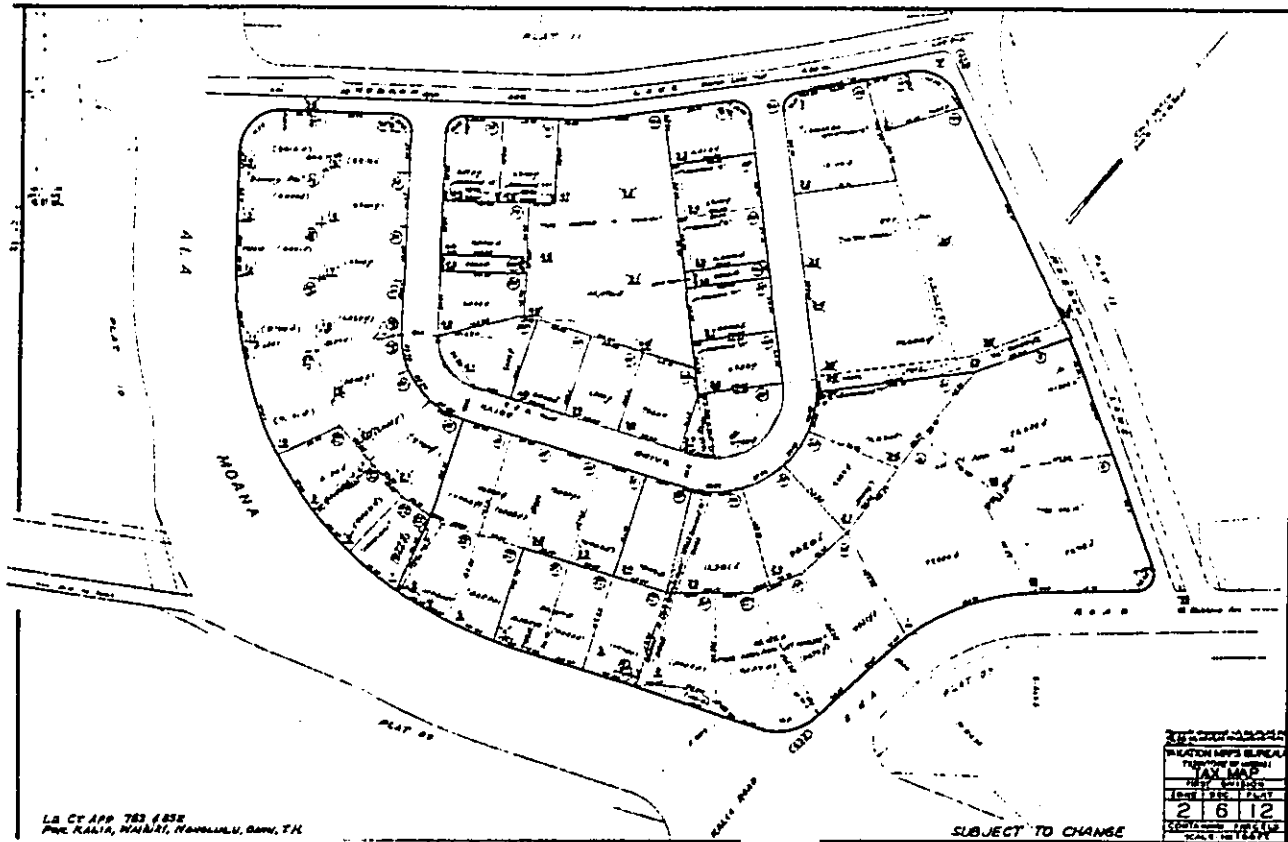


Figure 2 Tax map (2-6-12) showing project area (in red outline)

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Figure 3 Aerial photograph showing project location area (in red outline)

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Figure 4 Parcels in makai portion of project area, view to the north

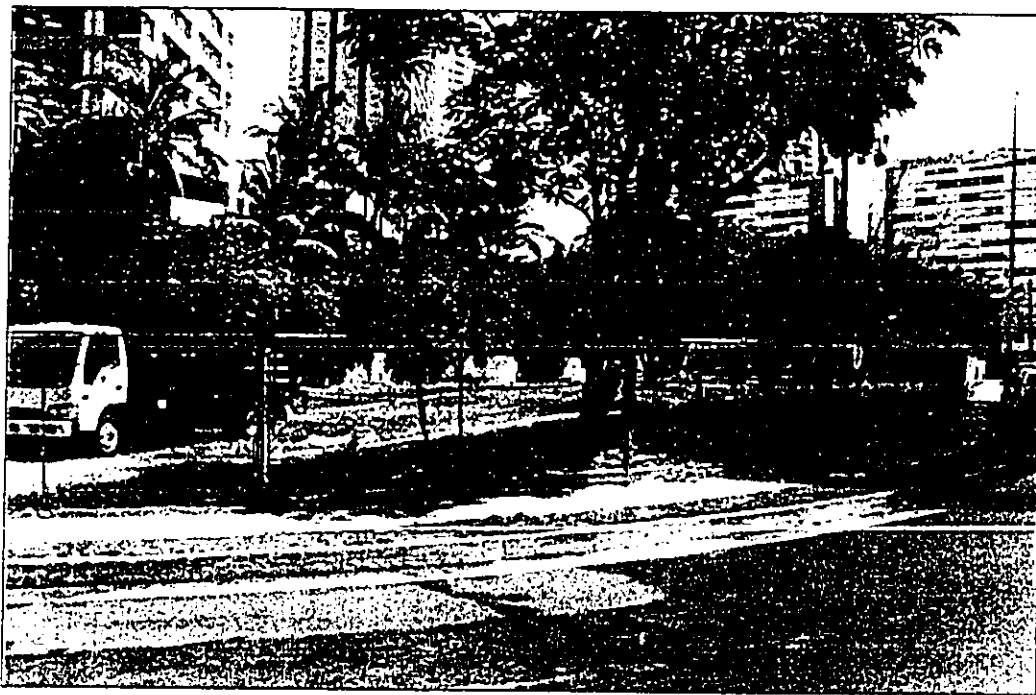


Figure 5 Parcels in central portion of project area, view to northeast

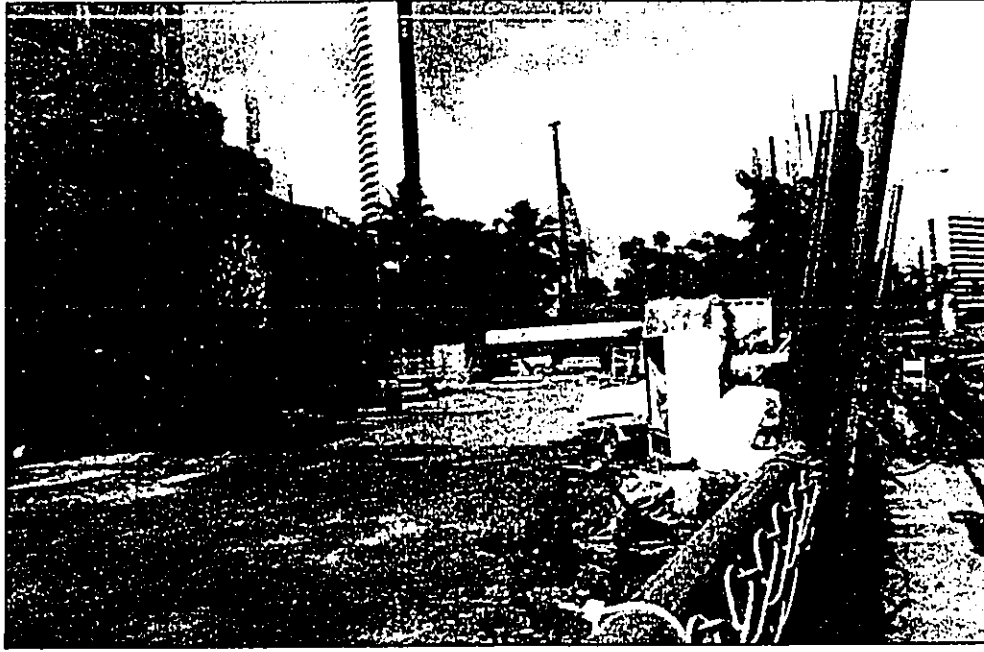


Figure 6 Parcels in mauka portion of project area. view to the west

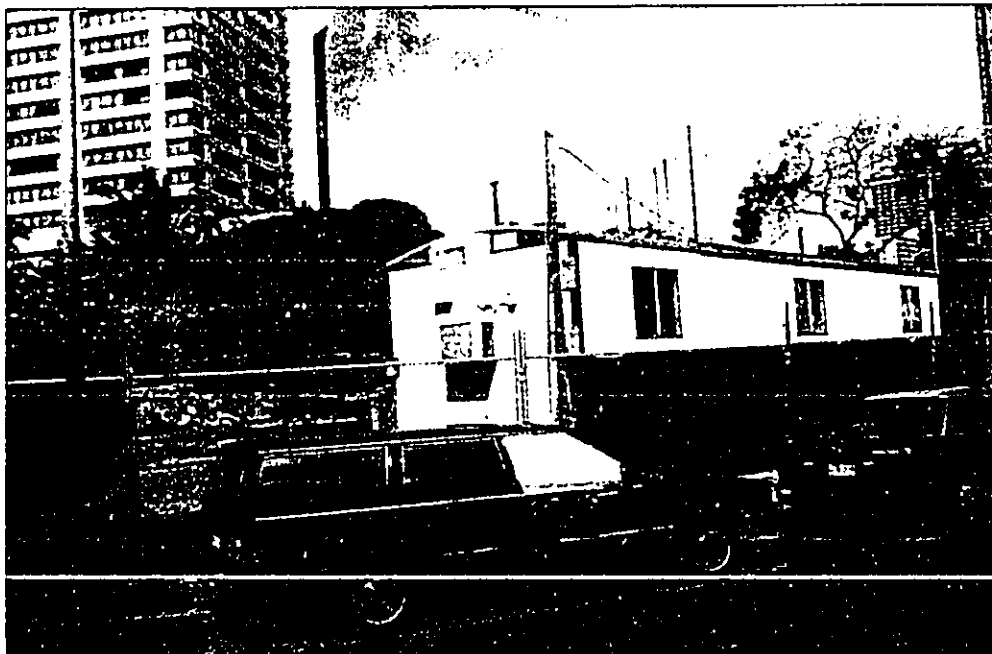


Figure 7 Trailer in mauka portion of project area. view to the west

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## Section 2 Methods

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Numerous published and unpublished accounts, surveys, reports, maps and photographs found in public and private collections pertaining to Waikīkī and the project area were investigated by Cultural Surveys Hawai'i Inc. Historical documents, maps and existing archaeological information pertaining to the sites in the vicinity of this project were researched at the State Historic Preservation Division library, Cultural Surveys Hawai'i Library, and the University of Hawai'i's Hamilton Library. The office of Hawaiian Affairs, O'ahu Island Burial Council, and members of other community organizations were contacted in order to identify potentially knowledgeable individuals with cultural expertise and/or knowledge of the study area and the surrounding vicinity. The names for potential community contacts were also provided by colleagues at CSH and from the researcher's familiarity of the families who frequent the area. Some of the prospective community contacts were not available to be interviewed as part of this project. A discussion of the consultation process can be found in the following section on "Community Consultations". Please refer to Table (2) for a complete list of individuals and organizations contacted.



## Section 3 Traditional and Historic Background

### 3.1 Traditional legends of Waikīkī

Waikīkī had a previous life, long before the first tourist arrived or the first hotel was built. Rekindling a love for Waikīkī's past has been the passion of author/historian Dr. George Kanahahele. Histories are intended to give meaning to events, and then all histories are stories, for stories are about meaning, which explain why things could have happened in a certain way. Traditionally, for Hawaiians, the *mo'olelo* (story) sought to do more than explain: it sought to re-enchant the mind and spirit. In his book *Waikīkī 100 B. C. to 1900 A.D. An Untold Story*, Dr. Kanahahele sums up the following legends of Waikīkī reflecting the elements of water that once flourished in the lands of Waikīkī and who's rolling surf still breaks upon the shores of Waikīkī (Kanahahele 1995:1).

#### 3.1.1 Kamō'ili'ili (the pebble lizard)

Waikīkī's earliest *mo'o* god was probably *Kamō'ili'ili* (literally, the pebble lizard) who was slain by Hi'iaka, Pele's sister. The legend relates that:

Hi'iaka and Wahine'ōma'o were escorting Lohi'au (Pele's lover-prince) back to Pele on the island of Hawai'i. During the return journey they left their canoe at Waikīkī and walked up toward Kamō'ili'ili. When they arrived at the particular spot (said to be where the old stone church stood in the 1920s), a heavy gust of wind blew, and Wahine'ōma'o and Lohi'au felt invisible hands pulling their ears back. They called to Hi'iaka for help. She knew that it was the lizard god, Kamō'ili'ili, who did it and told the other gods to keep closely behind her. A short distance away, they met Kamō'ili'ili who wanted to fight. Hi'iaka removed her outside skirt which concealed bolts of lightning and struck him with them. His body was cut to pieces and the peices turned into the long, low hill across from Waikīkī's Kūhiō School. [Kanahahele 1995:42]

#### 3.1.2 The Shark God Ka'ehu

Shark stories accompany surfing stories in myth as well as in real life because the man-eating shark is the most feared element in surfing. One legend that is popular even today is about the little yellow shark Ka'ehu of Pearl Harbor who was endowed with magical power by his ancestor Kamohoa'li'i, the shark god and brother of Pele. Yearning to see his parents off the Puna coast on the island of Hawai'i:

One day Ka'ehu called his shark friends to accompany him to Puna. On the way they stopped at Waikīkī where they met Pehu, a mean-eating shark from Maui, who was swimming back and forth at Kalehuawehe in wait for an unsuspecting surfer.

Ka'ehu asked what Pehu was doing there and he replied, "I'm catching a crab for my breakfast." "We'll help you catch your crab," Ka'ehu said, and told him to go

near the coral reef while he and his friends would drive them shoreward, allowing Pehu to catch this crab easily. He was pleased with the plan and swam close to the reef where he hid himself in its shadows.

Then Ka'ehu told his friends, "We must kill this man-eater because he is destroying our people. Let's try to push him into the shallow water."

Soon two surfers appeared and when Pehu leaps to catch one, Ka'ehu and his friends pushed the surfer aside and hurled Pehu over the reef into a deep hole in the coral. The more he thrashed about to escape, the more trapped he became.

When the surfers saw what had happened, they were not as afraid of Pehu and moved to the hole to kill him. As they cut into his body they discovered the remains of their own people. Out of respect, they delivered them to Pele'ula (an area with many healing *heiau* located in Kou, now downtown Honolulu) and burned the remains. Ka'ehu had many more adventures that had a similar objective, the punishment of other man-eaters from the great sea. [Kanahele 1995:58-59]

### 3.1.3 Surfing with Kelea

Surfing was one of the principal attractions of Waikīkī to both chiefs and commoners. So important was surfing that a major *heiau* dedicated to the *nalu* or surf, and its riders. Here at the "surfing *heiau*" of Papa'ena'ena, a terraced structure built at the foot of Diamond Head, is where surfers came to offer their sacrifices in order to obtain *mana* and knowledge of the surf. The site overlooked what surfers call today "First Break," the start of the Kalehuawehe surfing course which extended to Kawewehi (the deep, dark surf) at Kālia. Although everyone, including women and children, surfed, it was the chiefs who dominated the sport, and one of the best among Waikīkī's chiefs was Kalamakua. He came from a long ancestry of champion surfers whose knowledge, skill and *mana* were handed down and passed on from generation to generation. The story of his romantic meeting with Keleanuino'ana'api'api ("Great Kelea who flutters,") has been preserved as a reminder of the role that surfing played in the history of Waikīkī (Kanahele 1995:56-58):

One day this beautiful chiefess with "clear skin and sparkling eyes," who then resided in Wahiawā (in Central O'ahu), was visiting Waikīkī with a few of her ladies-in waiting. She entered the coconut grove and beach of Kawehewehe which was located just east of the Halekūlani Hotel. Here is where the sick came to bathe and to be healed. They would wear *limu kala* (seaweed) leis and leave them in the water as a request to the gods for forgiveness of past wrongs which was the cause of much illness.

The residents welcomed Keleanuino'ana'api'api and offered her coconuts to eat. She remarked that Waikīkī was "the most pleasant place we have seen," to which her hosts replied, "This is a place for enjoyment. Over there is the *kou* grove of Kahaloa where one may view the surfing of the chiefs and of the *ali'i nui*

Kalamakua." Kahaloa, or "Long Place," was also a beach area located today between the Royal Hawaiian and Halekūlani hotels and noted for its fragrant *lipoa* seaweed. When she asked if she could borrow a surfboard, the Waikīkīans were surprised because they thought people from Waihiawā were only adept at "slicing *mo'okilau* ferns and *pōpolo* stalks," not at surfing. They did not know that their visitor was originally from Maui where she surfed with all the chiefs. She was too beautiful to refuse and someone gave her a board.

Before she entered the water, she "rubbed off the red dirt of 'Ewa from her feet so as to look fresh," and then paddled off like an expert, moving easily and noiselessly without the least heeling over. Instead of starting at the first break where *kama'āina* (native born) surfers congregated, she went beyond and waiting for a large wave. She let the first, second and third waves pass, and rode the fourth one all the way to shore. The chiefs and commoners were so impressed with her skill and grace that they immediately joined in loud cheers of admiration.

Meanwhile, Kalamakua, who was working in his taro fields nearby asked his men who was causing the commotion. They replied that the people were amazed at the performance of a female surfer. A skilled surfer himself, Kalamakua rushed to the edge of the beach to see for himself. He recognized Kelea at once as the chiefess from Maui famed for her surfing prowess.

When she reached shore, he took hold of her board and asked, "Are you Kelea?" "Yes," she answered. As she stood up, in naked splendor, he removed his feathered shoulder cap and wrapped it around her. Then he guided her to a *kapu* place and made her his *ali'i wahine mō'i*, or queen. [Kanahele 1995:56-58]

This section presents a review of the available documentary evidence for the general character of the area presently identified as Waikīkī as it had evolved in the years before western contact in the later eighteenth century. The development of Waikīkī lands adjacent to and including the present project area during the nineteenth century and into the early twentieth century was recorded in increasingly detailed documentation - including government records and maps. Finally, during subsequent decades of the twentieth century, abundant documentation of Waikīkī allows a more precise focus on development of the project area itself.

### 3.2 Pre-Contact to Early 1800s

Waikīkī, by the time of the arrival of Europeans in the Hawaiian Islands during the late eighteenth century, had long been a center of population and political power on O'ahu. According to Martha Beckwith (1940), by the end of the fourteenth century Waikīkī had become "the ruling seat of the chiefs of Oahu." The preeminence of Waikīkī continued into the eighteenth century and is betokened by Kamehameha's decision to reside there upon wresting control of O'ahu by defeating the island's chief, Kalanikūpule. The 19th-century Hawaiian historian John Papa 'Ī'i, himself a member of the *ali'i* (chiefly class), described the king's Waikīkī residence:

Kamehameha's houses were at Puaaliili, *makai* of the old road, and extended as far as the west side of the sands of Apuakehau. Within it was Helumoa where Ka'ahumanu *mā* went to while away the time. The king built a stone house there, enclosed by a fence . . . ('Ī'Ī 1959:17).

'Ī'Ī further noted that the "place had long been a residence of chiefs. It is said that it had been Kekuapoi's home, through her husband Kahahana, since the time of Kahekili" ('Ī'Ī 1959:17).

Chiefly residences, however, were only one element of a complex of features – sustaining a large population – that characterized Waikīkī up to pre-contact times. Beginning in the fifteenth century, a vast system of irrigated taro fields was constructed, extending across the littoral plain from Waikīkī to lower Mānoa and Pālolo valleys. This field system – an impressive feat of engineering the design of which is traditionally attributed to the chief Kalamakua – took advantage of streams descending from Makiki, Mānoa and Pālolo valleys which also provided ample fresh water for the Hawaiians living in the *ahupua'a*. Water was also available from springs in nearby Mō'ili'ili and Punahou. Closer to the Waikīkī shoreline, coconut groves and fishponds dotted the landscape. A sizeable population developed amidst this Hawaiian-engineered abundance. Captain George Vancouver, arriving at "Whyteete" in 1792, captured something of this profusion in his journals:

On shores, the villages appeared numerous, large, and in good repair; and the surrounding country pleasingly interspersed with deep, though not extensive valleys; which, with the plains near the sea-side, presented a high degree of cultivation and fertility.

[Our] guides led us to the northward through the village, to an exceedingly well-made causeway, about twelve feet broad, with a ditch on each side.

This opened our view to a spacious plain, which, in the immediate vicinity of the village, had the appearance of the open common fields in England; but, on advancing, the major part appeared to be divided into fields of irregular shape and figure, which were separated from each other by low stone walls, and were in a very high state of cultivation. These several portions of land were planted with the eddo or taro root, in different stages of inundation; none being perfectly dry, and some from three to six or seven inches under water. The causeway led us near a mile from the beach, at the end of which was the water we were in quest of. It was a rivulet five or six feet wide, and about two or three feet deep, well banked up, and nearly motionless; some small rills only, finding a passage through the dams that checked the sluggish stream, by which a constant supply was afforded to the taro plantations.

[We] found the plain in a high state of cultivation, mostly under immediate crops of taro; and abounding with a variety of wild fowl, chiefly of the duck kind . . . The sides of the hills, which were at some distance, seemed rocky and barren; the intermediate vallies, which were all inhabited, produced some large trees, and made a pleasing appearance. The plain, however, if we may judge from the labour bestowed on their cultivation, seemed to afford the principal proportion of the

different vegetable productions on which the inhabitants depend for their subsistence. (Vancouver 1798: I, 161-164)

Further details of the exuberant life that must have characterized the Hawaiians use of the lands that included the *ahupua'a* of Waikīkī are given by Archibald Menzies, a naturalist accompanying Vancouver's expedition:

The verge of the shore was planted with a large grove of cocoanut palms, affording a delightful shade to the scattered habitations of the natives. Some of those near the beach were raised a few feet from the ground upon a kind of stage, so as to admit the surf to wash underneath them. We pursued a pleasing path back to the plantation, which was nearly level and very extensive, and laid out with great neatness into little fields planted with taro, yams, sweet potatoes and the cloth plant. These, in many cases, were divided by little banks on which grew the sugar cane and a species of *Draecena* without the aid of much cultivation, and the whole was watered in a most ingenious manner by dividing the general stream into little aqueducts leading in various directions so as to be able to supply the most distant fields at pleasure, and the soil seemed to repay the labour and industry of these people by the luxuriancy of its productions. Here and there we met with ponds of considerable size, and besides being well stocked with fish, they swarmed with water fowl of various kinds such as ducks, coots, water hens, bitterns, plovers and curlews. (Menzies 1920:23-24)

However, the traditional Hawaiian focus on Waikīkī as a center of chiefly and agricultural activities on southeastern O'ahu was soon to change – disrupted by the same Euro-American contact, which produced the first documentation (including the records cited above) of that traditional life. The *ahupua'a* of Honolulu - with the only sheltered harbor on O'ahu - became the center for trade with visiting foreign vessels, drawing increasing numbers of Hawaiians away from their traditional environments. Kamehameha himself moved his residence from Waikīkī to the coast near Honolulu harbor, likely in order to maintain his control of the lucrative trade in sandalwood that had developed. By 1828, the missionary Levi Chamberlain, describing a journey into Waikīkī, would note:

Our path led us along the borders of extensive plats of marshy ground, having raised banks on one or more sides, and which were once filled with water, and replenished abundantly with esculent fish; but now overgrown with tall rushes waving in the wind. The land all around for several miles has the appearance of having once been under cultivation. I entered into conversation with the natives respecting this present neglected state. They ascribed it to the decrease of population. (Chamberlain 1957:26)

Tragically, the depopulation of Waikīkī was not simply a result of the attractions of Honolulu (where, by the 1820's, the population was estimated at 6,000 to 7,000) but also of the European diseases that had devastating effects upon the Hawaiian populace.

### 3.3 Mid- to late -1800s

As the 19th century progressed, Waikīkī was becoming a popular site among foreigners – mostly American – who had settled on O'ahu. An 1865 article in the Pacific Commercial Advertiser mentioned a small community that had developed along the beach. The area continued to be popular with the *ali'i* – the Hawaiian royalty – and several notables had residences there. A visitor to O'ahu in 1873 described Waikīkī as “a hamlet of plain cottages, whither the people of Honolulu go to revel in bathing clothes, mosquitoes, and solitude, at odd times of the year” (Bliss 1873).

Other developments during the second half of the 19th century a prelude of changes that would dramatically alter the landscape of Waikīkī during the 20th century – include the improvement of the road connecting Waikīkī to Honolulu (the route of the present Kalākaua Ave.), the building of a tram line between the two areas, and the opening of Kapi'olani Park on June 11, 1877. Traditional land-uses in Waikīkī were abandoned or modified. By the end of the 19th century most of the fishponds that had previously proliferated had been neglected and allowed to deteriorate. The remaining taro fields were planted in rice to supply the growing numbers of immigrant laborers imported from China and Japan, and for shipment to the west coast of the United States.

As the sugar industry throughout the Hawaiian kingdom expanded in the second half of the 19th century, the need for increased numbers of field laborers prompted passage of contract labor laws. In 1852, the first Chinese contract laborers arrived in the islands. Contracts were for five years, and pay was \$3 a month plus room and board. Upon completion of their contracts, a number of the immigrants remained in the islands, many becoming merchants or rice farmers. As was happening in other locales, in the 1880's, groups of Chinese began leasing and buying (from the Hawaiians of Waikīkī) former taro lands for conversion to rice farming. The taro lands' availability throughout the islands in the late 1800's reflected the declining demand for taro as the native Hawaiian population diminished.

The Hawaiian Islands were well positioned for rice cultivation. A market for rice in California had developed as increasing numbers of Chinese laborers immigrated there since the mid-19th century. Similarly, as Chinese immigration to the islands also accelerated, a domestic market opened.

The primary market for both husked rice and paddy raised in all parts of the Hawaiian Islands was in Honolulu. The number of Chinese in the islands created a large home demand.

In 1880 the home market was made more secure by an increase in the duty on rice imported into Hawai'i to 1½ cents on paddy and 2½ cents on hulled rice. It resulted in further checking the importation of foreign rice and giving an immense impetus to the home product [Coulter and Chun, 1937: 13]

By 1892, Waikīkī had 542 acres planted in rice, representing almost 12% of the total 4,659 acres planted in rice on O'ahu. Most of the former taro *lo'i* converted to rice fields were located *mauka* of the present Ala Wai Boulevard.

### 3.4 1900s

During the first decade of the 20th century, the U.S. War Department acquired more than 70 acres in the Kālia portion of Waikīkī for the establishment of a military reservation called Fort DeRussy, named in honor of Brig. Gen. R.E. DeRussy of the Army Corps of Engineers.

On 12 November 1908, a detachment of the 1st Battalion of Engineers from Fort Mason, California, occupied the new post...

Between 1909 and 1911 the engineers were primarily occupied with mapping the island of O'ahu. At DeRussy other activities also had to be attended to - especially the filling of a portion of the fishponds which covered most of the Fort. This task fell to the Quartermaster Corps, and they accomplished it through the use of a hydraulic dredger which pumped fill from the ocean continuously for nearly a year in order to build up an area on which permanent structures could be built. Thus the Army began the transformation of Waikīkī from wetlands to solid ground, [Hibbard and Franzen 1986:79].

All the fishponds were filled by 1928.

During the 1920's, the Waikīkī landscape would be transformed when the construction of the Ala Wai Drainage Canal, begun in 1921 and completed in 1928, resulted in the draining and filling in of the remaining ponds and irrigated fields of Waikīkī. The canal was one element of a plan to urbanize Waikīkī and the surrounding districts:

The [Honolulu city] planning commission began by submitting street layout plans for a Waikīkī reclamation district. In January 1922 a Waikīkī improvement commission resubmitted these plans to the board of supervisors, which, in turn, approved them a year later. From this grew a wider plan that eventually reached the Kapahulu, Mō'ili'ili, and McCully districts, as well as lower Makiki and Mānoa...

The standard plan for new neighborhoods, with allowances for local terrain, was to be that of a grid, with 80-foot-wide streets crossing 70-foot-wide avenues at right angles so as to leave blocks of house lots about 260 by 620 feet. Allowing for a 10-foot-wide sidewalk and a 10-foot right-of-way [alley] down the center of each block, there would be twenty house lots, each about 60 by 120 feet, in each block [Johnson 1991:311]

During the course of the Ala Wai Canal's construction, the banana patches and ponds between the canal and the *mauka* side of Kalākaua Avenue were filled and the present grid of streets was laid out. These newly created land tracts spurred a rush to development in the 1930's. An article in the Honolulu Star-Bulletin in 1938 extolled the area's progress:

The expansion of apartment and private residence construction is no secret. Examination of building permits will show that more projects have been completed during the past year, and more are now underway in this area, than in any other section of the territory.

These developments are being made by island residents who have recognized the fact that Waikīkī presents the unparalleled possibility for safe investment with excellent return. (Newton 1938: 10)

The writer speculated that the “future of Waikīkī is assured.”

The entrance of the United States into World War II following the Japanese bombing of Pearl Harbor on December 7, 1941 put on hold plans for the development of Waikīkī as a tourist destination. Until the war's end in 1945, the tourist trade was non-existent “...since the Navy controlled travel to and from Hawai'i and did not allow pleasure trips” (Brown 1989: 141). For the duration of the war, Waikīkī was transformed into a recreation area for military personnel.

It was not the same Waikīkī as before the war, though; barbed wire barricades now lined its sands, and there were other changes too. Fort DeRussy became a huge recreation center, with a dance hall called Maluhia that attracted thousands of men at a time. The Moana Hotel continued to function, but many other establishments and private homes in the area were taken over by the military. [Brown 1989:141]

Nearing the war's end, concerns began arising over the future of Waikīkī. An article in the Honolulu Advertiser of July 16, 1945 decried “honky-tonks” that had sprung up in Waikīkī during the course of the war, and asked: “Can anyone look at present-day Kalākaua Ave. – lined with makeshift curio shops, noisy ‘recreation’ centers, eyesores that pass under the name of lunchrooms and miscellany of ‘joints’ – and hope that Waikīkī can stage a comeback [as a tourist destination]?”

By the mid-1950's there were more than fifty hotels and apartments from the Kālia area to the Diamond Head end of Kapi'olani Park. The Waikīkī population, by the mid-1950's, was not limited to transient tourists but included 11,000 permanent residents living in 4,000 single dwellings and apartments in stucco or frame buildings.

### 3.5 Historic Documentation of the Project area

Beginning at the mid-nineteenth century, the historical record of Waikīkī, including the present project area and adjacent lands, is increasingly detailed in photographs, maps, newspaper articles, and government records. These documents also give insight into pre-contact Waikīkī. During subsequent decades of the twentieth century, abundant documentation of Waikīkī allows a more precise focus on the changes within the project area itself up to the 1950s.

#### 3.5.1 1881 survey map by S.E. Bishop

An 1881 Hawaiian Government survey map by S.E. Bishop – with locations of Land Commission Award (LCA) parcels indicated – provides a detailed record of the physical landscape of Waikīkī before the transformations of the twentieth century. The map reveals an extensive complex of irrigated fields, streams and irrigation watercourses, and ponds stretching inland from the Waikīkī shoreline to the plains of Mō'ili'ili. Land Commission Award records for the awards shown on the map document house lots near the shore with associated taro *lo'i* [irrigated plots] located inland and house lots adjacent to inland taro *lo'i*.



The location of the present project area has been indicated on a portion of the Bishop map (Figure 8). A fishpond is shown running through the *makai* portion of the project area. Two LCA parcels are shown to the west of the project area: LCA 99 F.L. to Uma and LCA 2549 to Luaiku. LCA documents associated with these two awards give details of traditional Hawaiian land usage in the vicinity of the project area.

The LCA 99F.L. parcel is described as a house lot bound by a pond on the mauka (east) side and on the north side by a sea ditch. Uma testified to having received the land from his parents during the time of Kamehameha I.

Adjacent to the southwest corner of Uma's land is parcel (*apana*) 3 of LCA 2549, awarded to Luaiku who described it as his "kahuahale [house lot] situated in Kamooloa ili of Kalia Waikiki". The house lot is described as bounded:

Mauka by the loko belonging to Mahuka  
Kekaha by the land of Nakai  
Makai by the land Kalia, of Kekuanaoa  
Honolulu by the land of Uma.

During the *Māhele*, the 'ili of Kālia in Waikīkī was one of 52 'ili in the Kona district of O'ahu set aside as "fort lands", which were reserved "for the use of the Fort in Honolulu to be cultivated by soldiers and other tenants under the direction of the Governor of Oahu" (Chinen 1958:27). After the *Māhele*, portions of the Government Lands were often sold as a means of obtaining revenue to meet the increasing costs of the Government. Purchasers of these lands were issued documents called "Grants" or "Royal Patent Grants." On the Bishop map, the area surrounding LCAs 99 and 2549:3 and the present project area was owned by W. L. Moehonua through Royal Patent Grant No. 2785. W. L. Moehonua was an uncle of David Kalākaua, and husband of Kaunohua, a *kahu* (guardian) of Alexander Liholiho, Kamehameha III (Kame'eleihiwa 1992:264).

The map and *Māhele* documents suggest that the present project area, in traditional Hawaiian times and continuing into the 19<sup>th</sup> century, comprised a portion of the system of fishponds and adjacent house sites that characterized the Kālia section of Waikīkī.

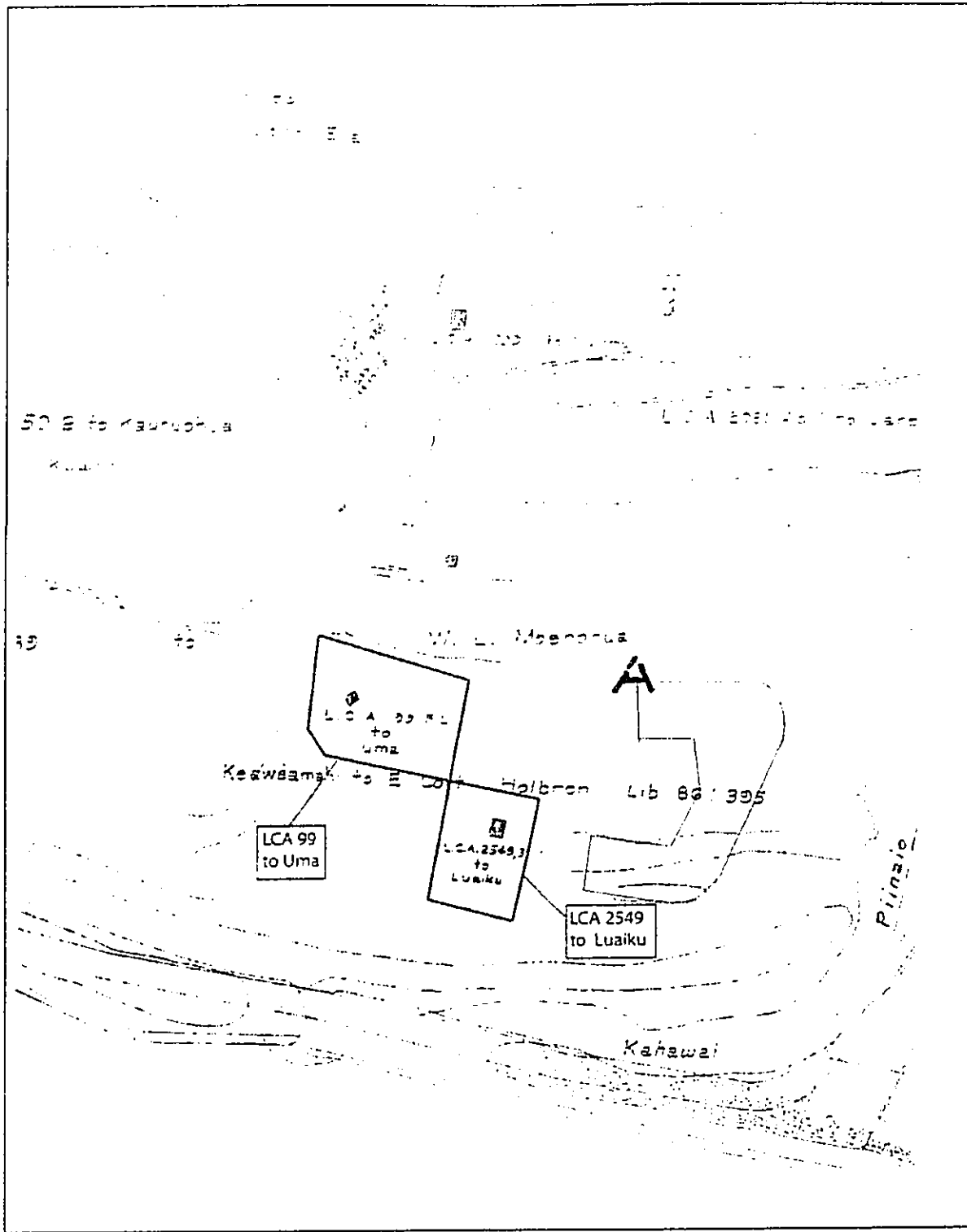


Figure 8 Portion of 1881 Hawaiian Government survey map by S.E. Bishop showing locations of LCA parcels (in green outline) and current project area (in red outline)

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### 3.5.2 The Project Area in the Twentieth Century

Historic maps and photographs document land use within the project area streets from the first decades of the twentieth century to the 1950s when the present layout of Waikīkī streets was completed.

A fire insurance map of 1914 shows that there were five areas in Waikīkī where residential and commercial structures were concentrated in the early 20th century (Figure 9). These areas were located: 1) clustered at Saratoga Road and Lewers Road; 2) near the intersection of `Ena Road and Kalākaua Avenue; 3) *makai* of Kālia Road on the east side of Ft. DeRussy; 4) clustered around the Moana Hotel (which had opened in 1901) on Kalākaua Avenue; and 5) in Kapahulu on the `Ewa side of Makee Road (the present Kapahulu Avenue). The fire insurance map also reveals the relative isolation of Waikīkī, in the early 20th century, from the encroaching grid of modern Honolulu streets.

A subsequent fire insurance map of 1927 – upon which the present project area outline has been indicated – shows the Kālia, Waikīkī landscape within and surrounding the project area before the completion of the Ala Wai Canal. (Figure 10). The map indicates that the *mauka* and *makai* “arms” of the project area were ponds up to the first decades of the 20<sup>th</sup> century. The central portion of the project area was then a dryland environment elevated above the surrounding ponds. As indicated on the soil survey of O’ahu (Foote *et al.* 1972) this dryland environment would have consisted primarily of jaucus sand. The fire insurance map also indicates that single-story dwelling structures were located immediately outside the project area.

A 1927 aerial photograph – upon which the present project area outline has been indicated – confirms the project area landscape recorded on the contemporaneous fire insurance map (Figure 11). The photograph shows the newly-constructed Ala Wai Canal and the offshore dredging operation that is pumping dredged materials to fill the marshes and fishponds of Waikīkī, including the two ponds within the present project area. The abundantly vegetated area between the two ponds confirms that the central portion of the project area was indeed existing dryland before the Waikīkī landfill operations that occurred in the 1920s.

As shown by a 1947 aerial photograph and a 1951 fire insurance map – the present project area and its surroundings reflect the mid-twentieth century changes occurring within Waikīkī (Figures 12 & 13). The parcels comprising the present project area are filled with the typical single-story cottages and two-story apartment buildings that characterized much of Waikīkī before subsequent resort development during the remainder of the century.

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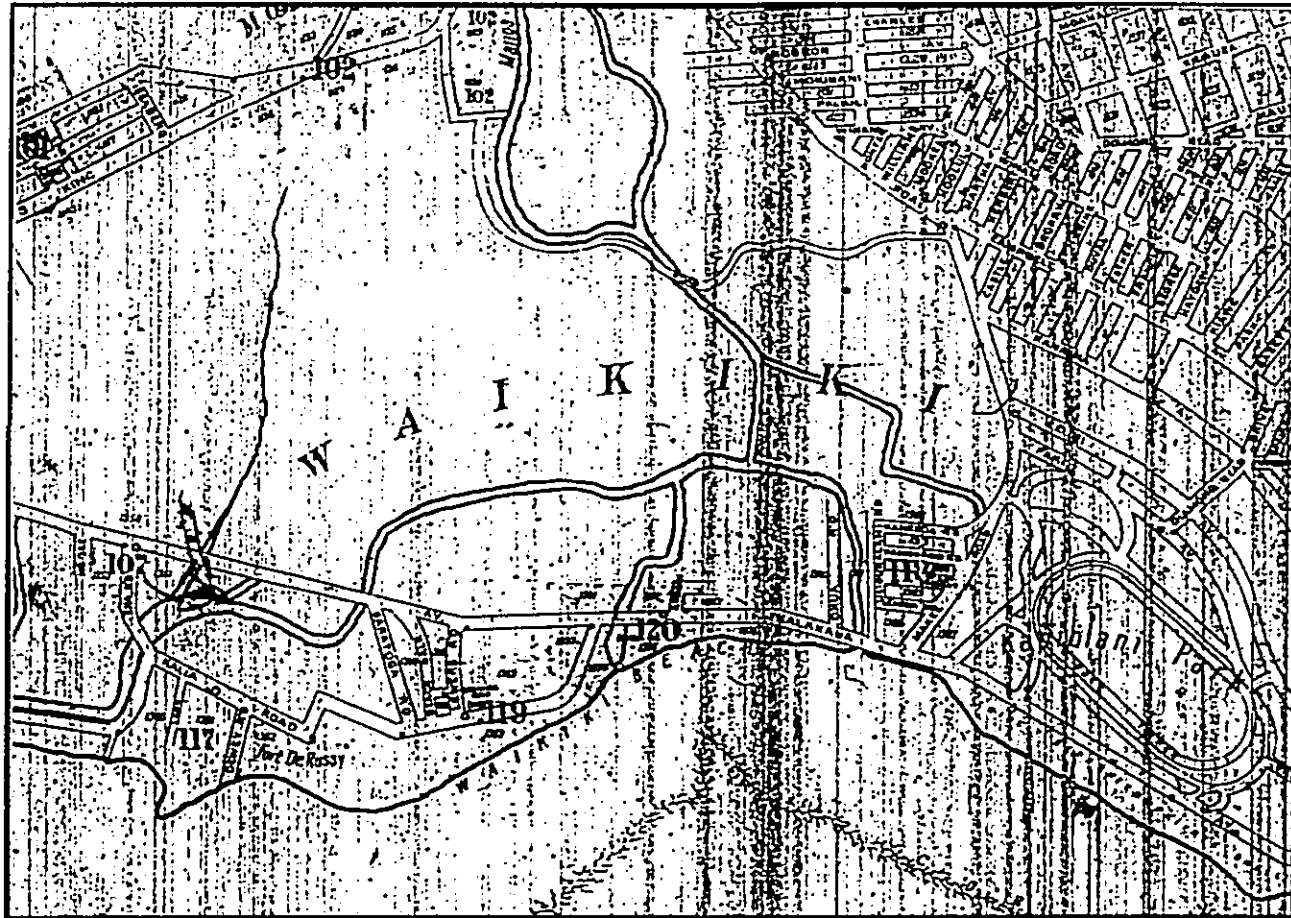


Figure 9 Portion of 1914 Sanborn Fire Insurance Map of Waikiki

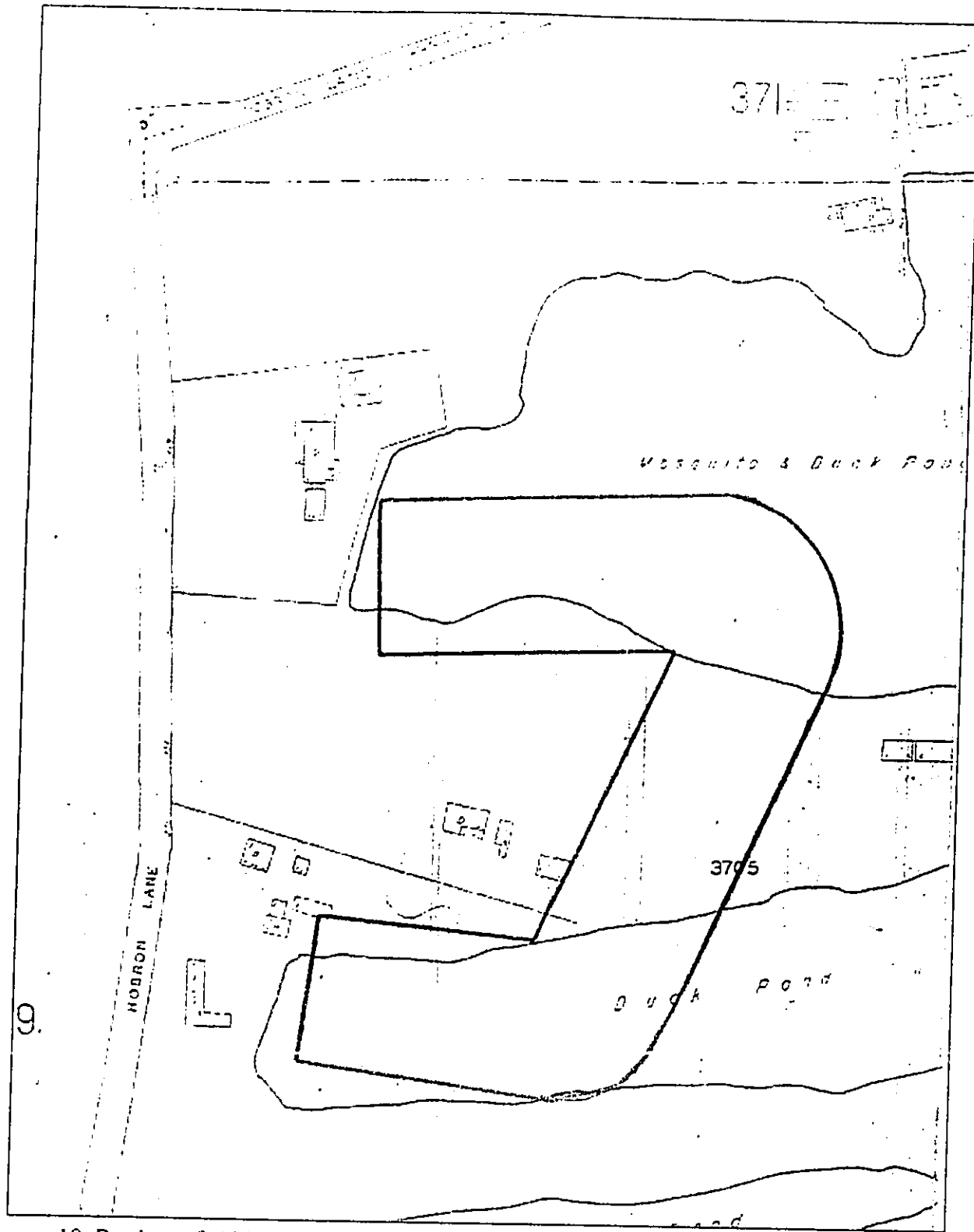


Figure 10 Portion of 1927 Sanborn Fire Insurance map with project area indicated (in red outline) showing fish ponds and dryland environment

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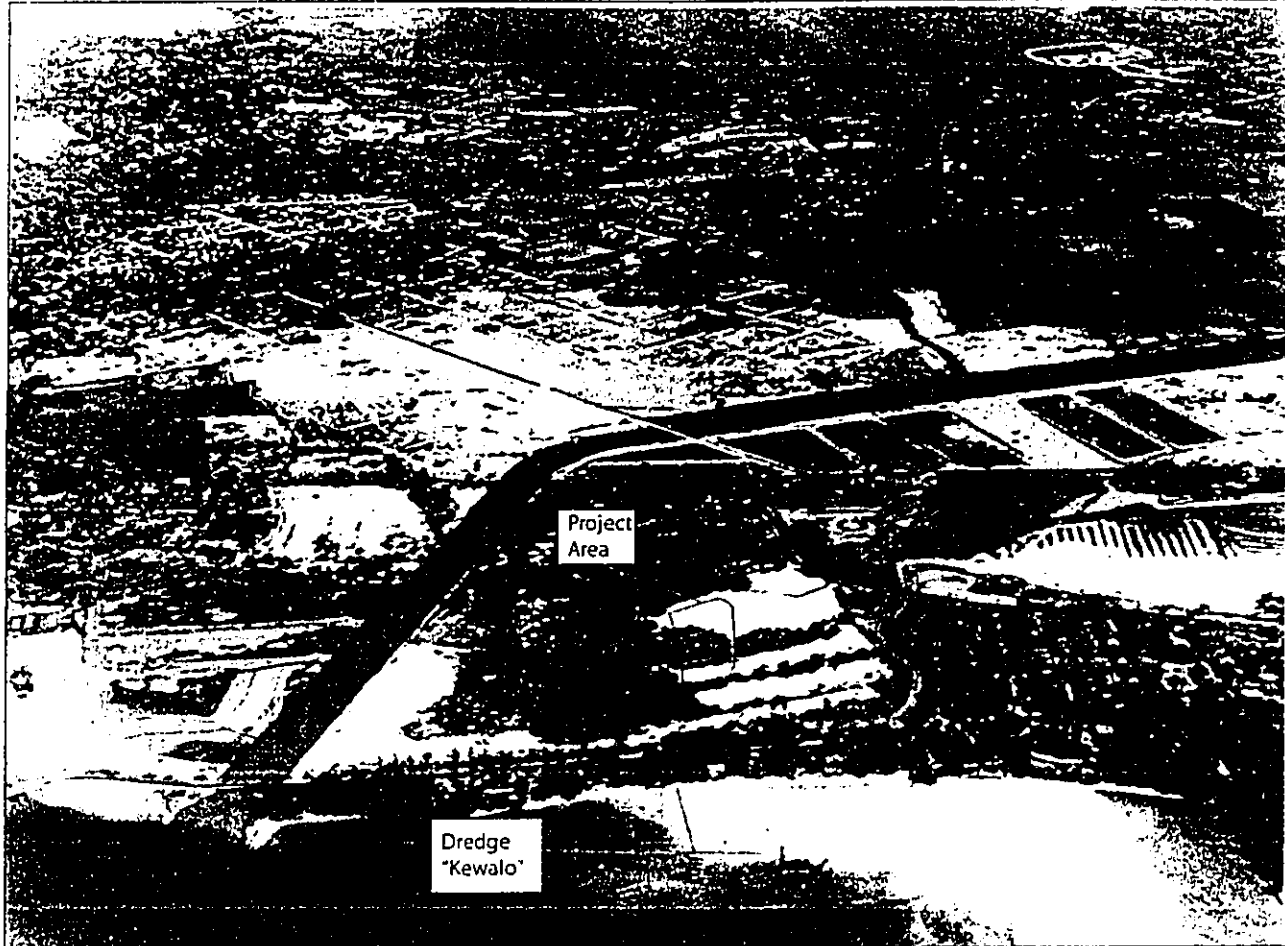


Figure 11 1927 aerial photograph with location of project area indicated (in red outline)

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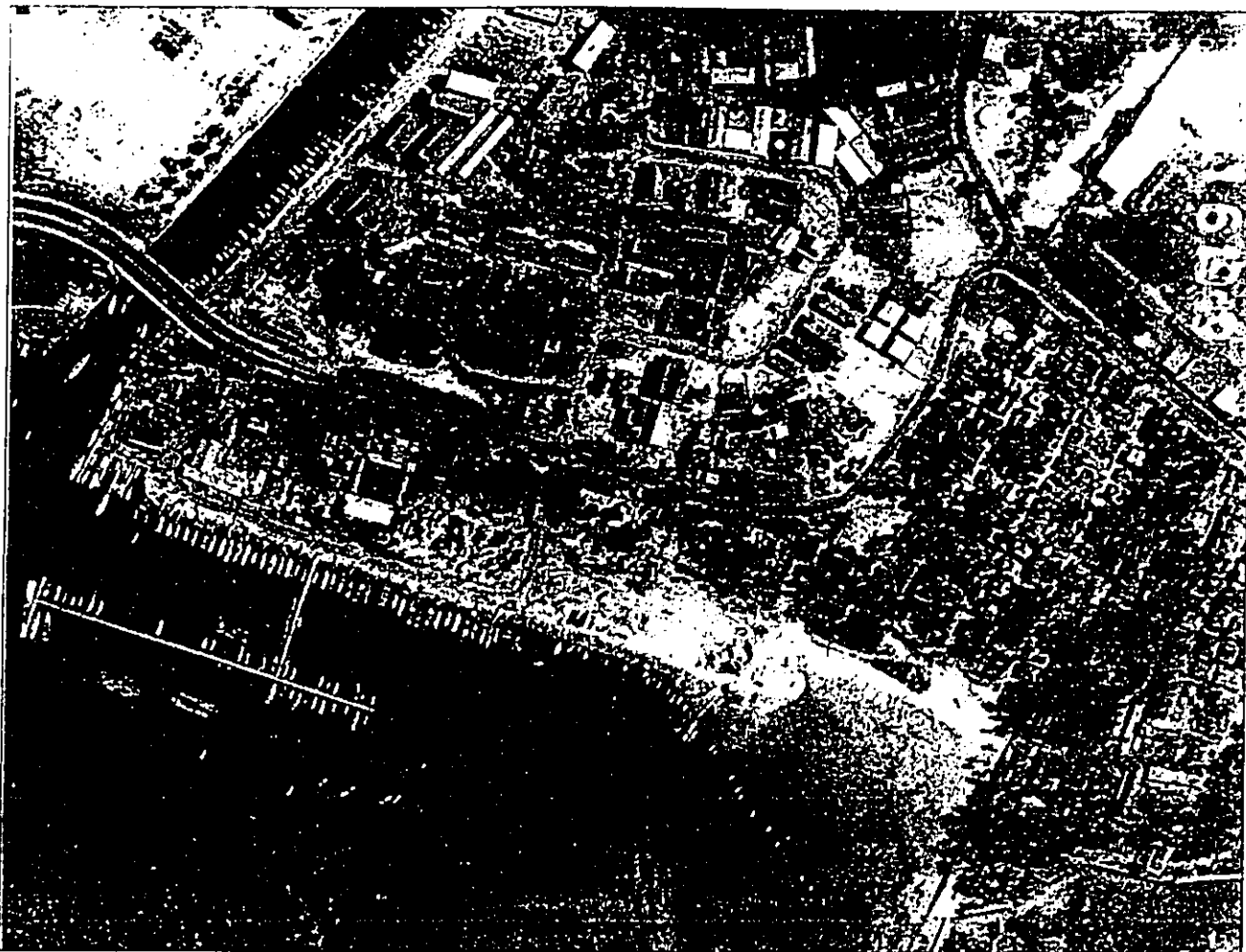


Figure 12 1947 aerial photograph with present project area indicated (in red outline)

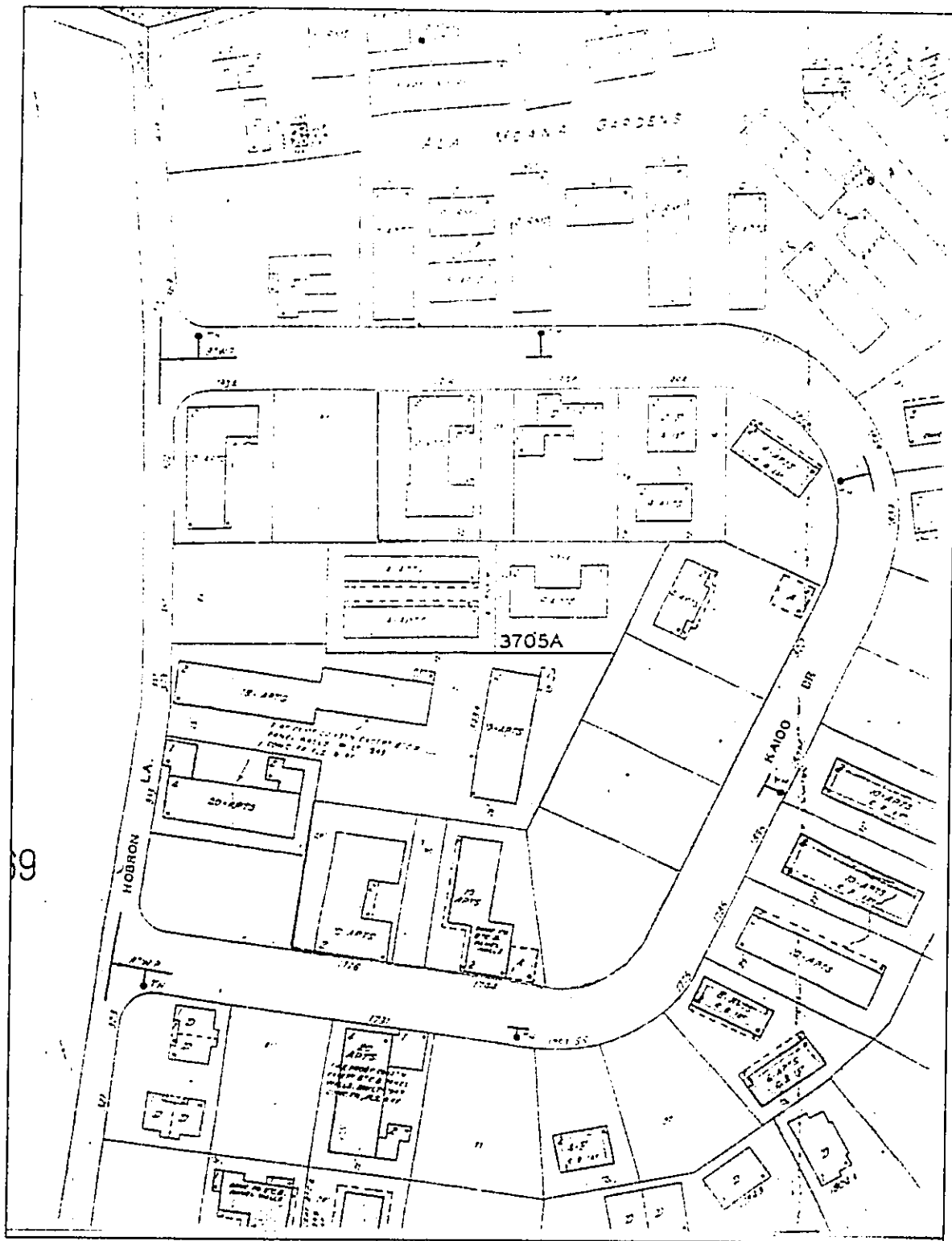


Figure 13 1951 Sanborn Fire Insurance map with present project area location (in red outline)

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## Section 4 Previous Archaeological Research

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The *ahupua'a* of Waikīkī, in the centuries before the arrival of Europeans, was an intensely utilized area, with abundant natural and cultivated resources, that supported a large population. In the nineteenth and early twentieth centuries, after a period of depopulation, Waikīkī was reanimated by Hawaiians and foreigners residing there, and by farmers continuing to work the irrigated field system, which had been converted from taro to rice. Farming continued up to the first decades of this century until the Ala Wai Canal drained the remaining ponds and irrigated fields. Remnants of the pre-contact and historical occupation of Waikīkī have been discovered and recorded in archaeological reports, usually in connection with construction activities related to urban development, or infrastructural improvements. These discoveries, which have occurred throughout Waikīkī, have included many human burials, traditional Hawaiian and historic, as well as pre-contact Hawaiian and historic cultural deposits. A full list of projects conducted in the Waikīkī area is listed in Table 1. Figure 14 shows locations of previous archaeological studies and burials in Waikīkī. A discussion of projects focusing on burials follows.

N.B. Emerson reported on the uncovering of human burials during the summer of 1901 on the property of James B. Castle - site of the present Elks Club - in Waikīkī during excavations for the laying of sewer pipes (Emerson 1902:18-20). Emerson noted:

The soil was white coral sand mixed with coarse coral debris and sea-shells together with a slight admixture of red earth and perhaps an occasional trace of charcoal. The ground had been trenched to a depth of five or six feet, at about which level a large number of human bones were met with, mostly placed in separate groups apart from each other, as if each group formed the bones of a single skeleton. Many of the skulls and larger bones had been removed by the workmen before my arrival, especially the more perfect ones [Emerson 1902:18].

Emerson's report on the find describes the remains of at least four individuals, all presumed to be Hawaiian. Associated burial goods were also exposed during excavation: these included "a number of conical beads of whale-teeth such as the Hawaiians formerly made" and "a number of round glass beads of large size." The glass beads "can be assigned with certainty to some date subsequent to the arrival of the white man" (Emerson 1902:19). Also located with the beads was "a small sized *nihopalaoa*, such as was generally appropriated to the use of the chiefs" which had been "carved from the tooth of the sperm-whale" and which was "evidently of great age" (Emerson 1902:19).

In the 1920s and 30s the first systematic archaeological survey of O'ahu was conducted by J. C. McAllister (1933). He recorded four *heiau* (temples), three of which were located at the *mauka* reaches of Waikīkī Ahupua'a in lower Mānoa Valley. The fourth *heiau* - Papa'ena'ena - was located at the foot of Diamond Head crater in the environs of the present Hawai'i School for Girls. Papa'ena'ena Heiau is traditionally associated with Kamehameha I, who was said to have visited the *heiau* before setting off to battle for Ni'ihau and Kaua'i in 1804. Five years later, according to John Papa 'Ī'ī, Kamehameha placed at Papa'ena'ena the remains of an adulterer - "all prepared in the customary manner of that time" ('Ī'ī 1959:50-51).

Table 1. Previous Archaeological Investigations in Waikīkī Ahupua'a

Reference	Type of Investigation	General Location	Findings
McAllister 1933	Island-wide survey	All of O'ahu	Waikīkī listed as Site 60.
Nakamura 1979	History Graduate Thesis	Waikīkī	History of Waikīkī with focus on the radical changes in land use that occurred in the early 20th century.
Neller 1980	Monitoring Report	Kālia Burial Site: Hilton Hawaiian Village	Brief field inspection: Partial recoveries of 3 historic Hawaiian burials, trash pit from 1890's, no pre-contact Hawaiian sites.
Bishop Museum 1981	Interim Progress Report on Testing, Excavations, and Monitoring	Halekūlani Hotel	Intact cultural deposits found.
Neller 1981	Reconnaissance Survey	Halekūlani Hotel	Limited background research on area.
Acson 1983	Historical Research, Past and Present Landmarks	'Ewa to Diamond Head end of Waikīkī	Nine walks through Waikīkī, photos, maps and historical information.
Bishop Museum 1984	Burial Remains List	Waikīkī Ahupua'a	Listing of burial remains found in Waikīkī Ahupua'a at the Bishop Museum.
Davis 1984	Archaeological and Historical Investigation	Halekūlani Hotel	48 historic and pre-contact features excavated.
Neller 1984	Informal Narrative Report	Paoakalani Street	Recovery of human skeletons at construction site.
Center for Oral History 1985	Oral Histories, Volumes I-IV	Waikīkī	Oral Histories of Waikīkī, 1900-1985, Volumes I-IV.
Griffin 1987	Burial Recovery Report	Along Kalākaua Ave. near the corner of Ka'iulani St.	Bones removed and bagged by construction crew, burial found in <i>makai</i> wall of gas pipe excavation.

Reference	Type of Investigation	General Location	Findings
SHPD 1987	Burial, PA Report	Kalākaua Ave.	From excavation adjacent to Moana Hotel (SIHP site -9901).
Davis 1989	Reconnaissance Survey and Historical Research	Fort DeRussy	Fishponds and other features are buried in this area. Sites -4573 thru -4577 are fishponds, 4570 is a remnant cultural deposit.
Riford 1989	Pre-Field Background Literature Search	TMK: 2-6-014:039	List of literature pertaining to Waikīkī area.
Rosendahl 1989	Inventory Survey, Preliminary Report	Fort DeRussy	Historic artifacts, no human remains.
Athens 1990	Letter	TMK: 2-6-023:025	Letter to SHPD listing human remains at IARII lab from Pacific Beach Hotel, and Barbers Point Generating Station.
Hurst 1990	Historical Literature and Documents Search	Waikikian Hotel	Background and planning document. No fieldwork was done.
Chigioji 1991	Assessment	2 parcels, TMK 2-6-24:65-68 and 80-83, TMK 2-6-24:34-40 & 42-45	TMK 2-6-24:36-40, formerly a corner of the 'Āinahau estate; remainder of parcels, former 'auwai, kalo and rice fields; subsurface test excavations and specific sampling strategy recommended.
Davis 1991	Monitoring Report	Fort DeRussy	See also Davis 1989. No groundwater contamination found; subsurface features and material remains date to early post-contact times (c. 1780s to 1790s) through the mid-19th century.

Reference	Type of Investigation	General Location	Findings
Kennedy 1991	Monitoring Report	TMK: 2-6-022:014 IMAX theatre location	Pollen and bulk-sediment <sup>14</sup> C samples from ponded sediments were recovered. The three <sup>14</sup> C dates and the pollen sequence were interpreted as inverted.
SHPD 1991	Public Inquiry	TMK: 2-6-024:036	Bones were determined to be non-human and part of the extensive fill material present in the area.
Simons et al. 1991	Interim Field Study, Monitoring and Data Recovery	Moana Hotel Area	Human skeletal remains, 8 burials, preliminary osteological analysis indicates pre-contact type; artifactual material recovered, both pre- and post-contact types.
Hurlbett 1992	Monitoring Report	TMK: 2-6-008:001	SIHP site -2870 (3 burials) found by Neller in 1980. This report is on testing and monitoring in same area.
Pietrusewsky 1992a	PA Report	Moana Hotel	Right half of human mandible found by hotel guest.
Pietrusewsky 1992b	PA Report	Lili'uokalani Gardens Site, Hamohamo	Human Remains from the Lili'uokalani Gardens Site, Hamohamo, Waikiki, O'ahu.
Rosendahl 1992	Monitoring Report	Hilton Hawaiian Village	Identified 12 historic refuse pits, 3 historic to modern trenches; not recommended for further work, significant solely for information content.
Streck 1992	Memorandum for Record	Fort DeRussy	Human burial discovery (believed to be late pre-contact Hawaiian) during data recovery excavations, May, 20, 1992.
Cleghorn 1993	Report on Inadvertent Discovery of Remains	Waikiki Aquarium	Remains of one human individual, mandible identified.

Reference	Type of Investigation	General Location	Findings
Dagher 1993	Report on Inadvertent Discovery of Remains	Waikīkī Aquarium	Human remains of at least one person identified, excavation recommended.
Dega and Kennedy 1993	Report on Inadvertent Discovery of Remains	Waikīkī Aquarium	Discovery of unidentified bone fragments, all remains turned over to SHPD.
Hammatt and Chiogioji 1993	Archaeological Assessment	16-Acre Portion of the Ala Wai Golf Course	Not associated with any known surface archaeological site, however pre-contact and early historic occupation layers associated with <i>lo'i</i> system remain intact below modern fill. Specific sampling strategy and potential burial testing recommended.
Maly et al. 1994	Archaeological and Historical Assessment Study	Convention Center Project Area	Recommend subsurface testing to determine presence or absence of cultural deposits and features.
McMahon 1994	SHPD Burial Report	Intersection of Kalākaua and Kuamo'o Streets	Inadvertent Burial Discovery: misc. bones uncovered in back dirt pile during construction. Follow up by CSH.
Hammatt and Shideler 1995	Sub-surface Inventory Surface	Hawai'i Convention Center SIHP site, 1777 Kalākaua Ave.	No further work recommended.
Jourdane 1995	Report of Inadvertent Discovery of Human Remains	Paoakalani Avenue	Human skeletal remains discovered in planted strip between street and sidewalk fronting hotel.
Simons et al. 1995	Data Recovery Excavations	Fort DeRussy	Historic and pre-contact artifacts, artifact debris, and midden materials collected from 7 occupational layers. 6 pre-contact cultural features recorded: <i>'auwai</i> bunds and channels, fishpond walls and sediments, a possible <i>lo'i</i> , and hearths.

Reference	Type of Investigation	General Location	Findings
Cleghorn 1996	Inventory Survey	TMK: 2-6-016:23, 25, 26, 28, 61, 69	7 backhoe trenches excavated, no sites located.
Grant 1996	Historical Reference	Waikīkī	Historical information about Waikīkī prior to 1900.
Hammatt and Shideler 1996	Data Recovery	Hawai'i Convention Center Site	No clear evidence that Kūwili Pond sediments present in project area; no further work recommended.
McDermott et al. 1996	Inventory Survey	'Āinahau Estate	Buried remnants of 'auwai and lo'i and human burial found on grounds of 'Āinahau Estate, <sup>14</sup> C dates. Ā
Denham et al. 1997	Data Recovery Report	Fort DeRussy	Excavations conducted at fishponds, <sup>14</sup> C dates mid-17th C.
Denham and Pantaleo 1997	Monitoring and Excavations Report	Fort DeRussy	Final Report does not include SHPD recommendations. 10 subsurface features and 9 burial locations found. <sup>14</sup> C dates.
Beardsley and Kaschko 1997	Monitoring and Data Recovery Report	Pacific Beach Hotel Office Annex	Traditional Hawaiian cultural deposits and 2 human burials. 3 <sup>14</sup> C dates.
Hammatt and Chiogioji. 1998	Assessment	King Kalākaua Plaza Phase II	No surface archaeological sites, documented human burials, presence of subsurface cultural deposits (both of pre-contact Hawaiian and historic provenance).
Hammatt and McDermott 1999	Burial Disinterment Plan and Report	Kalākaua Avenue	Two human burials found.
Perzinski et al. 1999	Monitoring Report	Along Portions of Ala Wai Boulevard, Kalākaua Avenue, Ala Moana Boulevard, and 'Ena Road	Two human burials found (1 preceding monitoring); pockets of undisturbed layers still exist. Burial #2 previously disturbed.

Reference	Type of Investigation	General Location	Findings
Rosendahl 1999	Interim Report: Inventory Survey	Fort DeRussy	This area is part of the old shoreline.
Hammatt and Chiogioji 2000	Archaeological Assessment	Honolulu Zoo Parcel	Majority of zoo parcel unlikely to yield significant cultural deposits. However, strong possibility of significant subsurface cultural deposits in the southwestern portion, and archaeological monitoring is recommended in this area.
LeSuer et al. 2000	Inventory Survey	King Kalākaua Plaza Phase II	SIHP site -5796 has been adversely affected by land alteration of the project area. SIHP site -4970 has been adequately documented.
Perzinski et al. 2000	Burial Findings	Kalākaua Ave. between Ka'iulani and Monsarrat Avenues	44 sets of human remains; 37 disinterred, 7 left in place; believed to be Native Hawaiian, prior to 1820.
Cleghorn 2001	Mitigation	Burger King Construction Site	Concerning three incidents of uncovered human remains while locating a buried sewer-line for the ABC's store.
Corbin 2001	Inventory Survey	Hilton Waikikian Property	No arch. sites were found during excavations of the area.
Elmore and Kennedy 2001	Burial Report	Royal Hawaiian Hotel	Human remains found during trench excavations for conduit. In situ remains left in place, remains disturbed reentered with others.
McGuire and Hammatt 2001	Cultural Assessment	Along Lewers St., Beach Walk, Kālia Rd. and Saratoga Rd. Proposed Waikīkī Beach Walk project (Outrigger properties renovations)	Primary cultural concern identified as inadvertent burial discovery. Cultural monitoring recommended for all subsurface work within project area.

Reference	Type of Investigation	General Location	Findings
Perzinski and Hammatt 2001a	Monitoring Report	Kapi'olani Bandstand	A charcoal layer was observed, more concentrated on the southwest side of the bandstand; recovered indigenous artifact, basalt lamp with a handle, from the southeast end of the bandstand.
Perzinski and Hammatt 2001b	Monitoring Report	Kapi'olani Park	No cultural layer, artifacts, midden or human burials were encountered during the excavations.
Perzinski and Hammatt 2001c	Monitoring Report	Kalākaua Avenue from the Natatorium to Poni Mō'i Road	No cultural layer, artifacts, midden or human burials were encountered during the excavations.
Rosendahl 2001	Assessment Study	Outrigger Beach Walk	Assessment of previous archaeological and historical literature.
Winieski and Hammatt 2001	Monitoring Report	TMK: 1-2-6-025:000	There is a possibility that Hawaiian or Historic materials as well as human burials may still be present within the project area.
Borthwick et al. 2002	Inventory Survey	71,000 sq. ft. parcel, TMK: 2-6-016:002	No burials were encountered during testing; absence of dry Jaucus sand deposits indicate that burial finds are unlikely in project area.
Bush et al. 2002	Monitoring Report	Kalākaua Avenue, between Ala Moana Blvd. and Kapahulu Ave.	Encountered 4 Human burials, analysis suggests pre-contact Native Hawaiians; several historic trash pits; entire pig within an <i>imu</i> pit (estimated date, A.D. 1641-1671); gleyed muck associated with former ponds.
Calis 2002	Monitoring Report	Lemon Road	No historic deposits, major previous disturbance.
Elmore and Kennedy 2002	Monitoring Report	Fort DeRussy	No findings.



Reference	Type of Investigation	General Location	Findings
Mann and Hammatt 2002	Monitoring Report	Lili'uokalani Avenue and Uluniu Avenue	5 burial finds of 6 individuals; two historic trash pits.
Putzi and Cleghorn 2002	Monitoring Report	Hilton Hawaiian Village	No findings during monitoring of trench excavations for sewer connections.
Winieski, Perzinski, Shideler and Hammatt 2002	Monitoring Report	Kalākaua Ave. between Ka'iulani and Monsarrat Avenues.	44 human burials encountered, 37 disinterred; buried habitation layer identified which contained traditional Hawaiian artifacts, midden, hearths, firepits, and charcoal concentrations; fragment of light gauge rail, remnant of Honolulu Transit trolley system, observed; low energy alluvial sediments associated with the now channelized <i>muliwai</i> Kukaunahi also observed.
Winieski, Perzinski, Souza and Hammatt 2002	Monitoring Report	Kūhiō Beach	Skeletal remains of 10 individuals, six disinterred, only 2 in situ. 4 indigenous artifacts, none in situ. Discontinuous cultural layer, historic seawall.
Bush et al. 2003	Monitoring Report	International Marketplace	Historic trash found.
Tome and Dega 2003	Monitoring Report	Waikīkī Marriot	No in situ remains, recommends monitoring if more work to be done, one isolated not in situ possible human bone fragment. Not identifiable.
Tulchin and Hammatt 2003	Archaeological and Cultural Impact Assessment	2284 Kalākaua Ave.	Notes possibility of burials within the project area; recommends an inventory survey with subsurface testing.

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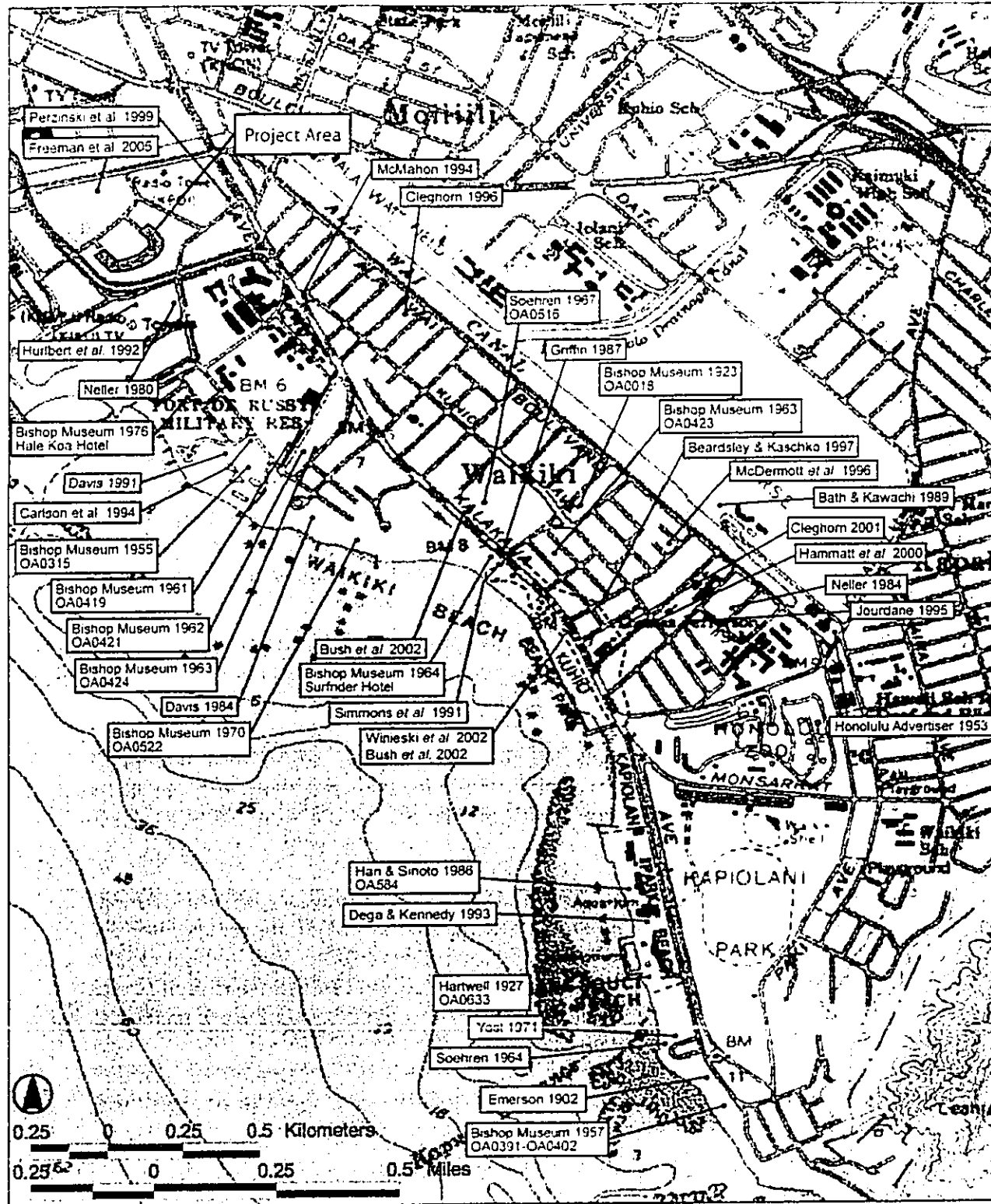


Figure 14. Previous archaeological work in Waikiki including location of burials showing location of project area (outlined in red).

In 1963, two human skulls and other human remains were discovered in a construction trench at 2431 Prince Edward St. (Bishop Museum site Oa-A4-23, cited in Neller, 1984).

In 1964, sand dune burials, a traditional Hawaiian mortuary practice, were revealed as beach sand eroded fronting the Surfrider Hotel (Bishop Museum Site Files).

In 1976, during construction of the Hale Koa Hotel, adjacent to the Hilton Hawaiian Village Hotel, six burials were unearthed, five of apparent pre-contact or early historic age, and one of more recent date (Bishop Museum Site Files).

In 1980, three burials were exposed at the Hilton Hawaiian Village during construction of the hotel's Tapa Tower, south-southeast of the present project area. Earl Neller of the (then named) State Historic Preservation Program was called in upon discovery of the burials and conducted fieldwork limited to three brief inspection of the project area. Neller's (1980) report noted:

The bones from three Hawaiian burials were partially recovered; one belonged to a young adult male, on a young adult female, and one was represented by a single bone. An old map showed that rapid shoreline accretion had occurred in the area during the 1800s, and that the beach in the construction area was not very old. It is possible the burials date back to the smallpox epidemic of 1853. It is likely that burials will continue to be found in the area. It is also possible that early Hawaiian sites exist farther inland, beneath Mō'ili'ili, adjacent to where the shoreline would have been 1000 years ago. (Neller 1980:5)

Neller also documented the presence of trash pits, including one from the 1890s which contained "a large percentage of luxury items, including porcelain tablewares imported from China, Japan, the United States, and Europe" (Neller 1980:5). He further notes:

It is suspected that other important historic archaeological sites exist in the highly developed concrete jungle of Waikīkī, with discrete, dateable trash deposits related to the different ethnic and social groups that occupied Waikīkī over the last 200 years [Neller 1980:5].

Between December 1981 and February 1982, archaeologists from the Bishop Museum led by Bertell Davis conducted a program of excavations and monitoring during construction of the new Halekūlani Hotel (Davis 1984). Six human burials were recovered along with "animal burials [and] cultural refuse from prehistoric Hawaiian firepits, and a large collection of bottles, ceramics, and other materials from trash pits and privies dating to the late 19th century" (Davis 1984:i). Age analysis of volcanic glass recovered from the site led Davis to conclude: "For the first time we can now empirically date . . . settlement in Waikīkī to no later than the mid-1600s" (Neller 1980:5).

In 1983, at the Lili'uokalani Gardens condominium construction site, seven traditional Hawaiian burials were recovered (Neller 1984). This had been the site of a bungalow owned by Queen Lili'uokalani at the end of the nineteenth century. In addition to the burials, the site contained plentiful historic artifacts, and a pre-historic cultural layer pre-dating the burials.

In 1985, International Archaeological Research Institute, Inc. performed archaeological monitoring and data recovery at the Pacific Beach Hotel Office Annex (Beardsley and Kaschko 1997). Two traditional Hawaiian burials were discovered and removed. Intact buried traditional Hawaiian cultural deposits, including a late pre-contact habitation layer, contained pits, firepits, post molds, artifacts, and food debris. The artifacts included basalt and volcanic glass flakes and cores, a basalt adze and adze fragments, worked pearl shells, a coral file and abraders, and a pearl shell fishhook fragment. Additionally, a late nineteenth century trash pit was discovered, which contained a variety of ceramics, bottles, and other materials.

During 1985 and 1986, archaeologists from Paul H. Rosendahl, Ph.D. Inc. conducted archaeological monitoring at the site of the Mechanical Loop Project at the Hilton Hawaiian Village, Waikiki. Much of this project area was disturbed by historic and modern construction and modification. Fifteen subsurface features were uncovered during the monitoring, all of which were determined to be historic trash pits or trenches. The dating of these features was based on dating the artifactual material they contained. All 15 features are thought to post-date 1881 based on this artifact analysis. The three partial burials reported by Neller (1980) were found within this project area (see above). No further burials were encountered during the PHRI field work (Hurlbett et. al. 1992).

In 1987, a human burial was discovered and removed at the intersection of Kalākaua Avenue and Ka'iulani Street during excavations for a gas pipe fronting the Moana Hotel (Griffin 1987).

In 1988, the Moana Hotel Historical Rehabilitation Project (Simons et. al. 1991) encountered human remains that amounted to at least 17 individuals. Based on stratigraphic association these burials were interred over time as the land form at the site changed. The sediment surrounding these burials yielded traditional midden and artifact assemblages. The burials and human remains were found in the Banyan Court and beneath the hotel itself.

In 1989, skeletal remains were unearthed on the grounds of the Ala Wai Golf Course during digging of an electrical line trench for a new sprinkler system. The trench had exposed a pit containing two burials (Bath and Kawachi 1989: 2). The report suggests that one of the burials may have been disturbed earlier during grading for the Territorial Fair Grounds. The osteological analysis included in the report concludes that both sets of remains "appear ancient." (Bath and Kawachi 1989: 2)

Davis' (1989, 1991) excavation and monitoring work at Fort DeRussy documented substantial subsurface archaeological deposits, pre-contact, historic, and modern. These deposits included buried fishpond sediments, 'auwai [irrigation ditch] sediments, midden and artifact enriched sediments, structural remains such as post holes and fire pits, historic trash pits, and a human burial. Davis' (1991) report documents human activity in the Fort DeRussy beach front area from the sixteenth century to the present.

The work at Fort DeRussy continued in 1992 when BioSystems researchers built upon Davis' work (Simons et al. 1995). BioSystems research documents the development and expansion of the fishpond and 'auwai system (SIHP site -4970) in the area. Remains of the fishpond and 'auwai deposits, as well as habitation deposits, were documented below modern fill deposits. This research, along with that of Davis (1991), clearly demonstrates that historical document

research can be an effective guide to locating late pre-contact/early historic subsurface deposits, even amidst the development of Waikīkī.

In 1992, Hurlbett et al. (1992) conducted additional monitoring and testing in this same area as Neller (1980). SIHP site -2870 was given to the three burials first found by Neller. Additional subsurface features, postdating 1881, were found during trenching operations.

The realignment of Kālia Road at Fort DeRussy in 1993 uncovered approximately 40 human burials. A large majority of these remains were recovered in a large communal burial feature (Carlson et. al. 1994). The monitoring and excavations associated with this realignment uncovered a cultural enriched layer which contained post holes.

In 1993, during construction activities at the Waikīkī Aquarium, approximately 3 km (1.86 miles) southwest of the present project area, fragmentary human remains were discovered scattered in a back dirt pile, although no burial pit was identified (Dega and Kennedy 1993).

On April 28, 1994, an inadvertent burial discovery was made during excavation for a water line at the intersection of Kalākaua Avenue and Kuamo'o Street (just *mauka* of Fort. DeRussy). These remains represented a single individual (McMahon 1994).

In 1995, the remains of one individual were discovered in situ during construction activities on Paoakalani Street, fronting the Waikīkī Sunset Hotel (Jourdane 1995).

In 1996, Pacific Legacy, Inc. conducted an archaeological inventory survey of the block bounded by Kalākaua Avenue, Kūhiō Avenue, 'Olohana Street, and Kālainmoku Street (Cleghorn 1996). The survey included excavation of seven backhoe trenches. The subsurface testing indicated that

. . . this area was extremely wet and probably marshy. This type of environment was not conducive for traditional economic practices. . . . The current project area appears to have been unused because it was too wet and marshy. Several peat deposits, containing the preserved remains of organic plant materials were discovered and sampled. These deposits have the potential to add to our knowledge of the paleoenvironment of the area [Cleghorn 1996:15].

The report concluded that no further archaeological investigations of the parcel were warranted since "no potentially significant traditional sites or deposits were found", but cautioned of the "possibility, however remote in this instance, that human burials may be encountered during large scale excavations" (Cleghorn 1996:15).

In 1996, a traditional Hawaiian burial was discovered and left in place during test excavations on two lots at Lili'uokalani Avenue and Tusitala Street (McDermott et al. 1996). Indigenous Hawaiian artifacts and historic artifacts were also found within the project area.

In 1997, during archaeological monitoring by CSH for the Waikīkī Force Main Replacement project, scattered human bones were encountered on 'Ōhua Street (Winieski and Hammatt 2000). These included the proximal end and mid-shaft of a human tibia, a patella, and the distal end and mid-shaft of a femur. These remains occurred within a coralline sand matrix which had been heavily disturbed by previous construction, and by the on-going construction project. No precise location for the original burial site was identified.

In April 1999, two human burials were inadvertently encountered near the intersection of ʻEna Road and Kalākaua Avenue during excavation activities for the first phase of the Waikīkī Anti-Crime Lighting Improvements Project (Perzinski et al. 1999). These discoveries were approximately 350 m (0.2 mile) east of the present project area, on the *makai* side of Kalākaua Avenue.

From July 1999 to October 2000, four sets of human remains were inadvertently encountered during excavation activities relating to the Waikīkī Anti-Crime Street Lighting Improvement project along portions of Kalākaua Avenue (Bush et al. 2002). The first burial was encountered on Kalākaua Avenue, just before Dukes Lane and assigned State Site 50-80-14-5864. The burial was left in place however, and the light post was repositioned. The second burial was encountered at the intersection of Kalākaua Avenue and Kaʻiulani Avenue. Earlier, during archaeological monitoring for the water mains project, two burials were encountered in the immediate area of the second burial find and assigned state site 50-80-14-5856 features A and B. Due to the close proximity to the previously encountered burials, the second burial was assigned the same State Site 50-80-14-5856, and designated feature C. Burials 3 and 4 were recovered at the intersection of Kalākaua Avenue and Kealohilani, near an area of concentrated burials assigned State Site 50-80-14-5860 during monitoring for the water mains project. Consequently, burials 3 and 4 were also assigned State Site 50-80-14-5860, features U and V. In addition to human remains, pre-contact deposits, historic and modern rubbish concentrations, and pond sediments were also encountered.

