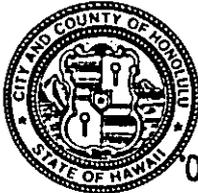


DEPARTMENT OF PLANNING AND PERMITTING  
**CITY AND COUNTY OF HONOLULU**

650 SOUTH KING STREET • HONOLULU, HAWAII 96813  
TELEPHONE: (808) 523-4414 • FAX: (808) 527-6743 • INTERNET: www.co.honolulu.hi.us/planning

JEREMY HARRIS  
MAYOR



RECEIVED

00 JUL 25 P3:46

RANDALL K. FUJIKI, AIA  
DIRECTOR

LORETTA K.C. CHEE  
DEPUTY DIRECTOR

July 24, 2000 OFF ENVIRONMENTAL  
QUALITY CONTROL

2000/SMA-24 (ask)  
2000/ED-6

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

Dear Ms. Salmonson:

SPECIAL MANAGEMENT AREA ORDINANCE  
CHAPTER 25, ROH  
Environmental Assessment (EA)/Determination  
Finding of No Significant Impact

Recorded Owner/  
Applicant : Castle Family Limited Partnership  
Agent : Sueda & Associates, Inc.  
Location : 108 Hekili Street - Kailua  
Tax Map Key : 4-2-38: 23  
Request : Special Management Area Use Permit  
Proposal : Redevelopment of the Kailua Town Center

Attached and incorporated by reference is the Final EA prepared by the applicant for the project. Based on the criteria outlined in Chapter 25, Revised Ordinances of Honolulu, we have determined that preparation of an Environmental Impact Statement is not required.

If you have any questions, please contact Ardis Shaw-Kim of our staff at 527-5349.

Sincerely yours,

For RANDALL K. FUJIKI, AIA  
Director of Planning and  
Permitting

RKF:lg  
Enclosures

doc. 47591

82

AUG 8 2000

**FILE COPY**

2000-08-08-0A-FA-

**FINAL ENVIRONMENTAL ASSESSMENT**

---

Demolition, Addition & Renovation to  
(Kailua Town Center)  
Kailua, Oahu, Hawaii

Tax Map Key 4-2-38:23

July, 2000

00 JUL 18 PM 3 05  
City & County of Honolulu

Prepared by:

Sueda & Associates, Inc.  
Architects & Planners  
905 Makahiki Way  
Honolulu, Hawaii 96826

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OFFICE OF THE COUNTY CLERK  
 COUNTY OF SAN DIEGO  
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# FINAL ENVIRONMENTAL ASSESSMENT

## BACKGROUND

The subject of this environmental assessment is the proposed demolition, renovation and addition to two existing buildings, formerly Foodland, Smitty's Pancake House, and additional retail/offices called "Kailua Town Center".

The existing site's tax map key number 4-2-38:23 consists of two abutting buildings with on-site parking. The buildings, except for one tenant, have been vacant for approximately six (6) months.

The project site lies within the Special Management Area (SMA), therefore, a major SMA permit will be required. This environmental assessment has been prepared as a requirement of the SMA permit process. (*See Figure 4*)

### 1.0 GENERAL INFORMATION

#### 1.1 Applicant

Castle Family Limited Partnership  
1199 Auloa Road  
Kailua, HI 96734  
Phone: 266-1400

#### 1.2 Recorded Fee Owner

Castle Family Limited Partnership  
1199 Auloa Road  
Kailua, HI 96734  
Phone: 266-1400

#### 1.3 Agent

Sueda & Associates, Inc.  
905 Makahiki Way  
Honolulu, HI 96826  
Phone: 949-6644

#### 1.4 Tax Map Key

TMK: 4-2-38-23

**1.5 Lot Area**

TMK: 4-2-38-23  
Land Area 100,475 s.f.

**1.6 Agencies Consulted**

1.6.1 City and County of Honolulu

Fire Department  
Department of Planning and Permitting  
Department of Public Works, Division of Engineering  
Department of Transportation Services  
Board of Water Supply

1.6.2 State of Hawaii

Department of Health  
Department of Land and Natural Resources, Historic Preservation Division

1.6.3 Federal Government

U.S. Fish & Wildlife Service

1.6.4 Other

Ducks Unlimited, Inc.  
Hawaiian Electric Co., Inc.  
GTE Hawaiian Tel (Now Verizon)

**2.0 DESCRIPTION OF THE PROPOSED ACTION**

**2.1 General Description**

2.1.1 Description of Proposed Project

The subject project is the demolition, renovation and addition to Kailua Town Center. The project involves the demolition of 19,500 s.f. of building (the former Wigwam Building) and the addition of ±6,000 s.f. of new retail and the renovation of the old Foodland Building. The existing structures are pre-engineered metal buildings with masonry walls. The new addition will be of a steel and wood frame construction. The proposed renovation and addition will result in a newly renovated Food Market, and additional complementary retail spaces. The project will also include civil and site work, such as a new loading dock, new parking layout and surfaces, new entry/exit driveway location, and a totally new landscape site. (See Figure 8)

## 2.1.2 Relation of the Parcel to the SMA

All of TMK 4-2-38:23 lies within the SMA. (See Figure 4)

## 2.1.3 Location

The project site is located on the northeastern coast of the island of Oahu in an area known as Kailua. It lies between the two nearest towns of Kaneohe to the west and Waimanalo to the east. The street address of the project is 108 Hekili Street. The project site lies in the northeastern quadrant of the intersection formed by Hamakua Drive and Hekili Street. (See Figures 1, 2 & 3)

## 2.1.4 Land Use Approvals

The land is zoned B-2 Commercial.

## 2.2 **Technical Characteristics**

### 2.2.1 Use Characteristics

The existing site is and will continue to be used for commercial purposes.

### 2.2.2 Physical Characteristics

The existing site consists of two existing buildings ( $\pm 50,000$  s.f. total). The demolition will consist of the removal of the 19,500 s.f. former Wigwam structure. The new proposed renovation will add  $\pm 6,000$  s.f. to the former Foodland structure bringing the new total area to  $\pm 36,000$  s.f. The remainder of the site will be devoted to loading docks and on grade parking. The existing parking lot can accommodate 84 cars. The proposed new parking lot will accommodate 135 cars. The new retail addition is one-story in height, with an entry tower feature not to exceed 40 feet. The maximum permissible building height for this B-2 parcel is 40 feet. (See Figure 9)

### 2.2.3 Construction Characteristics

In addition to modification and additions to the existing structure, construction will include demolition, removal, relocation, clearing, earthwork, soil treatment for vegetation control, basaltic termite barrier, drainage, new fence, asphaltic concrete (concrete driveway) paving, pavement markings, piped utility alterations, landscape irrigation, and landscaping.

#### 2.2.4 Utility Requirements

Water, electrical, and phone service already exist on site. The renovations and additions are not expected to make an appreciable increase in the former use of these utilities.

#### 2.2.5 Liquid Waste Disposal [municipal sewer system, septic tanks, or injection wells]

The project site has an existing 8" diameter City and County sewer lateral, formally used by Foodland, the existing restaurant and retail offices. We are proposing to reuse the existing sewer line.

#### 2.2.6 Solid Waste Disposal

The construction generated refuse will be disposed through commercial disposal firms, such as Rolloffs Hawaii, Inc., Horizon Waste Hawaii.

Soil generated refuse will also be disposed through a certified landfill. Any contaminated soil will be disposed and will meet all federal requirements for proper disposal.

#### 2.2.7 Access to Site & Traffic

The site is located on the corner of Hamakua Drive and Hekili Street. (See Figure 3) Hamakua Drive is now a major access from Pali Highway to Enchanted Lake. Public transportation is provided by "The Bus" system of the City and County of Honolulu. Since the renovation involves a net loss in floor area and an increase of parking stalls, parking and traffic is not expected to create a negative impact to the community. Foodland's original building size was 30,000 s.f. The proposed new Foodland will be exactly the same with a net loss of 13,000 s.f. of restaurants and other Commercial spaces, and an increase of parking (from 84 to 135 stalls) will only make conditions better. The circulation pattern will definitely be improved with the new parking layout. Most important will be the relocation of the loading zone which is presently off Hamakua Drive.

#### 2.2.8 Landscaping

The entire site will be totally relandscaped. There are no rare or endangered species of planting on the site. Plans call for a total removal of all existing vegetation. The new landscape planting in the parking lot and side yard fronting Hamakua Drive will try to incorporate native Hawaii plants. All landscape areas will have an automatic sprinkler system.

## **2.3 Economic and Social Characteristics**

### **2.3.1 Economic Characteristics**

Renovations to the Kailua Town Center and new parking is estimated to cost \$1,500,000.00. Construction time is expected to be a minimum of six months. Construction will commence as soon as all necessary government permits and approvals have been obtained.

### **2.3.2 Social Characteristics**

The new Kailua Town Center will return a full service market and other activities to the site, providing goods and services to local residents and businesses.

## **2.4 Environmental Characteristics**

### **2.4.1 Soils**

Soils investigation was completed by Shinsato Engineering, Inc., Consulting Geotechnical Engineers. (Refer to Final EA Appendix.)

The purpose of the soils investigation was to determine the soils bearing capacity for the new building addition, the design of the loading dock and the a.c. paving in the parking lot.

### **2.4.2 Topography**

The project site is relatively flat. Site elevation varies from 7.11 to 10.5.

### **2.4.3 Surface Runoff, Drainage, and Erosion Hazard**

**EXISTING CONDITIONS:** Storm water runoff from the property frontage along Hamakua Drive surface flows from the site to the City and County storm drainage system in Hamakua Drive. Storm water runoff from the existing parking lot fronting Hekili Street surface flows through the parking lot to the existing City and County storm drainage system in Hekili Street. Storm water runoff is collected by catch basins at the intersection of Hamakua Drive and Hekili Street and is piped to a 42-inch drain outlet which daylites at Kaelepulu Stream. (Kaelepulu Stream runs parallel to Hamakua Drive.) Storm water runoff volume is 10.83 cfs.

**PROPOSED NEW DEVELOPED CONDITIONS:** The proposed drainage system will be designed in accordance with the City and County of Honolulu's "Rules Relating to Storm Drainage Standards" dated

January 2000. During construction as well as after the development is completed the developers, will by the design will limit the amount of settlement and storm water discharge into the drainage canal by diverting as much surface runoff as possible into the landscaped area. The estimated storm water runoff volume is 10.74 cfs. Additional landscaping will reduce impervious areas, thus will result in a "no net increase" of storm water runoff quantities to the existing City and County storm drainage systems in Hamakua Drive and Hekili Street. Storm water runoff will consist of roof runoff and runoff from parking and planter areas.

**DUST AND EROSION CONTROL:** The City and County of Honolulu's "Rules Relating to Soil Erosion Standards and Guidelines" dated April 1999 will be followed. There will be no major grading work on site. There will be building and pavement demolition, structural excavation for new building footings, pavement excavation for new pavement base course and trench excavation for utilities. Importing structural and pavement backfill and topsoil for planters will be required. A temporary dust control barrier will be installed around the project site during construction and the contractor will provide a water truck on site to reduce dust nuisance. A temporary sediment barrier will be provided around areas open to excavation to contain sediment that may runoff during heavy rains. A temporary gravel pad will be provided at the entry to excavation areas to reduce mud from being tracked to City roadways by construction vehicles. Temporary catch basin inlet filters will be installed at catch basin openings on the Hamakua Drive and Hekili Street frontage during construction.

#### 2.4.4 Flood Hazard

The existing site is located in "Zone X" which allows on-grade construction. We have discussed this matter with Department of Planning and Permitting. (See Figure 5)

### 3.0 **AFFECTED ENVIRONMENT**

#### 3.1 **Surrounding Area**

##### 3.1.1 Description of Surrounding Area

The area surrounding the project site can be roughly divided into two types. To the south (across Hamakua Drive) is a storm drainage canal that is part of the Hamakua wetland. The area drains into Kailua Bay. The remaining west, north and east areas are existing developed commercial areas.

3.1.2 Description of Subject Site in relation to Surrounding Area

The project site is relatively flat from a low of 7.11 elevation to a high of 10.5 elevation. The surrounding commercial area is also relatively flat.

3.1.3 Existing Surrounding Land Uses

The existing commercial property is surrounded on three sides by open parking and other commercial buildings. Directly across Hamakua Drive is the storm drainage channel (Kaelepulu Stream) that is part of the Hamakua wetland.

3.1.4 General Plan Designation

The project site is designated Commercial on the General Plan.

3.1.5 Development Plan Designation

The project site is designated Commercial on the Development Plan.

3.1.6 Zoning

The project site is zone B-2 Commercial Business District. The adjacent properties to the west, north and east are zoned B-2. The drainage canal to the south is zoned P-2.

**3.2 Project Site in Relation to:**

3.2.1 Publicly owned or used Beaches, Parks and Recreation Areas

Not applicable.

3.2.2 Rare, Threatened or Endangered Species and their Habitats

The project site is fully developed and does not contain any rare, threatened or endangered species. With the exception of the drainage canal across Hamakua Drive, the nearby environs are fully developed. The Hamakua wetland is frequented by all four endangered Hawaiian waterfowl, as reported in a study by Ducks Unlimited (a national wetlands preservation organization) in 1989, and by a variety of other non-endangered endemic and exotic birds. Parties related to the Applicant donated the 22.6-acre Hamakua wetland to Ducks Unlimited in 1993. Ducks Unlimited improved the quality of certain areas of the wetland with funds from the U.S. Fish & Wildlife Service, and then conveyed the wetland to the State of Hawaii. The State's Department of Land and Natural Resources currently manages the wetland. See *Figure 6 - Wetland Location Map*.

3.2.3 Wildlife and Wildlife Preserves

Not applicable.

3.2.4 Wetland, Lagoons, Tidal Lands and Submerged Lands

As noted above in Section 3.2.2, the project site lies across Hamakua Drive from a drainage canal that is part of the Hamakua wetland.

3.2.5 Fisheries and Fishing Grounds

As noted above in Section 3.2.2, the project lies across Hamakua Drive from a drainage canal. There are species of fish in the canal, but neither the canal nor the wetland adjacent to it is a known fishery.

**3.3 Historic, Cultural, and Archaeological Resources**

According to the state Department of Land and Natural Resources, Historic Preservation Division, there are no known historic, cultural, or archaeological resources on the subject site. The site is fully developed and any significant remains would have been obliterated.

**3.4 Views**

The project site is located within other commercial areas and will have no impact on views from the existing streets to the mountains. The low horizontal massing of the one-story structure will not obstruct any mountain views.

**3.5 Quality of Receiving Waters and Ground Water**

A soils investigation was completed by Shinsato Engineering, Inc. However, the site is fully developed and has no indication of surface water bodies or potable ground water resources on the site.

**4.0 PROJECT IMPACTS**

**4.1 Positive Impacts**

The existing buildings have been vacant, or nearly vacant, and are presently an eyesore to the Kailua community. Hamakua Drive which was once a backstreet is now a major access from Kailua to Enchanted Lake. The existing building has all of its loading off Hamakua Drive. The new development will demolish the existing Wigwam building and relocate the loading to an interior location. The

demolition will open the corner of Hamakua and Hekili and add additional parking and landscaping. The existing loading area will be removed and landscaped, thereby redeveloping this site into a very nice retail complex. The proposed new market and retail will add choices and selection for the Kailua community.

- 4.1.2 The store will provide increased employment opportunities to residents of the area. Approximately 90% of the Kailua Town Center employees will come from the Kailua area.
- 4.1.3 Building of additional store space and parking will benefit the construction industry in the short-term.
- 4.1.4 Traffic may benefit with a larger parking area. The additional lot will provide ease of ingress and egress, and the new parking layout will improve the existing circulation pattern.

#### **4.2 Negative Impacts**

- 4.2.1 Construction Impacts. Negative impacts are expected due to construction activity. These will be short-term in nature for the duration of the construction period. The likely negative impacts would affect air quality and noise quality. Construction vehicle activity will increase automotive pollutant concentrations in the vicinity of the project site as well as on traffic routes from the vehicles' home base. On-site stationary and mobile construction equipment will contribute to exhaust emissions. Fugitive dust emissions are likely to increase during the construction period. Construction related noise will also constitute a negative impact and construction activity will increase the amount of traffic to and from the site.
- 4.2.2 Social Impacts. The existing vacant building has been an occasional shelter for homeless people. The renovation will be occupied and eliminate the possible shelter for the homeless.
- 4.2.3 Environmental Impacts. Although both the parking lot of the project area and the area fronting Hamakua Drive at the former loading area of the former Foodland building are currently lighted at night, because the parking lot of the proposed project will be larger than the current parking lot, the project will have more parking lot lights than at present. Parking lot lights may cause birds inhabiting the wetland to become disoriented at night.

#### **5.0 MITIGATION MEASURES**

## **5.1 Air Quality**

Measures to control equipment and dust emissions are required according to the Department of Health's Public Health Regulations on Air Pollution Control (State of Hawaii). Equipment emissions can be minimized by proper maintenance of all vehicles and equipment. Dust emissions can be minimized by strict adherence to State air pollution control standards.

## **5.2 Noise Quality**

Audible construction noise will probably be unavoidable during the entire project construction period. Adverse impacts from construction noise, however, are not expected to be in the "public health and welfare" category due to the temporary nature of work and the administrative controls available for its regulation. The contractor will be required to obtain a noise permit if noise levels are expected to exceed allowable levels as specified in the State Department of Health's Public Health Regulations, Title 11, Chapter 43. The contractor is responsible for properly maintaining construction equipment to minimize noise levels. All internal combustion engines will be required to have mufflers or other noise suppression devices in proper working order. Heavy vehicles required for construction must comply with the State Department of Health's regulations for vehicular noise control.

## **5.3 Social Problems**

Not applicable.

## **5.4 Parking Lot Lights**

We are aware of the different type of birds that populate the Hamakua wetland. We are, therefore, designing all exterior lights to meet these concerns

All parking lights used on this project will be "low sodium light fixtures". All lamps will be shielded from the air and focused down to the ground. This will prevent disoriented birds from accidentally flying into the exposed lamps.

## **6.0 DETERMINATION**

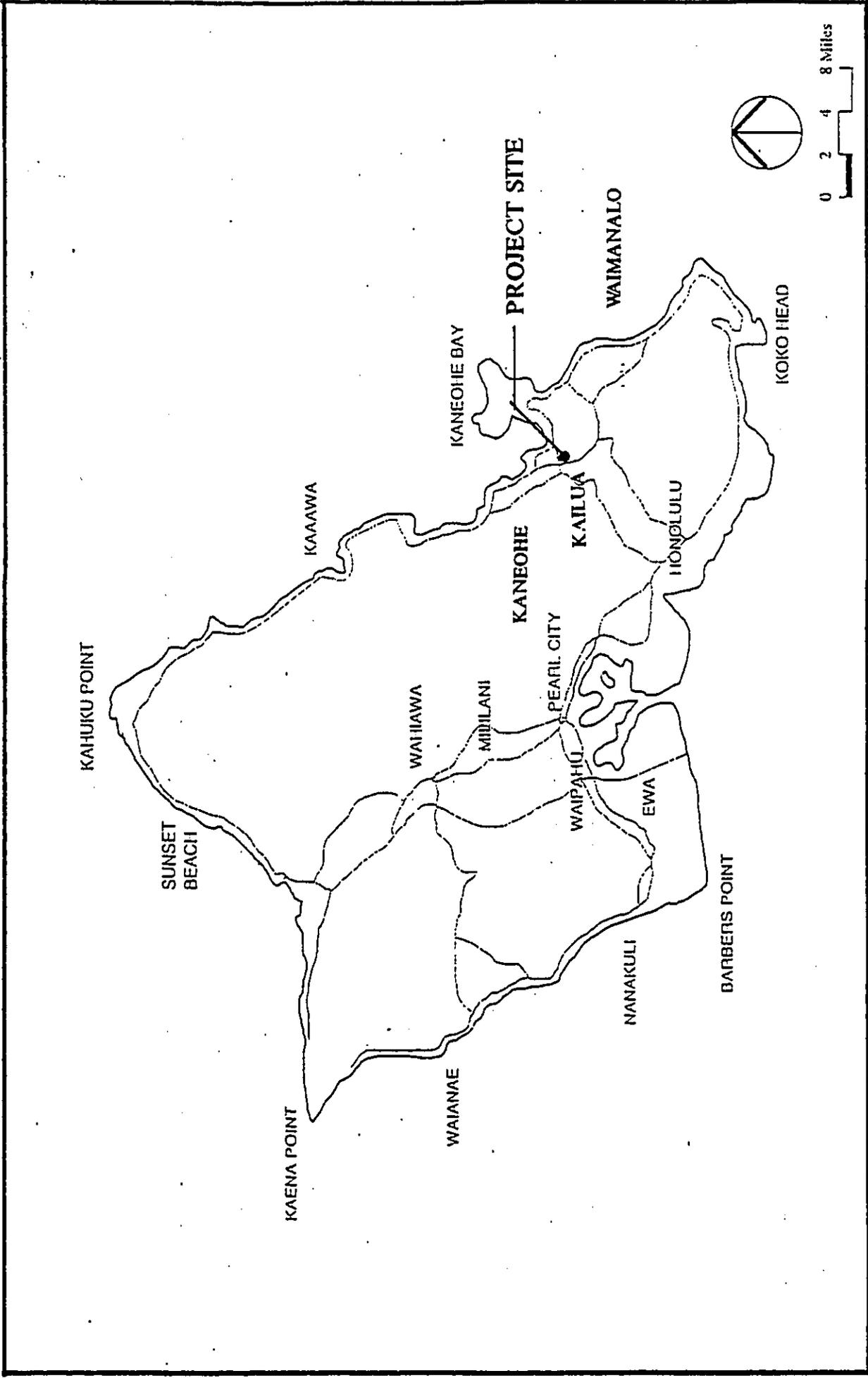
The proposed action is not expected to cause significantly adverse impacts to the environment. The project constitutes the renovation of an existing use that has not exhibited any negative environmental impacts in the past. Therefore, it has been determined that a negative declaration for its construction should be filed.

## **7.0 FINDING AND REASONS SUPPORTING THE DETERMINATION**

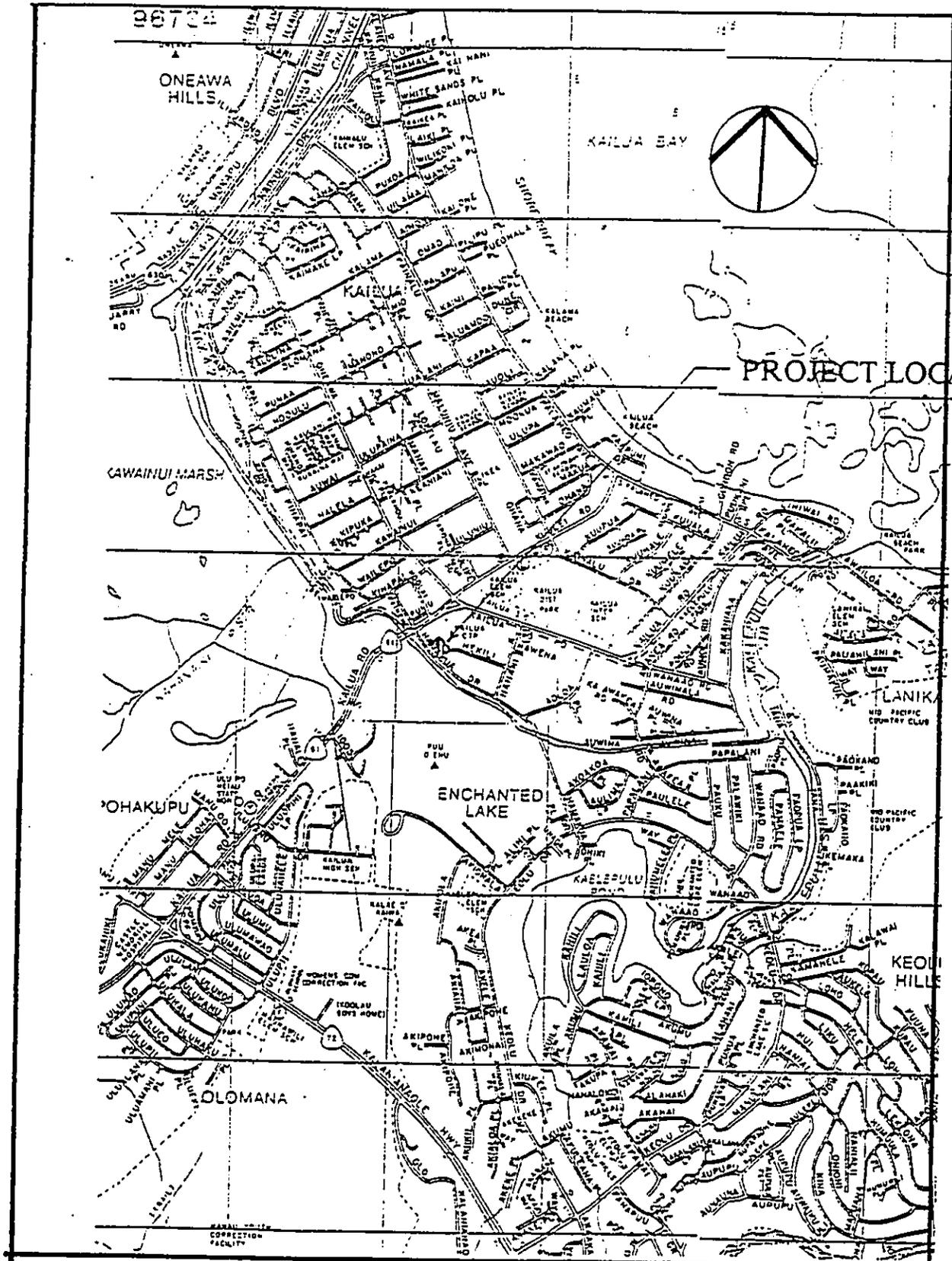
- 7.1** The demolition and renovation of the Kailua Town Center will not involve an irrevocable commitment to loss or destruction of any natural or cultural resources.
- 7.2** The project does not conflict with any County or State environmental or planning policies.
- 7.3** The project does not adversely affect the economic and social welfare of the City and County of Honolulu or the State of Hawaii.
- 7.4** The project will not generate secondary impacts on population or public facilities.
- 7.5** The project will not cause a substantial degradation of environmental quality.
- 7.6** The project will not affect any rare, threatened or endangered specie of flora or fauna. No endangered flora or fauna are known to exist on the proposed site.
- 7.7** The project will not adversely affect air or water quality, or the ambient noise environment of the area except in the short-run during construction.

For the reasons cited above, the proposed project will not have any significant negative environmental effect in the context of Chapter 343, Hawaii Revised Statutes and section 11-200-12 of the State Administrative Rules.