From November, 1999, to May, 2000, 44 human burials, with associated cultural deposits, were encountered during excavation for a waterline project on Kalākaua Avenue between the Kaʻiulani and ʻŌhua Avenues (Winieski et al. 2002a). Except for previously disturbed partial burials in fill, the bulk of the burials were encountered within a coralline sand matrix. Additionally, a major cultural layer was found and documented.

From January, 2000, to October 2000, 10 human burials were encountered during archaeological monitoring of the Kūhiō Beach Extension/Kalākaua Promenade project (Winieski et al. 2002b). Six of these were located within a coralline sand matrix. The four others were partial and previously disturbed within fill. Additionally, a major cultural layer was found and documented, apparently part of the same major cultural layer associated with the waterline project between Kaʻiulani and ʻŌhua Avenues.

In April 2001 human remains were inadvertently disturbed during excavations associated with the construction of a spa at the Royal Hawaiian Hotel (Elmore et al. 2001), approximately 1.30 km north of the current project area. Archaeological Consultants of the Pacific, Inc. was responsible for the documentation of the remainder of the burial and carrying out the instruction of DLNR/ SHPD. The burial and place it was encountered was designated SIHP site -5937. The burial was encountered on the north side of the hotel in the spa garden. The burial was partially disturbed through the thoracic region and anatomical left side. The disturbed remains were wrapped in muslin cloth and placed with the in-situ remains and reburied. The burial was recorded as a post contact burial based on artifacts associated with it. The associated artifacts included one shell button found *in-situ* and three more shell buttons found in the disturbed material. A single drilled dog tooth was found also during excavation but could not be positively associated with the site.

On May 2nd and June 14th, 2001, two in situ and two previously disturbed human burials were encountered at the site of a new Burger King (Cleghorn 2001a) and an adjoining ABC Store (Cleghorn 2001b). The finds were located at the intersection of 'Ōhua Street and Kalākaua Avenue (Cleghorn 2001a and 2001b). Because of their proximity to five burials encountered during the Kalākaua 16-inch Water Main Installation (Winieski et al. 2002a), they were included in the previously assigned State Site 50-80-14-5861. Three of these burials were recovered, and one was left in place. Volcanic glass fragments were found in association with one of the burials. A cultural layer was also observed which contained moderate to heavy concentrations of charcoal and fragments of volcanic glass. Historic era artifacts, including a bottle fragment, plastic and glass buttons, a ceramic fragment, and metal fragments were also encountered within fill materials.

In 2001 and 2002, CSH (Mann and Hammatt 2002) performed archaeological monitoring for the installation of 8- and 12-inch water mains on Uluniu Avenue and Lili'uokalani Avenue. During the course of monitoring, five burials finds, consisting of six individuals, were recorded within the project area. Four burial finds were recorded on Uluniu Avenue; three of these inadvertent finds were found in fill sediment. Due to the nature of the three burial finds in fill, it was concluded that no State Site number(s) be assigned to these three previously disturbed burials. The only primary in situ burial encountered on Uluniu Avenue was assigned SIHP site 50-80-14-6369. The fifth burial, consisting of two individuals in fill material, was recorded from Lili'uokalani Avenue. Since three burials had been found in the immediate vicinity during a previous project (Winieski et al. 2002b) and had been assigned to SIHP site 50-80-14-5859, the two new individuals were recorded as Feature H of this previously recorded site.

In 2004, Cultural Surveys Hawai'i conducted an archaeological inventory survey and cultural impact evaluation for the Ala Wai Gateway project site (Freeman *et al.* 2005). The project site comprised TMK 2-6-011:001, 002, 004, 32, 37, and 40, which are bounded by Ala Wai and Ala Moana boulevards, Hobron Lane, and Līpe'epe'e Street. As this project area is located on Hobron Lane, immediately adjacent to the present Kaio`o Drive project area, the findings of the inventory survey are especially relevant. Four historic properties were documented in the survey:

Site 50-80-14-6700: disturbed, ethnicity undetermined, human skeletal remains,

Site 50-80-14-6701: historic coffin burial, ethnicity undetermined,

Site 50-80-14-6702: culturally enriched buried A horizon in geographic association with Land Commission Award (LCA) 99 FL to Uma, and

Site 50-80-14-6703: fishpond remnant.

In summary, past archaeological research, from the beginning of the twentieth century to the present has produced evidence that traditional Hawaiian cultural deposits, historic trash deposits, and, most notably, human burials, do exist throughout the breadth of the Waikīkī area.

## Section 5 Community Consultations

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Throughout the course of this assessment, an effort was made to contact and consult with Hawaiian cultural organizations, government agencies, and individuals who might have knowledge of and/or concerns about traditional cultural practices specifically related to the project area. This effort was made by letter, e-mail, telephone and in person contact. In the majority of cases, letters along with a map and aerial photograph of the project area were mailed with the following text:

At the request of Kusao & Kurahashi Inc., Cultural Surveys Hawai'i Inc. is conducting a cultural impact assessment for the proposed Kaio'o Drive Multi-Family Development in Waikiki, Kona District, Island of O'ahu [TMK (1) 2-6-012: 37, 38, 39, 40, 41, 42, 43, 44, 55, 56, 57, & 58] (see enclosed map and aerial photograph).

Kusao & Kurahashi Inc. proposes to build a 6-story condominium complex. Our preliminary research shows that this site is the former location of LCA's (19<sup>th</sup> century house sites), fish ponds, and taro patches, which means that there is a high potential for cultural deposits, agricultural features and habitation layers beneath the fill layer. We have documented similar findings in previous projects in adjacent areas of Waikiki.

The purpose of the cultural impact assessment is to assess potential impacts to traditional cultural practices as a result of future development of the above mentioned project.

We are seeking your *kōkua* or help and guidance regarding the following aspects of our study:

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

Knowledge of cultural sites which may be impacted by future development of the project area-for example, historic sites, archaeological sites, and burials.

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

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

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

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



The individuals, organizations, and agencies attempted to be contacted and the results of any consultations are presented in the table below.

Table 2 Community Contacts

Name	Organization, Affiliation	Comments
Ayau, Halealoha	Hui Mālama O Nā Kūpuna O Hawai'i Nei	Contacted.
Diamond, Van Horn	Chairperson, O'ahu Island Burial Council	Contacted.
Kahanamoku Sterling, Joanne	<i>Kama'āina</i> of Waikīkī	See interview.
Kaleikini, Paulette	<i>Kama'āina</i> of Waikīkī	See interview.
Nāmu'o, Clyde	Administrator Office of Hawaiian Affairs	Contacted.
Norman, Ted	<i>Kama'āina</i> of Kālia	Contacted.
Paoa, Clark Robert	<i>Kama'āina</i> of Waikīkī	See interview.
Worthington, Bob	<i>Kama'āina</i> of Kālia	No cultural concerns at this time.

*Kama'āina* and *kūpuna* with knowledge of the Waikīkī and the area within the vicinity of the proposed project were contacted for this assessment.

The approach of Cultural Surveys to Cultural Impact Studies affords community members an opportunity to review transcriptions and to make any corrections, deletions or additions to the substance of their testimony. Our interview selection process tends to target knowledgeable older individuals (*kūpuna*) who are often in ill health or of a mind not to be rushed. It is often the case that the driving coercive demands of time that drive the contemporary development process do not fit well with those who have memories of an earlier time.

The present Cultural Impact Assessment documents our good faith effort to contact *kūpuna*, other knowledgeable parties, and cultural practitioners that is an essential part of the process of documenting and evaluating traditional cultural practices as they may relate to proposed development of the subject lands.

*Kama'āina* and *kūpuna* with knowledge of the Waikīkī area participated in "talk-story" sessions for this assessment to assist natural and cultural resources and any traditional cultural practices specific to the project area, CSH initiated the "talk-story" sessions with question from five broad categories. The categories include: Burials, Trails, Native Gathering Practices of Plants, Marine and Fresh Water Resources and Historic Properties.

Presented below are brief backgrounds of two previous "talk-story" sessions with Joanne Kahanamoku Sterling and Mr. Robert Clark Paoa. Both Ms. Joanne Sterling and Mr. Robert

Clark Paoa authorized the use of these interviews for this assessment. Their comments and concerns along with Ms. Paulette Kaleikini about the proposed project area are presented below.

#### **Joanne Kahanamoku Sterling**

Joanne Kahanamoku Sterling participated in a telephone interview with Cultural Surveys Hawai'i Inc. on October 1, 2004. Joanne Kahanamoku Sterling was born to Samuel Alapa'i Kahanamoku and Sara Tenamoieta of Tahiti. She was raised in Waikīkī on what is now the Ala Moana Boulevard where the Hilton is today southwest of the present project area. Joanne Kahanamoku Sterling presently resides in Kailua-Kona on the island of Hawai'i.

Joanne Kahanamoku Sterling specifically commented:

Our family home was where the Hilton is today in Waikīkī. It was all Paoa from the Hilton up to where Budget was. Other families included Kahanamoku, Bartelt and Harbottles. It was so beautiful where we lived. We used to call the area where your project is the "Dog Patch". I have a cousin Clark Robert Paoa who keeps up on all the family history and is very familiar with the area.

We used to know everybody and we never really went out of our area. We used to walk the waterway to the beach. In front of the 'Ilikai Hotel was all coral swamp. The beach was used by many families in the past to gather *limu*, fish and of course swim. I do not remember any burials in or around our area in my youth. The project area had many *kiawe* trees in those days.

Others in the neighborhood were the Furtados from Maui. They owned a shop collecting things from the monarch period. Anne was her name. There was also the Wise and the Keaweamahi families in the area near the project area. Another *kupuna* to contact would be Kawena Rubilite Johnson. She is very knowledgeable about that area.

#### **Clark Robert Paoa**

CSH conducted an interview with Mr. Robert Clark Paoa on October 4, 2004. Robert Clark Paoa was born in Waikīkī, Kalia (where the Ilikai is today) Kona District on the island of O'ahu in 1937. He was raised by his parents Mr. Malcom Paoa and Mrs. Ellen Clark Paoa on their family land just south of the current project area. Mr. Paoa worked for the Federal Government National Guard. Today he resides in Moanalua Gardens and is a member of the Moanalua Gardens Community Association.

Mr. Paoa specifically commented:

The family land was obtained during the *mahele* 1848. My Grandfather Paoa (his grandfather only had one name Paoa) was awarded that land in 1848. Later King David Kalākaua reconveyed the land to Paoa again 1877. We do not know why. It was a legal document. I have not been able to find it. My father and mother purchased the lot *makai* of us from my father's family. The fourth lot down from

us was owned by Nainoa Thompson's family the Harbottles. His mother is still alive and his father recently passed. Duke Kahanamoku owned his land but rented it out.

In the '50s or 1951, where the Kobe's Steak House is today, the road in front of our house, (Beach Road, now Ala Moana) was changed from two lanes to four lanes. The road work took our entire front yard. As they were working they found *iwi*. I only saw one long bone. As a child you do not notice too much like. In those times they called the Coroner. They were old burials according to the Coroner. The Coroner did not know what to do with the *iwi*, so my father said to move them into his yard. The bones are still there.

I doubt that they were still burying people in the project area. Maybe someone buried a family member in their yard. My family was buried where the Princess Ka'iulani Hotel is today. There was a church there, a branch of Kawaiha'o Church. The church had a piece of land and plots for different families. Most of the Hawaiians from this area were buried there. They later interred them at the Kawaiha'o Church. Richard Paliaqwan can tell you more about that.

My family and others used to fish in the ocean and gather *limu*. We did not trust fishing in the canal. The Japanese used to fish in the canal for mullet. You see, when war broke out in the 1940s that stopped any kind of cultural practices. When the war came there was black outs, rules and curfew in which it stopped the normal lifestyle. Where Hobran Street and what was Ala Moana to the Ala Wai was a base yard taken over by the Army from 1942-1945. There used to be all *kiawe* trees in this area.

It is really too late to interview the elders of that period most of them have past away. There was man by the name of Warren Nishimoto from the University of Hawai'i that I worked with before. I led him to families of that period and he did all the oral histories of this area. Some of the names were my Uncle and Aunt Fred Paoa and Mary Paoa Clark and Rebecca Kahale Kapule. If you can find the oral histories that Warren conducted they will tell you of this area. I will be willing to talk to you in more depth at another time if you need.

I don't remember any sites like *heiau* in this area. There was no pond during my time. It was all filled in. They did build the KHON radio tower in 1947 which is no longer there (looking east of the project area).

We used to call this place the "Dog Patch". My mother told us that a strong Hawaiian man used to raise dogs to eat in this area. They were still eating dogs. Some Hawaiians still enjoyed the meat. My mother said on Sundays the kids would watch by the fence and see them *pulehu* the dog and drink *okolehao*. This was in the 1920s. Some of the people do not like to hear the story because they feel sort of shame and looked down upon.

The above mentioned is of one version which dates back to the 1920s. However, in talking to a couple of older former residents of Kālia I learned that the name came into use later. The area that forms part of the Hawaiian Village now, had three lanes running from Kālia Rd to the beach and the area had dozens of homes. Originally the area had a lot of haole families and over the years they were replaced by locals....Part Hawaiians, Potugese, Chinese, Japanese and a mix of many races. It seems that sometime in the late 30s a part Hawaiian lady living nearby referred to the area as the "Dog Patch". I don't know if you ever read the comics... they had a comic strip of Lil Abner who lived in Dog Patch. This was a close nit community despite having fights and disputes and a few bad characters. When WWII Came a lot of single haole men who were defense workers moved into the area. Wild drinking parties became common with a lot of "loose women" who "visited". After the war the defense workers moved out and Dog Patch once again flourished! In the mid 50s Henry Kaiser purchased the area from the `Ena Estate and began the building of the Hawaiian Village. Many of the former residents still meet at funerals, parties and reunions to celebrate the good old days of Dog Patch. I was a bit too young to know that was going on there until after the war.

As we [CSH] looked at the photographs from 1927, 1945, 1948 and 1949, Mr. Paoa had this to say:

You see the area behind our land? (Pointing to the sandy areas behind their homesteads in the 1927 photograph) Dillingham owned property there. He used the coral from the dredging of Kewalo to fill his land (they paid him to do it so he made money two ways).

I was 8 years old in 1945, this is how I remember it looking (glancing at the 1945 photograph view SE of project area) like. I remember the 1946 tidal wave wrecked all the boats in the canal. The canal just rose up and broke all the boats. The buildings were called the Alawai Terrace if I remember correctly, but maybe that is the names of the hotels in the project area today. You will have to check on that.

#### **Paulette Kaleikini**

Mrs. Paulette Kaleikini was born to Samuel Keko'o Kawainui and his wife Alice Kekahiliokamokukeli'ilumilani Keaweamahi in June, 13, 1952. Mrs. Kaleikini commented on the present project in a e-mail dated November 21, 2005:

This project is in the same area where my kupuna kahiko lived when they traveled to O'ahu with the chiefs. The area where they lived included where the Ilikai now stands and gong mauka to just about Kalakaua Ave. it would be difficult to determine exactly where the living quarters of these kūpuna were because in those days, they ran the gamut of the `ili. The kupuna kahiko were not contained in fenced-off areas like we are today, which is a westernized idea of civilization. The kupuna lived by the sea when it was the season to fish and went mauka when it was time to tend to the mauka crops. It was not until in the middle 1800s that

my kupuna set up their western style homes in the vicinity of the Waipuna. The beach fronting the Ilikai was sandy and flat like the Ala Moana beach today, as was told to me by my mother. There were several cottages in this area of this Kaioo project when my mother was growing up; most were demolished when larger apartment buildings took its place.

Kamehameha also had quarters in Kalia when he lived on Oahu. He had kalo patches as well. My kupuna tended to the fishpond of moi in Kalia of which Kamehameha was very fond of. The exact location of this pond is lost.

## **Section 6 Traditional Cultural Practices**

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

This project seeks to assess traditional cultural practices as well as resources pertaining to the project area within Waikīkī Ahupua'a. This section will convey the different types of traditional practices, cultural resources associated with the vicinity. Excerpts from "talk-story" sessions are incorporated in sections where applicable. During these "talk-story" sessions a Mr. Clark Paoa made an interesting statement about traditional cultural practices in the 1940s:

When the war broke out in the 1940s that stopped any kind of cultural practices.  
When the war came there black ours, rules and curfew in which it stopped the normal lifestyle.

### **6.1 Gathering for Plant Resources**

Hawaiians utilized upland resources for a multitude of purposes. Forest resources were gathered, for not only the basic needs of food and clothing, but for tools, weapons, canoe building, house construction, dyes, adornments, hula, medicinal and religious purposes. Within the project area itself no specific documentation was found in regards to gathering of plants during traditional Hawaiian times. During this assessment there were no ongoing practices related to traditional gathering of plant resources identified in the present project area. None of the individuals contacted or interviewed for this assessment identified any native plant gathering practices within the project area. Based on the information it is likely that there was far greater emphasis on gathering plant resources further inland.

### **6.2 Marine and Freshwater Resources**

The sea is a rich resource and the Hawaiian people were traditionally expert fishermen. Fish of all types supplied the Hawaiian diet with a rich source of protein. Hawaiian women practiced the gathering of seaweeds and salt. Informants were quick to talk about coastal and offshore resources. None of the individuals contacted or interviewed for this assessment identified any native marine or freshwater resources within the project area. During this assessment there were no ongoing practices related to marine and freshwater resources identified in the present project area.

### **6.3 Historic Properties**

None of the individuals contacted or interviewed for this assessment identified any historic properties within the project area. During this assessment there were no historic properties identified within the project area.

## 6.4 Burials

Archaeological reports have documented human burials – both pre-contact Hawaiian and historic – throughout the breadth of Waikīkī as far *mauka* as the Ala Wai Golf Course. Especially relevant to the present project area are two burials that were recently encountered in a project area on the 'Ewa side of Hobron Lane (Freeman *et al.* 2005). None of the individuals contacted or interviewed for this assessment identified any human remains within the project area.

## 6.5 Trails

Trails served to connect the various settlements throughout the leeward districts. Based on nineteenth and twentieth century maps the primary transportation routes *mauka/makai* correlated closely to the existing major roadways. The 19th-century Hawaiian historian John Papa 'Ī'ī, himself a member of the *ali'i* (chiefly class), described the king's Waikīkī residence *makai* of the present project area. He further noted that the "place had long been a residence of chiefs. It is said that it had been Kekuapoi's home, through her husband Kahahana, since the time of Kahekili" ('Ī'ī 1959:17). None of the individuals contacted or interviewed for this assessment identified any trails within the project area. During this assessment there were no trails identified within the project area.

## Section 7 Summary and Recommendations

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The present project area is located within a portion of Waikīkī that, in traditional Hawaiian times and before the massive drainage accomplished by the Ala Wai Canal, comprised a complex of numerous large and small fishponds. Also located in this portion of Waikīkī were wetland and dryland agricultural fields, and habitation sites. Land Commission Award documents from the mid-nineteenth century record continuing native Hawaiian habitation in two parcels adjacent to the present project area. Subsequent nineteenth and twentieth century documents – including historic maps and photographs – indicate that the central portion of the project area from traditional Hawaiian times to the modern era comprised a dryland environment with surrounding fishponds. In traditional Hawaiian times, such an environment would have provided a base for habitation, work, and recreational activities of the population. Maps and photographs produced before and after the completion of the Ala Wai Canal in the late 1920s, indicate that the project area contained residential structures associated with the early development of Waikīkī.

Archaeological reports have documented human burials – both pre-contact Hawaiian and historic – throughout the breadth of Waikīkī as far *mauka* as the Ala Wai Golf Course. Especially relevant to the present project area are two burials that were recently encountered in a project area on the 'Ewa side of Hobron Lane (Freeman *et al.* 2005).

Several archaeological studies have recorded the presence within Waikīkī of subsurface cultural deposits of both pre-contact Hawaiian and historic provenance. These deposits had remained intact despite the years of construction activity that have altered the entire Waikīkī area. The authors of these studies emphasize that the potential for discovering similar intact deposits elsewhere in Waikīkī cannot be discounted. During archaeological inventory survey of the Hobron Lane parcel mentioned above, intact cultural deposits were encountered (Freeman *et al.* 2005).

As noted above in this report, before the construction of the Ala Wai Canal and the filling in of Waikīkī's marshes and fishponds, the present project area comprised dryland and portions of ponds. These features and their likely locations within the parcels comprising the project area are shown in Figure 15. It is possible that intact pond sediments and intact prehistoric and early contact cultural deposits associated with Hawaiian habitation, work and recreation are lying undisturbed beneath modern fill layers within the project area. Other cultural deposits, including historic trash pits, associated with late nineteenth century and early twentieth century residential sites may also be present. Additionally, human burials may also be present within the project area.

An effort was made to contact and consult with Hawaiian cultural organizations, government agencies, and individuals who might have knowledge of and/or concerns about the proposed project area. As a result of this assessment, no ongoing traditional cultural practices or concerns were identified for the study area. None of the community contacts queried for this evaluation identified any on-going traditional cultural practices, cultural sites or concerns specifically within the project area.



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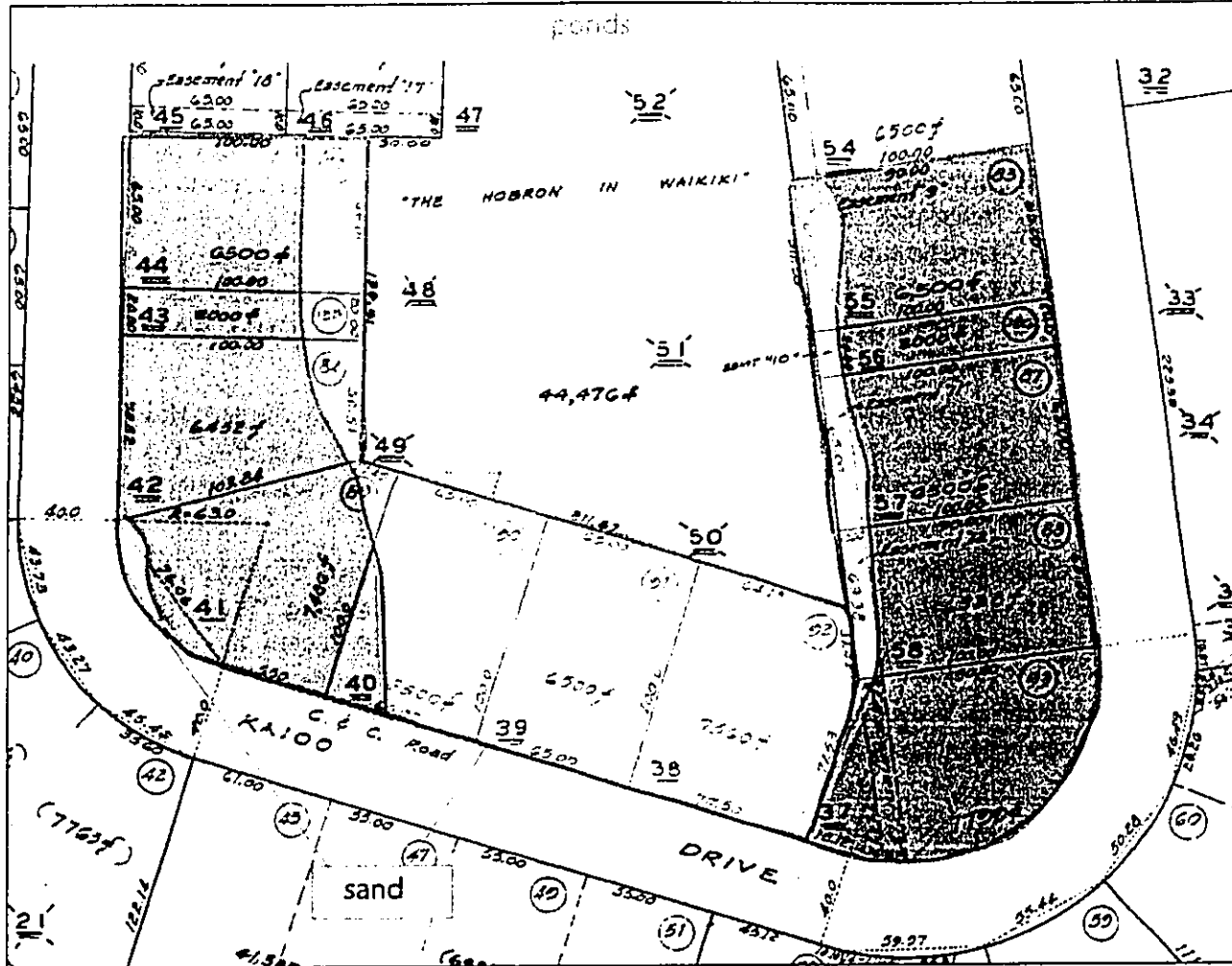


Figure 15 Tax map showing probably locations of former ponds and drylands in project area are based on historic documentation.

While none of the community contacts identified specific cultural concerns, as noted above, subsurface properties associated with former traditional Hawaiian activities, such as artifacts and cultural layers, may be present in the project area despite the decades of urban development of Waikīkī. Given this consideration and the cultural sensitivity of the entire Waikīkī area, Cultural Surveys Hawai'i recommends an archaeological inventory survey with a substantial subsurface testing component for the project area.

Based on the findings of the inventory survey, there could be additional archaeological mitigation requirements such as a burial treatment plan, archaeological data recovery, and an archaeological monitoring program.

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**APPENDIX IV**  
**TRAFFIC ASSESSMENT**

**Traffic Assessment**  
**for**  
**Kaioo Apartments**  
**Waikiki, Honolulu, Hawaii**

**November 4, 2005**

**Prepared by:**

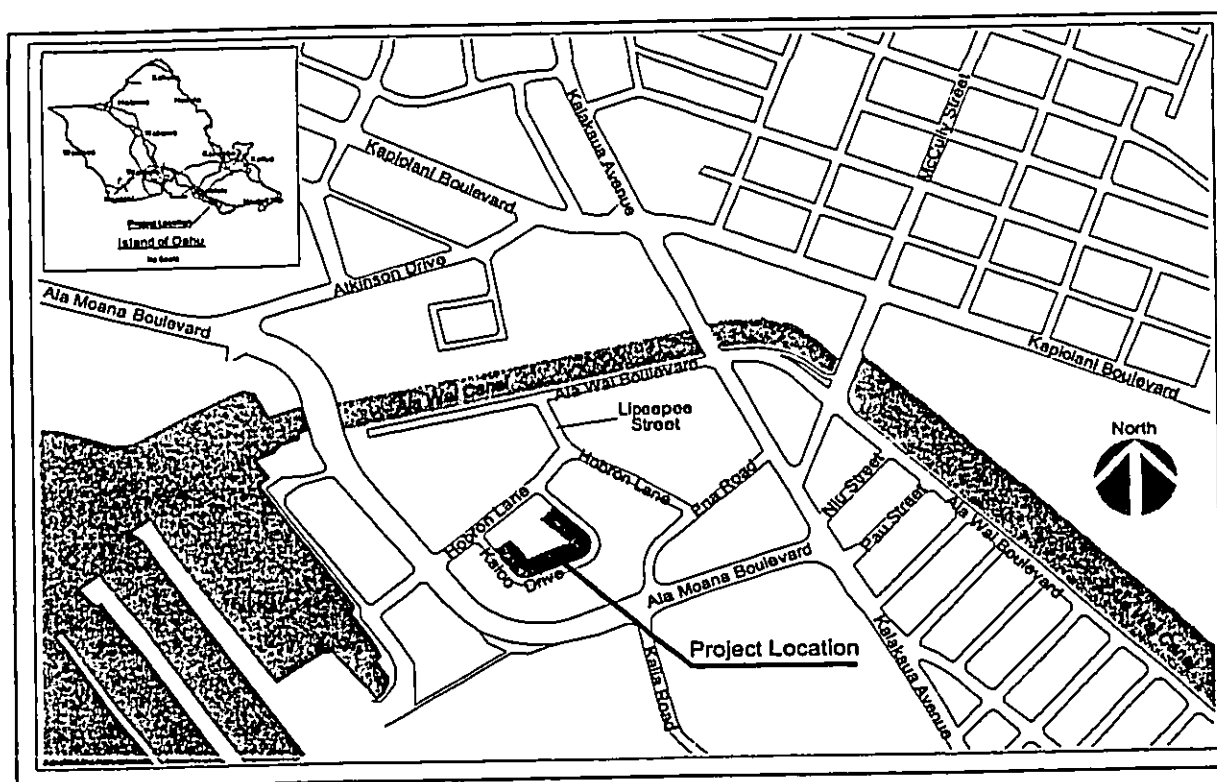
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**Traffic Assessment  
for  
Kaioo Apartments (TMK 2-6-12: 37-44, 55-58)  
Honolulu, Hawaii  
October 2005**

**Introduction** – Kaioo LLC has proposed to construct a 116-unit low-rise apartment project on approximately acres located on Kaioo Drive in Waikiki, on property that is currently vacant. The project is expected to have minimal impact to traffic conditions in the area, as the number of apartments that will be added is only a small portion of the total number of dwelling units in the area. This traffic assessment was prepared to quantify the potential impact to peak hour traffic conditions. Figure 1 shows the project location and the surrounding street system.



**Exhibit 1 – Project Location**

The development of other properties in the area is acknowledged and these projects could also have impacts to traffic conditions. However, this assessment focuses on the identification of the impact of the project in relation to existing traffic in the area.

**Existing Conditions** – Kaioo Drive is a single-lane roadway approximately 26 feet in width between curbs. Concrete sidewalks (4 feet wide) and 4-foot wide planter strips are present on both sides of the roadway within the street right-of-way. Kaioo Drive carries one-way traffic in a counterclockwise direction. Traffic exiting from Kaioo Drive is controlled by a stop sign at its mauka (northeast) intersection with Hobron Lane.

On-street parking is allowed on Kaioo Drive parallel to and along the left curb, except at driveways, around the first curve, and near a fire hydrant. Parallel parking is also allowed along portions of the right curb. On-street parking on Kaioo Drive is not marked, and the existing curbspace can accommodate approximately 55 cars.

Hobron Lane has one lane of traffic in each direction, with parallel parking permitted on both sides of the street near this intersection. An additional 15 marked spaces are striped on Hobron Lane between Ala Moana Boulevard and Lipeepee Street.

Each approach to the intersection of Hobron Lane and Lipeepee Street is controlled by a stop sign. Stop signs also control the “stem” approach at the nearby T-intersections (Lipeepee Street at Ala Wai Boulevard and Hobron Lane at Ena Road). The other intersections in the vicinity, with Kalakaua Avenue and with Ala Moana Boulevard are controlled by traffic signals.

The State of Hawaii Department of Transportation conducts traffic counts periodically at several nearby locations. Table 1 shows the most recent data published by the State for crossings over the Ala Wai Canal.

**Table 1 – Recent Traffic Count Data**

Direction, relative to Waikiki:	24-hour total (2-way)	AM Peak Hour		PM Peak Hour	
		Into	Out of	Into	Out of
<b>Ala Moana Boulevard at Ala Wai Canal Bridge</b>					
September 3-4, 2002	42,947	1,175	1,622	1,682	1,799
September 4-5, 2002	43,056	1,200	1,667	1,663	1,789
October 20-21, 2003	43,575	1,182	1,679	1,712	1,888
October 21-22, 2003	44,594	1,154	1,756	1,591	2,010
<b>Kalakaua Avenue at Ala Wai Canal Bridge</b>					
August 26-27, 2002	44,495	1,153	1,628	1,908	1,340
August 27-28, 2002	43,217	1,070	1,626	1,770	1,339
<b>McCully Street at Ala Wai Canal Bridge</b>					
August 26-27, 2002	31,922	836	838	768	1,338
August 27-28, 2002	32,075	851	850	771	1,321
Source: State of Hawaii, Department of Transportation, <i>Traffic Survey Data – Island of Oahu 2002</i> , <i>Traffic Survey Data – Island of Oahu 2003</i> .					

A recent traffic study done for the Hilton Hawaiian Village Waikikian project included analyses of peak hour turning movements at the nearest signalized intersection, Ala



Moana Boulevard and Hobron Lane. The study included a future scenario in which project traffic is added to the traffic counted during the peak visitor season in the summer of 2004. The results of the analyses of this baseline condition are compared used to show the impacts of traffic generated by this project later in this report (Table 4).

**Project Traffic Impacts** – The project’s potential traffic impact has been estimated using trip factors from the widely-used *Trip Generation* manual published by the Institute of Transportation Engineers. The manual has compiled data from various locations across the United States for a number of land uses, and typically for suburban areas with limited transit service. The average rates for various time periods are reported, along with directional splits for peak hours. Table 2 shows the rates for and the traffic estimates.

**Table 2 – Traffic Generation**

	Trip factors per DU*		Traffic volumes, 116 DUs	
	rate	% enter	Entering site	Leaving site
Average weekday	6.72	50%	390	390
AM Peak Hour	0.51	20%	12	47
PM Peak Hour	0.62	65%	47	25

DU = dwelling unit  
 \* Source: Institute of Transportation Engineers, *Trip Generation, 7<sup>th</sup> Edition*

The project traffic is well below the 100 vehicles per hour in the peak direction that has been suggested by the Institute of Transportation Engineers as the threshold for conducting a traffic impact or site access study\*. Because of the low volume of traffic generated by the proposed project, the traffic impact would be small. An analysis, however, follows to further illustrate the effect of this traffic impact.

Vehicles generated by the project would enter or leave the area using Ala Wai Boulevard, Lepeepee Street, Ena Road, and Hobron Lane. Traffic from outside of Waikiki would come over the Ala Wai Canal on Ala Moana Boulevard, Kalakaua Avenue, or McCully Street; other vehicles would arrive via Ala Wai Boulevard and Niu Street or Kalia Road. Similarly, vehicles leaving the project area would be able to use Ala Moana Boulevard, Kalakaua Avenue, or McCully Street (via Ala Moana Boulevard or Kalakaua Avenue, Pau Street, and Ala Wai Boulevard) to leave Waikiki or to use Kalakaua Avenue or Kalia Road to travel to destinations within Waikiki.

The project traffic was distributed assuming 10% will remain in Waikiki and the remainder will arrive or leave in proportion to the existing volumes over the Ala Wai Canal, with the most proximate (Ala Moana Boulevard) crossing given a double weighting, as shown in Table 3. Due to the street layout, traffic distributed to exit on McCully Street was reassigned to exit on Kalakaua Avenue.

\* Institute of Transportation Engineers, *Traffic Access and Impact Studies for Site Development – A Recommended Practice*, Washington, D.C. 1991. (p. 5)

**Table 3 – Distribution of Project Traffic**

	Average Weekday	AM Peak Hour		PM Peak Hour	
		enter	exit	enter	exit
Ala Moana Boulevard	370	6	24	24	13
Kalakaua Avenue (mauka)	260	3	18	13	10
McCully Street	70	2	0	5	0
Within Waikiki	80	1	5	5	2
<b>Total Project Traffic</b>	<b>780</b>	<b>12</b>	<b>47</b>	<b>47</b>	<b>25</b>

Based on this traffic distribution, the project traffic would increase volumes across the Ala Wai Canal by less than one percent. The impact at the nearest signalized intersection at Ala Moana Boulevard and Hobron Lane would be increases in the number of vehicles turning in and out of Hobron Lane. For example, six additional vehicles would turn left from eastbound Ala Moana Boulevard to Hobron Lane in the AM Peak Hour, and 24 additional vehicles would turn right from Hobron Lane to westbound Ala Moana Boulevard. As summarized in Table 4, the analyses indicate that the additional traffic at the intersection would have a minor effect on operations (there would be a slight decrease in average delay for southbound traffic on Hobron Lane in the PM Peak Hour, due to the increase in right turns, which have less delay than through or left turn movements).

**Table 4 – Conditions at Ala Moana Boulevard and Hobron Lane**

	AM Peak Hour		PM Peak Hour	
	Baseline *	With project	Baseline *	With project
Overall intersection v/c	0.68	0.70	0.89	0.91
Average delay (seconds)	53.8	54.5	58.4	59.5
Overall intersection LOS	D	D	E	E
Hobron Lane southbound delay	49.8	51.8	73.2	72.5
southbound approach LOS	D	D	E	E
Ala Moana Blvd. eastbound Left turn volume/capacity ratio	0.89	0.92	0.97	0.98
Left turn delay	100.4	107.1	99.9	101.1
Left turn Level of Service	F	F	F	F

\* Alcon & Associates, Inc. and Julian Ng, Inc., *Hilton Hawaiian Village Waikikian Project, Traffic Impact Analysis Update and Traffic Management Plan*, July 2005.

Project traffic impacts, therefore, will be minimal. The additional volume of eastbound left turns would affect the storage length required in the left turn pocket for eastbound left turns from Ala Moana Boulevard to Hobron Lane. The additional volume of 24 vehicles in the PM Peak Hour is approximately one vehicle per cycle, indicating that an increase in the storage requirement of one vehicle could be attributed to the project.

**Cumulative Traffic Impacts:** A comparison of the project traffic with existing volumes on Hobron Lane identifies the cumulative impact. Most of the project traffic is expected to use Hobron Lane to the south (toward Ala Moana Boulevard). Table 5 shows the peak hour volumes from recent counts and the estimates of project traffic from the Ala Wai Gateway project (across Hobron Lane from the north intersection with Kaiwo Drive) and the Kaiwo Apartments project.

**Table 5 – Comparison of Traffic Impacts with Existing Traffic**

Vehicles per hour, Hobron Lane north of Ala Moana Boulevard	AM Peak Hour		PM Peak Hour	
	southbound	northbound	southbound	northbound
<b>Traffic Count Data</b>				
Thursday, June 22, 2000 <sup>1</sup>	477	208 *	445	303 *
Saturday, July 10, 2004 <sup>2</sup>	n.a.	n.a.	325	215
Tuesday, July 13, 2004 <sup>2</sup>	433	199	n.a.	n.a.
Wednesday, July 14, 2004 <sup>2</sup>	n.a.	n.a.	526	328
Thursday, July 15, 2004 <sup>3</sup>	526	208 *	525	350 *
Thursday, July 15, 2004 <sup>2</sup>	508	203	n.a.	n.a.
Friday, July 16, 2004 <sup>2</sup>	n.a.	n.a.	467	319
<b>Projections of Project Traffic</b>				
Waikiki Gateway <sup>4</sup>	60	9	26	31
Kaiwo Apartments	24	9	13	34
Sources: <sup>1</sup> Belt Collins Hawaii, Ltd., <i>Waikikian Development Plan Final Environmental Statement</i> , Figures 4-1 and 4-2.				
<sup>2</sup> Alcon & Associates, Inc. unpublished data from traffic study for Hilton Hawaiian Village Waikikian project				
<sup>3</sup> Wilson Okamoto Corporation, <i>Traffic Impact Report, Ala Wai Gateway</i> , August 2004. Figures 3 and 4.				
<sup>4</sup> Wilson Okamoto Corporation, <i>Traffic Impact Report, Ala Wai Gateway</i> , August 2004. Figures 5 and 6.				
* volumes derived from turning movement counts and may be high due to U-turns on Ala Moana Boulevard that were not shown separately				

The Ala Wai Gateway project would increase peak hour traffic demand by 5-10% of existing traffic volume. The Kaiwo Apartments project would increase peak hour traffic demand by 2½-10% of existing traffic volume. While increases in peak hour traffic volumes have not been made as part of this assessment, other studies have used annual increases of approximately 2½% to forecast future traffic volumes. In this context, the two projects together would increase traffic in the area by an amount equivalent to between three and eight years of increase expected from other growth.

The increase in peak hour traffic demand will not be accommodated by the existing roadway system. As has occurred in other parts of Waikiki, peak conditions would spread over longer periods as drivers adjust their schedules to increases in traffic volumes. Further mitigation of the traffic impacts is the availability of alternative travel

modes, including public bus and walking to nearby destinations; the project traffic (for both the Ala Wai Gateway and the Kaiio Apartments) were based on trip rates from similar developments in areas with less opportunities for these alternatives.

**Bus Service and Pedestrian Access:** The project site is located near existing bus stops on both sides of Ala Moana Boulevard east of Hobron Lane; buses between a transit hub at Ala Moana Center and Waikiki use these bus stops. A marked crosswalk controlled by the traffic signal at the intersection is located at the intersection. Concrete sidewalks exist between the project site and the bus stops. Bus stops serving other routes are located on Kalakaua Avenue and sidewalks exist on Hobron Lane, Lipeepee Street, and Ena Road between the project site and these bus stops.

The impact of additional pedestrian traffic in the area will be minimal. The vehicular traffic estimates discussed above can be used as an indicator of pedestrian traffic (and bus use) generation. While the traffic estimates were based on trip factors from areas with minimal transit, the factors provide an indication of travel patterns. If the pedestrian and bus use generation were half of the vehicular generation, the project could generate as much as 40 pedestrians in the PM Peak Hour, or an average of one pedestrian every 90 seconds. Pedestrians to and from the project would use Kaiio Drive, and have a choice of either the makai connection to Hobron Lane or the mauka connection. This pedestrian impact compares to a total of 940 pedestrian crossings counted in one hour during the summer of 2004 at the intersection of Ala Moana Boulevard and Hobron Lane.

**Conclusions:** The proposed project is estimated to have a peak hour traffic impact of less than 50 vehicles per hour, which would be a minimal impact in an area with high traffic volumes. The project's location in an urban center, with various services and bus service available, will help to minimize traffic impacts. Pedestrian access to the site will be on existing sidewalks within public property, and the expected volumes would average less than one pedestrian per minute in the peak hour.

The project, along with other projects in the area, would increase the number of left turns from eastbound Ala Moana Boulevard to Hobron Lane. Additional storage in the existing turn lane should be provided to mitigate blockage of through traffic on Ala Moana Boulevard during peak hours (the equivalent of one car length, or about 25 feet, could be attributed to the project).

**APPENDIX V**  
**SEWER CONNECTION APPROVAL**

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

650 SOUTH KING STREET \* HONOLULU, HAWAII 96813  
 Phone: (808) 527-5827 \* Fax: (808) 547-7316

## SEWER CONNECTION APPLICATION

APPLICATION NO.: 2005/SCA-0602

STATUS: Approved with conditions

\$0.00

DATE RECEIVED: 08/24/2005

IWDP APP. NO.:

Wastewater System  
Facility Charge

PROJECT NAME: Hobron 2 / Dwelling Unit

LOCATION:

Zone	Section	Plat	Parcel
2	6	012	037

1860 KAIOO DR 7,799 Sq. Ft.

SPECIFIC LOCATION: Kaioo Dr

APPLICANT: SSFM International, Inc., Cey Murakami  
 501 Sumner Street Suite 620  
 Honolulu, Hawaii 96817

DEVELOPMENT TYPE: Dwelling, Multi-family

SEWER CONNECTION WORK DESIRED: Existing

OTHER USES:

NON-RESIDENTIAL AREA:

s.f.

APPROXIMATE DATE OF CONNECTION: 11/29/2006

PROPOSED UNITS

No. of New Units: 116

Studios:

1-Bedroom: 116

2-Bedroom:

3-Bedroom:

4-Bedroom:

5-Bedroom:

6-Bedroom:

EXISTING UNITS

No. of Existing Units: 82

Studios:

1-Bedroom:

2-Bedroom:

3-Bedroom:

4-Bedroom:

5-Bedroom:

6-Bedroom:

UNITS TO BE DEMOLISHED

No. of Units to be Demolished: 82

Studios:

1-Bedroom:

2-Bedroom:

3-Bedroom:

4-Bedroom:

5-Bedroom:

6-Bedroom:

REMARKS Approval is based on additional information submitted by Glenn M. Murata of Richard Matsunaga & Associates Architects, Inc. to DPP Wastewater Branch (letter with attachment dated August 18, 2005).

APPROVAL DATE: 08/30/2005

Valid 2-years after approval date. Construction plans shall be completed and approved within this 2-year period. Construction shall commence within 1-year after approval of plans.

EXPIRATION DATE: 08/30/2007

REVIEWED BY: Arturo Saavedra Jr.

*A. Saavedra Jr.*

Site Development Division, Wastewater Branch

ExternalID: 022670593-001

JobId: 22670593

Initial Print Date: Tuesday August 30, 2005 1:27 pm

Page 1 of 1

**APPENDIX VI**  
**ARCHAEOLOGICAL LITERATURE REVIEW**  
**AND FIELD INSPECTION**

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**Archaeological Literature Review and Field Inspection  
of the Proposed Kaiwo Drive Multi-Family Development in  
Waikīkī, Kona District, Island of O‘ahu  
TMK: (1) 2-6-012: 37, 38, 39, 40, 41, 42, 43, 44, 55, 56, 57  
&58**

**Prepared for  
Kusao & Kurahashi, Inc.**

**Prepared by  
Hallett H. Hammatt, Ph.D.**

**Cultural Surveys Hawai‘i, Inc.  
Kailua, Hawai‘i  
(Job Code: WAIK 81)**

**October 2005**

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## Management Summary

Reference	Archaeological Literature Review and Field Inspection of the Proposed Kaioo Drive Multi-Family Development (Hammatt 2005)
Date	October 2005
Project Number (s)	Cultural Surveys Hawai'i, Inc. (CSH) Job Code:WAIK 81
Investigation Permit Number	The fieldwork for this investigation was carried out under archaeological permit number 0508 issued by the Hawai'i State Historic Preservation Division/Department of Land and Natural Resources (SHPD/DLNR).
Project Location	Kaioo Drive, Waikīkī, Kona District, O'ahu. TMK: (1) 2-6-012: 37, 38, 39, 40, 41, 42, 43, 44, 55, 56, 57, & 58
Land Jurisdiction	Private
Project Description	The project proposes to develop a 6-story multi-family residential complex.
Project Acreage	72,135 square feet
Historic Preservation Regulatory Context	The project is subject to Hawai'i State environmental and historic preservation review legislation [Hawai'i Revised Statutes (HRS) Chapter 343 and HRS 6E-8/Hawai'i Administrative Rules (HAR) Chapter 13-13-275, respectively.
Fieldwork Effort	Field inspection of the project area was accomplished on October 9, 2005.
Summary of Findings	Before the construction of the Ala Wai Canal and the filling in of Waikīkī's marshes and fishponds, the present project area comprised dryland and portions of ponds. It is possible that intact pond sediments and intact prehistoric and early contact cultural deposits associated with Hawaiian habitation, work and recreation are lying undisturbed beneath modern fill layers within the project area. Other cultural deposits, including historic trash pits, associated with late nineteenth century and early twentieth century residential sites may also be present. Additionally, human burials may also be present within the project area.
Recommendations	Based on this report's findings and the cultural sensitivity of the entire Waikīkī area, Cultural Surveys Hawai'i recommends an archaeological inventory survey with a substantial subsurface testing component for the project area.

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## Section 1 Introduction

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### 1.1 Project Background

At the request of Kusao & Kurahashi, Inc., Cultural Surveys Hawai'i, Inc. has completed this archaeological literature review and field inspection report for the proposed Kaiwo Drive multi-family development on Kaiwo Drive in Waikiki, Kona District, O'ahu Island (TMK (1) 2-6-012: 37, 38, 39, 40, 41, 42, 43, 44, 55, 56, 57 & 58) (Figures 1 & 2).

The proposed project is a 6-story condominium complex.

Based on historical, cultural, and archaeological background research, and a field inspection of the project area, this report presents documentation of past land use within the project area and in the surrounding portion of Waikiki Ahupua'a. The report is intended to facilitate the project's planning and support the project's historic preservation compliance.

### 1.2 Scope of Work

The scope of work for this investigation includes:

1. Historical and previous archaeological background research to include study of archival sources, historic maps, Land Commission Awards and previous archaeological reports to construct a history of land use and to determine if archaeological sites have been recorded on or near this property.
2. Field inspection of the project area to identify any surface archaeological features and to investigate and assess the potential for impact to such sites. This assessment will identify any sensitive areas that may require further investigation or mitigation before the project proceeds.
3. Preparation of a report to include the results of the historical research and the fieldwork with an assessment of archaeological potential based on that research, with recommendations for further archaeological work, if appropriate. It will also provide mitigation recommendations if there are archaeologically sensitive areas that need to be taken into consideration.

### 1.3 Environmental Setting

The project area is flat and averages 2 to 3 meters above mean sea level. The average rain fall in this coastal area of Waikiki is between 20-30 inches per year, with temperatures ranging from 60 to 85 degrees Fahrenheit (Armstrong 1973:56). Although the area has been graded and filled (Fill Land), the natural soil deposit is Jaucus sand (JaC) (Foote et al. 1973).

DOCUMENT CAPTURED AS RECEIVED

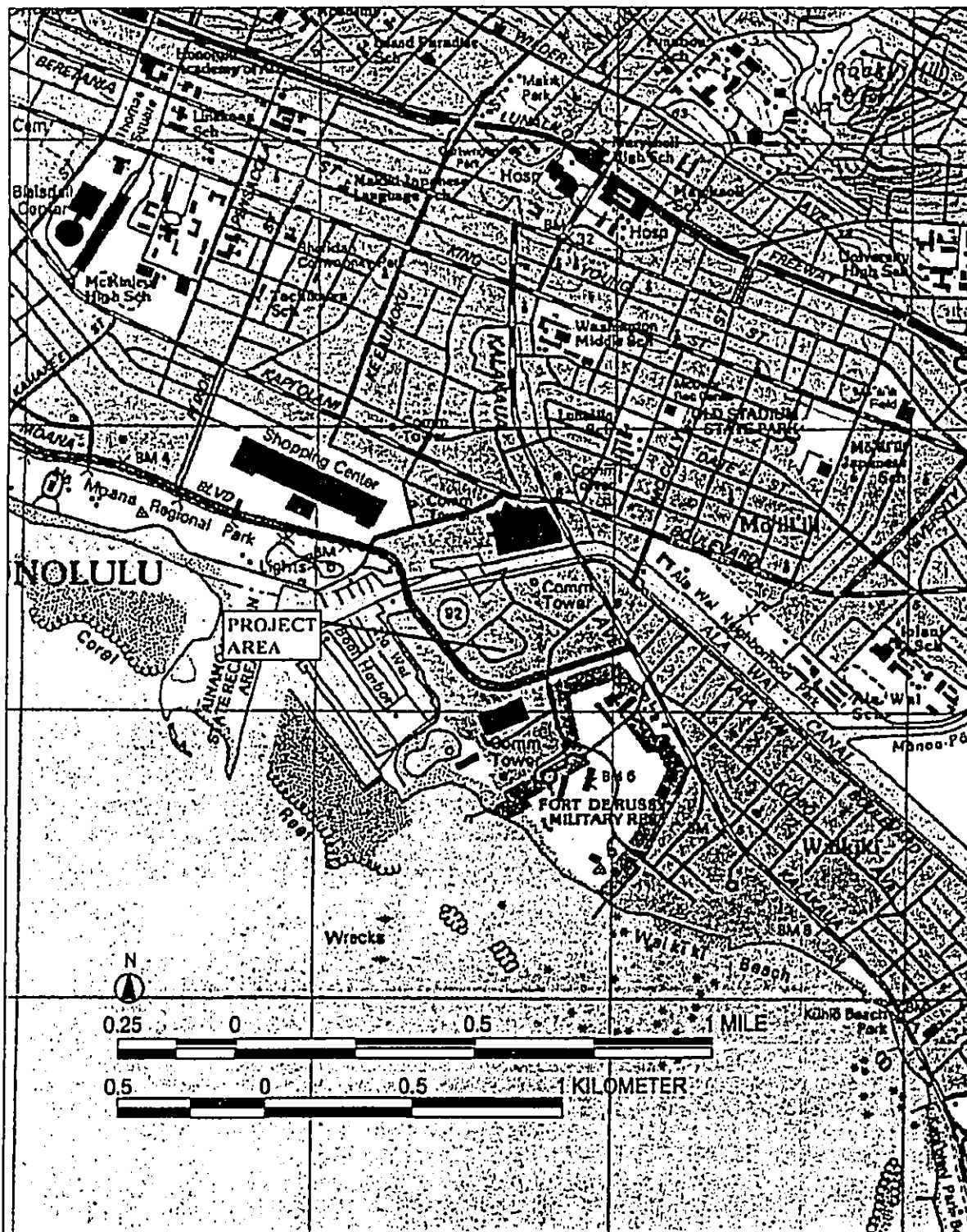


Figure 1. USGS 7.5 Minute Series topographic map, Honolulu Quadrangle, showing project area location

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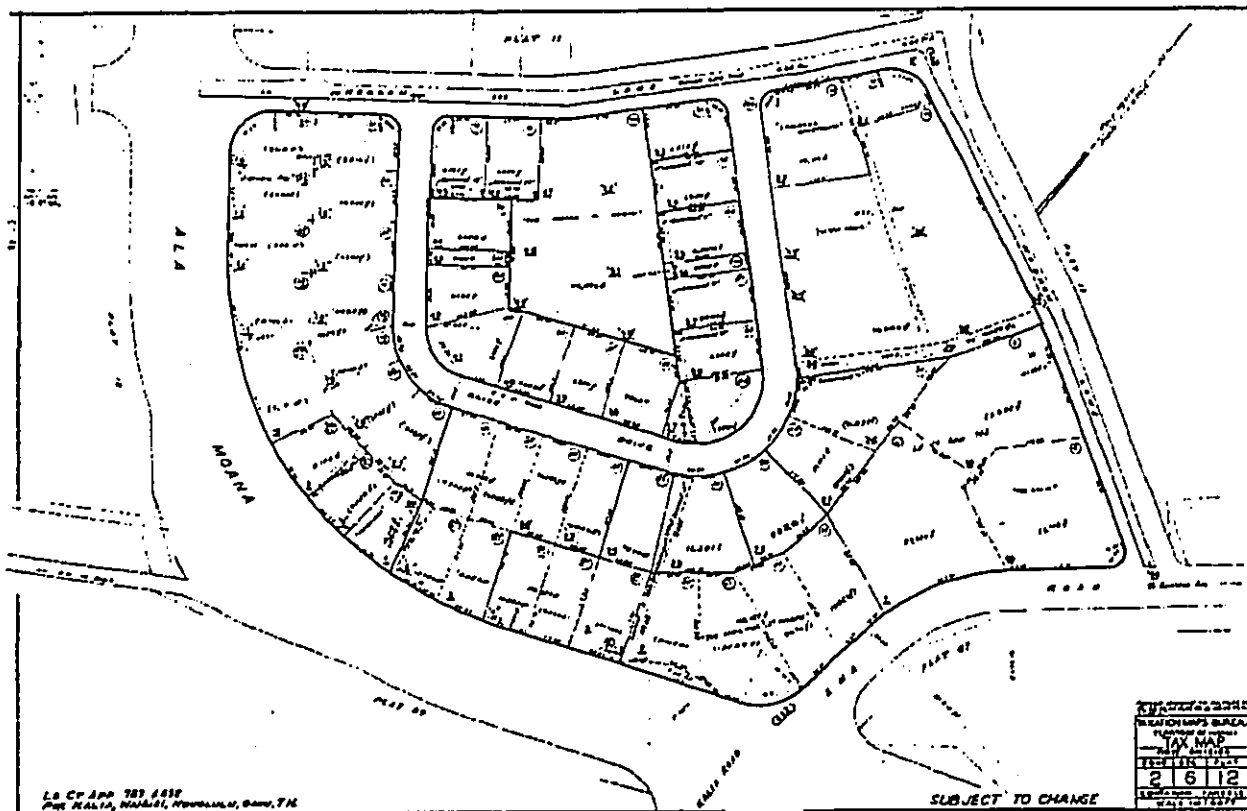


Figure 2. Tax map (2-6-12) showing project area (in red outline)

## Section 2 Traditional and Historical Background

### 2.1 Pre-Contact to Early 1800s

Waikīkī, by the time of the arrival of Europeans in the Hawaiian Islands during the late eighteenth century, had long been a center of population and political power on O'ahu. According to Martha Beckwith (1940), by the end of the fourteenth century Waikīkī had become "the ruling seat of the chiefs of Oahu." The preeminence of Waikīkī continued into the eighteenth century and is betokened by Kamehameha's decision to reside there upon wresting control of O'ahu by defeating the island's chief, Kalanikūpule. The 19th-century Hawaiian historian John Papa 'Ī'ī, himself a member of the *ali'i* (chiefly class), described the king's Waikīkī residence:

Kamehameha's houses were at Puaaliili, *makai* of the old road, and extended as far as the west side of the sands of Apuakehau. Within it was Helumoa where Ka'ahumanu *mā* went to while away the time. The king built a stone house there, enclosed by a fence . . . ('Ī'ī 1959:17).

'Ī'ī further noted that the "place had long been a residence of chiefs. It is said that it had been Kekuapoi's home, through her husband Kahahana, since the time of Kahekili" ('Ī'ī 1959:17).

Chiefly residences, however, were only one element of a complex of features – sustaining a large population – that characterized Waikīkī up to pre-contact times. Beginning in the fifteenth century, a vast system of irrigated taro fields was constructed, extending across the littoral plain from Waikīkī to lower Mānoa and Pālolo valleys. This field system – an impressive feat of engineering the design of which is traditionally attributed to the chief Kalamakua – took advantage of streams descending from Makiki, Mānoa and Pālolo valleys which also provided ample fresh water for the Hawaiians living in the *ahupua'a*. Water was also available from springs in nearby Mō'ili'ili and Punahou. Closer to the Waikīkī shoreline, coconut groves and fishponds dotted the landscape. A sizeable population developed amidst this Hawaiian-engineered abundance. Captain George Vancouver, arriving at "Whyteete" in 1792, captured something of this profusion in his journals:

On shores, the villages appeared numerous, large, and in good repair; and the surrounding country pleasingly interspersed with deep, though not extensive valleys; which, with the plains near the sea-side, presented a high degree of cultivation and fertility.

[Our] guides led us to the northward through the village, to an exceedingly well-made causeway, about twelve feet broad, with a ditch on each side.

This opened our view to a spacious plain, which, in the immediate vicinity of the village, had the appearance of the open common fields in England; but, on advancing, the major part appeared to be divided into fields of irregular shape and figure, which were separated from each other by low stone walls, and were in a very high state of cultivation. These several portions of land were planted with the



eddo or taro root, in different stages of inundation; none being perfectly dry, and some from three to six or seven inches under water. The causeway led us near a mile from the beach, at the end of which was the water we were in quest of. It was a rivulet five or six feet wide, and about two or three feet deep, well banked up, and nearly motionless; some small rills only, finding a passage through the dams that checked the sluggish stream, by which a constant supply was afforded to the taro plantations.

[We] found the plain in a high state of cultivation, mostly under immediate crops of taro; and abounding with a variety of wild fowl, chiefly of the duck kind . . . The sides of the hills, which were at some distance, seemed rocky and barren; the intermediate vallies, which were all inhabited, produced some large trees, and made a pleasing appearance. The plain, however, if we may judge from the labour bestowed on their cultivation, seemed to afford the principal proportion of the different vegetable productions on which the inhabitants depend for their subsistence. (Vancouver 1798: I, 161-164)

Further details of the exuberant life that must have characterized the Hawaiians use of the lands that included the *ahupua'a* of Waikīkī are given by Archibald Menzies, a naturalist accompanying Vancouver's expedition:

The verge of the shore was planted with a large grove of cocoanut palms, affording a delightful shade to the scattered habitations of the natives: Some of those near the beach were raised a few feet from the ground upon a kind of stage, so as to admit the surf to wash underneath them. We pursued a pleasing path back to the plantation, which was nearly level and very extensive, and laid out with great neatness into little fields planted with taro, yams, sweet potatoes and the cloth plant. These, in many cases, were divided by little banks on which grew the sugar cane and a species of *Draecena* without the aid of much cultivation, and the whole was watered in a most ingenious manner by dividing the general stream into little aqueducts leading in various directions so as to be able to supply the most distant fields at pleasure, and the soil seemed to repay the labour and industry of these people by the luxuriancy of its productions. Here and there we met with ponds of considerable size, and besides being well stocked with fish, they swarmed with water fowl of various kinds such as ducks, coots, water hens, bitterns, plovers and curlews. (Menzies 1920:23-24)

However, the traditional Hawaiian focus on Waikīkī as a center of chiefly and agricultural activities on southeastern O'ahu was soon to change – disrupted by the same Euro-American contact, which produced the first documentation (including the records cited above) of that traditional life. The *ahupua'a* of Honolulu - with the only sheltered harbor on O'ahu - became the center for trade with visiting foreign vessels, drawing increasing numbers of Hawaiians away from their traditional environments. Kamehameha himself moved his residence from Waikīkī to the coast near Honolulu harbor, likely in order to maintain his control of the lucrative trade in sandalwood that had developed. By 1828, the missionary Levi Chamberlain, describing a journey into Waikīkī, would note:

Our path led us along the borders of extensive plats of marshy ground, having raised banks on one or more sides, and which were once filled with water, and replenished abundantly with esculent fish; but now overgrown with tall rushes waving in the wind. The land all around for several miles has the appearance of having once been under cultivation. I entered into conversation with the natives respecting this present neglected state. They ascribed it to the decrease of population. (Chamberlain 1957:26)

Tragically, the depopulation of Waikīkī was not simply a result of the attractions of Honolulu (where, by the 1820's, the population was estimated at 6,000 to 7,000) but also of the European diseases that had devastating effects upon the Hawaiian populace.

## 2.2 Mid- to late-1800s

As the 19th century progressed, Waikīkī was becoming a popular site among foreigners – mostly American – who had settled on O'ahu. An 1865 article in the Pacific Commercial Advertiser mentioned a small community that had developed along the beach. The area continued to be popular with the *ali'i* – the Hawaiian royalty – and several notables had residences there. A visitor to O'ahu in 1873 described Waikīkī as “a hamlet of plain cottages, whither the people of Honolulu go to revel in bathing clothes, mosquitoes, and solitude, at odd times of the year” (Bliss 1873).

Other developments during the second half of the 19th century a prelude of changes that would dramatically alter the landscape of Waikīkī during the 20th century – include the improvement of the road connecting Waikīkī to Honolulu (the route of the present Kalākaua Ave.), the building of a tram line between the two areas, and the opening of Kapi'olani Park on June 11, 1877. Traditional land-uses in Waikīkī were abandoned or modified. By the end of the 19th century most of the fishponds that had previously proliferated had been neglected and allowed to deteriorate. The remaining taro fields were planted in rice to supply the growing numbers of immigrant laborers imported from China and Japan, and for shipment to the west coast of the United States.

As the sugar industry throughout the Hawaiian kingdom expanded in the second half of the 19th century, the need for increased numbers of field laborers prompted passage of contract labor laws. In 1852, the first Chinese contract laborers arrived in the islands. Contracts were for five years, and pay was \$3 a month plus room and board. Upon completion of their contracts, a number of the immigrants remained in the islands, many becoming merchants or rice farmers. As was happening in other locales, in the 1880's, groups of Chinese began leasing and buying (from the Hawaiians of Waikīkī) former taro lands for conversion to rice farming. The taro lands' availability throughout the islands in the late 1800's reflected the declining demand for taro as the native Hawaiian population diminished.

The Hawaiian Islands were well positioned for rice cultivation. A market for rice in California had developed as increasing numbers of Chinese laborers immigrated there since the mid-19th century. Similarly, as Chinese immigration to the islands also accelerated, a domestic market opened.

The primary market for both husked rice and paddy raised in all parts of the Hawaiian Islands was in Honolulu. The number of Chinese in the islands created a large home demand:

In 1880 the home market was made more secure by an increase in the duty on rice imported into Hawai'i to 1½ cents on paddy and 2½ cents on hulled rice. It resulted in further checking the importation of foreign rice and giving an immense impetus to the home product [Coulter and Chun, 1937: 13]

By 1892, Waikīkī had 542 acres planted in rice, representing almost 12% of the total 4,659 acres planted in rice on O'ahu. Most of the former taro *lo'i* converted to rice fields were located *mauka* of the present Ala Wai Boulevard.

### 2.3 1900s

During the first decade of the 20th century, the U.S. War Department acquired more than 70 acres in the Kālia portion of Waikīkī for the establishment of a military reservation called Fort DeRussy, named in honor of Brig. Gen. R.E. DeRussy of the Army Corps of Engineers.

On 12 November 1908, a detachment of the 1st Battalion of Engineers from Fort Mason, California, occupied the new post..

Between 1909 and 1911 the engineers were primarily occupied with mapping the island of O'ahu. At DeRussy other activities also had to be attended to - especially the filling of a portion of the fishponds which covered most of the Fort. This task fell to the Quartermaster Corps, and they accomplished it through the use of a hydraulic dredger which pumped fill from the ocean continuously for nearly a year in order to build up an area on which permanent structures could be built. Thus the Army began the transformation of Waikīkī from wetlands to solid ground, [Hibbard and Franzen 1986:79].

All the fishponds were filled by 1928.

During the 1920's, the Waikīkī landscape would be transformed when the construction of the Ala Wai Drainage Canal, begun in 1921 and completed in 1928, resulted in the draining and filling in of the remaining ponds and irrigated fields of Waikīkī. The canal was one element of a plan to urbanize Waikīkī and the surrounding districts:

The [Honolulu city] planning commission began by submitting street layout plans for a Waikīkī reclamation district. In January 1922 a Waikīkī improvement commission resubmitted these plans to the board of supervisors, which, in turn, approved them a year later. From this grew a wider plan that eventually reached the Kapahulu, Mō'ili'ili, and McCully districts, as well as lower Makiki and Mānoa..

The standard plan for new neighborhoods, with allowances for local terrain, was to be that of a grid, with 80-foot-wide streets crossing 70-foot-wide avenues at right angles so as to leave blocks of house lots about 260 by 620 feet. Allowing

for a 10-foot-wide sidewalk and a 10-foot right-of-way [alley] down the center of each block, there would be twenty house lots, each about 60 by 120 feet, in each block [Johnson 1991:311]

During the course of the Ala Wai Canal's construction, the banana patches and ponds between the canal and the *mauka* side of Kalākaua Avenue were filled and the present grid of streets was laid out. These newly created land tracts spurred a rush to development in the 1930's. An article in the Honolulu Star-Bulletin in 1938 extolled the area's progress:

The expansion of apartment and private residence construction is no secret. Examination of building permits will show that more projects have been completed during the past year, and more are now underway in this area, than in any other section of the territory.

These developments are being made by island residents who have recognized the fact that Waikīkī presents the unparalleled possibility for safe investment with excellent return. (Newton 1938: 10)

The writer speculated that the "future of Waikīkī is assured."

The entrance of the United States into World War II following the Japanese bombing of Pearl Harbor on December 7, 1941 put on hold plans for the development of Waikīkī as a tourist destination. Until the war's end in 1945, the tourist trade was non-existent "...since the Navy controlled travel to and from Hawai'i and did not allow pleasure trips" (Brown 1989: 141). For the duration of the war, Waikīkī was transformed into a recreation area for military personnel.

It was not the same Waikīkī as before the war, though; barbed wire barricades now lined its sands, and there were other changes too. Fort DeRussy became a huge recreation center, with a dance hall called Maluhia that attracted thousands of men at a time. The Moana Hotel continued to function, but many other establishments and private homes in the area were taken over by the military. [Brown 1989:141]

Nearing the war's end, concerns began arising over the future of Waikīkī. An article in the Honolulu Advertiser of July 16, 1945 decried "honky-tonks" that had sprung up in Waikīkī during the course of the war, and asked: "Can anyone look at present-day Kalākaua Ave. – lined with makeshift curio shops, noisy 'recreation' centers, eyesores that pass under the name of lunchrooms and miscellany of 'joints' – and hope that Waikīkī can stage a comeback [as a tourist destination]?"

By the mid-1950's there were more than fifty hotels and apartments from the Kālia area to the Diamond Head end of Kapi'olani Park. The Waikīkī population, by the mid-1950's, was not limited to transient tourists but included 11,000 permanent residents living in 4,000 single dwellings and apartments in stucco or frame buildings.

## 2.4 Historic Documentation of the Project Area

Beginning at the mid-nineteenth century, the historical record of Waikīkī, including the present project area and adjacent lands, is increasingly detailed in photographs, maps, newspaper

articles, and government records. These documents also give insight into pre-contact Waikīkī. During subsequent decades of the twentieth century, abundant documentation of Waikīkī allows a more precise focus on the changes within the project area itself up to the 1950s.

#### 2.4.1 1881 survey map by S.E. Bishop

An 1881 Hawaiian Government survey map by S.E. Bishop – with locations of Land Commission Award (LCA) parcels indicated – provides a detailed record of the physical landscape of Waikīkī before the transformations of the twentieth century. The map reveals an extensive complex of irrigated fields, streams and irrigation watercourses, and ponds stretching inland from the Waikīkī shoreline to the plains of Mō'ili'ili. Land Commission Award records for the awards shown on the map document houselots near the shore with associated taro *lo'i* [irrigated plots] located inland and house lots adjacent to inland taro *lo'i*.

The location of the present project area has been indicated on a portion of the Bishop map (Figure 3). A fishpond is shown running through the *makai* portion of the project area. Two LCA parcels are shown to the west of the project area: LCA 99 F.L. to Uma and LCA 2549 to Luaiku. LCA documents associated with these two awards give details of traditional Hawaiian land usage in the vicinity of the project area.

The LCA 99F.L. parcel is described as a house lot bound by a pond on the mauka (east) side and on the north side by a sea ditch. Uma testified to having received the land from his parents during the time of Kamehameha I.

Adjacent to the southwest corner of Uma's land is parcel (*apana*) 3 of LCA 2549, awarded to Luaiku who described it as his "kahuahale [house lot] situated in Kamooloa ili of Kalia Waikiki". The house lot is described as bounded:

Mauka by the loko belonging to Mahuka  
 Kekaha by the land of Nakai  
 Makai by the land Kalia, of Kekuanaoa  
 Honolulu by the land of Uma.

During the *Māhele*, the 'ili of Kālia in Waikīkī was one of 52 'ili in the Kona district of O'ahu set aside as "fort lands", which were reserved "for the use of the Fort in Honolulu to be cultivated by soldiers and other tenants under the direction of the Governor of Oahu" (Chinen 1958:27). After the *Māhele*, portions of the Government Lands were often sold as a means of obtaining revenue to meet the increasing costs of the Government. Purchasers of these lands were issued documents called "Grants" or "Royal Patent Grants." On the Bishop map, the area surrounding LCAs 99 and 2549:3 and the present project area was owned by W. L. Moehonua through Royal Patent Grant No. 2785. W. L. Moehonua was an uncle of David Kalākaua, and husband of Kaunohua, a *kahu* (guardian) of Alexander Liholiho, Kamehameha III (Kame'eleihiwa 1992:264).

The map and Mahele documents suggest that the present project area, in traditional Hawaiian times and continuing into the 19<sup>th</sup> century, comprised a portion of the system of fishponds and adjacent house sites that characterized the Kālia section of Waikīkī.

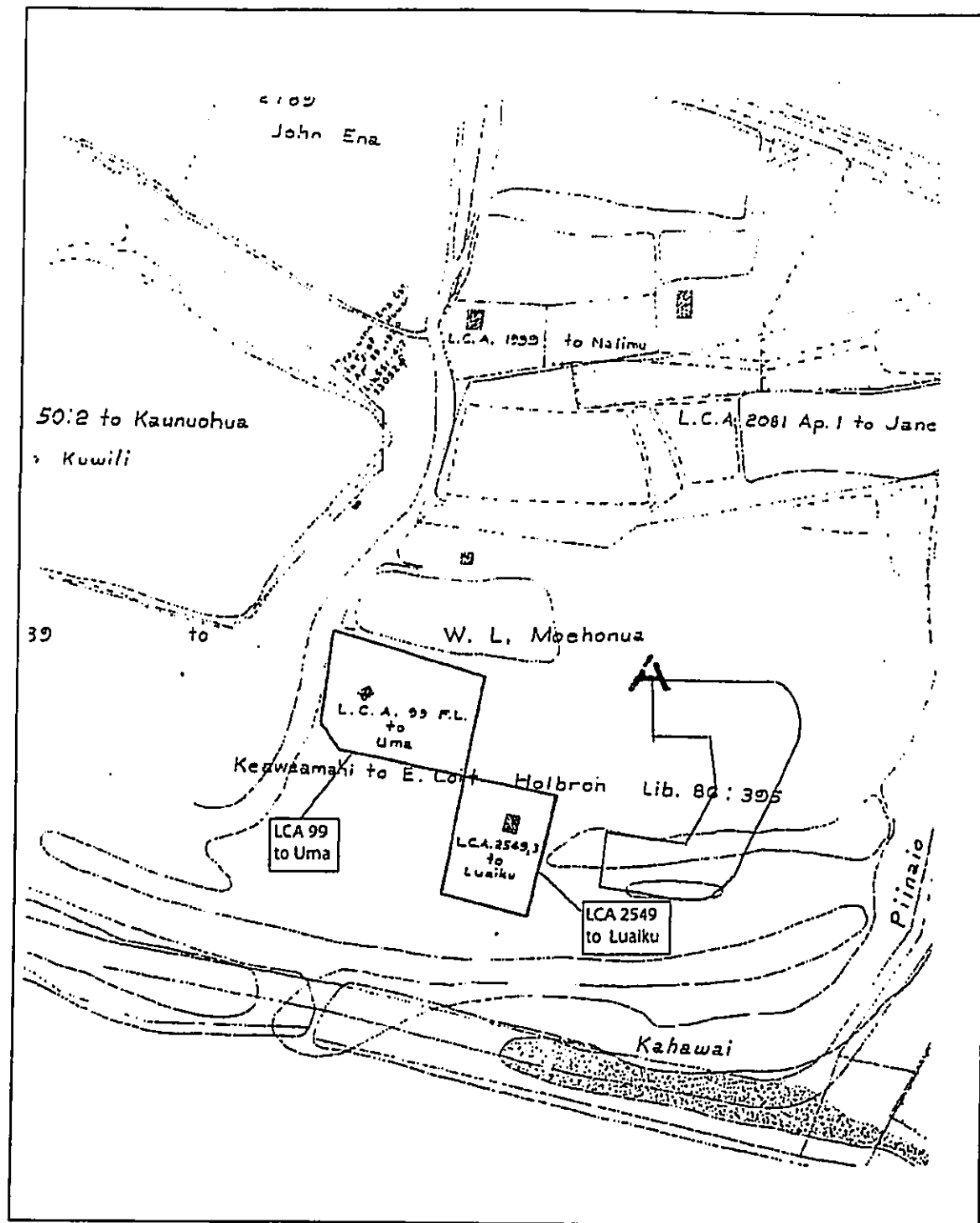


Figure 3. Portion of 1881 Hawaiian Government survey map by S.E. Bishop showing locations of LCA parcels (in green outline) and current project area (in red outline)

### 2.4.2 The Project Area in the Twentieth Century

Historic maps and photographs document land use within the project area streets from the first decades of the twentieth century to the 1950s when the present layout of Waikīkī streets was completed.

A fire insurance map of 1914 shows that there were five areas in Waikīkī where residential and commercial structures were concentrated in the early 20th century (Figure 4). These areas were located: 1) clustered at Saratoga Road and Lewers Road; 2) near the intersection of Ena Road and Kalākaua Avenue; 3) makai of Kālia Road on the east side of Ft. DeRussy; 4) clustered around the Moana Hotel (which had opened in 1901) on Kalākaua Avenue; and 5) in Kapahulu on the 'Ewa side of Makee Road (the present Kapahulu Avenue). The fire insurance map also reveals the relative isolation of Waikīkī, in the early 20th century, from the encroaching grid of modern Honolulu streets.

A subsequent fire insurance map of 1927 – upon which the present project area outline has been indicated – shows the Kālia, Waikīkī landscape within and surrounding the project area before the completion of the Ala Wai Canal. (Figure 5). The map indicates that the *mauka* and *makai* “arms” of the project area were ponds up to the first decades of the 20<sup>th</sup> century. The central portion of the project area was then a dryland environment elevated above the surrounding ponds. As indicated on the soil survey of O'ahu (Foote *et al.* 1972) this dryland environment would have consisted primarily of jaucus sand. The fire insurance map also indicates that single-story dwelling structures were located immediately outside the project area.

A 1927 aerial photograph – upon which the present project area outline has been indicated – confirms the project area landscape recorded on the contemporaneous fire insurance map (Figure 6). The photograph shows the newly-constructed Ala Wai Canal and the offshore dredging operation that is pumping dredged materials to fill the marshes and fishponds of Waikīkī, including the two ponds within the present project area. The abundantly vegetated area between the two ponds confirms that the central portion of the project area was indeed existing dryland before the Waikīkī landfill operations that occurred in the 1920s.

As shown by a 1947 aerial photograph and a 1951 fire insurance map – the present project area and its surroundings reflect the mid-twentieth century changes occurring within Waikīkī (Figures 7 & 8). The parcels comprising the present project area are filled with the typical single-story cottages and two-story apartment buildings that characterized much of Waikīkī before subsequent resort development during the remainder of the century.

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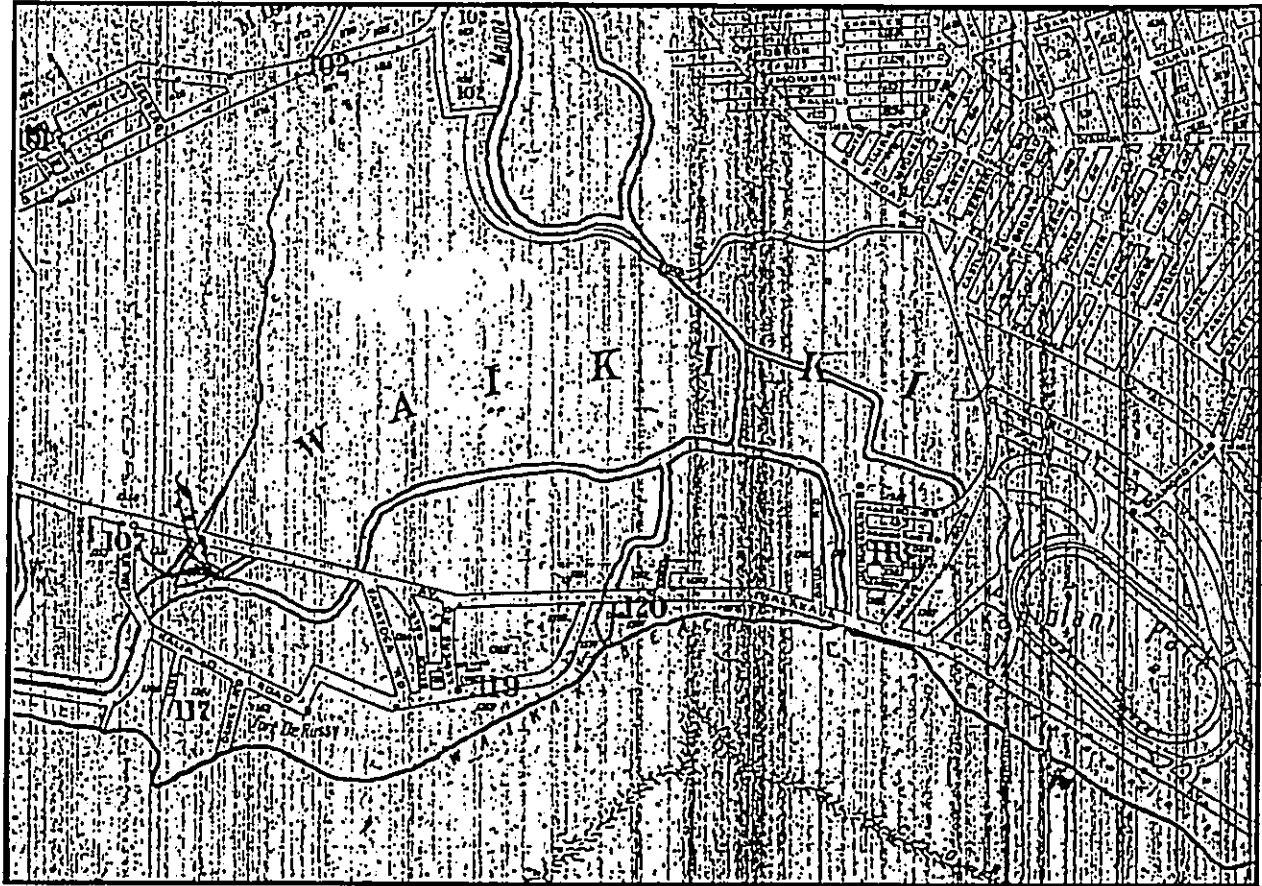


Figure 4. Portion of 1914 Sanborn Fire Insurance Map of Waikiki



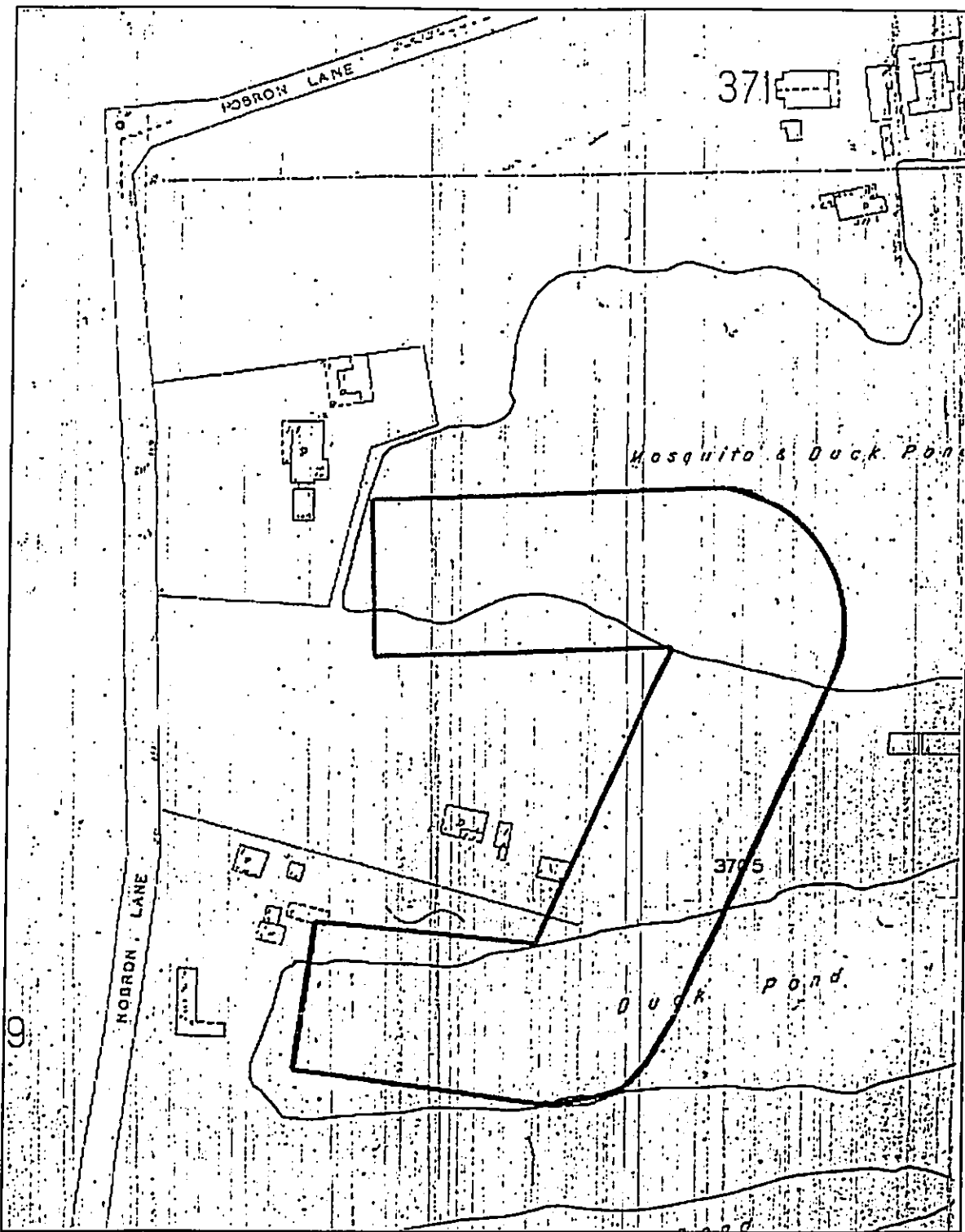


Figure 5. Portion of 1927 Sanborn Fire Insurance map with project area indicated (in red outline) showing fish ponds and dryland environment

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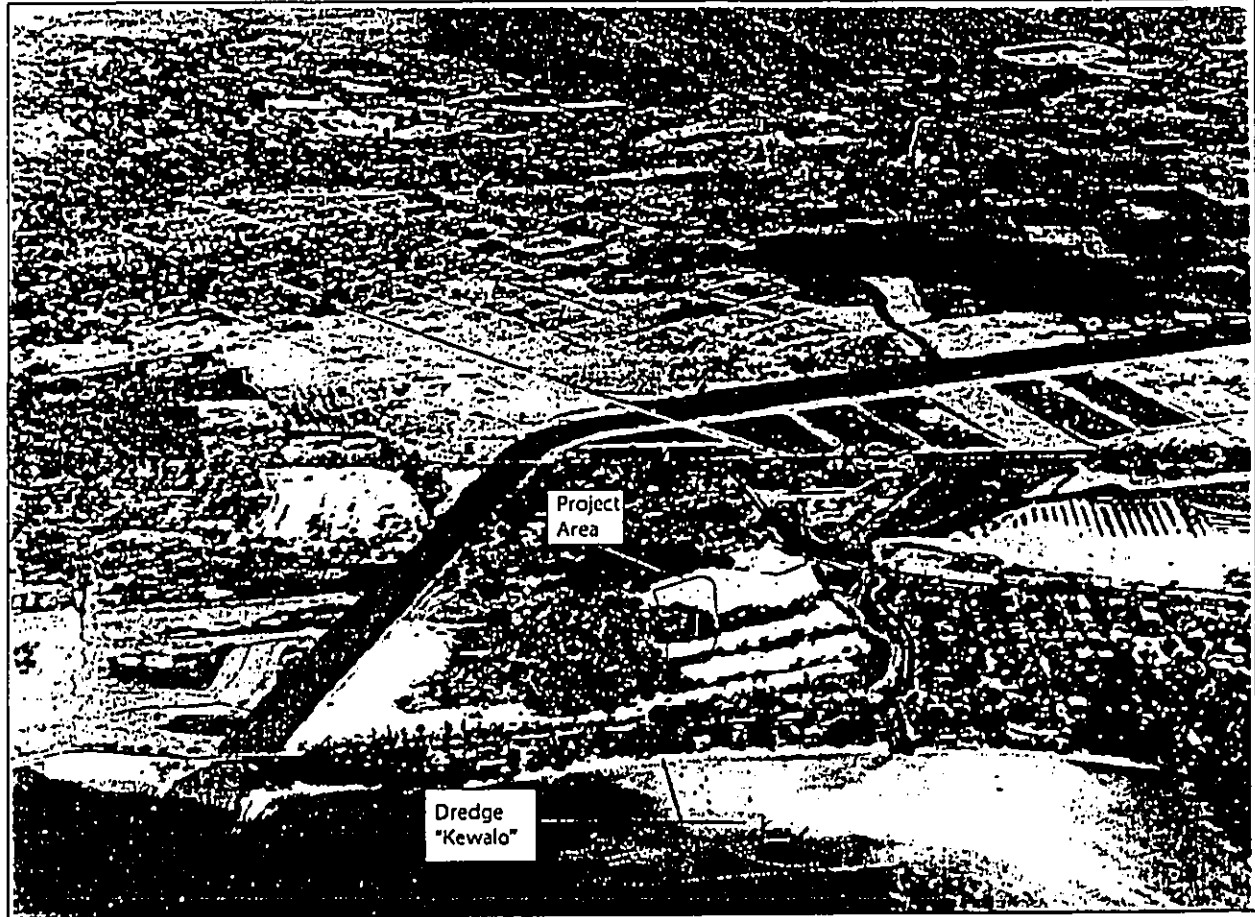


Figure 6. 1927 aerial photograph with location of project area indicated (in red outline)

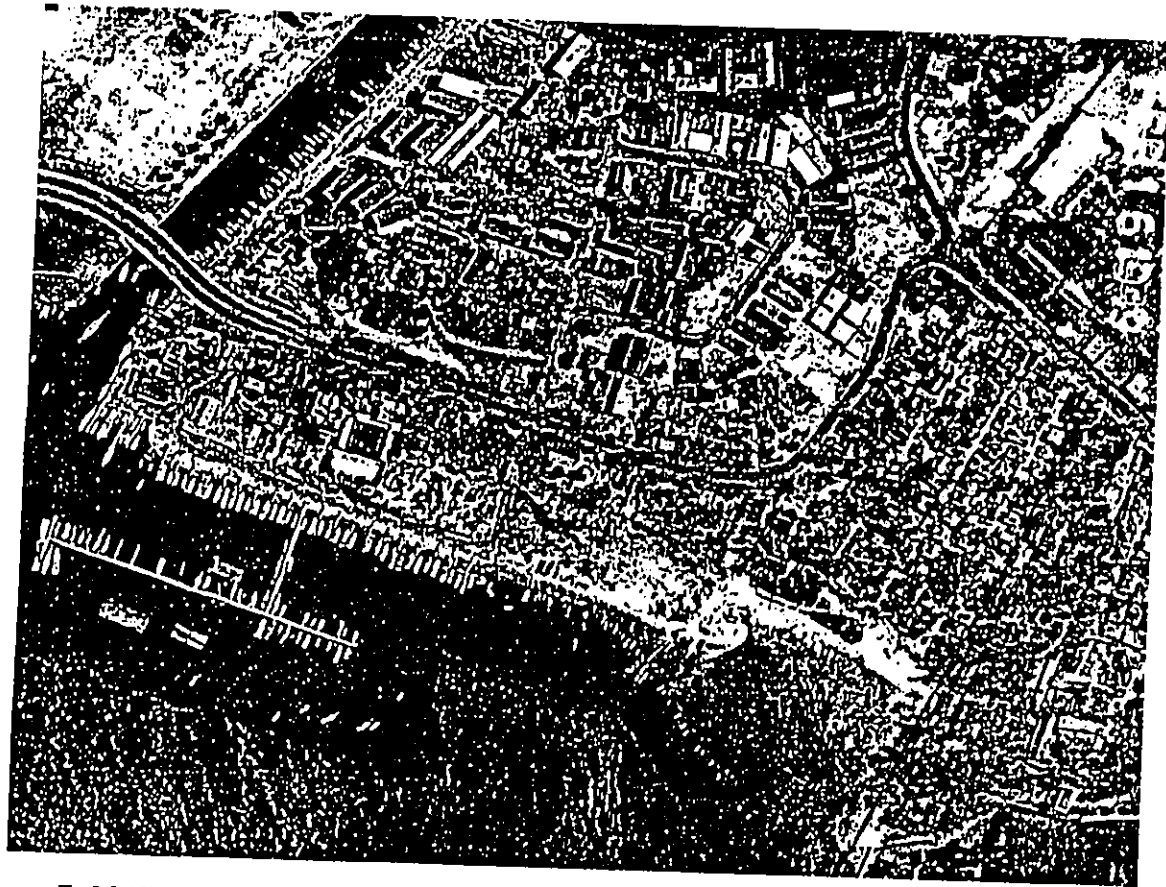


Figure 7. 1947 aerial photograph with present project area indicated (in red outline)

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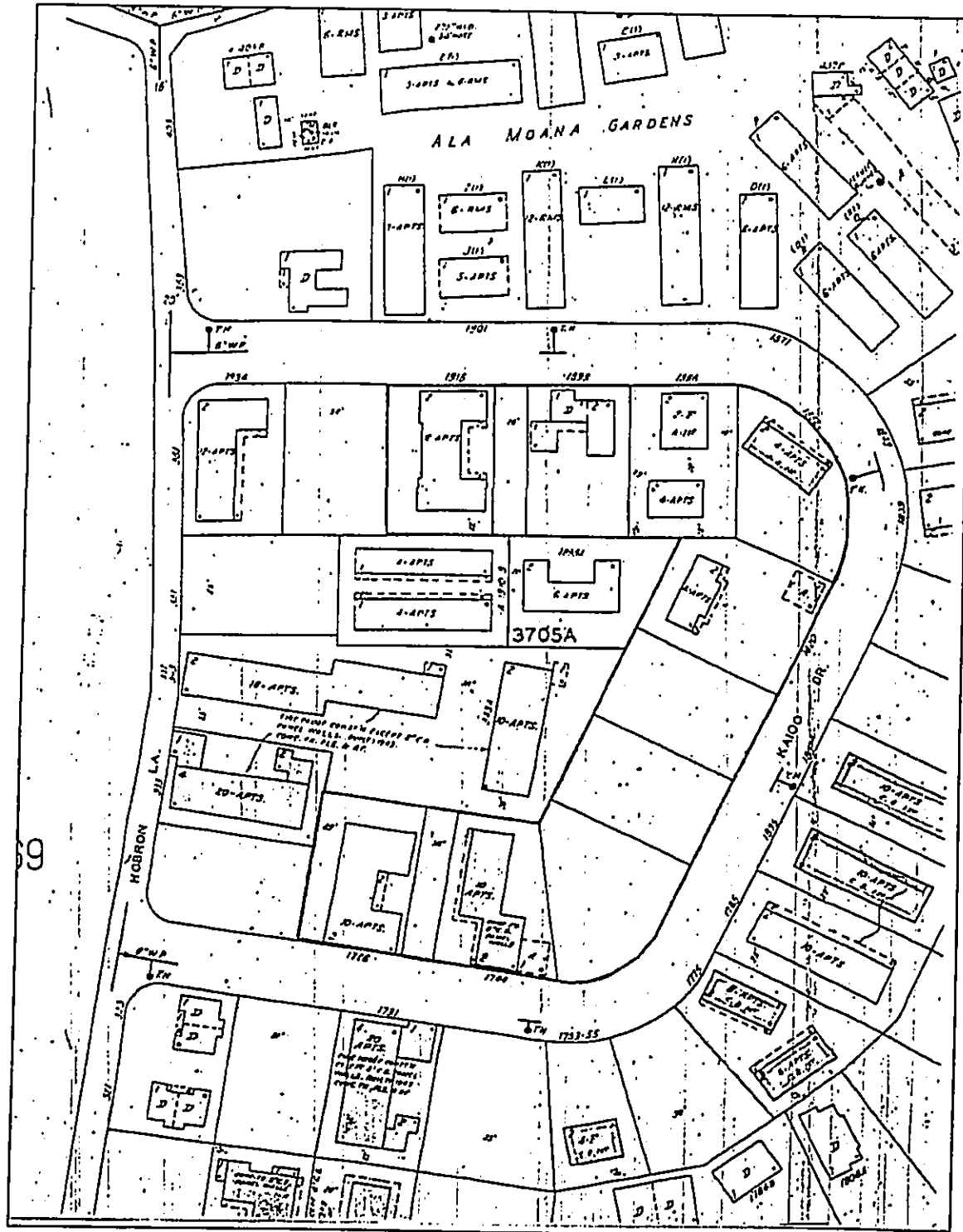


Figure 8. 1951 Sanborn Fire Insurance map with present project area location (in red outline)

### Section 3 Previous Archaeological Research

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The *ahupua'a* of Waikīkī, in the centuries before the arrival of Europeans, was an intensely utilized area, with abundant natural and cultivated resources, that supported a large population. In the nineteenth and early twentieth centuries, after a period of depopulation, Waikīkī was reanimated by Hawaiians and foreigners residing there, and by farmers continuing to work the irrigated field system, which had been converted from taro to rice. Farming continued up to the first decades of this century until the Ala Wai Canal drained the remaining ponds and irrigated fields. Remnants of the pre-contact and historical occupation of Waikīkī have been discovered and recorded in archaeological reports, usually in connection with construction activities related to urban development, or infrastructural improvements. These discoveries, which have occurred throughout Waikīkī, have included many human burials, traditional Hawaiian and historic, as well as pre-contact Hawaiian and historic cultural deposits. A full list of projects conducted in the Waikīkī area is listed in Table 1. Figure 9 shows locations of previous archaeological studies and burials in Waikīkī. A discussion of projects focusing on burials follows.

N.B. Emerson reported on the uncovering of human burials during the summer of 1901 on the property of James B. Castle - site of the present Elks Club - in Waikīkī during excavations for the laying of sewer pipes (Emerson 1902:18-20). Emerson noted:

The soil was white coral sand mixed with coarse coral debris and sea-shells together with a slight admixture of red earth and perhaps an occasional trace of charcoal. The ground had been trenched to a depth of five or six feet, at about which level a large number of human bones were met with, mostly placed in separate groups apart from each other, as if each group formed the bones of a single skeleton. Many of the skulls and larger bones had been removed by the workmen before my arrival, especially the more perfect ones [Emerson 1902:18].

Emerson's report on the find describes the remains of at least four individuals, all presumed to be Hawaiian. Associated burial goods were also exposed during excavation; these included "a number of conical beads of whale-teeth such as the Hawaiians formerly made" and "a number of round glass beads of large size." The glass beads "can be assigned with certainty to some date subsequent to the arrival of the white man" (Emerson 1902:19). Also located with the beads was "a small sized *nihopalaoa*, such as was generally appropriated to the use of the chiefs" which had been "carved from the tooth of the sperm-whale" and which was "evidently of great age" (Emerson 1902:19).

In the 1920s and 30s the first systematic archaeological survey of O'ahu was conducted by J. C. McAllister (1933). He recorded four *heiau* (temples), three of which were located at the *mauka* reaches of Waikīkī Ahupua'a in lower Mānoa Valley. The fourth *heiau* - Papa'ena'ena - was located at the foot of Diamond Head crater in the environs of the present Hawai'i School for Girls. Papa'ena'ena Heiau is traditionally associated with Kamehameha I, who was said to have visited the *heiau* before setting off to battle for Ni'ihau and Kaua'i in 1804. Five years later, according to John Papa 'Ī'ī, Kamehameha placed at Papa'ena'ena the remains of an adulterer - "all prepared in the customary manner of that time" ('Ī'ī 1959:50-51).

Table 1. Previous Archaeological Investigations in Waikīkī Ahupua'a

Reference	Type of Investigation	General Location	Findings
McAllister 1933	Island-wide survey	All of O'ahu	Waikīkī listed as Site 60.
Nakamura 1979	History Graduate Thesis	Waikīkī	History of Waikīkī with focus on the radical changes in land use that occurred in the early 20th century.
Neller 1980	Monitoring Report	Kālia Burial Site: Hilton Hawaiian Village	Brief field inspection: partial recovery of 3 historic Hawaiian burials, trash pit from 1890's, no pre-contact Hawaiian sites.
Bishop Museum 1981	Interim Progress Report on Testing, Excavations, and Monitoring	Halekulani Hotel	Intact cultural deposits found.
Neller 1981	Reconnaissance Survey	Halekulani Hotel	Limited background research on area
Acson 1983	Historical Research, Past and Present Landmarks	'Ewa to Diamond Head end of Waikīkī	Nine walks through Waikīkī, photos, maps and historical info.
Bishop Museum 1984	Burial Remains List	Waikīkī Ahupua'a	Listing of burial remains found in Waikīkī Ahupua'a at the Bishop Museum
Davis 1984	Archaeological and Historical Investigation	Halekulani Hotel	48 historic and pre-contact features excavated.
Neller 1984	Informal Narrative Report	Paoakalani Street	Recovery of human skeletons at construction site
Center for Oral History 1985	Oral Histories, Volumes I-IV	Waikīkī	Oral Histories of Waikīkī, 1900-1985, Volumes I-IV
Griffin 1987	Burial Recovery Report	Along Kalākaua Ave. near the corner of Kai'ulani St.	Bones removed and bagged by construction crew, burial found in <i>makai</i> wall of gas pipe excavation.

Previous Archaeological Research

Reference	Type of Investigation	General Location	Findings
SHPD 1987	Burial, PA Report	Kalākaua Ave.	From excavation adjacent to Moana Hotel (SIHP site -9901).
Davis 1989	Reconnaissance Survey and Historical Research	Fort DeRussy	Fishponds and other features are buried in this area. Sites -4573 thru -4577 are fishponds, 4570 is a remnant cultural deposit.
Riford 1989	Pre-Field Background Literature Search	TMK: 2-6-014:039	List of literature pertaining to Waikīkī area.
Rosendahl 1989	Inventory Survey, Preliminary Report	Fort DeRussy	Historic artifacts, no human remains
Athens 1990	Letter	TMK: 2-6-023:025	Letter to SHPD listing human remains at IARII lab from Pacific Beach Hotel, and Barbers Point Generating Station.
Hurst 1990	Historical Literature and Documents Search	Waikikian Hotel	Background and planning document. No fieldwork was done.
Chigioji 1991	Assessment	2 parcels, TMK 2-6-24:65-68 and 80-83, TMK 2-6-24:34-40 & 42-45	TMK 2-6-24:36-40, formerly a corner of the 'Āinahau estate; remainder of parcels, former 'auwai, kalo and rice fields; subsurface test excavations and specific sampling strategy recommended.
Davis 1991	Monitoring Report	Fort DeRussy	See also Davis 1989. No groundwater contamination found; subsurface features and material remains date to early post-contact times (c. 1780s to 1790s) through the mid-19th century.

Previous Archaeological Research

Reference	Type of Investigation	General Location	Findings
Kennedy 1991	Monitoring Report	TMK: 2-6-022:014 IMAX theatre location	Pollen and bulk-sediment <sup>14</sup> C samples from ponded sediments were recovered. The three <sup>14</sup> C dates and the pollen sequence were interpreted as inverted.
SHPD 1991	Public Inquiry	TMK: 2-6-024:036	Bones were determined to be non-human and part of the extensive fill material present in the area.
Simons et al. 1991	Interim Field Study, Monitoring and Data Recovery	Moana Hotel Area	Human skeletal remains, 8 burials, preliminary osteological analysis indicates pre-contact type; artifactual material recovered, both pre- and post-contact types.
Hurlbett 1992	Monitoring Report	TMK: 2-6-008:001	SIHP site -2870 (3 burials) found by Neller in 1980. This report is on testing and monitoring in same area.
Pietrusewsky 1992a	PA Report	Moana Hotel	Right half of human mandible found by hotel guest.
Pietrusewsky 1992b	PA Report	Lili'uokalani Gardens Site, Hamohamo	Human Remains from the Lili'uokalani Gardens Site, Hamohamo, Waikiki, O'ahu
Rosendahl 1992	Monitoring Report	Hilton Hawaiian Village	Identified 12 historic refuse pits, 3 historic to modern trenches; not recommended for further work, significant solely for information content.
Streck 1992	Memorandum for Record	Fort DeRussy	Human burial discovery (believed to be late pre-contact Hawaiian) during data recovery excavations, May, 20, 1992.
Cleghorn 1993	Report on Inadvertent Discovery of Remains	Waikiki Aquarium	Remains of one human individual, mandible identified.



Previous Archaeological Research

Reference	Type of Investigation	General Location	Findings
Dagher 1993	Report on Inadvertent Discovery of Remains	Waikīkī Aquarium	Human remains of at least one person identified, excavation recommended.
Dega and Kennedy 1993	Report on Inadvertent Discovery of Remains	Waikīkī Aquarium	Discovery of unidentified bone fragments, all remains turned over to SHPD.
Hammatt and Chiogioji 1993	Archaeological Assessment	16-Acre Portion of the Ala Wai Golf Course	Not associated with any know surface archaeological site, however pre-contact and early historic occupation layers associated with <i>lo'i</i> system remain intact below modern fill. Specific sampling strategy and potential burial testing recommended.
Maly et al. 1994	Archaeological and Historical Assessment Study	Convention Center Project Area	Recommend subsurface testing to determine presence or absence of cultural deposits and features.
McMahon 1994	SHPD Burial Report	Intersection of Kalākaua and Kuamo'o Streets	Inadvertent Burial Discovery: misc. bones uncovered in back dirt pile during construction. Follow up by CSH.
Hammatt and Shideler 1995	Sub-surface Inventory Surface	Hawai'i Convention Center SIHP site, 1777 Kalākaua Ave.	No further work recommended.
Jourdane 1995	Report of Inadvertent Discovery of Human Remains	Paoakalani Avenue	Human skeletal remains discovered in planted strip between street and sidewalk fronting hotel.
Simons et al. 1995	Data Recovery Excavations	Fort DeRussy	Historic and pre-contact artifacts, artifact debris, and midden materials collected from 7 occupational layers. 6 pre-contact cultural features recorded: <i>'auwai</i> bunds and channels, fishpond walls and sediments, a possible <i>lo'i</i> , and hearths.

Previous Archaeological Research

Reference	Type of Investigation	General Location	Findings
Cleghorn 1996	Inventory Survey	TMK: 2-6-016:23, 25, 26, 28, 61, 69	7 backhoe trenches excavated, no sites located.
Grant 1996	Historical Reference	Waikīkī	Historical information about Waikīkī prior to 1900.
Hammatt and Shideler 1996	Data Recovery	Hawai'i Convention Center Site	No clear evidence that Kuwili Pond sediments present in project area; no further work recommended.
McDermott et al. 1996	Inventory Survey	'Āinahau Estate	Buried remnants of 'auwai and lo'i and human burial found on grounds of 'Āinahau Estate, <sup>14</sup> C dates
Denham et al. 1997	Data Recovery Report	Fort DeRussy	Excavations conducted at fishponds, <sup>14</sup> C dates mid-17th C.
Denham and Pantaleo 1997	Monitoring and Excavations Report	Fort DeRussy	Final Report does not include SHPD recommendations. 10 subsurface features and 9 burial locations found. <sup>14</sup> C dates
Beardsley and Kaschko 1997	Monitoring and Data Recovery Report	Pacific Beach Hotel Office Annex	Traditional Hawaiian cultural deposits and 2 human burials. 3 <sup>14</sup> C dates
Hammatt and Chiogioji. 1998	Assessment	King Kalākaua Plaza Phase II	No surface archaeological sites, documented human burials, presence of subsurface cultural deposits (both of pre-contact Hawaiian and historic provenance).
Hammatt and McDermott 1999	Burial Disinterment Plan and Report	Kalākaua Avenue	Two human burials found
Perzinski et al. 1999	Monitoring Report	Along Portions of Ala Wai Boulevard, Kalākaua Avenue, Ala Moana Boulevard, and 'Ena Road	Two human burials found (1 preceding monitoring); pockets of undisturbed layers still exist. Burial #2 previously disturbed.
Rosendahl 1999	Interim Report: Inventory Survey	Fort DeRussy	This area is part of the old shoreline.

Previous Archaeological Research

Reference	Type of Investigation	General Location	Findings
Hammatt and Chiogioji 2000	Archaeological Assessment	Honolulu Zoo Parcel	Majority of zoo parcel unlikely to yield significant cultural deposits. However, strong possibility of significant subsurface cultural deposits in the southwestern portion, and archaeological monitoring is recommended in this area.
LeSuer et al. 2000	Inventory Survey	King Kalākaua Plaza Phase II	SIHP site -5796 has been adversely affected by land alteration of the project area. SIHP site -4970, has been adequately documented.
Perzinski et al. 2000	Burial Findings	Kalākaua Ave. between Kai'ulani and Monsarrat Avenues	44 sets of human remains; 37 disinterred, 7 left in place; believed to be Native Hawaiian, prior to 1820.
Cleghorn 2001	Mitigation	Burger King Construction Site	Concerning three incidents of uncovered human remains while locating a buried sewer-line for the ABC's store.
Corbin 2001	Inventory Survey	Hilton Waikikian Property	No arch. sites were found during excavations of the area
Elmore and Kennedy 2001	Burial Report	Royal Hawaiian Hotel	Human remains found during trench excavations for conduit. In situ remains left in place, remains disturbed reentered with others.
McGuire and Hammatt 2001	Cultural Assessment	Along Lewers St., Beach Walk, Kālia Rd. and Saratoga Rd. Proposed Waikīkī Beach Walk project (Outrigger properties renovations)	Primary cultural concern identified as inadvertent burial discovery. Cultural monitoring recommended for all subsurface work within project area.
Perzinski and Hammatt 2001a	Monitoring Report	Kapi'olani Bandstand	A charcoal layer was observed, more concentrated on the southwest side of the bandstand; recovered indigenous artifact, basalt lamp with a handle, from the southeast end of the bandstand.

Previous Archaeological Research

Reference	Type of Investigation	General Location	Findings
Perzinski and Hammatt 2001b	Monitoring Report	Kapi'olani Park	No cultural layer, artifacts, midden or human burials were encountered during the excavations.
Perzinski and Hammatt 2001c	Monitoring Report	Kalākaua Avenue from the Natatorium to Poni Mo'i Road	No cultural layer, artifacts, midden or human burials were encountered during the excavations.
Rosendahl 2001	Assessment Study	Outrigger Beach Walk	Assessment of previous archaeological and historical literature.
Winieski and Hammatt 2001	Monitoring Report	TMK: 1-2-6-025:000	There is a possibility that Hawaiian or Historic materials as well as human burials may still be present within the project area.
Borthwick et al. 2002	Inventory Survey	71,000 sq. ft. parcel, TMK: 2-6-016:002	No burials were encountered during testing; absence of dry Jaucus sand deposits indicate that burial finds are unlikely in project area.
Bush et al. 2002	Monitoring Report	Kalākaua Avenue, between Ala Moana Blvd. and Kapahulu Ave.	Encountered 4 Human burials, analysis suggests pre-contact Native Hawaiians; several historic trash pits; entire pig within an <i>imu</i> pit (estimated date, A.D. 1641-1671); gleyed muck associated with former ponds.
Calis 2002	Monitoring Report	Lemon Road	No historic deposits, major previous disturbance
Elmore and Kennedy 2002	Monitoring Report	Fort DeRussy	No findings.
Mann and Hammatt 2002	Monitoring Report	Lili'uokalani Avenue and Uluniu Avenue	5 burial finds of 6 individuals; two historic trash pits.
Putzi and Cleghorn 2002	Monitoring Report	Hilton Hawaiian Village	No findings during monitoring of trench excavations for sewer connections.

Previous Archaeological Research

Reference	Type of Investigation	General Location	Findings
Winieski, Perzinski, Shideler and Hammatt 2002	Monitoring Report	Kalākaua Ave. between Ka'iulani and Monsarrat Avenues.	44 human burials encountered, 37 disinterred; buried habitation layer identified which contained traditional Hawaiian artifacts, midden, hearths, firepits, and charcoal concentrations; fragment of light gauge rail, remnant of Honolulu Transit trolley system, observed; low energy alluvial sediments associated with the now channelized <i>muliwai</i> Kukaunahi also observed.
Winieski, Perzinski, Souza and Hammatt 2002	Monitoring Report	Kūhiō Beach	Skeletal remains of 10 individuals, six disinterred, only 2 in situ. 4 indigenous artifacts, none in situ. Discontinuous cultural layer, historic seawall.
Bush et al. 2003	Monitoring Report	International Marketplace	Historic trash found.
Tome and Dega 2003	Monitoring Report	Waikīkī Marriot	No in situ remains, recommends monitoring if more work to be done, one isolated not in situ possible human bone fragment. Not identifiable.
Tulchin and Hammatt 2003	Archaeological and Cultural Impact Assessment	2284 Kalākaua Ave.	Notes possibility of burials within the project area; recommends an inventory survey with subsurface testing.

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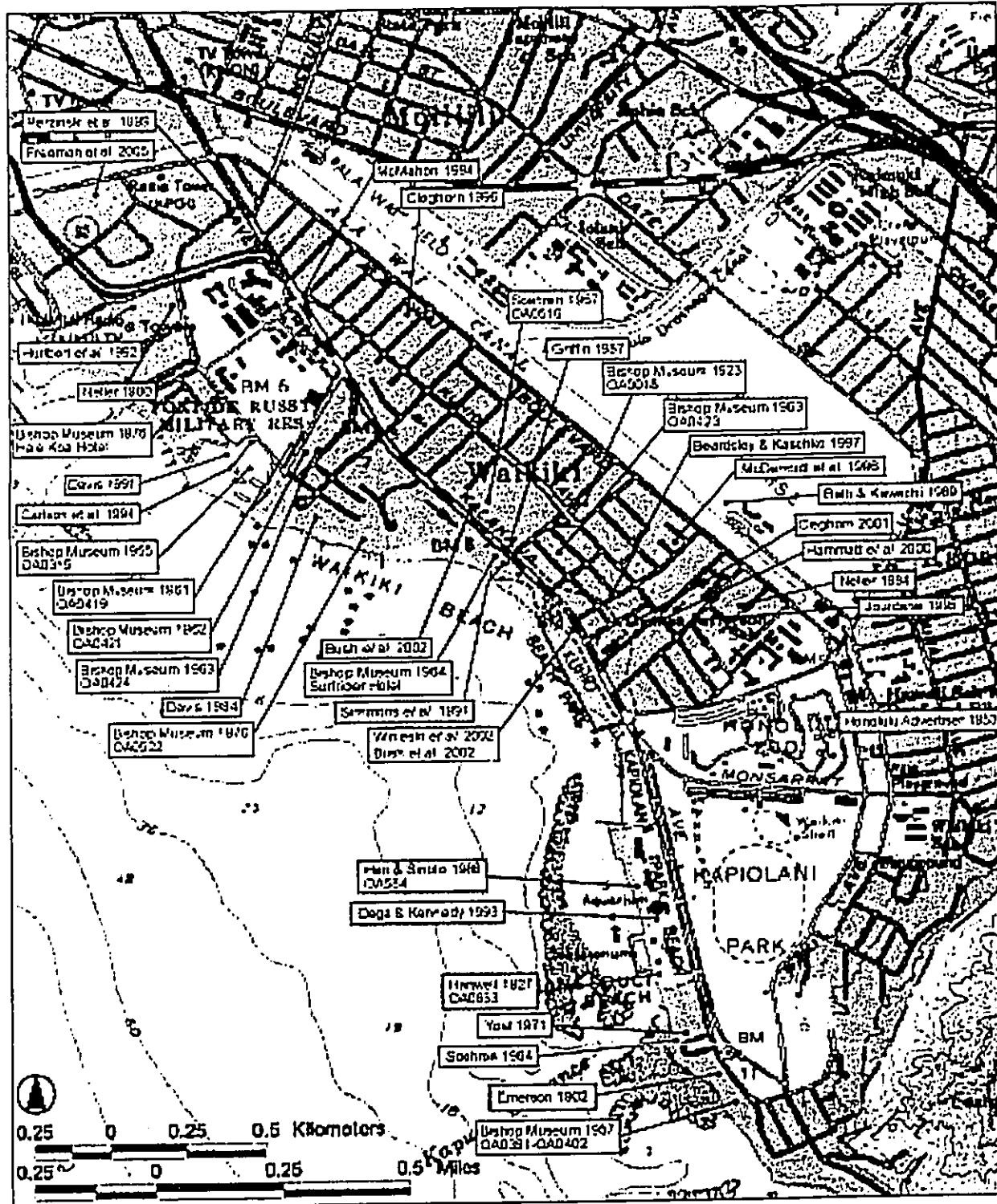


Figure 9. Previous archaeological work in Waikiki including location of burials

In 1963, two human skulls and other human remains were discovered in a construction trench at 2431 Prince Edward St. (Bishop Museum site Oa-A4-23, cited in Neller, 1984).

In 1964, sand dune burials, a traditional Hawaiian mortuary practice, were revealed as beach sand eroded fronting the Surfrider Hotel (Bishop Museum Site Files).

In 1976, during construction of the Hale Koa Hotel, adjacent to the Hilton Hawaiian Village Hotel, six burials were unearthed, five of apparent pre-contact or early historic age, and one of more recent date (Bishop Museum Site Files).

In 1980, three burials were exposed at the Hilton Hawaiian Village during construction of the hotel's Tapa Tower, south-southeast of the present project area. Earl Neller of the (then named) State Historic Preservation Program was called in upon discovery of the burials and conducted fieldwork limited to three brief inspection of the project area. Neller's (1980) report noted:

The bones from three Hawaiian burials were partially recovered; one belonged to a young adult male, on a young adult female, and one was represented by a single bone. An old map showed that rapid shoreline accretion had occurred in the area during the 1800s, and that the beach in the construction area was not very old. It is possible the burials date back to the smallpox epidemic of 1853. It is likely that burials will continue to be found in the area. It is also possible that early Hawaiian sites exist farther inland, beneath Mō'ili'ili, adjacent to where the shoreline would have been 1000 years ago. (Neller 1980:5)

Neller also documented the presence of trash pits, including one from the 1890s which contained "a large percentage of luxury items, including porcelain tablewares imported from China, Japan, the United States, and Europe" (Neller 1980:5). He further notes:

It is suspected that other important historic archaeological sites exist in the highly developed concrete jungle of Waikīkī, with discrete, dateable trash deposits related to the different ethnic and social groups that occupied Waikīkī over the last 200 years [Neller 1980:5].

Between December 1981 and February 1982, archaeologists from the Bishop Museum led by Bertell Davis conducted a program of excavations and monitoring during construction of the new Halekūlani Hotel (Davis 1984). Six human burials were recovered along with "animal burials [and] cultural refuse from prehistoric Hawaiian firepits, and a large collection of bottles, ceramics, and other materials from trash pits and privies dating to the late 19th century" (Davis 1984:i). Age analysis of volcanic glass recovered from the site led Davis to conclude: "For the first time we can now empirically date . . . settlement in Waikīkī to no later than the mid-1600s" (Neller 1980:5).

In 1983, at the Lili'uokalani Gardens condominium construction site, seven traditional Hawaiian burials were recovered (Neller 1984). This had been the site of a bungalow owned by Queen Lili'uokalani at the end of the nineteenth century. In addition to the burials, the site contained plentiful historic artifacts, and a pre-historic cultural layer pre-dating the burials.

In 1985, International Archaeological Research Institute, Inc. performed archaeological monitoring and data recovery at the Pacific Beach Hotel Office Annex (Beardsley and Kaschko 1997). Two traditional Hawaiian burials were discovered and removed. Intact buried traditional Hawaiian cultural deposits, including a late pre-contact habitation layer, contained pits, firepits, post molds, artifacts, and food debris. The artifacts included basalt and volcanic glass flakes and cores, a basalt adze and adze fragments, worked pearl shells, a coral file and abraders, and a pearl shell fishhook fragment. Additionally, a late nineteenth century trash pit was discovered, which contained a variety of ceramics, bottles, and other materials.

During 1985 and 1986, archaeologists from Paul H. Rosendahl, Ph.D. Inc. conducted archaeological monitoring at the site of the Mechanical Loop Project at the Hilton Hawaiian Village, Waikīkī. Much of this project area was disturbed by historic and modern construction and modification. Fifteen subsurface features were uncovered during the monitoring, all of which were determined to be historic trash pits or trenches. The dating of these features was based on dating the artifactual material they contained. All 15 features are thought to post-date 1881 based on this artifact analysis. The three partial burials reported by Neller (1980) were found within this project area (see above). No further burials were encountered during the PHRI field work (Hurlbett et. al. 1992).

In 1987, a human burial was discovered and removed at the intersection of Kalākaua Avenue and Ka'iulani Street during excavations for a gas pipe fronting the Moana Hotel (Griffin 1987).

In 1988, the Moana Hotel Historical Rehabilitation Project (Simons et. al. 1991) encountered human remains that amounted to at least 17 individuals. Based on stratigraphic association these burials were interred over time as the land form at the site changed. The sediment surrounding these burials yielded traditional midden and artifact assemblages. The burials and human remains were found in the Banyan Court and beneath the hotel itself.

In 1989, skeletal remains were unearthed on the grounds of the Ala Wai Golf Course during digging of an electrical line trench for a new sprinkler system. The trench had exposed a pit containing two burials (Bath and Kawachi 1989: 2). The report suggests that one of the burials may have been disturbed earlier during grading for the Territorial Fair Grounds. The osteological analysis included in the report concludes that both sets of remains "appear ancient." (Bath and Kawachi 1989: 2)

Davis' (1989, 1991) excavation and monitoring work at Fort DeRussy documented substantial subsurface archaeological deposits, pre-contact, historic, and modern. These deposits included buried fishpond sediments, 'auwai [irrigation ditch] sediments, midden and artifact enriched sediments, structural remains such as post holes and fire pits, historic trash pits, and a human burial. Davis' (1991) report documents human activity in the Fort DeRussy beach front area from the sixteenth century to the present.

The work at Fort DeRussy continued in 1992 when BioSystems researchers built upon Davis' work (Simons et al. 1995). BioSystems research documents the development and expansion of the fishpond and 'auwai system (SIHP site -4970) in the area. Remains of the fishpond and 'auwai deposits, as well as habitation deposits, were documented below modern fill deposits. This research, along with that of Davis (1991), clearly demonstrates that historical document



research can be an effective guide to locating late pre-contact/early historic subsurface deposits, even amidst the development of Waikīkī.

In 1992, Hurlbett et al. (1992) conducted additional monitoring and testing in this same area as Neller (1980). SIHP site -2870 was given to the three burials first found by Neller. Additional subsurface features, postdating 1881, were found during trenching operations.

The realignment of Kālia Road at Fort DeRussy in 1993 uncovered approximately 40 human burials. A large majority of these remains were recovered in a large communal burial feature (Carlson et al. 1994). The monitoring and excavations associated with this realignment uncovered a cultural enriched layer which contained post holes.

In 1993, during construction activities at the Waikīkī Aquarium, approximately 3 km (1.86 miles) southwest of the present project area, fragmentary human remains were discovered scattered in a back dirt pile, although no burial pit was identified (Dega and Kennedy 1993).

On April 28, 1994, an inadvertent burial discovery was made during excavation for a water line at the intersection of Kalākaua Avenue and Kuamo'o Street (just *mauka* of Fort. DeRussy). These remains represented a single individual (McMahon 1994).

In 1995, the remains of one individual were discovered *in situ* during construction activities on Paoakalani Street, fronting the Waikīkī Sunset Hotel (Jourdane 1995).

In 1996, Pacific Legacy, Inc. conducted an archaeological inventory survey of the block bounded by Kalākaua Avenue, Kūhiō Avenue, 'Olohana Street, and Kālamoku Street (Cleghorn 1996). The survey included excavation of seven backhoe trenches. The subsurface testing indicated that

... this area was extremely wet and probably marshy. This type of environment was not conducive for traditional economic practices. . . . The current project area appears to have been unused because it was too wet and marshy. Several peat deposits, containing the preserved remains of organic plant materials were discovered and sampled. These deposits have the potential to add to our knowledge of the paleoenvironment of the area [Cleghorn 1996:15].

The report concluded that no further archaeological investigations of the parcel were warranted since "no potentially significant traditional sites or deposits were found", but cautioned of the "possibility, however remote in this instance, that human burials may be encountered during large scale excavations" (Cleghorn 1996:15).

In 1996, a traditional Hawaiian burial was discovered and left in place during test excavations on two lots at Lili'uokalani Avenue and Tusitala Street (McDermott et al. 1996). Indigenous Hawaiian artifacts and historic artifacts were also found within the project area.

In 1997, during archaeological monitoring by CSH for the Waikīkī Force Main Replacement project, scattered human bones were encountered on 'Ōhua Street (Winieski and Hammatt 2000). These included the proximal end and mid-shaft of a human tibia, a patella, and the distal end and mid-shaft of a femur. These remains occurred within a coralline sand matrix which had been heavily disturbed by previous construction, and by the on-going construction project. No precise location for the original burial site was identified.

In April 1999, two human burials were inadvertently encountered near the intersection of Ena Road and Kalākaua Avenue during excavation activities for the first phase of the Waikīkī Anti-Crime Lighting Improvements Project (Perzinski et al. 1999). These discoveries were approximately 350 m (0.2 mile) east of the present project area, on the *makai* side of Kalakaua Avenue.

From July 1999 to October 2000, four sets of human remains were inadvertently encountered during excavation activities relating to the Waikīkī Anti-Crime Street Lighting Improvement project along portions of Kalākaua Avenue (Bush et al. 2002). The first burial was encountered on Kalākaua Avenue, just before Dukes Lane and assigned State Site 50-80-14-5864. The burial was left in place however, and the light post was repositioned. The second burial was encountered at the intersection of Kalākaua Avenue and Ka'iulani Avenue. Earlier, during archaeological monitoring for the water mains project, two burials were encountered in the immediate area of the second burial find and assigned state site 50-80-14-5856 features A and B. Due to the close proximity to the previously encountered burials, the second burial was assigned the same State Site 50-80-14-5856, and designated feature C. Burials 3 and 4 were recovered at the intersection of Kalākaua Avenue and Kealohilani, near an area of concentrated burials assigned State Site 50-80-14-5860 during monitoring for the water mains project. Consequently, burials 3 and 4 were also assigned State Site 50-80-14-5860, features U and V. In addition to human remains, pre-contact deposits, historic and modern rubbish concentrations, and pond sediments were also encountered.

From November, 1999, to May, 2000, 44 human burials, with associated cultural deposits, were encountered during excavation for a waterline project on Kalākaua Avenue between the Ka'iulani and 'Ōhua Avenues (Winieski et al. 2002a). Except for previously disturbed partial burials in fill, the bulk of the burials were encountered within a coralline sand matrix. Additionally, a major cultural layer was found and documented.

From January, 2000, to October 2000, 10 human burials were encountered during archaeological monitoring of the Kūhiō Beach Extension/Kalākaua Promenade project (Winieski et al. 2002b). Six of these were located within a coralline sand matrix. The four others were partial and previously disturbed within fill. Additionally, a major cultural layer was found and documented, apparently part of the same major cultural layer associated with the waterline project between Ka'iulani and 'Ōhua Avenues.

In April 2001 human remains were inadvertently disturbed during excavations associated with the construction of a spa at the Royal Hawaiian Hotel (Elmore et al. 2001), approximately 1.30 km north of the current project area. Archaeological Consultants of the Pacific, Inc. was responsible for the documentation of the remainder of the burial and carrying out the instruction of DLNR/ SHPD. The burial and place it was encountered was designated SIHP site -5937. The burial was encountered on the north side of the hotel in the spa garden. The burial was partially disturbed through the thoracic region and anatomical left side. The disturbed remains were wrapped in muslin cloth and placed with the in-situ remains and reburied. The burial was recorded as a post contact burial based on artifacts associated with it. The associated artifacts included one shell button found *in-situ* and three more shell buttons found in the disturbed material. A single drilled dog tooth was found also during excavation but could not be positively associated with the site.

On May 2nd and June 14th, 2001, two in situ and two previously disturbed human burials were encountered at the site of a new Burger King (Cleghorn 2001a) and an adjoining ABC Store (Cleghorn 2001b). The finds were located at the intersection of 'Ōhua Street and Kalākāua Avenue (Cleghorn 2001a and 2001b). Because of their proximity to five burials encountered during the Kalākāua 16-inch Water Main Installation (Winieski et al. 2002a), they were included in the previously assigned State Site 50-80-14-5861. Three of these burials were recovered, and one was left in place. Volcanic glass fragments were found in association with one of the burials. A cultural layer was also observed which contained moderate to heavy concentrations of charcoal and fragments of volcanic glass. Historic era artifacts, including a bottle fragment, plastic and glass buttons, a ceramic fragment, and metal fragments were also encountered within fill materials.

In 2001 and 2002, CSH (Mann and Hammatt 2002) performed archaeological monitoring for the installation of 8- and 12-inch water mains on Uluniu Avenue and Lili'uokalani Avenue. During the course of monitoring, five burials finds, consisting of six individuals, were recorded within the project area. Four burial finds were recorded on Uluniu Avenue; three of these inadvertent finds were found in fill sediment. Due to the nature of the three burial finds in fill, it was concluded that no State Site number(s) be assigned to these three previously disturbed burials. The only primary in situ burial encountered on Uluniu Avenue was assigned SIHP site 50-80-14-6369. The fifth burial, consisting of two individuals in fill material, was recorded from Lili'uokalani Avenue. Since three burials had been found in the immediate vicinity during a previous project (Winieski et al. 2002b) and had been assigned to SIHP site 50-80-14-5859, the two new individuals were recorded as Feature H of this previously recorded site.

In 2004, Cultural Surveys Hawai'i conducted an archaeological inventory survey and cultural impact evaluation for the Ala Wai Gateway project site (Freeman *et al.* 2005). The project site comprised TMK 2-6-011:001, 002, 004, 32, 37, and 40, which are bounded by Ala Wai and Ala Moana boulevards, Hobron Lane, and Līpe'epe'e Street. As this project area is located on Hobron Lane, immediately adjacent to the present Kaioo Drive project area, the findings of the inventory survey are especially relevant. Four historic properties were documented in the survey:

Site 50-80-14-6700: disturbed, ethnicity undetermined, human skeletal remains,

Site 50-80-14-6701: historic coffin burial, ethnicity undetermined,

Site 50-80-14-6702: culturally enriched buried A horizon in geographic association with Land Commission Award (LCA) 99 FL to Uma, and

Site 50-80-14-6703: fishpond remnant.

In summary, past archaeological research, from the beginning of the twentieth century to the present has produced evidence that traditional Hawaiian cultural deposits, historic trash deposits, and, most notably, human burials, do exist throughout the breadth of the Waikīkī area.

## Section 4 Field Inspection Findings

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Field inspection of the 72,135 square foot project area was conducted on October 9, 2005 by Rodney Chiogioji, B.A. under the general supervision of Hallett H. Hammatt, Ph.D. The inspection was carried out under archaeological permit number 0508 issued by the Hawai'i State Historic Preservation Division/Department of Land and Natural Resources (SHPD/DLNR).

All portions of the project area were accessible to visual inspection and were documented by field notes and photographs (Figures 10-13).

The project area is presently vacant land that has been cleared of buildings shown within the project area parcels on the 1947 aerial photograph and 1951 fire insurance map discussed above (see Figures 7 & 8) and of any subsequently built structures. The ground surface in parcels in the *makai* arm of the project area is dirt and remnant asphalt paving. The central portion of the project area is a grass lawn with various trees including areca palms, mango, plumeria, banana, and monkeypod. The ground surface in parcels in the *mauka* arm of the project area is loose gravel. A trailer and various construction materials are present in this portion.

No surface historic properties of archaeological concern were observed in any portion of the project area.

Based on field observation as well as historical background documentation, there has been relatively little subsurface disturbance within the project area during the twentieth century.

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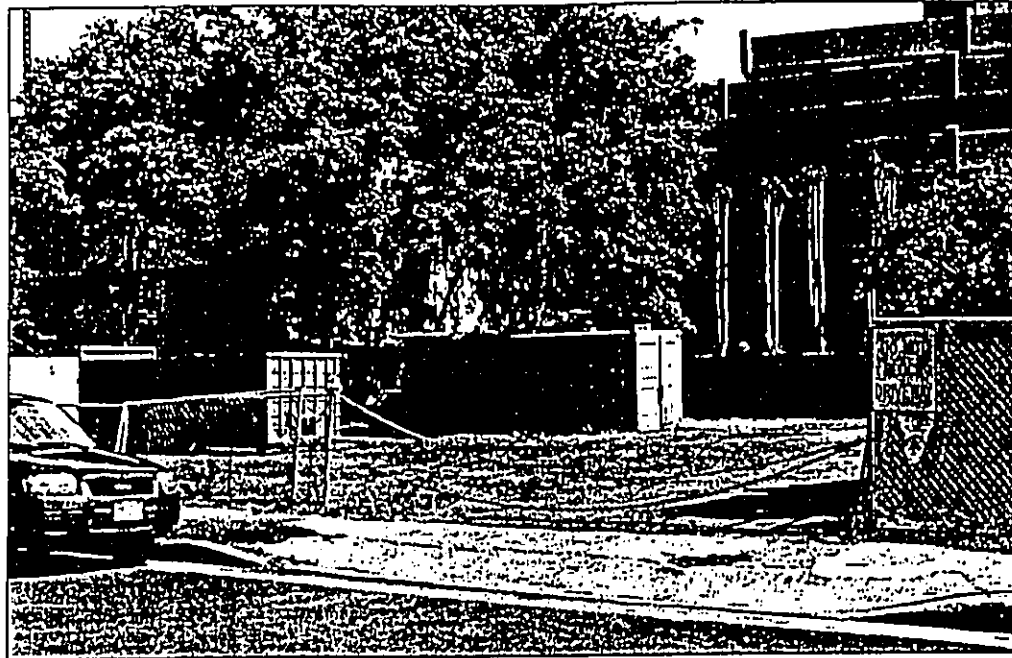


Figure 10. Parcels in makai portion of project area, view to north

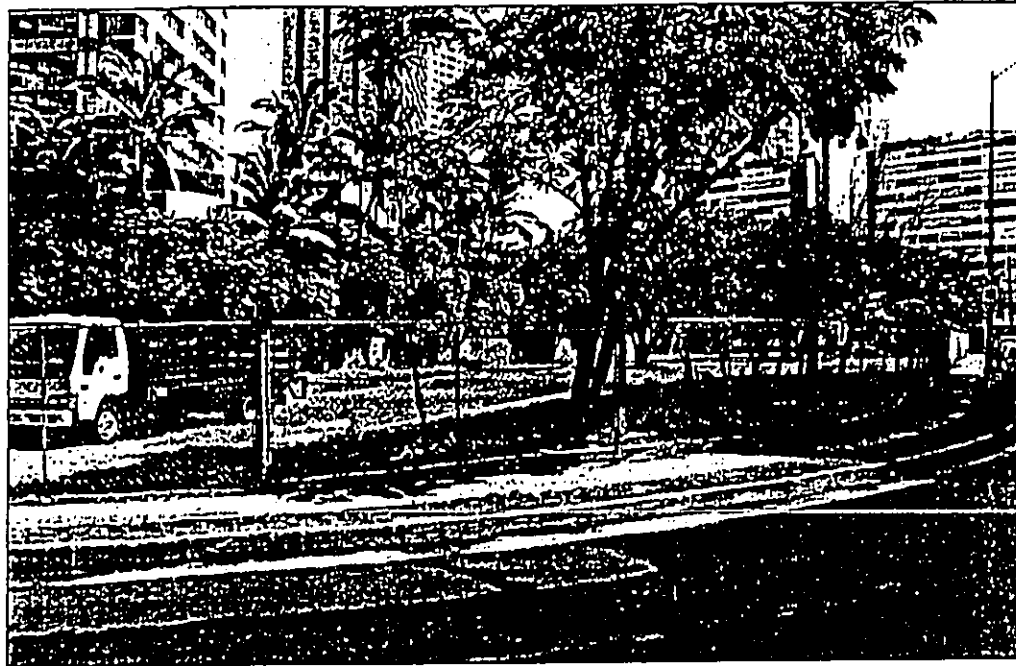


Figure 11. Parcels in central portion of project area, view to northeast

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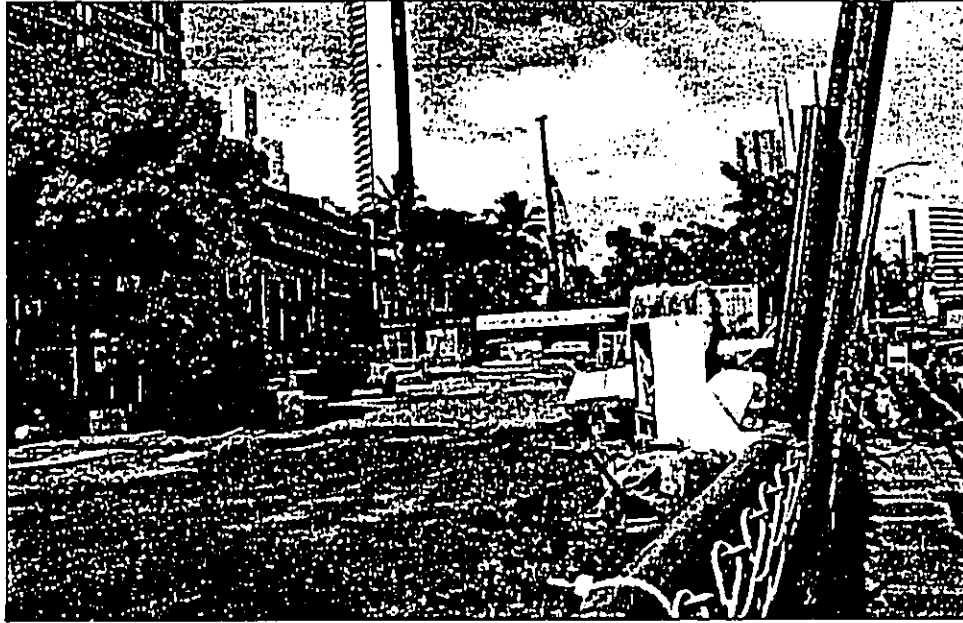


Figure 12. Parcels in mauka portion of project area, view to west

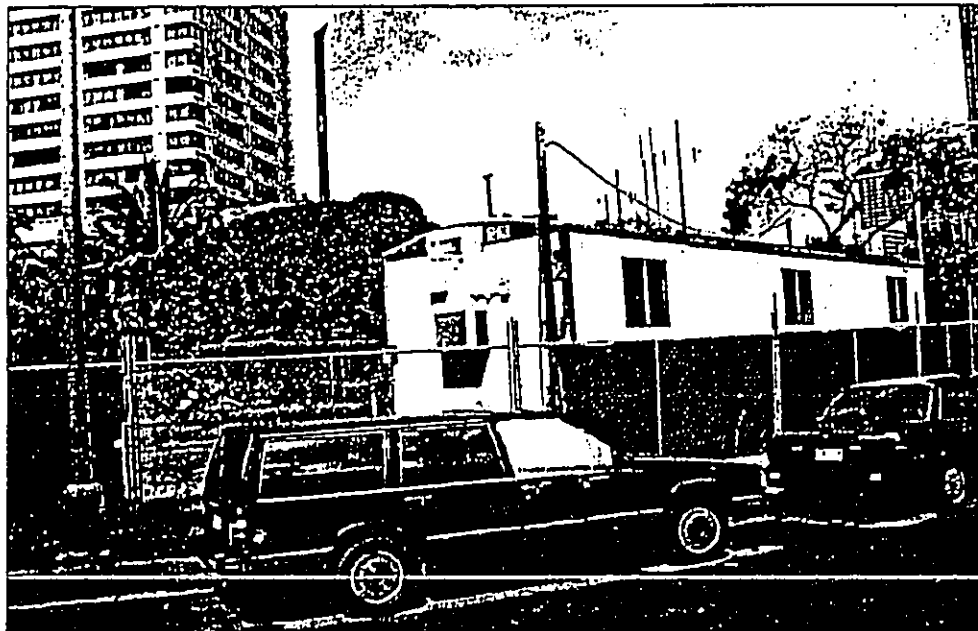


Figure 13. Trailer in mauka portion of project are, view to west

## Section 5 Summary and Recommendations

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The present project area is located within a portion of Waikīkī that, in traditional Hawaiian times and before the massive drainage accomplished by the Ala Wai Canal, comprised a complex of numerous large and small fishponds. Also located in this portion of Waikīkī were wetland and dryland agricultural fields, and habitation sites. Land Commission Award documents from the mid-nineteenth century record continuing native Hawaiian habitation in two parcels adjacent to the present project area. Subsequent nineteenth and twentieth century documents – including historic maps and photographs – indicate that the central portion of the project area from traditional Hawaiian times to the modern era comprised a dryland environment with surrounding fishponds. In traditional Hawaiian times, such an environment would have provided a base for habitation, work, and recreational activities of the population. Maps and photographs produced before and after the completion of the Ala Wai Canal in the late 1920s, indicate that the project area contained residential structures associated with the early development of Waikīkī.

As noted during field inspection, the project has been cleared of all surface structures. It was also noted during the inspection that there is no evidence of extensive ground disturbance either for the construction of the formerly standing structures or for their removal.

Archaeological reports have documented human burials – both pre-contact Hawaiian and historic – throughout the breadth of Waikīkī as far *mauka* as the Ala Wai Golf Course. Especially relevant to the present project area are two burials that were recently encountered in a project area on the 'Ewa side of Hobron Lane (Freeman *et al.* 2005).

Several archaeological studies have recorded the presence within Waikīkī of subsurface cultural deposits of both pre-contact Hawaiian and historic provenance. These deposits had remained intact despite the years of construction activity that have altered the entire Waikīkī area. The authors of these studies emphasize that the potential for discovering similar intact deposits elsewhere in Waikīkī cannot be discounted. During archaeological inventory survey of the Hobron Lane parcel mentioned above, intact cultural deposits were encountered (Freeman *et al.* 2005).

As noted above in this report, before the construction of the Ala Wai Canal and the filling in of Waikīkī's marshes and fishponds, the present project area comprised dryland and portions of ponds. These features and their likely locations within the parcels comprising the project area are shown in Figure 14. It is possible that intact pond sediments and intact prehistoric and early contact cultural deposits associated with Hawaiian habitation, work and recreation are lying undisturbed beneath modern fill layers within the project area. Other cultural deposits, including historic trash pits, associated with late nineteenth century and early twentieth century residential sites may also be present. Additionally, human burials may also be present within the project area.

Based on these considerations and the cultural sensitivity of the entire Waikīkī area, Cultural Surveys Hawai'i recommends an archaeological inventory survey with a substantial subsurface testing component for the project area.

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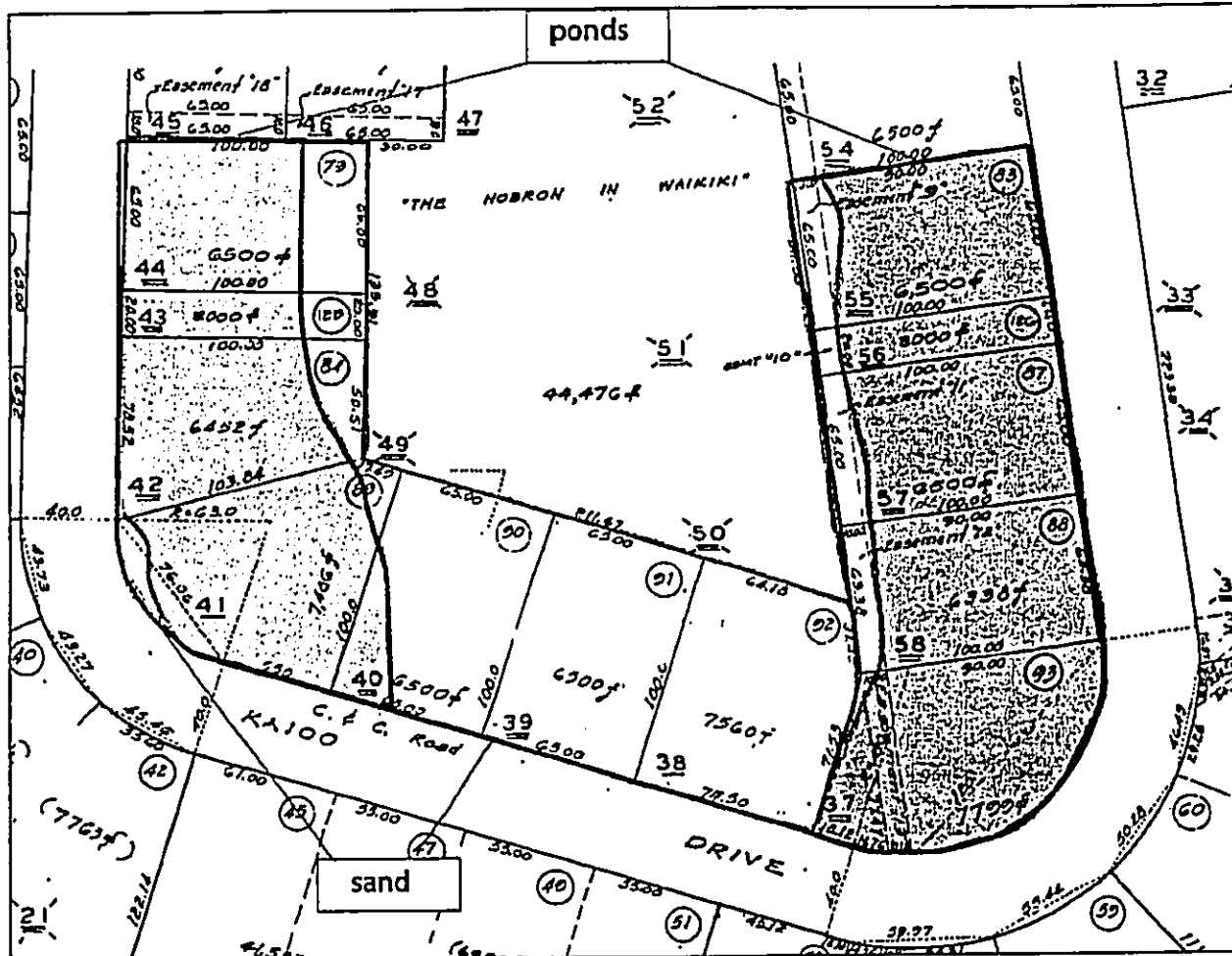


Figure 14. Tax map showing probable locations of former ponds and dryland in project area based on historic documentation



Based on the findings of the inventory survey, there could be additional archaeological mitigation requirements such as a burial treatment plan, archaeological data recovery, and an archaeological monitoring program.

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November 29, 2006

Dr. Hallett H. Hammatt  
Cultural Surveys of Hawai'i, Inc.  
P.O. Box 1114  
Kailua, Hawai'i 96734

LOG NO: 2006.4005  
DOC NO: 0611amj26  
Archaeology

Dear Dr. Hammatt:

**SUBJECT: Chapter 6E-42 Historic Preservation Review –  
Revised Archaeological Inventory Survey for the 116-Unit Kaio'o Multifamily  
Condominium Project, Waikiki Ahupua'a, Kona District, Island of O'ahu  
TMK: (1) 2-6-012:037-044, 055-058**

Thank you for submitting the revised report by O'Hare *et al.* (2006), which we received on October 30, 2006. One historic property was identified in the project area: SIHP No. 50-80-08-6848, a subsurface *imu* (firepit). One radiocarbon sample was dated to 320±40 BP, and calibrated (2 sigma) to AD 1470–1660.

In a letter (LOG NO: 2006.1319, DOC NO: 0604CM79) dated May 1, 2006, we reviewed a previous version of this report, and recommended a number of revisions, which you have made to our satisfaction.

In our previous review, we concurred with your determination that Site 6848 is eligible for the State Register of Historic Places under criterion D. We were unable to comment, however, on your mitigation recommendation, pending additional information, which you have now supplied.

Your report states: "...we recommend consultation with the State Historic Preservation Division for a possible archaeological monitoring program during any future development in the project area." Based on the information you have provided, we recommend monitoring of all Jaucas-sand deposits, in association with the proposed development. Our recommendation is based on the presence of eight burials within a block of the project area, and the presence of Jaucas-sand deposits throughout much of the project area.

With the condition that you submit an archaeological monitoring plan (AMP), in accordance with HAR 13-279, we accept this archaeological inventory survey report, in fulfillment of HAR 13-284 and 13-276.

Please contact Mr. Adam Johnson (O'ahu Assistant Archaeologist) at (808) 692-8015 if you have any questions or concerns regarding this letter.

Aloha,

  
Melanie Chinen, Administrator  
State Historic Preservation Division

amj:

**APPENDIX VII**  
**ARCHAEOLOGICAL INVENTORY SURVEY**

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**Archaeological Inventory Survey for the 116-unit Kaio‘o  
Multifamily Condominium Project, Waikiki Ahupua‘a,  
Honolulu (Kona) District, O‘ahu Island**

**TMK (1) 2-6-012:037-044, 055-058**

**Prepared for  
Kusao & Kurahashi, Inc.**

**Prepared by  
Constance R. O‘Hare, B.A.,  
David W. Shideler, M.A.,  
and  
Hallett H. Hammatt, Ph.D.**

**Cultural Surveys Hawai‘i, Inc.  
Kailua, Hawai‘i  
(Job Code: WAIK 82)**

**October 2006**

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## Management Summary

Reference	Archaeological Inventory Survey for the 116-unit Kaio'o Multifamily Condominium Project, Waikiki Ahupua'a, Honolulu (Kona) District, O'ahu Island, TMK (1) 2-6-012:037-044, 055-058, by Constance R. O'Hare, David W. Shideler, and Hallett H. Hammatt
Date	October 2006
Project Number (s)	CSH Job Code WAIK 82
Investigation Permit Number	Fieldwork was conducted under state archaeological fieldwork permit No. 0508 issued by SHPD, per Hawai'i Administrative Rules (HAR) Chapter 13-13-282.
Project Location	The project area comprises TMK: (1) 2-6-012: 37, 38, 39, 40, 41, 42, 43, 44, 55, 56, 57, & located in Honolulu in the block bounded by Kaio'o Drive on the north, east, and west sides and Hobron Lane on the west side. This area is depicted on the 1998 Honolulu 7.5-minute USGS topographic quadrangle
Land Jurisdiction	Kaio'o LLC
Agencies	State Historic Preservation Division / Department of Land and Natural Resources (SHPD/DLNR)
Project Description	The project proposes to develop a 6-story multi-family residential complex.
Project Acreage	72,135 square feet (1.67 acres)
Area of Potential Effect (APE) and Survey Acreage	For this inventory survey, the project's APE is defined as the entire U shaped parcel denoted by TMK: (1) 2-6-012: 37, 38, 39, 40, 41, 42, 43, 44, 55, 56, 57, & 58
Historic Preservation Regulatory Context	The Kaio'o LLC's proposed development for the Kaio'o Multifamily Condominium Project constitutes a project requiring compliance with and review under state of Hawai'i historic preservation review legislation (Hawai'i Revised Statutes (HRS) Chapter 6E-42 and Hawai'i Administrative Rules (HAR) 13-284). At the request of the Kusao and Kurahashi, Inc., CSH completed an archaeological inventory survey investigation, per the requirements of HAR Chapter 13-13-276, of the subject 1.67-acre parcel. This archaeological inventory report was prepared to support the proposed condominium's historic preservation review and any other project-related historic preservation consultation.
Fieldwork Effort	Constance O'Hare, B.A., Anthony Bush, B.A., and Douglas Borthwick, B.A. completed the fieldwork effort on November 2 and 3, 2005. Additional testing at Site 50-80-14-6458 was conducted on October 3, 2006 by Constance R. O'Hare and Dr. Hallett H. Hammatt.
Historic Properties Recommended Eligible to the Hawai'i Register of Historic Places (Hawai'i Register)	One. Site 50-80-14-6848, a pre-contact firepit radiocarbon dated to AD 1470-1660, was recorded. The firepit is considered significant under Criterion D. The firepit has provided new and important information about the cultural landscape in this portion of Waikiki, especially a date for the landscape of unmodified ponds, and marshy areas, separated by high, sandy areas used for temporary habitation
Historic Properties Recommended Ineligible to the Hawai'i Register	None.
Effect Recommendation	No further surface inventory or subsurface testing is necessary.
Mitigation Recommendation	No burials were found in the project area, but eight burials have been found in Waikiki within a block of the project area during previous archaeological projects. Therefore, we recommend consultation with the State Historic Preservation Division for a possible archaeological monitoring program during any future development in the project area.

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## Section 1 Introduction

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### 1.1 Project Background

At the request of Ms. Ardis Shaw-Kim of Kusao & Kurahashi, Inc. (Mānoa Market Place, 2752 Woodlawn Drive, Suite 5-202, Honolulu, Hawai'i 96822), Cultural Surveys Hawai'i (CSH) recently completed a surface and subsurface inventory survey, per the requirements of HAR Chapter 13-13-276, of the proposed 116-unit Kaio'o Multifamily Condominium Project area, Waikiki Ahupua'a, Honolulu (Kona) District, O'ahu Island, TMK (1) 2-6-012:037-044, 055-058. The horseshoe-shaped parcel 1.67-acre (0.68-hectare) lot is bound by Hobron Lane on the west side and by Kaio'o Drive on all other sides. This area is depicted on the 1998 Honolulu 7.5-minute USGS topographic quadrangle (Figure 1), the TMK Plat map 2-3-03 (Figure 2), and an aerial photograph (Figure 3). CSH completed the inventory survey fieldwork under state archaeological permit No. 0508 issued by the State Historic Preservation Division (SHPD), per Hawai'i Administrative Rules (HAR) Chapter 13-13-282.

The developers and owners of the property, Kaio'o LLC, proposed development of the Kaio'o Multifamily Condominium constitutes a project requiring compliance with and review under state of Hawai'i historic preservation review legislation (Hawai'i Revised Statutes (HRS) Chapter 6E-42 and HAR 13-284). This archaeological inventory survey report was prepared to support the proposed condominium's historic preservation review and any other project-related historic preservation consultation. For the purposes of this study the area of potential effect (APE) and the project area are considered one and the same. The company proposes to construct a six level structure with two parking levels and four levels of apartments, totaling 116 units.

### 1.2 Scope of Work

The archaeological inventory survey and its accompanying report documents all historic properties within the subject parcel. The following archaeological inventory survey scope of work satisfies the State and County requirements:

- 1) State rules have recently been established which require consultation with community members as part of the inventory survey process. This consultation requires contacting knowledgeable members of the community and requesting information on historic and cultural issues related to the property.
- 2) A complete ground survey of the entire project area for the purpose of site inventory was conducted. No surface sites were found.
- 3) Limited subsurface testing with a backhoe was conducted to determine if subsurface deposits were located in the project area. One appropriate charcoal sample was collected, and it was analyzed for chronological information.
- 4) Research on historic and archaeological background, including search of historic maps, written records, and Land Commission Award documents was carried out. This

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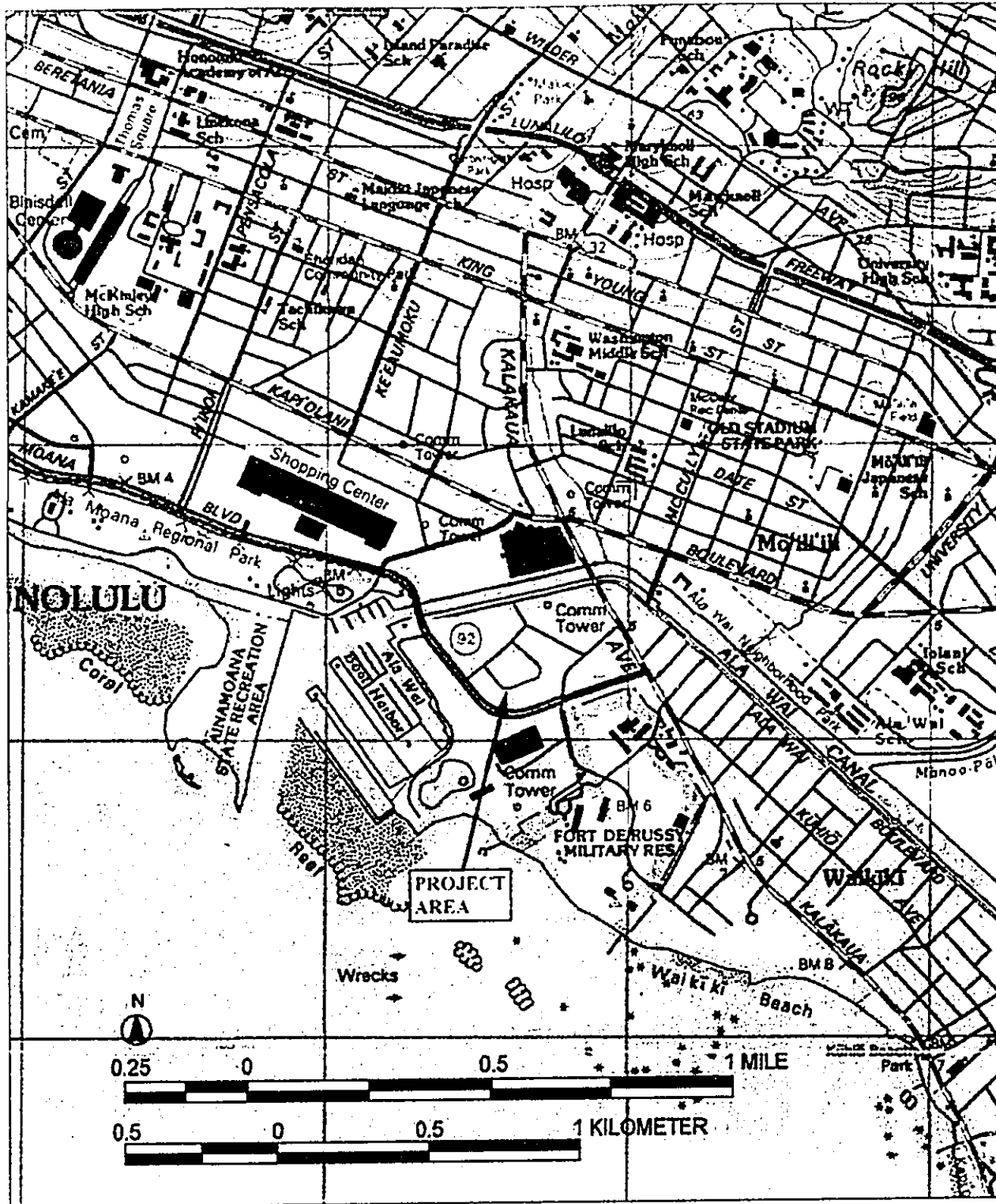


Figure 1. USGS 7.5 Minute Series topographic map, Honolulu Quadrangle, showing project area location

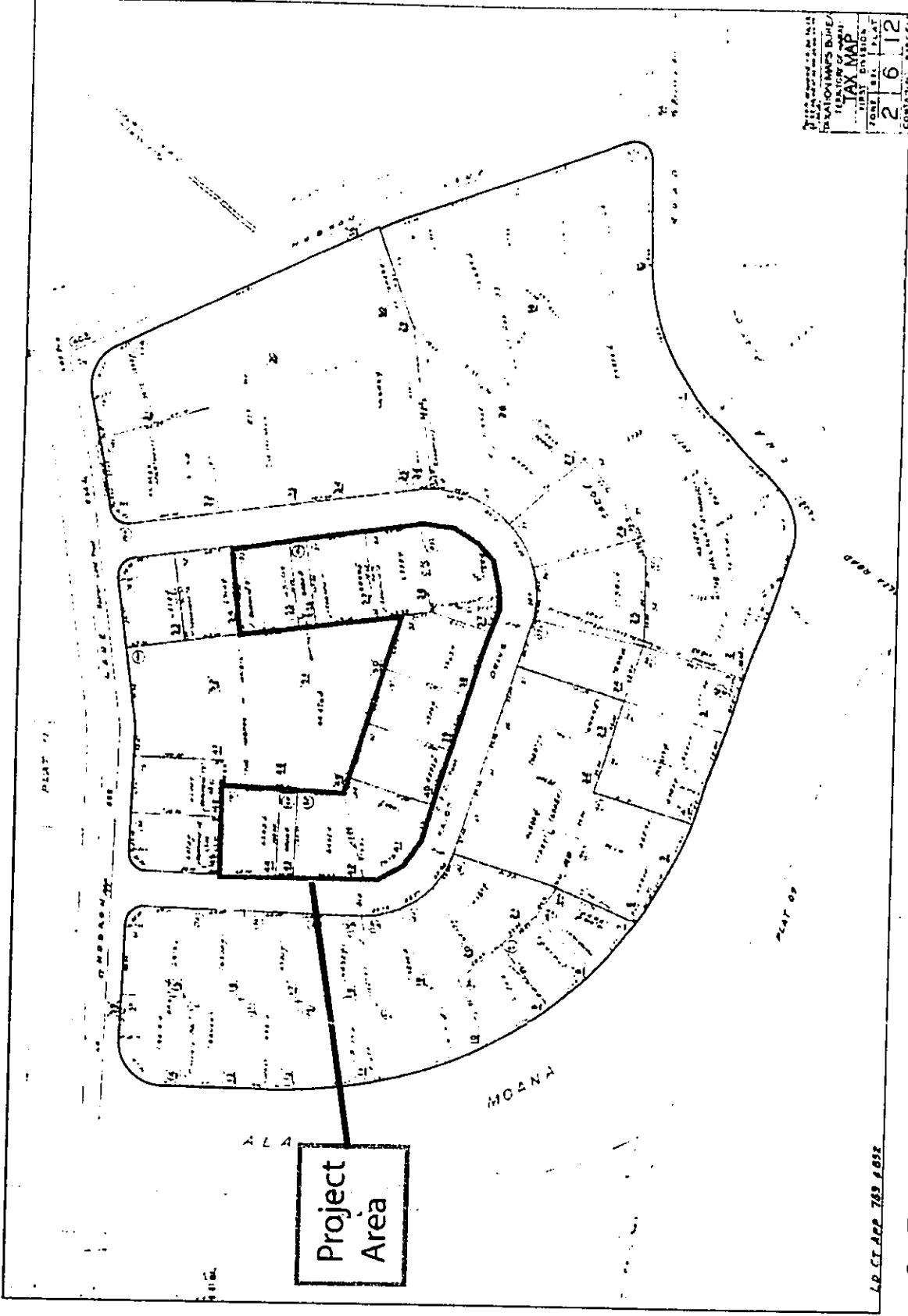


Figure 2. Tax map (2-6-12) showing project area (in red outline)

Inventory Survey for the 116-unit Kaio'o Multifamily Condominium Project

TMK: (1) 2-6-012: 37, 38, 39, 40, 41, 42, 43, 44, 55, 56, 57, & 58

research focused on the specific area with general background on the *ahupua'a* and district and emphasized settlement patterns.

- 5) Preparation of a survey report included the following:
  - a. A topographic map of the survey area showing all archaeological sites and site areas;
  - b. Results of consultation with knowledgeable community members about the property and its historical and cultural issues.
  - c. Description of all archaeological sites with selected photographs, scale drawings, and discussions of function;
  - d. Historical and archaeological background sections summarizing prehistoric and historic land use as they relate to the archaeological features; A summary of site categories and their significance in an archaeological and historic context;
  - e. Recommendations based on all information generated that specify what steps should be taken to mitigate impact of development on archaeological resources - such as data recovery (excavation) and preservation of specific areas. These recommendations will be developed in consultation with the client and the State agencies.

This scope of work also included full coordination with the State Historic Preservation Division (SHPD), and County relating to archaeological matters. This coordination takes place after consent of the owner or representatives.

## 1.3 Environmental Setting

### 1.3.1 Natural Environment

The project area is flat and averages 2 to 3 meters above mean sea level. The average rainfall in this coastal area of Waikīkī is between 20-30 inches per year, with temperatures ranging from 60 to 85 ° F (Armstrong 1973:56).

The U. S. Department of Agriculture soil survey of the Hawaiian Islands designates this area as "FL", mixed fill land, describing the land type as used for urban development and the fill as "materials dredged from the ocean or hauled from nearby areas, garbage, and general material from other sources" (Foote et al. 1972). The filling and subsequent development of the low-lying marshes, tidal flats, fish ponds, and reef areas which constituted the undeveloped natural condition of the project area, permanently changed it into its present fully urbanized character. Although the area has been graded and filled (Fill Land), the natural underlying soil deposit is Jaucus sand (JaC) (Foote et al. 1973).

### 1.3.2 Built Environment

The project area is located within central Honolulu and is surrounded by modern urban development including streets, sidewalks, and utility infrastructure. It is bounded by Kaio'o Drive on the north, east, and west sides and Hobron Lane on the west side. It is a horse-shoe

shaped property with the open ends toward Hobron Lane; the center of the horseshoe is fenced in around the Outrigger Hobron Hotel. The project area is currently an open lot surrounded by several condominiums and hotels fronting Kaio'o Drive and Hobron Lane (Figure 3). The majority of the project area is now covered with grass. Portions of the lot are covered with construction material. The *makai* (seaward) and western arm of the horseshoe is an open dirt lot (Figure 4), the mauka and eastern arm is half covered with asphalt (Figure 5), and the central *mauka-makai* section (Figure 6) is an open grassy lot.

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Figure 3. Aerial photograph, showing project area

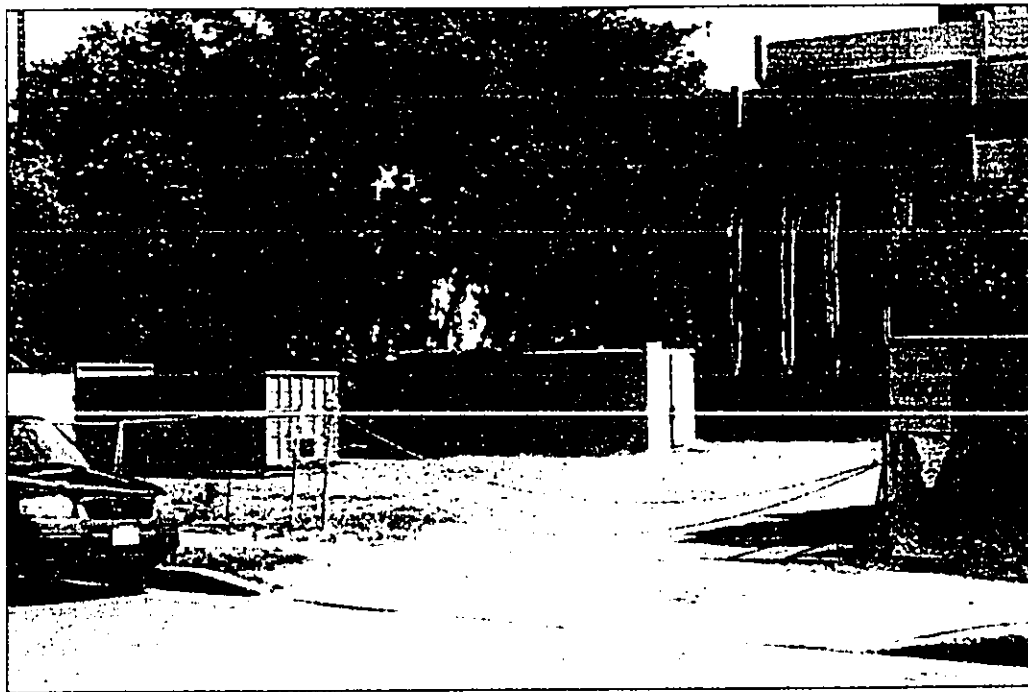


Figure 4. Makai (west) portion of the project area, view to the north

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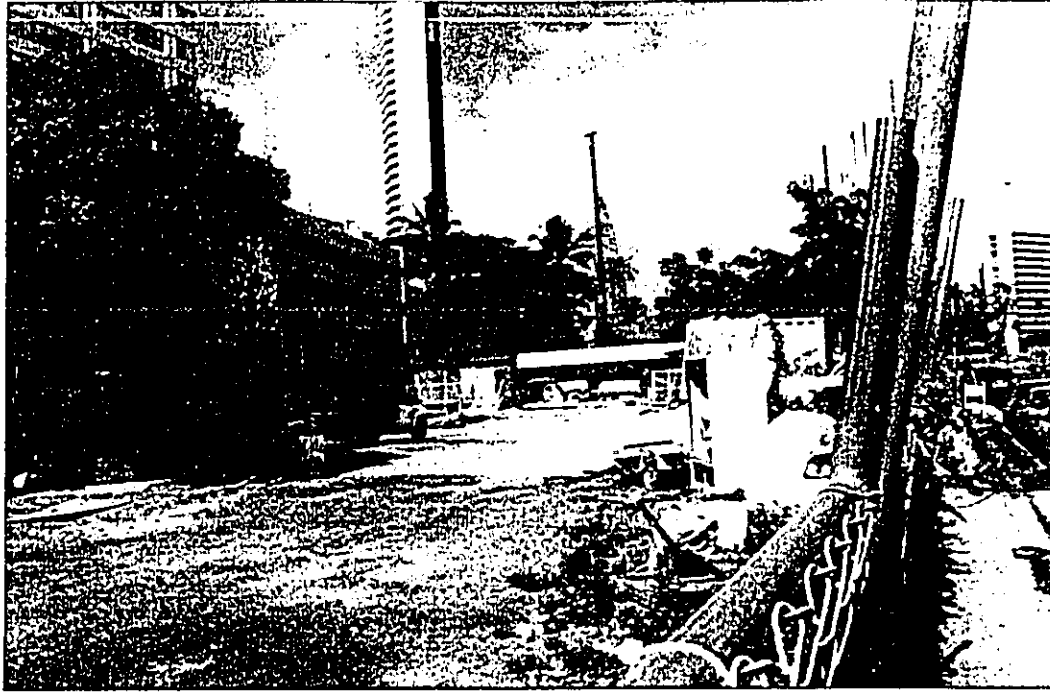


Figure 5. *Mauka* (east) portion of project area, showing pavement in background, view to the west

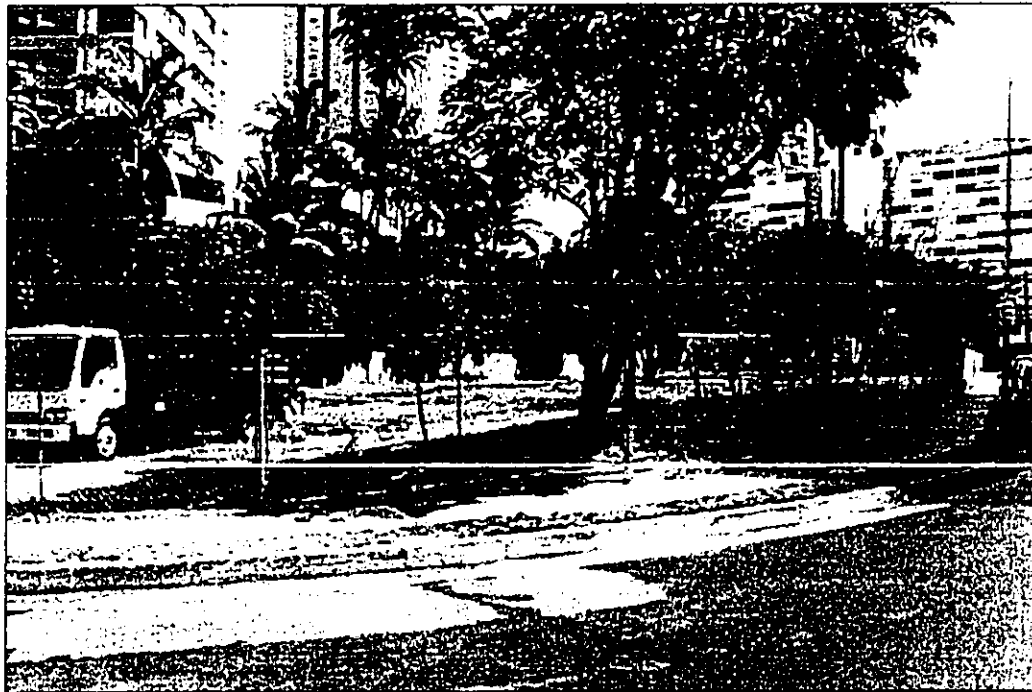


Figure 6. *Mauka-makai* strip of the project area, view to the northeast

## **Section 2 Methods**

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### **2.1 Field Methods**

Constance O'Hare, B.A., Anthony Bush, B.A., and Douglas Borthwick, B.A. completed the fieldwork effort on November 2 and 3, 2005. Additional field work at State Site 50-80-14-6458 was conducted on October 3, 2006 by Constance R. O'Hare and Dr. Hallett H. Hammatt. Fieldwork was conducted under state archaeological fieldwork permit No. 0508 issued by SHPD, per Hawai'i Administrative Rules (HAR) Chapter 13-13-282. The field effort, including subsurface testing with a backhoe, required 6 person-days to complete. Sub-surface testing consisted of the excavation of 20 backhoe trenches. These trenches were excavated to a hard coral shelf, usually found at 130-150 cmbs (centimeters below surface). A 70 cm (centimeter) wide bucket was used on the backhoe, and one bucket width trenches were dug. All excavations were closely monitored by CSH personnel. Trenches were placed to test specific questions identified in the background research, as well as provide adequate coverage of all portions of the project parcel.

The stratigraphy of one profile wall was drawn and photographed and sediments were described for each of the 20 trenches excavated. Sediment descriptions include Munsell color, texture, consistence, structure, plasticity, cementation, origin of sediments, descriptions of any inclusions such as cultural material and/or roots and rootlets, lower boundary distinctiveness and topography, and other general observations. The UTM coordinates (coordinates used by the U.S. Geological Survey) of one site, a firepit (Site 50-80-14-6848) was located using GPS (Global Positioning System) survey technology. The primary GPS device utilized was a Trimble ProXR (accuracy <1 m).

### **2.2 Laboratory Methods**

Because no archaeological artifacts were discovered, no laboratory work was undertaken. One charcoal/burnt rock sample was sent to Beta Analytic for radiocarbon age determination.

### **2.3 Document Review**

Background research included a review of previous archaeological studies on file at the State Historic Preservation Division (SHPD) of the Department of Land and Natural Resources (DLNR), a review of background material from the University of Hawai'i Hamilton Library, and a review of maps at the Hawaii Survey Office and the B.P. Bishop Museum. Historic maps and photographs contained in the CSH library were also consulted. This research provided the environmental, cultural, historic, and archaeological background for the project area. The sources studied were used to formulate a predictive model regarding the expected type and location of sub-surface pre and post-contact historic properties in the project areas.

### **2.4 Consultation**

Throughout the course of this survey, an effort was made to contact and consult with Hawaiian cultural organizations, government agencies, and individuals who might have



knowledge of and/or concerns about the historic review process. A separate Cultural Impact Assessment report (Mitchell and Chiogioji 2005) has been recently completed by CSH. A summary of the results of the Cultural Impact Assessment is presented in the Summary and Interpretation section (Section 7) of this report.

## Section 3 Background Research

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This section presents a review of the available documentary evidence for the general character of the area presently identified as Waikīkī as it had evolved in the years before western contact in the later eighteenth century. The development of Waikīkī lands adjacent to and including the present project area during the nineteenth century and into the early twentieth century was recorded in increasingly detailed documentation - including government records and maps. Finally, during subsequent decades of the twentieth century, abundant documentation of Waikīkī allows a more precise focus on development of the project area itself.

### 3.1 Pre-contact to 1800

Waikīkī is actually the name of a large *ahupua'a* (traditional land division) encompassing lands stretching from Honolulu to Maunalua Bay. Within that *ahupua'a*, by the time of the arrival of Europeans during the late eighteenth century, the area today known as Waikīkī had long been a center of population and political power on O'ahu. According to Martha Beckwith (1940:383), by the end of the fourteenth century Waikīkī had become "the ruling seat of the chiefs of O'ahu." The pre-eminence of Waikīkī continued into the eighteenth century and is confirmed by the decision of Kamehameha, in the midst of unifying control of the islands, to reside there after wresting control of O'ahu by defeating the island's chief, Kalanikupule. The nineteenth century Hawaiian historian John Papa 'I'i (1959:17), himself a member of the *ali'i* (chiefly class), described the king's Waikīkī residence:

Kamehameha's houses were at Puaaliilii, makai of the old road, and extended as far as the west side of the sands of 'Apuakehau. Within it was Helumoa where Ka'ahumanu mā went to while away the time. The king built a stone house there, enclosed by a fence . . . ('I'i 1959:17).

'I'i further noted that the "place had long been a residence of chiefs. It is said that it had been Kekuapoi's home, through her husband Kahahana, since the time of Kahekili" ('I'i 1959:17).

Chiefly residences, however, were only one element of a complex of features that characterized Waikīkī up to pre-contact times. Beginning in the fifteenth century, a vast system of irrigated taro fields was constructed, extending across the littoral plain from Waikīkī to lower Mānoa and Pālolo valleys. This field system, an impressive feat of engineering the design of which is traditionally attributed to the chief Kalamakua, took advantage of streams descending from Makiki, Mānoa and Pālolo valleys, which also provided ample fresh water for the Hawaiians living in the *ahupua'a*. Water was also available from springs in nearby Mō'ili'ili and Punahou. Closer to the Waikīkī shoreline, coconut groves, and fishponds dotted the landscape. A sizeable population developed amidst this Hawaiian-engineered abundance. Captain George Vancouver (1798:161-164), arriving at "Whyteete" in 1792, captured something of this profusion in his journals:

On shores, the villages appeared numerous, large, and in good repair; and the surrounding country pleasingly interspersed with deep, though not extensive

valleys; which, with the plains near the sea-side, presented a high degree of cultivation and fertility.