**FIGURES/PHOTOGRAPHS**



<p>Prepared by:  <b>Suedn &amp; Associates, Inc.</b>  <b>Honolulu, Hawaii</b></p>	<p>Figure 1  <b>ISLAND MAP</b></p>	<p><b>ENVIRONMENTAL ASSESSMENT</b>          Demolition, Renovations and Additions to:          Kailua Town Center          Kailua, Oahu, Hawaii          TMK: 4-2-38:23</p>
---	--	---



Prepared by  
Sueda & Associates, Inc.  
Honolulu, Hawaii

Figure 2  
VICINITY MAP

ENVIRONMENTAL ASSESSMENT

Renovations and Addition to  
Kailua Town Center

Kailua, Oahu, Hawaii

TMK: 4-2-38: 23









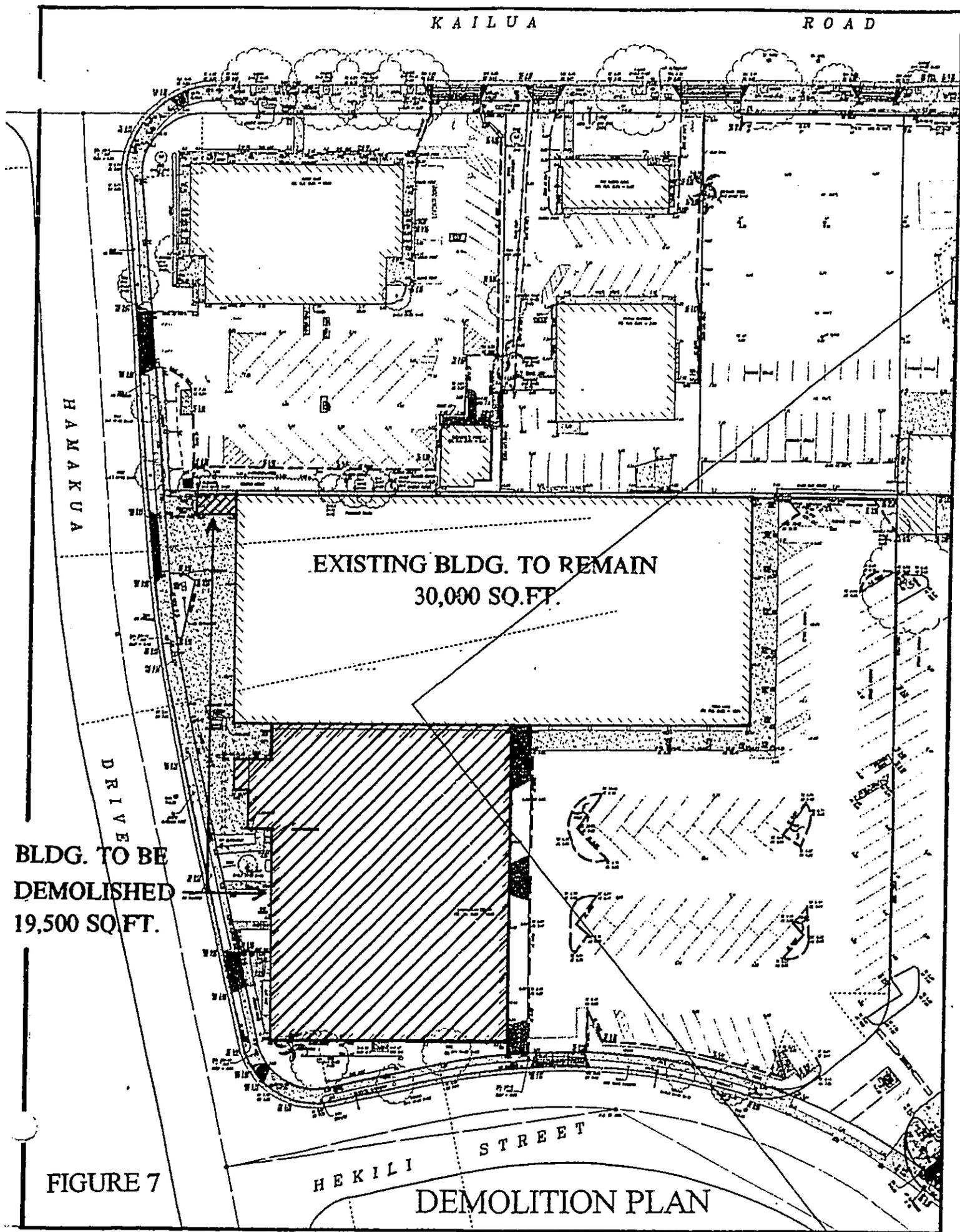
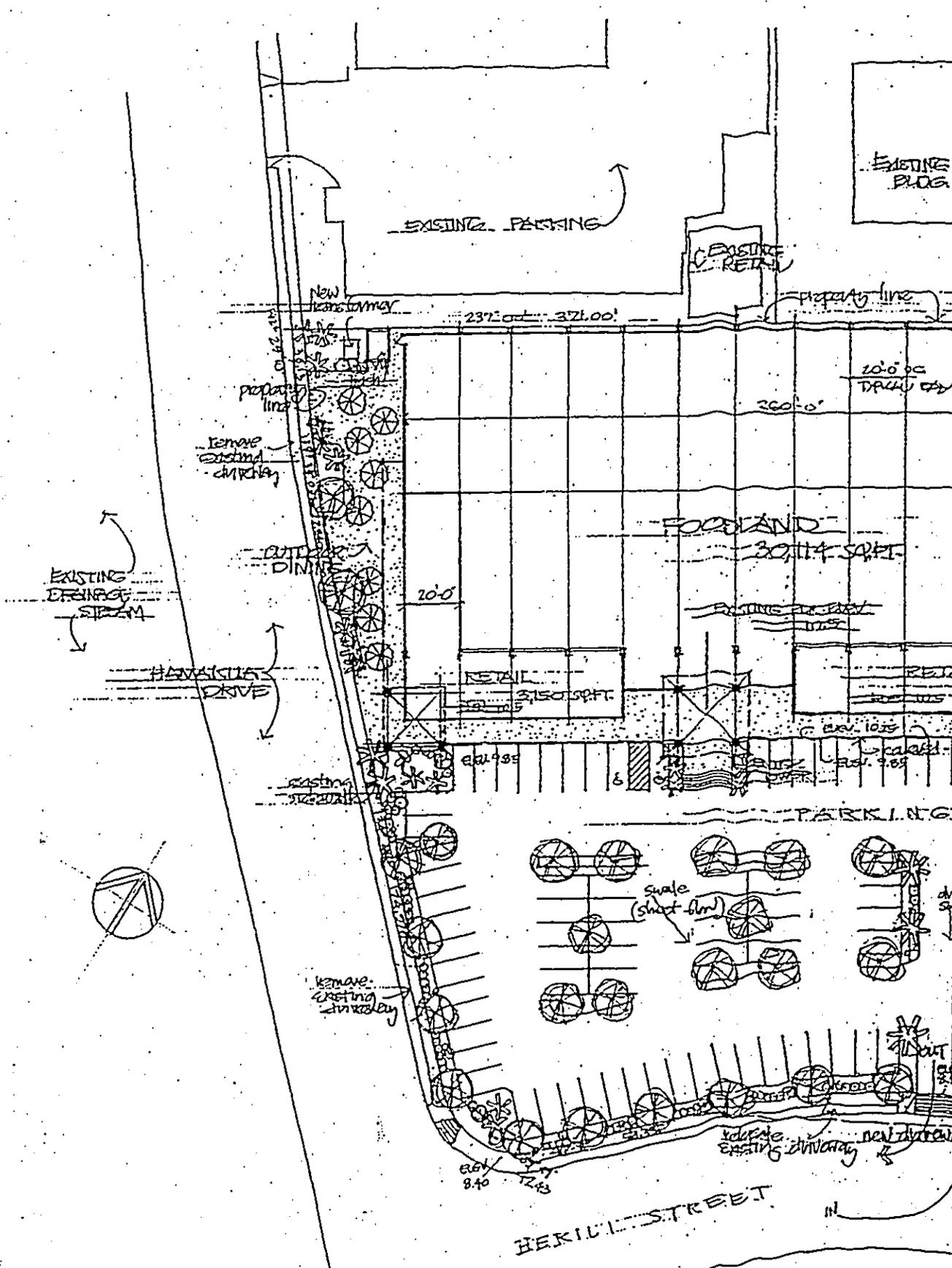


FIGURE 7

DEMOLITION PLAN

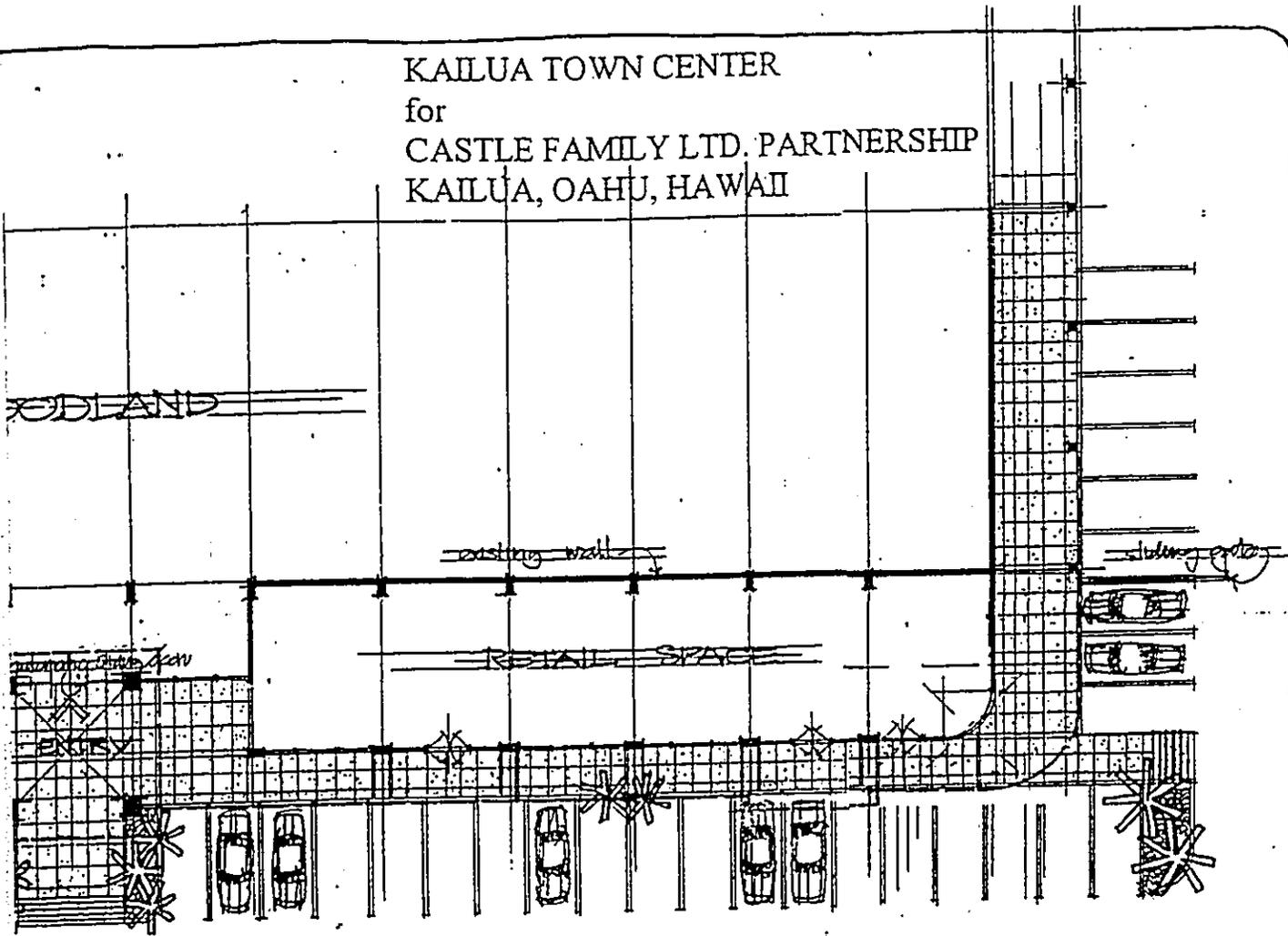


**SITE DEVELOPMENT &**  
 SCALE: 1/32" = 1'-0"



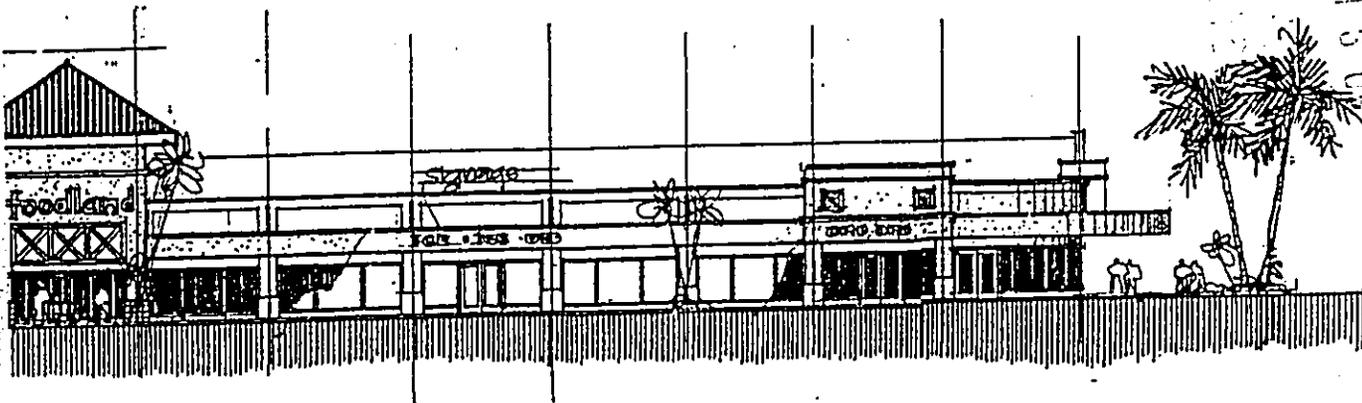


KAILUA TOWN CENTER  
for  
CASTLE FAMILY LTD. PARTNERSHIP  
KAILUA, OAHU, HAWAII



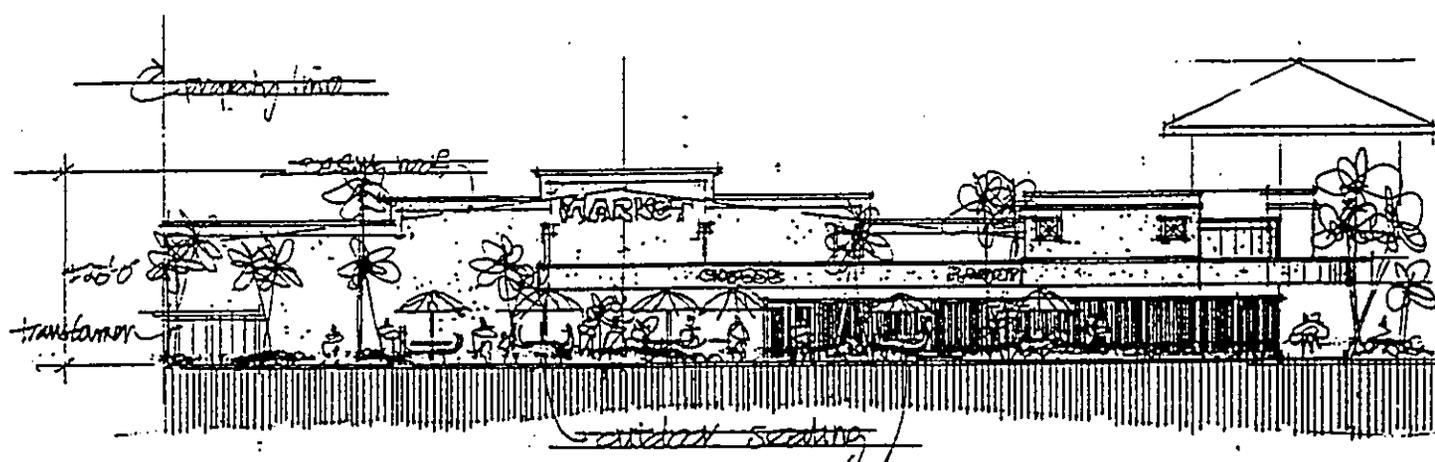
FLOOR PLAN  
S. 1/16" = 1'-0"

100 JUL 18 PM 5 05  
C. S. S. S.

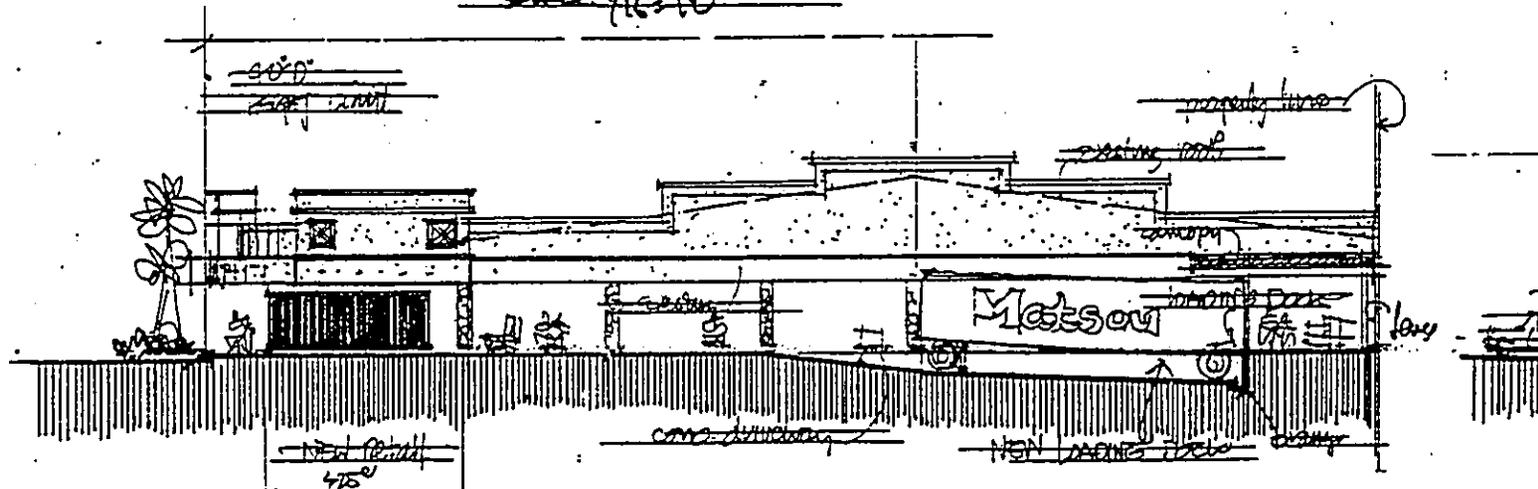


ELEVATION  
= 1'-0"

FIGURE 9



LEFT SIDE ELEVATION (hamakua drive)  
Scale: 1/16" = 1'-0"



RIGHT SIDE ELEVATION  
Scale: 1/16" = 1'-0"

06 JUL 18 PM 3 06

PEARL AND SHELLS

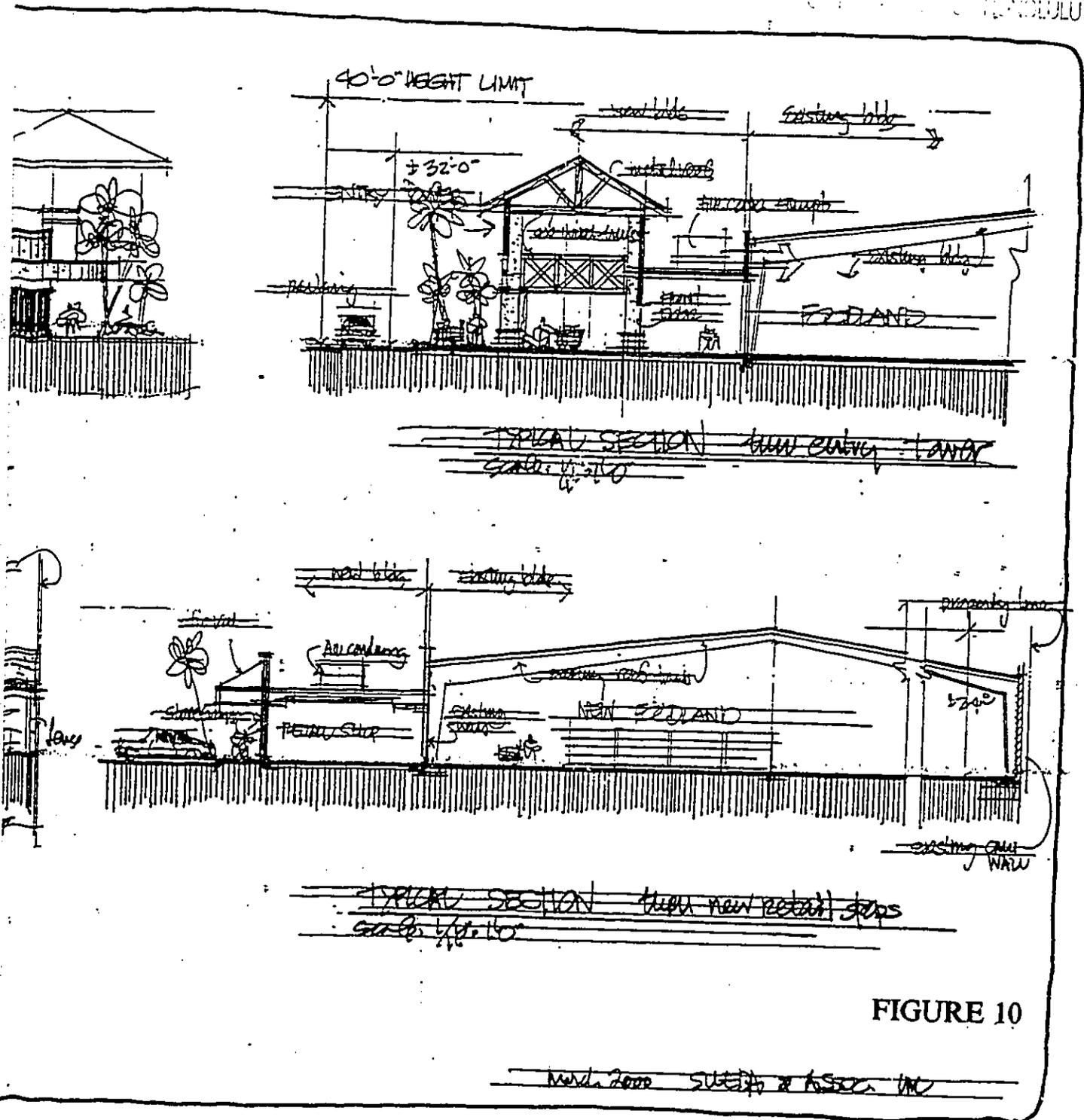


FIGURE 10

Mark Zoro SUEB & ASSOC. INC

KAILUA

ROAD

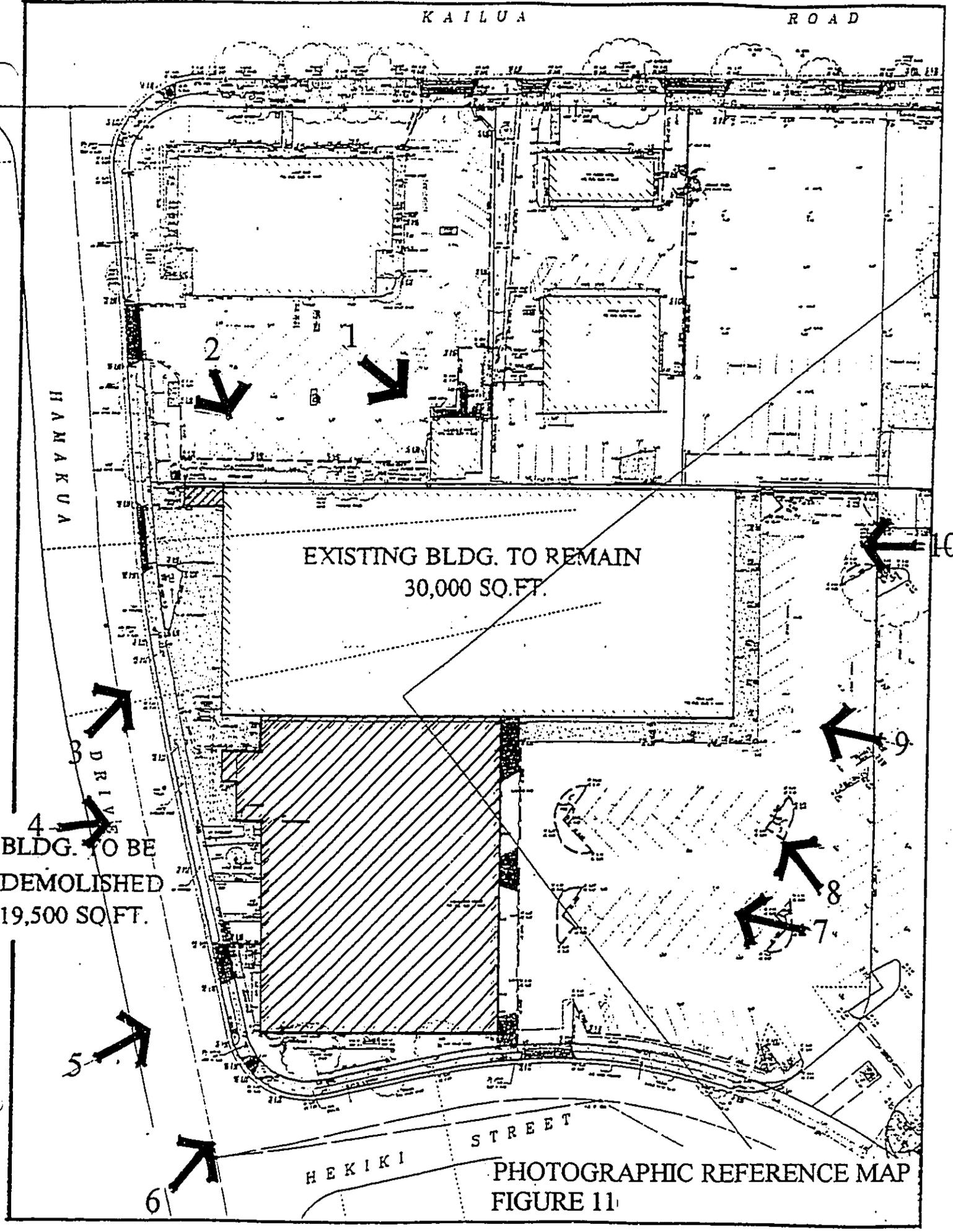
HANAKUA

EXISTING BLDG. TO REMAIN  
30,000 SQ. FT.

4  
BLDG. TO BE  
DEMOLISHED  
19,500 SQ. FT.

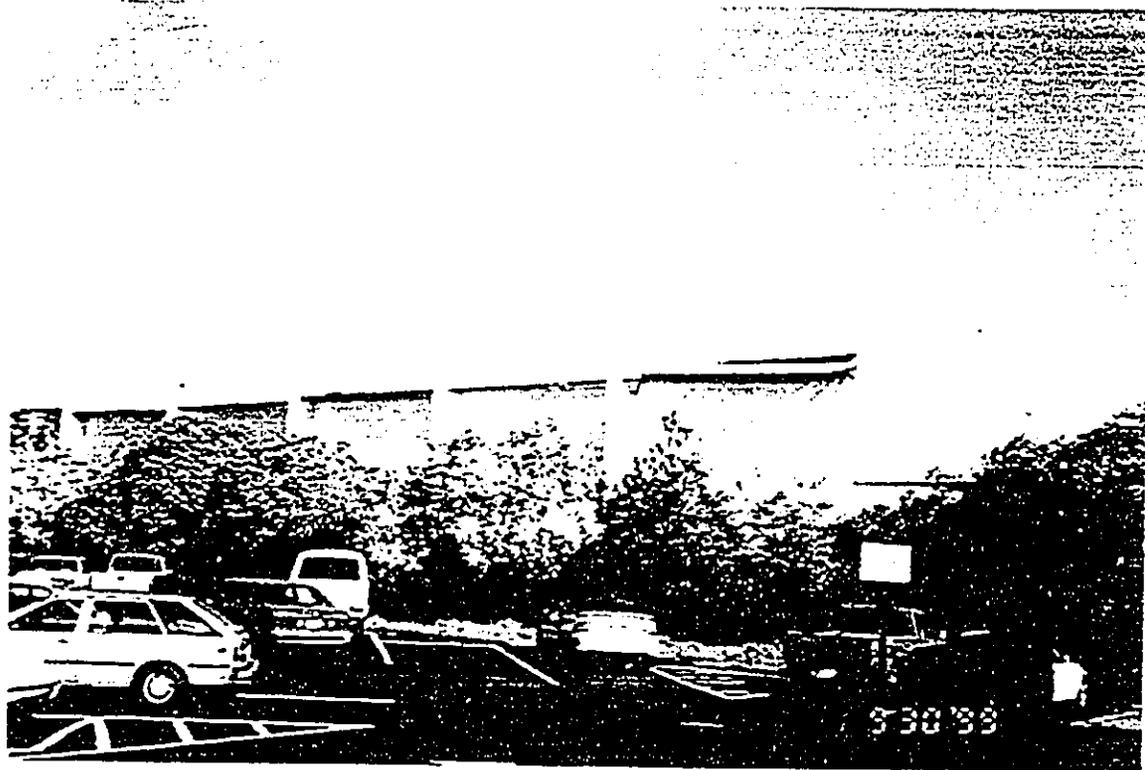
HEKIKI  
STREET

PHOTOGRAPHIC REFERENCE MAP  
FIGURE 11

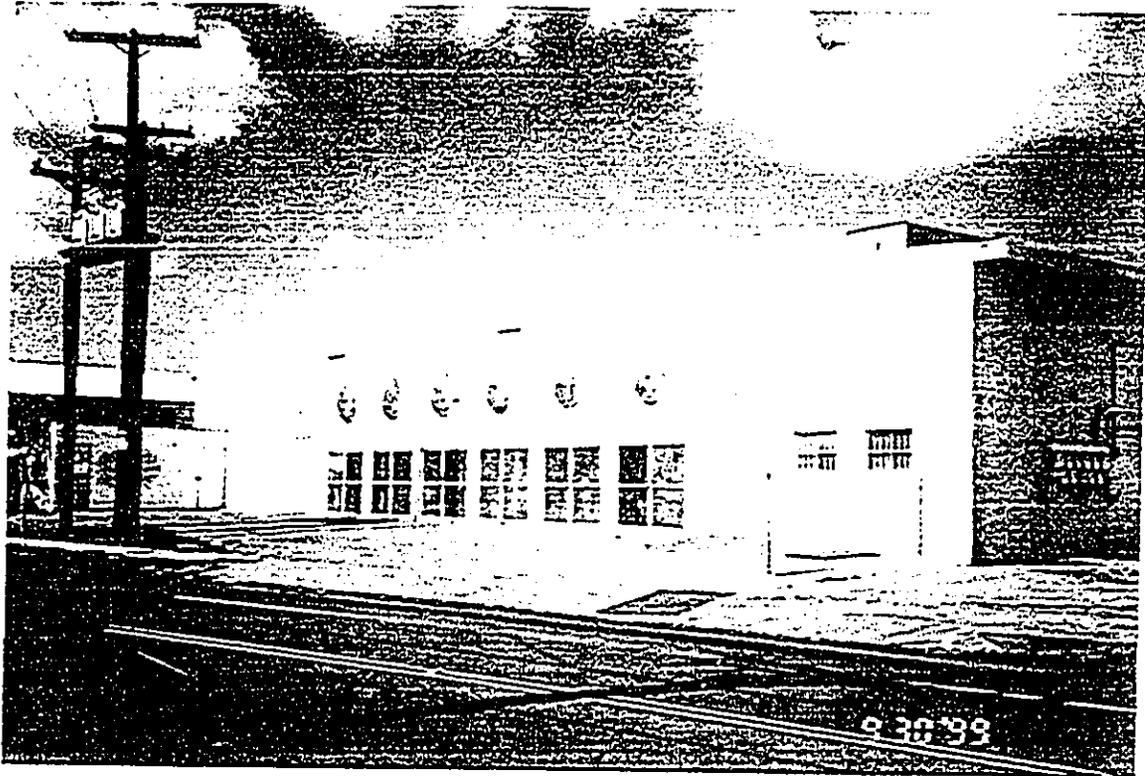




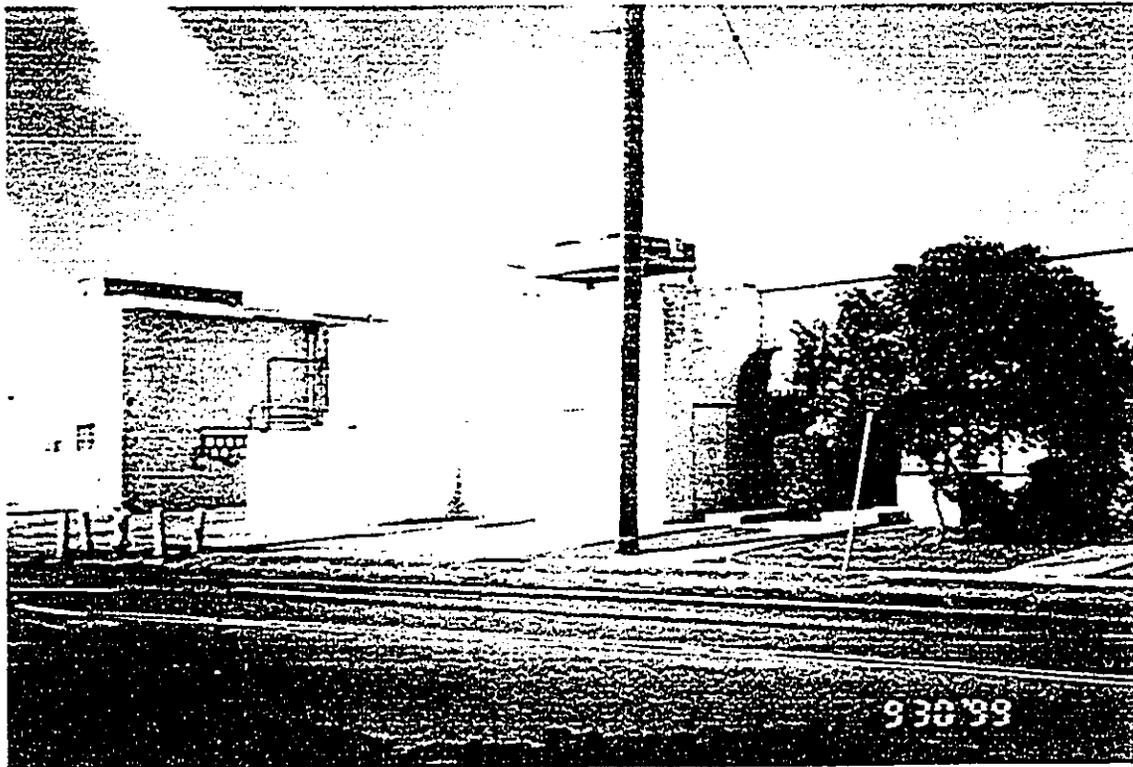
1 VIEW FROM ADJACENT PARKING LOT



2 VIEW FROM ADJACENT PARKING LOT

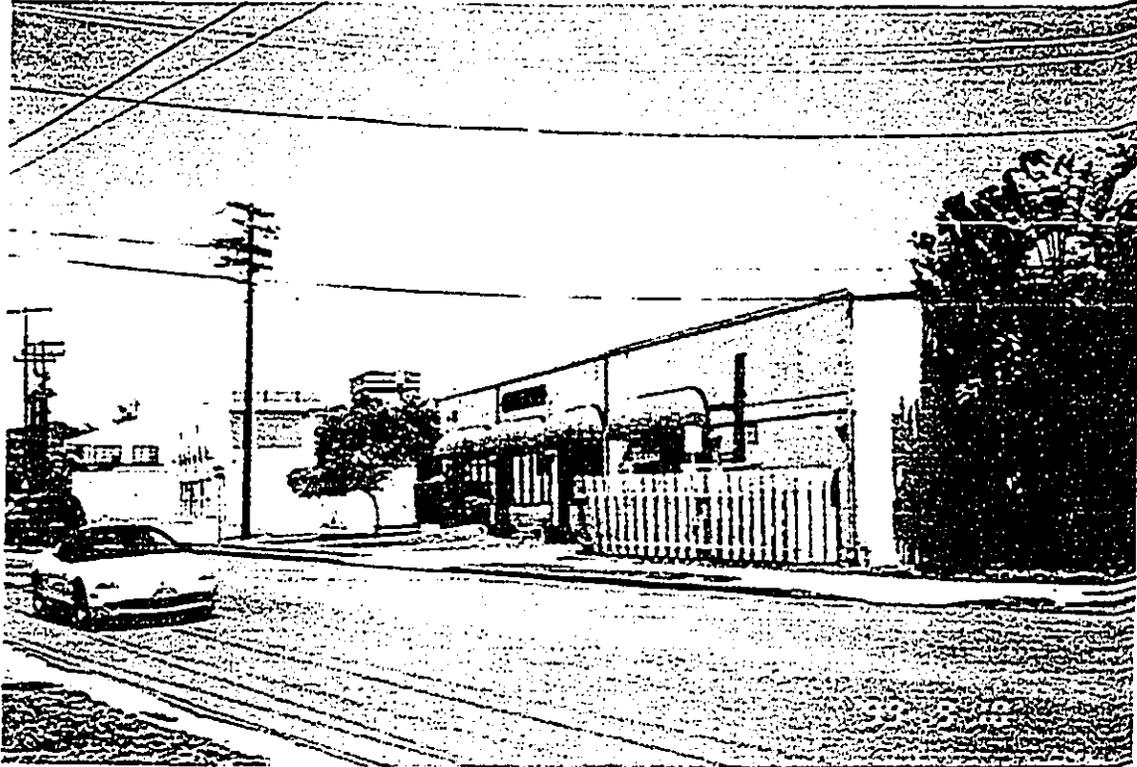


3 VIEW FROM HAMAKUA DRIVE  
EXISTING LOADING



4 VIEW FROM HAMAKUA DRIVE - EXISTING ELECTRICAL  
TRANSFORMER & A.C. EQUIPMENT TO BE DEMOLISHED



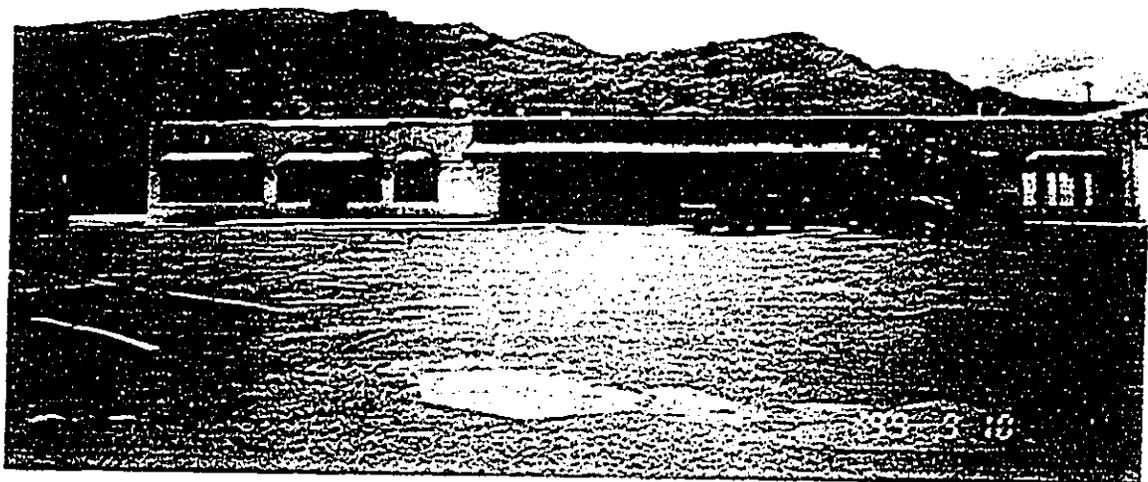


5. VIEW FROM HAMAKUA DRIVE  
BUILDING TO BE DEMOLISHED

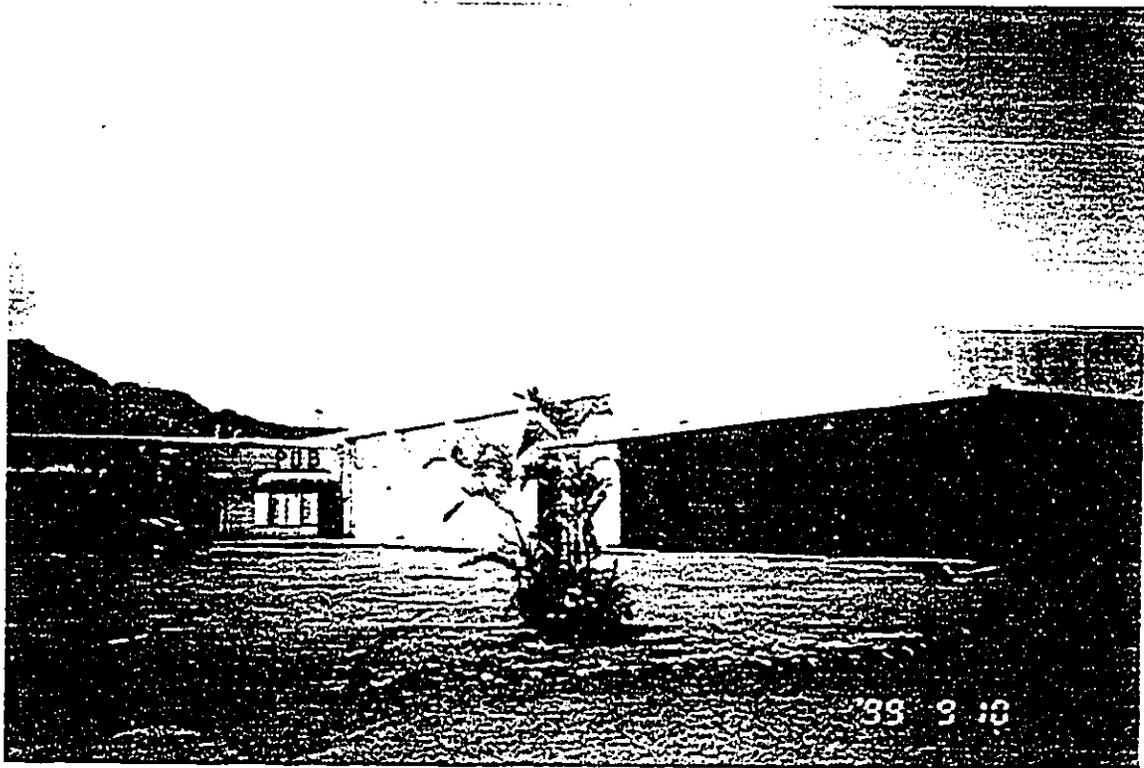


6. VIEW FROM CORNER OF HAMAKUA DRIVE &  
HEKILI STREET - BUILDING TO BE DEMOLISHED

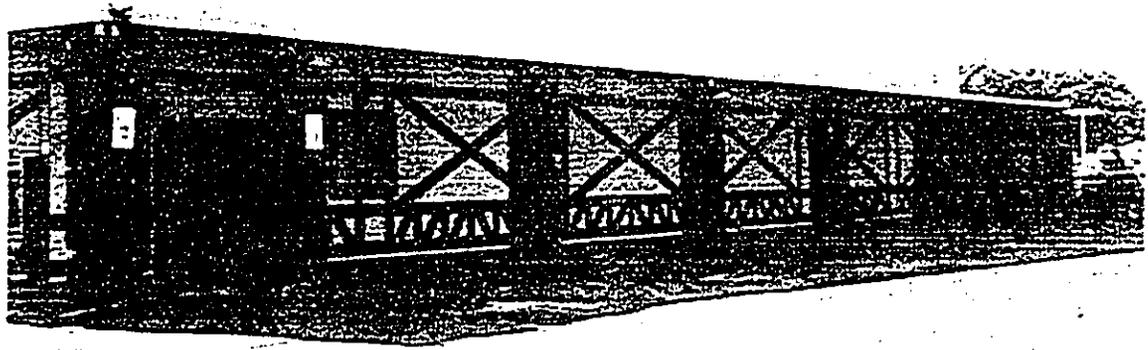
11A



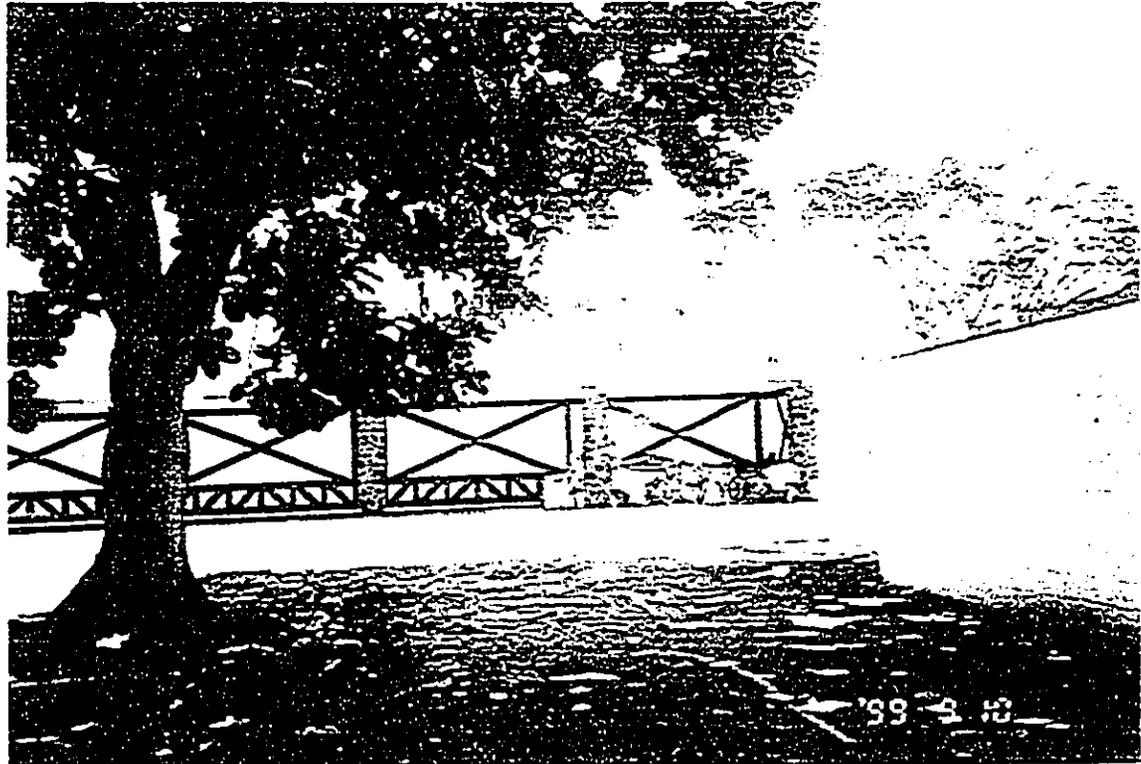
7. VIEW FROM EXISTING PARKING LOT  
BUILDING TO BE DEMOLISHED



8. VIEW FROM EXISTING PARKING LOT  
BUILDING TO BE RENOVATED



9. VIEW FROM PARKING LOT  
BUILDING TO BE RENOVATED



10. VIEW FOR ADJACENT PARKING LOT  
BUILDING TO BE RENOVATED

**COMMENTS RECEIVED AND  
RESPONSE LETTERS**



**KAILUA NEIGHBORHOOD BOARD NO. 81**

P.O. BOX 487 • KAILUA, HAWAII 96784

June 19, 2000

Castle Family Limited Partnership  
1199 Auloa Road  
Kailua, Hawaii 96734

**RECEIVED**  
**JUN 23 2000**  
**SUEDA & ASSOC., INC.**

Dear Sirs:

This letter represents the Kailua Neighborhood Board's comments to the draft environmental assessment for the Kailua Town Center Redevelopment (SMA).

The Kailua Neighborhood Board adopted the following motion at its meeting of June 1, 2000:  
*"The Kailua Neighborhood Board requests a thorough examination of potential traffic impacts of the Kailua Town Center project on the adjacent portion of Hamakua Drive."*

Discussion at the meeting centered on a concern for the integrity of Kawainui Stream. The project borders a portion of Hamakua Drive that has not been widened to the width of the remainder of Hamakua Drive. The opposite side of the Drive borders Kawainui Stream. Should a road widening become necessary on the stream side, it may have a major environmental impact on the stream.

Sincerely,

Faith P. Evans  
Chair

c.c. City & County of Honolulu.  
Department of Planning & Permitting  
650 South King St.  
Honolulu, Hawaii 96813

/ Sueda & Associates, Inc.  
905 Makahiki Way  
Honolulu, Hawaii 96826

OEQC  
Leiopapa A Kamehameha Building  
235 S. Beretania Street, Suite 702  
Honolulu, Hawaii 96813



Oahu's Neighborhood Board System - Established 1973



Sueda & Associates, Inc. / Architects and Planners

Lloyd T. Sueda, AIA  
Michael R. Wong, AIA Associate  
Byron T. Tsuruda, AIA Associate  
Robert S. Nitta, AIA Associate

July 3, 2000

Ms. Faith P. Evans, Chair  
Kailua Neighborhood Board No. 31  
P.O. Box 487  
Kailua, HI 96734

Re: Kailua Town Center - Draft Environmental Assessment

Dear Ms. Evans:

The following is in response to your letter dated June 19, 2000 regarding the Kailua Neighborhood Board's comments to the draft environmental assessment.

The existing Center has 50,000 s.f. of leasable space:

Former Foodland	30,000 s.f.
Additional Retail	20,000 s.f.

The proposed new development will consist of leasable space:

Foodland	30,000 s.f.
New Retail	6,000 s.f.

A net loss of 14,000 s.f. or 28 percent decrease in leasable area.

We are also proposing to close the existing loading area off Hamakua Drive where Foodland use to back up their container and delivery trucks. This change in loading zone location will be very significant in the reduction of traffic congestion. We are also proposing to move the existing driveway (off Hekili) further away from the intersection, again helping to control traffic.

These changes in the new project development will definitely lessen the traffic impact on Hamakua Drive.

Ms. Faith P. Evans, Chair  
July 3, 2000  
Page 2

The increase in parking stalls from 84 to 135 will help to contain internal traffic. The parking lot is adjacent to an existing ±1,000-car parking lot used by First Hawaiian Bank, Retail Shops, Restaurants, Longs Drug Stores, Liberty House and other businesses.

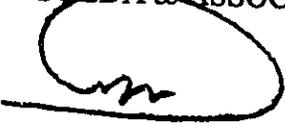
We, therefore, feel that the new development will not add any additional traffic to the neighborhood.

The City and County does not have plans for widening Hamakua Drive.

If you have any questions, please call and we can discuss this matter.

Very truly yours,

SUEDA & ASSOCIATES, INC.



Lloyd T. Sueda, AIA  
Principal

cc: Ardis Shaw-Kim/DPP  
Randy Moore/Kaneohe Ranch

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

650 SOUTH KING STREET • HONOLULU, HAWAII 96813  
TELEPHONE: (808) 523-4414 • FAX: (808) 527-8743 • INTERNET: www.co.honolulu.hi.us/planning

JEREMY HARRIS  
MAYOR



RANDALL K. FUJIKI, AIA  
DIRECTOR

LORETTA K.C. CHEE  
DEPUTY DIRECTOR

June 23, 2000

2000/ED-6  
2000/SMA-24 (ask)

**RECEIVED**  
JUN 27 2000  
SUEDA & ASSOC., INC.

Lloyd T. Sueda, AIA  
Sueda & Associates, Inc.  
905 Makahiki Way, Mauka Suite  
Honolulu, Hawaii 96826-2869

Dear Mr. Sueda:

**DRAFT ENVIRONMENTAL ASSESSMENT  
SPECIAL MANAGEMENT AREA (SMA) ORDINANCE  
CHAPTER 25, REVISED ORDINANCES OF HONOLULU (ROH)**

We are forwarding copies of comments we received, as well as our comments, relating to the Draft Environmental Assessment (EA) for the Kailua Town Center redevelopment project. In accordance with the provisions of Chapter 343, Hawaii Revised Statutes, you must respond to these comments and any other which were received during the 30-day public comment period. The final EA must include these comments and responses, as well as revised text, where appropriate.

Our comments on the Draft EA are as follows:

1. Wetlands

The Final EA should include a location map showing the location and extent of the wetland located across Hamakua Drive.

2. Drainage and Runoff

Page 5 of the Draft EA states that storm water runoff enters the City's drainage system on Hekili Street and Hamakua Drive. The Final EA should identify the location at which this system discharges. What are the estimated volumes of storm water runoff? Will runoff volumes change upon implementation of the project?

Lloyd T. Sueda, AIA

Page 2

June 23, 2000

3. Soils

Page 8 of the Draft EA states that a soil investigation is currently being conducted. The final EA should disclose the purpose of the investigation and the findings, if available.

4. Solid Waste

The final EA should describe the disposal sites for construction and operationally generated refuse.

5. Significance Criteria

The final EA should include a discussion of findings and reasons, according to the significance criteria listed in HAR 11-200-12, that supports a determination of either a Finding of No Significant Impact (FONSI) or EIS preparation notice.

If you have any questions, please contact Ardis Shaw-Kim of our staff at 527-5349.

Sincerely yours,



For RANDALL K. FUJIKI, AIA  
Director of Planning and  
Permitting

RKF:lg  
Enclosures

DN 43477



Sueda & Associates, Inc. / Architects and Planners

Lloyd T. Sueda, AIA

Michael R. Wong, AIA Associate

Byron T. Tsuruda, AIA Associate

Robert S. Nitta, AIA Associate

June 29, 2000

Mr. Randall K. Fujiki, AIA  
Director of Planning and Permitting  
Department of Planning and Permitting  
City and County of Honolulu  
650 So. King St.  
Honolulu, HI 96813

Re: Kailua Town Center - Draft Environmental Assessment

Dear Mr. Fujiki:

Thank you for your letter dated June 23, 2000 regarding your comments on our Draft Environment Assessment.

Our response to your comments are as follows:

1. **Wetlands:** The map of the existing wetland located across Hamakua Drive is enclosed in the revised Final EA .
2. **Drainage and Runoff:** This is being addressed by our civil engineer, Hida Okamoto & Associates in the revised Final EA.
3. **Soils:** Soils investigation was completed by Shinsato Engineering, Inc. , Consulting Geotechnical Engineers. (Refer to Final EA Appendix)

The purpose of the soils investigation was to determine the soils bearing capacity for the new building addition, the design of the loading dock and the a.c. paving in the parking lot.

4. **Solid Waste:** The construction generated refuse will be disposed through commercial disposal firms, such as Rolloffs Hawaii Inc., Horizon Waste Hawaii.

Soil generated refuse will also be disposed through a certified landfill. Any contaminated soil will be disposed and will meet all federal requirements for proper disposal.

Mr. Randall K. Fujiki  
June 29, 2000  
Page 2

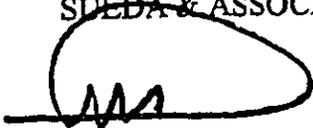
The operationally generated refuse will also be disposed through a certified commercial disposal firm.

5. **Significance Criteria:** See attached response to the State of Hawaii, Office of Environmental Quality Control, in response to HAR 11-200-12.

Please call if you have any questions.

Very truly yours,

SUEDA & ASSOCIATES, INC.



Lloyd T. Sueda, AIA  
Principal

Enc.

cc: Ardis Shaw-Kim/DPP  
Randy Moore/Kaneohe Ranch



United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Pacific Islands Ecoregion  
300 Ala Moana Blvd, Rm 3-122  
Box 50088  
Honolulu, HI 96850

RECEIVED  
JUN 27 2000  
SUEDA & ASSOC., INC.

'00 JUN 5 PM 2 34  
CITY OF HONOLULU

In Reply Refer To: Itg

Mr. Randall K. Fujiki, AIA  
Department of Planning and Permitting  
City and County of Honolulu  
650 South King Street  
Honolulu, HI 96813

Re: Draft Environmental Assessment for the Demolition, Addition, and Renovation to Kailua Town Center, Kailua, Hawaii

Dear Mr. Fujiki:

The U.S. Fish and Wildlife Service (Service) has reviewed the Draft Environmental Assessment (DEA) for the demolition, addition, and renovation of Kailua Town Center. The project sponsor is the Castle Family Limited Partnership. The proposed project involves the demolition of 19,500 square feet (sq ft) of the former Wigwam Building, the addition of approximately 10,000 sq ft of new retail space, the renovation of the old Foodland Building, construction of a loading dock and parking area, and landscaping. The Service offers the following comments for your consideration.

As you know, four federally listed endangered waterbirds have been known to occur at Hamakua Marsh, which is in close proximity to the project area, including: ae 'o or Hawaiian stilt (*Himantopus mexicanus knudseni*); 'alae ke 'oke 'o or American coot (*Fulica americana alai*); 'alae 'ula or Hawaiian common moorhen (*Gallinula chloropus sandvicensis*); and koloa maoli or Hawaiian duck (*Anas wyvilliana*). In addition, a Service biologist observed a Hawaiian common moorhen loafing along the edge of the drainage canal across from Hamakua Drive and the old Foodland Building on May 16, 2000.

The Service is concerned that sediments from the excavation may enter the drainage canal in storm water run-off and from the importation of backfill and topsoil for planters. However, the DEA states, "The City and County of Honolulu's "Rules Relating to Soil Erosion Standards and Guidelines" dated April 1999 will be followed." Based adherence to these rules, the Service does not anticipate significant adverse project-related impacts to fish and wildlife resources. Accordingly, we would support your Finding of No Significant Impact (FONSI) for the proposed project.

The Service appreciates the opportunity to comment. If you have any questions regarding these comments, please contact Fish and Wildlife Biologist Leila Gibson by telephone at (808) 541-3441 or by facsimile transmission at (808) 541-3470.

Sincerely,

A handwritten signature in black ink that reads "Paul Henson". The signature is written in a cursive style with a large, prominent initial "P".

Paul Henson  
Field Supervisor  
Ecological Services



Sueda & Associates, Inc. / Architects and Planners

Lloyd T. Sueda, AIA

Michael R. Wong, AIA Associate  
Byron T. Tsuruda, AIA Associate  
Robert S. Nitta, AIA Associate

June 28, 2000

Mr. Paul Henson  
Field Supervisor - Ecological Services  
United States Department of the Interior  
Fish and Wildlife Service  
300 Ala Moana Blvd., Room 3-122  
Honolulu, HI 96850

Re: Kailua Town Center - Draft Environmental Assessment

Dear Mr. Henson:

Thank you very much for your letter which we received on June 27, 2000 regarding our proposed Draft Environmental Assessment.

We are aware of the four federally listed endangered waterbirds in the Hamakua Marsh.

During construction as well as after the development is completed the developers, will by design, limit the amount of settlement and storm water discharge into the drainage canal by diverting as much surface runoff as possible into the landscaped area. We will also abide by all of the City and County's "Rules Relating to Soil Erosion Standards and Guidelines."

If you have any additional concerns, please address your comments to the Department of Planning and Permitting, attention Ardis Shaw-Kim.

Very truly yours,

SUEDA & ASSOCIATES, INC.

Lloyd T. Sueda, AIA  
Principal

cc: Ardis Shaw-Kim/DPP  
Randy Moore/Kaneohe Ranch

KTC-Fish&Wildlife response

**RECEIVED**  
JUN 27 2000  
SUEDA & ASSOC., INC.

WWB 2000-80 (SG)

May 24, 2000

**MEMORANDUM**

TO: ARDIS SHAW-KIM  
LAND USE PERMITS DIVISION

FROM: *Dennis M. Nishimura*  
DENNIS M. NISHIMURA  
WASTEWATER BRANCH

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT - DEMOLITION, ADDITION  
& RENOVATION TO KAILUA TOWN CENTER  
KAILUA, OAHU, HAWAII  
FILE NUMBER: 2000/SMA-24  
TMK: 4-2-038: 023

---

We have no objection to the proposed project. The applicant proposes to demolish 19,500 square feet of building, add 10,000 square feet of new retail space, and renovate the old Foodland Building. The net result will be a reduction in total floor area.

This statement shall not be construed as confirmation of sewage capacity reservation. Sewage capacity reservation is contingent on submittal and approval of a Sewer Connection Application form.

If you have any questions, please contact Mr. Scott Gushi of the Wastewater Branch at 523-4886.

DMN:dl  
[39146]



Sueda & Associates, Inc. / Architects and Planners

Lloyd T. Sueda, AIA

Michael R. Wong, AIA Associate

Byron T. Tsuruda, AIA Associate

Robert S. Nitta, AIA Associate

June 28, 2000

Mr. Dennis M. Nishimura  
Department of Planning and Permitting  
Wastewater Branch  
650 So. King St.  
Honolulu, HI 96813

Re: Kailua Town Center - Draft Environmental Assessment

Dear Mr. Nishimura:

Thank you for your memo dated May 24, 2000 regarding our Draft Environmental Assessment for Kailua Town Center.

Clarification

We proposed to demolish  $\pm 20,000$  s.f. and add 6,000 s.f. of leasable space - a decrease of 14,000 s.f. or 28 percent of the existing leasable space.

We do not anticipate any additional discharge of sewer from the original Center.

If you have any questions, please address your concerns to the Department of Planning and Permits, attention Ardis Shaw-Kim.

Very truly yours,

SUEDA & ASSOCIATES, INC.

Lloyd T. Sueda, AIA  
Principal

cc: Ardis Shaw-Kim/DPP  
Randy Moore/Kaneohe Ranch

KTC-Wastewtr Br. response

BENJAMIN J. CAYETANO  
GOVERNOR OF HAWAII

'00 MAY 22 AM 10 17

CITY & COUNTY OF HONOLULU



RECEIVED

JUN 27 2000

SUEDA & ASSOC., INC.

TIMOTHY E. JOHNS  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES

JANET E. KAWELO  
DEPUTY

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
DIVISION OF FORESTRY AND WILDLIFE  
1151 PUNCHBOWL STREET  
HONOLULU, HAWAII 96813

May 17, 2000

AQUACULTURE DEVELOPMENT  
PROGRAM  
AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
CONSERVATION AND  
ENVIRONMENTAL AFFAIRS  
CONSERVATION AND  
RESOURCES ENFORCEMENT  
CONVEYANCES  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
LAND MANAGEMENT  
STATE PARKS  
WATER AND LAND DEVELOPMENT  
WATER RESOURCE MANAGEMENT

Mr. Randall K. Fujiki, AIA  
Director of Planning and Permitting  
City and County of Honolulu  
650 South King Street, 7th Floor  
Honolulu, Hawaii 96813

Dear Mr. Fujiki:

Subject: **Environmental Assessment, Chapter 25, ROH Projects Within the  
Special Management Area for Kailua Town Center Redevelopment,  
108 Hekili Street, Kailua TMK: 4-2-38:23**

We have reviewed the subject EA for impacts to the native flora and fauna regarding DLNR, Division of Forestry and Wildlife programs and we provide the following comments for your consideration.