[Our] guides led us to the northward through the village, to an exceedingly well-made causeway, about twelve feet broad, with a ditch on each side.

This opened our view to a spacious plain, which, in the immediate vicinity of the village, had the appearance of the open common fields in England; but, on advancing, the major part appeared to be divided into fields of irregular shape and figure, which were separated from each other by low stone walls, and were in a very high state of cultivation. These several portions of land were planted with the eddo or taro root, in different stages of inundation; none being perfectly dry, and some from three to six or seven inches under water. The causeway led us near a mile from the beach, at the end of which was the water we were in quest of. It was a rivulet five or six feet wide, and about two or three feet deep, well banked up, and nearly motionless; some small rills only, finding a passage through the dams that checked the sluggish stream, by which a constant supply was afforded to the taro plantations.

[We] found the plain in a high state of cultivation, mostly under immediate crops of taro; and abounding with a variety of wild fowl, chiefly of the duck kind . . . The sides of the hills, which were at some distance, seemed rocky and barren; the intermediate vallies, which were all inhabited, produced some large trees, and made a pleasing appearance. The plain, however, if we may judge from the labour bestowed on their cultivation, seemed to afford the principal proportion of the different vegetable productions on which the inhabitants depend for their subsistence.

Further details of the exuberant life that must have characterized the Hawaiians use of the lands that included the *ahupua'a* of Waikīkī are given by Archibald Menzies (1920:23-24), a naturalist accompanying Vancouver's expedition:

The verge of the shore was planted with a large grove of cocoanut palms, affording a delightful shade to the scattered habitations of the natives. Some of those near the beach were raised a few feet from the ground upon a kind of stage, so as to admit the surf to wash underneath them. We pursued a pleasing path back to the plantation, which was nearly level and very extensive, and laid out with great neatness into little fields planted with taro, yams, sweet potatoes and the cloth plant. These, in many cases, were divided by little banks on which grew the sugar cane and a species of *Draecena* without the aid of much cultivation, and the whole was watered in a most ingenious manner by dividing the general stream into little aqueducts leading in various directions so as to be able to supply the most distant fields at pleasure, and the soil seemed to repay the labour and industry of these people by the luxuriancy of its productions. Here and there we met with ponds of considerable size, and besides being well stocked with fish,

they swarmed with water fowl of various kinds such as ducks, coots, water hens, bitterns, plovers and curlews [Menzies 1920: 23-24].

These and other early written accounts clearly depict a continuous zone of population and cultivation from the shoreline of present day Waikīkī Beach extending north well into Mānoa Valley.

An early map of O'ahu's south shore depicts the Waikīkī landscape in the first decades following western contact (Figure 7). Lt. Charles Malden surveyed south O'ahu in 1825; his map was published in 1841. It shows a concentration of house sites and coconut trees at "Waiatitē (Waikīkī), stretched along the coast and terminating, to the southeast, at a pair of "fresh water ponds."

Already in the 1820s when Malden was drawing his map, the traditional Hawaiian focus on Waikīkī as a center of chiefly and agricultural activities on southeastern O'ahu was changing, disrupted by the same Euro-American contact which produced the first documentation (including the records cited above) of that traditional life. The *ahupua'a* of Honolulu - with the only sheltered harbor on O'ahu - became the center for trade with visiting foreign vessels, drawing increasing numbers of Hawaiians away from their traditional environments. The shift in pre-

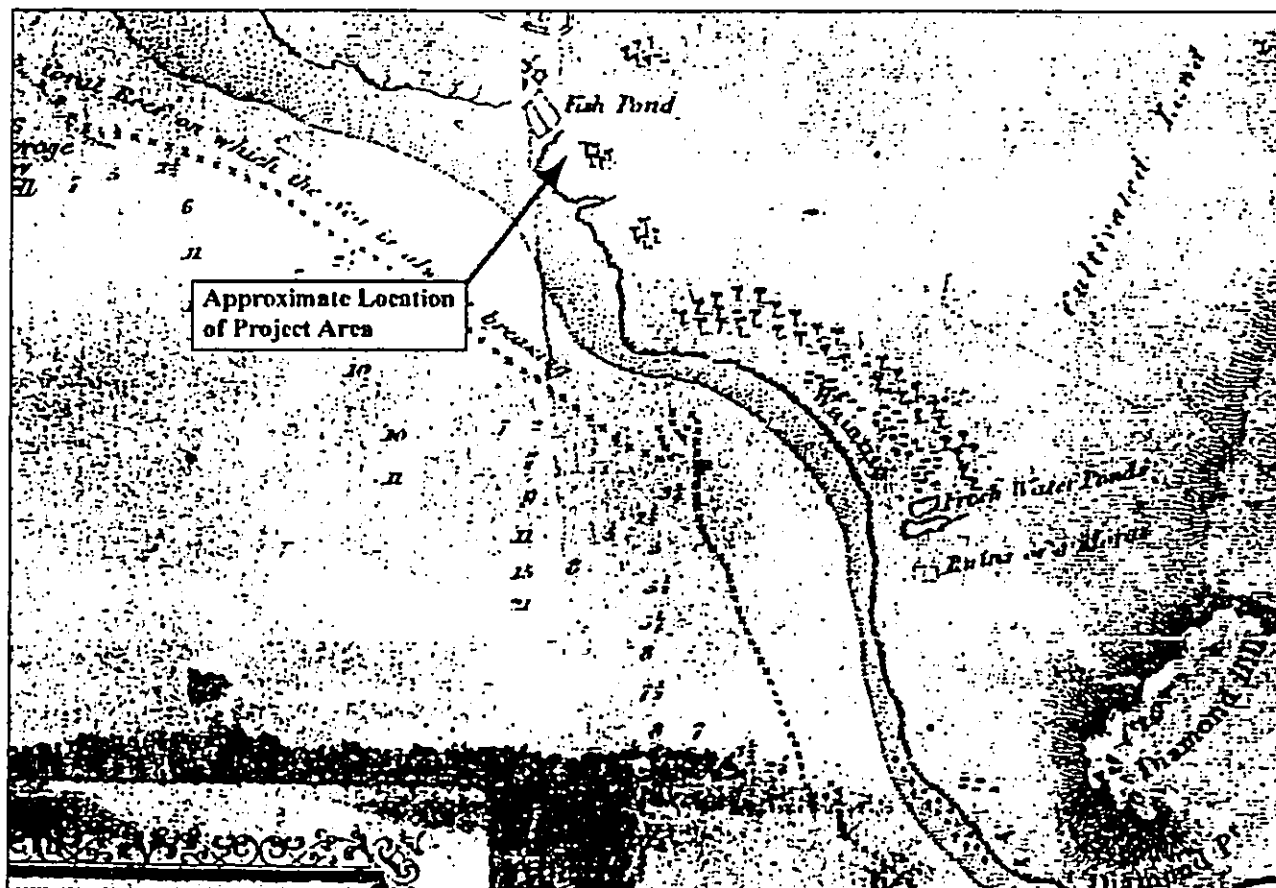


Figure 7. Portion of 1841 Map, survey by Lt. Charles Malden in 1825, showing Waikīkī coastline

eminence is illustrated by the fact that Kamehameha moved his residence from Waikīkī to Honolulu. Indeed, by 1828, Levi Chamberlain describing a journey into Waikīkī would note:

Our path led us along the borders of extensive plats of marshy ground, having raised banks on one or more sides, and which were once filled with water, and replenished abundantly with esculent fish; but now overgrown with tall rushes waving in the wind. The land all around for several miles has the appearance of having once been under cultivation. I entered into conversation with the natives respecting this present neglected state. They ascribed it to the decrease of population [Chamberlain 1957:26].

Tragically, the depopulation of Waikīkī was not simply a result of the attractions of Honolulu (where, by the 1820s, the population was estimated at 6,000 to 7,000) but also of the European diseases that had devastating effects upon the Hawaiian populace. The depopulation of Waikīkī, however, was not total and the *ahupua'a* continued to sustain Hawaiians living traditionally into the nineteenth century. Land Commission Award (LCA) records from the 1840s indicate awardees continuing to maintain fishponds and irrigated and dry-land agricultural plots, though on a greatly reduced scale than had been possible previously with adequate manpower.

An early, somewhat generalized depiction of the pre-contact native Hawaiian shaping of Honolulu and Waikīkī is given on an 1817 map (Figure 8) by Otto von Kotzebue, commander of the Russian ship *Rurick*, who had visited O'ahu the previous year. The map shows taro *lo'i* (rectangular areas depicting irrigated fields) massed around the streams descending from Nu'uuanu and Mānoa valleys. The depicted areas of population and habitation concentration (indicated by the trapezoids), however, probably reflect distortions caused by the post-contact shift of Hawaiians to the area around Honolulu Harbor - the only sheltered landing on O'ahu and the center of increasing trade with visiting foreign vessels.

### 3.2 1800s

As the nineteenth century progressed, Waikīkī was becoming a popular site among foreigners – mostly American – who had settled on O'ahu. An 1865 article in the *Pacific Commercial Advertiser* mentioned a small community that had developed along the beach. The area continued to be popular with the *ali'i* – the Hawaiian royalty – and several notables had residences there. A visitor to O'ahu in 1873 described Waikīkī as “a hamlet of plain cottages, whither the people of Honolulu go to revel in bathing clothes, mosquitoes, and solitude, at odd times of the year” (Bliss 1873).

Other developments during the second half of the nineteenth century, a prelude of changes that would dramatically alter the landscape of Waikīkī during the twentieth century, include the improvement of the road connecting Waikīkī to Honolulu (the route of the present Kalākaua Ave.), the building of a tram line between the two areas, and the opening of Kapi'olani Park on June 11, 1877. Traditional land-uses in Waikīkī were abandoned or modified. By the end of the nineteenth century, most of the fishponds that had previously proliferated had been neglected and allowed to deteriorate. The remaining taro fields were planted in rice to supply the growing numbers of immigrant laborers imported from China and Japan, and for shipment to the west coast of the United States.

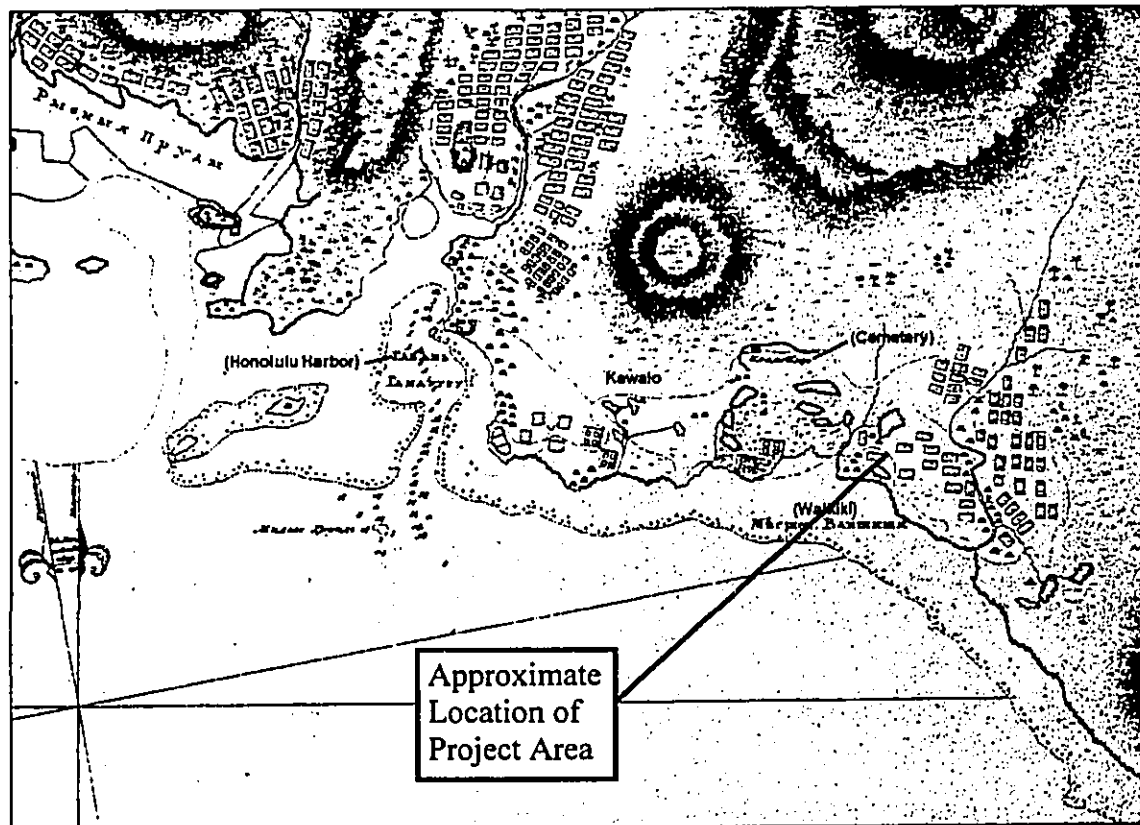


Figure 8. 1817 Map by Otto Von Kotzebue with translations (in parentheses), showing densely populated areas of Honolulu and Waikiki

As the sugar industry throughout the Hawaiian kingdom expanded in the second half of the nineteenth century, the need for increased numbers of field laborers prompted passage of contract labor laws. In 1852, the first Chinese contract laborers arrived in the islands. Contracts were for five years, and pay was \$3 a month plus room and board. Upon completion of their contracts, a number of the immigrants remained in the islands, many becoming merchants or rice farmers. As was happening in other locales in the 1880s, groups of Chinese began leasing and buying (from the Hawaiians of Waikiki) former taro lands for conversion to rice farming. The taro lands' availability throughout the islands in the late 1800s reflected the declining demand for taro as the native Hawaiian population diminished.

The Hawaiian Islands were well positioned for rice cultivation. A market for rice in California had developed as increasing numbers of Chinese laborers immigrated there since the mid-nineteenth century. Similarly, as Chinese immigration to the islands also accelerated, a domestic market opened.

The primary market for both husked rice and paddy raised in all parts of the Hawaiian Islands was in Honolulu. The number of Chinese in the islands created a large home demand.

In 1880 the home market was made more secure by an increase in the duty on rice imported into Hawai'i to 1½ cents on paddy and 2½ cents on hulled rice. It resulted in further checking the importation of foreign rice and giving an immense impetus to the home product [Coulter and Chun 1937: 13].

By 1892, Waikīkī had 542 acres planted in rice, representing almost 12% of the total 4,659 acres planted in rice on O'ahu. Most of the former taro *lo'i* converted to rice fields were located *mauka* (inland) of the present Ala Wai Boulevard.

### 3.3 1900 to Present

During the first decade of the twentieth century, the U.S. War Department acquired more than 70 acres in the Kālia portion of Waikīkī for the establishment of a military reservation called Fort DeRussy, named in honor of Brigadier General R. E. DeRussy of the Army Corps of Engineers.

On November 12 1908, a detachment of the 1st Battalion of Engineers from Fort Mason, California, occupied the new post. Between 1909 and 1911 the engineers were primarily occupied with mapping the island of O'ahu. At DeRussy other activities also had to be attended to, especially the filling of a portion of the fish ponds that covered most of the 70 acres of the Fort. The task fell to the Quartermaster Corps, and they accomplished it through the use of a hydraulic dredger that pumped fill from the ocean continuously for nearly a year in order to build up an area on which permanent structures could be built. Thus the Army began the transformation of Waikīkī from wetlands to solid ground [Hibbard and Franzen 1986:79].

It was also during the 1920s that the lands, including the present project area, would be transformed when the construction of the Ala Wai Drainage Canal - begun in 1921 and completed eight years later - resulted in the draining and filling in of the remaining ponds and irrigated fields of Waikīkī. The canal was one element of a plan to urbanize Waikīkī and the surrounding districts:

The [Honolulu city] planning commission began by submitting street layout plans for a Waikīkī reclamation district. In January 1922 a Waikīkī improvement commission resubmitted these plans to the board of supervisors, which, in turn, approved them a year later. From this grew a wider plan that eventually reached the Kapahulu, Mō'ili'ili, and McCully districts, as well as lower Makiki and Mānoa. . .

The standard plan for new neighborhoods, with allowances for local terrain, was to be that of a grid, with 80-foot-wide streets crossing 70-foot-wide avenues at right angles so as to leave blocks of house lots about 260 by 620 feet. Allowing for a 10-foot-wide sidewalk and a 10-foot right-of-way [alley] down the center of each block, there would be twenty house lots, each about 60 by 120 feet, in each block [Johnson 1991:311].

Dredging for the Ala Wai Canal began in 1921 and was completed seven years later. The final result was a "canal three miles long, with an average depth of twenty-five feet and a breadth of two hundred fifty feet" (*Honolulu Advertiser*, 17 October 1928:2:16). Several claims were made against the dredging company, including compensation for destroyed crops and livestock, by farmers living in Waikīkī. For instance, a Chinese tenant farmer named Chang Fow, leasing lands in Waikīkī from the Bishop Trust Company, wrote a letter of complaint indicating that the salt water that leached into his lands as a result of the dredging of the canal had devastated his fishponds and stocks of ducks and chickens (letter from Chang Fow to the Bishop Trust Company, 23 May 1922, quoted in Nakamura 1979:100-101). His claims, along with those of other residents of the area, give an impression of the continuing agricultural subsistence base in Waikīkī that lasted into the 1920s, and rapidly became a thing of the past.

Nakamura (1979:85) writes that the government of the Territory of Hawai'i solicited bids, in 1920, for the dredge and fill project planned for the environs of Waikīkī. The plan was to create hundreds of acres of urban land—at the expense of wetland agriculture and aquaculture in the area. The advertisement soliciting bids for the project, put forward by Lyman H. Bigelow, masked the significance of the project by stating that "for Dredging a Drainage Canal and Filling and Reclaiming Certain Unsanitary Lands at Waikiki" (Nakamura 1979:85). He further writes that State laws were passed requiring property owners to pay for the filling in of their lands, which apparently was going to be done whether they wanted it or not. A lien would be fixed against their property and if all payment was not made on time, land would be foreclosed on. Nakamura points out that the cost was so high for some of the property owners that the bank lien could extend into a fifteen-year mortgage (Nakamura 1979:89).

Once land that the Territory of Hawai'i government wanted filled in (for state buildings) was complete, any further dredged materials became the property of the dredging company—the Hawaiian Dredging Company—and they in turn could sell the materials to the property owners, who in turn were forced to buy the product. Walter F Dillingham, of the Hawaiian Dredging Company died in 1963. *Time* magazine, in their article about him and his involvement in the project stated that ". . . Walter Dillingham used the muck dragged up from the sea to fill in low, marshy areas around Honolulu, over the years created 5,000 acres of solid ground that now holds a full third of the city's population" (cited in Nakamura 1979:112).

The land surface of modern Waikīkī is situated on the result of this decade long dredging and fill project of which the creation of the Ala Wai Canal was included. In Nakamura's (1979:113) "The Story of Waikīkī and the Reclamation Project" he writes that this land "reclamation" program changed the ecology of Waikīkī from a once viable and important agriculture and aquaculture center . . . destroyed by profit-seeking capitalist entrepreneurs . . . under the subterfuge of "drainage" and "sanitation." Many of the original property owners lost their land or had serious damage to their property as a result of the reclamation activities and/or the costly expense for the mandatory filling in of their properties.

Waikīkī had been changed forever by the Ala Wai Canal. The ancient irrigation systems were gone, the farms were gone, the streams were gone, the mosquitoes were gone, and Waikīkī was separated from the rest of Honolulu by a broad canal. On the new high-and-dry lands behind the hotels, developers laid out tracts of inexpensive homes and garden apartments. Almost overnight Waikīkī became urban (Grant 1996:54).



### 3.4 Development of the Project Area

#### 3.4.1 The Project Area in the Nineteenth Century

The Organic Acts of 1845 and 1846 initiated the process of the *Māhele* – the division of Hawaiian lands – which introduced private property into Hawaiian society. In 1848 the crown, the Hawaiian government, and the *ali'i* (royalty) received their land titles. Subsequently in the *Māhele*, Land Commission Awards (LCAs) for *kuleana* (tenant) parcels were given to commoners and others who could prove residency on and use of the parcels they claimed. Land Commission Award records document awardees continuing to maintain fishponds and irrigated and dry-land agricultural plots, though on a greatly reduced scale.

An 1881 Hawaiian Government survey map by S.E. Bishop (with locations of LCA parcels indicated) provides a detailed record of the physical landscape of Waikīkī before the transformations of the twentieth century. The map reveals an extensive complex of irrigated fields, streams and irrigation watercourses, and ponds stretching inland from the Waikīkī shoreline to the plains of Mō'ili'ili. Land Commission Award records for the awards shown on the map document houselots near the shore with associated taro *lo'i* [irrigated plots] located inland and house lots adjacent to inland taro *lo'i*.

The location of the present project area has been indicated on a portion of the Bishop map (Figure 9). A fishpond or low area is shown running through the *makai* portion of the project area. Two LCA parcels are shown to the west of the project area: LCA 99 F.L. to Uma and LCA 2549 to Luaiku. LCA documents associated with these two awards give details of traditional Hawaiian land usage in the vicinity of the project area.

The LCA 99F.L. parcel is described as a house lot bound by a pond on the *mauka* (east) side and on the north side by a sea ditch. Uma testified to having received the land from his parents during the time of Kamehameha I.

No. 99 F.L., Uma, Honolulu, 18 March 1852  
N.R. 763v3

The Land Commissioners of the Hawaiian Islands, Greetings: I have a house site in the 'ili of Kalia in Waikiki, Oahu, with one house in it. It has not been fenced because it has not been necessary and it is bounded by a pond.

N.T. 304v10  
No. 99 FL. Uma, 21 March 1853

Luaiku, sworn, I have seen his land section in Kalia, Waikiki, Kona, Oahu of a house site and a fish pond.

Mauka, Waiālae, Makai, Government land  
Honolulu, A sea ditch.

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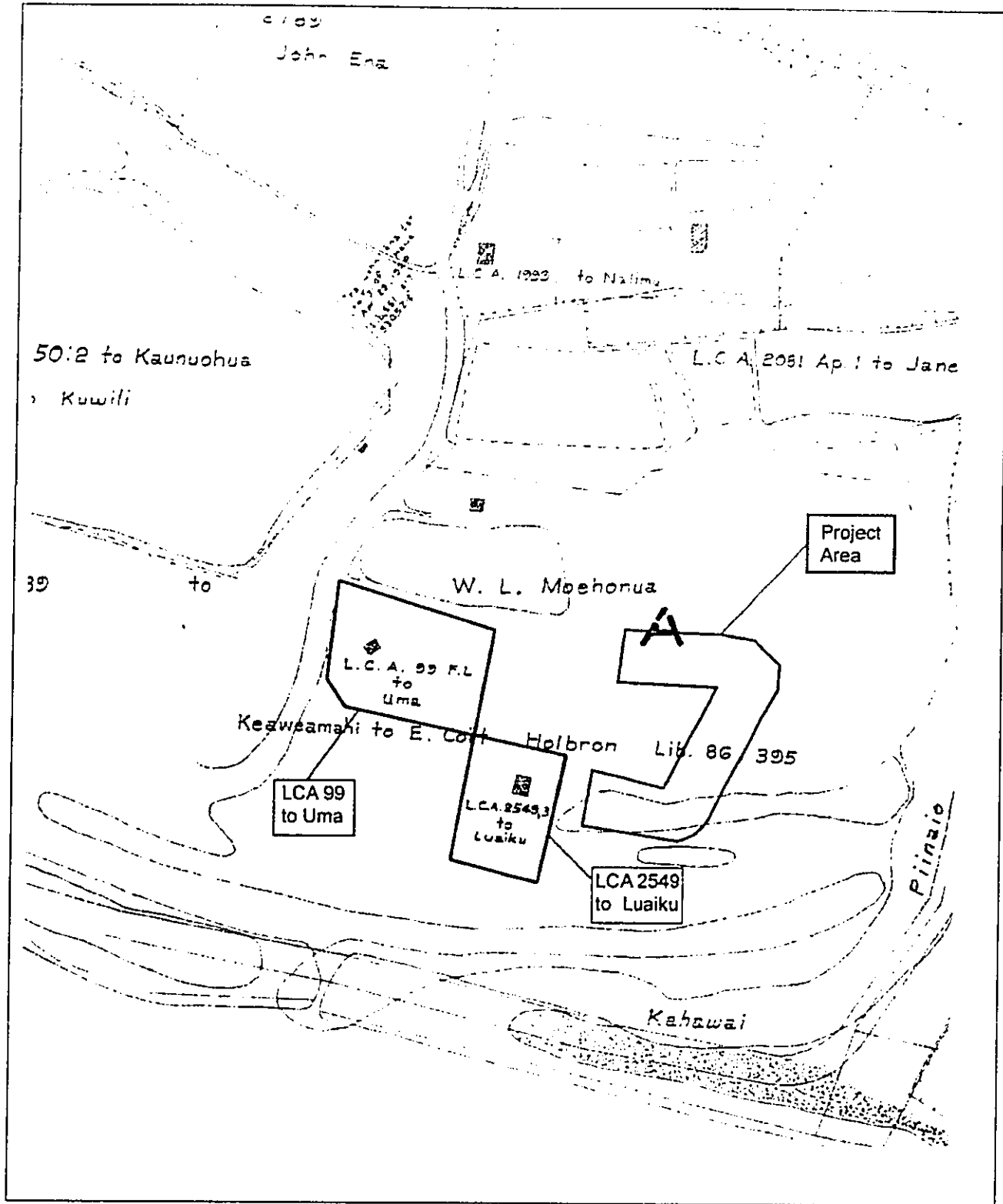


Figure 9. Portion of 1881 Hawaiian Government survey map by S.E. Bishop showing locations of LCA parcels (in green outline) and current project area (in red outline)

Adjacent to the southwest corner of Uma's land is parcel (*apana*) 3 of LCA 2549, awarded to Luaiku who described it as his "kahuahale [house lot] situated in Kamooloa ili of Kalia Waikiki". The house lot is described as bounded:

Say! I, the one whose name is below, hereby state my little claim in Waikiki, in the 'ili of Maulukikepa. I have 4 lo'i and a section of watercourse and my house site at Kalia. 2 lo'i were from my makuahine, and a kula and her house in that kula. That is my claim which I state to you, to be worked on at the proper time. When I am directed, I will come with the proper witnesses.

#### LUAIKU

Waikiki, 30 December 1847 Apana 3, kahuahale situated in Kamooloa, ili of Kalia, Waikiki, is bounded:

Mauka by the loko belonging to Mahuka  
 Kekaha [to the east-toward the project area] by the land of Nakai  
 Makai by the land Kalia, of Kekuanaoa  
 Honolulu [to the west] by the land of Uma.

During the *Māhele*, the 'ili of Kālia in Waikīkī was one of 52 'ili in the Kona district of O'ahu set aside as "fort lands," which were reserved "for the use of the Fort in Honolulu to be cultivated by soldiers and other tenants under the direction of the Governor of Oahu" (Chinen 1958:27). After the *Māhele*, portions of the Government Lands were often sold as a means of obtaining revenue to meet the increasing costs of the Government. Purchasers of these lands were issued documents called "Grants" or "Royal Patent Grants." On the Bishop map, the area surrounding LCAs 99 and 2549:3 and the present project area was owned by W. L. Moehonua through Royal Patent Grant No. 2785. W. L. Moehonua was an uncle of David Kalākaua, and husband of Kaunohua, a *kahu* (guardian) of Alexander Liholiho, Kamehameha III (Kame'eleihiwa 1992:264).

The map and *Māhele* documents suggest that the present project area, in traditional Hawaiian times and continuing into the nineteenth century, comprised a portion of the system of fishponds and adjacent house sites that characterized the Kālia section of Waikīkī.

#### 3.4.2 The Project Area in the Twentieth Century

Historic maps and photographs document land use within the project area streets from the first decades of the twentieth century to the 1950s when the present layout of Waikīkī streets was completed.

A fire insurance map of 1914 shows that there were five areas in Waikīkī where residential and commercial structures were concentrated in the early twentieth century (Figure 10). These areas were: 1) clustered at Saratoga Road and Lewers Road; 2) near the intersection of Ena Road and Kalākaua Avenue; 3) *makai* of Kālia Road on the east side of Ft. DeRussy; 4) clustered around the Moana Hotel (which had opened in 1901) on Kalākaua Avenue; and 5) in Kapahulu on the 'Ewa side of Makee Road (the present Kapahulu Avenue). The fire insurance map also reveals the relative isolation of Waikīkī, in the early twentieth century from the encroaching grid of modern Honolulu streets.

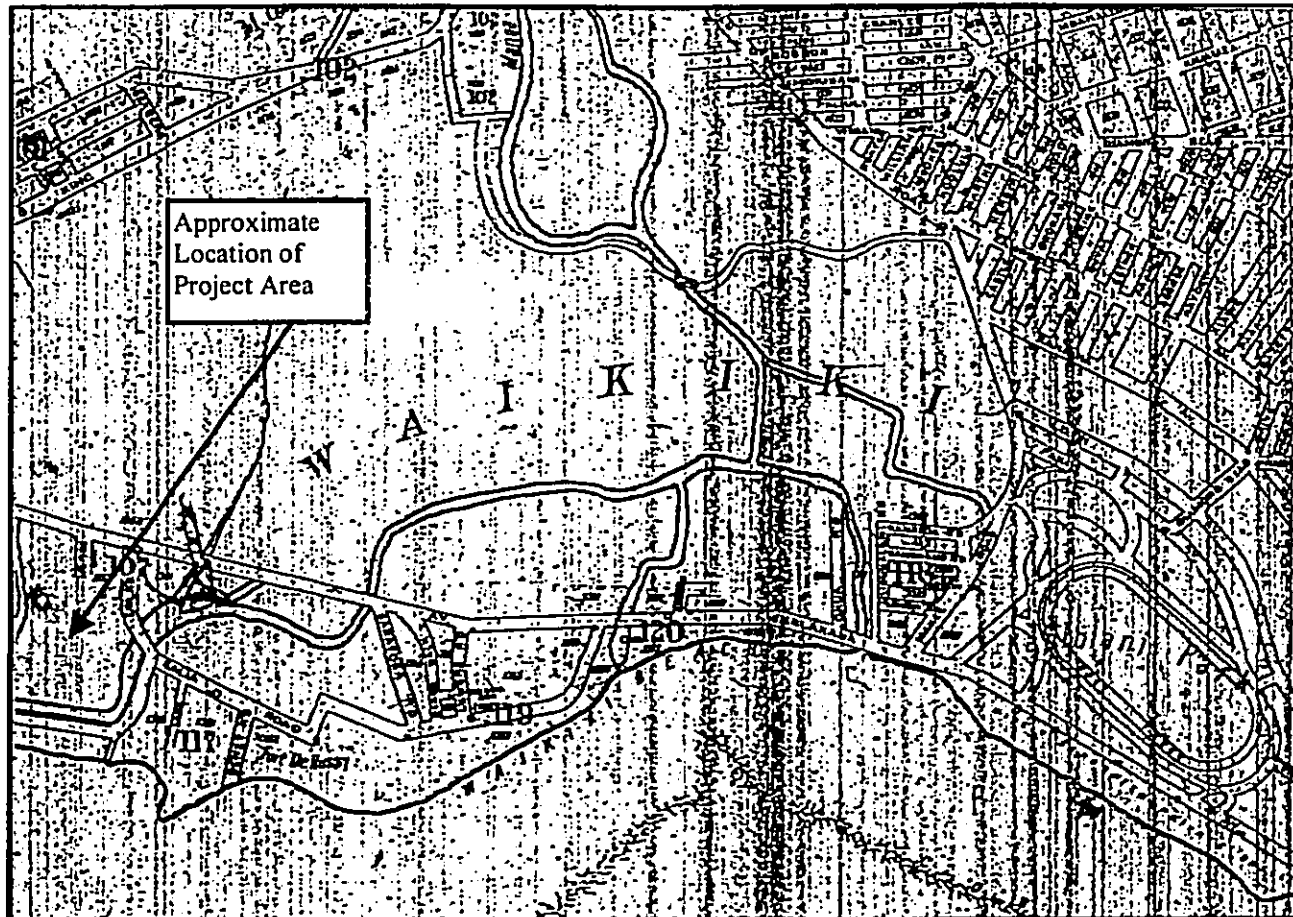


Figure 10. Portion of 1914 Sanborn Fire Insurance Map of Waikīkī

A subsequent fire insurance map of 1927 – upon which the present project area outline has been indicated – shows the Kālia, Waikīkī landscape within and surrounding the project area before the completion of the Ala Wai Canal (Figure 11). The map indicates that the *mauka* and *makai* “arms” of the project area were ponds up to the first decades of the twentieth century. The label “Mosquito & Duck Pond” suggests that these areas were more likely low-lying, swampy areas that filled with water after rains, rather than well-maintained fishponds. The central portion of the project area was then a dryland environment elevated above the surrounding wetlands. As indicated on the soil survey of O‘ahu (Foote *et al.* 1972), this dryland environment would have consisted primarily of Jaucus sand. The fire insurance map also indicates that single-story dwelling structures (labeled “D”) were located immediately outside the project area.

A 1927 aerial photograph (Figure 12) – upon which the present project area outline has been indicated – confirms the project area landscape recorded on the contemporaneous fire insurance map (see Figure 11). The photograph shows the newly-constructed Ala Wai Canal and the offshore dredging operation that is pumping dredged materials to fill the marshes and fishponds of Waikīkī, including the two low-lying areas within the present project area. The abundantly vegetated area between the two filled-in areas confirms that the central portion of the project area was indeed existing dryland before the Waikīkī landfill operations that occurred in the 1920s.

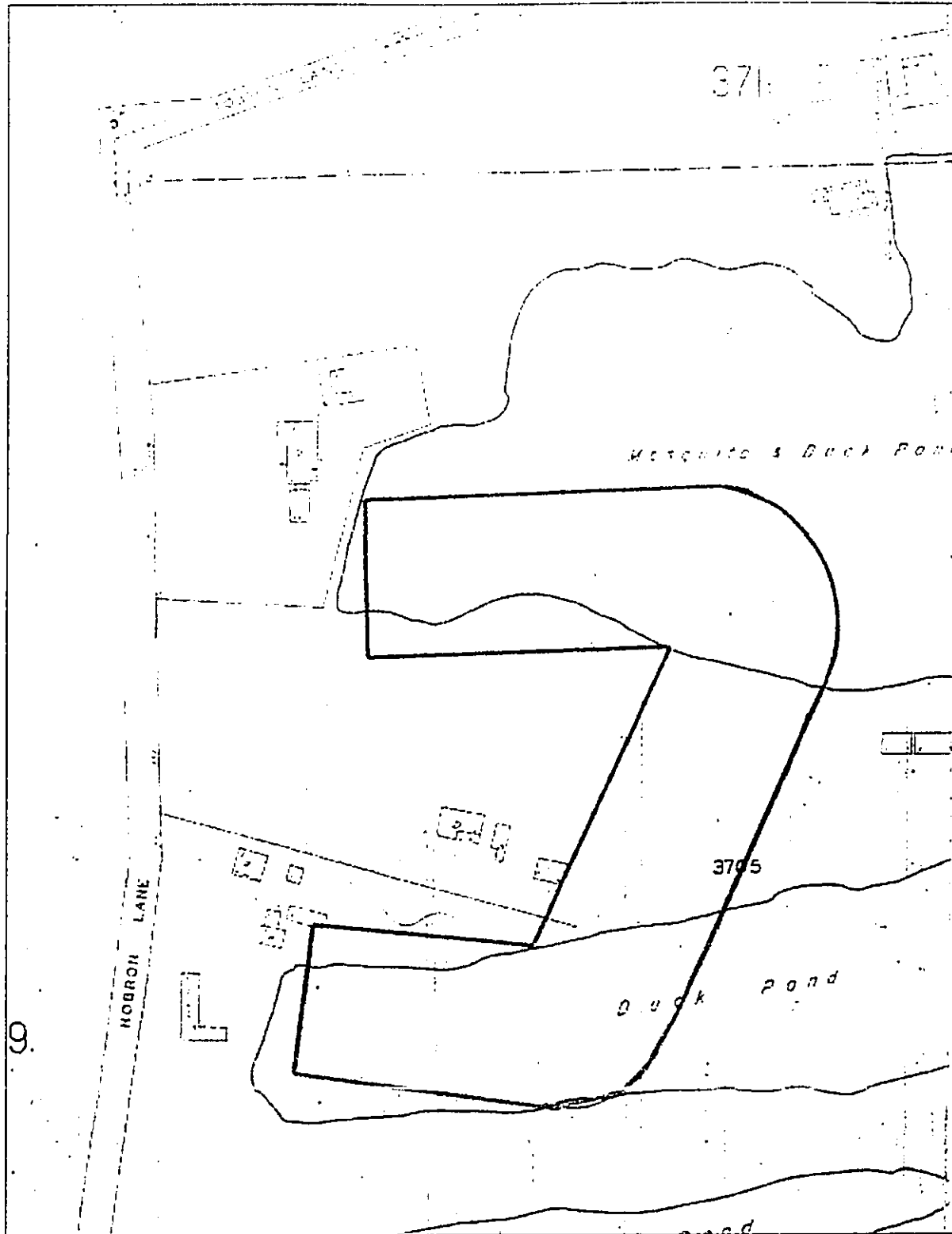


Figure 11. Portion of 1927 Sanborn Fire Insurance map with project area indicated (in red outline) showing fish ponds and dryland environment

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Figure 12. 1927 aerial photograph with location of project area indicated (in red outline); the suction dredge "Kewalo" is carving out and filling tidal flats

Inventory Survey for the 116-unit Kaio'o Multifamily Condominium Project

TMK: (1) 2-6-012: 37, 38, 39, 40, 41, 42, 43, 44, 55, 56, 57, & 58

As shown by a 1947 aerial photograph and a 1951 fire insurance map the present project area and its surroundings reflect the mid-twentieth century changes occurring within Waikiki (Figure 13 and Figure 14). The parcels comprising the present project area are filled with the typical single-story cottages and two-story apartment buildings that characterized much of Waikiki before subsequent resort development during the remainder of the century.

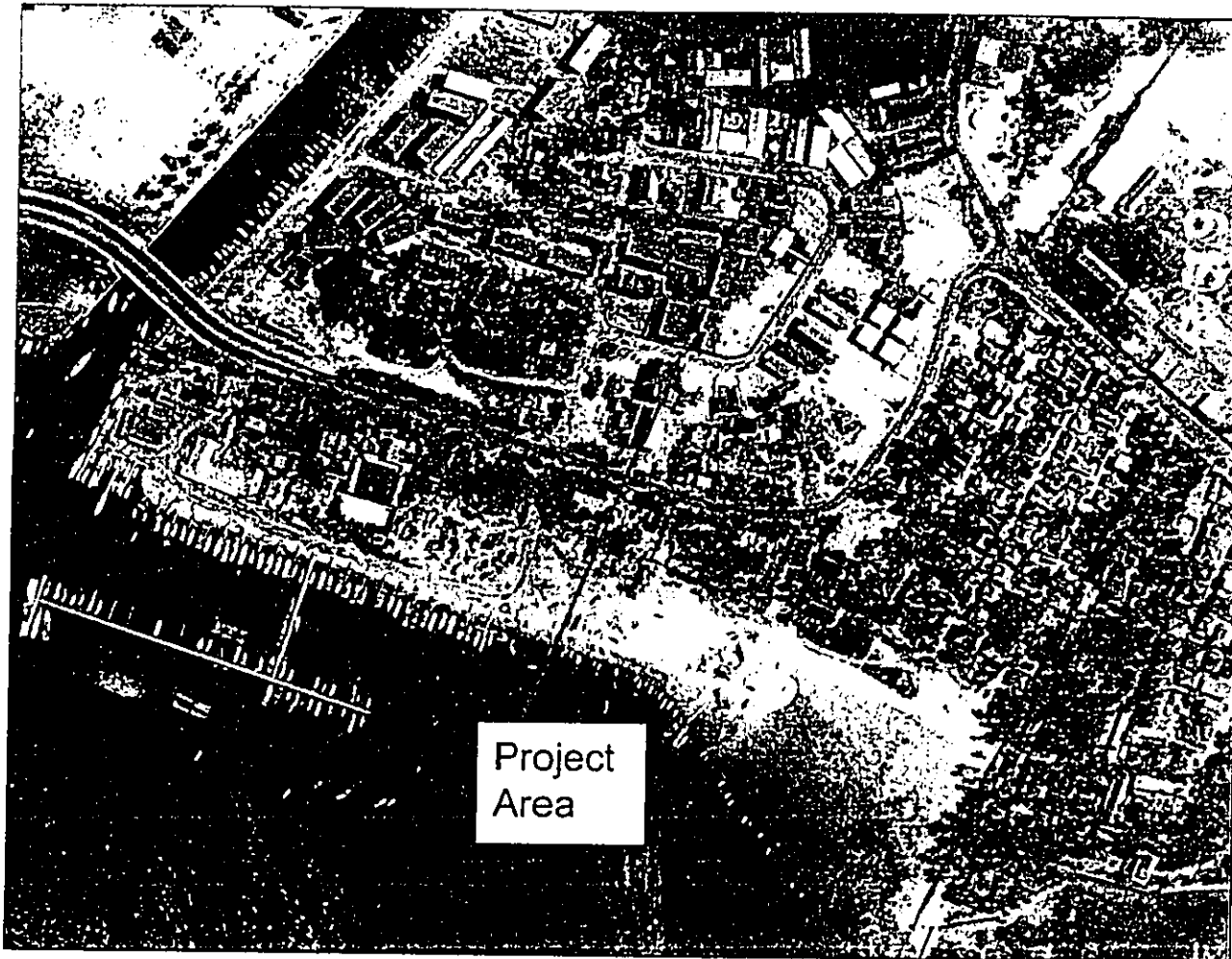


Figure 13. 1947 aerial photograph with present project area indicated (in red outline)

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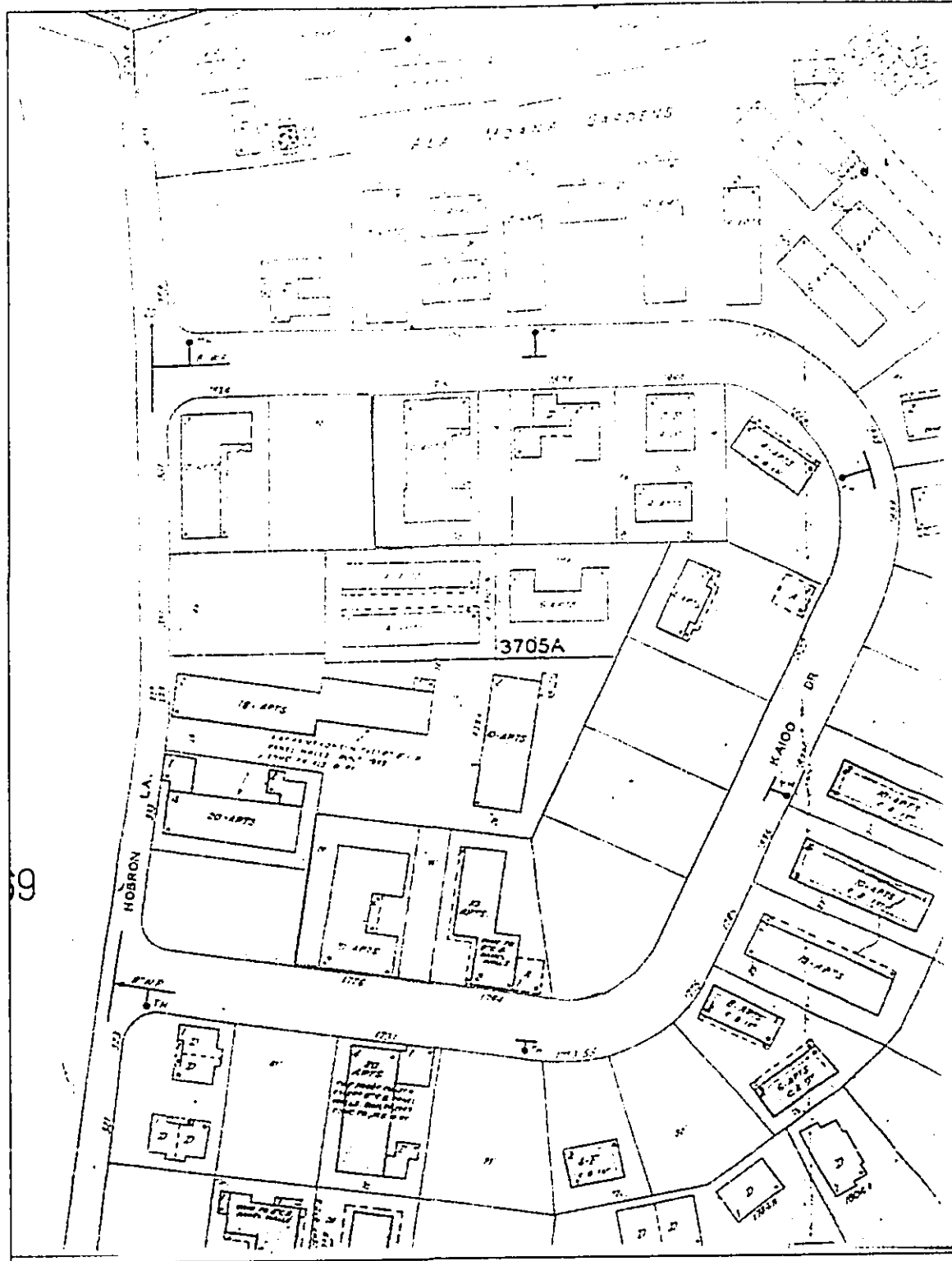


Figure 14. 1951 Sanborn Fire Insurance map with present project area location (in red outline)



## Section 4 Community Consultation Process

A separate Cultural Impact Assessment report was prepared by CSH for the clients, Kusao & Kurahashi (Mitchell and Chiogiji 2005). Throughout the course of this assessment, an effort was made to contact and consult with Hawaiian cultural organizations, government agencies, and individuals who might have knowledge of and/or concerns about traditional cultural practices specifically related to the project area. This effort was made by letter, e-mail, telephone, and in person contact. The individuals, organizations, and agencies attempted to be contacted and the results of any consultations are presented Table 1 below.

Table 1. Community Contacts

Name	Organization, Affiliation	Comments
Ayau, Halealoha	Hui Mālama O Nā Kūpuna O Hawai'i Nei	Contacted
Diamond, Van Horn	Chairperson, O'ahu Island Burial Council	Contacted
Kahanamoku Sterling, Joanne	<i>Kama'āina</i> of Waikīkī	Interviewed
Kaleikini, Paulette	<i>Kama'āina</i> of Waikīkī	Interviewed
Nāmu'o, Clyde	Administrator Office of Hawaiian Affairs	Contacted
Norman, Ted	<i>Kama'āina</i> of Kālia	Contacted
Paoa, Clark Robert	<i>Kama'āina</i> of Waikīkī	Interviewed
Worthington, Bob	<i>Kama'āina</i> of Kālia	No cultural concerns at this time

Joanne Kahanamoku Sterling participated in a telephone interview with Cultural Surveys Hawai'i Inc. on October 1, 2004. Joanne Kahanamoku Sterling was born to Samuel Alapa'i Kahanamoku and Sara Tenamoietā of Tahiti. She was raised in Waikīkī on what is now the Ala Moana Boulevard where the Hilton is today southwest of the present project area. Joanne Kahanamoku Sterling specifically commented that the Waikīkī section where the project is located was once called "Dog Patch" by the families living there. These families went to the beach in front of the 'Ilikai Hotel to swim, gather *limu* (edible seaweed), and fish. The informant did not remember any talk of burials in the area.

CSH conducted an interview with Mr. Robert Clark Paoa on October 4, 2004. Robert Clark Paoa was born in Waikīkī, Kalia (where the 'Ilikai Hotel is today) on the island of O'ahu in 1937. He was raised by his parents Mr. Malcom Paoa and Mrs. Ellen Clark Paoa on their family on land just south of the current project area. Mr. Paoa worked for the Federal Government National Guard. Mr. Paoa specifically commented that his family received the land in the Māhele of 1848. Mr. Paoa remembers when human bones were found during roadwork on Ala Moana

Boulevard in the early 1950s. His father told the coroner that he could rebury the bones in his own yard. Mr. Paoa also remembered that the area was called "Dog Patch." He said that the area was so named in the 1920s as a Hawaiian resident of this area used to raise dogs to eat. Other residents of the area say that the name originated later, in the 1930s. Because the area was such a tight-knit community, the residents called it "Dog Patch," based on the home of the popular characters of the comic strip "L'il Abner."

Mrs. Paulette Kaleikini was born to Samuel Keko'o Kawainui and his wife Alice Kekahiliokamokukeli'ilumilani Keaweamahi in June 13, 1952. Mrs. Kaleikini commented on the present project in a e-mail dated November 21, 2005. She stated that her *kupuna kahiko* (ancestor) tended to a fishpond of *moi* (threadfish) in Kālia.

The background research and interviews did not identify any former or on-going cultural practices in the project area, such as the collection of plants or marine resources. No historic properties, such as *heiau*, trails, or burial sites, were identified by the informants.

## Section 5 Previous Archaeological Research

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The *ahupua'a* of Waikīkī, in the centuries before the arrival of Europeans, was an intensely utilized area, with abundant natural and cultivated resources, that supported a large population. In the nineteenth and early twentieth centuries, after a period of depopulation, Waikīkī was reanimated by Hawaiians and foreigners residing there, and by farmers continuing to work the irrigated field system, which had been converted from taro to rice. Farming continued up to the first decades of this century until the Ala Wai Canal drained the remaining ponds and irrigated fields. Remnants of the pre-contact and historical occupation of Waikīkī have been discovered and recorded in archaeological reports, usually in connection with construction activities related to urban development, or infrastructural improvements. These discoveries, which have occurred throughout Waikīkī, have included many human burials, traditional Hawaiian and historic, as well as pre-contact Hawaiian and historic cultural deposits. A full list of projects conducted in the Waikīkī area is listed in Table 1. A discussion of projects focusing on burials (Figure 12) follows.

N.B. Emerson reported on the uncovering of human burials during the summer of 1901 on the property of James B. Castle - site of the present Elks Club - in Waikīkī during excavations for the laying of sewer pipes (Emerson 1902:18-20). Emerson noted:

The soil was white coral sand mixed with coarse coral debris and sea-shells together with a slight admixture of red earth and perhaps an occasional trace of charcoal. The ground had been trenched to a depth of five or six feet, at about which level a large number of human bones were met with, mostly placed in separate groups apart from each other, as if each group formed the bones of a single skeleton. Many of the skulls and larger bones had been removed by the workmen before my arrival, especially the more perfect ones [Emerson 1902:18].

Emerson's report on the find describes the remains of at least four individuals, all presumed to be Hawaiian. Associated burial goods were also exposed during excavation; these included "a number of conical beads of whale-teeth such as the Hawaiians formerly made" and "a number of round glass beads of large size". The glass beads "can be assigned with certainty to some date subsequent to the arrival of the white man" (Emerson 1902:19). Also located with the beads was "a small sized *nihopalaoa*, such as was generally appropriated to the use of the chiefs" which had been "carved from the tooth of the sperm-whale" and which was "evidently of great age" (Emerson 1902:19).

In the 1920s and 30s the first systematic archaeological survey of O'ahu was conducted by J. C. McAllister (1933). He recorded four *heiau* (temples), three of which were located at the *mauka* reaches of Waikīkī *Ahupua'a* in lower Mānoa Valley. The fourth *heiau* - Papa'ena'ena - was located at the foot of Diamond Head crater in the environs of the present Hawai'i School for Girls. Papa'ena'ena Heiau is traditionally associated with Kamehameha I, who was said to have visited the *heiau* before setting off to battle for Ni'ihau and Kaua'i in 1804. Five years later, according to John Papa 'Ī'i, Kamehameha placed at Papa'ena'ena the remains of an adulterer - "all prepared in the customary manner of that time" ('Ī'i 1959:50-51).

Table 2. Previous archaeological investigations in Waikīkī Ahupua'a, focusing on burials

Reference	Type of Investigation	General Location	Findings
McAllister 1933	Island-wide survey	All of O'ahu	Waikīkī listed as Site 60.
Nakamura 1979	History Graduate Thesis	Waikīkī	History of Waikīkī with focus on the radical changes in land use that occurred in the early 20th century.
Neller 1980	Monitoring Report	Kālia Burial Site: Hilton Hawaiian Village	Brief field inspection: partial recovery of 3 historic Hawaiian burials, trash pit from 1890's, no prehistoric Hawaiian sites.
Bishop Museum 1981	Testing, Excavations, & Monitoring	Halekulani Hotel	Intact cultural deposits found.
Neller 1981	Reconnaissance Survey	Halekulani Hotel	Limited background research on area
Acson 1983	Historical Research	'Ewa to Diamond Head	Nine walks through Waikīkī, photos, maps and historical info.
Bishop Museum 1984	Burial Remains List	Waikīkī Ahupua'a	Listing of burial remains found in Waikīkī Ahupua'a at the Bishop Museum
Davis 1984	Archaeological and Historical Investigation	Halekulani Hotel	48 historic and prehistoric features excavated.
Neller 1984	Informal Narrative Report	Paoakalani Street	Recovery of human skeletons at construction site
Center for Oral History 1985	Oral Histories, Volumes I-IV	Waikīkī	Oral Histories of Waikīkī, 1900-1985, Volumes I-IV
Griffin 1987	Burial Recovery Report	Along Kalākaua Ave. near corner of Kai'ulani St.	Bones removed and bagged by construction crew, burial found in <i>makai</i> wall of gas pipe excavation.
SHPD 1987	Burial, PA Report	Kalākaua Ave.	From excavation adjacent to Moana Hotel (site - 9901).
Davis 1989	Reconnaissance Survey & Historical Research	Fort DeRussy	Fishponds and other features are buried in this area. Sites -4573 thru -4577 are fishponds, 4570 is a remnant cultural deposit.
Riford 1989	Background Literature Search	TMK: 2-6-014:039	List of literature pertaining to Waikīkī area.
Rosendahl 1989	Inventory Survey, Prelim. Report	Fort DeRussy	Historic artifacts, no human remains
Athens 1990	Letter	TMK: 2-6-023:025	Letter to SHPD listing human remains at IARII lab from Pacific Beach Hotel, and Barbers Point Generating Station.
Hurst 1990	Historical Literature Search	Waikikian Hotel	Background and planning document. No fieldwork was done.
Chigioji 1991	Assessment	2 parcels, TMK 2-6-24:65-68 and 80-83, TMK 2-6-24:34-40 & 42-45	Formerly a corner of the 'Āinahau estate; remainder of parcels, former 'auwai, kalo and rice fields; test excavations and specific sampling strategy recommended.

Reference	Type of Investigation	General Location	Findings
Davis 1991	Monitoring Report	Fort DeRussy	See also Davis 1989. Subsurface features and material remains date to early post-contact times (c. 1780s to 1790s) through the mid-19th century.
Kennedy 1991	Monitoring Report	TMK: 2-6-022:014 IMAX theatre location	Pollen and bulk-sediment <sup>14</sup> C samples from ponded sediments were recovered. The three <sup>14</sup> C dates and pollen sequence were inverted.
SHPD 1991	Public Inquiry	TMK: 2-6-024:036	Bones were determined to be non-human and part of the extensive fill material present
Simons et al. 1991	Interim Field Study, Monitoring & Data Recovery	Moana Hotel Area	8 burials, preliminary osteological analysis indicates pre-contact type; pre- and post artifactual material recovered.
Hurlbett 1992	Monitoring Report	TMK: 2-6-008:001	Site -2870 (3 burials) found by Neller in 1980. This report is on testing and monitoring in same area.
Pietrusewsky 1992a	PA Report	Moana Hotel	Right half of human mandible found by hotel guest.
Pietrusewsky 1992b	PA Report	Lili'uokalani Gardens Site, Hamohamo	Human Remains from the Lili'uokalani Gardens Site, Hamohamo, Waikiki, O'ahu
Rosendahl 1992	Monitoring Report	Hilton Hawaiian Village	Identified 12 historic refuse pits, 3 historic to modern trenches.
Streck 1992	Memorandum for Record	Fort DeRussy	Human burial discovery (believed to be late prehistoric Hawaiian) during data recovery excavations, May, 20, 1992.
Cleghorn 1993	Inadvertent Discovery of Human Remains	Waikiki Aquarium	Remains of one human individual, mandible identified.
Dagher 1993	Inadvertent Discovery of Human Remains	Waikiki Aquarium	Human remains of at least one person identified, excavation recommended.
Dega & Kennedy 1993	Inadvertent Discovery of Remains	Waikiki Aquarium	Discovery of unidentified bone fragments, all remains turned over to SHPD.
Hammatt & Chiogioji 1993	Archaeological Assessment	16-Acre Portion of the Ala Wai Golf Course	Not associated with any know surface archaeological site, however prehistoric and early historic occupation layers associated with <i>lo'i</i> system remain intact below modern fill. Specific sampling strategy and potential burial testing recommended.
Maly et al. 1994	Archaeological and Historical Assessment Study	Convention Center Project Area	Recommend subsurface testing to determine presence or absence of cultural deposits and features.
McMahon 1994	SHPD Burial Report	Intersection of Kalakaua and Kuamo'o Streets	Inadvertent Burial Discovery: misc. bones uncovered in back dirt pile during construction. Follow up by CSH.
Hammatt & Shideler 1995	Sub-surface Inventory Surface	Hawai'i Convention Center Site, 1777 Kalakaua Ave.	No further work recommended.

Reference	Type of Investigation	General Location	Findings
Jourdane 1995	Inadvertent Discovery of Human Remains	Paoakalani Avenue	Human skeletal remains discovered in planted strip between street and sidewalk fronting hotel.
Simons et al. 1995	Data Recovery Excavations	Fort DeRussy	Historic and prehistoric artifacts, and midden materials collected from 7 occupation layers. 6 prehistoric cultural features recorded: 'auwai bunds and channels, fishpond walls and sediments, a possible lo'i, and hearths.
Cleghorn 1996	Inventory Survey	TMK: 2-6-016:23, 25, 26, 28, 61, 69	7 backhoe trenches excavated, no sites located.
Grant 1996	Historical Reference	Waikiki	Historical information about Waikiki prior to 1900.
Hammatt & Shideler 1996	Data Recovery	Hawai'i Convention Center Site	No clear evidence that Kuwili Pond sediments present in project area; no further work recommended.
McDermott et al. 1996	Inventory Survey	'Ainahau Estate	Buried remnants of 'auwai and lo'i and human burial found. <sup>14</sup> C dates
Denham et al. 1997	Data Recovery Report	Fort DeRussy	Excavations conducted at fishponds, <sup>14</sup> C dates mid-17th C.
Denham & Pantaleo 1997	Monitoring and Excavations Report	Fort DeRussy	Final Report does not include SHPD recommendations. 10 subsurface features and 9 burial locations found. <sup>14</sup> C dates
Beardsley & Kaschko 1997	Monitoring and Data Recovery Report	Pacific Beach Hotel Office Annex	Traditional Hawaiian cultural deposits and 2 human burials. 3 <sup>14</sup> C dates
Hammatt & Chiogioji. 1998	Assessment	King Kalākaua Plaza Phase II	No surface archaeological sites, documented human burials, presence of subsurface cultural deposits (both of pre-contact Hawaiian and historic provenance).
Hammatt & McDermott 1999	Burial Disinterment Plan and Report	Kalākaua Avenue	Two human burials found
Perzinski et al. 1999	Monitoring Report	Along Ala Wai Blvd., Kalākaua Ave., Ala Moana Blvd., & 'Ena Rd.	Two human burials found (1 preceding monitoring); pockets of undisturbed layers still exist. Burial #2 previously disturbed.
Rosendahl 1999	Interim Report: Inventory Survey	Fort DeRussy	This area is part of the old shoreline.
Hammatt & Chiogioji 2000	Archaeological Assessment	Honolulu Zoo Parcel	Majority of zoo parcel unlikely to yield significant cultural deposits. However, strong possibility of significant subsurface cultural deposits in the SW portion. Monitoring is recommended in this area.
LeSuer et al. 2000	Inventory Survey	King Kalākaua Plaza Phase II	Site -5796 has been adversely affected by land alteration of the project area. Site -4970, has been adequately documented.

Reference	Type of Investigation	General Location	Findings
Perzinski et al. 2000	Burial Findings	Kalākaua Ave. between Kai'ulani & Monsarrat Avenues	44 sets of human remains; 37 disinterred, 7 left in place; believed to be Native Hawaiian, interred prior to 1820.
Cleghorn 2001	Mitigation	Burger King Construction Site	Concerning three incidents of uncovered human remains while locating a buried sewer-line for the ABC's store.
Corbin 2001	Inventory Survey	Hilton Waikikian Property	No arch. sites were found during excavations of the area
Elmore & Kennedy 2001	Burial Report	Royal Hawaiian Hotel	Human remains found during trench excavations for conduit. The in situ remains were left in place, while the disturbed remains were reentered with the others.
McGuire & Hammatt 2001	Cultural Assessment for Waikīkī Beach Walk Project	Along Lewers St., Beach Walk, Kālia Rd. & Saratoga Rd.	Primary cultural concern identified as inadvertent burial discovery. Cultural monitoring recommended for all subsurface work within project area.
Perzinski & Hammatt 2001a	Monitoring Report	Kapi'olani Bandstand	A charcoal layer was observed, concentrated on the SW side of the bandstand; recovered indigenous basalt lamp with a handle, from the SE end of the bandstand.
Perzinski & Hammatt 2001b	Monitoring Report	Kapi'olani Park	No cultural layer, artifacts, midden or human burials were encountered during the excavations.
Perzinski & Hammatt 2001c	Monitoring Report	Kalākaua Avenue from the Natatorium to Poni Mo'i Road	No cultural layer, artifacts, midden or human burials were encountered during the excavations.
Rosendahl 2001	Assessment Study	Outrigger Beach Walk	Assessment of previous archaeology and historical literature.
Winieski & Hammatt 2001	Monitoring Report	TMK: 1-2-6-025:000	There is a possibility that Hawaiian or Historic materials as well as human burials may still be present within the project area.
Borthwick et al. 2002	Inventory Survey	71,000 sq. ft. parcel, TMK: 2-6-016:002	No burials were found during testing; absence of dry Jaucus sand deposits indicate that burial finds are unlikely in project area.
Bush et al. 2002	Monitoring Report	Kalākaua Avenue, between Ala Moana Blvd. and Kapahulu Ave.	Encountered 4 human burials, probably pre-contact Native Hawaiians; several historic trash pits; entire pig within an <i>imu</i> pit (estimated date, A.D. 1641-1671); gleyed muck associated with former ponds.
Calis 2002	Monitoring Report	Lemon Road	No historic deposits, major previous disturbance
Elmore & Kennedy 2002	Monitoring Report	Fort DeRussy	No findings.
Mann & Hammatt 2002	Monitoring Report	Lili'uokalani Avenue and Uluniu Avenue	5 burial finds of 6 individuals; two historic trash pits.
Putzi & Cleghorn 2002	Monitoring Report	Hilton Hawaiian Village	No findings during monitoring of trench excavations for sewer connections.

Reference	Type of Investigation	General Location	Findings
Winieski, Perzinski, Shideler et al. 2002	Monitoring Report	Kalākaua Ave. between Ka'iulani and Monsarrat Avenues.	44 human burials encountered, 37 disinterred; buried habitation layer identified, with traditional Hawaiian artifacts, midden, firepits, & charcoal; fragment of light gauge rail, remnant of Honolulu Transit trolley system, observed; low energy alluvial sediments associated with the now channelized <i>muliwai</i> Kukaunahi also observed.
Winieski, Perzinski, Souza et al. 2002	Monitoring Report	Kūhiō Beach	Skeletal remains of 10 individuals, six disinterred, only 2 in situ. 4 indigenous artifacts, none in situ. Discontinuous cultural layer, historic seawall.
Bush et al. 2003	Monitoring Report	International Marketplace	Historic trash found.
Tome & Dega 2003	Monitoring Report	Waikīkī Marriot	One isolated not in situ possible human bone fragment found. Recommends monitoring during future work.
Tulchin & Hammatt 2003	Archaeological & Cultural Impact Assessment	2284 Kalākaua Ave.	Notes possibility of burials in the project area; recommends an inventory survey with subsurface testing.
Freeman et al. 2005	Archaeological Inventory Survey	Hobron Lane	Four sites identified during subsurface testing; 1 disturbed burial; 1 coffin burial with two individuals; 1 cultural deposit; and, 1 fishpond sediment



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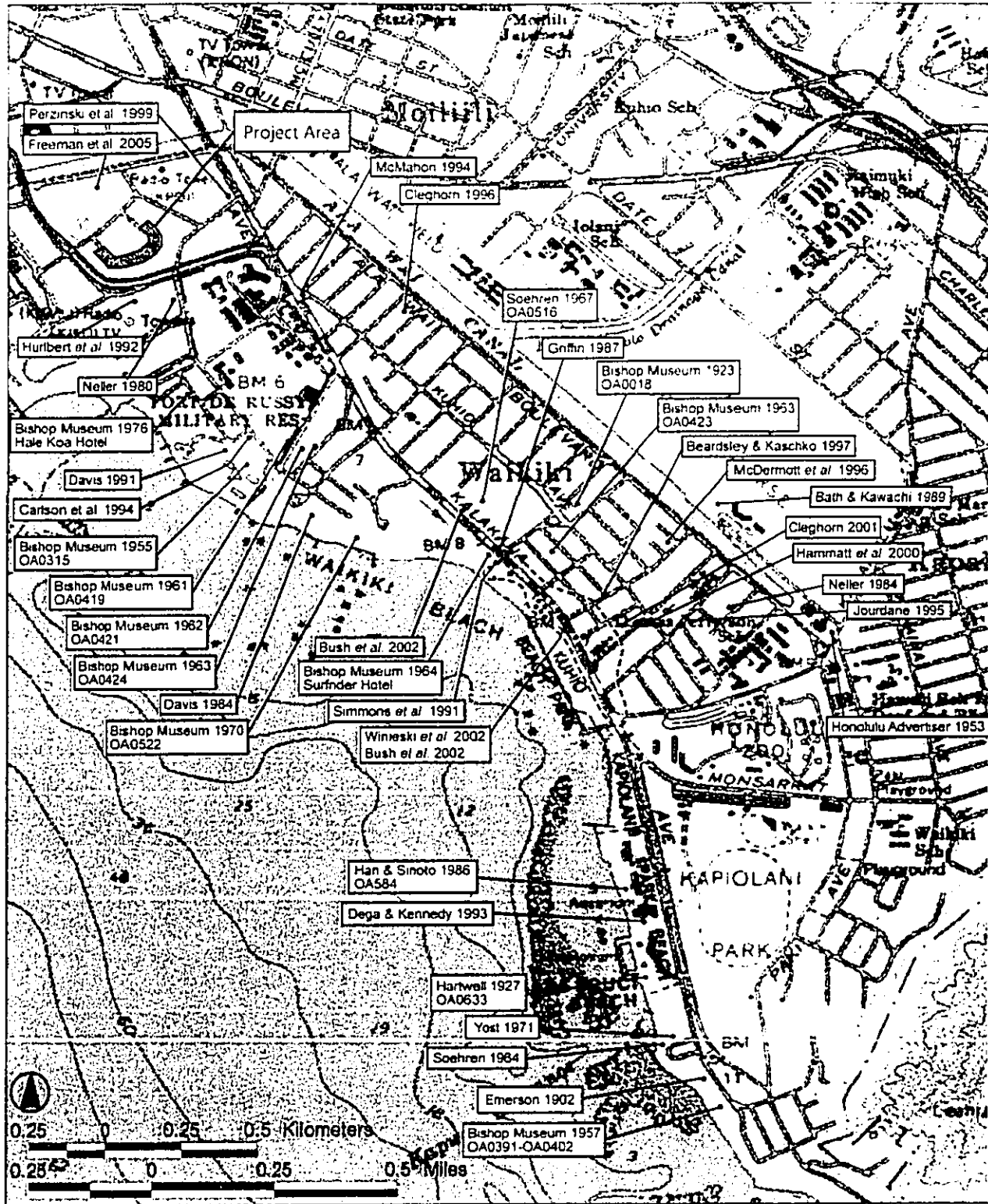


Figure 15. Previous Archaeological Work in Waikīkī, focusing on locations of burials

In 1963, two human skulls and other human remains were discovered in a construction trench at 2431 Prince Edward St. (Bishop Museum site Oa-A4-23, cited in Neller 1984). Multiple burials were encountered in 1963 during excavation for the construction of the present Outrigger Canoe Club at the Diamond Head end of Kalākaua Avenue. As reported in a newspaper article on Jan. 24, 1963:

The Outrigger Canoe Club yesterday dedicated its new site [on land adjacent to and leased from the Elks Club], an ancient Hawaiian burial ground in Waikīkī. . .

Robert Bowen of the Bishop Museum has been working closely with Ernest Souza, Hawaiian Dredging superintendent, on the removal of skeletons unearthed on the site, between the Colony Surf and the Elks Club. . . .

Most of the bodies were buried in the traditional hoolewa position, with the legs bound tightly against the chest.

One of the skeletons, Bowen said, shows evidence of a successful amputation of the lower forearm, indicating that the Hawaiians knew this kind of operation before the arrival of Europeans.

The ages of the skeletons ranged from children to 40-year-old men and women. The average life span of the Hawaiians at the time was about 32 years [*Honolulu Star-Bulletin*; Jan. 24, 1963: 1A].

A total of 27 burials were encountered (Yost 1971: 28). Apparently, no formal archaeological report on the burials was produced.

In 1964, sand dune burials, a traditional Hawaiian mortuary practice, were revealed as beach sand eroded fronting the Surfider Hotel (Bishop Museum Site Files).

In 1976, during construction of the Hale Koa Hotel, adjacent to the Hilton Hawaiian Village Hotel, six burials were unearthed, five of apparent prehistoric or early historic age, and one of more recent date (Bishop Museum Site Files).

In 1980, three burials were exposed at the Hilton Hawaiian Village during construction of the hotel's Tapa Tower. Earl Neller of the (then named) State Historic Preservation Program was called in upon discovery of the burials and conducted fieldwork limited to three brief inspection of the project area. Neller's (1980) report noted:

The bones from three Hawaiian burials were partially recovered; one belonged to a young adult male, on a young adult female, and one was represented by a single bone. An old map showed that rapid shoreline accretion had occurred in the area during the 1800s, and that the beach in the construction area was not very old. It is possible the burials date back to the smallpox epidemic of 1853. It is likely that burials will continue to be found in the area. It is also possible that early Hawaiian sites exist farther inland, beneath Mō'ili'ili, adjacent to where the shoreline would have been 1000 years ago [Neller 1980:5].

Neller also documented the presence of trash pits, including one from the 1890s which contained "a large percentage of luxury items, including porcelain tablewares imported from China, Japan, the United States, and Europe" (Neller 1980:5). He further notes:

It is suspected that other important historic archaeological sites exist in the highly developed concrete jungle of Waikīkī, with discrete, dateable trash deposits related to the different ethnic and social groups that occupied Waikīkī over the last 200 years [Neller 1980:5].

Between December 1981 and February 1982, archaeologists from the Bishop Museum led by Bertell Davis conducted a program of excavations and monitoring during construction of the new Halekūlani Hotel (Davis 1984). Six human burials were recovered along with "animal burials [and] cultural refuse from prehistoric Hawaiian firepits, and a large collection of bottles, ceramics, and other materials from trash pits and privies dating to the late 19th century" (Davis 1984:i). Age analysis of volcanic glass recovered from the site led Davis to conclude: "For the first time we can now empirically date . . . settlement in Waikīkī to no later than the mid-1600s" (Neller 1980:5). Just as significant to Davis was the collection of historic era material at the Halekūlani site; he states:

[The] Halekūlani excavations clearly demonstrate...that there is a definite need to consider historic-period archaeology as a legitimate avenue of inquiry in Hawaiian research. Furthermore, archaeology in the urban context can yield results every bit as significant as in less developed areas. Development in the 19th and early 20th centuries clearly has not destroyed all archaeological resources in Waikīkī, Honolulu, or in any of the other urbanized areas of Hawai'i [Neller 1980:5].

In 1983, at the Lili'uokalani Gardens condominium construction site, seven traditional Hawaiian burials were recovered (Neller 1984). This had been the site of a bungalow owned by Queen Lili'uokalani at the end of the nineteenth century. In addition to the burials, the site contained plentiful historic artifacts, and a pre-historic cultural layer pre-dating the burials.

In 1985, International Archaeological Research Institute, Inc. performed archaeological monitoring and data recovery at the Pacific Beach Hotel Office Annex (Beardsley and Kaschko 1997). Two traditional Hawaiian burials were discovered and removed. Intact buried traditional Hawaiian cultural deposits, including a late pre-contact habitation layer, contained pits, firepits, post molds, artifacts, and food debris. The artifacts included basalt and volcanic glass flakes and cores, a basalt adze and adze fragments, worked pearl shells, a coral file and abraders, and a pearl shell fishhook fragment. Additionally, a late nineteenth century trash pit was discovered, which contained a variety of ceramics, bottles, and other materials.

During 1985 and 1986, archaeologists from Paul H. Rosendahl, Ph.D. Inc. conducted archaeological monitoring at the site of the Mechanical Loop Project at the Hilton Hawaiian Village, Waikīkī. Much of this project area was disturbed by historic and modern construction and modification. Fifteen subsurface features were uncovered during the monitoring, all of which were determined to be historic trash pits or trenches. The dating of these features was based on dating the artifactual material they contained. All 15 features are thought to post-date 1881 based

on this artifact analysis. The three partial burials reported by Neller (1980) were found within this project area (see above). No further burials were encountered during the PHRI field work (Hurlbett et. al. 1992).

In 1987, a human burial was discovered and removed at the intersection of Kalākaua Avenue and Ka'iulani Street during excavations for a gas pipe fronting the Moana Hotel (Griffin 1987).

In 1988, the Moana Hotel Historical Rehabilitation Project (Simons et. al. 1991) encountered human remains that amounted to at least 17 individuals. Based on stratigraphic association these burials were interred over time as the land form at the site changed. The sediment surrounding these burials yielded traditional midden and artifact assemblages. The burials and human remains were found in the Banyan Court and beneath the hotel itself.

In 1989, skeletal remains were unearthed on the grounds of the Ala Wai Golf Course during digging of an electrical line trench for a new sprinkler system. The trench had exposed a pit containing two burials (Bath and Kawachi 1989: 2). The report suggests that one of the burials may have been disturbed earlier during grading for the Territorial Fair Grounds. The osteological analysis included in the report concludes that both sets of remains "appear ancient." (Bath and Kawachi 1989: 2)

Davis' (1989, 1991) excavation and monitoring work at Fort DeRussy documented substantial subsurface archaeological deposits, prehistoric, historic, and modern. These deposits included buried fishpond sediments, 'auwai [irrigation ditch] sediments, midden and artifact enriched sediments, structural remains such as post holes and fire pits, historic trash pits, and a human burial. Davis' (1991) report documents human activity in the Fort DeRussy beach front area from the sixteenth century to the present.

The work at Fort DeRussy continued in 1992 when BioSystems researchers built upon Davis' work (Simons et al. 1995). BioSystems research documents the development and expansion of the fishpond and 'auwai system in this area. The 'auwai system was entered on the State Inventory of Historic Places (SIHP) as State Site 50-80-14-4970. As indicated on the 1881 map by S. E. Bishop discussed above, this 'auwai enters the Fort DeRussy grounds through the present project area). Remains of the fishpond and 'auwai deposits, as well as habitation deposits, were documented below modern fill deposits. This research, along with that of Davis (1991), clearly demonstrates that historical document research can be an effective guide to locating late prehistoric/early historic subsurface deposits, even amidst the development of Waikīkī.

In 1992, Hurlbett et al. (1992) conducted additional monitoring and testing in this same area as Neller (1980). The state site -2870 was given to the three burials first found by Neller. Additional subsurface features, postdating 1881, were found during trenching operations.

The realignment of Kālia Road at Fort DeRussy in 1993 uncovered approximately 40 human burials. A large majority of these remains were recovered in a large communal burial feature (Carlson et. al. 1994). The monitoring and excavations associated with this realignment uncovered a cultural enriched layer that contained post holes.

In 1993, during construction activities at the Waikīkī Aquarium, directly adjacent to the present project area, fragmentary human remains were discovered scattered in a back dirt pile, although no burial pit was identified (Dega and Kennedy 1993).

On April 28, 1994, an inadvertent burial discovery was made during excavation for a water line at the intersection of Kalākaua Avenue and Kuamo'o Street (just *mauka* of Fort. DeRussy). These remains represented a single individual (McMahon 1994).

In 1995, the remains of one individual were discovered in situ during construction activities on Paoakalani Street, fronting the Waikīkī Sunset Hotel (Jourdane 1995).

In 1996, Pacific Legacy, Inc. conducted an archaeological inventory survey of the block bounded by Kalākaua Avenue, Kūhiō Avenue, 'Olohana Street, and Kālaimoku Street (Cleghorn 1996). The survey included excavation of seven backhoe trenches. The subsurface testing indicated that

. . . this area was extremely wet and probably marshy. This type of environment was not conducive for traditional economic practices. . . The current project area appears to have been unused because it was too wet and marshy. Several peat deposits, containing the preserved remains of organic plant materials were discovered and sampled. These deposits have the potential to add to our knowledge of the paleoenvironment of the area [Cleghorn 1996:15].

The report concluded that no further archaeological investigations of the parcel were warranted since "no potentially significant traditional sites or deposits were found", but cautioned of the "possibility, however remote in this instance, that human burials may be encountered during large scale excavations" (Cleghorn 1996:15).

In 1996, a traditional Hawaiian burial was discovered and left in place during test excavations on two lots at Lili'uokalani Avenue and Tusitala Street (McDermott et al. 1996). Indigenous Hawaiian artifacts and historic artifacts were also found within the project area.

In 1997, during archaeological monitoring by CSH for the Waikīkī Force Main Replacement project, scattered human bones were encountered on 'Ōhua Street (Winieski and Hammatt 2000). These included the proximal end and mid-shaft of a human tibia, a patella, and the distal end and mid-shaft of a femur. These remains occurred within a coralline sand matrix that had been heavily disturbed by previous construction, and by the on-going construction project. No precise location for the original burial site was identified.

In April 1999, two human burials were inadvertently encountered near the intersection of Ena Road and Kalākaua Avenue during excavation activities for the first phase of the Waikīkī Anti-Crime Lighting Improvements Project (Perzinski et al. 1999). These discoveries were the closest to the current project area on the *makai* side of Kalakaua Avenue.

From July 1999 to October 2000, four sets of human remains were inadvertently encountered during excavation activities relating to the Waikīkī Anti-Crime Street Lighting Improvement project along portions of Kalākaua Avenue (Bush et al. 2002). The first burial was encountered on Kalākaua Avenue, just before Dukes Lane and assigned State Site 50-80-14-5864. The burial was left in place however, and the light post was repositioned. The second burial was encountered at the intersection of Kalākaua Avenue and Ka'iulani Avenue. Earlier, during

archaeological monitoring for the water mains project, two burials were encountered in the immediate area of the second burial find; they were assigned state site 50-80-14-5856 features A and B. Due to the close proximity to the previously encountered burials, the second burial was assigned the same State Site 50-80-14-5856, and designated feature C. Burials 3 and 4 were recovered at the intersection of Kalākaua Avenue and Kealohilani, near an area of concentrated burials assigned State Site 50-80-14-5860 during monitoring for the water mains project. Consequently, burials 3 and 4 were also assigned State Site 50-80-14-5860, features U and V. In addition to human remains, pre-contact deposits, historic and modern rubbish concentrations, and pond sediments were also encountered.

From November, 1999, to May, 2000, 44 human burials, with associated cultural deposits, were encountered during excavation for a waterline project on Kalākaua Avenue between the Ka'iulani and 'Ōhua Avenues (Winieski et al. 2002a). Except for previously disturbed partial burials in fill, the bulk of the burials were encountered within a coralline sand matrix. Additionally, a major cultural layer was found and documented.

From January 2000, to October 2000, 10 human burials were encountered during archaeological monitoring of the Kūhiō Beach Extension/Kalākaua Promenade project (Winieski et al. 2002b). Six of these were located within a coralline sand matrix. The four others were partial and previously disturbed within fill. Additionally, a major cultural layer was found and documented, apparently part of the same major cultural layer associated with the waterline project between Ka'iulani and 'Ōhua Avenues.

In April 2001 human remains were inadvertently disturbed during excavations associated with the construction of a spa at the Royal Hawaiian Hotel (Elmore et al. 2001). Archaeological Consultants of the Pacific, Inc was responsible for the documentation of the remainder of the burial and carrying out the instruction of DLNR/ SHPD. The burial and place it was encountered was assigned State Site # 50-80-14-5937. The burial was encountered on the North side of the hotel in the spa garden approximately 75 meters north of the current project area separated by a wing of the hotel. The burial was partially disturbed through the thoracic region and anatomical left side. The disturbed remains were wrapped in muslin cloth and placed with the in-situ remains and reburied. The burial was recorded as a post contact burial based on artifacts associated with it. The associated artifacts included one shell button found *in-situ* and three more shell buttons found in the disturbed material. A single drilled dog tooth was found also during excavation but could not be positively associated with the site.

On May 2nd and June 14th, 2001, two in situ and two previously disturbed human burials were encountered at the site of a new Burger King (Cleghorn 2001a) and an adjoining ABC Store (Cleghorn 2001b). The finds were located at the intersection of 'Ōhua Street and Kalākaua Avenue (Cleghorn 2001a and 2001b). Because of their proximity to five burials encountered during the Kalākaua 16" Water Main Installation (Winieski et al. 2002a), they were included in the previously assigned State Site 50-80-14-5861. Three of these burials were recovered, and one was left in place. Volcanic glass fragments were found in association with one of the burials. A cultural layer was also observed which contained moderate to heavy concentrations of charcoal and fragments of volcanic glass. Historic era artifacts, including a bottle fragment, plastic and glass buttons, a ceramic fragment, and metal fragments were also encountered within fill materials.

In 2001 and 2002, CSH (Mann and Hammatt 2002) performed archaeological monitoring for the installation of 8- and 12-inch water mains on Uluniu Avenue and Lili'uokalani Avenue. During the course of monitoring, five burials finds, consisting of six individuals, were recorded within the project area. Four burial finds were recorded on Uluniu Avenue; three of these inadvertent finds were found in fill sediment. Due to the nature of the three burial finds in fill, it was concluded that no State Site number(s) be assigned to these three previously disturbed burials. The only primary in situ burial encountered on Uluniu Avenue was assigned State Site #50-80-14-6369. The fifth burial, consisting of two individuals in fill material, was recorded from Lili'uokalani Avenue. Since three burials had been found in the immediate vicinity during a previous project (Winieski et al. 2002b) and had been assigned to Site #50-80-14-5859, the two new individuals were recorded as Feature H of this previously recorded site.

In 2004, Cultural Surveys Hawai'i conducted an archaeological inventory survey and cultural impact evaluation for the Ala Wai Gateway project site (Freeman et al. 2005). The project site comprised TMK 2-6-011:001, 002, 004, 32, 37, and 40, which are bounded by Ala Wai and Ala Moana boulevards, Hobron Lane, and Līpe'epe'e Street. As this project area is located on Hobron Lane, immediately adjacent to the present Kaio'o Drive project area, the findings of the inventory survey are especially relevant. Four historic properties were documented in the survey:

Site 50-80-14-6700: disturbed, ethnicity undetermined, human skeletal remains;

Site 50-80-14-6701: historic coffin burial, with two individuals, ethnicity undetermined;

Site 50-80-14-6702: culturally enriched buried A horizon in geographic association with Land Commission Award (LCA) 99 FL to Uma; and,

Site 50-80-14-6703: fishpond remnant.

In summary, past archaeological research, from the beginning of the twentieth century to the present has produced evidence that traditional Hawaiian cultural deposits, historic trash deposits, and, most notably, human burials, do exist throughout the breadth of the Waikīkī area.

## Section 6 Predictive Model

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The *ahupua'a* of Waikīkī in the centuries before the arrival of Europeans was an intensely used locale with abundant natural and cultivated resources - including an expansive system of irrigated taro fields - supporting a large population that included the highest-ranking *ali'i*. In the nineteenth century, after a period of depopulation, Waikīkī was reanimated by the Hawaiian *ali'i* and the foreigners residing there and by the farmers continuing to work the irrigated field system, which had been converted from taro to rice. This farming continued up to the first decades of this century until the Waikīkī reclamation project drained the remaining ponds and irrigated fields.

Early nineteenth century historic maps (see Figures 7 and 8) show that the northern portion of Waikīkī, in which the current project area is located, was less intensely populated than Honolulu or the southern portion of Waikīkī. Mid-nineteenth century Land Court Award maps and documents do indicate that this area was used for habitation, fishpond agriculture, and irrigated agriculture, probably for taro. Two LCAs, LCA 99 awarded to Uma and LCA 2549:3 to Luaiku, are just west of the current project area. This LCA was bound by a fishpond to the east, and a "sea ditch" to the north, and contained the house of Uma, whose family had lived on this property from the time of Kamehameha I (pre-1819, or before the year of his death). The awardee of LCA 2549:3 testified that his lot contained a house, an *'auwai* (watercourse), and four *lo'i* for irrigated agriculture.

These two LCAs are between the sea to the west, a pond to the east (in the project area), and a stream to the north. It is likely that areas around the ponds and streams were low-lying wetlands or marshes. The two houselots must have been on higher ground, on a sandbar that allowed for the formation of the fishpond east of the coast. According to the LCA testimony, the houselots were used for habitation, agriculture, and fishpond aquaculture. Infrequently, Hawaiians also used houselots for the burial of family members.

### 6.1 Human Burials

Previous and on-going archaeological reports have documented human burials - both pre-contact Hawaiian and historic - throughout the Waikīkī area (see Figure 15). Isolated pre-contact burials and burial clusters in Waikīkī have been found primarily in sandy deposits, just above the water table and below historic era fill materials. If there are intact *Jaucus* sand deposits below the nineteenth and twentieth century fills in the project area, it is possible that pre-contact burials will be found. Pre-contact burials will likely be located within pits and be associated with pre-contact habitation deposits. Post-contact burials will typically be located within extended pits with possible evidence of coffin material and/or grave goods, such as metal jewelry or other associated Asian or European objects.

Three projects at which burials (8 individuals) were found are located very near the current project area (Figure 16). Perzinski et al. (1999) found two burials on the corner of 'Ena Road and Kalākaua Avenue, one block east of the current project area. These burials were interpreted as probably pre-contact or early post-contact Hawaiian burials. Three human burials, possibly dated to the mid-1800s, were recorded by Neller in 1980 and later by Hurlbett in 1992. These



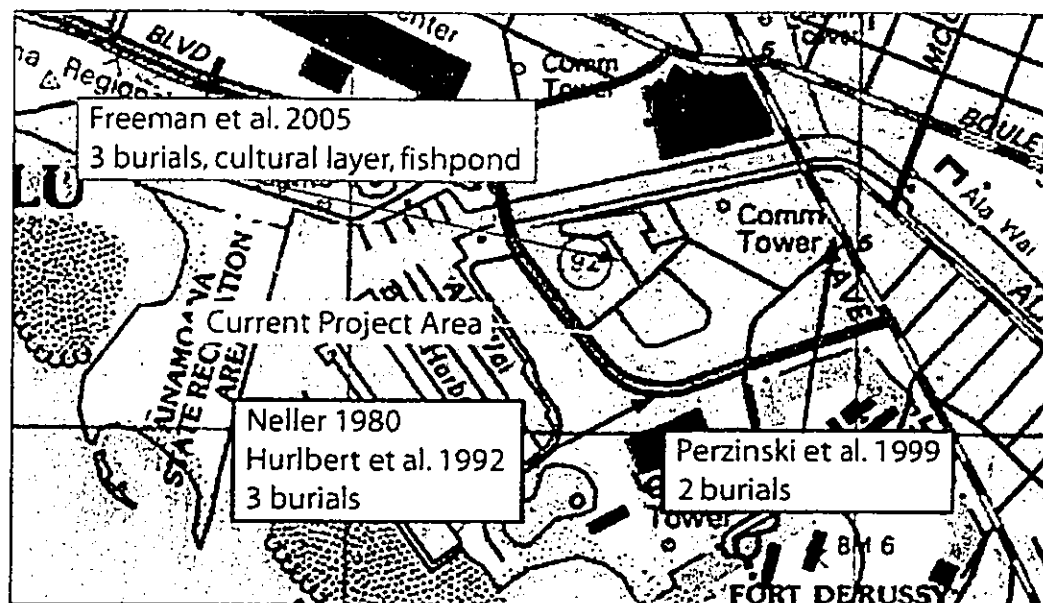


Figure 16. Previous archaeological projects near current project area

burials were found one block south of the current project area, near the corner of Ala Moana Boulevard where it fronts the Hilton Hawaiian Village Complex. Three human burials, one disturbed (time period unknown), and two post-contact burials within a single coffin, were also found west of the project area across Hobron Lane in the Ala Wai Gateway project area (Freeman et al. 2005). In addition, a cultural deposit and a fishpond deposit, both possibly associated with a mid-nineteenth century LCA award were identified in the Ala Wai Gateway project area.

## 6.2 Pre-Contact and Early Post-Contact Agricultural and Habitation Deposits

According to mid-nineteenth century Land Court Award testimony (LCA 99 to Uma), the project area is located in an area that was once near to a fishpond (to the northwest), next to a ditch or stream (west of the project area) and had a house. An adjacent LCA (LCA 2549:3 to Luaiku) also had a house, an *'auwai*, and four irrigated *lo'i* plots. The area to the east of these LCAs (within the current project area) is shown to have at least one to two low areas, which was possibly filled with water and used as a *lo'i* for irrigated taro in the mid-nineteenth century (see 1881 Bishop map; Figure 9). By the early twentieth century (see 1927 Sanborn map; Figure 11), these swampy areas were possibly used for rice cultivation and as duck ponds. The central portion of the project area was shown as higher ground in all nineteenth and twentieth century maps and aerial photographs; therefore this area could have been used as a habitation area.

It is predicted, therefore, that features related to habitation, such as a house platform, food residue, and other trash, features related to ponds, such as pond banks and berms, and features related to agriculture, such as *lo'i* (pond fields) and *'auwai* levee remnants, may be found in the project area. Habitation deposits will frequently be evident in the stratigraphy as dark-colored sand with features such as post-holes and firepits, artifacts, and food remains (marine shell, bone,

and *kukui* endocarps etc.). Agricultural features such as irrigation ditches, fishponds and irrigated fields, and the sand berms that were often built along the edges of ponds and fields may be found in the trench profiles. *'Auwai* and sand berms will frequently be evident within the stratigraphy as a dip within a stratigraphic layer which could possibly be stone-lined. *Lo'i* will frequently be evident by a silty clay layer within the stratigraphy.

Following the initial years of European contact, Westerners engaged in new massive agricultural ventures. Immigrant workers from Asia were brought to Hawai'i to labor in these new agricultural ventures, and as a result, rice also became a major crop in many areas. The wetlands of Waikīkī were an ideal environment for the cultivation of rice, and the area yielded much of its traditional taro cultivation land to rice production. Features related to rice agriculture may also be present, such as fences to mark field boundaries, or other evidence.

The same area, in the early twentieth century, was altered more intensely for land-reclamation plans; the resulting dredge and fill projects obliterated what remained of traditional Hawaiian cultivation processes, in Waikīkī. In the four projects conducted near the current project area (Neller 1980; Hurlbett 1992; Perzinski et al. 1999; Freeman et al. 2005), post-contact subsurface features with nineteenth and twentieth century artifacts were also recorded, indicating the use of the area in the later post-contact period. The post-contact deposits will likely contain ceramic, metal and glass.

### 6.3 Summary of Anticipated Findings

The present project area is located within a portion of Waikīkī that, in traditional Hawaiian times and before the massive drainage accomplished by the Ala Wai Canal, comprised a complex of numerous large and small fishponds. Also located in this portion of Waikīkī were wetland and dryland agricultural fields, and habitation sites. Land Commission Award documents from the mid-nineteenth century record continuing native Hawaiian habitation in two parcels adjacent to the present project area. Subsequent nineteenth and twentieth century documents – including historic maps and photographs – indicate that the central portion of the project area from traditional Hawaiian times to the modern era comprised a dryland environment with surrounding fishponds. In traditional Hawaiian times, such an environment would have provided a base for habitation, work, and recreational activities of the population. Maps and photographs produced before and after the completion of the Ala Wai Canal in the late 1920s, indicate that the project area contained residential structures associated with the early development of Waikīkī.

As noted during the surface inventory survey, the project has been cleared of all surface structures. It was also noted during the inspection that there is no evidence of extensive ground disturbance either for the construction of the formerly standing structures or for their removal.

Archaeological reports have documented human burials – both pre-contact Hawaiian and historic – throughout the breadth of Waikīkī as far *mauka* as the Ala Wai Golf Course. Especially relevant to the present project area are three burials that were recently encountered in a project area on the 'Ewa side of Hobron Lane (Freeman et al. 2005).

Several archaeological studies have recorded the presence within Waikīkī of subsurface cultural deposits of both pre-contact Hawaiian and historic provenance. These deposits had

remained intact despite the years of construction activity that have altered the entire Waikiki area. The authors of these studies emphasize that the potential for discovering similar intact deposits elsewhere in Waikiki cannot be discounted. During archaeological inventory survey of the Hobron Lane parcel mentioned above, intact cultural deposits were encountered (Freeman *et al.* 2005).

As noted above in this report, before the construction of the Ala Wai Canal and the filling in of Waikiki's marshes and fishponds, the present project area comprised dryland and portions of ponds. These features and their likely locations within the parcels comprising the project area are shown in Figure 17. It is possible that intact pond sediments and intact prehistoric and early contact cultural deposits associated with Hawaiian habitation, work and recreation are lying undisturbed beneath modern fill layers within the project area. Other cultural deposits, including historic trash pits, associated with late nineteenth century and early twentieth century residential sites may be present. Additionally, human burials may also be present within the project area.

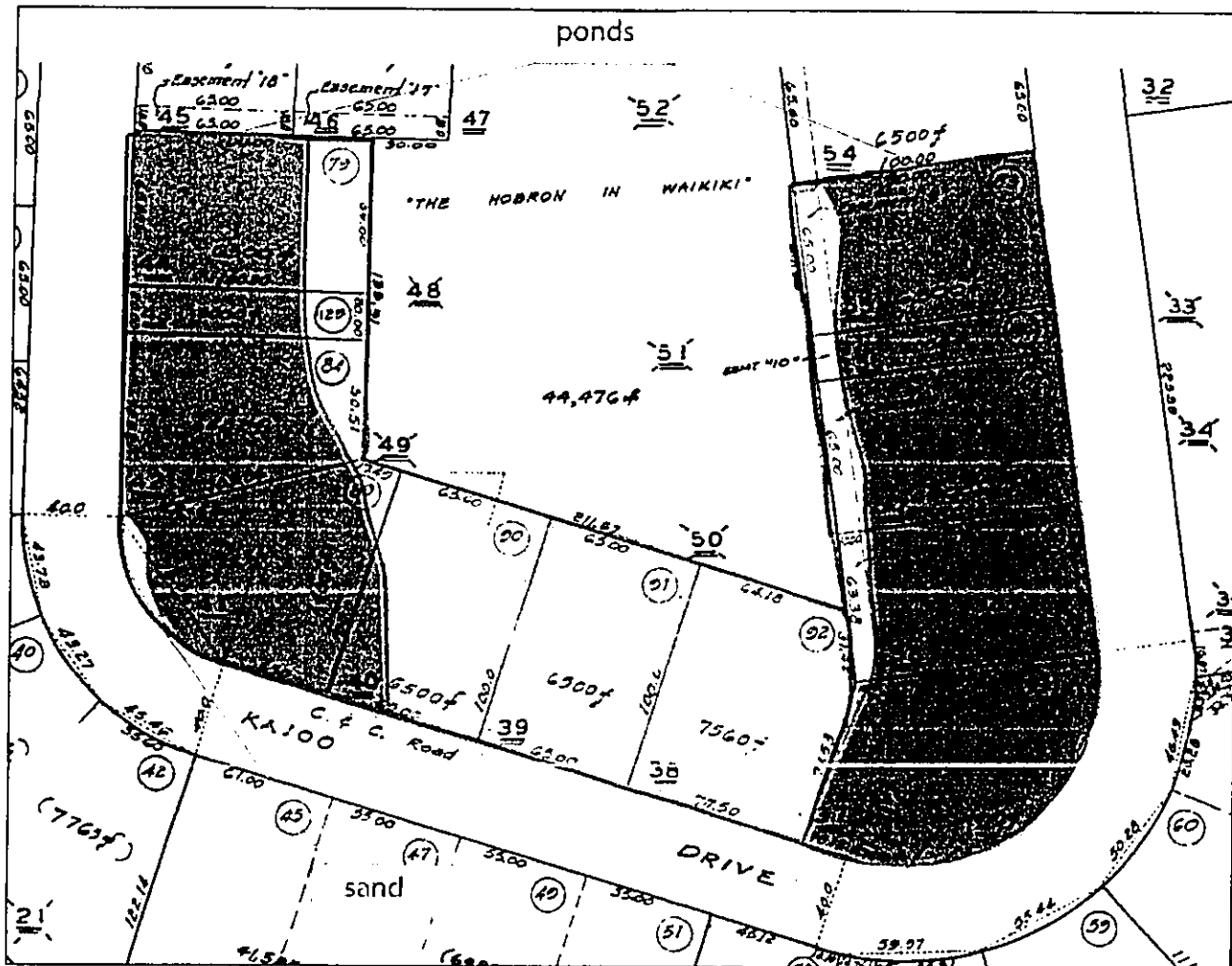


Figure 17. Tax map showing probable locations of former ponds and dryland in project area based on historic documentation

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## Section 7 Results of Fieldwork

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### 7.1 Surface Survey

A pedestrian inspection was conducted of the entire project area prior to commencing the excavation of trenches. No surface features were found.

### 7.2 Backhoe Testing and Stratigraphic Descriptions

A total of twenty backhoe trenches were excavated within the project area (Figure 18). Trench locations were selected to insure a comprehensive coverage of the project area. A single backhoe bucket was used for all of the trenches resulting in a standard trench width of approximately 80 cm. Field personnel watched the removal of all materials from the trenches. No trenches were excavated in the northeastern section of the project area covered with asphalt pavement. This pavement will remain in place during future construction, thus the ground below the pavement will not be disturbed.

The development of the sediments within the Waikīkī region of Honolulu is a complex multi-stage process. Originally, the region, and specifically the project area, was part of the ocean while reef development was occurring. This resulted in the formation of the hard coral shelf (Stratum VI), which now underlies all trenches in the project area, as well as the coarse dark gray (Stratum V) or light gray sand (Stratum III) that directly overlies the coral shelf. Eventually uplift and/or dropping sea levels exposed the reef. Alluvium flowing down from the Ko'olau Mountains soon covered the reef, turning the area into a mosaic of marshy wetlands. This mosaic would have included fishponds, which would have been bounded by walls or sand berms and kept free of most vegetation. It would also have included shallow areas often covered in water, without any constructed walls or berms. Although sometimes labeled as "ponds," on historic maps, these would have been unmodified areas bound by higher ground. Stratum IV is found in some of the trenches in the project area. It is a richly organic clay loam, and it represents the bottom of these natural pond areas. The major component of the higher ground would have been covered with Jaucus sands, or a mixture of the sands and alluvium. In the project area, this older surface is represented by Stratum II soils, a loamy sand or sandy loam.

The stratigraphy in trenches 1-20 indicates that the creation of the marshy wetlands was eventually disturbed during the early portion of the twentieth century. The disturbance came in the form of the deposition of fine-grained clay sediments that were dredged from the ocean bottom and the Ala Wai Canal, as discussed in the background section. The deposition of these hydraulic wet fills (Stratum Id) filled in the low-lying areas and killed the plants that were growing on the ground surface. A layer of crushed coral (Stratum Ib) was sometimes immediately added on top of the wet fill. As development continued in the Waikīkī region, other dry fill sediments (Strata Ia and Ic) were deposited on top of the hydraulic fill materials to raise the land to the present day street level.

Because of the consistency between the trenches in the project area, a single stratigraphy profile has been created. Not all trenches contained all of the described strata.

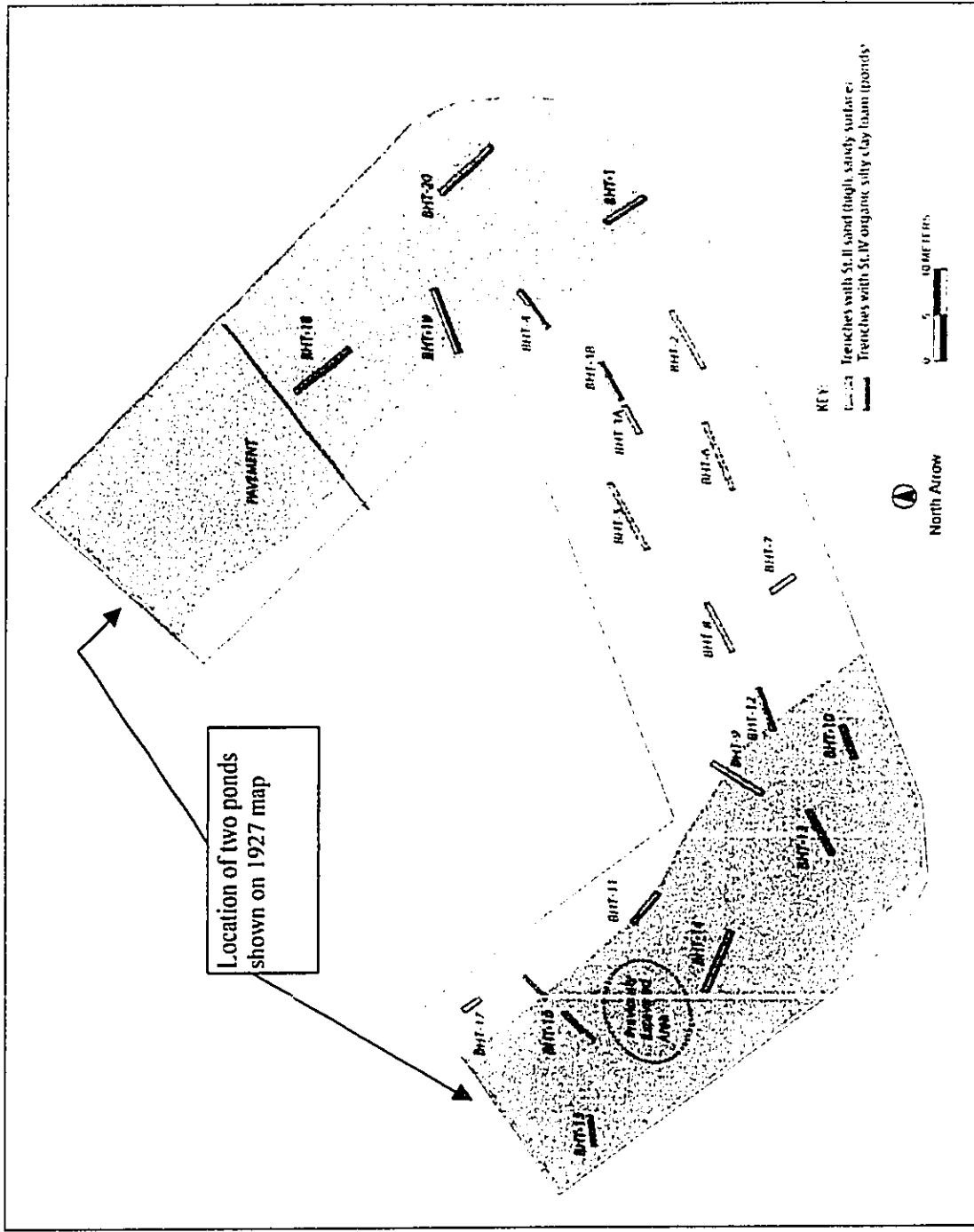


Figure 18. Location of Backhoe Trenches (BHT 1-20) excavated in the project area, with overlay of pond locations (in blue) shown on 1927 Sanborn Fire Insurance map

Inventory Survey for the 116-unit Kaio'o Multifamily Condominium Project

TMK: (1) 2-6-012: 37, 38, 39, 40, 41, 42, 43, 44, 45, 56, 57, & 58

Table 3. Stratigraphic soil descriptions for all trenches

Stratum	Soil Description
Stratum Ia	Fill; Brown (5YR 4/3) silt loam; weak, fine, granular structure; loose when moist, slightly sticky and non-plastic consistence; terrestrial origin; many, fine interstitial roots; contains fossilized shells ( <i>Turbo</i> sp.) and construction debris; abrupt, wavy lower boundary
Stratum Ib	Fill; Light gray (10YR 4.2) very coarse sand with 80% crushed coral; sand is structureless; loose when moist, non-sticky and non-plastic consistence; marine origin; placed at same time as pumped dredge material (Stratum Id); abrupt, smooth boundary
Stratum Ic	Fill: Olive yellow (2.5 Y 6/6) to pale brown (10 YR 5/2) fine, medium sand with microstratigraphy; 20% rocks and cobbles; structureless; loose when moist, non-sticky and non-plastic consistence; marine origin; abrupt, wavy lower boundary
Stratum Id	Fill: (pumped dredge material): Light greenish gray (gley 7.1) silty clay; weak, fine prismatic structure; loose when moist, sticky and plastic consistence; very abrupt, smooth lower boundary
Stratum Ie	Fill: Dark brown (10YR4.3) loamy sand with 10% gravel and 5% crushed coral and many small, flat metal fragments; loose coral boulders at water line; overlies broken coral shelf (Stratum VI); this area has been previously excavated down and into the coral shelf and has been backfilled with the soil and coral shelf fragments
Stratum IIa	Dark grayish brown (10YR 4/2) sandy loam; structureless; very friable when moist, non-sticky and non-plastic consistence; marine origin; no organics, but has many small marine shells; abrupt, wavy lower boundary
Stratum IIb	Yellowish brown (2.5 Y 6/4) fine to medium loamy sand; structureless, loose when moist, non-sticky and non-plastic consistence
Stratum III	Light gray (10YR 7/2) fine, medium sand; structureless; loose when moist, non-sticky and non-plastic consistence; marine origin
Stratum IV	Very dark grayish brown (2.5 Y 3/8) clay loam; sticky and plastic consistence; rich in organics
Stratum V	Dark gray (2.5 Y 4.6) sand; structureless, non-sticky and non-plastic consistence; marine origin; usually overlies the coral shelf
Stratum VI	Hard coral shelf

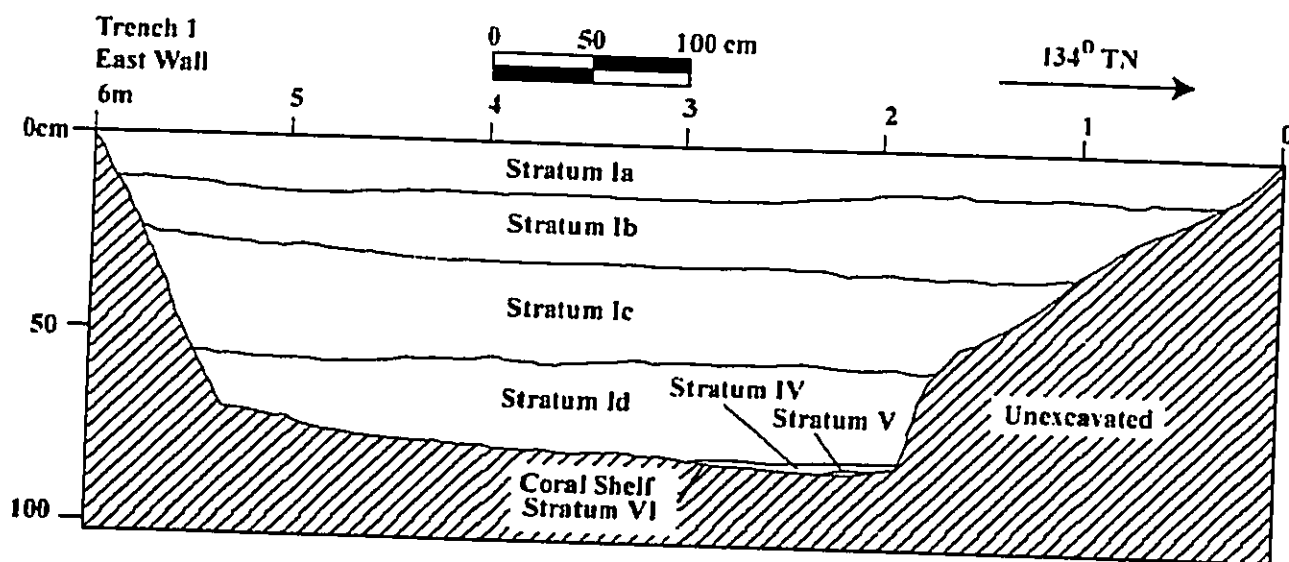


Figure 19. Backhoe Trench 1, east wall profile

**Backhoe Trench 1** (Figure 19) is a 6.0 m long trench excavated near the outer southeastern corner of the project area. It contained three layers of dry fill (Strata Ia-Ic), one stratum of pumped-dredge wet fill, a thin stratum of the organic clay loam (Stratum IV) that represents a wetland deposit, and a 0.5 cm-thick layer of Stratum V dark gray coarse sand that lies directly over the hard coral shelf (Stratum VI). The thinness of the Stratum IV soil in this trench indicates that this area was on the edge of the low, swampy area labeled "Duck & Mosquito Pond" on a 1927 Sanborn map (see Figure 11 and Figure 18). The trench was excavated to a maximum depth of 167 cmbs to the hard coral shelf.

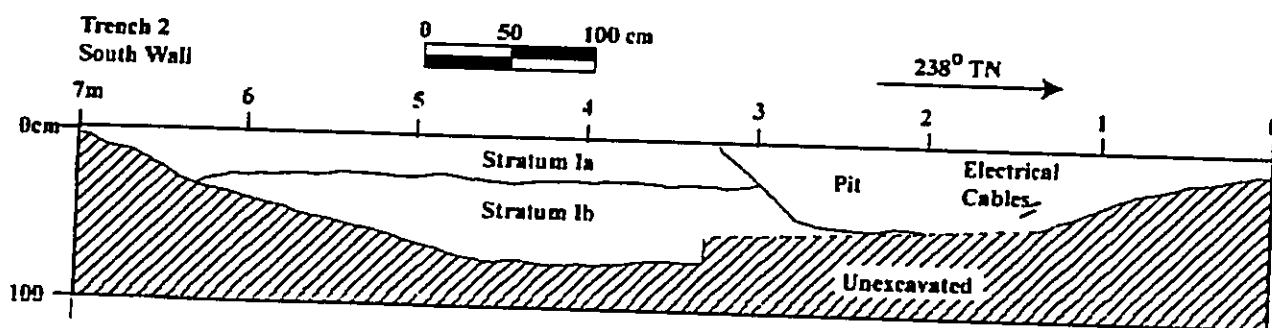


Figure 20. Backhoe Trench 2, south wall profile

**Backhoe Trench 2** (Figure 20) is a 7.0 m long trench excavated in the east central section of the project area. Two layers of dry fill (Strata Ia and Ib) were exposed, but the excavation of the trench had to be terminated at 70 cmbs due to the uncovering of several electrical cables in the western end.

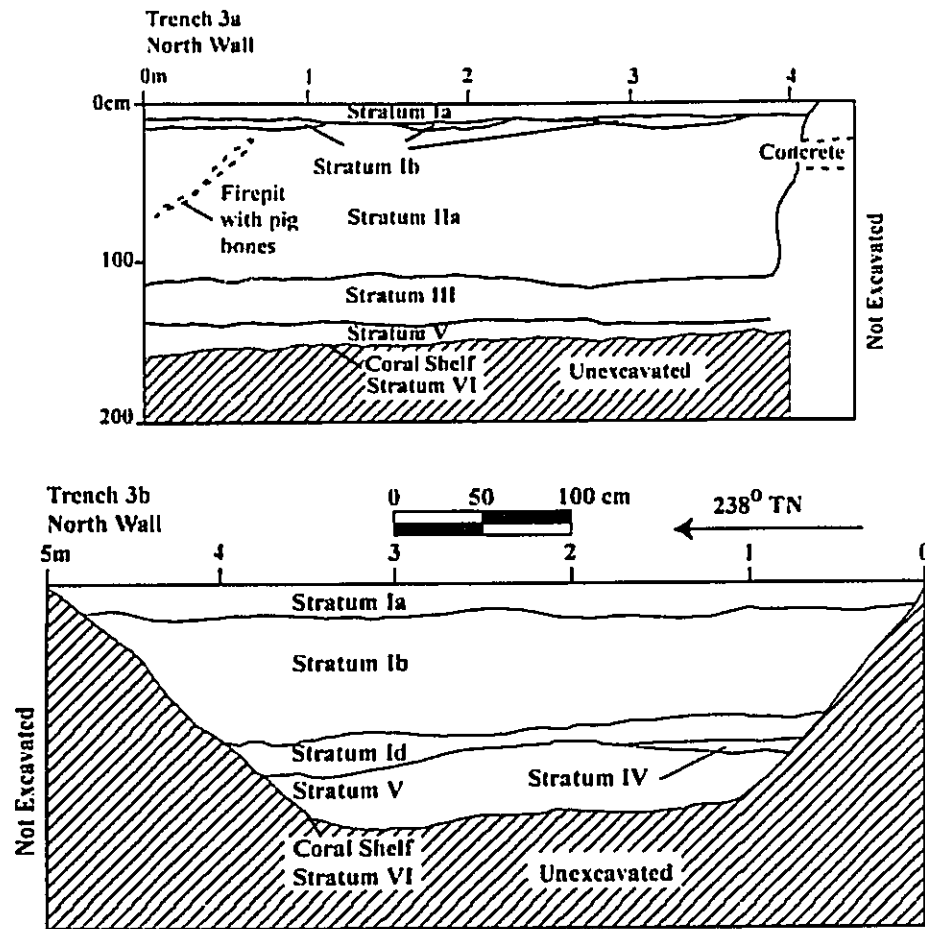


Figure 21. Backhoe Trenches 3a and 3b, north wall profile

**Backhoe Trench 3** (Figure 21) was excavated in two sections, with a 1.0 m section in the middle unexcavated to avoid a concrete slab. The two sections of the trench are quite different in profile. The western end (Trench 3a) has two thin layers of dry fill (Strata Ia and Ib), one layer of dark grayish brown sandy loam (Stratum IIa), a layer of light gray fine, medium sand (Stratum III), and a layer of dark gray sand (Stratum V) over a hard coral shelf at 147 cmbs. The eastern end (Trench 3b) has two thick layers of dry fill (Strata Ia and Ib), a layer of wet pumped fill (Stratum Id), a thin layer of Stratum IV very dark grayish clay loam (indicating a wetland environment), and a thick layer of dark gray sand (Stratum V) over the hard coral shelf at 150 cmbs. This indicates that Trench 3 is at the interface between the dry, high land in the center of the project (Trench 3a and western end of Trench 3b) and the original low, swampy surface of the "Duck & Mosquito Pond" area existing before the onset of the Ala Wai project of the 1920s and 1930s. This is also emphasized by the absence of most of the dry fill and all of the wet, pumped fill in the western Trench 3a, which must have been on such high ground that it was not necessary to fill it in with either dry or pumped fill. This has left intact Jaucus sand layers (Stratum IIa) in Trench 3a, which represents the original high, sandy surface of the land in the pre-contact and early historic periods. An historic firepit with sawn pig bones has intruded into Stratum IIa in Trench 3a.



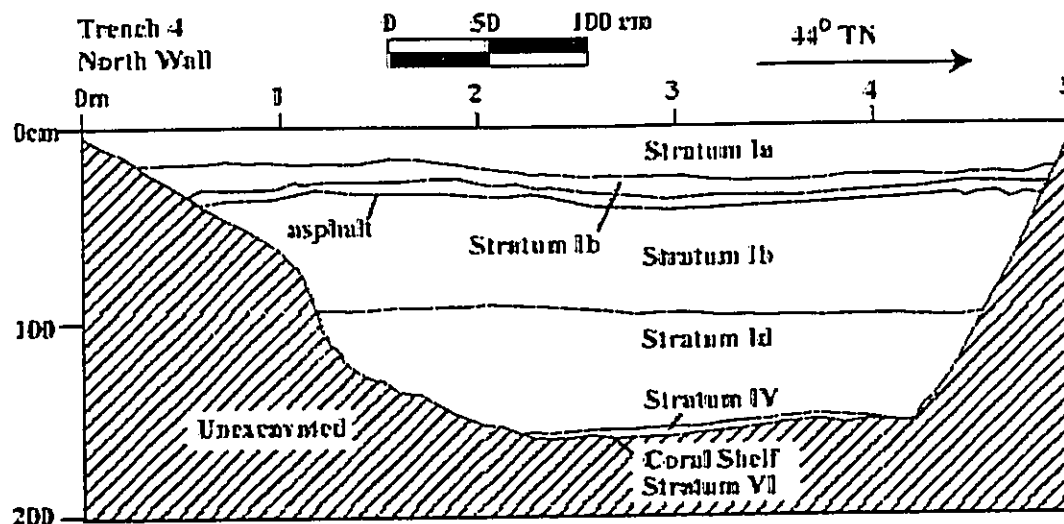


Figure 22. Backhoe Trench 4, north wall profile

**Backhoe Trench 4** (Figure 22) is a 5.0 m long trench excavated near the inner southeastern corner of the project area, west of Backhoe Trench 1, which also has a similar stratigraphy. Trench 4 has two layers of dry fill (Strata Ia and Ib), with a layer of asphalt within Stratum Ib. Below this is a layer of wet, pumped fill (Stratum Id), and a thin layer of clay loam (Stratum IV, the wetland layer) over a hard coral shelf (Stratum VI) at 157 cmbs. This trench would have been within the "Duck & Mosquito Pond" area pictured in the 1927 Sanborn map (see Figure 11), as was Backhoe Trench 1.

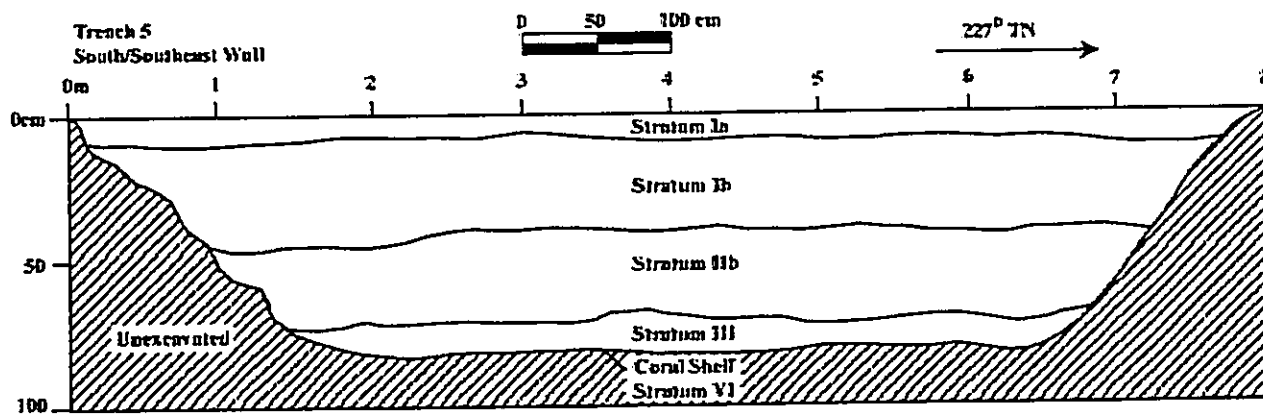


Figure 23. Backhoe Trench 5, south/southeast wall profile

**Backhoe Trench 5** (Figure 23) is an 8.0 m long trench excavated in the east central section of the project area. It contained two layers of dry fill (Stratum Ia and Ib), a layer of yellowish brown medium sand (Stratum IIb), and a layer of light gray fine to medium sand (Stratum III) over a hard coral shelf (Stratum VI) at 160 cmbs. This trench would have been located in the high ground between the two ponds shown on the 1927 Sanborn map (see Figure 17), which explains the lack of the organic, wetland stratum (Stratum IV) and the wet, pumped fill (Stratum Id) that was used to fill in low-lying area during the Ala Wai Reclamation Project.

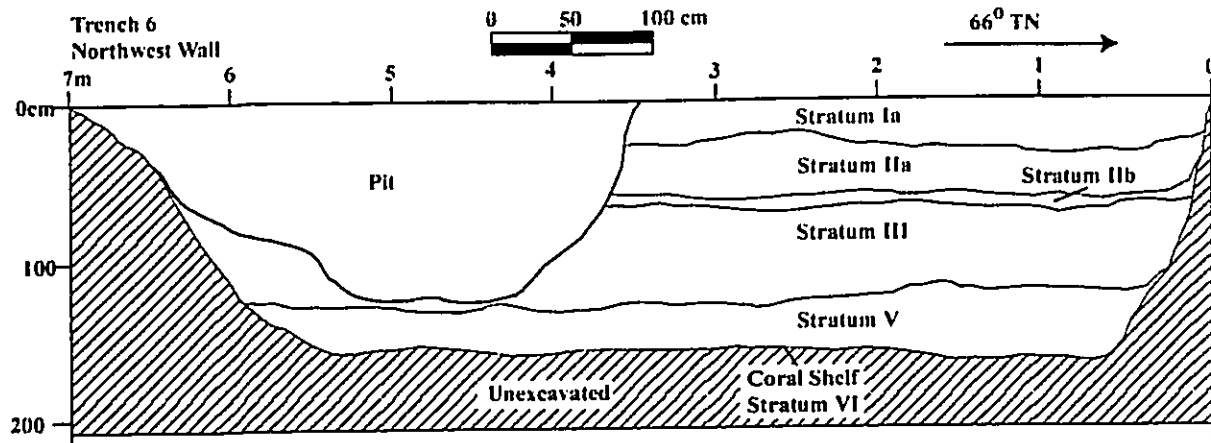


Figure 24. Backhoe Trench 6, northwest wall profile

**Backhoe Trench 6** (Figure 24) is a 7.0 m long trench excavated in the east central section of the project area. It is about 10 m south of Trench 5, and like Trench 5 contains the Stratum II (Strata IIa and IIb) sand that represents the original surface of the high land between the two pictured 1927 ponds on each end of the project area. The trench also contains one layer of dry fill (Stratum Ia), a layer of light gray sand (Stratum III), and a layer of dark gray sand (Stratum V) over the hard coral shelf (Stratum VI) at 160 cmbs. A large pit with no cultural material intruded through Strata I-III.

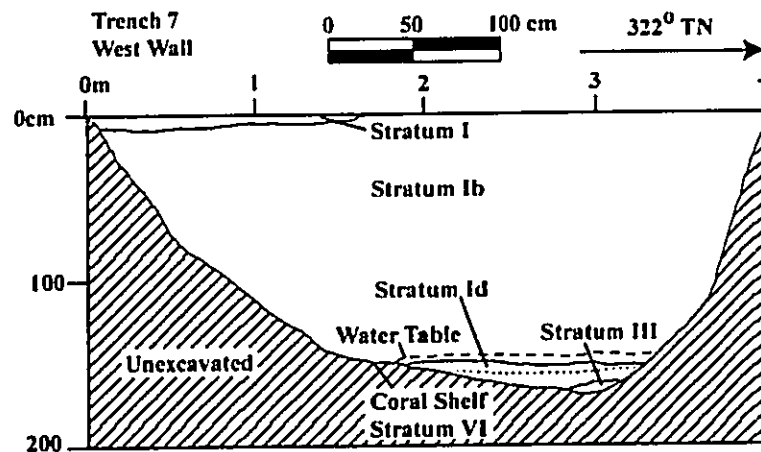


Figure 25. Backhoe Trench 7, west wall profile

**Backhoe Trench 7** (Figure 25) is a 4.0 m long trench excavated at the western central section of the project area. Although it did not contain any Stratum IV material (the organic, wetland layer), it did contain a thick layer of dry fill (Strata Ia and Ib) and a thin layer of wet, pumped fill (Stratum Id). This indicates that the trench is located near the interface of the high, sandy central section and the low, swampy areas on each end of the project area; it must have been low enough that some pumped dredge material needed to be placed on the area to raise it to the level of the high central section. The trench also contained a thin pocket of light gray sand (Stratum III) over the hard coral shelf (Stratum VI) at 158 cmbs.

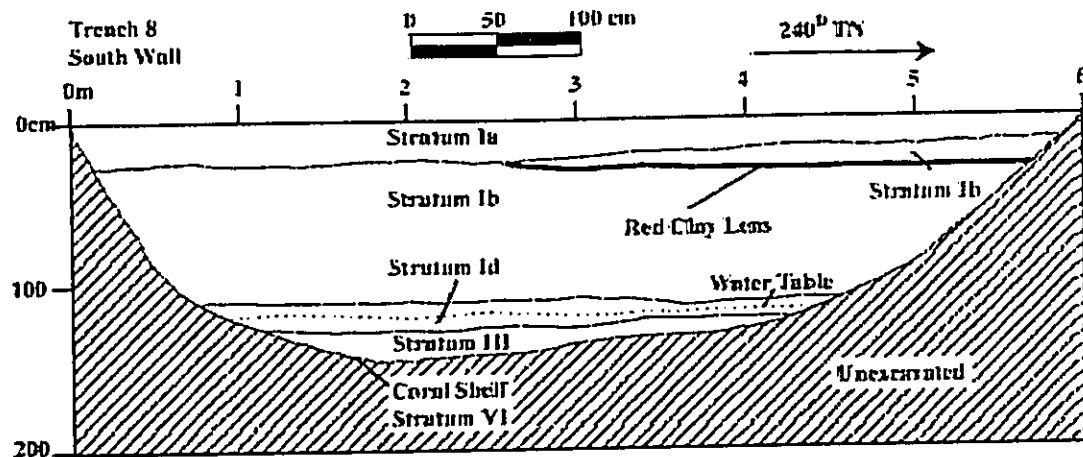


Figure 26. Backhoe Trench 8, south wall profile

**Backhoe Trench 8** (Figure 26) is a 6.0 m long trench located in the west central section of the project area, about 4 m north of Trench 7. Like Trench 7 it did not contain any Stratum IV clay loam (the organic, wetland layer), but it did contain thick layers of dry fill (Stratum Ia and Ib) and a thick layer of wet, pumped fill (Stratum Id), indicating the trench was not within the "ponds" area but was in a low enough area that it needed to be filled with some material to reach the level of the high, sandy central section. The trench also had a thin lens of red clay within Strata Ib; since this is a dry fill stratum, this red lens must also represent some type of fill material. There is a thick layer of light gray sand (Stratum III) over the hard coral shelf (Stratum VI) at 135 cmbs. 1 1945 Coca-cola bottle (not collected) was found in the Ia stratum.

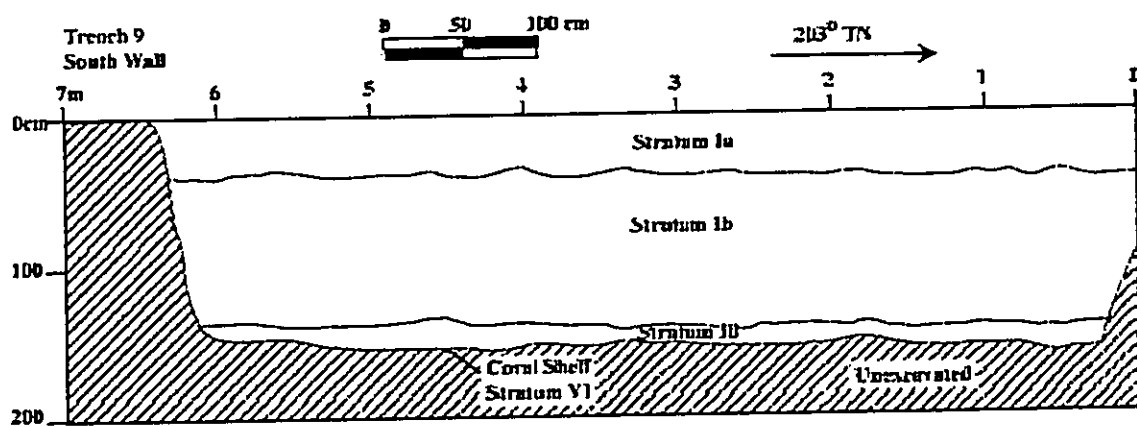


Figure 27. Backhoe Trench 9, south wall profile

**Backhoe Trench 9** (Figure 27) is a 6.5 m long trench excavated at the inner southwestern corner of the project area. It contained two thick layers of dry fill (Strata Ia and Ib) and a layer of wet, pumped fill, which extended down to the hard coral shelf at 150 cmbs. This trench is not located in the former "pond" areas, but must have been low enough to need considerable wet and dry fill to bring it up to the level of the highest ground in the project area.

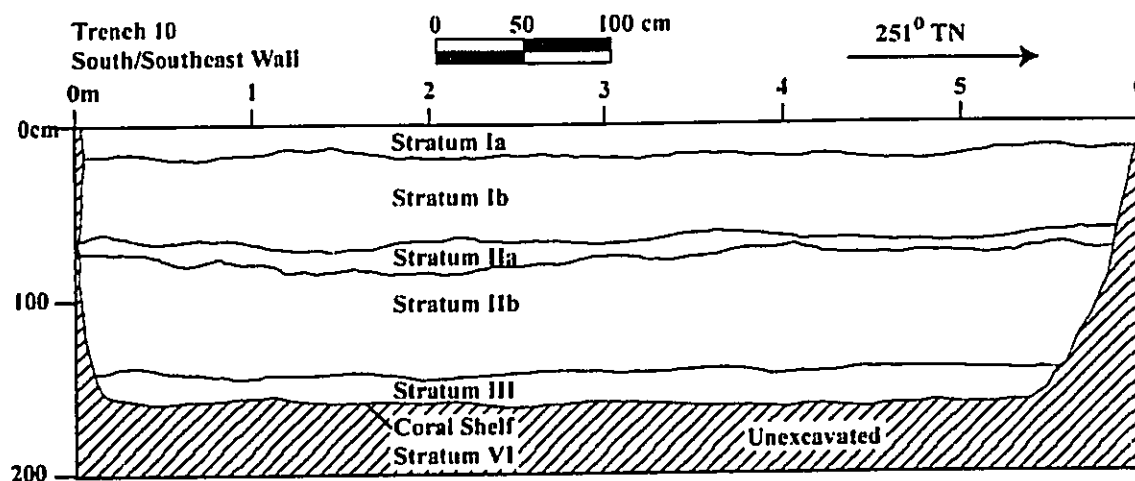


Figure 28. Backhoe Trench 10, south/southeast wall profile

**Backhoe Trench 10** (Figure 28) is a 6.0 m long trench excavated near the outer southwestern corner of the project area. It is similar to Trench 6, which is located in the central section of the project area that was once high ground between the two ponds. This area must also have been fairly high ground, because it was not necessary to cover this area with the wet, pumped material (Stratum Id) that was used to fill-in low sections. The trench contains two layers of dry fill (Stratum Ia and Ib), two layers of the Stratum II sand which represents the original high, sandy surface around and between the ponds, and a layer of light gray sand (Stratum III) over the hard coral shelf (Stratum VI) at 160 cmbs.

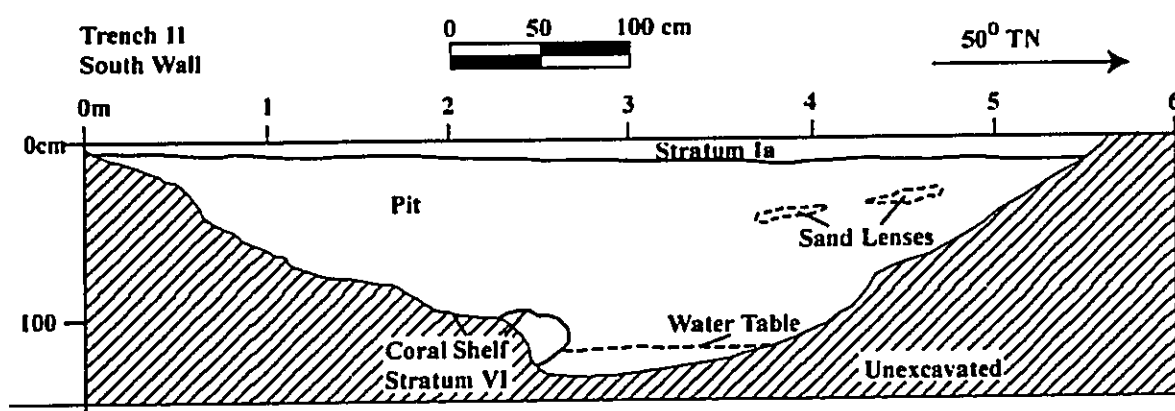


Figure 29. Backhoe Trench 11, south wall profile

**Backhoe Trench 11** (Figure 29) is a 5.5 m long trench excavated in the southeastern portion of the western, *makai* "arm" of the project area. It is near a large circular depression in the project area (see Figure 18), in an area where the ground has been previously excavated during earlier building in the project area. Although the trench was not located within the circular depression, there is evidence that the trench area has also been previously disturbed, as a large pit below one fill layer (Stratum Ia) extended down to 130 cmbs. At this level, there are a number of large coral boulders, so it seems that hard coral shelf was busted and the coral bedrock fragments were used as part of the material to refill the excavation.

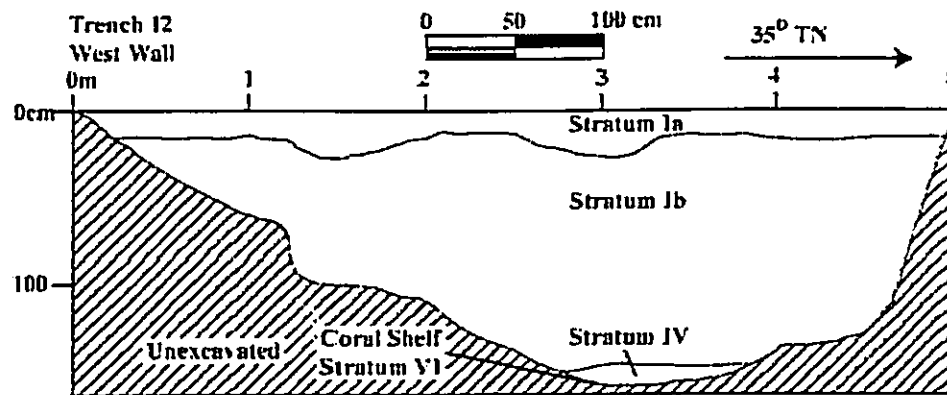


Figure 30. Backhoe Trench 12, west wall profile

**Backhoe Trench 12** (Figure 30) is a 5.0 m long trench excavated at the western end of the central *mauka-makai* section. This is the first trench in the western half of the project area to contain the Stratum IV wetland clay loam, and would be in the location of the second “Duck Pond” labeled on the 1927 Sanborn map (see Figure 11). The trench consists of two layers of dry fill (Stratum Ia and Ib) and Stratum IV over the hard coral shelf (Stratum VI) at 160 cmbs.

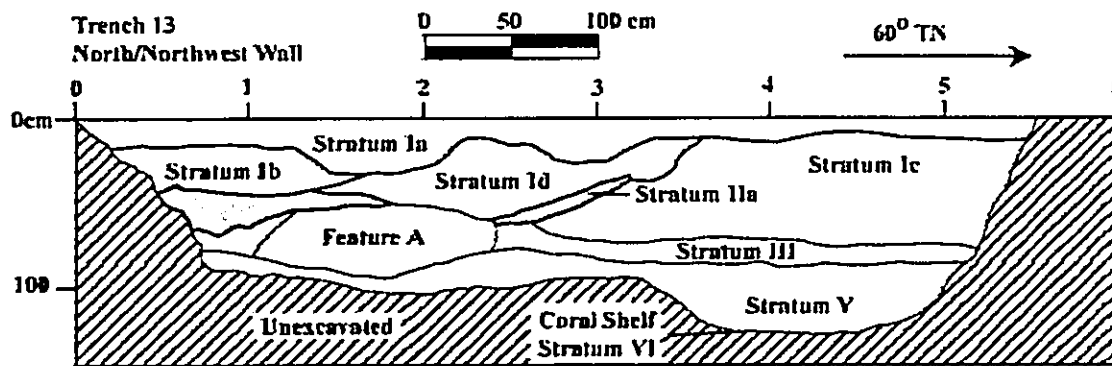


Figure 31. Backhoe Trench 13, north/northwest wall profile

**Backhoe Trench 13** (Figure 31) is a 5.5 m long trench excavated near the southwestern corner of the project area, 7 m west of Trench 12, which had a Stratum IV wetland layer. Trench 13 does not have a Stratum IV layer, but does have a Stratum II layer (a buried A horizon), which indicates this area was higher ground and adjacent to the “Duck Pond.” The trench consists of three dry fill layers (Stratum Ia, Ib, and Ic), Stratum IIa sandy loam, Stratum III light gray sand, Stratum V dark gray sand, and the coral shelf (Stratum VI) at 132 cmbs. Feature A, a firepit with fire-altered rock originated within Stratum IIa and intruded into Stratum III. A sample of rock and charcoal was sent to Beta Analytic for radiocarbon age determination. A date of AD 1470-1660 (Ox-Cal calibration 2 sigma date) was determined for this firepit. Thus Stratum IIa, the former high ground surface adjacent to the “Duck Pond” still extant in 1927, was used by native Hawaiians for pre-contact habitation as early as the late fifteenth century.

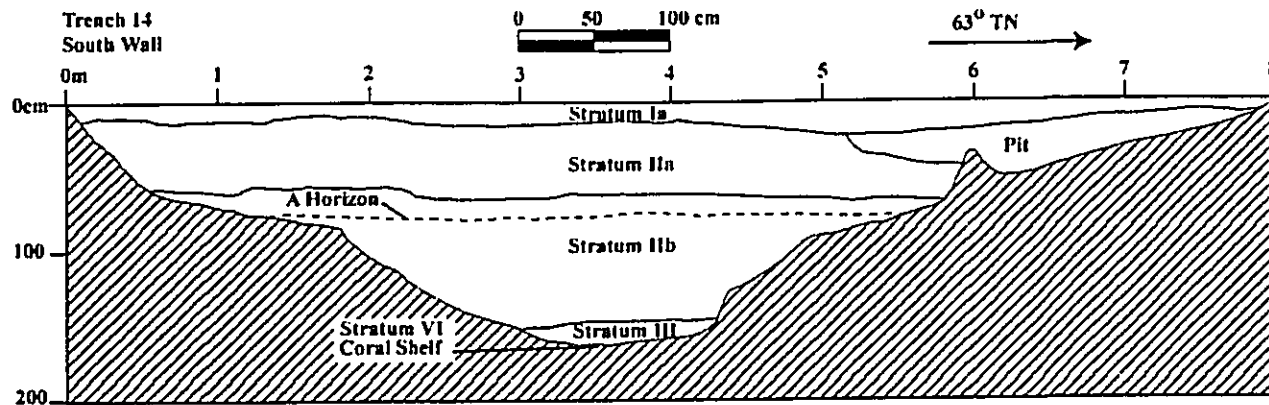


Figure 32. Backhoe Trench 14, south wall profile

**Backhoe Trench 14** (Figure 32) is an 8.0 m long trench excavated in the "makai," west arm of the project area, and is 11 m north of Trench 13. Like Trench 13 it has Stratum II (IIa and IIb) soil, indicating it was once higher ground, and a buried A horizon (within Stratum IIb). It also contains one layer of dry fill (Stratum Ia) and one layer of light gray sand (Stratum III) over the coral shelf (Stratum VI) at 160 cmbs. There was also a pit in the eastern end with electrical cables.

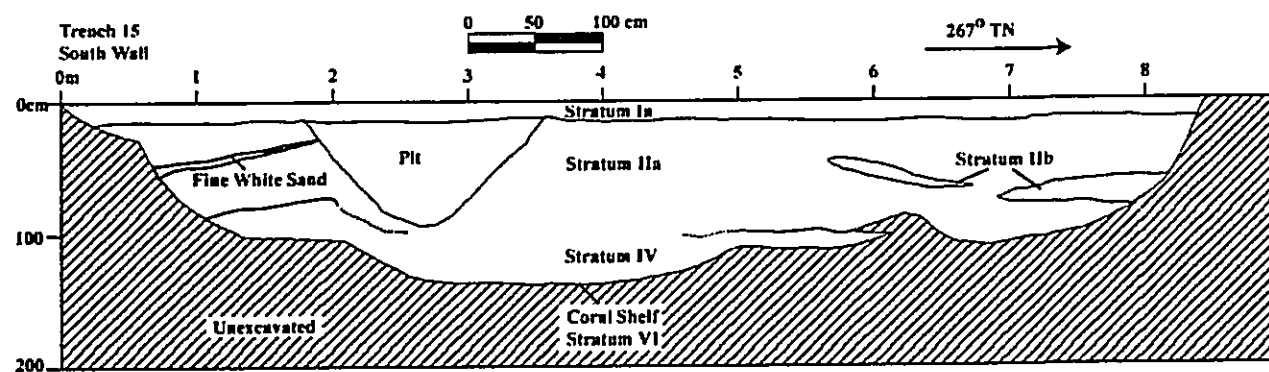


Figure 33. Backhoe Trench 15, south wall profile

**Backhoe Trench 15** (Figure 33) is an 8.5 m long trench excavated in the extreme northwestern corner of the project area, in the makai, west arm. The stratigraphy of the trench is disturbed with one or more pits intruding into the lower layers. The trench contains one layer of dry fill (Stratum I), two layers of Stratum II soils overlying, with an indistinct boundary, a layer of Stratum IV clay loam (wetland deposit) over the coral shelf (Stratum VI) at 145 cmbs. The Stratum IV layer only covers the eastern section of the trench. This trench is at the interface of the higher ground, swampy area of the western "Duck Pond," but the exact interface line cannot be determined, since there is so much disturbance.

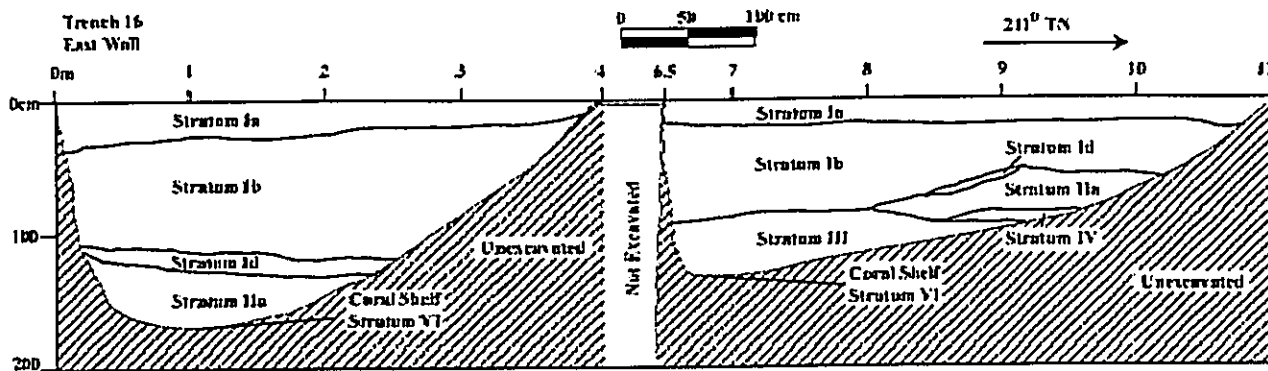


Figure 34. Backhoe Trench 16, east wall profile

**Backhoe Trench 16** (Figure 34) in the *makai*, west arm of the project area, was excavated in two sections, separated by 2.5 m unexcavated section. Like Trench 15, it is at the interface area between the swampy land represented by Stratum IV, and the high sandy ground, represented by Stratum II. The eastern end (left side of figure) consists of two layers of dry fill (Strata Ia and Ib), one layer of wet pumped fill (Stratum Id), and one layer of sandy loam (Stratum IIa) over the coral bedrock (Stratum VI) at 170 cmbs. The western end (right side of figure) contains two layers of dry fill (Strata Ia and Ib), one layer of wet, pumped fill, one layer of sandy loam (Stratum IIa), a thin layer of wetland clay loam (Stratum IV) adjacent to a layer of light gray sand (Stratum III) over the coral shelf (Stratum VI) at 130 cmbs.

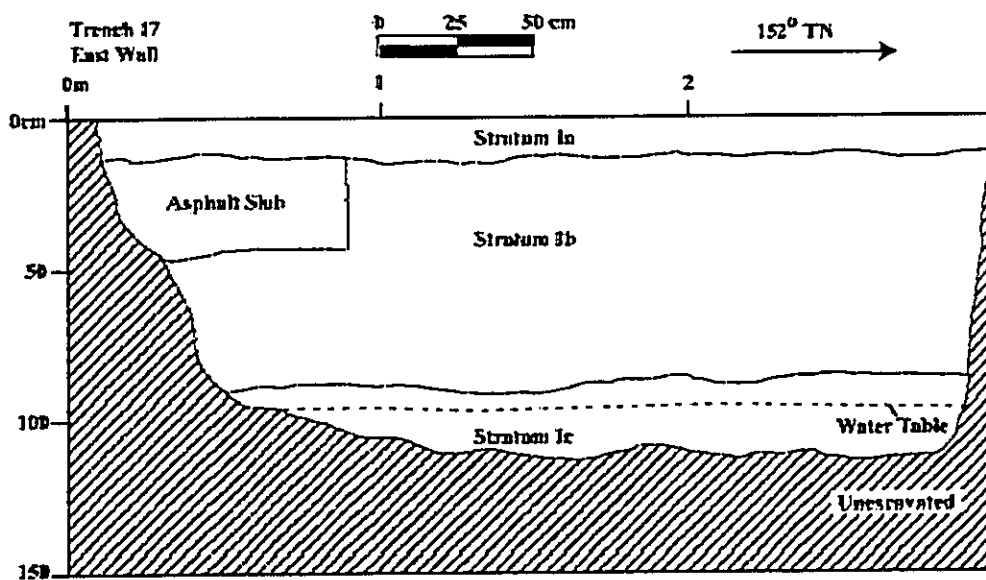


Figure 35. Backhoe Trench 17, east wall profile

**Backhoe Trench 17** (Figure 35) is a 2.9 m trench excavated in the inner northwestern corner of the project area in the *makai*, west arm. The trench contained three layers of dry fill (Strata Ia, Ib, and Ic) down to the coral shelf (Stratum VI) at 110 cmbs). As with other trenches in the *makai* arm, there is evidence for disturbance in this area, including an asphalt slab from 10 to 50 cmbs.

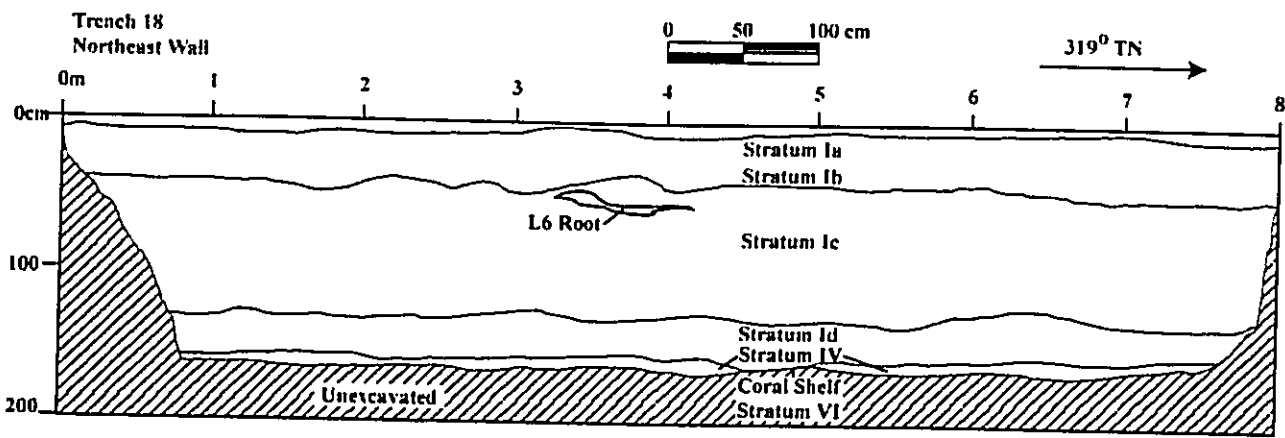


Figure 36. Backhoe Trench 18, northeast wall profile

Backhoe Trench 18 (Figure 36) is a 8.0 m long trench excavated in the *mauka*, east “arm” of the project area, adjacent to the asphalt pavement. No trenches were excavated in the pavement area, since the developers plan to leave this area undisturbed. Trench 18 contains three layers of dry fill (Strata Ia, Ib, and Ic), a layer of wet, pumped fill (Stratum Id), a layer of organic clay loam (Stratum IV) found in the “pond” areas, and the coral shelf at 162 cmbs. This trench is within the area labeled “Duck & Mosquito Pond) labeled on the 1927 Sanborn map (see Figure 11), as are Trenches 1, 4, and 3b.

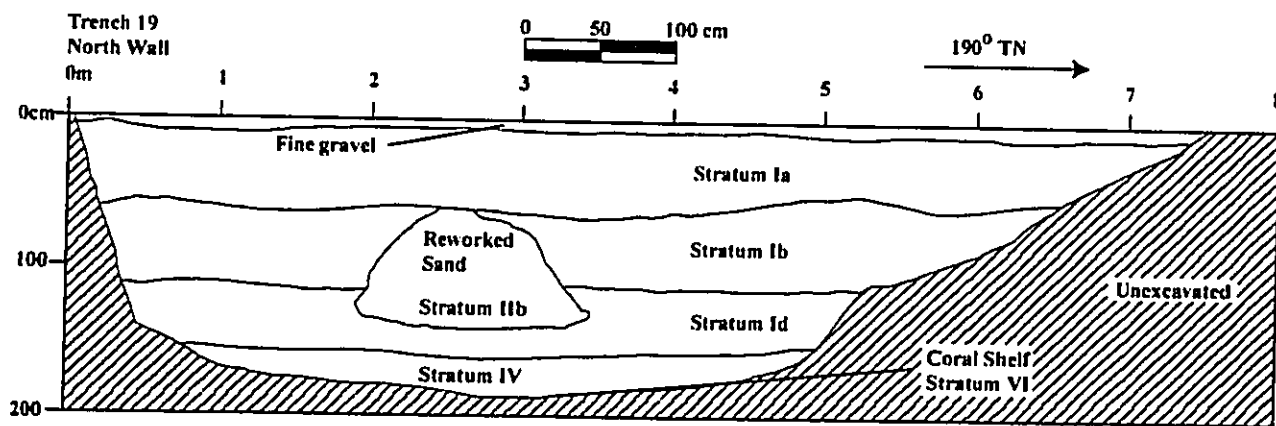


Figure 37. Backhoe Trench 19, north wall profile

**Backhoe Trench 19** (Figure 37) is a 7.5 m long trench excavated in the *mauka*, east arm of the project area. It contains a thin layer of fine gravel on the surface, two layers of dry fill (Strata Ia and Ib), a layer of wet, pumped fill (Stratum Id), a pocket of yellowish brown sand (Stratum IIb), and a layer of wetland organic clay loam (Stratum IV) over the coral shelf (Stratum VI) at 185 cmbs. Along with Trenches 1, 3b, 4, and 18, it is part of the “Duck & Mosquito Pond” still extant in 1927.



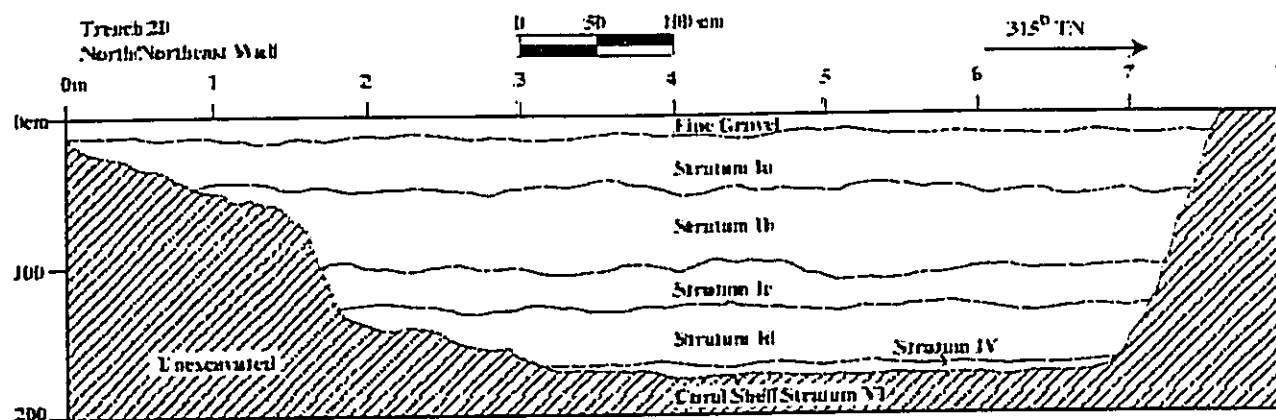


Figure 38. Backhoe Trench 20, north/northeast wall profile

Backhoe Trench 20 (Figure 38) is a 7 m long trench excavated at the east side of the *mauka*, east arm of the project area. It is similar to Trench 19, and contains a layer of fine gravel on the surface, three layers of dry fill (Strata Ia, Ib, and Ic), one layer of wet, pumped fill (Stratum Id), a thin layer of the wetland clay loam (Stratum IV) over the coral shelf (Stratum VI) at 165 cmbs. It is within the area denoted on a 1929 map as “Duck and Mosquito Pond.”

### 7.3 Summary of Trench Stratigraphy

Based on early nineteenth and early twentieth century maps and photographs (see Figure 9, Figure 11, and Figure 12), two ponds once existed in the project area, surrounded by higher ground composed of a mixture of *Jaucus* sands and alluvium (sandy loam and loamy sand). Māhele land documents indicate that areas to the west of the project area (on the opposite site of Hobron Land) were used for habitation, irrigated taro cultivation, and the maintenance of (with stone walls or sand berms) fishponds.

There were no Māhele claims for habitation lots or maintained fishponds in the current project area, but one “low area” is shown on an 1881 Hawaiian Government Survey map and two “Duck and Mosquito Ponds” are shown on a 1927 Sanborn Fire Insurance map. The depiction of the ponds indicates that they were probably shallow, stagnant (hence “mosquitoes”) water ponds, surrounded by higher lands, but not modified in any way or demarcated with stone walls or sand/earth berms. Stratum IV, found in nine trenches in the project area, represents the wetland deposits related to the two former ponds. These sediments were not assigned a State Inventory of Historic Places (SIHP) site designation number because they represent natural deposits.

The recent trench excavations at the project area have matched the predictive model for this parcel. In the eastern portion (*mauka* arm and eastern corner of central area) of the project area, six trenches have a layer of organic clay loam (Stratum IV) that formed at the bottom of a still-water environment (including Backhoe Trench 4; Figure 39). When the location of ponds on a 1927 map is overlain on a modern map of the project area, five of the six trenches fall within the eastern pond labeled “Duck and Mosquito Pond.” During the Ala Wai Reclamation Project, low lying areas in Waikīkī were filled in with a combination of a wet, pumped clay dredged from the coast or streams and dry fills, especially crushed coral. In all six eastern trenches with Stratum

IV wetland soil, there is also a layer of wet, pumped clay (Stratum Id) and one or more thick layers of dry fill (Strata Ia, Ib, and Ic) (see Figure 39).

In the central section of the project area are three trenches (Trenches 3a, 5, and 6) with sandy loam and loamy sand layers (Stratum IIa and IIb), near the current surface under only one or two dry fill layers. The wet, pumped layer (Stratum Id) is not present Backhoe Trench shown in Figure 40). These trenches are located in an area that was once high ground, covered by the original *Jaucus* sands, which was between the two ponds.

There are three trenches (Trenches 12, 15, and 16) in the western half (west central and *makai* arm) that also contain the Stratum IV wetland stratum (Backhoe Trench 16 show in Figure 41). Both fall within or near the predicted location of the second, *makai* pond shown on the 1927 Sanborn map. To the west (*makai*) of these trenches, are three trenches that again have Stratum II soils overlain by only one to two layers of dry fill; no wet, pumped fill (Stratum Id) is present. These trenches were on the higher ground on the west edge of the second pond. On the overlay map (see Figure 17), these three trenches fall within the predicted location of the second pond. From the trench locations with Stratum IV pond soil, the pond actually seems to have been located more *mauka*, to the east than predicted. One trench (the eastern portion of Trench 16) also must have been on higher ground on the east side of the pond. The exact perimeter of this pond cannot be exactly determined as several trenches in the *makai* arm show there has been substantial previous subsurface disturbance in this area.

The remaining trenches show varying amounts of wet and dry fills over sand layers (Stratum III and V) (Backhoe Trench 9 shown in Figure 42). There is a hard coral shelf (the former reef) at about 160 cmbs found at the base of all trenches (except those that were terminated due to the presence of electrical cables).

Of special interest is a firepit (Feature A; now Site 50-80-14-6848) found in Backhoe Trench 13. This trench did not have a "pond" layer (Stratum IV) or any pumped fill (Stratum Id), but did contain a buried A horizon with Stratum IIa (the former sandy surface of the high ground). The firepit is contemporaneous with Stratum IIa. Radiocarbon determination of charcoal and rocks from this firepit date to AD 1470-1660. This firepit was not associated with any cultural layer, which would indicate permanent habitation near this area. The presence of the firepit does indicate that the pond shore was used for temporary habitation, possibly to collect resources or to conduct other short-term activities.

No pre-contact or historic burials were found in the project area. No traditional Hawaiian artifacts were found in the project area. Only one historic artifact, a 1945 Coca-cola bottle recovered from the top fill layer (Stratum Ia), was recovered. Although small dwellings have been built on this lot since the 1930s, the area was covered with apartment buildings as early as the 1950s, and larger structures were built on this lot later, no large historic trash dumps were found. There is little material evidence remaining of the mid-twentieth century close-knit community called "Dog Patch," that once covered this portion of Waikīkī.

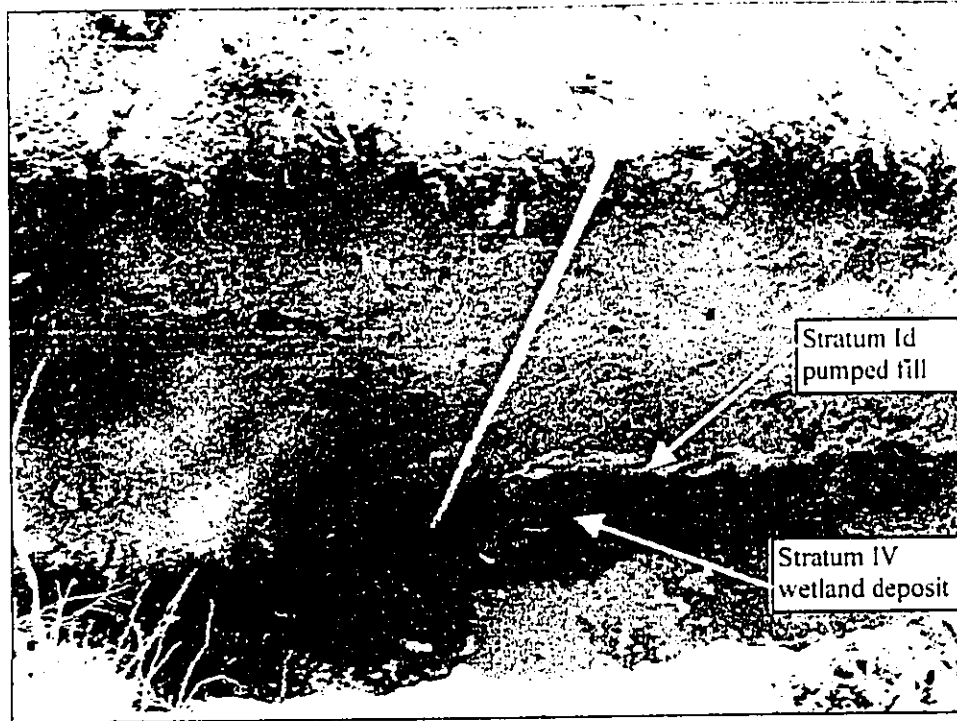


Figure 39. Backhoe Trench 4, showing fill layers (Stratum Ia, Ib, and Id), and Stratum IV (wetland deposit)

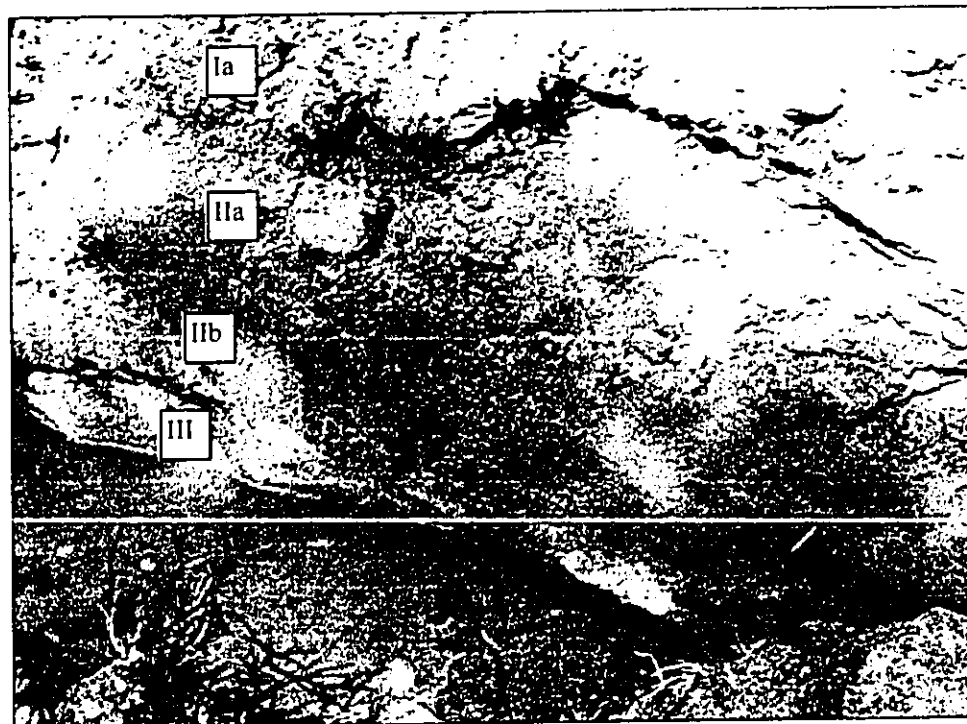


Figure 40. Backhoe Trench 6, showing fill layer (Stratum Ia), sandy loam and loamy sand (IIa and IIb), light gray sand (III); dark gray sand (V) below water table

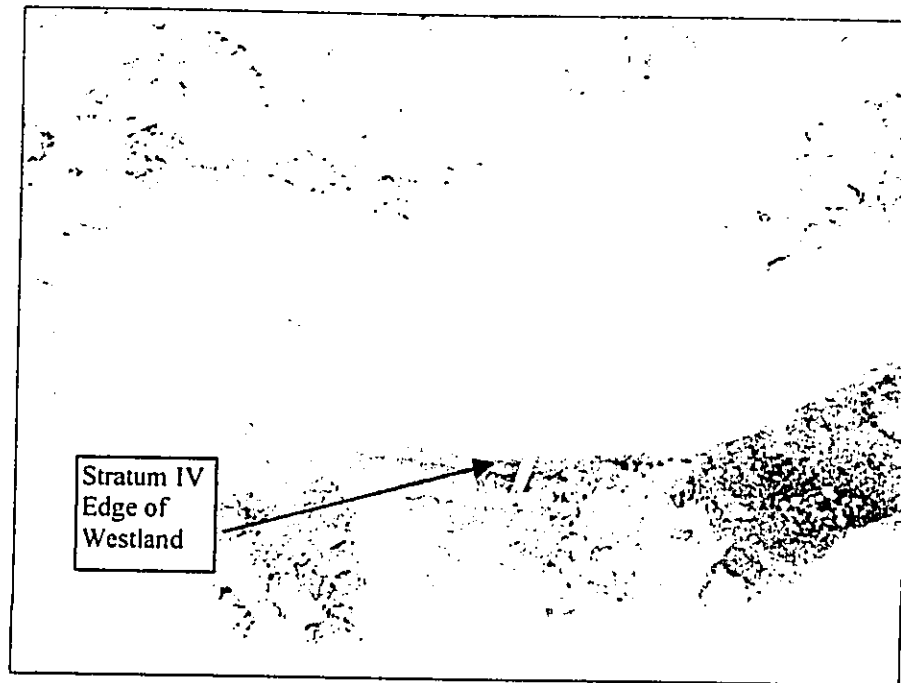


Figure 41. Backhoe Trench 16 (west half), showing edge of wetland deposit (Stratum IV)

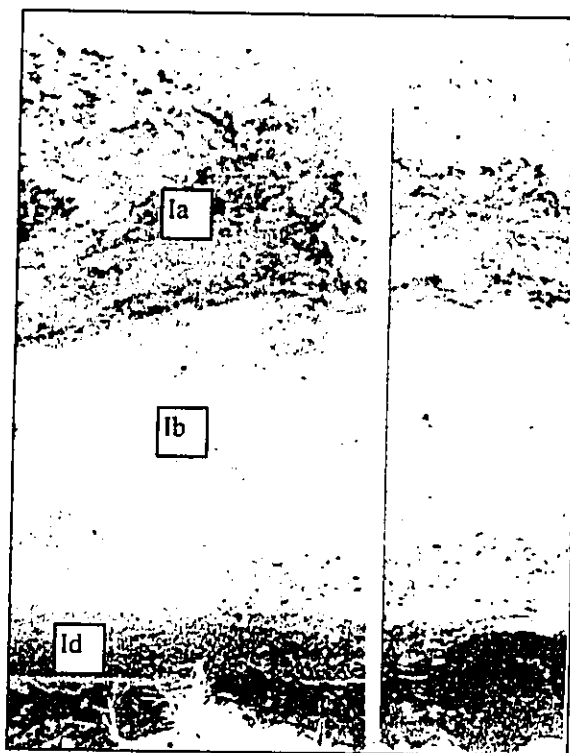


Figure 42. Backhoe Trench 9, showing two dry fill layers (Stratum Ia and Ib) and one pumped fill layer (Stratum Id) extending to the coral shelf (Stratum VI-below the water table)

### 7.4 Site Description, 50-80-14-6848

A firepit, dated to A.D. 1470-1660, was found in one trench (Backhoe Trench 13), showing evidence of temporary habitation and possible resource utilization in this area in the pre-contact period. This firepit was given a SIHP designation, Site 50-80-14-6848. UTM coordinates 2354.93 N, 620604 E (Figure 43 and Figure 44). This firepit is contemporaneous with Stratum II, which represents the high, sandy ground surface surrounding two former unmodified ponds that remained in the project area up until at least 1927.

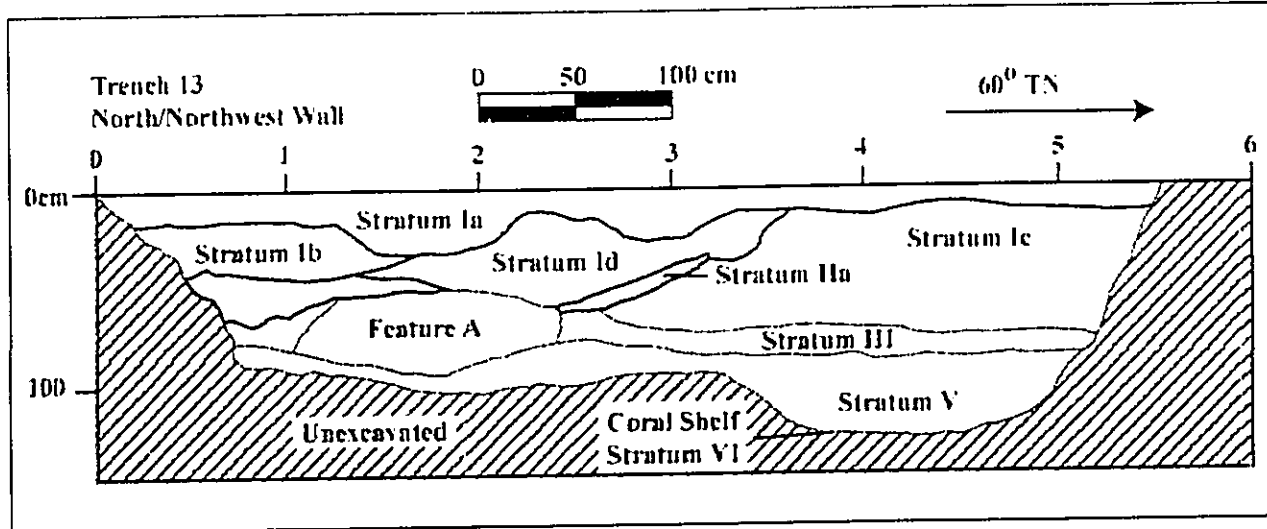


Figure 43. State Site 50-80-100-6848, firepit in Backhoe Trench 13

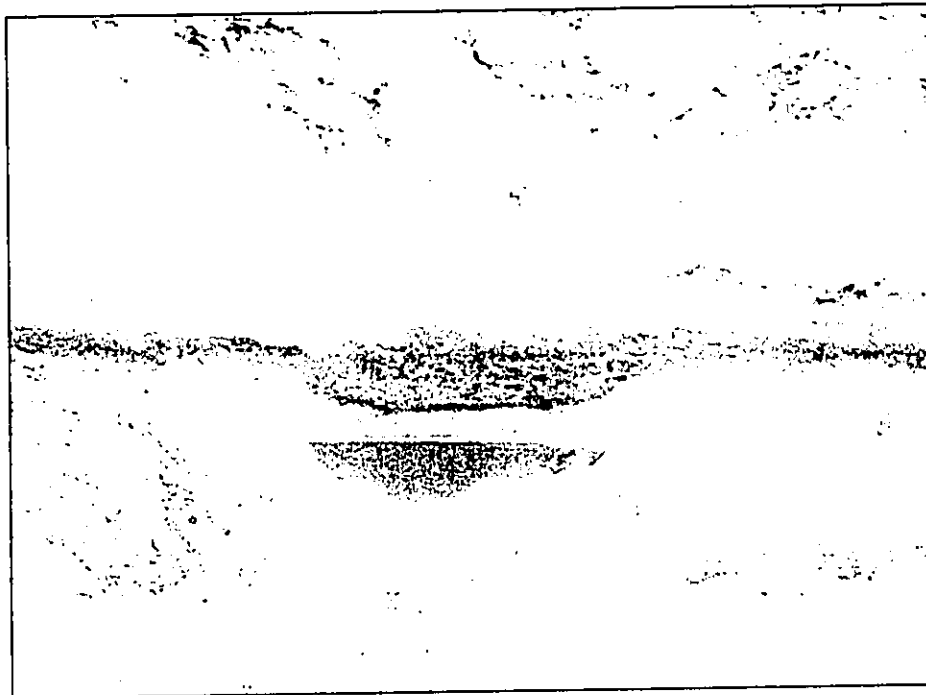


Figure 44. State Site 50-80-100-6848, firepit in Backhoe north/northwest wall of Trench 13

## 7.5 Radiocarbon Data Analysis

Sample WAIK 82 (Beta No. 211326), from a firepit in Backhoe Trench 13 (Site 50-80-14-6848) was analyzed by the AMS technique (Figure 45). AMS results are derived from reduction of sample carbon to graphite (100% C), along with standards and backgrounds. The graphite is then detected for  $C^{14}$  content in an accelerator-mass-spectrometer (AMS). Calibrations for the samples were performed using Stuiver *et al.* (1998), OxCal version 3.5, which provides probability estimates for the most likely ages that intercept the calibration curve at multiple points.

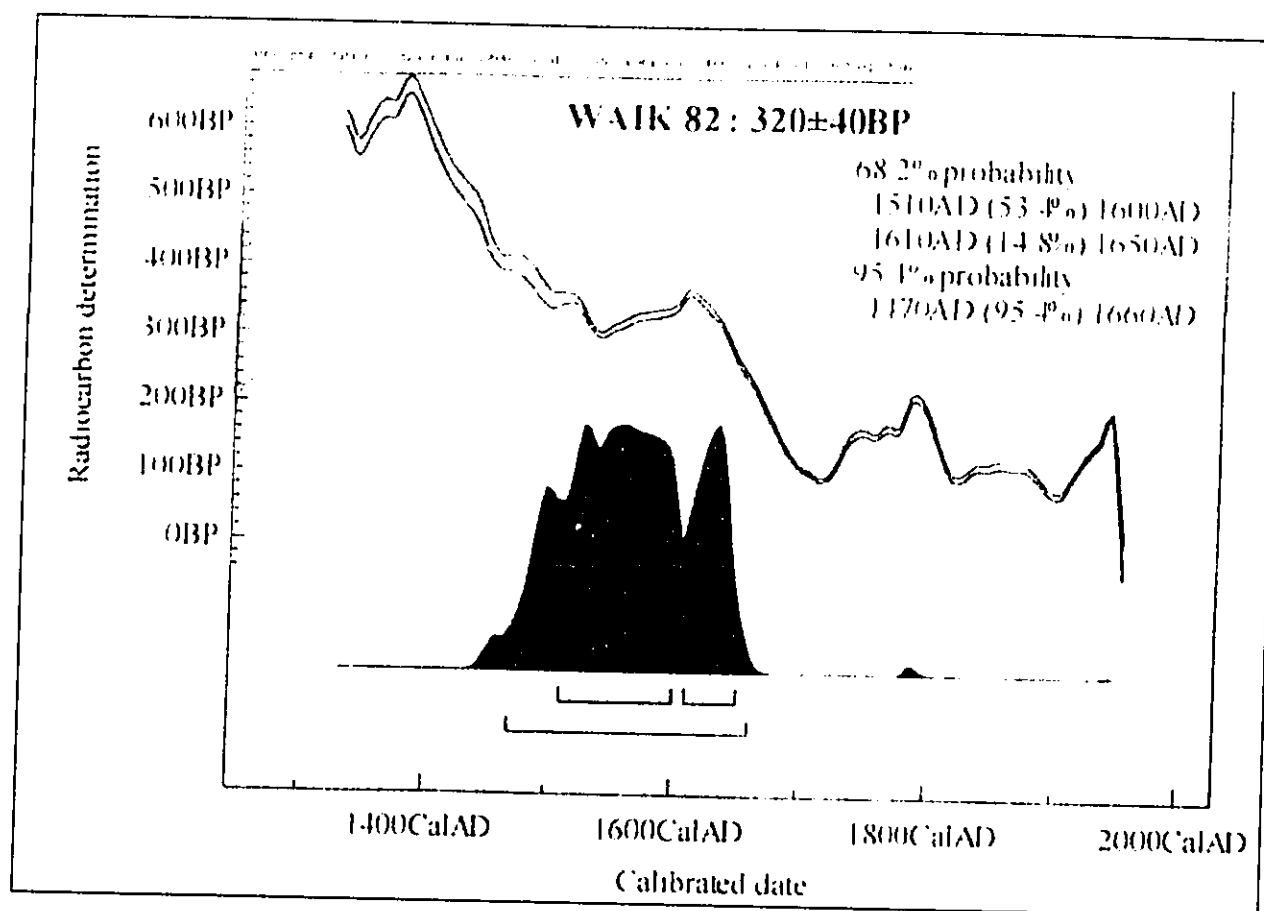


Figure 45. Radiocarbon results, Oxcal Calibration Program, for Site 50-80-14-6848 (pre-contact firepit)

Sample WAIK-82 was collected at 95-100 cm below surface within Stratum IIa (a grayish brown sandy loam) that was the former high ground west of a pond that existed as early as AD 1881 and was filled-in after AD 1927. The sample consisted of two fire-altered rocks and the charred material on the rocks. The charcoal from Sample WAIK-82 (Table 4) has a conventional radiocarbon age of 320 +/- 40 years BP (Before Present). The one sigma calibrated result (68.2%) indicated that the sample had a 53.4% probability of being between AD 1510-1600, and a 14.8% probability of being between AD 1610-1650. The two sigma calibrated result indicated a 95.4% probability that the sample dated between AD 1470 to 1660.