1. Section 1.6.2, DLNR, Division of Forestry and Wildlife should be recognized and added as an agency that the City has consulted with regarding this EA.
2. Section 4.2.3, DLNR, Division of Forestry and Wildlife recommends shielded lighting or cut-off luminary lights for all parking-lot and outdoor lights for this project. We appreciate your concern regarding the lighting that may cause birds near the wetland to become disoriented at night.
3. Section 3.2.2, To further clarify this section, there are three different types of waterfowl population that use the nearby Hamakua wetland. First, are the wintering birds, second are the migratory birds and lastly, and most important of the three are the resident nesting birds which include endangered and non-endangered species.
4. DLNR, Division of Forestry and Wildlife recommends using native landscape plants for the project. Landscaping with native plants will always earn the support of the community. But most importantly, we caution the use of pesticides and herbicides to maintain the project's landscape that is nearby a wetland. The affects of chemical drift and drainage as a result of the

Mr. Randall K. Fujiki  
May 17, 2000  
Page 2

pesticide or herbicide applications can cause irrevocable impacts to the birds, and their habitat. Preventive measures are advised to reduce the impact of chemical drift or drainage into the neighboring wetland.

5. The last point is the drainage and flood control measures that will be used to reduce impacts to the wetland. The EA states in section 2.4.3 that "no net increase" of storm water runoff will be anticipated to the existing City and County storm drainage systems in Hamakua Drive and Hekili Street. We also note that to the south, a storm drainage canal is part of the Hamakua wetland. We hope that the "Flood Retention System" being used here by the City is adequate and over-sedimentation and runoff beyond acceptable levels will be minimized from impacting the wetland.

We appreciate your addressing the dust and erosion control issues to mitigate the potential impacts from construction, i.e. installing temporary dust control barriers, gravel pads, and catch basin inlet filters. Thank you for allowing us the opportunity to comment on your project. Please call Patrick Costales, Oahu Branch Manager, DLNR, Forestry and Wildlife at 973-9787, if you have questions regarding this review.

Very truly yours,

*(all) Michael*  
*for* Michael G. Buck  
Administrator

C: DOFAW, Oahu Branch



Sueda & Associates, Inc. / Architects and Planners

Lloyd T. Sueda, AIA

Michael R. Wong, AIA Associate

Byron T. Tsuruda, AIA Associate

Robert S. Nitta, AIA Associate

June 29, 2000

Mr. Michael G. Buck, Administrator  
State of Hawaii  
Department of Land and Natural Resources  
Division of Forestry and Wildlife  
1151 Punchbowl St.  
Honolulu, HI 96813

Re: Kailua Town Center - Draft Environmental Assessment

Dear Mr. Buck:

Thank you for your letter dated May 17, 2000 regarding our Draft Environmental Assessment for the proposed Kailua Town Center.

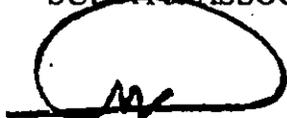
1. The DLNR, Division of Forestry and Wildlife will be recognized and added as an agency that the City will consult with regarding this Draft Environmental Assessment.
2. All parking lights used on this project will be "low sodium light fixtures". All lamps will be shielded from the air and focused down to the ground. This will prevent disoriented birds from accidentally flying into the exposed lamps.
3. We are aware of the different type of birds that populate the Hamakua wetland. We are, therefore, designing all exterior lights to meet these concerns.
4. We are instructing our landscape architect, The Mechler Corporation, to use native landscaping plants in the landscape design of the Kailua Town Center. They will also be made aware of the DLNR concerns of use of pesticides and herbicides to prevent any possible runoffs of chemicals into the adjacent wetland.
5. The civil engineer will design the storm drainage system to allow the majority of the drainage to occur in new landscape areas, trying to avoid as much as possible limited storm water runoff into the Hamakua wetland. This drainage issue is being enforced by the City and County.

Mr. Michael G. Buck  
June 29, 2000  
Page 2

If you have any other questions, please address your concerns to the Department of  
Planning and Permitting, attention Ardis Shaw-Kim.

Very truly yours,

SUEDA & ASSOCIATES, INC.

A handwritten signature in black ink, appearing to be "L. Sueda", is written over a horizontal line. The signature is enclosed within a hand-drawn oval.

Lloyd T. Sueda, AIA  
Principal

cc: Ardis Shaw-Kim/DPP  
Randy Moore/Kaneohe Ranch

RECEIVED

JUN 27 2000

SUEDA & ASSOC., INC.

DEPARTMENT OF BUDGET AND FISCAL SERVICES  
**CITY AND COUNTY OF HONOLULU**  
DIVISION OF TREASURY

530 SOUTH KING STREET, HONOLULU, HAWAII 96813  
PHONE (808) 523-4806 FAX (808) 527-6503

'00 MAY 12 AM 10 35

DEPT. OF BUDGET AND FISCAL SERVICES  
DIVISION OF TREASURY  
CITY & COUNTY OF HONOLULU



May 9, 2000

TO: RANDALL K. FUJIKI  
Department of Planning and Permitting

FROM: DORIS OSHIRO - x-4806  
Division of Treasury  
Real Property Tax Collections and Improvement District Section

SUBJECT: SPECIAL MANAGEMENT AREA USE PERMIT (SMP)

Real Property Tax Collections have the following requirements for unpaid real property taxes of the Department of Budget and Fiscal Services:

<u>Ref. No.</u>	<u>Tax Map Key</u>	<u>Period</u>	<u>Total Due 05/31/00</u>
2000/SMA-24 (ASK)	4-2-038: 23 Castle Family Ltd Tr	1999-00(2)	\$26,727.25



Sueda & Associates, Inc. / Architects and Planners

Lloyd T. Sueda, AIA

Michael R. Wong, AIA Associate

Byron T. Tsuruda, AIA Associate

Robert S. Nitta, AIA Associate

June 29, 2000

Ms. Doris Oshiro  
Division of Treasury  
City and County of Honolulu  
Department of Budget and Fiscal Services  
530 So. King St.  
Honolulu, HI 96813

Re: Kailua Town Center - Draft Environmental Assessment

Dear Ms. Oshiro:

The Castle Family Limited Partnership, the fee owner of the property, was not aware of the assessment due. They will take care of this matter immediately.

If you have any other questions, please address your concerns to the Department of Planning and Permitting, attention Ardis Shaw-Kim.

Very truly yours,

SUEDA & ASSOCIATES, INC.

Lloyd T. Sueda, AIA  
Principal

cc: Ardis Shaw-Kim/DPP  
Randy Moore/Kaneohe Ranch

KTC-DB&FS response

BENJAMIN J. CAYETANO  
GOVERNOR



RECEIVED  
JUN 27 2000  
SUEDA & ASSOC., INC.

GENEVIEVE SALMONSON  
DIRECTOR

STATE OF HAWAII  
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

235 SOUTH BERETANIA STREET  
SUITE 702  
HONOLULU, HAWAII 96813  
TELEPHONE (808) 586-4186  
FACSIMILE (808) 586-4186

May 24, 2000

Randall Fujiki, Acting Director  
Department of Planning and Permitting  
650 South King Street, 7th Floor  
Honolulu, Hawaii 96813

Attn: Ardis Shaw-Kim

Dear Mr. Fujiki:

Subject: Draft Environmental Assessment (EA) for Kailua Town Center Redevelopment

We have the following comments to offer:

1. Contacts:
  - a. Notify any businessman's or merchants association about the proposed project, allowing them sufficient time to review the draft EA and submit comments.
  - b. Document your contacts with the State Historic Preservation Division of DLNR in the final EA and include copies of any correspondence.
2. Flood hazard zone: Indicate what "Zone X" represents, either in the text of section 2.4.4 or on Figure 5. If this is a low-lying area prone to flooding, what mitigation measures do you plan to implement to reduce negative impacts?
3. Permits and approvals: List all required permits and approvals for this project and give the status of each.
4. Significance criteria: Include a discussion of findings and reasons, according to the significance criteria listed in HAR 11-200-12, that supports your forthcoming determination, either Finding of No Significant Impact (FONSI) or EIS preparation notice. A simple reiteration of the criteria in the negative, as listed

CITY & COUNTY OF HONOLULU  
04 JUN 31 PM 4 40

Randall Fujiki  
May 24, 2000  
Page 2

in the draft EA, will not suffice. You may use the enclosed sample as a guide-line.

5. Sustainable Building Design: Please consider applying sustainable building techniques presented in the enclosed "Guidelines for Sustainable Building Design in Hawaii." In the final EA include a description of any of the techniques you will implement.
6. Two-sided pages: In order to reduce bulk and save on paper, please consider printing on both sides of the pages in the final document.

If you have any questions call Nancy Heinrich at 586-4185.

Sincerely,



GENEVIEVE SALMONSON  
Director

Enc.

c: Lloyd Sueda  
Castle Family Ltd. Partnership

## DETERMINATION, FINDINGS AND REASONS FOR SUPPORTING DETERMINATION

**SIGNIFICANCE CRITERIA:** According to the Department of Health Rules (I 1-200-12), an applicant or agency must determine whether an action may have a significant impact on the environment, including all phases of the project, its expected consequences both primary and secondary, its cumulative impact with other projects, and its short and long-term effects. In making the determination, the Rules establish "Significance Criteria" to be used as a basis for identifying whether significant environmental impact will occur. According to the Rules, an action shall be determined to have a significant impact on the environment if it meets any one of the following criteria:

- (1) Involves an irrevocable commitment to loss or destruction of any natural or cultural resources;

The proposed project will not impact scenic views of the ocean or any ridge lines in the area. The visual character of the area will change from the current agricultural land to an improved 4-lane highway which is compatible with the surrounding land use plans and programs being implemented for the region. The highway corridor is comprised of "Prime" agricultural land which is an important resource. Development of drainage systems will follow established design standards to ensure the safe conveyance and discharge of storm runoff. In addition, the subject property is located outside of the Count's Special Management Area (SMA).

As previously noted, no significant archaeological or historical sites are known to exist within the corridor. Should any archaeologically significant artifacts, bones, or other indicators of previous onsite activity be uncovered during the construction phases of development, their treatment will be conducted in strict compliance with the requirements of the Department of Land and Natural Resources.

- (2) Curtails the range of beneficial uses of the environment;

Although the subject property is suitable for agricultural uses, the land area adjoining the Mokulele Highway is naturally suited for transportation purposes due to its location proximate to an existing highway system. To return the site to a natural environmental condition is not practical from both an environmental and economic perspective.

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

The proposed development is consistent with the Environmental Policies established in Chapter 344, HRS, and the National Environmental Policy Act.

- (4) Substantially affects the economic or social welfare of the community or state;

The proposed project will provide a significant contribution to Maui's future population by providing residents with the opportunity to "live and work in hannony" in a high quality living environment. The proposed project is designed to support surrounding land use patterns, will not negatively or significantly alter existing residential areas, nor will unplanned population growth or its distribution be stimulated. The project's development is responding to projected population growth rather than contributing to new population growth by stimulating in-migration.

- (5) Substantially affects public health

Impacts to public health may be affected by air, noise, and water quality impacts, however, these will be insignificant or not detectable, especially when weighed against the positive economic, social, and quality of life implications associated with the project. Overall, air, noise, and traffic impacts will be significantly positive in terms of public health as compared to the "no action" alternative.

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

Existing and planned large-scale housing development projects within Wailuku-Kahului and Kihei will contribute to a future population growth rate that will require expansion of public and private facilities and services. These

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# Guidelines for Sustainable Building Design in Hawai'i

## *A planner's checklist*

(Adopted by the Environmental Council on October 13, 1999)

### Introduction

Hawai'i law calls for efforts to conserve natural resources, promote efficient use of water and energy and encourage recycling of waste products. Planning a project from the very beginning to include sustainable design concepts can be a critical step toward meeting these goals.

The purpose of the state's environmental review law (HRS Ch. 343) is to encourage a full, accurate and complete analysis of proposed actions, promote public participation and support enlightened decision making by public officials. The Office of Environmental Quality Control offers the following guidelines for preparers of environmental reviews under the authority of HRS 343 to assist agencies and applicants in meeting these goals.

These guidelines do not constitute rules or law. They have been refined by staff and peer review to provide a checklist of items that will help the design team create projects that will have a minimal impact on Hawai'i's environment and make wise use of our natural resources. In a word, projects that are *sustainable*.

A sustainable building is built to minimize energy use, expense, waste, and impact on the environment. It seeks to improve the region's sustainability by meeting the needs of Hawai'i's residents and visitors today without compromising the needs of future generations. Compared to conventional projects, a resource-efficient building project will:

- I. Use less energy for operation and maintenance
- II. Contain less *embodied* energy (e.g. locally produced building products often contain less *embodied* energy than imported products because they require less energy-consuming transportation.)
- III. Protect the environment by preserving/conserving water and other natural resources and by minimizing impact on the site and ecosystems
- IV. Minimize health risks to those who construct, maintain, and occupy the building
- V. Minimize construction waste
- VI. Recycle and reuse generated construction wastes

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- VII. Use resource-efficient building materials (e.g. materials with recycled content and low embodied energy, and materials that are recyclable, renewable, environmentally benign, non-toxic, low VOC (Volatile Organic Compound) emitting, durable, and that give high life cycle value for the cost.)
- VIII. Provide the highest quality product practical at competitive (affordable) first and life cycle costs.

In order to avoid excessive overlapping of items, the checklist is designed to be read in totality, not just as individual sections. This checklist tries to address a range of project types, large scale as well as small scale. Please use items that are appropriate to the type and scale of the project.

Although this list will help promote careful and sensitive planning, mere compliance with this checklist does not confirm sustainability. Compliance with and knowledge of current building codes by users of this checklist is also required.

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## I. Pre Design

- \_\_\_1. Hold programming team meeting with client representative, Project Manager, planning consultant, architectural consultant, civil engineer, mechanical, electrical, plumbing (MEP) engineer, structural engineer, landscape architect, interior designer, sustainability consultant and other consultants as required by the project. Identify project and sustainability goals. Client representatives and consultants need to work together to ensure that project and environmental goals are met.
- \_\_\_2. Develop sustainable guideline goals to insert into outline specifications as part of the Schematic Design documents. Select goals from the following sections that are appropriate for the project.
- \_\_\_3. Use Cost-Benefit Method for economic analysis of the sustainability measures chosen. (Cost-Benefit Method is a method of evaluating project choices and investments by comparing the present and life cycle value of expected benefits to the present and life cycle value of expected costs.)
- \_\_\_4. Include "Commissioning" in the project budget and schedule. (Building "Commissioning" is the process of ensuring that systems are designed, installed, functionally tested, and capable of being operated and maintained in accordance with specifications that meet the owner's needs, and recognize the owner's financial and operational capacity. It improves the performance of the building systems, resulting in energy efficiency and conservation, improved air quality and lower operation costs. *Refer to Section IX.*)

## II. Site Selection & Site Design

### A. Site Selection

- \_\_\_1. Analyze and assess site characteristics such as vegetation, topography, geology, climate, natural access, solar orientation patterns, water and drainage, and existing utility and transportation infrastructure to determine the appropriate use of the site.
- \_\_\_2. Whenever possible, select a site in a neighborhood where the project can have a positive social, economic and/or environmental impact.
- \_\_\_3. Select a site with short connections to existing municipal infrastructure (sewer lines, water, waste water treatment plant, roads, gas, electricity, telephone, data communication lines and services). Select a site close to mass transportation, bicycle routes and pedestrian access.

### B. Site Preparation and Design

- \_\_\_1. Prepare a thorough existing conditions topographic site plan depicting topography, natural and built features, vegetation, location of site utilities and include solar information,

rainfall data and direction of prevailing winds. Preserve existing resources and natural features to enhance the design and add aesthetic, economic and practical value. Design to minimize the environmental impact of the development on vegetation and topography.

- 2. Site building(s) to take advantage of natural features and maximize their beneficial effects. Provide for solar access, daylighting and natural cooling. Design ways to integrate the building(s) with the site that maximizes and preserves positive site characteristics, enhances human comfort, safety and health, and achieves operational efficiencies.
- 3. Locate building(s) to encourage bicycle and pedestrian access and pedestrian oriented uses. Provide bicycle and pedestrian paths, bicycle racks, etc. Racks should be visible and accessible to promote and encourage bicycle commuting.
- 4. Retain existing topsoil and maintain soil health by clearing only the areas reserved for the construction of streets, driveways, parking areas, and building foundations. Replant exposed soil areas as soon as possible. Reuse excavated soils for fill and cut vegetation for mulch.
- 5. Grade slopes to a ratio of less than 2 : 1 (run to rise). Balance cut and fill to eliminate hauling. Check grading frequently to prevent accidental over excavation.
- 6. Minimize the disruption of site drainage patterns. Provide erosion and dust controls, positive site drainage, and siltation basins as required to protect the site during and after construction, especially, in the event of a major storm.
- 7. Minimize the area required for the building footprint. Consolidate utility and infrastructure in common corridors to minimize site degradation, and cost, improve efficiency, and reduce impermeable surfaces.
- 8. For termite protection, use non toxic alternatives to pesticides and herbicides, such as Borate treated lumber, Basaltic Termite Barrier, stainless steel termite barrier mesh, and termite resistant materials.

### **III. Building Design**

- 1. Consider adaptive re-use of existing structures instead of demolishing and/or constructing a new building. Consult the State Historic Preservation Officer for possible existing historic sites that may meet the project needs.
- 2. Plan for high flexibility while designing building shell and interior spaces to accommodate changing needs of the occupants, and thereby extend the life span of the building.
- 3. Design for re-use and/or disassembly. (For recyclable and reusable building products, see Section VII).
- 4. Design space for recycling and waste diversion opportunities during occupancy.
- 5. Provide facilities for bicycle and pedestrian commuters (showers, lockers, bike racks, etc.) in commercial areas and other suitable locations.
- 6. Plan for a comfortable and healthy work environment. Include inviting outdoor spaces, wherever possible. (*Refer to Section VIII.*)

- \_\_\_7. Provide an Integrated Pest Management approach. The use of products such as Termi-mesh, Basaltic Termite Barrier and the Sentricon "bait" system can provide long term protection from termite damage and reduce environmental pollution.
- \_\_\_8. Design a building that is energy efficient and resource efficient. (See Sections IV, V, VII.) Determine building operation by-products such as heat gain and build up, waste/gray-water and energy consumption, and plan to minimize them or find alternate uses for them.
- \_\_\_9. For natural cooling, use
  - a. Reflective or light colored roofing, radiant barrier and/or insulation, roof vents
  - b. Light colored paving (concrete) and building surfaces
  - c. Tree Planting to shade buildings and paved areas
  - d. Building orientation and design that captures trade winds and/or provides for convective cooling of interior spaces when there is no wind.

#### IV. Energy Use

- \_\_\_1. Obtain a copy of the State of Hawai'i Model Energy Code (available through the Hawai'i State Energy Division, at Tel. 587-3811). Exceed its requirements. (Contact local utility companies for information on tax credits and utility-sponsored programs offering rebates and incentives to businesses for installing qualifying energy efficient technologies.)
- \_\_\_2. Use site sensitive orientation to :
  - a. Minimize cooling loads through site shading and carefully planned east-west orientation.
  - b. Incorporate natural ventilation by channeling trade winds.
  - c. Maximize daylighting.
- \_\_\_3. Design south, east and west shading devices to minimize solar heat gain.
- \_\_\_4. Use spectrally selective tints or spectrally selective low-e glazing with a Solar Heat Gain Coefficient (SHGC) of 0.4 or less.
- \_\_\_5. Minimize effects of thermal bridging in walls, roofs and window systems.
- \_\_\_6. Maximize efficiencies for lighting, Heating, Ventilation, Air Conditioning (HVAC) systems and other equipment. Use insulation and/or radiant barriers, natural ventilation, ceiling fans and shading to avoid the use of air conditioning whenever appropriate.
- \_\_\_7. Eliminate hot water in restrooms when possible.
- \_\_\_8. Provide tenant sub-metering to encourage utility use accountability.
- \_\_\_9. Use renewable energy. Use solar water heaters and consider the use of photovoltaics and Building Integrated Photovoltaics (BIPV).
- \_\_\_10. Use available energy resources such as waste heat recovery, when feasible.

### **A. Lighting**

1. Design for at least 15% lower interior lighting power allowance than the Energy Code.
2. Select lamps and ballasts with the highest efficiency, compatible with the desired level of illumination and color rendering specifications. Examples that combine improved color rendering with efficient energy use include compact fluorescent and T8 fluorescent that use tri-phosphor gases.
3. Select lighting fixtures which maximize system efficacy and which have heat removal capabilities
4. Reduce light absorption on surfaces by selecting colors and finishes that provide high reflectance values without glare.
5. Use task lighting with low ambient light levels.
6. Maximize daylighting through the use of vertical fenestration, light shelves, skylights, clerestories, building form and orientation as well as through translucent or transparent interior partitions. Coordinate daylighting with electrical lighting for maximum electrical efficiency.
7. Incorporate daylighting controls and/or motion activated light controls in low or intermittent use areas.
8. Avoid light spillage in exterior lighting by using directional fixtures.
9. Minimize light overlap in exterior lighting schemes.
10. Use lumen maintenance procedures and controls.

### **B. Mechanical Systems**

1. Design to comply with the Energy Code and to exceed its efficiency requirements.
2. Use "Smart Building" monitor/control systems when appropriate.
3. Utilize thermal storage for reduction of peak energy usage.
4. Use Variable air volume systems to save fan power.
5. Use variable speed drives on pumping systems and fans for cooling towers and air handlers.
6. Use air-cooled refrigeration equipment or use cooling towers designed to reduce drift.
7. Specify premium efficiency motors.
8. Reduce the need for mechanical ventilation by reducing sources of indoor air pollution. Use high efficiency air filters and ultraviolet lamps in air handling units. Provide for regular maintenance of filtration systems. Use ASHRAE standards as minimum.
9. Locate fresh air intakes away from polluted or overheated areas. Locate on roof where possible. Separate air intake from air exhausts by at least 40 ft.
10. Use separate HVAC systems to serve areas that operate on widely differing schedules and/or design conditions.
11. Use shut off or set back controls on HVAC system when areas are not occupied.
12. Use condenser heat, waste heat or solar energy. (Contact local utility companies for information on the utility-sponsored Commercial and Industrial Energy Efficiency

Programs which offer incentives to businesses for installing qualifying energy efficient technologies.)

- \_\_\_ 13. Evaluate plug-in loads for energy efficiency and power saving features.
- \_\_\_ 14. Improve comfort and save energy by reducing the relative humidity by waste reheat, heat pipes or solar heat.
- \_\_\_ 15. Minimize heat gain from equipment and appliances by using:
  - a. Environmental Protection Agency (EPA) Energy Star rated appliances.
  - b. Hoods and exhaust fans to remove heat from concentrated sources.
  - c. High performance water heating that exceeds the Energy Code requirements.
- \_\_\_ 16. Specify HVAC system "commissioning" period to reduce occupant exposure to Indoor Air Quality (IAQ) contaminants and to maximize system efficiency.

## V. Water Use

### A. Building Water

- \_\_\_ 1. Install water conserving, low flow fixtures as required by the Uniform Plumbing Code.
- \_\_\_ 2. If practical, eliminate hot water in restrooms.
- \_\_\_ 3. Use self closing faucets (infrared sensors or spring loaded faucets) for lavatories and sinks.

### B. Landscaping and Irrigation

(See Section VI.)

## VI. Landscape and Irrigation

- \_\_\_ 1. Incorporate water efficient landscaping (xeriscaping) using the following principles:
  - a. Planning, Efficient irrigation: Create watering zones for different conditions. Separate vegetation types by watering requirements. Install moisture sensors to prevent operation of the irrigation system in the rain or if the soil has adequate moisture. Use appropriate sprinkler heads.
  - b. Soil analysis/improvement: Use (locally made) soil amendments and compost for plant nourishment, improved water absorption and holding capacity.
  - c. Appropriate plant selection: Use drought tolerant and/or slow growing hardy grasses, native and indigenous plants, shrubs, ground covers, trees, appropriate for local conditions, to minimize the need for irrigation.
  - d. Practical turf areas: Turf only in areas where it provides functional benefits.

- e. Mulches: Use mulches to minimize evaporation, reduce weed growth and retard erosion.

Contact the local Board of Water Supply for additional information on xeriscaping such as efficient irrigation, soil improvements, mulching, lists of low water-demand plants, tours of xeriscaped facilities, and xeriscape classes.

- \_\_\_2. Protect existing beneficial site features and save trees to prevent erosion. Establish and carefully mark tree protection areas well before construction.
- \_\_\_3. Limit staging areas and prevent unnecessary grading of the site to protect existing, especially native, vegetation.
- \_\_\_4. Use top soil from the graded areas, stockpiled on the site and protected with a silt fence to reduce the need for imported top soil.
- \_\_\_5. Irrigate with non-potable water or reclaimed water when feasible. Collect rainwater from the roof for irrigation.
- \_\_\_6. Sub-meter the irrigation system to reduce water consumption and consequently water and sewer fees. Contact the local county agency to obtain irrigation sub-metering requirements and procedures. Locate irrigation controls within sight of the irrigated areas to verify that the system is operating properly.
- \_\_\_7. Use pervious paving instead of concrete or asphalt paving. Use natural and man-made berms, hills and swales to control water runoff.
- \_\_\_8. Avoid the use of solvents that contain or leach out pollutants that can contaminate the water resources and runoff. Contact the State of Hawai'i Clean Water Branch at 586-4309 to determine whether a NPDES (National Pollutant Discharge Elimination System) permit is required.
- \_\_\_9. Use Integrated Pest Management (IPM) techniques. IPM involves a carefully managed use of biological and chemical pest control tactics. It emphasizes minimizing the use of pesticides and maximizing the use of natural process
- \_\_\_10. Use trees and bushes that are felled at the building site (i.e. mulch, fence posts). Leave grass trimmings on the lawn to reduce green waste and enhance the natural health of lawns.
- \_\_\_11. Use recycled content, decay and weather resistant landscape materials such as plastic lumber for planters, benches and decks.

## **VII. Building Materials & Solid Waste Management**

### **A. Material Selection and Design**

- \_\_\_1. Use durable products.
- \_\_\_2. Specify and use natural products or products with low embodied energy and/or high recycled content. Products with recycled content include steel, concrete with glass,

drywall, carpet, etc. Use ground recycled concrete, graded glass cullet or asphalt as base or fill material.

- \_\_\_3. Specify low toxic or non-toxic materials whenever possible, such as low VOC (Volatile Organic Compounds) paints, sealers and adhesives and low or formaldehyde-free materials. Do not use products with CFCs (Chloro-fluoro-carbons).
- \_\_\_4. Use locally produced products such as plastic lumber, insulation, hydro-mulch, glass tiles, compost.
- \_\_\_5. Use advanced framing systems that reduce waste, two stud corners, engineered structural products and prefabricated panel systems.
- \_\_\_6. Use materials which require limited or no application of finishing or surface preparation. (i.e. finished concrete floor surface, glass block and glazing materials, concrete block masonry, etc.).
- \_\_\_7. Use re-milled salvaged lumber where appropriate and as available. Avoid the use of old growth timber.
- \_\_\_8. Use sustainably harvested timber.
- \_\_\_9. Commit to a material selection program that emphasizes efficient and environmentally sensitive use of building materials, and that uses locally available building materials. (A list of Earth friendly products and materials is available through the Green House Hawai'i Project. Call Clean Hawai'i Center, Tel. 587-3802 for the list.)

#### **B. Solid Waste Management, Recycling and Diversion Plan**

- \_\_\_1. Prepare a job-site recycling plan and post it at the job-site office.
- \_\_\_2. Conduct pre-construction waste minimization and recycling training for employees and sub-contractors.
- \_\_\_3. Use a central area for all cutting.
- \_\_\_4. Establish a dedicated waste separation/diversion area. Include Waste/Compost/Recycling collection areas and systems for use during construction process and during the operational life cycle of the building.
- \_\_\_5. Separate and divert all unused or waste cardboard, ferrous scrap, construction materials and fixtures for recycling and/or forwarding to a salvage exchange facility. Information on "Minimizing C&D (construction and demolition) waste in Hawai'i" is available through Department of Health, Office of Solid Waste Management, Tel. 586-4240.
- \_\_\_6. Use all green waste, untreated wood and clean drywall on site as soil amendments or divert to offsite recycling facilities.
- \_\_\_7. Use concrete and asphalt rubble on-site or forward the material for offsite recycling.
- \_\_\_8. Carefully manage and control waste solvents, paints, sealants, and their used containers. Separate these materials from C&D (construction and demolition) waste and store and dispose them of them carefully.
- \_\_\_9. Donate unused paint, solvents, sealants to non-profit organizations or list on HIMEX (Hawai'i Materials Exchange). HIMEX is a free service operated by Maui Recycling

Group, that offers an alternative to landfill disposal of usable materials, and facilitates no-cost trades. See web site, [www.himex.org](http://www.himex.org).

- \_\_\_10. Use suppliers that re-use or recycle packaging material whenever possible.

## **VIII. Indoor Air Quality**

- \_\_\_1. Design an HVAC system with adequate supply of outdoor air, good ventilation rates, even air distribution, sufficient exhaust ventilation and appropriate air cleaners.
- \_\_\_2. Develop and specify Indoor Air Quality (IAQ) requirements during design and contract document phases of the project. Monitor compliance in order to minimize or contain IAQ contaminant sources during construction, renovation and remodeling.
- \_\_\_3. Notify occupants of any type of construction, renovation and remodeling and the effects on IAQ.
- \_\_\_4. Inspect existing buildings to determine if asbestos and lead paint are present and arrange for removal or abatement as needed.
- \_\_\_5. Supply workers with, and ensure the use of VOC (Volatile Organic Compounds)-safe masks where required.
- \_\_\_6. Ensure that HVAC systems are installed, operated and maintained in a manner consistent with their design. Use UV lamps in Air Handling Units to eliminate mold and mildew growth. An improperly functioning HVAC system can harbor biological contaminants such as viruses, bacteria, molds, fungi and pollen, and can cause Sick Building Syndrome (SBS).
- \_\_\_7. Install separate exhaust fans in rooms where air polluting office equipment is used, and exhaust directly to the exterior of the building, at sufficient distance from the air intake vents.
- \_\_\_8. Place bird guards over air intakes to prevent pollution of shafts and HVAC ducts.
- \_\_\_9. Control indoor air pollution by selecting products and finishes that are low or non-toxic and low VOC emitting. Common sources of indoor chemical contaminants are adhesives, carpeting, upholstery, manufactured wood products, copy machines, pesticides and cleaning agents.
- \_\_\_10. Schedule finish application work to minimize absorption of VOCs into surrounding materials e.g. allow sufficient time for paint and clear finishes to dry before installing carpet and upholstered furniture. Increase ventilation rates during periods of increased pollution.
- \_\_\_11. Allow a flush-out period after construction, renovation, remodeling or pesticide application to minimize occupant exposure to chemicals and contaminants.

## **IX. Commissioning & Construction Project Closeout**

- 1. Appoint a Commissioning Authority to develop and implement a commissioning plan and a preventative maintenance plan. Project Manager's responsibilities must include coordination of commissioning activities during project closeout.
- 2. Commissioning team should successfully demonstrate all systems and perform operator training before final acceptance.
- 3. Provide flush-out period to remove air borne contaminants from the building and systems.
- 4. Provide as-built drawings and documentation for all systems. Provide data on equipment maintenance and their control strategies as well as maintenance and cleaning instructions for finish materials.

## **X. Occupancy and Operation**

### **A. General Objectives**

- 1. Develop a User's Manual for building occupants that emphasizes the need for Owner/Management commitment to efficient sustainable operations.
- 2. Management's responsibilities must include ensuring that sustainability policies are carried out.

### **B. Energy**

- 1. Purchase EPA rated, Energy Star, energy-efficient office equipment, appliances, computers, and copiers. (Energy Star is a program sponsored by U.S. Dep. Of Energy. Use of these products will contribute to reduced energy costs for buildings and reduce air pollution.)
- 2. Institute an employee education program about the efficient use of building systems and appliances, occupants impact on and responsibility for water use, energy use, waste generation, waste recycling programs, etc.
- 3. Re-commission systems and update performance documentation periodically per recommendations of the Commissioning Authority, or whenever modifications are made to the systems.

### **C. Water**

- 1. Start the watering cycle in the early morning in order to minimize evaporation.
- 2. Manage the chemical treatment of cooling tower water to reduce water consumption.

### **D. Air**

- 1. Provide incentives which encourage building occupants to use alternatives to and to reduce the use of single occupancy vehicles.

- \_\_\_ 2. Provide a location map of services within walking distance of the place of employment (child care, restaurants, gyms, shopping).
- \_\_\_ 3. Periodically monitor or check for indoor pollutants in building.
- \_\_\_ 4. Provide an IAQ plan for tenants, staff and management that establishes policies and documentation procedures for controlling and reporting indoor air pollution. This helps tenants and staff understand their responsibility to protect the air quality of the facility.

#### **E. Materials and Products**

- \_\_\_ 1. Purchase business products with recycled content such as paper, toners, etc.
- \_\_\_ 2. Purchase Furniture made with sustainably harvested wood, or with recycled and recycled content materials, which will not off gas VOC's.
- \_\_\_ 3. Remodeling and painting should comply with or improve on original sustainable design intent.
- \_\_\_ 4. Use low VOC, non-toxic, phosphate and chlorine free, biodegradable cleaning products.

#### **F. Solid Waste**

- \_\_\_ 1. Collect recyclable business waste such as paper, cardboard boxes, and soda cans.
- \_\_\_ 2. Avoid single use items such as paper or Styrofoam cups and plates, and plastic utensils.

## **XI. Resources**

Financing: Energy Efficiency in Buildings. U.S. Department of Energy, DOE/EE-0152, May, 1998 (Call Tel.1-800-DOE-EREC or visit local office)

Building Commissioning: The Key to Quality Assurance. U.S. Department of Energy, DOE/EE-0153, May, 1998 (Call Tel.1-800-DOE-EREC or visit local office)

Guide to Resource-Efficient Building in Hawaii. University of Hawai'i at Manoa, School of Architecture and Energy, Resources and Technology Division, Department of Business, Economic Development and Tourism, October 1998. (Call Tel. 587-3804 for publication)

Hawaii Model Energy Code. Energy, Resources and Technology Division, Department of Business, Economic Development and Tourism, November 1997 (Call Tel. 587-3810 for publication)

Photovoltaics in the Built Environment: A Design Guide for Architects and Engineers. NREL Publications, DOE/GO #10097-436, September 1997 (Call Tel.1-800-DOE-EREC or visit local office)

Building Integrated Photovoltaics: A Case Study. NREL Publications #TP-472-7574, March 1995 (Call Tel. 1-800-DOE-EREC or visit local office)

Solar Electric Applications: An overview of Today's Applications. NREL Publications, DOE/GO #10097-357, Revised February, 1997 (Call Tel. 1-800-DOE-EREC or visit local office)

Green Lights: An Enlightened Approach to Energy Efficiency and Pollution Prevention. U.S. Environmental Protection Agency, Pacific Island Contact Office (Call Tel. 541-2710 for publication.)

Healthy Lawn, Healthy Environment. U.S. Environmental Protection Agency, Pacific Island Contact Office. (Call Tel. 541-2710 for this and related publications)

How to Plant a Native Hawaiian Garden. Office of Environmental Quality Control (OEQC), Department of Health, State of Hawai'i (Call Tel. 586-4185 for publication)

Buy Recycled in Hawai'i. Clean Hawai'i Center, Energy, Resources and Technology Division, Department of Business, Economic Development and Tourism, November 1997. (Call Tel. 587-3802 for publication)

Hawai'i Recycling Industry Guide and other recycling and reuse related fact sheets. Clean Hawai'i Center, Energy, Resources and Technology Division, Department of Business, Economic Development and Tourism, July 1999. (Call Tel. 587-3802 for publication)

Minimizing Construction and Demolition Waste. Office of Solid Waste Management, Department of Health and Clean Hawai'i Center, Energy, Resources and Technology Division, Department of Business, Economic Development and Tourism, February 1998. (Call Tel. 586-4240 for publication)

Contractor's Waste Management Guide and Construction and demolition Waste Management Facilities Directory. Clean Hawai'i Center, Energy, Resources and Technology Division, Department of Business, Economic Development and Tourism, 1999. (Call Tel. 587-3802 for publication)

Waste Management and Action: Construction Industry. Department of Health, Solid and Hazardous Waste Branch (Call Tel. 586-7496 for publication)

Business Guide For reducing Solid Waste. U.S. Environmental Protection Agency, Pacific Island Contact Office, Tel. 541-2710 (Call for publication.)

The Inside Story: A Guide to Indoor Air Quality. U.S. Environmental Protection Agency, Pacific Island Contact Office, Tel. 541-2710 (Call for this and related publications.) Additional information is available from the American Lung Association, Hawai'i, Tel. 537-5966

Selecting Healthier Flooring Materials. American Lung Association and Clean Hawai'i Center, February 1999. (Call Tel. 537-5966 x307)

Office Paper Recycling: An Implementation Manual. U.S. Environmental Protection Agency, Pacific Island Contact Office, Tel. 541-2710 (Call for publication.)

### **Acknowledgments**

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June 13, 2000

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

Re: Draft Environmental Assessment (EA) for Kailua Town Center

Dear Ms. Salmonson:

Thank you for your letter of May 24, 2000. In regard to your comments, we respectfully submit the following responses.

1. **Contacts:**

- a. We presented our project to the Kailua Neighborhood Board, Thursday evening, June 1, 2000.
- b. The County also held a public hearing on Monday, June 5, 2000.
- c. We will document our contacts and send a copy to the State Historic Preservation Division of DLNR, including copies of any correspondence.

2. **Flood Hazard Zone:** This existing site is located in "Zone X". We have contacted Public Works (Engineering) and will work with them and meet all requirements for buildings in the "Zone X" designated area.

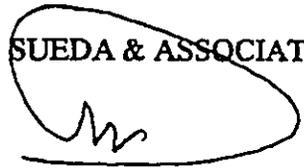
3. **Permits and Approvals:** we were required to hold a public hearing (completed June 5, 2000). The Department of Planning and Permitting has ten (10) working days after the public hearing to submit their finds to the City Council. The City Council must grant or deny the application within (60) days after the close of the public hearing. The exact date of the Council Hearing has not been determined. Upon an approval from the City Council, we will then have an accepted SMP. Application for building permit can then be filed with the Department of Planning and Permitting.

Ms. Genevieve Salmonson  
June 13, 2000  
Page 2

4. Significance Criteria: We will review the proposed HAR 11-200-12 and submit additional detail information for your review.
5. We will consider applying sustainable building techniques as presented in the "Guidelines for Sustainable Building Design in Hawaii" in the final EA.
6. Two-sided pages: We will comply in printing on both sides of the pages for the final document.

Very truly yours,

SUEDA & ASSOCIATES, INC.



Lloyd T. Sueda, AIA  
Principal

Enc.

cc: Randy Moore w/enc.  
Fray Heath w/enc.

## DETERMINATION, FINDINGS AND REASONS FOR SUPPORTING DETERMINATION

1. **Involves an irrevocable commitment to loss or destruction of any natural or cultural resources:** The proposed project is not a new structure - it is a renovation and addition of an existing building. Portions of the proposed development is the demolition of an existing building. The final product is significantly smaller in scale than the existing building. Therefore, the final product will not have any visual impact to any of the surrounding areas.  
  
No significant archaeological or historical sites are known to exist on this site. However, if we do encounter any significant artifacts or bones, we will immediately stop construction and notify the proper authorities.
2. **Curtails the range of beneficial uses of the environment:** The subject property is completely developed, therefore, this section is not applicable.
3. **Conflicts with the State's long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS; and any revisions thereof and amendments thereto, court decisions, or executive orders:** The proposed development is consistent with the Environmental Policies established in Chapter 344, HRS, and the National Environmental Policy Act.
4. **Substantially affects the economic or social welfare of the community or state:** The proposed project will provide a significant contribution to Kailua's future development. The existing structures are over developed for the site. The building has been vacant for a number of years and not leasable in its present status. The proposed renovation will definitely enhance the Kailua business area and be a positive benefit to the residents of Kailua. It will not only change the area, but provide additional jobs and add to the welfare of the Kailua community.
5. **Substantially affects public health:** Impacts to public health may be affected by air, noise, and water quality impacts, however, these will be insignificant or not detectable, especially when weighted against the positive economic, social, and quality of life implications associated with the project. Overall, air, noise, and traffic impacts will be significantly positive in terms of public health as compared to the "no action" alternative.
6. **Involves substantial secondary impacts, such as population changes or effects on public facilities:** This is such a small scale development in terms of the whole Kailua town, therefore, should not have any impact on population and on any public facility. However, this development will create new employment opportunities and direct and indirect revenue for individuals. The construction will create indirect employment in a wide range of service related industries.
7. **Involves a substantial degradation of environmental quality:** The development will remove portions of an existing building, therefore, create more open space for parking and landscaping giving the development a more pleasing visual impact from the adjacent neighborhood.
8. **Is individually limited but cumulatively has considerable effect on the environment, or involves a commitment for larger actions:** Not applicable.

DETERMINATION, FINDINGS AND REASONS FOR SUPPORTING DETERMINATION  
Page 2

9. **Substantially affects a rare, threatened or endangered species or its habitat:** No endangered plant or animal species are located on the project site.
10. **Detrimentially affects air or water quality or ambient noise levels:** Air and water quality will not be affected by the proposed development. Noise levels will be affected only during the construction period.
11. **Affects or is likely to suffer damage by being located in an environmentally sensitive area, such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, freshwater, or coastal waters:** Existing flood plain will be observed during the design phase of this project. Shoreline, valleys, or ridges will not be impacted by the development.
12. **Substantially affects scenic vistas and view planes identified in county or state plans or studies:** The development will in fact enhance the scenic vistas of the proposed development site and will not affect the view planes of the adjacent view of the mountains.
13. **Requires substantial energy consumption:** The proposed project will not require substantial energy consumption.

## **GUIDELINES FOR SUSTAINABLE BUILDING DESIGN IN HAWAII**

The design of the proposed project will take into consideration the "Guidelines for Sustainable Building Design in Hawaii".

### **I. Pre Design**

We have made extensive design studies to finalize the final design of this proposed development.

### **II. Site Selection & Site Design**

The proposed development is on an existing site. We have considered the impact of this project to have a positive impact on the neighborhood. We have considered the existing municipal infrastructure in the design of this project.

### **III. Site Preparation and Design**

We have prepared a topo to ensure positive drainage. We will make proper provisions for possible erosion and dust control during construction. We are proposing to use non toxic pesticide and herbicide for treatment of the ground and framing lumber.

### **IV. Energy Use**

We will in our design stage and preparation of construction documents take into consideration the "State of Hawaii Model Energy Code".

- a. Use of energy efficient air conditioning, solar, as well as electrical fixtures.
- b. Tinted glass will be used for glass storefronts.
- c. All exterior walls will be insulated.

#### **A. Lighting**

The Food Market will use solar - skylights for daytime use (minimizing the use of lighting during the daylight hours).

#### **B. Mechanical Systems**

The mechanical system will be designed and comply with the Energy Code.

### **V. Water Use**

Low flow fixtures will be used as required by the Uniform Plumbing Code.

## **GUIDELINES FOR SUSTAINABLE BUILDING DESIGN IN HAWAII**

Page 2

### **VI. Landscape and Irrigation**

All of the water efficient landscaping devices will be incorporated in the final design. The landscape architect will be made aware of this section of the "Guidelines for Sustainable Building Design In Hawaii".

### **VII. Building Materials & Solid Waste Management**

- a. The market will have a bailer to save and recycle all cardboard material.
- b. All recyclable material will be separated during demolition and properly disposed for recycling, such as metal and copper.

### **VIII. Indoor Air Quality**

These guidelines will be considered during the designing of the air conditioning system.

### **IX. Commissioning & Construction Project Closeout**

- a. All systems will be reviewed for use by the tenants before the final turnover.
- b. As-built drawings will be prepared for all systems - Building, Mechanical and Electrical.

### **X. Occupancy and Operation**

- A. **General Objectives:** A User's Manual for the building will be provided to the tenants.
- B. **Energy:** Energy efficient fixtures will be utilized as required by the Energy Code.
- C. **Water:** Not applicable.
- D. **Air:** Not applicable.
- E. **Materials and Products:** Not applicable.
- F. **Solid Waste:** Foodland will recycle all cardboard and paper products.

DEPARTMENT OF ENVIRONMENTAL SERVICES  
CITY AND COUNTY OF HONOLULU  
650 SOUTH KING STREET, 3RD FLOOR • HONOLULU, HAWAII 96813  
PHONE: (808) 527-6663 • FAX: (808) 527-6675 • Website: www.co.honolulu.hi.us



JEREMY HARRIS  
Mayor

KENNETH E. SPRAGUE, P.E., Ph.D.  
Director

BARRY FUKUHAGA  
Deputy Director

ENV 00-43

MAY 16 2000

MEMORANDUM

TO: RANDALL K. FUJIKI, DIRECTOR  
DEPARTMENT OF PLANNING AND PERMITTING

FROM:  KENNETH E. SPRAGUE, DIRECTOR  
DEPARTMENT OF ENVIRONMENTAL SERVICES

SUBJECT: ENVIRONMENTAL ASSESSMENT (EA)  
KAILUA TOWN CENTER REDEVELOPMENT  
TMK: 4-2-38: 23

'00 MAY 17 AM 9 18  
DEPT. OF ENVIRONMENTAL SERVICES  
CITY & COUNTY OF HONOLULU

We have reviewed the subject EA and have the following comments:

1. During the period of demolition and construction, best management practices (BMPs) should be employed to reduce and control discharge of pollutants.
2. Direct surface runoff, if possible to landscaped area or water quality inlets to minimize discharge of pollutants.

Should you have any questions, please contact Alex Ho at extension 4150.



Sueda & Associates, Inc. / Architects and Planners

Lloyd T. Sueda, AIA

Michael R. Wong, AIA Associate

Byron T. Tsuruda, AIA Associate

Robert S. Nitta, AIA Associate

June 28, 2000

Mr. Kenneth E. Sprague, Director  
Department of Environmental Services  
City and County of Honolulu  
650 South King St., 3<sup>rd</sup> Floor  
Honolulu, HI 96813

Re: Kailua Town Center - Draft Environmental Assessment

Dear Mr. Sprague:

Thank you very much for your memo dated May 16, 2000 regarding our Draft Environmental Assessment.

During the period of demolition and construction, we will take all necessary precaution and follow all governmental laws to reduce and control the discharge of pollutants.

We will work with our civil engineer to direct as much surface runoff as possible to landscaped areas to minimize discharge of pollutants.

If you have any questions, please address your concerns to the Department of Planning and Permitting, attention Ardis Shaw-Kim.

Very truly yours,

SUEDA & ASSOCIATES, INC.

Lloyd T. Sueda, AIA  
Principal

cc: Ardis Shaw-Kim/DPP  
Randy Moore/Kaneohe Ranch

KTC-Dept of Environ Serv response

BENJAMIN J. CAYETANO  
GOVERNOR OF HAWAII

'00 JUL 3 PM 4 29

DEPARTMENT OF PLANNING  
& PERMITTING  
CITY & COUNTY OF HONOLULU

STAT  
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P.  
HONOLULU, HAWAII 96801

Post-it* Fax Note	7671	Date	# of pages ▶
To	Lloyde	From	Ardis
Co./Dept.	J	Co.	
Phone #		Phone #	5275349
Fax #		Fax #	

June 26, 2000

00-082/epo

Mr. Randall Fujiki, Director  
Department of Planning and Permitting  
City and County of Honolulu  
650 South King Street  
Honolulu, Hawaii 96813

Dear Mr. Fujiki:

Subject: Draft Environmental Assessment  
Project Name: Kailua Town Center Redevelopment  
Location: 108 Hekili Street  
Kailua, Oahu  
TMK: 4-2-38:23

Thank you for allowing us to review and comment on the subject permit application. We have the following comments to offer:

Asbestos

Prior to any demolition activities, federal rules (40 CFR Part 61, National Emission Standard for Hazardous Air Pollutants, Asbestos NESHAP Revision; Final Rule, November 20, 1990), require an inspection of all affected areas to determine whether asbestos is present.

Under the NESHAP regulation, the project would be required to file with the Noise, Radiation and Indoor Air Quality Branch of the Department of Health an Asbestos Demolition/Renovation notification ten working days prior to demolition of each building or the disturbance of regulated asbestos-containing materials. All regulated quantities and types of asbestos-containing materials would be subject to emission control, proper collection, containerizing, and disposal at a permitted landfill.

Questions concerning asbestos requirements should be directed to Mr. Robert H. Lopes at 586-5800. Should there be additional concerns, please contact Mr. Russell Takata, Environmental Health Program Manager of the Noise, Radiation and Indoor Air Quality Branch at 586-4701.

Mr. Randall K. Fujiki  
June 26, 2000  
Page 2

00-082/epo

Vector Control

The property may be harboring rodents which will be dispersed to the surrounding areas when any buildings are demolished or the site is cleared. The applicant is required by Hawaii Administrative Rules, Chapter 11-26, "Vector Control" to eradicate any rodents prior to demolition or site clearing activities and to notify the Department of Health by submitting Form VC-12 to the local Vector Control Branch when such action is taken. Rodent traps and/or rodenticides should be set out on the project site for at least a week or until the rodent activity ceases.

The Vector Control Branch phone numbers are as follows:

Oahu: 831-6767

Kauai: 241-3306

Hawaii--Hilo: 974-4238, Kona: 322-7011

Maui (includes Molokai and Lanai): 873-3560

Sincerely,



GARY GILL  
Deputy Director for  
Environmental Health

c: NRFAQ  
VCB



Sueda & Associates, Inc. / Architects and Planners

July 7, 2000

Mr. Gary Gill  
Deputy Director for Environmental Health  
State of Hawaii  
P.O. Box 3378  
Honolulu, HI 96801

Re: Kailua Town Center - Draft Environmental Assessment

Dear Mr. Gill:

Thank you very much for your response letter dated July 26, 2000 regarding our Draft Environmental Assessment for Kailua Town Center.

Asbestos

We have completed our Hazardous Building Material Survey for the proposed project.  
*See enclosed survey.*

We will follow all requirements set by the State in the demolition of the buildings, including filing with the Department of Health. All hazardous materials will be disposed of in a properly manner..

Vector Control

The demolition contractor, prior to the demolition will complete a rodent eradication program to meet State requirements.

Please call me if you have any questions.

Very truly yours,

SUEDA & ASSOCIATES, INC.

Lloyd T. Sueda, AIA  
Principal

cc: Ardis Shaw-Kim/Randy Moore

KTCE Health

Lloyd T. Sueda, AIA

Michael R. Wong, AIA Associate

Byron T. Tsuruda, AIA Associate

Robert S. Nitta, AIA Associate

**APPENDIX**

REPORT  
SOILS INVESTIGATION

PROPOSED ADDITIONS AND RENOVATIONS  
KAILUA TOWN CENTER  
HAMAKUA DRIVE AND HEKILI STREET  
KAILUA, OAHU, HAWAII  
TMK: 4-2-38: 23

for

CASTLE FAMILY LIMITED PARTNERSHIP  
KANEOHE RANCH CO., LTD.

Project No. 00-0055  
June 28, 2000

# **SHINSATO ENGINEERING, Inc.**

CONSULTING GEOTECHNICAL ENGINEERS  
98-747 KUAHAO PLACE, PEARL CITY, HAWAII 96782  
PHONE: (808) 487-7855  
FAX: (808) 487-7854

---

June 28, 2000  
Project No. 00-0055

Kaneohe Ranch Co., Ltd.  
1199 Auloa Road  
Kailua, Hawaii 96734

Attention: Randolph G. Moore  
President

Gentlemen:

The attached report presents the results of a soils investigation for the proposed additions and renovations to the Kailua Town Center located at the corner of Hamakua Drive and Hekili Street in Kailua, Oahu, Hawaii.

A summary of the findings is as follows:

- 1) The subsurface condition at the site was explored by drilling 4 test borings to depths of 5.25 to 15 feet below existing grade.

At Boring 1, asphaltic concrete paving and dense, dark gray and yellow brown clayey GRAVEL base were found to a depth of 2.5 feet followed by moderately dense, brown silty SAND to a depth of 6 feet, moderately dense, tan SAND to a depth of 9.5 feet, and moderately dense to loose, light gray and tan SAND to the final depth of the boring at 15 feet. Groundwater was encountered in the boring at a depth of 9'-3" below existing grade.

Boring 2 encountered 5.5 inches of asphaltic concrete paving followed by dense, dark gray and yellow brown clayey GRAVEL base to a depth of 2.5 feet then by stiff, green-gray CLAY to a depth of 5 feet, moderately dense, brown silty SAND to a depth of 6 feet, moderately dense, tan SAND to a depth of 11.5 feet and loose, gray SAND to the final depth of the boring at 13 feet. Groundwater was encountered at a depth of 9'-4" below existing grade.

At Boring 3, 2.5 inches of asphaltic concrete paving was found followed by dense, gray brown GRAVEL to a depth of 8.5 inches, moderately dense, orange brown clayey GRAVEL to a depth of 2.5 feet, moderately stiff, green-gray CLAY to a depth of 4 feet then by loose to moderately dense, tan SAND to the final depth of the boring at 5.5 feet. No groundwater was encountered in the boring.

At Boring 4, moderately stiff, dark brown, orange and yellow brown elastic SILT with gravel was found to a depth of 4 feet followed by moderately dense, light-brown SAND to the final depth of the boring at 5.25 feet. No groundwater was encountered in the boring.

Kaneohe Ranch Co., Ltd.  
June 28, 2000  
Page Two

2) Based on the findings and observations of this investigation, it is concluded that the proposed structures may be supported on footings that bear on firm on-site soils or properly compacted structural fill. A summary of the foundation design parameters is as follows:

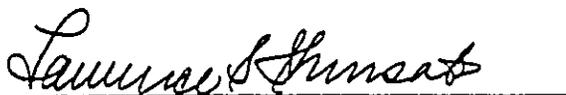
- |    |                                  |  |
|----|----------------------------------|--|
| a. | Allowable soil bearing pressure: | 3,000 psf  |
| b. | Minimum footing embedment depth: | 24 inches  |
| c. | Frictional coefficient:          | 0.4 times dead load  |
| d. | Passive earth resistance:        | 300 pcf  |
| e. | Active earth pressure:           | 30 pcf (free-standing wall with level imported structural fill as backfill)  |
| f. | Slab-on-grade                    | On-site CLAY and SILT soils have moderate to high expansion potential when allowed to air-dry. Where the CLAY and SILT are found at subgrade elevation under slabs, the CLAY/SILT soil shall be removed to a depth of 24 inches and then be replaced with compacted structural fill. |

Details of the findings and recommendations are presented in the attached report.

This investigation was made in accordance with generally accepted engineering procedures and included such field and laboratory tests considered necessary for the project. In the opinion of the undersigned, the accompanying report has been substantiated by mathematical data in conformity with generally accepted engineering principles and presents fairly the design information requested by your organization. No other warranty is either expressed or given.

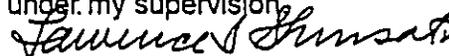
Respectfully submitted,

SHINSATO ENGINEERING, INC.

  
Lawrence S. Shinsato, P.E.  
President



This work was prepared by me  
or under my supervision.



LSS:ls

Distribution: Kaneohe Ranch So., Ltd. (2)  
Heath Construction Services, Inc. (1)  
Sueda and Associates, Inc. (2)

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## INTRODUCTION

This investigation was made for the purpose of obtaining information on the subsurface conditions from which to base recommendations for foundation design for the proposed additions and renovations to be located at the Kailua Town Center located at the corner of Hamakua drive and Hekili Street in Kailua, Oahu, Hawaii. The location of the site, relative to the existing streets and landmarks, is shown on the Vicinity Map, Plate 1.

## SCOPE OF WORK

The services included drilling 4 test borings to depths of 5.25 and 15 feet below existing grade, obtaining samples of the underlying soils, performing laboratory tests to determine pertinent engineering properties of the representative soil samples, and performing an engineering analysis to determine foundation design parameters. The following information is provided for use by the Architect and/or Engineer:

1. General subsurface conditions, as disclosed by the test borings.
2. Physical characteristics of the soils encountered.
3. Recommendations for foundation design, including bearing values, embedment depth and estimated settlement.
4. Recommendations for placement of fill and backfill.
5. Special design considerations.

## PLANNED DEVELOPMENT

From the information provided, the project will consist of demolishing a portion of the existing structure, constructing single story additions, and constructing new parking areas.

## SITE CONDITIONS

### Surface

The property is approximately square shaped and bound by Hamakua Drive to the southwest, Hekili Street to the southeast, and existing commercial properties to the northeast and northwest. The site is presently occupied by single story buildings and a parking area. The ground surface is generally flat to slightly sloping.

### Subsurface

The subsurface condition at the site was explored by drilling 4 test borings to depths of 5.25 to 15 feet below existing grade. The locations of the borings are shown on the Plot Plan, Plate 2. Detailed logs of the borings are presented in the Appendix to this report.

At Boring 1, asphaltic concrete paving and dense, dark gray and yellow brown clayey GRAVEL base were found to a depth of 2.5 feet followed by moderately dense, brown silty SAND to a depth of 6 feet, moderately dense, tan SAND to a depth of 9.5 feet, and moderately dense to loose, light gray and tan SAND to the final depth of the boring at 15 feet. Groundwater was encountered in the boring at a depth of 9'-3" below existing grade.

Boring 2 encountered 5.5 inches of asphaltic concrete paving followed by dense, dark gray and yellow brown clayey GRAVEL base to a depth of 2.5 feet then by stiff, green-gray CLAY to a depth of 5 feet, moderately dense, brown silty SAND to a depth of 6 feet, moderately dense, tan SAND to a depth of 11.5 feet and loose, gray SAND to the final depth of the boring at 13 feet. Groundwater was encountered in the boring at a depth of 9'-4" below existing grade.

At Boring 3, 2.5 inches of asphaltic concrete paving was found followed by dense, gray brown GRAVEL to a depth of 8.5 inches, moderately dense, orange brown clayey GRAVEL to a depth of 2.5 feet, moderately stiff, green-gray CLAY to a depth of 4 feet then by loose to moderately dense, tan SAND to the final depth of the boring at 5.5 feet. No groundwater was encountered in the boring.

At Boring 4, moderately stiff, dark brown, orange and yellow brown elastic SILT with gravel was found to a depth of 4 feet followed by moderately dense, light-brown SAND to the final depth of the boring at 5.25 feet. No groundwater was encountered in the boring.

From the USDA Soil Conservation Service "Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai and Lanai, State of Hawaii", the site is located in an area designated as Jaucas sand, 0 to 15 percent slopes (JaC). The Jaucas series consists of excessively drained, calcareous soils that occur as narrow strips on coastal plains, adjacent to the ocean. They developed in wind and water deposited sand from coral and seashells. In a representative profile, the soil is single grain, pale brown to very pale brown, sandy and more than 60 inches deep. In many places the surface layer is dark brown as a result of accumulation of organic matter and alluvium. The soil is neutral to moderately alkaline throughout the profile. Permeability is rapid and runoff is very slow to slow. The hazard of water erosion is slight, but wind erosion is a severe hazard where vegetation has been removed (USDA, 1972, pp. 48, Plate 65).