Table 4. Radiocarbon dating results for Feature A (Site 50-80-14-6848), Backhoe Trench 13

Sample No.	Beta No.	Service	Measured Age	13C/12C	Conventional Age	Ox-cal Calibration (2 Sigma)
KAPI-82	211326	AMS-Standard Delivery	290 +/- 40 BP	-22.9 o/oo	320 +/- 40 BP	A.D. 1470-1660 (95.4%)

## 7.6 Additional Work at Site 50-80-14-6848

The SHPD requested additional work at Site 50-80-14-6848 in a letter dated May 1, 2006 (LOG NO: 2006.1319, DOC NO: 0604CM79). They requested relocation of the firepit, hand excavation of an area surrounding the firepit, and hand-screening of the sediments around the firepit to see if there was any other evidence for temporary habitation in the project area.

On October 3, 2006, Dr. Hallett H. Hammatt and Constance R. O'Hare excavated a 10 m by 4 m Expanded Area surrounding Trench 13 and the firepit, Site 6848. A backhoe was used to remove the top fill layers (Layers Ia, Ib, Ic, and Id) to approximately 50 cm below surface to the top of Stratum IIa or to the top of Stratum III (light gray, fine to medium sand) (Figure 46).

The outline of the previously excavated trench could be clearly seen in the walls and floor of the expansion area. The crew used shovels in the expansion area from approximately 50 cm below surface to 80 cm below surface, when the outline of the firepit on the floor of the area could be seen (Figure 47). During the original excavation of Trench 13, the firepit was recorded in the north wall of the trench. During this second excavation, we noted the outline of the firepit extending north from the north wall of the trench (Figure 48 to Figure 53).

The firepit was surrounded by Stratum IIb soil, a dark grayish brown (10YR 4/2) sandy loam. However, at this level (80 cmbs), the remaining portion of the expansion area floor was within Stratum IIb, a yellowish brown (2.5 Y 6/4) fine to medium loamy sand (Figure 54 and Figure 55). A plan view and profile (Figure 56) of the firepit was drawn and pictures were taken of the firepit. We then shoveled the expansion area down to 90-95 cmbs at the water table, within Stratum III, a light gray (10YR 7/2) fine, medium sand. North of the firepit were three small elliptical areas of dark soil. These look like previous disturbances, probably from the teeth of a backhoe.

The firepit was excavated and all of the material within it was sieved through a 1/8<sup>th</sup> mesh screen. No cultural material was found. The only charcoal in the firepit was on the surface of several fire-altered rocks found in the firepit. The radiocarbon date (A.D. 1470-1660; see Table 4) determined for the firepit after the original excavation of Backhoe Trench 13, was generated from similar fire-altered rocks, so it was not thought necessary to collect an additional sample. A 2.0 m by 1.0 m area around the firepit, within Stratum IIa, was also screened. No cultural material was found.

Three conclusions can be drawn from the excavation of the expanded area:

- (1) The firepit is 50 cm long northwest/southeast, as shown in the original Backhoe Trench 13 profile (see Figure 43 and Figure 44). The excavation of the expansion area

indicates that the firepit was at least 20 cm wide, comprising the north portion of the feature. The south half of the feature was destroyed during the original excavation of Trench 13, so it is not possible to determine the exact northeast/southwest dimension. It is possible that the firepit was roughly circular, 50 cm by 50 cm.

- (2) No other evidence was found for temporary habitation in this area. There was no midden, no charcoal found in surrounding screened material, and no other subsurface features.
- (3) A 1927 map indicated that there was a shallow-water "duck pond" once in this area (see Figure 18). It was predicted that a wetland soil deposit (Stratum IV) would be found in the ten trenches that overlap this area, but Stratum IV was found in only two trenches (Backhoe Trenches 12 and 16), both located on the eastern edge or boundary. It was concluded that the "duck pond" was located east of the predicted location. Stratum IV was not found in the Expansion Area (see photographs and profile of the south wall; Figure 55), which lends weight to the conclusion that the western duck pond was either discontinuous, or located further to the east than predicted.





Figure 46. Removal of top historic fill layers (Strata Ia-Id) over firepit, Site 50-80-14-6848; note profile of former Backhoe Trench 13 in northwest wall of expansion area

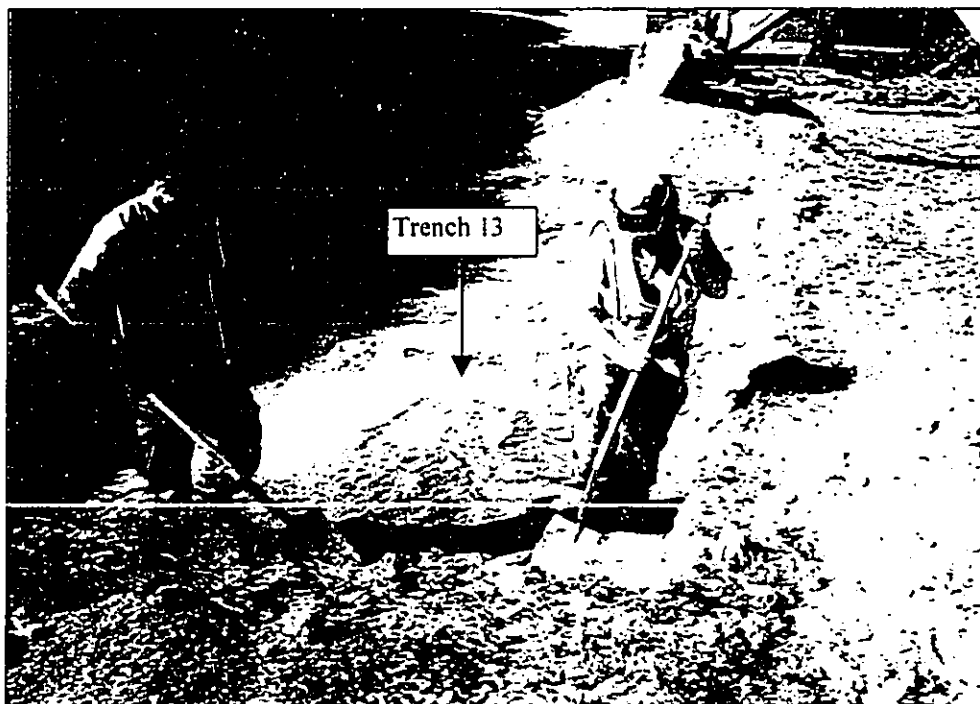


Figure 47. Hand-excavation of Layer IIa and IIb surrounding Backhoe Trench 13 (center of picture), view to the southeast

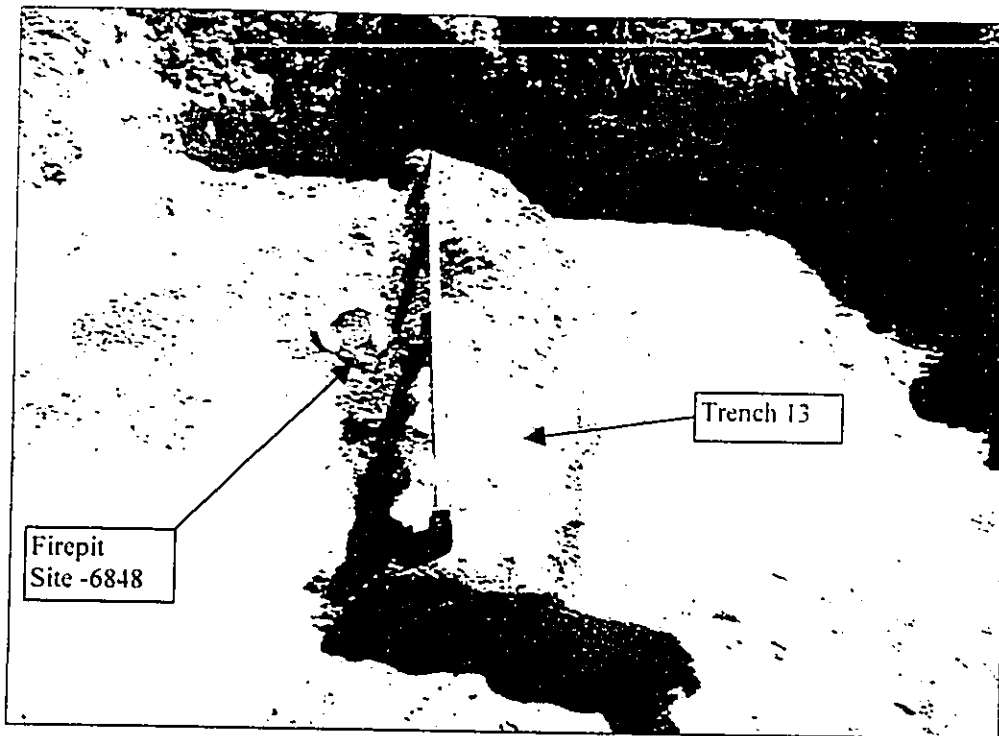


Figure 48. Backhoe Trench 13 and firepit (Site 6848): soil at base of excavation is Stratum IIa on north (left) side and Stratum IIb on south (right) side. view to the northwest: trowel points to the north



Figure 49. Site -6848 firepit profile, view to the east-southeast: trowel points to the north

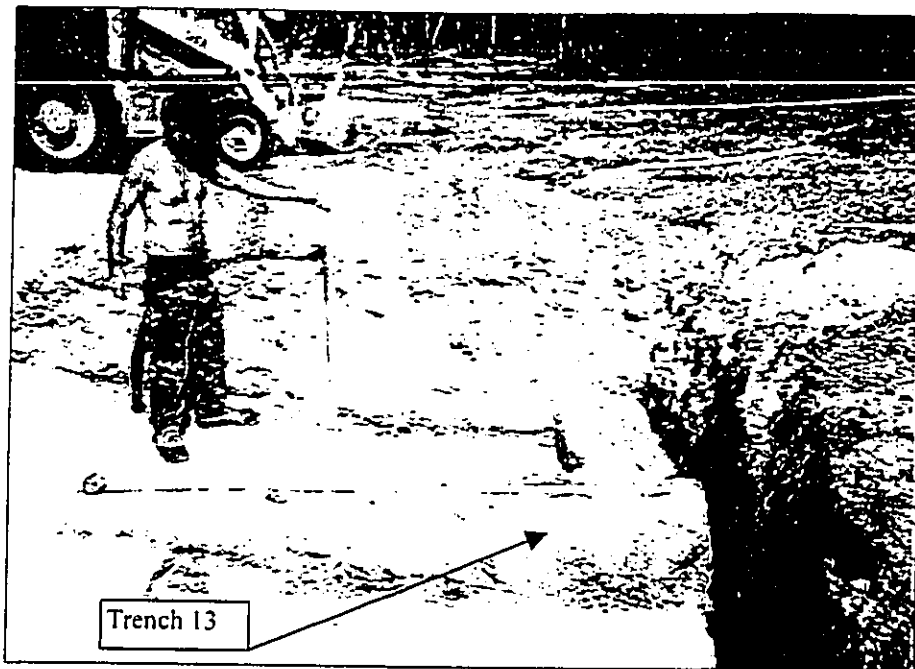


Figure 50. North wall of expansion area, showing profile of Stratum IIa; Backhoe Trench 13 in foreground



Figure 51. Expansion area, Backhoe Trench 13 in foreground, view to the southwest



Figure 52. Expansion area, southwest wall profile, showing Stratum IIb near base; hand-excavated to waterline within Stratum III, view to the southwest



Figure 53. Entire expansion area hand-excavated to waterline in Stratum III, view to the southwest

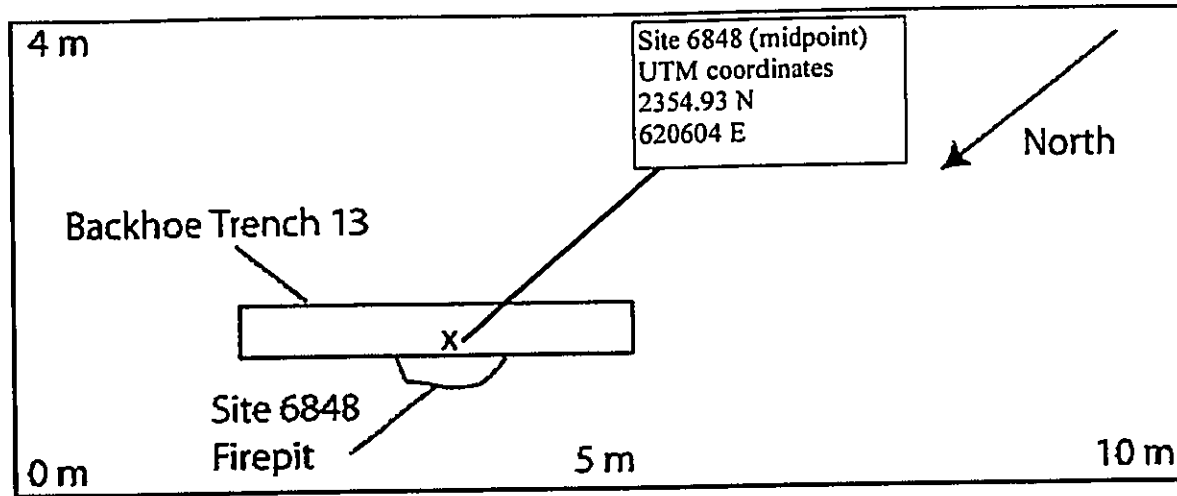


Figure 54. Plan view of entire Expansion Area around Backhoe Trench 13, showing location of trench and Site 6848, firepit

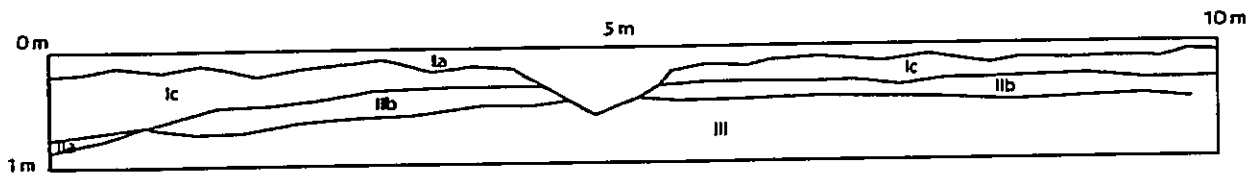


Figure 55. Profile of south wall of Expansion area

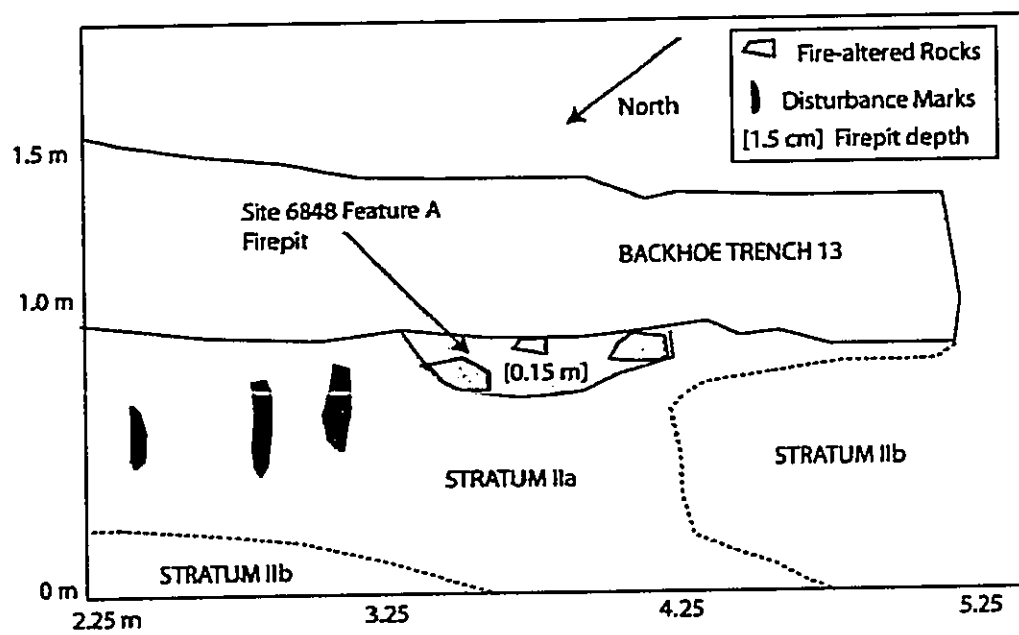


Figure 56. Plan View at 80 cm below surface of Site 6848 Firepit on west side of Backhoe Trench 13

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## Section 8 Significance and Recommendations

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### 8.1 Significance

One new site, SIHP site 50-80-14-6848, a pre-contact firepit, was designated as a result of the archaeological inventory survey of the current project area. The following significance is based on the criteria of the Hawai'i State and National Registers of Historic places (HRS 6E-10 and ^6-5.5), which defines five broad criteria for defining a cultural site as significant.

- A. Site reflects major trends or events in the prehistory or history of the state or nation.
- B. Site is associated with the lives of persons significant in our past.
- C. Site is an excellent example of a site type.
- D. Site has yielded or is likely to yield information important to prehistory or history.
- E. Site has traditional cultural significance to an ethnic group.

The firepit is considered significant under Criterion D. The firepit has provided new and important information about the cultural landscape in this portion of Waikiki, especially a date for the landscape of unmodified ponds, and marshy areas, separated by high, sandy areas used for temporary habitation. The site has the potential to yield additional significant information on land use and human-induced landform transformation through time.

### 8.2 Recommendations

Based on the results of the archaeological inventory survey, we are inclined to recommend that no additional data recovery work needs to be carried out in the project area. Twenty test trenches were excavated in the project area. As a result, a former mosaic of marshy areas surrounded by higher sandy areas was shown to have existed as early as the sixteenth century and continued until the low, marshy areas and ponds were filled-in in the early twentieth century. Only one pre-contact feature, a firepit (Site 50-80-14-6848), was uncovered, and only one historic artifact (one 1945 Coca cola bottle) was found during the entire trenching project. No further trenching would be necessary to determine the extent of the two ponds in the project area.

No human burials were found in the 20 trenches. The prospect of purposeful human burial interments still present in the project area seems low. However, 8 burials (both pre-contact and historic coffin burials) have been found within a block distance from the present project area (Neller 1930; Hurlbett 1992; Perzinski et al. 1992; Freeman et al. 2005). For this reason we do recommend consultation with the State Historic Preservation Division for a possible archaeological monitoring program during any future development in the project area.

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**APPENDIX VIII**  
**ENVIRONMENTAL NOISE ASSESSMENT**



**D. L. ADAMS ASSOCIATES, LTD.**

Consultants In Acoustics and Performing Arts Technologies

**Environmental Noise Assessment Report  
Kaioo Drive, Waikiki  
Waikiki, Oahu, Hawaii**

November 2005

DLAA Project No. 05-81

Prepared for:  
Kaioo LLC  
Honolulu, Hawaii

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**APPENDIX**

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## 1.0 EXECUTIVE SUMMARY

- 1.1 The proposed residential development is located on Kaiio Drive, on the Ewa side of Waikiki. Approximately 116 residential units and 188 parking stalls are planned for the 6 story multi-family complex. The residences will consist of one and two bedroom units.
- 1.2 The project area currently experiences noise levels typical of an urban environment. Noise measurements taken on the existing project property show a Day-Night Level,  $L_{dn}$ , of 63 dBA. These noise levels are slightly below the EPA noise design goal of  $L_{dn} \leq 65$  dBA. However, noise levels are above the EPA future noise design goal of  $L_{dn} \leq 55$  dBA.
- 1.3 The proposed condominiums may be impacted by existing background mechanical system noise levels greater than the State Department of Health nighttime noise limits. The noise levels are 56 dBA during the nighttime hours and are attributed to the rooftop mechanical equipment adjacent to the Kaiio Drive project site.
- 1.4 During the project construction, the dominant noise sources will probably be mini-pile drivers and earth moving equipment, such as bulldozers and diesel powered trucks. Noise from construction activities will occur on the project site. Noise from construction activities should be short term and must comply with State of Hawaii Community Noise Control Rules and a construction noise permit issued by the Department of Health.
- 1.5 The results of the vehicular traffic noise analyses show negligible increases in traffic noise levels due to the project. In addition, all existing and future predicted noise levels are expected to be below the FHWA/HDOT maximum noise limit of 67 dBA. Therefore, the project is not expected to produce a significant traffic noise impact.
- 1.6 Noise from the planned parking garage will be audible at the nearest residences. The design of the garage should incorporate noise control measures.

## 2.0 PROJECT DESCRIPTION

The proposed residential development is located on Kaiwo Drive, on the Ewa side of Waikiki as shown in Figure 1. Approximately 116 residential units and 188 parking stalls are planned for the 6 story multi-family complex, consisting of one and two bedroom units. The project site is currently vacant and is located north of Ala Moana Boulevard and south of Hobron Lane.

## 3.0 NOISE STANDARDS

Various local and federal agencies have established guidelines and standards for assessing environmental noise impacts and set noise limits as a function of land use. A brief description of common acoustic terminology used in these guidelines and standards is presented in Appendix A.

### 3.1 State of Hawaii, Community Noise Control

The State of Hawaii Community Noise Control Rule [Reference 1] defines three classes of zoning districts and specifies corresponding maximum permissible sound levels due to *stationary* noise sources such as air-conditioning units, exhaust systems, generators, compressors, pumps, etc. The Community Noise Control Rule does not address most *moving* sources, such as vehicular traffic noise, air traffic noise, or rail traffic noise. However, the Community Noise Control Rule does regulate noise related to agricultural, construction, and industrial activities, which may not be stationary.

The maximum permissible noise levels are enforced by the State Department of Health (DOH) for any location at or beyond the property line and shall not be exceeded for more than 10% of the time during any 20-minute period. The specified noise limits which apply are a function of the zoning and time of day as shown in Figure 2. With respect to mixed zoning districts, the rule specifies that the primary land use designation shall be used to determine the applicable zoning district class and the maximum permissible sound level. In determining the maximum permissible sound level, the background noise level is taken into account by the DOH.

### 3.2 U.S. Federal Highway Administration (FHWA)

The FHWA defines four land use categories and assigns corresponding maximum hourly equivalent sound levels,  $L_{eq(h)}$ , for traffic noise exposure [Reference 2], which are listed in Figure 3. For example, Category B, defined as picnic and recreation areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals, has a corresponding maximum exterior  $L_{eq}$  of 67dBA and a maximum interior  $L_{eq}$  of 52 dBA. These limits are viewed as design goals, and all projects meeting these limits are deemed in conformance with FHWA noise standards. Calculation of traffic noise levels should be conducted using a Federal Highway Administration traffic noise model [Reference 3].

### 3.3 Hawaii Department of Transportation (HDOT)

The HDOT has adopted FHWA's design goals for traffic noise exposure in its noise analysis and abatement policy [Reference 4]. According to the policy, a traffic noise impact occurs when the predicted traffic noise levels "approach" or exceed FHWA's design goals or when the predicted traffic noise levels "substantially exceed the existing noise levels." The policy also states that "approach" means at least 1 dB less than FHWA's design goals and "substantially exceed the existing noise levels" means an increase of at least 15 dB.

### 3.4 U.S. Environmental Protection Agency (EPA)

The U.S. EPA has identified a range of yearly day-night equivalent sound levels,  $L_{dn}$ , sufficient to protect public health and welfare from the effects of environmental noise [Reference 5]. The EPA has established a goal to reduce exterior environmental noise to an  $L_{dn}$  not exceeding 65 dBA and a future goal to further reduce exterior environmental noise to an  $L_{dn}$  not exceeding 55 dBA. Additionally, the EPA states that these goals are not intended as regulations as it has no authority to regulate noise levels, but rather they are intended to be viewed as levels below which the general population will not be at risk from any of the identified effects of noise.

## 4.0 EXISTING ACOUSTICAL ENVIRONMENT

Two types of noise measurements were conducted to assess the existing acoustical environment in the vicinity of the project location. The first noise measurement type consisted of continuous long-term ambient noise level measurements (Location L1), as shown in Figure 1. The second type of noise measurement was short-term and included traffic counts (Location S1 and S2), also shown in Figure 1. The purpose of the short-term noise measurements and corresponding traffic counts were to calibrate a traffic noise prediction model. All noise measurements were conducted between November 14, 2005 and November 16, 2005.

### 4.1 Noise Measurement Procedure

#### Long-Term Noise Measurement Procedure

Continuous, hourly, statistical sound levels were recorded for 46 hours. The measurements were taken using a Larson-Davis Laboratories, Model 820, Type-1 Sound Level Meter together with a Larson-Davis, Model 2560 Type-1 Microphone. Calibration was checked before and after the measurements with a Larson-Davis Model CAL200 calibrator. Both the sound level meter and the calibrator have been certified by the manufacturer within the recommended calibration period.

The microphone was mounted on a tripod, approximately 6 feet above grade. A windscreen covered the microphone during the entire measurement period. The sound level meter was secured in a weather resistant case.

#### Short-Term Noise Measurement Procedure

An approximate 20-minute equivalent sound level,  $L_{eq}$ , was measured. Vehicular traffic counts and traffic mix were documented during the measurement period. The noise measurement was taken using a Larson-Davis Laboratories, Model 824, Type-1 Sound Level Meter together with a Larson-Davis, Model 2541 Type-1 Microphone. Calibration was checked before and after the measurements with a Larson-Davis Model CAL200 calibrator. Both the sound level meter and the calibrator have been certified by the manufacturer within the recommended calibration period.

The microphone and sound level meter were mounted on a tripod, approximately 6 feet above grade. A windscreen covered the microphone during the entire measurement period.

#### 4.2 Noise Measurement Locations

##### Long-Term Noise Measurement Locations

Location L1: Positioned in the middle of the proposed development site, approximately 50 feet north of the edge-of-pavement of Kaiwo Drive and 40 feet south of the wall of the adjacent property.

##### Short-Term Noise Measurement Locations

Location S1: Positioned adjacent to Hobron Lane, between Kaiwo Drive and Lipeepee Street, approximately 10 feet east of the edge-of-pavement.

Location S2: Positioned adjacent to Kaiwo Drive, approximately 15 feet east of the edge-of-pavement.

#### 4.3 Long-Term Noise Measurement Results

The measured long-term sound levels vary slightly with the time of day. The hourly equivalent sound levels,  $L_{eq}$ , at Location L1 generally ranged from 56 dBA during the nighttime and early morning hours to approximately 59 dBA during the daytime hours. The Average Day-Night Level,  $L_{dn}$ , was calculated from the measured noise levels to be 63 dBA.

The dominant and secondary noise sources are described below:

##### Noise Sources

Dominant: Mechanical noise from neighboring properties, vehicular traffic, construction noise.

Secondary: Pedestrians, typical urban noises such as sirens, car horns, etc.

#### **4.4 1850 Ala Moana Boulevard Rooftop Mechanical Noise**

Additional nighttime measurements taken on November 27, 2005 show that rooftop mechanical equipment from the neighboring property generates noise levels that exceed the State of Hawaii Department of Health (DOH) nighttime noise limit. This background noise levels may impact the residents of the proposed Kaiwo Drive condominiums, especially those whose windows face 1850 Ala Moana Boulevard. At the same time, construction of the proposed condominiums will block the sound to neighboring buildings near Hobron Lane, thereby lowering the background noise level at these locations.

### **5.0 POTENTIAL NOISE IMPACTS DUE TO THE PROJECT**

#### **5.1 Project Construction Noise**

Development of project areas will involve excavation, grading, pile driving, and other typical construction activities during construction. The various construction phases of the project may generate significant amounts of noise. The actual noise levels produced during construction will be a function of the methods employed during each stage of the construction process. Typical ranges of construction equipment noise are shown in Figure 4. Earthmoving equipment, e.g., bulldozers and diesel-powered trucks, will probably be the loudest equipment used during construction. Pile driving will create additional noises, however, if approved by the soils and structural engineers, use of mini-piles could mitigate the pile driving noise.

#### **5.2 Project Generated Stationary Mechanical Noise & Compliance with State of Hawaii Community Noise Control Rule**

The new buildings may incorporate stationary mechanical equipment that is typical for residential buildings. Expected mechanical equipment may include air handling equipment, condensing units, chillers, emergency generators, etc. Noise from this mechanical equipment and other stationary equipment must meet the State DOH noise rules, which stipulate maximum permissible noise limits at the property line. These noise limits are 60 dBA during the daytime hours (7:00 am to 10:00 pm) and 50 dBA during the night time hours (10:00 pm to 7:00 am) for multi-family housing.

#### **5.3 Compliance with FHWA/HDOT Noise Limits**

A vehicular traffic noise analysis was completed for the "with" and "without" project conditions and traffic noise levels were predicted for two locations, Location A and Location B (see Figure 1). An average annual traffic increase of 2.5% in daily volumes is normally used to predict future traffic noise levels. However, peak hour volumes are not likely to increase since intersections near the proposed project are already near capacity. Traffic projections due to the project were provided by Julian Ng, Inc [Reference 7].

### **5.3.1 Vehicular Traffic Noise Impacts on the Surrounding Community**

Noise levels predicted at Locations A and B are below the FHWA/HDOT maximum noise limit of 67 dBA. Traffic noise levels are expected to increase by 2 dB on Kaioo Drive (Location B) due to the project. However, traffic noise levels are masked by the existing background levels, so residents of Kaioo Drive are not likely to experience a noise impact. For the residences located on Hobron Lane and adjacent roads, the increase in traffic noise level due to the project is negligible. Therefore, a significant noise impact on the surrounding community due to project generated traffic noise is not expected.

### **5.3.2 Vehicular Traffic Noise Impacts on the Project**

Noise level projections at the proposed condominiums on Kaioo Drive are predicted to be below the FHWA/HDOT maximum noise limits. Therefore, a significant noise impact on the project due to vehicular traffic noise is not expected.

## **5.4 Compliance with EPA Noise Guidelines**

The result from the long-term noise measurements conducted at the proposed project site show a calculated Day-Night Level, Ldn, of 63 dBA. Therefore, the noise levels at the proposed condominiums on Kaioo Drive are below the current EPA design goals but exceed future EPA design goals. It is important to note that the EPA noise guidelines are design goals and are not enforceable regulations. However, these guidelines and design goals are useful tools for assessing the noise environment.

## **5.5 Project Generated Noise from the Parking Garage**

Noise generated from the proposed parking garage, i.e., car alarms, engine startup noise, and noisy mufflers, may cause excessive reverberation within the garage and could cause complaints from the neighboring residences across the street. Another source of annoyance may come from the squeal of tires around corners and on the garage ramps. These noises will be mitigated with an effective parking garage design. The proposed garage design includes only one turn and is designed so vehicles will not have the ability to build-up speed.

## **6.0 NOISE IMPACT MITIGATION**

### **6.1 Mitigation of Construction Noise**

In cases where construction noise exceeds, or is expected to exceed the State's "maximum permissible" property line noise levels [Reference 1], a permit must be obtained from the State DOH to allow the operation of vehicles, cranes, construction equipment, power tools, etc., which emit noise levels in excess of the "maximum permissible" levels.



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

Specific permit restrictions for construction activities [Reference 1] are:

"No permit shall allow any construction activities which emit noise in excess of the maximum permissible sound levels ... before 7:00 a.m. and after 6:00 p.m. of the same day, Monday through Friday."

"No permit shall allow any construction activities which emit noise in excess of the maximum permissible sound levels... before 9:00 a.m. and after 6:00 p.m. on Saturday."

"No permit shall allow any construction activities which emit noise in excess of the maximum permissible sound levels on Sundays and on holidays."

The use of hoe rams and jack hammers 25 lbs. or larger, high pressure sprayers, chain saws, and pile drivers are restricted to 9:00 a.m. to 5:30 p.m., Monday through Friday. In addition, construction equipment and on-site vehicles or devices whose operations involve the exhausting of gas or air, excluding pile hammers and pneumatic hand tools weighing less than 15 pounds, must be equipped with mufflers [Reference 1].

The DOH noise permit does not limit the noise level generated at the construction site, but rather the times at which noisy construction can take place. Therefore, noise mitigation for construction activities should be addressed using project management, such that the time restrictions within the DOH permit are followed.

## **6.2 Mitigation of Project Generated Mechanical Noise**

The design of the new buildings on Kaiwo Drive will give consideration to controlling the noise emanating from stationary mechanical equipment, such as chillers, compressors, air conditioning units, etc. so as to comply with the State of Hawaii Community Noise Control rules [Reference 1]. Noisy equipment should be located away from neighbors and residential units, as much as is practical. Enclosed mechanical rooms may be required for some equipment.

**6.4 Mitigation of Vehicular Traffic Noise**

The traffic noise analysis shows no significant noise impacts to the surrounding community, or at the proposed condominiums on Kaiwo Drive. Therefore, noise mitigation for vehicular traffic noise is not required.

**6.5 Mitigation of Project Generated Noise from the Parking Garage**

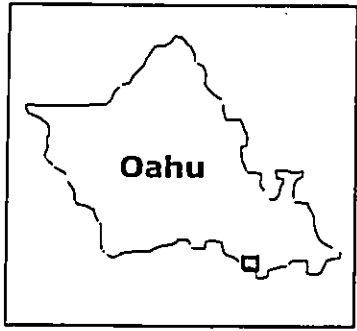
Noise emanating from the parking garage to the neighboring residences may be audible and cause for complaint. Noise reduction measures will be considered during the design of the garage. Design should consider treating the floor of the garage to reduce tire squeal and treating the ceiling to reduce the build-up of noise within the garage.

**6.6 Mitigation of 1850 Ala Moana Boulevard Rooftop Mechanical Noise**

The rooftop mechanical equipment noise from the adjacent property exceeds the State DOH property line noise limits and could be cause for complaints from the residents of the proposed condominium on Kaiwo Drive. The adjacent property is required to reduce noise levels to meet State Noise regulations. However, the proposed development will include the installation of insulated windows, insulated exterior walls, and solid core entry doors which will reduce exterior mechanical noise inside the units.

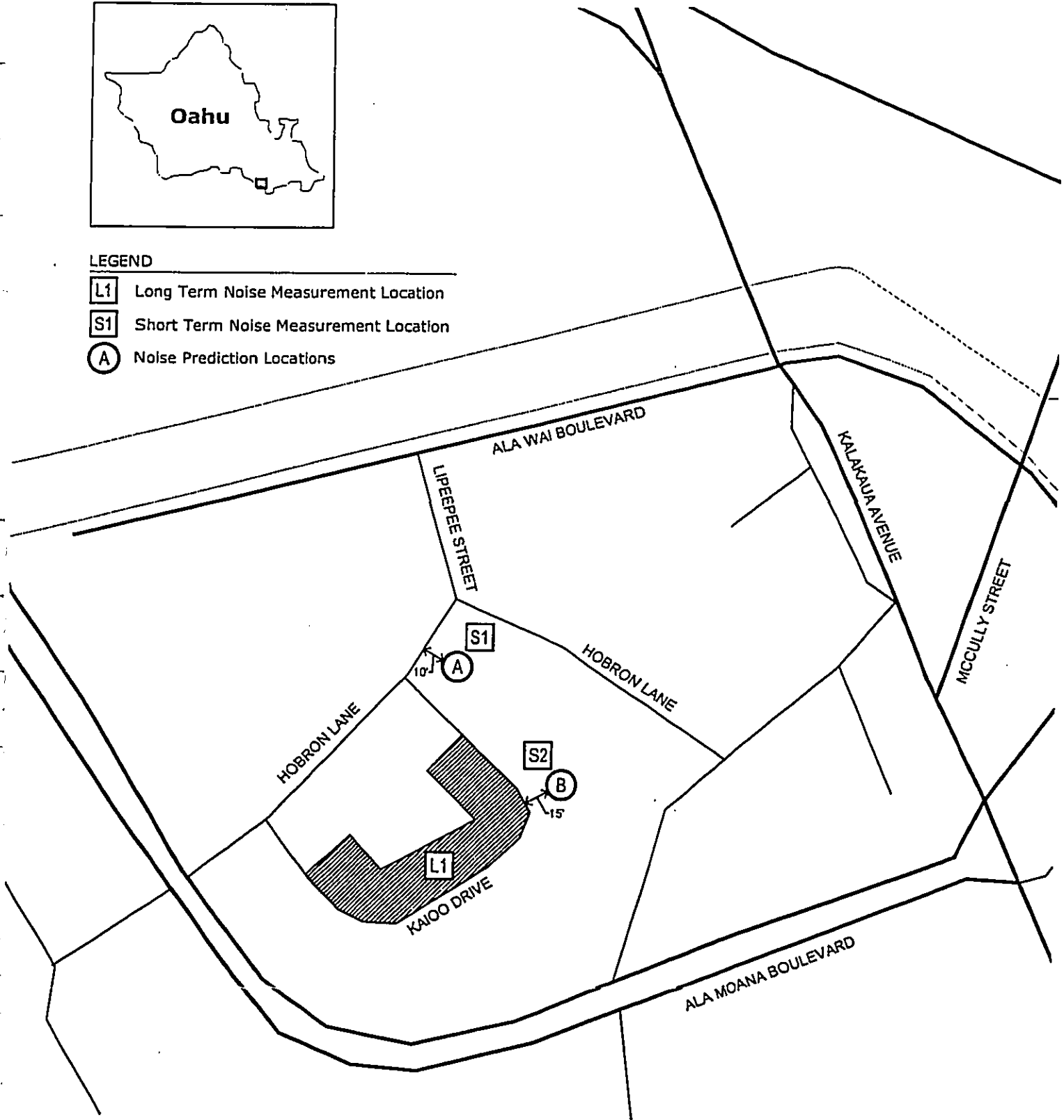
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2. *Department of Transportation, Federal Highway Administration Procedures for Abatement of Highway Traffic Noise*, Title 23, CFR, Chapter 1, Subchapter J, Part 772, 38 FR 15953, June 19, 1973; Revised at 47 FR 29654, July 8, 1982.
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4. *Noise Analysis and Abatement Policy*, Department of Transportation, Highways Division, State of Hawaii, June 1977.
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6. *Department of Housing and Urban Development Environmental Criteria and Standards*, Title 24 CFR, Part 51, 44 FR 40860, July 12, 1979, Amended by 49 FR 880, January 6, 1984.
7. *Traffic Assessment for Kaioo Apartments*, Julian Ng, Inc., November 3, 2005.



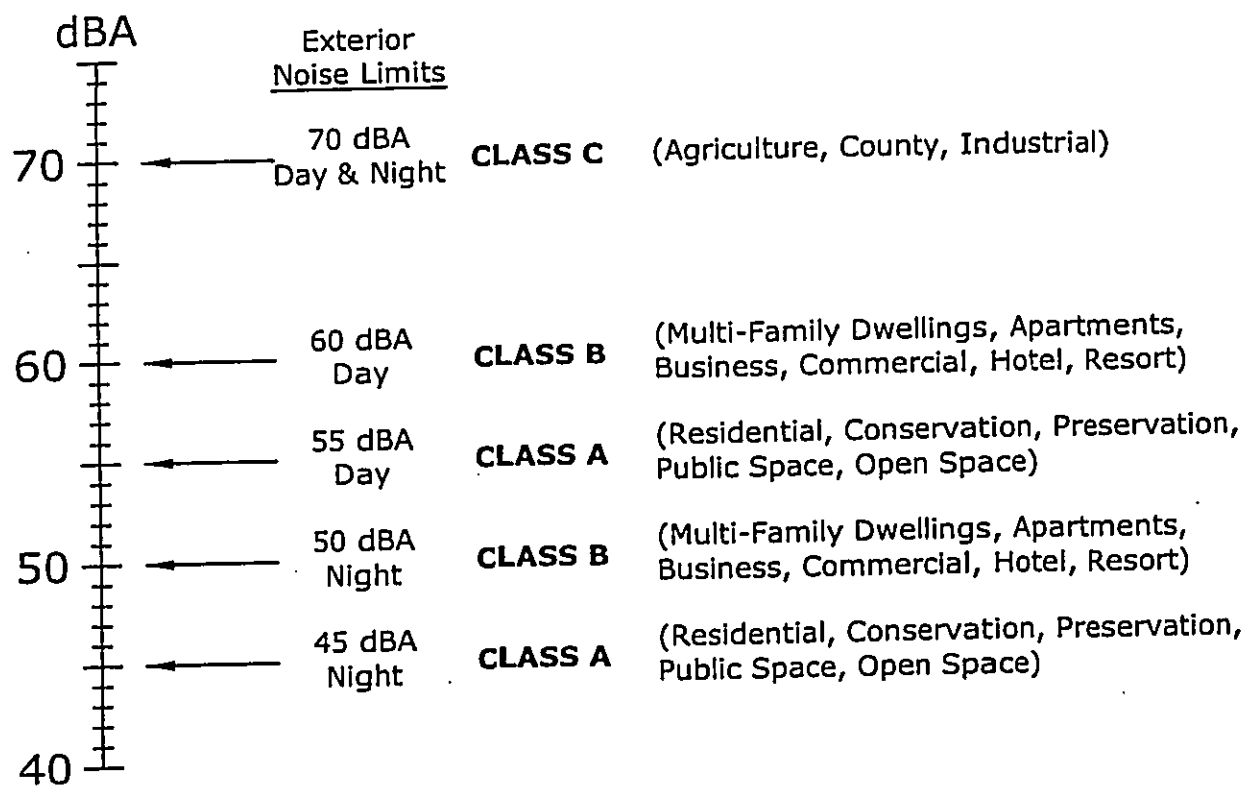
LEGEND


- L1 Long Term Noise Measurement Location
- S1 Short Term Noise Measurement Location
- A Noise Prediction Locations



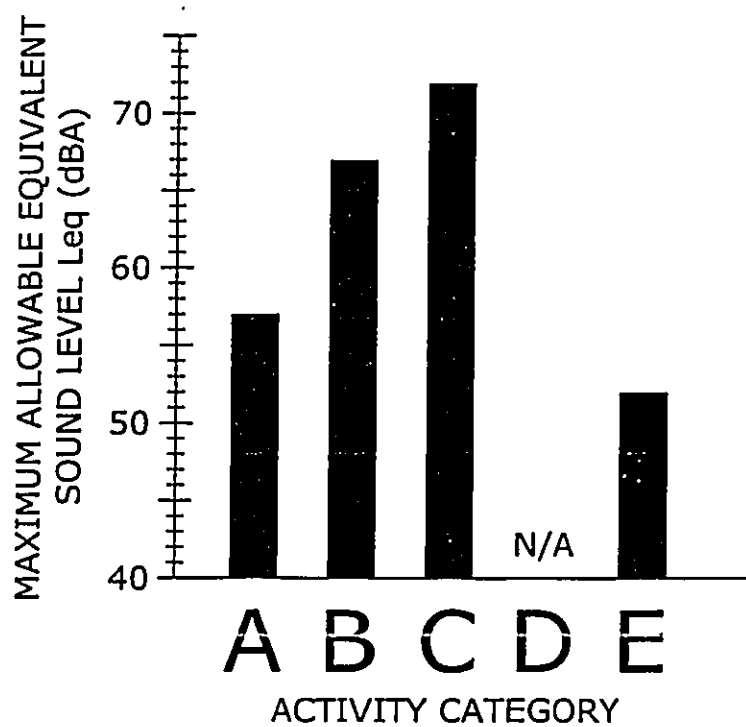
 <b>D. L. ADAMS ASSOCIATES, LTD.</b> 970 N. KALAHEO AVE. A-311 KAILUA, HAWAII 96734 808/254-3318 FAX 808/254-5293	<b>Noise Measurement and Prediction Locations</b>		Figure No
	Kaioo Apartments Waikiki		1
	Not to Scale		
	Date November 2005	Project No. 05-81	Drawn By DFD


Zoning District	Day Hours (7 AM to 10 PM)	Night Hours (10 PM to 7 AM)
<b>CLASS A</b> Residential, Conservation, Preservation, Public Space, Open Space	55 dBA (Exterior)	45 dBA (Exterior)
<b>CLASS B</b> Multi-Family Dwellings, Apartments, Business, Commercial, Hotel, Resort	60 dBA (Exterior)	50 dBA (Exterior)
<b>CLASS C</b> Agriculture, Country, Industrial	70 dBA (Exterior)	70 dBA (Exterior)



 <b>D. L. ADAMS ASSOCIATES, LTD.</b> 970 N. KALAHOE AVE. A-311 KAILUA, HAWAII 96734 808/254-3318 FAX 808/254-8296	<b>Hawaii Maximum Permissible Sound Levels for Various Zoning Districts</b>			2
	Kaioo Apartments Waikiki			
	Not to Scale			
	Date November 2005	Project No. 05-81	Drawn By TRB	

ACTIVITY CATEGORY	ACTIVITY CATEGORY DESCRIPTION	MAXIMUM EQUIVALENT SOUND LEVEL L <sub>eq</sub> (h)
<b>A</b>	LANDS ON WHICH SERENITY AND QUIET ARE OF EXTRAORDINARY SIGNIFICANCE AND SERVE AN IMPORTANT PUBLIC NEED AND WHERE THE PRESERVATION OF THOSE QUALITIES IS ESSENTIAL IF THE AREA IS TO CONTINUE TO SERVE ITS INTENDED PURPOSE.	57 dBA (EXTERIOR)
<b>B</b>	PICNIC AREAS, RECREATION AREAS, PLAYGROUNDS, ACTIVE SPORT AREAS, PARKS, RESIDENCES, MOTELS, HOTELS, SCHOOLS, CHURCHES, LIBRARIES, AND HOSPITALS.	67 dBA (EXTERIOR)
<b>C</b>	DEVELOPED LANDS, PROPERTIES, OR ACTIVITIES NOT INCLUDED IN ACTIVITY CATEGORIES A OR B ABOVE.	72 dBA (EXTERIOR)
<b>D</b>	UNDEVELOPED LAND	N/A
<b>E</b>	RESIDENCES, MOTELS, HOTELS, PUBLIC MEETING ROOMS, SCHOOLS, CHURCHES, LIBRARIES, HOSPITALS, AND AUDITORIUMS.	52 dBA (INTERIOR)




 <p>D. L. ADAMS ASSOCIATES, LTD. 970 N. KALAHEO AVE. A-311 KAILUA, HAWAII 96734 808/254-3318 FAX 808/254-8298</p>	Federal Highways Administration Recommended Equivalent Hourly Sound Levels Based on Land Use			Figure No <b>3</b>
	Kaioo Apartments Waikiki			
	Not to Scale			
	Date November 2005	Project No. 05-81	Drawn By TRB	

NOISE LEVEL IN dBA AT 50 FEET (dBA)

60      70      80      90      100      110

EARTH MOVING	COMPACTORS (ROLLERS)		70-75			
	FRONT LOADERS		70-85			
	BACKHOES		70-95			
	TRACTORS		75-95			
	SCRAPERS GRADERS		80-95			
	PAVERS			85-90		
	TRUCKS			80-95		
MATERIAL HANDLING	CONCRETE MIXERS		75-90			
	CONCRETE PUMPS			85-90		
	CRANES (MOVABLE)		75-90			
	CRANES (DERRICK)			85-90		
STATIONARY	PUMPS		70-75			
	GENERATORS		70-85			
	COMPRESSORS		75-90			
IMPACT EQUIPMENT	PNEUMATIC WRENCHES			85-90		
	JACK HAMMERS AND ROCK DRILLS			85-100		
	PILE DRIVERS (PEAKS)				100-110	
OTHER	VIBRATORS		70-85			
	SAWS		75-85			

NOTE: BASED ON LIMITED AVAILABLE DATA SAMPLES

 <p>D. L. ADAMS ASSOCIATES, LTD. 970 N. KALAEHO AVE., A-311 KAILUA, HAWAII 96734 808/254-3316 FAX 808/254-8295</p>	<b>Typical Sound Levels from Construction Equipment</b>		Figure No
	Kaioo Apartments Waikiki		4
	Not to Scale		
	Date November 2005	Project No. 05-81	Drawn By TRB

**APPENDIX A**  
**Acoustic Terminology**



## Acoustic Terminology

### Sound Pressure Level

Sound, or noise, is the term given to variations in air pressure that are capable of being detected by the human ear. Small fluctuations in atmospheric pressure (sound pressure) constitute the physical property measured with a sound pressure level meter. Because the human ear can detect variations in atmospheric pressure over such a large range of magnitudes, sound pressure is expressed on a logarithmic scale in units called decibels (dB). Noise is defined as "unwanted" sound.

Technically, sound pressure level (SPL) is defined as:

$$\text{SPL} = 20 \log (P/P_{\text{ref}}) \text{ dB}$$

where P is the sound pressure fluctuation (above or below atmospheric pressure) and  $P_{\text{ref}}$  is the reference pressure, 20  $\mu\text{Pa}$ , which is approximately the lowest sound pressure that can be detected by the human ear. For example:

$$\begin{aligned} \text{If } P &= 20 \mu\text{Pa, then SPL} = 0 \text{ dB} \\ \text{If } P &= 200 \mu\text{Pa, then SPL} = 20 \text{ dB} \\ \text{If } P &= 2000 \mu\text{Pa, then SPL} = 40 \text{ dB} \end{aligned}$$

The sound pressure level that results from a combination of noise sources is not the arithmetic sum of the individual sound sources, but rather the logarithmic sum. For example, two sound levels of 50 dB produce a combined sound level of 53 dB, not 100 dB. Two sound levels of 40 and 50 dB produce a combined level of 50.4 dB.

Human sensitivity to changes in sound pressure level is highly individualized. Sensitivity to sound depends on frequency content, time of occurrence, duration, and psychological factors such as emotions and expectations. However, in general, a change of 1 or 2 dB in the level of sound is difficult for most people to detect. A 3 dB change is commonly taken as the smallest perceptible change and a 6 dB change corresponds to a noticeable change in loudness. A 10 dB increase or decrease in sound level corresponds to an approximate doubling or halving of loudness, respectively.

### A-Weighted Sound Level

Studies have shown conclusively that at equal sound pressure levels, people are generally more sensitive to certain higher frequency sounds (such as made by speech, horns, and whistles) than most lower frequency sounds (such as made by motors and engines)<sup>1</sup> at the same level. To address this preferential response to frequency, the A-weighted scale was developed. The A-weighted scale adjusts the sound level in each frequency band in much the same manner that the

---

<sup>1</sup> D.W. Robinson and R.S. Dadson, "A Re-Determination of the Equal-Loudness Relations for Pure Tones," *British Journal of Applied Physics*, vol. 7, pp. 166 - 181, 1956. (Adopted by the International Standards Organization as Recommendation R-226.)

human auditory system does. Thus the A-weighted sound level (read as "dBA") becomes a single number that defines the level of a sound and has some correlation with the sensitivity of the human ear to that sound. Different sounds with the same A-weighted sound level are perceived as being equally loud. The A-weighted noise level is commonly used today in environmental noise analysis and in noise regulations. Typical values of the A-weighted sound level of various noise sources are shown in Figure A-1.

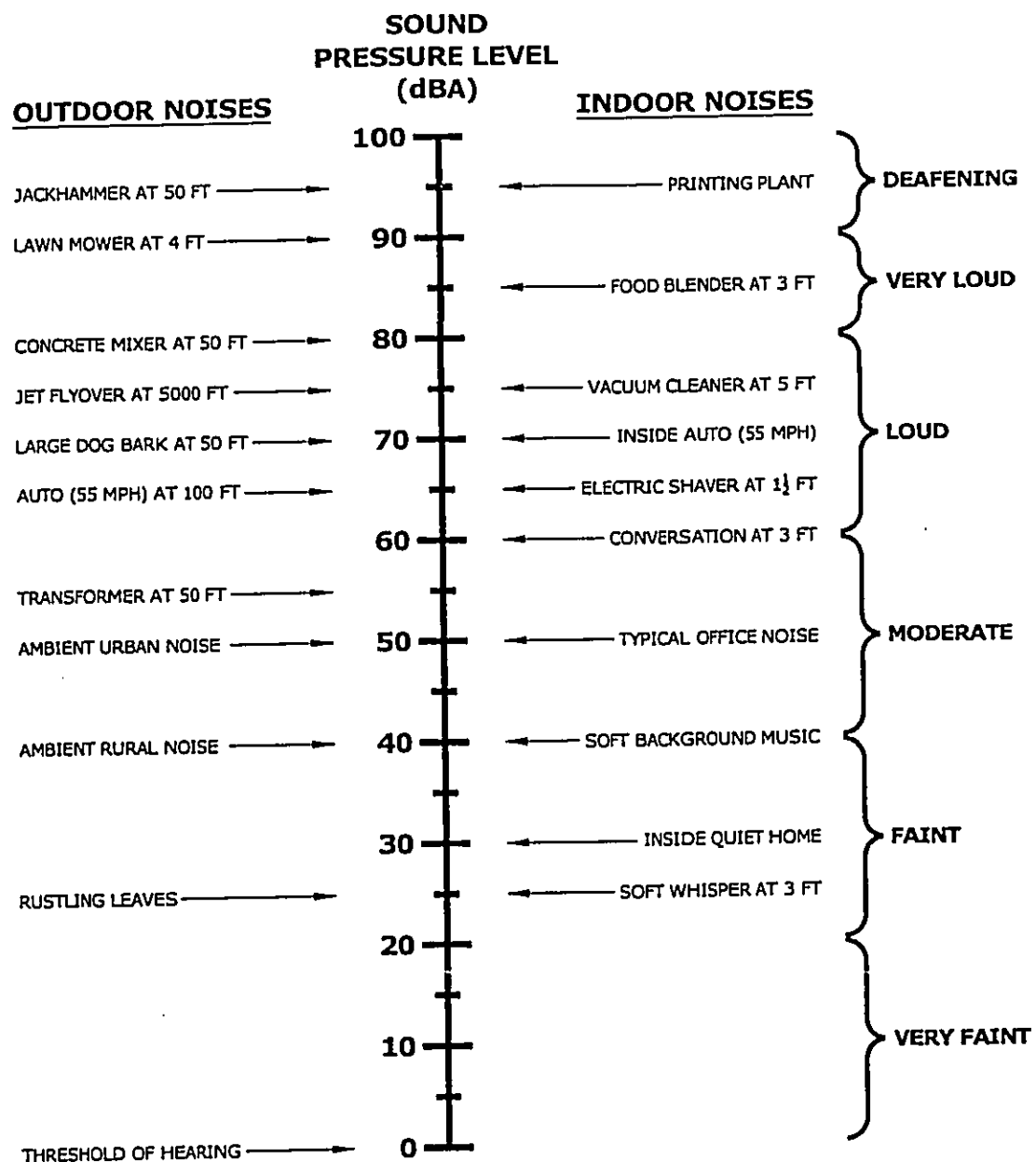


Figure A-1. Common Outdoor/Indoor Sound Levels

### Equivalent Sound Level

The Equivalent Sound Level ( $L_{eq}$ ) is a type of average which represents the steady level that, integrated over a time period, would produce the same energy as the actual signal. The actual *instantaneous* noise levels typically fluctuate above and below the measured  $L_{eq}$  during the measurement period. The A-weighted  $L_{eq}$  is a common index for measuring environmental noise. A graphical description of the equivalent sound level is shown in Figure A-2.

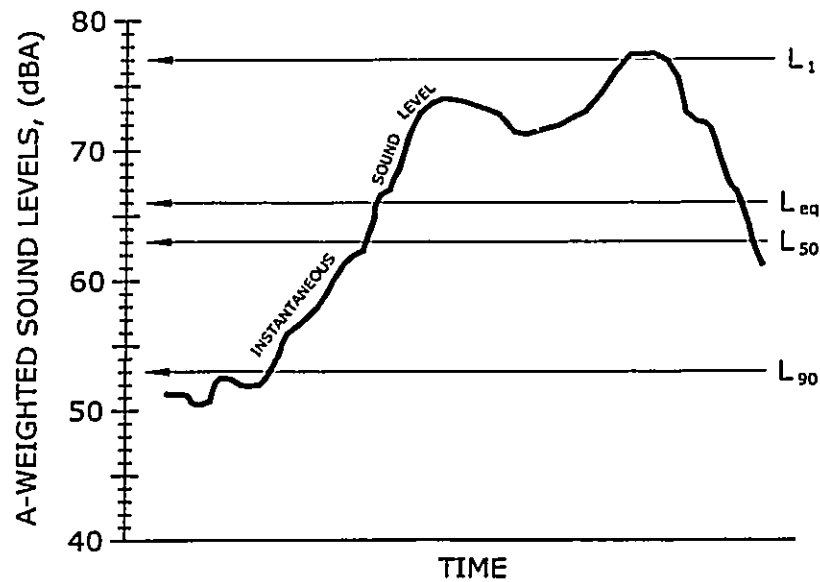


Figure A-2. Example Graph of Equivalent and Statistical Sound Levels

### Statistical Sound Level

The sound levels of long-term noise producing activities such as traffic movement, aircraft operations, etc., can vary considerably with time. In order to obtain a single number rating of such a noise source, a statistically-based method of expressing sound or noise levels has been developed. It is known as the Exceedence Level,  $L_n$ . The  $L_n$  represents the sound level that is exceeded for  $n\%$  of the measurement time period. For example,  $L_{10} = 60$  dBA indicates that for the duration of the measurement period, the sound level exceeded 60 dBA 10% of the time. Typically, in noise regulations and standards, the specified time period is one hour. Commonly used Exceedence Levels include  $L_{01}$ ,  $L_{10}$ ,  $L_{50}$ , and  $L_{90}$ , which are widely used to assess community and environmental noise. A graphical description of the equivalent sound level is shown in Figure A-2.

### Day-Night Equivalent Sound Level

The Day-Night Equivalent Sound Level,  $L_{dn}$ , is the Equivalent Sound Level,  $L_{eq}$ , measured over a 24-hour period. However, a 10 dB penalty is added to the noise levels recorded between 10 p.m. and 7 a.m. to account for people's higher sensitivity to noise at night when the background noise level is typically lower. The  $L_{dn}$  is a commonly used noise descriptor in assessing land use compatibility, and is widely used by federal and local agencies and standards organizations.

**APPENDIX IX  
PHOTOGRAPHS**

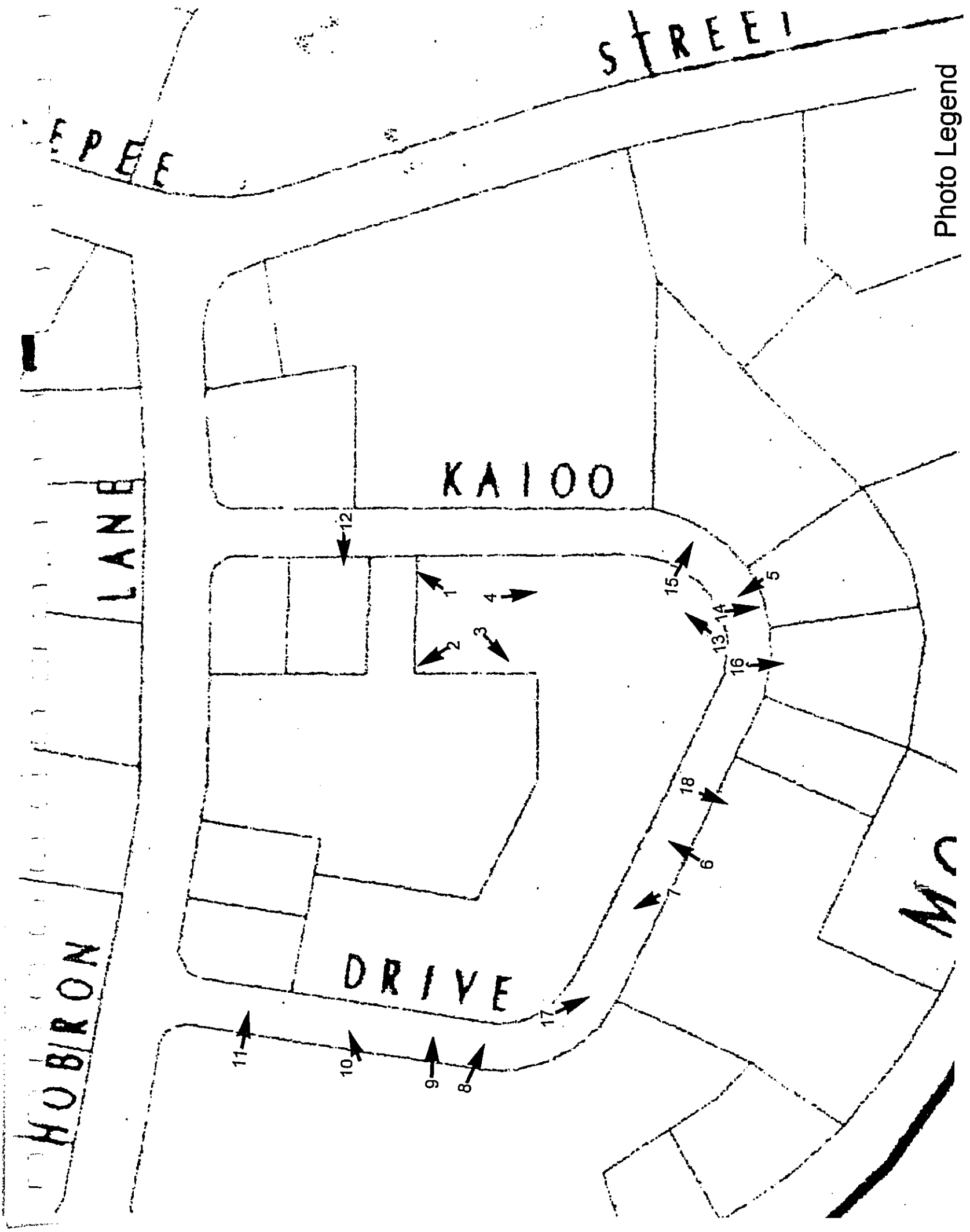
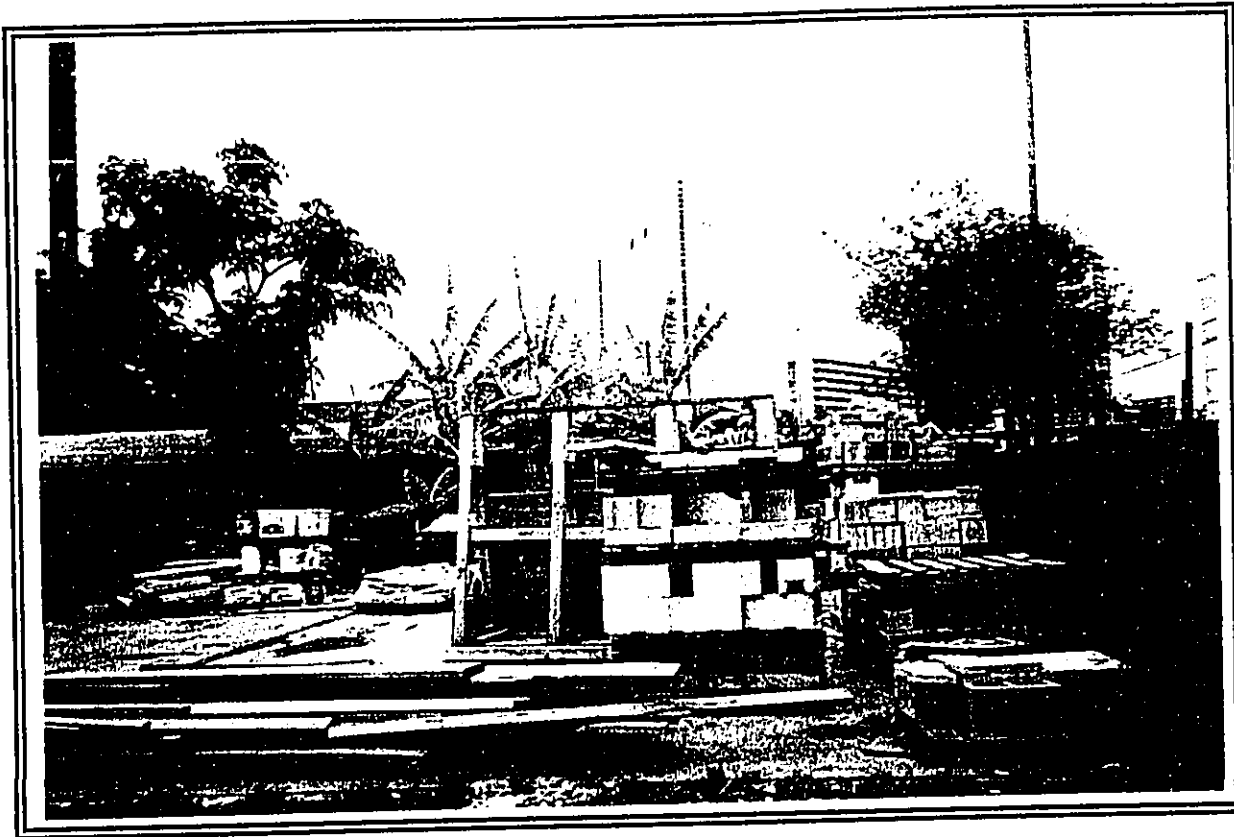
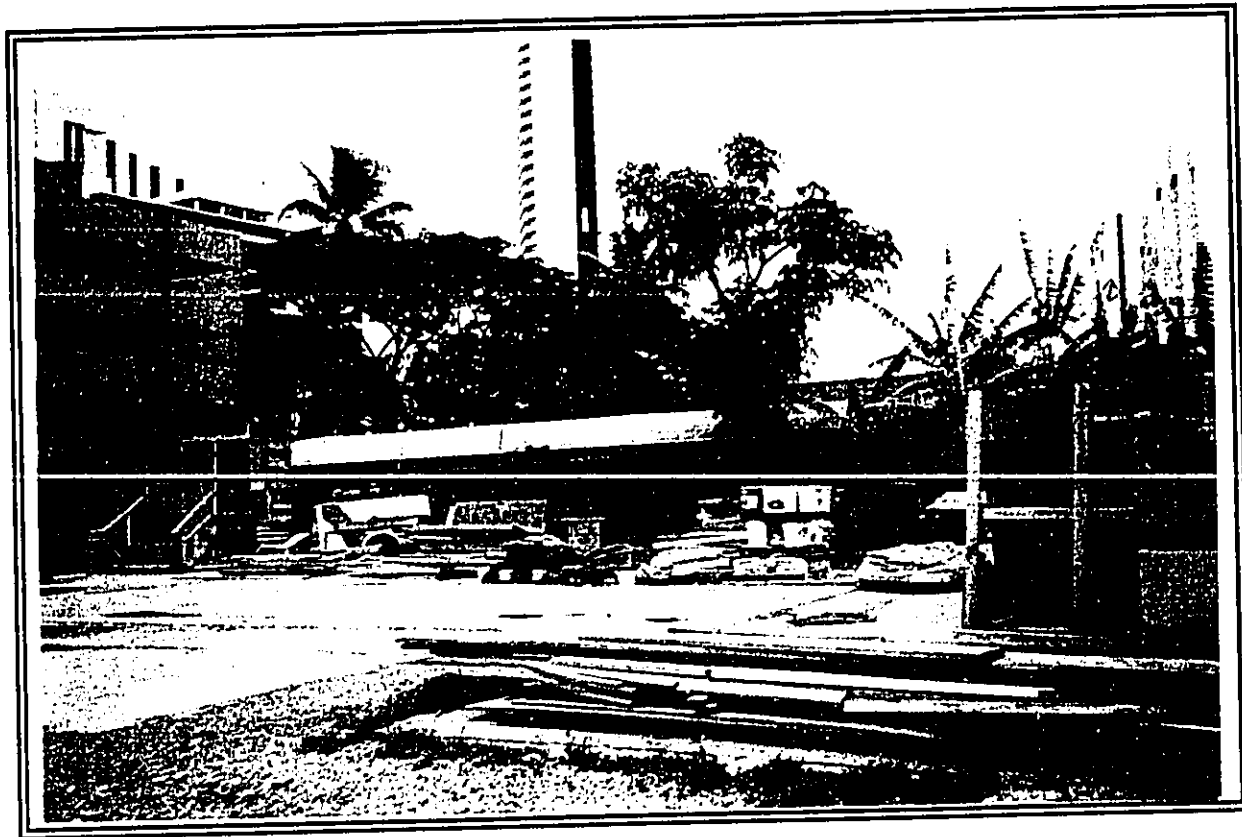


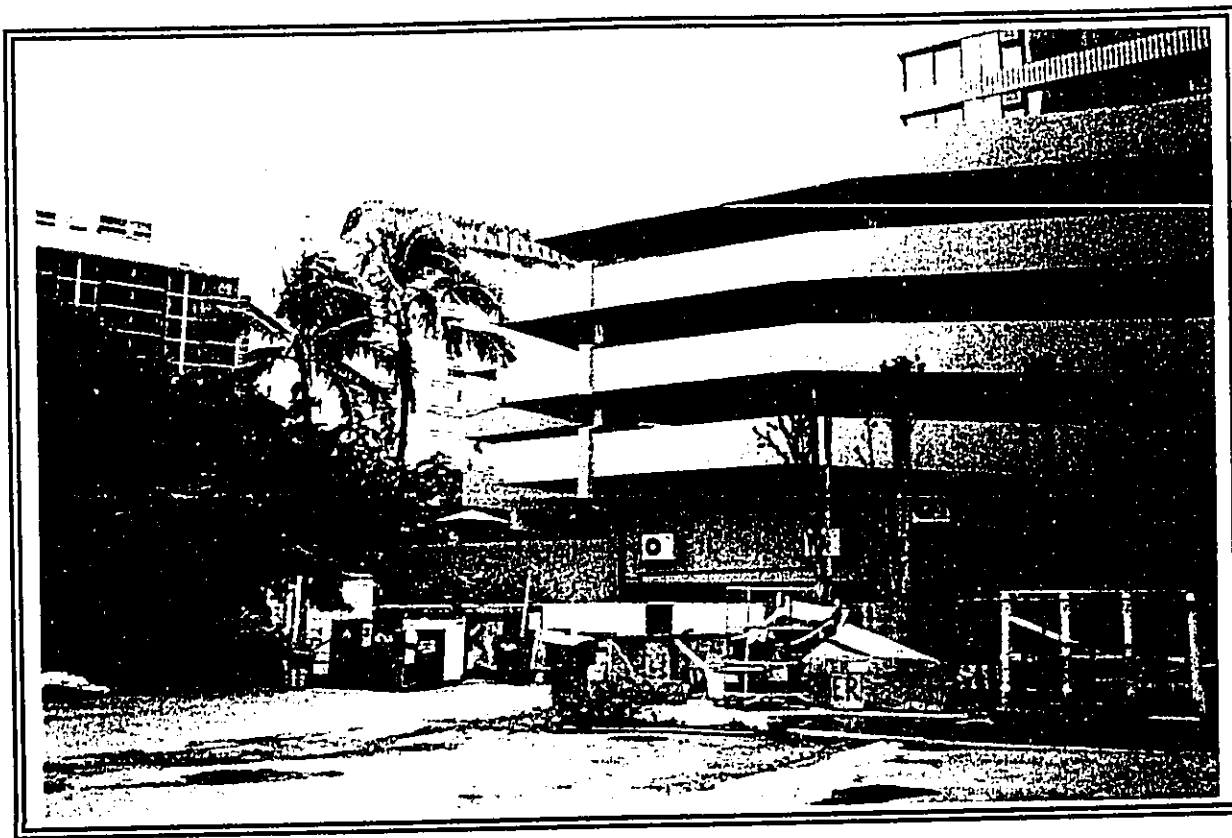
Photo Legend



Photograph No. 1 - View of the mauka side of the project site which has been used as a temporary construction staging area (facing Ewa).



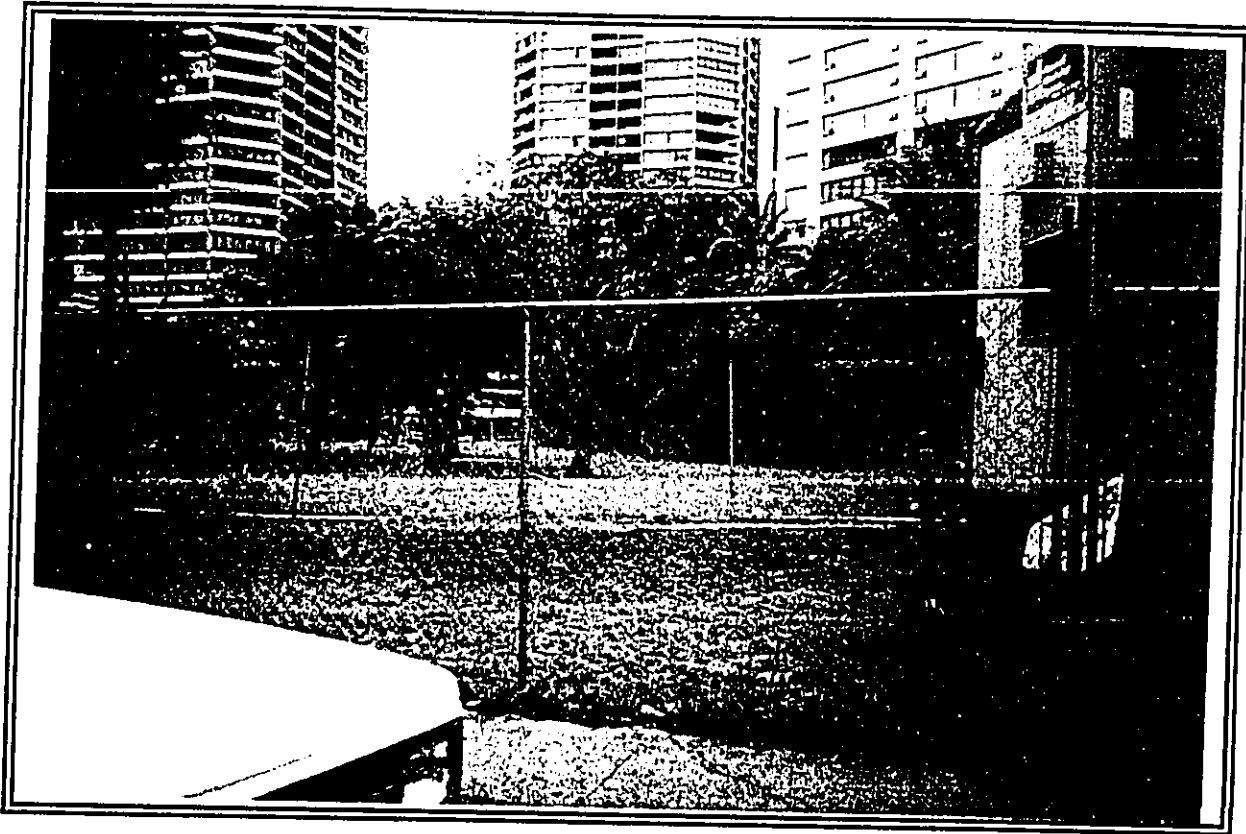
Photograph No. 2 - View of the mauka side of the project site showing a portion of the Windsor parking garage on the left side of the photo frame.



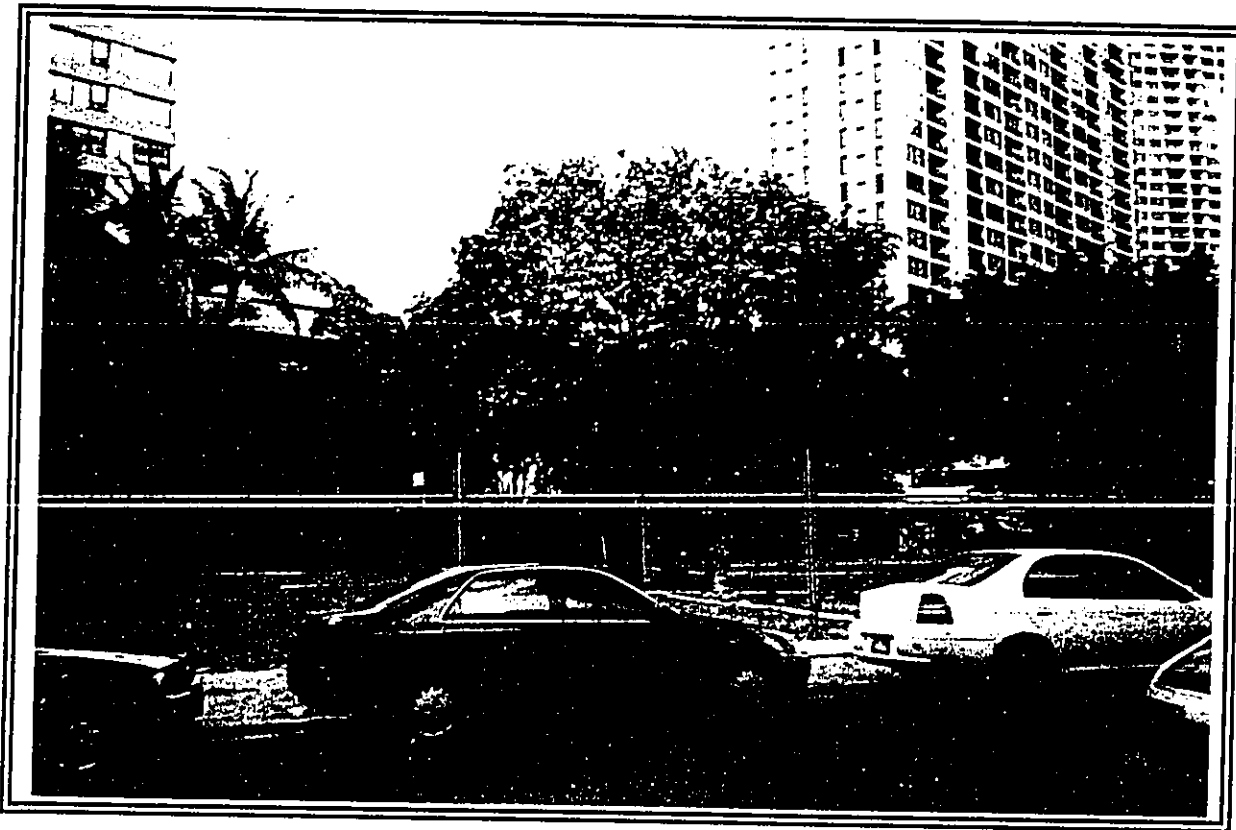
Photograph No. 3 - View of the mauka side of the project site facing makai showing the parking garage for the Windsor.



Photograph No. 4 - Photo of the mauka portion of the project site, facing east, showing the temporary office trailer with The Wailana in the background.



Photograph No. 5 - View of the east side of the project site showing Discovery Bay in the background..

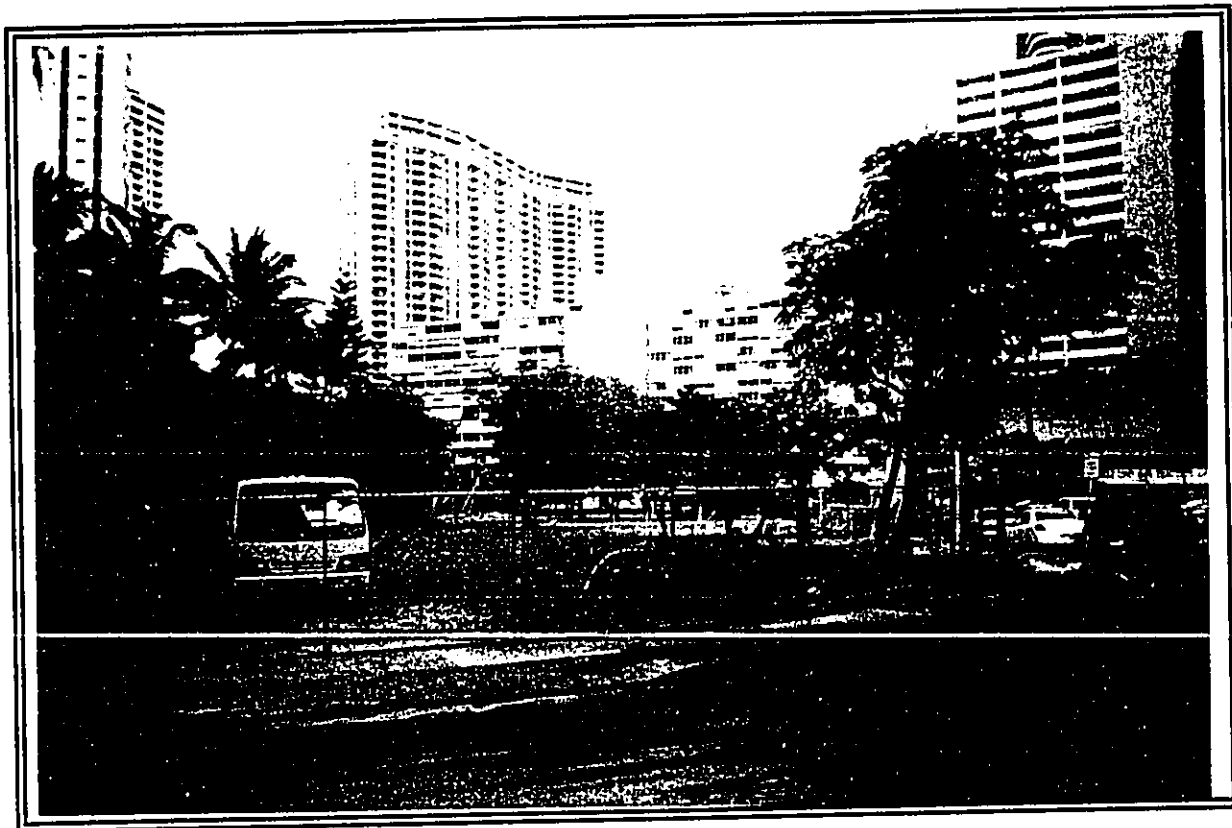


Photograph No. 6 - View of the east side of the project site with the Windsor in the background on the left and Chateau Waikiki on the right.





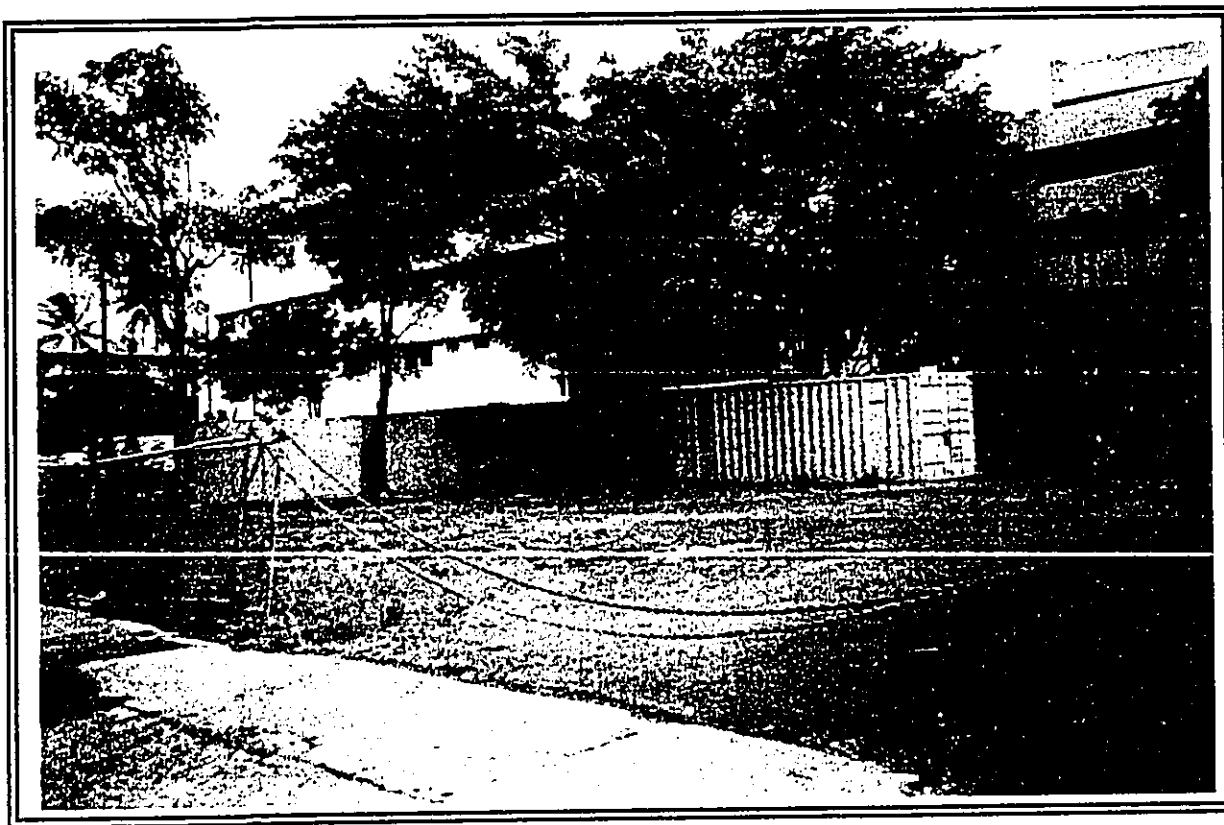
Photograph No. 7 - View of the project site with the Discovery Bay in the background.



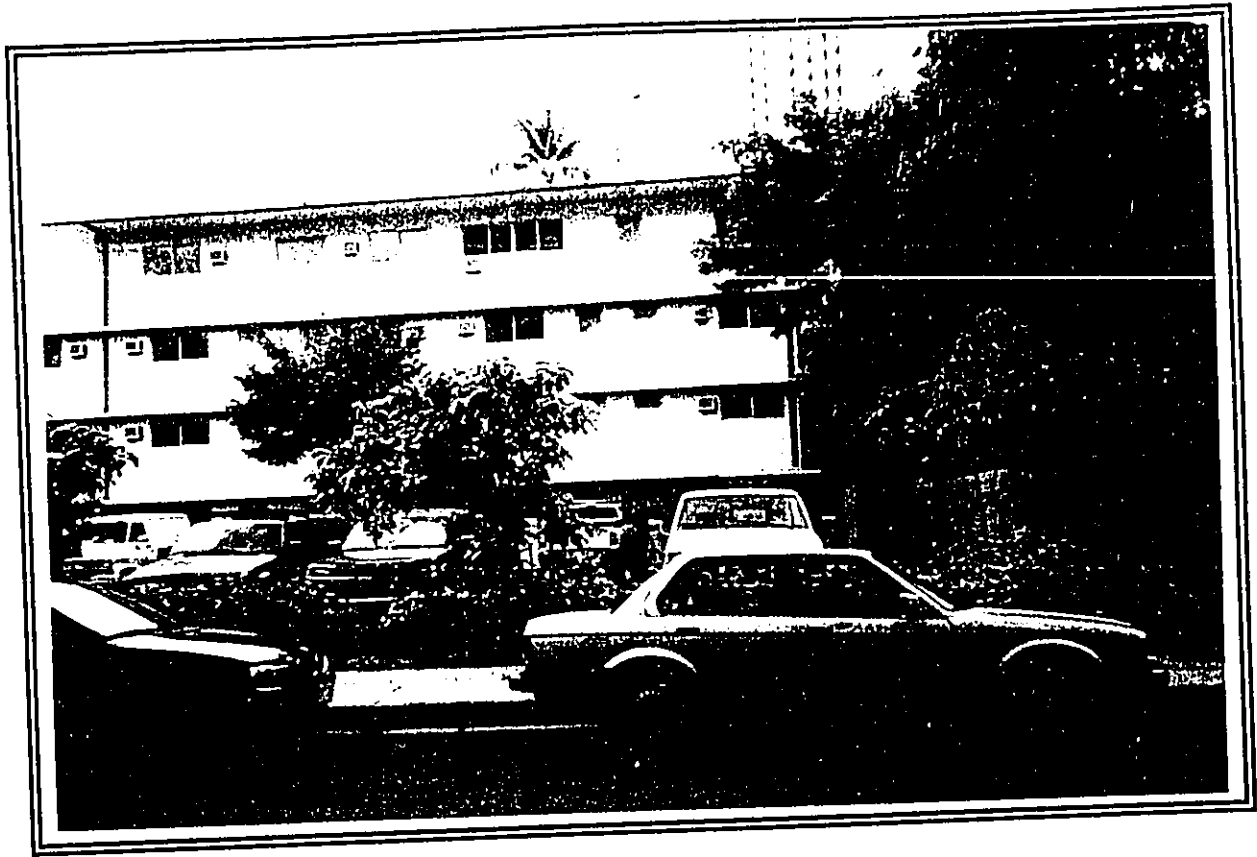
Photograph No. 8 - View of the east side of the project site looking toward the mountains



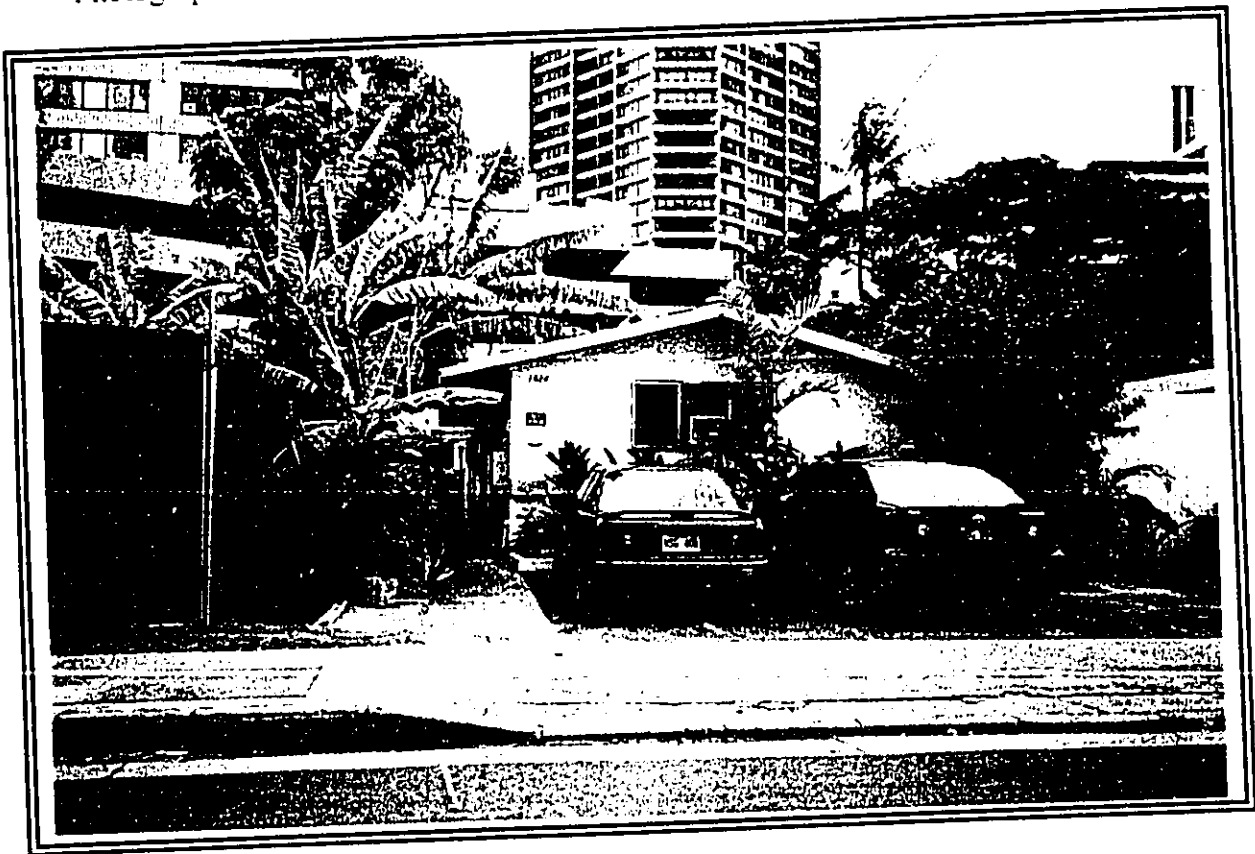
Photograph No. 9 - View of the project site with looking mauka showing the Windsor in the back ground..



Photograph No. 10- View of the makai end of the project site.



Photograph No. 11 - View of the adjacent property.

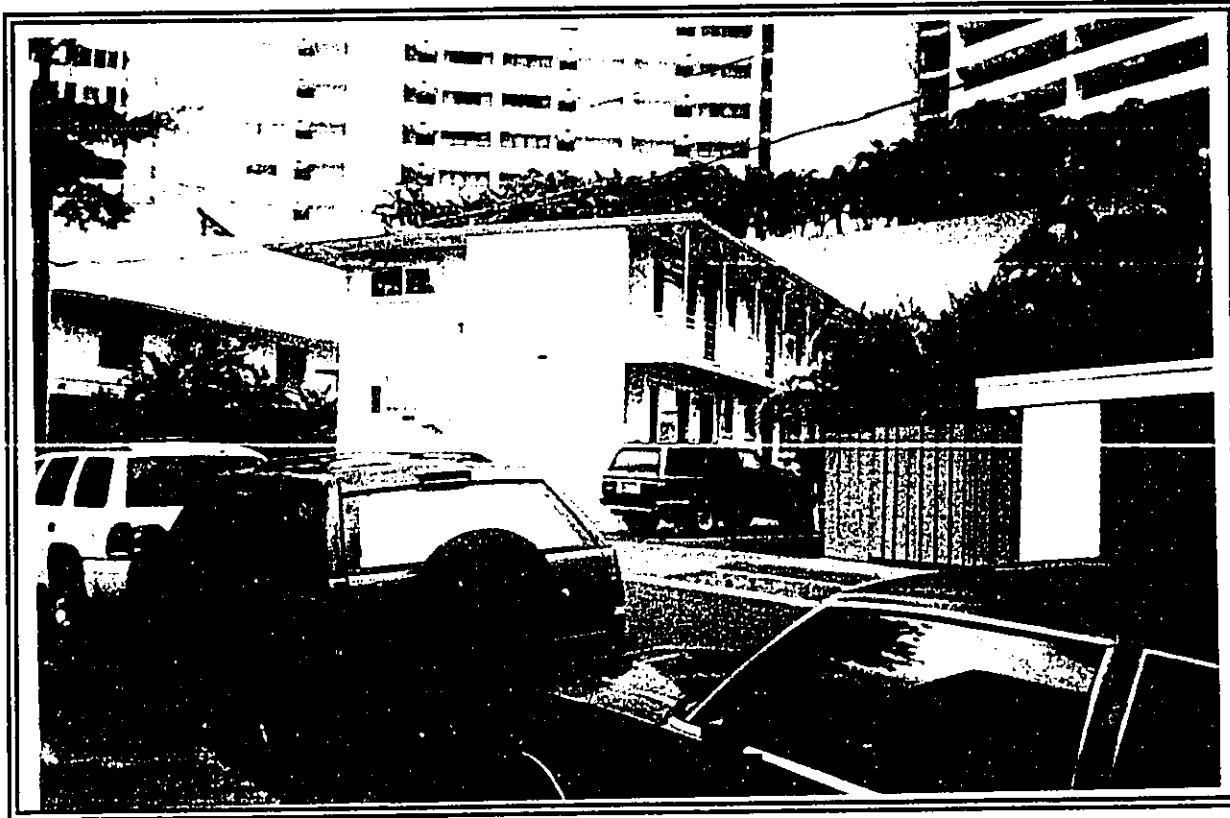


Photograph No. 12 - View of an adjacent property.

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Photograph No. 13 - View of Chateau Waikiki and parking garage across Kaioo Drive from the project site.



Photograph No. 14 - View of properties across Kaioo Drive.

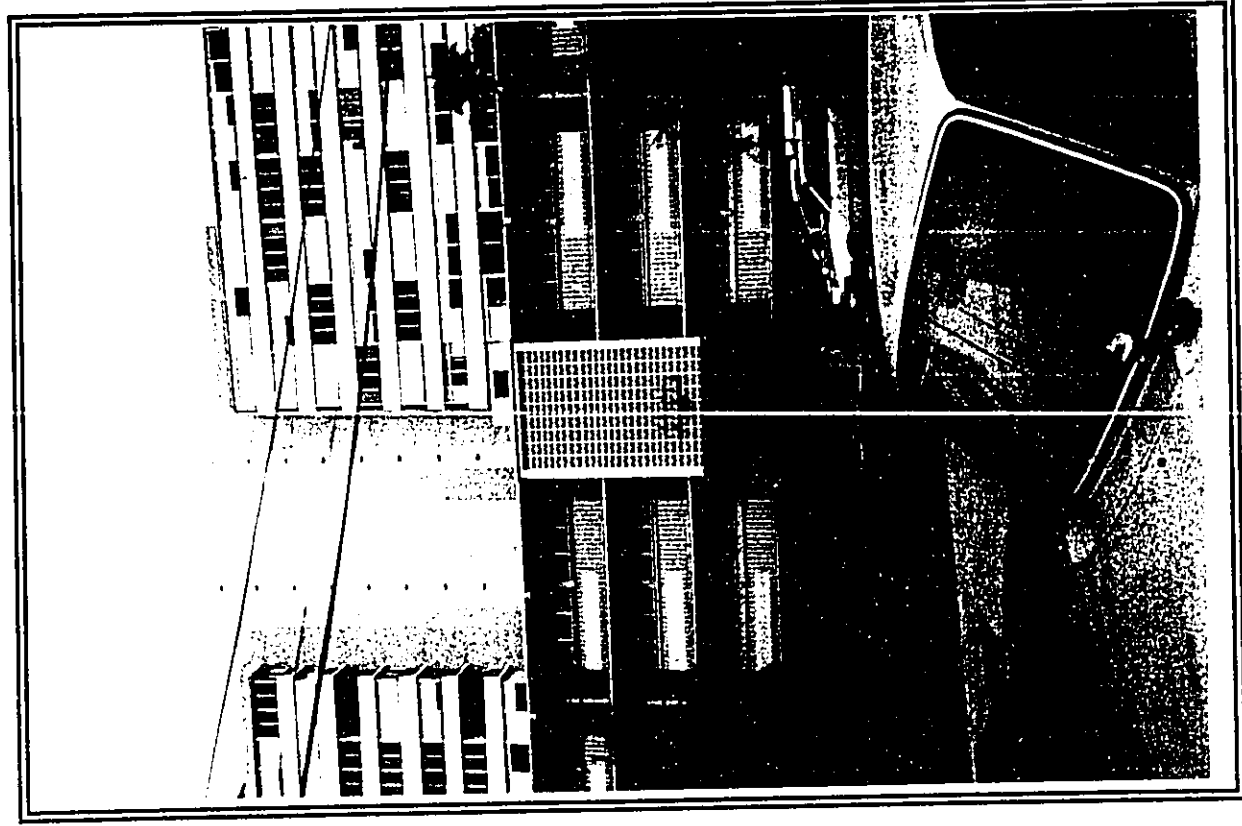
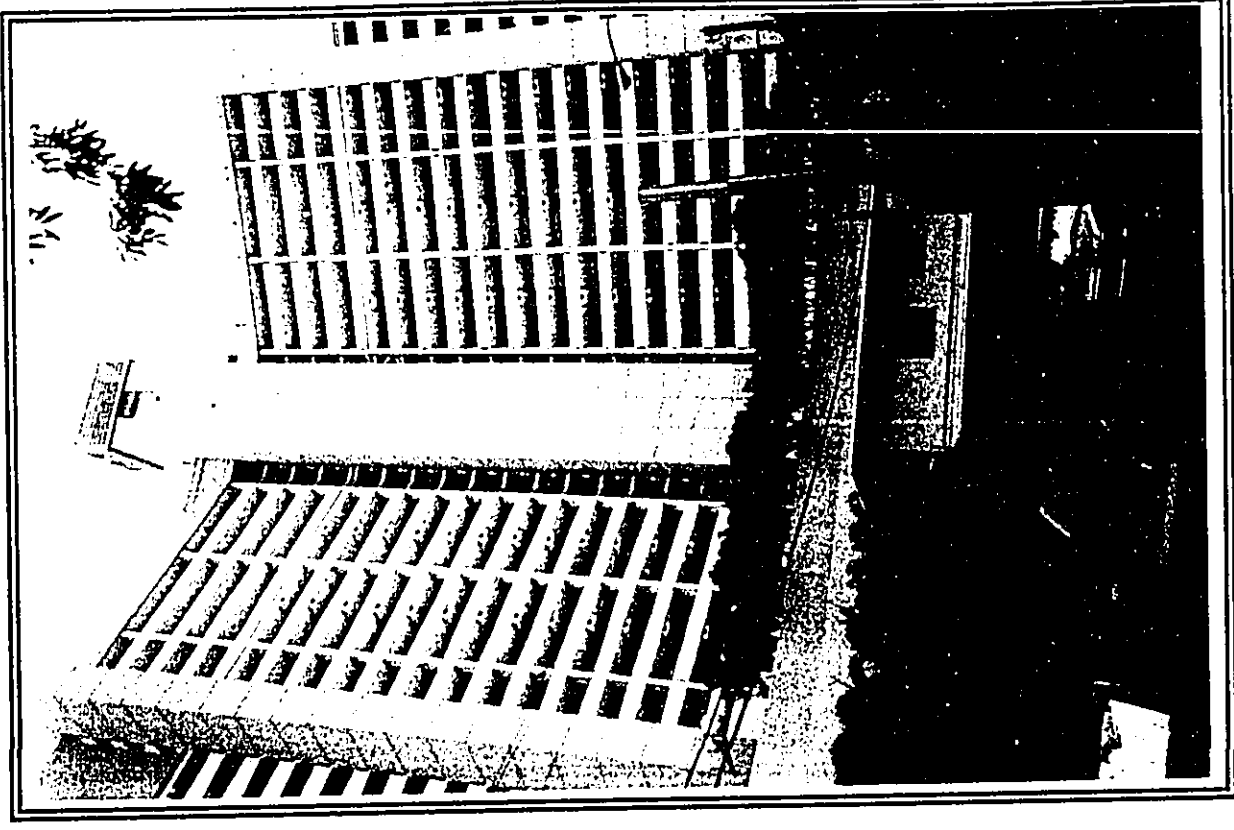
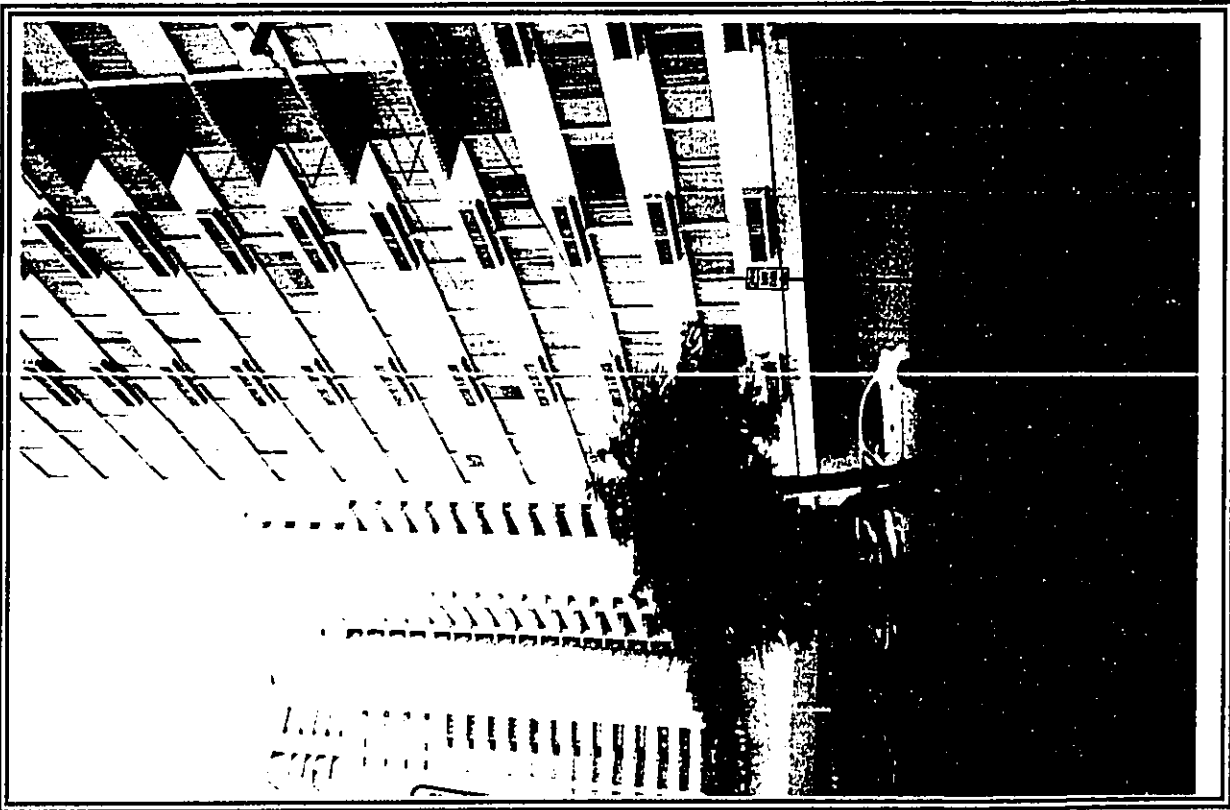


Photo No. 15 - View of the Kaioo Terrace with at-grade parking in front.



Photograph No. 16 - View of properties across Kaioo Drive from the project site with Wailana in the back ground.



Photograph No. 17 - View of properties across Kaoo Drive showing the Holiday Inn on the right side with Wailana in the back ground.



Photograph No. 18 - View of properties across Kaoo Drive from the project site showing open parking and the Aston Hotel Kai in the back ground.

**APPENDIX X**  
**AGENCY AND PUBLIC COMMENTS AND RESPONSES**

POLICE DEPARTMENT  
**CITY AND COUNTY OF HONOLULU**

801 SOUTH BERETANIA STREET  
HONOLULU, HAWAII 96813 - AREA CODE (808) 528-3111

http://www.honolulu.gov  
www.honolulu.gov

2006 MAR 3 PM 3 13

MUFI HANTEMANN  
MAYOR



BOISSE P. CORREA  
CHIEF  
DEPT OF PLANNING  
AND PERMITTING  
CITY & COUNTY OF HONOLULU  
GLENN K. KAJIYAMA  
AND J. PUTZULU  
DEPUTY CHIEFS

OUR REFERENCE BS-KF

March 2, 2006

TO: HENRY ENG, FAICP, DIRECTOR  
DEPARTMENT OF PLANNING AND PERMITTING

FROM: BOISSE P. CORREA, CHIEF OF POLICE  
HONOLULU POLICE DEPARTMENT


SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT, WAIKIKI PALMS  
MULTI-FAMILY DEVELOPMENT, TMK: 2-6-12: 37-44 AND 55-58

Thank you for the opportunity to review and comment on the subject project.

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

If there are any questions, please call Major Thomas Nitta of District 6 at 529-3361 or Mr. Brandon Stone of the Executive Bureau at 529-3644.

BOISSE P. CORREA  
Chief of Police

By   
KARL GODSEY  
Assistant Chief of Police  
Support Services Bureau



KUSAO & KURAHASHI, INC.

*Planning and Zoning Consultants*

MANOA MARKET PLACE  
2752 WOODLAWN DRIVE, SUITE 5-202  
HONOLULU, HAWAII 96822

BUS. (808) 988-2231

FAX. (808) 988-1140

E-Mail: [kkurahashi@hawaii.m.com](mailto:kkurahashi@hawaii.m.com)

June 8, 2006

Mr. Boisse P. Correa, Chief of Police  
Honolulu Police Department  
City and County of Honolulu  
801 South Beretania Street  
Honolulu, Hawaii 96813

Attention: Major Thomas Nitta (District 6) and Mr. Brandon Stone (Executive Bureau)

Dear Chief Correa:

**Subject: Draft Environmental Assessment Comments on  
Waikiki Palms - Multi-Family Development  
1726-1916 Kaioo Drive - Waikiki  
Tax Map Key: 2-6-12: 37-44 and 55-58**

Thank you for your March 2, 2006 comments on the Draft Environmental Assessment (EA) for the Waikiki Palms Multi-family development.

Your letter indicates that the proposed project is not anticipated to impact the facilities or operations of the Honolulu Police Department. As the Draft EA noted, the proposal represents a modest increase in the number of dwelling units that previously occupied the site. Security measures within the new project are anticipated to be superior to those that previously existed.

Your comment letter will be included in the Final Environmental Assessment.

Very truly yours,



Ardis Shaw-Kim

cc: K3 Owners LLC

PHONE (808) 594-1888

FAX (808) 594-1665



2006 APR 6 PM 4 14

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

DEPT OF PLANNING  
& PERMITTING  
& COUNTY OF HONOLULU

HRD06/2279

March 3, 2006

Henry Eng  
Department of Planning & Permitting  
650 S. King Street, 7<sup>th</sup> Floor  
Honolulu, HI 96813

**RE: Draft Environmental Assessment for the Proposed Waikiki Palms Development,  
Waikiki, O'ahu, TMK 2-6-12: 37-44 and 55-58.**

Dear Mr. Eng,

The Office of Hawaiian Affairs (OHA) is in receipt of your February 14, 2006 request for comment on the above listed proposed project. OHA offers the following comments:

Our staff would appreciate the opportunity to review the Archaeological Inventory Survey Report referred to in the document on Page 37. OHA cannot concur with a finding of no significant impact as the above-listed document does not include any information on the survey findings. We look forward to reviewing any further documentation from the applicant. Thank you for your correspondence.

OHA asks that, in accordance with Section 6E-46.6, Hawaii Revised Statutes and Chapter 13-300, Hawaii Administrative Rules, if any significant cultural deposits or human skeletal remains are encountered, work shall stop in the immediate vicinity and the State Historic Preservation Division (SHPD/DLNR) shall be contacted.

Thank you for the opportunity to comment. If you have further questions or concerns, please contact Jesse Yorck, Native Rights Policy Advocate, at (808) 594-0239 or [jessey@oha.org](mailto:jessey@oha.org).

'O wau iho nō,

Clyde W. Nāmu'o  
Administrator

KUSAO & KURAHASHI, INC.

*Planning and Zoning Consultants*

MANOA MARKET PLACE  
2752 WOODLAWN DRIVE, SUITE 5-202  
HONOLULU, HAWAII 96822

BUS. (808) 988-2231  
FAX. (808) 988-1140  
E-Mail: kkurahashi@hawaii.m.com

June 8, 2006

Mr. Clyde W. Namu'o, Administrator  
Office of Hawaiian Affairs  
711 Kapiolani Boulevard, Ste. 500  
Honolulu, Hawaii 96813

Attention: Mr. Jesse Yorck

Dear Mr. Namu'o:

**Subject: Draft Environmental Assessment Comments on  
Waikiki Palms - Multi-Family Development  
1726-1916 Kaioo Drive - Waikiki  
Tax Map Key: 2-6-12: 37-44 and 55-58**

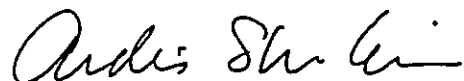
Thank you for your March 10, 2005 response to the Draft Environmental Assessment for the proposed Waikiki Palms multi-family development. The following responds to your comments:

As requested in your letter, we are providing you with a copy of the Archaeological Inventory Survey Report. For your information, a copy of this report has also been provided to the State Historic Preservation Division.

In accordance with Section 6E-46.6, Hawaii Revised Statutes and Chapter 13-300, Hawaii Administrative Rules, if any significant cultural deposits or human skeletal remains are encountered during construction, work shall stop in the immediate vicinity and the State Historic Preservation Division shall be contacted.

Your letter and this response will be included in the Final EA.

Very truly yours,



Arid Shaw-Kim

cc: Kaioo, LLC

**BOARD OF WATER SUPPLY**

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



2006 MAR 8 AM 9 45

DEPT OF PLANNING and PERMITTING  
CITY & COUNTY OF HONOLULU  
March 6, 2006

MUFI HANNEBAMA, Mayor

RANDALL Y. S. CHUNG, Chairman  
HERBERT S. K. KAOPIA, SR.  
SAMUEL T. HATA  
ALLY J. PARK

RODNEY K. HARADA, Ex-Officio  
LAVERNE T. HISA, Ex-Officio

CLIFFORD P. LUM  
Manager and Chief Engineer

SONNA FAY K. KYOSAKI  
Deputy Manager and Chief Engineer

TO: HENRY ENG, FAICP, DIRECTOR  
DEPARTMENT OF PLANNING AND PERMITTING

FROM: *(Signature)*  
for CLIFFORD P. LUM, MANAGER AND CHIEF ENGINEER

SUBJECT: YOUR LETTER DATED FEBRUARY 14, 2006 REGARDING CHAPTER 343,  
HRS, DRAFT ENVIRONMENTAL ASSESSMENT DPP PROJECT NO.  
2006/ED-1, TMK: 2-6-12: 37-44 AND 55-58

Thank you for the opportunity to comment on the proposed project.

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

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

The project is subject to Board of Water Supply Cross-Connection Control and Backflow Prevention requirements prior to the issuance of the building permit.

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

If you have any questions, please contact Robert Chun at 748-5440.

KUSAO & KURAHASHI, INC.

*Planning and Zoning Consultants*

MANOA MARKET PLACE  
2752 WOODLAWN DRIVE, SUITE 5-202  
HONOLULU, HAWAII 96822

BUS. (808) 988-2231  
FAX. (808) 988-1140  
E-Mail: kkurahashi@hawaii.m.com

June 8, 2006

Mr. Clifford P. Lum, Manager and Chief Engineer  
Board of Water Supply  
City and County of Honolulu  
630 South Beretania Street  
Honolulu, Hawaii 96843

Attention: Mr. Robert Chun

Dear Mr. Lum:


**Subject: Draft Environmental Assessment Comments on  
Waikiki Palms - Multi-Family Development  
1726-1916 Kaioo Drive - Waikiki  
Tax Map Key: 2-6-12: 37-44 and 55-58**

Thank you for your March 6, 2006 comments on the Draft Environmental Assessment for the Waikiki Palms Multi-family development. Our response is as follows:

1. We understand that the availability of water for the project will ultimately be confirmed at the time of building permit processing.
2. The Water System Facilities Charges will be paid when water is made available.
3. The applicant will satisfy the Board of Water Supply Cross-Connection Control and Backflow Prevention requirements prior to the issuance of the building permits.
4. On-site fire protection requirements will be coordinated with the Fire Prevention Bureau.

Your letter and this response will be included in the Final EA.

Very truly yours,

  
Ardis Shaw-Kim

cc: K3 Owners LLC

DEPARTMENT OF FACILITY MAINTENANCE

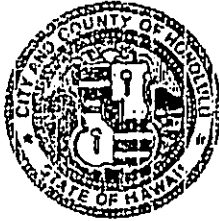
**CITY AND COUNTY OF HONOLULU**

1000 ULUOHIA STREET, SUITE 215, KAPOLEI, HAWAII 96707  
TELEPHONE : (808) 692-5054 FAX: (808) 692-5857  
Website: www.honolulu.gov

2006 MAR 13 PM 3 25

MUJI HANNIGAN  
MAYOR

DEPT OF PLANNING  
and PERMITTING  
CITY & COUNTY OF HONOLULU



LAVENNE HIGA, P.E.  
DIRECTOR AND CHIEF ENGINEER

GEORGE A. MIYAMOTO  
DEPUTY DIRECTOR

IN REPLY REFER TO:  
DSM 03-206

March 9, 2006

MEMORANDUM

TO: HENRY ENG, FAICP, DIRECTOR  
DEPARTMENT OF PLANNING AND PERMITTING

FROM: *[Signature]*  
LAVENNE HIGA, P.E., DIRECTOR AND CHIEF ENGINEER  
DEPARTMENT OF FACILITY MAINTENANCE

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (DEA)  
WAIKIKI PALMS MULTI FAMILY DEVELOPMENT  
1726-1916 KAICO DRIVE, WAIKIKI

Thank you for the opportunity to review and comment on the DEA dated December 2005, for the subject proposed multi-family development.

We have no comments to add to the document as the proposed development will not have any adverse affects on our maintenance operations.

Returned for your use is the DEA document.

Should you have any questions, please call Charles Pignataro of the Division of Road Maintenance, at 484-7697.

Attachment

KUSAO & KURAHASHI, INC.

*Planning and Zoning Consultants*

MANOA MARKET PLACE  
2752 WOODLAWN DRIVE, SUITE 5-202  
HONOLULU, HAWAII 96822

BUS. (808) 988-2231  
FAX. (808) 988-1140  
E-Mail: [kkurahashi@hawaii.m.com](mailto:kkurahashi@hawaii.m.com)

June 8, 2006

Ms. Lavern Higa, P.E., Director and Chief Engineer  
Department of Facility Maintenance  
1000 Uluhio Street, Ste. 215  
Kapolei, Hawaii 96707

Attention: Mr. Charles Pignataro

Dear Ms. Higa:

**Subject: Draft Environmental Assessment Comments on  
Waikiki Palms - Multi-Family Development  
1726-1916 Kaioo Drive - Waikiki  
Tax Map Key: 2-6-12: 37-44 and 55-58**

Thank you for your March 9, 2006 comments on the Draft Environmental Assessment for the on the Draft Environmental Assessment (EA) for the Waikiki Palms Multi-family development.

Your letter stated that the proposed project will not have any adverse affect on the maintenance operations of the Department of Facility Maintenance.

Your letter and this response will be included in the Final EA.

Very truly yours,



Ardis Shaw-Kim

cc: K3 Owners LLC

LINDA LINGLE  
GOVERNOR

PATRICIA HAMAMOTO  
SUPERINTENDENT



2006 MAR 22 PM 1 38

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

DEPT OF PLANNING  
& PERMITTING  
CITY & COUNTY OF HONOLULU  
OFFICE OF THE SUPERINTENDENT

March 22, 2006

Mr. Henry Eng, Director  
Department of Planning and Permitting  
City and County of Honolulu  
650 South King Street  
Honolulu, Hawaii 96813

Dear Mr. Eng:

Subject: Application for Waikiki Special District Permit for the Waikiki Palms,  
TMK: 2-6-012: 37-44 & 55-58 (2005/ED-1)

The Department of Education (DOE) has reviewed the Environmental Assessment (EA) and Special District Major Permit request from Kaioo, LLC, for a 116-unit, high-rise condominium in Waikiki.

Although the project will have an impact on student enrollment in neighborhood schools, the property already has its appropriate zoning so the DOE will not ask for a school fair-share condition.

Thank you for the opportunity to review and comment on this EA. Should you have any questions, please call Heidi Meeker of the Facilities Development Branch at 733-4862.

Very truly yours,

Patricia Hamamoto  
Superintendent

PH:jmb

c: Randolph Moore, Acting Assistant Superintendent, OBS  
Duane Kashiwai, FDB  
Estelle Wong, CAS, Kaimuki/Kalani Complex Areas

DOCUMENT CAPTURED AS RECEIVED



KUSAO & KURAHASHI, INC.

*Planning and Zoning Consultants*

MANOA MARKET PLACE  
2752 WOODLAWN DRIVE, SUITE 5-202  
HONOLULU, HAWAII 96822

BUS. (808) 988-2231  
FAX. (808) 988-1140  
E-Mail: kkurahashi@hawaii.m.com

June 8, 2006

Ms. Patricia Hamamoto, Superintendent  
State Department of Education  
P.O. Box 2360  
Honolulu, Hawaii 96804

Attention: Heidi Meeker (Facilities Development Branch)

Dear Superintendent Hamamoto:

**Subject: Draft Environmental Assessment Comments on  
Waikiki Palms - Multi-Family Development  
1726-1916 Kaioo Drive - Waikiki  
Tax Map Key: 2-6-12: 37-44 and 55-58**

Thank you for your March 22, 2006 letter regarding the Draft Environmental Assessment for the proposed Waikiki Palms multi-family development. Your letter basically stated that because the zoning to allow a multi-family dwelling development is currently in place, the State Department of Education will not ask for a school fair-share condition.

Your comment letter and this response will be included in the Final Environmental Assessment.

Very truly yours,



Ardis Shaw-Kim

cc: Kaioo, LLC

LINDA LINGLE  
GOVERNOR OF HAWAII

2006 APR 6 PM 4 15



DEPT OF PLANNING STATE OF HAWAII  
and DEPARTMENT OF LAND AND NATURAL RESOURCES  
CITY & COUNTY OF HONOLULU  
STATE HISTORIC PRESERVATION DIVISION  
601 KAMOKILA BOULEVARD, ROOM 555  
KAPOLEI, HAWAII 96707

PETER T. YOUNG  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENTROBERT K. MASUDA  
DEPUTY DIRECTOR - LANDDEAN HAKANO  
ACTING DEPUTY DIRECTOR - WATERAQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONVEYANCES  
COMMISSION ON WATER RESOURCES MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES ENFORCEMENT  
CROSSLAND  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAOIOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

March 31, 2006

Mr. Henry Eng  
Department of Planning and Permitting  
City & County of Honolulu  
650 South King Street, 7<sup>th</sup> Floor  
Honolulu, Hawai'i 96813

LOG NO: 2006.0870  
DOC NO: 0603CM96  
Archaeology

Dear Mr. Eng:

**SUBJECT: Chapter 6E-42 Historic Preservation Review [Private] –  
Draft Environmental Assessment (DEA)  
Waikiki Palms–Multi-Family Development (DPP Project Reference No. 2006/ED-1)  
Waikiki Ahupua'a, Honolulu [Kona] District, Island of O'ahu  
TMK (1) 2-6-012: various plats and parcels**

Thank you for the opportunity to review the aforementioned project, which we received on February 23, 2006. The proposed undertaking consists of the construction of two (2) six-story buildings comprising a 116-unit, multi-family development.

Cultural Surveys of Hawai'i (Hammatt 2005) has completed an archaeological literature review and field inspection of this proposed undertaking (Appendix IV of the DEA), and recommended that an archaeological inventory survey be conducted of the subject project area. We concur with this recommendation, and we also request the drafting of an inventory survey *plan*, for review by this office, prior to the commencement of the inventory survey. We look forward to working with the archaeological consultant on this project.

Please call Dr. Chris Monahan at 808-692-8015 if you have any questions about this letter.

Aloha,

Melanie Chinen, Administrator  
State Historic Preservation Division

CM

Cc: Cultural Surveys of Hawai'i

KUSAO & KURAHASHI, INC.  
*Planning and Zoning Consultants*

MANOA MARKET PLACE  
2752 WOODLAWN DRIVE, SUITE 5-202  
HONOLULU, HAWAII 96822

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FAX. (808) 988-1140  
E-Mail: kkurahashi@hawaii.m.com

June 8, 2006

Ms. Melanie Chinen, Administrator  
State Historic Preservation Division  
601 Kamokila Boulevard, Room 555  
Kapolei, Hawaii 96707

Attention: Dr. Chris Monahan

Dear Ms. Chinen:

**Subject: Draft Environmental Assessment Comments on  
Waikiki Palms - Multi-Family Development  
1726-1916 Kaioo Drive - Waikiki  
Tax Map Key: 2-6-12: 37-44 and 55-58**

Thank you for your letter of March 31, 2006 regarding the Draft Environmental Assessment for the proposed Waikiki Palms multi-family development. The following responds to your comments:

An Archaeological Monitoring Plan will be prepared prior to ground altering activities. An archaeologist will be present as specified in the Archaeological Monitoring plan.

Your letter and this response will be included in the Final EA.

Very truly yours,



Ardis Shaw-Kim

Cc: Kaioo, LLC

LINDA LINGLE  
GOVERNOR OF HAWAII



GENEVIEVE SALMONSON  
DIRECTOR

STATE OF HAWAII  
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

April 13, 2006

Mr. Henry Eng  
Department of Planning and Permitting  
City and County of Honolulu  
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Honolulu, HI 96813

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Ms. Ardis Shaw-Kim  
Kusao & Kurahashi, Inc.  
2752 Woodlawn Drive, Suite 5-202  
Honolulu, HI 96822

Mr. Larry Hansen  
Kaioo, LLC  
1001 Bishop Street, Suite 1280  
Honolulu, HI 96815

Dear Messrs. Eng and Hansen, and Ms. Shaw-Kim:

Having reviewed the draft environmental assessment for the Waikiki Palms Multifamily Development, Tax Map Key (1st) 2-6-012, parcels 37 through 44 and 55 through 58, the Office of Environmental Quality Control offers the following comments for your review and response.

1. **Early Assessment and Consultation:** Section 11-200-9(b)(1), Hawai'i Administrative Rules requires the approving agency to require the applicant to seek the advice and input of the lead county agency responsible for implementing the county's general plan in which the proposed action is to occur, and to consult with other agencies having jurisdiction or expertise as well as citizen groups and individuals which the approving agencies reasonably believes to be affected. Section 11-200-10 (3) notes that the environmental assessment must identify agencies, citizen groups, and individuals consulted. Please describe the early assessment and consultation process and identify those parties contacted prior to the preparation of the environmental assessment document.
2. **Clarification of Terms:** On page 40, please clarify the meaning of the acronym "FAR" associated with the development standard known as "maximum density." Please clarify what is meant by "Dickey" stylized roof on the second line of page 44.
3. **Open Space:** On page 30, the project is short of the 3.55% of open space requirements. The City should be looking at more open space. What is the reason for the loss of open space?
4. **Affordable Housing:** Is the development affordable? The development displaces 82 units of affordable housing. Should not the developer look at the percentage of affordable units?
5. **Cultural Survey Comment:** On page 49 of Appendix IX of the Cultural Impact Assessment, the last paragraph makes reference to "decades of sugar cultivation activities." This appears to be erroneous as Kalia was historically never the locus of intensive sugar farming.
6. **Axonometric Plans:** In Appendix V, please describe from what elevation and looking in what direction the visualizations were modeled from.

7. *Native Hawaiian Landscaping:* On page 48, the list of vegetation considers some non-native and non-indigenous species. Please consider using native Hawaiian vegetation. Please refer to our Internet site at <http://www.state.hi.us/health/oeqc/index.html> for more information in this regard.

Thank you for the opportunity to comment. If there are any questions, please contact Mr. Leslie Segundo, Environmental Health Specialist, at (808) 586-4185.

Sincerely,

  
GENEVIEVE SALMONSON  
Director

KUSAO & KURAHASHI, INC.

*Planning and Zoning Consultants*

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June 20, 2006

Ms. Genevieve Salmonson, Director  
Office of Environmental Quality Control  
State of Hawaii  
235 South Beretania Street, Ste. 702  
Honolulu, Hawaii 96813

Attention: Mr. Leslie Segundo, Environmental Health Specialist

**Subject: Draft Environmental Assessment Comments on  
Waikiki Palms - Multi-Family Development  
1726-1916 Kaioo Drive - Waikiki  
Tax Map Key: 2-6-12: 37-44 and 55-58**

Dear Ms. Salmonson:

Thank you for your comments, dated December 30, 2005, on the Draft Environmental Assessment (EA) for the Waikiki Palms Multi-Family development. Our response is as follows:

1. In addition to those agencies that were listed on page 3 of the Draft EA the following were also provided input prior to preparation of the Draft EA.

- Department of Planning and Permitting:
  - Urban Design Branch
  - Zoning Adjustments Branch
  - Subdivision Branch
  - Building Division
  - Wastewater Branch
- Honolulu Fire Department
- Board of Water Supply
- Waikiki Neighborhood Board
- FEMA (Federal Emergency Management Agency)
- Kelly Barnes, an adjacent land owner

The design of the project and the content of the Draft EA is based on input received from the consulted parties.

2. The Final EA will provide a definition of FAR. FAR means "Floor Area Ratio" and is the ratio of the floor area of the buildings to the total area of the zoning lot expressed as a percent or decimal. The "Dickey" style roof is a style that is reminiscent of old Hawaii. It has a high pitch and broad eaves.
3. The developer is currently proposing to provide the required open space.
4. We cannot confirm that the rents that were being charged at the 81 units that were demolished were at affordable rental rates established by the United States Department of Housing and Urban Development. The developer does not plan to develop affordable housing. The City's housing policy generally requires affordable housing or contributions toward the development of affordable housing when a property owner is granted a zone change approval or possibly some other entitlement which provides additional density or units over that allowed under existing zoning. The applicant is planning to develop the project in accordance with the existing zoning and no requirement for affordable housing will be triggered.
5. The error in the Cultural Impact Assessment had been corrected prior to the printing of the Draft EA but the Draft CIA was inadvertently attached to the Draft EA. The Final CIA will be attached to the Final EA.
6. The Axonometric Plans were modeled from approximately 800 feet above ground level in order to be able to see the Waikiki Palms parcel.

The Axonometric Plans note the vantage point of the viewer. The view would logically be in the opposite direction. The "View from the mountains" looks in a makai direction. This view shows the Ala Wai Canal (foreground) that empties into the ocean (in the background), and also the State Convention Center on the right-side. The Waikiki Palms is the "small yellow patch" located among the existing high rises in the center of the picture.

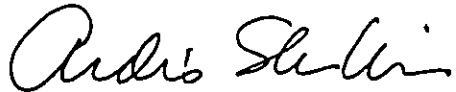
The "View from Diamond Head" is looking towards Ewa, and the Waikiki Palms is hidden from view by the Wailana Condominium.

The "View from Ewa" is looking in the makai Diamond direction. The u-shaped Waikiki Palms is in the center of the picture with the State Convention Center on the bottom left, and the Ala Wai Yacht Harbor on the right-side. Waikiki high rises and Ft. DeRussy are in the background.

7. The plant list on page 48 of the Draft EA includes Loulu Palms (*Pritchardia* sp.) which is a native plant species. Certain Hibiscus, which are also listed, could be considered a native variety. The developer will consider other native plants and will comply with the Waikiki Special District Design Guidelines.

Your comment letter and this response will be included in the Final EA.

Very truly yours,



Ardis Shaw-Kim  
cc: Kaioo, LLC



March 29, 2006

Ardis Shaw-Kim  
Kusao & Kurahashi, Inc.  
2752 Woodlawn Dr., Ste 5-202  
Honolulu, HI 96822

Re: Draft Environmental Assessment  
Waikiki Palms

Dear Ms. Shaw-Kim:

The purpose of this letter is to provide comments on the Draft Environmental Assessment ("EA") for the proposed Waikiki Palms. The EA's analysis of environmental impacts on the nearest neighbors to the proposed project is wholly lacking. John Sambuco and I own property immediately adjacent to the proposed Waikiki Palms, including TMK parcels 2-6-12:53 and 54 (the "Barnes/Sambuco Parcels"). Attached as Exhibit 1 is a map showing the location of our property. The analysis in the EA is also deficient in other respects, which are discussed in detail below.

The purpose of Hawaii's Environmental Policy Act, Haw. Rev. Stat. Chapter 343, is to allow the opportunity for public comment on the adequacy of the analysis in the Draft EA before it is finalized. The Draft EA for Waikiki Palms, however, is incomplete. It is insufficient for Kaioo, LLC to respond by including the requisite analysis for the first time in its Final EA, as this would deny the required opportunity for public comment. The public must be given the opportunity to comment on the analysis when it is presented for the first time in draft form. The Draft EA, therefore, must be revised and made available for a full public comment period once again. Alternatively, based on the significant and unavoidable impacts on the owners and occupants of the homes on the Barnes/Sambuco Parcels, a full Environmental Impact Statement must be prepared.

Where the EA already concedes that the construction impacts will be significant, as a matter of law, a full environmental impact statement must be prepared before the project can go forward.

## **I. VISUAL IMPACTS**

The roofline of the proposed Waikiki Palms will be 65 feet high (EA at 13) and even higher when elevator structures and other rooftop machinery is added (EA at 48). The full height is not disclosed in the EA and it should be.

There is absolutely no discussion of the visual impact of these proposed buildings compared to the one and two story structures on the Barnes/Sambuco Parcels. The closest building on our parcel TMK 2-6-12: 54 is approximately 15 feet tall, and will be dwarfed by the proposed Waikiki Palms buildings which are at least 50 feet taller and out of character in the existing neighborhood. The residents living in the studio units in our buildings will be less than 20 feet away from the new parking garage structure and all of the associated construction activities. When the residents of these apartments look out the ground floor windows from our single story building, they will look directly into the Waikiki Palms parking garage, less than 20 feet away. The EA is deficient in that it wholly avoids any assessment of the impacts of these residents.

The only reference to the existence of our parcels or the residential character of their use is a single photograph (photograph 12) in Appendix VII. The residential structures on our parcel are neither mentioned nor discussed elsewhere in the report. We have prepared our own illustration of how our building will appear next to the Waikiki Palms (enclosed as Exhibit 2) We request that this illustration be included as an exhibit in the Final EA, and its significance discussed in the text of the report.

We request that the EA be amended to reflect the existence of these small residential structures on our parcel in the following respects:

- The section on "Existing Conditions" should be amended to reflect a physical description of the structures on the Barnes/Sambuco Parcel and the residential nature of their use.
- The drawings on pages 1, 6 and 7 of Appendix 1 should be amended to show the existing structures on the Barnes/Sambuco Parcel so that an adequate assessment of the proposed structures in comparison to the existing surroundings can be made. As drafted, these drawings are deceptive in that they show our parcels as vacant, and therefore do not permit the Department of Planning & Permitting to make an informed decision regarding impact significance.

We also request that the impacts on our property and its residents be fully disclosed and analyzed and that this analysis be made available for our review and comment.

**A. Noncompliance with Waikiki Special Design Guidelines (Transitional Height)**

The Draft EA is deficient in that it does not compare the differential impact between: (1) the Waikiki Palms project as it is proposed in the EA (with nonconforming transitional heights); and (2) the Waikiki Palms project redesigned to comply with the Waikiki Special District Design Guidelines (in compliance with transitional height requirements). This analysis should be prepared and the public should be allowed to comment on the adequacy of the analysis.

The Draft EA fails to assess the impact of noncompliance with the Waikiki Special District Design Guidelines ("WSDDG"), and is therefore deficient. This analysis must be prepared and made available for public comment before the Draft EA can be finalized.

The WSDDG require provision of "appropriate height restrictions to adjoining small scale projects" (WSDDG at 4), and state that "buildings with a series of graduated, stepped, forms are preferred for new projects" (WSDDG at 4). As shown in the demonstrative exhibit we have prepared and attached as Exhibit 2, the height of the proposed Waikiki Palms is inappropriate compared to the building height on the immediately adjoining Barnes/Sambuco Parcels.

In addition, the proposed Waikiki Palms is in the Apartment Precinct (Draft EA at 3) and is more than forty feet in height. It therefore does not meet the "additional setback from any front, side, rear yard or property line." (WSDDG at 5) This requirement also applies to any "side or rear yard which adjoins a lot in the Apartment Precinct" (WSDDG at 5). The Waikiki Palms presents a sheer vertical height of at least 60 feet on the front, side, rear yard and property lines. This sheer vertical face is out of character with the immediately adjacent Barnes/Sambuco parcels and with the neighborhood generally. The impact should be assessed, and the public should be allowed the opportunity to comment on the assessment.

**B. Open Space**

**1. Impact of Zoning Variance**

The Draft EA acknowledges that in an effort to "capture maximum allowable floor area" (Draft EA at 29), presumably at an increased profit to Kaioo, the project does not comply with the requirement that development with an Apartment Precinct requires an area equal to 50% of the zoning lot be kept in open space. While acknowledging that the project will seek a variance to be allowed to provide less than the required amount of open space, the Draft EA nowhere analyzes the impact that such a variance would have if granted. Obtaining a variance does not avoid the need to analyze the significance of impacts that will occur. The

Draft EA should be amended to include a full analysis. The impacts from noncompliance should also be analyzed in the context of existing structures in the same area which may also have sought open space variances in the past. The cumulative impacts of the lack of open space in the neighborhood should also be analyzed.

The requested variance should not be granted because the design of the Waikiki Palms does not meet the intent or the spirit of the WSDDG with respect to new development neighboring existing properties.

The EA should identify and analyze the impacts of granting the variance. If a variance is granted and open space is restricted, what will the impact be on future property owners in the vicinity who also wish to seek their own variance or develop projects with inadequate open space? Will there be any impediments to future permits if a variance is granted? If so, what will the economic impact be on the surrounding community?

## **2. Waikiki Special District Design Guidelines Regarding Open Space**

The WSDDG require that projects in the Waikiki area, "Emphasize functional and accessible open spaces containing water features and generous landscaping that contribute to a lush, tropical setting to offset higher density urban developments." (Draft EA at 1) Although the Draft EA makes mention of a "sign wall," there is no indication of the wall's height or its extent and how this will impact accessibility. There is a general depiction of some type of fence on the final two pages of Appendix 1, a specific description of the wall, including its height and the type of materials used should be disclosed. There is no discussion in the EA of how the open space for this project will be accessible to residents of the proposed Waikiki Palms and to the surrounding community. The EA should be revised to reflect this discussion, and these revisions should be made available for public comment.

There is no landscaping plan attached to the WSDDG that allows the public to comment on whether the proposed Waikiki Palms will constitute a "lush tropical setting" as required by the WSDDG. The minimal vegetation reflected in the architectural renderings included in Appendix I clearly falls short of the WSDDG requirements. A landscaping plan should be made available for public comment. The impact of compliance or noncompliance with the WSDDG should be analyzed, and that analysis should be made available for public review and comment.

The WSDDG also provide that,

District objectives encourage the provision of useable, landscaped open spaces. Open spaces and required yard should provide a public focus, provide visual relief and create places for social

interaction. In order to maximize community benefit and enjoyment with these spaces, open spaces and yard configurations should be integrated with and complement open spaces and yards on adjoining lots.

(WSDDG at 5). The Draft EA should be amended to include discussion of how the open spaces will be useable, how they will be landscaped, how they will have a public focus, how they will provide visual relief, and how they will create places for social interaction. There is no discussion of how the community will benefit and enjoy these open spaces. There is absolutely no discussion on how the open spaces will be integrated with open spaces on adjoining lots. The Draft EA must acknowledge that there is no open space other than the minimal lot line setback between the proposed Waikiki Palm and the adjoining Barnes/Sambuco Parcel. The Draft EA must acknowledge that there is no "integration" between the proposed Waikiki Palms and the adjacent Barnes/Sambuco Parcel. The Draft EA must then analyze these impacts. The public must then be given the opportunity to comment on this analysis before the EA is finalized.

The WSDDG require that "Wherever possible, visual or physical links should be provided to connect private open space to public spaces." (WSDDG at 5) The Draft EA does not indicate that any visual or physical links between the private open space in the northeast corner of the development will be linked to public spaces. The Draft EA is devoid of discussion of how the private open space at the proposed Waikiki Palms will be linked to public open spaces. The impacts of any linkages must be analyzed. The public must then be given the opportunity to comment on this analysis before the EA is finalized.

While it is certainly to Kaioo's benefit to maximize square footage, and thereby deprive owners and occupants of adjoining properties of open space, the purpose of the EA is to analyze the impact of that variance on the surrounding community. The EA is deficient because it fails to analyze that impact. The public should be allowed to comment on the adequacy of this analysis before the EA is finalized.

The open space on the northeast corner of the project is characterized "as a buffer zone between the two buildings and the surrounding lots." (p. 44). The Draft EA fails to acknowledge that there is no similar buffer zone between the proposed Waikiki Palms and the one story residential building on the adjacent Barnes/Sambuco Parcel. The Draft EA must acknowledge this lack of buffer zone and discuss the impacts of this lack of buffer zone. The public must then be given the opportunity to comment on this analysis before the EA is finalized.

The Draft EA fails to identify any mitigation measures to compensate for the lack of open space caused by this proposed project. Mitigation measures must be proposed and discussed. The public must be allowed to comment on the adequacy of the mitigation measures to address the impacts caused by the lack of open space.

### 3. Analysis of Open Space Alternatives

A Draft EA must identify and discuss a range of alternatives for the proposed action. Haw. Admin. R. § 11-200-10(6). The Draft EA for the proposed Waikiki Palms, however, considers only three limited alternatives: (1) no action (leaving the previous buildings in place); (2) vacant land (leaving the property in its existing vacant state) or (3) proposed multi-family development with 116 units (not in compliance with open space requirements or the WSDDG). Additional alternatives, and their impacts, should be examined.

The Draft EA must consider and compare the impacts of a modified project design which is in compliance with all zoning requirements and the WSDDG.

The Draft EA must consider and compare the impacts of a modified project design involving multiple structures which are consistent with the character of the buildings previously on the parcel (15 buildings housing 82 low-rise multi family dwelling units, with 141 occupants).

The analysis of alternatives must be completed and the draft analysis made available for public review and comment.

## II. PARKING IMPACTS

The Draft EA should acknowledge that the Waikiki Palms parking will negatively impact the adjacent tenants on the Barnes/Sambuco Parcels in terms of noise, light, visual impacts, and odor.

The Draft EA should make available a parking and outdoor lighting plan for public comment so that the impacts of the additional lights can be assessed. The Draft EA should acknowledge the impact of this additional lighting on the residents in the nearby Barnes/Sambuco building less than 20 feet away from the new parking structure. Impacts resulting from the lighting plan should be quantified and assessed. Mitigation measures should be far more specific than the general reference to "subdued or shielded" lighting. (EA at 50). The public should be allowed the opportunity to comment on the impacts from the lighting plan and the adequacy of the mitigation measures.

The Draft EA indicates that "the ground floor garbage dumpster for Building A is located on the ewa side of the elevators." The location of the elevators has not been clearly indicated on any of the existing drawings for Building A. The public has therefore been deprived of its opportunity to comment on the impacts from these dumpsters as their location cannot be ascertained. The Draft EA should not only analyze odor from these dumpsters, it should also analyze the additional noise from heavy vehicles that will routinely collect refuse

from these locations. What is the decibel level associated with the refuse collection trucks. What type of dumpsters will be used? What is the decibel level associated with lifting and replacing the dumpsters? What time of day and how often will refuse pickups be scheduled? Will there be any impacts from vermin associated with this new refuse disposal plan? What mitigation measures will be implemented to control vermin? The public should be allowed the opportunity to review and comment on these impacts mitigation measures.

The Draft EA should analyze the impacts of vehicle exhaust on the nearest residents. What impacts will result if a vehicle is left running in the parking garage? What impacts will result if a vehicle alarm goes off in the middle of the night only 20 feet from a resident's bedroom window? What impacts will result from unshielded motorcycle mufflers? We submit that these impacts on the nearest neighbors will be significant.

The WSDDG require that

parking should not interrupt public access or negatively impact surrounding neighborhoods. Whenever possible, parking should be located behind buildings, within basements or within the interior of a block.

(WSDDG at 6). There is no discussion in the EA of whether public access will be interrupted. There is no discussion of whether parking will negatively impact surrounding neighborhoods. There is no discussion of how the parking will affect the neighbors on the single story residential unit on the Barnes/Sambuco Parcel which is less than 20 feet away from the parking garage. The Draft EA should analyze these impacts. The public should be allowed to comment on the adequacy of this analysis before the EA is finalized.

The EA should fully analyze an alternative redesigned to be in compliance with the WSDDG where parking is located behind the proposed Waikiki Palms buildings, within basements or within the interior of the block. The public should be allowed to comment on the adequacy of this analysis before the EA is finalized.

The WSDDG require that parking should be "buffered or screened with landscaping." (WSDDG p. 6) The Draft EA does not analyze how the proposed parking is, or is not, consistent with this requirement. No landscaping plan has been provided for public review or comment. The EA does not analyze how the landscaping is adequate to create a parking buffer as required by the WSDDG. The required analysis must be made available in draft format for public comment.

What little is shown of the landscaping around the parking areas is inconsistent. Appendix 1, pages 1 and 2 show only 9 palms at the western end of buildings A & B. The visual

depiction of the West Elevation of Building A, however, shows a denser planting 16 palms (App. 1 at p. 3). There is no analysis of whether 9 palms are sufficient to minimize impacts on residential units merely 20 feet away. There is no analysis of whether 16 palms are sufficient to minimize impacts on residential units merely 20 feet away. There is no analysis of whether either 9 or 16 palms would be a sufficient buffer or screen as required by the WSDDG. This analysis should be performed and made available for public comment.

### III. SOCIOECONOMIC IMPACTS

Socioeconomic impacts are discussed generally on pp. 16-17, 34 and 55 of the Draft EA. The EA claims creation of long term jobs for Waikiki Palms (p. 16). This statement is incorrect. Although the property has been vacant for a few short years, jobs were lost when these same owners tore down the previous structures and previous property managers were deprived of their long term jobs. The loss of previous jobs should be analyzed here and in the discussion of "cumulative impacts" from past activities. "Credit" should not be taken for new jobs when old jobs were abruptly terminated.

The EA is also deficient in that it does not discuss the socioeconomic impact on the nearest properties, particularly the Barnes/Sambuco Parcels. Will the rental value in these buildings decrease now that these apartments are closer to parking garage noise, garbage odors and higher density? Will the property values decrease now that these apartments are closer to parking garage noise, garbage odors and higher density?

During the period of construction, what will the economic impact be on the Barnes/Sambuco Parcels? With construction noise less than twenty feet from bedroom windows, will there be any tenants on the Barnes/Sambuco Parcels? Will we lose tenants? Will rental values decrease during the construction period? If existing tenants leave during the period of construction, what will be the cost of finding replacement tenants? None of this has been analyzed, and it should be. The analysis should be made available for public comment.

The EA is deficient in that it does not compare the differential economic impact between: (1) the Waikiki Palms project as it is proposed in the EA; and (2) the Waikiki Palms project redesigned to comply with the Waikiki Special District Design Guidelines. This analysis should be prepared and the public should be allowed to comment on the adequacy of the analysis.

What will the socioeconomic impact be on local residents who occupy low income housing? What will be the rental values of the new structures compared to the previous structures which have now been developed? What will be the property values of the new structures compared to the previous structures which have now been developed? Will these new units be affordable? What is the demographic population that was displaced by demolition?



What is the new demographic population intended to be? How will this affect the demographics of the neighborhood?

#### IV. CONSTRUCTION IMPACTS

The EA does not discuss the impacts of construction on the closest neighbors. There can be no dispute that constructing a 65 foot tall structure less than 20 feet away from the window of an adjacent residence will have significant impacts. These impacts have neither been disclosed nor discussed.

##### A. Noise

Construction will be ongoing for 12 months. The activities will involve excavation, grading, pile driving and other types of construction activities. (EA at App. VI, p. 5.) The EA concedes that these activities could "generate significant amounts of noise." (*Id.*) This significance determination mandates that the City require that a full Environmental Impact Statement be prepared.

The Environmental Noise Assessment Report is inadequate. The methods employed during each stage of the construction process should be identified. Although the EA shows typical ranges of construction equipment noise, it should identify the particular types of construction equipment, the decibel level of the noise impacts, the duration and time of day of the noise impacts. It should also disclose whether construction activities are planned for the weekend, when more residents are likely to be home.

The Environmental Noise Assessment Report makes reference to typical noise levels from construction equipment. The peak decibel level for typical construction equipment is more than 100 dBA, significantly above the 60 dBA noise levels in the State DOH noise rules. The impacts of these noise levels are neither discussed nor adequately mitigated, and they should be.

While the noise impacts are generally discussed in the context of existing DOH and DOT regulations, the impact upon the human population is not discussed. What is the impact of noise at projected project levels upon the human populations? What is the impact of noise above 60 dBA upon human populations? The Hawaii Administrative Rules define noise as "any sound that may produce adverse physiological or psychological effects or interfere with individual or group activities including but not limited to communication, work, rest, recreation, or sleep." Haw. Admin Rules, Title 11, Chapter 46. The EA should analyze the adverse physiological or psychological effects. The EA should analyze interference with individual or group activities including but not limited to communication, work, rest, recreation or sleep.

The EA should also examine the different impacts on infants and seniors who are residents in the area more likely to be at home when construction is ongoing, and should identify the demographics of the nearby properties, assessing the noise impacts on each. It should particularly examine the noise impacts on the nearest adjacent building. For example, will the time restrictions for certain equipment use (such as jack hammers and pile drivers, which are limited to use during working hours) be sufficient mitigation for infants and seniors who may be in their residences during this period of time? Are there any night shift workers who sleep in these residences during the day? What will the impact be on these individuals?

The impacts on the human environment must be assessed, even if noise levels are successfully mitigated below maximum permissible property line levels. In other words, it is not sufficient for the EA to state that noise impacts are insignificant when mitigated below permissible regulatory levels. Noise impacts will still occur below regulatory levels. Those impacts must be identified and discussed.

What are the noise impacts upon workers involved in the construction activities? What are OSHA permissible noise levels? How do the noise levels of the construction activities for this proposed project compare to OSHA permissible noise exposure limits? Will onsite construction workers be provided with hearing protection? Will nearby residents be provided with hearing protection? If not, why not?

What measures are taken to incorporate noise mitigation into the construction plan? What noise monitoring will be conducted? What community meetings will be held to invite the neighboring residents and business owners to discuss construction noise? How will the Contractor respond to issues raised at such meetings?

What reasonable and standard practices will be used to mitigate noise? Will mufflers be used on diesel and gasoline engines? Will machines be properly tuned and balanced? Will temporary noise barriers be constructed? What time of day and usage limits will be used? Will backup alarms be disabled? Will Kaioo and its contractor make a commitment that no noise variances will be sought and there will be no work during evening or weekend hours?

The EA acknowledges that "Noise emanating from the parking garage to the neighboring residence may be audible and cause for complaint." (EA App. VI at 8.) What specific noise reduction levels will be implemented? Will Kaioo and its Contractor make a commitment the recommended noise abatement by treating the floor and ceiling of the garage? What products will be used? By how much will decibel levels be reduced? What will the impacts be at these reduced levels?

What is the cumulative impact of project noise, along with past present and reasonably foreseeable noise impacts? The EA acknowledges that "The rooftop mechanical equipment noise from the adjacent property exceeds the State DOH property line noise limits and could be cause for complaints from the residents of the proposed condominium on Kaioo drive." (EA App. VI at 8.) If existing noise levels exceed regulatory limits, how can the addition of the project noise be a permissible cumulative impact? The existing exceedence of property line noise limits should be assessed with (added to) the projected noise levels from the Waikiki Palms as part of a cumulative impacts analysis. These incremental impacts should then be added to other reasonably foreseeable impacts. From which "adjacent property" does this noise exceedence emanate? The Windsor? If so, is it reasonable for the same developer to create one exceedence, and the ignore that existing exceedence when it fails to prepare a cumulative impact analysis of noise?

The cumulative impacts discussion should also examine past construction activities in the area and future construction activities in the area. What was the impact on residents on the Barnes/ Sambuco parcels from the construction noise for the Windsor renovation combined with the construction noise from the Waikiki Palms construction? What future construction projects, public or private, are reasonably foreseeable? What are the impacts from these other construction projects? What are the impacts of construction noise when added to existing rooftop machinery noise?

**B. Dust**

What dust impacts will result from construction activities? How will dust impacts be mitigated? What are the impacts of dust on human health?

**C. Other Construction Impacts**

What other construction impacts will occur? Will portable toilets be used for the construction workers? Will there be odors? Where will the portable toilets be located?

**V. ARCHAEOLOGICAL IMPACTS**

A close review of the Archaeological Assessment reveals the existence of burials less than a block away from the project. (EA at App IX, p. 33, Fig 14). In 1999, Perzinski et al. found two human burials one block to the west. In 2005, Cultural Surveys Hawaii conducted an archaeological inventory survey for the nearby Ala Wai Gateway project site, approximately one block away to the west. Approximately one block away to the east, three burials were identified by Hurlbett in 1992, and in that same location, Beller identified three historical Hawaiian Burials in 1980. The exact distance of these burial locations to the proposed project site has not been identified or discussed.

# **CORRECTION**

THE PRECEDING DOCUMENT(S) HAS  
BEEN REPHOTOGRAPHED TO ASSURE  
LEGIBILITY  
SEE FRAME(S)  
IMMEDIATELY FOLLOWING

What is the cumulative impact of project noise, along with past present and reasonably foreseeable noise impacts? The EA acknowledges that "The rooftop mechanical equipment noise from the adjacent property exceeds the State DOH property line noise limits and could be cause for complaints from the residents of the proposed condominium on Kaioo drive." (EA App. VI at 8.) If existing noise levels exceed regulatory limits, how can the addition of the project noise be a permissible cumulative impact? The existing exceedence of property line noise limits should be assessed with (added to) the projected noise levels from the Waikiki Palms as part of a cumulative impacts analysis. These incremental impacts should then be added to other reasonably foreseeable impacts. From which "adjacent property" does this noise exceedence emanate? The Windsor? If so, is it reasonable for the same developer to create one exceedence, and the ignore that existing exceedence when it fails to prepare a cumulative impact analysis of noise?

The cumulative impacts discussion should also examine past construction activities in the area and future construction activities in the area. What was the impact on residents on the Barnes/ Sambuco parcels from the construction noise for the Windsor renovation combined with the construction noise from the Waikiki Palms construction? What future construction projects, public or private, are reasonably foreseeable? What are the impacts from these other construction projects? What are the impacts of construction noise when added to existing rooftop machinery noise?

**B. Dust**

What dust impacts will result from construction activities? How will dust impacts be mitigated? What are the impacts of dust on human health?

**C. Other Construction Impacts**

What other construction impacts will occur? Will portable toilets be used for the construction workers? Will there be odors? Where will the portable toilets be located?

**V. ARCHAEOLOGICAL IMPACTS**

A close review of the Archaeological Assessment reveals the existence of burials less than a block away from the project. (EA at App IX, p. 33, Fig 14). In 1999, Perzinski et al. found two human burials one block to the west. In 2005, Cultural Surveys Hawaii conducted an archaeological inventory survey for the nearby Ala Wai Gateway project site, approximately one block away to the west. Approximately one block away to the east, three burials were identified by Hurlbett in 1992, and in that same location, Beller identified three historical Hawaiian Burials in 1980. The exact distance of these burial locations to the proposed project site has not been identified or discussed.

The Archaeological Assessment states that human burials "exist throughout the breadth of the Waikiki area." EA at App. IX, p 38, 47.

Despite this statement, no subsurface archaeological survey has been conducted and made available for public review. Cultural Surveys Hawaii recommends "an archaeological inventory survey with a substantial subsurface testing component for the project area." (EA at App. IV, p. at 35). A subsurface archaeological survey should be prepared and made available for public comment

Given that burials in the area are likely to be encountered, a Burial Treatment Plan should be considered. At minimum, a full time archaeologist should be onsite to monitor field activities involving any ground disturbance. Has the alternative of preparing a Burial Treatment Plan been considered? Has full time professional monitoring been considered? If these alternatives have been dismissed, why?

The Archaeological Assessment recommends that "As a precautionary measure, personnel involved in future development activities in the area should be informed of the possibility of inadvertent cultural finds, and should be made aware of the appropriate notification measures to follow." (EA at App. IX, p. ii, 49). What information will be given? How are untrained personnel to recognize inadvertent cultural finds? Why aren't personnel specifically being advised of their obligations in the event a burial is encountered? What mitigation measures are in place to be sure that the advice given is heeded and proper actions will be taken? There is no indication in the EA that Kaiwo has made a commitment to follow these recommendations.

The EA should assess what the impacts will result if a burial or cultural remains are encountered. Compliance with law does not necessarily mitigate impacts.

## VI. CUMULATIVE IMPACTS

A Draft EA must analyze cumulative impacts. Cumulative impacts are defined as,

The impact on the environment which results from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

Haw. Admin R. § 11-200-2.

The Draft EA nowhere analyzes cumulative impacts. Instead the EA contains only two brief, unsupported and conclusory sentences indicating that the project will not result in cumulative impacts and will not generate future developments. (Draft EA at 55). There is no analysis, only unsupported conclusion. The public should have the opportunity to comment on the analysis, not just the conclusion.

The cumulative impacts section omits any mention or consideration of the effects of past actions. An omission of a mention or consideration of the effects of past actions has been held to be a deficient cumulative impacts analysis. Attached as Exhibit 3 are excerpts from an order filed on July 15, 2003 in *Office of Hawaiian Affairs v. Sean O'Keefe in the United States District Court for the District of Hawaii*. There is no dispute that the Waikiki Palms is being added to existing development in the area and that there have been substantial past actions in this part of Waikiki, including renovation of the Windsor and construction of the Watermark Waikiki. The EA fails as a whole to recognize and consider the effects of past actions in Waikiki.

The cumulative impacts section also omits any reference to reasonably foreseeable actions in the project area. The lack of analysis of reasonably foreseeable future impacts also results in a deficient cumulative impacts analysis. (Exhibit 3 at 22-23) As Judge Mollway has instructed, it is not only the effects of construction of a particular project that should be taken into account, but rather the effects of any action as a whole. The cumulative impacts discussion must be amended to discuss reasonably foreseeable future actions. This discussion must include "detail and analysis" regarding the reasonably foreseeable projects (Exhibit 3 at 23). The cumulative impact analysis in an EA requires "more than a 'snapshot' or mere description of past activities or existing environmental conditions. Rather, the EA must . . . analyze the effects of those activities." (Exhibit 3 at 25) In other words, the cumulative impacts discussion must do more than focus on existing conditions and address the incremental impact of the Waikiki Palms project.

The discussion of each category of impacts (demographic, economic, public services and environmental impacts) should be revised to include a cumulative impacts analysis. The cumulative impacts discussion should consider all of these impacts cumulatively.

#### **A. Cumulative Traffic Impacts**

Cumulative impacts are only given a short, and inadequate, analysis in the Traffic Impacts report. Table 5 of that report compares traffic impacts with existing traffic. It does not project future reasonably foreseeable projects and the traffic impacts due to the construction of those projects and ongoing additional traffic resulting from those projects.

Ardis Shaw-Kim  
March 29, 2006  
Page 14

The cumulative impacts discussion in the traffic analysis report is not a cumulative impact analysis at all. No future traffic impacts from other reasonably foreseeable traffic impacts are incorporated. Instead "A comparison of the project traffic with existing volumes on Hobron Lane identifies the cumulative impact." A cumulative impact analysis, as discussed above, is far more than a comparison of project data against existing conditions. A full traffic study is warranted by the significant existing traffic conditions in Waikiki and new project planned in the Waikiki area.

The traffic analysis should also focus on impacts resulting from the 12 months of anticipated construction activities for the Waikiki Palms, not just the additional vehicular traffic from the residents who will live in the new units.

The methodology for the traffic impacts analysis should be clarified and revised if appropriate. Reportedly, the trip factors per dwelling unit have been estimated based on typical data from the *Trip Generation Manual* published by the Institute of Transportation Engineers which has compiled data "typically for suburban areas with limited transit service." Waikiki, an urban area with extensive transit service is not necessarily represented by the data from the Trip generation manual.

A comprehensive traffic impact study should be prepared given the urban nature of Waikiki and the significant existing traffic impacts in that area. Mr. Ng states only that because the traffic impact is well below 100 vehicles per hour based on suburban traffic data from the mainland, that a traffic impact or site access study need not be prepared based on direction suggested by the Institute of Transportation Engineers. We disagree and request that a full traffic impact study be prepared.

## VII. CONSULTATION

The EA is also defective because required consultation has not been conducted. The Hawaii Administrative Rules require that the City,

Require the applicant, at the earliest practicable time, to seek the advice and input of the lead county agency responsible for implementing the county's general plan for each county in which the proposed action is to occur, and consult with other agencies having jurisdiction or expertise as well as those citizen groups and individuals which the approving agency reasonably believes to be affected.

Haw. Admin. Rules § 11-200-8(b)(1). There is no evidence in the EA that such consultation has occurred, or that if such consultation did occur, that the information gleaned from the



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consultation has been used to develop the content of the EA in any way whatsoever. Consultation must be done before an EA can be prepared.

When such consultation occurs, we request that we be consulted regarding the impacts on our building and its residents, closest to the project area.

### VIII. CONCLUSION

The EA is incomplete and therefore inadequate. Certain required analysis (visual impacts, noise, cumulative impact, etc.) is totally lacking. Mitigation measures are either not identified or are not discussed with sufficient particularity to allow public comment.

More analysis needs to be done and the document re-opened for public comment (including comment on adequacy of analysis and the adequacy of mitigation measures) before a decision can be made regarding the significance of the impacts from this project. Alternatively, a draft Environmental Impact Statement should be prepared and made available for public review and comment.

Very truly yours,

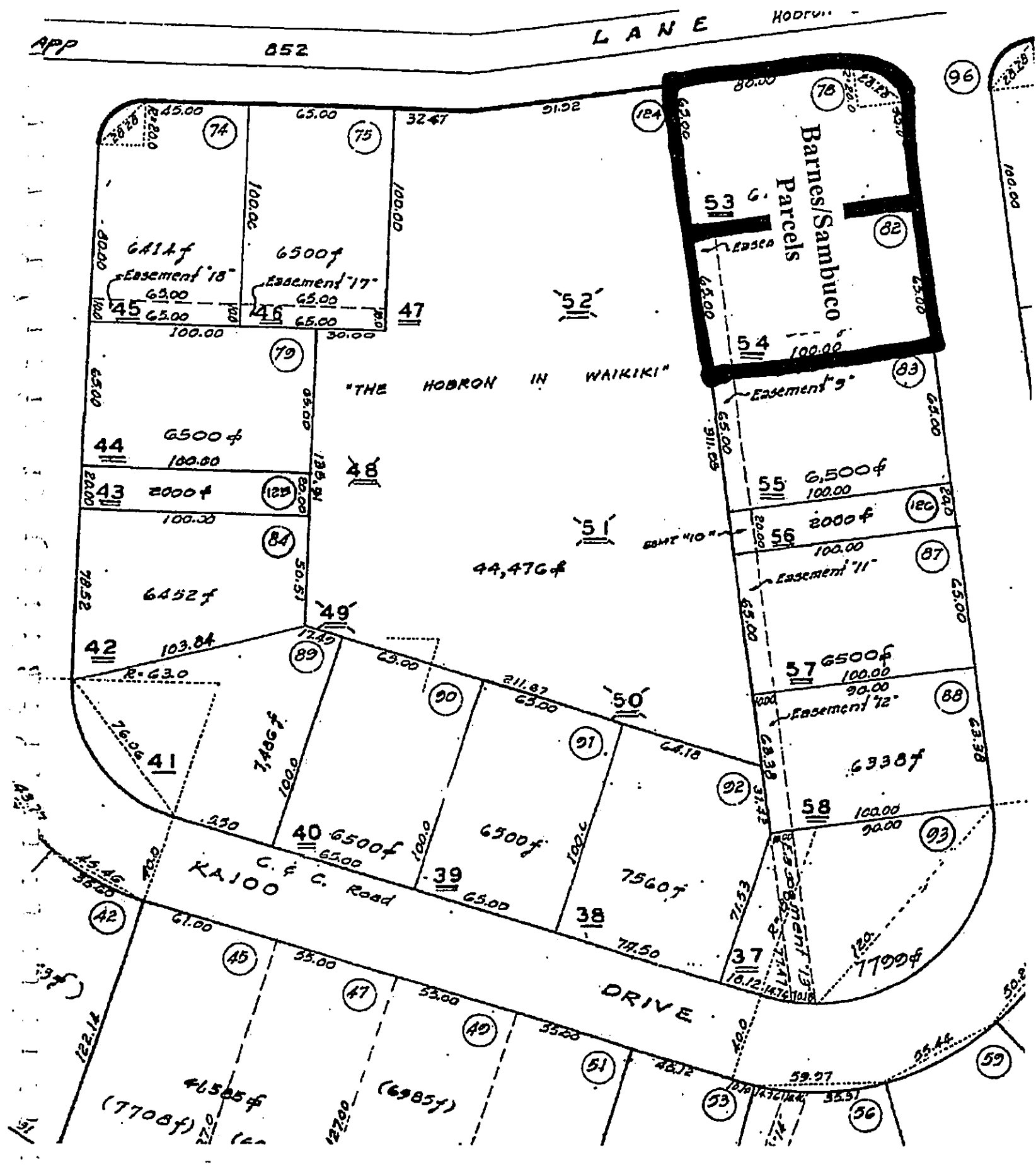


Kelly Barnes

#### Enclosures

- Exh. 1 – TMK Map
- Exh. 2 – West Elevation/Visual Impact Depiction
- Exh. 3 – Judge Mollway's Opinion

cc: Mayor Mufi Hannemann  
Henry Eng, Department of Planning & Permitting  
Larry Hansen, Kaioo LLC/U.S. Pacific Development  
Patrick Seguirant, Urban Design Branch, Land Use Permits Division  
Councilman Charles K. Djou  
Office of Environmental Quality Control  
Andrew Gomes, Honolulu Advertiser  
Carol Eblen, Esq., Goodsill Anderson Quinn & Stifel LLP  
Lisa Bail, Esq., Goodsill Anderson Quinn & Stifel LLP



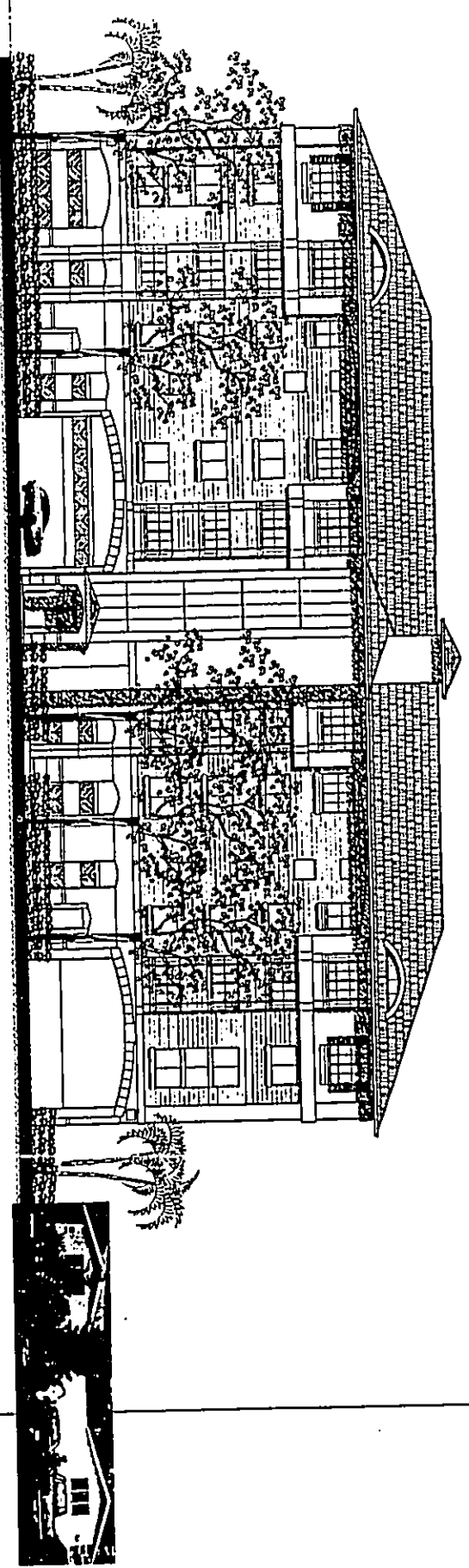
**EXHIBIT 1**

**IKIKI PALMS**  
SHEET NO. 1  
YASO DR. E. WARD, HAWAII  
LAKELAND

**BUILDING "A" - WEST ELEVATION**



**BUILDING "A" - NORTH ELEVATION**



**EXHIBIT 2**

FILED IN THE  
UNITED STATES DISTRICT COURT  
DISTRICT OF HAWAII

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF HAWAII

FILED: 15 2003

at 3 o'clock and 30 min. P.M.  
WALTER A. Y. H. CHINN, CLERK

The OFFICE OF HAWAIIAN )  
AFFAIRS, a body corporate )  
pursuant to Hawai'i Revised )  
Statutes Chapter 10, )  
 )  
Plaintiff, )  
 )  
vs. )  
 )  
SEAN O'KEEFE, in his capacity )  
as Administrator, National )  
Aeronautics and Space )  
Administration; ROLF-PETER )  
KUDRITZKI, in his capacity as )  
Director, University of )  
Hawai'i Institute for )  
Astronomy; et al., )  
 )  
Defendants. )

CIV. NO. 02-00227 SOM/BMK  
ORDER (1) GRANTING IN PART  
AND DENYING IN PART  
PLAINTIFF'S MOTION FOR  
SUMMARY JUDGMENT ON ALL  
CLAIMS; (2) DENYING  
PLAINTIFF'S RENEWED MOTION  
FOR SUMMARY JUDGMENT RE  
TIMING; (3) GRANTING IN PART  
AND DENYING IN PART  
DEFENDANTS' MOTIONS FOR  
SUMMARY JUDGMENT; (4) DENYING  
DEFENDANTS' MOTIONS TO STRIKE  
AND TO SUPPLEMENT

ORDER (1) GRANTING IN PART AND DENYING IN PART  
PLAINTIFF'S MOTION FOR SUMMARY JUDGMENT ON ALL CLAIMS;  
(2) DENYING PLAINTIFF'S RENEWED MOTION FOR SUMMARY JUDGMENT  
RE TIMING; (3) GRANTING IN PART AND DENYING IN PART  
DEFENDANTS' MOTIONS FOR SUMMARY JUDGMENT; (4) DENYING  
DEFENDANTS' MOTIONS TO STRIKE AND TO SUPPLEMENT

I. INTRODUCTION.

The Office of Hawaiian Affairs ("OHA") has sued Sean O'Keefe ("NASA") and Rolf-Peter Kudritzki ("Kudritzki") (collectively "Defendants"), alleging that Defendants have violated the National Environmental Policy Act of 1969, 42 U.S.C. §§ 4331 to 4346b ("NEPA"), the National Historic Preservation Act, 16 U.S.C. §§ 470 to 470x (the "NHPA"), and the Hawaii Environmental Policy Act, Haw. Rev. Stat. § 343 to 344 ("HEPA"), in connection with the proposed construction of four to six

**EXHIBIT 3**

notes that the NHPA specifically mentions Native Hawaiian organizations. The NHPA states that "[i]t shall be the policy of the Federal Government to . . . assist State and local governments . . . and Native Hawaiian organizations . . . to expand and accelerate their historic preservation programs and activities." 16 U.S.C. § 470-1(6). The NHPA mandates that a federal agency "shall consult with any . . . Native Hawaiian organization that attaches religious and cultural significance" to properties eligible for inclusion on the National Register. Id. § 470a(d)(6). It is undisputed that OHA is a Native Hawaiian organization within the meaning of the NHPA.

IV. THE ENVIRONMENTAL ASSESSMENT PREPARED BY NASA WAS INADEQUATE.

Because this court determines that the EA was substantively inadequate, the court denies OHA's renewed motion for summary judgment regarding timing and does not address the timeliness of the EA. See Kern v. U.S. Bureau of Land Mgmt., 284 F.3d 1062, 1074 (9th Cir. 2002) (declining to address the claim that the EA was untimely because the EA was inadequate even if timely). The court directs NASA to prepare a new EA. The court does not address OHA's other claims under NEPA; therefore, summary judgment is denied on all other NEPA claims.<sup>5</sup>

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<sup>5</sup> The court notes, and OHA conceded at the hearing, that the Sixth and Seventh Claims, which are purportedly asserted under the Administrative Procedures Act alone, are duplicative of the First through Fifth Claims. Summary judgment is therefore

Count 2 of the Complaint alleges that the EA is inadequate because it fails to evaluate the cumulative impacts of the outrigger telescopes project in conjunction with past actions at the Keck Observatory. Compl. ¶ 89. The Complaint then alleges that the "cumulative environmental impact of the ['Keck'] Project is significant. Accordingly, NASA is required to prepare an EIS." Id. ¶ 90. The record is insufficiently developed to permit the court to reach any conclusion as to whether an EIS is required for the outrigger telescopes project. Therefore, summary judgment is granted on Count 2 only as to the inadequacy of the EA.

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denied on the Sixth and Seventh Claims except to the extent that the court holds that the EA was inadequate and remands this matter to NASA for preparation of a new EA.

The court also denies OHA's request that the court enjoin Kudritzki from relying on the EA in the application for a Conservation District Use Permit ("CDUP") from the Hawaii Bureau of Land and Natural Resources ("BLNR"). See OHA's Mot. at 66-67. The CDUP application submitted by the University of Hawaii Institute for Astronomy ("IFA"), of which Kudritzki is the director, attaches NASA's Draft EA for "information purposes." See CDUP Application at AR 2895 (AR #142); see also id. at AR 3013. The CDUP Application also refers to the Draft EA. See id. at AR 3012-13. While the court rules that the EA is inadequate under NEPA, this ruling does not control the evidence that the IFA may refer to in a state permitting proceeding. A reference to a draft EA alone does not violate NEPA. Nor is the court concerned with whether such references somehow violate state law. As explained in this court's October 31 Order, Kudritzki has Eleventh Amendment immunity from claims based solely on state law. It is up to the BLNR to assess the evidence submitted in its proceeding.

The Ninth Circuit has held that "an EA may be deficient if it fails to include a cumulative impacts analysis or to tier to an EIS that has conducted such an analysis."<sup>6</sup> Kern, 284 F.3d at 1076. "Cumulative impact" is defined as

the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from other individually minor but collectively significant actions taking place over a period of time.

40 C.F.R. § 1508.7.

NASA's cumulative impacts section, which takes up only three pages in the 125-page EA, does not include an appropriate analysis. First, although the EA recognizes that cumulative impacts "refer to the incremental environmental impact of the action when added to other 'past, present, and reasonably foreseeable future actions, regardless of what agency . . . or person undertakes such other actions,'" the cumulative impacts analysis section omits any mention or consideration of the

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<sup>6</sup> "Tiering" refers to avoiding detailed discussion by referring to another document containing the required discussion. Kern, 284 F.3d at 1073. Tiering is encouraged by federal regulations to "eliminate repetitive discussions of the same issues and to focus on the actual issues ripe for decision at each level of environmental review." 40 C.F.R. § 1502.20. "However, tiering to a document that has not itself been subject to NEPA review is not permitted, for it circumvents the purpose of NEPA." Kern, 284 F.3d at 1073. The EA in this case does not tier to any other document.

effects of past actions. See EA at 123-25 (citing 40 C.F.R. § 1508.7). There is no dispute that the outrigger telescopes are being added to an existing set of substantially larger telescopes and that there have been substantial past "actions" at the Keck observatory site. Although there are scattered descriptions in the rest of the EA regarding current pollution and traffic levels, the EA fails as a whole to recognize and consider the effects of past actions on the summit of Mauna Kea.

Second, the EA defines "reasonably foreseeable" actions as those "relat[ing] to initiation of on-site construction of a new project within the Astronomy Precinct of Mauna Kea within the next seven years." EA at 123. The EA explains that that definition is based on the request by UH that "the total time allowed for completion of the Outrigger Telescopes Project be seven years after the [Conservation District Use Application ("CDUA")] permit is granted."<sup>7</sup> Id. In other words, the EA considers only those activities whose construction time might occur concurrently with the construction of the outrigger telescopes project. However, it is not only the effects of construction of a particular project that should be taken into account, but rather the effects of any action as a whole. For

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<sup>7</sup> NASA's consideration of "the next seven years" does not correspond to "seven years after the CDUA permit is granted." As the CDUA has not to date been granted, while "the next seven years" began to run some time ago, the EA's explanation of its choice of a seven-year period is now particularly baffling.



instance, there is evidence in the record that the physical appearance of the Mauna Kea summit, or the "viewscape," is of cultural and religious significance to Native Hawaiians and that the placement of the telescopes has an adverse effect on the viewscape. The effects of development at the summit would obviously last beyond construction.