#### Geology

The site is located on the windward side of Oahu within the caldera of the old Koolau Volcano. The Koolau Volcano is an elongated shield that is believed to have formed during late Tertiary/early

Pleistocene time (between 1 and 12 million years ago) by lavas flowing from rift zones along a northwest-trending rift zone.

The caldera of the volcano is presumed to have extended from near Waimanalo at the southeast to beyond Kaneohe at the northwest, at the base of the Pali to the southwest and somewhere between the hills of Lanikai and the Mokulua Islands (offshore) to the east. This eastern side was probably destroyed by erosion.

#### CONCLUSIONS AND RECOMMENDATIONS

##### General

Based on the findings and observations made during this investigation, it is concluded that the proposed structures may be supported on footings that bear on firm on-site soils or properly compacted fill.

##### Foundations

An allowable bearing value of 3,000 pounds per square foot may be used for footings that bear on firm on-site soils or on properly compacted structural FILL. The minimum footing embedment depth shall be 24 inches below the lowest adjacent finished grade.

For footings located adjacent to utility trenches, the bottom of the footing shall be deepened below a 1 horizontal to 1 vertical plane projected upwards from the edge of the utility trench.

For footings located on or adjacent to slopes, the footing shall be deepened such that there is a minimum horizontal distance of 5 feet from the edge of the footing to the slope face.

Where footings are to be located adjacent to retaining walls or other structural elements which are not designed for surcharge loading, the new footing shall be deepened below a 45-degree plane projected upwards from the adjacent structure.

The bearing value is for dead plus live loads and may be increased by one-third for momentary loads due to wind or seismic forces. If any footing is eccentrically loaded, the maximum edge pressure shall not exceed the bearing pressure for permanent or for momentary loads.

All loose and disturbed soil at the bottom of footing excavations shall be removed to firm soil or the disturbed soil shall be compacted prior to laying of steel or pouring of concrete.

#### Settlement

Under the fully applied recommended bearing pressure, it is estimated that the total settlement of footings up to 5 feet square or 3 feet continuous that bear on firm on-site soils or properly compacted FILL will be less than 3/4 inch. Differential settlement between footings will vary according to the size and bearing pressure of the footing.

#### Lateral Resistance

For resistance of lateral loads, such as wind or seismic forces, an allowable passive resistance equivalent to that exerted by a fluid weighing 300 pounds per cubic foot may be used for footings, or other structural elements, provided the vertical surface is in direct contact with undisturbed soil or properly compacted fill.

Frictional resistance for footings and slabs that bear on firm on-site soils or properly compacted fill may be assumed as 0.4 times the dead load.

Lateral resistance and friction may be combined.

### Retaining Walls

Foundations for retaining walls shall be designed as per the foundation section of this report.

For design of free-standing retaining walls that have properly draining select granular backfill within a 1H:2V plane projected upwards from the bottom of the footing, the following active earth pressures may be used:

<u>Backfill Slope</u>	<u>Horizontal Component</u>	<u>Vertical Component</u>
Level backfill	30 psf/lin. ft.	0
3H:1V backfill	40 psf/lin. ft.	10 psf/lin. ft.
2H:1V backfill	45 psf/lin. ft.	20 psf/lin. ft.

In the case of free-standing property line walls supporting a cut slope where select granular backfill material is not within the 1H:2V zone, the active earth pressure shall be increased by 1.5 times the recommended value.

Free-standing walls are defined as walls that are allowed to rotate between 0.005 and 0.01 times the wall height. The rotation of the wall develops "active earth pressures." If the wall is not allowed to move as in the case of basement walls or walls that are restrained at the top, the soil pressure

that will develop is known as an "at-rest" pressure. For restrained walls, the above active earth pressures shall be increased by 50 percent.

Drainage of the retaining wall backfill material shall be accomplished by providing 4-inch diameter weepholes spaced 8-feet on-center (horizontally as well as vertically) or by using a minimum 4-inch diameter perforated PVC footing drain pipe. A 2-foot wide layer of crushed gravel, which is wrapped with geotextile filter fabric, shall be placed above the pipe; the crushed gravel shall be continuous from weephole to weephole, or in the case of a footing drain pipe, laid throughout the full length of the pipe. Geotextile fabric shall be AMOCO 4545, or similar.

Backfill for retaining walls shall be properly compacted in accordance with the Site Preparation and Grading section to this report.

The above active pressures do not include surcharge loads such as footings located within a 45-degree plane projected upwards from the heel of the footing, and/or from hydrostatic pressures. If such conditions occur, the active pressure shall be increased accordingly.

#### Slab-on-Grade

The on-site CLAY and SILT soils have moderate to high expansion potential when allowed to air-dry. Where the CLAY or SILT soils are found at subgrade elevation under slabs, the CLAY/SILT soil shall be removed to a depth of 24 inches below bottom of slab and then be replaced with properly compacted structural fill. Any granular cushion or moisture barrier may be considered as a part of the 24 inch thickness.

It is recommended that slabs-on-grade with moisture sensitive floor covering be protected with a moisture barrier.

It is recommended that the subgrade soil be prepared in accordance with the Site Preparation and Grading section to this report.

Slopes

New cut and fill slopes of soil type materials shall not exceed 2 horizontal to 1 vertical. Exposed slopes shall be covered as soon as practical after construction to minimize erosion.

Fill slopes shall be constructed by either overfilling and cutting back to compacted soil.

Pavement Design

For design of pavement areas, the recommended pavement sections are as follows:

<u>Traffic Load</u>	<u>A.C.</u>	<u>Base</u>	<u>Select Borrow</u>
Vehicles under 10,000 GVW	2"	6"	0
Over 10,000 lb. GVW	2.5"	6"	6"

The top 6 inches of pavement subgrade, any select borrow and base course gravel shall be compacted to at least 95 percent of the maximum dry density (ASTM D1557-91).

All material quality and compaction requirements for pavement section shall be in accordance with the Hawaii Standard Specifications for Road, Bridge and Public Works Construction, dated 1994.

Site Preparation and Grading

The maximum dry density and optimum moisture content specified hereinafter refers to the ASTM D1557-91 test procedure.

It is recommended that the site be prepared in the following manner:

1. In areas to receive fill and beneath structural and pavement areas, all vegetation, weeds, brush, roots, stumps, rubbish, debris, soft soils, old foundations and other deleterious material shall be removed from the site.
2. The exposed surface shall then be scarified to a depth of 6 inches, moisture conditioned to near optimum moisture content and then compacted to at least 90 percent of the maximum dry density. If soft areas are encountered, these areas shall be removed to firm material and the resulting depression shall be filled with properly compacted fill.
3. Fill and backfill material shall consist of soil which is free of organics and debris. For imported material, the portion passing the #4 sieve shall have an expansion index less than 20.
4. Fill and Backfill for Structural Areas: Structural areas shall be defined as areas beneath and 3 feet beyond the edges of the building and pavement areas. In the upper 3 feet from finished grade, the fill and backfill material shall contain no particle larger than 3 inches in greatest dimension. Below 3 feet from finished grade, the material shall be less than 6 inches in greatest dimension.

In the upper 3 feet from finished grade, the fill and backfill material shall be placed in lifts not exceeding 8 inches in loose thickness. Below 3 feet from finished grade, fill and backfill shall be placed in 12-inch loose lifts provided the compaction equipment is capable of compacting the layer to the minimum degree of compaction specified below. Prior to placing the fill and backfill, the material shall be aerated or moistened to near optimum moisture content.

Each layer of structural fill and backfill shall be thoroughly compacted to at least 95 percent of the maximum dry density.

5. Fill and Backfill for Non-Structural Areas: Non-structural areas shall be defined as areas beyond 3 feet from the edges of any building and pavement area.

In the upper 3 feet, fill and backfill material shall be less than 3-inches in greatest dimension. Particles up to 12-inch in diameter may be used at depths greater than 3 feet from finished grade provided the interstices between the particles are filled with sufficient fines to produce a well-graded, dense mass. The on-site soils are acceptable for use as non-structural fill provided the above size requirements are met and the material is free of organics and debris.

Each layer of non-structural fill and backfill shall be thoroughly compacted to at least 90 percent of the maximum dry density.

6. Where fill is placed on existing ground that is steeper than 5 horizontal to 1 vertical, the existing ground surface shall be benched into firm soil as the fill is placed.
7. Drainage shall be provided to minimize ponding of water adjacent to or on foundation and pavement areas. Ponded areas shall be drained immediately or water pumped out without damaging adjacent structures and property. If water accumulation softens the subgrade materials, the affected soils shall be removed and replaced with properly compacted fill.
8. Footing excavations shall be cleaned of loose, soft and/or disturbed material prior to laying of steel or pouring of concrete.

It is particularly important to see that all backfill soils are properly compacted especially if these are designed to resist lateral forces.

#### INSPECTION

During the progress of construction, so as to evaluate compliance with the design concepts, specifications and recommendations contained in this report, qualified engineering personnel should be present to observe the following operations:

1. Site preparation.
2. Placement of fill and backfill.
3. Footing excavations.

#### REMARKS

The conclusions and recommendations contained herein are based on the findings and

observations made at the boring locations. If conditions are encountered during construction which appear to differ from those disclosed by the explorations, this office shall be notified so as to consider the need for modifications.

This report has been prepared for the exclusive use of the Castle Family Limited Partnership, Kaneohe Ranch Company, Ltd. and their respective agents and designers. It shall not be used by or transferred to any other party or to another project without the consent and/or thorough review by this facility. Should the project be delayed beyond the period of one year from the date of this report, the report shall be reviewed relative to possible changed conditions.

Samples obtained in this investigation will deteriorate with time and will be unsuitable for further laboratory tests within one (1) month from the date of this report. Unless otherwise advised, the samples will be discarded at that time.

- o o o -

The following are included and complete this report:

Foundation Design Details ----- Plate A  
Vicinity Map ----- Plate 1  
Plot Plan ----- Plate 2  
Appendix

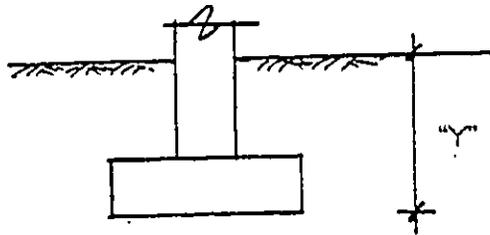
Field Investigation

Laboratory Testing

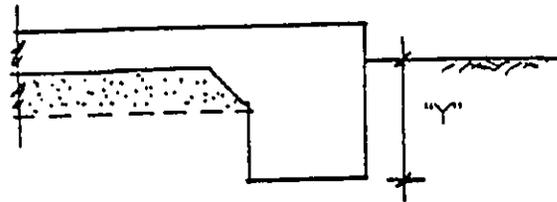
Logs of Test Borings

Results of Laboratory Tests

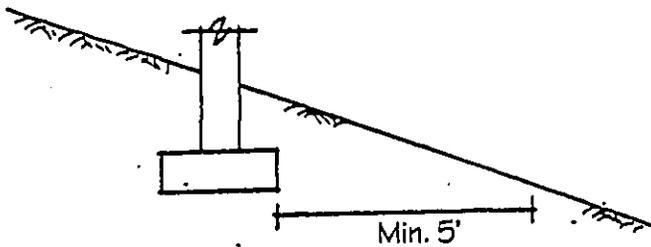
"Y" = min. of 24" for footings bearing on firm on-site soils and properly compacted fill; allowable soil bearing pressure = 3,000 psf. Reinforcing details to be provided by others.



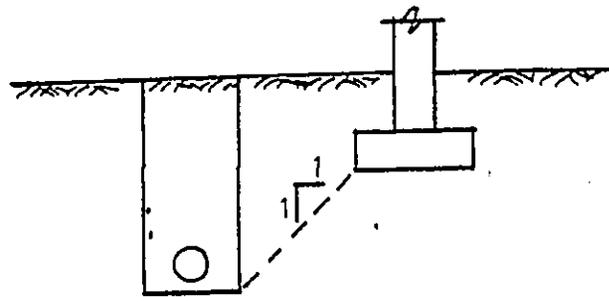
COLUMN FOOTING



THICKENED EDGE FOOTING



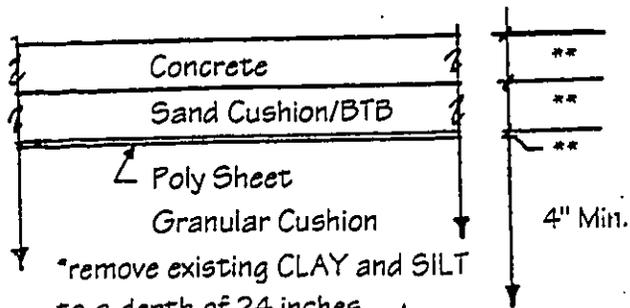
FOOTING ON SLOPE



FOOTING ADJACENT TO UTILITY TRENCH

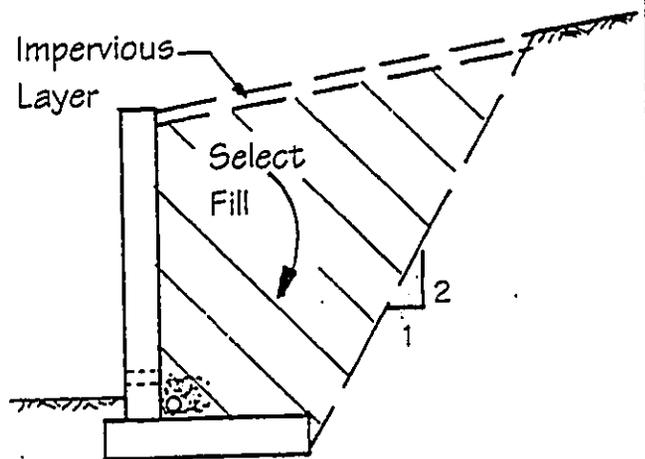
FOOTING EMBEDMENT DEPTH DETAILS

\*\*Thickness/Details By Others



\*remove existing CLAY and SILT to a depth of 24 inches if encountered under slabs and replace with compacted structural fill

SLAB-ON-GRADE



RETAINING WALL BACKFILL

(Provide Backfill Drainage Using Weepholes or Footing Drain; Cap Surface with Impervious Layer)

Project: KAILUA TOWN CENTER

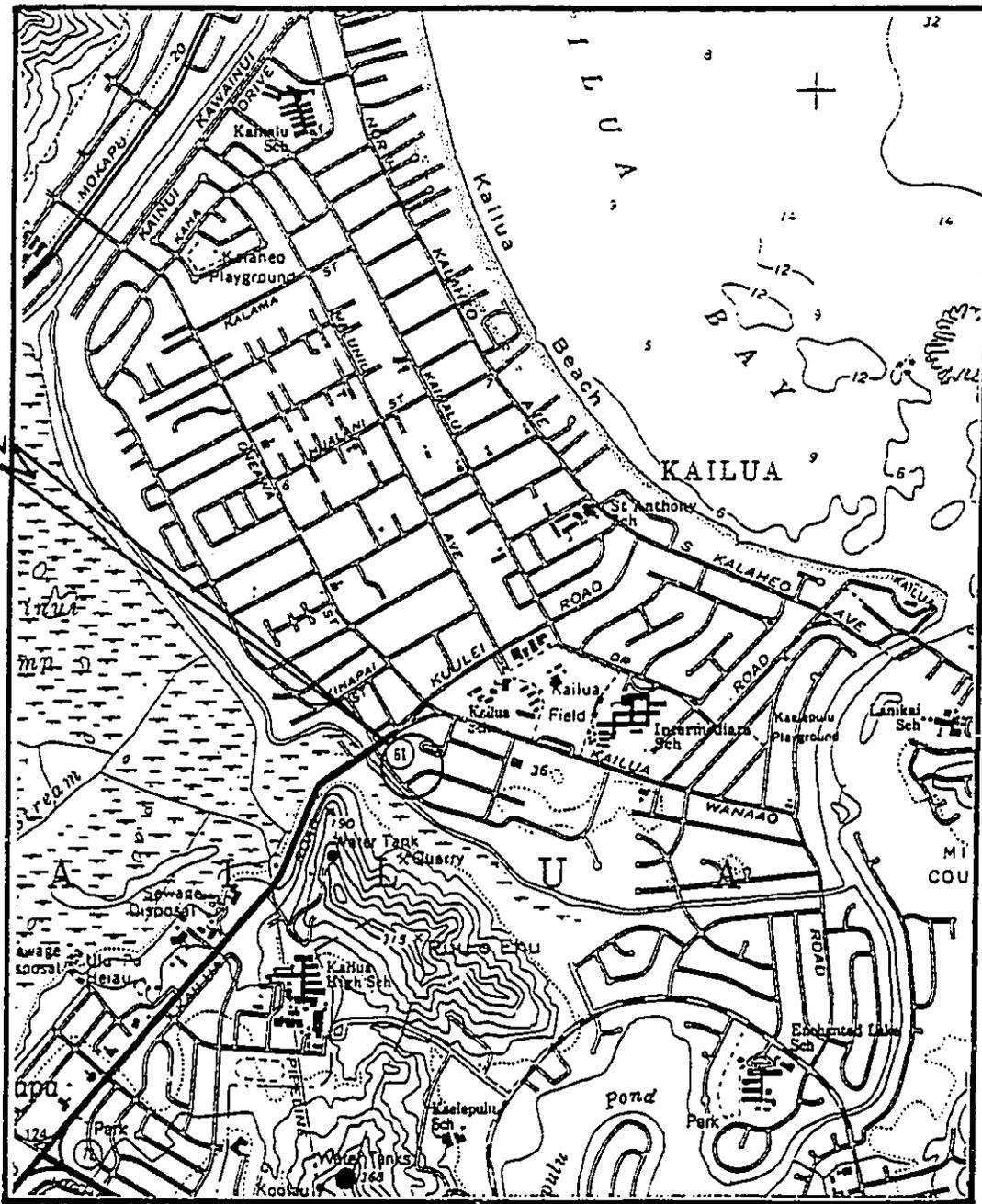
Project No.: 00-0055

SHINSATO ENGINEERING, INC.  
98-747 KUAHAO PL., PEARL CITY, HI 96782  
Consulting Geotechnical Engineer

PLATE  
A

# VICINITY MAP

SITE LOCATION



**REFERENCE:**

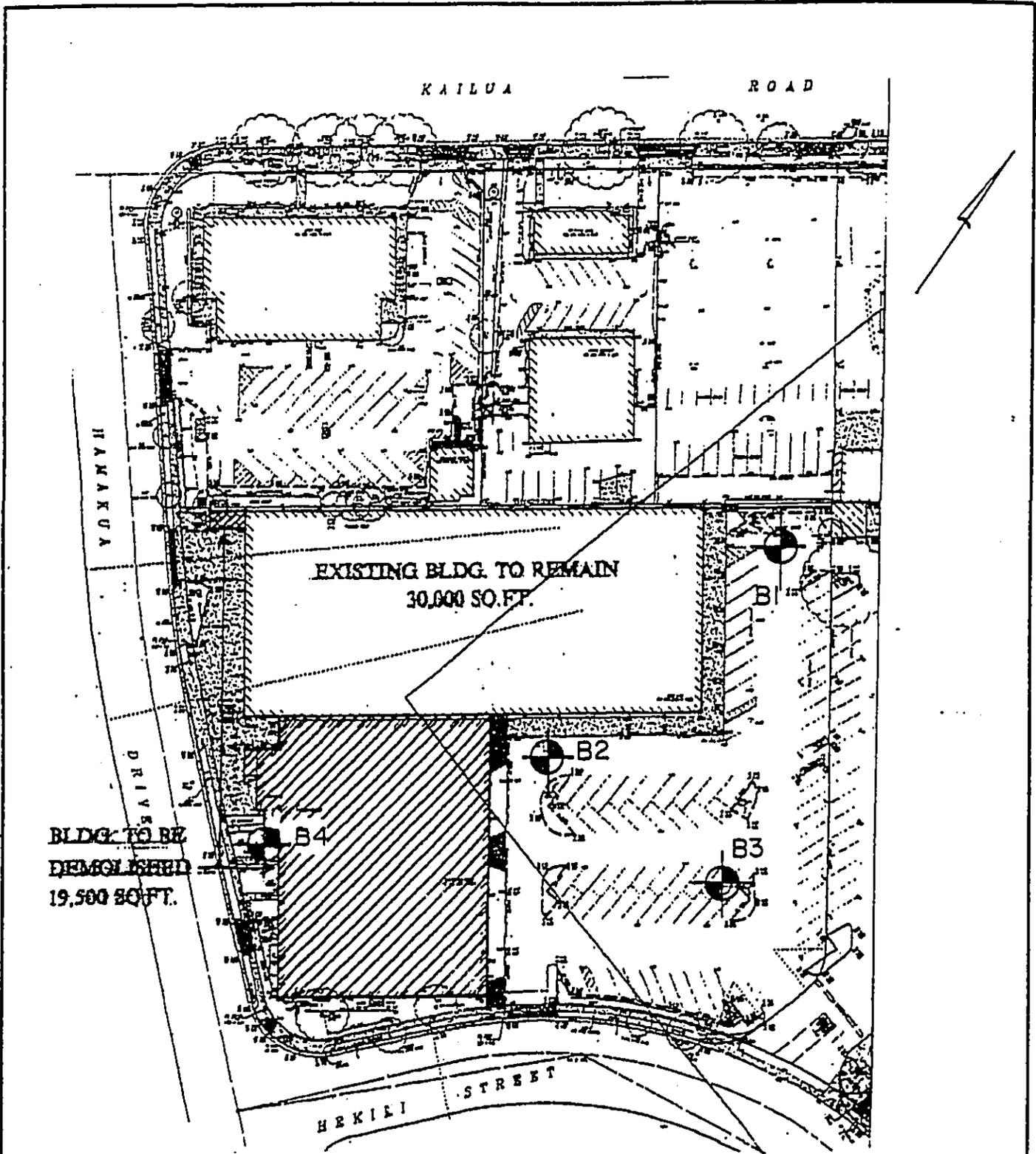
USGS TOPOGRAPHIC MAP  
MOKAPU QUADRANGLE  
DATED 1983

## KAILUA TOWN CENTER

*SHINSATO ENGINEERING, INC.*  
CONSULTING GEOTECHNICAL ENGINEERS

98-747 KUAHAO PL. PEARL CITY, HI 96782

PROJECT NO.	00-0055
DATE	05/00
SCALE	1" = 2000'
PLATE	1



**PLOT PLAN**  
Scale: 1" = 80'

REFERENCE: Demolition Plan, undated

Project: KAILUA TOWN CENTER	<b>SHINSATO ENGINEERING, INC.</b> Consulting Geotechnical Engineers	<b>PLATE</b> <b>2</b>
Project No.: 00-0055	98-747 Kuahao Pl. Pearl City, HI 96782	

APPENDIX

FIELD INVESTIGATION AND LABORATORY TESTING

## FIELD INVESTIGATION

### General

The field investigation consisted of performing explorations at the locations shown on the Plot Plan. The borings were advanced with a Badger drill rig using continuous flight augers.

At Borings 1, 2 and 3, relatively undisturbed samples of the underlying soils were obtained by driving a sampling tube into the subsurface material using a 140-pound safety hammer falling from a height of 30 inches. At Boring 4, relatively undisturbed samples were obtained using a 7.5 pound slide hammer.

Ring samples were obtained using a 3-inch outside diameter, 2.5 inch inside diameter steel sampling tube with an interior lining of one-inch long, thin brass rings. The tube is driven into the soil and a section of the central portion is placed in a close fitting waterproof container in order to retain field conditions until completion of the laboratory tests. The number of blows required to drive the sampler into the ground is recorded at 6-inch intervals. The blow count for the last 12-inches (or smaller intervals if hard material is encountered) is shown on the boring logs.

The soil samples were visually classified in the field using the Unified Soil Classification System. Samples were then packed in moisture proof containers and transported to the laboratory for testing.

## LABORATORY TESTING

### General

Laboratory tests were performed on various soil samples to determine their engineering properties. Descriptions of the various tests are listed below.

### Unit Weight and Moisture Content

The in-place moisture content and unit weight of the samples are used to correlate similar soils at various depths. The sample is weighed, the volume determined, and a portion of the sample is placed in the oven. After oven-drying, the sample is again weighed to determine the moisture loss. The data is used to determine the wet-density, dry-density and in-place moisture content.

### Direct Shear

Direct shear tests are performed to determine the strength characteristics of the representative soil samples. The test consists of placing the sample into a shear box, applying a normal load and then shearing the sample at a constant rate of strain. The shearing resistance is recorded at various rates of strain. By varying the normal load, the angle of internal friction and cohesion can be determined.

### Consolidation Test

Consolidation tests are performed to obtain data from which time rates of consolidation and amounts of settlement may be estimated. The test is performed by placing a specimen in a consolidation apparatus. Loads are applied in increments to the circular face of a one (1) inch high sample. Deformation or changes in thickness of the specimen are recorded at selected time intervals. Water is introduced to or allowed to drain from the sample through porous disks placed against the top and bottom faces of the specimen. The data is then used to plot a stress-volume strain curve which is used in estimating settlement.

#### Classification Tests

The soil samples are classified using the Unified Soil Classification System. Classification tests include sieve and hydrometer analysis to determine grain size distribution, and Atterberg Limits to determine the liquid limit, plastic limit and plasticity index.

#### Penetrometer Test

Penetrometer tests are performed on clayey soils to determine the consistency of the material and an approximate value of the unconfined compressive strength.

#### Torvane

Torvane tests are used to determine the approximate undrained shear strength of clayey soils. The torvane apparatus consists of a torque device with a small diameter plate that has vanes situated perpendicular to the plate. The vanes are pushed into the soil and torque is applied until failure occurs. The torque required to cause failure is converted to approximate undrained strength of the soil.

# LOG OF BORING NO. 1

ELEVATION: (unknown)

EQUIPMENT USED: Badger Drill Rig

DEPTH OF BORING (FT.): 15

DATE DRILLED: May 6, 2000

DEPTH TO GROUNDWATER: 9'-3"

DEPTH (FT)	GRAPHIC SYMBOL	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	SAMPLE	BLOWS/FOOT	COLOR	MOISTURE	CONSISTENCY	DRY DENSITY (PCF)	MOISTURE CONTENT (% OF DRY WT.)	PENETROMETER (TSF)	TORVANE STRENGTH (TSF)
0		AC	A.C. paving									
0		GC	clayey GRAVEL, with cobbles		.44	dark gray and yellow brown	moist	dense	94.2	10.4		
2		SM	silty SAND, fine grain		31	brown		mod. dense	73.2	23.7		
6		SP	SAND, little to no fines		23	tan			75.1	11.4		
10					31	light gray and tan			75.2	37.8		
14			--some coral gravel --SPT sampler		11			loose		28.6		
16			END OF BORING									
18												
20												
22												
24												
26												
28												

PROJECT NAME: KAILUA TOWN CENTER	SHINSATO ENGINEERING, INC. Consulting Geotechnical Engineers 98-747 Kuahao Pl. Pearl City, HI 96782	PLATE
PROJECT NO.: 00-0055		3

# LOG OF BORING NO. 2

ELEVATION: (unknown)

EQUIPMENT USED: Badger Drill Rig

DEPTH OF BORING (FT.): 13

DATE DRILLED: May 6, 2000

DEPTH TO GROUNDWATER: 9'-4"

DEPTH (FT.)	GRAPHIC SYMBOL	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	SAMPLE	BLOWS/FOOT	COLOR	MOISTURE	CONSISTENCY	DRY DENSITY (PCF)	MOISTURE CONTENT (% OF DRY WT.)	RENETHROMETER (TSF)	TORVANE STRENGTH (TSF)
0		AC	5.5" A.C.									
2		GC	clayey GRAVEL, with cobbles		28	dark gray and yellow brown	moist	dense	108.8	11.4		
4		CH	CLAY, with gravel		14	green gray		stiff	79.6	34.0	2.00	1.75
6		SP-SM	SAND, some fines			brown		mod. dense				
8		SP	SAND, little to no fines		32	tan			75.8	12.2		
10					36				74.9	36.9		
12			--SPT sampler		6	gray		loose				
14			END OF BORING									
16												
18												
20												
22												
24												
26												
28												

PROJECT NAME: KAILUA TOWN CENTER

SHINSATO ENGINEERING, INC.

PLATE

PROJECT NO.: 00-0055

Consulting Geotechnical Engineers

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Pearl City, HI 96782

4

# LOG OF BORING NO. 3

EQUIPMENT USED: Badger Drill Rig

DATE DRILLED: May 6, 2000

ELEVATION: (unknown)

DEPTH OF BORING (FT.): 5.5

DEPTH TO GROUNDWATER: None

DEPTH (FT.)	GRAPHIC SYMBOL	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	SAMPLE	BLOWS/FOOT	COLOR	MOISTURE	CONSISTENCY	DRY DENSITY (PCF)	MOISTURE CONTENT (% OF DRY WT.)	PENETROMETER (TSF)	TORVANE STRENGTH (TSF)
0		AC	2.5" A.C.			gray brown	moist	dense	101.3	13.2	1.25	
		GP	GRAVEL, some fines			orange brown		mod. dense				
2		GC	clayey GRAVEL mixture		29	green gray		mod. stiff				
4		CH	CLAY, with gravel			tan		loose to mod. dense				
		SP	SAND, little to no fines		18				67.3	22.0		
6			END OF BORING									
8												
10												
12												
14												
16												
18												
20												
22												
24												
26												
28												

PROJECT NAME: KAILUA TOWN CENTER  
PROJECT NO.: 00-0055

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Consulting Geotechnical Engineers  
98-747 Kuahao Pl.  
Pearl City, HI 96782

PLATE  
5

**LOG OF BORING NO. 4**

ELEVATION: (unknown)

EQUIPMENT USED: Badger Drill Rig

DEPTH OF BORING (FT.): 5.25

DATE DRILLED: May 6, 2000

DEPTH TO GROUNDWATER: None

DEPTH (FT.)	GRAPHIC SYMBOL	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	SAMPLE	BLOWS/FOOT	COLOR	MOISTURE	CONSISTENCY	DRY DENSITY (PCF)	MOISTURE CONTENT (% OF DRY WT.)	PENETROMETER (TSF)	TORVANE STRENGTH (TSF)
0		MH	elastic SILT, with gravel		*41/ 6"	dark brown	moist	mod. stiff	71.6	43.6		
2			--*blow counts for sampler driven with a 7.5 pound slide hammer --weathered cobble at 1.5'			orange and yellow brown						
4		SP-SM	SAND, with fines		*25/ 6"	light brown		mod. dense	70.4	20.4		
6			END OF BORING									
8												
10												
12												
14												
16												
18												
20												
22												
24												
26												
28												

PROJECT NAME: KAILUA TOWN CENTER

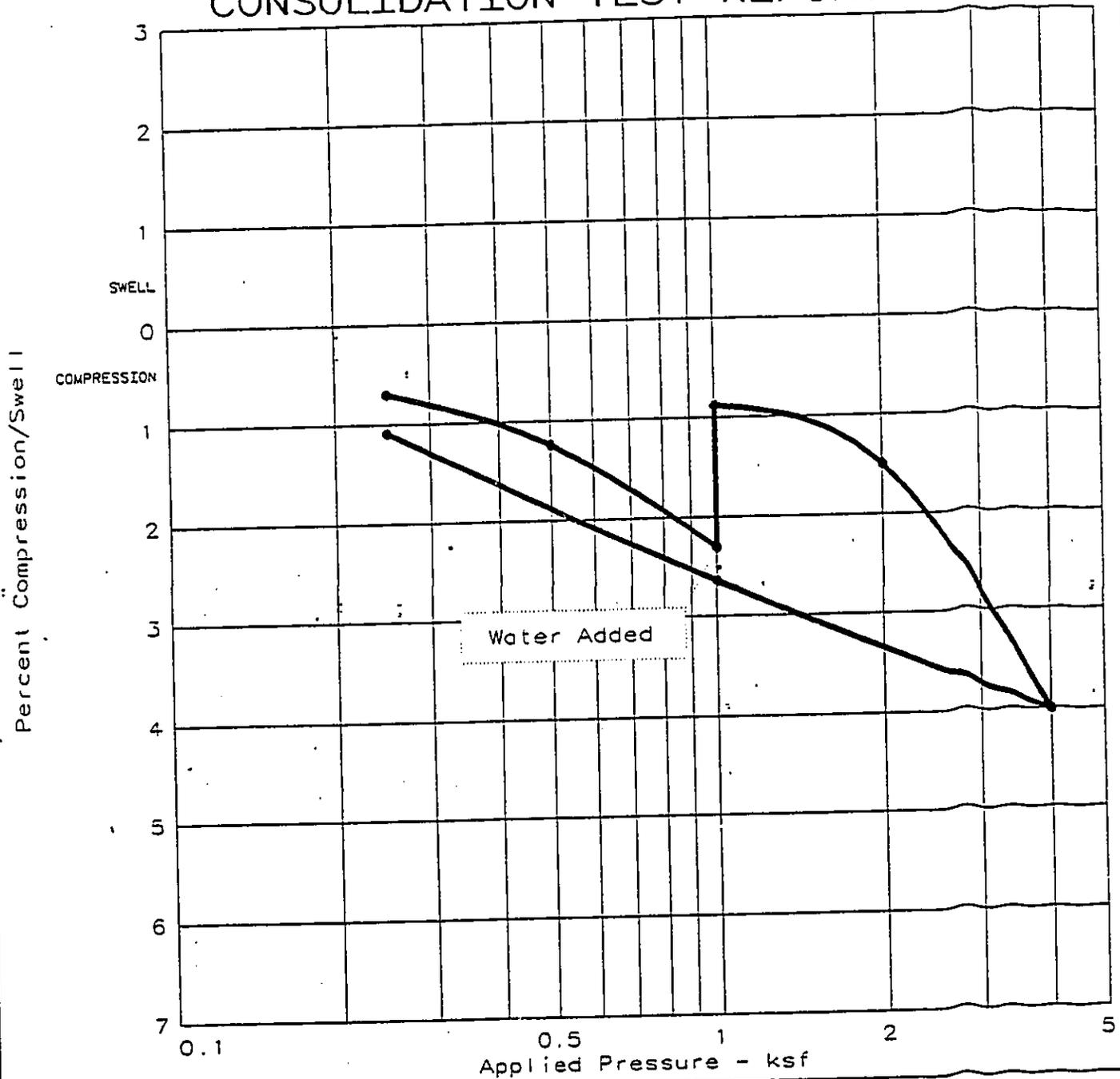
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 Consulting Geotechnical Engineers  
 98-747 Kuahao Pl.  
 Pearl City, HI 96782

PLATE

PROJECT NO.: 00-0055

6

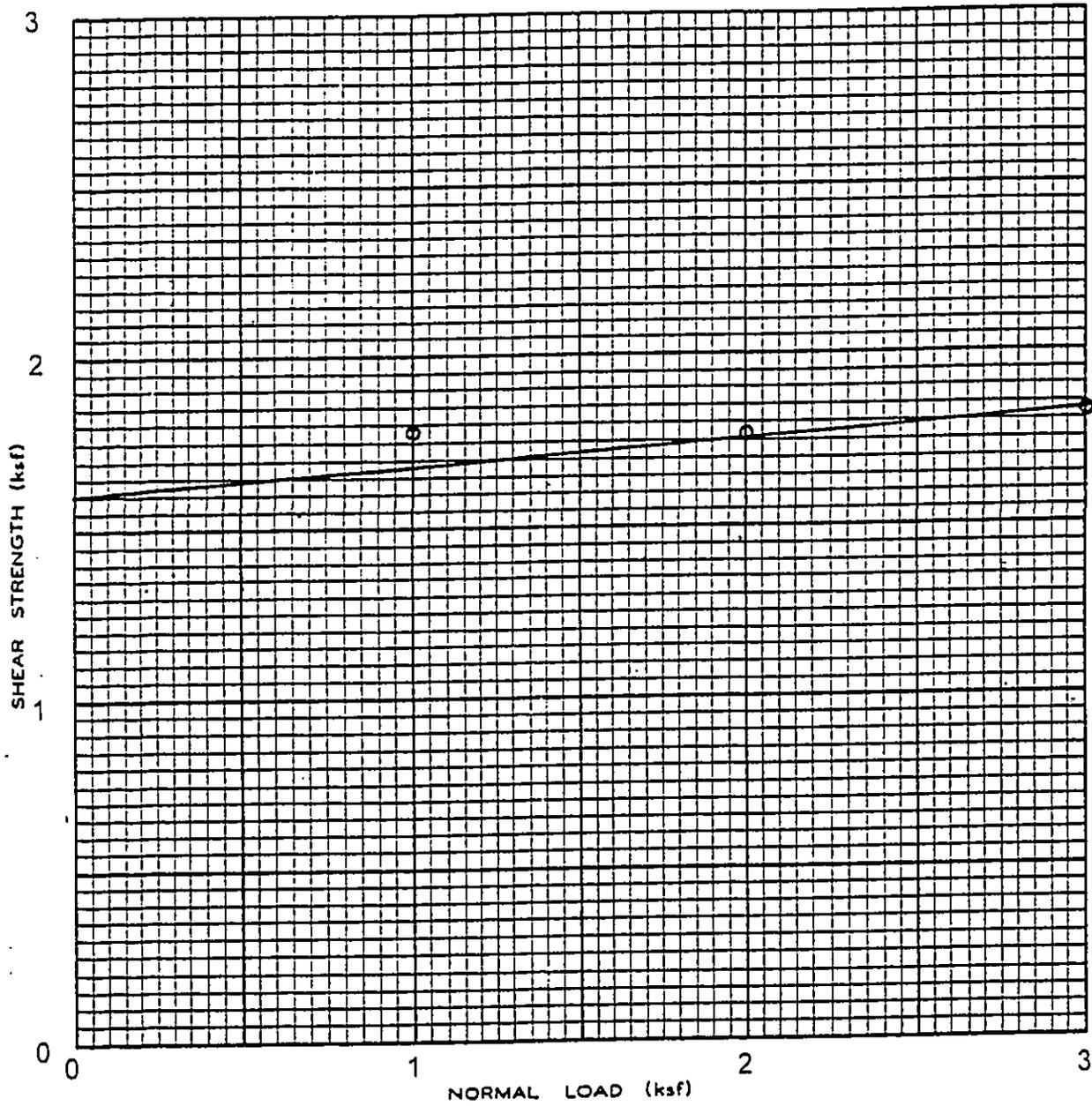
# CONSOLIDATION TEST REPORT



Swell press.	Nat. Sat.	Nat. Moist.	Dry. Dens. (pcf)	LL	PI	Sp.Gr.	Initial void ratio
1.63	87.3 %	39.1 %	76.7			2.730	1.2222

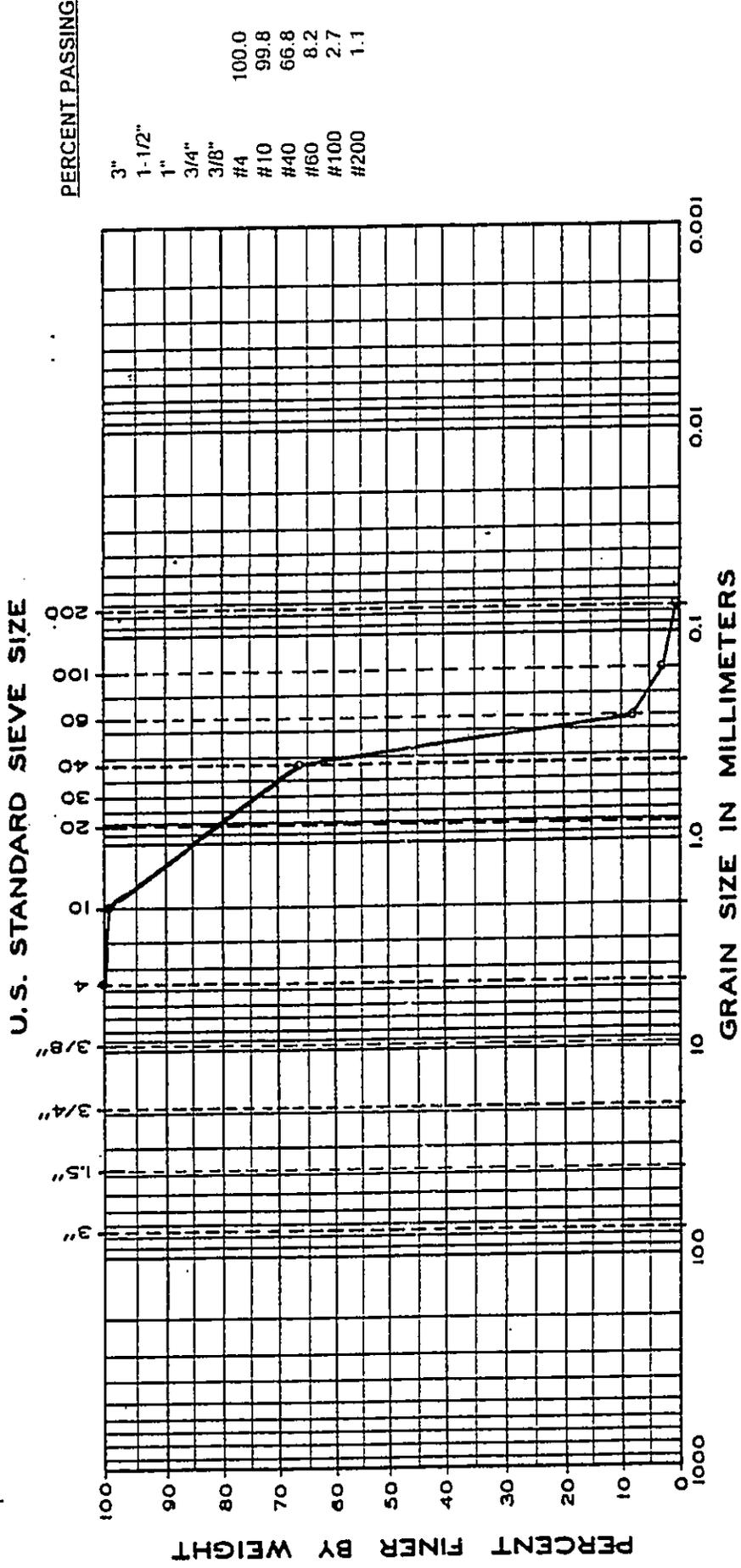
TEST RESULTS.	MATERIAL DESCRIPTION
Percent swell = 1.4	green/gray CLAY
Project No.: 00-0055 Project: KAILUA TOWN CENTER Location: Boring 2, Sample 2 @ 3..5'	Class: CH
Date: 6/00	Remarks:
CONSOLIDATION TEST REPORT SHINSATO ENGINEERING, INC. Consulting Geotechnical Engineers	PLATE NO. 7

## DIRECT SHEAR TEST



	LOCATION	DEPTH (ft.)	COHESION (psf)	ANGLE OF INTERNAL FRICTION	TEST CONDITIONS
O	Boring 2	3.5	1,600	5	Field density: peak strength
PROJECT: KAILUA TOWN CENTER			PROJECT NO. 00-0055		SHINSATO ENGINEERING, INC. CONSULTING GEOTECHNICAL ENGINEERS 98-747 KUAHAO PL. PEARL CITY, HI 96782
					<u>PLATE</u> 8

# GRAIN SIZE DISTRIBUTION



LOCATION	DEPTH	GROUP SYMBOL	CLASSIFICATION			SILT OR CLAY	ATTERBERG LIMITS		
			CO	MEDIUM	FINE		LL	PL	PI
BORING 1	6.5'	SP	SAND, trace of fines						

KAILUA TOWN CENTER

PROJECT NO. 00-0055

SHINSATO ENGINEERING, INC.

PLATE 9

# COOPER INTERNATIONAL

## QUOTATION

TO The Castle Family Partnership  
C/O. Heath Construction Services, Inc.  
Fax# 988-6335

PROJECT Kailua Town Center  
Remediation of Asbestos  
Lead-Base Paint Assessment

We propose to remove and dispose of:

Approximately 2,100 sf of 12-inch by 12-inch tan floor tile located under carpeting in Units 7 and 8

Approximately 320 sf of floor tile mastic located underneath 12-inch by 12-inch gray floor tile in the rear hallway

Approximately 50 sf of 9-inch by 9-inch gray floor tile and the associated mastic located in the north-west corner stock room of Foodland Super Market.

Total Price: \$3,960.00

### NOTES

Price includes excise tax  
Price includes personal air monitoring.  
Proposal includes required notification, work plan and submittals  
Proposal includes \$1 million "per occurrence" asbestos/lead liability insurance.  
All layouts by others  
All furniture must be removed by others prior to any abatement work.  
CI will not be responsible for any existing damages

Damages to walls, ceilings and floors may occur as a result of containment installation. This proposal does not include repair of damages caused by containment installation.  
Copies of worker asbestos certificates, disposal manifest and air monitoring records will be furnished.  
Provide parking spaces for CI vehicles.  
Provide space for non-hazardous/hazardous rolloff near work site.  
Water and electricity to be provided by the owner.  
This proposal is for straight time hours only. DBA WAGE RATE  
All work will be performed in strict accordance with applicable EPA, OSHA and HIOSH rules and regulations.

\* This proposal is subject to change and may be withdrawn if not accepted within 30 days of date below. This proposal is subject to and includes all terms and conditions listed above. Client agrees to pay the charges within thirty (30) days of invoice date. Any payments not made within 30 days of invoice date shall be subject to a 1.5% per month late charge.

Respectfully Submitted,  
COOPER INTERNATIONAL

By: *[Signature]*  
Michael G. Keith, Director of Operations

Date: May 8, 2000

Accepted By:

Castle Family Limited Partnership  
(Company Name)

*[Signature]* 5/11/00  
(Client Signature) (Date)

Randolph E. Moore  
(Printed Name and Title)  
pres., Kaneohe Ranch Co., Ltd.

**RECEIVED**

Woman Owned Small Business

general partner  
MAY 8 2000

94-111A Leokane St., Waipahu, Hawaii 96797 • (808) 678-1311 • Fax (808) 678-1330  
Corporate Office • P O Box 351, Roosevelt, Oklahoma 73564 • (405) 639-2253  
Contractor's License No. C-15834

HEATH CONSTRUCTION  
SERVICES, INC.

Honolulu Regional Office

---

Pali Palms Plaza  
970 N. Kalaheo Avenue  
Suite C-316  
Kailua, Oahu, HI 96734  
(808) 531-6708  
Fax (808) 537-4084

**Clayton**  
ENVIRONMENTAL  
CONSULTANTS

Asbestos and Lead-Base Paint Assessment  
at  
The Kailua Town Center  
108 Hekili Street, Kailua, Oahu, Hawaii  
for  
Hawaiian Asset Management  
Honolulu, Oahu, Hawaii

Clayton Project No. 85-97012.00

October 11, 1996

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## Executive Summary

Mr. Darryll Goodman of Hawaiian Asset Management retained Clayton Environmental Consultants, Inc. to conduct an assessment of suspect asbestos-containing materials (ACM) and lead-based paint (LBP) at the Kailua Town Center, located at 108 Hekili Street in Kailua, Oahu, Hawaii.

The purpose of this project was to conduct an asbestos and lead-based paint survey, which included a walk-through survey of accessible areas of the subject property and collection and analyses of bulk samples of suspect asbestos-containing materials and suspect lead-containing paint.

Based on our investigation and sample analytical results, Clayton's findings and recommendations are as follows:

### -Asbestos-Containing Materials

Based on our assessment and laboratory analytical results, the following building materials tested positive for asbestos content:

- Approximately 2,100 square feet of 12-inch by 12-inch tan floor tile located under carpeting in Units 7 and 8
- Approximately 320 square feet of floor tile mastic located underneath 12-inch by 12-inch gray floor tile in the rear hallway
- Approximately 50 square feet of 9-inch by 9-inch gray floor tile and the associated mastic located in the northwest corner stock room of Foodland Super Market

All of these ACM were observed in good condition and are considered nonfriable (not easily crumbled under hand pressure). Therefore, these materials may remain in place until removal becomes feasible. Until such time, the condition of the ACM should be monitored under an Operations and Maintenance (O&M) Plan. If the ACM becomes friable due to deterioration, or if removal is planned, the ACM should be removed by a licensed asbestos abatement contractor.

Lead-Based Paint

Based on our assessment and laboratory analytical results, all of the paint samples collected from the subject property contain lead levels below the Department of Housing and Urban Development (HUD) definition of 0.50 percent (%) lead by weight for lead-based paint. Therefore, no special procedures are required for handling the painted surfaces at the subject property.

## 1.0 INTRODUCTION

Mr. Darryll Goodman of Hawaiian Asset Management retained Clayton Environmental Consultants, Inc. to conduct an assessment of suspect asbestos-containing materials (ACM) and lead-based paint (LBP) at the Kailua Town Center located at 108 Hekili Street in Kailua, Oahu, Hawaii. The scope of services provided by Clayton is described in our Proposal No. 96-HI-50024, dated September 23, 1996. Authorization to proceed was given on September 26, 1996.

On September 30, 1996, Mr. Tim Swartz, Industrial Hygienist with Clayton, conducted a walkthrough assessment of the shopping center. During the walkthrough assessment, Mr. Swartz performed a visual inspection of the readily accessible portions of the building and noted areas where friable, as well as non-friable, materials suspected of containing asbestos were located. A friable material is one which, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. In addition, paint was sampled from the interior and exterior of the building and analyzed for lead content.

Bulk suspect asbestos and paint samples were shipped to EMSL Analytical, Inc. laboratory, located in San Mateo, California. The asbestos samples were analyzed for asbestos content using the Environmental Protection Agency (EPA) recommended standard method of polarized light microscopy (PLM) for determining asbestos fibers in bulk materials. Paint samples were analyzed for total lead using EPA Method 7420.

## 2.0 DESCRIPTION OF FACILITY

The Kailua Town Center consists of a single-story, L-shaped building that includes Foodland Super Market, The Pub, Smitty's Restaurant, a deli kitchen, a boutique, office space, storage space, and five vacant units. According to Mr. Goodman, the Foodland Super Market was constructed at a later date than the rest of the shopping center. Therefore, building materials and paint in the Foodland portion of the building were sampled separately from the remainder of the shopping center.

### 2.1 DESCRIPTION OF ASBESTOS ASSESSMENT

During Clayton's onsite inspection, suspect asbestos-containing materials (ACM) were observed throughout the building and a minimum of one representative sample of each material was collected for PLM analysis. Suspect ACM may include ceiling and floor tile, pipe and boiler insulation, spray-applied plaster, and various other building materials. According to federal and state regulations, a material is considered asbestos-containing if it contains at least one percent (%) asbestos fibers.

## 2.2 DESCRIPTION OF LEAD-BASED PAINT ASSESSMENT

Interior and exterior paint chips were collected to assess the presence of lead using the Housing and Urban Development (HUD) guidelines. According to the HUD guidelines, a paint sample is considered lead-based when it contains 0.5% or more lead by weight.

## 3.0 SURVEY RESULTS

### 3.1 RESULTS OF ASBESTOS ASSESSMENT

The following table shows the suspect ACM sampled, material locations, PLM analytical results, and sample identification (ID) numbers. Sample locations with the corresponding sample ID numbers are indicated on the floor plan included in Figure 1 of Appendix A.

Asbestos Assessment Results

Material Description	Material Location	% and Type of Asbestos	Sample ID Numbers
Gypsum wall/ceiling board with joint tape/compound	Interior walls and ceilings throughout building	ND	1144-1146
12-inch by 12-inch tan floor tile and mastic	Units 7 & 8 (under carpet)	2% chrysotile (tile only)	1147
2-feet by 4-feet "fissure" drop ceiling panels	Units 3 & 4	ND	1148-1150
2-feet by 4-feet "textured" drop ceiling panels	Units 9 & 10	ND	1151-1153
12-inch by 12-inch brown floor tile and mastic	Unit 3	ND	1154
12-inch by 12-inch black floor tile and mastic	Unit 3	ND	1155
White floor base and mastic	Unit 3	ND	1156
Gray sink undercoating	Unit 4	ND	1157

Asbestos Assessment Results (continued)

Material Description	Material Location	% and Type of Asbestos	Sample ID Numbers
2-feet by 4-feet "pinhole" drop ceiling panels	Units 2, 3, 6, 7, 8 & rear hallway	ND	1158-1160
2-feet by 2-feet "fissure" drop ceiling panels	Unit 1 (Smitty's Restaurant, dining area)	ND	1161-1163
2-feet by 2-feet gypsum drop ceiling panels	Unit 1 (Smitty's Restaurant, kitchen area)	ND	1164-1166
Tan floor base and mastic	Rear hallway	ND	1167
12-inch by 12-inch gray floor tile and mastic	Rear hallway	10% chrysotile (mastic only)	1168
Stucco plaster finish	Exterior walls of original structure	ND	1169-1171
Stucco plaster finish	Exterior walls of Foodland structure	ND	1172-1174
12-inch by 12-inch white floor tile and mastic	Foodland Super Market (retail area)	ND	1175
2-feet by 4-feet "pinhole" drop ceiling panels	Foodland Super Market (retail area and employee lounge)	ND	1176-1178
9-inch by 9-inch gray floor tile and mastic	Foodland Super Market (stock room in northwest corner)	3% chrysotile (floor tile) 20% chrysotile (mastic)	1179
Brown floor base and mastic	Foodland Super Market (retail area)	ND	1180

ND: None detected

Based on PLM analytical results, the Kailua Town Center contains ACM in the following amounts:

- Approximately 2,100 square feet of 12-inch by 12-inch tan floor tile located under carpeting in Units 7 and 8

- Approximately 320 square feet of mastic located underneath 12-inch by 12-inch gray floor tile in the rear hallway
- Approximately 50 square feet of 9-inch by 9-inch gray floor tile and the associated mastic, located in the northwest corner stock room of Foodland Super Market

All of these ACM were observed in good condition and are considered nonfriable (not easily crumbled under hand pressure). Therefore, these materials may remain in place until removal becomes feasible. Until such time, the condition of the ACM should be monitored under an Operations and Maintenance (O&M) Plan. If the ACM becomes friable due to deterioration, or if removal is planned, the ACM should be removed by a licensed asbestos abatement contractor.

The results of the asbestos analysis from EMSL Analytical, Inc. laboratory are included in Appendix B.

### 3.2 RESULTS OF LEAD-BASED PAINT (LBP) ASSESSMENT

The following table shows the painted components sampled, lead content, and sampled ID numbers. Sample locations with the corresponding sample ID numbers are indicated on the floor plan included in Figure 2 of Appendix A.

LBP Assessment Results

Painted Component	Lead Content (% by weight)	Sample ID Numbers
White paint on interior walls of Units 1 through 11	<0.01	P-01
Gray, turquoise and black paint on interior walls of Unit 3 (composite sample)	<0.01	P-02
Gray paint on interior walls of the rear hallway	<0.01	P-03
White paint on exterior walls of original Kailua Town Center structure	<0.01	P-04
White paint on exterior walls of Foodland Super Market structure	0.018	P-05

LBP Assessment Results (continued)

Painted Component	Lead Content (% by weight)	Sample ID Numbers
White paint on interior walls of stock rooms in Foodland Super Market	0.242	P-06
Blue paint on interior walls of refrigerator compressor room in Foodland Super Market	0.018	P-07
Pink paint on north and south interior walls of retail area in Foodland Super Market	<0.01	P-08

0.01% lead by weight = limit of detection (LOD) for analytical method

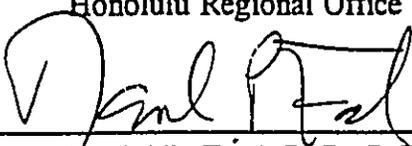
Based on laboratory analytical results, all of the paint samples collected from the Kailua Town Center contain less than 0.50% lead by weight, which is the minimum level at which HUD guidelines define lead-based paint. Therefore, no special procedures are required for handling the painted surfaces at the subject property.

The results of the lead analysis from EMSL Analytical, Inc. laboratory are included in Appendix C.

#### 4.0 LIMITATIONS

The information and opinions rendered in this report are exclusively for use by Hawaiian Asset Management. Clayton Environmental Consultants, Inc. will not distribute this report without your written consent except as may be required by law or court order. The information and opinions expressed in this report are given in response to our limited assignment and should be evaluated and implemented only in light of that assignment. We accept the responsibility for the competent performance of our duties in executing the assignment and preparing this report in accordance with the normal standards of our profession but disclaim any responsibility for consequential damages.