NASA does not explain why seven years is an appropriate or logical limitation on reasonable foreseeability for NASA actions. Given NASA's insistence that it is engaged in long-term projects that require many years of planning, a seven-year, construction-related limitation is arbitrary. It is clear from the administrative record, for instance, that the onsite installation of the outrigger telescopes, which has not yet occurred, was reasonably foreseeable at least nine years ago. See Pilcher Dep. at 39 (stating that NASA knew in 1994 that CARA envisioned the outrigger telescopes as part of the Keck Interferometric Array). The Mauna Kea Science Reserve Master Plan, adopted by the University of Hawaii Board of Regents on June 16, 2000, discusses future development plans for the Astronomy Precinct section of Mauna Kea using a twenty-year time frame. See Mauna Kea Science Reserve Master Plan at IX-20 to IX-45 (AR 3287-3312). The cumulative impacts analysis in the draft EA, released in December 2000, defines "reasonably foreseeable" as relating to "detailed design of a new project and/or

fabrication of equipment for a new project within the Astronomy Precinct of Mauna Kea within the next five years." See Draft EA at 109 (AR 1822). Apparently, the EA was changed at some point to limit its discussion of future activities to those that were set for construction within a certain time frame rather than in the planning phases. NASA has not offered any explanation for that change.

Third, the EA's discussion of the "reasonably foreseeable actions" it does include is markedly lacking in detail and analysis. It describes each action in a separate paragraph, and, in each paragraph, notes that the action might result in increased traffic, dust, or noise. Although the EA states or suggests that the increase in traffic and dust attributable to each action would be minimal, nowhere does the EA discuss what the overall effect of all of the actions together might be. There is no attempt to quantify the amount of traffic and dust generated by those activities, even in relation to the traffic and dust generated by the outrigger telescopes project. Moreover, the description of the activities themselves is too general to be meaningful. See City of Carmel-Bv-The-Sea v. U.S. Dept. of Transp., 123 F.3d 1142, 1160 (9th Cir. 1997) (holding that the EIS described past projects in the area "with

generalities insufficient to permit adequate review of their cumulative impact").<sup>9</sup>

For instance, the EA notes that "the potential exists for an expansion of the existing Visitor Information Station at Hale Pōhaku" and that the expansion would result in "additional traffic on the lower portion of the Mauna Kea Access Road . . . and additional dust generation from the potential addition." EA at 124. The EA does not describe the proposed scope of the expansion, however, even though that information is in the administrative record. See Letter from W.T. Stormont, Director, Office of Mauna Kea Management, to C. Pilcher, Senior Scientist, NASA, of 1/14/02 (AR 3295) (noting that the expansion might include "an auditorium, Ranger offices/station, and an addition to house a 20" optical telescope") (hereinafter "Stormont Letter"). At least one project is mentioned but is excluded from the cumulative impacts analysis because its construction would not occur in the next seven years. See EA at 124-25 (suggesting that the construction of a proposed Next Generation Large Telescope ("NGLT") within the next seven years "remains speculative for purposes of analyzing cumulative impacts in this NEPA document"). The EA does not mention that the preliminary

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<sup>9</sup> The court recognizes that an EA need not necessarily reach the same level of detail as an EIS. However, because the purpose of an EA is to determine whether an EIS is required, some detail is necessary so that the agency can make an informed and reasonable decision.

"seeing" testing for the NGLT had already occurred in late 2001, with more testing expected in mid- to late 2002, although that information is also in the administrative record. See Stormont Letter (asking that NASA add to the cumulative impacts section a statement that such testing had already occurred and would be continuing).

NASA's own contentions regarding the EA's discussion of cumulative effects suggest that NASA misunderstands the nature of the "cumulative impact analysis" required under NEPA. For instance, NASA contends that "[t]he EA presents a clear snapshot of past, present, and future activities," and that the EA "provides a clear picture of existing activities in the Astronomy precinct." NASA Reply at 15; NASA Opp. at 41 (emphasis added). The cumulative impact analysis, however, requires more than a "snapshot" or mere description of past activities or existing environmental conditions. Rather, the EA must should analyze the effects of those activities. No such analysis is to be found in the EA. The EA focuses instead on existing conditions only to address the incremental impact of the outrigger telescopes project. See NASA Opp. at 40 (stating that the EA "reviews existing traffic levels, power usage, socioeconomic conditions and addresses impacts from the Outrigger Telescopes Project in conjunction with these current conditions" and that the EA "reviews the impact of the Outrigger Telescopes on existing

viewsapes through comparison to the current landscape"). The EA, however, should take into account more than the incremental change "in comparison to" the current environment, regardless of whether past changes in the environment are attributable to the agency or not. See Blue Mountains Biodiversity Project v. Blackwood, 161 F.3d 1208, 1213 (9th Cir. 1998) (stating that the agency should take into account the impact of its proposed action together with the effects of a recent forest fire).<sup>9</sup>

Finally, the court notes that, because there is no previous EIS or EA that encompasses the site of the outrigger telescopes project, NASA's obligation to consider the cumulative impacts of development at the Keck observatory is correspondingly greater. See Kern, 284 F.2d at 1078 (holding that, because there

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<sup>9</sup> In Blue Mountains, the Ninth Circuit rejected the Forest Service's argument that the incremental impact of its plan would be small in light of the natural disaster that had just occurred:

Despite its lack of data, the Forest Service asserts throughout the EA that the expected level of increased erosion and sediment delivery will be small in comparison to that caused by the fire. Whether the increased erosion from logging and roadbuilding is smaller or larger than that produced by the fire is irrelevant. The proper evaluation should identify the impact of the increased sediment from the logging and roadbuilding on the fisheries habitat in light of the documented increases that already have resulted from the fire.

161 F.3d at 1213.

was no cumulative impact analysis in the EIS for an entire Bureau of Land Management district, the "scope of the required analysis in the EA" for a specific site within that district was "correspondingly increased").<sup>10</sup>

The court notes, however, that its holding that the EA was inadequate because it lacks an appropriate cumulative impacts analysis is not a holding that the EA, or any subsequent EIS, must consider specific NASA actions other than the outrigger telescopes project. In other words, the court emphasizes that its holding regarding "cumulative impacts" is not a holding that there are "cumulative actions" (as that term is defined by federal regulations) that the EA or an EIS must consider in addition to the outrigger telescopes project.<sup>11</sup> See Native

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<sup>10</sup> In this case, of course, there is no EIS that encompasses the site of the outrigger telescopes project.

<sup>11</sup> An agency's NEPA analysis must consider not only the proposed action but also three other types of actions: "connected actions," "cumulative actions," and "similar actions." 40 C.F.R. § 1508.25(a); Kern, 284 F.3d at 1075. "Cumulative actions" are those "which when viewed with other proposed actions have cumulatively significant impacts and should therefore be discussed in the same impact statement." 40 C.F.R. § 1508.25(a)(2). "Connected actions" are those which "are closely related and therefore should be discussed in the same impact statement." Id. § 1508.25(a)(1). Actions are connected if they (i) automatically trigger other actions that may require environmental impact statements; (ii) cannot or will not proceed unless other actions are taken previously or simultaneously; (iii) are interdependent parts of a larger action and depend on the larger action for their justification. Id. "Similar actions" are those that, when "viewed with other reasonably foreseeable or proposed agency actions[,] have similarities that provide a basis for evaluating their environmental consequences

Ecosystems Council, 304 F.3d at 896 (noting that the EA should have addressed the impacts of certain actions in its cumulative impacts analysis but that those actions were not "cumulative actions").

The court remands this matter to NASA for preparation of a new EA in accordance with this opinion. The record is insufficiently developed for this court to determine whether the outrigger telescopes project would have a significant impact on the environment.<sup>12</sup>

Given this remand, the court declines to address claims relating to NASA's duty to prepare an EIS. The court does, however, note without ruling on the issue that it does not find compelling OHA's argument that NASA's regulations require NASA to prepare an EIS based on the potential impact of the outrigger telescopes project on a property eligible for listing in the National Register. See OHA Mot. at 42 (contending that, because it is undisputed that the outrigger telescopes project will have

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together, such as common timing or geography." Id. § 1508.25(a)(3). An agency "may wish to analyze [similar] actions in the same impact statement." Id.

<sup>12</sup> This remand will not necessarily delay NASA if it is ultimately allowed to complete its proposed outrigger telescopes project. At the hearing on the present motions, NASA estimated that a remand could take half a year to a year. NASA is awaiting a determination as to whether the State of Hawaii will issue the necessary permit, and any such determination might be challenged. Conceivably, the remand process could run concurrently with all or a part of the permitting process.

an adverse effect on a historic property, NASA has a mandatory obligation under its own regulations to prepare an EIS).<sup>13</sup>

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<sup>13</sup> OHA's argument is based on 14 C.F.R. § 1216.320, which states in part:

(1) Section 106 of the National Historic Preservation Act of 1966 (16 U.S.C. [470f]) requires identification of National Register properties, eligible properties, or properties which may be eligible for the National Register within the area of the potential impact of a NASA proposed action. Evaluation of the impact of the NASA action on such properties shall be discussed in draft environmental impact statements and transmitted to the Advisory Council on Historic Preservation for comments.

14 C.F.R. § 1216.320(a)(1) (emphasis added). OHA contends that the last sentence of section 1216.320(a)(1) "plainly" requires that an EIS be prepared whenever a proposed NASA action may have an impact on a historic property, such as the cinder cone cluster on Mauna Kea. See OHA Opp. at 17-19. By contrast, NASA contends that section 1216.320(a)(1) is meant simply to ensure that a draft EIS, when prepared, include a discussion of the potential impact on historic properties.

The text of the cited regulation itself appears inconsistent with OHA's interpretation, although the court leaves for another day any actual ruling on the matter. The initial paragraph of section 1216.320(a), which immediately precedes the paragraph quoted by OHA, states: "Headquarters officials and Field Installation Directors shall, to the maximum extent possible, conduct environmental analyses, assessments, and any impact statement preparation concurrently with environmental reviews required by the laws and regulations listed below." 14 C.F.R. § 1216.320(a) (emphasis added). That introductory language suggests that section 1216.304(a) does not determine whether an EIS is required, but that section 1216.304(a) ensures that, if an EIS is prepared, the EIS address concerns connected with the NHPA process.

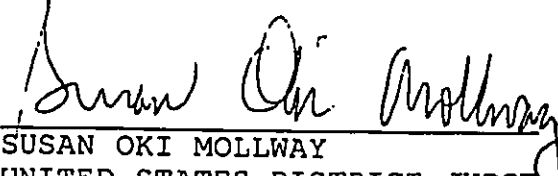
The court also notes that NASA's regulations contain separate subsections that list categories of actions requiring an EIS or excluded from the requirements to prepare an EA or EIS.



that it may complete the required cumulative impacts analysis and include it in a new EA. Summary judgment is granted in favor of NASA on the portion of the Fifth Claim alleging that NASA failed to make a reasonable and good faith effort to identify historic or traditional cultural properties. Summary judgment is denied to all parties on all other claims, and the motions to strike and to supplement are denied.

IT IS SO ORDERED.

DATED: Honolulu, Hawaii, July 15, 2003.

  
SUSAN OKI MOLLWAY  
UNITED STATES DISTRICT JUDGE

OHA v. O'Keefe et al., Civ. No. 02-00227 SOM/BMK; ORDER (1) GRANTING IN PART AND DENYING IN PART PLAINTIFF'S MOTION FOR SUMMARY JUDGMENT ON ALL CLAIMS; (2) DENYING PLAINTIFF'S RENEWED MOTION FOR SUMMARY JUDGMENT RE TIMING; (3) GRANTING IN PART AND DENYING IN PART DEFENDANTS' MOTIONS FOR SUMMARY JUDGMENT; (4) DENYING DEFENDANTS' MOTIONS TO STRIKE AND TO SUPPLEMENT.

KUSAO & KURAHASHI, INC.

*Planning and Zoning Consultants*

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2752 WOODLAWN DRIVE, SUITE 5-202  
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June 20, 2006

Mr. Kelly Barnes  
66 Queen Street, Penthouse 3803  
Honolulu, Hawaii 96707

Dear Mr. Barnes:

**Subject: Draft Environmental Assessment Comments on  
Waikiki Palms - Multi-Family Development  
1726-1916 Kaioo Drive - Waikiki  
Tax Map Key: 2-6-12: 37-44 and 55-58**

Thank you for your March 29, 2006 response to the Draft Environmental Assessment (EA) for the proposed Waikiki Palms multi-family development. The following responds to your comments:

The Draft Environmental Assessment (EA) addressed environmental impacts to the surrounding area, including the neighboring properties as well as proposed mitigation measures as required by State law and applicable rules. The Draft EA is complete and was prepared in accordance with Chapter 343, Hawaii Revised Statutes (HRS) and Chapter 200 of Title 11, Hawaii Revised Statutes and Chapter 200 of Title 11, Hawaii Administrative Rules. The Draft EA was determined to be complete and acceptable for processing by the Department of Planning and Permitting. Photographs of the adjacent parcels are included in the Draft EA and an additional aerial photo will be included in the Final EA to show the structures on the adjacent properties. These depict the relationship of the "Barnes/Sambuco" property to the project site.

The Draft EA presented an analysis of the anticipated environmental impacts. Based on the analysis in the Draft EA the environmental impacts for the project are not anticipated to be significant as outlined in the significance criteria established in Department of Health Administrative Rules. Accordingly, it is not anticipated that preparation of an Environmental Impact Statement (EIS) will be required.

It is our sincere belief that the project will enhance the area and result in a beneficial effect for the surrounding properties.

The Draft EA does not concede that construction impacts will be significant. The Draft EA states as follows: "The development will not result in substantial degradation

of the environment. Only minimal impact is projected during the construction phase."

#### I. VISUAL IMPACT

The approximate height of the proposed buildings is anticipated to be about 65 feet (mentioned several times in the Draft EA). The elevator machine room, which represents only a small portion of the rooftop, may exceed the general height of the building (also mentioned in the Draft EA). This height was described in the text and depicted in plans included in the Draft EA. By measuring the height of the building based on the scaled elevation, the building height is as noted 65 feet to the top of the main roof and extends to about 68.5 feet with the proposed elevator room. This additional height is not significant and is depicted on the elevation drawings. The structures will be well within the 350-foot height limit for the property.

Given the allowable height limit of 350 feet, the proposed 65-foot height of the structure to the top of the roof is modest in relation to the allowable height limit. In addition, at the height setback of 13 feet from the abutting "Barnes/Sambuco" property, the height of the building will be about 55 feet with a sloping pitched roof rising to 65 feet. In order to minimize impacts from the parking garage and view into the parking garage that seemed to be a concern, the applicant plans a solid wall face with a design feature presently planned as "chevrons" to soften the visual impact of the structure and landscaping to visually screen the proposed structure. For further noise mitigation from the garage and property a 6-foot high solid wall is planned along the "Barnes/Sambuco" property line. A similar solid wall has been provided on the abutting Windsor property and the other abutting property at 331/333 Hobron Lane (located at the corner of Hobron Lane and Kaioo Drive) and no walls or fences are planned on the Waikiki Palms property at this time fronting these two lots. The proposed Waikiki Palms development will meet the required height setbacks from the front, side and rear property lines providing adequate setback related to the planned height of the new structures. The landscaping adjacent to the "Barnes/Sambuco" property should provide additional visual screening over the 6-foot solid wall planned along this property line for tenants of the "Barnes/Sambuco" property.

The proposed Waikiki Palms is not out of character with the existing neighborhood which includes a mix of low-rise, mid-rise and high-rise apartment, condominiums and hotels. Abutting the project site is the 44-story Windsor and across the street are the 39-story Chateau Waikiki, the 4-story Kaioo Terrace, the 16-story Holiday Inn, and the 42-story Discovery Bay.

The Draft and Final EA's are disclosure documents intended to disclose anticipated impacts on the surrounding properties in general. They are not

intended to disclose in detail impacts on each individual lot in the surrounding neighborhood.

On page 11 of the Draft EA, under item 5. Surrounding Area, the following statement is made:

"On the ewa side of the property is an open parking lot and other multifamily buildings, including the 44-story Windsor."

Your apartment building and 331/333 Hobron Lane are the "other multifamily buildings" cited in this quote from the Draft EA.

We will include the Exhibit and your comment letter in the Agency and Public Comment Appendix of the Final EA. The relationship between the project site and abutting properties is depicted in photographs (including a new aerial photograph) and axonometric plans in the Final EA.

The "Existing Conditions" section of the Final EA is intended to reflect the existing condition of the project site. As was mentioned earlier, The "Surrounding Area" section notes that multifamily structures (including yours) are located on the ewa side of the property.

The plans on pages 1 and 6 and the renderings on page 7 of Appendix I in the Draft EA were intended to show the roof plan, site and landscape plan and the rendering of the proposed project and not surrounding properties. The relationship of the project site to surrounding properties is depicted in the photographs and axonometric plans provided in the Draft and Final EA's (including the new aerial photo).

As was mentioned earlier, the Draft and Final EA's are disclosure documents intended to disclose anticipated impacts on the surrounding properties in general. They are not intended to disclose in detail impacts on each individual lot in the surrounding neighborhood.

**A. Noncompliance with Waikiki Special District Design Guidelines (Transitional Heights)**

Based on the concerns presented in comments on the Draft EA, the applicant has modified his proposal to comply with transitional height setbacks and open space requirements. As such a comparison between a project that does not comply with Land Use Ordinance/Waikiki Special District Standards will not be required. The modifications required only minor adjustments to the location of the proposed structures and the

layout on the site plan and will not result in a development significantly different from that proposed in the Draft EA. The sides of the Waikiki Palms building facing the neighboring properties will be setback 13-feet from the property line, which satisfies the Land Use Ordinance requirements for transitional height setback.

As currently designed the project will comply with the Waikiki Special District Design Guidelines. These were addressed in Section X of the Draft EA. Page 4 of the Waikiki Special District Design Guidelines states that "A mixture of low, mid and high-rise buildings are recommended to provide adequate light and air, to create neighborhoods with a pedestrian scale and to provide height transitions to adjoining small scale projects." The 6-story Waikiki Palms buildings will provide an appropriate height transition from lower buildings in the area.

Waikiki Palms in conjunction with the low-rise structures and the high-rise Windsor provide a "graduated, stepped form" as encouraged by the Waikiki Special District Design Guidelines.

Based on your concern that the project does not meet the "additional setback from any front, side, rear yard or property line" the applicant has decided to modify the proposed development to comply with the required transitional height setback.

The impact of the proposed building structure and form on the "Barnes/Sambuco Property" will be mitigated by provision of the required transitional height setback required by the Waikiki Special District development standards and the provision of a solid 6-foot wall and landscaping to provide screening for this and other abutting properties (other abutting properties have provided their own solid screening walls).

**B. Open Space**

**1. Impacts of Zoning Variance**

Based on concerns that you and other commenting agencies raised, the project has been adjusted to provide the required amount of open space, accordingly there will be no impact associated with granting of a variance.

**2. Waikiki Special District Design Guidelines Regarding Open Space**

The applicant will comply with the Waikiki Special District Design Guidelines including those related to open space, water features and landscaping. The Draft EA notes a swimming pool in a private park area and provides a conceptual landscape plan.

The sign wall has not yet been designed and the height of the sign has not been determined. The ground sign will not exceed the size permitted by the LUO. The sign will be located on private property and will not impact access to public areas.

The applicant intends to provide a six-foot high wrought iron fence or fence of similar transparency along Kaioo Drive with breaks for driveways and walkways to the building. As such the setback will be two feet from the property line providing a two-foot public access area along the Kaioo Drive frontage of the property. In addition, the public will have a visual connection through the entire landscape area with the front yard of the project.

A conceptual landscape plan was attached as part of Appendix I. This plan identifies the location, type of landscaping and samples of the species to be used. This landscape plan provides adequate detail to determine that the visual effect will be a significant improvement over the former development on the property that provided minimal open space and landscaping.

The applicant proposes an open space recreational area in the northeastern corner of the site and also surrounding each of the buildings. Configuring the open-space in this manner creates usable open-space for the residents and is consistent with the illustration for "preferred location for open space" illustrated on page 5 of the Waikiki Special Design District Guidelines. The northeastern corner of the project consists primarily of a private recreational area that will create an area for social interaction and visual relief. The proposed landscaping for the open space areas was included in the Draft EA as part of Appendix 1. The Final EA will include a plan showing the open space areas. The adjoining Windsor project has its own screening wall, however, on the Waikiki Palms side of the wall, the yard are abutting the Windsor wall will provide open space and landscaping. The project provides open

space adjacent to the "Barnes/Sambuco" property which will integrate provide an additional buffer over the proposed six foot solid wall planned to provide additional screening for the "Barnes/Sambuco" property. The planned landscape in this side yard will provide additional screening for the "Barnes/Sambuco" property from the wall of the parking garage and the condominium units above. A similar landscape area will be provided at the other end of Kaioo Drive where the landscaping will again provide screening to supplement the screening wall on the neighboring property.

The 13-foot wide open space side yard are similar to the 18-foot front and rear yards and provides a lush perimeter of open space surrounding the structures. This lush landscaping will provide a two-foot landscape perimeter open to the public right-of-way on Kaioo Drive. This two-foot perimeter landscaping will provide a physical link between public and private open spaces and the remaining landscape area on the project side of the fence will provide a visual link with the public and abutting private open spaces.

The private open space at the northeastern corner of the lot and front yard will be adjacent to the public sidewalks and roadway and will be visually linked to these public open spaces.

The applicant will comply with the open space requirements. The project will not "deprive owners and occupants of adjoining properties of open space"

The Draft EA showed the setback of the proposed buildings from the property lines. The proposed multi-family buildings will now be setback 13 feet from the property line along the "Barnes/Sambuco" property line and the other adjoining property at the other side of Kaioo Drive. This 13-foot side yard is similar to the 18-foot front and rear yards and provides adequate buffering from the surrounding parcels. The placement of the open space recreational area at the northeast corner is consistent with the Waikiki special District Design Guidelines relative to the placement of open space and is centrally located to the project creating a more usable recreational area for the residents of the project.

The Final EA will not address "mitigation measures" to compensate for the proposed for the lack of open space because the required open space will be provided and no variance will be required.

### 3. Alternatives of Open Space Alternatives

The proposed project will comply with the open space requirements. The Final EA will discuss a project that complies with the open space requirements and all zoning requirements and the Waikiki Special Design District guidelines.

The alternatives will be restructured. The no action alternative will be considered leaving the site in its current vacant state. A new 82-unit alternative will be considered. The final alternative will be the proposed 116 units which will comply with open space requirements and the Waikiki Special Design District guidelines.

## II. PARKING IMPACTS

In order to mitigate potential noise, light, visual impacts, and odor from the proposed parking garage on abutting property owners, adjacent to the side yards of the property, the applicant plans to provide a solid wall for the parking levels. This solid wall will serve to minimize potential impacts from noise, light, visual impact and odors from the proposed parking garage. Lights from inside the parking garage will not impact the two properties that abut the project's side yards. In addition, an existing screening wall on the 331/333 Hobron Lane property and a planned six-foot high solid screening wall planned along the property line with the "Barnes/Sambuco" property will provide further screening from noise and light impacts from the Waikiki Palms.

The outdoor light fixtures will be provided in accordance with the LUO and Waikiki Special District Design Guidelines which call for lighting to contribute to public safety. In addition outdoor lighting will be subdued or shielded and provided so as not to produce glare and light spillage onto surrounding properties, or public rights-of-ways. The applicant intends to provide lights at or below the 10-foot height on the exterior of the building to better control light spillage onto surrounding properties. Interior lighting from the proposed parking levels will not impact the "Barnes/Sambuco" property because there will be a solid wall along the two levels of parking that face the "Barnes/Sambuco" property and an additional six-foot high solid screening wall at the "Barnes/Sambuco" property line.



The Draft EA included conceptual floor plans and parking plans showing the location of the elevators. The elevators are designated with the standard "X" in the elevator stall and appears in the lobby area of the buildings at the main entrance to the building and is carried through to the parking levels. The elevators for Building A are located within the lobby situated in the middle of the structure to provide adequate distance and buffer from the neighboring residences. The dumpsters will be situated next to the elevators in the interior of the building, providing a 70-foot separation from the property line of the adjacent "Barnes/Sambuco" property. The dumpster's location will result in multiple walls between the dumpsters and the "Barnes/Sambuco" property line. This distance and multiple walls, coupled with the plan for lids on the dumpsters will provide multiple mitigation measures to minimize odor impacts on the neighboring property. The dumpster's lids will also provide control of pests and vermin generally associated with refuse containers. Although garbage at multi-family project is typically collected two to three times a week a garbage pickup schedule has not been established for the project. The City collects garbage in this neighborhood twice a week. Sound levels associated with garbage trucks range from 90 to 100 at 50 feet from the source. Again the 70-foot distance will provide noise mitigation for the "Barnes/Sambuco" property. Placing the covered garbage dumpster within an enclosed room provides mitigation from visual impacts, odor impact and pests.

The project is anticipated to have a beneficial impact to the area as a result of the quality of the project and its future residents, proposed landscaping and compliance with the Waikiki special District requirements for design and open space and is anticipated to revitalize the immediate area.

It should be noted that parking on the existing surrounding properties and the former apartments on the project site did not conform to city standards. Cars parked on these properties must reverse onto the public street resulting in an unsafe condition for pedestrians and other motorists. Cars parked in the project's parking garage will enter into the

Impacts from vehicle exhausts are not expected to impact the nearest residents. Solid walls at the points nearest to the residences will provide adequate mitigation from exhaust fumes. According to the traffic report, traffic volumes entering and exiting the project, even during peak periods will not be significant. Parking is dispersed across two levels across the project site. Cars are not expected to be "idling" within the parking garage. For these reasons exhaust fumes from vehicles are not anticipated to have a significant impact on surrounding properties. The attached information from the noise consultant further addresses your concerns related to noise. Noise generated by automobiles on the site will be no different than existed prior to

demolition of the multi-family dwellings and is similar to the noise currently generated by automobiles and other vehicles that operate and park in the area. The noise generated from vehicle alarms or unshielded motorcycle mufflers will generally be no different than the existing conditions and will in fact be improved in that these alarms will now be mitigated by the noise attenuation provided by the partially enclosed parking garage and the solid wall at the side yards of the project. This will provide better mitigation than was available with former open parking lots on the project site and existing open parking areas in the surrounding neighborhood.

It is anticipated that the Association of Apartment Owners (if a condominium) or the owner (if a rental apartment complex) will promulgate and enforce rules governing alarms, motorcycle muffler noise and other noises for the benefit of the residents, which will also benefit the adjacent property owners.

The proposed parking will be located on private property and will not impact public access. The parking located in the parking garage is not anticipated to adversely impact the surrounding neighborhood. The elevation drawings and landscape plans illustrate that the two parking levels will be screened from view. The applicant is proposing a solid wall to separate the two levels of parking from the "Barnes/Sambuco" property and the abutting property at the other side yard.

The shallow depth of the project lot and existing flood regulations effectively preclude locating the parking behind the buildings, within a basement, or within the interior of the block. The Waikiki Special District Design Guidelines (WSDDG) allows parking along the street provided certain criteria are met.

Your letter states that no landscaping plan has been provided for public to review and comment. Appendix 1 includes a conceptual landscape plan. This conceptual landscape plan identifies the location, type of landscaping and samples of the species to be used. This landscape plan provides adequate detail to determine that the visual effect will be a significant improvement over the former development on the property that provided minimal open space and landscaping. This landscape plan shows that the proposed landscaping will be consistent with the Waikiki Special District Design Guideline requirements for buffering and screening.

Regarding your discussion of tree counts on the west end of Buildings A and B, please note that multi-trunk palm trees are called out on the Landscape Plan, which is what is depicted on the West Elevation of Building A. Mature, multi-trunk palms (Areca or MacArthur palms) are expected to be even more lush and dense than shown on the building elevation drawings. Landscape design is expected to be reviewed carefully by the city, and tree counts and

arrangement of trees will be a collaborative effort of the project's landscape architect and the city planners.

### III. SOCIOECONOMIC IMPACT

The Final EA will be amended to note that former property manager may have lost some income as a result of demolition of these rentals. It is not evident that "old jobs were abruptly terminated." This is a temporary condition as new property management work will be required with the proposed development. In addition, landscaping work and maintenance and repair work on the new units will provide additional employment for the project.

Given the allowable height limit of 350 feet, the proposed 65-foot height of the structure to the top of the roof is modest in relation to the allowable height limit. In addition, at the height setback of 13 feet from the abutting "Barnes/Sambuco" property, the height of the building will be about 55 feet with a sloping pitched roof rising to 65 feet. In order to minimize impacts from the parking garage and view into the parking garage that seemed to be a concern, the applicant plans a solid wall face with a design feature presently planned as "chevrons" to soften the visual impact of the structure and landscaping to visually screen the proposed structure. The proposed Waikiki Palms development will meet the required height setbacks from the front, side and rear property lines providing adequate setback related to the planned height of the new structures. The landscaping and open space adjacent to the "Barnes/Sambuco" property should provide a pleasant visual effect over the planned six-foot solid screening wall for tenants of the "Barnes/Sambuco" property.

Rental values have been increasing as a result of market forces. The Final EA will explain that garage noises and odors are not expected to be significant as explained in the previous section on parking. The nominal increase in the number of units (34 additional units) over the 1.66 acre property is not a significant increase in density related to number of units. It should be noted that the density at the Windsor was recently reduced from 596 hotel units to 181 condominium units. The net effect of the Windsor and the Waikiki Palms is a reduction of 381 units resulting in a significant reduction in traffic and other related environmental impacts.

As far as the increase in floor-area (another form of density) planned for this project over the previous apartment structures, the quality of the new structures and overall improvement in open space and landscaping should enhance surrounding property values rather than decrease them.

Property values are based on appraisals and the sale of comparable properties in the area. It is possible and likely that the sales of the proposed units could be used as "comparable properties", adjusted for age and condition for the purpose of determining property values for the adjacent properties including the "Barnes/Sambuco" property resulting in enhancement of property values for the surrounding properties. We expect that upgrading the neighborhood with new landscaping and open space will enhance property values and potential rental income for surrounding properties. As mentioned earlier, parking garage noise and garbage odor will be mitigated in the proposed development and should not adversely impact abutting properties. The increase in densities for this property is not significant and when considered in conjunction with the reduction in units at the Windsor, actually results in a net decrease in unit counts (density) and impacts. Should some of the units in the proposed development be rented, it could result in an increase in rental rate potential for neighboring low-rise units as renters compare rental rates on nearby properties, using the Waikiki Palms for comparison.

Construction impacts will be temporary (estimated at 12 to 14 months) and will be mitigated. It is generally recognized that the rental market has been extremely tight with low vacancies and higher rents, particularly for rentals of apartments similar to the "Barnes/Sambuco" property in Waikiki. As a result of market conditions, the demand for rentals is expected to remain high in spite of minor temporary construction impacts that may result from the proposed project.

Construction activity is an acceptable phenomenon in Honolulu and Waikiki, particularly in older neighborhoods where structures may have outlived their economic value. With mitigation measures in place and the existing tight rental market, the proposed construction is not expected to have a significant adverse impact on rental income of neighboring properties. Over the long term, the upgrade of these properties with a quality multi-family development, with improved open space and landscaping should enhance property values and rental income.

The applicant has modified the project to comply with the Waikiki Special District Guidelines related to open space and transitional height setback as recommended in your letter. The comparison requested between a project not in compliance and a project in compliance will not be required.

The project will is not expected to have any impact on local residents who now occupy low income housing. These families will continue to rent low income housing units unless they otherwise become ineligible. It would be reasonable to expect that the rental income per unit (if units are rented) would be higher for this new development in relation to the older low-rise units formerly on the property

due to the better quality of the units and due to the fact that rental income has been rapidly increasing in recent years. However, there is a good chance that these units will be sold to homeowners that will live in the units and not rent them out. The project is now planned as a condominium that will be sold to individual owners and not as a rental project; however the developer has reserved the right to operate the property as a rental apartment complex. It is not the intent of the developer to provide units for sale to families earning incomes at levels that would qualify them for affordable housing. Units will be sold at market rates. The vital statistics of those families that previously occupied the property is not known. The developer does not intend to market the units to any particular demographic group. The demographics of this neighborhood is already a mixture of lower and higher income residents given the luxury high rises located nearby and the low-rise older apartment buildings in the neighborhood. The mid-rise units planned on this property will probably be considered more middle of the road in terms of the existing demographic falling between the low-rise older structure tenants and the high-rise unit owners with ocean and mountain views. Page 15 of the Draft EA discusses how the project is expected to impact population in the area.

#### IV. CONSTRUCTION IMPACTS

The Draft EA contains sections addressing construction impact on surrounding properties (which include closest neighbors) and proposed mitigation measures related to noise and dust.

##### A. Noise

The Draft EA contains a Noise Assessment which discusses construction noise and other noise impacts associated with the project and in the surrounding area. The Final EA will include additional information regarding noise in response to your questions. The Draft EA stated that "The various construction phases may generate significant amounts of noise." then went on to discuss and recommend measures to mitigate noise impacts.

The construction noise will be short term and must comply with State of Hawaii Community Noise Control Rules and the construction noise permit issued for the project. Once completed, the project will not result in an increase in ambient noise levels. Short term construction noise impacts would not in and of itself trigger a requirement for a full EIS, particularly where mitigation measures are recommended and followed where feasible.

The noise consultant response to your noise related questions related to construction impacts and ranges of construction equipment noise, types of construction equipment, decibel levels, and duration of noise impacts. The time of construction is expected to be between 7:00 am and 3:30 pm Monday through Friday. Occasionally clean up of the construction site may occur on Saturdays, but this activity will not be noise intensive and should not result in a significant noise impact on surrounding neighbors. Depending on the availability of concrete deliveries, it is possible that concrete pours may occur on Saturdays, however, given the concrete requirements of the project, Saturday work related to concrete pours will total four Saturdays at most.

Over the 2 year construction period, the use of the loudest equipment, pile drivers are expected to be used for only about 20 days, less than 3% of the total construction period.

In order to mitigate noise impacts, the applicant will follow the guidelines of noise permits that may be necessary for the project. Department of Health (DOH) will determine the terms of each permit, including the allowable hours of operation. Mitigation measures recommended in the Noise Assessment will be considered to further mitigate noise impacts due to construction. The applicant plans to use improved pile drivers that utilize 20% less power and emit no exhaust and provides for noise impact reduction.

The noise impacts on human populations are discussed by the noise consultant in the attached response to your comments.

Nearby residents will not be provided with hearing protection, because the distance between neighbors and the construction equipment and the exposure period is not expected to result in significant adverse impact to neighbors. The construction worker may be operating in close proximity to equipment with significant noise impacts and over extending periods during their workday.

The developer does not have plans at this time to conduct special community meetings with neighboring residents and business owners. There are no plans at this time to seek a noise variance from the State Department of Health. Noise variance applications typically require that surrounding property owners be notified of the variance request.

Noise impacts at the parking garage will be mitigated by the solid wall at the closest residences and with the garage design that includes only one

turn and is designed so vehicles will not have the ability to build up speed on approach to that turn. The applicant will also follow the noise consultant's recommendation for floor treatment to reduce noise impacts.

The noise consultant has responded to other noise reduction at the parking garage and the potential reduction in noise levels and cumulative noise impacts.

**B. Dust**

Page 39 of the Draft EA addressed dust control measures that would be undertaken when appropriate, including frequent watering of the site during construction, paving and landscaping exposed areas as soon as possible, and installation of dust screens when needed.

**C. Other Construction Impacts**

As with other construction projects the developer expects to use portable toilets for construction workers. These are temporary and are designed to minimize odors. The location of the portable toilets has not been determined at this time however, they will not be located in close proximity to the "Barnes/Sambuco" property.

**V. ARCHAEOLOGICAL IMPACTS**

A figure showing the previous archeological work, including discovered burials relative to the project site, will be included in the Final EA as part of the Archeological Inventory Survey.

The Archaeological Inventory Survey recommends consultation with the State Historic Preservation Division for a possible archaeological monitoring program during any future development in the project area. This monitoring program if required would contain the information specified in Section 13-279-4 Hawaii Administrative Rules. This information will describe the kinds of archaeological resources anticipated to require protection and also describe the work needed to protect the anticipated historic properties. Preparation of a Burial Treatment Plan is inappropriate at this time because human remains have not been encountered on the site. If remains are encountered, the requirements of Chapter 6E-43 Hawaii Revised Statutes and Chapter 13-300 Hawaii Administrative Rules will be followed. Professional monitoring has not been dismissed.

The applicant has contacted the State Historic Preservation Division (SHPD) to determine if an archaeological monitoring program will be required prior to start of construction. The applicant will follow recommendations of SHPD. The applicant will engage the Cultural Surveys Hawaii to provide an orientation for construction workers charged with ground disturbing activities to train them on their actions upon finding cultural artifacts or bones.

If a monitoring program is required, the applicant expects that an archaeologist will be either on-site or on-call during ground disturbing activities greater than a depth of one foot.

## VI, CUMULATIVE IMPACTS

The Draft EA addressed cumulative impacts in that it takes into account existing conditions which represent past and present conditions. The proposed development represents a net increase in 34 units on the project site which will have a marginal impact on the environment. Accordingly, the impact of the project can reasonably be characterized as insignificant. When all known projects in close proximity to the project site are considered representing recent past, present and future developments, we find that there was a conversion of 596 hotel units to 181 condominium units at the Windsor; there will be 212 units replacing 230 units formerly on the property at the Ala Wai Gateway (Watermark); and 116 units replacing 82 units in the proposed Waikiki Palms development. The net cumulative impact is a reduction of units from 908 units to 509 units, resulting in a reduction of 399 units. The net result is about a 40% reduction in the total number of units in these three projects. A reduction of 399 units in this neighborhood represents a significant reduction in traffic impacts, noise impacts, and air quality impacts in the area and should represent a positive impact on the environment.

The sections on demographic, economic, public services and environmental impacts will be expanded to include cumulative impacts related to the increase in residential units and the decrease in hotel units from development completed at the Windsor, and planned at the Watermark (under construction) and Waikiki Palms.

### Cumulative Traffic Impacts

The Traffic Assessment Report ("Report") accounted for cumulative traffic as the existing traffic counts in Table 5 of the Report noted existing traffic primarily in 2004 which accounts for the traffic from the new Windsor development. Table 5 also considered projected traffic from the "Waikiki Gateway" (should have been Ala Wai Gateway) and the proposed Kaiwo Apartments (now Waikiki Palms). As



was mentioned earlier, the cumulative impacts in the immediate area are related to the Windsor Development (the reduction in traffic from the conversion from hotel to condominium units is reflected in the existing traffic) and the Ala Wai Gateway (now Watermark) and the proposed Kaioo Apartments (now Waikiki Palms).

The cumulative impacts in the area were adequately addressed by Table 5 analysis within the Cumulative Traffic Impacts section of the Report. As was mentioned in the Report, the traffic engineer followed the nationally accepted standard for determining the need for a traffic impact study ("full traffic study") and the national threshold for this project was not met.

The potential project impacts were identified for weekday peak hours in the morning and afternoon, when project traffic (at completion) and other traffic in the area are at their highest levels. Traffic generated by construction activities are not expected to exceed the volumes at completion.

The 12 months of construction will not result in a significant amount of impact on surrounding residents given the relatively large open space at the planned recreational site located between the two structures that can be used for staging construction equipment and vehicles on the property. The construction stage is not expected to generate more traffic during the peak hours than the proposed Waikiki Palms development upon full buildout. As such the traffic impact during construction is expected to have minimal impact, similar to the traffic at full buildout.

Traffic engineers are normally a very conservative group and as such, utilizing data "typically for suburban areas with limited transit services" probably overstates the trips that would be expected for an urban area such as Waikiki with transit services and dining, retail and opportunities for social and recreational activities nearby. This overstatement in number of trips comes from the fact that more vehicle trips can be eliminated by residents opting to use convenient transit services and deciding to walk to nearby eateries, convenience stores, retail stores and recreational and social areas in close proximity to the Watermark and Waikiki Palms developments. Even with this overstated impact from trips generated by the Watermark and Waikiki Palms developments, traffic impacts are not expected to be significant.

Given the significant reduction in trips from the cumulative impact of the loss of 596 hotel units and an increase of 197 condominium units, the cumulative impact is an overall reduction in trips for the peak hours and for the 24-hour traffic volumes from the project area. With a cumulative reduction in traffic, a full traffic impact study is truly not warranted.

## VII. CONSULTATION

In addition to those agencies that were listed on page 3 of the Draft EA the following were also consulted prior to preparation of the Draft EA.

- Department of Planning and Permitting:
  - Urban Design Branch
  - Zoning Adjustments Branch
  - Subdivision Branch
  - Building Division
  - Wastewater Branch
- Honolulu Fire Department
- Board of Water Supply
- Waikiki Neighborhood Board
- FEMA (Federal Emergency Management Agency)
- Mr. Kelly Barnes, an adjacent landowner

The design of the project and content of the Draft EA is based on input received from the consulted parties.

## VIII. CONCLUSION

The Draft EA is complete and adequate. Visual impacts, noise impacts and cumulative impacts, related to traffic and other impacts have been considered. Some of these impacts will be more fully discussed in the Final EA.

Mitigation measures have been addressed in Section VI of the Draft EA.

Additional information will be added to the Final EA. The Draft EA included the content requirement specified in Chapter 343, Hawaii Revised Statutes and the applicable rules.

Your letter and this response will be included in the Final EA. The public will have additional opportunity to comment on the project during the processing of the Waikiki Special District Permit.

Very truly yours,



Ardis Shaw-Kim

cc: Kaioo LLC



D. L. ADAMS ASSOCIATES, LTD.

Consultants In Acoustics and Performing Arts Technologies

May 12, 2006

Kusao & Kurahashi Inc.  
2752 Woodlawn Dr #5-202  
Honolulu, HI 96822

Attention: Ms. Ardis Shaw-Kim

**RE: Waikiki Palms Draft Environmental Noise Assessment Comments (DLAA #05-81)**

Dear Ms. Shaw-Kim:

The following are comments to the questions posed by the City and County of Honolulu and Kelly Barnes in regards to our draft Environmental Noise Assessment for the Waikiki Palms project in Waikiki:

*C&C of Honolulu, Section VIb.: More specific mitigation measures to minimize the impacts of pile driving (such as the use of mufflers) should be discussed. In addition, the use of different materials at the parking structure floor should be discussed.*

**DLAA Response:** Products available to reduce the radiated noise from a pile driver include shock absorbing pads placed on the pile cap, enclosures around the hammer's noise exhaust, and sound damping compound painted across the web of each pile. A sound barrier wall at the property line could also reduce construction noise where the line of sight between the construction equipment and the residence is blocked.

The floor of the garage will be treated (e.g., floor surface will be scored or textured) to reduce tire squeal noise. Design should consider treating the ceiling with sound absorptive material to reduce the build-up of noise within the garage.

*Kelly Barnes, page 7: What is the decibel level associated with the refuse collection trucks? What type of dumpsters will be used? What is the decibel level associated with lifting and replacing the dumpsters? What time of day and how often will refuse pickups be scheduled?*

**DLAA Response:** Sound levels from garbage trucks range from 90 to 100 dBA at 50 feet from the source. Sound levels from refuse collection are not expected to change from existing refuse collection on Kaiwo Drive. The City and County of Honolulu determines the refuse collection schedule.

*Kelly Barnes, page 7: What impacts will result if a vehicle alarm goes off in the middle of the night only 20 feet from a resident's bedroom window? What impacts will result from unshielded motorcycle mufflers?*

**DLAA Response:** It should be no different than when an alarm of an automobile parked on the street is activated now, during the middle of the night.

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*Kelly Barnes, page 9: The methods employed during each stage of the construction process should be identified. Although the EA shows typical ranges of construction equipment noise, it should identify the particular types of construction equipment, the decibel level of the noise impacts, the duration and time of day of the noise impacts. It should also disclose whether construction activities are planned for the weekend, when more residents are likely to be home.*

DLAA Response: The noise permit will have all construction equipment listed. All construction activities must comply with the State DOH noise permit issued for the project.

The table below identifies various types of construction equipment, the acoustical usage factor (i.e., the fraction of time each piece of construction equipment is operating at full power during a construction operation), and the calculated  $L_{max}$  and  $L_{eq}$  at a distance of 20 feet.  $L_{max}$  is the maximum noise level during a noise event whereas the Equivalent Sound Level ( $L_{eq}$ ) is a type of average which represents the steady level that, integrated over a time period, would produce the same energy as the actual signal.

Table 1<sup>+</sup> Construction Noise Levels in  $L_{max}$  and  $L_{eq}$  at 20 feet from Source  
 Calculated @ 20 ft

Description	Impact Device	Usage (%)	$L_{max}$ * (dBA)	$L_{eq}$ (dBA)
Backhoe	No	40	85.5	81.5
Compressor (air)	No	40	85.6	81.6
Crane	No	16	88.5	80.6
Concrete Mixer Truck	No	40	86.8	82.8
Concrete Pump Truck	No	20	89.4	82.4
Dozer	No	40	89.6	85.6
Dump Truck	No	40	84.4	80.4
Excavator	No	40	88.7	84.7
Generator (<25KVA, VMS signs)	No	50	80.8	77.8
Impact Pile Driver	Yes	20	109.2	102.2
Vibratory Pile Driver	No	20	108.8	101.8
Paver	No	50	85.2	82.2
Pickup Truck	No	40	83.0	79.0
Pneumatic Tools	No	50	93.1	90.1
Pumps	No	50	88.9	85.9
Vacuum Street Sweeper	No	10	89.5	79.5
Warning Horn	No	5	91.1	78.1

<sup>+</sup> Roadway Construction Noise Model (RCNM), Version 1.0, FHWA-HEP-05-05; U.S. Department of Transportation, January 2006.

\* Calculated  $L_{max}$  is the loudest level

*Kelly Barnes, page 9: The Environmental Noise Assessment Report makes reference to typical noise levels from construction equipment. The peak decibel level for typical construction equipment is more than 100 dBA, significantly above the 60 dBA noise levels in the State DOH noise rules. The impacts of these noise levels are neither discussed nor adequately mitigated, and they should be.*

DLAA Response: As shown in Table 1 above, only the pile driver is predicted to operate at levels above 100 dBA at distance of 20 feet. The DOH makes an exception for impulsive noise, where the maximum permissible sound level is 10 dBA greater than the maximum permissible sound levels for all other noises.

The DOH must issue a permit to allow for the operation of construction equipment which emits noise levels in excess of the "maximum permissible" levels. A detailed schedule of plans, procedures, and specifications for the attenuation of noise level emissions from the source emitting excessive noise must be submitted to the DOH in application for the noise permit. Mitigating construction noise at the source is the most effective form of noise control. The source control methods listed in Table 2 can be applied to most construction equipment.

**Table 2. Construction Noise Source Control Methods**

Scheduling	Limit activities that generate the most noise to less sensitive time periods (e.g. daytime hours).
Substitution	Use quieter methods/equipment when possible (e.g. low noise generators, smaller excavators, etc.).
Exhaust Mufflers	Install quality mufflers on equipment.
Reduced Power Options	Use smallest size and/or lowest power as required.
Quieter Backup Alarms	Install manual adjustable or ambient sensitive alarms. Do not use backup alarms during night work.

When source control measures are not sufficient to avoid a noise impact, path control measures must be considered. A temporary sound barrier wall could be constructed at the project property lines to help mitigate construction noise. The sound barrier wall will not eliminate construction noise, but will help reduce the impact of noisy construction activities for the neighbors closest to the construction site. Design should include location and height of noise barrier walls.

*Kelly Barnes, page 9: What is the impact of noise at projected project levels upon the human populations? What is the impact of noise above 60 dBA upon human populations? The EA should analyze the adverse physiological or psychological effects. The EA should analyze interference with individual or group activities including but not limited to communication, work, rest, recreation, or sleep.*

DLAA Response: There is ample data to show the relationship between noise-induced permanent hearing loss and daily, steady-state noise exposure of 8-hour durations over a period of years. However, the exposure to intermittent noise of shorter durations, such as construction noise, is dependant on noise level, duration, number of exposures, and other factors. The following Table 3 shows HIOSH guidelines for permissible noise exposure times. The threshold of hearing discomfort and pain is 120 dB and 140 dB, respectively. Noise from construction activities at the Waikiki Palms project is expected to be short term and temporary.

**Table 3. HIOSH Permissible Noise Exposures**

Sound Level (dBA)	Permissible Exposure Time
90	8 hours
92	6 hours
95	4 hours
97	3 hour
100 dB	2 hours
102 dB	1.5 hours
105 dB	1 hour

General physiological effects of noise include change in blood circulation, skin resistance to electrical potentials, muscle tension, breathing, and sleep. As with hearing loss, research has found that these changes have occurred in individuals who are exposed to high sound levels over long periods of time. Construction should not be allowed during nighttime hours.

The psychological response to noise is difficult to quantify and is dependent on personal factors including attitude or mood, personal environment, whether the noise is an arousal or distraction, and whether the sound is sensed as an invasion of privacy. Noise does not generally interfere with human performance unless the noise level exceeds 90 dBA.

Research has shown that speech intelligibility is dependent on the distance from the speaker to the listener, voice level, and the ambient noise level. Face-to-face communication at a "normal" voice level becomes increasingly difficult as ambient noise levels exceed 70 dBA.

*Kelly Barnes, page 10: The EA should also examine the different impacts on infants and seniors who are residents in the area more likely to be at home when construction is ongoing and should identify the demographics of the nearby properties, assessing the noise impacts on each. What will be the impact on night shift workers?*

DLAA Response: We do not have demographic data on the residents in the vicinity of the Waikiki Palms project site. A noise impact will occur during the construction phase of the Waikiki Palms project. Infants, seniors, and nightshift workers who may be in their residences during the day will hear and may be impacted by construction noise. We are not aware of any research that concludes infants and seniors are more sensitive to construction noise than the rest of the population. However, noise from construction activities will be short term and must comply with State of Hawaii Community Noise Control Rules and the construction noise permit issued for the project.

*Kelly Barnes, page 10: The impacts on the human environment must be assessed, even if noise levels are successfully mitigated below maximum permissible property line levels.*

DLAA Response: Again, a noise impact will occur during the construction phase of the Waikiki Palms project. However, noise from construction activities will be short term and must comply with State of Hawaii Community Noise Control Rules and a construction noise permit issued by the DOH.

Kusao & Kurahashi Inc.  
May 12, 2006  
Page 5 of 6

*Kelly Barnes, page 10: What are OSHA permissible noise levels? How do the noise levels of the construction activities for this proposed project compare to OSHA permissible noise exposure limits? Will onsite construction workers be provided with hearing protection?*

DLAA Response: Table 3 lists HIOSH permissible noise exposures. As construction work hours are limited by the State DOH noise permit, noise from the construction site at the neighboring buildings will not exceed the HIOSH permissible levels. In addition, construction noise will occur intermittently throughout the permitted construction hours. The HIOSH permissible exposure times apply to steady-state noise exposure. Employers must provide hearing protection to all employees who are exposed to an 8-hour time-weighted average of 85 dB or greater.

*Kelly Barnes, page 10: What measures are taken to incorporate noise mitigation into the construction plan? What noise monitoring will be conducted? What community meetings will be held to invite the neighboring residents and business owners to discuss construction noise? How will the Contractor respond to issues raised at such meetings?*

DLAA Response: See Table 2 and the following paragraphs for a description of recommended construction noise mitigation. The Contractor must respond to this question.

*Kelly Barnes, page 10: What reasonable and standard practices will be used to mitigate noise? Will mufflers be used on diesel and gasoline engines? Will machines be properly tuned and balanced? Will temporary noise barriers be constructed? What time of day and usage limits will be used? Will backup alarms be disabled? Will Kaiwo and its Contractor make a commitment that no noise variances will be sought and there will be no work during evening or weekend hours?*

DLAA Response: Reasonable and standard practices used to mitigate construction noise have been listed in previous paragraphs. The aforementioned are all standard practices that the Contractor could implement during construction of the building. The State DOH noise permit hours are listed in the EA. The Contractor will need to respond to specific construction requests.

*Kelly Barnes, page 10: What specific noise reduction levels will be implemented [for the parking garage]? By how much will decibel levels be reduced? What will the impacts be at these reduced levels?*

DLAA Response: Specific noise reduction must be addressed and chosen during design of the building. Noise reduction treatments can reduce noise levels up to 10 dB.

*Kelly Barnes, page 11: What is the cumulative impact of project noise, along with past, present, and reasonable foreseeable noise impacts? If existing noise levels exceed regulatory limits, how can the addition of the project noise be a permissible cumulative impact? The existing exceedence of property line noise limits should be assessed with (added to) the projected noise levels from the Waikiki Palms as part of a cumulative impacts analysis. These incremental impacts should then be added to other reasonably foreseeable impacts. From which "adjacent property" does this noise exceedence emanate?*

Kusao & Kurahashi Inc.  
May 12, 2006  
Page 6 of 6


DLAA Response: There is no existing impact due to the Waikiki Palms project. As stated in the EA, with an effective design, the Waikiki Palms project is not expected to have a future noise impact. Therefore, there is no cumulative impact of project noise. Existing ambient noise levels exceed regulatory limits. However, the Waikiki Palms project is not expected to "add" noise. The ambient noise environment at the Barnes/Sambuco parcels is expected to decrease as the proposed building should block the line of sight from the offending rooftop equipment to the Barnes/Sambuco residences at the back of the property. The location of the excessive mechanical equipment was stated in the EA.

*Kelly Barnes, page 11: The cumulative impacts discussion should also examine past construction activities in the area and future construction activities in the area. What was the impact on residents on the Barnes/Sambuco parcels from the construction noise for the Windsor renovation combined with the construction noise from the Waikiki Palms construction? What future construction projects, public or private, are reasonably foreseeable? What are the impacts from these other construction projects? What are the impacts of construction noise when added to existing rooftop machinery noise?*

DLAA Response: We cannot address the Windsor project since we were not involved. Data on past, present or future construction activities in the area has not been assessed nor is it available for review. We do not expect a cumulative impact due to construction noise and existing rooftop mechanical equipment noise. The mechanical equipment is audible when background noise levels are lowest, i.e., during the evening and nighttime hours. Noise from construction activities should be short term and must comply with State of Hawaii Community Noise Control Rules and a construction noise permit issued by the DOH, i.e., construction will occur during the daytime hours. We do not have information on future projects in the area.

Please call if you have any questions.

Sincerely,



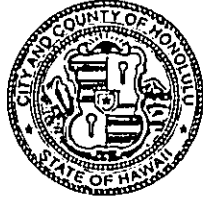
Dana Dorsch



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

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MUFI HANNEMANN  
MAYOR



HENRY ENG, FAICP  
DIRECTOR

DAVID K. TANOUE  
DEPUTY DIRECTOR

2006/ED-1(TC)

April 11, 2006

Ms. Ardis Shaw-Kim  
Kusao & Kurahashi, Inc.  
2752 Woodlawn Drive, Suite 5-202  
Honolulu, Hawaii 96822

Dear Ms. Shaw-Kim:

Re: Chapter 343, HRS, Draft Environmental Assessment (DEA)  
DPP Project Reference No. 2006/ED-1  
Project: Waikiki Palms – Multi-Family Development  
Location: 1726-1916 Kaioo Drive - Waikiki  
Tax Map Key: 2-6-12: 37-44 and 55-58

Transmitted for your response and incorporation into the project's Final Environmental Assessment (FEA) are agency comments on the Draft Environmental Assessment (DEA) received thus far by the Department of Planning and Permitting (DPP). Most of these comments were previously faxed to you; we will transmit any others that are received after the date of this letter.

Additionally, the DPP has reviewed the project's DEA, and transmits the following comments:

1. Section IV – Impacts

- a. Vehicular and Pedestrian Traffic – Discuss and illustrate the traffic impacts of adding a stacking left-turn lane along Hobron Lane at the Kaikoo Drive intersection. Discuss whether the cumulative increase in traffic volumes from surrounding developments would warrant a signalized intersection at Hobron Lane and Kaioo Drive. Also, submit a written response from the State Department of Transportation to the proposed increase in the left-turn stacking lane on Ala Moana Boulevard. In addition, discuss the proposed modifications to Ala Moana Boulevard proposed by the Hilton Hawaiian Village Waikikian project.

- b. On-Street Parking – Discuss and compare the amount of on-street parking stalls before, during, and after the completion of the project. How many legal and illegal on-street parking stalls are currently available along the street frontage of the project site? How many on-street parking stalls will be available during construction? How many on-street parking stalls will be available after the completion of the project?

Parking fronting the site and particularly at driveways may be restricted as part of this development.
  - c. Driveways - Driveway grades should not exceed five (5) percent for a minimum distance of 25-feet from the property line. Driveways should be constructed as standard City dropped driveways and adequate sight distance to pedestrians and other vehicles should be provided and maintained. As necessary, driveway locations should be located as far from curves in the roadway as practical.
  - d. Loading - The loading area should be located at a central location for all users of the facility to discourage loading activities from occurring on Kaioo Drive. The loading area should be designed so that there is no reversing of vehicles on Kaioo Drive and all necessary maneuvering can conveniently be provided for on-site.
  - e. Walkways - Internal walkways leading to the sidewalk on Kaioo Drive should be located before the point of curvature in the road to increase pedestrian visibility.
2. Section V – Alternatives Considered – Discuss and show other development alternatives considered or potentially possible under current rules and regulations. If the proposed development does not meet open space requirements, then discuss what building configuration(s) would meet it and its corresponding impacts.
  3. Section VI – Mitigation Measures
    - a. Archaeological Inventory Survey – This study with applicable mitigation measures shall be submitted with the Final Environmental Assessment.
    - b. Noise – More specific mitigation measures to minimize the impacts of pile driving (such as the use of mufflers) should be discussed. In addition, the use of different materials (that will assist with noise attenuation) at the parking structure floor should be discussed.

4. Section IX – Land Use Ordinance

- a. Lot Area - Verify lot area listed for proposed project (72,354 s.f. versus 72,135 s.f.).
- b. Transitional Height Setbacks - Show how the proposed project complies with the required transitional height setbacks. Revise drawings as required.
- c. Yards and Setbacks - Drawings should include the property lines, required yards, transitional height setbacks, building heights, and critical dimensions to show compliance with the rules and regulations of the Land Use Ordinance (LUO).
- d. Loading – Please note that no loading stall or maneuvering area is permitted in the required yard.
- e. Floor Area - Please note that stairs and elevators located on the parking levels (because they serve the upper residential floors) will be counted as floor area. The areas under the driveway ramps will be counted as floor area unless they are shown as “dead” spaces. Revise your floor area tabulations as required.
- f. Flood Fringe District Certification - Flood Fringe District Certification shall be required to establish the Regulatory Flood Elevation (finish floor elevation).

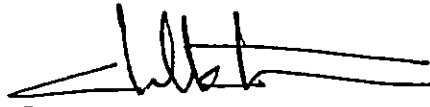
5. Section X – Waikiki Special District

- a. Open Space - Discuss how the proposed project meets the three (3) tests of hardship for a zoning variance to allow less than the required amount of open space (50 percent of zoning lot). Show an outline of the proposed open space areas on a site plan, indicate their respective areas, and provide open space area tabulations.
  - b. Existing Trees – Discuss and show all existing trees (with 6-inch caliper or more) to be removed, retained, or relocated. Identify tree species, caliper, spread, and height. Assess their condition and how they meet the criteria for removal.
6. Primary Urban Center Development Plan – Since the existing policy of the Primary Urban Center Development Plan encourages mixed uses as an essential component of the land use designation (Medium and Higher-Density Residential/Mixed Use), discuss how the project integrates or is in close proximity to offices, retail services, and recreation and community facilities.

Ms. Ardis Shaw-Kim  
April 11, 2006  
Page 4

Should you have any questions or need additional information, please contact Anthony Ching of our Urban Design Branch at 527-5833.

Very truly yours,

  
Henry Eng, FAICP, Director  
Department of Planning and Permitting

HE:cs

cc: OEQC

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*Planning and Zoning Consultants*

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June 8, 2006

Henry Eng, FAICP, Director  
Department of Planning and Permitting  
City and County of Honolulu  
650 So. King Street, 7<sup>th</sup> Floor  
Honolulu, Hawaii 96813

Attention: Mr. Anthony Ching, Staff Planner

**Subject: Draft Environmental Assessment Comments on  
Waikiki Palms - Multi-Family Development  
1726-1916 Kaioo Drive - Waikiki  
Tax Map Key: 2-6-12: 37-44 and 55-58**

Dear Mr. Eng:

Thank you for comments, dated December 30, 2005, on the Draft Environmental Assessment for the Waikiki Palms Multi-family development. Our response is as follows:

1.a. Vehicular and Pedestrian Traffic

Hobron Lane currently carries one lane of traffic in each direction with parallel parking or loading permitted curbside along most of both sides of the street. Restriping Hobron Lane to provide a separate lane to store vehicles waiting to turn left into Kaioo Drive will require that the travel lane(s) be relocated closer to the curb, resulting in the loss of several parking spaces and portions of the existing loading zones.

The driveway to the Ala Wai Gateway (now Watermark) project site appears to form the fourth leg of the existing T-intersection of Kaioo Drive and Hobron Lane. For a signal to be warranted at this intersection, left turn volumes from either the Ala Wai Gateway project or from Kaioo Drive (not both, and not a combined total) must exceed 75 vehicles per hour for each of eight hours of a typical day, or exceed 80 vehicles per hour for each of the four hours of a typical day when total traffic on Hobron Lane exceeds 1,100 vehicles per hour (2:00 PM to 6:00 PM, based on a 24+ hour count summarized in the appendix of the Ala Wai Gateway traffic study). Based on the information provided in the Ala Wai Gateway traffic report, volumes from that side are nowhere near meeting the

warrant. On the Kaioo Drive side, traffic counts are not available to determine if the left turn volumes exceed the minimums; however, it would be reasonable to estimate that the volume of traffic making the left turn from Kaioo Drive to Hobron Lane is less than the volume making left turns from Hobron Lane to Lipeepee Street (3-way stop intersection just to the north). The appendix in the Ala Wai Gateway traffic report shows peak hour traffic counts at this intersection; the highest volume of left turns from Hobron Lane to Lipeepee Street is 63 vehicles per hour. Thus a traffic signal at this intersection is not warranted.

A copy of the traffic assessment for the project has been sent to the State Department of Transportation with a request for a review of the proposed left turn stacking lane on Ala Moana Boulevard.

The following roadway and traffic operations improvements were proposed along Ala Moana Boulevard as part of the Hilton Hawaiian Village Waikikian project (listed geographically, from Ala Wai Canal toward Kalakaua Avenue, or west to east):

1. Increase the length of the eastbound left turn pocket on Ala Moana Boulevard for left turns to Hobron Lane (mauka).
2. Adjust the timing of the existing traffic signal at the intersection of Ala Moana Boulevard and Hobron Lane.
3. Add a fourth eastbound lane on Ala Moana Boulevard, from Hobron Lane to Kalia Road.
4. Remove the old roadway segment located makai of the eastbound lanes of Ala Moana Boulevard in the vicinity of the Ilikai east driveway. Provide a new bus parking area in front of the existing ramps to the Ilikai parking garage and a new driveway to Ala Moana Boulevard.
5. Connect Dewey Lane directly to the eastbound lanes of Ala Moana Boulevard and create a new median opening on Ala Moana Boulevard where Dewey Lane intersects Ala Moana Boulevard. Provide new sidewalks through the area and landscape the unpaved areas.
6. Provide a new traffic signal system to control movements at the intersection of Dewey Lane and Ala Moana Boulevard; provide crosswalks across Dewey Lane and across Ala Moana Boulevard.
7. Construct a new westbound left turn pocket on Ala Moana Boulevard for left turns to Dewey Lane.
8. Widen the right turn from eastbound Ala Moana Boulevard to Kalia Road from one to two lanes; add a right turn signal and pedestrian signals for the pedestrian crossing across these lanes.

9. Adjust the timing of the existing traffic signal at the intersection of Ala Moana Boulevard and Kalia Road/Ena Road and coordinate the timing of the signals along Ala Moana Boulevard from Atkinson Drive to Kalia Road.

10. Increase the length of the westbound left turn pocket on Ala Moana Boulevard for left turns to Kalia Road.

These improvements are intended to address the traffic related to the Hilton Hawaiian Village Waikikian project.

1. b. On-Street Parking

There is currently parking for about 26 cars along the property frontage without markings, and 23 cars if the stalls were marked (using the City's standard practice of marking 22-foot stalls with 18-foot stalls at the ends). The future number of parking stalls is estimated to be relatively unchanged with a total of about 26 unmarked stalls and 23 marked stalls. Generally, the location of on street parking will change with an increase in parking in the middle of the block (where there are broad existing driveways fronting parcels 90, 91 and 92) and a decrease in other areas. Under existing conditions, unauthorized parking is available for about eight cars along these lengthy driveway aprons. Parking along these driveway aprons should not be allowed. A recent parking count found that 43 cars were parked along the property frontage, parked bumper to bumper and along the driveway curb cuts and aprons.

The number of parking spaces available during construction will depend on the areas that the city will allow the contractor to utilize. We anticipate that this will be determined by the Department of Transportation Services upon application for a street usage permit

We acknowledge that parking fronting the site and particularly at the driveways may be restricted as part of this development.

1.c. Driveways

Driveways will be designed to not exceed 5% slope for the first 25-feet from the property line. The driveways will be constructed as standard City dropped driveways and adequate sight distance to pedestrians and other vehicles will be provided and maintained, with details worked out with City traffic engineers.

1.d. Loading

The loading area is centrally located between the two buildings to provide access for both buildings. A backup area for loading vehicles will be provided on site and allow all necessary maneuvering to occur on-site and allow vehicles to exit in a forward manner. The Final EA will include a site plan showing the changes to the loading space.

1.e. Walkways

At their current locations the internal walkways leading to the sidewalk on Kaiwo Drive are expected to provide sufficient pedestrian visibility to motorists exiting the site. The pedestrian walkway at Building B is located near the point of curvature in the road but is approximately 55 feet from the proposed driveway. Motorists exiting this driveway and sidewalk will be entering a one-way street traveling away from the pedestrian walkway.

2. Alternative Considered

The design team is working with the staff at the Department of Planning and Permitting (D.P.P.) to address compliance with current rules and standards including open space requirements and reducing or eliminating the maneuvering for loading vehicles within the front yard to allow for the required landscaping. The projects compliance with these standards will be discussed in the Final EA.

3.a. Archaeological Inventory Survey

The Archeological Inventory Survey and mitigation measures will be included in the Final EA.

3.b. Noise

More specific mitigation measures to minimize potential noise impacts will be included in the Final EA.

The developer is considering use of a Junttan Hydraulic Impact Hammer, a relatively new piece of equipment with low impact noise and no exhaust.

4.a. Lot Area

The total lot area is 72,135 square feet. This will be consistent in the application material.

4.b. Transitional Height Setback

The project will comply with the Transitional Height Setback requirements as reflected in the revised drawing submitted with the Final EA.

4.c. Yards and Setbacks



The project will comply with the Land Use Ordinance requirements related to yards and setbacks, as reflected in the revised drawings submitted with the Final EA.

4.d. Loading

The developer has modified the site plan to eliminate the loading stall and maneuvering area currently shown within the front yard. Revised plans will be included in the Final EA.

4.e. Floor Area

The floor area calculations provided include those areas defined by the Land Use Ordinance as "floor area".

4.f. Flood Fringe District Certification

The applicant will provide a Flood Fringe District Certification to establish the Regulatory Flood Elevation.

5.a. Open Space

Due to plan revisions, the project will comply with open space requirements and a variance will no longer be required. The Final EA will include a revised site plan showing the revisions.

5.b. Existing Trees

The existing vegetation consists of remnant landscaping that was not removed during the demolition of the previously existing older structures. It is likely that much of this remnant vegetation will be removed or relocated so that the proposed project can be implemented. In conjunction with application for the Waikiki Special District Permit for tree removal and the project, the applicant will discuss and show all existing trees (with 6-inch caliper or more) to be removed, retained, or relocated. The species, caliper, spread, and height will be identified. A certified Arborist will be employed, if needed, to assess their condition and determine which ones can survive relocation.

6. Primary Urban Center Development Plans

The project is in close proximity to a variety of retail establishments at the following locations:

6.a. Discovery Bay - There are several levels of retail establishments across Kaioo Drive in the Discovery Bay complex including several eating establishments.

- 6.b. Corner of Hobron and Ala Moana - ABC Store. This store sells staples including bread and milk.
- 6.c. Ena Road Establishments - The Wailana Coffee Shop and a variety of other retail establishments are located at the Canterbury Place.
- 6.d. The Ala Wai Boat Harbor and Fort DeRussy Beach Park are within walking distance of the project. These locations will provide recreational opportunities for the future residents of the project.

Your comment letter and this response will be included in the Final Environmental Assessment.

Very truly yours,



Ardis Shaw-Kim

cc: Kaioo, LLC

**APPENDIX XI**  
**NEIGHBORHOOD BOARD MINUTES**

[Government](#) | [Kama'aina](#) | [Business](#) | [Visitors](#) | [Kids World](#) | [Seniors World](#) | [On-Line Services](#) | [Economic Development](#)

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## WAIKIKI NEIGHBORHOOD BOARD

### MINUTES OF REGULAR MEETING SEPTEMBER 13, 2005 WAIKIKI COMMUNITY CENTER

**CALL TO ORDER:** The meeting was called to order by Chair Finley at 7:02 p.m. A quorum of 11 members was present.

**MEMBERS PRESENT:** Jo-Ann Adams, Leslie Among, Bert Benevento, Tom Brower, David Chen, Louis Erteschik, Robert Finley, Walt Flood, Raymond Gruntz, John Kaimi, Jeffery Merz, Mike Peters, Richard Poole, Mary Simpson.

**MEMBERS ABSENT:** Jeff Apaka, Nathaniel Childs, Jack Myers

**GUESTS:** Keith Rollman (Mayor's Representative); James Burke (City Department of Transportation Services); Bob Kessler (Waikiki Residents' Association); Kelley Barnes, Joe Cowing, Mary Cowing, Jan Bappe, Emily Reed, Mary Cherry, Laura Warfield, Corey Dillman, Robert Herberger, Joan Naguwa, Emily Arneson, Daisy Murai and Helen Carroll; Lt. Mei Aiona, Sgt. Harold Rabacal (Honolulu Police Department); Capt. Paul Nishihara (Honolulu Fire Department); Eric L. La'a (Representative Scott Nishimoto's Staff); Representative Galen Fox; Marsha Wienert (Governor's Office); Anne Stevens (Senator Trimble Staff); Councilmember Djou and Lori Wingard (Councilmember Djou's Staff); Scott Muraoka (Board of Water Supply); Rick Egged (Waikiki Improvement Association); Michelle Matson (Waikiki Residents' Association); Joey Manahan (Neighborhood Commission Office Staff).

Tom Brower arrived at 7:08 p.m.

**APPROVAL OF MINUTES** —The Board voted unanimously to approve the minutes with the following corrections:

Page 1, under item 1 of the treasurer's report, the operating budget should read, "\$1430.24"

Page 2, under item 1 of the HFD report, "bursh" should read "brush".

Page 3, under "expidite" should read "expedite"

Page 4, under item 4 of the Questions, answers, and comments section of the Mayor's Representative section, Mr. Apaka's name should be removed.

Leslie Among arrived at 7:14 p.m.

**TREASURER'S REPORT** – Mr. Chen distributed the report and highlighted the following: 1) There is \$1301.68 in the operating budget. 2) There is \$2,941.00 in the publicity budget. 3) There is \$120.00 in the refreshment budget. 4) Copies of the treasurer's report are available upon request. 5) Report was adopted and filed.

**CHAIR ANNOUNCEMENTS** – The Chair suggested the Board recess for the month of December.

Gruntz moved and Flood seconded the motion to recess in December. (Ayes: Among, Benevento, Brower, Chen, Erteschik, Finley, Flood, Gruntz, Kaimi, Merz, Peters, Poole and Simpson. Nays: 0 Abstain: Adams). The motion passed (14-0-1).

**HONOLULU FIRE DEPARTMENT** – Capt. Nishihara from the Waikiki Fire Station reported the following:

1) Statistics for last month included: 16 structure, 0 bursh, 2 rubbish, 3 vehicle, 94 medical emergencies, and 7 search and rescues calls. 2) Fire Safety Tip for the month of September: The National Fire Protection Association (NFPA) has selected "Use Candles with Care" as the theme for Fire Prevention Week, October 9-15, 2005. Signs will be displayed at all fire stations and demonstrations will be conducted at various schools and shopping centers around the island. The 2005 Fire Safety Guides will also be distributed to all elementary schools. 3) HFD took this opportunity to thank the community for their support during this very busy summer. Questions, answers, and comments:

In response to a question from the Board regarding the requirement of HFD to use its sirens when responding to an emergency, Capt. Nishihara responded, sirens are required at all times when responding to an emergency. There are no exceptions.

Capt. Nishihara was thanked for attending the meeting.

**HONOLULU POLICE DEPARTMENT**– Lt. Aiona distributed copies of statistics for the month of June and reported the following: Seven arrests were made in the month of August for fraud and theft, three for robbery, two for stolen vehicles, and two for breaking and entering.

Questions, answers and comments followed:

1. In response to a question from the Chair regarding the new pedestrian law, Lt. Aiona responded that if a pedestrian is on the driver's immediate half of the pedestrian lane, then the driver is required to stop until the person has safely crossed. A person must use a crosswalk if they are within 200 feet of one, and bicycles must be walked across.
2. In response to a question from the Board regarding too many officers responding to calls, Lt. Aiona responded that the number of officers responding to a call depends on the nature of the call. Supervisors will stop if they see officers on the scene of a call, but all officers are free to respond to calls as necessary.
3. The Board suggested proactive responses are better than reactive responses. In response, Lt. Aiona clarified that HPD is always proactive with prevention, education, and their responses.
4. In response to the Board's concerns regarding homeless people living in abandoned cars within the district, HPD does monitor abandoned vehicles especially on Ala Wai Boulevard.

**CITIZENS' CONCERNS:**

1. A board member suggested that the GET surcharge should be placed on the ballot for the upcoming election. He encourages people to tell their legislators to bring the issue before the Charter Commission while they are in session in order to circumvent the petition process.
2. Hurricane preparedness is an issue for Waikiki residents.
3. A board member suggested giving HPD, HFD, and EMS authority to send people involved in non-emergency calls or situations to the hospital in a taxicab.

**BOARD OF WATER SUPPLY** – Scott Muraoka, from the Board of Water Supply, reported the following: 1) There were no water main breaks in this area last month. 2) Neighborhood Board members: Please reserve October 15th for the 2nd annual Board of Water Supply Neighborhood

Board Workshop. This will give you an opportunity to learn more about BWS and how we fulfill our mission as the stewards of Oahu's water system. The program will begin at 9 am at the City's Mission Memorial Auditorium. Subjects to be discussed include:

- a. The History of Water on Oahu
- b. Our Water Supply and Where It Comes From
- c. Customer Services
- d. Construction Projects, and
- e. Water Quality

There will be ample time for questions and answers, and we hope you will come away from the workshop with a deeper understanding of just what it takes to maintain the water system. You should be receiving your invitation letter soon. Please join us if you can, and we look forward to seeing you there!

Note: The 2005 Board of Water Supply Water Conservation Calendar has a new design! It will be a standard January to December calendar, and will be 12" x 9" when folded. They will be distributed to the schools in December, and will focus on water conservation tips and ideas while highlighting the wonderful art from the winning artists.

Muraoka was thanked for attending the meeting.

**ELECTED OFFICIALS:**

**MAYOR'S REPRESENTATIVE** – Mr. Rollman distributed the Mayor's newsletter and reported the following:

1. The City is not able to track the performance of bus drivers; that is the responsibility of their employer, Oahu Transit Services, Inc. (OTS), the contract operator of The Bus for the City. The bunching of buses has many causes, including human nature, i.e., boarding the first bus that arrives, even though another may be visible following behind. As the first bus fills, it slows down, and following buses catch up. Traffic delays, weather, more than normal or difficult wheelchair boardings, and many other factors can cause delays and bunching. If details are supplied, we can respond more specifically. Reports/complaints should be made to OTS Customer Service at 848-4500 or via the website [www.thebus.org](http://www.thebus.org).
2. Response from the City Department of Planning and Permitting (DPP) Wastewater Division will brief the three Beachwalk Pump Station projects at the Waikiki Improvement Association meeting on August 18th. The Waikiki Neighborhood Board can be briefed at a meeting of their choice. Response from the City Department of Environmental Services (ENV): I believe the reference to "Aloha Drive Park" is regarding the lot on Aloha Drive that has been used as a contractor's staging area for City construction projects. The City has proposed to continue the use of this lot as a contractor's staging area in support of the following projects: Beachwalk Wastewater Pump Station (WWPS) Force Main project: construction funds in the FY06 CIP budget. Beachwalk WWPS -New: construction funds programmed in the FY08 CIP budget. Ala Wai Trunk Sewer Relief (project includes a 48-inch sewer on Lewers Street): construction funds programmed in the FY08 CIP budget. Waikiki Sewer Rehabilitation/Reconstruction (project includes rehab of existing sewers and manholes mainly on Kuhio Ave. and Lewers St.): construction funds programmed in the FY08 CIP budget. DPP's response: Our Site Development Division reports that the reference may be to a proposed relief sewer line in Lewers Avenue. The project is known as the "Ala Wai Trunk Sewer Relief", estimated construction 2007. Per ENV's response: "Aloha Drive Park" is regarding the lot on Aloha Drive that has been used as a contractor's staging area for City construction projects. The City has proposed to continue the use of this lot as a contractor's staging area in support of the following projects: Beachwalk Wastewater Pump Station (WWPS) Force Main project: construction funds in the FY06 CIP budget. Beachwalk WWPS -New: construction funds programmed in the FY08 CIP budget. Ala Wai Trunk Sewer Relief (project includes a 48-inch sewer on Lewers Street): construction funds programmed in the FY08 CIP budget. Waikiki Sewer Rehabilitation/Reconstruction (project includes rehab of existing sewers and manholes mainly on Kuhio Ave. and Lewers

St.): construction funds programmed in the FY08 CIP budget.

3. The number of trees being removed on Kuhio Avenue, The City Department of Parks and Recreation (DPR) identified 86 trees. Of the 86 trees, 9 are shower trees, which will be removed and relocated within the project. The remaining trees, 15 monkeypods, 1 coconut and 61 showers are being removed and relocated elsewhere by the contractor.
4. Parking on Various Mauka-Makai Streets - The City plans to remove the problematic trees from the impacted streets this year. However, this does not address the fact that some of the parking stalls are sub-standard in size. This condition existed prior to the installation of the trees. Whether these stalls should be eliminated and the parking layout modified will need to be addressed by the Department of Transportation Services (DTS). The remedial action involves only the use of construction funds as a change order to the construction contract to Royal Contracting. The Waikiki Mauka-Makai project is not a design-build project. To perform any remediation as a design-build project would require the project to be bid out. The scope of work does not require design services. The scope of work is to remove problematic planters, which supposedly impaired parallel parking. Those planters affected were simply identified by whether or not the trees have been damaged. Obviously if the trees are damaged, then there is a problem. If the trees are not damaged, then it can be assumed that no problem exists. The actual work involves removing identified planters, capping the irrigation feed line, compaction, ac patch and striping. Striping will be placed between the parking stalls in place of the removed planter. No adjustments are planned. It is assumed that all reasonable adjustments to parking spaces were made during construction.

Questions, answers, and comments followed:

The Board is inquiring who is responsible for closing off parking at Kapiolani Bandstand when there are events such as parades, Sunset on the Beach and/or Brunch on the Beach. Why is parking limited when there is a clear need for it during such events?

Rollman deferred to James Burke from the City Department of Transportation Services (DTS) to discuss the E Bus Route.

#### **E BUS ROUTE:**

Route E was an added service covering areas that are served by other bus routes. While not an exact match, Route E overlapped paths with Routes 8, 19, 20, and 42.

There were no funds budgeted for the operation of Route E in the FY2005 operating budget. The idea was to partially fund Route E by eliminating Route 8 (Ala Moana to Waikiki). Route 8 was only partially reduced and no additional funds were available.

As a result of eliminating a large percentage of Route 8 service (about 60 passengers per hour), Routes 8, 19, 20, and 42 experienced severe overcrowding and were forced to pass-up passengers at certain locations.

Route E averaged only 27 passengers an hour on a route with six buses an hour (about 4,000 passengers per weekday). By comparison, Route 42 averages about 47 passengers per hour with only three buses per hour (about 9,000 passengers per weekday). A public hearing was publicized, and held on March 28, 2005 at the Ala Wai Community Park.

The City recognizes that the standard notification on the elimination of Route E was too limited in scope, and we will do more in future to ensure adequate coverage. Improvements will include display advertisements in the newspapers and issuance of press releases indicating the subject, time, and location of public hearings. Whenever possible, we will issue public service announcements for use on radio.

The following service modifications we made as a result of the hearing:

- Restore Route 8 its former level of service
- Route 8 now serves Kalakaua Avenue, eastbound through Waikiki.
- Route 65 (Ala Moana to Kaha'u'u) now operates on Ilalo Street to provide service to the Kaka'ako Waterfront.
- Route 6 now operates two-way on Auahi Street through the Ward Centers; it provides a link to downtown from Ward and Ala Moana Center.

In our continual efforts to review The Bus service, we will properly plan and budget for limited stop services within Honolulu's urban corridor.

Questions, answers, and comments:

Supporters of the E Bus route, a coalition consisting of Board members, area residents, as well as non-area residents, oppose the cancellation of the E Bus for the following reasons:

- The E Bus route had fewer stops and quicker run times than the B, 2, 13, 19, 20 or 42.
- The E provided later service than the B
- The E had more frequent runs and shorter wait times than the B, 2, 13, 19, 20, or 42.
- Only the E went from Waikiki to the Ward Shopping Center.
- Only the E went from Waikiki to the makai area of Kakaako, by Kakaako Waterfront Park, the new medical school, the Hawaii Children's discovery cCenter, the Pier 2 cruise-ship terminal under construction, and the planned residential high-rise complex at Kewalo Basin.
- Only the E stopped right at Aloha Tower Marketplace.

The coalition feels that the public was not properly notified of the hearings regarding the cancellation of the E Bus route, and thus, their concerns were not considered prior to its cancellation. They would like to see the route restored.

Rollman and Burke were thanked for attending the meeting.

**NEIGHBORHOOD COMMISSION UPDATE** – Chair Finley announced that Executive Secretary of the Neighborhood Commission Office (NCO), Baybee Hufana-Ablan was unable to attend the meeting due to a conflict in schedule. Hufana-Ablan was at the regular meeting of the Neighborhood Commission.

**COUNCILMEMBER DJOU** – Councilmember Djou reported the following: 1) Bill 40 passed Council on August 10. 2) Djou voted in opposition to Bill 40. 3) Bill 6 also passed Council on August 10, which caps property taxes for low-income individuals. 4) Form to file for homeowner's tax exemptions is attached to the written report, and the deadline to file for exemptions is Sept. 30. 5) Djou plans to introduce a bill in October banning street performers during peak pedestrian hours.

**SENATOR GORDON TRIMBLE** – Anne Stevens distributed Senator Trimble's report and was available for questions. Anne announced that Senator Trimble is currently teaching in China and any questions, comments, or concerns may be emailed to him at [sentrimble@capitol.hawaii.gov](mailto:sentrimble@capitol.hawaii.gov).

Stevens was thanked for attending the meeting.

**REPRESENTATIVE GALEN FOX** – Representative Fox distributed his report and highlighted the following: 1) Hawaii now has the nation's only gas cap law, which links local prices, for the first time, to Gulf Coast prices. In comparison, Washington and Oregon which are linked to Alaska and Asian markets, as Hawaii was prior to the gas cap law, have only seen a \$0.10 increase per gallon in their gasoline prices. Hawaii residents are now paying \$0.25 more per gallon as a result of the new law. 2) A group of concerned citizens is moving ahead with an initiative petition to allow repeal of the recent ordinance that would raise the GET by 12.5%.

Fox was thanked for attending the meeting.

**REPRESENTATIVE SCOTT NISHIMOTO** – Eric La'a distributed Representative Nishimoto's report.



**GOVERNOR'S REPRESENTATIVE** – Marsha Wienert distributed the Governor's newsletter and highlighted the following: 1) The Governor is hosting women leaders from around the world, who are attending the International Women's Leadership Conference at the Sheraton Waikiki on September 14-15. 2) The State will be hosting the third Asia-Pacific Homeland Security Summit & Expo from September 20-23. For more information please visit: [http:// www2.hisummit.Hawaii.gov/](http://www2.hisummit.Hawaii.gov/) 3) Visitor expenditures increased 11.2% in July and total air seats are up by 4%. 4) Wienert passed out a report entitled "Plan to End Chronic Homelessness in Hawaii", which outlines the State's initiatives to address homelessness in Hawaii.

Wienert deferred to Sam Lemmo of the State Department of Land and Natural Resources (DLNR) to discuss the Kuhio Beach sand replenishment project.

**KUHIO BEACH SAND REPLENISHMENT** – Sam Lemmo distributed his report and highlighted the following:

1) The project consists of pumping up to 10,000 cy of sand from 200 feet offshore. 2) Sand will be discharged into a staging/stockpile area then mechanically moved to the nourishment sites. 3) This is project is a non-technical and straight forward, and the only concerns are minimal impacts to the environment. 4) The duration of the project is scheduled for 20 to 30 days. 5) In response to concerns regarding reef depletion, Lemmo replied, that it has been well-documented that this area is man-made and in the past, did not normally have sand. He assured no reefs will be depleted as a result of this project, and the process is similar to the natural cycle of erosion and replenishment that already exists since the creation of Waikiki beach. 6) In response to a question regarding using synthetic sand made from a mix of recycled glass and sand, Lemmo replied that sand on Hawaii's beaches are not silicon-based, thus the sand-glass mix would not be compatible for this project.

Wienert and Lemmo were thanked for attending the meeting.

**WAIKIKI IMPROVEMENT ASSOCIATION** – Rick Egged reported the following: 1) The world premier of the second season of Lost will take place on September 14 at the Sunset on the Beach stage. 2) This weekend's Sunset on the Beach movies will be Hitch Hiker's Guide to the Galaxy and Robots. 3) The next Brunch on the Beach will be held on October 16 in honor Princess Kaiulani's birthday. 4) In response to concerns regarding the movie screen on the beach, Egged replied that though there are a few who are concerned, there are many who benefit from the events. Egged cited the Ewa Beach baseball team's parade as well as tourists and residents who support the Sunset on the Beach events on a weekly basis.

Egged was thanked for attending the meeting.

**KAIO DRIVE PROJECT** – Ardis Shaw-Kim, from Kusao and Kurahashi, reported the following: Kusao and Kurahashi, a land use consulting company, has been hired to assist developer, Kaioo LLC, obtain the required land use permits (an Environmental Assessment, Waikiki Special District Permit, Conditional Use Permit for a joint-development and possibly a zoning variance for providing less than the required 50% open space) for the condominium project planned for the properties surrounding The Windsor on Kaioo Drive.

Not information was given at this time, however, for the Board to consider the project.

Shaw-Kim was thanked for attending the meeting.

**CHAIR REPORT** – Deferred.

**ANNOUNCEMENTS:** None.

**ADJOURNMENT:** The meeting adjourned at 9:38 p.m.

Submitted by,

Joey Manahan  
Neighborhood Assistant

Wednesday, October 05, 2005

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