This report prepared by:   
Tim Swartz  
IH/EPA Asbestos Inspector  
Certification No. 7ME04249601IR003  
Honolulu Regional Office

This report reviewed by:   
Daniel P. Ford, R.G., R.E.A.  
Manager/Senior Hydrogeologist  
Honolulu Regional Office

**APPENDIX A**  
**SAMPLE LOCATIONS**

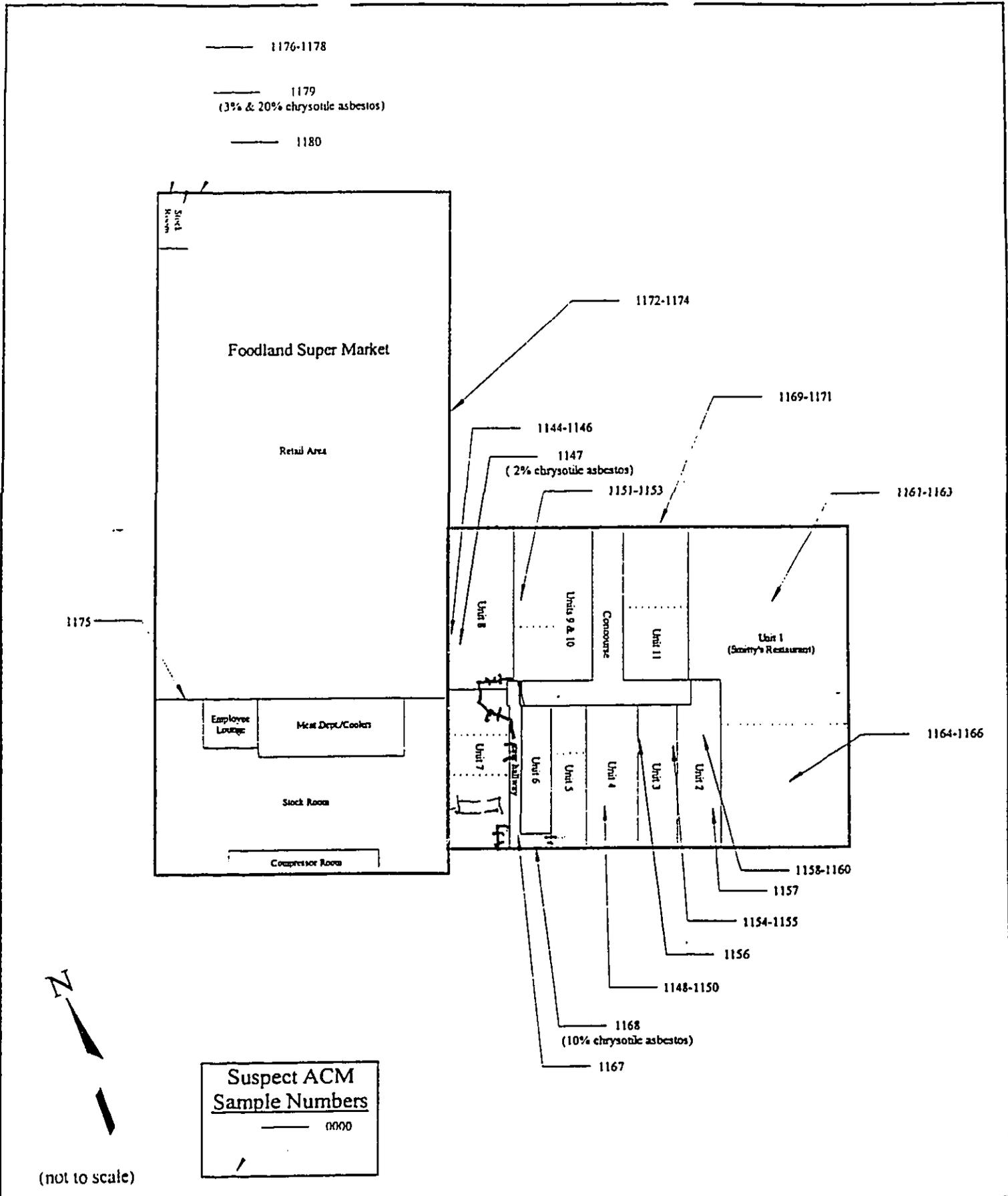
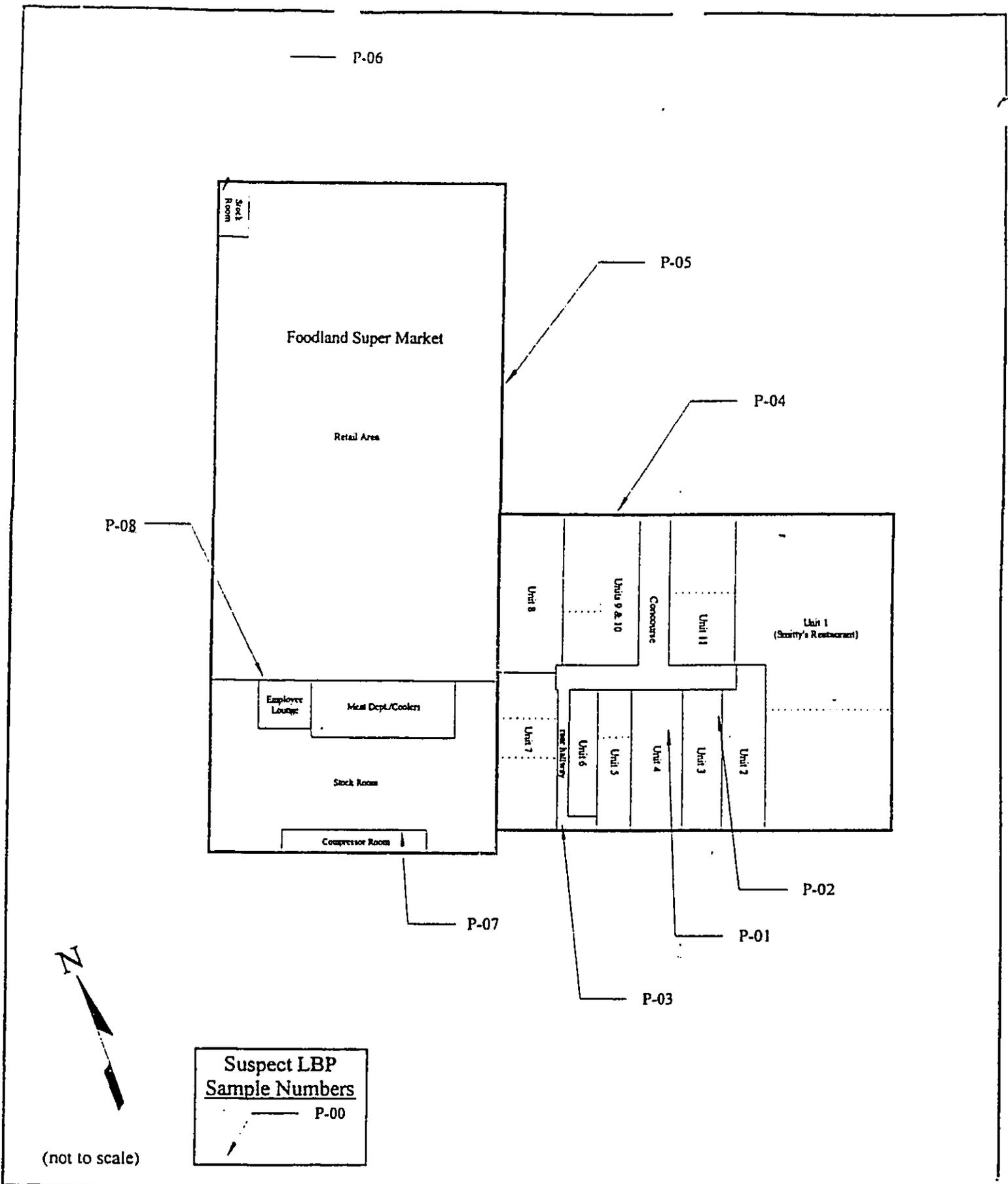


Figure 1	Clayton ENVIRONMENTAL CONSULTANTS	Kailua Town Center, 108 Hekili Street, Kailua, Oahu, Hawaii	
Suspect ACM Sample Locations		Clayton Project No. 85-97012.00	Client: Hawaiian Asset Management



<p>Figure 2 Suspect LBP Sample Locations</p>	<p><b>Clayton</b> ENVIRONMENTAL CONSULTANTS</p>	<p>Kailua Town Center, 108 Hekili Street, Kailua, Oahu, Hawaii Clayton Project No. 85-97012.00</p>	<p>Client: Hawaiian Asset Management</p>
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**APPENDIX B**  
**LABORATORY ANALYTICAL RESULTS FOR ASBESTOS**

Waco, TX (817) 870-1111 | Dallas, TX (972) 412-1111 | Fort Worth, TX (817) 412-1111 | Houston, TX (281) 412-1111 | San Antonio, TX (214) 412-1111 | Austin, TX (512) 412-1111 | Phoenix, AZ (602) 412-1111 | San Diego, CA (619) 412-1111 | Los Angeles, CA (310) 412-1111 | San Francisco, CA (415) 412-1111 | New York, NY (212) 412-1111 | Chicago, IL (312) 412-1111 | Atlanta, GA (404) 412-1111 | Miami, FL (305) 412-1111 | Seattle, WA (206) 412-1111 | Portland, OR (503) 412-1111 | Denver, CO (303) 412-1111 | Salt Lake City, UT (801) 412-1111 | Salt Lake City, UT (801) 412-1111 | Salt Lake City, UT (801) 412-1111



Clayton Environmental Consultants  
 Honolulu Regional Office  
 970 North Kalaheo Ave., Suite C-316  
 Kaitua, HI 96734

Friday, October 04, 1996

Ref Number: CA968310

**POLARIZED LIGHT MICROSCOPY (PLM)**

Project: #85-97012.00

SAMPLE	LOCATION	APPEARANCE	SAMPLE TREATMENT	ASBESTOS		NONASBESTOS	
				%	TYPE	%	FIBROUS / NONFIBROUS
1144		White Non-Fibrous Heterogeneous	Teased	None Detected		5% Other	30% Gypsum 20% Ca Carbonate 45% Other
1145		White Non-Fibrous Heterogeneous	Teased	None Detected		5% Other	30% Gypsum 20% Ca Carbonate 45% Other
1146		White Non-Fibrous Heterogeneous	Teased	None Detected		5% Other	30% Gypsum 20% Ca Carbonate 45% Other
1147 - TILE		Brown Non-Fibrous Homogeneous	Teased	2% Chrysotile		None Detected	80% Ca Carbonate 18% Other
1147 - MASTIC		Black Non-Fibrous Homogeneous	Teased	None Detected		None Detected	40% Ca Carbonate 60% Other
1148		White Fibrous Homogeneous	Teased	None Detected		30% Glass 20% Cellulose	30% Perlite 20% Other

Comments: For all obviously heterogeneous samples easily separated into subsamples, and for layered samples, each component is analyzed separately. Also, "# of Layers" refers to number of separable subsamples.

Kevin Smith  
 Analyst

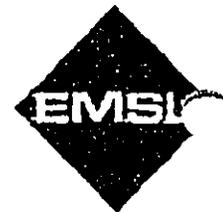
Laboratory  
 Supervisor

Other Approved  
 Signatory



Disclaimer: PLM has been known to miss asbestos in a small percentage of samples which contain asbestos. Thus negative PLM results cannot be guaranteed. Floor tiles and waxes should be tested with either SEM or TEM. The above test report relates only to the items tested. This report may only be reproduced in full with written approval by EMSL. The above text must not be used by the client to claim product endorsement by NVLAP nor any agency of the United States Government. All "NVLAP" reports with NVLAP logo must contain at least one signature to be valid.

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Friday, October 04, 1996

Ref Number: CA968310

**POLARIZED LIGHT MICROSCOPY (PLM)**

Project: #85-97012.00

SAMPLE	LOCATION	APPEARANCE	SAMPLE TREATMENT	ASBESTOS		NONASBESTOS	
				%	TYPE	% FIBROUS	% NONFIBROUS
1149		White Fibrous Homogeneous	Teased	None Detected		30% Glass 20% Cellulose	30% Perlite 20% Other
1150		White Fibrous Homogeneous	Teased	None Detected		30% Glass 20% Cellulose	30% Perlite 20% Other
1151		Tan Fibrous Homogeneous	Teased	None Detected		20% Glass 20% Cellulose	40% Perlite 20% Other
1152		Tan Fibrous Homogeneous	Teased	None Detected		20% Glass 20% Cellulose	40% Perlite 20% Other
1153		Tan Fibrous Homogeneous	Teased	None Detected		20% Glass 20% Cellulose	40% Perlite 20% Other
1154 - TILE		Brown Non-Fibrous Homogeneous	Teased	None Detected		None Detected	80% Ca Carbonate 20% Other

Comments: For all obviously heterogeneous samples easily separated into subsamples, and for layered samples, each component is analyzed separately. Also, "# of Layers" refers to number of separable subsamples.

Kevin Smith  
 Analyst

Laboratory  
 Supervisor

Other Approved  
 Signatory

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Friday, October 04, 1996

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**POLARIZED LIGHT MICROSCOPY (PLM)**

Project: #85-97012.00

SAMPLE	LOCATION	APPEARANCE	SAMPLE TREATMENT	ASBESTOS		NONASBESTOS	
				%	TYPE	%	FIBROUS
1154 - MASTIC		Brown Non-Fibrous Homogeneous	Teased	None Detected		None Detected	30% Ca Carbonate 20% Quartz 50% Other
1155 - TILE		Black Non-Fibrous Homogeneous	Teased	< 1% Chrysotile		None Detected	80% Ca Carbonate 20% Other
1155 - MASTIC		Brown Non-Fibrous Homogeneous	Teased	None Detected		None Detected	30% Ca Carbonate 70% Other
1158 - FLOOR BASE		White Non-Fibrous Homogeneous	Teased	None Detected		None Detected	20% Ca Carbonate 10% Mica 70% Other
1156 - MASTIC		Yellow Non-Fibrous Homogeneous	Teased	None Detected		None Detected	40% Quartz 60% Other
1157		White Non-Fibrous Homogeneous	Teased	None Detected		20% Cellulose	50% Ca Carbonate 10% Mica 20% Other

Comments: For all obviously heterogeneous samples easily separated into subsamples, and for layered samples, each component is analyzed separately. Also, "# of Layers" refers to number of separable subsamples.

Kevin Smith  
 Analyst

Laboratory  
 Supervisor

Other Approved  
 Signatory

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 Kailua, HI 96734

Friday, October 04, 1996  
 Ref Number: CA968310

**POLARIZED LIGHT MICROSCOPY (PLM)**

Project #85-97012.00

SAMPLE	LOCATION	APPEARANCE	SAMPLE TREATMENT	ASBESTOS		NONASBESTOS	
				%	TYPE	%	FIBROUS
1158		Tan Fibrous Homogeneous	Teased	None Detected		60% Glass 20% Cellulose	10% Perlite 10% Other
1159		Tan Fibrous Homogeneous	Teased	None Detected		60% Glass 20% Cellulose	10% Perlite 10% Other
1160		Tan Fibrous Homogeneous	Teased	None Detected		60% Glass 20% Cellulose	10% Perlite 10% Other
1161		Tan Fibrous Homogeneous	Teased	None Detected		40% Cellulose 10% Glass	30% Perlite 20% Other
1162		Tan Fibrous Homogeneous	Teased	None Detected		40% Cellulose 10% Glass	30% Perlite 20% Other
1163		Tan Fibrous Homogeneous	Teased	None Detected		40% Cellulose 10% Glass	30% Perlite 20% Other

Comments: For all obviously heterogeneous samples easily separated into subsamples, and for layered samples, each component is analyzed separately. Also, "# of Layers" refers to number of separable subsamples.

Kevin Smith  
 Analyst

Laboratory  
 Supervisor

Other Approved  
 Signatory

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Friday, October 04, 1996

Ref Number: CA968310

**POLARIZED LIGHT MICROSCOPY (PLM)**

Project: #85-97012.00

SAMPLE	LOCATION	APPEARANCE	SAMPLE TREATMENT	ASBESTOS		NONASBESTOS	
				%	TYPE	% FIBROUS	% NONFIBROUS
1164		Brown/White Fibrous Heterogeneous	Teased	None Detected		10% Cellulose 3% Other	20% Gypsum 20% Ca Carbonate 47% Other
1165		Brown/White Fibrous Heterogeneous	Teased	None Detected		10% Cellulose 3% Other	20% Gypsum 20% Ca Carbonate 47% Other
1166		Brown/White Fibrous Heterogeneous	Teased	None Detected		5% Cellulose 5% Other	30% Gypsum 20% Ca Carbonate 40% Other
1167 - FLOOR BASE		Tan Non-Fibrous Homogeneous	Teased	None Detected		None Detected	70% Ca Carbonate 30% Other
1167 - MASTIC		Brown Non-Fibrous Homogeneous	Teased	None Detected		5% Cellulose 3% Wollastonite	30% Ca Carbonate 62% Other
1168 - TILE		White Non-Fibrous Homogeneous	Teased	None Detected		None Detected	80% Ca Carbonate 20% Other

Comments: For all obviously heterogeneous samples easily separated into subsamples, and for layered samples, each component is analyzed separately. Also, "# of Layers" refers to number of separable subsamples.

Kevin Smith  
 Analyst

Laboratory  
 Supervisor

Other Approved  
 Signatory

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Friday, October 04, 1996

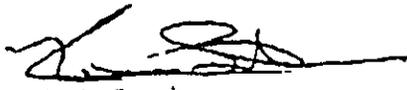
Ref Number: CA968310

**POLARIZED LIGHT MICROSCOPY (PLM)**

Project: #85-97012.00

SAMPLE	LOCATION	APPEARANCE	SAMPLE TREATMENT	ASBESTOS		NONASBESTOS	
				%	TYPE	% FIBROUS	% NONFIBROUS
1168 - MASTIC		Black Non-Fibrous Homogeneous	Grasped	10%	Chrysotile	None Detected	50% Ca Carbonate 40% Other
1169		Grey/White Non-Fibrous Heterogeneous	Crushed	None Detected		None Detected	40% Quartz 10% Ca Carbonate 50% Other
1170		Grey/White Non-Fibrous Heterogeneous	Crushed	None Detected		None Detected	40% Quartz 10% Ca Carbonate 50% Other
1171		Grey/White Non-Fibrous Heterogeneous	Crushed	None Detected		None Detected	40% Quartz 10% Ca Carbonate 50% Other
1172		Grey/White Non-Fibrous Heterogeneous	Crushed	None Detected		None Detected	40% Quartz 10% Ca Carbonate 50% Other
1173		Grey/White Non-Fibrous Heterogeneous	Crushed	None Detected		None Detected	40% Quartz 10% Ca Carbonate 50% Other

Comments: For all obviously heterogeneous samples easily separated into subsamples, and for layered samples, each component is analyzed separately.  
 Also, "# of Layers" refers to number of separable subsamples.

  
 Kevin Smith  
 Analyst

  
 Laboratory  
 Supervisor

Other Approved  
 Signatory



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**POLARIZED LIGHT MICROSCOPY (PLM)**

Project: #85-97012.00

SAMPLE	LOCATION	APPEARANCE	SAMPLE TREATMENT	ASBESTOS		NONASBESTOS	
				%	TYPE	% FIBROUS	% NONFIBROUS
1174		Grey/White Non-Fibrous Heterogeneous	Crushed		None Detected	None Detected	40% Quartz 10% Ca Carbonate 50% Other
1175 - TILE		White Non-Fibrous Homogeneous	Teased		None Detected	None Detected	80% Ca Carbonate 20% Other
1176 - MASTIC		Brown Non-Fibrous Homogeneous	Teased		None Detected	None Detected	50% Ca Carbonate 10% Mica 40% Other
1176		Pink Fibrous Homogeneous	Teased		None Detected	50% Glass 20% Cellulose	10% Quartz 20% Other
1177		Pink Fibrous Homogeneous	Teased		None Detected	50% Glass 20% Cellulose	10% Quartz 20% Other
1178		Pink Fibrous Homogeneous	Teased		None Detected	50% Glass 20% Cellulose	10% Quartz 20% Other

Comments: For all obviously heterogeneous samples easily separated into subsamples, and for layered samples, each component is analyzed separately. Also, "# of Layers" refers to number of separable subsamples.

  
 Kevin Smith  
 Analyst

  
 Laboratory  
 Supervisor

Other Approved  
 Signatory

Disclaimer: PLM has been known to miss asbestos in a small percentage of samples which contain asbestos. Thus negative PLM results cannot be guaranteed. Floor tiles and wipes should be tested with either SEM or TEM. The above test report relates only to the items tested. This report may only be reproduced in full with written approval by EMSL. The above text must not be used by the client to derive product endorsement by NVLAP nor any agency of the United States Government. All "NVLAP" reports with NVLAP logo must contain at least one signature to be valid.

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Friday, October 04, 1996

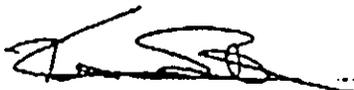
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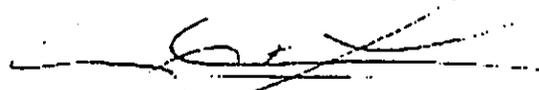
**POLARIZED LIGHT MICROSCOPY (PLM)**

Project: #85-97012.00

SAMPLE	LOCATION	APPEARANCE	SAMPLE TREATMENT	ASBESTOS		NONASBESTOS		
				%	TYPE	%	FIBROUS	%
1178 - TILE		Grey Non-Fibrous Homogeneous	Teased	3%	Chrysotile		None Detected	70% Ca Carbonate 27% Other
1178 - MASTIC		Black Non-Fibrous Homogeneous	Teased	20%	Chrysotile		None Detected	30% Ca Carbonate 50% Other
1180 - FLOOR BASE		Brown Non-Fibrous Homogeneous	Teased		None Detected		None Detected	70% Ca Carbonate 30% Other
1180 - MASTIC		Brown Non-Fibrous Homogeneous	Teased		None Detected	2%	Wollastonite	20% Ca Carbonate
						1%	Cellulose	77% Other

Comments: For all obviously heterogeneous samples easily separated into subsamples, and for layered samples, each component is analyzed separately. Also, "# of Layers" refers to number of separable subsamples.

  
 Kevin Smith  
 Analyst

  
 Laboratory  
 Supervisor

Other Approved Signatory

Disclaimer: PLM has been known to miss asbestos in a small percentage of samples which contain asbestos. Thus negative PLM results cannot be guaranteed. Floor tiles and tapes should be tested with either SEM or TEM. The above test report releases only to the items tested. This report may only be reproduced in full with written approval by EMSL. The above test must not be used by the client to claim product endorsement by NVLAP nor any agency of the United States Government. All "NVLAP" reports with NVLAP logo must contain at least one signature to be valid.



EMSL Analytical, Inc.

Asbestos

CHAIN OF CUSTODY

EMSL Representative: Connie Frasca

Your Company Name: Clayton Environmental Consultants EMSL-Bill to: Same  
Honolulu Regional Office

Street: 970 North Kalahoe Ave., Suite C-316 Street: \_\_\_\_\_  
 Box #: \_\_\_\_\_ Box #: \_\_\_\_\_  
 City/State: Kailua, HI Zip 96734 City/State: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone Results to: Name Tim Swartz Fax Results to: Name Tim Swartz  
 Telephone #: (808) 531-6708 Fax Number: (808) 537-4084

Project Name/Number: 85-97012.00 Purchase Order #: Not applicable

MATRIX

TURNAROUND

Air     Floor Tile     Soil  
 Bulk     Drinking Water     Dust  
 Wipe     Wastewater

6-10 Days     72 Hours     24 Hour     Same Day\*  
 5 Days     48 Hours     12 Hour     6 Hours  
 \*S.D. - A.M. delivery by Fed. Ex. - Results by Mid-night or earlier

<p><b>PCM</b></p> <input type="checkbox"/> NIOSH 7400 <input type="checkbox"/> OSHA <input type="checkbox"/> Other: _____	<p><b>TEM AIR</b></p> <input type="checkbox"/> AHERA <input type="checkbox"/> NIOSH 7402 <input type="checkbox"/> Level I <input type="checkbox"/> Level II	<p><b>TEM WATER</b></p> <input type="checkbox"/> Wastewater <input type="checkbox"/> Drinking Water EPA 100.2 <input type="checkbox"/> Water - NY Wastewater <input type="checkbox"/> Water-NY Drinking Water
<p><b>PLM</b></p> <input checked="" type="checkbox"/> EPA 600 <input type="checkbox"/> NOB <input type="checkbox"/> Point Count <input type="checkbox"/> Other: _____	<p><b>TEM BULK</b></p> <input type="checkbox"/> Drop Mount (Qualitative) <input type="checkbox"/> Chatfield <input type="checkbox"/> Chatfield / SEM QC <input type="checkbox"/> Conventional (Quantitative) <input type="checkbox"/> EMSL Method <input type="checkbox"/> NOB <input type="checkbox"/> NOB / SEM QC <input type="checkbox"/> Micro Vac - Quantitative <input type="checkbox"/> Micro Vac - Qualitative	<p><b>TEM WIPE</b></p> <input type="checkbox"/> Quantitative <input type="checkbox"/> Qualitative
<p><b>SEM</b></p> <input type="checkbox"/> Qualitative <input type="checkbox"/> Quantitative		<p><b>XRD</b></p> <input type="checkbox"/> Asbestos <input type="checkbox"/> Silica
		<p><b>OTHER</b></p> <input type="checkbox"/> _____

Client Sample # (s) 1144 - 1180 Total Samples: 37

Relinquished: [Signature] Date: 10-2-96 Time: 0900

Received: [Signature] Date: 10-3-96 Time: 11:40AM

Received: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_



EMSL Analytical, Inc.

Asbestos

CHAIN OF CUSTODY

EMSL Representative: Connie Frasca

Your Company Name: Clayton Env. Cons. EMSL-Bill to: Same

Honolulu Regional Office

Street: 970 North Kalanooa Ave, Suite C-316 Street: \_\_\_\_\_

Box #: \_\_\_\_\_ Box #: \_\_\_\_\_

City/State: Kailua, HI Zip 96734 City/State: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone Results to: Name Tim Swartz Fax Results to: Name Tim Swartz  
Telephone #: (808) 531-6708 Fax Number: (808) 537-4084

Project Name/Number: 85-97012:00 Purchase Order #: \_\_\_\_\_

MATRIX

TURNAROUND

- Air
- Bulk
- Wipe
- Floor Tile
- Drinking Water
- Wastewater
- Soil
- Dust

- 6-10 Days
  - 72 Hours
  - 24 Hour
  - Same Day\*
  - 5 Days
  - 48 Hours
  - 12 Hour
  - 6 Hours
- \*S.D. - A.M. delivery by Fed. Ex.-Results by Mid-night or earlier

<p><b>PCM</b></p> <input type="checkbox"/> NIOSH 7400 <input type="checkbox"/> OSHA <input type="checkbox"/> Other: _____	<p><b>TEM AIR</b></p> <input type="checkbox"/> AHERA <input type="checkbox"/> NIOSH 7402 <input type="checkbox"/> Level I <input type="checkbox"/> Level II	<p><b>TEM WATER</b></p> <input type="checkbox"/> Wastewater <input type="checkbox"/> Drinking Water EPA 100.2 <input type="checkbox"/> Water - NY Wastewater <input type="checkbox"/> Water-NY Drinking Water
<p><b>PLM</b></p> <input checked="" type="checkbox"/> EPA 600 <input type="checkbox"/> NOB <input type="checkbox"/> Point Count <input type="checkbox"/> Other: _____	<p><b>TEM BULK</b></p> <input type="checkbox"/> Drop Mount (Qualitative) <input type="checkbox"/> Chatfield <input type="checkbox"/> Chatfield / SEM QC <input type="checkbox"/> Conventional (Quantitative) <input type="checkbox"/> EMSL Method <input type="checkbox"/> NOB <input type="checkbox"/> NOB / SEM QC	<p><b>TEM WIPE</b></p> <input type="checkbox"/> Quantitative <input type="checkbox"/> Qualitative
<p><b>SEM</b></p> <input type="checkbox"/> Qualitative <input type="checkbox"/> Quantitative	<input type="checkbox"/> Micro Vac - Quantitative <input type="checkbox"/> Micro Vac - Qualitative	<p><b>XRD</b></p> <input type="checkbox"/> Asbestos <input type="checkbox"/> Silica
<p><b>OTHER</b></p> <input type="checkbox"/> _____		

Client Sample # (s) See page 1 - Total Samples: \_\_\_\_\_

Relinquished: Tim Swartz Date: 10-2-96 Time: 0900

Received: Dendra Chiles Date: 10-3-96 Time: 11:40 AM

Received: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

**APPENDIX C**  
**LABORATORY ANALYTICAL RESULTS**  
**FOR LEAD-BASED PAINT**



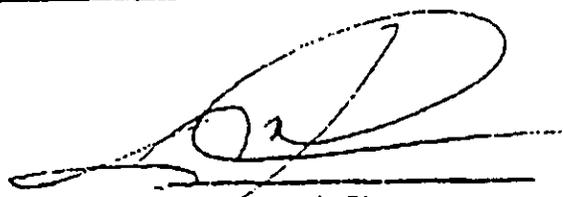
PRELIMINARY SUMMARY DATA SHEET  
Atomic Absorption Spectrophotometry

Client CLAYTON Project # 85-97012.00

Date 8 OCT 96 No. of Samples 8 Attn. TIM SWARTZ

Sample ID	Analyte	Weight (mg or g)	LOD (weight%)	Results (weight%)
P-01	Pb	0.1992	0.010	<0.010
02		0.1925		<0.010
03		0.1740		<0.010
04		0.1831		<0.010
05		0.1814		0.018
06		0.1939		0.242
07	✓	0.1953	✓	0.018
08	✓	0.1909	✓	<0.010

LOD = Limit of Detection  
NA = Not Analyzed  
NS = No Sample

  
Approved Signatory



EMSL ANALYTICAL

CHAIN OF CUSTODY

LEAD

Date: 10-2-96 EMSL Representative: Connie Frasca Project Name/No.: 85-97012.007.O.#: NA  
 Company Name: Clayton Environmental Consult. EMSL-Bill to: Same  
 Street: 970 N. Kalaheo Ave., Suite C-316 Street: \_\_\_\_\_  
 Box #: \_\_\_\_\_ Box #: \_\_\_\_\_  
 City/State: Kailua, HI Zip: 96734 City/State: \_\_\_\_\_ Zip: \_\_\_\_\_  
 Phone Results to: (Name) Tim Swartz Telephone: (808) 531-6708  
 Fax Results to: (Name) Tim Swartz Fax #: (808) 537-4084

MATRIX	METHOD	INSTRUMENT	mdls	TAT
Lead Chips*	AOAC 5.009 (974.02) or SW846-7420	Flame Atomic Absorption	0.01% ++	<b>72 hours</b>
Lead Wastewater	SW846-7420	Flame Atomic Absorption	0.4 mg/l water 50 mg/kg (ppm) soil	
Lead Soil *	or SW846-6010	ICP	0.1 mg/l water 10 mg/kg (ppm) soil	
Lead in Air***	NIOSH 7082	Flame Atomic Absorption	10 ug/liter	
	or NIOSH 7300	ICP	3.0 ug/liter	
Lead in Wipe	SW846-7420	Flame Atomic Absorption	10 ug/wipe	
	or SW846-6010	ICP	3.0 ug/wipe	
TCLP Lead **	SW846-1311/7420	Flame Atomic Absorption	0.4 mg/l (ppm)	
	or SW846-6010	ICP	0.1 mg/l (ppm)	
Lead in Air ****	NIOSH 7105	Graphite Furnace Atomic Absorption	0.03 ug/liter	
Lead Wastewater	SW846-7421	Graphite Furnace Atomic Absorption	0.003 mg/l (ppm) water	
Lead Soil *			0.3 mg/kg (ppm) soil	
Lead in Drinking Water (check state Certification Requirements)	EPA 239.2	Graphite Furnace Atomic Absorption	0.003 mg/l (ppm)	

TAT (Turnaround) - Same day, 24 hours, 48 hours, 72 hours, 4 Days, 5 Days, 6-10 Days  
 \*, \*\*, \*\*\*, \*\*\*\*, +, ++ Please Refer to Price Quote

SAMPLE #	LOCATION	LAP #
P-01	White paint on walls	
P-02	Composite (gray, turquoise, black)	
P-03	Gray paint on walls	
P-04	White exterior paint	
P-05	White exterior paint	
P-06	white paint on walls	
P-07	blue paint on walls	
P-08	pink paint on walls	

Relinquished By: (Person) [Signature] Date: 10-2-96  
 Received at EMSL By: [Signature] Date: 10-3-96-11:40  
 Received at EMSL By: \_\_\_\_\_ Date: \_\_\_\_\_

Note: Please duplicate this form and use additional sheets if necessary.